CITY OF DOVER

DOVER PLANNING BOARD – AGENDA

Meeting Type:	Regular Meeting
Meeting Location:	Council Chambers, City Hall, 288 Central Ave, Dover NH 03820
Meeting Date:	**Tuesday, April 23, 2019**
Meeting Time:	**7:00 pm**

1. **CITIZENS' FORUM**
2. **ELECTION OF VICE CHAIR**
3. **APPROVAL OF THE PRIOR MINUTES**
   - April 9, 2019 Regular Meeting Minutes
4. **OLD BUSINESS**
5. **NEW BUSINESS**
   A. Consideration and acceptance of a Minor Subdivision for David W. Vincent, LLS, (Owner: Valerie A. Chenevert Irrevocable Trust), Assessor's Map M, Lot 102, zoned R-40, located at 277 Middle Road. (2 new lots) *(P19-28)

   B. Consideration and acceptance of a Minor Subdivision for Knox Marsh Development LLC, (Owner: Michael & Gaye Dean), Assessor's Map 38, Lot 32-1, zoned R-12, and located at 7 Glenwood Avenue. (Proposal is to subdivide the existing lot into two lots).*(P19-31)

   C. Consideration and acceptance of a Conditional Use Permit for Eversource Energy, (Owners: David & Laurie Landry and Christopher Lacasse), Assessor's Map I, Lots 29 and 29-D, zoned R-40, located at at 17 & 19 Spruce Lane. (Proposal is to replace an existing utility pole structure in a utility easement within the 50-foot wetland buffer. Temporary wetland buffer impacts are 4,461 s.f.). *(P19-32)

   D. Consideration and acceptance of a Conditional Use Permit for Amer Fakhoury & Micheline Elias, Assessor's Map 4, Lot 40, zoned CBD – General, and located at 6-12 Preble Street. (Proposal is to a allow a building that provides 37.6% lot coverage, where a minimum lot coverage of 75% is required). *(P19-12)

   E. Consideration and acceptance of a Site Review for Amer Fakhoury & Micheline Elias, Assessor's Map 4, Lot 40, zoned CBD – General, and located at 6-12 Preble Street. (Proposal is to construct a four-story building and driveway with parking. The building will consist of 12 apartment units on the upper three floors, and approx. 1,811 s.f. of commercial space on the first floor). *(P19-11)

   F. Consideration and acceptance of a Lot Line Adjustment for Invictus Holdings, LLC, c/o Summit Land Development, LLC (Owners: Invictus Holdings, LLC c/o Summit Land Development, LLC & H53 Mast Road LLC), Assessor's Map H, Lots 48 & 53, zoned R-40, located at Cold Springs Road & 17 Stonewall Drive. *(P19-33)

   G. Consideration and acceptance of a Minor Subdivision for Kevin P & Karen M Coppinger, Assessor's Map M Lot 40, zoned R-12, and located at 39 Gerrish Road. (Proposal is to subdivide the existing lot into two lots). *(P19-34)

   H. Consideration and acceptance of a Site Review for Little Bay Marina & Development, LLC, Assessor's Map 8, Lots 9, 10, 11, & 12, zoned LBW, located at 421, 423, 425, and 427 Dover Point Road. (Proposal is to develop a condominium containing 23 units plus marina/marina office with 1 ADU and 27 parking spaces. This project has TDR approval from the Planning Board). *(P19-04)

   I. Consideration and acceptance of a Conditional Use Permit for Little Bay Marina & Development, Assessor's Map 8, Lots 9, 10, 11, & 12, zoned LBW, located at 421, 423, 425, and 427 Dover Point Road. (Proposal will impact 2,304 sq. ft. of non-tidal wetlands, the total area of the 100' tidal buffer is 58,203 sq. ft. and the 50' buffer area to be impacted will be 15,579 sq. ft.). *(P19-05)

6. **STAFF COMMENTS**
7. **MEMBER COMMENTS**
8. **ADJOURNMENT**

*Indicates that if the application is accepted for discussion, the public hearing will be held the same evening. Note that some hearings will be continued from one meeting to another and some may be postponed. Since this is only a partial description of the proposal and may change, persons with questions or wishing to see the plans are invited to visit the Planning Office, Monday through Thursday from 8:30 am to 5:30 pm and Friday 8:30 am to 4:00 pm or email Dover-Planning@dover.nh.gov. You may also view materials at www.dover.nh.gov. Follow us on Twitter @DoverNHPlanning and find us on Facebook at https://www.facebook.com/DoverNHPlanning.

CITY OF DOVER

DOVER PLANNING BOARD – MINUTES

Meeting Type:	Regular Meeting
Meeting Location:	City Council Chamber's 288 Central Avenue
Meeting Date:	**Tuesday, April 9, 2019**
Meeting Time:	**7:00 pm**

Members Present: Gina Cruikshank (Chair), Dennis Ciotti (Councilor), Dave White, Dave Landry, Frank Torr, Tom Clark, Jackson Kaspari (Alternate), Matt Sullivan (Alternate), Lee Skinner (arrived 7:48pm.)

Members Not Present: Tristan Donovan (Vice Chair), Hayley Harmon, James Burdin (Alternate)

Staff Present: Donna Benton, City Planner

The Chair called the meeting to order at 7:00pm and appointed Jackson Kaspari to sit for Tristan Donovan and Matt Sullivan to sit for Hayley Harmon and announced that Items 3A and 4F would not be heard tonight.

1. CITIZENS' FORUM

Citizens Forum Open No one spoke. *Citizens Forum Closed.*

2. APPROVAL OF THE PRIOR MINUTES

- March 26, 2019 Regular Meeting Minutes

Motion: D. Landry made a motion to approve the minutes. Seconded by D. White. Vote: U/A.

3. OLD BUSINESS

A. Consideration and possible vote on posting the proposed Architectural Design Guidelines. The full text of the amendments is available in Planning Department & at www.dover.nh.gov located under City Documents & View Current City Reports.

D. Benton gave an update on the process thus far and explained that the Steering Committee had some comments that staff wanted to address before asking the Board to vote on posting. The Board will receive the draft changes to the zoning and site plan regulations at their May 14 meeting.

4. NEW BUSINESS

J. Kaspari announced items 4A,B &C will be heard together.

A. Consideration and acceptance of Transfer of Development Rights for 44 Maple Ave. LLC, (Owner: Dennis Ciotti Revocable Trust), Assessor's Map 30, Lot 19, zoned I-1, located at 44 Maple Street. (Requesting to buy 7 units) *(P18-60)

B. Consideration and acceptance of a Conditional Use Permit for 44 Maple Ave. LLC, (Owner: Dennis Ciotti Revocable Trust), Assessor's Map 30, Lot 19, zoned I-1 located at 44 Maple Street. (Proposal is to construct a small parking array within the 50 ft. wetland buffer). *(P18-59)

C. Consideration and acceptance of a Site Review for 44 Maple Ave. LLC, (Owner: Dennis Ciotti Revocable Trust), Assessor's Map 30, Lot 19, zoned I-1, located at 44 Maple Street. (Proposal is to construct two 6 units residential buildings and construction of a private roadway with additional parking and access to proposed buildings). *(P18-58)

D. Ciotti recused himself from the cases.
D. Benton introduced the project.

Christopher Berry, Berry Surveying and Engineering, represented the owner and reviewed the application including the location and current improvements on site. The property has been almost 100% impervious for

many years. The wetlands were located and surveyed. The brook is important, and they plan to improve the site.

They will construct a small driveway, two 6-unit buildings and a shared parking area. An agreement has been made with the owners of the abutting lot. The applicant will redevelop the front of that site along with the applicant's site including parking and sidewalk extension. They are requesting a waiver for the parking array to be less than 10' from the right of way. It will be 2'. This will be an improvement as it is currently 0'.

The stormwater will all be captured and filtered and discharged into Berry's Brook. There are invasive species in the buffer zone. The applicant will work with Stoney Ridge Environmental to determine what's there and how to remove it. The area will be replanted with native species.

C. Berry explained the architecture plans and how they've been revised as he's worked with the Planning office.

The CUP is requested to be within 50' of the wetland buffer. The proposed plan is actually a net reduction in impervious surface.

Motion: F. Torr made a motion to accept the applications. Seconded by D. White. Vote U/A.

Public hearing opened.
No one spoke.
Public Hearing closed.

P18-60:
STAFF RECOMMENDATION-TDR:
Staff reviewing density calculation and agrees with baseline. Furthermore, staff supports that the request is consistent with the Master Plan and is compatible with land uses on neighboring lots.

The Planning Department recommends that the Planning Board accept the application, hold the public hearing, and vote to approve the application of the TDR with following conditions:

Conditions to Be Met Prior to the Granting of the TDR:
1. Payment of the TDR fee ($93,814)
2. Revise the plan to note what relief is granted (i.e. frontage, lot size, etc.)
3. Revise the plan to note that the TDR is in conformance with Chapter 170.27.2.G(3)(b)

Motion: F. Torr made a motion to approve with staff recommended conditions. Seconded by D. Landry. Vote U/A.

P18-59:
STAFF RECOMMENDATION-CUP:
The Planning Department recommends the Planning Board to accept the application, open the public hearing, and vote to approve the Conditional Use Permit with the following conditions:

Conditions to Be Met Prior to the Issuance of a Conditional Use Permit:
1. The Planning Board approves the Transfer of Development Rights application (P18-60)
2. The Planning Board approves the Site Plan Application (P18-58)

Motion: D. White made a motion to approve with staff recommended conditions. Seconded by D. Landry. Vote U/A.

P18-58:
STAFF RECOMMENDATION: Waiver Request
The Planning Department recommends that the Planning Board accept the item for review, hold a public hearing, and then vote to approve the waiver request with the following condition:

Condition to Be Met Prior to the Signing of the Plan:
1. A note shall be added to the site plan that the waivers were granted for the reasons stated by the applicant and that the Board found the criteria of 149-19 have been met.

D. Landry mentioned that this is one of the most thorough applications he has seen. It is well thought out.

Motion: F. Torr made a motion to grant the waiver request with staff recommended conditions. Seconded by D. Landry. Vote U/A.

STAFF RECOMMENDATION: Site Plan
The Planning Department recommends that the Planning Board approve the site plan with transfer of development rights with the following conditions:

Conditions to Be Met Prior to Signing of Plans:
1. The Transfer of Development Rights request to buy 7 units is granted by the Planning Board.
2. The Conditional Use Permit is granted by the Planning Board.
3. The applicant shall provide a digital version of the plan to the Planning Department.
4. The applicant shall revise the plat to:
    a. Add the owners' signatures
    b. Add the Licensed Land Surveyor, Professional Engineer, Wetland Soil Scientist, Architect, and Landscape Architect stamps and signatures

Conditions to Be Met Prior to Any Construction Activity:
5. Applicant shall supply the Planning Department a letter indicating whether a pest management plan is necessary and if so, shall provide the management plan to the satisfaction of the Health Inspector.
6. The applicant shall provide a copy of the recorded deed over the Free Trade parcel to the Planning Department.
7. A site construction sign with the contact information for the general contractor must be located and approved by the City Engineer or Assistant City Manager.
8. Applicant shall complete Land Use Development Tracking Form, most recently revised version, utilizing the online Pollution Tracking and Accounting Pilot Project (PTAPP) portal. https://www.unh.edu/unhsc/ptapp
9. The applicant shall either contribute $10,000 in recreation fees to the City or contribute $10,000 worth of active recreation infrastructure at Horne Street School Park, to the satisfaction of the Assistant City Manager with consultation by the Recreation Director.

Conditions to Be Met Prior to Issuance of a Building Permit:
10. Water and sewer investment fees shall be paid at the time of request of service.

Conditions to Be Met Prior to Occupancy:
11. Issuance of a certificate of occupancy.

12. The applicant shall provide a letter of credit or other form of security acceptable to the City for any unfinished work.
13. Impact fees for any new unit ($4,601 per unit) shall be paid per the invoice provided with the Notice of Decision.
14. The recreation contribution be either paid to the City or put in place.

Motion: D. White made a motion to approve with staff recommended conditions. Seconded by D. Landry. Vote U/A.

J. Kaspari announced Items 4D&E would be heard together.

D. Consideration and acceptance of Transfer of Development Rights for Graystone Builders Inc., (Owners: Claire and Raymond Howe), Assessor's Map G, Lot 35-E, zoned R-40, and located at 32 Old Stage Road. (Requesting to buy 7 units)*(P19-19)

E. Consideration and acceptance of a Subdivision for Graystone Builders Inc., (Owners: Claire and Raymond Howe), Assessor's Map G, Lot 35-E, zoned R-40, and located at 32 Old Stage Road. (9 new lots)*(P19-20)

D. Ciotti returned to his seat.

D. Benton introduced the applications.

Christopher Berry, Berry Surveying and Engineering, represented the owner and explained the applications including the location and current site improvements. The driveway will be widened, retaining wall moved outward and slope regraded. They modified their road design based on TRC recommendations and studies of traffic and speed.

Stormwater will be captured, stored and re-infiltrated into the ground.

They propose to keep the current single-family house on site and construct nine new single-family homes clustered around a cul-de-sac. They want to create single-family homes that are affordable and in keeping with the neighborhood.

They are proposing a vegetative buffer to protect views.

F. Torr asked about the cemetery and if it will be maintained as part of the maintenance plan. C. Berry said there will be an HOA so that could be added.

Motion: F. Torr made a motion to accept the applications. Seconded by D. Landry. Vote U/A.

Public hearing opened.
No one spoke.
Public Hearing closed.

P19-19:
STAFF RECOMMENDATION-TDR:
Staff finds that this application meets the intent of the Master Plan and is compatible with land uses on neighboring lots.

The Planning Department recommends that the Planning Board accept the application, open the public hearing, close the public hearing, and vote to approve the application of TDR to the Subdivision Plan with the following conditions:

Conditions to be Met Prior to Granting the TDR:

1. Payment of the TDR fee ($53,608)
2. Revise the plan to note what relief is granted (i.e. frontage, lot size, etc.)
3. Any requirements of 170-27.2.G(3)(a) be included on the plan.

Motion: F. Torr made a motion to approve with staff recommended conditions. Seconded by J. Kaspari. Vote U/A.

P19-20:
STAFF RECOMMENDATION: Waiver Request
The Planning Department recommends that the Planning Board accept the item for review, hold a public hearing, and then vote to approve the waiver requests with the following condition:

Condition to Be Met Prior to the Signing of the Plan:

1. A note shall be added to the subdivision plan that the waivers were granted for the reasons stated by the applicant and that the Board found the criteria of 155-52 have been met.

Motion: D. White made a motion to grant the waiver with staff recommended conditions. Seconded by D. Ciotti. Vote U/A.

STAFF RECOMMENDATION: Subdivision
The Planning Department recommends that the Planning Board approve the subdivision plat with transfer of development rights with the following conditions:

Conditions to Be Met Prior to Signing of Plans:

1. The applicant shall provide a digital version of the plan to the Planning Department.
2. The applicant shall provide homeowners association documents to be reviewed and approved by the Assistant City Manager in consultation with the City's General Legal Counsel. Documentation shall include common space, cemetery, roadway, perimeter screening, stormwater infrastructure maintenance/operation, and deed/easement requirements per Section 170.27.2.
3. Provide a revised traffic study with actual eastbound design speed at site driveway to the satisfaction of the Assistant City Manager with consultation by the Police Sergeant.
4. The applicant shall revise the plat to:
    a. Add the owners' signatures
    b. Add the Licensed Land Surveyor, Professional Engineer, and Landscape Architect stamps and signatures
    c. Add permit numbers and dates to the permit status notes
    d. Indicate 6 units will be purchased and restricted

Conditions to Be Met Prior to Any Construction Activity:

5. A site construction sign with the contact information for the general contractor must be located and approved by the City Engineer or Assistant City Manager.

6. Applicant shall complete Land Use Development Tracking Form, most recently revised version, utilizing the online Pollution Tracking and Accounting Pilot Project (PTAPP) portal. https://www.unh.edu/unhsc/ptapp
7. Provide deed language to the Planning Department including regards to the specific restrictions set forth in 170-27.2.G.

Conditions to Be Met Prior to Issuance of a Building Permit:

8. The applicant shall provide a letter of credit or other form of security acceptable to the City for any unfinished work.
9. Water and sewer investment fees shall be paid at the time of request of service.

Conditions to Be Met Prior to Occupancy:

10. Issuance of a Certificate of Occupancy.
11. Documentation that the HOA has been created and is in place.
12. Impact fees for any new unit ($8,895 per unit) shall be paid per the invoice provided with the Notice of Decision.

Motion: D. White made a motion to approve with staff recommended conditions. Seconded by F. Torr. Vote U/A.

F. Consideration and acceptance of a Minor Subdivision for David W. Vincent, LLS, (Owner: Valerie A. Chenevert Irrevocable Trust), Assessor's Map M, Lot 102, zoned R-40, located at 277 Middle Road. (2 new lots). *(P19-28)

J. Kaspari announced Item 4F would not be heard until April 23, 2019.

5. STAFF COMMENTS

- The only TRC item since the last meeting was Northern Pool and Spa at 29 Littleworth
- On pace for a record-breaking year in the number of plan submissions
- NHDOT Rt. 108 meeting May 2nd
- NH OSI Spring Planning and Zoning Conference is June 1st

6. MEMBER COMMENTS

- D. Benton read T. Donovan's resignation. The Chair mentioned Tristan was a great asset to the board and she wished him well on his next endeavors.
- D. Ciotti complimented the Planning and Engineering offices on processing a high number of plans that are being submitted.

L. Skinner arrived at this time.

7. ADJOURNMENT

Motion: J. Kaspari made a motion to adjourn at 7:48 pm. Seconded by D. Ciotti. Vote U/A

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P19-28

Application Type:	Minor Subdivision
Applicant(s):	David W. Vincent LLS
Owner(s):	Valerie A Chenevert Irrevocable Trust
Location:	277 Middle Road (Map M, Lot 102)
Meeting Date:	April 23, 2019

INTENT: To subdivide one lot into 3 lots. The new lots would be 1.15 acres, 1 acre and 28.56 +/- acres.

LOTS/UNITS PROPOSED: 2 new lots

AGENDA ITEM #: 5-A

ACREAGE: 30.07 acres

ZONING DISTRICT: Rural Residential District (R-40)

EXISTING LAND USE: Residential

PROPOSED LAND USE: Residential

SURROUNDING LAND USE: Residential, Radio Station

ZBA ACTION: None

ATTACHMENTS: Application Materials including Subdivision Plan

NOTICES SENT: Abutter notices were sent by certified or first class mail to all abutters for this meeting

PERMITS REQUIRED: Sewer Discharge Permit/NHDES Subdivision Permit

WAIVERS REQUESTED:
155.28 (F), (G), & (H): Boundary, Topography, and Wetlands of Entire Property

Summary of Request and Background
The applicant proposes to subdivide Tax Map M Lot 102 into three separate parcels, creating two new lots. The new lot areas would be 1.15 acres, 1 acre and 28.56 +/- acres.

The new lots meet the frontage and area requirements.

As this is a minor subdivision, it did not go before the Technical Review Committee.

Waiver
The applicant is requesting a waiver from Section 155-28 to allow the plat to be reviewed by the Planning Board without certain topographic, wetland, and other required site features over the entire parent parcel.

Typically, staff would support such a waiver request if a reference plan shows the missing information and is listed on the plat before the Board. In this case, staff recommends the condition of approval below that any substantial building be built, over 200 sq.ft., that Planning Board review may be required as the new lots are in the area of the plat that has been surveyed with topo and wetlands indicated.

Consistency with Land Use Regulations
Chapter 155-15 of the Land Subdivision Regulations of the City Code provides for subdivisions of existing lots. This plan is consistent with the regulations.

STAFF RECOMMENDATION-Waiver:
The Planning Department recommends that the Planning Board accept the application, open the public hearing, and vote on the waiver request per the reasons provided by the applicant at the meeting:

Condition to be Met Prior to Signing of the Plans:

1. Add a note to the plat that the Board granted a waiver to Chapter 155-28 and that the Board found the criteria of Chapter 155-52.A have been met.
2. Add a note to the plat that should any building over 200 sq.ft. be built on the proposed lot 102-12 on the area not shown on this subdivision plat, that further Planning Board review may be necessary.

STAFF RECOMMENDATION-Minor Subdivision:
The Planning Department recommends that the Planning Board approve the Minor Subdivision with the following conditions:

Conditions to Be Met Prior to Signing of Plans:

1. Provide:

a. Copy of Sewer Discharge permit and amend plan note to add permit number.
b. Updated current use plan to the satisfaction of the City Assessor

2. The applicant shall revise the plat to:
   a. Include the Licensed Land Surveyor signature and stamp
   b. Add the owner's signatures to the final plat submitted for signature to be recorded at the Strafford County Registry of Deeds
   c. Indicate leach field area
   d. Show proposed utilities
   e. Show proposed driveway location
   f. Add Planning File #P19-28
   g. Revise floodplain note to indicate that floodplains may be along the rear of the parcel that was not part of the survey/review.
   h. Fix spelling of the owner's name
   i. Add tax map and lots per Assessing Office

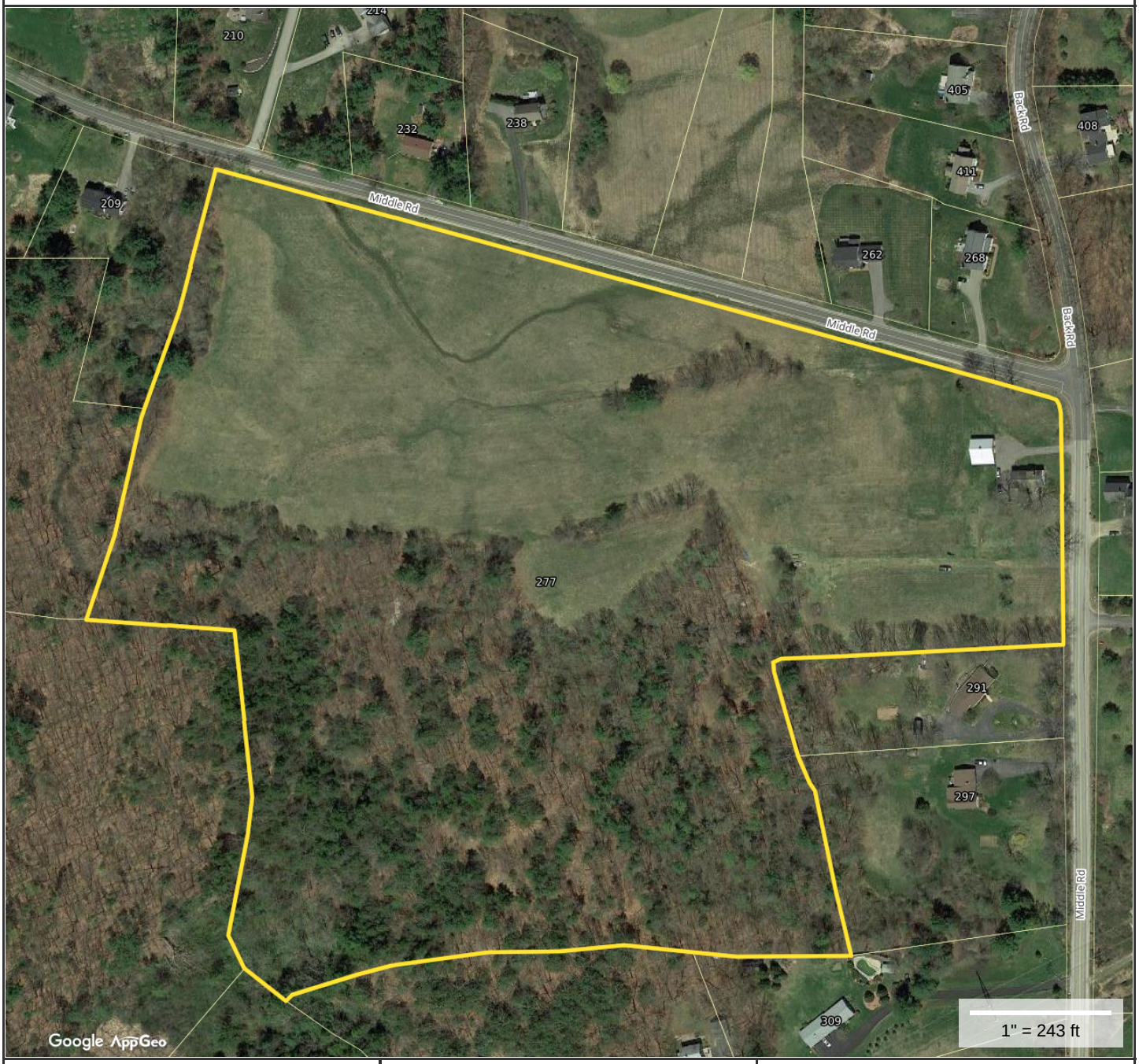
Conditions to Be Met Prior to Build Permit:

3. Water and sewer investment fees shall be paid at time of request for service.

Conditions to Be Met Prior to Occupancy:

4. Issuance of a Certificate of Occupancy.
5. Impact fees for new dwelling unit shall be paid per the invoice included with the Notice of Decision.

277 Middle Road



Property Information

Property ID	M0102-000000
Location	277 MIDDLE RD
Owner	CHENEVERT VALERIE A IRREVOCABLE TRUST
Land Use	101

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 11/16/2018
Data updated Daily

James P. Chenevert
PO Box 262
Berwick, ME 03901
603-781-5322

RECEIVED
Planning Office
MAR 19 2019
Dover, New Hampshire

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

Re: Minor Subdivision - Valerie A. Chenevert Irrevocable Trust
Assessor's Map M / Lot 102
277 Middle Road, Dover, NH

To Whom it May Concern;

I, James P. Chenevert, Trustee of the Valerie A. Chenevert Irrevocable Trust, with a mailing address of PO Box 262, Town of Berwick, State of Maine, 03901, hereby authorize David W. Vincent, LLS, his employees or assigns, of Land Surveying Services, with a mailing address of PO Box 1622, City of Dover, State of New Hampshire, 03821, to represent us at any public hearing or public department regarding the submittal, review and approval of the application referenced above.

Signed:

James P. Chenevert, Trustee

3-12-19
Date

City of Dover, New Hampshire
MINOR SUBDIVISION APPLICATION

[Revision Date: August 02, 2017]

Office Use Only	Project #: P19-28	Date Received: RECEIVED Planning Office
	Amount Paid:	Time Received: MAR 19 2019

Dover, New Hampshire

APPLICANT AND OWNER INFORMATION

Name of Applicant: David W. Vincent, LLS Telephone: # 603-664-5786

Address of Applicant: Land Surveying Services, PO Box 1622, Dover, NH 03821

Name of Property Owner: Valerie A. Chenevert Irrevocable Trust Telephone: # 603-781-5322

Address of Property Owner: James P. Chenevert Trustee, PO Box 262, Berwick, ME 03901

E-Mail Address: threesunsmassage@yahoo.com

PROPERTY INFORMATION

Address of Property: 277 Middle Road

Assessor's Map # M Lot(s) # 102

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

Size of Parcel: 30.07 Acres Property Deed: Book: 3037 Page: 996

Existing Use of Property: Residential

SUBDIVISION INFORMATION

Existing Number of Lots: 1 Proposed Number of Lots: 3

City Water? _X_ Yes ___ No How far is city water from the property? _____

City Sewer? ___ Yes _X_ No How far is city sewer from the property? _____

Highway Access (check where applicable): _X_ City Street ____ State Highway

Estimated Length of Proposed Roads: N/A feet Public or Private Road? N/A

WAIVER REQUESTS

Subdivision Regulations section(s) to be waived: Chapter 155.28 (F) & (H) Boundary & Topography of Entire Property

Justification for waiver request(s) (*attach additional sheets as needed*): A boundary survey plan exists for the entire property, copy provided. Sufficient topography and test pit data has been provided to meet the minimum requirements for residential development for a single family dwelling on the remaining 28+ acres.

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) David W. Vincent, LLS

Address Land Surveying Services, PO Box 1622, Dover, NH 03821 Telephone #: 603-664-5786

Professional License #: 821 E-mail address: d.vincent@landsurveyingservices.net

ENGINEER INFORMATION

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

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

SIGNATURES

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

Signature of Property Owner: James P. Chmura Date: 3-12-19

Signature of Applicant (*if different from owner*): [signature] Date: 3-12-19

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: James P. Chmura Date: 3-12-19

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

I, and my successors, hereby authorize the City of Dover and its assigns to enter my property for the purpose of completing the site work as required by the approved plan should the letter or credit or other surety be called. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: James P. Chmura Date: 3-12-19

Signature of Applicant (*if different from owner*): [signature] Date: 3-12-19

CERTIFICATION OF FEES

I, and my successors, hereby certify that I understand that the City of Dover collects impact fees, utility investment fees and inspection fees for projects developed in Dover. Said fees must be paid before a Certificate of Occupancy can be obtained for a structure, unless a different payment schedule is agreed to by the applicant and the City prior to approvals being issued by the Dover Planning Board. Additionally, should the property be in "Current Use" it will be subject to the Land Use Change Tax.

Signature of Property Owner: James P. Chagnon Date: 3-12-19

Signature of Applicant (*if different from owner*): [signature] Date: 3-12-19

CERTIFICATION OF PUBLIC ROADWAY ACCEPTANCE

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

Signature of Property Owner: N/A Date: _____

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

PLANNING BOARD
ESTIMATED FEE SCHEDULE

This is only provided to give you an estimate of the application fees. *After you submit an application, staff will invoice you a total.* All fees must be paid two weeks before the Planning Board meeting. **If the Fee has not been paid, the item will not be placed upon the agenda.**

A. TOTAL FEE paid by cash or check made payable to "City of Dover"

1. Application fee for the following:
   - SUBDIVISION $150.00 x # _____ new lots created = $ _____
   - LOT LINE ADJUSTMENT $200.00 (if more than two lots involved, add $100.00 per lot) =
   - SITE REVIEW – TRANSFER OF DEVELOPMENT RIGHTS Application fee $150.00 = $ _____
   - SITE REVIEW - RESIDENTIAL $100.00 x # ____ per dwelling unit = $ _____
   - SITE REVIEW – NON-RESIDENTIAL (not to exceed $10,000)
     New construction $.15 sq. ft. x # _____ sq. ft. = $ _____
     Additions (new floor space) $.10 per sq. ft. x # _____sq. ft. = $ _____
   - IMPERVIOUS PAVED AREA (for new development) OR IMPERVIOUS PARKING LOT ADDITIONS (not to exceed $10,000) $.07 sq. ft. x # _____ = $ _____
   - MOTEL/HOTEL $35.00 x # ___ per lodging unit = $ _____
   - CHANGE OF USE (not to exceed $5,000)
     Existing floor space $.10 per sq. ft. x # ____ sq. ft. = $ _____
   - CONDITIONAL USE PERMIT $150.00 x # _____ per application = $ _____
   - GRAVEL PIT/ EXCAVATIONS - Application fee $50.00 & Permit fee $75.00 = $ _____
   - EXTENSIONS OF/AMENDMENTS TO/WAIVERS FOR AN APPROVED PLAN ($150.00 minimum) $50.00 x # ____ per hour of review $ _____
   - REQUEST FOR REZONING $150.00 = $ _____
   - DRIVEWAY WAIVER – $100.00 application fee =
     Letter of rejection from Engineering Department, diagram & letter from owner $ _____

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 need to provide to this office the engineer, architect, land surveyor or soil scientist whose professional seal appears on the plan with names and addresses for notices. You will be notified with the amount due, once this has been completed.

1. Applicant & Owner, engineer, architect, land surveyor or soil scientist
   Certified letters fee # _____ of x $8.00 =
2. Certified letters fee: # of abutters _____ X $8.00 = $ _____
3. First Class Mail fee (for individual owner of units within a condominium or other collective form of ownership): # of abutters _____ X $1.00 = $ _____
4. Creating/Printing Abutter Labels in triplicate per sheet _____ x $10.00 = $ _____

C. Foster's newspaper public notice fee **$ 80.00**

(Revised October 2, 2018)

TOTAL FEE $ _____

CITY OF DOVER SUBDIVISION
LIST OF ABUTTERS

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
M	102	Valerie A. Chenevert Irr. Trust	PO Box 262, Berwick, ME 03901

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS
David W. Vincent, LLS	Land Surveying Services	PO Box 1622, Dover, NH 03821

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
David W. Vincent, LLS	Land Surveying Services	PO Box 1622, Dover, NH 03821
Michael Cuomo	Wetland Scientist	6 York Pond Road, York, ME 03909

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

City of Dover, New Hampshire
MINOR SUBDIVISION SUBMISSION CHECKLIST

[Revision Date: December 15, 2017]

This review checklist is intended to assist the applicant in the planning process of preparing a Subdivision application for Planning Board action. The size of the project will determine the types of information required for review, therefore, a **pre-application conference** with the Planning Department to determine the list of items that must be completed is strongly encouraged.

Fees will be invoiced and are due along with fifteen (15), folded, copies of the plan set and materials will be due 3 weeks prior to the Planning Board meeting.

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

APPLICANT: David W. Vincent, LLS File Number: _____

PROJECT TITLE: Minor Subdivision Plan for Valerie A. Chenevert Irrevocable Trust

PROPERTY LOCATION: 277 Middle Road Tax Map: M Lot: 102

	Explain How Provided	Reviewed
1. Completed and signed Application form	Provided	
2. Electronic copy of the surveyed plat layout	Provided	
3. Electronic copy of supplementary materials and application	Provided	
4. Waiver requests to the Subdivision Regulations, with written justification	Provided	
5. Conditional Use Permit applications	N/A	
6. List of all professional agents to be notified for Planning Board	Provided	
7. Letter to Serve from Public and Private Utilities	N/A	
8. Fifteen folded copies of subdivision plan w/scale of not less than 1"=50' or 1"=100' for larger subdivisions. Plans shall contain the following items as appropriate:	Provided	
Location map at appropriate scale	On Plans	
Proposed subdivision name and title and Planning File #	On Plans	
Date, north arrow and scale	On Plans	
Names of all abutting property owners	On Plans	
Name and address of owners and/or applicants	On Applications	
Signature & stamp of NH licensed land surveyor and/or engineer	On Plans	
Zoning District boundaries, including any special or overlay districts	On Plans	
Location of Conservation District areas	On Plans	
Location, names and widths of existing and proposed streets, including pavement widths, grades, curbs and crosswalks	N/A	
Location and widths of existing & proposed easements & right of ways	N/A	
Location and widths of existing and proposed sidewalks	N/A	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	On Plans	
Existing and proposed lot areas in square feet	On Plans	
Existing and proposed topographic information at two foot intervals	On Plans & Waiver	
Existing and proposed buildings and structure locations	On Plans	
Minimum building setbacks or build to lines on all lots	On Plans	
Location and size of existing and proposed electric, telephone, gas cable and other underground utilities	N/A	

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

REVIEWED BY: _____ DATE_____

Michael Cuomo, Soil Scientist
6 York Pond Road, York, Maine 03909
207 363 4532
mcuomosoil@gmail.com

Dale Chenevert
12 Cote Dr.
Dover, NH 03820

4 October 2018

Dear Mr. Chenevert;

This letter is in reference to the property at 277 Middle Road in Dover, NH. In September and October of this year I identified the wetland/upland boundaries on this 30.7 acre parcel to assist you in planning.

Wetlands were identified as defined by the town's zoning. "The Wetlands Protection District is hereby determined to be all areas of wetlands as defined by RSA 482-A:2, X and New Hampshire Administrative Rule Wt 101.103, which states a "'Wetland' means an area that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support and that under normal conditions does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include, but are not limited to, swamps, marshes, bogs and similar areas. For the purpose of this section, the delineation of wetland protection district boundaries shall be consistent with NHDES Wetlands Bureau Rules Wt. 301.01 or successor regulations."

Blue sequentially numbered 'Wetland Boundary' flags were placed along the wetland-upland boundaries. The following flag sequences were used: A1 to A43; B1 to B13; C1 to C81; D1 to D8; E1 to E36; F1 to F30; G1 to G54; and H1 to H28.

This property has been highly modified by human activity for hundreds of years, including, farming, erosion, sedimentation,

mowing, ditching, and logging. Many non-native plants occur on this site. This makes the wetland delineation work more challenging, particularly in the hay fields. The resulting wetland delineation represents my best professional judgement.

Please call if you have questions regarding this work.

Sincerely,

Michael Cuomo

Michael Cuomo
NH Soil Scientist #006
NH Wetland Scientist #004



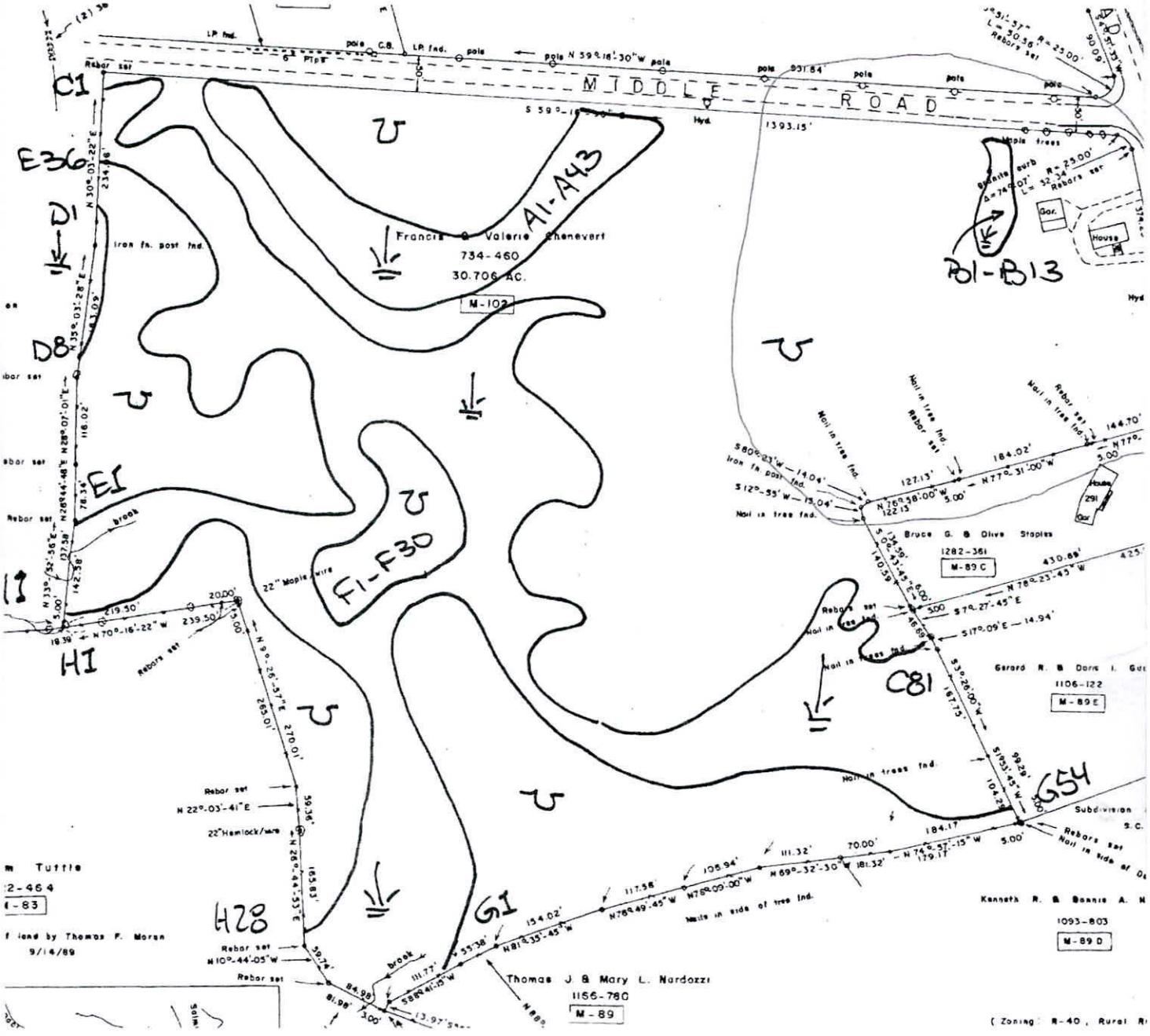


Copy to: David Vincent, LLS
Jim Chenevert

Michael Cuomo, Soil Scientist
6 York Pond Road, York, Maine 03909
207 363 4532
mcuomosoil@gmail.com

ROUGH SKETCH OF WETLANDS October 2018

Chenevert, Middle Road, Dover



P19-28 **277 Middle Road**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip	
M0083-007000	52 OVERLOOK DR	SCIRE WILLIAM E &	SCIRE PENNY E	52 OVERLOOK DR	DOVER	NH	03820	
M0083-015000	62 QUAKER LN	SHELTON DEBORAH H		62 QUAKER LN	DOVER	NH	03820-4916	
M0083-016000	59 QUAKER LN	MORE ASHISH &	MORE SARAH	59 QUAKER LN	DOVER	NH	03820	
M0087-000000	193 MIDDLE RD	WELCH PATRICIA E TRUSTEE	WELCH PATRICIA E REVOCABLE LIVING TRUST	193 MIDDLE ROAD	DOVER	NH	03820	
M0088-001000	209 MIDDLE RD	MONTECALVO RYAN P &	MONTECALVO ALLISON N	209 MIDDLE RD	DOVER	NH	03820-5002	
M0089-000000	315 MIDDLE RD	GAGNON SCOTT C TRUSTEE	GAGNON SCOTT REVOCABLE TRUST	315 MIDDLE RD	DOVER	NH	03820	
M0089-C00000	291 MIDDLE RD	SPALDING MELISSA		291 MIDDLE RD	DOVER	NH	03820	
M0089-D00000	309 MIDDLE RD	HACKETT THEODORE S &	HACKETT CYNTHIA A	309 MIDDLE ROAD	DOVER	NH	03820	
M0089-E00000	297 MIDDLE RD	MAMIGONIAN CARL H & SHARON J TRUSTEES	MAMIGONIAN CARL AND SHARON REVOCABLE LIV	297 MIDDLE RD	DOVER	NH	03820	
M0091-000000	286 MIDDLE RD	STRANGE EDWARD S		286 MIDDLE RD	DOVER	NH	03820	
M0091-A00000	292 MIDDLE RD	TOWNSQUARE MEDIA PORTSMOUTH LLC		PO BOX 576	DOVER	NH	03821-0576	
M0091-B00000	278 MIDDLE RD	MCKENNA JAMES F & JOANNE E TRUSTEES	MCKENNA JAMES AND JOANNE REVOCABLE LIVIN	278 MIDDLE ROAD	DOVER	NH	03820	
M0092-A00000	BACK RD	LANGS PATRICIA		10 HAWTHORN ROAD	DOVER	NH	03820	
M0101-000000	196 MIDDLE RD	BWW TRUST		196 MIDDLE ROAD	DOVER	NH	03820	
M0101-002000	210 MIDDLE RD	KLEIN MATTHEW R &	BLEYENBERG JULIE A	210 MIDDLE RD	DOVER	NH	03820-5001	
M0101-003000	214 MIDDLE RD	COFFEY DENNIS & JUDITH M TRUSTEES	COFFEY DENNIS M & JUDITH REVOCABLE LIVIN	214 MIDDLE RD	DOVER	NH	03820	
M0101-A00000	232 MIDDLE RD	O CONNELL ELIAS & PAULINE TRUS	O CONNELL FAMILY TRUST	232 MIDDLE RD	DOVER	NH	03820	
M0102-001000	268 MIDDLE RD	MINEROWICZ EDWARD	MINEROWICZ MARCIA	268 MIDDLE RD	DOVER	NH	03820	
M0102-002000	262 MIDDLE RD	BEAUDOIN KENNETH D JR & CATHLEEN TRUSTEE	BEAUDOIN FAMILY TRUST	262 MIDDLE RD	DOVER	NH	03820	
M0102-007000	9 EMERY LN	MAXWELL WILLIAM J & PATRICIA L TRUSTEES	MAXWELL WILLIAM AND PATRICIA REVOCABLE T	9 EMERY LN	DOVER	NH	03820	
M0102-008000	15 EMERY LN	O CONNOR JOHN E & JANE R CO-TRUSTEES	O CONNOR FAMILY REVOCABLE TRUST OF 2016	15 EMERY LANE	DOVER	NH	03820-5011	
M0102-009000	19 EMERY LN	BLACK TODD R & JULIE TRUSTEES	BLACK TODD AND JULIE M REVOCABLE TRUSTS	19 EMERY LANE	DOVER	NH	03820	
M0102-010000	238 MIDDLE RD	TUNG PAUL C	TUNG LEA ANN	238 MIDDLE RD	DOVER	NH	03820	
M0102-000000	277 MIDDLE RD	CHENEVERT VALERIE A IRREVOCABLE TRUST	CHENEVERT JAMES P TRUSTEE	PO BOX 262	BERWICK	ME	03901	315000 329900 210800 200407 3034/95 101
		DAVID W VINCENT LLS	LAND SURVEYING SERVICES	PO BOX 1622	DOVER	NH	03820	
		MICHAEL CUOMO	WETLAND SCIENTIST	6 YORK POND ROAD	YORK	ME	03909	



Tax Map

Scale: 1"=200'±

Notes:

1. The intent of this plan is to subdivide the existing lot into three single family residential lots.
2. Owner of Record are: Valerie A. Chenevert Irrevocable Trust c/o James Chenevert PO Box 262 Berwick, ME 03901

Authorized Signature

3. The parcel is shown as Lot No. 102, on Map M of the City of Dover Tax Assessor's Maps.
4. Existing Lot 102–0 contains 30.706± acre or 1,337,550± sq. ft. area of land.

   Proposed Lot 102–0 contains 1.00 acre or 43,560± sq. ft. of land, Proposed Lot 102–11 contains 1.15 acres or 50,233± sq. ft. area of land and Proposed Lot 102–12 contains 28.56± acres or 1,243,492± sq. ft. area of land.
5. Title reference for the project parcels are the Strafford County Registry of Deeds, Book No. 3037, Page No. 996.
6. Reference Plan: "Plan of Land for Francis & Valerie Chenevert, Middle Road, Dover, NH," dated May 1989, prepared by K.E. Moore & B.G. Staples, SCRD Plan #38–48.
7. Parcel is subject to "Reserving a lot two rods square for a burial place as now reserved, where Giles, son of Nathaniel Horne is buried, and free access therto." See SCRD Book No. 364, Page No. 96. Also see NH RSA 289: 3(III). Proposed Lot 102–12 shall be subject to an overhead utility line serving the barn on Lot 102–0.
8. Zoning dimensional and density requirements are as follows:
   a. Zoning district R–40
   b. Minimum lot size is 40,000 sq. ft.
   c. Minimum lot frontage is 150 ft.
   d. Minimum yard setbacks:
      Front 40 ft.
      Side 25 ft.
      Rear 30 ft.
      Abut–a–street 40 ft.
   e. Maximum lot coverage 30%
   f. Maximum building height 35 ft.

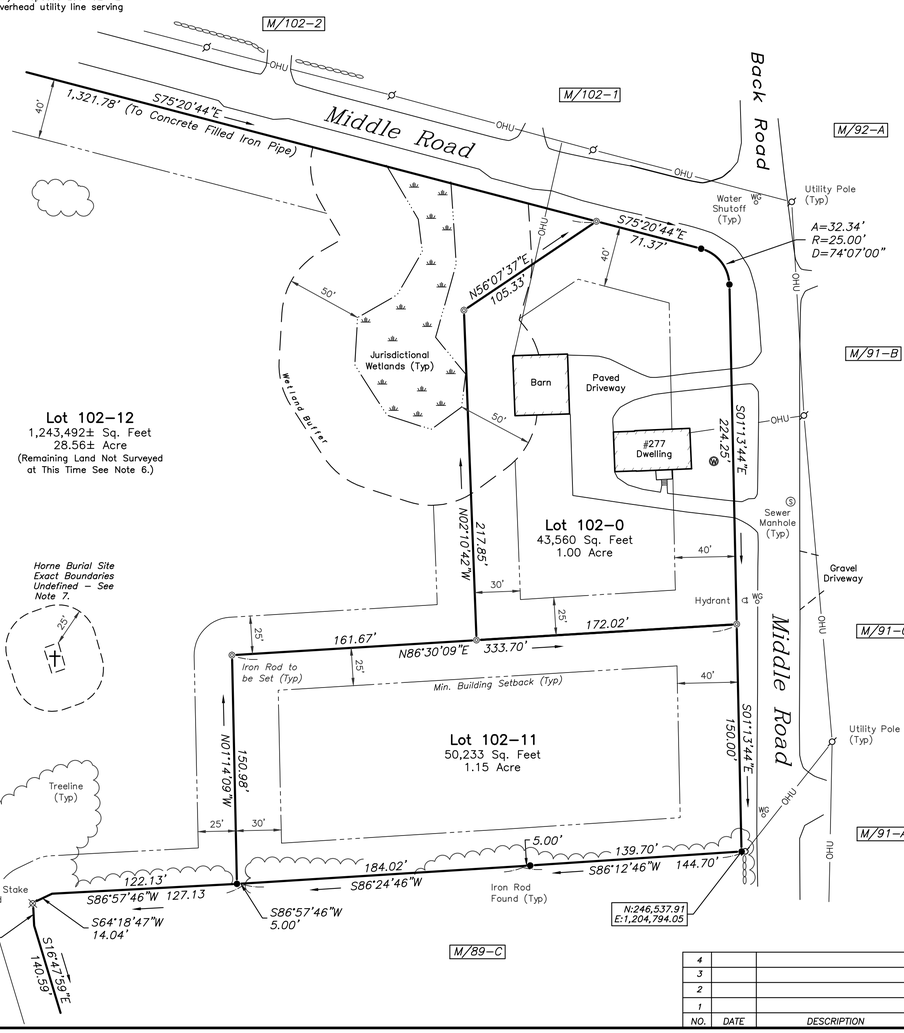
   Outbuildings/Accessory Use
   Minimum yard setbacks:
      Front 40 ft.
      Side 10 ft.
      Rear 10 ft.
      Abut–a–street 40 ft.

   This property falls within the following zoning overlay district: Wetlands Protection. A 50' natural buffer shall be maintained from wetland protection areas.
9. No variances have been granted for either property regarding this application.
10. Property line information has been obtained from an on the ground survey performed by this land surveyor on a portion of the subject property between October 15, 2018 and November 06, 2018, with an error of closure not greater than 1 in 10,000.
11. The subject parcel is not located within a Federally designated flood hazard area as depicted on FEMA Community panel number 33017C0340E, Effective Date: September 30, 2015.
12. Wetlands were delineated by Michael Cuomo, Certified Wetlands Scientist, Certification Number 004, in accordance with Chapter 170–27.1 of the Zoning Ordinance, October/September, 2018.
13. Topography depicted is based on the NHDOT Geodetic Control NAVD88 stations 125–100 and 125–0810.
14. Basis of bearing is the USA/NAD83–86/New Hampshire State Plane system stations 125–100 and 125–0810 which were used to determine location, orientation and vertical datum.
15. Lot 102–0 is currently served by overhead utilities. All on–site utilities on Lots 102–11 and 102–12 shall be installed underground.
16. Lot 102–0 is currently served by municipal water and on–site subsurface septic system. The subdivision Lots 102–11 and 102–12, are proposed to be served by municipal water and on–site subsurface septic systems.
17. The existing use for Lot 102–0 is single family residential use. The proposed use for Lots 102–11 and 102–12 is single family residential.
18. Street addresses for Lots 102–11 and 102–12 shall be assigned by the Building Official at the time of issuance of a building permit.
19. NHDES Subdivision Approval: Pending.
20. The licensed land surveyor of this plan does not warranty nor guarantee the location of utilities shown or not shown on this plan. Pursuant to New Hampshire Statute RSA 374, Sections 47–56, the contractor, prior to the commencement of any construction, shall verify the location of all utilities and contact "DigSafe" at 1–800–344–7233 or dial 811.

For Registry of Deeds Purposes



LOCATION PLAN
NOT TO SCALE



Abutters:

Map M / Lot 83–7
William E. & Penny E. Scire
52 Overlook Drive
Dover, NH 03820

Map M / Lot 83–15
Deborah H. Shelton
62 Overlook Drive
Dover, NH 03820

Map M / Lot 87
Patricia Welch Revocable Living Trust
193 Middle Road
Dover, NH 03820

Map M / Lot 88–1
Ryan D. & Allison N. Montecalvo
209 Middle Road
Dover, NH 03820

Map M / Lot 89
Scott Gagnon
Revocable Trust
315 Middle Road
Dover, NH 03820

Map M / Lot 89–C
Melissa Spalding
291 Middle Road
Dover, NH 03820

Map M / Lot 89–D
Theodore S. & Cynthia A. Hackett
309 Middle Road
Dover, NH 03820

Map M / Lot 89–E
Carl & Sharon Mamigonian Revocable Trust
297 Middle Road
Dover, NH 03820

Map M / Lot 91
Edward S. Strange
286 Middle Road
Dover, NH 03820

Map M / Lot 91–B
James & Joanne McKenna Revocable Living Trust
287 Middle Road
Dover, NH 03820

Map M / Lot 101–A
O'Connell Family Trust
210 Middle Road
Dover, NH 03820

Map M / Lot 101–3
Dennis & Judith Coffey Revocable Living Trust
214 Middle Road
Dover, NH 03820

Map M / Lot 102–1
Edward & Marcia Minerowicz
268 Middle Road
Dover, NH 03820

Map M / Lot 102–2
Beaudoin Family Trust
262 Middle Road
Dover, NH 03820

Map M / Lot 102–7
William & Patricia Maxwell Revocable Trust
9 Emery Lane
Dover, NH 03820

Map M / Lot 102–8
O'Connor Family Revocable Trust of 2016
15 Emery Lane
Dover, NH 03820

Map M / Lot 102–9
Todd & Julie Black Revocable Trust
19 Emery Lane
Dover, NH 03820

Map M / Lot 102–10
Paul C. & Lea A. Tung
238 Middle Road
Dover, NH 03820

Legend:

M/91–B	Tax Map / Lot Number
N/F	Now or Formerly
OHU	Overhead Utilities
SCRD	Strafford County Registry of Deeds
(Typ)	Typical
⊗	Steel Stake Found
◎	Iron Rod to be Set
●	Iron Rod Found
⌀	Utility Pole
———	Building Setback
— — —	50' Wetland Buffer

STATE OF NEW HAMPSHIRE No. 821 DAVID W. VINCENT SIGNATURE LICENSED LAND SURVEYOR

19 Mar. 2019

David W. Vincent, LLS No. 821 — Date

NO.	DATE	DESCRIPTION	BY
4			
3			
2			
1			

MINOR SUBDIVISION PLAN
OF PROPERTY IN THE NAME OF
VALEIRE A. CHENEVERT IRREVOCABLE TRUST
SHOWN AS
TAX MAP M / LOT 102
LOCATED AT
277 MIDDLE ROAD
COUNTY OF STRAFFORD
DOVER, NH

50 0 25 50 100 200

SCALE: 1"= 50' DATE: MARCH 19, 2019

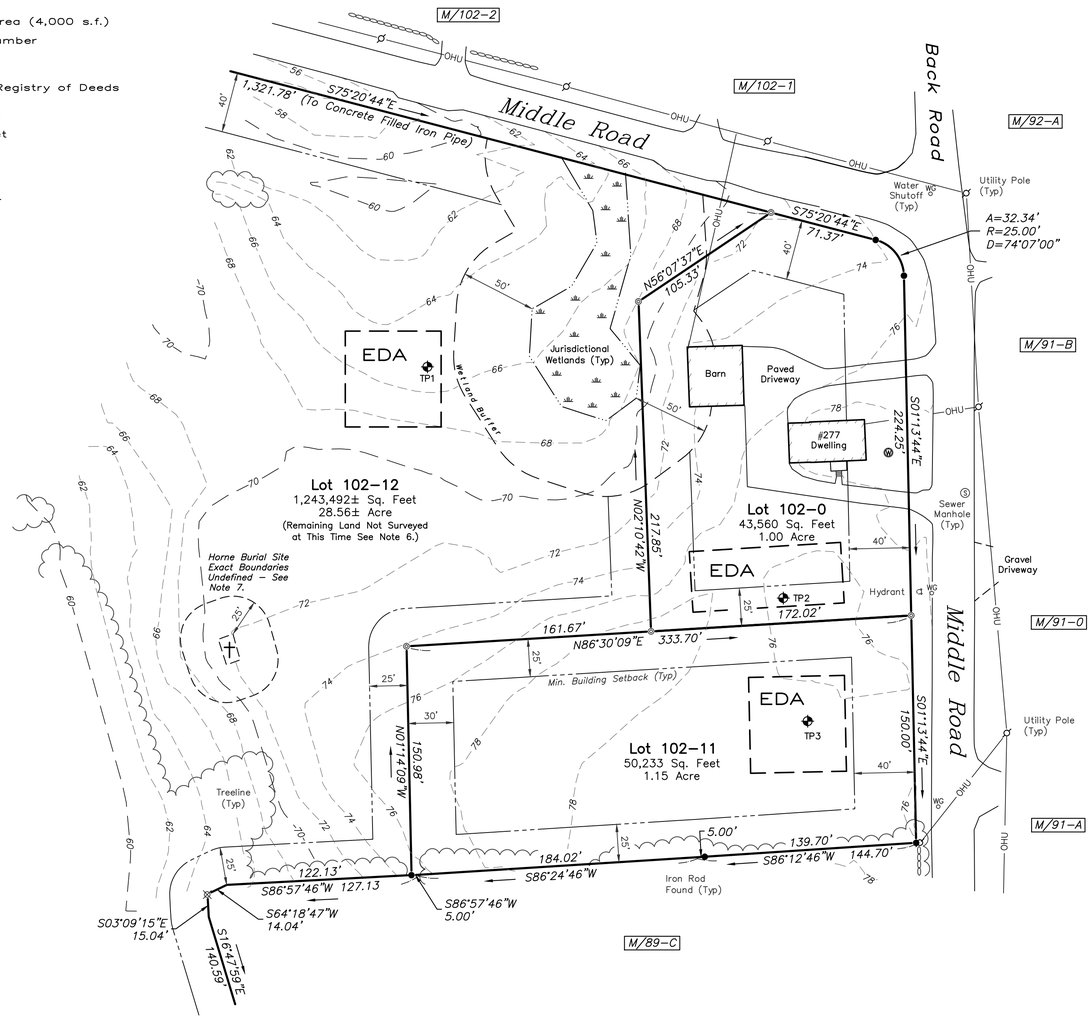
DAVID W. VINCENT, LLS
LAND SURVEYING SERVICES
PO BOX 1622
DOVER, NH 03821
TEL: (603) 664–5786
www.landsurveyingservices.net

DWG NAME: 036sub | FB: 52/82–85

P19–XX 18_036

Legend:

EDA	Effluent Disposal Area (4,000 s.f.)
M/91–B	Tax Map / Lot Number
N/F	Now or Formerly
OHU	Overhead Utilities
SCRD	Strafford County Registry of Deeds
(Typ)	Typical
⊠	Steel Stake Found
◎	Iron Rod to be Set
●	Iron Rod Found
⌀	Utility Pole
———	Building Setback
— — —	50' Wetland Buffer



Notes:

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   c/o James Chenevert
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   Berwick, ME 03901

   _____
   Authorized Signature
3. The parcel is shown as Lot No. 102, on Map M of the City of Dover Tax Assessor's Maps.
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   a. Zoning district R–40
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   c. Minimum lot frontage is 150 ft.
   d. Minimum yard setbacks:
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      Side 25 ft.
      Rear 30 ft.
      Abut–a–street 40 ft.
   e. Maximum lot coverage 30%
   f. Maximum building height 35 ft.

   Outbuildings/Accessory Use
   Minimum yard setbacks:
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      Side 10 ft.
      Rear 10 ft.
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12. Wetlands were delineated by Michael Cuomo, Certified Wetlands Scientist, Certification Number 004, in accordance with Chapter 170–27.1 of the Zoning Ordinance, October/September, 2018.
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Lot Area Calculations:

Contiguous Upland Soils Excludes Wetland Soils or Exposed Ledge.

LOT NO.	EXISTING CONDITIONS TOTAL AREA	CONTIGUOUS UPLAND SOILS	TOTAL FRONTAGE
102–0	43,560 s.f.	43,560 s.f.	224.25'
102–11	50,233 s.f.	50,223 s.f.	150.00'
102–12	28.56± Acres	>40,000 s.f.	1,321.78'

Lot Loading Lot 102–0: 43560/43560 x 2000 = 2000 2000/1.3 = 1,538 gpd
Lot Loading Lot 102–11: 50233/43560 x 2000 = 2306 2306/1.0 = 2,306 gpd

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 821 DAVID W. VINCENT

19 Mar. 2019

David W. Vincent, LLS No. 821 — Date

Test Pit Data: Date: 4 December 2018

TEST PIT No. 1 (Open Field)

DEPTH (in.)	DESCRIPTION
00–09	10YR 3/2 Very Dark Brown, very fine sandy loam, granular, friable
09–20	10YR 5/3 Brown, very fine sandy loam, granular, friable
20–60	10YR 5/4 Yellowish Brown, very fine sandy loam, massive, firm w/ redox features

ESHWT = 20" Observed Water Table = 24" Restrictive Layer = 20" Refusal = None to 60"
Roots = 20"± Perc Test @ 18" = 18 minutes/inch

TEST PIT No. 2 (Open Field)

DEPTH (in.)	DESCRIPTION
00–08	10YR 3/2 Very Dark Brown, very fine sandy loam, granular, friable
08–16	10YR 5/3 Brown, very fine sandy loam, granular, friable
16–57	2.5Y 5/3 Light Olive Brown, very fine sandy loam, massive, firm w/ redox features

ESHWT = 16" Observed Water Table = 18" Restrictive Layer = 16" Refusal = None to 57"
Roots = 23"± Perc Test @ 14" = 18 minutes/inch

TEST PIT No. 3 (Open Field)

DEPTH (in.)	DESCRIPTION
00–12	10YR 3/2 Very Dark Brown, very fine sandy loam, granular, friable
12–22	10YR 5/6 Yellowish Brown, fine sandy loam, granular, friable
22–62	2.5Y 5/4 Light Olive Brown, very fine sandy loam, massive, firm w/ redox features

ESHWT = 22" Observed Water Table = 41" Restrictive Layer = 22" Refusal = None to 62"
Roots = 28"± Perc Test @ 20" = 18 minutes/inch

NEW HAMPSHIRE Designer of Subsurface Disposal Systems ★★★ David W. Vincent No. 1413 Department of Environmental Services

Soils Data:

CfB – Charlton, Fine sandy loam. 3 to 8%

HcB – Hollis–Charlton, Fine sandy loam. 3 to 8%

WfB – Windsor, Loamy fine sand. 0 to 8%

Reference: Sheet 28 Soil Survey of Strafford County, New Hampshire, Prepared by U.S. Dept. of Agriculture Soil Conservation Service, Dated March 1973.

811 DigSafe MA·ME·NH·RI·VT

NO.	DATE	DESCRIPTION	BY
4			
3			
2			
1			

MINOR SUBDIVISION SITE PLAN

OF PROPERTY IN THE NAME OF

VALEIRE A. CHENEVERT IRREVOCABLE TRUST

SHOWN AS

TAX MAP M / LOT 102

LOCATED AT

277 MIDDLE ROAD

COUNTY OF STRAFFORD

DOVER, NH

50 0 25 50 100 200

SCALE: 1"= 50' DATE: MARCH 19, 2019

DAVID W. VINCENT, LLS
LAND SURVEYING SERVICES
PO BOX 1622
DOVER, NH 03821
TEL: (603) 664–5786
www.landsurveyingservices.net

DWG NAME: 036sit | FB: 52/82–85

P19–XX 18_036

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P19-31

Application Type:	Minor Subdivision
Applicant(s):	Knox Marsh Development LLC
Owner(s):	Michael and Gaye Dean
Location:	7 Glenwood Ave (Map 38, Lot 32-1)
Meeting Date:	April 23, 2019

INTENT: To subdivide one lot into 2 lots. The new lots would be 0.45 acres and 0.28 acres.

LOTS/UNITS PROPOSED: 2 lots (1 new)

AGENDA ITEM #: 5-B

ACREAGE: 0.72 acres existing

ZONING DISTRICT: R-12

EXISTING LAND USE: 4 unit residence

PROPOSED LAND USE: Residential

SURROUNDING LAND USE: Residential

ZBA ACTION: None

ATTACHMENTS: Application Materials including Subdivision Plan

NOTICES SENT: Abutter notices were sent by certified or first class mail to all abutters for this meeting

PERMITS REQUIRED: N/A

WAIVERS REQUESTED: None

Summary of Request and Background
The applicant proposes to subdivide Dover Tax Map 38 Lot 32-1 into two lots. The new lot areas would be 0.28 acres and 0.45 acres.

The new lots meet the frontage and area requirements.

As this is a minor subdivision, it did not go before the Technical Review Committee. But due to the location of the parking and access today along the proposed boundary line, a condition of approval is that the applicant has the Technical Review Committee review the parking, access, and drainage and the Community Services Department approve the exact location of the water/sewer lines at the time of service.

Consistency with Land Use Regulations
Chapter 155-15 of the Land Subdivision Regulations of the City Code provides for subdivisions of existing lots. This plan is consistent with the regulations.

STAFF RECOMMENDATION-Minor Subdivision:
The Planning Department recommends that the Planning Board accept the application, open the public hearing, and vote to approve the Minor Subdivision with the following conditions:

Conditions to Be Met Prior to Signing of Plans:

1. As noted on the plan, the parking, access, and drainage will need to be reviewed by the Technical Review Committee.
2. The applicant shall revise the plat to:
    a. Include the Licensed Land Surveyor signature and stamp
    b. Add the owner's signatures to the final plat submitted for signature to be recorded at the Strafford County Registry of Deeds
    c. Add Planning File #P19-31
    d. Revise note 17 to indicate no Sunday hours of construction
    e. Show proposed driveway location

Conditions to Be Met Prior to Building Permit:

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

Conditions to Be Met Prior to Occupancy:

4. Issuance of a Certificate of Occupancy.
5. Impact fees for new dwelling unit shall be paid per the invoice included with the Notice of Decision.

7 Glenwood Avenue



Property Information

Property ID	38032-001000
Location	7 GLENWOOD AV
Owner	DEAN GAYE H &
Land Use	111

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 11/16/2018
Data updated Daily

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

March 28, 2019

City of Dover
Planning Office
Attn: Donna Benton, City Planner
288 Central Ave
Dover, NH 03820

RE: Knox Marsh Development, LLC
Residential Minor Subdivision
7 Glenwood Avenue
Dover, NH
Tax Map 38, Lot 32-1

Mrs. Benton,

Enclosed please find the following required material in support of the 2 lot subdivision off Glenwood Avenue:

- 18 Copies of the subdivision application
- 18 Copies of the subdivision checklist
- 18 Copies of a narrative
- 15 Half Scale Copies of the project plan set
- 3 Full size copies of the project plan set
- 1 CD containing the same
- 1 Copy of the list of professionals
- 1 Abutters List
- 1 Set of Abutters Labels

Thank you for your time and attention to this matter.

BERRY SURVEYING & ENGINEERING

Christopher R. Berry
Principal, President

City of Dover, New Hampshire
MINOR SUBDIVISION APPLICATION

[Revision Date: August 02, 2017]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: Knox Marsh Development, LLC Telephone #

Address of Applicant: 242 Central Ave, Dover, NH 03820

Name of Property Owner (*if different from applicant*): Michael & Gaye Dean Telephone #

Address of Property Owner: 44 Smith Well Road, Dover NH, 03820

E-Mail Address:

PROPERTY INFORMATION

Address of Property: 7 Glenwood Ave.

Assessor's Map # 38 Lot(s) # 32-1

Zoning District(s) R-12 Overlay District(s)

Size of Parcel: 0.72 Acres Property Deed: Book 2509 Page: 766

Existing Use of Property: Existing 4 unit building with attached barn and garage

SUBDIVISION INFORMATION

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

City Water? X Yes ___ No How far is city water from the property? +/- 22 feet

City Sewer? X Yes ___ No How far is city sewer from the property? +/- 34 feet

Highway Access (check where applicable): X City Street ____ State Highway

Estimated Length of Proposed Roads: N/A feet Public or Private Road? Private Driveway

WAIVER REQUESTS

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

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

dotloop signature verification: dtlp.us/ncB3-GPF3-nRNb

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) Kenneth A Berry, PE, LLS
Berry Surveying & Engineering

Address 335 Second Crown Point Rd, Barrington, NH 03825 Telephone #: 603-332-2863

Professional License #: 805 E-mail address: K.Berry@BerrySurveying.com
crberry@metrocast.net

ENGINEER INFORMATION

Name of Engineer and Company (Licensed in N.H.) Kenneth A Berry, PE, LLS
Berry Surveying & Engineering

Address 335 Second Crown Point Rd, Barrington, NH 03825 Telephone #: 603-332-2863

Professional License #: 14243 E-mail address: K.Berry@BerrySurveying.com
crberry@metrocast.net

SIGNATURES

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

Signature of Property Owner: Michael Dean dotloop verified 03/16/19 10:53 AM EDT XY1Z-SZ1J-DYVA-6N2V Gaye Dean dotloop verified 03/15/19 10:51 PM EDT TTSU-M0P2-KRZZ-QFXF Date: _____

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

Signature of Agent: _____ Date: _____

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner: Michael Dean dotloop verified 03/16/19 10:53 AM EDT VLBC-5ZP5-CKTU-TU0M Gaye Dean dotloop verified 03/15/19 10:51 PM EDT 95FV-99JL-XTG7-JEKZ Date: _____

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

I, and my successors, hereby authorize the City of Dover and its assigns to enter my property for the purpose of completing the site work as required by the approved plan should the letter or credit or other surety be called. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: Michael Dean dotloop verified 03/16/19 10:53 AM EDT QP8P-AKEI-J2M9-PKEC Gaye Dean dotloop verified 03/15/19 10:51 PM EDT 92NS-7NCR-EKVD-TH99 Date: _____

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

dotloop signature verification: dtlp.us/ncB3-GPF3-nRNb

CERTIFICATION OF FEES

I, and my successors, hereby certify that I understand that the City of Dover collects impact fees, utility investment fees and inspection fees for projects developed in Dover. Said fees must be paid before a Certificate of Occupancy can be obtained for a structure, unless a different payment schedule is agreed to by the applicant and the City prior to approvals being issued by the Dover Planning Board. Additionally, should the property be in "Current Use" it will be subject to

Signature of Property Owner: Michael Dean dotloop verified 03/16/19 10:53 AM EDT V8JJ-TV47-9Y6F-YRSD Gaye Dean dotloop verified 03/15/19 10:51 PM EDT HLZI-VFAJ-OWGE-PL9I Date: _____

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

CERTIFICATION OF PUBLIC ROADWAY ACCEPTANCE

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

Signature of Property Owner: Michael Dean dotloop verified 03/16/19 10:53 AM EDT TD3N-SVLF-EZA6-HGYZ Gaye Dean dotloop verified 03/15/19 10:51 PM EDT 5MTF-M4XB-V1UM-WK3Y Date: _____

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

City of Dover, New Hampshire
MINOR SUBDIVISION SUBMISSION CHECKLIST

[Revision Date: December 15, 2017]

This review checklist is intended to assist the applicant in the planning process of preparing a Subdivision application for Planning Board action. The size of the project will determine the types of information required for review, therefore, a **pre-application conference** with the Planning Department to determine the list of items that must be completed is strongly encouraged.

Fees will be invoiced and are due along with fifteen (15), folded, copies of the plan set and materials will be due 3 weeks prior to the Planning Board meeting.

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

APPLICANT: Know Marsh Development, LLC File Number: _____

PROJECT TITLE: _____

PROPERTY LOCATION: 7 Glenwood Ave. Tax Map: 38 Lot: 32-1

	Explain How Provided	Reviewed
1. Completed and signed Application form	X	
2. Electronic copy of the surveyed plat layout	X	
3. Electronic copy of supplementary materials and application	X	
4. Waiver requests to the Subdivision Regulations, with written justification	N/A	
5. Conditional Use Permit applications	N/A	
6. List of all professional agents to be notified for Planning Board	X	
7. Letter to Serve from Public and Private Utilities	N/A	
8. Fifteen folded copies of subdivision plan w/scale of not less than 1"=50' or 1"=100' for larger subdivisions. Plans shall contain the following items as appropriate:	X	
Location map at appropriate scale	X	
Proposed subdivision name and title and Planning File #	X	
Date, north arrow and scale	X	
Names of all abutting property owners	X	
Name and address of owners and/or applicants	X	
Signature & stamp of NH licensed land surveyor and/or engineer	X	
Zoning District boundaries, including any special or overlay districts	X	
Location of Conservation District areas	N/A	
Location, names and widths of existing and proposed streets, including pavement widths, grades, curbs and crosswalks	X	
Location and widths of existing & proposed easements & right of ways	X	
Location and widths of existing and proposed sidewalks	X	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	X	
Existing and proposed lot areas in square feet	X	
Existing and proposed topographic information at two foot intervals	X	
Existing and proposed buildings and structure locations	X	
Minimum building setbacks or build to lines on all lots	X	
Location and size of existing and proposed electric, telephone, gas cable and other underground utilities	X	

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

REVIEWED BY: _____ DATE_____

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

City of Dover
Attention: City Planner Donna Benton
288 Central Ave
Dover, NH 03820

March 28, 2019

Re: Knox Marsh Development, LLC
Michael & Gaye Dean
Residential Minor Subdivision
7 Glenwood Avenue
Dover, NH
Tax Map 38, Lot 32-1

Dear Mrs. Benton,

On behalf of our client Knox Marsh Development LLC and the owners Michael and Gaye Dean, Berry Surveying & Engineering (BS&E) is submitting for TRC to discuss a proposed 2 lot subdivision off Glenwood Avenue.

Background and General Narrative:

Michael & Gaye Dean own the 0.72 acre parcel known as 7 Glenwood Avenue in Dover, NH (Tax Map 38, Lot 32-1). Berry Surveying and Engineering has conducted an on-site survey of the parcel which includes a topographic analysis as well as a wetlands analysis. Please note there are no wetlands found on the parcel or within 50 feet of the parcel. The site contains and existing 4 unit building, with an attached barn and garage. The site slopes up from Glenwood Avenue towards the rear of the parcel. The site is mostly open small pockets of trees on either side of the parcel.

The Proposal:

The proposal is to subdivide the existing lot into two lots. Both lots will meet zoning.

Respectfully Submitted,
BERRY SURVEYING & ENGINEERING

James F. Hayden
Engineering Technician

Christopher R. Berry
Principal, President

P19-31 **7 Glenwood Avenue**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
36033-000000	14 GLENWOOD AV	LAURIE BRUCE &	LAURIE LISA A	14 GLENWOOD AVENUE	DOVER	NH	03820
36034-000000	102 HORNE ST	LYONS GALE C TRUSTEE	LYONS GALE C REVOCABLE TRUST	102 HORNE ST	DOVER	NH	03820
36034-A00000	100 HORNE ST	PIER JASON &	PIER HANNAH	100 HORNE ST	DOVER	NH	03820
37038-000000	8 GLENWOOD AV	OKAD OF DOVER LLC		321 D LAFAYETTE ROAD	HAMPTON	NH	03842
37039-000000	12 GLENWOOD AV	MOUTEVELIS NIKI		12 GLENWOOD AVE	DOVER	NH	03820
37039-A00000	99 HORNE ST	SIEBERSMA MICHAEL V &	SIEBERSMA KERRY L	99 HORNE ST	DOVER	NH	03820
37039-H00000	1 CRESCENT AV	FLETCHER BENJAMIN M		1 CRESCENT AVENUE	DOVER	NH	03820
37065-000000	2 CRESCENT AV	KELLEY FAMILY REVOCABLE TRUST	KELLEY BRIAN T SR AND ANN R TRUSTEES	2 CRESCENT AVENUE	DOVER	NH	03820
37066-000000	10 GLENWOOD AV	WEST AILEEN P		10 GLENWOOD AV	DOVER	NH	03820
38032-000000	4 A SMITH WELL RD	DEAN GAYE H &	DEAN MICHAEL D	4A SMITH WELL RD	DOVER	NH	03820
38032-A00000	15 GLENWOOD AV	CLARK RICHARD SR & JUNE TRUSTEES	CLARK RICHARD AND JUNE TRUST OF 2001	15 GLENWOOD AVENUE	DOVER	NH	03820
38032-C00000	1 SMITH WELL RD	BRAGG MICHAEL S &	HAWKES DIANE	1 SMITH WELL RD	DOVER	NH	03820
38032-D00000	2 SMITH WELL RD	STICKLES DARLENE	STICKLES PETER L	2 SMITH WELL ROAD	DOVER	NH	03820
38032-E00000	4 SMITH WELL RD	NEWMAN JOAN & KENT	MCGUIRE GRACE AND JAMES	14701 NANTUCKET RD	N FT MYERS	FL	33917-9039
38032-F00000	5 GLENWOOD AV	BARTON THEODORE D		5 GLENWOOD AV	DOVER	NH	03820
38032-G00000	6 SMITH WELL RD	HEMPHILL JAMIE S &	HEMPHILL KILEY J	6 SMITH WELL RD	DOVER	NH	03820-2410
38033-000000	1 GLENWOOD AV	BULWARK DOVER LLC	C/O WALGREEN STORE NO 10780	PO BOX 1159	DEERFIELD	IL	60015
D0062-000000	3 SMITH WELL RD	TROJAN GEORGE A JR &	TROJAN CHRISTINE R	3 SMITH WELL RD	DOVER	NH	03820-2429
		KNOX MARSH DEVELOPMENT LLC		242 CENTRAL AVE	DOVER	NH	03820
		BERRY SURVEYING & ENGINEERING	KENNETH A BERRY, PE, LLS	335 SECOND CROWN POIN	BARRINGTON	NH	03825
		BERRY SURVEYING & ENGINEERING	CHRISTOPHER R BERRY	335 SECOND CROWN POIN	BARRINGTON	NH	03825
		MICHAEL & GAYE DEAN		44 SMITH WELL ROAD	DOVER	NH	03820

GOVE ENVIRONMENTAL SERVICES, INC.
LUKE D. HURLEY, CWS #232

SOIL NOTE:

SOILS WERE DELINEATED BY GOVE ENVIRONMENTAL SERVICES, INC. IN MARCH 2019 UTILIZING THE FOLLOWING STANDARDS:

SITE-SPECIFIC SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE AND VERMONT: SSSNNE SPECIAL PUBLICATION NO. 3, VERSION 5.0, DECEMBER 2017. THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PRODUCT, INTENDED FOR THE NH DES ALTERATION OF TERRAIN. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCE CONSERVATION SERVICE.

SOILS:

HaB – HINCKLEY LOAMY SAND, 3 TO 8% SLOPES

WfB – WINDSOR LOAMY FINE SAND, CLAY SUBSOIL 0 TO 8% SLOPES

SEE WEBSOIL USDA–NRCS

LEGEND:

- IRON BOUND (SET)
- IRON BOUND (FND)
- IRON PIPE (FND)
- UTILITY POLE / GUY WIRE
- PROPOSED BOUNDARY LINE
- BUILDING SETBACK LINE
- APPROXIMATE BOUNDARY LINE
- FND FOUND
- TBS TO BE SET
- TYP TYPICAL
- S.C.R.D. STRAFFORD COUNTY REGISTRY OF DEEDS

PLAN REFERENCES:

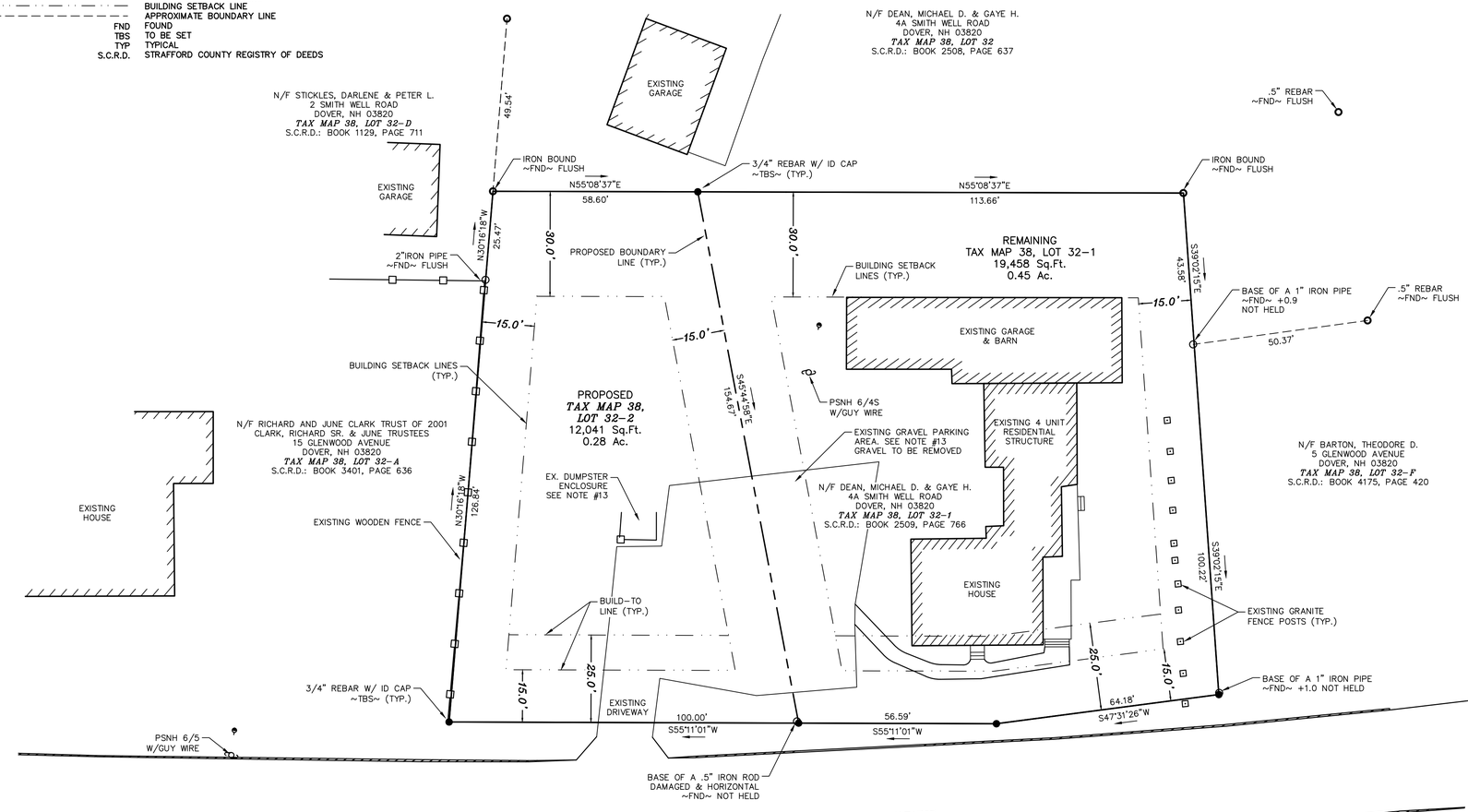
1.) "LOT LINE ADJUSTMENT PLAN PREPARED FOR GAYE H. DEAN & MICHAEL D. DEAN, TAX MAP 38, LOT NOS. 32 & 32–1, 7 GLENWOOD AVE. & 4A SMITH WELL RD., CITY OF DOVER, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE"
BY: MCENEANEY SURVEY ASSOCIATES, INC
DATED: JANUARE 7, 2011
S.C.R.D. PLAN #102–22

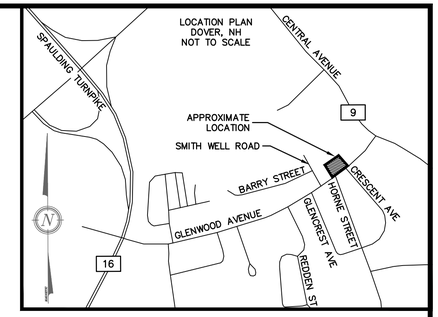
2.) "MINOR SUBDIVISION OR LAND PREPARED FOR GREGORIOS KOUTRELAKOS REVOCABLE TRUST, TAX MAP 38, LOT NO. 32, GLENWOOD AVENUE & SMITH WELL ROAD, CITY OF DOVER, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE"
BY: MCENEANEY SURVEY ASSOCIATES, INC
DATED: MARCH 27, 2002
S.C.R.D. PLAN #65–75

3.) "LOT LINE ADJUSTMENT PLAN PREPARED FOR DARLENE AND PETER STICKLES AND HELEN AND GREGORIOS KOUTRELAKOS, GLENWOOD AVENUE & SMITHWELL ROAD, DOVER, NEW HAMPSHIRE"
BY: MCENEANEY SURVEY ASSOCIATES, INC
DATED: AUGUST 7, 1995
S.C.R.D. PLAN #46–78

4.) "PLAN OF LAND, JOHN J. LINK & FRED V. LABONTE, DOVER NEW HAMPSHIRE"
BY: G.L. DAVIS & ASSOCIATES
DATED: JUNE 1964
S.C.R.D. PLAN #20, POCKET #7, FOLDER #2

5.) "PROPOSED DEVELOPMENT, GLENCREST – INC, DOVER NEW HAMPSHIRE"
BY: DAVIS & ASSOCIATES
DATED: MARCH 1950
S.C.R.D. PLAN #36, POCKET #3, FOLDER #1





NOTES:

1.) OWNER: MICHAEL D. & GAYE H. DEAN
4A SMITH WELL ROAD
DOVER, NH 03820

1A.) APPLICANT: KNOX MARSH DEVELOPMENT LLC
242 CENTRAL AVE.
DOVER, NH 03820

2.) TAX MAP 38, LOT 32–1

3.) LOT AREA: 31,500 Sq. Ft., 0.72 Ac

4.) S.C.R.D. BOOK 2509, PAGE 766

5.) ZONING: MEDIUM DENSITY RESIDENTIAL (R–12) DISTRICT
SETBACKS:
FRONT – BUILD TO LINE 15–25'
SIDE – 15.0'
REAR – 30.0'
WETLANDS SETBACK – 50.0'
MIN. LOT SIZE – 12,000 Sq. Ft.
MIN. LOT FRONTAGE – 100'
MAX. BLDG. HEIGHT – 35'
MAX. LOT COVERAGE – 30%

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

7.) VERTICAL DATUM BASED ON NAVD88 ELEVATIONS. HORIZONTAL COORDINATES BASED ON NAD83. COORDINATES GATHERED USING TOPCON HIPER SR SURVEY GRADE GPS RECEIVERS.

8.) THE BOUNDARY LINES SHOWN ON THIS PLAN ARE THE RESULT OF A CLOSED TRAVERSE PERFORMED BY THIS OFFICE IN MARCH OF 2019, WITH AN ERROR OF CLOSURE OF 1 PART IN 27,268.

9.) THE INTENT OF THIS PLAN IS TO SHOW THE PROPOSED BOUNDARIES OF A 2 LOT SUBDIVISION ON TAX MAP 38, LOT 32–1.

10.) THIS IS A THREE SHEET PLAN SET WITH SHEET ONE RECORDED AT THE STRAFFORD COUNTY REGISTRY OF DEEDS. SHEET TWO AND THREE WILL BE ON FILE AT THE CITY OF DOVER OR THIS OFFICE. FOR MORE INFORMATION ON THIS LOT LINE REVISION, CONTACT THE CITY OF DOVER PLANNING DEPARTMENT, 288 CENTRAL AVENUE, DOVER, NH 03820, (603) 516–6008.

11.) BOTH LOTS ARE SERVICED BY MUNICIPAL SEWER AND WATER.

12.) OWNER TO WORK WITH CITY ENGINEER ON PROPOSED WATER AND SEWER UTILITIES FOR THE PROPOSED LOT.

13.) APPLICANT TO COME BACK FOR A TRC REVIEW TO ADJUST PARKING.

14.) THE PROJECT SITE WAS REVIEWED BY LUKE HURLEY OF GOVE ENVIRONMENTAL SERVICES. NO WETLANDS FOUND ON SITE.

15.) SEE SHEET 3 FOR ALL OTHER STANDARD SUBDIVISION NOTES.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

REVISION	DATE	DESCRIPTION
#1	3–28–19	REVISED PER CITY OF DOVER

SUBDIVISION PLAN
KNOX MARSH DEVELOPMENT
LAND OF
MICHAEL & GAYE DEAN
7 GLENWOOD AVENUE
DOVER, N.H.
TAX MAP 38, LOT 32–1

I CERTIFY THAT THIS PLAT EXCEEDS THE MINIMUM REQUIREMENT FOR ACCURACY AND COMPLETENESS OF THE STATE OF N.H. AND OF THE CITY OF DOVER, N.H. – 1:10,000 –
3-28-19
KENNETH A. BERRY LLS 805 DATE

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

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT RD.
BARRINGTON, N.H. (603)332–2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : MARCH 19, 2019
FILE NO. : DB 2019 – 028 CRB

GOVE ENVIRONMENTAL SERVICES, INC.
LUKE D. HURLEY, CWS #232

SOIL NOTE:

SOILS WERE DELINEATED BY GOVE ENVIRONMENTAL SERVICES, INC. IN MARCH 2019 UTILIZING THE FOLLOWING STANDARDS:

SITE-SPECIFIC SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE AND VERMONT: SSSNNE SPECIAL PUBLICATION NO. 3, VERSION 5.0, DECEMBER 2017. THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PRODUCT, INTENDED FOR THE NH DES ALTERATION OF TERRAIN. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCE CONSERVATION SERVICE.

SOILS:

HaB – HINCKLEY LOAMY SAND, 3 TO 8% SLOPES

WfB – WINDSOR LOAMY FINE SAND, CLAY SUBSOIL 0 TO 8% SLOPES

SEE WEBSOIL USDA-NRCS

LEGEND:

- IRON BOUND (SET)
- IRON BOUND (FND)
- IRON PIPE (FND)
- UTILITY POLE / GUY WIRE
- CATCH BASIN
- SEWER MAN HOLE
- GATE VALVE
- PROPOSED BOUNDARY LINE
- BUILDING SETBACK LINE
- OVERHEAD UTILITIES
- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- APPROXIMATE BOUNDARY LINE
- FOUND
- TO BE SET
- TYPICAL
- STRAFFORD COUNTY REGISTRY OF DEEDS

PLAN REFERENCES:

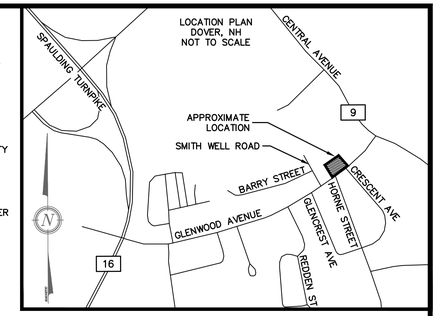
1.) "LOT LINE ADJUSTMENT PLAN PREPARED FOR GAYE H. DEAN & MICHAEL D. DEAN, TAX MAP 38, LOT NOS. 32 & 32-1, 7 GLENWOOD AVE. & 4A SMITH WELL RD., CITY OF DOVER, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE"
BY: MCENEANEY SURVEY ASSOCIATES, INC
DATED: JANUARE 7, 2011
S.C.R.D. PLAN #102-22

2.) "MINOR SUBDIVISION OR LAND PREPARED FOR GREGORIOS KOUTRELAKOS REVOCABLE TRUST, TAX MAP 38, LOT NO. 32, GLENWOOD AVENUE & SMITH WELL ROAD, CITY OF DOVER, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE"
BY: MCENEANEY SURVEY ASSOCIATES, INC
DATED: MARCH 27, 2002
S.C.R.D. PLAN #65-75

3.) "LOT LINE ADJUSTMENT PLAN PREPARED FOR DARLENE AND PETER STICKLES AND HELEN AND GREGORIOS KOUTRELAKOS, GLENWOOD AVENUE & SMITHWELL ROAD, DOVER, NEW HAMPSHIRE"
BY: MCENEANEY SURVEY ASSOCIATES, INC
DATED: AUGUST 7, 1995
S.C.R.D. PLAN #46-78

4.) "PLAN OF LAND, JOHN J. LINK & FRED V. LABONTE, DOVER NEW HAMPSHIRE"
BY: G.L. DAVIS & ASSOCIATES
DATED: JUNE 1964
S.C.R.D. PLAN #20, POCKET #7, FOLDER #2

5.) "PROPOSED DEVELOPMENT, GLENCREST – INC, DOVER NEW HAMPSHIRE"
BY: DAVIS & ASSOCIATES
DATED: MARCH 1950
S.C.R.D. PLAN #36, POCKET #3, FOLDER #1



NOTES:

1.) OWNER: MICHAEL D. & GAYE H. DEAN
4A SMITH WELL ROAD
DOVER, NH 03820

1A.) APPLICANT: KNOX MARSH DEVELOPMENT LLC
242 CENTRAL AVE.
DOVER, NH 03820

2.) TAX MAP 38, LOT 32-1

3.) LOT AREA: 31,500 Sq. Ft., 0.72 Ac

4.) S.C.R.D. BOOK 2509, PAGE 766

5.) ZONING: MEDIUM DENSITY RESIDENTIAL (R-12) DISTRICT
SETBACKS:
FRONT – BUILD TO LINE 15-25'
SIDE – 15.0'
REAR – 30.0'
WETLANDS SETBACK – 50.0'
MIN. LOT SIZE – 12,000 Sq. Ft.
MIN. LOT FRONTAGE – 100'
MAX. BLDG. HEIGHT – 35'
MAX. LOT COVERAGE – 30%

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

7.) VERTICAL DATUM BASED ON NAVD88 ELEVATIONS. HORIZONTAL COORDINATES BASED ON NAD83. COORDINATES GATHERED USING TOPCON HIPER SR SURVEY GRADE GPS RECEIVERS.

8.) THE BOUNDARY LINES SHOWN ON THIS PLAN ARE THE RESULT OF A CLOSED TRAVERSE PERFORMED BY THIS OFFICE IN MARCH OF 2019, WITH AN ERROR OF CLOSURE OF 1 PART IN 27,268.

9.) THE INTENT OF THIS PLAN IS TO SHOW THE PROPOSED BOUNDARIES OF A 2 LOT SUBDIVISION ON TAX MAP 38, LOT 32-1.

10.) THIS IS A THREE SHEET PLAN SET WITH SHEET ONE RECORDED AT THE STRAFFORD COUNTY REGISTRY OF DEEDS. SHEET TWO AND THREE WILL BE ON FILE AT THE CITY OF DOVER OR THIS OFFICE. FOR MORE INFORMATION ON THIS LOT LINE REVISION, CONTACT THE CITY OF DOVER PLANNING DEPARTMENT, 288 CENTRAL AVENUE, DOVER, NH 03820, (603) 516-6008.

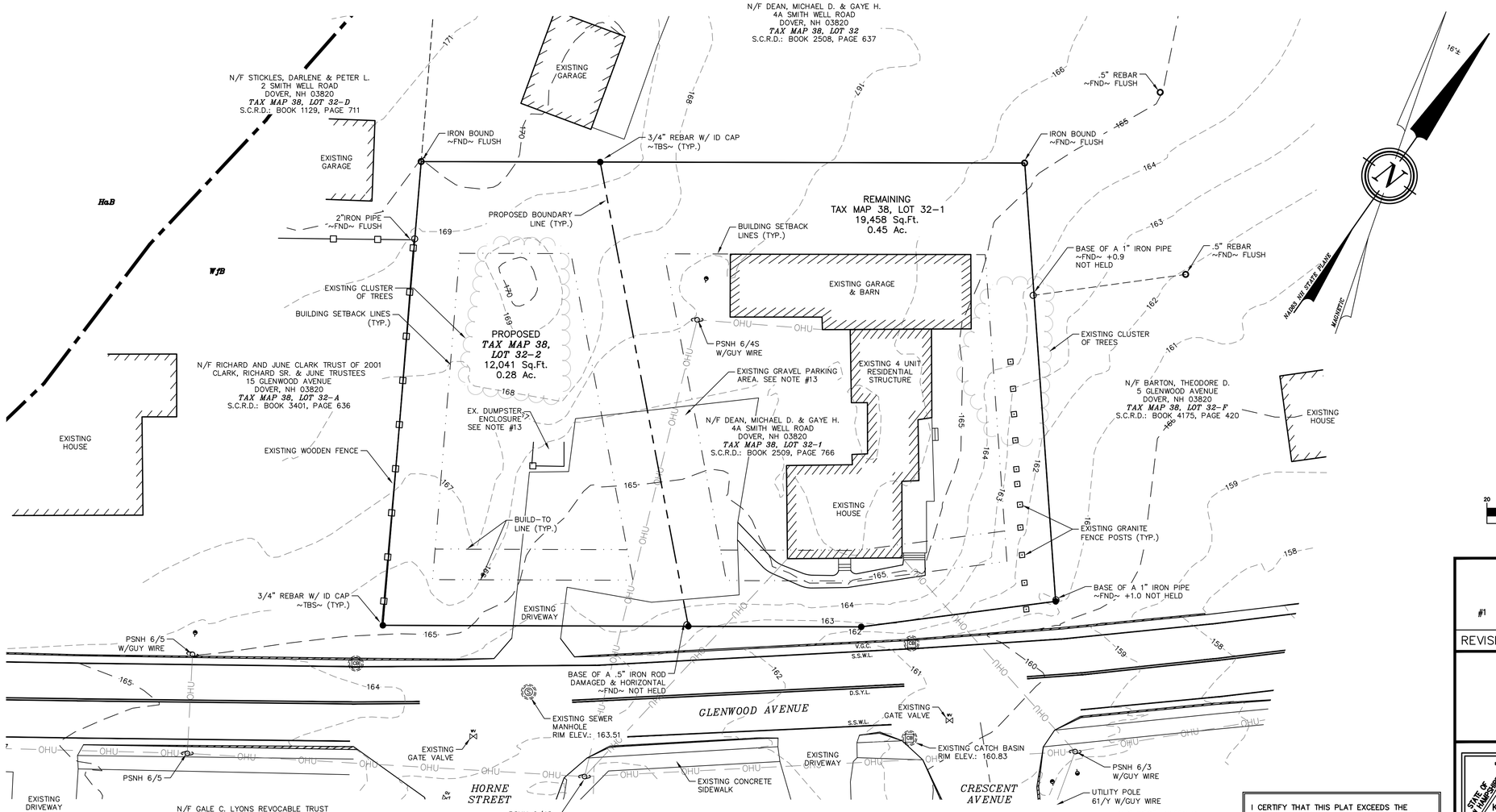
11.) BOTH LOTS ARE SERVICED BY MUNICIPAL SEWER AND WATER.

12.) OWNER TO WORK WITH CITY ENGINEER ON PROPOSED WATER AND SEWER UTILITIES FOR THE PROPOSED LOT.

13.) APPLICANT TO COME BACK FOR A TRC REVIEW TO ADJUST PARKING.

14.) THE PROJECT SITE WAS REVIEWED BY LUKE HURLEY OF GOVE ENVIRONMENTAL SERVICES. NO WETLANDS FOUND ON SITE.

15.) SEE SHEET 3 FOR ALL OTHER STANDARD SUBDIVISION NOTES.



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

REVISION	DATE	DESCRIPTION
#1	3-28-19	REVISED PER CITY OF DOVER

SUBDIVISION PLAN (TOPOGRAPHY)
KNOX MARSH DEVELOPMENT
LAND OF
MICHAEL & GAYE DEAN
7 GLENWOOD AVENUE
DOVER, N.H.
TAX MAP 38, LOT 32-1

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

3-28-19

KENNETH A. BERRY LLS 805 DATE

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

BERRY SURVEYING & ENGINEERING
335 SECOND CROWN POINT RD.
BARRINGTON, N.H. (603)332-2863

SCALE : 1 IN. EQUALS 20 FT.
DATE : MARCH 19, 2019
FILE NO. : DB 2019 – 028 CRB

ABBREVIATION LEGEND:

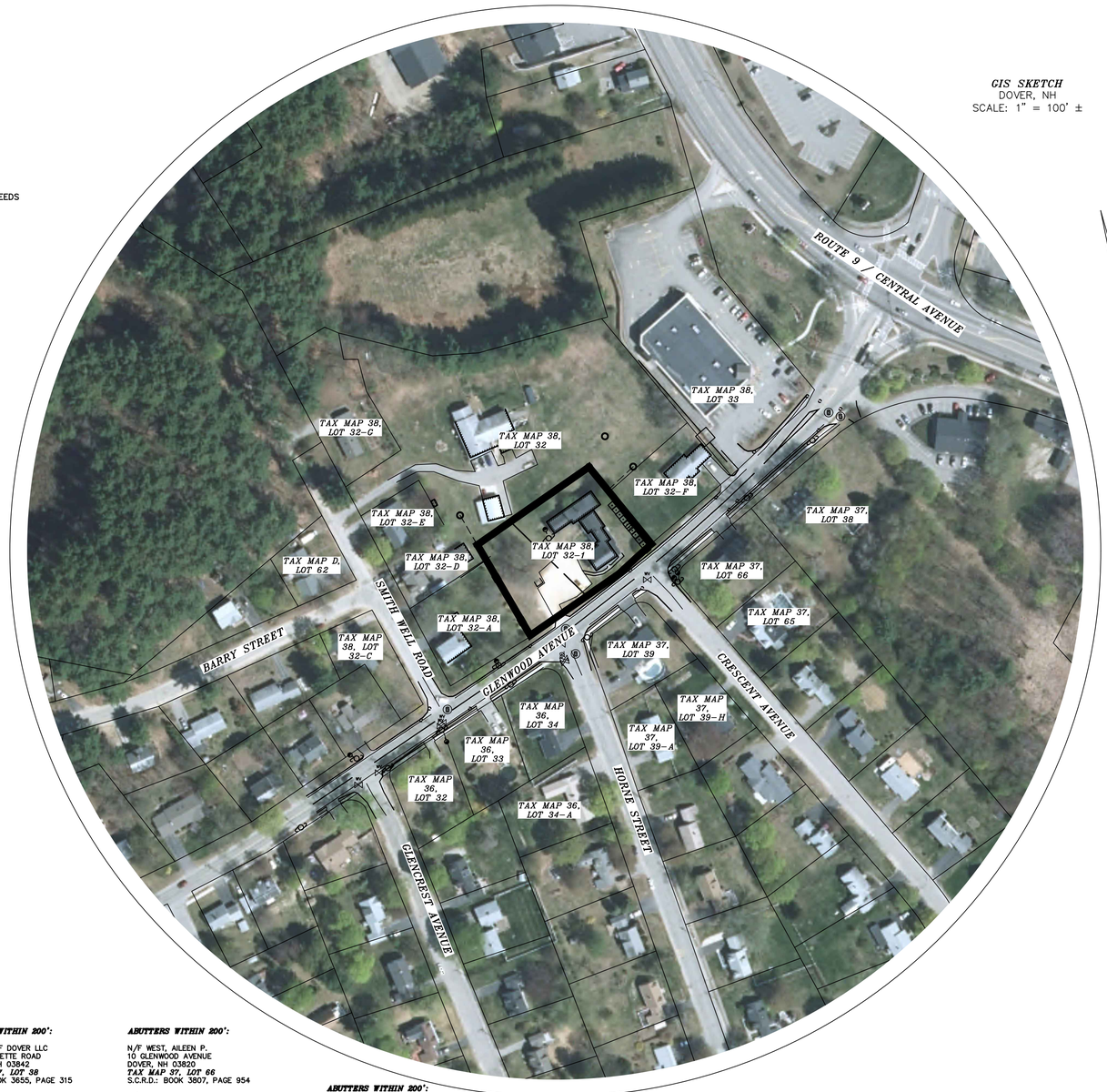
V.G.C.	VERTICAL GRANITE CURB
E.O.P.	EDGE OF PAVEMENT
BITUM.	BITUMINOUS
E.S.H.W.T	ESTIMATED SEASONAL HIGH WATER TABLE
TYP.	TYPICAL
U.G.E.	UNDER GROUND ELECTRIC / UTILITY
HDPE	HIGH DENSITY POLYETHYLENE
ACP	ASBESTOS CLAY PIPE
F.G.	FINISHED GRADE
E.G.	EXISTING GRADE
L.F.	LINEAR FOOT
F.D.	FINISHED FLOOR
FND	FOUND
T.B.R.	TO BE REMOVED
P.L.	PROPERTY LINE
E.L.	EASEMENT LINE
T.B.M.	TEMPORARY BENCHMARK
'/,	FOOT / FOOT

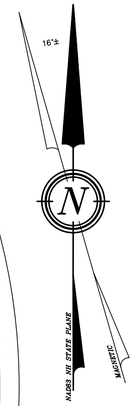
{ } SSL ( ) ~ {SIZE} SINGLE SOLID LINE (COLOR W=WHITE, Y=YELLOW)
{ } DSL ( ) ~ {SIZE} DOUBLE SOLID LINE (COLOR W=WHITE, Y=YELLOW)
{ } SSB ( ) ~ {SIZE} SINGLE SOLID W/ BROKEN LINE (COLOR W=WHITE, Y=YELLOW)
{ } SBL ( ) ~ {SIZE} SINGLE BROKEN LINE (COLOR W=WHITE, Y=YELLOW)
{ } DBL ( ) ~ {SIZE} DOUBLE BROKEN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

LEGEND:

- IRON BOUND (SET)
- IRON BOUND (FND)
- IRON PIPE (FND)
- UTILITY POLE / GUY WIRE
- CATCH BASIN
- SEWER MAN HOLE
- GATE VALVE
- PROPOSED BOUNDARY LINE
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- EXISTING CONTOUR MAJOR
- APPROXIMATE BOUNDARY LINE
- FOUND
- TO BE SET
- TYPICAL
- STRAFFORD COUNTY REGISTRY OF DEEDS

GIS SKETCH
DOVER, NH
SCALE: 1" = 100' ±





NOTES CONTINUED:

16.) LIST ANY VARIANCES OR SPECIAL EXCEPTIONS GRANTED BY THE ZONING BOARD OF ADJUSTMENT OR ANY CONDITIONAL USE PERMITS GRANTED BY THE PLANNING BOARD FOR THE PROPERTY, INCLUDING CASE NUMBER AND DATE OF DECISION AND ANY CONDITIONS: NONE

17.) AS-BUILT PLANS OF THE SITE SHALL BE SUBMITTED ON A REPRODUCIBLE MYLAR MEDIUM AND IN A DIGITAL DXF FORMAT ON DISK TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF PROJECT. AS-BUILT PLANS SHALL BE PREPARED AND CERTIFIED CORRECT BY A L.L.S. OR P.E.

18.) THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED. SITE PLANS SHALL SHOW ANY EASEMENTS FOR THESE SERVICES.

19.) ALL CONSTRUCTION SHALL CONFORM TO THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. CONSTRUCTION SHALL ALSO CONFORM TO THE CITY OF DOVER POLICIES AND PRACTICES.

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

21.) THE LIMITS OF CONSTRUCTION DISTURBANCE SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR TO THE COMMENCEMENT OF SITE WORK.

22.) ALL TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.

23.) A LETTER OF CREDIT FOR THE COST OF RE-VEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS. COORDINATE WITH CITY OF DOVER, COMMUNITY SERVICES AND ENGINEERING DEPARTMENT.

24.) 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.

25.) BUILDING ADDRESSES SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.

26.) THE FOLLOWING FEDERAL AND STATE PERMITS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY:
NONE

27.) THE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY-FRIDAY 7AM-6PM, SATURDAY AND SUNDAY 9 AM-4PM. HOURS OF CONSTRUCTION SHALL BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR.

28.) COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM WITH DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.

29.) LOT 32-1 WILL REMAIN A 4 UNIT LOT AND THE PROPOSED USE FOR 32-2 WILL BE SINGLE FAMILY.

ABUTTERS WITHIN 200':

N/F TROJAN, GEORGE A. JR. & CHRISTINE R.
3 SMITH WELL ROAD
DOVER, NH 03820
TAX MAP D, LOT 62
S.C.R.D.: BOOK 3072, PAGE 545

N/F LAURIE A. LAZAR REVOCABLE TRUST
LAZAR LAURIE A. TRUSTEE
16 GLENWOOD AVENUE
DOVER, NH 03820
TAX MAP 36, LOT 32
S.C.R.D.: BOOK 4582, PAGE 142

N/F LAURIE, BRUCE & LISA A.
14 GLENWOOD AVENUE
DOVER, NH 03820
TAX MAP 36, LOT 33
S.C.R.D.: BOOK 2969, PAGE 310

N/F GALE C. LYONS REVOCABLE TRUST
LYONS, GALE C. TRUSTEE
102 HORNE STREET
DOVER, NH 03820
TAX MAP 36, LOT 34
S.C.R.D.: BOOK 2444, PAGE 494

N/F PIER. JASON & HANNAH
100 HORNE STREET
DOVER, NH 03820
TAX MAP 36, LOT 34-A
S.C.R.D.: BOOK 4399, PAGE 160

ABUTTERS WITHIN 200':

N/F OKAD OF DOVER LLC
321 D LAFAYETTE ROAD
HAMPTON, NH 03842
TAX MAP 37, LOT 38
S.C.R.D.: BOOK 3655, PAGE 315

N/F MOUTEVELIS, NIKI
12 GLENWOOD AVENUE
DOVER, NH 03820
TAX MAP 37, LOT 39
S.C.R.D.: BOOK 2961, PAGE 115

N/F SIEBERSMA, MICHAEL V. & KERRY L.
99 HORNE STREET
DOVER, NH 03820
TAX MAP 37, LOT 39-A
S.C.R.D.: BOOK 3941, PAGE 403

N/F FLETCHER, BENJAMIN M.
1 CRESCENT AVENUE
DOVER, NH 03820
TAX MAP 37, LOT 39-H
S.C.R.D.: BOOK 4490, PAGE 96

N/F KELLY FAMILY REVOCABLE TRUST
KELLY, BRIAN T. SR. & ANN R. TRUSTEES
2 CRESCENT AVENUE
DOVER, NH 03820
TAX MAP 37, LOT 65
S.C.R.D.: BOOK 3094, PAGE 298

ABUTTERS WITHIN 200':

N/F WEST, AILEEN P.
10 GLENWOOD AVENUE
DOVER, NH 03820
TAX MAP 37, LOT 66
S.C.R.D.: BOOK 3807, PAGE 954

N/F DEAN, MICHAEL D. & GAYE H.
4A SMITH WELL ROAD
DOVER, NH 03820
TAX MAP 38, LOT 32
S.C.R.D.: BOOK 2508, PAGE 637

N/F RICHARD AND JUNE CLARK TRUST OF 2001
CLARK, RICHARD SR. & JUNE TRUSTEES
15 GLENWOOD AVENUE
DOVER, NH 03820
TAX MAP 38, LOT 32-A
S.C.R.D.: BOOK 3401, PAGE 636

N/F BRAGG, MICHAEL S. & HAWKES, DIANE
1 SMITH WELL ROAD
DOVER, NH 03820
TAX MAP 38, LOT 32-C
S.C.R.D.: BOOK 2893, PAGE 785

N/F STICKLES, DARLENE & PETER L.
2 SMITH WELL ROAD
DOVER, NH 03820
TAX MAP 38, LOT 32-D
S.C.R.D.: BOOK 1129, PAGE 711

ABUTTERS WITHIN 200':

N/F NEWMAN, JOAN & KENT
4 SMITH WELL ROAD
DOVER, NH 03820
TAX MAP 38, LOT 32-E
S.C.R.D.: BOOK 1255, PAGE 78

N/F BARTON, THEODORE D.
5 GLENWOOD AVENUE
DOVER, NH 03820
TAX MAP 38, LOT 32-F
S.C.R.D.: BOOK 4175, PAGE 420

N/F HEMPHILL, JAMIE S. & KILEY J.
6 SMITH WELL ROAD
DOVER, NH 03820
TAX MAP 38, LOT 32-G
S.C.R.D.: BOOK 3773, PAGE 430

N/F BULWARK DOVER LLC
C/O WALGREENS STORE NO. 10780
PO BOX 1159
DEERFIELD, IL 60015
TAX MAP 38, LOT 33
S.C.R.D.: BOOK 3655, PAGE 315

REVISION	DATE	DESCRIPTION
#1	3-28-19	REVISED PER CITY OF DOVER

NEIGHBORHOOD PLAN
FOR KNOX MARSH DEVELOPMENT
LAND OF
MICHAEL & GAYE DEAN
7 GLENWOOD AVENUE
DOVER, N.H.
TAX MAP 38, LOT 32-1

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

SCALE : AS SHOWN
DATE : MARCH 19, 2019
FILE NO. : DB 2019 - 029

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

To The Chairmen and Members of The Planning Board:

I am requesting That This letter be read aloud and entered into the minutes of The meeting.

I am an abutter and homeowner to The proposed Project at 7 Glenwood Avenue.
I have already spoken with employees in The Planning Department and with The developer, Mr. Robert Baldwin. I understand that The land meets The City of Dover requirements to be dividable, which makes it a moot point to oppose This project from The ever increasing building in This neighborhood.

I was told by Mr. Baldwin That a single family residence is planned to be built on The new lot, and There will be some demolition to The current apartment building structure along with The removal of The garbage dumpster and the trash around it.

My question to The Planning Board is:
Due to The rat infestation in Dover, will The developer and owner of 7 Glenwood Avenue be mandated by The City of Dover to implement measures to control any rats and other rodents from spreading into The surrounding neighborhood? This is a BIG problem in Dover, and The City of Dover offers no help to residents with the costly expense of trying to eradicate rats from their property due to all The demolition, building, and developing of land that is taking place in The City.
I hope you will take my question into consideration, and you will address this issue.

Thank you.

Gale Lyons

Gale Lyons

RECEIVED
Planning Office
APR 19 2019
Dover, New Hampshire

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P19-32

Application Type:	Conditional Use Permit
Applicant(s)	Eversource Energy
Owner(s):	David & Laurie Landry and Christopher Lacasse
Location:	17 & 19 Spruce Lane - Map I, Lots 29 and 29-D
Meeting Date:	April 23, 2019

INTENT: To obtain a Conditional Use Permit to replace utility pole structures in a utility easement within the 50-foot wetland buffer. Temporary wetland buffer impacts would be 4,461 square feet.

LOTS/UNITS PROPOSED: None

AGENDA ITEM: # 5-C

ACREAGE: N/A

ZONING DISTRICT: Rural Residential (R-40)

EXISTING LAND USE: Utility easement/Residential

PROPOSED LAND USE: Utility easement

SURROUNDING LAND USE: Residential and City of Dover property

ZBA ACTION: N/A

ATTACHMENTS:
CUP application and materials, 4/8/19 Conservation Commission minutes

APPLICATION IS COMPLETE: Yes

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

PERMITS REQUIRED:
-Conditional Use Permit for Wetland Protection District

WAIVERS REQUESTED: None

Summary of Request and Background
The applicant is requesting a Conditional Use Permit to replace existing wooden utility pole structures with new steel poles in a utility easement within the 50-foot wetland buffer. Access will be via a temporary gravel driveway off of Spruce Lane. There are temporary wetlands impacts of 4,461 square feet.

The Conservation Commission endorsed this CUP at their April 8, 2019 meeting.

Consistency with Land Use Regulations
The Wetlands Protection District ordinance provides for Conditional Use Permits to allow impacts to wetlands and wetland buffers if standards related to demonstration of need, avoidance, minimization, and mitigation are met. This proposal is consistent with those standards.

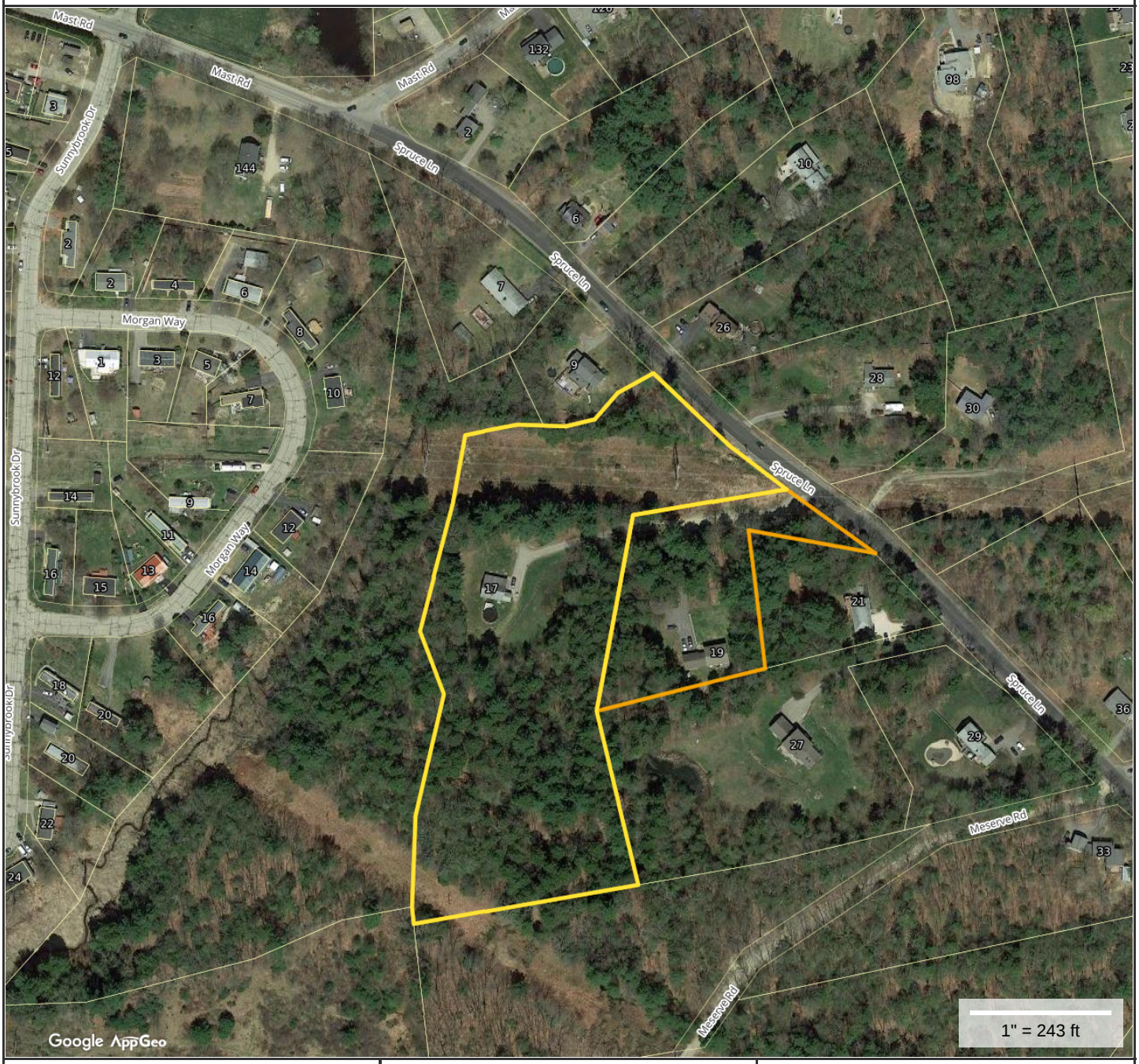
STAFF RECOMMENDATION:

The Planning Department recommends the Planning Board accept the application, open the public hearing, and vote to approve the Conditional Use Permit with the following condition:

Condition to Be Met Prior to Commencing Site Work:

1. The applicant shall install the erosion and sediment control measures as depicted on the plans.

17 and 19 Spruce Lane



Property Information

Property ID	I0029-000000
Location	17 SPRUCE LN
Owner	LANDRY DAVID P &
Land Use	101

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 11/16/2018
Data updated Daily

NORMANDEAU ASSOCIATES
ENVIRONMENTAL CONSULTANTS

City of Dover Planning Board
Conditional Use Permit Application
Transmission Line 307 Structure Replacement

Prepared For
Eversource Energy
13 Legends Drive
Hooksett, NH 03106

Submitted By
Normandeau Associates, Inc.
25 Nashua Road
Bedford, NH 03110-5500
603.472.5191
www.normandeau.com

March 28, 2019

NORMANDEAU ASSOCIATES
ENVIRONMENTAL CONSULTANTS

March 28, 2019

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

Re: Conditional Use Permit for Structure Replacement on Eversource Transmission Line 307

Dear Sir/Madam:

On behalf of Eversource Energy (Eversource), Normandeau Associates, Inc. (Normandeau) is filing a Conditional Use Permit Application requesting approval to replace existing utility pole structures within Eversource transmission Line 307 in the City of Dover.

Attached are the conditional use permit application and all required supplemental materials for review of this proposal. We anticipate attending the regularly scheduled meeting of the Dover Conservation Commission on April 8, 2019 and Planning Board meeting on April 23, 2019 to present the details of this project.

Sincerely,

Sarah Barnum, CWB®
Project Manager

Attachment:

1. Conditional Use Permit Application (15)
2. Plans Sets - 24x34 in. (3) and 11x17 in. (12)

Cc: Matthew Cardin, Eversource, via email

TABLE OF CONTENTS

City of Dover Conditional Use Permit Application Form

1 Filing Fee

2 Project Description

3 Tax Maps

4 Abutter List

5 Property Easement Deeds

6 Proposed Plans

DISCLOSURE STATEMENT

The data contained in all pages of this document have been submitted in confidence and contain trade secrets and/or privileged or confidential information, and such data shall be used or disclosed only for evaluation purposes, provided that if a contract is awarded to this proposer as a result of or in connection with the submission of this proposal, the client shall have the right to use or disclose the data herein to the extent provided in the contract. This document includes data that shall not be disclosed outside of the purposes of this submittal and shall not be duplicated, used, or disclosed--in whole or in part--for any purpose other than for evaluation purposes.

City of Dover Conditional Use Permit Application Form

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: May 18, 2017]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: Eversource Energy Telephone # (603) 634-2992

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

E-Mail Address: matthew.cardin@eversource.com

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

Address of Property Owner: Multiple (see additional detail)

PROPERTY INFORMATION

Assessor's Map # Multiple Lot(s) # Multiple (see additional detail)

Address of Property: Multiple (see additional detail)

Zoning District(s) Rural Residential District Overlay District(s) Conservation District

Existing Use of Property: Residential

CONDITIONAL USE PERMIT INFORMATION

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

☒ Conservation District ☐ RCM Use Overlay District ☐ I-1 District Uses

☐ 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:

Replacement of existing utility poles, requiring work within the 50-foot buffer of a freshwater wetland, defined as an area within the Conservation District, resulting in temporary impacts (see narrative for additional details).

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: A Utility Maintenance Notification (UMN) will be submitted to NHDES (the City of Dover will receive a hard copy).

Name of Professional That Prepared Plans: William C. McCloy, NH CWS

Address PO Box 205, Rutland, VT, 05701 Telephone #: (802) 861-7038

Professional License #: No. 268 E-mail address: wmccloy@normandeau.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: See property easement deeds Date: _____

Signature of Applicant (if different from owner): _____ Date: 03/27/19

Signature of Agent: _____ Date: 3/28/19

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner: See property easement deeds Date: _____

PLANNING BOARD
ESTIMATED FEE SCHEDULE

This is only provided to give you an estimate of the application fees. *After you submit an application, staff will invoice you a total.* All fees must be paid two weeks before the Planning Board meeting. **If the Fee has not been paid, the item will not be placed upon the agenda.**

A. TOTAL FEE paid by cash or check made payable to "City of Dover"

1. Application fee for the following:
   - SUBDIVISION $150.00 x # _____ new lots created = $ 0.00
   - LOT LINE ADJUSTMENT $200.00 (if more than two lots involved, add $100.00 per lot) =
   - SITE REVIEW – TRANSFER OF DEVELOPMENT RIGHTS Application fee $150.00 = $ 0.00
   - SITE REVIEW - RESIDENTIAL $100.00 x # ____ per dwelling unit = $ 0.00
   - SITE REVIEW – NON-RESIDENTIAL (not to exceed $10,000)
     New construction $.15 sq. ft. x # _____ sq. ft. = $ 0.00
     Additions (new floor space) $.10 per sq. ft. x # _____sq. ft. = $ 0.00
   - IMPERVIOUS PAVED AREA (for new development) OR IMPERVIOUS PARKING LOT ADDITIONS (not to exceed $10,000) $.07 sq. ft. x # _____ = $ 0.00
   - MOTEL/HOTEL $35.00 x # ___ per lodging unit = $ 0.00
   - CHANGE OF USE (not to exceed $5,000)
     Existing floor space $.10 per sq. ft. x # ____ sq. ft. = $ 0.00
   - CONDITIONAL USE PERMIT $150.00 x # 1 per application = $ 150.00
   - GRAVEL PIT/ EXCAVATIONS - Application fee $50.00 & Permit fee $75.00 = $ 0.00
   - EXTENSIONS OF/AMENDMENTS TO/WAIVERS FOR AN APPROVED PLAN ($150.00 minimum) $50.00 x # ____ per hour of review $ 0.00
   - REQUEST FOR REZONING $150.00 = $ 0.00
   - DRIVEWAY WAIVER – $100.00 application fee =
     Letter of rejection from Engineering Department, diagram & letter from owner $ 0.00

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 need to provide to this office the engineer, architect, land surveyor or soil scientist whose professional seal appears on the plan with names and addresses for notices. You will be notified with the amount due, once this has been completed.

1. Applicant & Owner, engineer, architect, land surveyor or soil scientist Certified letters fee # 4 of x $8.00 = $ 32.00
2. Certified letters fee: # of abutters 9 X $8.00 = $ 72.00
3. First Class Mail fee (for individual owner of units within a condominium or other collective form of ownership): # of abutters _____ X $1.00 = $ 0.00
4. Creating/Printing Abutter Labels in triplicate per sheet ? x $10.00 = $?

C. Foster's newspaper public notice fee **$ 80.00**

(Revised October 2, 2018)

TOTAL FEE $ >334.00

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
	Multiple	Multiple (see additional detail)	Multiple (see additional detail)

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS
Matthew Cardin	Eversource Energy	13 Legends Dr., Hooksett, NH 03106

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
William S. McCloy	Normandeau Associates, Inc.	PO Box 205, Rutland, VT 05701

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS
N/A	N/A	N/A	N/A

Additional Detail for Owner Information and Property Information on Page One of the Conditional Use Permit Application Form

Property Owner Information

1. David P. & Laurie R. Landry (Parcel ID: I0029-000000)
   17 Spruce Lane
   Dover, NH 03802
   (Book No. 2004/Page No. 347); Date: 19980507

   Map: I, Lot: 29
   17 Spruce Lane
   Dover, NH 03802
   Zone: R-40
   Existing Use: R
   Overlay District: Conservation District

2. Christopher M. Lacasse (Parcel ID: I0029-D00000)
   19 Spruce Lane
   Dover, NH 03802
   (Book No. 3788/Page No. 405); Date: 20091104

   Map: I, Lot: 29, Sub: D
   12 Treehouse Way
   Barrington, NH 03825-7471
   Zone: R-40
   Existing Use: R
   Overlay District: Conservation District

1 Filing Fee

A filling fee will be invoiced by the City of Dover after the Conditional Use Permit Application has been submitted. Once the invoice is received, the fee will be paid for by check via hand delivery, mail, or other preferred method to the City of Dover.

2 Project Description

On behalf of Eversource Energy (Eversource), Normandeau Associates, Inc. (Normandeau) has compiled the Conditional Use Permit for the City of Dover, requesting approval to replace utility pole structures within the existing Line 307 345KV utility transmission right-of-way (ROW) in the City of Dover. Eversource proposes to replace four pole structures in the line in order to provide reliable electrical power to customers.

Proposed structure replacements in the City of Dover includes Structures #71, 73, 75, and 76 (Section 6, Proposed Plans). The attached plans only include pages relevant to these structures. All work associated with this project is located within the existing ROW and disturbance will be temporary. No work will occur in wetlands within the City of Dover, but the proposed structure replacement for Structure #75 will require work within a 50-foot buffer from the reference line of a freshwater wetland, defined as an area within Dover's Conservation District.

The only expected soil disturbance within the wetland buffer will occur where the replacement utility poles will be installed, approximately 10 feet from the existing poles. Construction will require using construction equipment capable of hauling new structures and excavation to install replacement poles. Wetland matting will not be necessary as the proposed work will not cross wetlands, but upland matting will be used to limit ground disturbance and limit vegetation impacts within the wetland buffer area. Once the work is finished, matting will be removed and any disturbed areas will be restored. Road building, grading, and graveling outside of the wetland buffer may be required and will be restored to the extent practical. The timeframe for this work is expected to be May – August, 2019.

During construction and through restoration, the Best Management Practices Manual for Utility Maintenance in and Adjacent to Wetlands and Waterbodies in New Hampshire (NH Department of Natural and Cultural Resources, 2018) will be adhered to.

A list of abutters has been generated for those properties which adjoin properties where the proposed work within the Conservation District will occur, including those across streets or waterways, or those that lie directly within 200 linear feet of the proposed site under construction where temporary wetland impacts are expected to occur (Section 4, Abutter List). In lieu of property owner signatures, a copy of easement documents for all properties located within the utility ROW where work will occur is included in Section 5.

The proposed utility pole replacements for each identified structure located within transmission ROW Line 307 adheres to the criteria of Dover Code Zoning, Article VII, 170-27, 170-27.1.

Dover Code Zoning, Article VII, 170-27:

(1) To prevent the development of STRUCTURES and land uses on naturally occurring wetlands and flood- prone areas which would contribute to pollution of surface and ground water by sewage or other contaminants.

- The proposed project will install new utility poles to replace existing utility poles which currently do not contribute to pollution, therefore the proposed installations are not expected to contribute to pollution. Only clean material or native back fill will be used to install the new utility poles.

(2) To prevent the destruction of natural wetlands or aquifer areas which provide flood protection, recharge of groundwater supply and augmentation of stream flow during dry periods.

- Temporary impacts are proposed only within the Conservation District (the 50-foot wetland buffer) and are not proposed within wetlands or streams. Temporary impacts are not expected to permanently destroy or alter wetlands or streams. No impervious surface construction is proposed so the project will not prevent groundwater recharge or cause a flood hazard.

(3) To prevent unnecessary or excessive expenses to the city to provide and maintain essential services and utilities which arise because of inharmonious use of wetlands and other environmentally sensitive areas.

- The proposed project is a public utility which provides an essential service to the community and will not result in expenses to the city.

(4) To encourage those uses that can be most appropriately and safely located in wetland and other environmentally sensitive areas.

- The access routes were chosen to avoid and minimize disturbance in wetlands and streams and associated buffers. Utility pole replacements will include excavation within 10 feet from existing utility poles where new utility poles will be installed. Impacts to wetlands or streams are not proposed however, temporary erosion and sediment control methods will be used where necessary to prevent impacts to nearby existing wetlands.

(5) To preserve existing natural drainage systems and the vegetation and wildlife habitats therein.

- No changes to natural drainage systems are proposed. Vegetation and related habitats will be protected using BMPs including temporary and permanent erosion and sediment controls.

(6) To preserve wetlands and other environmentally sensitive areas for other ecological reasons inter alia, those cited in RSA 483-B.

- The proposed utility pole replacement work does not occur or fall within criteria of RSA 483 – B. The City of Dover will be copied on other state applications when applicable.

(7) To preserve and enhance those aesthetic values associated with waterways and the natural shoreline.

- Eversource believes there will be no changes in aesthetics resulting from the proposed project because existing utility poles will be cut at ground level and new utility poles will be installed within 10 feet from the base of existing poles with no change in structure height.

(8) To protect public health and safety by minimizing hazards, including soil erosion, storm water runoff, SLOPE instability risks, and environmental degradation associated with development on steep and/or unstable slopes.

- BMPs will be utilized throughout construction to ensure erosion hazards are controlled and minimized in accordance with The Best Management Practices Manual for Utility Maintenance in and Adjacent to Wetlands and Waterbodies in New Hampshire (NH Department of Natural and Cultural Resources, 2018).

Dover Code Zoning, Article VII, 170-27.1:

(1) Prevent the development of STRUCTURES and land uses on wetlands, which will contribute to pollution of surface and ground water by sewerage, toxic substances or sedimentation.

- The proposed project will install new utility poles to replace existing utility poles which currently do not contribute to pollution, therefore the proposed installations are not expected to contribute to pollution. Only clean material or native back fill will be used to install the new utility poles.

(2) Prevent the destruction of, or Significant changes to, wetlands which provide flood protection, recharge the groundwater supply and augment stream flow during dry periods and filtration of water flowing into ponds and streams.

- Temporary impacts are proposed only within the Conservation District (the 50-foot wetland buffer) and are not proposed within wetlands or streams. Temporary impacts are not expected to permanently destroy or alter wetlands or streams. No impervious access road construction is proposed so the project will not prevent groundwater recharge or cause a flood hazard.

(3) Protect unique and unusual natural areas and rare, threatened, and endangered species.

- A project review was conducted by the New Hampshire Natural Heritage Bureau for this project. No rare, threatened, or endangered species or exemplary natural communities exist in the vicinity of where utility pole replacement will occur in Dover for this project.

(4) Protect wildlife habitats, maintain ecological balances and enhance ecological values such as those cited in RSA 482-A:1.

- No changes to natural drainage systems, streams, or wetlands are proposed. Vegetation and related habitats will be protected using BMPs including temporary and permanent erosion and sediment controls. All impacts will occur within the utility right-of-way and matted vegetation is expected to rebound shortly within the current growing season, post proposed work.

(5) Protect potential water supplies and existing aquifers (water-bearing stratum) and aquifer recharge areas.

- As previously stated, no changes to natural drainage systems, streams, or wetlands are proposed. All activities will adhere to BMPs therefore Eversource anticipates potential water supplies and existing aquifers will not be affected.

(6) Prevent unnecessary or excessive expense to the city for the purpose of providing and/or maintaining essential services and utilities, which might be required as a result of misuse or abuse of wetlands.

- The proposed project is a public utility which provides an essential service to the community and will not result in expenses to the city.

(7) Encourage those low-intensity uses that can be harmoniously, appropriately and safely located in wetlands.

- All impacts within the Conservation District (50-foot wetland buffer) will be temporary. Work is not expected to occur within wetlands or streams. BMPs in accordance with The Best Management Practices Manual for Utility Maintenance in and Adjacent to Wetlands and Waterbodies in New Hampshire (NH

Department of Natural and Cultural Resources, 2018) will be adhered to throughout the process for the protection of wetlands and the surrounding environment.

(8) Preserve and enhance the aesthetic values associated with wetlands in the City of Dover.

- Eversource believes there will be no changes in aesthetics resulting from the proposed project because existing utility poles will be cut at ground level and new utility poles will be installed within 10 feet from the base of existing poles with no change in structure height.

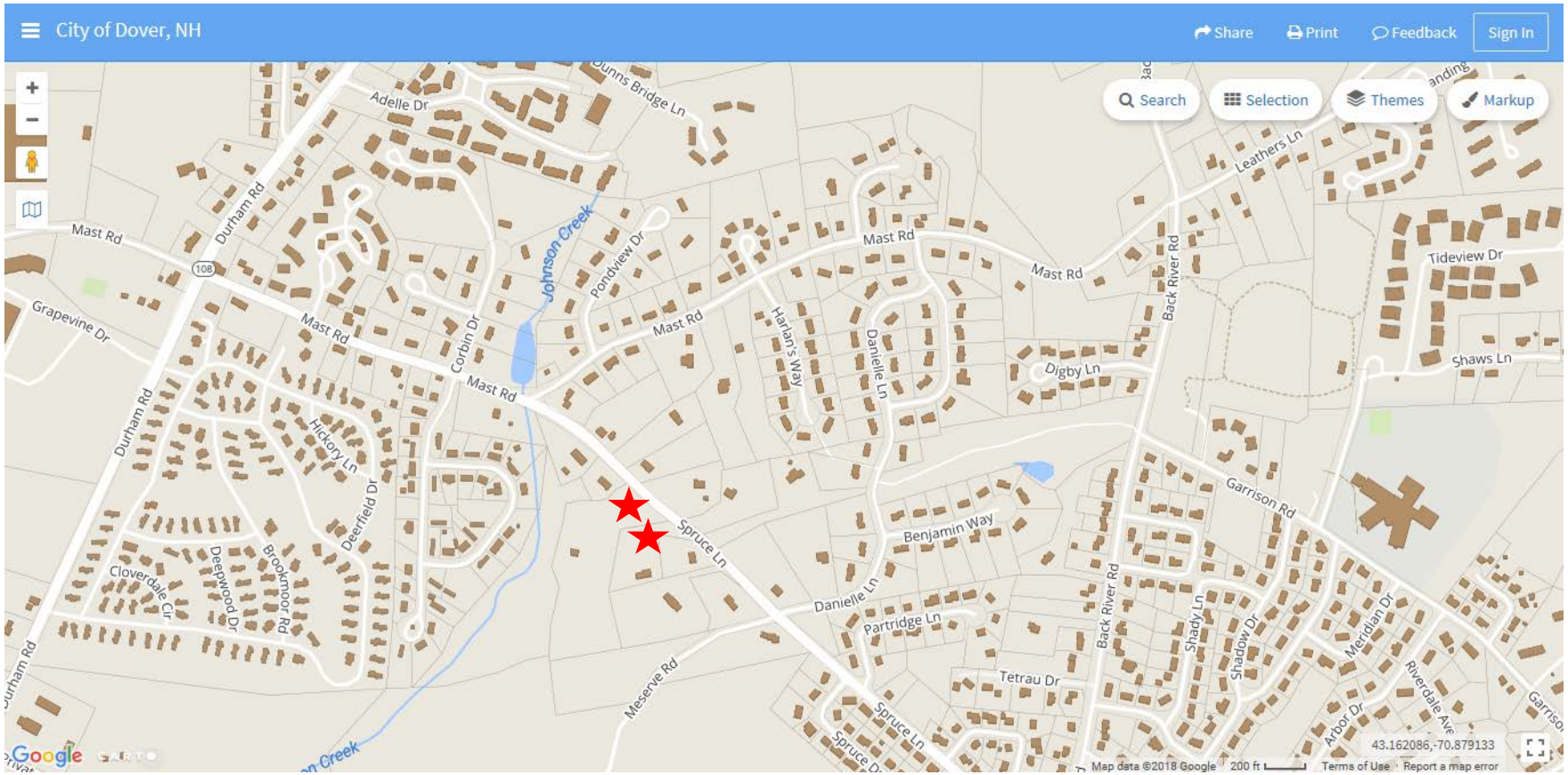
(9) Avoid the high costs of constructing heavy STRUCTURES and prevent damage to STRUCTURES and abutting properties caused by inappropriate development in wetland areas.

- This project includes the replacement of existing utility poles to ensure reliable electrical power to customers. Work is not proposed in wetlands. Where necessary access routes will be developed to provide safe access and a platform to conduct the work. Access and work pads will be limited to only what is necessary and will be restored to the extent practical upon completion.

3 Tax Map

Parcels with red stars (2 total) indicate lots where work is proposed and associated Easement Documentation is provided (Section 5).

The City of Dover uses an online GIS mapping system for public records of parcel information. Property record cards, location, and other pertinent information were obtained via the City of Dover's online interactive MapGeo program, located at: https://dovernh.mapgeo.io



Source: The City of Dover uses online GIS mapping systems for public records of parcel information. The above interactive tax map may be located at: https://dovernh.mapgeo.io

4 Abutter List

The total number of abutters for the proposed maintenance amounts to nine (not including the Certified Wetland Scientist whose name, signature, and stamp appear on the proposed plans).

Abutters include those properties which adjoin properties with proposed work within the Conservation District (including those across streets or waterways) or those that lie directly within 200 linear feet of the proposed site under construction.

Property Owner Information

Property ID	Location	Owner 1	Owner 2	Owner Address	City	State	Zip Code
I0029-000000	17 SPRUCE LN	LANDRY DAVID P & (Deeded from Nealley)	LANDRY LAURIE R	17 SPRUCE LN	DOVER	NH	03820
I0029-D00000	19 SPRUCE LN	CHISTOPHER M LACASSE (Deeded from Nealley)		12 TREEHOUSE WAY	BARRINGTON	NH	03825-7471

Abutter Information

Property ID	Location	Owner 1	Owner 2	Owner Address	City	State	Zip Code
I0027-000000	33 MESERVE RD	COLPRIT STEPHEN W & PHEBE C TRUSTEES	COLPRIT STEPHEN W AND PHEBE C REV LIV TR	33 MESERVE RD	DOVER	NH	03820
I0028-000000	SPRUCE LN	COLPRIT STEPHEN W & PHEBE C TRUSTEES	COLPRIT STEPHEN W AND PHEBE C REV LIV TR	33 MESERVE RD	DOVER	NH	03820
I0029-B00000	27 SPRUCE LN	LAAKSO ERIK W		27 SPRUCE LANE	DOVER	NH	03820
I0029-C00000	21 SPRUCE LN	BARRY BRIAN E		21 SPRUCE LN	DOVER	NH	03820
I0030-B00000	SUNNYBROOKE DR	WHITE ENTERPRISES INC		ROUTE 108	DURHAM	NH	03824
I0030-C00000	9 SPRUCE LN	CUSSINS FAMILY REVOCABLE TRUST	CUSSINS ROGER L AND MARIANNE J TRUSTEES	269 LONG PONS RD	NORTHWOOD	NH	03261
I0033-C00000	26 SPRUCE LN	CARUSO JOHN A JR &	CARUSO MERCEDES R	26 SPRUCE LN	DOVER	NH	03820-4410
I0034-000000	28 SPRUCE LN	POKRZYWINSKI MARJORIE A	POKRZYWINSKI JOHN M	28 SPRUCE LANE	DOVER	NH	03820
I0034-A00000	30 SPRUCE LN	JOHNS ELLEN R		30 SPRUCE LN	DOVER	NH	03820

5 Property Easement Deeds

PROPERTY EASEMENT DEED
FOR STRUCTURE MAINTENANCE ON STRUCTURE #75

c/f EAA-4747

EAA-1096

MARJORIE H. NEALLEY

of Dover, County of Strafford,

in The State of New Hampshire
(hereinafter called the Grantor) for consideration paid, grant(s) to Public Service Company of New Hampshire, a corporation having its principal place of business at 1087 Elm Street, in Manchester, in the County of Hillsborough, and The State of New Hampshire (hereinafter called the Grantee), with Quitclaim covenants, the RIGHT and EASEMENT to construct, repair, rebuild, operate, patrol and remove overhead and underground lines consisting of wires, cables, ducts, manholes, poles and towers together with foundations, crossarms, braces, anchors, guys, grounds and other equipment, for transmitting electric current and/or intelligence over, under and across a Strip of land 150 feet in width in the ~~town~~/city of Dover, county of Strafford in The State of New Hampshire.

Said 150 foot Strip shall extend 75 feet southerly and 75 feet northerly of a line or extension of a line, described as follows:

Beginning at a point on the westerly side line of Spruce Lane, said point being located 221.3 feet measuring Southeasterly along the westerly side of said Spruce Lane from an iron pin located at the northeast corner of the Grantor's land; thence, running North 71°-40'-40" West, 507.63 feet to the westerly boundary line of Grantor's land at land of Charles I. White.

The 150 foot wide strip of land herein described is intended to include all or part of the same strip of land described in deed of Frank H. Hall and Clare J. Hall to J. Brodie Smith dated July 21, 1926, and recorded in Strafford County Registry of Deeds, Book 423, Page 35.

This conveyance shall include the right for the Grantee, at its sole discretion, to leave some or all existing trees or underbrush and to plant and maintain trees and underbrush within fringe strip areas not more than 100 feet in depth adjacent to streets or other public ways.

For a chain of title see the following Probate records: Frank H. Hall (Probate #X9525); Carroll E. Hall (Probate #A7592); Ella B. Hall (Probate #A15269).

1973 JAN 26 PM 12:57

STATE OF NEW HAMPSHIRE
TAX ON TRANSFER OF REAL PROPERTY
STATE TAX COMMISSION
JAN - '73
$ 03.00
R.B. 19666

Said Strip of land being a part of the premises of the Grantor(~~s~~) described in deed of John T. Peaslee to Frank H. Hall dated November 17, 1915 and recorded in the Strafford County Registry of Deeds, Book 375, Page 529.

This conveyance shall, ~~subject to the right hereinafter reserved for a specified period,~~ include the right to clear and keep clear the Strip of all trees and underbrush by such means as the Grantee may select, to remove all structures or obstructions which are now found within the limits of the Strip, and the right to cut or trim such trees on the above-mentioned premises of the Grantor(~~s~~) as in the judgment of the Grantee may interfere with or endanger said lines or their maintenance or operation.

The Grantor(~~s~~) for ~~her~~ self and ~~her~~ heirs, executors, administrators, successors and assigns, covenant(s) and agree(s) to and with the Grantee, its successors and assigns, that they will not erect or maintain any building or other structure, or permit the erection or maintenance of any building or other structure of any kind or nature upon the Strip, or change the existing grade or ground level of the Strip by excavation or filling.

~~There is reserved to the Grantor(s) for a period of xxxxxxxxxxxxxxxxxxxx from the date hereof the right to cut and remove all standing wood and timber located upon the Strip, but the ownership of said wood and timber and the Grantor's right to cut and remove shall terminate, and all wood and timber shall become the property of the Grantee.~~

6019 3/68

BK- 919 PGE 155

And I, Lawrence R. Nealley, husband of Marjorie H. Nealley,
release to said Grantee all rights of ~~dower~~, curtesy and homestead and other interest therein.

WITNESS ..their.. hands and seals this ..26.. day of December, 19 72.

In the presence of

E. Edward Daley
as to both

Marjorie H. Nealley
Lawrence R. Nealley

The State of New Hampshire

Strafford SS.

December 1972

Lawrence R. Nealley
Marjorie H. Nealley
Personally appeared and acknowledged the foregoing instrument to be
their voluntary act and deed.
Before me.

E. Edward Daley
Notary Public Justice of the Peace

My commission expires:
7/26/77

EDWARD DALEY NOTARY PUBLIC NEW HAMPSHIRE

~~SS.~~

~~19~~

~~Personally appeared and acknowledged the foregoing instrument to be~~
~~voluntary act and deed.~~
~~Before me.~~

~~Notary Public~~ ~~Justice of the Peace~~

BK- 919 PGE 153

RECEIVED
Book No. 919 Page No. 153
Stafford County

21

EAA-10961

October 17, 1972
(3:12 P. M.)

REPORT TO PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
ON TITLE TO PROPERTY OF MARJORIE H. NEALLEY,
SOUTHWESTERLY SIDE OF SPRUCE LANE, DOVER, NEW HAMPSHIRE,
(MORAN BLUE LINE PRINT #307-24)

Search was made to date at Strafford County Registries of Deeds and Probate. Unless otherwise indicated, all deeds are of general warranty and formally sufficient as recorded.

John T. Peaslee (no dower released) conveyed to Frank H. Hall, by deed dated November 17, 1915, recorded Book 375, Page 529, as follows:

> "...land...southerly side of the New or Garrison Road, so-called... beginning on the West side of Spruce Lane [sic as to naming of highways] at the corner of a road running to land of John Kelley, thence running by an old wall South 89° 30' West 400 feet, thence N 86° W 300 feet, thence N 87° W 100 feet, thence N 88° W 200 feet, thence N 86° 45' W 153 feet to land of heirs of Andrew Meserve, thence N 10° 45' E by land of Meserve to Freeman Thompson 100 feet, thence N 20° 15' E by land of Freeman Thompson 100 feet, thence N 29° E 149 feet to an iron pipe; from now on there is an iron pipe at each angle point, thence N 24° 30' E 48 feet, thence N 5° W 108 feet, thence N 31° 30' E 62 feet, thence N 28° E 68 feet, thence N 27° 45' E 111 feet, thence same course 91 feet, thence S 43° 10' E 42.6 feet, thence N 89° 45' E 28 feet, thence same course 40.5 feet, thence S 76° 15' E 91.2 feet, thence S 83° 30' E 56 feet, thence N 51° 45" E 61.5 feet, thence N 74° E 55 feet to an iron pipe at the West side of Spruce Lane, thence S 36° E by Spruce Lane 300 feet, thence S 40° 45' E 100 feet, thence S 29° 20' E 549 feet to the point begun at; containing 11.5 acres."

Frank H. Hall (and wife, Clara J.) gave a nine-months' option to Twin State Gas & Electric Company for a power line, dated February 8, 1926, and recorded Book 419, Page 286; the easement under this option was granted by Hall and wife to J. Brodie Smith by deed dated July 21, 1926, recorded Book 423, Page 35.

Frank H. Hall died intestate February 20, 1935 (Probate #X 9525), leaving a widow, Clara J., and a son, Carroll E. Hall. Upon petition of the widow, the son was appointed Administrator on March 5, 1935, and gave bond in the sum of $12,000. The inventory shows personalty $15,083.55 and real estate $6,125 including: "Wood Land, Spruce Lane...13 acres, $300." Inheritance tax statement is on file. Account (first and final) showing a balance of $14,949.20, was allowed September 1, 1936. No receipt was filed.

> Clara E. Hall, the widow, who apparently never perfected any interest in her husband's property, died intestate March 16, 1937, leaving the son, Carroll E. Hall, as her sole heir, and showing no real estate in her inventory (Probate #A 345).

Report to Public Service Company of New Hampshire October 17, 1972
Re: Marjorie H. Nealley Property

Carroll [E.] Hall died intestate October 24, 1955, leaving a widow, Ella B. Hall, and a daughter, Marjorie H. Nealley (Probate #A 7592). Upon petition of the widow, the son-in-law Lawrence Nealley was appointed Administrator on November 1, 1955, and gave surety company bond in the sum of $3,000. Real estate report is on file (without description of any property) indicating that real estate passed to the widow and daughter. Inheritance tax statement is on file. The inventory shows personalty $48,649.90, and real estate $9,500 including: "Land on Spruce Lane... $2,000." Account ("final") showing no balance was allowed June 2, 1961; Schedule 7. thereof indicates that the widow was paid $14,754.46, and the daughter $29,508.01, a total of $44,263.37. Receipts are on file, dated April, 1961, and a consent to the account was signed by the widow and daughter.

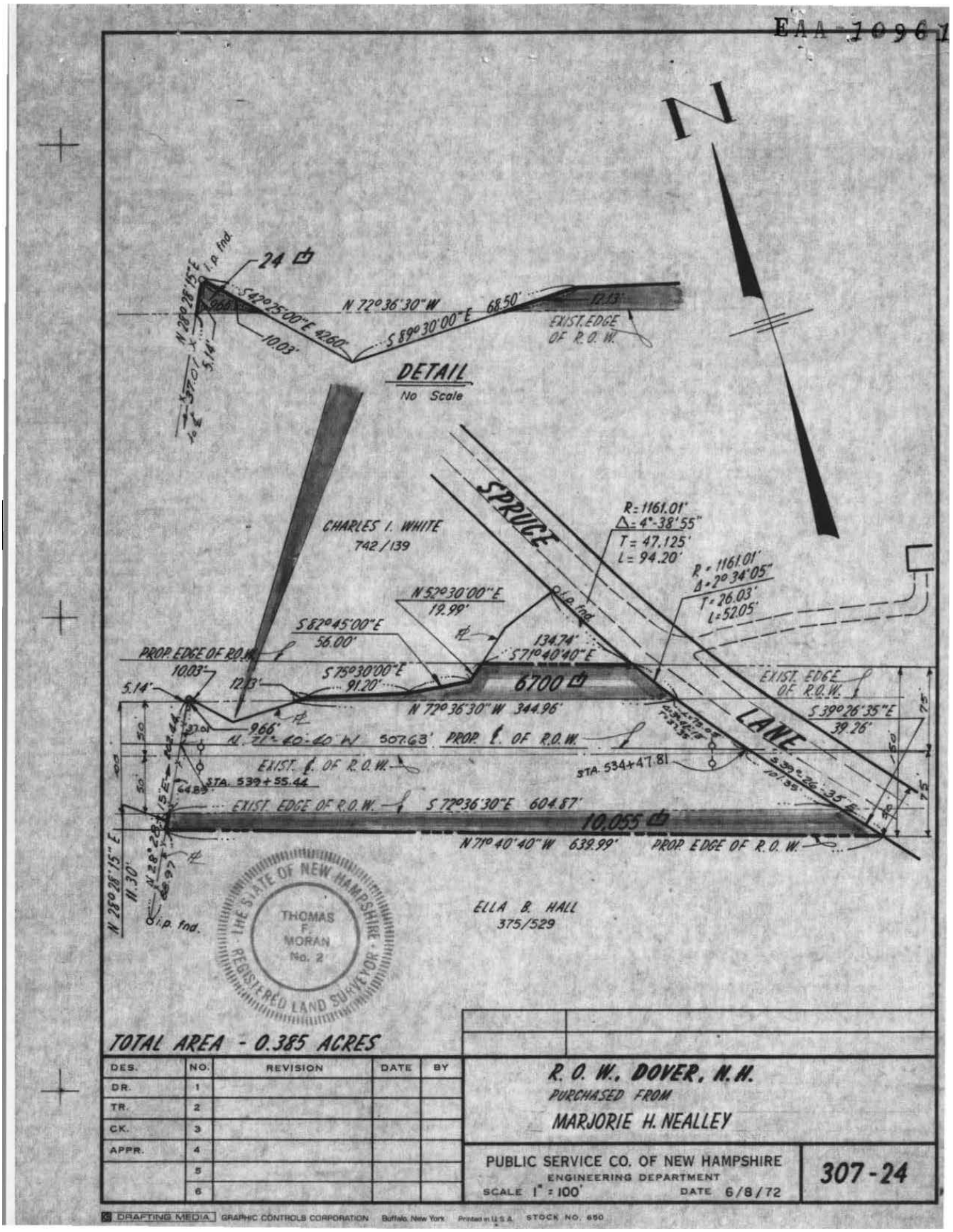
> Note that although the widow is indicated in the real estate report as having inherited an interest in the real estate, and although she was paid one-third of the personal estate, she never perfected any interest in the real estate in the manner required by statute. However, she was continued on the tax rolls, and apparently in the family understanding, as a co-owner with her daughter, and the property is still taxed to"Marjorie H. Nealley and the heirs of Ella B. Hall" although complete legal title would appear to be in Marjorie H. Nealley alone.

Ella B. Hall, after coming under the guardianship of her daughter (Probate #A 14,315), died intestate on June 10, 1971 (Probate #A 15269), leaving her daughter as her only heir, and only non-locus real estate in the inventory.

No mortgages, tax, attachment or other liens or encumbrances, flaws or conflicting conveyances, were found of record. Taxes through 1971 appear to have been paid, and it is not known whether taxes for 1972 have been billed and/or paid.

In accordance with our custom and practice, the foregoing does not constitute a guarantee of title, but represents my understanding of the purport and effect of the records indicated as having been searched.

F. W. Peyser


EAA-10961
N
DETAIL
No Scale
24
i.p. fnd
N 28°28'15" E
11.30'
N 72°36'30" W
68.50'
S 89°30'00" E
12.13'
EXIST. EDGE OF R.O.W.
S 42°25'00" E 42.60'
10.03'
5.14'
966'
CHARLES I. WHITE
742/139
SPRUCE
LANE
R=1161.01'
Δ=4°-38'55"
T=47.125'
L=94.20'
R=1161.01'
Δ=2°34'05"
T=26.03'
L=52.05'
N 52°30'00" E
19.99'
S 82°45'00" E
56.00'
S 75°30'00" E
91.20'
134.74'
S 71°40'40" E
6700
PROP. EDGE OF R.O.W.
N 72°36'30" W 344.96'
N 71°-40'-40" W 507.63'
PROP. ℄ OF R.O.W.
EXIST. ℄ OF R.O.W.
STA. 539+55.44
STA. 534+47.81
EXIST. EDGE OF R.O.W.
S 72°36'30" E 604.87'
10,055
N 71°40'40" W 639.99'
PROP. EDGE OF R.O.W.
S 39°26'35" E
39.26'
ELLA B. HALL
375/529
THE STATE OF NEW HAMPSHIRE
THOMAS F. MORAN No. 2
REGISTERED LAND SURVEYOR
TOTAL AREA - 0.385 ACRES
DES. DR. TR. CK. APPR.
NO. REVISION DATE BY
1 2 3 4 5 6
R. O. W., DOVER, N.H.
PURCHASED FROM
MARJORIE H. NEALLEY
PUBLIC SERVICE CO. OF NEW HAMPSHIRE
ENGINEERING DEPARTMENT
SCALE 1" = 100'
DATE 6/8/72
307-24
DRAFTING MEDIA GRAPHIC CONTROLS CORPORATION Buffalo, New York Printed in U.S.A. STOCK NO. 650

EAA-J09461

7311-L-1

PUBLIC SERVICE Company of New Hampshire — INTRA-COMPANY BUSINESS MEMO

Subject Real Estate

From E. T. Miller District Date December 6, 1972

To R. A. Winslow Reference:

We have prepared a check for payment of real estate item as follows:

Name Marjorie H. Nealley Amount $ 2,000.00

Address 16 Fisher Street Vo. No. 12-44

Dover, New Hampshire

Land in Fee _____

Right of Way X

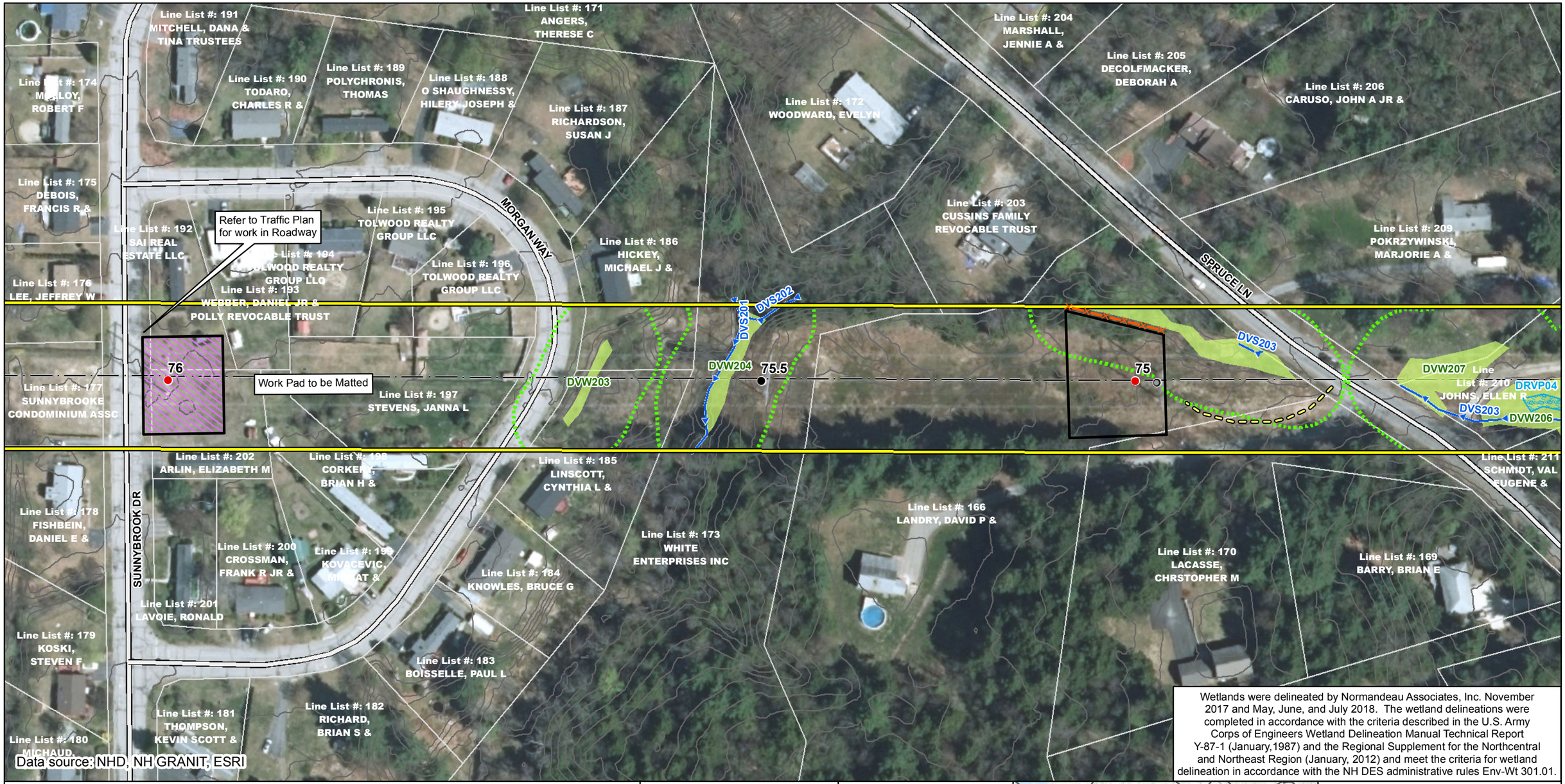
Town Dover

Reason To be used for Newington to Deerfield 345 KV transmission line

E. T. Miller
Treasurer

ETM:cm

6 Proposed Plans



Wetlands were delineated by Normandeau Associates, Inc. November 2017 and May, June, and July 2018. The wetland delineations were completed in accordance with the criteria described in the U.S. Army Corps of Engineers Wetland Delineation Manual Technical Report Y-87-1 (January,1987) and the Regional Supplement for the Northcentral and Northeast Region (January, 2012) and meet the criteria for wetland delineation in accordance with the NH DES administrative rules Env-Wt 301.01.

- Arch. Sensitive Areas (SA)
- Structure to be replaced
- Structure to remain
- Stone Work Pad
- Access Road
- 307 Right-of-way
- Stream Centerline
- Town of Lee 75' Wetland Buffer
- Town of Lee 75' Wetland Buffer Impacts
- Temporary Wetland Impacts
- Stream Top of Bank
- Vernal Pools
- Estimated Wetland
- Upland Matting
- Wetlands
- Silt Fence
- Structures on other lines
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- Roads NHDOT
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- Parcels
- 2 Foot Contours

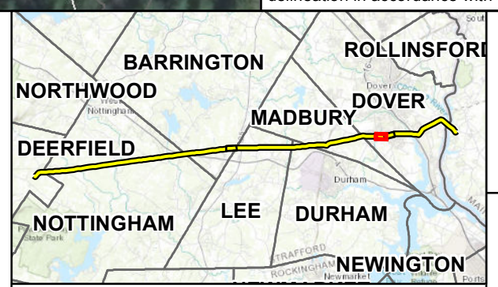
STATE OF NEW HAMPSHIRE
WILLIAM S. McCLUSKY
7/2018
No. 268
CERTIFIED WETLAND SCIENTIST

Town: Dover

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1 inch = 100 feet

0 50 100 Feet



Index Map - 1" - 35,000 feet

Eversource - 307 Line

2019 Maintenance Project

Page 2 of 4

Date: 3/28/2019

NORMANDEAU ASSOCIATES
Environmental Consultants

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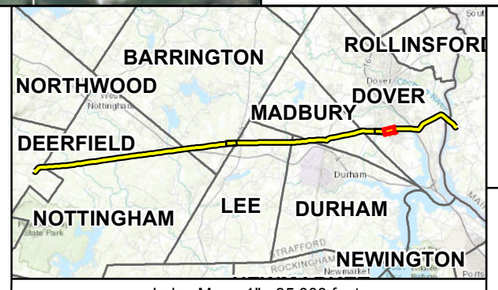
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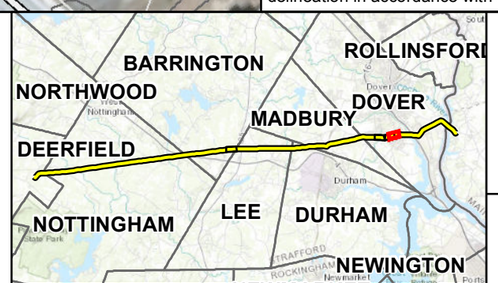
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2019 Maintenance Project

Page 4 of 4

Date: 3/28/2019

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Environmental Consultants

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DOVER CONSERVATION COMMISSION – MINUTES

CITY OF DOVER

Meeting Type:	Regular Meeting
Meeting Location:	**1st Floor Conference Room** - 288 Central Avenue, Dover, NH
Meeting Date:	Monday, April 8, 2019
Meeting Time:	5:30 pm

MEMBERS PRESENT: Robert Atwood (Acting Chair), Tristan Donovan, Amy Kramer Perry, Abby Lyon, Richard Erickson, Jason Aube (Alternate)

STAFF PRESENT: Steve Bird (City Planner)

OTHERS PRESENT: Sarah Barnum, Matt Cardin, Matt Flanders, Steve Haight, James Olcott, Rick Schnable, others

In the absence of the Chair and Vice Chair, Robert Atwood, Secretary, will be the acting Chair.

1. **The meeting was convened at 5:30 PM and a roll call was done.**
2. **APPROVAL OF THE PRIOR MEETING MINUTES** – March 11, 2019

Lyon moved to approve the March 11, 2019 minutes, Kramer-Perry seconded. Vote: 5 in favor, Donovan abstained.

3. **OLD BUSINESS:**
4. **NEW BUSINESS:**

A. City of Dover Conditional Use Permit for Eversource Energy, Assessor's Map I, Lot 29, owned by David & Laurie Landry at 17 Spruce Lane, zoned R-40, and Assessor's Map I, Lot 29-D, owned by Christopher Lacasse at 19 Spruce Lane, zoned R-40.

Sarah Barnum of Normandeau Associates and Matt Cardin and Matt Flanders of Eversource were present to explain the proposal to replace an existing utility pole structure in a utility easement, within a 50-foot wetlands buffer. Temporary wetland buffer impacts are 4,461 square feet. Access will be off of Spruce Lane with a gravel driveway. Will be using temporary timber mats around the pole site. Standard erosion and sediment control measures will be used. Normandeau will monitor construction during the project. We hope to start in late May or early June.

Donovan: What structure is being replaced?

Cardin: The existing poles are wooden and new poles will be steel.

Kramer-Perry: Do you use a different technique now to install the poles?

Cardin: Yes we have less impact by using an auger for the holes and then remove the old poles.

Bird: How close is the proposed access point to the existing residential driveway and could it be used?

Cardin: It is right next to the driveway but we don't want to use it due to the impact our equipment would have.

Bird: You might want to reach out to the two property owners soon because they will be receiving notices soon.

Donovan made a motion to endorse the City of Dover CUP, Aube seconded. Vote: 6 in favor

Donovan stepped down on the next agenda item due to a conflict of interest.

B. Preliminary Discussion on two City of Dover Conditional Use Permits and two NHDES Wetland Permits for Little Bay Marina & Development., LLC, Assessor's Map 8, Lots 9, 10, 11 & 12, zoned LBW, located at 421, 423, 425 & 427 Dover Point Road.

Steve Haight of Civilworks and James Olcutt of TM Marine Construction were present to explain the proposal for 23 multi-family units in 5 buildings, 1 mixed use building, and associated parking and drainage creating 2,304 sq. ft. of wetlands impact, 15,579 sq. ft. of 50 foot wetland buffer impact and 58,203 sq. ft. of Conservation District impact on tidal Little Bay. Additionally 4,300 sq. ft. of a soil causeway is proposed to be replaced in the Conservation District. DES wants to have both projects go through the process together. The number of boat slips will stay at 45. There is no storm water treatment now but all water will be treated by this plan. The second

DRAFT

P19-32 **17 & 19 Spruce Lane**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
I0027-000000	33 MESERVE RD	COLPRIT STEPHEN W & PHEBE C TRUSTEES	COLPRIT STEPHEN W AND PHEBE C REV LIV TR	33 MESERVE RD	DOVER	NH	03820
I0028-000000	SPRUCE LN	COLPRIT STEPHEN W & PHEBE C TRUSTEES	COLPRIT STEPHEN W AND PHEBE C REV LIV TR	33 MESERVE RD	DOVER	NH	03820
I0029-A00000	29 SPRUCE LN	GAGNE JOSEPH E &	GAGNE JODIE A	29 SPRUCE LN	DOVER	NH	03820
I0029-B00000	27 SPRUCE LN	LAAKSO ERIK W		27 SPRUCE LANE	DOVER	NH	03820
I0029-C00000	21 SPRUCE LN	BARRY BRIAN E		21 SPRUCE LN	DOVER	NH	03820
I0030-A00000	7 SPRUCE LN	WOODWARD EVELYN		7 SPRUCE LANE	DOVER	NH	03820
I0030-B00000	SUNNYBROOKE DR	WHITE ENTERPRISES INC		ROUTE 108	DURHAM	NH	03824
I0030-B00019	14 MORGAN WY	KNOWLES BRUCE G		14 MORGAN WAY	DOVER	NH	03820
I0030-B00020	12 MORGAN WY	LINSCOTT CYNTHIA L &	LINSCOTT ARTHUR R JR	12 MORGAN WAY	DOVER	NH	03820
I0030-B00021	10 MORGAN WY	HICKEY MICHAEL J &	HICKEY BETSY L	10 MORGAN WY	DOVER	NH	03820
I0030-C00000	9 SPRUCE LN	CUSSINS FAMILY REVOCABLE TRUST	CUSSINS ROGER L AND MARIANNE J TRUSTEES	269 LONG PONS RD	NORTHWOOD	NH	03261
I0033-001000	SPRUCE LN	MARSHALL JENNIE A &	LOUCKS FREDERICK S	140 SILVER ST	DOVER	NH	03820-3953
I0033-B00000	10 SPRUCE LN	DECOLFMACKER DEBORAH A	DECOLFMACKER GARY J	10 SPRUCE LANE	DOVER	NH	03820
I0033-C00000	26 SPRUCE LN	CARUSO JOHN A JR &	CARUSO MERCEDES R	26 SPRUCE LN	DOVER	NH	03820-4410
I0034-000000	28 SPRUCE LN	POKRZYWINSKI MARJORIE A &	POKRZYWINSKI JOHN M	28 SPRUCE LANE	DOVER	NH	03820
I0034-A00000	30 SPRUCE LN	JOHNS ELLEN R		30 SPRUCE LN	DOVER	NH	03820
I0034-B00000	49 DANIELLE LN	SCHMIDT VAL EUGENE &	SNEARY ALICE R	49 DANIELLE LANE	DOVER	NH	03820
I0035-A00000	36 SPRUCE LN	BRENNAN MATTHEW B &	MILES KATHRYN A	36 SPRUCE LN	DOVER	NH	03820
I0029-000000	17 SPRUCE LN	LANDRY DAVID P &	LANDRY LAURIE R	SPRUCE LN	DOVER	NH	03820
I0029-D00000	19 SPRUCE LN	LACASSE CHRSTOPHER M		12 TREEHOUSE WAY	BARRINGTON	NH	03825-7471
		EVERSOURCE ENERGY	MATTHEW CARDIN	13 LEGENDS DRIVE	HOOKSETT	NH	03106
		NORMANDEAU ASSOCIATES, INC	WILLIAM C MCCLOY, NH CWS	P.O.BOX 205	RUTLAND	VT	05701

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P19-12

Application Type:	Conditional Use Permit for Review
Applicant(s):	Amer Fakhoury & Micheline Elias
Owner(s):	Amer Fakhoury & Micheline Elias
Location:	6-12 Preble (Assessor's Map 4, Lot 40)
Meeting Date:	April 23, 2019

INTENT: Proposal is to allow a building with 37.6% lot coverage where 75% is allowed.

LOTS/UNITS PROPOSED: 12 units plus approximately 1,811 s.f. of commercial

AGENDA ITEM #: 5-D

ACREAGE: 0.257 acres

ZONING DISTRICT: CBD - General

EXISTING LAND USE: Vacant/parking lot

PROPOSED LAND USE: Mixed-use building

SURROUNDING LAND USE: Commercial/Residential

ZBA ACTION: None

ATTACHMENTS: Application materials, TRC minutes, and Site Plan

APPLICATION IS COMPLETE: Yes

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

PERMITS REQUIRED: Conditional Use Permit (minimum lot coverage)

WAIVERS REQUESTED: None

Summary of Request and Background

The applicant is requesting to construct a mixed use building just off of Central Ave behind "Quick-to-Go". The site is proposed to be serviced by municipal water and sewer.

This application was reviewed by the Technical Review Committee on February 28, 2019 (minutes attached).

Consistency with Land Use Regulations

The CBD-General-district requires a minimum lot coverage of 75%. Because the applicant proposes buildings which does not meet this requirement, a Conditional Use Permit is required. If this property were in any other zone, a variance would be required; however, in the CBD, relief is provided by the Planning Board via a CUP rather than by a Zoning Board variance.

Chapter 170-20-B(1) of the City Code states that conditional use approval for relief from the standards may be granted by the Planning Board provided that the proposed project complies with the following standards:

(a) That both public and private BUILDINGs and landscaping shall contribute to the physical definition of RIGHTs OF WAY as CIVIC SPACEs.
(b) That development shall adequately accommodate automobiles, while respecting the pedestrian and the spatial form of public areas.
(c) That the design of STREETs and BUILDINGs shall reinforce safe environments, but not at the expense of accessibility.
(d) That architecture and landscape design shall grow from local climate, topography, history, and BUILDING practice.
(e) That BUILDINGs shall provide their inhabitants with a clear sense of geography and climate through energy efficient methods.
(f) That CIVIC BUILDINGs and public gathering places shall be provided as locations that reinforce community identity and activity.
(g) That CIVIC BUILDINGs shall be distinctive and appropriate to a role more important than the other BUILDINGs that constitute the fabric of the city.
(h) That the preservation and renewal of historic BUILDINGs shall be facilitated.
(i) That the harmonious and orderly evolution of urban areas shall be advanced by the proposed BUILDING and/or use.

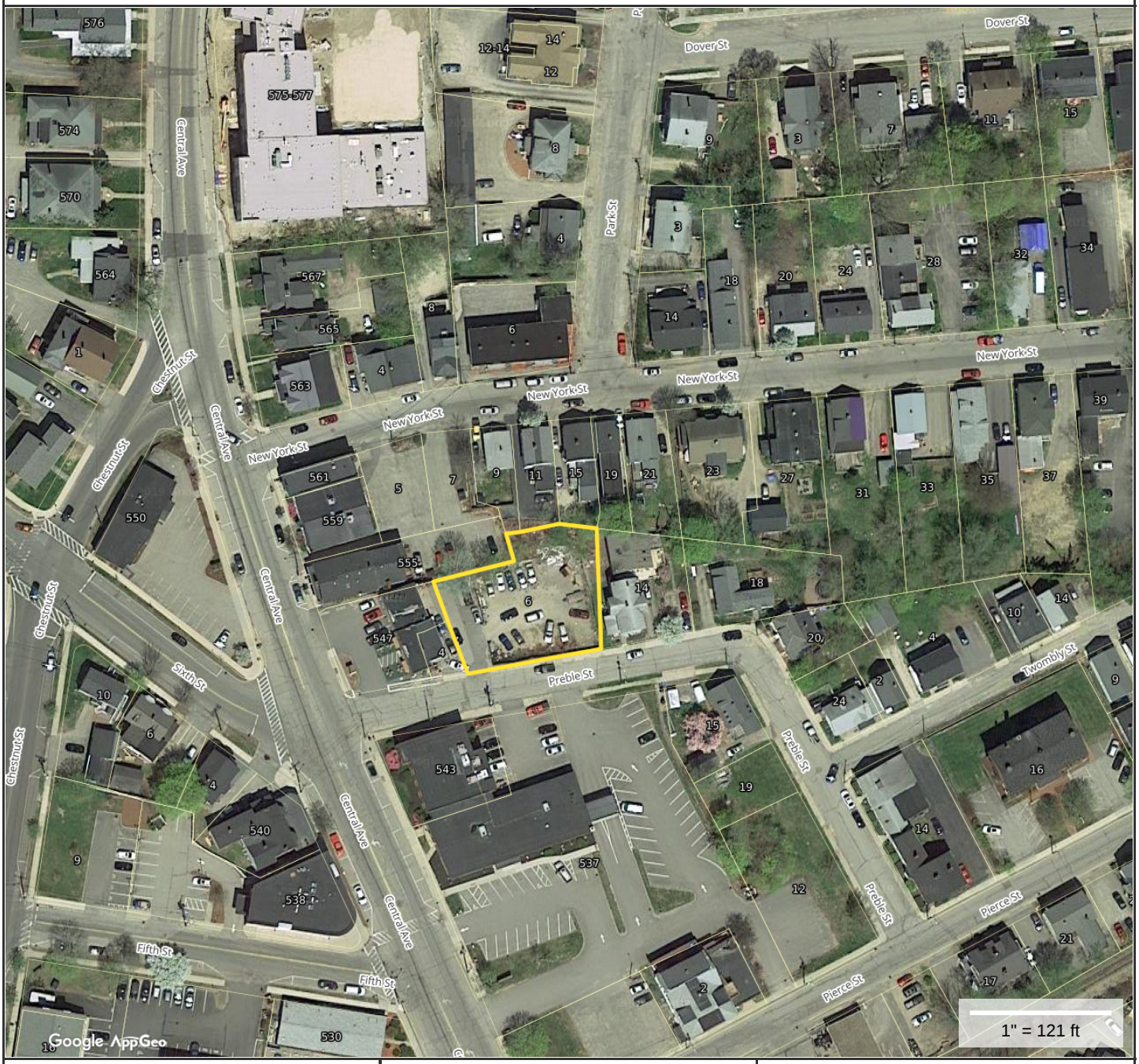
Considering the justification provided in the applicant's narrative, the Conditional Use Permit request meets these requirements.

STAFF RECOMMENDATION:

The Planning Department recommends that the Planning Board accept the application for review, open the public hearing, and vote to approve the Conditional Use Permits with the following conditions to be met **prior to the issuance of the Conditional Use Permit:**

1. The applicant shall be subject to a formal agreement between the Planning Board and the applicant. Said agreement shall be recorded at the Strafford County Registry of Deeds per Chapter 170-20-B(3).

6-12 Preble Street



Property Information

Property ID	04040-000000
Location	6 PREBLE ST
Owner	FAKHOURY AMER &
Land Use	390

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 11/16/2018
Data updated Daily

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P19-11

Application Type:	Site Review for Review
Applicant(s):	Amer Fakhoury & Micheline Elias
Owner(s):	Amer Fakhoury & Micheline Elias
Location:	6-12 Preble (Assessor's Map 4, Lot 40)
Meeting Date:	April 23, 2019

INTENT: To construct a new four-story building and driveway with 11 parking spaces. The building will consist of 12 apartment units on the upper three floors, as well as 966 sq. ft. of office space and 845 sq. ft. of restaurant space on the first floor. A CUP application for lot coverage will also appear before the Planning Board

LOTS/UNITS PROPOSED: 12 residential 966 sq. ft. office and 845 sq.ft. of restaurant

AGENDA ITEM #: 5-E

ACREAGE: 0.257 acres

ZONING DISTRICT: CBD - General

EXISTING LAND USE:
Vacant/parking lot

PROPOSED LAND USE: Mixed-use building

SURROUNDING LAND USE:
Commercial/Residential

ZBA ACTION: None

ATTACHMENTS: Application materials, TRC minutes, and Site Plan

APPLICATION IS COMPLETE:
Yes

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

PERMITS REQUIRED:
Conditional Use Permit (minimum lot coverage)

WAIVERS REQUESTED: None

Summary of Request and Background
The applicant is requesting to construct a mixed use building just off of Central Ave behind "Quick-to-Go". The site is proposed to be serviced by municipal water and sewer.

This application was reviewed by the Technical Review Committee on February 28, 2019 (minutes attached).

Consistency with Land Use Regulations
Chapter 149-4 of the Site Review Regulations of the City Code provides for site review by the Planning Board of new construction of various types. This plan is consistent with those regulations.

STAFF RECOMMENDATION:
The Planning Department recommends the Planning Board to accept the application, open the public hearing, and vote to approve the Site Plan with the following conditions:

Conditions to Be Met Prior to the Signing of Plans:

1. The conditional use permit (P19-12) shall be approved.
2. The applicant shall provide:
   a. A digital version of plan set
   b. Example lease to the satisfaction of the Assistant City Manager
   c. Replacement Letter to Serve from Eversource Engineering or Site Supervisor
3. The applicant must revise final plan set to:
   a. Add the owner's signatures to the final plat submitted for signature to be recorded at the Strafford County Registry of Deeds
   b. Add LLS, PE, Landscape Architect, and Architect signatures and stamps to final plan
   c. Add benches, trees, and receptacles per the CDB Standards.
   d. Note that the applicant shall overlay Preble Street in the Construction Sequence.
   e. Revise lighting plan so that there is no spill over onto abutting properties.
   f. Note that the minimum pavement setback is 5 feet.
   g. Verify the location of the hydrant and FDC to the satisfaction of the Building Official.

Conditions to Be Met Prior to any Construction Activity:

4. A site construction sign with the contact information for the general contractor must be located and approved by the City Engineer or Assistant City Manager.
5. Applicant shall complete Land Use Development Tracking Form, most recently revised version, utilizing the online Pollution Tracking and Accounting Pilot Project (PTAPP) portal. https://www.unh.edu/unhsc/ptapp

6. Install signage noting visibility and noise during any earthwork, to the satisfaction of the City Engineer.

Conditions to Be Met Prior to Issuance of a Building Permit:

7. The new dwelling units shall be assessed and pay the current water and sewer investment fees in place at the time of application for service.
8. Applicant shall record the proposed easement(s) at the Strafford County Registry of Deeds to the satisfaction of the Assistant City Manager.

Conditions to Be Met Prior to Occupancy:

9. Issuance of a certificate of occupancy.
10. Impact fees shall be paid per the invoice included with the Notice of Decision.
11. The applicant shall provide a letter of credit or other form of security acceptable to the City for any unfinished work.

6-12 PREBLE STREET

6-12 PREBLE STREET

DOVER, NEW HAMPSHIRE

NARRATIVE
for
Conditional Use Permit Application

Zoning Ordinance: Article IV, Chapter 170-12 – Applicability of Tables of Use and Dimensional Regulations by District

B. *The minimum regulations for LOT size, LOT FRONTAGE, BUILDING SETBACK standards for front, side and REAR YARDS, BUILDING HEIGHTS, and LOT coverage shall be as specified in the Tables of Use and Dimensional Regulations By District.*

The proposed building provides 37.6% lot coverage where a minimum lot coverage of 75% is required.

B. Conditional Use Permit

(1) Conditional use approval for relief from the standards herein may be granted by the Planning Board (RSA 674:21 II) after proper public notice and public hearing provided that the proposed project complies with the following standards:

(a) ***That both public and private BUILDINGS and landscaping shall contribute to the physical definition of RIGHTS OF WAY as CIVIC SPACES.***

The project included the reconstruction and realignment of a portion of the sidewalk on Preble Street. The new sidewalk runs parallel with the right of way and realigns it into the city right of way.

(b) ***That development shall adequately accommodate automobiles, while respecting the pedestrian and the spatial form of public areas***.

The site layout provides for adequate on-site parking and travel ways as well as sidewalks for residential access.

(c) ***That the design of streets and BUILDINGS shall reinforce safe environments, but not at the expense of accessibility.***

The parking is focused at the rear of the building, while new sidewalks are also proposed at the front and sides of the building. The lighting design provides adequate visibility for the proposed use.

(d) ***That architecture and landscape design shall grow from local climate, topography, history, and BUILDING practice.***

NARRATIVE
for
Conditional Use Permit Application

The site design maintains the existing topography and dramatically improves the architectural and landscaping appearance of Preble Street. The sidewalk improvements make the site more congruous with Central Avenue.

(e) ***That BUILDINGS shall provide their inhabitants with a clear sense of geography and climate through energy efficient methods.***

The proposed dwelling units will be in compliance with State and Local regulations for energy efficiency for new construction, and be provided with energy star appliances.

(f) ***That CIVIC BUILDINGS and public gathering places shall be provided as locations that reinforce community identity and activity.***

There are neither Civic Buildings nor public gatherings places proposed with the project.

(g) ***That CIVIC BUILDINGS shall be distinctive and appropriate to a role more important than the other BUILDINGS that constitute the fabric of the city.***

There are no Civic Buildings proposed with the project.

(h) ***That the preservation and renewal of historic BUILDINGS shall be facilitated.***

No historically significant buildings are proposed or exist on the parcel.

(i) ***That the harmonious and orderly evolution of urban areas shall be secured through the adoption of these regulations.***

The building presence as well as the sidewalk improvements make the site more congruous with Central Avenue.

TRITECH
ENGINEERING CORPORATION

755 Central Avenue
Dover, New Hampshire 03820

Telephone 603.742.8107
Facsimile 603.742.3830

April 2, 2019

Ms. Donna Benton
Assistant City Planner
City of Dover, Planning Department
288 Central Avenue
Dover, New Hampshire 03820

Subject: *Supplemental Response to the March 21, 2019 Response Letter*
Amer Fakhoury & Micheline Elias
6-12 Preble Street
Tax Map 4, Lot 46
Job No. 17141

Dear Donna:

Based on the Technical Review Center meeting March 28, 2019 we have further revised our plans to better address comments from the February 28, 2019 meeting. Specifically:

Planning Comments:

- Please revise application to include:
  - Provide lease agreement for review
    The Lease Agreement is being prepared by the applicant's legal counsel. We understand this will be a condition of approval.
- Please revise plan set to:
  - Add bench/trees/receptacles per the CBD regulations
    We have relocated the bench and trash receptacle to the westerly end of the building as requested.
  - Add book/page to note 16
    Notes 16 and 17 are proposed easements. Draft easement language will be provided to the Planning Department for review. We understand this will be a condition of approval.
  - Add owners signatures
    The owner's signatures will be added to the final plans. We understand this will be a condition of approval.
  - Revise lighting plan to balance out the lighting and confirm it meets the regulations. Only ok to spill onto abutting property if the lots are merged.
    We have further revised the site lighting by lowering the pole light to 12 feet high. We believe that the small amount of spill over onto the abutter will be blocked by the 8 foot high stockade fence which the lighting model does not consider.
  - Engineer, LLS, and Landscape architect to sign and stamp final plan set
    Professional stamps will be provided on final plans. We understand this will be a condition of approval.
  - Snow storage?
    Snow storage and notes have been added to the landscape plan Sheet La-1.

Fire/Inspections Comments:

- Sheet SP-3 shall indicate the location of the FDC.
  The Fire Department Connector has been relocated as requested.
- Sheet SP-3 shall indicate the installation of a fire hydrant.
  We believe the hydrant location is acceptable.

Engineering Comments:

- Overlay Preble due to the amount of patching
  We have revised drainage Note D-17 and D-19 on Sheet SP-4 to reflect that the City of Dover will provide the materials for the installation of the two (2) catch basins requested by the Engineering Department. We have also added Note C-31 to Sheet SP-2 indicating the limits of the pavement overlay.

Economic Development Comments:

- What is the plan for ventilation?
  Note C-30 has been added to Sheet SP-2 indicating that ventilation for a commercial kitchen shall be screened to the satisfaction of the Assistant City Manager.

Enclosed please find the following:

- Eighteen (18) copies of this supplemental TRC Response Letter.
- Eighteen (18) copies of the TRC Response Letter.
- Eighteen (18) copies of the Site Review Application.
- Eighteen (18) copies of the Site Review Check List.
- Eighteen (18) copies of the Conditional Use Permit Application.
- Eighteen (18) copies of the Traffic Assessment.
- Three (3) full size copies of the Plan Set.
- Fifteen (15) half size copies of the Plan Set.

We look forward to discussing this application with Planning Board on April 23, 2019.

Please advise should you have any questions.

Very truly yours,
TRITECH ENGINEERING CORP.

Robert J. Stowell, P.E., L.L.S.
President

RJS / rms
Enclosures
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TRITECH
ENGINEERING CORPORATION

755 Central Avenue
Dover, New Hampshire 03820

Telephone 603.742.8107
Facsimile 603.742.3830

March 21, 2019

Ms. Donna Benton
Assistant City Planner
City of Dover, Planning Department
288 Central Avenue
Dover, New Hampshire 03820

Subject: *Site Review & Conditional Use Permit Application*
Amer Fakhoury & Micheline Elias
6-12 Preble Street
Tax Map 4, Lot 46
Job No. 17141

Dear Donna:

Below please find our responses to the February 28, 2019 Technical Review Committee Minutes as to how our plans have been revised to address these comments.

Planning Comments:

- Water and Sewer Investment fees
  The applicant is aware of these fees.
- Impact fees
  The applicant is aware of these fees.
- Will garage still be used in abutting building? If so, won't be able to park there
  The applicant intends to discontinue the automotive business.
- Consider 8' fence (notes 11 & 12 on sheet SP-2) (note separate building permit needed)
  Notes 11 and 12 on Sheet SP-2 have been modified to indicate the installation of an 8 foot fence.
- Any zoning violations would need to be remedied before Planning Board review
  The applicant is not aware of any outstanding zoning violations.
- Please revise application to include:
  - Letters from utilities
    Attached please find letters to serve from Eversource and Unitil.
  - Provide lease agreement for review
    The Lease Agreement is being prepared by the applicant's legal counsel
- Please revise plan set to:
  - Depict contours 100' off property
    The project plans do not extend 100 feet off property.

- Update neighborhood plan
  Sheet T-2 has been updated as requested.
- Add fence to Ex-1
  Sheet EX-1 depicts all fences.
- Add bench/trees/receptacles per the CBD regulations
  A bench and trash receptacle has been added to the plans at the easterly end of the site. An additional shade tree has been added at the drive entrance. There are limited opportunities on site for shade trees.
- Note how street parking will be addressed
  On street parking is allowed on our side of the street. Striping is not proposed.
- Add sidewalk
  The proposed sidewalk has been extended towards Central Avenue as requested.
- Add book/page to note 16
  Notes 16 and 17 are proposed easements. Draft easement language will be provided to the Planning Department for review.
- Add owners signatures
  The owner's signatures will be added to the final plans.
- Revise note 17 on SP-2 to indicate no Saturday or Sunday hours
  Note 17 on Sheet SP-7 has been revised as requested.
- Revise note 24 on Sp-2 to 45 days and 30 days
  Note 24 Sheet SP-7 has been revised as requested.
- Revise lighting plan to balance out the lighting and confirm it meets the regulations. Only ok to spill onto abutting property if the lots are merged.
  The lighting has been revised and a Lighting Easement will be provided for any over spill of lighting.
- Add more landscaping perimeter/shade trees
  An additional shade tree has been added at the drive entrance. There are limited opportunities on site for shade trees.
- Note what is provided to meet zoning requirements of CBD/indicate the calculation
  Note 7 on Sheet SP-1 has been modified with this data.
- Provide dumpster screening detail
  Detail 1 on Sheet La-2 depicts the dumpster fencing.
  Plantings have also been added to Sheet La-1.
- Engineer, LLS, and Landscape architect to sign and stamp final plan set
  Professional stamps will be provided on final plans.
- Add Planning file number P16-11
  File Number P19-11 has been added to all plans.
- Note signage noting visibility and noise will be installed and used during any earthwork, to the satisfaction of the City Engineer.
  Note 25 has been added to Sheet SP-7.
- Confirm all common site plan notes
  All common site plan notes are included in the plan set.
- Snow storage?
  Snow storage is available at the north east corner of the site. Excess snow will need to be removed from the site.
- Parking permitted on that side of Preble
  On street parking is allowed on our side of the street. Striping is not proposed.

Police Department Comments:

- Site review application lists "Existing" parking conditions as "0". This site is presently littered with cars.
  There are presently no striped spaces on site.

- Extend sidewalk all the way to Central Avenue, or at least to the appropriate Preble Street curb cut for Lot 4-76.
  The proposed sidewalk has been extended towards Central Avenue as requested.
- What is the restaurant space contemplated to occupy 860 square feet? No utility/appliances shown on floor plan.
  No specific use has been identified for the commercial spaces.
- Will garage doors remain at rear of 547 Central Avenue building? Is so, then 3 new spaces shown may not be viable.
  The applicant intends to discontinue the automotive business.
- Sheet SP-2, note C-17: remove crosswalk – will not be maintained by City
  The proposed crosswalk has been eliminated.
- Relocate bike rack to a more visible location
  The bike rack has been relocated as suggested.

Fire/Inspections Comments:

- Sheet SP-3, clarify if the utilities are located on/in the exterior or interior of the structure
  Note S-4 on Sheet SP-23 indicates that the sewer line cannot be exposed with the stair towers.
- Sheet SP-3 Clarify the location of the sewer line into the structure within the stair enclosure
  Note S-4 on Sheet SP-23 indicates that the sewer line cannot be exposed with the stair towers.
- Sheet SP-3 Provide a separate domestic and suppression water line into the building.
  Sheet SP-3 has been modified to provide:
  - *One (1) Fire Suppression Service.*
  - *One (1) Domestic Service for Residential Uses*
  - *One (1) Domestic Service for Commercial Uses.*
- Sheet SP-3 note 6 shall indicate an approved backflow preventer.
  Note 6 on Sheet SP-3 has been revised as requested.
- Sheet SP-3 shall indicate the location of the FDC.
  Note W-10 on Sheet SP-3 depicts the connection location.
- Sheet SP-3 shall indicate the installation of a fire hydrant
  A proposed fire hydrant has been added to the plan as requested.
- Sheet SP-1 discuss location of dumpster pad for vehicular access, transformer, snow storage
  The dumpster has been moved to improve the snow storage.
- Submitted plans shall indicate design and plans comply with the applicable accessibility regulations. (i.e. '09, IBC Chapter 11 w/ NH Amendments and ANSI)) as well as compliance with NH RSA 155-A: 5.
  This is identified as Note 22 on Sheet SP-7.
- Accessible spot on adjacent lot may not work
  These spaces are now shown as a parking easement and we believe this complies with Chapter 18 of the IBC.

Engineering Comments:

- There are multiple water services to the old lot that need to be discontinued
  This note has been added to Sheet DE-1.
- Continue the curb and sidewalk to central ave.
  This proposed sidewalk has been continued towards Central Avenue as requested.
- We need to discuss how to feed the building with water.
  The water service has been modified as noted above.
- There may be an issue with how to feed the lot with electric
  The electric service has been modified.
- Can you get by with a 6 inch sewer service instead of an 8 inch
  The sewer service has been reduced to 6".

- Where does the roof drain
  Note D-23 on Sheet SP-4 notes the connection to the proposed drainage system.
- Add catchbasins on Preble in your new drainline
  These basins have been added to the plans as requested.
- Overlay Preble due to the amount of patching
  The City has asked that the applicant install additional catch basins on Preble Street that are not necessitated by the project. The applicant has shown construction of those basins with expectation that, in exchange, the City would participate in cost sharing for the overlay of Preble Street.

Economic Development Comments:

- What is the plan for ventilation?
  The interior spaces have been designated.
- Are there washer/dryers in the units?
  The interior spaces have been designated.

Planning Board Comments:

- Thanks for adding building materials
  Thank you.
- Lighting under canopy or along walkway?
  Note 4 has been added to Sheet Li-1, which indicates lighting under the canopies will be provided.
- Easement recorded?
  The proposed easements will be recorded. Draft easement language will be provided to the Planning Department for review.
- Plantings around dumpster
  Plantings have been added at the dumpster.
- This would be a great improvement
  Thank you.

Enclosed please find the following:

- Eight (8) Full Size copies of the Plan Set.
- One (1) Half Size copy of the Plan Set.
- Eight (8) copies each
  -This cover letter.
  -The Letters to serve.

We look forward to discussing this application with Technical Review Committee on April 4, 2019.

Please advise should you have any questions.

Very truly yours,
TRITECH ENGINEERING CORP.

Robert J. Stowell, P.E., L.L.S.
President

RJS / rms
Enclosures
\\17141_TRC1_Response Ltr.docx

City of Dover, New Hampshire
SITE REVIEW APPLICATION

[Revision Date: August 02, 2017]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: Amer Fakhoury & Micheline Elias Telephone # (603)-617-8068

Address of Applicant: 21 Bellamy Road Dover, NH 03820

E-Mail Address: quick2go@gmail.com

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

Address of Property Owner: _____

PROPERTY INFORMATION

Address of Property: 6-12 Preble Street

Assessor's Map # 4 Lot(s) # 40

Zoning District(s) Commercial Business District Overlay District(s) _____

Size of Parcel: 11,208 sq. ft. 0.257 ac. Property Deed: Book 3853 Page: 17

Existing Use of Property: Vacant Land

SITE PLAN INFORMATION

Describe Proposed Use: Mixed-Use Commercial and Residential

Area of Parcel to be Developed: 11,208 sq. ft.

If Multi-family Residential, Specify Number of Units & Buildings Proposed: 12 Units, 1 Building

Number of Parking Spaces: Existing 0 Proposed 11

Highway Access (check where applicable): X City Street ____ State Highway

Number of Employees Total: Unknown In Maximum Shift: Unknown

Disposition of Parcel:

Building Footprint 4,212 sq. ft.

Total Building Area 16,848 sq. ft.

Paved Area 5,188 sq. ft.

Building Setbacks:

Front Yard 2.00 ft.

Rear Yard 25.24 ft.

Side Yard: Right 9.86 ft. Left 20.48 ft.

City Water? X Yes ___ No How far is city water from the property? At the frontage

City Sewer? X Yes ___ No How far is city sewer from the property? At the frontage

BUILDING INFORMATION

Type of Building to be Built: Commercial and Residential - Mixed Use

Height of Building: 44' 5" Finished Floor Elevation: 72.10 ft.

Number of Seats (where applicable) Unknown

Estimated value of construction: $2,350,000 Refuse removal: Public/(Private) (circle one)

WAIVER REQUESTS

Site Review Regulations section(s) to be waived: _____

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

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) Robert J. Stowell, Tritech Engineering Corporation

Address 755 Central Ave, Dover, NH 03820 Telephone #: (603)-742-8107

Professional License #: 884 E-mail address: rjs@tritecheng.com

ENGINEER INFORMATION

Name of Engineer and Company (Licensed in N.H.) Robert J. Stowell, Tritech Engineering Corporation

Address 755 Central Ave, Dover, NH 03820 Telephone #: (603)-742-8107

Professional License #: 9903 E-mail address: rjs@tritecheng.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. Furthermore, I/we submit that the existing conditions sheet of the plan represents the lot in question, and that no alteration of the site shall take place during Planning Board review up to and including the pre-construction meeting. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: _____ Date: 1-23-19

Signature of Applicant (*if different from owner*): _____ 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: 1-23-19

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

I, and my successors, hereby the City of Dover or its assigns to enter my property for the purpose of completing the site work as required by the approved plan should the letter or credit or other surety be called. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ Date: 1-23-19

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

CERTIFICATION OF FEES

I, and my successors, hereby certify that I understand that the City of Dover collects impact fees, utility investment fees and inspection fees for projects developed in Dover. Said fees must be paid before a Certificate of Occupancy can be obtained for a structure, unless a different payment schedule is agreed to by the applicant and the City prior to approvals being issued by the Dover Planning Board. Additionally, should the property be in "Current Use" it will be subject to the Land Use Change Tax.

Signature of Property Owner: _____ Date: 1-23-19

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

CITY OF DOVER SITE REVIEW
LIST OF ABUTTERS

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
4	40	Amer Fakhoury & Micheline Elias	21 Bellamy Road, Dover, NH 03820

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Robert J. Stowell	Tritech Engineering Corporation	755 Central Ave, Dover, NH 03820

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

PLANNING BOARD
ESTIMATED FEE SCHEDULE

This is only provided to give you an estimate of the application fees. *After you submit an application, staff will invoice you a total.* All fees must be paid two weeks before the Planning Board meeting. **If the Fee has not been paid, the item will not be placed upon the agenda.**

A. TOTAL FEE paid by cash or check made payable to "City of Dover"

1. Application fee for the following:
   - SUBDIVISION $150.00 x # _____ new lots created = $ _____
   - LOT LINE ADJUSTMENT $200.00 (if more than two lots involved, add $100.00 per lot) = $ _____
   - SITE REVIEW - RESIDENTIAL $100.00 x # 12 per dwelling unit = $ 1,200.00
   - SITE REVIEW – NON-RESIDENTIAL (not to exceed $10,000)
     New construction $.15 sq. ft. x # 4,212 sq. ft. = $ 631.80
     Additions (new floor space) $.10 per sq. ft. x # _____sq. ft. = $ _____
   - IMPERVIOUS PAVED AREA (for new development) OR IMPERVIOUS PARKING LOT ADDITIONS (not to exceed $10,000) $.07 sq. ft. x # 5,188 = $ 363.16
   - MOTEL/HOTEL $35.00 x # ___ per lodging unit = $ _____
   - CHANGE OF USE (not to exceed $5,000)
     Existing floor space $.10 per sq. ft. x # ____ sq. ft. = $ _____
   - CONDITIONAL USE PERMIT $150.00 x # _____ per application = $ _____
   - GRAVEL PIT/ EXCAVATIONS - Application fee $50.00 & Permit fee $75.00 = $ _____
   - EXTENSIONS OF/AMENDMENTS TO/WAIVERS FOR AN APPROVED PLAN ($150.00 minimum) $50.00 x # ____ per hour of review $ _____
   - REQUEST FOR REZONING $150.00 = $ _____
   - DRIVEWAY WAIVER – $100.00 application fee =
     Letter of rejection from Engineering Department, diagram & letter from owner $ _____

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 need to provide to this office the engineer, architect, land surveyor or soil scientist whose professional seal appears on the plan with names and addresses for notices. You will be notified with the amount due, once this has been completed.

1. Applicant & Owner, engineer, architect, land surveyor or soil scientist
   Certified letters fee # 2 of x $8.00 =
2. Certified letters fee: # of abutters _____ X $8.00 = $ 16.00
3. First Class Mail fee (for individual owner of units within a condominium or other collective form of ownership): # of abutters _____ X $1.00 = $ _____
4. Creating/Printing Abutter Labels in triplicate per sheet _____ x $10.00 = $ _____

C. Foster's newspaper public notice fee **$ 80.00**

D. Digital Version of the Plan in PDF/A format or Archive Fee $1.00 x # _____ per sheet of plan set = $ _____

(Revised May 15, 2017)

TOTAL FEE **$** 2,290.96

City of Dover, New Hampshire
SITE PLAN REVIEW SUBMISSION CHECKLIST

[Revision Date: December 15, 2017]

This site plan review checklist, as required by Chapter 149-6-B(2), should be completed by the applicant. It is intended to assist the applicant in the planning process of preparing a Site Plan Review application for Planning Board action. The size of the project will determine the types of information required for review, therefore, a **pre-application conference** with the Planning Department to determine the list of items that must be completed is strongly encouraged.

Fees will be invoiced and are due along with fifteen (15), folded, copies of the plan set and materials, including response to TRC comments, will be due 3 weeks prior to the Planning Board meeting.

The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all site plan review requirements. Please refer to the Site Plan Review Regulations for full details.

APPLICANT: Amer & Michelle Fakhoury File Number: _____

PROJECT TITLE: 6-12 Preble Street

PROPERTY LOCATION: Preble Street Tax Map: 4 Lot: 40

	Explain How Provided	Reviewed
1. Completed and signed Application form	Enclosed	
2. Electronic copy of the engineered/surveyed plan layout	Emailed	
3. Electronic copy of supplementary materials and application	Emailed	
4. Traffic Impact Assessment and Analysis (Standard or Advanced)	Enclosed	
5. Fiscal Impact Analysis (For more than 10 units)	N/A	
6. Waiver requests to the Site Plan Review Regulations, with written justification	N/A	
7. Conditional Use Permit applications	N/A	
8. A colored rendering of the streetscape that will be created along the existing public right-of-way	Enclosed	
9. A colored architectural plan showing all sides of buildings	Enclosed	
10. List of all professional agents to be notified for Planning Board	Enclosed	
11. Letter to Serve from Public and Private Utilities	Enclosed	
12. Eight folded copies of site plan w/scale of not less than 1"=50' or 1"=100' for larger site plans, for TRC. Plans shall contain the following items as appropriate:	Enclosed	
Location map at appropriate scale	Sheet SP-1	
Proposed Project name and title and Planning File #	Sheet T-1	
Date, north arrow and scale	All Sheets	
Names of all abutting property owners	Sheet SP-1	
Name and address of owners and/or applicants	Sheet SP-1	
Signature & stamp of NH licensed land surveyor and/or engineer	All Sheets	
Zoning District boundaries, including any special or overlay districts	Sheet SP-1	
Location of Conservation District areas	N/A	
Location, names and widths of existing and proposed streets, including pavement widths, grades, curbs and crosswalks	Sheet SP-1 & SP-4	
Location and widths of existing & proposed easements & right of ways	Sheet SP-1	
Depict pedestrian walkways and accessible access	All Sheets	
Location and width of existing and proposed access/egress ways	All Sheets	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	Sheet SP-1	

	Explain How Provided	Reviewed
Existing and proposed topographic information at two foot intervals	Sheet T-1	
Existing and proposed buildings and structure locations	All Sheets	
Minimum building setbacks or build to lines on all lots	Sheet T-1	
Location and size of existing and proposed electric, telephone, gas cable and other underground utilities	Sheet SP-3	
Existing and proposed water lines and fire hydrants, including materials and capacity needed	Sheet SP-3	
Location and materials of sanitary sewage facilities within project site and projected additional peak hour sewer load	N/A	
Existing and proposed stormwater lines and facilities	Sheet SP-4	
Lighting plan depicting all existing and proposed exterior light fixtures and a lighting level analysis for parking lots	Sheet Li-1	
Location of Flood Hazard Zone	N/A	
Location of all bodies of water and watercourses	N/A	
Location of wetlands and buffers	N/A	
Neighborhood plan with aerial underlay showing how project relates to abutting uses within the plan set	Sheet T-2	
Existing natural features and/or significant vegetation on property	EX-1	
Depict existing contours up to 100 ft. beyond project limits		
Landscape plan depicting existing and proposed landscaping, prepared by a licensed Professional Landscape Architect	La-1	
Location of parking layout delineating spaces and arrangement; note addressing maximum required spaces	Sheet SP-1	
Location, material and size of existing and proposed pavement area	Sheet SP-1	
Location of proposed fire lanes	N/A	
Specify finished floor elevations of buildings	Sheet SP-4	
Location of solid waste disposal facilities (dumpster, pad and screening, etc.), including required screening	Sheet SP-2	
Depict all service, storage, loading bays and utility areas	Sheet SP-3	
All applicable Dover Common Site Plan notes	All Sheets	
13. Additional Information if appropriate		
Stormwater Management Plan depicting the existing & proposed storm drainage system and engineered drainage analysis	Enclosed	
Stormwater Management System Operation and Maintenance Plan	Enclosed	
Erosion and Sedimentation Control Plan	Enclosed	
Landscape Operation and Maintenance Plan	Enclosed	
Proposed restrictive covenants or homeowners association documents	N/A	
Dates and permit numbers of all required state and federal permits	N/A	
If wetland buffer, indicate placards locations, as applicable	N/A	
Depict test boring locations, groundwater elevations and soil profiles and/or soils types call-outs	Enclosed	
Location of proposed drive-in facilities	N/A	
Provide additional exhibits/technical data determined appropriate by the Planning Board or its staff as required	N/A	

REVIEWED BY: _____ DATE_____ TRC DATE_____

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: May 18, 2017]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: Amer Fakhoury & Mciheline Elias Telephone # (603)-617-8068

Address of Applicant: 21 Bellamy Road, Dover, NH 03820

E-Mail Address: quick2go@gmail.com

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

Address of Property Owner: _____

PROPERTY INFORMATION

Assessor's Map # 4 Lot(s) # 40

Address of Property: 6-12 Preble Street, Dover, NH 03820

Zoning District(s) Commercial Business District Overlay District(s) _____

Existing Use of Property: Vacant Land

CONDITIONAL USE PERMIT INFORMATION

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

☐ Conservation District ☐ RCM Use Overlay District ☐ I-1 District Uses

☐ Groundwater Protection ☐ Off-Street Parking and Loading ☐ Alternative Treatment Center

☐ Wetland Protection District ☒ Central Business District ☐ Heritage Residential District

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

The proposed building provides 37.6% lot coverage where a minimum lot coverage of 75% is required.

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: Robert J. Stowell, Tritech Engineering Corporation

Address 755 Central Avenue, Dover, NH 03820 Telephone #: (603)-742-8107

Professional License #: 9903 E-mail address: rjs@tritecheng.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: 1-23-19

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

Signature of Agent: _____, PRESIDENT Date: 01/23/19

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: 1-23-19

PLANNING BOARD
ESTIMATED FEE SCHEDULE

This is only provided to give you an estimate of the application fees. *After you submit an application, staff will invoice you a total.* All fees must be paid two weeks before the Planning Board meeting. **If the Fee has not been paid, the item will not be placed upon the agenda.**

A. TOTAL FEE paid by cash or check made payable to "City of Dover"

1. Application fee for the following:
   - SUBDIVISION $150.00 x # _____ new lots created = $ _____
   - LOT LINE ADJUSTMENT $200.00 (if more than two lots involved, add $100.00 per lot) =
   - SITE REVIEW – TRANSFER OF DEVELOPMENT RIGHTS Application fee $150.00 = $ _____
   - SITE REVIEW - RESIDENTIAL $100.00 x # 12 per dwelling unit = $ _____
   - SITE REVIEW – NON-RESIDENTIAL (not to exceed $10,000)
     New construction $.15 sq. ft. x # 4,212 sq. ft. = $ _____
     Additions (new floor space) $.10 per sq. ft. x # _____sq. ft. = $ _____
   - IMPERVIOUS PAVED AREA (for new development) OR IMPERVIOUS PARKING LOT ADDITIONS (not to exceed $10,000) $.07 sq. ft. x # 5,188 = $ _____
   - MOTEL/HOTEL $35.00 x # ___ per lodging unit = $ _____
   - CHANGE OF USE (not to exceed $5,000)
     Existing floor space $.10 per sq. ft. x # ____ sq. ft. = $ _____
   - CONDITIONAL USE PERMIT $150.00 x # 1 per application = $ 150.00
   - GRAVEL PIT/ EXCAVATIONS - Application fee $50.00 & Permit fee $75.00 = $ _____
   - EXTENSIONS OF/AMENDMENTS TO/WAIVERS FOR AN APPROVED PLAN ($150.00 minimum) $50.00 x # ____ per hour of review $ _____
   - REQUEST FOR REZONING $150.00 = $ _____
   - DRIVEWAY WAIVER – $100.00 application fee =
     Letter of rejection from Engineering Department, diagram & letter from owner $ _____

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 need to provide to this office the engineer, architect, land surveyor or soil scientist whose professional seal appears on the plan with names and addresses for notices. You will be notified with the amount due, once this has been completed.

1. Applicant & Owner, engineer, architect, land surveyor or soil scientist Certified letters fee # 2 of x $8.00 =
2. Certified letters fee: # of abutters _____ X $8.00 = $ 16.00
3. First Class Mail fee (for individual owner of units within a condominium or other collective form of ownership): # of abutters _____ X $1.00 = $ _____
4. Creating/Printing Abutter Labels in triplicate per sheet _____ x $10.00 = $ _____

C. Foster's newspaper public notice fee **$ 80.00**

(Revised October 2, 2018)

TOTAL FEE $ 246.00

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
4	40	Amer Fakhoury & Micheline Elias	21 Bellamy Road, Dover, NH 03820

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Robert J. Stowell	Tritech Engineering Corporation	755 Central Ave, Dover, NH 03820

Conservation Easement Holder:

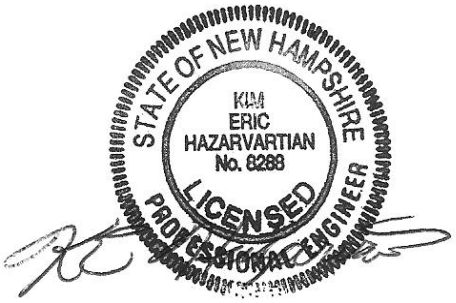
TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

TEPP LLC TRANSPORTATION ENGINEERING, PLANNING AND POLICY

93 Stiles Road, Suite 201, Salem, New Hampshire 03079 USA
800 Turnpike Street, Suite 300, North Andover, Massachusetts 01845 USA
Phone (603) 212-9133 and Fax (603) 226-4108
Email tepp@teppllc.com and Web www.teppllc.com

MEMORANDUM

Ref: 1454
Subject: Traffic Assessment
6-12 Preble Street
Dover, New Hampshire
From: Kim Eric Hazarvartian, Ph.D., P.E., PTOE
Principal
Date: January 24, 2019



INTRODUCTION

Tritech Engineering Corporation has retained TEPP LLC to prepare this traffic-assessment memorandum (TAM). This TAM regards the 6-12 Preble Street mixed-use development in the City of Dover, New Hampshire.

This TAM includes:

- existing site description
- proposed project description
- road description
- public transit
- sight distances
- trip generation
- trip distribution/assignment
- potential traffic impacts

This TAM concludes that the proposed development is not anticipated to add significant new traffic to the area.

EXISTING SITE DESCRIPTION

The site:

- is along the north side of Preble Street
- has an area of about 0.257 acres
- is essentially vacant
- is located across Preble Street from a bank, has a small restaurant and automobile repair facility to the west and has residential development to the east

PROPOSED PROJECT DESCRIPTION

The project will provide:

- one four-story building
- about 966 square feet (sf) of office floor area on the first floor
- about 845 sf of restaurant floor area on the first floor
- total of 12 apartment units on the upper three floors
- a driveway intersecting the north side of Preble Street about 110 feet (ft) west of Central Avenue

ROAD DESCRIPTION

Preble Street:

- is under the jurisdiction of the City
- is an urban local street about 600-ft long
- has its western terminus at Central Avenue, an arterial street that provides a connection with the City central business district (CBD), to/from the south
- has its eastern terminus at Pierce Street, a collector street
- has horizontal alignment that include a small-radius turn about 225-ft east of the proposed driveway intersection
- is almost level near the site
- has asphalt-cement-concrete pavement in overall good condition

- has a 20-ft wide travelway
- has one travel lane per direction
- has parking prohibited on the south side
- includes curb and sidewalk along both sides
- has no posted speed limit
- generally does not include pavement markings
- includes utility poles, some with luminaires

PUBLIC TRANSIT

The Dover Transportation Center is located about 1,500-ft walking distance southwest of the site. The Dover Transportation Center includes the following services:

- Amtrak Downeaster trains, providing direct connections with multiple municipalities in Maine (including Portland); Massachusetts (including Boston) and New Hampshire
- Cooperative Alliance for Seacoast Transportation (COAST) bus routes 1, 2, and 33, providing direct connections with Dover, Newington, Portsmouth, Rochester and Somersworth, New Hampshire and Berwick, Maine
- University of New Hampshire (UNH) Wildcat bus route, providing direct connections with Dover, Durham and Madbury, New Hampshire

COAST bus route 2 runs along Central Avenue near the site and provides connections with the:

- Dover Transportation Center
- City of Rochester, to/from the north
- City of Somersworth, to/from the north
- City CBD, to/from the south
- Town of Newington, to/from the south
- City of Portsmouth, to/from the south

UNH Wildcat bus route 3 runs along Central Avenue near the site and provides connections with the:

- Dover Transportation Center
- City CBD, to/from the south
- Town of Madbury, to/from the south

- Town of Durham, to/from the south
- University of New Hampshire campus in the Town of Durham

SIGHT DISTANCES

The proposed driveway will intersect the north side of Preble Street about:

- 110 ft east of the terminus of Preble Street at Central Avenue
- 225 ft west of the small-radius Preble Street turn

The proximity of the terminus and the small-radius turn serve to limit Preble Street speeds.

Sight distances are anticipated to extend from the terminus to the turn, subject to the potential presence of parked vehicles on the north side of Preble Street east of the proposed driveway. Such presence of parked vehicles is common in an urban area.

CALCULATED TRIP GENERATION

The Institute of Transportation Engineers (ITE) compiles and publishes trip-generation information for a variety of land uses in *Trip Generation Manual*.[1] This authoritative guide for calculating site traffic includes information for:

- multifamily housing (mid-rise), land use 221, based on number of dwelling units[2]
- small office building, land use 712, based on floor area[3]
- fast-casual restaurant, based on floor area[4]

Table 1 shows calculated weekday vehicle trips due to the proposed 8 dwelling units as:

- daily, 347 (total of in and out)
- AM-street-peak hour, 8 (4 in and 4 out)
- PM-street-peak hour, 19 (10 in and 9 out)

[1] ITE, *Trip Generation Manual*, 10th edition (Washington DC, September 2017).

[2] ITE, *Trip Generation Manual*, Volume 2, Data, Residential (Land Uses 200-299), pages 71 to 149.

[3] ITE, *Trip Generation Manual*, Volume 2, Data, Office (Land Uses 700-799), pages 93 to 110.

[4] ITE, *Trip Generation Manual*, Volume 2, Data, Services (Land Uses 900-999), pages 60 to 68.

Table 1. Calculated weekday vehicle-trip generation.

	Vehicle-Trips[a]						
		AM-Street-Peak Hour			PM-Street-Peak Hour		
	Daily	Total	In	Out	Total	In	Out
Residential[a]	65	4	1	3	5	3	2
Office[b]	16	2	2	0	2	0	2
Restaurant[c]	266	2	1	1	12	7	5
Total	347	8	4	4	19	10	9

[a] Based on ITE, *Trip Generation Manual*, multifamily housing (mid-rise), land use 221, 12 dwelling units.

[a] Based on ITE, *Trip Generation Manual*, small office building, land use 712, 966-sf floor area.

[a] Based on ITE, *Trip Generation Manual*, fast-casual restaurant, land use 930, 845-sf floor area.

ITE states, in the authoritative Hooper, *Trip Generation Handbook: A Recommended Practice*, that "the total generation of vehicle trips entering and exiting the multi-use site may be reduced from simply a sum of the individual, discrete trips generated by each land use."[5] The proposed uses constitute a multi-use site. Table 1 conservatively shows no such reduction.

Total trips appear on site driveways but not all are added to roads near the site. Accordingly, ITE compiles information on three trip types, based on empirical data for many land uses, in Hooper, *Trip Generation Handbook*. These three trip types are:

- primary trips that are added to the area and are primarily for visiting the site
- diverted trips that not added to the general area; these trips are from existing traffic on roads near the site
- pass-by trips that are not added to the general area; these trips are from existing traffic passing the site[6]

Table 1 conservatively does not break down trips as primary, diverted or pass-by.

[5] Kevin G. Hooper, P.E., Principal Editor, *Trip Generation Handbook: A Recommended Practice*, 2nd edition (Washington DC: Institute of Transportation Engineers, June 2004), page 85.

[6] Kevin G. Hooper, P.E., Principal Editor, *Trip Generation Handbook*, 3nd edition (Washington DC: Institute of Transportation Engineers, September 2017), page 93.

TRIP DISTRIBUTION/ASSIGNMENT

Calculated trip generation is so low that area traffic operations are not sensitive to trip distribution/assignment. Vehicle-trips to and from the south may predominate due to the proximity of the CBD.

POTENTIAL TRAFFIC IMPACTS

Table 1 shows less than 100 peak-hour vehicle-trips due to the proposed development. More specifically, tabulated peak-hour trip generation is:

- 8 to 19 vehicle-trips
- split entering versus exiting the site
- further split by orientation to and from the north, south, east and west
- further split by amongst area streets

Therefore, the proposed development is not anticipated to add significant new traffic to the area.

CONCLUSION

In conclusion, the proposed development is not anticipated to add significant new traffic to the area.

P19-11 & P19-12 6-12 Preble Street

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
04024-000000	12 PIERCE ST	PEOPLE'S UNITED BANK		850 MAIN ST	BRIDGEPORT	CT	06604
04025-000000	19 PREBLE ST	PEOPLE'S UNITED BANK		850 MAIN ST	BRIDGEPORT	CT	06604
04026-000000	15 PREBLE ST	STERGIOU GEORGE T JR		15 PREBLE STREET	DOVER	NH	03820
04029-000000	543 CENTRAL AV	PEOPLE'S UNITED BANK		850 MAIN ST	BRIDGEPORT	CT	06604
04030-000000	537 CENTRAL AV	PEOPLE'S UNITED BANK		850 MAIN ST	BRIDGEPORT	CT	06604
04039-000000	4 PREBLE ST	TDL GAS & FOOD CORP		547 CENTRAL AVE	DOVER	NH	03820
04041-000000	14 PREBLE ST	HASENFUS JAMES R		14 PREBLE ST	DOVER	NH	03820
04042-000000	18 PREBLE ST	MCCARTHY JACK A	MCCARTHY JENNIFER R	18 PREBLE ST	DOVER	NH	03820
04043-000000	20 PREBLE ST	CULLEN RICHARD A	CULLEN PAMELA J	20 PREBLE STREET	DOVER	NH	03820
04044-000000	24 PREBLE ST	SULLIVAN BRENDAN J		24 PREBLE ST	DOVER	NH	03820
04045-000000	2 TWOMBLY ST	ROY JOHN E		2 TWOMBLY ST	DOVER	NH	03820
04046-000000	4 6 TWOMBLY ST	ROY JOHN E		2 TWOMBLY ST	DOVER	NH	03820-3136
04064-000000	31 NEW YORK ST	HOLLOW JEFFREY M &	O CONNOR JILL	39 GLENBROOK RD APT 5F	STAMFORD	CT	06902-2986
04065-000000	23 25 NEW YORK ST	WIRKALA DANA &	WIRKALA SUSAN	23 25 NEW YORK ST	DOVER	NH	03820
04065-A00000	27 29 NEW YORK ST	DEGNON REBECCA J &	DEGNON JEAN	27 NEW YORK ST	DOVER	NH	03820-3128
04066-000000	21 NEW YORK ST	TURNER EDWIN III	TURNER KAREN	21 NEW YORK STREET	DOVER	NH	03820
04067-000000	19 NEW YORK ST	LEACH RANDEL K &	FREEDA STANLEY J	569 MAIN ST	FARMINGTON	NH	03835-3477
04068-000000	15 NEW YORK ST	O NEIL LOREN		285 OLD MOUNTAIN RD	NORTHWOOD	NH	03261
04069-000000	11 NEW YORK ST	DASS VASANT T		14 OLD DOVER RD	ROCHESTER	NH	03867
04070-000000	9 NEW YORK ST	MASK & MONSTERS LLC	ATTN CHRIS WYSKIEL	561 CENTRAL AVENUE	DOVER	NH	03820
04071-000000	7 NEW YORK ST	MASK 561 CENTRAL LLC		561 CENTRAL AVENUE	DOVER	NH	03820
04072-000000	5 NEW YORK ST	MASK 561 CENTRAL LLC		561 CENTRAL AVENUE	DOVER	NH	03820
04073-000000	561 CENTRAL AV	MASK 561 CENTRAL LLC		561 CENTRAL AVENUE	DOVER	NH	03820
04074-000000	559 CENTRAL AV	MASK 561 CENTRAL LLC		561 CENTRAL AVENUE	DOVER	NH	03820
04075-000000	555 CENTRAL AV	BRATTER MYLES S &	BRATTER ELIZABETH A	75 SPUR RD	DOVER	NH	03820
04076-000000	547 CENTRAL AV	TDL GAS & FOOD CORP		547 CENTRAL AVE	DOVER	NH	03820
05011-000000	538 CENTRAL AV	FIVE POINTS DEVELOPMENT LLC		340 CENTRAL AVE STE 202	DOVER	NH	03820
05012-000000	540 542 CENTRAL AV	SMUTTYNOSE PROPERTIES LLC		110 MAINMAST CIRCLE	NEW CASTLE	NH	03854
05012-A00000	4 SIXTH ST	SMUTTYNOSE PROPERTIES LLC		PO BOX 801	NEW CASTLE	NH	03854
05017-000000	550 CENTRAL AV	GREATER DOVER CHAMBER OF COMMERC		550 CENTRAL AVE	DOVER	NH	03820
27006-000000	565 CENTRAL AV	DIMAMBRO BRIAN &	DIMAMBRO MEREDITH	567 CENTRAL AV	DOVER	NH	03820
27007-000000	563 CENTRAL AV	HOUSING PARTNERSHIP	C/O ALLIANCE ASSET MANAGEMENT	105 LOUDON RD UNIT 1	CONCORD	NH	03301-5601
27008-000000	4 NEW YORK ST	GRIMES-GRUCZKA THADDEUS A		4 NEW YORK ST	DOVER	NH	03820
27009-000000	8 A&B NEW YORK ST	DIMAMBRO BRIAN D &	DIMAMBRO MEREDITH	567 CENTRAL AVE	DOVER	NH	03820
27011-000000	6 12 NEW YORK ST	JAD INVESTMENTS LLC		87 R SIXTH ST	DOVER	NH	03820
27012-000000	4 6 PARK ST	PALMER WILLIAM R &	PALMER PATRICIA	4 PARK STREET	DOVER	NH	03820
27035-000000	14 16 NEW YORK ST	DOAN TONY CHICAO &	ISHII JENNY GLORIA	16 DOVER POINT RD	DOVER	NH	03820
27036-000000	18 NEW YORK ST	SHERPA LAKPA		9 A CHANDLER WAY	DOVER	NH	03820
27037-000000	20 NEW YORK ST	ARSENAULT MARK & MELISSA A TRUSTEES	ARSENAULT FAMILY REVOCABLE TRUST	19 WHITEHORSE DRIVE	RYE	NH	03870
		AMER FAKHOURY & MCIHELINE ELIAS		21 BELLAMY ROAD	DOVER	NH	03820
		TRITECH ENGINEERING CORPORATION	ROBERT J. STOWELL	755 CENTRAL AVENUE	DOVER	NH	03820

CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES - P19-11

Application Type:	Site Plan Review
Applicant(s):	Amer Fakhoury & Micheline Elias
Owner(s):	Amer Fakhoury & Micheline Elias
Location:	6-12 Preble (Tax Map 4, Lot 40)
Date:	February 28, 2019

INTENT: To construct a new four-story building and driveway with 11 parking spaces. The building will consist of 12 apartment units on the upper three floors, as well as 966 sq. ft. of office space and 845 sq. ft. of restaurant space on the first floor. A CUP application for lot coverage will also appear before the Planning Board

LOTS/UNITS PROPOSED: 12 residential 966 sq. ft. office and 845 sq.ft. of restaurant

AGENDA ITEM #: 1

ACREAGE: 0.257 acres

ZONING DISTRICT: CBD - General

EXISTING LAND USE: Vacant/parking lot

SURROUNDING LAND USE:
Commercial/residential

ZBA ACTION: None

PERMITS REQUIRED: Conditional Use Permit (minimum lot coverage)

WAIVERS REQUESTED: None

ATTENDANCE:
Members:
Donna Benton, Planning
Elena Piekut, Zoning
Dave White, Engineering
Jim Maxfield, Inspection Services
Sgt. Marn Speidel, Police
Dan Barufaldi, Economic Development
Frank Torr, Planning Board

Others:
Bob Stowell, Engineer
Amer Fakhoury, Owner
Guilia Fakhoury
Micheline Elias, Owner
Assistant Chief Paul Haas, Fire

Approval of 2/7/2019 Meeting Minutes
D.White moved to approve the minutes of February 7, 2019. D.Barufaldi seconded. Vote: U/A

PLAN REVIEW:
Planning Comments:

- Water and Sewer Investment fees
- Impact fees
- Will garage still be used in abutting building? If so, won't be able to park there
- Consider 8' fence (notes 11 & 12 on sheet SP-2) (note separate building permit needed)
- Any zoning violations would need to be remedied before Planning Board review
- Please revise application to include:
  - Letters from utilities
  - Provide lease agreement for review
- Please revise plan set to:
  - Depict contours 100' off property
  - Update neighborhood plan
  - Add fence to Ex-1
  - Add bench/trees/receptacles per the CBD regulations
  - Note how street parking will be addressed
  - Add sidewalk
  - Add book/page to note 16
  - Add owners signatures
  - Revise note 17 on SP-2 to indicate no Saturday or Sunday hours
  - Revise note 24 on Sp-2 to 45 days and 30 days
  - Revise lighting plan to balance out the lighting and confirm it meets the regulations. Only ok to spill onto abutting property if the lots are merged.
  - Add more landscaping perimeter/shade trees
  - Note what is provided to meet zoning requirements of CBD/indicate the calculation
  - Provide dumpster screening detail
  - Engineer, LLS, and Landscape architect to sign and stamp final plan set
  - Add Planning file number P16-11
  - Note signage noting visibility and noise will be installed and used during any earthwork, to the satisfaction of the City Engineer.
  - Confirm all common site plan notes
  - Snow storage?

DRAFT

- Parking permitted on that side of Preble

Police Department Comments:

- Site review application lists "Existing" parking conditions as "0". This site is presently littered with cars.
- Extend sidewalk all the way to Central Avenue, or at least to the appropriate Preble Street curb cut for Lot 4-76.
- What is the restaurant space contemplated to occupy 860 square feet? No utility/appliances shown on floor plan.
- Will garage doors remain at rear of 547 Central Avenue building? Is so, then 3 new spaces shown may not be viable.
- Sheet SP-2, note C-17: remove crosswalk – will not be maintained by City
- Relocate bike rack to a more visible location

Fire/Inspections Comments:

- Sheet SP-3, clarify if the utilities are located on/in the exterior or interior of the structure
- Sheet SP-3 Clarify the location of the sewer line into the structure within the stair enclosure
- Sheet SP-3 Provide a separate domestic and suppression water line into the building.
- Sheet SP-3 note 6 shall indicate an approved backflow preventer.
- Sheet SP-3 shall indicate the location of the FDC.
- Sheet SP-3 shall indicate the installation of a fire hydrant
- Sheet SP-1 discuss location of dumpster pad for vehicular access, transformer, snow storage
- Submitted plans shall indicate design and plans comply with the applicable accessibility regulations. (i.e. '09, IBC Chapter 11 w/ NH Amendments and ANSI)) as well as compliance with NH RSA 155-A: 5.
- Accessible spot on adjacent lot may not work

Engineering Comments:

- There are multiple water services to the old lot that need to be discontinued
- Continue the curb and sidewalk to central ave.
- We need to discuss how to feed the building with water.
- There may be an issue with how to feed the lot with electric
- Can you get by with a 6 inch sewer service instead of an 8 inch
- Where does the roof drain
- Add catchbasins on Preble in your new drainline
- Overlay Preble due to the amount of patching

Economic Development Comments:

- What is the plan for ventilation?
- Are there washer/dryers in the units?

Planning Board Comments:

- Thanks for adding building materials
- Lighting under canopy or along walkway?
- Easement recorded?
- Plantings around dumpster
- This would be a great improvement

Next Steps: Come back for an unofficial second TRC before submitting to Planning Board per the schedule.

TRC paused at 11:14

DRAFT

SITE DEVELOPMENT PLANS

6-12 PREBLE STREET

6-12 PREBLE STREET
DOVER, NEW HAMPSHIRE

LIST OF PLANS

T-1	-	TITLE SHEET
T-2	-	NEIGHBORHOOD PLAN 1" = 50'
EX-1	-	EXISTING CONDITIONS PLAN 1" = 10'
DE-1	-	DEMOLITION PLAN 1" = 10'
SP-1	-	GENERAL SITE PLAN 1" = 10'
SP-2	-	SITE DEVELOPMENT PLAN 1" = 10'
SP-3	-	UTILITY PLAN 1" = 10'
SP-4	-	GRADING & DRAINAGE PLAN 1" = 10'
SP-4A	-	OFF-SITE DRAINAGE IMPROVEMENTS PLAN 1" = 10'
SP-4B	-	EROSION & SEDIMENT CONTROL PLAN 1" = 10'
SP-5	-	CONSTRUCTION DETAILS
SP-6	-	CONSTRUCTION DETAILS
SP-7	-	CONSTRUCTION DETAILS
SP-8	-	DRAINAGE DETAILS
SP-9	-	SEWER DETAILS
SP-10	-	SEWER DETAILS
Li-1	-	LIGHTING PLAN 1" = 10'
LA-1	-	LANDSCAPING PLAN 1" = 10'
LA-2	-	LANDSCAPING DETAILS
LA-3	-	STREETSCAPE PLAN
A-1	-	BUILDING ELEVATIONS 1/8" = 1'-0"
A-2	-	BUILDING FLOOR PLANS 1/8" = 1'-0"

PREPARED FOR:

AMER FAKHOURY & MICHELINE ELIAS
21 BELLAMY ROAD
DOVER, NEW HAMPSHIRE

OWNER:

AMER FAKHOURY & MICHELINE ELIAS
21 BELLAMY ROAD
DOVER, NEW HAMPSHIRE

PREPARED BY

TRITECH
ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

REVISIONS

DATE:	DESCRIPTION:
03/21/19	REVISED PER TRC COMMENTS
04/02/19	REVISED PER TRC COMMENTS

TITLE SHEET
6-12 PREBLE STREET
6 - 12 PREBLE STREET
DOVER, NEW HAMPSHIRE
JANUARY 24, 2019
JOB No. 17141

SHEET NO.
T-1

(P19-11)

ABUTTERS LIST

MAP 4, LOT 39	TDL GAS & FOOD CORP. 547 CENTRAL AVE DOVER, NH 03820
MAP 4, LOT 76	TDL GAS & FOOD CORP. 547 CENTRAL AVE DOVER, NH 03820
MAP 4, LOT 75	MYLES & ELIZABETH BRATTER 75 SPUR ROAD DOVER, NH 03820
MAP 4, LOT 70	MASK & MONSTERS, LLC 561 CENTRAL AVE DOVER, NH 03820
MAP 4, LOT 69	VASANT T. DASS 14 OLD ROCHESTER ROAD ROCHESTER, NH 03867
MAP 4, LOT 68	LOREN O'NEIL 285 OLD MOUNTAIN ROAD NORTHWOOD, NH 03261
MAP 4, LOT 67	RANDEL K LEACH & STANLEY J FREEDA 569 MAIN STREET FARMINGTON, NH 03835
MAP 4, LOT 41	JAMES R. HASENFUS 14 PREBLE STREET DOVER, NH 03820
MAP 4, LOT 29	CHITTENDEN CORPORATION 2 BURLINGTON SQUARE BURLINGTON, VT 05401
MAP 4, LOT 30	CHITTENDEN CORPORATION 2 BURLINGTON SQUARE BURLINGTON, VT 05401

50 0 25 50 100 200

1"=50'

N

TRITECH
ENGINEERING CORPORATION

TRITECH
ENGINEERING CORPORATION
795 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3630

REVISIONS

DATE:	DESCRIPTION:
03/21/19	REVISED PER TRC COMMENTS
04/02/19	REVISED PER TRC COMMENTS

NEIGHBORHOOD PLAN

6-12 PREBLE STREET

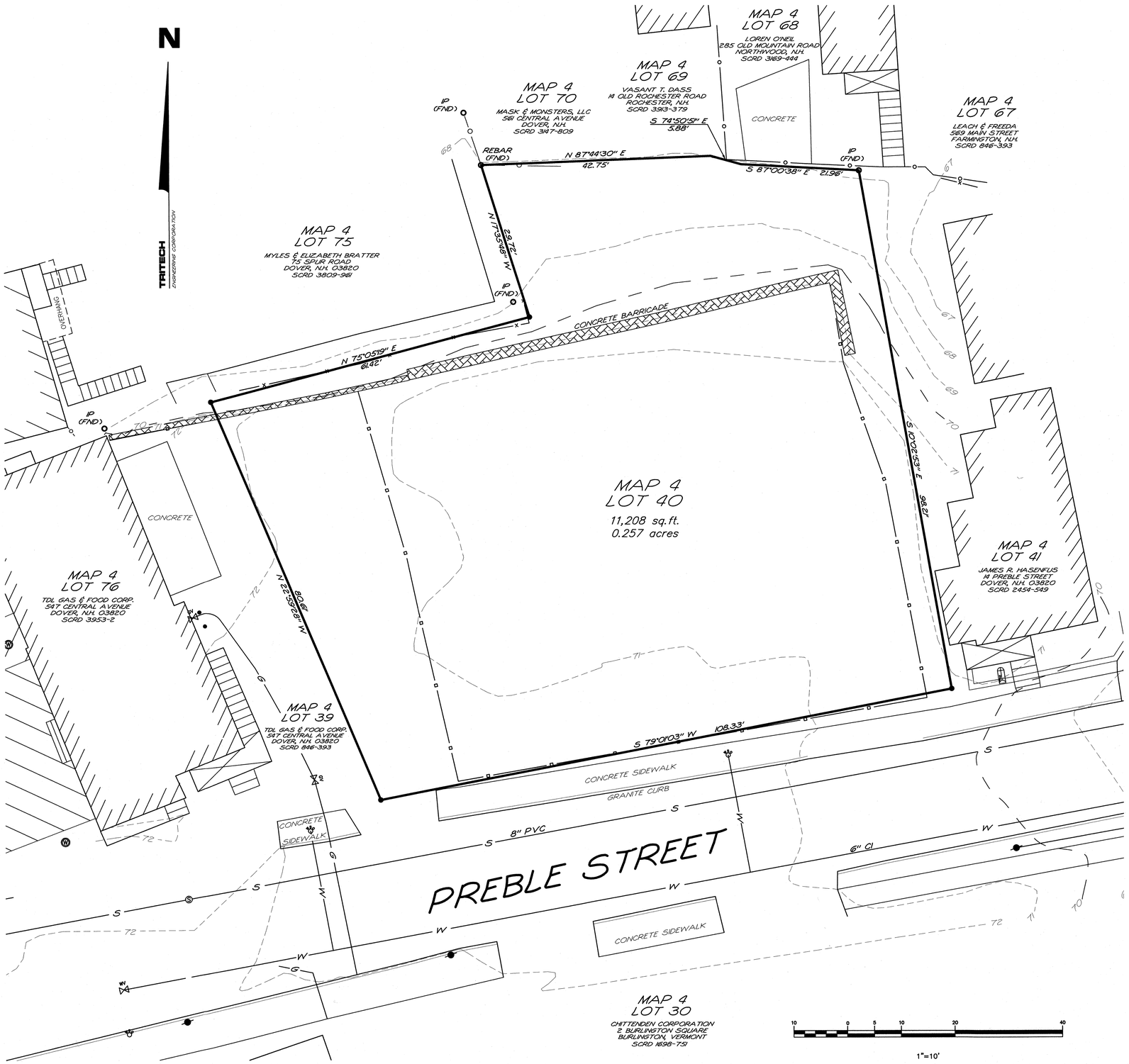
6 - 12 PREBLE STREET
DOVER, NEW HAMPSHIRE

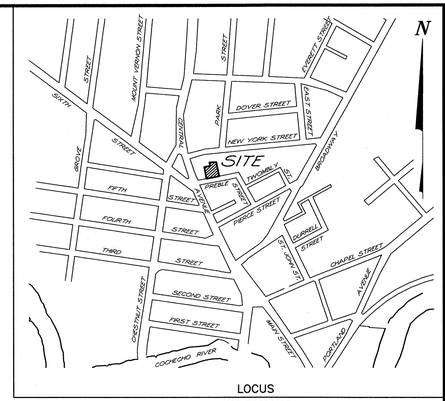
JANUARY 24, 2019
JOB No. 17141
SCALE: 1" = 50'

SHEET NO.

T-2

(P19-11)





LOCUS
(NOT TO SCALE)

NOTES

1.) INTENT: TO SHOW THE EXISTING CONDITIONS OF DOVER TAX MAP 4 LOT 40.

2.) CURRENT OWNER: AMER FAKHOURY & MICHELINE ELIAS
21 BELLAMY ROAD
DOVER, N.H. 03820

3.) TOTAL AREA: 11,208 SQ.FT. = 0.257 ACRES

4.) TAX MAP 4 LOT 40

5.) PROJECT DEED REFERENCE: BOOK 3853 PAGE 17

6.) PROJECT PLAN REFERENCE:

BOUNDARY PLAN
MASK AND SPIDER ENTERPRISES
CENTRAL AVENUE AND
NEW YORK STREET
DOVER, NEW HAMPSHIRE
TRITECH ENGINEERING CORPORATION
NOVEMBER 29, 1995

PLAN OF NEW YORK STREET
AND EAST BRICK STREET CORNER
S.S. JENKINS MAY 1893
SCRD POCKET 2 FOLDER 15 PLAN 1

PLAN OF LAND FOR
DAVID AND DEBORAH JOHNSON
11 & 13 NEW YORK STREET
DOVER, N.H.
ROARING BROOK CONSULTANTS
6/21/90 NOT RECORDED

7.) ZONING: CENTRAL BUSINESS DISTRICT – GENERAL SUB–DISTRICT
MIN. LOT SIZE: N–A
FRONTAGE BUILD OUT: 70% MIN.
MIN. SETBACKS:
FRONT: AVERAGE ± 5 FT
SIDE: 0' MIN TO 24' MAX
REAR: 10 FT MIN.

8.) THE RAW UNADJUSTED CLOSURE OF OUR RANDOM POINT TRAVERSE WAS 1 PART IN 26,000 AND WAS ACCOMPLISHED USING A TOPCON GT 503 TOTAL STATION, DURING THE MONTH OF DECEMBER 2017.

9.) SUBJECT PARCEL IS NOT WITHIN A FEDERALLY DESIGNATED SPECIAL FLOOD HAZARD ZONE (PANEL 0310E, MAP No. 33017C0310E, DATE: 9–30–2015).

10.) LOT IS SERVICED BY MUNICIPAL WATER AND SEWER.

11.) BASIS OF BEARING: BEARING SYSTEM BASED ON GPS FIELD OBSERVATIONS ON FEBRUARY 31, 2017 USING TOPCON HIPER SR RECEIVERS AND OPUS CORRECTED ON MARCH 13, 2017. DATUM BASED ON NEW HAMPSHIRE STATE PLANE COORDINATES SPC (2800 NH), (NAVD 88).

12.) SUBJECT PARCEL IS LOCATED IN THE CITY OF DOVER, COUNTY OF STRAFFORD AND THE STATE OF NEW HAMPSHIRE.

13.) THIS PROPERTY FALLS WITHIN THE FOLLOWING ZONING OVERLAY DISTRICTS: NONE

14.) SUBJECT PARCEL SCS SOIL TYPES –SfC– SUFFIELD, SILT LOAM, 8 TO 15% SLOPES

LEGEND

- REBAR WITH ID CAP TO BE SET
- UTILITY POLE
- SEWER MANHOLE
- S — SEWER LINE
- HYDRANT
- WV WATER GATE VALVE
- WATER SHUT–OFF
- W — WATER LINE
- MONITORING WELL
- GV GAS GATE
- G — GAS LINE
- BOLLARD
- □ — STOCKADE FENCE
- O — CHAIN LINK FENCE
- X — WIRE FENCE

TRITECH
ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3630

REVISIONS
DATE: DESCRIPTION:
3–14–19 REVISED PER TRC COMMENTS

EXISTING CONDITIONS PLAN

AMER FAKHOURY & MICHELINE ELIAS

6 – 12 PREBLE STREET
DOVER, NEW HAMPSHIRE

JANUARY 24, 2019 JOB No. 17141

SCALE: 1" = 10'

SHEET No. **EX-1**

(P19-11)

N

TRITECH
ENGINEERING CORPORATION

755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

IP (FND)

REBAR (FND)

IP (FND)

IP (FND)

IP (FND)

TRITECH
ENGINEERING CORPORATION

CONCRETE BARRICADE

DE-3

DE-9

CONCRETE

DE-4

DE-5

EDGE OF PAVEMENT

DE-2

DE-5

DE-6

DE-7

DE-8

DE-7

DE-6

DE-1

PREBLE STREET

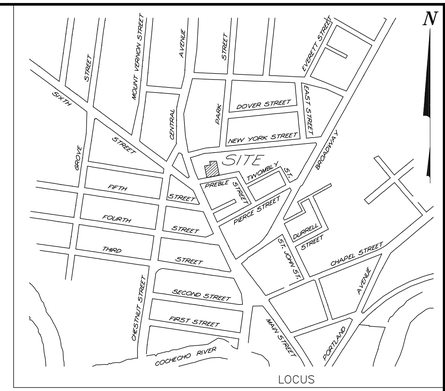
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TRITECH ENGINEERING CORPORATION

TRITECH
ENGINEERING CORPORATION
795 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3630

NOTES

1.) INTENT: TO SHOW THE REDEVELOPMENT OF DOVER TAX MAP 4 LOT 40, SPECIFICALLY: NEW CONSTRUCTION OF A MIXED USE BUILDING WITH 1,811 SQ.FT. OF COMMERCIAL SPACE ON THE FIRST FLOOR, AND TWELVE (12) RESIDENTIAL UNITS ON THE TOP 3 FLOORS

2.) CURRENT OWNER: AMER FAKHOURY & MICHELINE ELIAS
21 BELLAMY ROAD
DOVER, N.H. 03820

APPLICANT: AMER FAKHOURY & MICHELINE ELIAS
21 BELLAMY ROAD
DOVER, N.H. 03820

SIGNATURE

3.) TOTAL AREA: 11,208 SQ.FT.= 0.257 ACRES

4.) TAX MAP 4 LOT 40

5.) PROJECT DEED REFERENCE: BOOK 3853 PAGE 17

6.) PROJECT PLAN REFERENCE: BOUNDARY PLAN
MASK AND SPIDER ENTERPRISES
CENTRAL AVENUE AND
NEW YORK STREET
DOVER, NEW HAMPSHIRE
TRITECH ENGINEERING CORPORATION
NOVEMBER 29, 1995

PLAN OF NEW YORK STREET
AND EAST BRICK STREET CORNER
S.S. JENKINS MAY 1893
SCRD POCKET 2 FOLDER 15 PLAN 1

PLAN OF LAND FOR
DAVID AND DEBORAH JOHNSON
11 & 13 NEW YORK STREET
DOVER, N.H.
ROARING BROOK CONSULTANTS
6/21/90 NOT RECORDED

7.) ZONING: CENTRAL BUSINESS DISTRICT, SUBDISTRICT–GENERAL

	REQUIRED	PROVIDED
MIN. LOT SIZE:	N/A	
MIN. FRONTAGE:	N/A FRONTAGE BUILD OUT 70%	FRONTAGE: (78.13/108.33)*100 = 72%
MIN. SETBACKS:		SETBACKS
FRONT:	+/– 5 FT	FRONT: 2 FT
SIDE:	0 TO 24 FT MAX	SIDE: 10 FT
REAR:	10 FT MIN	REAR: 25 FT

8.) THE RAW UNADJUSTED CLOSURE OF OUR RANDOM POINT TRAVERSE WAS 1 PART IN 26,000, AND WAS ACCOMPLISHED USING A TOPCON GT 503 TOTAL STATION, DURING THE MONTH OF DECEMBER 2017.

9.) SUBJECT PARCEL IS NOT WITHIN A FEDERALLY DESIGNATED SPECIAL FLOOD HAZARD ZONE (PANEL 0310E, MAP No. 33017C0310E, DATE: 9–30–2015).

10.) LOT IS SERVICED BY MUNICIPAL WATER AND SEWER.

11.) BASIS OF BEARING: BEARING SYSTEM BASED ON GPS FIELD OBSERVATIONS ON FEBRUARY 31, 2017 USING TOPCON HIPER SR RECEIVERS AND OPUS CORRECTED ON MARCH 13, 2017. DATUM BASED ON NEW HAMPSHIRE STATE PLANE COORDINATES SPC (2800 NH), (NAVD 88).

12.) SUBJECT PARCEL CONTAINS NO WETLANDS.

13.) PARKING CALCULATION

BUILDING "A" – MIXED USE
12 RESIDENTIAL
1.65 x 12 = 19.8 = 20 SPACES — 20 SPACES
1,790 SQ. FT. COMMERCIAL
1,790 SQ.FT. / 275 = 6.5 = 7 SPACES — NOT ALLOWED
20 SPACES

PARKING PROVIDED
5 SPACES, EXTERIOR
6 SPACES, GARAGE
3 SPACES, (VIA EASEMENT FROM LOTS 39 & 76)
6 SPACES, (VIA LEASE FROM LOT 76) — 20 SPACES

14.) VARIANCES, SPECIAL EXCEPTIONS, CONDITIONAL USE PERMITS:
CONDITIONAL USE PERMIT FOR LOT COVERAGE: PENDING

15.) THE FOLLOWING FEDERAL AND STATE PERMITS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY: NONE

16.) PROPOSED ACCESS AND UTILITY EASEMENT ACROSS MAP 4 LOT 39, IN FAVOR OF MAP 4 LOT 40.

17.) PROPOSED PARKING EASEMENT ON MAP 4 LOT 76 & LOT 39, IN FAVOR OF MAP 4 LOT 40. THIS EASEMENT WILL ALSO PROVIDE FOR LIGHTING OF THE SPACES AS NECESSARY FOR THE USE BY MAP 4 LOT 40.

LEGEND

- REBAR WITH ID CAP TO BE SET
- UTILITY POLE
- SEWER MANHOLE
- HYDRANT
- BUILDING ENTRANCE
- PROPOSED VINYL STOCKADE FENCE
- PROPERTY LINE
- PROPOSED BOLLARD
- PROPOSED SIGN
- PROPOSED DETECTABLE WARNING PAD
- PROPOSED LIGHT
- PROPOSED FIRE DEPARTMENT CONNECTION

REVISIONS

DATE:	DESCRIPTION:
03/21/19	REVISED PER TRC COMMENTS
04/02/19	REVISED PER TRC COMMENTS

GENERAL SITE PLAN

6-12 PREBLE STREET

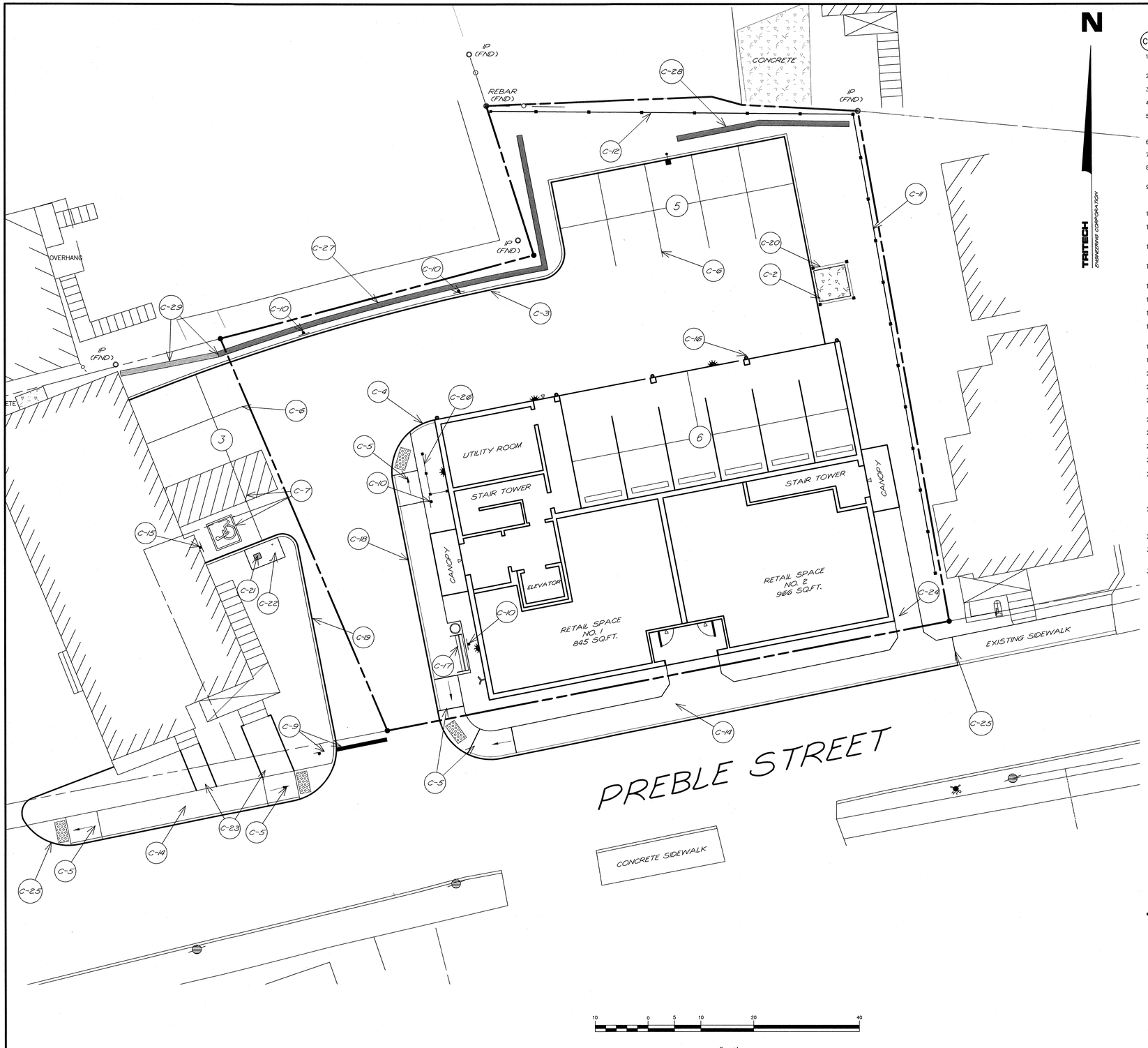
6 - 12 PREBLE STREET
DOVER, NEW HAMPSHIRE

JANUARY 24, 2019 — JOB No. 17141

SCALE: 1" = 10'

SHEET No. SP-1

(P19-11)



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TRITECH ENGINEERING CORPORATION

C-1 CONSTRUCTION NOTES:

1. INSTALL SILT FENCE PER DETAIL 1, SHEET SP-7 OR FILTER SOXX PER DETAIL 6, SHEET SP-7. SEE SHEET SP-4B FOR INSTALLATION LOCATION.
2. INSTALL 6.0' x 6.0' CONCRETE DUMPSTER PAD PER DETAIL 8, SHEET SP-5.
3. INSTALL 170' OF SLOPED GRANITE CURB PER DETAIL 4, SHEET SP-5.
4. INSTALL 7' OF SLOPED GRANITE CURB PER DETAIL 4, SHEET SP-5.
5. INSTALL HANDICAP ACCESSIBLE REINFORCED CONCRETE RAMP (MAXIMUM SLOPE = 1" IN 12") FROM PAVEMENT GRADE TO SIDEWALK GRADE IN COMPLIANCE WITH ALL A.D.A. STANDARDS, PER DETAIL 5, SHEET SP-5.
6. INSTALL WHITE PAVEMENT MARKINGS FOR PARKING SPACES.
7. INSTALL HANDICAP SYMBOL AND HANDICAP STRIPING, PER DETAIL 9, SHEET SP-6 AND DETAIL 1, SHEET SP-6.
8. INSTALL STABILIZED CONSTRUCTION ENTRANCE PER DETAIL 3, SHEET SP-7. SEE SHEET SP-4B FOR INSTALLATION LOCATION.
9. INSTALL 10' STOP BAR AND SIGN IN ACCORDANCE WITH THE 2010 STATE OF N. H. DEPARTMENT OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", PER DETAIL 12, SHEET SP-6.
10. INSTALL SIGN (4) "NO PARKING – FIRE LANE"
11. INSTALL 88' OF 8' HIGH VINYL STOCKADE FENCE PER DETAIL 2, SHEET LA-2. SEPARATE BUILDING PERMIT NEEDED.
12. INSTALL 68' OF 8' HIGH VINYL STOCKADE FENCE PER DETAIL 2, SHEET LA-2. SEPARATE BUILDING PERMIT NEEDED.
13. SAWCUT PAVEMENT, PATCH AND MATCH EXISTING PAVEMENT PER DETAIL 2, SHEET SP-6. SEE SHEET DE-1, SP-3, & SP-4A FOR SPECIFIC SAWCUT LOCATIONS.
14. INSTALL 5' WIDE CONCRETE SIDEWALK WITH VERTICAL CURB PER DETAIL 2, SHEET SP-5.
15. INSTALL HANDICAP PARKING SIGN (1) PER DETAIL 10, SHEET SP-6.
16. INSTALL (5) BOLLARDS PER DETAIL 8, SHEET SP-6.
17. WIDEN CONCRETE SIDEWALK BY 30". INSTALL BENCH AND TRASH BIN PER DETAIL 7 & 8, PER SHEET LA-2.
18. INSTALL 5' WIDE CONCRETE SIDEWALK WITH INTEGRAL CONCRETE CURB, PER DETAIL 1, SHEET SP-5.
19. INSTALL 43' OF SLOPED GRANITE CURB PER DETAIL 4, SHEET SP-5.
20. INSTALL 18' OF 6' HIGH VINYL STOCKADE FENCE PER DETAIL 1, LA-2.
21. INSTALL 4' x 6.75' CONCRETE PAD FOR BIKE RACK PER DETAIL 7, SHEET SP-5.
22. INSTALL UPLIFT BIKE DOCK, 2 BIKE RACK (MODEL 543-4000), DETAIL 5, SHEET LA-2. BIKES FOR THE RESIDENTIAL UNITS SHALL BE STORED INSIDE THE INDIVIDUAL UNITS.
23. INSTALL AT GRADE PAVEMENT FOR APARTMENT WALKWAY.
24. INSTALL 5' WIDE CONCRETE WALK PER DETAIL 1, SHEET SP-5.
25. LIMITS OF SIDEWALK RECONSTRUCTION.
26. INSTALL 12' OF 4' HIGH VINYL STOCKADE FENCE PER DETAIL 3, SHEET LA-2.
27. INSTALL 90' OF RETAINING WALL USING VERSA-LOK SQUARE FOOT UNIT BLOCKS, PER DETAIL 6, SHEET LA-2. FOLLOW CURVE OF EDGE OF PAVEMENT UNTIL WALL MEETS EXISTING RETAINING WALL. GRADE AT BASE OF WALL = 69.7 +/- TOP OF WALL = 72.20 OR 72.50 AS APPROPRIATE.
28. INSTALL 33' OF RETAINING WALL USING VERSA-LOK SQUARE FOOT UNIT BLOCKS, PER DETAIL6, SHEET LA-2. GRADE AT BASE OF WALL = 68.8 TOP OF WALL = 72.0 THEN DROP TO 71.2, 70.4, & 69.6 AS APPROPRIATE.
29. EXISTING RETAINING WALL TO REMAIN.
30. VENTILATION FOR A COMMERCIAL KITCHEN SHALL BE SCREENED TO THE SATISFACTION OF THE ASSISTANT CITY MANAGER.
31. SHADED AREA (SHOWN ON SHEET SP-3) – GRIND EXISTING PAVEMENT & PROVIDE 1½" OVERLAY PAVEMENT

LEGEND

- REBAR WITH ID CAP TO BE SET
- UTILITY POLE
- SEWER MANHOLE
- HYDRANT
- BUILDING ENTRANCE
- PROPOSED VINYL STOCKADE FENCE
- PROPERTY LINE
- PROPOSED BOLLARD
- PROPOSED SIGN
- PROPOSED DETECTABLE WARNING PAD
- PROPOSED LIGHT
- PROPOSED POLE LIGHT
- PROPOSED FIRE DEPARTMENT CONNECTION

TRITECH
ENGINEERING CORPORATION
765 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

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SITE CONSTRUCTION PLAN

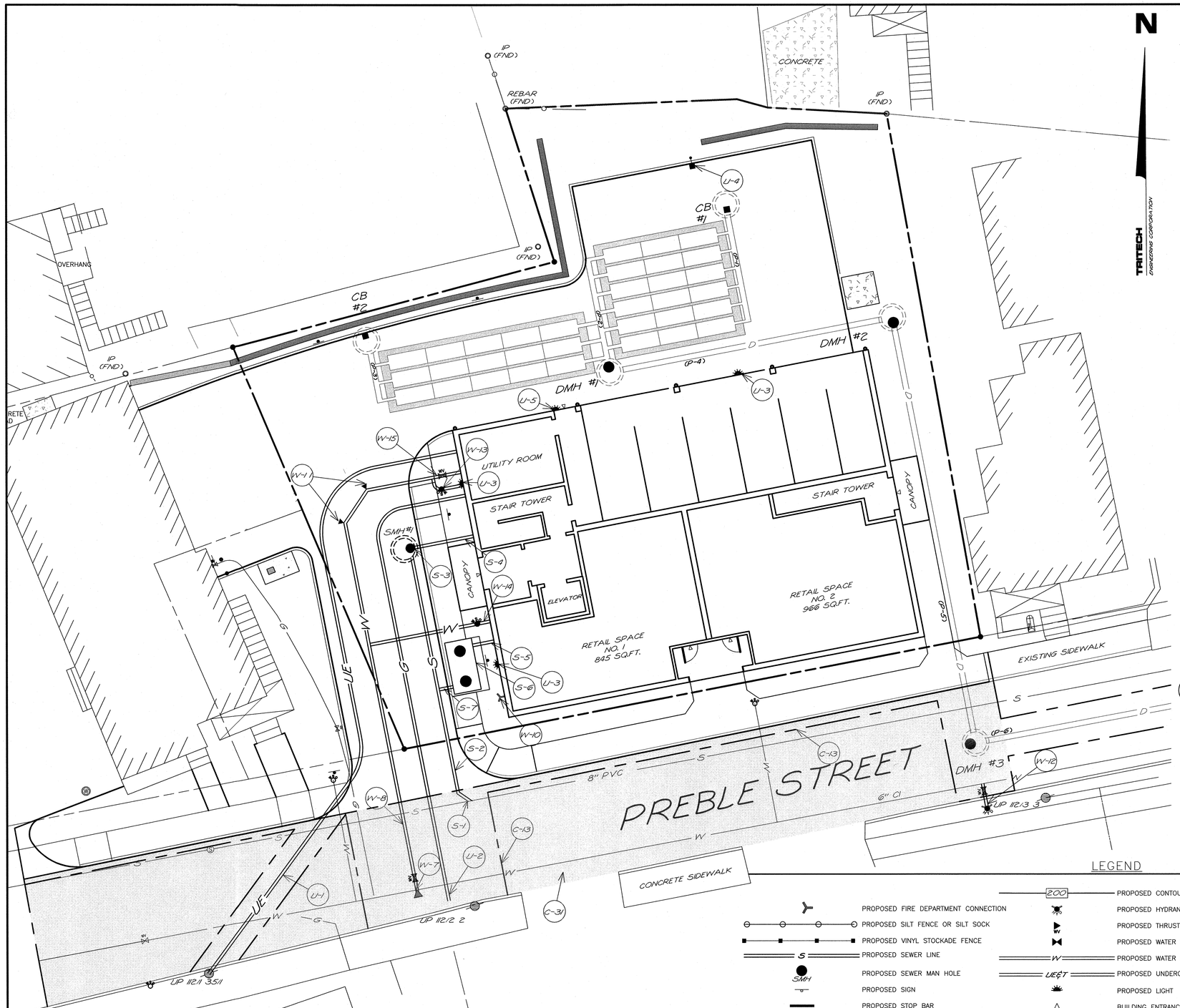
6-12 PREBLE STREET

6 - 12 PREBLE STREET
DOVER, NEW HAMPSHIRE

JANUARY 24, 2019 JOB No. 17141
SCALE: 1" = 10'

SHEET No. **SP-2**

(P19-11)



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TRITECH ENGINEERING CORPORATION

W-1 WATER NOTES:

1. WATERLINE AND APPENDITURES, INSTALLATION, AND MATERIALS SHALL CONFORM WITH THE CITY OF DOVER, NH AND AMERICAN WATER WORKS STANDARDS. ALL VALVES SHALL REQUIRE RESTRAINED MECHANICAL JOINTS USING EITHER MEGA-LUG, GRIP RINGS, OR OTHER METHODS OF RESTRAIN ACCEPTABLE TO THE CITY OF DOVER WATER DEPARTMENT, IN ADDITION TO USE OF CONCRETE THRUST BLOCKS.
2. PRESSURE AND LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST STANDARDS OF AAWA. CHLORINATING AND FLUSHING SHALL BE COMPLETED IN ACCORDANCE WITH THE LATEST STANDARDS OF AAWA, STATE AND LOCAL REGULATIONS.
3. THE PROPOSED STRUCTURE SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED UNDER CHAPTER 109-30 OF THE CODE OF THE CITY OF DOVER AND THE 2015 STATE BUILDING CODES.
4. 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.
5. FIRE DEPARTMENT CONNECTIONS SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13.
6. APPROVED BACKFLOW PREVENTORS SHALL BE PROVIDED FOR ALL WATER LINES.
7. CONNECT TO EXISTING WATER MAIN. INSTALL TAPPING SLEEVE AND 6" GATE VALVE AND THRUST BLOCK.
8. INSTALL 95' - 6" CONCRETE LINED DUCTILE IRON CLASS 52 (C.L.D.I.) WATER MAIN WITH POLYWRAP FROM EXISTING LINE TO BUILDING. MINIMUM DEPTH OF COVER OVER PIPE = 5.5'.
9. DOMESTIC WATER AND LANDSCAPING WATER SHALL BE METERED SEPARATELY.
10. INSTALL FIRE DEPARTMENT CONNECTION.
11. INSTALL THRUST BLOCK
12. INSTALL FIRE HYDRANT ASSEMBLY WITH GATE VALVE, PER DETAIL 5, SHEET SP-6.
13. INSTALL 4 FT OF 2" TYPE K COPPER OR EQUAL FROM 6" MAIN TO BUILDING FOR RESIDENTIAL TENANTS.
14. INSTALL 23 FT OF 2" TYPE K COPPER OR EQUAL FROM 6" MAIN TO BUILDING FOR COMMERCIAL TENANTS.
15. INSTALL 6" WATER GATE VALVE.

S-1 SEWER NOTES:

1. INSTALL "Y" SHAPED FITTING TO CONNECT INTO EXISTING SERVICE LINE AT ELEVATION = 67.10'.
2. INSTALL 45' OF 6"ø SDR 35 SEWER PIPE AT A SLOPE OF 0.020 FT/FT FROM EXISTING SERVICE LINE @ ELEV = 67.10' TO SMH #1 @ ELEV = 68.00'
3. INSTALL NEW SEWER MANHOLE (SMH #1) INVERT IN ELEV = 68.25' INVERT OUT ELEV = 68.00'
4. INSTALL 13' OF 6"ø SDR 35 SEWER PIPE AT A SLOPE OF 0.020 FT/FT FROM SMH #1 @ ELEV = 68.25' TO BUILDING @ ELEV = 68.50' PIPE SHALL NOT PENETRATE SLAB WITHIN THE STAIR TOWER.
5. INSTALL 4' OF 6"ø SDR 35 SEWER PIPE AT A SLOPE OF 0.060 FT/FT FROM SEWER LINE @ ELEV = 68.25' TO BUILDING @ ELEV = 68.50'
6. INSTALL SHEA CONCRETE 1000 GALLON GREASE TRAP PER DETAIL 10, SHEET SP-5. THE CONTRACTOR SHALL COORDINATE WITH THE BUILDING INSPECTORS DEPARTMENT PRIOR TO THE START OF CONSTRUCTION REGARDING PROVIDING AN INTERNAL GREASE TRAP IN LIEU OF THE EXTERIOR ONE SHOWN. INVERT IN ELEV = 68.25' INVERT OUT ELEV = 68.10
7. INSTALL 3' SDR 35 SEWER PIPE INVERT IN ELEV = 68.10' INVERT OUT @ SEWER LINE ELEV = 67.50'

U-1 UTILITY NOTES:

1. INSTALL 125 FT OF UNDERGROUND CONDUIT IN ACCORDANCE WITH EVERSOURCE STANDARDS & DETAIL 4, (TRENCH "A"), SHEET SP-6 FROM EXISTING UTILITY POLE 112/2 2 TO BUILDING.
2. INSTALL GAS SERVICE AS SHOWN. CONNECT PROPOSED GAS SERVICE TO EXISTING GAS MAIN IN PREBLE STREET.
3. INSTALL (3) MCGRAW-EDISON ISS-AF-350-LED-E1-SL4 WALL MOUNTED LIGHT FIXTURE. MOUNTING HEIGHT SHALL BE 12 FEET ABOVE FINISH GRADE.
4. INSTALL CONCRETE POLE BASE AND LIGHTS WHERE SHOWN (1). LIGHTS SHALL BE 52 WATT GALLEON LED - MCGRAW EDISON, GLEON-AF-01-LED-E1-SL4, OR EQUAL, MOUNTED 12' ABOVE FINISHED GRADE, WITH SHIELDING, SEE DETAIL 7, SHEET SP-6.
5. INSTALL (1) MCGRAW-EDISON ISS-AF-450-LED-E1-SL4 WALL MOUNTED LIGHT FIXTURE. MOUNTING HEIGHT SHALL BE 12 FEET ABOVE FINISH GRADE.
6. RECESSED DOWN-LIGHTING WILL BE UTILIZED UNDER ENTRANCE CANOPIES ON EITHER SIDE OF BULDING, AND IS NOT FACTORED INTO PHOTOMETRIC CALCULATIONS.
7. EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 149-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.

LEGEND

- PROPOSED FIRE DEPARTMENT CONNECTION
- PROPOSED SILT FENCE OR SILT SOCK
- PROPOSED VINYL STOCKADE FENCE
- PROPOSED SEWER LINE
- PROPOSED SEWER MAN HOLE
- PROPOSED SIGN
- PROPOSED STOP BAR
- IRON PIPE
- UTILITY POLE
- PROPOSED DRAIN MAN HOLE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED CONTOUR
- PROPOSED HYDRANT
- PROPOSED THRUST BLOCK
- PROPOSED WATER GATE VALVE
- PROPOSED WATER LINE OR SERVICE
- PROPOSED UNDERGROUND ELECTRIC & TELEPHONE
- PROPOSED LIGHT
- BUILDING ENTRANCE
- PROPOSED BOLLARD
- PROPOSED STREET LIGHT
- PROPOSED DRAIN LINE
- PROPOSED CATCH BASIN
- TEST PIT
- EXISTING STREET LIGHT
- EXISTING SEWER MANHOLE
- EXISTING CATCH BASIN
- EXISTING 2 FOOT CONTOUR
- EXISTING 10 FT CONTOUR
- EXISTING SEWER LINE
- EXISTING GAS LINE
- EXISTING WATER LINE OR SERVICE
- EXISTING WATER SHUTOFF
- EXISTING WATER GATE VALVE
- PROPERTY LINE

TRITECH ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3850

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UTILITIES PLAN

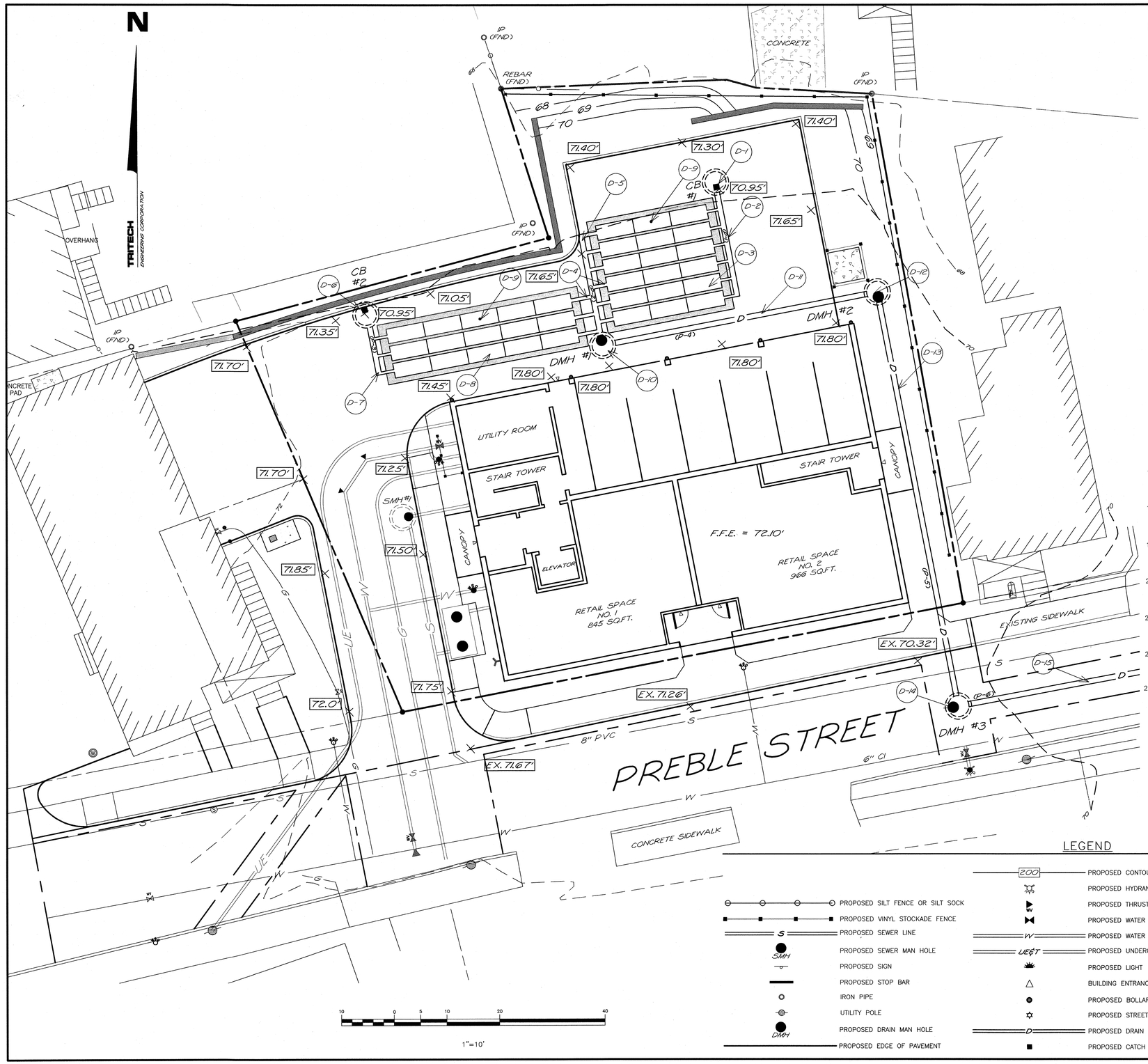
6-12 PREBLE STREET

6 - 12 PREBLE STREET
DOVER, NEW HAMPSHIRE

JANUARY 24, 2019 JOB No. 17141
SCALE: 1" = 10'

SHEET No. SP-3

(P19-11)



D-1 DRAINAGE NOTES

1. INSTALL CB #1 PER DETAIL 8, SHEET SP-8.
   RIM ELEV = 70.95'
   INVERT OUT = 67.55' (P-1)
   SUMP ELEV = 63.55'
2. INSTALL 20' OF 12"ø HDPE DRAINAGE PIPE AS INLET MANIFOLD FROM CB #1 @ ELEV = 67.55' TO 6" CHAMBER INLET STUBS, PART# SC310EPE06T AT ELEV = 67.35'.
3. INSTALL 6 ROWS, 3 CHAMBERS PER ROW, OF STORMTECH SC-310 CHAMBERS AND 6" SPACING BETWEEN ROWS, AND END-CAP AT END OF EACH ROW, SEE DETAIL 6, SHEET SP-8
4. INSTALL 8" OUTLET STUBS, PART# SC310EPE08B, AT ELEV = 67.65' TO (P-2).
5. INSTALL 20' of 12" HDPE DRAIN PIPE (P-2) TO DMH-1 AT ELEV = 67.65'.
6. INSTALL CB #2 PER DETAIL 8, SHEET SP-8.
   RIM ELEV = 70.95'
   INVERT OUT = 67.45' (P-3)
   SUMP ELEV = 63.45'
7. INSTALL 10' OF 12"ø HDPE DRAINAGE PIPE AS INLET MANIFOLD FROM CB #2 @ ELEV = 66.15' TO 6" CHAMBER INLET STUBS, PART# SC310EPE08T AT ELEV = 67.45'.
8. INSTALL 3 ROWS, 5 CHAMBERS PER ROW, OF STORMTECH SC-310 CHAMBERS AND 6" SPACING BETWEEN ROWS, AND END-CAP AT END OF EACH ROW, SEE DETAIL 6, SHEET SP-8
9. INSTALL 4" INSPECTION PORT, PER DETAIL 5, SHEET SP-8
10. INSTALL DMH-1 PER DETAIL 7, SHEET SP-7.
    RIM ELEV = 71.60'
    INVERT IN = 67.40'
    INVERT OUT = 62.30' (P-4)
11. INSTALL 50' OF 12"ø HDPE DRAINAGE PIPE (P-4) FROM DMH-1 TO DMH-2.
    INVERT IN = 67.30'
    INVERT OUT = 66.80'
    SLOPE = 0.010 FT/FT
12. INSTALL DMH-2 PER DETAIL 7, SHEET SP-7.
    RIM ELEV = 70.90'
    INVERT IN = 66.80' (P-4)
    INVERT OUT = 66.70' (P-5)
13. INSTALL 75' OF 12"ø HDPE DRAINAGE PIPE (P-5) FROM DMH-2 TO DMH-3.
    INVERT IN = 66.70'
    INVERT OUT = 65.95'
    SLOPE = 0.010 FT/FT
14. INSTALL DMH-3 PER DETAIL 7, SHEET SP-7.
    RIM ELEV = 70.10 +/-'
    INVERT IN = 65.95' (P-5)
    INVERT OUT = 65.85' (P-6)
15. INSTALL 110' OF 12"ø HDPE DRAINAGE PIPE (P-6) FROM DMH-3 TO DMH-4.
    INVERT IN = 65.85'
    INVERT OUT = 61.45'
    SLOPE = 0.040 FT/FT
16. INSTALL DMH-4 PER DETAIL 7, SHEET SP-7.
    RIM ELEV = 65.00 +/-'
    INVERT IN = 61.45' (P-6)
    INVERT OUT = 61.35' (P-9)
17. INSTALL CB #3 PER DETAIL 8, SHEET SP-8. (MATERIALS TO BE PROVIDED BY THE CITY OF DOVER)
    RIM ELEV = 65.00 +/-'
    INVERT OUT = 61.50' (P-7)
    SUMP ELEV = 57.50'
18. INSTALL 7' OF 12"ø HDPE DRAINAGE PIPE (P-7) FROM CB-3 TO DMH-3.
    INVERT IN = 61.50'
    INVERT OUT = 61.40'
    SLOPE = 0.014 FT/FT
19. INSTALL CB #4 PER DETAIL 8, SHEET SP-8. (MATERIALS TO BE PROVIDED BY THE CITY OF DOVER)
    RIM ELEV = 64.70 +/-'
    INVERT OUT = 61.50' (P-8)
    SUMP ELEV = 57.50'
20. INSTALL 10' OF 12"ø HDPE DRAINAGE PIPE (P-8) FROM CB-4 TO DMH-4.
    INVERT IN = 61.50'
    INVERT OUT = 61.40'
    SLOPE = 0.010 FT/FT
21. INSTALL 82' OF 12"ø HDPE DRAINAGE PIPE (P-9) FROM DMH-4 TO DMH-5.
    INVERT IN = 61.35'
    INVERT OUT = 59.60'
    SLOPE = 0.021 FT/FT
22. INSTALL DMH-5 PER DETAIL 8, SHEET SP-8.
    RIM ELEV = 63.00 +/-'
    INVERT IN = 59.60' (P-9)
    INVERT OUT = 59.50' (EXISTING)
23. ROOF DRAINS FOR THE PROPOSED BUILDING AS WELL AS THE EASTERLY PORTION OF THE EXISTING BUILDING WILL CONNECT TO THE PROPOSED STORMWATER INFILTRATION SYSTEM.

LEGEND

- PROPOSED SILT FENCE OR SILT SOCK
- PROPOSED VINYL STOCKADE FENCE
- PROPOSED SEWER LINE
- PROPOSED SEWER MAN HOLE
- PROPOSED SIGN
- PROPOSED STOP BAR
- IRON PIPE
- UTILITY POLE
- PROPOSED DRAIN MAN HOLE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED CONTOUR
- PROPOSED HYDRANT
- PROPOSED THRUST BLOCK
- PROPOSED WATER GATE VALVE
- PROPOSED WATER LINE OR SERVICE
- PROPOSED UNDERGROUND ELECTRIC & TELEPHONE
- PROPOSED LIGHT
- BUILDING ENTRANCE
- PROPOSED BOLLARD
- PROPOSED STREET LIGHT
- PROPOSED DRAIN LINE
- PROPOSED CATCH BASIN
- TEST PIT
- EXISTING STREET LIGHT
- EXISTING SEWER MANHOLE
- EXISTING CATCH BASIN
- EXISTING 2 FOOT CONTOUR
- EXISTING 10 FT CONTOUR
- EXISTING SEWER LINE
- EXISTING GAS LINE
- EXISTING WATER LINE OR SERVICE
- EXISTING WATER SHUTOFF
- EXISTING WATER GATE VALVE
- PROPERTY LINE

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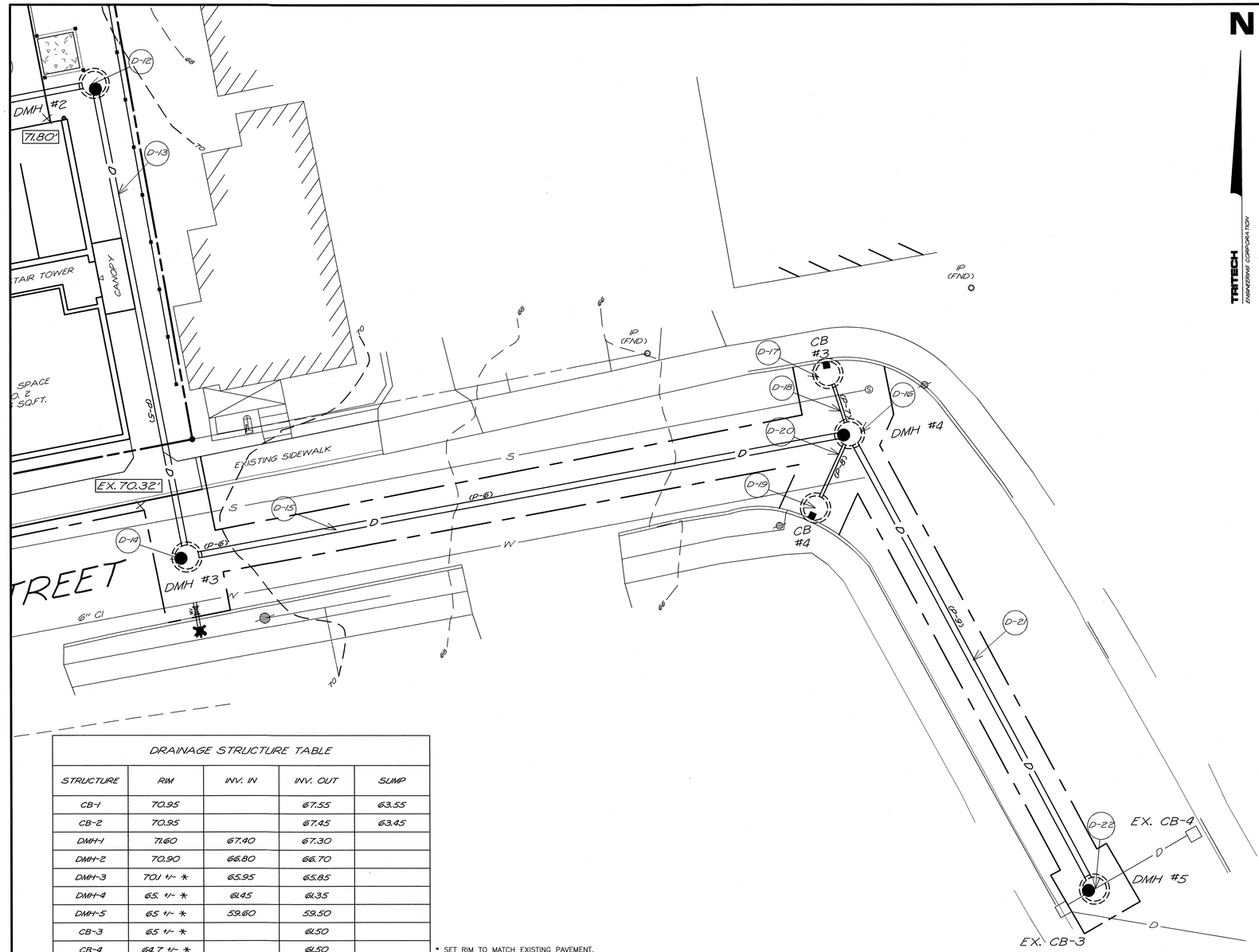
GRADING AND DRAINAGE PLAN

6-12 PREBLE STREET

6 - 12 PREBLE STREET
DOVER, NEW HAMPSHIRE
JANUARY 29, 2019
JOB No. 17141
SCALE: 1" = 10'

SHEET NO. SP-4

(P19-11)



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TRITECH ENGINEERING CORPORATION

LEGEND

- IRON PIPE
- UTILITY POLE
- TP — TEST PIT
- EXISTING STREET LIGHT
- EXISTING SEWER MANHOLE
- EXISTING CATCH BASIN
- 156 — EXISTING 2 FOOT CONTOUR
- 160 — EXISTING 10 FT CONTOUR
- S — EXISTING SEWER LINE
- G — EXISTING GAS LINE
- W — EXISTING WATER LINE OR SERVICE
- EXISTING WATER SHUTOFF
- WV — EXISTING WATER GATE VALVE
- PROPERTY LINE
- PROPOSED EDGE OF PAVEMENT
- 200 — PROPOSED CONTOUR
- PROPOSED HYDRANT
- PW — PROPOSED THRUST BLOCK
- PROPOSED WATER GATE VALVE
- W — PROPOSED WATER LINE OR SERVICE
- UE&T — PROPOSED UNDERGROUND ELECTRIC & TELEPHONE
- PROPOSED LIGHT
- BUILDING ENTRANCE
- PROPOSED BOLLARD
- PROPOSED STREET LIGHT
- D — PROPOSED DRAIN LINE
- PROPOSED CATCH BASIN
- DMH — PROPOSED DRAIN MANHOLE
- PROPOSED SILT FENCE OR SILT SOCK
- PROPOSED VINYL STOCKADE FENCE
- S — PROPOSED SEWER LINE
- SMH — PROPOSED SEWER MANHOLE
- PROPOSED SIGN
- PROPOSED STOP BAR

DRAINAGE STRUCTURE TABLE

STRUCTURE	RIM	INV. IN	INV. OUT	SUMP
CB-1	70.95		67.55	63.55
CB-2	70.95		67.45	63.45
DMH-1	71.60	67.40	67.30	
DMH-2	70.90	66.80	66.70	
DMH-3	70.1 +/- *	65.95	65.85	
DMH-4	65. +/- *	61.45	61.35	
DMH-5	65 +/- *	59.60	59.50	
CB-3	65 +/- *		61.50	
CB-4	64.7 +/- *		61.50	

* SET RIM TO MATCH EXISTING PAVEMENT.

DRAINAGE PIPE TABLE

PIPE	START STRUCTURE	INV.	END STRUCTURE	INV.	SIZE	L.F.	SLOPE
P-1	CB-1	67.55	STORMTECH	67.35	12"	20'	0.010 FT/FT
P-2	STORMTECH	67.65	DMH-1	67.40	12"	20'	0.010 FT/FT
P-3	CB-2	67.45	STORMTECH	67.35	12"	10'	0.010 FT/FT
P-4	DMH-1	67.30	DMH-2	66.80	12"	50'	0.010 FT/FT
P-5	DMH-2	66.70	DMH-3	65.95	12"	75'	0.010 FT/FT
P-6	DMH-3	65.85	DMH-4	61.45	12"	110'	0.040 FT/FT
P-7	DMH-4	61.35	DMH-5	59.60	12"	82'	0.021 FT/FT
P-8	CB-3	61.50	DMH-4	61.40	12"	7'	0.014 FT/FT
P-9	CB-4	61.50	DMH-4	61.40	12"	10'	0.010 FT/FT

10 0 5 10 20 40

1"=10'

TRITECH
ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

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DATE:	DESCRIPTION:
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04/02/19	REVISED PER TRC COMMENTS

DRAINAGE EXTENSION PLAN

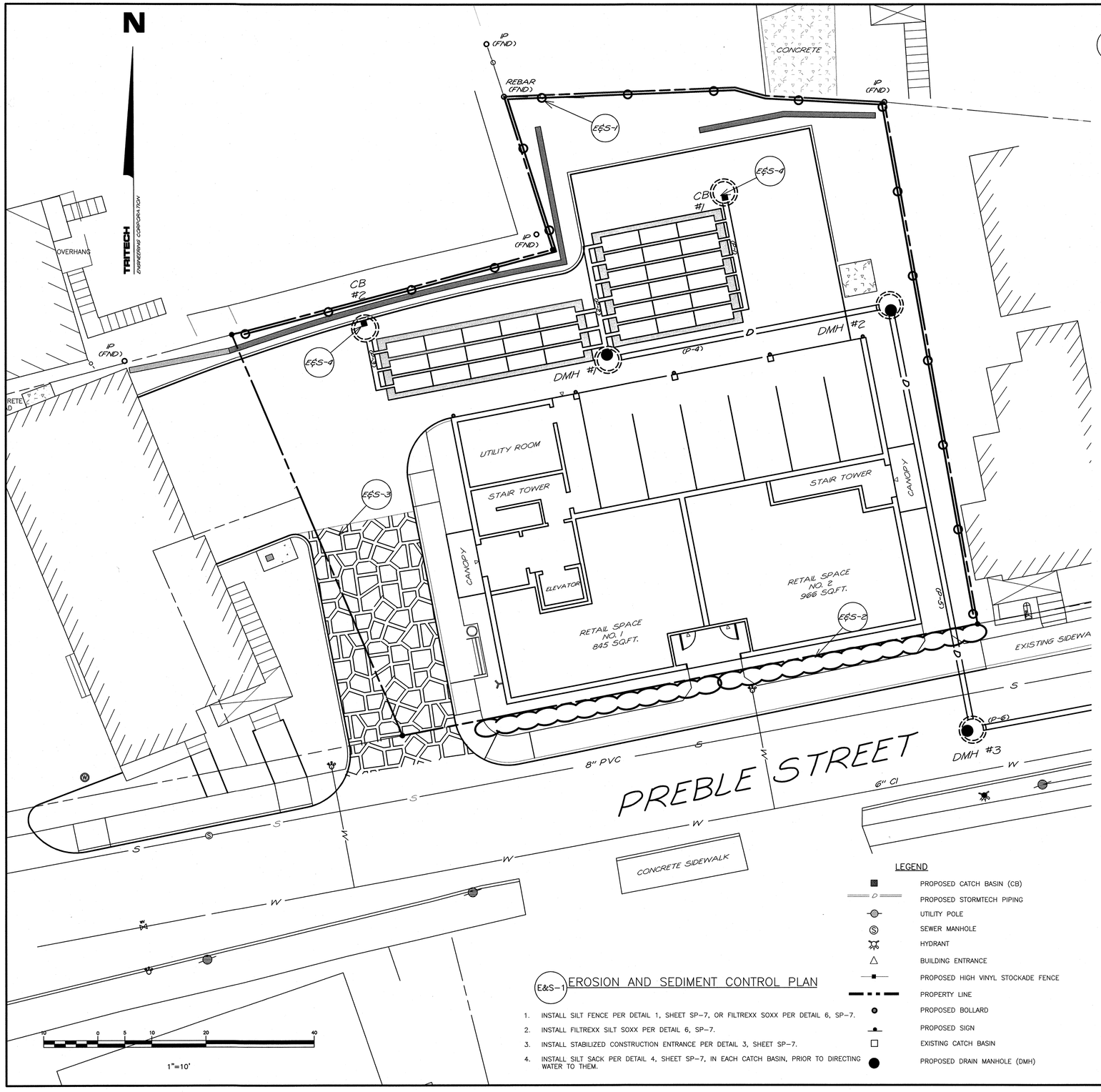
6-12 PREBLE STREET

6 - 12 PREBLE STREET
DOVER, NEW HAMPSHIRE
JANUARY 24, 2019
JOB No. 17141
SCALE: 1" = 10'

SHEET No.

SP-4A

(P19-11)



E&S EROSION AND SEDIMENT CONTROL NOTES

1. THE PROJECT SHALL BE MANAGED TO MEET THE REQUIREMENTS AND INTENT OF RSA 430:53 AND AGR 3800 RELATIVE TO INVASIVE SPECIES.
2. FUGITIVE DUST SHALL BE CONTROLLED IN ACCORDANCE WITH ENV-A 1000.

CRITICAL AREAS

Anywhere on the site that existing vegetation is to be removed will require immediate erosion control treatment. Special care should be taken where runoff enters wetlands. All storm water practices areas shall be stabilized prior to directing storm water to them; specifically all infiltration practices.

EROSION AND SEDIMENT CONTROL PRACTICES

Erosion and sediment control practices will include the use of rip-rap, and silt fence check dams. All erosion and sediment control practices will be constructed and maintained according to the minimum standards and specifications contained in the "New Hampshire Stormwater Manual, Volume 2".

A. Erosion and Sediment Control Measures

1. The erosion control procedures shall conform to Section 645 of the "Standard Specifications for Road and Bridge Construction" of the NH DOT, and the "New Hampshire Stormwater Manual."
2. During Construction and thereafter, erosion control measures are to be implemented as noted. The smallest practical area of land should be exposed at any one time during development. The amount of exposed areas which are temporarily stabilized without permanent stabilization shall be limited to 5 acres.
3. During grading operations, install stone check dams at 50 foot intervals in drainage swales and at drain inlets where shown. Barriers are to be maintained and cleaned until disturbed areas are stabilized.
4. Any disturbed areas which are to be left temporarily, and which will be regraded later during construction shall be machine hay mulched and seeded with rye grass to prevent erosion.
5. Silt fences and other erosion control measures shall be inspected weekly and after every 0.25" rainfall event during the life of the project. All damaged silt fences shall be repaired. Sediment deposits shall periodically be removed.
6. Avoid the use of future open spaces (loam and seed areas) wherever possible during the construction. Construction traffic shall use the roadbeds of future roads and parking areas.
7. Topsoil required for the establishment of vegetation shall be stock piled in amounts necessary to complete finished grading of all exposed areas.
8. Areas to be filled shall be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots or other objectionable material. Stumps shall be disposed by grinding or fill in an approved facility.
9. All fills shall be placed and compacted to reduce erosion, slippage settlement, subsidence or other related problems.
10. All fill shall be placed and compacted in layers not to exceed 8 inches in thickness.
11. Frozen material or soft, mucky or highly compressible material shall not be incorporated into fills.
12. Fill material shall not be placed on a frozen foundation subgrade.
13. Disturbed areas shall be seeded immediately following finished grading.
14. Limit of exposed area that is temporarily stabilized without permanent stabilization is 5 acres or less.
15. All areas not stabilized by Nov. 1st must be protected by Erosion Control Blankets or equivalent and mulched/seeded with winter rye or oats.
16. All disturbed areas must be seed and mulched within 3 days of final grading, permanently stabilized within 15 days of final grading or temporarily stabilized within 45 days of initial disturbance.
17. All ditches and swales are to be stabilized prior to directing runoff to these features.
18. All cut and fill slopes shall be seeded immediately.
19. An area shall be considered stable if one of the following has occurred:
    a.) Base course gravels are installed in areas to be paved
    b.) A minimum of 85% vegetated growth has been established
    c.) A minimum of 3" of non-erosive material such as stone or riprap has been installed
    d.) Erosion control blankets have been properly installed.

B. Vegetative Practice

All ground areas opened up for construction will be regraded, loamed, seeded and mulched in the shortest practical time. All Temporary and Permanent Seeding must be applied prior to October 1st. Employ temporary erosion and sedimentation control devices as detailed in this plan as necessary until adequate stabilization has been assured.

A. Temporary Seeding & Hay Mulching

1. At no time shall any disturbed area remain unstabilized for longer than 30 days. All areas where construction is not completed within 30 days of the initial disturbance shall receive temporary seeding measures.
2. Fertilizer shall be spread on the top layer of loam and worked into the surface. Fertilizer application rate shall be 300 pounds per acre of 10-10-10 fertilizer.
3. Seed shall be Winter Rye, 112 LBS. per acre.
4. Remove stones and trash that will interfere with seeding the area. Where feasible, till the soil to a depth of about 3 inches to prepare a seedbed and mix fertilizer into the soil. The seedbed should be left in a firm and smooth condition. The last tillage operation should be performed across the slope whenever practical.
5. If seeding between May 15th and August 15th, hay mulch shall be applied immediately after seeding at a rate of 1.5 to 2 tons per acre and shall be held in place using appropriate techniques from the Erosion and Sediment Control Handbook.
6. The surface shall be watered and kept moist with a fine spray as required without washing away the soil, until the grass is well established. Any areas which are not satisfactorily covered with grass shall be reseeded, and all noxious weeds are removed.

B. Permanent Seeding & Hay Mulching

1. All disturbed areas shall be loamed (4") and limed. Lime shall be thoroughly incorporated into the loam layer at a rate of 2 tons per acre.
2. Fertilizer shall be spread on the top layer of loam and worked into then surface. Fertilizer application rate shall be 500 pounds per acre of 10-20-20 fertilizer.
3. Seed shall be 48 lbs. per acre, SCS mixture "c" (20 lbs tall fescue, 20 lbs. creeping red fescue and 8 lbs. birds foot trefoil = 48 lbs total.) The soil shall be lightly raked immediately before seeding. One half the seed shall be sown in one direction and the other half at right angles to the original direction. It shall be lightly raked in to the soil to a depth not over 1/4 inch and rolled with hand roller weighing not over 100 points per linear foot to width.
4. Hay mulch shall be applied immediately after seeding at a rate of 1.5 to 2 tons per acre and shall be held in place using appropriate techniques from the Erosion and Sediment Control Handbook. The surface shall be watered and kept moist with a fine spray as required, without washing away the soil, until the grass is well established. Any areas which are not satisfactorily covered with grass shall be reseeded, and all noxious weeds removed.

CONSTRUCTION SEQUENCE

1. Do not begin construction until all local, state and federal permits have been applied for and received.
2. Install silt fences and/or filtrexx soxx as necessary to control erosion and prevent sediment contamination prior to any earth moving activities.
3. Cut and remove trees, shrubs, saplings, brush, vines and other debris and rubbish as specified for construction, and complete demolition as directed on sheet DE-1.
4. Care shall be taken to preserve the infiltration capacity of the infiltrating soil. See the New Hampshire Stormwater Manual for additional information.
5. Construct stormwater Infiltration Practice #1. Do not direct runoff to these practices until the practice and contributing areas are fully stabilized.
6. Building construction may begin.
7. Construct driveways, parking and utilities.
8. Loam and seed disturbed areas in accordance with vegetative practice and general construction notes. Cut and fill slopes shall be seeded immediately after their construction.
9. All areas receiving runoff, including but not limited to the stormwater infiltration shall be stabilized prior to directing runoff to them.
10. All soils that are finish graded must be stabilized within 72 hours of disturbance.
11. Maintain disturbed areas as necessary.

MAINTENANCE

During the period of construction and/or until long term vegetation is established:

1. Seeded areas will be fertilized and reseeded as necessary to insure vegetative establishment.
2. The side slopes will be checked after each significant rainfall.
3. The side slopes will be checked weekly and repaired when necessary until adequate vegetation is established.
4. The silt fence barriers will be checked regularly. Necessary repairs will be made to correct undermining or deterioration of the structures.

WINTER CONSTRUCTION NOTES

1. All proposed vegetated areas which do not exhibit a minimum of 85% vegetation 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 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 melts.
2. All ditches or swales which do not exhibit a minimum of 85% vegetation 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.
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.

E&S-1 EROSION AND SEDIMENT CONTROL PLAN

1. INSTALL SILT FENCE PER DETAIL 1, SHEET SP-7, OR FILTREXX SOXX PER DETAIL 6, SP-7.
2. INSTALL FILTREXX SILT SOXX PER DETAIL 6, SP-7.
3. INSTALL STABILIZED CONSTRUCTION ENTRANCE PER DETAIL 3, SHEET SP-7.
4. INSTALL SILT SACK PER DETAIL 4, SHEET SP-7, IN EACH CATCH BASIN, PRIOR TO DIRECTING WATER TO THEM.

LEGEND

- PROPOSED CATCH BASIN (CB)
- PROPOSED STORMTECH PIPING
- UTILITY POLE
- SEWER MANHOLE
- HYDRANT
- BUILDING ENTRANCE
- PROPOSED HIGH VINYL STOCKADE FENCE
- PROPERTY LINE
- PROPOSED BOLLARD
- PROPOSED SIGN
- EXISTING CATCH BASIN
- PROPOSED DRAIN MANHOLE (DMH)

TRITECH ENGINEERING CORPORATION
765 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
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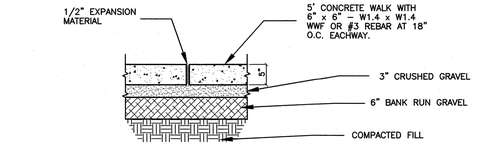
EROSION AND SEDIMENT CONTROL PLAN

6-12 PREBLE STREET

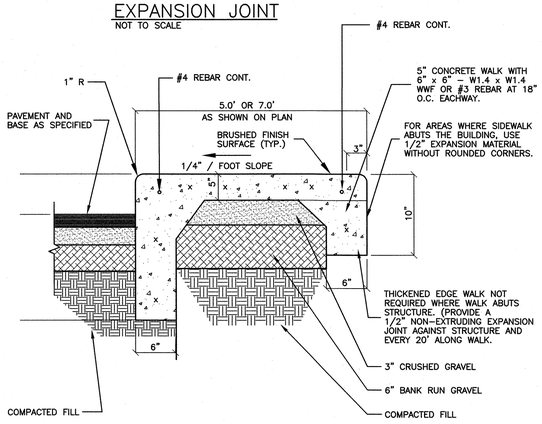
6 - 12 PREBLE STREET
DOVER, NEW HAMPSHIRE
JANUARY 24, 2019 JOB No. 17141
SCALE: 1" = 10'

SHEET No. SP-4B

(P19-11)

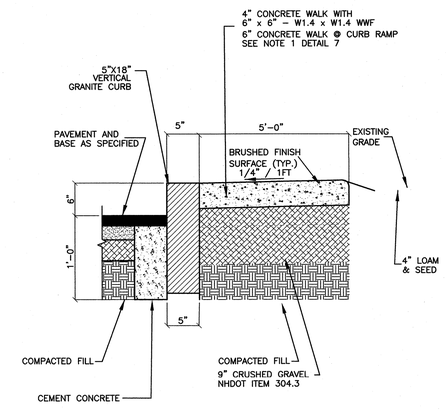


EXPANSION JOINT
NOT TO SCALE

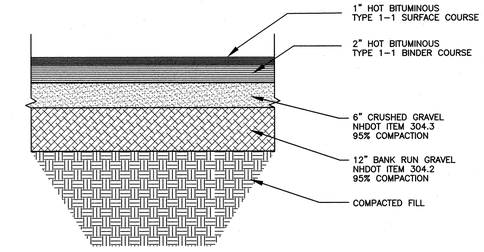


CONCRETE WALK W/CONCRETE CURB
NOT TO SCALE

1 CONCRETE WALK DETAILS
NOT TO SCALE



2 CONCRETE SIDEWALK WITH GRANITE CURB DETAIL
NOT TO SCALE



GENERAL MATERIALS NOTES – APPLIES TO ALL DETAILS UNLESS NOTED.

1.) MATERIALS & CONSTRUCTION METHODS SHALL CONFORM TO THE STATE OF NEW HAMPSHIRE STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION.
2.) COMPACTED FILL UNDER PAVEMENT OR CONCRETE AREAS SHALL BE FREE OF ORGANIC MATERIAL & COMPACTED IN 6" LIFTS TO NOT LESS THAN 95% OPTIMUM DENSITY.
3.) BANK RUN GRAVEL SHALL BE:

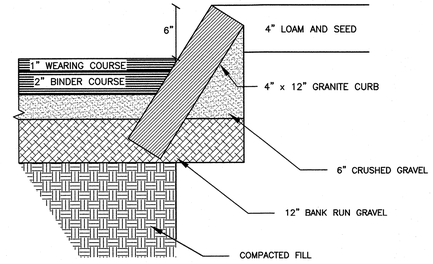
SIEVE	PERCENT PASSING
6"	100%
#4	25 – 70%
#200	≤ 12% OF PASSING #4

4.) CRUSHED GRAVEL SHALL BE:

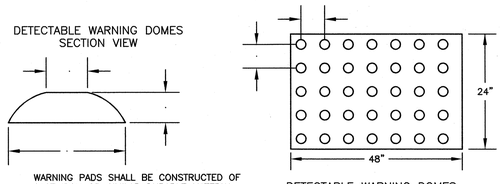
SIEVE	PERCENT PASSING
3"	100%
2"	95 – 100%
1"	55 – 85%
#4	27 –52%
#200	0 – 12%

5.) BASE COURSE OF PAVEMENT SHALL BE 3/4" DIA. TYPE I-1 HOT BITUMINOUS CONCRETE (225 LBS/SQ.YD.)
6.) WEARING COURSE OF PAVEMENT SHALL BE 1/2" DIA. TYPE I-1 HOT BITUMINOUS CONCRETE (115 LBS/SQ.YD.)

3 TYPICAL PAVEMENT SECTION
NOT TO SCALE



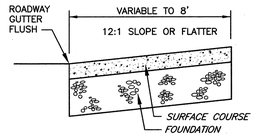
4 SLOPED GRANITE CURB SECTION
NOT TO SCALE



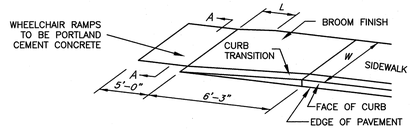
NOTES:
1. THE DIMENSIONS SHOWN AT ROADWAY EDGE ARE FIXED DISTANCES.
2. RAMP CROSS SECTION TO BE SAME AS ADJACENT SIDEWALK; I.E.. DEPTH OF SURFACE AND FOUNDATION.
3. PORTLAND CEMENT CONCRETE RAMPS ARE TO BE TEXTURED BY BROOMING IN A DIRECTION PARALLEL TO THE LENGTH OF THE RAMP.
4. SIDEWALKS THAT CROSS DRIVEWAYS SHALL BE RAMPED TO MEET THE GRADE OF DRIVEWAY.
5. THESE DIMENSIONS ARE SUBJECT TO CHANGE IN THE FIELD IF EXISTING APPURTENANCES OR CONDITIONS WILL MAKE THE RAMP LOCATIONS IMPRACTICAL OR UNSAFE.
6. DETECTABLE WARNINGS TO BE INSTALLED 6" FROM EDGE OF RAMP
7. DETECTABLE WARNINGS PADS SHALL BE CONSTRUCTED OF CAST IRON OR SIMILAR DURABLE MATERIAL APPROVED BY THE CITY OF ROCHESTER.

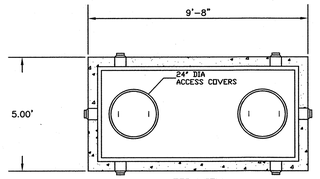
5 WHEEL CHAIR RAMP
NOT TO SCALE

W	L	S.Y.
5'–0"	2'–9"±	6.3
6'–0"	2'–0"±	7.2
7'–0"	1'–3"±	8.0
8'–0"	0'–0"	8.1

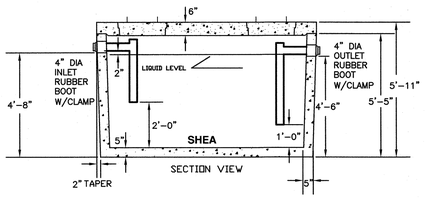


SECTION A–A





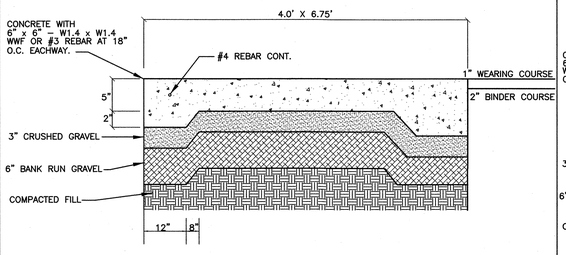
TOP VIEW



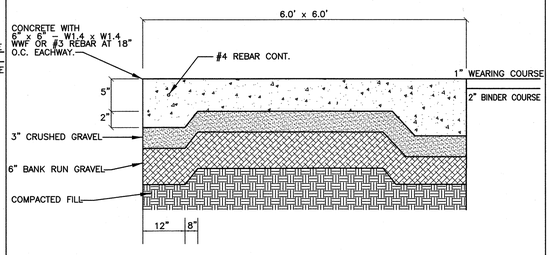
SECTION VIEW

NOTES:
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
2. CONSTRUCTION OF GREASE TRAPS CONFORMS WITH 310 CMR, SECTION 15.00 DEP TITLE 5 REGS.
3. ALL REINFORCEMENT PER ASTM C1227.
4. TEES AND BAFFLES SOLD SEPARATELY.
5. TONGUE & GROOVE JOINT SEALED WITH BUTYL RESIN.
6. DESIGNED FOR AASHTO HS–20 LOADING, 1 TO 5 FT COVER.

10 1000 GALLON GREASE TRAP
NOT TO SCALE



7 BIKE RACK CONCRETE PAD DETAIL
NOT TO SCALE



8 DUMPSTER CONCRETE PAD DETAIL
NOT TO SCALE

9 NOT USED
NOT TO SCALE

TRITECH
ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
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CONSTRUCTION DETAILS

6-12 PREBLE STREET

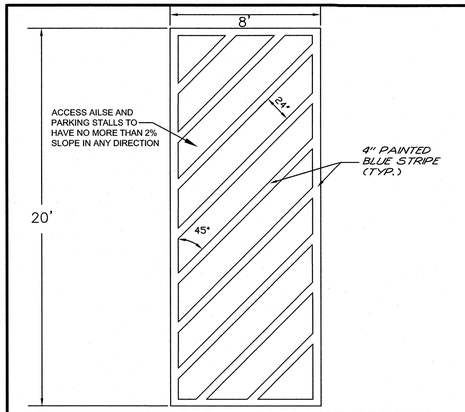
6 - 12 PREBLE STREET
DOVER, NEW HAMPSHIRE

JANUARY 24, 2019

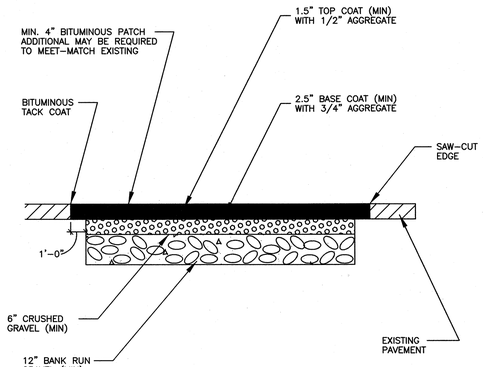
JOB No. 17141

SHEET NO.
SP-5

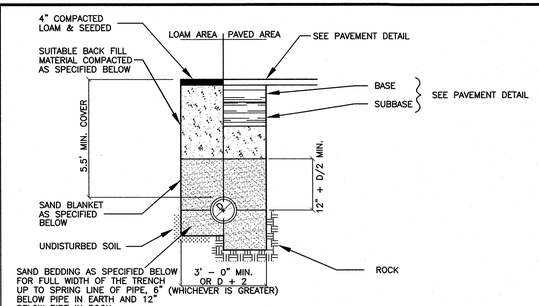
(P19-11)



1 ADA HANDICAP PARKING SPACE STRIPING
NOT TO SCALE



2 TRENCH PATCH DETAIL
NOT TO SCALE

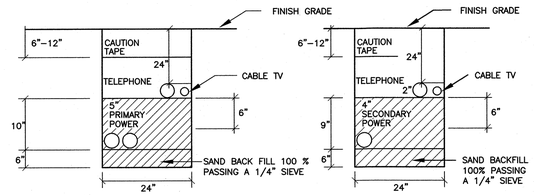


SAND BLANKET & BEDDING

SIEVE SIZE	%FINER BY WEIGHT
1/2"	90 – 100
200	0 – 15

BACK FILL MATERIAL BELOW PAVED OR CONCRETE AREAS, BEDDING MATERIAL, AND SAND BLANKET SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T 99, METHOD C. SUITABLE BACK FILL MATERIAL BELOW LOAM AREAS SHALL BE COMPACTED TO NOT LESS THAN 90% OF AASHTO T 99, METHOD C.

3 WATER LINE TRENCH
NOT TO SCALE



ELECTRICAL TRENCH "A"
NOT TO SCALE

ELECTRICAL TRENCH "B"
NOT TO SCALE

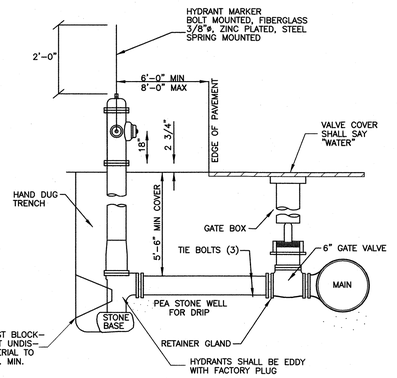
1.) TELEPHONE CONDUIT SHALL BE 3" SCHEDULE 40 PVC, WITH STEEL SWEEPS AT RISER POLE, 90° BENDS AND AT BUILDING.

2.) LEAVE PULL ROPE IN ALL CONDUITS FOR CABLE INSTALLATION.

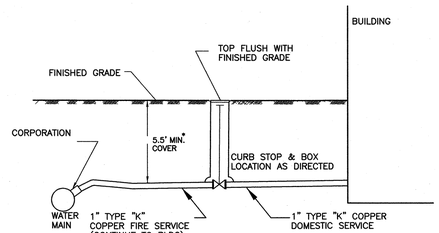
3.) FOR COMPLETE SPECIFICATION SEE "PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE CONSTRUCTION SPECIFICATIONS FOR UNDERGROUND CONDUIT SYSTEMS".

4.) CONTRACTOR SHOULD VERIFY THE NUMBER & SIZE OF CONDUIT WITH THE APPROPRIATE UTILITIES.

4 ELECTRICAL TRENCH
NOT TO SCALE



5 HYDRANT & VALVE DETAIL
NOT TO SCALE



USE 2" x 2' RIGID BOARD INSULATION OVER PIPE WHEN COVER REQUIREMENT CANNOT BE SATISFIED.

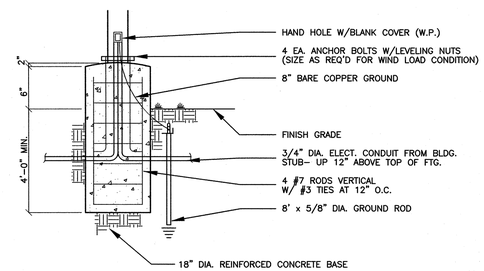
NOTES:

1.) SERVICE TO BE TYPE "K" COPPER OR EQUAL, APPROVED BY LOCAL AND STATE SPECIFICATIONS.

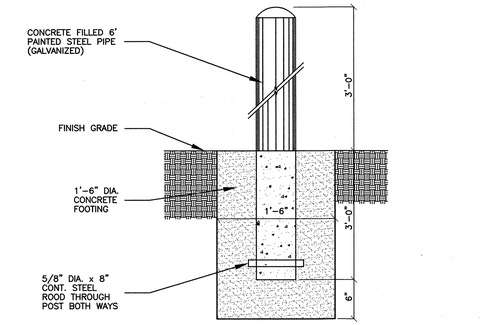
2.) BALL VALVE CURB STOP COMPRESSION (NO DRAIN)

3.) WATER SERVICE SIZE MAY BE MODIFIED AS WARRANTED BY FIRE SUPPRESSION SYSTEM DESIGN.

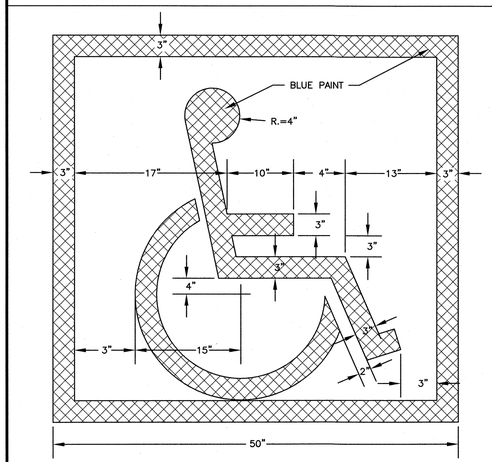
6 BUILDING WATER SERVICE
NOT TO SCALE



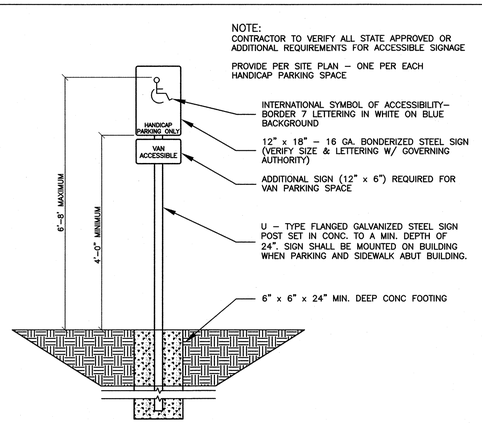
7 SITE LIGHTING BASE
NOT TO SCALE



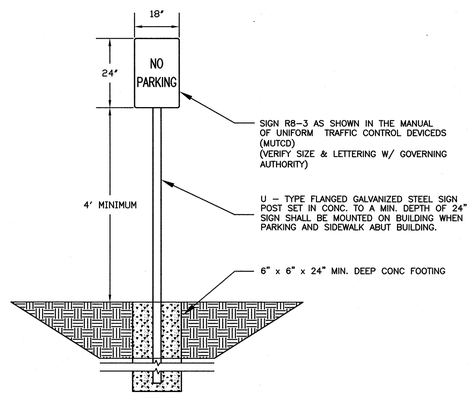
8 BOLLARD DETAIL
NOT TO SCALE



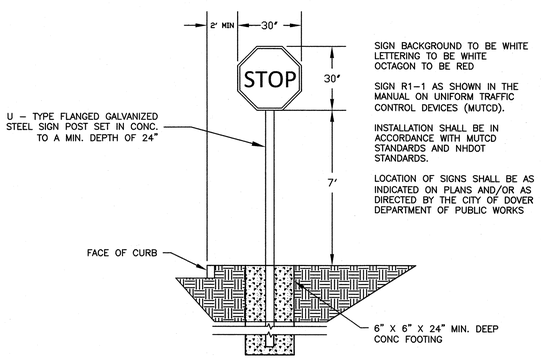
9 HANDICAP SYMBOL DETAIL
NOT TO SCALE



10 HANDICAP PARKING SIGN
NOT TO SCALE



11 NO PARKING SIGN
NOT TO SCALE



12 STOP SIGN
NOT TO SCALE

TRITECH
ENGINEERING CORPORATION
735 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

REVISIONS

DATE:	DESCRIPTION:
03/21/19	REVISED PER TRC COMMENTS

CONSTRUCTION DETAILS

6-12 PREBLE STREET

6 - 12 PREBLE STREET
DOVER, NEW HAMPSHIRE

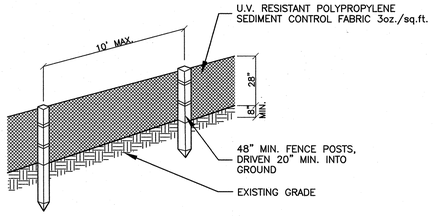
JANUARY 24, 2019

JOB No. 17141

SHEET NO.

SP-6

(P19-11)



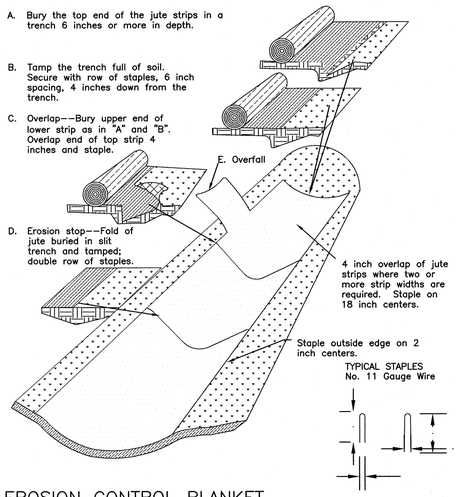
PERSPECTIVE VIEW

NOTES

1. THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR BEST MANAGEMENT PRACTICE FOR SILT FENCES, OF THE "STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE" PREPARED BY ROCKINGHAM COUNTY CONSERVATION DISTRICT, DATED AUGUST 1992.
2. THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 8 INCHES INTO THE GROUND AND THE SOIL COMPACTED OVER THE EMBEDDED FABRIC.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED.
4. FENCE POSTS SHALL BE A MINIMUM OF 36 INCHES LONG AND DRIVEN A MINIMUM OF 20 INCHES INTO THE GROUND. WOOD POSTS SHALL BE OF SOUND QUALITY HARDWOOD AND SHALL HAVE A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQ.IN..
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED TO PREVENT BULGES IN THE SILT FENCE DUE TO DEPOSITION OF SEDIMENT.
6. REMOVE BY HAND AND PROPERLY DISPOSE OF ALL SEDIMENT PRIOR TO REMOVING FENCE.

SECTION

1 SILT FENCE
NOT TO SCALE

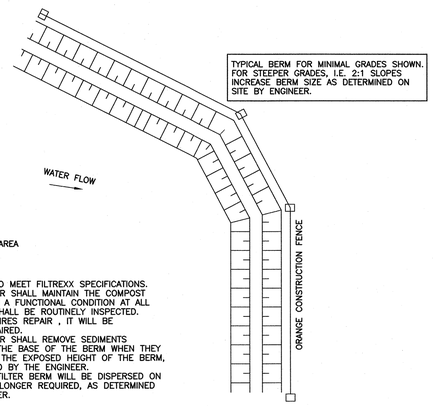


2 EROSION CONTROL BLANKET
NOT TO SCALE

Specifications:

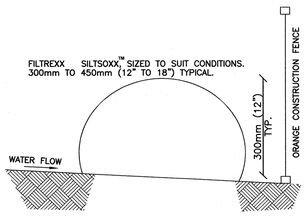
a) Fabric used should not be laminated.
b) Silt sack to have two #2 grommets, one on each of the two sides, 15" from the bottom of the silt sack.
c) Tie 1/4" wide yellow rope 19" long through the grommets on two sides of the silt sack.

4 Hi Vis Hi Flow Silt Sack
NOT TO SCALE



NOTES

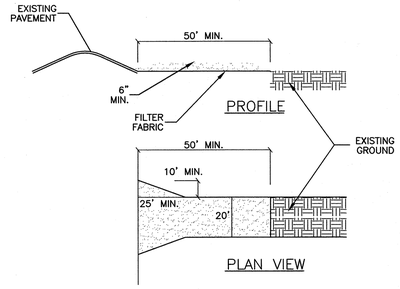
1.) ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2.) THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTER BERM IN A FUNCTIONAL CONDITION AT ALL TIMES AND IT SHALL BE ROUTINELY INSPECTED.
3.) WHERE IT REQUIRES REPAIR , IT WILL BE ROUTINELY REPAIRED.
4.) THE CONTRACTOR SHALL REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE BERM WHEN THEY REACH 1/3 OF THE EXPOSED HEIGHT OF THE BERM, OR AS DIRECTED BY THE ENGINEER.
5.) THE COMPOST FILTER BERM WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE ENGINEER.



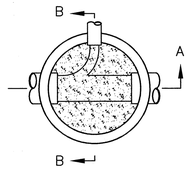
FILTER COMPOST MATERIAL AS PER SPECIFICATIONS.

6 FILTREXX® SILTSOXX™ – SILT FENCE
NOT TO SCALE

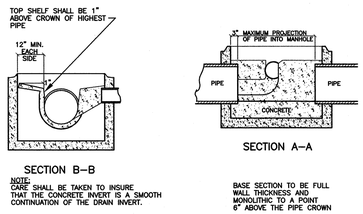
1. GRADE AND COMPACT ACCESS ROAD ENTRANCE AS NECESSARY PLACE FILTER FABRIC (MIRAFI OR EQUAL) AND PLACE 6" OF 1" – 2" STONE TO MATCH SLOPE OF EXISTING ROAD
2. PROVIDE NECESSARY SWALES OR DIVERSIONS TO MINIMIZE DIRECT FLOW OF WATER ONTO STONE AREA.
3. CONSTRUCTION ENTRANCE SHALL BE MAINTAINED AS NECESSARY TO REMOVE SILT FROM TIRES PRIOR TO ENTERING PUBLIC ROADS. A SMALL SWALE SHALL BE CONSTRUCTED ON THE DOWN GRADIENT SIDE TO TRAP ANY SILT WASHED FROM THE STONE.
4. HAYBALES OR SILT FENCE SHALL BE PLACED ON THE DOWN GRADIENT SIDE AS SHOWN ON THE EROSION CONTROL PLAN.

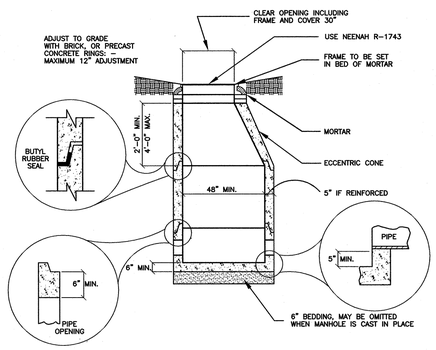


3 STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

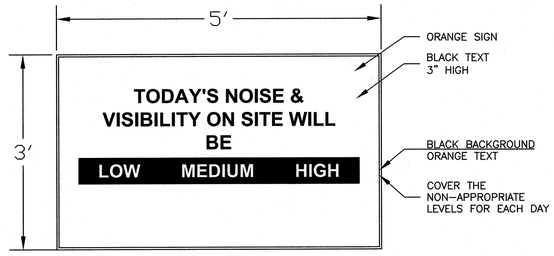


PLAN





7 DRAIN MANHOLE DETAILS
NOT TO SCALE



8 NOISE & VISIBILITY SIGN
NOT TO SCALE

GC–1 GENERAL CONSTRUCTION NOTES:

1. THE CONTRACTOR IS REQUIRED UNDER NEW HAMPSHIRE LAW TO CONTACT "DIG SAFE" AT 1–800–225–4977, 72 HOURS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN THE "DIG SAFE" LOCATIONS THROUGH OUT THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL BEAR THE COST TO REPAIR ANY UTILITIES DAMAGED DURING THE COURSE OF THE WORK.
2. EXISTING UTILITIES – ALL INFORMATION ON, AND LOCATION OF, EXISTING UTILITIES ARE APPROXIMATE AND BASED ON FIELD INFORMATION AND AVAILABLE PLANS. EXACT LOCATIONS AND DEPTHS TO BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
3. AS–BUILT PLANS OF THE SITE SHALL BE SUBMITTED ON PAPER AND IN DIGITAL FORMAT IN PDF AND AUTOCAD DWG, AUTOCAD DXF OR AN ESRI FORMAT TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF THE 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 NAD 83 AND SHALL BE EXPRESSED IN FEET.
4. ALL BACKFILL IN TRENCHES AND FILL FOR ROADBEDS SHALL BE THOROUGHLY COMPACTED TO 95% OF OPTIMUM DENSITY.
5. TOPOGRAPHIC SURVEY PERFORMED BY TRITECH ENGINEERING CORPORATION FEBRUARY, 2017 AND ELEVATIONS ARE BASED ON U.S.G.S. DATUM.
6. A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 58, ARTICLE 1, SECTION 58–2 OF THE CODE OF THE CITY OF DOVER.
7. BUILDING/MAILING ADDRESSES SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
8. EXTERIOR LIGHTING SHALL BE CUT–OFF TYPE FIXTURES PER CHAPTER 149–14–E AND SHALL PROVIDE LIGHTING DIRECTED ON–SITE ONLY.
9. TRASH REMOVAL WILL BE PROVIDED ON SITE BY A DUMPSTER.
10. COMMERCIAL VEHICLE ROUTES DURING CONSTRUCTION SHALL CONFORM WITH DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.
11. THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED.
12. THE OWNER SHALL RECORD AT THE STRAFFORD COUNTY REGISTRY OF DEEDS: DOCUMENTATION SUFFICIENT TO PROVIDE NOTICE TO SUCCESSORS IN TITLE THAT THIS PROPERTY IS SUBJECT TO THE REQUIREMENTS AND RESPONSIBILITIES DESCRIBED IN THE APPROVED STORMWATER MANAGEMENT PLAN.
13. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN THE 50 FOOT OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.
14. ALL TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.
15. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE AND APPROVED CONSTRUCTION SIGN SHALL BE IN PLACE PRIOR TO ANY EARTH DISTURBING ACTIVITY.
16. 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.
17. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY–FRIDAY 7AM–6 PM. NO CONSTRUCTION SHALL TAKE PLACE SATURDAY OR SUNDAY. 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 ASSISTANT CITY MANAGER.
18. 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.
19. THE PROPOSED STRUCTURE SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED UNDER CHAPTER 109–30 OF THE CODE OF THE CITY OF DOVER AND THE 2015 STATE BUILDING CODES.
20. 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.
21. FIRE DEPARTMENT CONNECTIONS SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13.
22. THESE PLANS HAVE BEEN DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBLE REGULATIONS (i.e. STATE ADOPTED BUILDING CODE W/AMENDMENTS, ANSI 117, ETC.) AND RSA–155–A:5.
23. ALL UNITS ARE PROPOSED TO BE SERVED BY MUNICIPAL WATER AND SEWER.
24. CALL PROFESSIONAL EXTERMINATOR A MINIMUM OF 45 DAYS AHEAD OF GROUND BREAKING PEST CONTROL DEVICES AREA TO BE SET A MINIMUM OF 30 DAYS BEFORE GROUNDBREAKING.
25. INSTALL AND MAINTAIN NOISE AND VISIBILITY LEVEL SIGN PER DETAIL 8, SHEET SP–7. KEEP SIGN IN PROMINENT, AND VISIBLE LOCATION.

10 GENERAL CONSTRUCTION NOTES
NOT TO SCALE

TRITECH
ENGINEERING CORPORATION
795 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3630

REVISIONS:

DATE:	DESCRIPTION:
03/21/19	REVISED PER TRC COMMENTS

EROSION & SEDIMENT CONTROL DETAILS

6-12 PREBLE STREET

6 - 12 PREBLE STREET
DOVER, NEW HAMPSHIRE

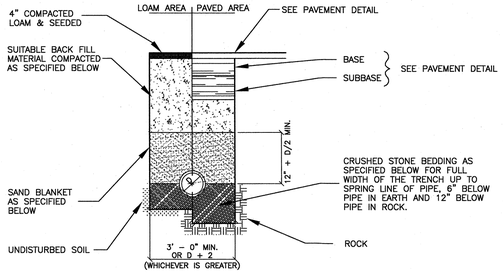
JANUARY 24, 2019

JOB No. 17141

SHEET NO.

SP-7

(P19-11)

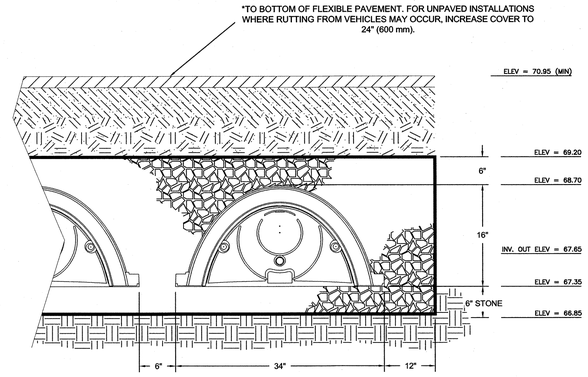


SAND BLANKET		CRUSHED STONE BEDDING	
SIEVE SIZE	%FINER BY WEIGHT	SIEVE SIZE	%FINER BY WEIGHT
1"		1"	100
1/2"	90 – 100	3/4"	90 – 100
200	0 – 15	3/8"	20 – 55
		#4	0 – 10
		#8	0 – 5

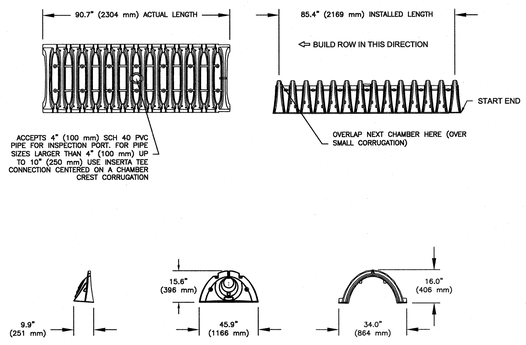
EQUIVALENT TO STANDARD STONE SIZE #67 – SECTION 703 OF NHDOT STANDARD SPECIFICATIONS

BACK FILL MATERIAL BELOW PAVED OR CONCRETE AREAS, BEDDING MATERIAL, AND SAND BLANKET SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T 99, METHOD C. SUITABLE BACK FILL MATERIAL BELOW LOAM AREAS SHALL BE COMPACTED TO NOT LESS THAN 90% OF AASHTO T 99, METHOD C.

1 STORM DRAINAGE & SEWER PIPE TRENCH
NOT TO SCALE



2 STORMTECH ELEVATION DETAIL
NOT TO SCALE



NOMINAL CHAMBER SPECIFICATIONS
SIZE (W X H X INSTALLED LENGTH) 34.0" X 16.0" X 85.4" (864 mm X 406 mm X 2169 mm)
CHAMBER STORAGE 14.7 CUBIC FEET (0.42 m³)
MINIMUM INSTALLED STORAGE* 31.0 CUBIC FEET (0.88 m³)
WEIGHT 35.0 lbs. (16.8 kg)

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



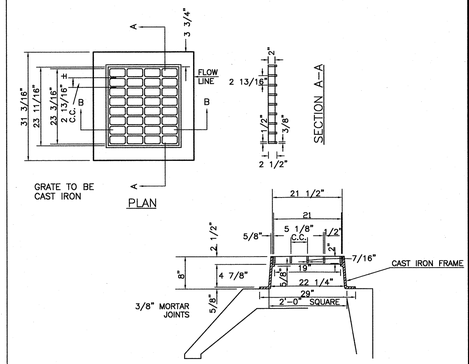
STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

ALL STUBS, EXCEPT FOR THE SC310EPE12B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC310EPE12B THE 12" (300 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 0.25" (6 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

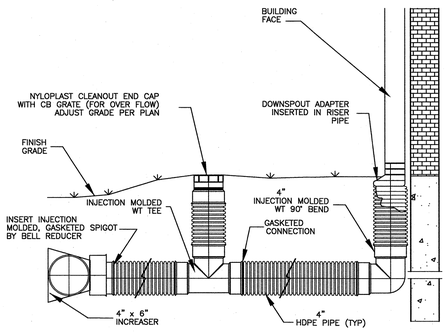
NOTE: ALL DIMENSIONS ARE NOMINAL

6 STORMTECH SC-310
NOT TO SCALE

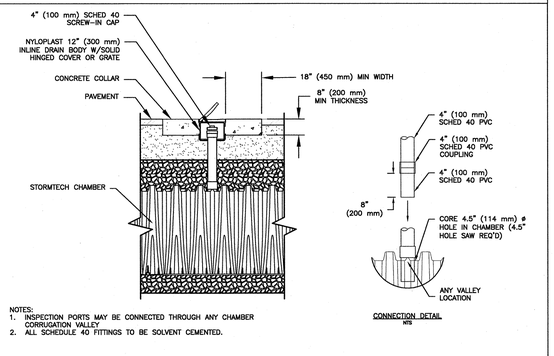


NOTES
1.) USE NEENAH R-3570
2.) FOR SHALLOW INVERTS, USE NEENAH R-3570-A.

3 CATCH BASIN FRAME & GRATE
NOT TO SCALE

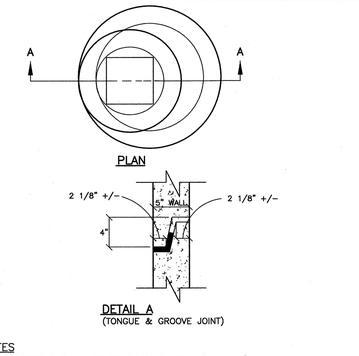


4 ROOF DRAIN W-TEE CLEANOUT
NOT TO SCALE



NOTES:
1. INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY
2. ALL SCHEDULE 40 FITTINGS TO BE SOLVENT CEMENTED.

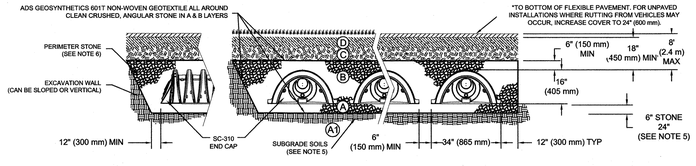
5 STORMTECH-INSPECTION PORT
NOT TO SCALE



NOTES
1. ALL SECTIONS SHALL BE CONCRETE CLASS AA(4000 psi).
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ.IN. PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
3. THE TONGUE OR GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FOOT.
4. RISERS OF 1', 2', 3' & 4' CAN BE USED TO REACH DESIRED DEPTH.
5. THE STRUCTURES SHALL BE DESIGNED FOR H-20 LOADING.
6. FOR SHALLOW INVERTS, A FLAT TOP SLAB WITH TONGUE AND GROOVE JOINTS (DETAIL A), MEETING H-20 LOADING MAY BE USED.

	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.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE (B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE.	AASHTO M145¹ A-1, A-2-4, A-3 OR AASHTO M43¹ 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, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4-2 INCH (20-50 mm)	AASHTO M43¹ 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, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4-2 INCH (20-50 mm)	AASHTO M43¹ 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ²³

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.



7 STORMTECH ACCEPTABLE FILL MATERIALS
NOT TO SCALE

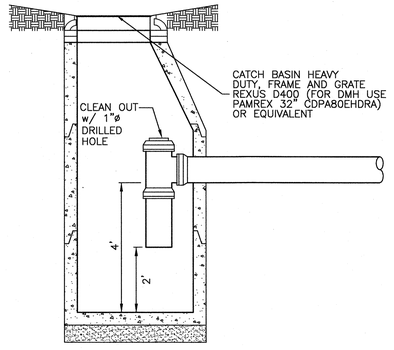
FILL SPECIFICATION A1

COMPONENT MATERIAL	PERCENT BY VOLUME	GRADATION OF MATERIAL	
		SIEVE No.	% PASSING BY WEIGHT
ASTM C-33 CONCRETE SAND	50-55%		
LOAMY SAND TOPSOIL	20-30%	200	15-25%
MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH	20-30%	200	<5%

PROPOSED FILL UNDER INFILTRATION SYSTEM SHALL BE TESTED FOR INFILTRATION RATE PRIOR TO INSTALLATION BY THE LABORATORY METHOD DESCRIBED IN NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES Env-Wq 1504.14 (g). AFTER FILL IS PLACED BUT BEFORE THE PRACTICE IS INSTALLED, FILL SHALL BE TESTED BY FIELD MEASUREMENT METHOD DESCRIBED IN Env-Wq 1504.14 (b). A MINIMUM INFILTRATION RATE OF 4 INCHES PER HOUR MUST BE ACHIEVED IN BOTH TESTS.

NOTES:

1. SC-310 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE "SITE DESIGN ENGINEER" REFERS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE STORMTECH CHAMBERS FOR THIS PROJECT.
5. SUBBASE SOIL SHALL BE AS FOLLOWS: A1 FILL SECTION.
6. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.



8 DEEP SUMP HOODED CATCH BASIN
NOT TO SCALE

TRITECH
ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

REVISIONS
DATE: DESCRIPTION:

DRAINAGE DETAILS

6-12 PREBLE STREET

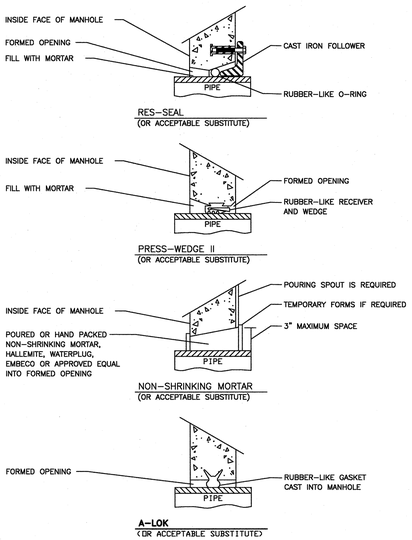
6 - 12 PREBLE STREET
DOVER, NEW HAMPSHIRE

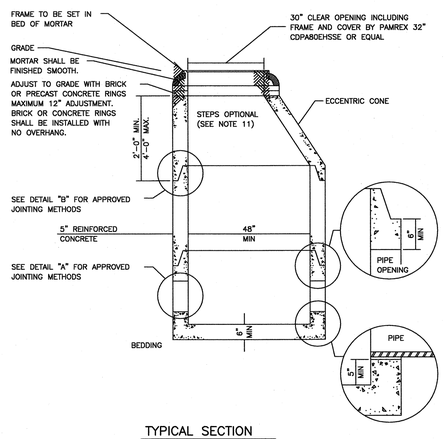
JANUARY 24, 2019

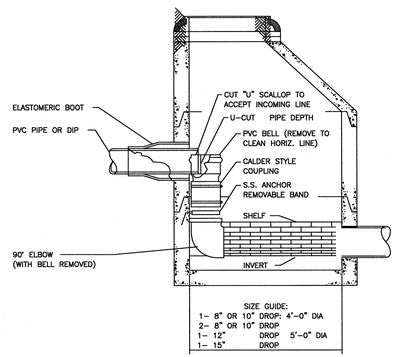
JOB No. 17141

SHEET NO.
SP-8

(P19-11)







NOTE:

ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS

DETAIL "B" – HORIZONTAL JOINTS

GENERAL NOTES

1) IT IS THE INTENTION THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAK PROOF QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES SHALL BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT, WITH ADEQUATE JOINTING, OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH REINFORCEMENT. IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS(H-20 LOADING) WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.

2) BARRELS AND CONE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE, OR POURED IN PLACE REINFORCED CONCRETE.

3) PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C478.

4) LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS.

5) INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED OR PRECAST CONCRETE SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF THE PIPE AND FLOW. AT CHANGES IN DIRECTIONS, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY OR PRECAST CONCRETE.

6) FRAMES AND COVERS: MANHOLES FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. A 3-INCH (MINIMUM HEIGHT) WORD "SEWER" FOR SEWERS AND "DRAIN" FOR DRAINS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER

7) BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33, SIZE NUMBER 67.
100% PASSING 1 INCH SCREEN 0-10% PASSING #4 SIEVE
90-100% PASSING INCH SCREEN 0-5% PASSING #8 SIEVE
20-55% PASSING INCH SCREEN
WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, SCREENED GRAVEL OR CRUSHED STONE INCH TO 1 INCH SHALL BE USED.

8) FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDE WITHIN THE FOLLOWING DISTANCES: RCP & CI PIPE – ALL SIZES – 48"

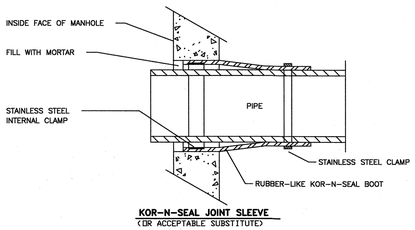
9) SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H-20 LOADS.

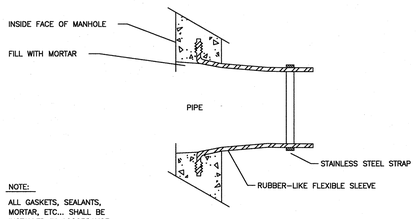
10) MANHOLE STEPS MAY BE PERMITTED UPON REQUEST BY THE OWNER AS SECONDARY ADDITIONAL SAFETY FEATURE SUPPLEMENTARY TO THE PRIMARY PORTABLE LADDER ENTRY AND WHEN INSTALLED UNDER THE FOLLOWING CONDITIONS:

1. THE STEPS SHALL BE MANUFACTURED OF PLASTIC COVERED STEEL. THEY SHALL BE SHAPED SO THEY CANNOT BE PULLED OUT OF THE CONCRETE WALL IN WHICH THEY ARE EMBEDDED.
2. THE STEPS SHALL BE EMBEDDED IN THE CONCRETE BY THE MANUFACTURER DURING MANUFACTURE OR IMMEDIATELY FOLLOWING REMOVAL OF FORMS. SECURING THE STEPS WITH MORTAR IN DRILLED OR CAST HOLES, WILL NOT BE ACCEPTABLE.
3. THE STEPS SHALL BE OF THE DROP TYPE WITH A DEPRESSED SECTION FOR HANDHOLD. APPROXIMATELY 14"X10" IN DIMENSION.

11) HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF A TYPE APPROVED BY THE ENGINEER, WHICH TYPE SHALL, IN GENERAL, DEPEND FOR WATERTIGHTNESS UPON AN ELASTOMERIC OR MASTIC-LIKE GASKET. APPROVED ELASTOMERIC SEALANTS ARE: RAM-NEK
KENT SEAL NO.2
EZ

12) PIPE TO MANHOLE JOINTS SHALL BE ONLY AS APPROVED BY THE ENGINEER AND IN GENERAL, WILL DEPEND FOR WATERTIGHTNESS UPON EITHER AN APPROVED NON-SHRINKING MORTAR OR ELASTOMERIC SEALANT.

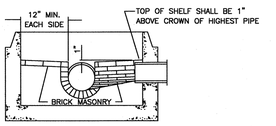


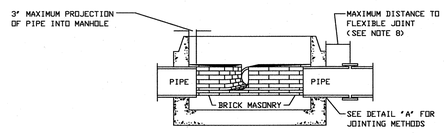


NOTE:

ALL GASKETS, SEALANTS, MORTAR, ETC... SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS

DETAIL "A" – PIPE TO MANHOLE JOINTS



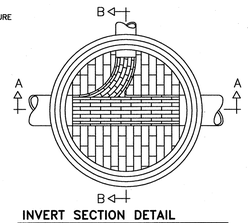


NOTES:

A) INVERT AND SHELF TO BE PLACED AFTER LEAKAGE TEST

B) CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT. INVERT BRICKS SHALL BE LAID ON EDGE.

C) BASE SECTION TO BE FULL WALL THICKNESS AND MONOLITHIC TO A POINT 6" ABOVE THE PIPE CROWN



INVERT SECTION DETAIL
NOT TO SCALE

TRITECH
ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

REVISIONS
DATE: DESCRIPTION:

STANDARD SEWER DETAILS

6-12 PREBLE STREET

6 - 12 PREBLE STREET
DOVER, NEW HAMPSHIRE

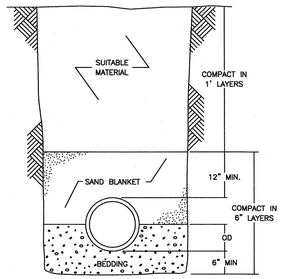
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JANUARY 24, 2019

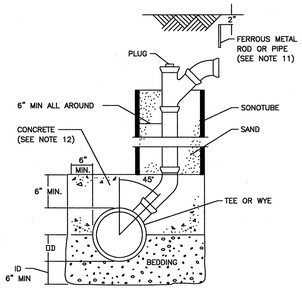
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SP-9

(P19-11)

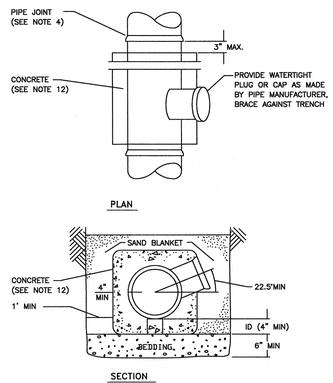


TRENCH CROSS-SECTION
NOT TO SCALE

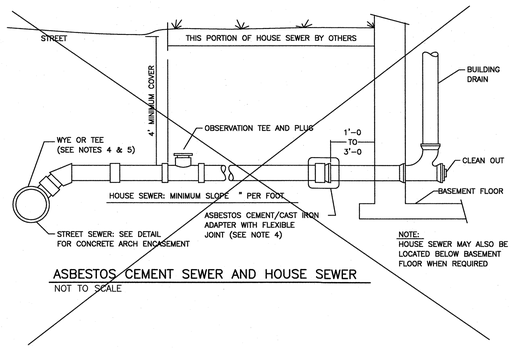


NO BACKFILLING BEFORE CONCRETE HAS TAKEN INITIAL SET (7 HRS. MIN.). BACKFILLING TO BE BROUGHT UP EVENLY ON ALL SIDES.

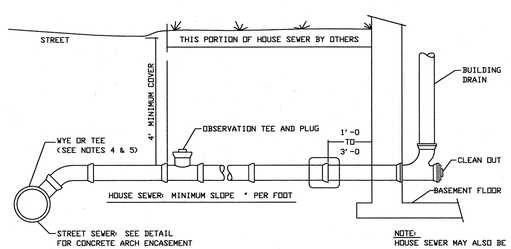
CHIMNEY (SEE NOTE 13)
NOT TO SCALE



CONCRETE FULL ENCASEMENT
NOT TO SCALE



ASBESTOS CEMENT SEWER AND HOUSE SEWER
NOT TO SCALE



SEWER AND HOUSE SEWER
NOT TO SCALE

NOT USED

GENERAL NOTES

1) MINIMUM SIZE PIPE FOR HOUSE SERVICE SHALL BE FOUR INCHES.

2) PIPE AND JOINT MATERIALS:

A. PLASTIC SEWER PIPE

1. PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F789	PVC (SOLID WALL)	4" THROUGH 18" (T-1 TO T-3)
F794	PVC (RIBBED WALL)	8" THROUGH 36"
D2680	*ABS (COMPOSITES WALL)	8" THROUGH 15"

*PVC: POLY VINYL CHLORIDE
*ABS: ACRYLONITRILE-BUTADIENE-STYRENE

2. JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.

ABS TRUSS PIPE AND FITTINGS SHALL CONFORM TO ASTM D-2680, POLYMER COMPOUNDING SHALL BE TO ASTM D-1788 (CLASS 322).

JOINTS FOR ABS TRUSS PIPE SHALL BE CHEMICAL WELDED COUPLINGS TYPE SC IN ACCORDANCE WITH ASTM D-2680, FORMING A CHEMICAL WELDED JOINT.

B. DUCTILE-IRON PIPE, FITTINGS AND JOINTS.

1. DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:
A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 DUCTILE IRON CASTINGS.
A21.51 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS.

2. JOINTS SHALL BE OF THE MECHANICAL OR PUSH-ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO:
A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS

3) DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.

4) JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER-TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

5) TEES AND WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING MANUFACTURERS' INSTRUCTIONS USING A BOLTED, CLAMPED OR EPOXY-CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED AS SHOWN IN THE DETAIL UP TO AND INCLUDING 15" DIAMETER.

6) HOUSE SEWER INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES.

THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE FOUNDATION AT A GRADE OF NOT LESS THAN INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.

7) TESTING: THE COMPLETED HOUSE SEWER SHALL BE SUBJECTED TO A LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS: (PRIOR TO BACKFILLING)

A. AN OBSERVATION TEE SHALL BE INSTALLED AS SHOWN AND WHEN READY FOR TESTING, AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE TEE. AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.

B. THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER, TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS OR, IF TRENCH IS WET, THE GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. INSPECTIONS FOR LEAKS SHALL BE MADE THROUGH THE CLEANOUT WITH A FLASHLIGHT.

C. DRY FLUORESCENE DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER, OR IF THE TRENCH IS WET, GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST DOWN-STREAM MANHOLE.

LEAKAGE OBSERVED IN ANY ONE OF THE ABOVE ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG-UP IF NECESSARY AND RE-LAID SO AS TO ASSURE WATER TIGHTNESS.

8) ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM HOUSE TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR OTHER SIMILAR CONNECTIONS CARRYING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.

9) HOUSE WATER SERVICE SHALL NOT BE LAID IN SAME TRENCH AS SEWER SERVICE.

10) BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33-67.

100% PASSING	1 INCH SCREEN
90%-100% PASSING	3/4 INCH SCREEN
20%- 55% PASSING	3/8 INCH SCREEN
0%- 10% PASSING	#4 SIEVE
0%- 5% PASSING	#8 SIEVE

WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1 1/2 INCH SHALL BE USED.

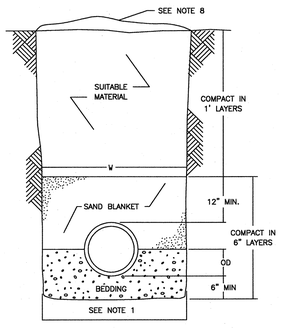
11) LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.

12) CONCRETE: CONCRETE SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000 PSI) CONCRETE OF THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARDS SPECIFICATIONS AS FOLLOWS:

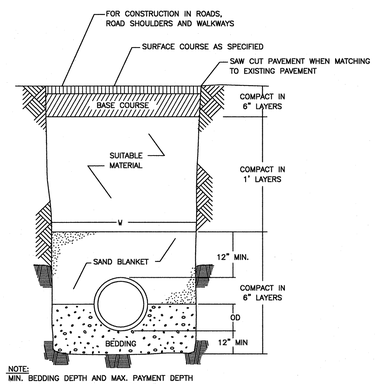
CEMENT: 6.0 BAGS PER CUBIC YARD
WATER: 5.75 GALLONS PER BAG CEMENT
MAXIMUM SIZE OF AGGREGATE: 1 INCH

13) CHIMNEYS: IF VERTICAL DROP INTO SEWER IS GREATER THAN 4 FEET, A CHIMNEY SHALL BE CONSTRUCTED FOR THE HOUSE CONNECTION. CHIMNEY INSTALLATION AS RECOMMENDED BY THE PIPE MANUFACTURER MAY BE USED IF APPROVED BY THE ENGINEER.

14) MAINTAIN A 10' HORIZONTAL SEPARATION BETWEEN SEWER LINES AND WATER LINES, AND AN 18" VERTICAL SEPARATION AT SEWER AND WATER CROSSINGS, WITH WATER OVER SEWER.

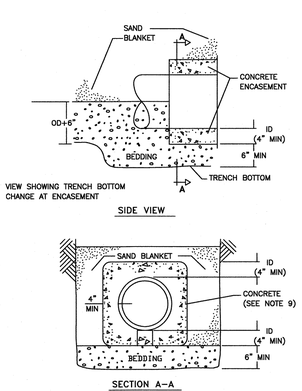


TYPICAL SECTION
NOT TO SCALE



NOTE:
MIN. BEDDING DEPTH AND MAX. PAYMENT DEPTH FOR LEDGE EXCAVATION SHALL BE 12"

LEDGE CONSTRUCTION
NOT TO SCALE



CONCRETE FULL ENCASEMENT
NOT TO SCALE

GENERAL NOTES

1) ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE. REFILL WITH BEDDING MATERIAL. FOR TRENCH WIDTH SEE NOTE 7.

2) BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33 STONE SIZE NO. 67.

100% PASSING	1 INCH SCREEN
90%-100% PASSING	3/4 INCH SCREEN
20%- 55% PASSING	3/8 INCH SCREEN
0%- 10% PASSING	#4 SIEVE
0%- 5% PASSING	#8 SIEVE

WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, GRADED SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1 1/2 INCH SHALL BE USED.

3) SAND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER SO GRADED THAT 90%-100% PASSES A 1/2 INCH SIEVE AND NOT MORE THAT 15% WILL PASS A #200 SIEVE. BLANKET MAY BE OMITTED FOR DUCTILE IRON AND REINFORCED CONCRETE PIPE PROVIDED THAT NO STONE LARGER THAN 2 INCHES IS IN CONTACT WITH THE PIPE.

4) SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALK-WAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.

IN CROSS-COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLY RECONSTRUCTION, WHEN NECESSARY WILL BE PRESERVED.

5) BASE COURSE, IF ORDERED BY THE ENGINEER, SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE LATEST EDITION OF THE:
STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
OF THE STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION.

6) WOOD SHEETING, IF REQUIRED. WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.

7) W= MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES, FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.

8) FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUNDED TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.

9) CONCRETE FOR ENCASEMENT SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000 LB) CONCRETE OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AS FOLLOWS: CEMENT: 6.0 BAGS PER CUBIC YARD
WATER: 5.75 GALLONS PER BAG CEMENT
MAXIMUM SIZE OF AGGREGATE: 1 INCH

10) IF FULL ENCASEMENT IS UTILIZED, DEPTH OF CONCRETE BELOW PIPE SHALL BE 1/4 I.D. (4" MIN.) BLOCK SUPPORT SHALL BE SOLID CONCRETE BLOCKS.

TRITECH
ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

REVISIONS
DATE: DESCRIPTION:

STANDARD SEWER DETAILS

6-12 PREBLE STREET

6 - 12 PREBLE STREET
DOVER, NEW HAMPSHIRE

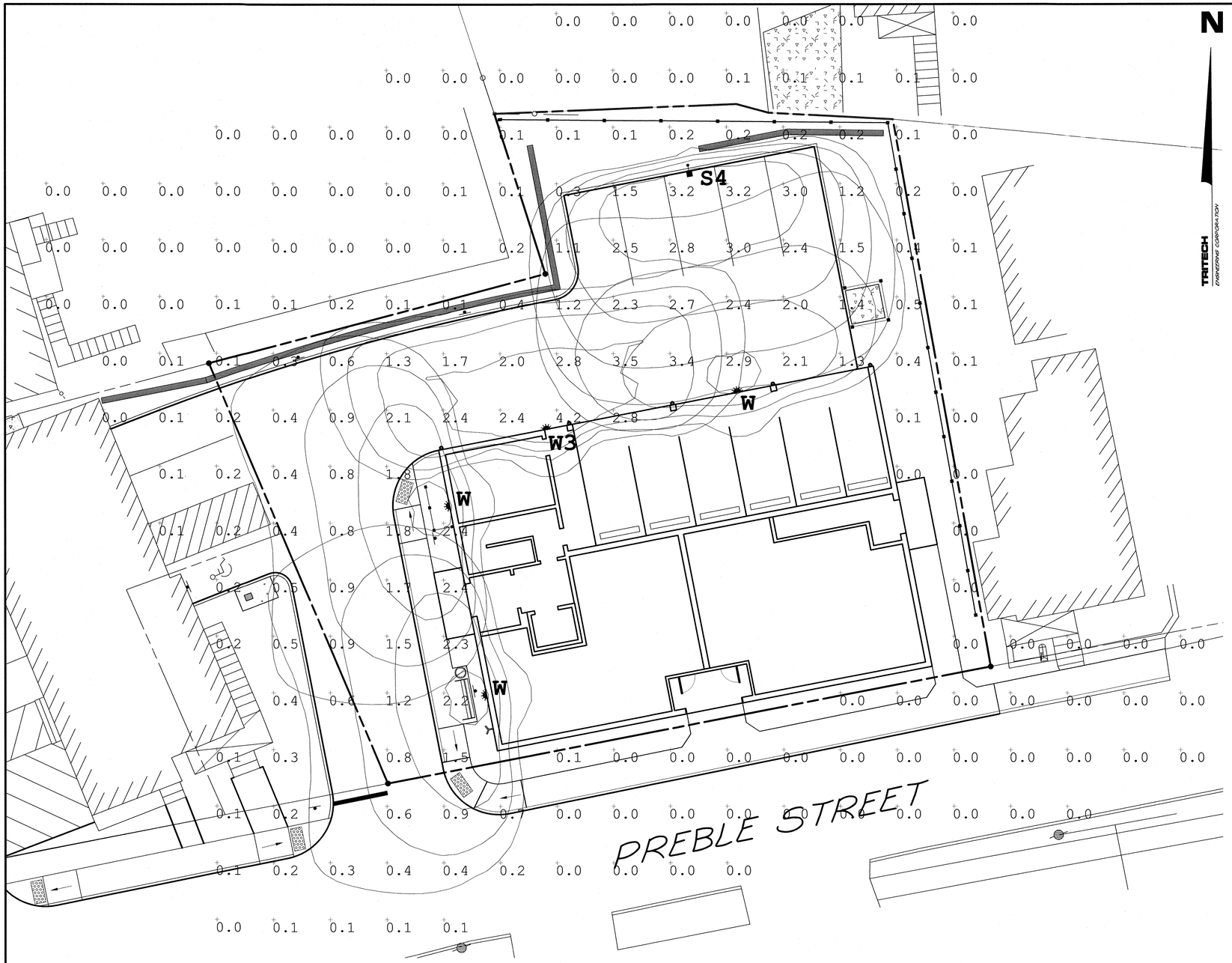
JOB No. 1714

JANUARY 24, 2019

SHEET NO.

SP-10

(P19-11)



LIGHTING NOTES:

1. INSTALL CONCRETE POLE BASE AND LIGHT WHERE SHOWN (1). LIGHT SHALL BE 52 WATT GALLEON LED, MCGRAW-EDISON GLEON-AF-01-LED-E1-SL4, OR EQUAL, MOUNTED 12' ABOVE FINISHED GRADE, WITH SHIELDING, SEE DETAIL 7, SHEET SP-6.
2. INSTALL (1) MCGRAW-EDISON ISS-AF-450-LED-E1-SL3 WALL MOUNTED LIGHT FIXTURE, MOUNTED 12' ABOVE FINISHED GRADE, WITH SHIELDING,
3. INSTALL (3) MCGRAW-EDISON ISS-AF-350-LED-E1-SL4 WALL MOUNTED LIGHT FIXTURES, MOUNTED 12' ABOVE FINISHED GRADE, WITH SHIELDING.
4. RECESSED DOWN-LIGHTING WILL BE UTILIZED UNDER ENTRANCE CANOPIES ON EITHER SIDE OF BULDING, AND IS NOT FACTORED INTO PHOTOMETRIC CALCULATIONS.
5. EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 149-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.
6. PHOTOMETRICS CONTAINED ON THIS PLAN PROVIDED BY CHARRON INC.

LIGHTING STATISTICS:

ILLUMINANCE (Fc)
AVERAGE = 1.94
MAXIMUM = 4.2
MINIMUM = 0.4
AVG/MIN RATIO = 4.85
MAX/MIN RATIO = 10.50

LIGHTING SCHEDULE

SYMBOL	QTY	LABEL	ARRANGEMENT	DESCRIPTION
	1	S4	SINGLE	GLEON-AF-01-LED-E1-SL4/ SSS4A12SFN1 (12')
	1	W3	SINGLE	ISS-AF-450-LED-E1-SL3/ WALL MTD 12' AFG
	3	W	SINGLE	ISS-AF-350-LED-E1-SL4/ WALL MTD 12' AFG

TRITECH
ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

REVISIONS
DATE: DESCRIPTION:
03/21/19 REVISED PER TRC COMMENTS
04/02/19 REVISED PER TRC COMMENTS

SITE LIGHTING PLAN

6-12 PREBLE STREET

6 - 12 PREBLE STREET
DOVER, NEW HAMPSHIRE
JANUARY 24, 2019
JOB No. 17141
SCALE: 1" = 10'

SHEET No.
Li-1

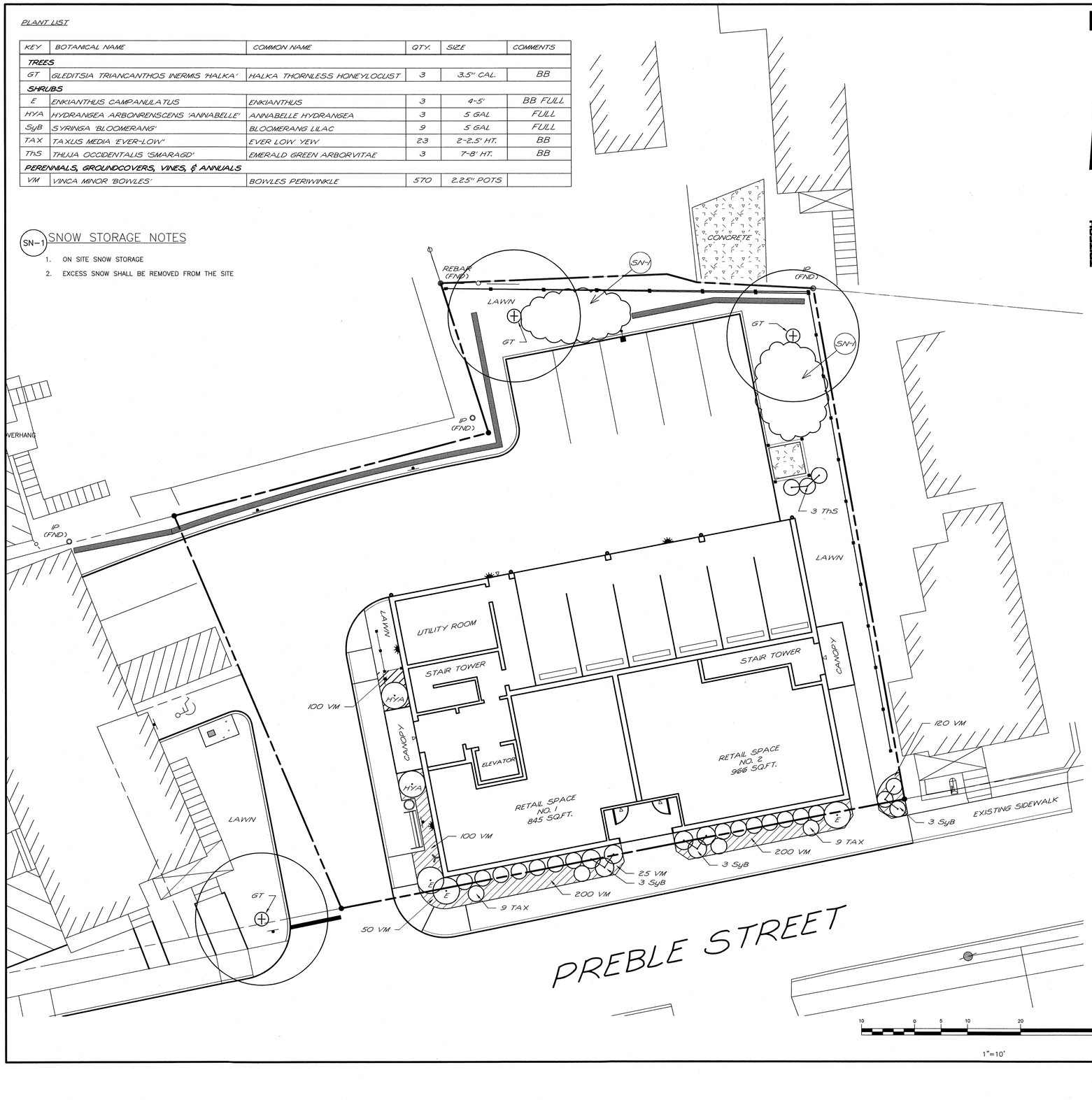
(P19-11)

PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	COMMENTS
TREES					
GT	GLEDITSIA TRIANCANTHOS INERMIS 'HALKA'	HALKA THORNLESS HONEYLOCUST	3	3.5" CAL.	BB
SHRUBS					
E	ENKIANTHUS CAMPANULATUS	ENKIANTHUS	3	4-5'	BB FULL
HYA	HYDRANGEA ARBONRENSCENS 'ANNABELLE'	ANNABELLE HYDRANGEA	3	5 GAL	FULL
SyB	SYRINGA 'BLOOMERANG'	BLOOMERANG LILAC	9	5 GAL	FULL
TAX	TAXUS MEDIA 'EVER-LOW'	EVER LOW YEW	23	2-2.5' HT.	BB
ThS	THUJA OCCIDENTALIS 'SMARAGD'	EMERALD GREEN ARBORVITAE	3	7-8' HT.	BB
PERENNIALS, GROUNDCOVERS, VINES, & ANNUALS					
VM	VINCA MINOR 'BOWLES'	BOWLES PERIWINKLE	570	2.25" POTS	

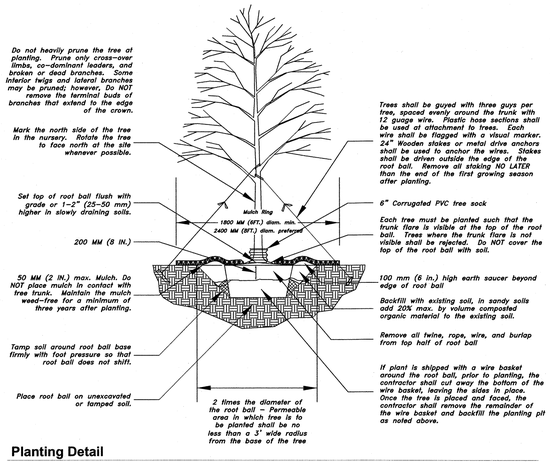
SN-1 SNOW STORAGE NOTES

1. ON SITE SNOW STORAGE
2. EXCESS SNOW SHALL BE REMOVED FROM THE SITE



Landscape Notes

1. Design is based on drawings and information from Tritech Engineering received 09/28/2017 and may require adjustment due to actual field conditions.
2. The contractor shall follow best management practices during construction and shall take all means necessary to stabilize and protect the site from erosion.
3. Erosion Control shall be in place prior to construction.
4. Erosion Control to consist of Hay Bales and Erosion Control Fabric and shall be staked in place between the work and Water bodies, Wetlands and/or drainage ways prior to any construction.
5. The Contractor shall verify layout and grades and inform the Landscape Architect or Client's Representative of any discrepancies or changes in layout and/or grade relationships prior to construction.
6. Plantings to remain within the construction zone shall be protected from damage for the duration of the project by snow fence or other suitable means of protection to be approved by Landscape Architect or Client's Representative. Do not fill or mulch on the trunk flare. Do not disturb roots. Snow fence shall be located at the drip line or at least 4' from shrubs and 10' from trees in all directions, whichever is greater, and shall include any and all surface roots. In order to protect the integrity of the roots, branches, trunk and bark of the tree(s) no vehicles or construction equipment shall drive or park in or on the area within the drip line(s) of the tree(s).
7. Location, support, protection, and restoration of all existing utilities and appurtenances shall be the responsibility of the Contractor.
8. The Contractor shall verify exact location and elevation of all utilities with the respective utility owners prior to construction. Call DIGSAFE at 1-888-344-7233.
9. The Contractor shall procure any required permits prior to construction.
10. The Contractor shall furnish and plant all plants shown on the drawings and listed thereon. All plants shall be nursery-grown under climactic conditions similar to those in the locality of the project. Plants shall conform to the botanical names and standards of size, culture, and quality for the highest grades and standards as adopted by the American Association of Nurserymen, Inc. in the American Standard of Nursery Stock, American Standards Institute, Inc. 230 Southern Building, Washington, D.C. 20005.
11. All plants shall be legibly tagged with proper botanical name.
12. The Contractor shall guarantee all plants for not less than one year from time of acceptance.
13. Owner or Owner's Representative will inspect plants upon delivery for conformity to Specification requirements. Such approval shall not affect the right of inspection and rejection during the progress trees at the place of growth of the work. The Owner reserves the right to inspect and/or select all and reserves the right to approve a representative sample of each type of shrub, herbaceous perennial, annual, and ground cover at the place of growth. Such sample will serve as a minimum standard for all plants of the same species used in this work.
14. No substitutions of plants may be made without prior approval of the Owner or the Owner's Representative for any reason.
15. All landscaping shall be provided with either of the following
    a. An underground sprinkling system
    b. An outside hose attachment within 150 feet
16. If automatic irrigation is installed, all irrigation valve boxes shall be located within planting bed areas.
17. Contractor shall provide an alternate price for irrigating all newly landscaped areas. Contractor shall provide irrigation design for review by Landscape Architect or Owner's Representative when awarded the project.
18. All disturbed areas will be dressed with 6" of loam and planted as noted on the plans or seeded except plant beds. Plant beds shall be prepared to a depth of 12" with 75 % compost and 25 % loam.
19. Trees, ground cover, and shrub beds shall be mulched to a depth of 2" with one-year-old, well-composted, shredded native bark not longer than 4" in length and ½" in width, free of wood chips and sawdust. Mulch for ferns and herbaceous perennials shall be no longer than 1" in length. Trees in lawn areas shall be mulched in a 5' diameter min. saucer.
20. Owner is solely responsible for maintaining vehicular and pedestrian vision lines pertaining to vegetation growth.



Planting Detail

Scale: NTS

TRITECH ENGINEERING CORPORATION
765 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

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

REVISIONS

DATE:	DESCRIPTION:
03/21/19	REVISED PER TRC COMMENTS
04/02/19	REVISED PER TRC COMMENTS

LANDSCAPING PLAN

6-12 PREBLE STREET

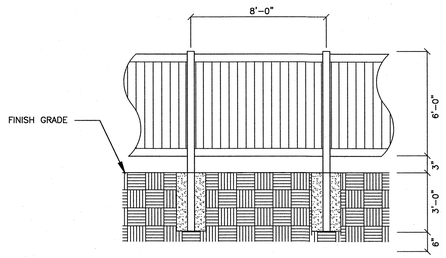
6 - 12 PREBLE STREET
DOVER, NEW HAMPSHIRE

JANUARY 24, 2019 JOB No. 17141

SCALE: 1" = 10'

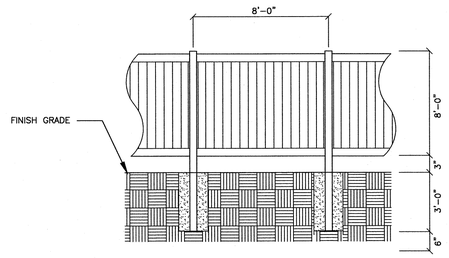
SHEET No. LA-1

(P19-11)



INSTALL 6' TALL VINYL FENCE
POSTS SHALL BE EMBEDDED 36" MINIMUM

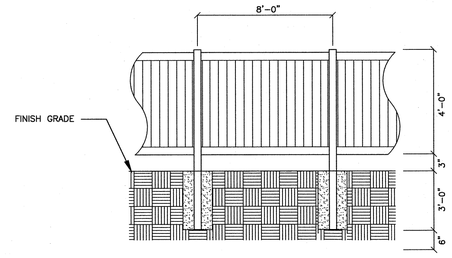
1 6' VINYL STOCKADE FENCE DETAIL (DUMPSTER)
NOT TO SCALE



INSTALL 8' TALL VINYL FENCE

A SEPARATE BUILDING PERMIT IS REQUIRED
FOR THE INSTALLATION OF AN 8' HIGH FENCE.
POST FOUNDATION DESIGN BY OTHERS.

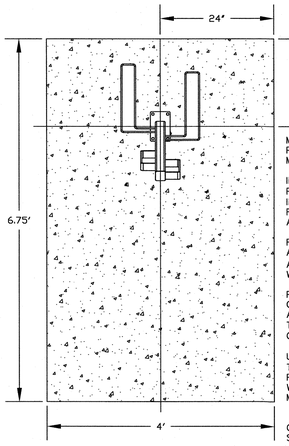
2 8' VINYL STOCKADE FENCE DETAIL (PERIMETER)
NOT TO SCALE



INSTALL 4' TALL VINYL FENCE
POSTS SHALL BE EMBEDDED 36" MINIMUM

3 4' VINYL STOCKADE FENCE DETAIL (UTILITY)
NOT TO SCALE

4 NOT USED
NOT TO SCALE



MANUFACTURER: THE PARK CATALOG
PRODUCT: UPLIFT BIKE RACK
MODEL: 543-4000

INSTALLATION:
PRE DRILL HOLES 2"-3" DEEP WITH IMPACT DRILL, AND VACUUM DEBRIS FROM HOLES AND SURROUNDING AREA.

REMOVE NUTS AND WASHERS FROM ANCHORS, AND POUND ALL 4 ANCHORS 1½" INTO DRILLED HOLES WITH MALLET.

PLACE MOUNTING FLANGE HOLES ONTO ANCHORS. REPLACE NUTS AND WASHERS & POUND UNTIL THERE IS 2" CLEARANCE FROM TOP OF FLANGE TO TOP OF ANCHOR.

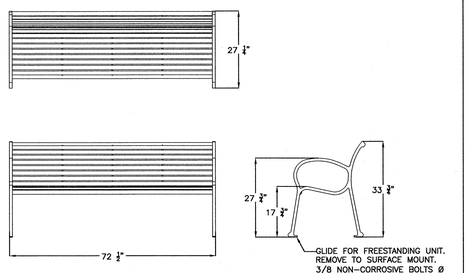
USING 3/8" SOCKET WRENCH, TIGHTEN BOLTS TO 20-30 lbs OF PRESSURE, ENSURING NO PLY WHEN TRYING TO UNTIGHTEN WITH MEDIUM PRESSURE.

CONCRETE PAD:
SEE DETAIL 7, SHEET SP-5.

5 UPLIFT BIKE RACK
NOT TO SCALE

6 NOT USED
NOT TO SCALE

Scarborough™ Bench, 72" Backed, with Horizontal Strap Seat
Product Drawing
Date: 5/19/2010
www.landscapeforms.com Ph: 800.521.2546

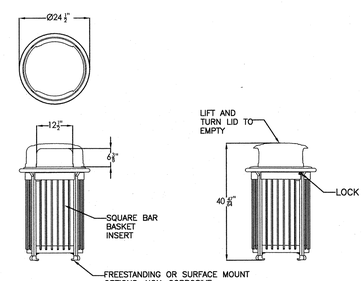


GLIDE FOR FREESTANDING UNIT. REMOVE TO SURFACE MOUNT. 3/8 NON-CORROSIVE BOLTS Ø (4) RECOMMENDED FOR ANCHORING, PROVIDED BY OTHERS.

CONFIDENTIAL DRAWING INFORMATION CONTAINED HEREIN IS THE PROPERTY OF LANDSCAPE FORMS, INC. INTENDED USE IS LIMITED TO DESIGN PROFESSIONALS SPECIFYING LANDSCAPE FORMS, INC. PRODUCTS AND THEIR DIRECT CLIENTS. DRAWING IS NOT TO BE COPIED OR DISCLOSED TO OTHERS WITHOUT THE CONSENT OF LANDSCAPE FORMS, INC.
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7 NOT TO SCALE

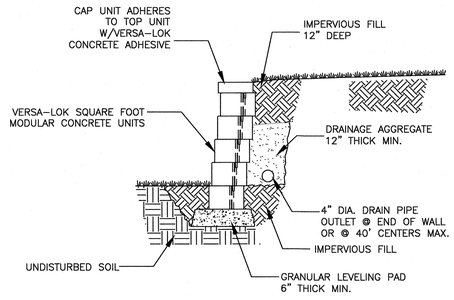
Scarborough® Litter Receptacle, Side Opening, 30 Gallon, Square Bar, with Lock
Product Drawing
Date: 5/19/2010
www.landscapeforms.com Ph: 800.521.2546



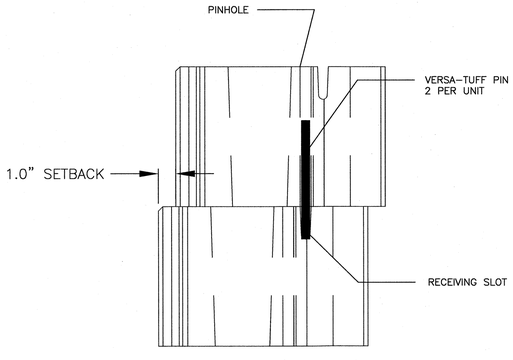
FREESTANDING OR SURFACE MOUNT OPTIONS. NON-CORROSIVE ANCHORING HARDWARE SUPPLIED BY OTHERS. (4) Ø7/16" MOUNTING HOLES.

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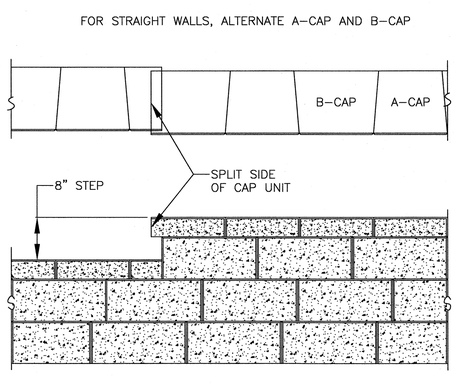
8 TRASH BIN DETAIL
NOT TO SCALE



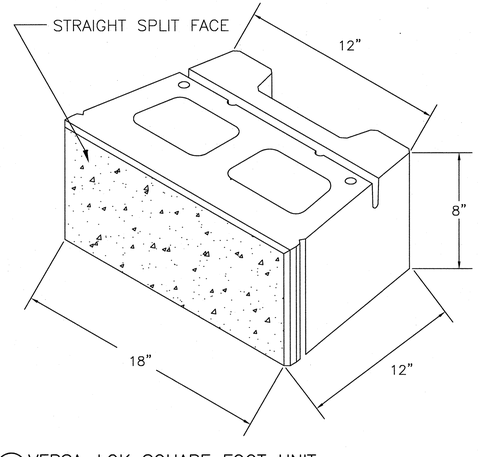
9 TYPICAL SECTION-UNREINFORCED RETAINING WALL
NOT TO SCALE



10 PINNING DETAIL
NOT TO SCALE



11 CAPPING-DETAIL PROFILE
NOT TO SCALE



12 VERSA-LOK SQUARE FOOT UNIT
NOT TO SCALE

TRITECH
ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

REVISIONS
DATE: 03/21/19
DESCRIPTION: ADDED TO PLAN SET

CONSTRUCTION DETAILS

6-12 PREBLE STREET

6 - 12 PREBLE STREET
DOVER, NEW HAMPSHIRE

JOB No. 17141

JANUARY 24, 2019

SHEET NO.
LA-2

(P19-11)

0 2 4 8 16

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

TRITECH
ENGINEERING CORPORATION
755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820
TELEPHONE 603 742 8107
FAX 603 742 3830

REVISIONS:

DATE:	DESCRIPTION:
02/07/19	ADDED TO PLAN SET
03/21/19	REVISED SHEET NUMBER

STREETSCAPE PLAN

6-12 PREBLE STREET

6 - 12 PREBLE STREET
DOVER, NEW HAMPSHIRE
JANUARY 24, 2019 JOB No. 17141

SHEET No.

LA-3

(P19-11)



REAR ELEVATION



RIGHT ELEVATION



FRONT ELEVATION
PREBLE STREET ELEVATION



LEFT ELEVATION

6-12 PREBLE STREET
DOVER NEW HAMPSHIRE

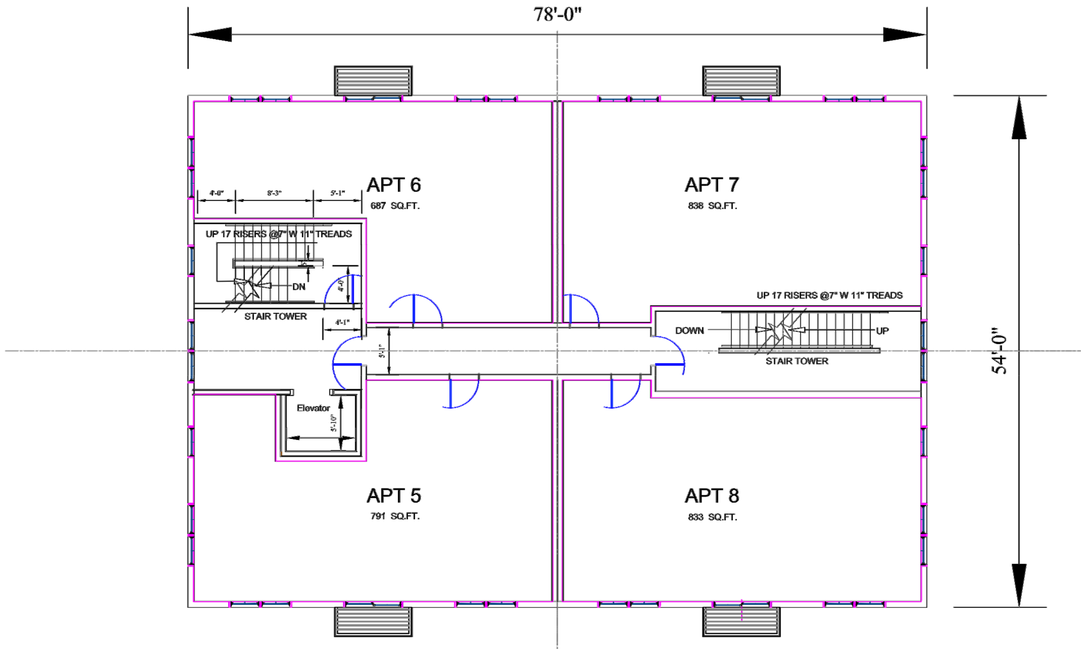
ELEVATIONS
SCALE: 1/8"=1'-0"

CHARLES HOYT DESIGNS
Shingle Style Architecture
893 Ocean Blvd.
Rye, NH. 03870
(603) 431-5310
charleshoytdesigns@hotmail.com

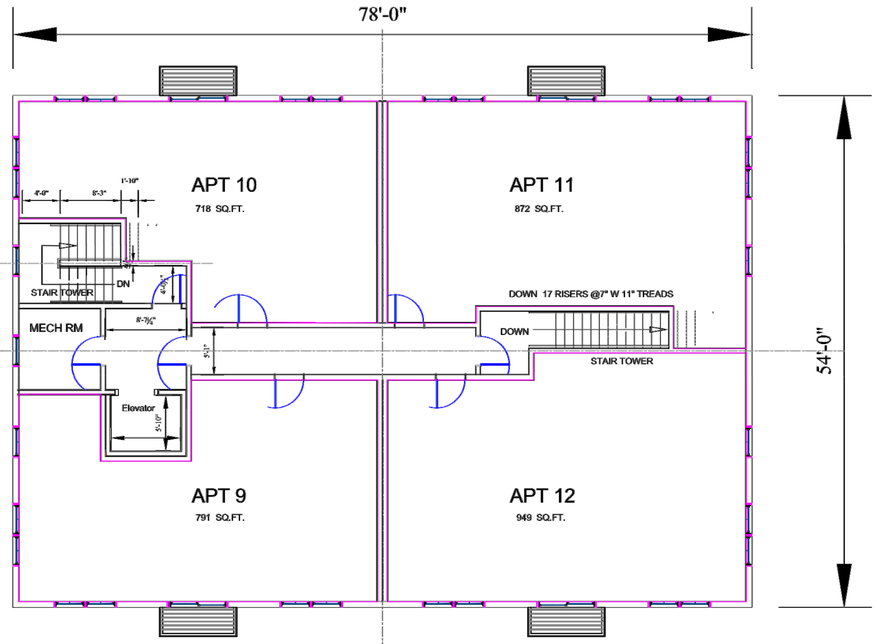
1-21-19

A1

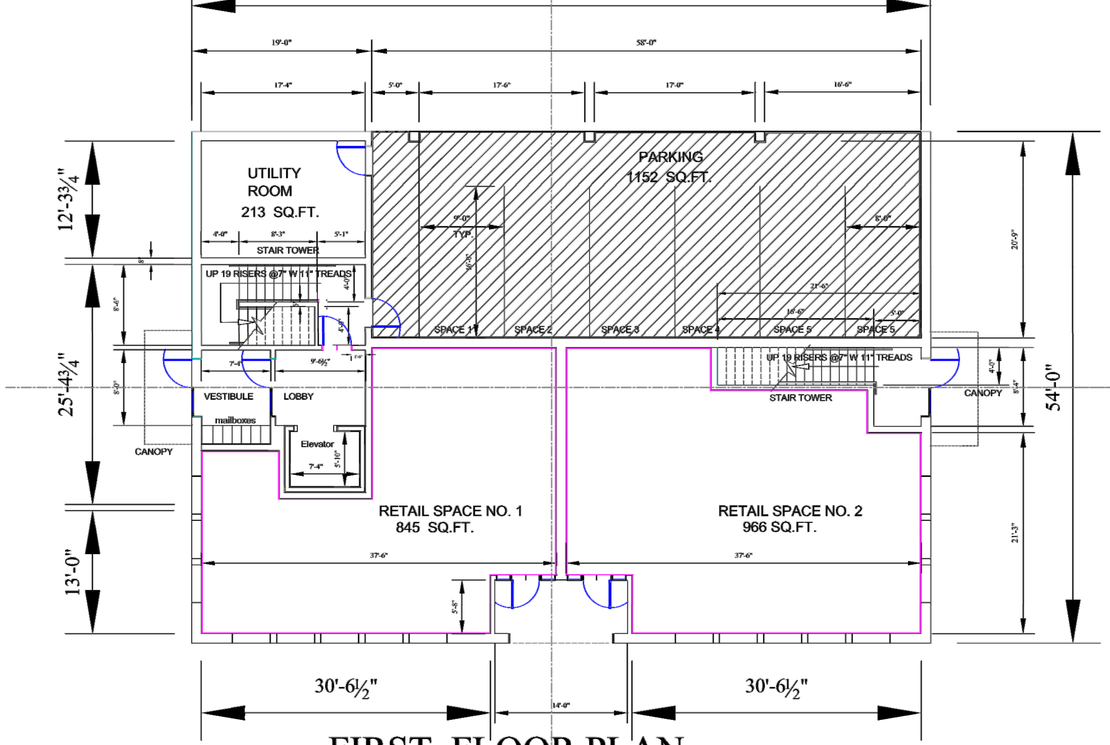
SCHEMATIC DESIGN



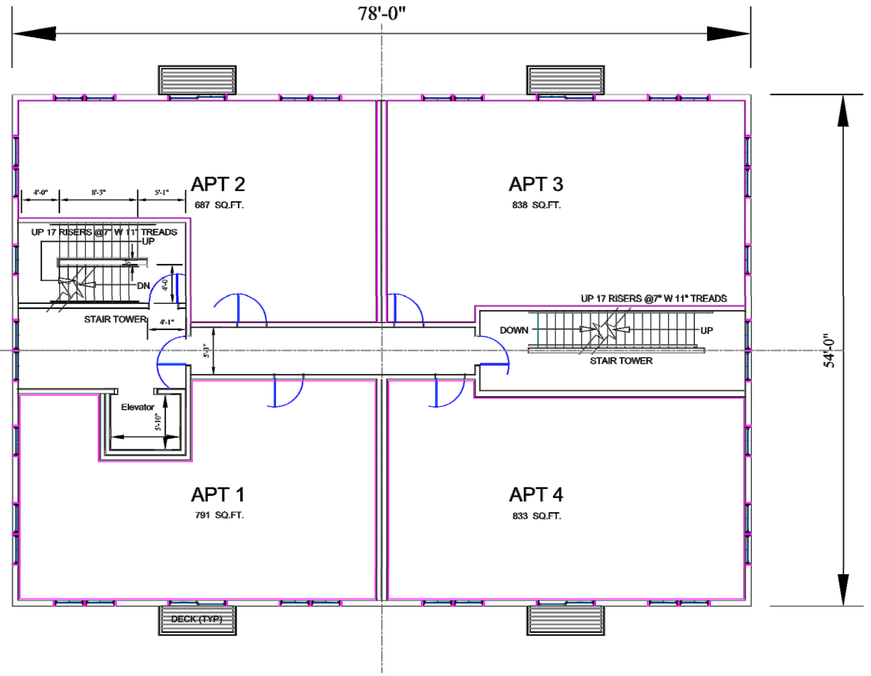
THIRD FLOOR PLAN



FOURTH FLOOR PLAN



FIRST FLOOR PLAN
(GROUND FLOOR)



SECOND FLOOR PLAN

6-12 PREBLE STREET
DOVER NEW HAMPSHIRE

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

CHARLES HOYT DESIGNS
Shingle Style Architecture
893 Ocean Blvd.
Rye, NH. 03870
(603) 431-5310
charleshoytdesigns@hotmail.com

1-21-19

A2

SCHEMATIC DESIGN

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P19-33

Application Type:	Minor Lot Line Adjustment
Applicant(s):	Invictus Holdings, LLC c/o Summit Land Development
Owner(s):	Invictus Holdings, LLC c/o Summit Land Development & H53 Mast Road LLC
Location:	Cold Springs Road & 17 Stonewall Dr (Assessor's Map H, Lots 48 & 53)
Meeting Date:	April 23, 2019

INTENT: Proposed is to adjust the lot lines between two adjacent parcels.

LOTS/UNITS PROPOSED: N/A

AGENDA ITEM #: 4-F

AREA:	**Existing:**	**Proposed**:
H/48:	3.02 (131,677 s.f)	9.36 ac (407,627 s.f)
H/53:	32.74 ac (1,426,005 s.f)	26.40 ac (1,150,055 s.f)

ZONING DISTRICT: R-40 & I-4

EXISTING LAND USE: Single Family Home and Industrial

PROPOSED LAND USE: N/A

SURROUNDING LAND USE: Residential and Industrial

ZBA ACTION: N/A

ATTACHMENTS: Application materials including LLA Plan

APPLICATION IS COMPLETE: Yes

NOTICES SENT: Abutter notices were sent by certified or first class mail to all abutters for this meeting.

PERMITS REQUIRED: None

WAIVERS REQUESTED: None

Summary of Request and Background
The applicant is proposing to adjust the lot line between the two subject lots moving 6.34.5 acres to lot 48. The new lot lint will be along the zoning boundary between the I-4 and R-40 district. Both new lots would meet the zoning requirements.

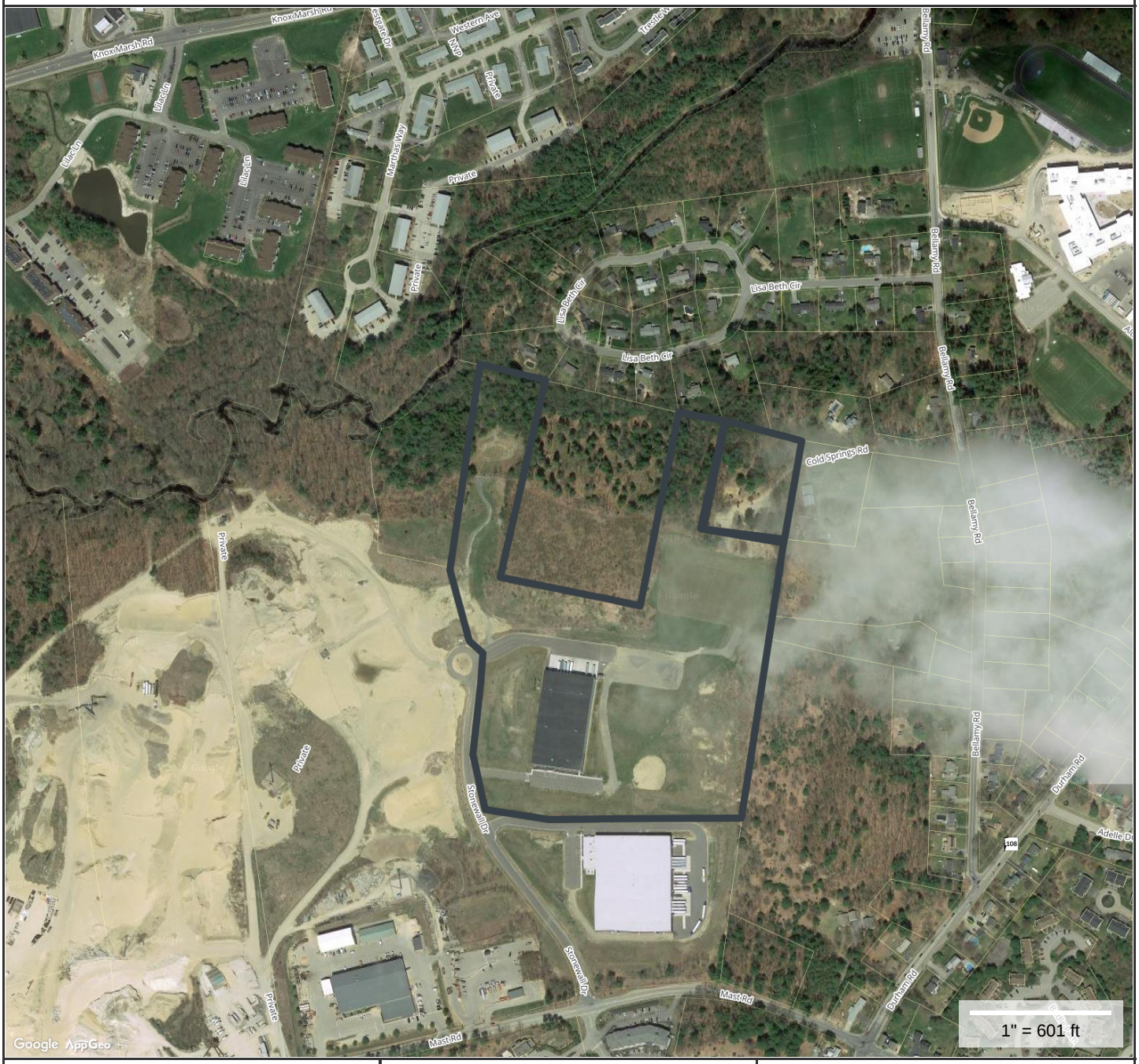
The area of the lot line adjustment is comprised of a multi-use ballfield and former home site. Both areas are encumbered by conservation and recreation easements, used to satisfy Transfer of Development Rights requirements for Pointe Place. Based upon those easements, no more intense use will be allowed on the site.

Consistency with Land Use Regulations
Chapter 155-18 of the Land Subdivision Regulations of the City Code provides for the adjustment of existing lot lines between two or more lots. This plan is consistent with those regulations. Lot H/48's access would remain the same without frontage on a public street but instead having Cold Springs Road run through the lot. Therefore, staying in the legal nonconforming status.

STAFF RECOMMENDATION:
The Planning Department recommends that the Planning Board accept the application for review, open the public hearing, and vote to approve the minor lot line adjustment with the following conditions:

Conditions to Be Met Prior to Signing of Plans:
1. The applicant shall provide the Planning Department with a digital version of the final plat.
2. The applicant shall revise the plat to:
   a. Add Planning file number P19-33
   b. Add signature and stamp of LLS
   c. Add owners' signatures
   d. Add a note regarding the conservation and recreation easements.

Cold Springs Road and 17 Stonewall Drive



MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 11/16/2018
Data updated Daily

City of Dover, New Hampshire
MINOR LOT LINE ADJUSTMENT APPLICATION

[Revision Date: May 18, 2017]

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

APPLICANT INFORMATION

Name of Applicant: INVICTUS HOLDINGS, LLC c/o SOMMIT LAND DEVELOPMENT, LLC Telephone # 603-749-2800

Address of Applicant: 340 CENTRAL AVENUE, SUITE 202 DOVER, NH 03820

FIRST PROPERTY OWNER AND PARCEL INFORMATION

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

Address of 1st Property Owner:

Address of Property: COLD SPRINGS ROAD (PRIVATE) - OFF BELLAMY ROAD

Assessor's Map # H Lot(s) # 48

Property Deed: Book 4475 Page: 717

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

Size of Existing Parcel (sq. ft.): 131,677 Size of Proposed Parcel (sq. ft.): 407,627

SECOND PROPERTY OWNER AND PARCEL INFORMATION

Name of 2nd Property Owner (*if different from applicant*): 453 MAST ROAD LLC Telephone # 749-2800

Address of 2nd Property Owner: 340 CENTRAL AVENUE, SUITE 202 DOVER, NH 03820

Address of Property: 17 STONEWALL DRIVE

Assessor's Map # H Lot(s) # 53

Property Deed: Book 4216 Page: 317

Zoning District(s) I-4 Overlay District(s) NONE

Size of Existing Parcel (sq. ft.): 1,426,005 Size of Proposed Parcel (sq. ft.): 1,150,055

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

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) KEVIN MCENEANEY MCENEANEY SURVEY ASSOCIATES

Address 24 CHESTNUT STREET DOVER NH 03820 Telephone #: 742-0911

Professional License #: 1061 E-mail address: kevin@surveynh.com

SIGNATURES

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

Signature of First Property Owner: _____ Date: 4/1/19

Signature of Second Property Owner: _____ Date: 4/1/19

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

Signature of Agent: _____ Date: _____

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Signature of Property Owner: _____ Date: 4/1/19

CITY OF DOVER MINOR LOT LINE ADJUSTMENT LIST OF ABUTTERS

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
H	53	H53 MAST ROAD, LLC	340 CENTRAL AVE DOVER, NH 03820 SUITE 202

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS
INVICTUS HOLDINGS, LLC		340 CENTRAL AVE DOVER, NH 03820 SUITE 202

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
KEVIN MCENEANEY	MCENEANEY SURVEY ASSOCIATES	24 CHESTNUT ST DOVER, NH 03820

Conservation Easement Holder: —

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

City of Dover, New Hampshire
LOT LINE ADJUSTMENT SUBMISSION CHECKLIST

[Revision Date: May 15, 2017]

This review checklist is intended to assist the applicant in the planning process of preparing a Subdivision application for Planning Board action. The size of the project will determine the types of information required for review, therefore, a **pre-application conference** with the Planning Department to determine the list of items that must be completed is strongly encouraged.

Fifteen (15), folded, copies of the plan set and materials will be due 3 weeks prior to the Planning Board meeting. Fees will be invoiced and are due 2 weeks prior to Planning Board.

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

APPLICANT: INVICTUS HOLDINGS, LLC File Number: _____

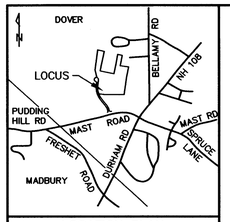
PROPERTY LOCATION: OFF BELLAMY ROAD Tax Map: H Lot: 48

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

REVIEWED BY: _____ DATE_____

P19-33 **Cold Springs Road & 17 Stonewall Drive**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
H0004-002000	215 MAST RD	TORR ROBERT H		215 MAST RD	DOVER	NH	03820
H0041-T00000	WHITE CLIFFS	MSM BROTHERS INC		510 MARTHA'S WAY	DOVER	NH	03820
H0042-000000	43 BELLAMY RD	HOWARD KEITH M &	TOWLE DIENNE M	43 BELLAMY ROAD	DOVER	NH	03820-4326
H0042-B00000	47 BELLAMY RD	WIEDMANN FREDDY R &	WIEDMANN ELIZABETH A	47 BELLAMY RD	DOVER	NH	03820
H0044-L00000	28 LISA BETH CR	JOHNSON RANDY L	JOHNSON ROSALIE S	28 LISA BETH CIR	DOVER	NH	03820
H0044-M00000	30 LISA BETH CR	KEELTY LANCE D &	KEELTY ELIZABETH M	30 LISA BETH CIR	DOVER	NH	03820
H0044-N00000	26 LISA BETH CR	NAVEZ DIANA MH TRUSTEE	NAVEZ DIANA MH REVOCABLE TRUST	26 LISA BETH CIRCLE	DOVER	NH	03820
H0044-R00000	32 LISA BETH CR	MASTROBATTISTA ANDREW &	CIOTTI DONNA	32 LISA BETH CIRCLE	DOVER	NH	03820
H0044-T00000	34 LISA BETH CR	HALE MITCHELL E &	HALE CAROL A	34 LISA BETH CIRCLE	DOVER	NH	03820
H0044-X00000	22 LISA BETH CR	GEMBINSKI MARY M	GEMBINSKI JOHN C	940 PLUM TREE LANE	FENTON	MI	48430-2296
H0047-A00000	COLD SPRINGS RD	DOWALIBY FAMILY REVOCABLE TRUST	DOWALIBY GEORGE AND FRANCES TRUSTEES	1 COLD SPRINGS RD	DOVER	NH	03820
H0050-000000	65 BELLAMY RD	BATES GARY V &	BATES KIM T	52 MARTEL RD	CHICHESTER	NH	03234
H0050-A00000	65 A BELLAMY RD	CHANDLER DONALD S &	CHANDLER-JANUS CHRISTINE A	65A BELLAMY ROAD	DOVER	NH	03820
H0053-001000	15 STONEWALL RD	MAST ROAD DOVER LLC	C/O RAND-WHITNEY CONTAINER LLC	207 GREENWOOD ST	WORCESTER	MA	01607
H0055-000000	BELLAMY RD	MACLEAN SANDY F &	GARRISON KAREN M	180 PISCATAQUA RD	DURHAM	NH	03824
H0056-000000	BELLAMY RD	CITY OF DOVER		288 CENTRAL AVENUE	DOVER	NH	03820
H0058-000000	271 275 MAST RD	CITY OF DOVER		288 CENTRAL AVE	DOVER	NH	03820
H0058-000LS2	273 MAST RD	OMNIPOINT HOLDINGS INC	ATTN PROPERTY MANAGEMENT	4 SYLVAN WAY	PARSIPPANY	NJ	07054
H0072-000000	24 LISA BETH CR	DUPONT DAVID & CAROLYN TRUSTEES	DUPONT FAMILY REV LIV TRUST	24 LISA BETH CIRCLE	DOVER	NH	03820
H0048-000000	49 BELLAMY RD	INVICTUS HOLDINGS LLC	C/O SUMMIT LAND DEVELOPMENT LLC	340 CENTRAL AVE STE 202	DOVER	NH	03820
H0053-000000	17 STONEWALL DR	H53 MAST RD LLC		340 CENTRAL AVE #202	DOVER	NH	03820
		MCENEANEY SURVEY ASSOCIATES INC	KEVIN MCENEANEY	24 CHESTNUT STREET	DOVER	NH	03820



LOCATION PLAN
(NO SCALE)

No.	Central Angle	Radius	Arc Length	Chord Length	Chord Bearing
C1	27°33'52"	720.00	346.38	343.05	N06°24'02"W
C2	83°29'13"	85.00	123.86	113.19	N34°21'42"W

No.	Bearing	Distance
L1	S78°31'06"E	84.40'
L2	N09°56'57"E	15.02'
L3	S12°01'58"W	23.72'
L4	S11°53'16"W	74.68'
L5	S12°40'53"W	85.45'
L6	N82°45'25"W	25.00'

H / 47A
DOWALIBY FAMILY REVOCABLE TRUST
GEORGE AND FRANCES DOWALIBY, TRUSTEES
1 COLD SPRINGS ROAD
DOVER, NH 03820
2465 / 266

H / 50
GARY V. BATES
KIM T. BATES
52 MARTEL ROAD
CHICHESTER, NH 03234
2557 / 210

H / 50A
DONALD S. CHANDLER
CHRISTINE A. CHANDLER–JANUS
65A BELLAMY ROAD
DOVER, NH 03820
1808 / 720

H / 4–2
ROBERT H. TORR
215 MAST ROAD
DOVER, NH 03820
4253 / 111

CITY OF DOVER GRID NORTH

H / 42B
FREDDY R. WIEDMANN
ELIZABETH A. WIEDMANN
47 BELLAMY ROAD
DOVER, NH 03820
2780 / 846

H / 44T
MITCHELL E. HALE
CAROL A. HALE
34 LISA BETH CIRCLE
DOVER, NH 03820
1798 / 48

H / 44R
ANDREW MASTROBATTISTA
DONNA CIOTTI
32 LISA BETH CIRCLE
DOVER, NH 03820
1708 / 278

H / 44M
LANCE D. KEELTY
ELIZABETH M. KEELTY
30 LISA BETH CIRCLE
DOVER, NH 03820
4345 / 166

H / 55
SANDY F. MACLEAN
KAREN M. GARRISON
180 PISCATAQUA ROAD
DURHAM, NH 03824
3743 / 448

H / 44N
DIANA M. H. NAVEZ, TRUSTEE
THE DIANA M. H. NAVEZ REVOCABLE TRUST
26 LISA BETH CIRCLE
DOVER, NH 03820
4539 / 71

H / 72
DAVID & CAROLYN DUPONT, TRUSTEES
DUPONT FAMILY REVOCABLE LIVING TRUST 10/19/2011
24 LISA BETH CIRCLE
DOVER, NH 03820
3965 / 19

H / 56
CITY OF DOVER
288 CENTRAL AVENUE
DOVER, NH 03820
2768 / 421

H / 58
CITY OF DOVER
288 CENTRAL AVENUE
DOVER, NH 03820
648 / 271
648 / 272

H / 53–1
MAST ROAD DOVER, LLC
C/O RAND–WHITNEY CONTAINER, LLC
207 GREENWOOD STREET
WORCESTER, MA 01607
4333 / 441

ZONE R–20 / ZONE R–40 boundary
ZONE R–40
ZONE I–4
ZONE R–40 / ZONE I–4 boundary
NEW LOT LINE
LOT LINE TO BE ABANDONED
BUILDING SETBACK LINE (TYP.)
COLD SPRINGS ROAD – GRAVEL {SEE NOTE 10}
60' WIDE R.O.W.
STONEWALL DRIVE
STONEWALL KITCHEN

IRON ROD FOUND
IRON PIPE FOUND
STONE BOUND FOUND
GRANITE BOUND

S11°59'10"W 401.03'
S11°56'31"W 216.19'
S07°22'54"W 727.25'
S07°22'54"W 765.98'
S79°32'07"E 124.87'
S77°42'14"E 200.56'
S77°18'05"E 185.86'
S10°26'26"W 425.00'
S82°45'25"E 315.00'
N77°33'42"W 519.26'
358.94'
N09°56'41"E
421.26'
N11°36'10"E
S78°16'06"E 479.80'
N82°37'06"W 262.06'
S11°58'00"W 806.91'
S77°13'52"E 270.00'
229.95' N07°22'54"E
306.41' N13°28'47"W
412.04'
N07°24'46"E 402.78'
N07°46'38"E

NEW PARCEL AREA
407,627 S.F.
9.36 Ac.

(A)
275,950 S.F.
6.34 Ac.

NEW PARCEL AREA
1,150,055 S.F.
26.40 Ac.

IRON PIPE FOUND
N – 246,983.96
E – 705,565.99
(SEE NOTE 8)

IRON ROD FOUND
N – 246,235.97
E – 705,194.94
(SEE NOTE 8)

NOTES:

1.) OWNER OF RECORD:

H / 48 — INVICTUS HOLDINGS, LLC
C/O SUMMIT LAND DEVELOPMENT, LLC
340 CENTRAL AVENUE, SUITE 202
DOVER, NEW HAMPSHIRE 03820
S.C.R.D. VOL. 4475, PAGE 717
OWNER SIGNATURE

H / 53 — H53 MAST ROAD LLC
340 CENTRAL AVENUE, SUITE 202
DOVER, NEW HAMPSHIRE 03820
S.C.R.D. VOL. 4216, PAGE 0317
OWNER SIGNATURE

2.) H / 53 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) THE SUBJECT PARCELS ARE LOCATED WITHIN THE ASSEMBLY AND OFFICE (I–4) ZONING DISTRICT AND THE RURAL RESIDENTIAL (R–40) ZONING DISTRICT AS SHOWN.

4.) DIMENSIONAL REGULATIONS:

	ZONING DISTRICT I–4	R–40
MINIMUM LOT SIZE:	5 ACRES	40,000 S.F.
MINIMUM LOT COVERAGE:	33 PERCENT	10 PERCENT
MINIMUM FRONTAGE:	400 FEET	150 FEET
BUILDING SETBACKS:		
FRONT	75 FEET	40 FEET
SIDE	75 FEET	25 FEET
REAR	75 FEET	30 FEET
MAXIMUM BUILDING HEIGHT:	40 FEET	35 FEET

5.) PLAN INTENT: TO ADJUST THE LOT LINES AS SHOWN, TRACT "A" 275,950 S.F. IS TO BE ADDED TO PARCEL H / 48.

6.) PARCEL AREAS =

PARCEL	ORIGINAL PARCEL	NEW PARCEL
H / 48	131,677 S.F. / 3.02 Ac.	407,627 S.F. / 9.36 Ac.
H / 53	1,426,005 S.F. / 32.74 Ac.	1,150,055 S.F. / 26.40 Ac.

7.) THE SUBJECT PARCELS ARE LOCATED WITHIN AREAS DETERMINED TO BE OUTSIDE THE 0.2 PERCENT ANNUAL CHANCE FLOOD; SOURCE: FLOOD INSURANCE RATE MAP COMMUNITY NUMBER 330145, PANEL 0320, SUFFIX E; MAP NUMBER 33017C0320E, EFFECTIVE DATE: SEPTEMBER 30, 2015.

8.) BASIS OF BEARING IS THE CITY OF DOVER / GEOD CORP. GRID NORTH, PER REFERENCE PLAN 1.

9.) A DIGITAL DXF COPY OF THE APPROVED PLAN WILL BE PROVIDED TO CITY OF DOVER PLANNING DEPARTMENT UPON FINAL APPROVAL.

10.) PARCEL H / 53 IS SUBJECT TO:
– THE RIGHTS OF OTHERS, IF ANY, TO USE THE COLD SPRINGS ROAD SO–CALLED.
– THE RESERVATION INCLUDED IN THE DEED FROM CHARLES T. DRISCOLL AND SHIRLEY T. DRISCOLL TO ALBERT P. MARCOTTE AND SYLVIA P. MARCOTTE DATED JULY 12, 1971 AND RECORDED AT BOOK 889, PAGE 13 OF THE RIGHT TO USE AS NOW PRACTICED, IN COMMON WITH OTHERS, THE PASSWAY WHICH PROVIDES AN ENTRANCE TO THE HOME NOW OR FORMERLY OF ROBERT C. STAPLES FROM THE COLD SPRINGS ROAD, SO–CALLED, TO THE EXTENT THE SAME MAY EXIST.

11.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES, INC. DURING MARCH 1997 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.

REFERENCE PLANS:

1.) PLAN OF LOT LINE ADJUSTMENTS PREPARED FOR MAST ROAD SAND AND GRAVEL AND FRANCES E. AND GEORGE E. DOWALIBY, MAST ROAD & COLD SPRINGS ROAD, DOVER, NEW HAMPSHIRE. SCALE: 1" = 100'; DATED: MARCH 11, 1997, REVISED THROUGH 5/2/97; BY THIS OFFICE. RECORDED S.C.R.D. PLAN 49–95.

2.) PLAN OF LOT LINE ADJUSTMENTS PREPARED FOR H53 MAST ROAD LLC AND THE CITY OF DOVER, TAX MAP H, LOT Nos. 53 & 58, MAST ROAD, CITY of DOVER, COUNTY of STRAFFORD, STATE of NEW HAMPSHIRE. SCALE: 1" = 150'; DATED: NOVEMBER 14, 2014, REVISED THROUGH 2/23/15; BY THIS OFFICE. RECORDED S.C.R.D. PLAN 109–9.

3.) SUBDIVISION OF LAND PREPARED FOR H53 MAST ROAD LLC, TAX MAP H, LOT No. 53, MAST ROAD, CITY of DOVER, COUNTY of STRAFFORD, STATE of NEW HAMPSHIRE. SCALE: 1" = 150'; DATED: NOVEMBER 17, 2014, REVISED THROUGH 2/23/15; BY THIS OFFICE. RECORDED S.C.R.D. PLAN 109–8.

4.) AMENDED SUBDIVISION OF LAND PREPARED FOR H53 MAST ROAD LLC, TAX MAP H, LOT No. 53, MAST ROAD, CITY of DOVER, COUNTY of STRAFFORD, STATE of NEW HAMPSHIRE. SCALE: 1" = 100'; DATED; APRIL 2, 2015; BY THIS OFFICE. RECORDED S.C.R.D. PLAN 109–63.

5.) LOT LINE ADJUSTMENT PLAN FOR FRANCES E. AND GEORGE E. DOWALIBY AND KEVIN TULLY AND SHARON LEGERE, TAX MAP H, LOTS 47A & 48, COLD SPRINGS ROAD AND BELLAMY ROAD, DOVER, STRAFFORD COUNTY, NEW HAMPSHIRE. SCALE: 1" = 40'; DATED: JUNE 3, 2001; BY: K.E.M. LAND SURVEY, INC. RECORDED S.C.R.D. PLAN 63–17.

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

14–2058	LL ADJ	14–08
PROJECT NO	TYPE	FIELDBOOK & PAGES

LEGEND

S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS

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

LOT LINE ADJUSTMENT PLAN
PREPARED FOR
INVICTUS HOLDINGS, LLC
AND
H53 MAST ROAD LLC
TAX MAP H, LOT Nos. 48 & 53
COLD SPRINGS ROAD & STONEWALL DRIVE
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. P 19–__

DRAWN BY: RJM	FILE: W:\CP\2058\14–2058 H–53 H–48 LLADJ
SCALE: 1" = 100'	DATE: APRIL 1, 2019

100 50 0 50 100 200 300 400

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

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

SURVEYING – PLANNING – CONSULTING

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P19-34

Application Type:	Minor Subdivision
Applicant(s):	Kevin P and Karen M Coppinger
Owner(s):	Kevin P and Karen M. Coppinger
Location:	39 Gerrish Road (Assessor's Map M, Lot 40)
Meeting Date:	April 23, 2019

INTENT: To subdivide one lot into 2 lots. The new lots would be 0.35 acres and 0.38 acres.

LOTS/UNITS PROPOSED: 2 lots (1 new)

AGENDA ITEM #: 5-G

ACREAGE: 0.73 acres

ZONING DISTRICT: R-12

EXISTING LAND USE: Residential

PROPOSED LAND USE: N/A

SURROUNDING LAND USE: Residential and Spaulding Turnpike

ZBA ACTION: None

ATTACHMENTS: Application Materials including Subdivision Plan

NOTICES SENT: Abutter notices were sent by certified or first class mail to all abutters for this meeting

PERMITS REQUIRED: N/A

WAIVERS REQUESTED: None

Summary of Request and Background
The applicant proposes to subdivide Dover Tax Map 38 Lot 32-1 into two lots. The new lot areas would be 0.28 acres and 0.45 acres.

The new lots meet the frontage and area requirements.

As this is a minor subdivision, it did not go before the Technical Review Committee.

Consistency with Land Use Regulations
Chapter 155-15 of the Land Subdivision Regulations of the City Code provides for subdivisions of existing lots. This plan is consistent with the regulations.

STAFF RECOMMENDATION:
The Planning Department recommends that the Planning Board accept the application, open the public hearing, and vote to approve the Minor Subdivision with the following conditions:

Conditions to Be Met Prior to Signing of Plans:

1. The applicant shall revise the plat to:
    a. Include the Licensed Land Surveyor signature and stamp
    b. Add the owner's signatures to the final plat submitted for signature to be recorded at the Strafford County Registry of Deeds
    c. Add Planning File #P19-34
    d. Show proposed driveway location
    e. Show proposed utilities
    f. Add note that both wooden fences would be removed so that they do not cross boundaries
    g. Revise note 10 to add when and by whom the site was reviewed for wetlands.
    h. Add common subdivision notes: 15, 17, & 26.
    i. Add note that the new lot number will be assigned by the City Assessor and Building address by the Building Official.

Conditions to Be Met Prior to Building Permit:

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

Conditions to Be Met Prior to Occupancy:

3. Issuance of a Certificate of Occupancy.
4. Impact fees for new dwelling unit shall be paid per the invoice included with the Notice of Decision.

39 Gerrish Road



Property Information

Property ID	M0040-000000
Location	39 GERRISH RD
Owner	COPPINGER KEVIN P &
Land Use	101

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 11/16/2018
Data updated Daily

City of Dover, New Hampshire
MINOR SUBDIVISION APPLICATION

[Revision Date: August 02, 2017]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: KEVIN P & KAREN M. COPPINGER Telephone # 742-9425

Address of Applicant: 39 GERRISH ROAD DOVER, NH 03820

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

Address of Property Owner: SAME

E-Mail Address: N/A

PROPERTY INFORMATION

Address of Property: 39 GERRISH ROAD

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

Zoning District(s) R-12 Overlay District(s) NONE

Size of Parcel: 31,788 s.f. (.73 ac) Property Deed: Book 2518 Page: 654

Existing Use of Property: SINGLE FAMILY RESIDENTIAL

SUBDIVISION INFORMATION

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

City Water? ✓ Yes ___ No How far is city water from the property? IN GERRISH ROAD

City Sewer? ✓ Yes ___ No How far is city sewer from the property? IN GERRISH ROAD

Highway Access (check where applicable): ✓ City Street ___ State Highway

Estimated Length of Proposed Roads: N/A feet Public or Private Road?

WAIVER REQUESTS

Subdivision Regulations section(s) to be waived: NONE

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

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) KEVIN MCENEANEY MCENEANEY SURVEY ASSOCIATES

Address 24 CHESTNUT ST DOVER, NH 03820 Telephone #: 742-0911

Professional License #: lolol E-mail address: Kevin@surveynh.com

ENGINEER INFORMATION

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

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

SIGNATURES

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

X Signature of Property Owner: Kevin P Cheeseman Date: 4-1-19

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.

X Signature of Property Owner: _____ Date: _____

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY N/A

I, and my successors, hereby authorize the City of Dover and its assigns to enter my property for the purpose of completing the site work as required by the approved plan should the letter or credit or other surety be called. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: Kevin P Cheeseman Date: 4-1-19

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

CERTIFICATION OF FEES

I, and my successors, hereby certify that I understand that the City of Dover collects impact fees, utility investment fees and inspection fees for projects developed in Dover. Said fees must be paid before a Certificate of Occupancy can be obtained for a structure, unless a different payment schedule is agreed to by the applicant and the City prior to approvals being issued by the Dover Planning Board. Additionally, should the property be in "Current Use" it will be subject to the Land Use Change Tax.

X Signature of Property Owner: Kent P Copperger Date: 4-1-19

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

CERTIFICATION OF PUBLIC ROADWAY ACCEPTANCE N/A

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

Signature of Property Owner: _____ Date: _____

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

CITY OF DOVER SUBDIVISION
LIST OF ABUTTERS

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
M	40	Kevin + Karen Coppinger	39 Gerrish Rd Dover NH 03820

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Kevin McEnearney	McEnearney Survey Associates	24 Chestnut St. Dover NH 03820

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

City of Dover, New Hampshire
MINOR SUBDIVISION SUBMISSION CHECKLIST

[Revision Date: December 15, 2017]

This review checklist is intended to assist the applicant in the planning process of preparing a Subdivision application for Planning Board action. The size of the project will determine the types of information required for review, therefore, a **pre-application conference** with the Planning Department to determine the list of items that must be completed is strongly encouraged.

Fees will be invoiced and are due along with fifteen (15), folded, copies of the plan set and materials will be due 3 weeks prior to the Planning Board meeting.

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

APPLICANT: KEVIN & KAREN COPPINGER File Number: _____

PROJECT TITLE: COPPINGER SUBDIVISION

PROPERTY LOCATION: GERRISH ROAD Tax Map: M Lot: 40

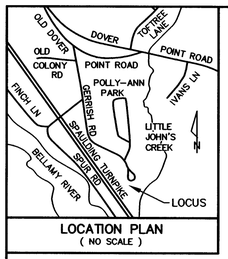
	Explain How Provided	Reviewed
1. **Completed and signed Application form** ✓		
2. **Electronic copy of the surveyed plat layout** ✓		
3. **Electronic copy of supplementary materials and application** ✓		
4. **Waiver requests to the Subdivision Regulations, with written justification**	N/A	
5. **Conditional Use Permit applications**	N/A	
6. **List of all professional agents to be notified for Planning Board** ✓		
7. **Letter to Serve from Public and Private Utilities**	N/A	
8. **Fifteen folded copies of subdivision plan w/scale of not less than 1"=50' or 1"=100' for larger subdivisions. Plans shall contain the following items as appropriate:** ✓		
Location map at appropriate scale ✓		
Proposed subdivision name and title and Planning File # ✓		
Date, north arrow and scale ✓		
Names of all abutting property owners ✓		
Name and address of owners and/or applicants ✓		
Signature & stamp of NH licensed land surveyor and/or engineer ✓		
Zoning District boundaries, including any special or overlay districts ✓		
Location of Conservation District areas	N/A	
Location, names and widths of existing and proposed streets, including pavement widths, grades, curbs and crosswalks ✓		
Location and widths of existing & proposed easements & right of ways	N/A	
Location and widths of existing and proposed sidewalks	N/A	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system ✓		
Existing and proposed lot areas in square feet ✓		
Existing and proposed topographic information at two foot intervals ✓		
Existing and proposed buildings and structure locations ✓		
Minimum building setbacks or build to lines on all lots ✓		
Location and size of existing and proposed electric, telephone, gas cable and other underground utilities	N/A	

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

REVIEWED BY: _____ DATE_____

P19-34 **39 Gerrish Road**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
M0033-A00000	25 GERRISH RD	WALSH GERALD R &	WALSH PENELOPE T	25 GERRISH ROAD	DOVER	NH	03820
M0033-C00000	23 GERRISH RD	GUSTIN DOUGLAS E SR		23 GERRISH ROAD	DOVER	NH	03820
M0038-000000	30 GERRISH RD	MURPHY ROBERT M &	ROBERTS JULIANA H	30 GERRISH RD	DOVER	NH	03820-4671
M0039-000000	36 GERRISH RD	MCCULLOUGH KRISTIN C &	MCCULLOUGH DONALD J JR	36 GERRISH RD	DOVER	NH	03820
M0039-A00000	42 GERRISH RD	LLOYD GARY & LLOYD DENISE		42 GERRISH RD	DOVER	NH	03820
M0040-A00000	47 GERRISH RD	DOMOWITZ FREDERICK R &	DOMOWITZ CANDIS L	47 GERRISH RD	DOVER	NH	03820-4675
M0041-000000	50 GERRISH RD	STATE OF NEW HAMPSHIRE		J.D. MORTON BLDG	CONCORD	NH	03301
M0040-000000	39 GERRISH RD	COPPINGER KEVIN P &	COPPINGER KAREN M	39 GERRISH RD	DOVER	NH	03820
		MCENEANEY SURVEY ASSOCIATE	KEVIN MCENEANY	24 CHESTNUT STREET	DOVER	NH	03820



LOCATION PLAN
(NO SCALE)

16°36'48"
NH DOT – REFERENCE PLAN No. 1
NH STATE PLANE GRID NORTH

M / 38
ROBERT M. MURPHY
JULIANA H. ROBERTS
30 GERRISH ROAD
DOVER, NH 03820–4671
3747 / 709

M / 39
KRISTIN C. MCCULLOUGH
DONALD J. MCCULLOUGH, JR.
BETH D. LEVI
36 GERRISH ROAD
DOVER, NH 03820
4616 / 945

M / 39A
GARY LLOYD
DENISE LLOYD
42 GERRISH ROAD
DOVER, NH 03820
2908 / 204

M / 41
STATE OF NEW HAMPSHIRE
J.O. MORTON BUILDING
CONCORD, NH 03301
555 / 437

IRON PIPE FOUND
FIRE HYDRANT
UP 166/7A1 97/7
CONCRETE BOUND FOUND 'NHHD'
UP 166/8

GERRISH ROAD {fka CUSHING ROAD}
PUBLIC – VARIABLE WIDTH RIGHT OF WAY
EDGE OF PAVEMENT (TYP.)
SMH RIM = 40.9
SMH RIM = 42.9
UP 166/6
UP 166/7
UP 168/1

IRON PIPE FOUND
N – 243,290.156
E – 1,201,093.959
(SEE NOTE 8)

WOOD FENCE
S06°44'10"E 42.00'
IRON ROD TBS
100.00'
S06°44'10"E 109.96'
IRON ROD TBS
15' MINIMUM BUILD TO LINE
25' MAXIMUM BUILD TO LINE
ASPHALT DRIVEWAY
15' MINIMUM BUILD TO LINE
25' MAXIMUM BUILD TO LINE
15' SIDE SETBACK LINE
M / 40A
FREDERICK R. DOMOWITZ
CANDIS L. DOMOWITZ
47 GERRISH ROAD
DOVER, NH 03820–4675
1952 / 439

M / 40–1
LOT 1
AREA
15,328 S.F.
0.35 Ac.

141.00'
N78°40'50"E
15' MINIMUM BUILD TO LINE
25' MAXIMUM BUILD TO LINE
12.0'
GARAGE
2 1/2 STORY WOOD FRAME HOUSE #39
108.96'
S85°12'50"W
180.67'
S88°36'34"W
15' SIDE SETBACK LINE
SHED
30' REAR SETBACK LINE
42
40
38
36
34
32
IRON ROD TBS
M / 40
REMAINING LAND AREA
16,460 S.F.
0.38 Ac.
142.08'
N36°42'40"W
30' REAR SETBACK LINE
70.00'
N53°31'50"E
WOOD FENCE
42.93'
N36°42'40"W
IRON ROD TBS
CONCRETE BOUND FOUND 'NHHD'
N – 243,262.502
E – 1,200,955.730
(SEE NOTE 8)
CONCRETE BOUND FOUND 'NHHD'
UP 168/2
TO PORTSMOUTH

SPUR ROAD
VARIABLE WIDTH LIMITED ACCESS RIGHT OF WAY
S.C.R.D. 555 / 437 & LS 1822 (1) – S.C.R.D. 637 / 328
SPAULDING TURNPIKE
300' WIDE LIMITED ACCESS RIGHT OF WAY
BRIDGE
TO ROCHESTER

M / 33A
GERALD R. WALSH
PENELOPE T. WALSH
25 GERRISH ROAD
DOVER, NH 03820
1980 / 336

M / 33C
DOUGLAS E. GUSTIN, SR.
23 GERRISH ROAD
DOVER, NH 03820
2691 / 660

CONCRETE BOUND FOUND 'NHHD'

REFERENCE PLANS:

1.) STATE OF NEW HAMPSHIRE – DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS – PLANS OF PROPOSED L.S. 1822 (1), N.H. PROJECT P–2692–D. SHEET 18. SCALE: 1" = 100'; DATED: 06/27/1954. ON FILE WITH NH D.O.T. AT WEBSITE: http://gis.dot.nh.gov/plan/P2692D.ASB.pdf

2.) PLAN OF LAND – CLARK W. & RUTH L. STEERE, DOVER, N.H. SCALE: 1" = 40'; DATED: SEPT. 1983; BY: G.L. DAVIS & ASSOCIATES. RECORDED S.C.R.D. PLAN 17E–14.

3.) PLAN OF LAND – JAMES F. McKENNA & DALE P. RENAUD, DOVER, NEW HAMPSHIRE. SCALE: 1" = 50'; DATED: JULY 1973; BY: K.E. MOORE & B.G. STAPLES. RECORDED S.C.R.D. PLAN 38, POCKET 1, FOLDER 4.

OWNERS SIGNATURES

NOTES:

1.) OWNERS OF RECORD:
KEVIN P. COPPINGER
KAREN M. COPPINGER
39 GERRISH ROAD
DOVER, NEW HAMPSHIRE 03820
S.C.R.D. VOL. 2518, PAGE 654

2.) M / 40 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) ZONING DISTRICT IS MEDIUM DENSITY RESIDENTIAL (R–12) DISTRICT

4.) DIMENSIONAL REGULATIONS:

MINIMUM LOT SIZE	= 12,000 S.F.
MAXIMUM LOT COVERAGE	= 30 PERCENT
MINIMUM FRONTAGE	= 100 FEET
BUILDING REQUIREMENTS:	
FRONT BUILD TO LINE	= 15 FEET MINIMUM
	= 25 FEET MAXIMUM
SIDE SETBACK	= 15 FEET
REAR SETBACK	= 30 FEET
MAXIMUM BUILDING HEIGHT	= 35 FEET
OUTBUILDING SETBACK	= 10 FEET SIDE AND REAR

5.) PLAN INTENT: TO SUBDIVIDE THE SUBJECT PARCEL AS SHOWN, PARCEL IS SERVICED BY MUNICIPAL SEWER AND WATER.

6.) TOTAL PARCEL AREA: 31,788 S.F. / 0.73 Ac.

7.) THE SUBJECT PARCEL IS LOCATED WITHIN AREAS DETERMINED TO BE OUTSIDE THE 0.2 PERCENT ANNUAL CHANCE FLOODPLAIN AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY NUMBER 330145; PANEL 0340; SUFFIX E; MAP NUMBER 33017C0340E; EFFECTIVE DATE SEPTEMBER 30, 2015.

8.) BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED MARCH 7, 2019.
VERTICAL DATUM IS NAVD88 BASED ON GPS OBSERVATION DATED MARCH 7, 2019.

9.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES, INC. DURING MARCH 2019 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.

10.) NO WETLANDS WERE OBSERVED ON THE SUBJECT PARCEL.

11.) TOPOGRAPHIC INFORMATION SHOWN IS AS OBTAINED FROM NH GRANIT (LIDAR).

LEGEND

IRON ROD TBS – IRON ROD TO BE SET
S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
-o- UP – UTILITY POLE
SMH – SEWER MANHOLE
N – – NORTHING
E – – EASTING

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

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

19–2215	SUBDIVISION	19–02	34–41 GPS
PROJECT NO	TYPE	FIELDBOOK & PAGES	

MINOR SUBDIVISION OF LAND
PREPARED FOR
KEVIN P. & KAREN M. COPPINGER
TAX MAP M, LOT No. 40
39 GERRISH ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. P 19–___

DRAWN BY: RJM	FILE: W10 cP\2215\19–2215 NAD83
SCALE: 1" = 20'	DATE: MARCH 15, 209

20 10 0 10 20 40 60 80

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

McEneaney Survey Associates, inc.
P.O. Box 681 – 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742–0911
SURVEYING – PLANNING – CONSULTING

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P19-04

Application Type:	Site Plan Review
Applicant(s):	Little Bay Marina & Development, LLC
Owner(s):	Little Bay Marina & Development, LLC
Location:	421, 423, 425, 427 Dover Point Road (Map 8, Lots 9-12)
Meeting Date:	April 23, 2019

INTENT: Proposal is to develop a condominium containing 23 units plus marina/marina office with 1 Accessory Dwelling unit and 27 parking spaces.

LOTS/UNITS PROPOSED: 23

AGENDA ITEM #: 5-H

ACREAGE: 3.49 acres

ZONING DISTRICT: LBW

EXISTING LAND USE: Marina and Single Family Dethatched Homes

PROPOSED LAND USE: Marina and Single Family Attached Homes

SURROUNDING LAND USE: Commercial, Spaulding Turnpike, and Bellamy River

ZBA ACTION: Relief was granted to allow multi-family where 3 and 4 family units per lot are allowed

ATTACHMENTS: Application Materials including site plan, 2/28/19 TRC minutes, and 4/8/19 Conservation Commission minutes

NOTICES SENT: Abutter notices were sent by certified or first class mail to all abutters for a previous meeting

PERMITS REQUIRED: Alteration of Terrain, Wetland Permit and Shore land Permit, Conditional Use Permit

WAIVERS REQUESTED:
N/A

Summary of Request and Background
The applicant proposes to merge the existing lots and develop a condominium with 23 units plus 1 accessory dwelling unit above the marina office. The site would be serviced by public water and sewer.

The Board voted to sell the additional TDR units at their September 11, 2018 meeting.

The application was reviewed by the Technical Review Committee on February 28, 2019 and initially heard but not yet acted upon by the Conservation Commission on April 8, 2019 (minutes for both are attached).

The applicant is still working with NHDES on the wetland/shoreland permit applications so the Conservation Commission has yet to vote on this project. Staff feels that a project of this magnitude could utilize a site walk in which case the Conservation Commission would like to be invited to.

Consistency with Land Use Regulations
Chapter 149-4 of the Site Review Regulations of the City Code provides for site review by the Planning Board of new construction of various types. This plan is consistent with those regulations.

STAFF RECOMMENDATION:
The Planning Department recommends that the Planning Board accept the application, open the public hearing, and table the public hearing and application to schedule a site walk to occur before May 13th.

427 Dover Point Road



Property Information

Property ID	08010-000000
Location	427 DOVER POINT RD
Owner	LITTLE BAY MARINA & DEVELOPMENT LLC
Land Use	101

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 11/16/2018
Data updated Daily

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P19-05

Application Type:	Conditional Use Permit
Applicant(s):	Little Bay Marina & Development, LLC
Owner(s):	Little Bay Marina & Development, LLC
Location:	421, 423, 425, 427 Dover Point Road (Map 8, Lots 9-12)
Meeting Date:	April 23, 2019

INTENT: Proposed multifamily development will impact 2,304 sq. ft. of non-tidal wetlands, the total area of the 100' tidal buffer is 58,203 sq. ft. and the 50' buffer area to be impacted will be 15,579 sq. ft.

LOTS/UNITS PROPOSED: 23

AGENDA ITEM #: 5-I

ACREAGE: 3.49 acres

ZONING DISTRICT: LBW

EXISTING LAND USE: Marina and Single Family Dethatched Homes

PROPOSED LAND USE: Marina and Single Family Attached Homes

SURROUNDING LAND USE: Commercial, Spaulding Turnpike, and Bellamy River

ZBA ACTION: Relief was granted to allow multi-family where 3 and 4 family units per lot are allowed

ATTACHMENTS: Application Materials including site plan, 2/28/19 TRC minutes, and 4/8/19 Conservation Commission minutes

NOTICES SENT: Abutter notices were sent by certified or first class mail to all abutters for a previous meeting

PERMITS REQUIRED: Alteration of Terrain, Wetland Permit and Shore land Permit, Conditional Use Permit

WAIVERS REQUESTED:
N/A

Summary of Request and Background
The applicant proposes to merge the existing lots and develop a condominium with 23 units plus 1 accessory dwelling unit above the marina office. The site would be serviced by public water and sewer.

The Board voted to sell the additional TDR units at their September 11, 2018 meeting.

The application was reviewed by the Technical Review Committee on February 28, 2019 and initially heard but not yet acted upon by the Conservation Commission on April 8, 2019 (minutes for both are attached).

The applicant is still working with NHDES on the wetland/shoreland permit applications so the Conservation Commission has yet to vote on this project. Staff feels that a project of this magnitude could utilize a site walk in which case the Conservation Commission would like to be invited to.

Consistency with Land Use Regulations
The Wetlands Protection District ordinance provides for Conditional Use Permits to allow impacts to wetlands and wetland buffers if standards related to demonstration of need, avoidance, minimization, and mitigation are met. This proposal is consistent with those standards.

STAFF RECOMMENDATION:
The Planning Department recommends that the Planning Board accept the application, open the public hearing, and table the public hearing and application to schedule a site walk to occur before May 13th.

427 Dover Point Road



Property Information

Property ID	08010-000000
Location	427 DOVER POINT RD
Owner	LITTLE BAY MARINA & DEVELOPMENT LLC
Land Use	101

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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Geometry updated 11/16/2018
Data updated Daily

CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES - P19-04

Application Type:	Site Plan Review
Applicant(s):	Little Bay Marina & Development, LLC
Owner(s):	Little Bay Marina & Development, LLC
Location:	421, 423, 425, and 427 Dover Point Road (Tax Map 8, Lots 9-12)
Date:	February 28, 2019

INTENT: To develop a condominium containing 23 units plus marina/marina office with 1 ADU and 27 parking spaces. This project has TDR approval from the Planning Board. A related CUP application for wetland buffer impact will also appear before the Planning Board.

LOTS/UNITS PROPOSED: 23, 1 accessory apartment plus marina/marina office

AGENDA ITEM #: 2

ACREAGE: 3.49 acres

ZONING DISTRICT: Little Bay Waterfront

EXISTING LAND USE: Residential with Marina and marina office

SURROUNDING LAND USE: Residential, Restaurant, Little Bay

ZBA ACTION:-Z18-01: Variance granted on 2/15/18 to allow multi-family dwellings (this will be coming back to ZBA to get an updated Variance)
-H88-8: Variance granted on 2/25/1988 to increase a nonconforming use (marina)
-H80-33: variance granted for Lot 9 to subdivide a lot without street frontage

PERMITS REQUIRED: Conditional Use Permit (Wetlands and Conservation District)

WAIVERS REQUESTED: None

ATTENDANCE:
Members: Donna Benton, Planning
Elena Piekut, Zoning
Dave White, Engineering
Jim Maxfield, Inspection Services
Sgt. Marn Speidel, Police
Dan Barufaldi, Economic Development
Frank Torr, Planning Board
Others: Steve Haight, Engineer
Kevin McEneaney
Chris Parker, Planning
Assistant Chief Paul Haas, Fire

PLAN REVIEW:
Planning Comments:

- Water and Sewer Investment fees
- Impact fees
- TDR fees from previous approval
- HOA documents will be required for review
- Please revise application to include:
    - A note from the abutting property owner (Newick's) of ability to cross that property in case of an emergency.
    - Letters to serve from utilities
    - Landscape O&M
- Please revise plan set to:
    - Note what is provided to meet zoning requirements
    - Engineer, LLS, and Landscape architect to sign and stamp final plan set
    - Label view of streetscape
    - Add planning file number P19-04
    - Add state permit numbers
    - Indicate materials on buildings
    - Revise note 24 on sheet 4 to indicate no Sunday hours
    - Revise note 30 to indicate the variances granted
    - Revise the flood plain note to indicate 1% not 0.2%
    - Revise note 3 on sheet 4 to add second column of dimensional information provided
    - Provide contours 100' off property or waiver request
    - Add boat trailer turning radius
    - Architectural plans indicate plans are for variance
    - Note 2 on sheet 4 should also indicate area in square feet
    - Show all surface parking including in front of garages
    - Indicate easement with northerly lot where driveway exists
    - Fix typos and clean up notes including leader notes
    - Indicate number of parking spaces in each grouping
    - Better screening of transformer
    - Indicate bike rack
    - Add note for no boat storage, no overnights, and no house boats

CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES - P19-04

Application Type:	Site Plan Review
Applicant(s):	Little Bay Marina & Development, LLC
Owner(s):	Little Bay Marina & Development, LLC
Location:	421, 423, 425, and 427 Dover Point Road (Tax Map 8, Lots 9-12)
Date:	February 28, 2019

Police Department Comments:

- Sheet 4, Site Data note #3 is not consistent with Project Narrative with respect to parking calculations
- Sheet 4, Grading Note #1 does not jive with porous pavement shown
- Sheet 17 Lighting Plan: some of the downlight numbers from the MERU LED series lights seem very high vs. dark nearby
- Concerned with lack of short term trailer parking

Fire/Inspections Comments:

- Sheet 4 note 16 add "approved" before backflow.
- Provide a proposed name for private road.
- Clarify a scope of improvements for the boat slips. Also consider access and electrical needs.
- Clarify the use of the office building.
- Sheet 10, clarify design for the domestic and suppression water lines. If there is a sprinkler riser room locate on plans.
- Indicate location of FDC.
- Clarify the use of the marina building.
- Site plans shall indicate confirmation of design has been reviewed for and complies with all applicable accessibility regulations. (i.e. '09, IBC Chapter 11 w/ NH Amendments and ANSI) in accordance with NH RSA 155-A: 5.
- Discuss phasing for barge and other work.
- Label retail rather than shop

Engineering Comments:

- If improvements are to be made to the waterfront then it should be part of this project
- Pull the buildings back for more buffer along the waterfront
- Add trees to the 'lawn area'
- Install a water gate after the tee on the fireline
- Delineate the waterservice size and material, call out the tapping sleeve and gate

Economic Development Comments:

- Streetscape
- Materials
- Design could be better

Planning Board Comments:

- Landscaping at Newick's Line possibly on their lot

Next Steps: Unofficial second TRC then Conservation Commission.

DOVER CONSERVATION COMMISSION – MINUTES

CITY OF DOVER

Meeting Type:	Regular Meeting
Meeting Location:	**1st Floor Conference Room** - 288 Central Avenue, Dover, NH
Meeting Date:	Monday, April 8, 2019
Meeting Time:	5:30 pm

MEMBERS PRESENT: Robert Atwood (Acting Chair), Tristan Donovan, Amy Kramer Perry, Abby Lyon, Richard Erickson, Jason Aube (Alternate)

STAFF PRESENT: Steve Bird (City Planner)

OTHERS PRESENT: Sarah Barnum, Matt Cardin, Matt Flanders, Steve Haight, James Olcott, Rick Schnable, others

In the absence of the Chair and Vice Chair, Robert Atwood, Secretary, will be the acting Chair.

1. **The meeting was convened at 5:30 PM and a roll call was done.**
2. **APPROVAL OF THE PRIOR MEETING MINUTES** – March 11, 2019

Lyon moved to approve the March 11, 2019 minutes, Kramer-Perry seconded. Vote: 5 in favor, Donovan abstained.

3. **OLD BUSINESS:**
4. **NEW BUSINESS:**

A. City of Dover Conditional Use Permit for Eversource Energy, Assessor's Map I, Lot 29, owned by David & Laurie Landry at 17 Spruce Lane, zoned R-40, and Assessor's Map I, Lot 29-D, owned by Christopher Lacasse at 19 Spruce Lane, zoned R-40.

Sarah Barnum of Normandeau Associates and Matt Cardin and Matt Flanders of Eversource were present to explain the proposal to replace an existing utility pole structure in a utility easement, within a 50-foot wetlands buffer. Temporary wetland buffer impacts are 4,461 square feet. Access will be off of Spruce Lane with a gravel driveway. Will be using temporary timber mats around the pole site. Standard erosion and sediment control measures will be used. Normandeau will monitor construction during the project. We hope to start in late May or early June.

Donovan: What structure is being replaced?

Cardin: The existing poles are wooden and new poles will be steel.

Kramer-Perry: Do you use a different technique now to install the poles?

Cardin: Yes we have less impact by using an auger for the holes and then remove the old poles.

Bird: How close is the proposed access point to the existing residential driveway and could it be used?

Cardin: It is right next to the driveway but we don't want to use it due to the impact our equipment would have.

Bird: You might want to reach out to the two property owners soon because they will be receiving notices soon.

Donovan made a motion to endorse the City of Dover CUP, Aube seconded. Vote: 6 in favor

Donovan stepped down on the next agenda item due to a conflict of interest.

B. Preliminary Discussion on two City of Dover Conditional Use Permits and two NHDES Wetland Permits for Little Bay Marina & Development., LLC, Assessor's Map 8, Lots 9, 10, 11 & 12, zoned LBW, located at 421, 423, 425 & 427 Dover Point Road.

Steve Haight of Civilworks and James Olcutt of TM Marine Construction were present to explain the proposal for 23 multi-family units in 5 buildings, 1 mixed use building, and associated parking and drainage creating 2,304 sq. ft. of wetlands impact, 15,579 sq. ft. of 50 foot wetland buffer impact and 58,203 sq. ft. of Conservation District impact on tidal Little Bay. Additionally 4,300 sq. ft. of a soil causeway is proposed to be replaced in the Conservation District. DES wants to have both projects go through the process together. The number of boat slips will stay at 45. There is no storm water treatment now but all water will be treated by this plan. The second

DRAFT

DES Wetlands application will be submitted next week. We are proposing hard armoring (rip rap) for the breakwater, but DES is pushing for living shoreline.

Aube: What is amount of proposed impervious surface and how does it compare to existing conditions?

Haight: Proposed impervious exceeds the pre-construction amount. We are proposing some porous pavement, grass pavers, and treatment swales. We have met with DES Alteration of Terrain staff. All the existing boat storage will go away, boats will have to be in the water or stored elsewhere.

Lyon: Who will be responsible for maintenance of the porous pavement?

Haight: The homeowner association will be responsible.

Kramer-Perry: Where will marina customers that have boats park?

Haight pointed out the grass pavers parking spaces near the water.

Lyon: What will the first floor in the residential units be used for?

Haight: If you look at the floor plans you can see that there will be two parking spaces and some living space.

Aube: Is there an opportunity for planting native vegetation on site?

Haight: The landscape plans shows the lawn areas and the landscaping.

Aube: I would like to see you reduce the lawn areas and put in native plantings, especially near the water.

Lyon: The native plants will help provide more flood protection.

Haight: We have a grassed treatment swale on the west side.

Atwood: Where would the boat trailers be parked?

Haight: Boat trailers will not be parked on-site.

Lyon: Explain the decision on where to have porous pavement.

Haight: Standard pavement will be used on drive aisles but porous pavement will be used for parking spaces. That is due to the wear and tear.

Lyon: Can we make some recommendations related to maintenance?

Bird: Yes as part of your recommendations to the Planning Board you can add specific maintenance recommendations that the Planning Board can add to the conditions of approval.

Haight: We have prepared an operation and maintenance plan that is required to address some of those items.

Conservation Commission discussed the need for a site walk and the consensus was to attend a site walk if the Planning Board decided to have one. This would occur prior to the next meeting on May 13th.

5. **REPORT FROM THE CHAIR**

A. Review of Correspondence Received From NH Department of Environmental Services:

1. Ambit Engineering letter to DES with more information for Kimberly Wesson at 407 Dover Point Road for seawall.

DRAFT

CIVILWORKS NEW ENGLAND

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

January 4, 2019

Mr. Christopher Parker
Assistant City Manager/Director of Planning
City of Dover
288 Central Ave
Dover, NH 03820

Subject: Little Bay Marina
421 Dover Point Road
Dover, NH 03820
Our Reference No. 1788

Re: Site Review Application &
Conditional use Permit

Dear Mr. Parker:

On Behalf of our clients, Little Bay Marina & Development, LLC, we are pleased to submit (8) Copies of the Application(s), (8) sets of the application material, (2) sets of the supporting drainage analysis, (8) full size plan sets, (1) reduced sets, and one electronic copy of the attached materials for TRC review:

1) Site Review Application
2) Conditional Use Permit Application
3) Deeds
4) Project Narrative
5) Tax Maps
6) USGS Map
7) NHB Review
8) Site Photographs
9) Utility Letters
10) Stormwater Inspection and Maintenance Plan
11) Drainage Report & Plans (Select Sets)
12) Design Plans

We look forward to discussing this application with the Technical Review Committee. If you have any questions that we might be able to answer, please do not hesitate to contact our office.

Sincerely,



Stephen J Haight, PE

CIVILWORKS NEW ENGLAND

SJH

City of Dover, New Hampshire
SITE REVIEW APPLICATION

[Revision Date: April 02, 2018]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: Little Bay Marina and Development, LLC Telephone # (603) 224-2251

Address of Applicant: 111 Loudon Road, Concord, NH 03301

E-Mail Address: aaversa@nedermatology.com

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

Address of Property Owner: _____

PROPERTY INFORMATION

Address of Property: 421 Dover Point Road

Assessor's Map # 8 Lot(s) # 9, 10, 11, & 12

Zoning District(s) LBW-Little Bay Waterfront Overlay District(s) Conservation District, Wetlands Protection District

Size of Parcel: 152,438 sq. ft. 3.49 ac. Property Deed: Book 2770, 4101, 4415, 4475 Page: 977, 409, 221, 288

Existing Use of Property: Residential / Commercial / Marina

SITE PLAN INFORMATION

Describe Proposed Use: 23 residential units and marina/marina office w/(1) apartment

Area of Parcel to be Developed: 152,438 sq. ft.

If Multi-family Residential, Specify Number of Units & Buildings Proposed: 23 units, 6 buildings (Mixed Use Bldg 1 Unit)

Number of Parking Spaces: Existing 60 boat trailers Proposed 27

Highway Access (check where applicable): X City Street ____ State Highway

Number of Employees Total: 2 In Maximum Shift: 2

Disposition of Parcel:

Building Footprint 5-4120 sf, 1-1400 sf, 1-3090 sf sq. ft.

Total Building Area 25,090 sq. ft.

Paved Area 50,890 sq. ft.

Building Setbacks:

Front Yard 28 ft.

Rear Yard 104 ft.

Side Yard: Right 17.1 ft. Left 12.9 ft.

City Water? X Yes ___ No How far is city water from the property? along frontage

City Sewer? X Yes ___ No How far is city sewer from the property? along frontage

BUILDING INFORMATION

Type of Building to be Built: Wood-frame

Height of Building: 34'-47' Finished Floor Elevation: Varies

Number of Seats (where applicable) 0

Estimated value of construction: $600,000 Refuse removal: Public/Private (circle one) Private

WAIVER REQUESTS

Site Review Regulations section(s) to be waived: _____

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

SURVEYOR INFORMATION

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

Address P.O. Box 681, Dover, NH Telephone #: (603) 742.0911

Professional License #: 661 E-mail address: msa@surveynh.com

ENGINEER INFORMATION

Name of Engineer and Company (Licensed in N.H.) Civilworks New England

Address P.O. Box 1166, Dover, NH Telephone #: (603) 749.0443

Professional License #: 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. Furthermore, I/we submit that the existing conditions sheet of the plan represents the lot in question, and that no alteration of the site shall take place during Planning Board review up to and including the pre-construction meeting. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: _____ Date: 11/5/18

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: Anthony Owen Date: 11/5/18

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

I, and my successors, hereby the City of Dover or its assigns to enter my property for the purpose of completing the site work as required by the approved plan should the letter or credit or other surety be called. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: Anthony Owen Date: 11/5/18

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

CERTIFICATION OF FEES

I, and my successors, hereby certify that I understand that the City of Dover collects impact fees, utility investment fees and inspection fees for projects developed in Dover. Said fees must be paid before a Certificate of Occupancy can be obtained for a structure, unless a different payment schedule is agreed to by the applicant and the City prior to approvals being issued by the Dover Planning Board. Additionally, should the property be in "Current Use" it will be subject to the Land Use Change Tax.

Signature of Property Owner: Anthony Owen Date: 11/5/18

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

CITY OF DOVER PLANNING DEPARTMENT

(Revision Date: May 15, 2017)

APPLICANT: _____ FILE NUMBER: _____

List of Common Site Plan Notes

The following list of commonly required notes is intended to be used as a guide to applicants and should not be construed as a comprehensive note requirement list for all projects. A preapplication conferenee with the Planning Department is suggested to help determine the actual notes that may be required.

1. The intent of this site plan is _____.

2. Current Owner: *Name and address*

   Authorized Signature

3. The project parcel(*s*) is (*are*) shown as Lot No. _____, Map ____ of the City of Dover Tax Assessor's Maps.

4. The project parcel(*s*) contains ____ acres or _____ square feet area of land.

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

6. Project Plan References: *(List all reference plans and their SCRD #)*

7. All applicable right-of-way, conservation, slope, construction, utility, access, or other easements shall be referenced in a note and shown on the plan and shown on the plan.

8. Zoning dimensional and density requirements are as follows:

   a. zoning district _____ subdistrict _____
   b. minimum lot size: _____ acres (sq. ft.)
   c. minimum lot frontage: _____ ft.
   d. minimum yard setbacks/build-to-lines:

      Front _____ft.
      Side _____ft.
      Rear _____ft.
      Abut-a-street _____ ft.

   Maximum/minimum lot coverage _____ %
   Minimum/maximum hldg. height _____ ft./stories

   This property falls within the following zoning overlay districts: *(List districts)*

9. Property line information has been obtained from a survey performed by *(surveyor)* on (*date*) with an error not greater than 1 in 10,000 (*or has been obtained from _____ Plan, prepared by (surveyor)*).

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

REVIEWED BY: _____ DATE_____ TRC DATE_____

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: May 18, 2017]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: Little Bay Marina and Development, LLC Telephone #(603) 224-2251

Address of Applicant: 111 Loudon Road, Concord, NH 03301

E-Mail Address: aaversa@nedermatology.com

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

Address of Property Owner: _____

PROPERTY INFORMATION

Assessor's Map # 8 Lot(s) # 9, 10, 11, 12

Address of Property: 421, 423, 425, 427 Dover Point Road

Zoning District(s) LBW Overlay District(s) Conservation District
Wetlands Protection District

Existing Use of Property: residential/commercial/marina

CONDITIONAL USE PERMIT INFORMATION

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

☒ Conservation District ☐ RCM Use Overlay District ☐ I-1 District Uses

☐ 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 project applicant proposes to install a driveway, utilities, sidewalk, a commercial building, and conduct site grading within a small wetland island (2,304 SF) and the associated 50' wetland buffer.

Total permanent impact area within the non-tidal wetlands on-site of 2,304 SF and the total 50' Dover wetland buffer impact will be 15,579 SF A total of 58,203 SF of temporary and permanent impact of previously developed 100' tidal buffer will be disturbed within the property.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: Alteration of Terrain, Standard Dredge and Fill Permit, Shoreland

Name of Professional That Prepared Plans: Stephen J. Haight

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

Professional License #: 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: Anthony J Avers Date: 11/5/18

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: Anthony J Avers Date: 11/5/18

PROJECT NARRATIVE
for
Little Bay Marina
423 Dover Point Road, Dover, NH
Tax Map 08, Lots 09, 10, 11 & 12

PROJECT OVERVIEW

The project applicant is proposing to combine four existing lots, remove the existing buildings and driveways, and create a new residential neighborhood with a commercial marina using the existing slips and moorings. The proposed site will include a new mixed use marina office building including (1) residential 2-bedroom unit, (23) additional 3-bedroom residential units within (6) new buildings, a new driveway layout, a new drop-off access at the waterfront, and replacing any remaining gravel areas with green space. The project will impact 2,304 square feet of non-tidal wetlands.

As a portion of the work proposed is within the 100' tidal buffer but does not fill greater than 0.5 acre-feet. The project will require filing for additional State Permits, including an Alteration of Terrain (AOT) permit and Wetland Permit including Shoreland permitting requirements.

The project consists of the following general improvements:

- Remove existing buildings, driveways, and existing site improvements
- Construction of (6) new multi-unit buildings and (1) Commercial mixed-use building
- Construction of stormwater treatment structures, grading, and other drainage requirements
- Site utility construction
- Construct new parking lots, 24' wide driveway, and access ways
- Stabilize remaining areas with loam and seed

PROJECT LOCATION AND SITE CHARACTERISTICS

The project site is located within the Little Bay Waterfront district. The project area consists of (4) parcels of land shown on Tax Map 08 as Lots 09, 10, 11 and 12. Lot 09 contains +/- 2.04 acres and is currently developed as a commercial marina with onsite storage, patron parking, and access to the existing slips and mooring field. Lots 10, 11 and 12 contain a total of +/- 1.45 acres and are currently developed as residential housing lots. The project proposes to combine the existing (4) lots with a lot line adjustment application attached. All the lots are accessed from Dover Point Road and are located along Little Bay.

DRIVEWAY AND PARKING LOT

The proposed driveway will be 24' with curbing and sidewalk. The proposed entrance located along Dover Point Road will be 24' wide and will service all the proposed buildings. There will be +/- 26,726 S.F. of porous pavement in the parking areas. Lighting for the proposed parking lot and driveway will be per the lighting plan.

For the proposed development, the City of Dover Parking maximums allow for the following:

- LBW Residential (24 Units)*(1.4.+0.5) = 45.6 Spaces Maximum
- LBW Office (1400 SF)/(275 SF) = 5.1 Spaces Maximum
- Boat Slips (42 Slips/0.8) = 34 Spaces
    - Total for Site = **84.7 Spaces Maximum (Surface)**

- Proposed Garage (23)*(2) = 46 Private Garage Spaces
- Proposed Surface Spaces = 27 Public Surface Spaces
- Total proposed = 73 Spaces (2 Accessible Space)

WETLAND IMPACT TYPE

The project work requires a standard Dredge and Fill Wetlands Permit Application. Approximately 2,304 SF of non-tidal wetland will be impacted. The total area of the 100' tidal buffer is 58,203 S.F. and the 50' buffer area to be impacted will be 15,579 S.F. The project does not impact bogs, marshes, sand dunes, tidal wetlands, cedar swamps, undisturbed tidal buffer zone, or involve any work within 50 feet of a salt marsh. The project is not located within 100 feet of prime wetlands.

DRAINAGE

The proposed development of the site includes the demolition of all the existing structures as well as the construction of 6 multi-unit residential buildings as well as a mixed use commercial building with the marina offices on the first floor and an apartment above. The development also includes the construction of an access road, parking for the residential and commercial use of the site, utility upgrades, and drainage improvements including the stormwater quality treatment structures of rain gardens, porous pavement, and a treatment swale.

The post development watershed is modeled utilizing the same point of analysis, Little Bay, incorporated in the pre development conditions to allow direct comparison of the peak runoff between the pre and post developed conditions. The post development condition has been divided into sixteen sub-catchments to accurately model the proposed development with the inclusion of rain gardens, porous pavement areas, a detention

pond, and a treatment swale as well as the closed drainage system. The stormwater conveyance systems include an existing swale to the north of the site and a closed drainage system which includes under drains and drain manholes to the south, both of which discharge to Little Bay .

The analysis indicates that the proposed development of the site will have negligible impact on the watershed.

UTILITIES

The proposed project expects to connect to City of Dover water and sewer as well as Unitil natural gas, and Eversource electric. Natural Gas lines are located within the Dover Point Road right-of-way which is the anticipated location for this connection. The existing site is already serviced by Natural Gas and Electricity. City of Dover water and sewer lines are located within the Dover Point Road right-of-way. The project anticipates connecting to City of Dover water via the Portland Road water main. Internal water services will be 6” mains with 2” connections to the buildings. Buildings will be sprinkled and connections made per the City’s Community Services Utility Division and Fire Department requirements and standards. The project plans to connect to the gravity sewer lines in Dover Point Road. Electricity for the site is proposed to be provided by the existing electric lines located along Dover Point Road.

EDoc # 0013412 Sep 12, 2016 1:25 PM
Book 4415 Page 0221 Page 1 of 7
Register of Deeds, Strafford County

C/H
L-CHIP
STA106913

STATE OF NEW HAMPSHIRE
DEPARTMENT OF REVENUE ADMINISTRATION
REAL ESTATE TRANSFER TAX
****2 Thousand 8 Hundred 65 Dollars
DATE 09/12/2016 ST838327 AMOUNT $ ****2865.00
VOID IF ALTERED

FORECLOSURE DEED

U.S. Bank National Association as trustee for CMALT REMIC 2007-A6 PRAA - REMIC Pass-Through Certificates, Series 2007-A6 having a mailing address c/o CitiMortgage, Inc., 1000 Technology Drive, O'Fallon, MO 63368, the current holder of a Mortgage from Thomas M. Ratay to Mortgage Electronic Registration Systems, Inc. as nominee for Merrimack Mortgage Company, Inc. dated April 25, 2007, recorded in the Strafford County Registry of Deeds at Book 3521, Page 0945, by the power conferred by said Mortgage and every other power, for One Hundred Ninety One Thousand and 00/100 Dollars ($191,000.00) paid, grants to:

Little Bay Marina & Development, LLC, a New Hampshire limited liability company, having a mailing address of 111 Loudon Road, Concord, NH 03301, the premises conveyed by said Mortgage.

Doc #:31702

425 Dover Point Road, Dover, NH 03820

Said premises are conveyed subject to all municipal real estate taxes and assessments.

Executed this 7th day of September, 2016.

U.S. Bank National Association as trustee for CMALT REMIC 2007-A6 PRAA - REMIC Pass-Through Certificates, Series 2007-A6, by and through its attorney-in-fact CitiMortgage, Inc.

By: _____, duly authorized
Sue Jorden
Its: Vice President-Document Control

STATE OF Missouri

County of St. Charles

On this 7 day of September, 2016, before me, the undersigned notary public, personally appeared Sue Jorden, personally known to me, who, being by me duly sworn or affirmed, did say that he/she is the Vice President-Document Control (position) of CitiMortgage, Inc., duly authorized to execute the preceding or attached document for said Corporation, as attorney in fact for U.S. Bank National Association as trustee for CMALT REMIC 2007-A6 PRAA - REMIC Pass-Through Certificates, Series 2007-A6, and he/she acknowledged said instrument to be the voluntary fee act and deed of said CitiMortgage, Inc., attorney in fact for U.S. Bank National Association as trustee for CMALT REMIC 2007-A6 PRAA - REMIC Pass-Through Certificates, Series 2007-A6, for its stated purpose.

Stephanie A Green
Notary Public
My commission expires: 9-8-19
(Seal)

STEPHANIE A. GREEN
Notary Public - Notary Seal
State of Missouri
St. Charles County
Commission #15231124
My Commission Expires September 8, 2019

Doc #:31702

AFFIDAVIT OF SALE
REQUIRED BY N.H. RSA 479:26

I, Steven G. Manchini, Esquire as attorney of Cunningham, Machanic, Cetlin, Johnson, Harney & Tenney, LLP counsel for US Bank National Association as Trustee for CMALT REMIC Series 2007-A6-REMIC Pass-Through Certificates Series 2007-A6, the grantor in the foregoing deed, on my oath say that the principal and interest secured by the mortgage referred to in the foregoing deed were not paid or tendered or performed when due or prior to the **July 18, 2016** foreclosure sale, and that a Notice of Foreclosure Sale was published in the *New Hampshire Union Leader*, a newspaper of statewide circulation and/or of general circulation within the town in which the premises are situated, published in Manchester, in the State of New Hampshire, on June 10, 2016, June 17, 2016 and June 25, 2016. A copy of said Notice of Foreclosure Sale is attached as Exhibit A.

And I further on oath say that on June 1, 2016, copies of said Notice were sent via certified mail to the current owners of the premises and to the mortgagors of said mortgage to the property address and at their last known address (es) to wit:

Thomas M. Ratay
425 Dover Point Road
Dover, NH 03820

Spouse of Thomas M. Ratay
425 Dover Point Road
Dover, NH 03820

and on said date to all persons having a lien on the premises of record in the Registry of Deeds of the County in which the subject premises are situated, at least fifty (50) days before the date of sale specified in said Notice, and if applicable, with additional Notice to IRS pursuant to Section 7425(c), to wit:

City of Dover
Water & Sewer Department
288 Central Avenue
Dover, NH 03820

City of Dover
Office of the Tax Collector
288 Central Avenue
Dover, NH 03820

Beneficial New Hampshire, Inc.
75 Congress Street
Portsmouth, NH 03081

Beneficial New Hampshire, Inc.
c/o C T Corporation Systems
9 Capitol Street
Concord, NH 03301

Beneficial New Hampshire, Inc.
1421 W. Shure Dr., Ste 100
Arlington Heights, IL 60004

Atlantic Credit & Finance, Inc.
3353 Orange Avenue
Roanoke, VA 24012

Atlantic Credit & Finance, Inc.
c/o Lexis Document Services, Inc.
10 Ferry Street, Suite 313
Concord, NH 03301

Atlantic Credit & Finance, Inc.
c/o Adam J. Olshan, Esq.
Law Offices of Howard Lee Schiff, PC
PO Box 8177
Brattleboro, VT 05301-8177

Atlantic Credit & Finance, Inc.
c/o Law Offices of Howard Lee Schiff, PC
510 Tolland Street
PO Box 280245
East Hartford, CT 06128-0245

I further say on oath that pursuant to said Notice, at that time and place therein appointed, the mortgaged premises was sold at public auction to Anthony Aversa for One Hundred Ninety One Thousand and 00/100 Dollars ($191,000.00), bid by Anthony Aversa, being the highest bid made at said auction, and being an amount equal to or in excess of an upset price established by said mortgage holder. See Assignment of Memorandum of Terms of Sale from Anthony Aversa to **Little Bay Marina & Development, LLC** recorded herewith. (Exhibit B)

I further say on oath that to the best of my knowledge no service of petition to enjoin the sale was filed in the **Strafford** County Superior Court.

I further on oath say that to the best of my knowledge and belief, the mortgagors were not in the military or other service of the United States at the time of the foreclosure or within twelve (12) months prior to the foreclosure or were members of the military service when the mortgage was executed, pursuant to the provisions of the Servicemembers Civil Relief Act.

Witness my hand this 15th day of August, 2016.

Steven G. Manchini, Esquire as attorney of Cunningham, Machanic, Cetlin, Johnson, Harney & Tenney, LLP counsel for US Bank National Association as Trustee for CMALT REMIC Series 2007-A6-REMIC Pass-Through Certificates Series 2007-A6,

COMMONWEALTH OF MASSACHUSETTS

County of Middlesex

On this 15th day of August, 2016 before me, the undersigned notary public, personally appeared Steven G. Manchini as attorney for **US Bank National Association as Trustee for CMALT REMIC Series 2007-A6-REMIC Pass-Through Certificates Series 2007-A6,** known to me to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

Notary Public Katherine Y. Goff
My commission expires: 11/12/2021
(Seal)

Doc #:31702

KATHERINE Y. GOFF
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
November 12, 2021

EXHIBIT A

Legal Notice

NOTICE OF MORTGAGEE'S SALE

For breach of the conditions set forth in a certain Mortgage dated April 25, 2007, given by **Thomas M. Ratay** to Mortgage Electronic Registration Systems, Inc. as nominee for Merrimack Mortgage Company, Inc., recorded with the Strafford County Registry of Deeds at Book 3521, Page 0945, the undersigned being the present holder of said mortgage, the original of which Mortgage is located at US Bank National Association as Trustee for CMALT REMIC Series 2007-A6-REMIC Pass-Through Certificates Series 2007-A6, 60 Livingston Avenue, St. Paul, MN 55107 and may be examined there during normal business hours, by virtue of Power of Sale contained in said Mortgage, US Bank National Association as Trustee for CMALT REMIC Series 2007-A6-REMIC Pass-Through Certificates Series 2007-A6, for the purpose of foreclosing said Mortgage, default having been made in the conditions thereof, will sell on the mortgaged premises which are situated at:

425 Dover Point Road, Dover, Strafford County, New Hampshire

all of said holder's right, title and interest in and to the real estate described in said mortgage, at PUBLIC AUCTION on Monday, July 18, 2016, at 12:00 p.m. local time. For mortgagor's(s') title see Deeds recorded with the Strafford County Registry of Deeds in Book 3510, Page 0904, in Book 3510, Page 898, and in Book 2049, Page 0658.

Terms of Sale: Ten Thousand Dollars ($10,000.00) cash, bank draft or other form acceptable to the said holder, to be paid at the time of the sale, and the balance of the purchase price to be paid within thirty (30) days of the date of sale at the firm of Cunningham, Machanic, Cetlin, Johnson, Harney & Tenney, LLP, Attorneys for said holder, 220 North Main Street, Suite 301, Natick, Massachusetts.

The above-described premises shall be so sold subject to all easements, restrictions, municipal or other public taxes, assessments, liens or claims in the nature of liens, outstanding tax titles, building, zoning and other land use laws and all permits and approvals issued pursuant thereto, and existing encumbrances of record created prior to said Mortgage, if there be any. Said premises are to be sold subject to the right of redemption of the United States of America, if any there be. The successful bidder shall be required to sign a Memorandum of Terms of Sale. Other terms, if any, to be announced at the time and place of sale. The description of the premises contained in said mortgage shall control in the event of error in publication.

The Mortgagee may amend or alter the terms of sale by oral or written notice before or at the auction sale. The Mortgagee may reject and accept bids at its discretion. The auction sale may be canceled or continued to another date or time on notice by the Mortgagee.

Notices Pursuant to New Hampshire RSA 479:25: You are hereby notified that you have the right to petition the superior court for the county in which the mortgaged premises are situated, with service upon the mortgagee, and upon such bond as the court may require, to enjoin the scheduled foreclosure sale.

The address of the mortgagee for service of process is: 60 Livingston Avenue, St. Paul, MN 55107. The name and address of the mortgagee's agent for service of process is: Cunningham, Machanic, Cetlin, Johnson, Harney & Tenney, LLP, 220 North Main Street, Suite 301, Natick, MA 01760.

The contact information for the New Hampshire Banking Department is:
New Hampshire Banking Department
53 Regional Drive, Suite 200
Concord NH 03301

For information on getting help with housing and foreclosure issues, please call the foreclosure information hotline at 1-800-437-5991. The hotline is a service of the New Hampshire banking department. There is no charge for this call.

Dated at Natick, Massachusetts this 1st day of June, 2016.

US Bank National Association as
Trustee for CMALT REMIC Series
2007-A6-REMIC Pass-Through
Certificates Series 2007-A6
Present Holder of Said Mortgage,
By it Attorneys,
CUNNINGHAM, MACHANIC, CETLIN,
JOHNSON, HARNEY & TENNEY, LLP
By: Steven G. Manchini
CUNNINGHAM, MACHANIC, CETLIN,
JOHNSON, HARNEY & TENNEY, LLP
220 North Main Street, Suite 301
Natick, MA 01760
(508) 651-7524

(UL - June 10, 17, 25)

EXHIBIT B

ASSIGNMENT OF
MEMORANDUM OF TERMS OF SALE

Anthony Aversa, with a mailing address of 111 Loudon Road, Concord, New Hampshire 03301, the Buyer under a certain Memorandum of Terms of Sale dated July 18, 2016, by and between the Buyer and US Bank National Association as Trustee for CMALT REMIC Series 2007-A6-REMIC Pass-Through Certificates Series 2007-A6 ("Seller"), with respect to a certain parcel of real property commonly known as 425 Dover Point Road, Dover, New Hampshire, with a Purchase Price of $191,000.00 (the "Purchase Agreement"), for consideration paid, hereby assigns all of his right, title, interest as the Buyer under the Memorandum of Terms of Sale to Little Bay Marina & Development, LLC, a New Hampshire limited liability company with a mailing address of 111 Loudon Road, Concord, New Hampshire 03301.

ASSIGNOR:

Dated: August 5, 2016

Anthony Aversa

ASSIGNEE:

Little Bay Marina & Development, LLC

Dated: August 5, 2016 By:

Anthony Aversa, Manager
Duly Authorized

2003 JUN 10 PM 1:40
STRAFFORD COUNTY
REGISTRY OF DEEDS

Return to:
Schop & Pleskow, LLP
Attorneys at Law
403 Main Street, Suite 605
Buffalo, New York 14203

018904

QUIT-CLAIM DEED

KNOW ALL MEN BY THESE PRESENTS, that RICHARD J. C. BENN, a married man with an address of 421 Dover Point Road, Dover, New Hampshire 03820, for consideration paid grants to RICHARD J.C. BENN AND VICTORIA BENN, husband and wife, as joint tenants with rights of survivorship, with an address of 421 Dover Point Road, Dover, New Hampshire 03820, WITH QUIT-CLAIM COVENANTS, the following:

A CERTAIN PARCEL OF LAND, with the buildings thereon,

SEE LEGAL DESCRIPTION ATTACHED HERETO

Meaning and intending to describe and convey the same premises conveyed to by deed dated June 10, 1997 and recorded in the Strafford County Registry of Deeds on July 2, 1997 in Book 1936 at page 563.

BK2770PG0977

I, RICHARD J.C.BENN, a married man, do hereby release all rights of homestead and other interests therein.

I, VICTORIA BENN, a married woman, wife of RICHARD J.C. BENN, do hereby release all rights of homestead and other interests therein.

Pursuant to New Hampshire RSA 78-B:2 (ix), the conveyance of the above described property is a non-contractual transfer and is exempt from the New Hampshire tax on transfer of real property.

#2

DATED this 23 Day of May, 2003

Victoria Benn
VICTORIA BENN

Richard J.C. Benn
RICHARD J.C. BENN

STATE OF NEW HAMPSHIRE
COUNTY OF Hillsborough

Then personally appeared the above-named, VICTORIA BENN AND RICHARD J.C.BENN, known to me to be the person(s) signing the within instrument and acknowledged that they executed the same for the purposes therein contained.

DATED May 23, 2003

Melanie Achter
Notary Public/Justice of the Peace
My Commission Expires: May 21, 2008

MELANIE ACHTER NOTARY PUBLIC STATE OF NEW HAMPSHIRE MY COMMISSION EXPIRES MAY 21, 2008

BK2770PG0978

QUIT-CLAIM DEED LEGAL DESCRIPTION

A CERTAIN TRACT OF LAND, together with any and all buildings thereon, known as 421 Dover Point Road, in Dover, County of Strafford and State of New Hampshire, at the southeasterly corner of land now or formerly of Alletta M. Abbott, bounded and described as follows:

BEGINNING at the southeasterly corner of land now or formerly of Arthur Hartford,; thence running southwesterly along land now or formerly of Frank Ham, two hundred fifty-five (255) feet, more or less, to a hub; thence northwesterly along land now or formerly of Charles Hussey and land now or formerly of Alletta M. Abbott, eighty-five (85) feet, more or less, to a hub; thence northeasterly along other land now or formerly of said Alletta M. Abbott, two hundred fifty-five (255) feet, more or less, to a hub in the ground; thence southeasterly along said Hartford land to the bound begun at.

SUBJECT ALSO to sewer easement to the City of Dover dated February 2, 1976 and recorded in the Strafford County Registry of Deeds at Book 1011, page 244.

TOGETHER WITH a right of way as stated in Deed recorded with said Registry at Book 1501, page 771.

BK2770PG0979

EDoc # 0005698 May 2, 2017 10:54 AM
Book 4473 Page 0288 Page 1 of 2
Register of Deeds, Strafford County

C/H
L-CHIP
STA115348

STATE OF NEW HAMPSHIRE
DEPARTMENT OF REVENUE ADMINISTRATION
REAL ESTATE TRANSFER TAX
****3 Thousand 7 Hundred 50 Dollars
DATE 05/02/2017 ST840307 AMOUNT $ ****3750.00
VOID IF ALTERED

Return to:
Baroff & Craven, PA
740 Chestnut Street
Manchester, NH 03104

QUITCLAIM DEED

KNOW ALL MEN BY THESE PRESENTS that I **Renee F. Johnson,** un-remarried widow, of 35 Wiltshire Drive, Worcester, Worcester County and Commonwealth of Massachusetts, 01609, grant(s) to **Little Bay Marina & Development, LLC**, a New Hampshire Limited Liability Company, with an address of 111 Loudon Road, Concord, Merrimack County, New Hampshire 03301 the following described premises with QUITCLAIM COVENANTS:

Two certain tracts or parcels of land with the buildings thereon, situated in Dover, County of Strafford, State of New Hampshire, and bounded and described as follows:

Tract I

A certain tract or parcel of land with the buildings thereon, situated on the Bellamy River in the Dover Point section of Dover, County of Strafford, State of New Hampshire, and bounded and described as follows:

Beginning at a cement post set in the ground at land now or formerly of Armand Ouellette, which cement post is sixty-five (65) feet, more or less, northerly from the Bellamy River; thence running Easterly by said Ouellette land a distance of fifty (50) feet, more or less, to a cement post in the ground at land now or formerly of Frank W. Ham; thence running southerly by said land now or formerly of Ham, a distance of one hundred twenty (120) feet, more or less, to the Bellamy River; thence turning and running in a westerly direction by said Bellamy River to land formerly of Alletta M. Abbott; thence turning and running in a northerly direction by said land formerly of Alletta M. Abbott a distance of sixty-five (65) feet, more or less.

Tract II

Also one other certain tract or parcel of land situate in Dover, County of Strafford, State of New Hampshire, situated northerly of the above-described tract or parcel of land and bounded and described as follows, to wit:

GAUTHIER &
MACMARTIN, PLLC
ATTORNEYS AT LAW
123 ELM ST.
MILFORD, NH 03055
603-673-7220

Beginning at the northeasterly corner of the above-described tract or parcel of land and by land formerly of Alletta M. Abbott a distance of eighty-five (85) feet, more or less, to a point; thence turning and running in a northerly direction a distance of twenty (20) feet to a point at other land now or formerly of Armand Ouellette; thence turning and running in an easterly direction by said Ouelllette land on a line parallel to the first mentioned bound a distance of eighty-five (85) feet, more or less, to a point; thence turning and running in a southerly direction a distance of twenty (20) feet to the point of beginning.

The above parcels of land are conveyed together with a right-of-way from the Dover Point Road through land formerly of Alletta M. Abbott, the location of said right-of-way to be determined at all times by said Abbott, her heirs and assigns. There is conveyed herewith a right to lay and maintain water pipes over other land of said Ouellette northerly of the parcels herein conveyed.

The grantor derives her title as the sole devisee of the Estate of Barry Thomas Johnson NH 7th Circuit – Probate Division – Dover Docket #319-2014-ET-00444. See also the Estate of Venice Mae Smith NH 7th Circuit – Probate Division – Dover Docket #319-2013-ET-00589.

Meaning and intending to describe and convey the same premises conveyed to Venice Mae Smith by Warranty Deed of Rachel B. Orcutt dated Decemebr 2, 1993 recorded with the Strafford County Registry of Deeds at Book 1718, Page 307.

This is not homestead property of the Grantor.

Executed this 1st day of May 2017.

Renee F. Johnson

State of New Hampshire
County of Hillsborough

Then personally appeared before me on this 1st day of May 2017, the said Renee F. Johnson and acknowledged the foregoing to be her voluntary act and deed.

Notary Public/~~Justice of the Peace~~
Commission expiration: 2/25/2020

ALEXANDER MACMARTIN JR. NOTARY PUBLIC NEW HAMPSHIRE

GAUTHIER &
MACMARTIN, PLLC
ATTORNEYS AT LAW
123 ELM ST.
MILFORD, NH 03055
603-673-7220

Z Drive:Cara:Deeds:Johnson, Barry Sale.doc

RE: 2013-793

Doc # 0002989 Feb 25, 2013 9:46 AM
Book 4101 Page 0409 Page 1 of 3
Register of Deeds, Strafford County

C/H
L-CHIP
STA061770

STATE OF NEW HAMPSHIRE
DEPARTMENT OF REVENUE ADMINISTRATION
REAL ESTATE TRANSFER TAX
****9 Thousand 6 Hundred 48 Dollars
DATE 02/25/2013 ST826068 AMOUNT $ ****9648.00
VOID IF ALTERED

Return to:
Craven, Sullivan & Splendore, PLLC
740 Chestnut Street
Manchester, NH 03104

QUITCLAIM DEED

KNOW ALL MEN BY THESE PRESENTS that Salt Water Aquatics, LLC, a dissolved New Hampshire limited liability company and Anthony J. Aversa, the sole Member thereof, both with a mailing address of 469 Brown Ridge Road, Ossipee, County of Carroll and State of New Hampshire 03864, for consideration paid grants to Little Bay Marina & Development, LLC, a New Hampshire limited liability company with a mailing address of 469 Brown Ridge Road, Ossipee, County of Carroll and State of New Hampshire 03864, with QUITCLAIM COVENANTS, the premises described below:

DOVER, NEW HAMPSHIRE

Two such tracts of land with buildings thereon, situate on the Southwesterly side of Dover Point Road in Dover, County of Strafford, State of New Hampshire and more particularly known as Lots #1 and 2 on "Plan of Land in Dover, New Hampshire prepared for Richard F. and Joan-Marie Benn, Scale 1" = 20', April 2, 1981, revised April 30, 1981, Robert G. Kobath of Wolfeboro, New Hampshire" and bounded and described as follows:

Lot 2

A certain tract of land with buildings thereon situate on the Southwesterly side of Dover Point Road in Dover, County of Strafford, State of New Hampshire and more particularly known as Lot 2 on "Plan of Land in Dover, New Hampshire, prepared for Richard F. and Joan-Marie Benn, Scale 1" = 20', April 2, 1981 revised April 30, 1981, Robert G. Kobath Surveyor, Wolfeboro, New Hampshire" and bounded and described as follows:

Beginning at a point on Dover Point Road, so-called, said point also being at a junction of the Northeasterly corner of land now or formerly of Mary Ratay, thence turning and running South 59° 10' 34" West one hundred sixty-four (164') feet along land of said Ratay to a point at land of said Ratay; thence turning and running South 40° 11' 26" East one hundred and fifty (150') feet along land of said Ratay to a point at land now or formerly of Armand Ouellette, thence turning and running South 61° 36' 04" West two hundred (200') feet along land of said Ouellette to a point at the Southeasterly corner of Lot 1 on the above-described plan; thence turning and running North 28° 23' 56" West one hundred ninety-four and 44/100 (194.44') feet by said Lot 1 to a point at the Northwesterly (sic Southwesterly) corner of this land and the Northeasterly corner of Lot #1 and land now or formerly of Alan David (sic Davis), thence turning and running North 60° 55' 34" East three hundred twenty six and 61/100 (326.61') feet

by land of said Davis to a headwall set on the Southwesterly sideline of Dover Point Road so-called; thence turning and running South 36° 50' 34" East along said Dover Point Road so-called, a distance of forty-five (45') feet to the point of beginning.

Said Lot 2 contains forty-two thousand nine hundred sixteen (42,916 sq. ft. +/-) square feet more or less. Subject to a right of way formerly in favor of Armand Ouellette, now or formerly of Benjamin and Rachell Orcutt, and of Richard F. and Joan-Marie Benn (Lot 1), their heirs and assigns, said right of way leading from Southwesterly sideline of Dover Point Road to lands of Ouellette, Orcutt and Benn (Lot 1) over existing drive.

Subject also to the limited access provisions relating to turnpikes as taken by Commissioners' Return dated January 3, 1955 and recorded in the Strafford County Records, Book 639, Page 328 and to pole rights granted to Public Service Company of New Hampshire. Subject to a sewage easement to the city of Dover, recorded in the Strafford County Registry of Deeds at Book 1006, Page 450-452.

Lot 1

A certain tract of land situate on the Southwesterly side of Dover Point Road in Dover, County of Strafford, State of New Hampshire, and more particularly known as Lot 1 on "Plan of Land in Dover, New Hampshire, prepared for Richard F. and Joan-Marie Benn Scale 1" = 20', April 2, 1981, revised April 30, 1981, Robert G. Kobath, Surveyor, Wolfeboro, New Hampshire" and bounded and described as follows:

Beginning at a point on the southeasterly corner of Lot 1 and the Southwesterly corner of Lot 2 as shown and said plan; thence running South 61° 36' 04" West fifty-five (55') feet along land now or formerly of Armand Ouellette to a point; thence turning and running South 40° 11' 26" East thirty-five (35') feet along said Ouellette land to a point at land now or formerly of Benjamin and Rachell Orcott; thence turning and running South 61° 36' 04" West one hundred thirty-six (136') feet along said Orcutt land to rip rap at the Bellamy River also known as Little Bay; thence proceeding by said rip rap along said Bellamy River to a retaining wall; thence proceeding by said retaining wall and said Bellamy River two hundred and five (205') feet to a point; thence turning and running in a westerly direction by a causeway one hundred forty-three (143') feet to a sunken-filled barge; thence along the Southwesterly sideline of said sunken-filled barge in Little Bay one hundred forty-two (142') feet; thence turning and running across the front of Westerly side of said barge in Little Bay twenty-five (25') feet; thence turning and running along the Northerly side of said barge in Little Bay one hundred forty-two (142') feet; thence turning and running North 60° 55' 34" East along land now or formerly of Allen Davis three-hundred one (301') feet to a point at the Northeasterly corner of Lot 1 and the Northwesterly corner of Lot 2; thence turning and South 28° 23' 56" East one hundred ninety-four and 44/100 (194.44') feet by said Lot 2 to the point of beginning.

Said Lot 1 contains thirty-eight thousand and five hundred eighty-seven (38,587 sq ft +/-) (sic) square feet more or less.

Subject to a right of way formerly in favor of Armand Ouellette, now or formerly of Benjamin and Rachell Orcutt, and of Richard F. and Joan-Marie Benn (Lot 1), their heirs and assigns. Said right of way leading from Southwesterly sideline of Dover Point Road to lands of Ouellette, Orcutt and Benn (Lot 1) over existing drive.

Subject to city sewer easement.

MEANING AND INTENDING to describe and convey those premises conveyed to Salt Water Aquatics, LLC by Jay M. Smith by deed dated June 30, 1999 and recorded in the Strafford County Registry of Deeds at Book 2145, Page 0127.

This is not homestead property.

This Quitclaim Deed was prepared without the benefit of a title search and therefore title as transferred is subject to any and all encumbrances and conditions of record, including but not limited to that certain Mortgage, Security Agreement and Financing Statement recorded in the Strafford County Registry of Deeds at Book 3833, Page 0425, as modified by that certain Modification and Substitution of Mortgage recorded in said Registry at Book 3922, Page 0441.

Witness my hand this 21st day of February, 2013.

Salt Water Aquatics, LLC

By: _____
Anthony J. Aversa, Member

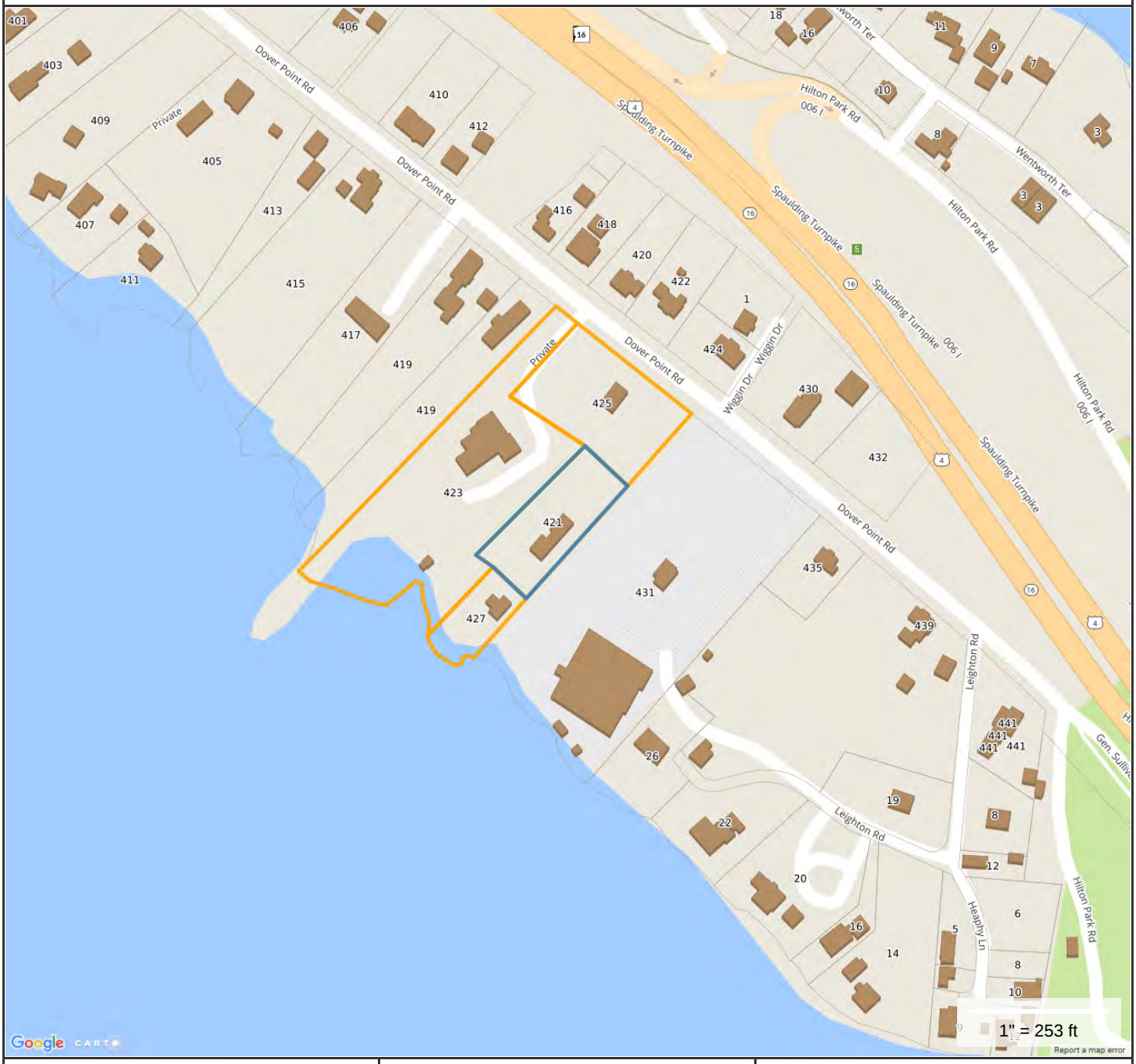
_____
Anthony J. Aversa, Individually

State of New Hampshire
County of Hillsborough

On this 21st day of February, 2013, before me, the undersigned officer, personally appeared Anthony J. Aversa, individually and as the duly authorized sole Member of Salt Water Aquatics, LLC, known to be (or satisfactorily proven to be) the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

SUSAN E. BOYD
MY COMMISSION EXPIRES APR. 9, 2013
NOTARY PUBLIC NEW HAMPSHIRE

_____
~~Justice of the Peace~~/Notary Public
New Hampshire
My Commission Expires: _____



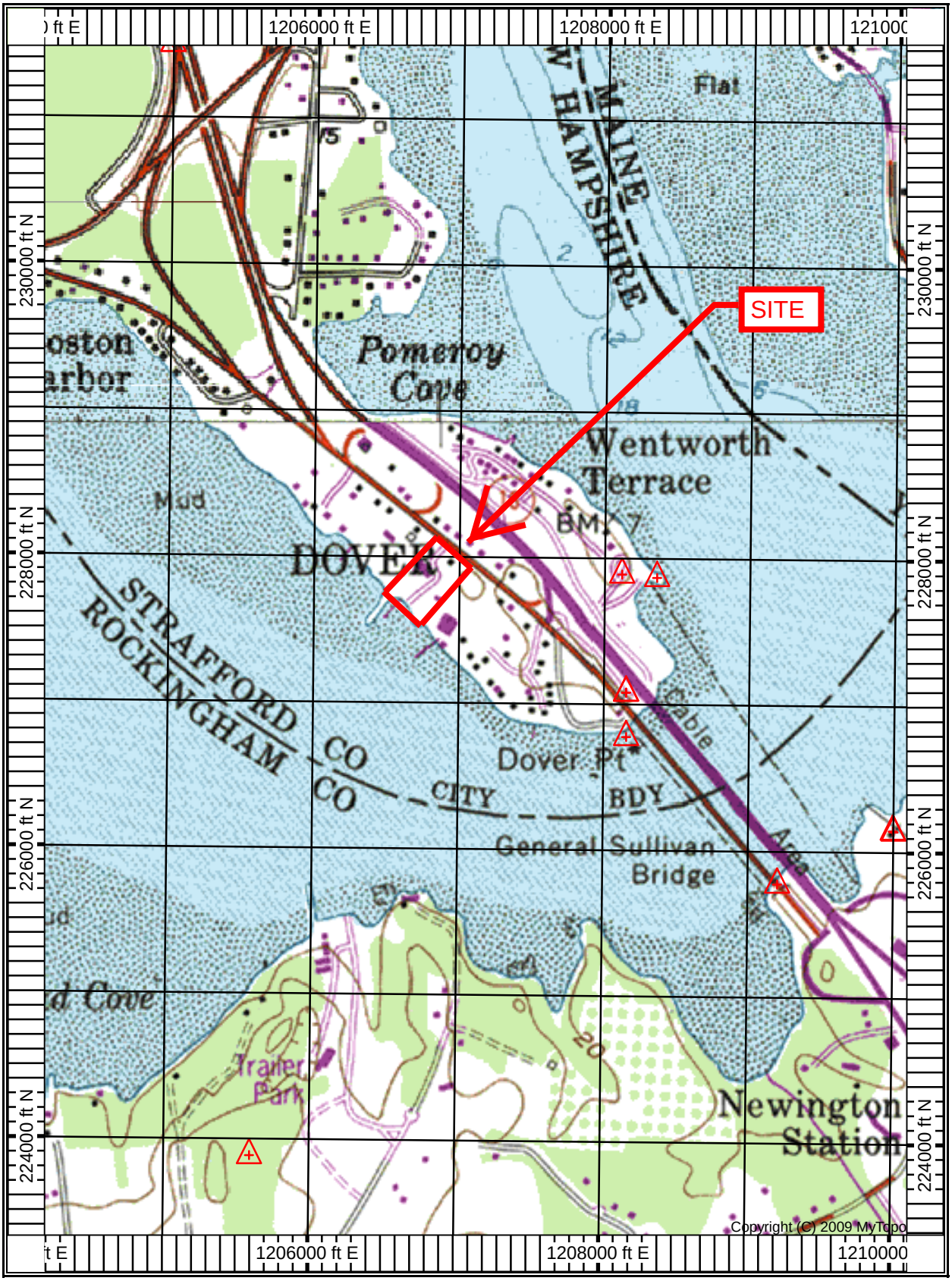
Property Information

Property ID	08011-000000
Location	421 DOVER POINT RD
Owner	BENN RICHARD J C &

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Parcels updated 03/29/2018
Properties updated 07/18/2018



SCALE 1:12000

0 1000 2000 3000

FEET

To: Paige Dickie, Civilworks New England
181 Watson Road
P.O. Box 1166
Dover, NH 03821

From: NH Natural Heritage Bureau

Date: 4/16/2018 (valid for one year from this date)

Re: Review by NH Natural Heritage Bureau of request submitted 3/30/2018

NHB File ID: NHB18-1025 **Applicant:** N/A

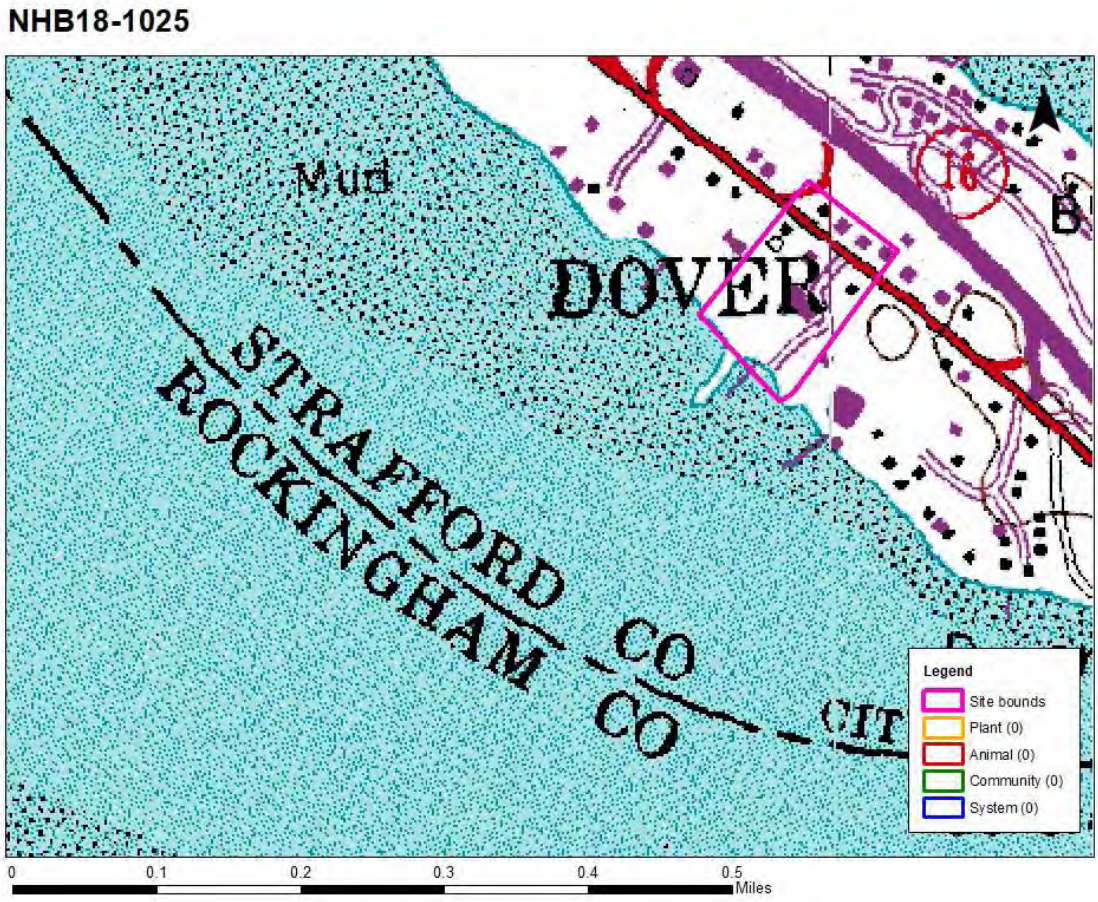
Location: Dover
Tax Maps: Tax Map 8 Lots 09, 10, 11, 12

Project Description: The proposed project will be a redevelopment to the Little Bay Marina. The proposed site will combine four lots, tear down existing buildings, and construct a new office building, add a parking area, add storage bays, and create a widened driveway for trucks to be able to move in and out of the site.

The NH Natural Heritage database has been checked by staff of the NH Natural Heritage Bureau and/or the NH Nongame and Endangered Species Program for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government.

It was determined that, although there was a NHB record (e.g., rare wildlife, plant, and/or natural community) present in the vicinity, we do not expect that it will be impacted by the proposed project. This determination was made based on the project information submitted via the NHB Datacheck Tool on 3/30/2018, and cannot be used for any other project.

MAP OF PROJECT BOUNDARIES FOR: **NHB18-1025**



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

AREA WITHIN LIMITS OF
CAUSEWAY' & "BARGE"
= 8,250 S.F.± / 0.19 Ac.±

"CAUSEWAY"

8 / 8B

JOHN ANASTAS
GLORIA ESPOSITO–ANASTAS
419A DOVER POINT ROAD
DOVER, NH 03820
2567 / 760

F.E.M.A. F.I.R.M. ZONE
AE LINE (ELEVATION 6)

HIGHEST
OBSERVABLE
TIDE LINE

175.00'
N44°47'03"E

157.17'
N44°47'03"E

NON–TIDAL WETLAND

IRON ROD W/
CIVILWORKS CAP
FOUND

142.83'
N44°47'03"E

8 / 38D

PAUL G. LONG,
418 DOVER POINT
DOVER, NH 03820
1673 / 085

8 / 9

PARCEL AREA

79,592 S.F.±

1.83 Ac.±

GRAVEL DRIVE

130.92'
S42°21'18"W

NON–TIDAL WETLAND

MARINA GARAGE
/ WORKSHOP

APARTMENT
ABOVE MARINA
SALES & STORE

GRAVEL DRIVE AND
PARKING AREA

FUEL
CUT–OFF
VALVE

PAD FUEL
PUMP
CONCRETE

CONCRETE PAD FUEL TANK
COVER NH DES
UNDERGROUND STORAGE
TANK SITE NUMBER
199902013

GRAVEL DRIVE AND
PARKING AREA

VARIABLE WIDTH LIMITED ACCESS R.O.W.

DOVER POINT ROAD

8 /

MILES C. F
COURTNEY E
420 DOVER R
DOVER, NH
4049 /

A/C
G E
OHU

HOUSE
#425

IRON ROD
FOUND

235.00'
S42°25'33"W

GARAGE

8

SETH C.
422 DOVER
DOVER,
4359

IRON ROD W/
CIVILWORKS CAP
FOUND

67.12'

120.00'
S42°25'33"W

POOL

IRON ROD IN
CONCRETE
MONUMENT
FOUND

N41°35'16"W
65.39'

DECK

DECK

HOUSE

GARAGE

SHED

SHED

8 / 11

PARCEL AREA
20,592 S.F.
0.47 Ac.

8 / 12

PARCEL AREA
35,046 S.F.
0.80 Ac.

COTTAGE

S42°21'16"W 250.57'

S42°21'18"W
150.92'

HIGHEST
OBSERVABLE
TIDE LINE

8 / 10

LITTLE BAY MARINA
& DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301
4473 / 288

8 / 13A–1

JOHN F. NEWICK REVOCABLE TRUST 2001
JOHN F. NEWICK, TRUSTEE
431 DOVER POINT ROAD
DOVER, NH 03820
2472 / 010

105°21'16"

REF. PLAN 1

DV = 312.0000'

NH STATE PLANE
GPS OBS. JULY 18, 2016

IRON AXLE
FOUND

IRON ROD W/
CIVILWORKS CAP
FOUND

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

1 PHOTO NUMBER

PHOTO KEY PLAN

No.	Appd	Date

REVISIONS

LITTLE BAY MARINA & DEVLOPMENT LLC
111 LOUDON ROAD
CONCORD, NH 03301

DESIGNED BY: PDD
DRAWN BY: PDD
APPROVED BY: SJH

DATE: 4–2–18
SCALE: AS SHOWN
FILE NO: 1788

CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-0443

K1



Photo 4



Photo 2



Photo 3



Photo 1



Photo 5



Photo 7



Photo 8



Photo 6



Photo 12



Photo 10



Photo 11



Photo 9



Photo 13



Photo 15



Photo 16



Photo 14



Photo 20



Photo 18



Photo 19



Photo 17



Photo 24



Photo 22



Photo 23



Photo 21



Photo 25

CIVILWORKS NEW ENGLAND

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

Subject: Little Bay Marina Condominiums
423 Dover Point Road
Dover, NH 03820
Our Reference No. 1788

Re: List of Project Professionals

Applicant: LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

Owner(s): LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

Site Civil Engineer: CIVILWORKS NE
181 WATSON ROAD
PO BOX 1166
DOVER, NH 03820

Surveyor: MCENEANEY SURVEY ASSOCIATES, INC.
P.O. BOX 681
24 CHESTNUT STREET
DOVER, NH 03820

Wetland Scientist: GOVE ENVIRONMENTAL SERVICES
8 CONTINENTAL DR.
BUILDING 2, UNIT H
EXETER, NH 03833

Landscape Architect: WOODBURN & COMPANY
LANDSCAPING ARCHITECTURE, LLC
130 KENT PLACE
NEWMARKET, NH 03857

Architect: MICHAEL J. KEANE ARCHITECTS, PLLC
101 KENT PLACE
NEWMARKET, NH 03857

"CAUSEWAY"

8 / 9

PARCEL AREA
79,592 S.F.±
1.83 AC.±

EXISTING BUILDING SETBACK LINE

100' TIDE BUFFER
(CITY OF DOVER JURISDICTIONAL SETBACK)

NON-TIDAL WETLAND

50' SWDPA

HEADWALL "B"

150' SWDPA

250' SWDPA

GAS METER

GAS

PROPOSED 4 UNIT RESIDENTIAL BUILDING

PROPOSED 3 UNIT RESIDENTIAL BUILDING

PROPOSED OFFICE BUILDING

PROPOSED 4 UNIT RESIDENTIAL BUILDING

PROPOSED 4 UNIT RESIDENTIAL BUILDING

PROPOSED 4 UNIT RESIDENTIAL BUILDING

PROPOSED 4 UNIT RESIDENTIAL BUILDING

EXISTING SMH

PSMH1

PSMH2

PSMH3

PSMH4

PW

PS

PG

PE

NON-TIDAL WETLAND

TBM
NAIL FOUND IN POLE
(MARKED EL. 10.65)
NAVD88 ELEV.9.77

IRON ROD W/
CIVILWORKS CAP FOUND

BIT.CONC.SIDEWALK

VGC

DOVER POINT ROAD

NAIL FOUND IN POLE
(MARKED EL. 10.65)
NAVD88 ELEV. 9.77

APPROXIMATE GAS LINE LOCATION (V.I.F.)

APPROXIMATE SEWER LINE LOCATION (V.I.F.)

BITUMINOUS CONCRETE SIDEWALK

VERTICAL GRANITE CURB (TYP.)

DOUBLE YELLOW LINE

EDGE OF PAVEMENT

IRON AXLE FOUND

IRON ROD W/ CIVILWORKS CAP FOUND

SANITARY SEWER SCHEDULE

EXISTING SMH
RIM=8.88
INV.=3.0

PSMH1
RIM=
INV.IN=
INV.OUT=

PSMH2
RIM=
INV.IN=
INV.OUT=

PSMH3
RIM=
INV.IN=
INV.OUT=

PSMH4
RIM=
INV.OUT=

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILENO.: P18-____

CIVILWORKS NEW ENGLAND
Civil Engineering
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-0943

NO.	REVISION	APP'D	DATE

DATE: 12-17-18
SCALE: 1"=20'
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:1788
FILE: SITE.DWG

PRELIMINARY UTILITY PLAN (EVERSOURCE)

LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

7

DAVE WHITE, P.E.
City Engineer
d.white@dover.nh.gov

288 Central Avenue
Dover, New Hampshire 03820-4169
(603) 516-6450
www.dover.nh.gov

City of Dover, New Hampshire

COMMUNITY SERVICES DEPARTMENT

July 17, 2018

CIVILWORKS NEW ENGLAND
P.O. Box 1166, 181 Watson Road
Dover, NH 03820

RE: Tax Map 8 Lot 9, 10, 11, & 12
423 Dover Point Road
Dover, NH 03820

To Whom It May Concern:

This letter is written confirmation that the City of Dover will serve the above referenced development with water and sanitary sewer services. Water and sanitary sewer work shall conform to the City's Water and Sewer Ordinances, as well as the requirements of Dover's Community Services Utilities Division. There is also adequate supply and capacity in the water and sewer system. If you have any questions, please feel free to call me at 516-6450.

Sincerely,

Dave White

Dave White, PE
City Engineer

CIVILWORKS NEW ENGLAND

P.O. BOX 1166, 181 WATSON ROAD
DOVER, NH
TEL: (603) 750-4266, FAX: (603)749-7348

July 11, 2018

David White, PE
City Engineer
271 Mast Road
Dover, NH 03820

Re: **Water Availability**
Little Bay Marina
Tax Map 8 Lot 9, 10, 11, & 12
423 Dover Point Road
Dover, NH 03820

Dear Mr. White,

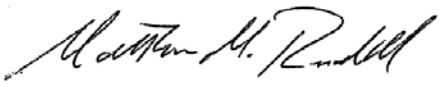
On behalf of the applicant, Little Bay Marina and Development, LLC, we are requesting confirmation that the Dover Community Services has capacity in their system to accommodate a multi-unit Residential/Commercial project to be located at 423 Dover Point Road, Dover, NH.

The project will generally consist of (5) new buildings (residential/commercial), including (15) 3-bedroom units, (1) 2- bedroom unit, and 1400 sf general office space which is expected to generate a domestic water usage of approximately 2470 gpd*.

* Water volume is based on NHDES Env-Wq 1008.03 Table 1008-1 Design Flow figures: for Dwellings, Apartments and Unspecified Office Space.

Please let me know if you need any additional information.

Sincerely,
CIVILWORKS NEW ENGLAND



Matthew M. Randall, PE

c.c. File

CIVILWORKS NEW ENGLAND

P.O. BOX 1166, 181 WATSON ROAD
DOVER, NH
TEL: (603) 750-4266, FAX: (603)749-7348

July 16, 2018

David White, PE
City Engineer
271 Mast Road
Dover, NH 03820-4169

Re: **Sewer Allocation Request**
Little Bay Marina
Tax Map 8 Lot 9, 10, 11, & 12
423 Dover Point Road
Dover, NH 03820

Dear Mr.White,

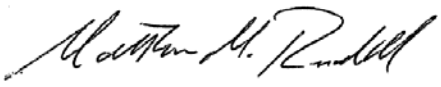
On behalf of the applicant, Little Bay Marina and Development, LLC, we are requesting confirmation that the Dover Community Services has capacity in their system to accommodate a multi-unit Residential/Commercial project to be located at 423 Dover Point Road, Dover, NH.

The project will generally consist of (5) new buildings (residential/commercial), including (15) 3-bedroom units, (1) 2-bedroom unit, and 1400 sf of general office space which is expected to generate a sewer volume of approximately 2470 gpd*.

* Sewer volume is based on NHDES Env-Wq 1008.03 Table 1008-1 Design Flow figures: for Dwellings, Apartments, and Unspecified Office Space.

Please let me know if you need any additional information.

Sincerely,
CIVILWORKS NEW ENGLAND



Matthew M. Randall

c.c. File

CIVILWORKS NEW ENGLAND

P.O. BOX 1166, 181 WATSON ROAD
DOVER, NH
TEL: (603) 750-4266, FAX: (603)749-7348

July 11, 2018

Janet Oliver
Unitil – Northern Utilities
325 West Road
Portsmouth, NH 03802-0508

Re: **Natural Gas Request**
Little Bay Marina
Tax Map 8 Lot 9, 10, 11, & 12
423 Dover Point Road
Dover, NH 03820

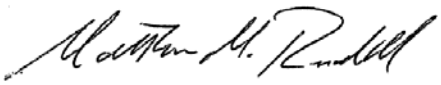
Dear Ms. Oliver,

On behalf of the project proponent, Little Bay Marina & Development, LLC, we are requesting natural gas service for a proposed total of (5) residential/commercial buildings including (15) 3-bedroom apartments, (1) 2-bedroom apartment, and 1400 sf of office space.

The proposed development is new construction.

We have attached the Unitil Request for Service. Please let me know if you need any additional information.

Sincerely,
CIVILWORKS NEW ENGLAND



Matthew M. Randall

c.c. File

Stormwater Management System Inspection & Maintenance Plan

For

LITTLE BAY MARINA
MAP 08, LOT 09, 10, 11, 12

423 Dover Point Road
Dover, New Hampshire
Strafford County

July 2018

Prepared For:

LITTLE BAY MARINA & DEVELOPMENT, LLC
111 Loudon Road
Concord, NH 03301

Prepared By:

CIVILWORKS NE
P.O. Box 1166
181 Watson Road
Dover, New Hampshire 03820

Introduction

Civilworks NE, has prepared the following Stormwater Management System Inspection & Maintenance Plan for Little Bay Marina, Dover, NH. The intent of this plan is to provide a list of procedures that document the inspection and maintenance requirements of the Stormwater Management System for this site.

The following inspection and maintenance program is necessary in order to keep the Stormwater Management System functioning properly. These measures will also help to minimize potential environmental impacts to the areas surrounding the developed site. By following the enclosed procedures, the property owners, and maintenance personnel will be able to maintain the functional design of the Stormwater Management System and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff while at the same time ensuring the recharge of groundwater resources through continued infiltration.

Owner

Little Bay Marina & Development, LLC
111 Loudon Road
Concord, NH 03301

In the event of a change in ownership, this Inspection and Maintenance Plan shall be transferred to the new party; transfer shall be documented to NH DES in writing.

Contact / Responsible Party

Little Bay Marina & Development, LLC
111 Loudon Road
Concord, NH 03301
(603) 224-2251

The contact information for the Contact / Responsible Party shall be kept current; transfer shall be documented to NHDES in writing.

Management Company

Little Bay Marina & Development, LLC
111 Loudon Road
Concord, NH 03301

The contact information for the Management Party shall be kept current.

Inspection Schedule / Record Retention

Inspection frequency should, at a minimum, be in accordance with New Hampshire Stormwater Manual, Volume 2, latest edition, as updated by NHDES. See the Inspection and Maintenance Plan for frequency requirements. A copy of the completed Stormwater Management System's Inspection & Maintenance Log and Deicing Salt Quantity Use Log shall be maintained, kept on-site, and be made available to local, state, or federal regulators as applicable by law.

Stormwater Management System Components

The Stormwater Management System associated with the project is designed to mitigate both the quantity and quality of site-generated stormwater runoff and to recharge the underlying groundwater resources. As a result, its design includes the following elements:

- Culverts
- Detention Ponds/Raingardens
- Energy Dissipation Structures (Rip Rap)
- Swales
- Catch Basins
- Pavement and Porous Pavement
- Outlet Structures
- Litter / Trash Removal

Structure callouts in ( ) correlate to the design plans, a copy of which shall be maintained with this Inspection and Maintenance Plan.

Inspection and Maintenance Plan

By implementing the following procedures, the owners will be able to maintain the functional design of the Stormwater Management System and maximize the system's ability to remove sediment and other contaminants from site generated stormwater runoff and to effectively recharge the underlying groundwater resources.

CULVERTS:

- Inspect once per year.
- Inspect for clogging and sediment accumulation.
- Remove all debris immediately and sediment accumulations ≥ 2 inches.

DETENTION PONDS/RAINGARDENS:

- Inspection, by a **qualified professional**, of detention ponds 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.
- Embankments and spillways should be inspected by a **qualified professional** for settlement, erosion, seepage, animal burrows, woody vegetation, and other conditions that could degrade the embankment and reduce its stability for impounding water. Immediate corrective action should be implemented if any such conditions are found.
- Inlet and outlet pipes, inlet and outlet structures, energy dissipation structures or practices, and other structural appurtenances should be inspected by a **qualified professional**, and corrective action implemented (e.g., maintenance, repairs, or replacement) as indicated by such inspection.
- The bottoms, interior and exterior side slopes, and crest of earthen detention basins should be mowed, and the vegetation maintained in healthy condition, as appropriate to the function of the facility and type of vegetation.
- Vegetated embankments that serve as "berms" or "dams" that impound water should be mowed at least once annually to prevent the establishment of woody vegetation.
- Trash and debris should be removed from the pond and any inlet or outlet structures whenever observed.
- Accumulated sediment should be removed when it significantly affects pond capacity.

ENERGY DISSIPATION STRUCTURES (RIP RAP): As Applicable

- Inspect the outlet protection annually for damage and deterioration. Repair damages immediately.
- If stones become displaced from the riprap areas they should be replaced immediately and chinked in to assure stability. Add additional riprap as needed. Vegetation growing through the riprap should be eliminated at least yearly.

SWALES (RIP RAP LINED):

- Inspect once per year.

- Inspect for erosion, sediment accumulation, vegetation loss, and presence of invasive species.
- Remove debris and accumulated sediment, based on inspection.
- Repair eroded areas and provide additional rip rap/vegetation as needed; remove invasive species and dead vegetation.

OUTLET STRUCTURE(S):

- Inspect once per year.
- Inspect for clogging and sediment accumulation.
- Remove all debris immediately and sediment accumulations ≥ 2 inches.

CATCH BASIN(S):

- Inspect once per year.
- Inspect for floatables, sediment accumulation, and hydrocarbons (oils and grease).
- Remove all floatables immediately and sediment accumulations ≥ 2 feet.
- Hydrocarbons shall be removed immediately by skimming, absorbent materials, or other methods and should be disposed of in accordance with applicable State and Federal regulations.

PAVEMENT/POROUS PAVEMENT:

- Minimize sanding.
- Minimize application of salt for ice control.
- Monitor periodically to ensure that the pavement surface drains effectively after storms.
- Clean periodically (1-2 times per year) using a sweeper or vacuum sweeper. Vacuum sweeping is the preferred method.

LITTER / TRASH REMOVAL:

- Routinely patrol site for litter pick up.

Inspection & Maintenance Table

System Component / BMP	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance / Cleanout Threshold
Culverts	Annually	Check for sediment accumulation and clogging	≥ 2 in. sediment depth
Detention Ponds/ Raingardens • Outlet Structure • Inlet/Outlet Piping • Embankments • Pond Sediment • Trash/Debris • Vegetation (Veg.)	Bi-Annually " " " " Periodically " " " "	See Catch Basin (CB) Requirements (Req.) See Outlet Structure (OS) Req. Check for erosion, settlement, seepage, etc. Check for sediment accumulation in pond Check for trash (in pond and structures) • Maintain 95% veg. (pond & slopes) • Maintain healthy stand of veg.	See CB Req. See OS Req. Repair immediately ≥ 2 in. sediment Remove all trash/debris Restore veg. in-kind Mow when ≥ 6 in
Energy Dissipation (ED) Structures (RipRap)	Annually	Check for displaced stones Check for woody vegetation	Replace immediately Remove annually
Swales (Rip Rap Lined)	Annually	• Check for sediment accumulation • Check for erosion	≥ 1 in. sediment Repair immediately
Outlet Structure(s)	Annually	• Inspect once per year. • Inspect for clogging and sediment accumulation. • Remove all debris immediately and sediment accumulations ≥ 2 inches.	≥ 2 in. sediment Remove immediately
Catch Basins	Annually	• Check for sediment accumulation • Check for floatable contaminants	≥ 2 ft. sediment depth Remove all floatables
Catch Basin Stormwater Filter	Annually	• Check general condition of the unit/vault • Check for accumulation of sediment, static water or a special condition warranting maintenance	>4" sediment on the vault floor, >1/4" Sediment on top of the cartridge, or >4" of Static water
Pavement • Sanding • Salt Applications • Sweep/Vacuum • Trash/Debris	Limit use As Req. 1 - 2 x's Year Periodically	Minimize use to prevent tracking issues RECORD APPLICATION RATES Sweep or vacuum to prevent tracking issues Check for trash/debris	Sweep to prevent issues Minimize as Req. Sweep/Vac as needed Remove when noticed
Litter / Trash Removal	Periodically	Check for litter and trash	Remove when noticed

Inspection & Maintenance Checklist/Log

The following pages contain a blank copy of the Stormwater Management System's Inspection & Maintenance Log and a Deicing Salt Quantity Use Log. These forms are provided to assist the owners with the inspection and maintenance of the aforementioned Stormwater Management System.

Stormwater Management System's Inspection & Maintenance Log

Date of Inspection/Maintenance: _____ Inspector: _____

System Component / BMP	Cleaning / Repair Needed (List Items / Comments)	Date of Cleaning/Repair	Performed By

Deicing Salt Quantity Use Log

Date	Amount of Material Applied	Comments

Standard Traffic Impact Assessment & Analysis

Little Bay Marina & Development, LLC

Dover Point Road
Dover, New Hampshire

---

prepared for:
Little Bay Marina & Development, LLC
111 Loudon Road
Concord, NH 03301
Contact Person: Anthony Aversa
Tel. No. (603) 224-2251

prepared by:
Civilworks New England
P.O. Box 1166
Dover, NH 03821

December, 2018
Reference No. 1788

Description of Site and Surrounding Land Uses

The project site, a portion of which is currently known as Little Bay Marina, is located on the southerly side of Dover Point Road and is shown on Tax Map 8 as Lots 9, 10, 11 & 12. The total project parcel area is 3.49 acres and the project is located in the Little Bay Waterfront (LBW). The site is currently occupied by the Little Bay Marina, which is currently operational, along with three (3) single-family residences. The marina use includes 55 dock slips and 32 moorings. This component of the site will remain unchanged.

Surrounding land uses include residential to the west, a restaurant (Newick's) to the east and residences on the opposite side of Dover Point Road, to the north. Little Bay, a tidal waterway, lies to the south. The Spaulding Turnpike parallels Dover Point and is located approximately 350 feet to the north of the site.

Description of Roadways

The project site fronts on, and is accessed via, an existing drive cut on Dover Point Road. This is a two-way street with 12-ft. lanes and variable width paved shoulders. This road formerly served as a primary north/south route, connecting to Portsmouth/Newington via the old General Sullivan Bridge, but has served as a local roadway with access to Hilton Park and limited commercial development since the 1980's.

Sight Distance Analysis

The available sight distance at the existing/proposed access driveway, looking both east and west, is in excess of 400 ft. for exiting vehicles.

Given the posted speed limit of 30 miles per hour and the straight and level geometry of the roadway segment, it is reasonable to assume a typical travel speed of 40 miles per hour. Per AASHTO-Geometric Design of Highways and Streets, required stopping sight distance, rounded for design, is 275 ft. to 325 ft.

Stopping sight distance is the distance a vehicle travels from the time the driver sights an object (or vehicle) necessitating a stop (perception), plus the distance a vehicle travels during the physical reaction required to apply the brakes (reaction), plus the distance required to stop the vehicle from the instant the brakes are applied. As stated above, available sight distance exceeds 400 ft.

Trip Generation

The following is pertinent relative to calculation of trip generation estimates associated with the subject project:

- Data Source – ITE Trip Generation, 7th Edition
- Proposed Project
  - 23 Residential Condominium Townhouses
  - Marina with 55 dock slips and 32 moorings
- Use Descriptions (per ITE Land Use Codes)
  - L.U.C. 230 – Residential Condominium Townhouses
    - Ownership units
    - Peak hour of trip generation typically coincides with peak hours of adjacent streets
  - L.U.C. 420 – Marina
    - Typically includes associated services

Based on the above data and the project scope, the following trip generation during the A.M. and P.M. Peak Hours and distribution of trips has been calculated:

Townhouse Condominiums (L.U.C. 230)				
			Distribution	
Parameter	**Avg. Rate [1]**	**Total Trip Ends**	**Entering**	**Exiting**
A.M. Peak Hour	.44	10.1	1.7	8.4
P.M. Peak Hour	.52	12.0	8.0	4.0

Marina (L.U.C. 420)				
			Distribution	
Parameter	**Avg. Rate [2]**	**Total Trip Ends**	**Entering**	**Exiting**
A.M. Peak Hour	0.08	7.0	2.3	4.7
P.M. Peak Hour	0.19	16.5	9.9	6.6

Total Project Estimated Peak Hour Trip Generation				
			Distribution	
Parameter	**Avg. Rate**	**Total Trip Ends**	**Entering**	**Exiting**
A.M. Peak Hour	-----	13.6	4.0	13.1
P.M. Peak Hour	-----	24.3	17.9	10.6

[1] Per dwelling unit
[2] Per berth

Trip Distribution

Given the site's location relative to the Spaulding Turnpike and Portsmouth/Dover employment and retail centers, it is assumed 50% of the trips will depart the site to the east (right-turn) to access the Turnpike northbound and 50% will depart to the west (left-turn) to access Route 4 and the Spaulding southbound. It is also assumed that 100% of the arriving trips will be from the west.

Based on the preceding assumptions, the following trip distribution is anticipated:

	Entering Trip Ends	**Exiting Trip Ends**	
Parameter	**via Dover Point eastbound**	**via Dover Point eastbound**	**via Dover Point westbound**
A.M. Peak Hour	4.0	6.55	6.55
P.M. Peak Hour	17.9	5.3	5.3

It should be noted that time of day (A.M. vs. P.M.) does not impact trip distribution due to the overriding effect of access limitations to the Spaulding Turnpike as it relates to origin and destination desires. Further, the analysis results above indicate the largest peak hour vehicle movements occur during the P.M. peak hour with 17.9 vehicles entering the site and 10.6 vehicles exiting. It should be noted that the major portion of the trips operated by the site already exist in the presence of the marina and that these trips are seasonal, April to October.

Public Transit

There is no public transit available to the site.

Appendix 'A'
Trip Generation Rate Data
(Source: ITE Trip Generation, 7th Ed.)

Land Use: 230, Residential Townhouse Condo
Land Use: 420, Marina

Land Use: 230
Residential Condominium/Townhouse

Description

Residential condominiums/townhouses are defined as ownership units that have at least one other owned unit within the same building structure. **Both condominiums and townhouses are included in this land use.** The studies in this land use did not identify whether the condominiums/townhouses were low-rise or high-rise. Low-rise residential condominium/townhouse (Land Use 231), high-rise residential condominium/townhouse (Land Use 232) and luxury condominium/townhouse (Land Use 233) are related land uses.

Additional Data

The number of vehicles and the number of residents had a high correlation with average weekday vehicle trip ends. The use of these variables was limited, however, because the number of vehicles and residents was often difficult to obtain or predict. The number of dwelling units was generally used as the independent variable of choice because it is usually readily available, easy to project and had a high correlation with average weekday vehicle trip ends.

The peak hour of the generator typically coincided with the peak hour of the adjacent street traffic.

The sites were surveyed from the mid-1970s to the 2000s throughout the United States and Canada.

Source Numbers

4, 92, 94, 95, 97, 100, 105, 106, 114, 168, 186, 204, 237, 253, 293, 319, 320, 321, 390, 412, 418, 561, 562, 583

Residential Condominium/Townhouse
(230)

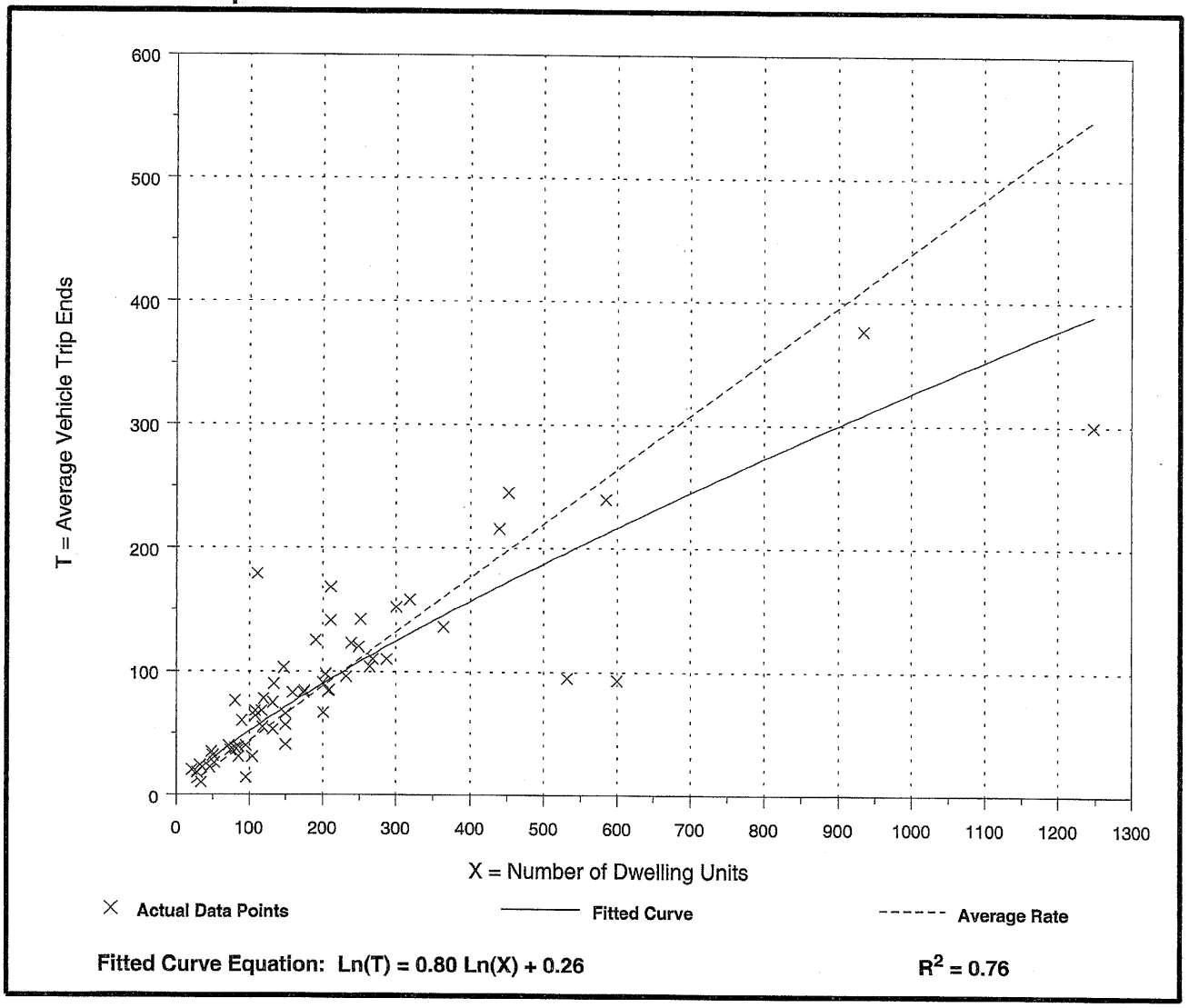
Average Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Number of Studies: 59
Avg. Number of Dwelling Units: 213
Directional Distribution: 17% entering, 83% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.44	0.15 - 1.61	0.69

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.80 Ln(X) + 0.26

R^2 = 0.76

Residential Condominium/Townhouse
(230)

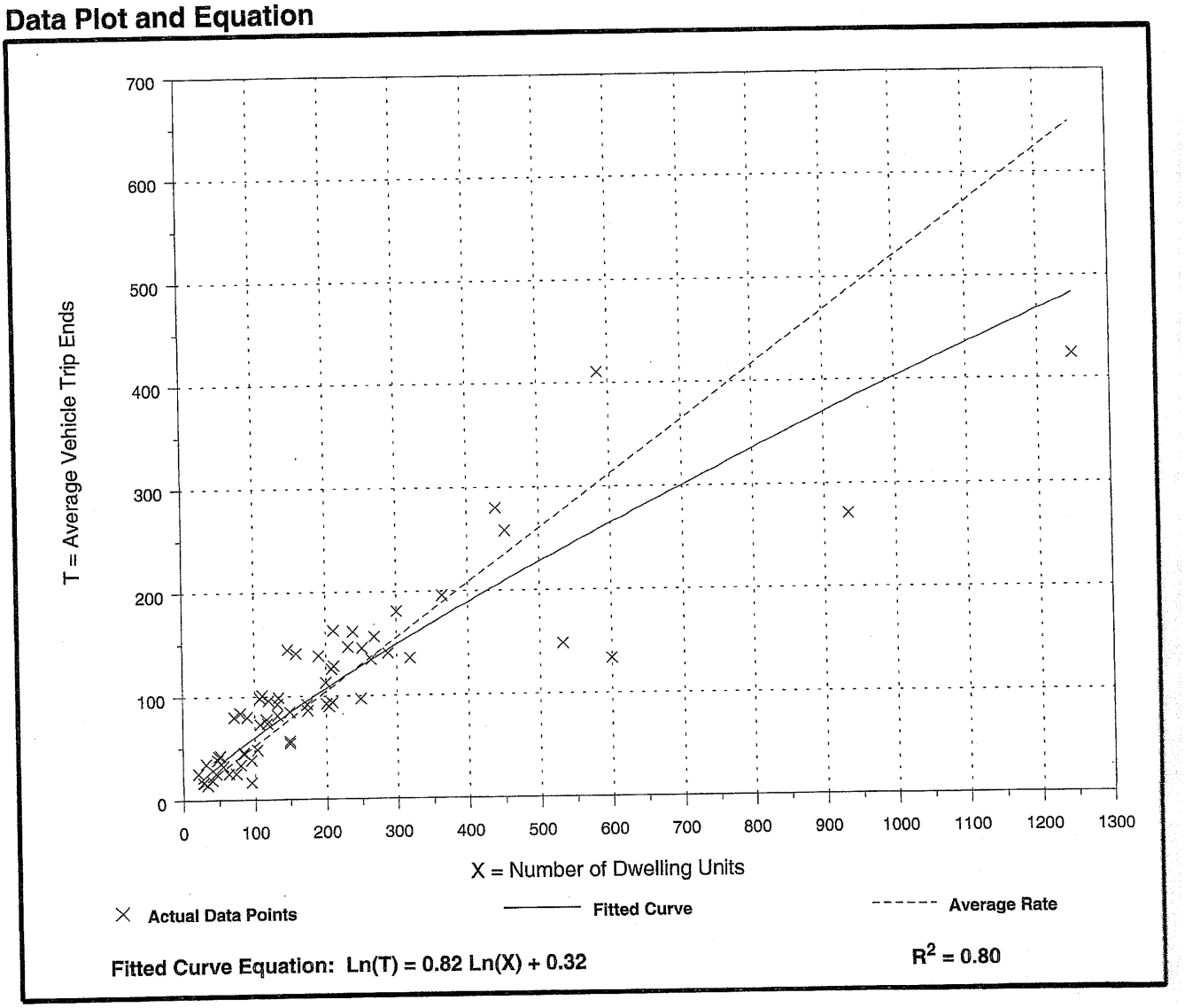
Average Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 62
Avg. Number of Dwelling Units: 205
Directional Distribution: 67% entering, 33% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.52	0.18 - 1.24	0.75

Data Plot and Equation



Fitted Curve Equation: $Ln(T) = 0.82\ Ln(X) + 0.32$

$R^2 = 0.80$

Residential Condominium/Townhouse
(230)

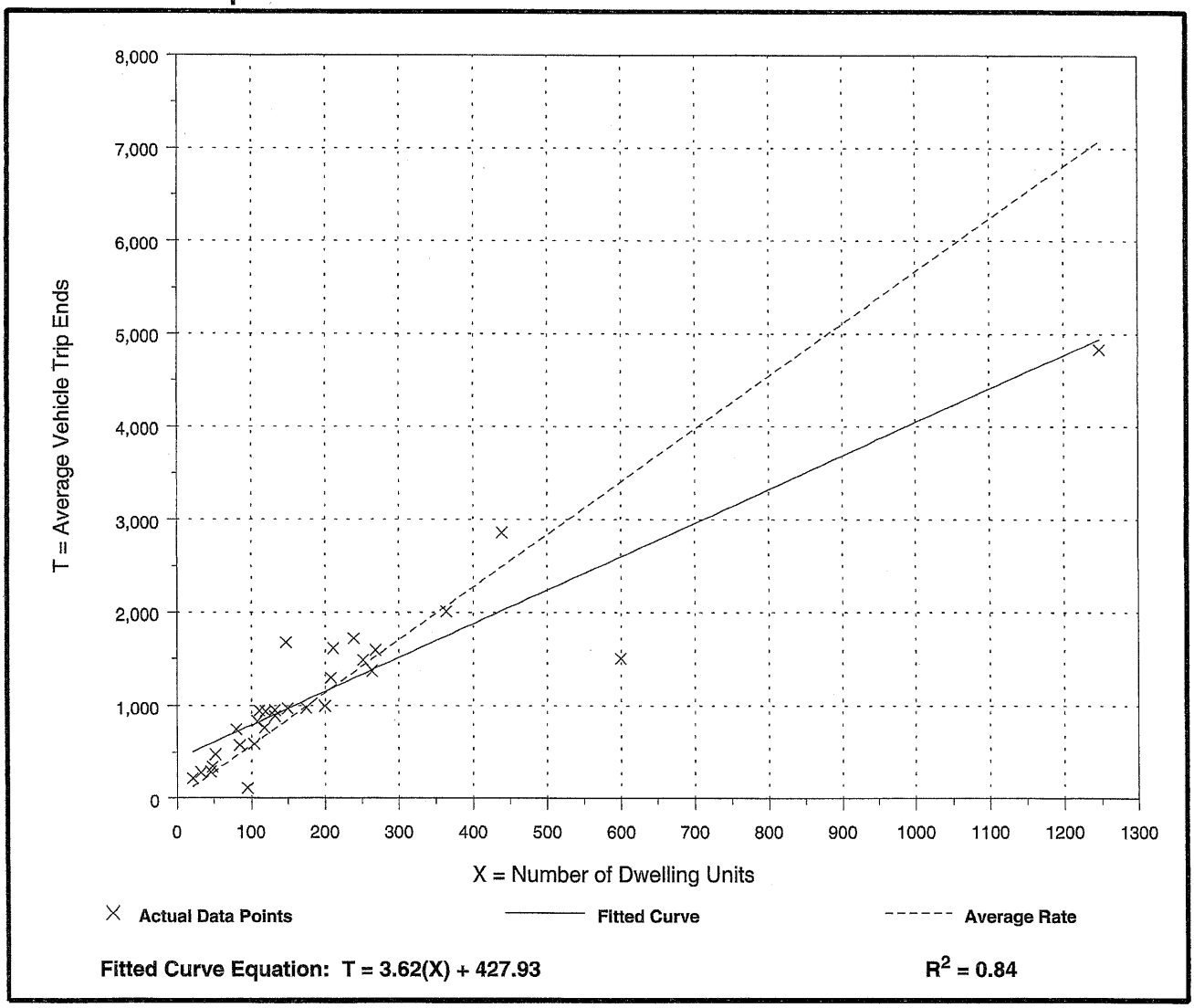
Average Vehicle Trip Ends vs: Dwelling Units
On a: Saturday

Number of Studies: 30
Avg. Number of Dwelling Units: 209
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
5.67	1.17 - 11.40	3.10

Data Plot and Equation



Fitted Curve Equation: T = 3.62(X) + 427.93

R^2 = 0.84

Marina
(420)

Average Vehicle Trip Ends vs: **Berths**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

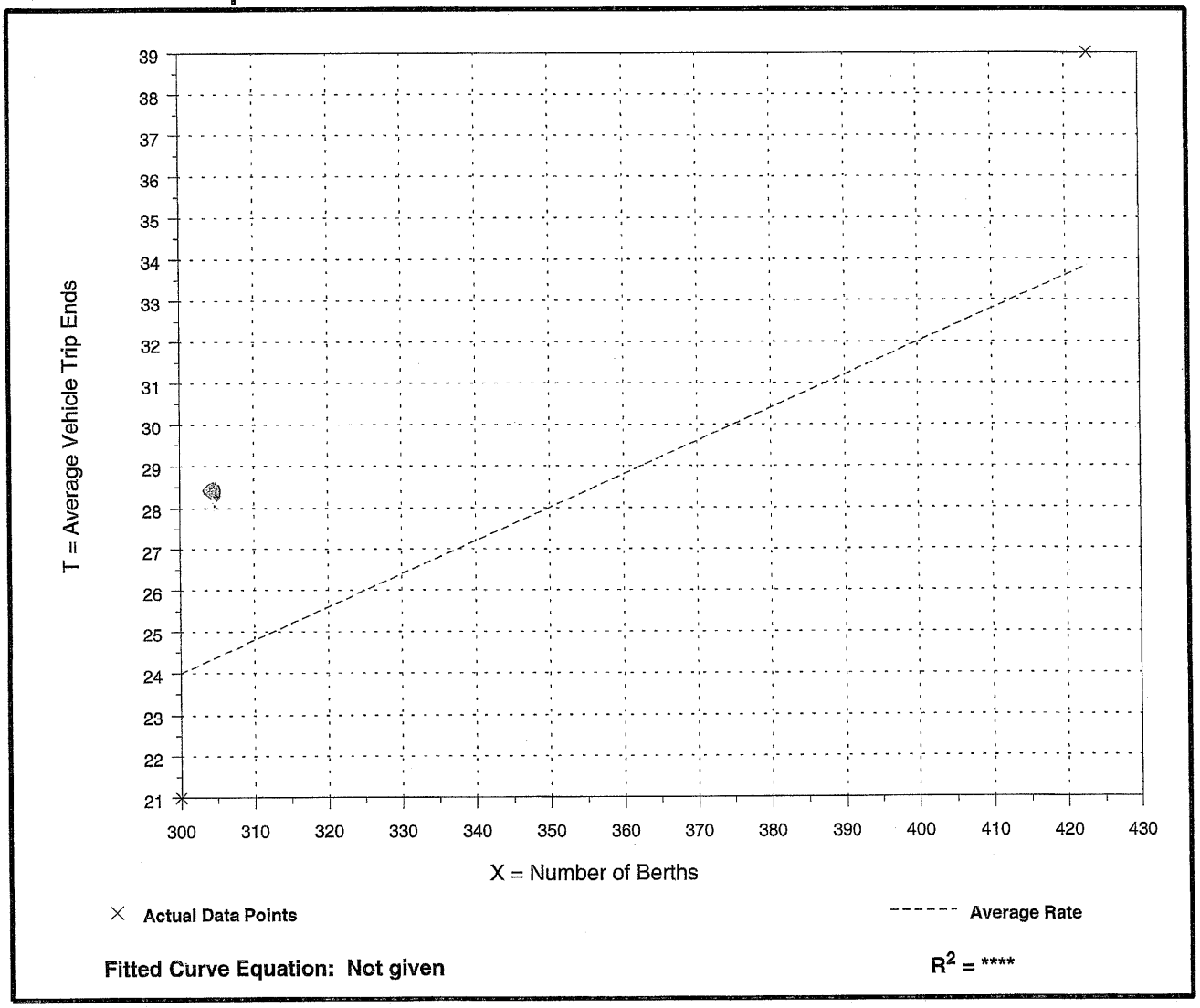
Number of Studies: 2
Average Number of Berths: 362
Directional Distribution: 33% entering, 67% exiting

Trip Generation per Berth

Average Rate	Range of Rates	Standard Deviation
0.08	0.07 - 0.09	*

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



Fitted Curve Equation: Not given

R^2 = ****

Marina
(420)

Average Vehicle Trip Ends vs: **Berths**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

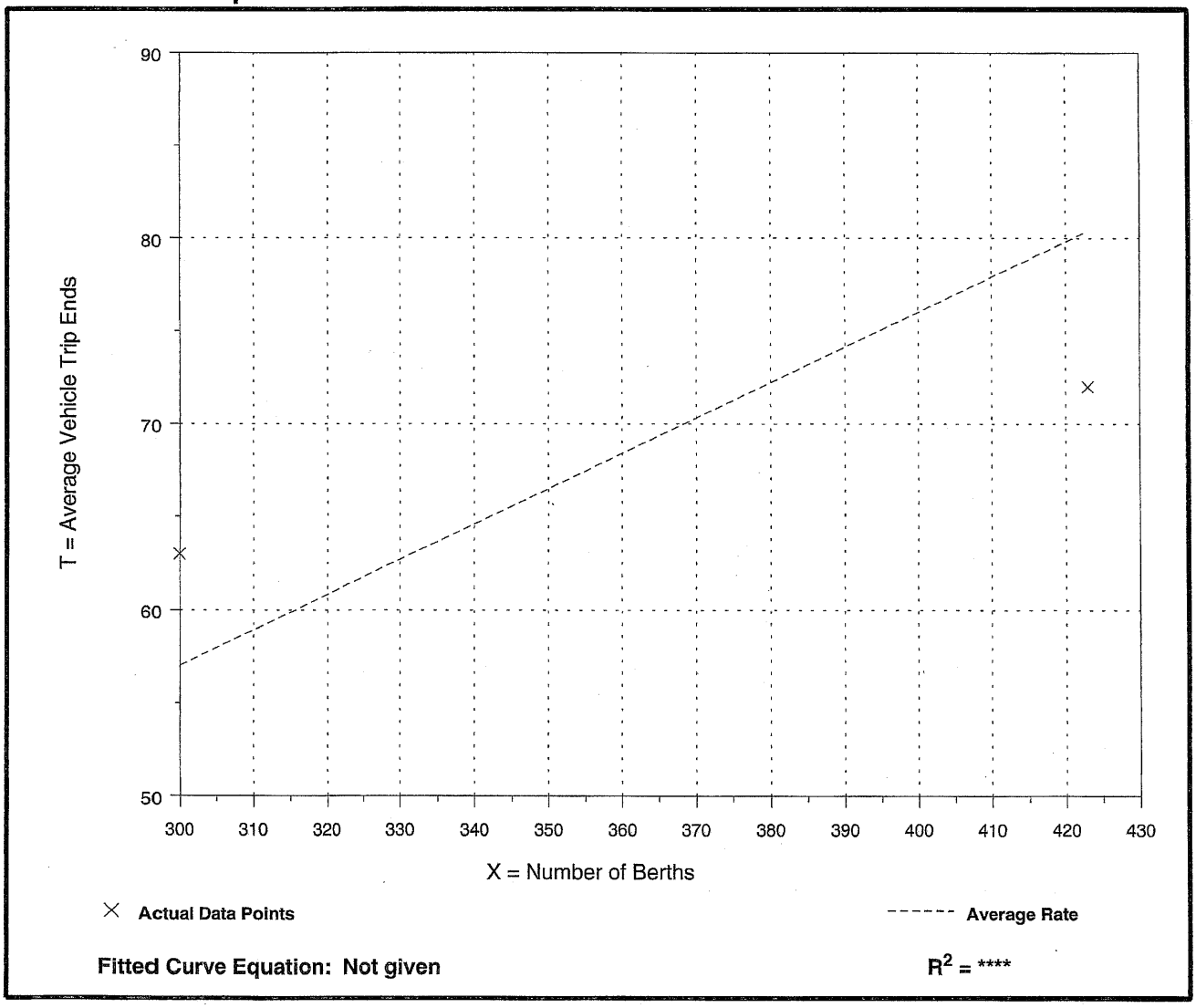
Number of Studies: 2
Average Number of Berths: 362
Directional Distribution: 60% entering, 40% exiting

Trip Generation per Berth

Average Rate	Range of Rates	Standard Deviation
0.19	0.17 - 0.21	*

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



Fitted Curve Equation: Not given

R^2 = ****

Marina
(420)

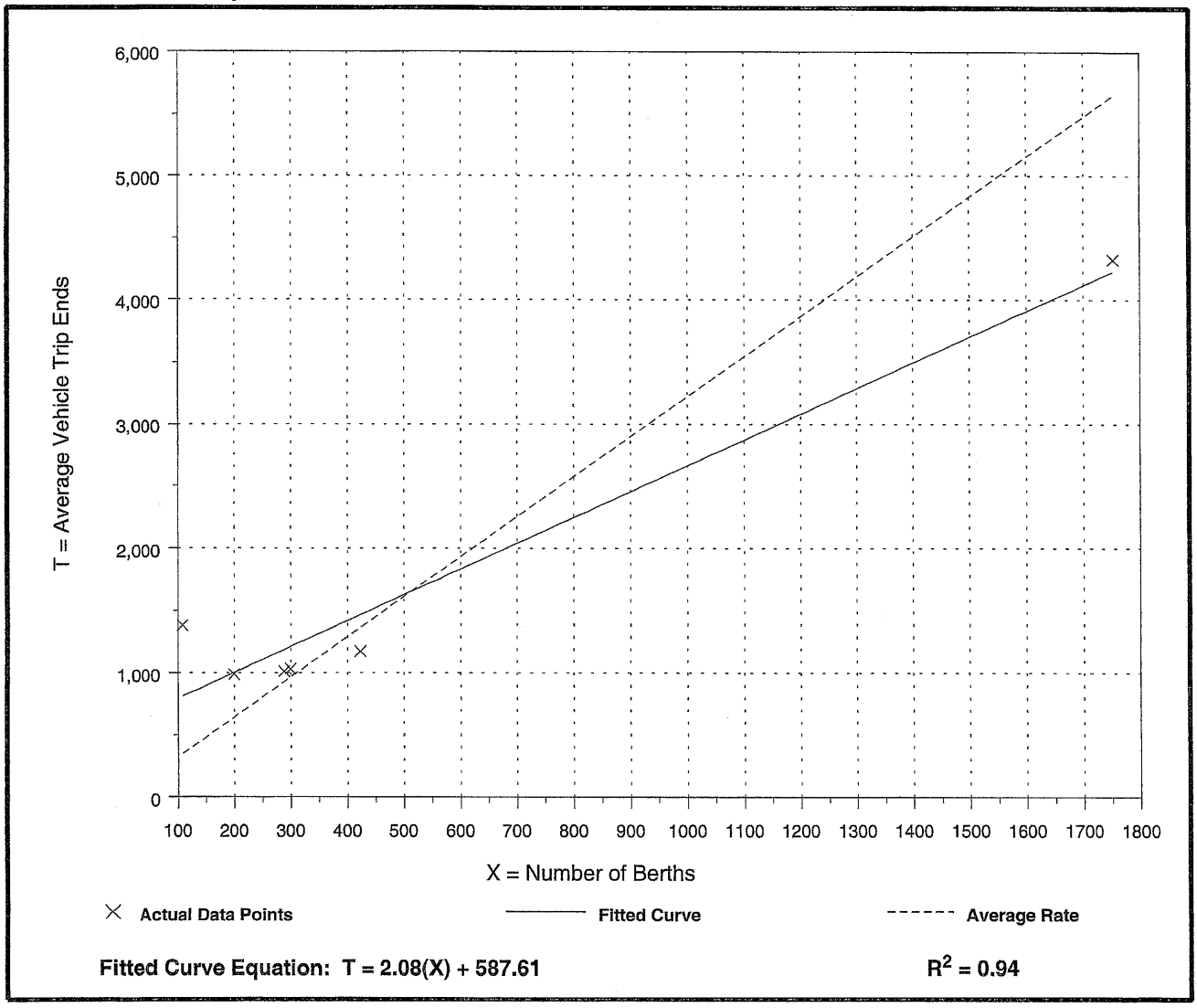
Average Vehicle Trip Ends vs: Berths
On a: Saturday

Number of Studies: 6
Average Number of Berths: 512
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Berth

Average Rate	Range of Rates	Standard Deviation
3.22	2.47 - 12.78	2.64

Data Plot and Equation



Fitted Curve Equation: T = 2.08(X) + 587.61

R^2 = 0.94

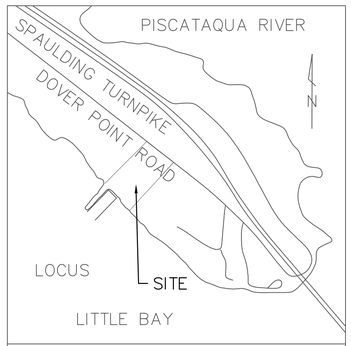
LITTLE BAY MARINA MIX USE DEVELOPMENT
MULTI UNIT RESIDENTIAL
AND MARINA OFFICE SITE PLAN

TAX MAP 8, LOTS 9, 10, 11 & 12

DOVER POINT ROAD

DOVER, NH

FEBRUARY 21, 2019



LOCATION PLAN
1" = 1,000'±

OWNER/APPLICANT — LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

FOR:_____ DATE

SITE CIVIL ENGINEER — CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-0443

LAND SURVEYOR — MCENEANEY SURVEY ASSOCIATES, INC.
P.O. BOX 681
24 CHESTNUT STREET
DOVER, NH 03820
(603) 742-0911

LANDSCAPE ARCHITECT — WOOBBURN & COMPANY
103 KENT PLACE
NEWMARKET, NH 03857
(603) 659-5949

SHEET INDEX	SHEET
COVER SHEET	1
NEIGHBORHOOD PLAN	2
EXISTING CONDITIONS PLAN (BY MCENEANEY SURVEY)	3
NOTE SHEET	4
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STREET SCAPE PLAN	-
ARCHITECTURAL ELEVATIONS & FLOOR PLANS	-

PLANNING FILE NO.: P18-____



ABUTTERS LIST
(WITHIN 200 FT)

	TAX MAP	LOT NO.	NAME & ADDRESS
8 / 8-B	8	8-B	JOHN H & M BLACKWELL 57 PLEASANT LANE HAMPSTEAD, NH 03841
8 / 13-A	8	13-A	NEWICK FAMILY REAL ESTATE LLC & NEWWICK JOAN LIFE ESTATE 431 DOVER POINT ROAD DOVER, NH 03820
8 / 29	8	29	STATE OF NEW HAMPSHIRE PO BOX 483 CONCORD, NH 03302-0483
8 / 38	8	38	SETH C. DESJARDINS 422 DOVER POINT ROAD DOVER, NH 03820
8 / 38-A	8	38-A	MILES C. & COUTRNEY E. ROBERGE 420 DOVER POINT ROAD DOVER, NH 03820
8 / 38-C	8	38-C	PATRICK J. CRAGIN PO BOX 250 DOVER, NH 03820
H / 33-D	8	38-D	PAUL G. LONG JR. 418 DOVER POINT ROAD DOVER, NH 03820

H / 33-E TAX MAP LOT NUMBER

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILENO.: P18-___

CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-0443

NO.	REVISION	APP'D	DATE
1	AOT SUBMISSION	SJH	1-22-19

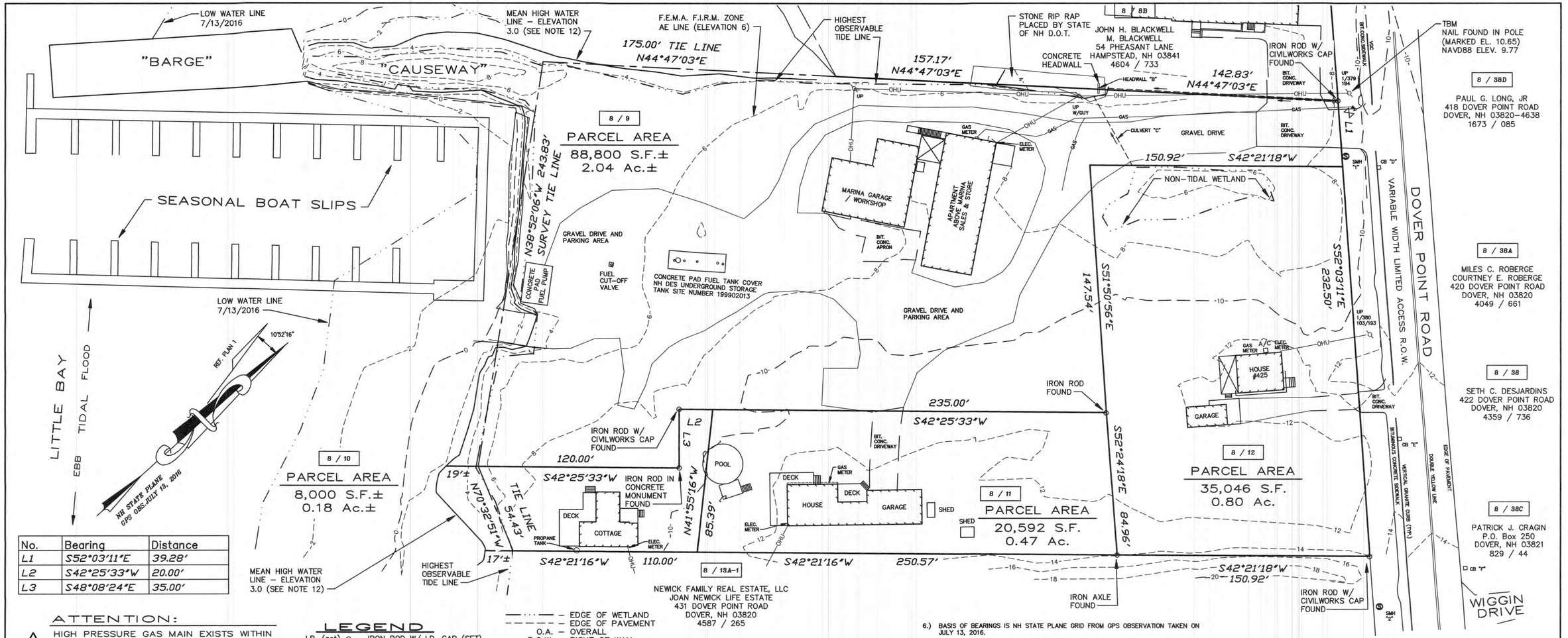
DATE: 11-2-18
SCALE: AS NOTED
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:1788
FILE: SITE.DWG

NEIGHBORHOOD PLAN

LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

2



No.	Bearing	Distance
L1	S52°03'11"E	39.28'
L2	S42°25'33"W	20.00'
L3	S48°08'24"E	35.00'

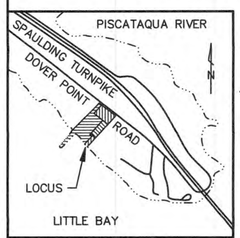
ATTENTION:

⚠ HIGH PRESSURE GAS MAIN EXISTS WITHIN THE RIGHT OF WAY OF DOVER POINT ROAD; PRIOR TO ANY EARTH MOVING ACTIVITY CONTACT DIGSAFE AT 1-888-344-7233 TO VERIFY LOCATION.

LEGEND

I.R. (set) o – IRON ROD W/ I.D. CAP (SET)
S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
ø – DIAMETER
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
-o- UP – UTILITY POLE

– · – · – EDGE OF WETLAND
– – – – – EDGE OF PAVEMENT
O.A. – OVERALL
R.O.W. – RIGHT OF WAY
CB – CATCH BASIN
SMH – SEWER MANHOLE
WV – WATER GATE VALVE
BIT. – BITUMINOUS
CONC. – CONCRETE
ELEV. – ELEVATION
FF – FINISH FLOOR
ELEC. – ELECTRIC
OHU – OVERHEAD UTILITIES



LOCATION PLAN
1" = 1,000'±

SANITARY SEWER STRUCTURE SCHEDULE

EXIST. SMH "1"
RIM ELEV: = 8.9
INVERT IN: = 3.1 – SITE
INVERT IN: = 3.2 NORTH WEST
INVERT OUT: = 3.0 SOUTH EAST

EXIST. SMH "2"
RIM ELEV: = 16.4
INVERT IN: =
INVERT OUT: =

STORMDRAINAGE STRUCTURE SCHEDULE

EXIST. CB "A"
RIM = 7.7
INVERT OUT = 4.1
SUMP = 3.7
12" HDPE

EXIST. HEADWALL "B" – CONCRETE
TOP = 5.3±
INVERT OUT: = 2.7 12" HDPE

EXIST. CULVERT "C"
INVERT IN = 4.8± 6" CMP
INVERT OUT = 4.0± 6" CLAY

EXIST. CB "D"
RIM = 10.0

EXIST. CB "E"
RIM = 12.3

EXIST. CB "F"
RIM = 13.3

NOTES:

1.) OWNERS OF RECORD:

8 / 9 — LITTLE BAY MARINA & DEVELOPMENT, LLC, 197 LOUDON ROAD, SUITE 350, CONCORD, NEW HAMPSHIRE 03301-8000, S.C.R.D. VOL. 4101, PAGE 409, REF. S.C.R.D. VOL. 4593, PAGE 978

8 / 10 — LITTLE BAY MARINA & DEVELOPMENT, LLC, 197 LOUDON ROAD, SUITE 350, CONCORD, NEW HAMPSHIRE 03301-8000, S.C.R.D. VOL. 4473 PAGE 288

8 / 11 — LITTLE BAY MARINA & DEVELOPMENT, LLC, 197 LOUDON ROAD, SUITE 350, CONCORD, NEW HAMPSHIRE 03301-8000D, S.C.R.D. VOL. 4589, PAGE 826

8 / 12 — LITTLE BAY MARINA & DEVELOPMENT, LLC, 197 LOUDON ROAD, SUITE 350, CONCORD, NEW HAMPSHIRE 03301-8000, S.C.R.D. VOL. 4415, PAGE 221

2.) 8 / 9 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) ZONING DISTRICT: LITTLE BAY WATERFRONT (LBW)

MINIMUM LOT SIZE	= 10,000 S.F.
MAXIMUM COVERAGE	= 50 PERCENT
MINIMUM FRONTAGE	= 75 FEET
FRONT SETBACK	= 15 FEET
ABUT A STREET SETBACK	= 15 FEET
SIDE SETBACK	= 10 FEET
REAR SETBACK	= 15 FEET
MAXIMUM BUILDING HEIGHT	= 40 FEET

4.) PLAN INTENT: TO DEPICT THE PROJECT PARCEL BOUNDARIES AND IMPROVEMENTS AS OF NOVEMBER 2018, PARCELS ARE SERVICED BY MUNICIPAL SEWER AND WATER SUPPLY SYSTEMS.

5.) A PORTION OF PARCEL 8 / 9 & PARCEL 8 / 10 IS LOCATED WITHIN THE 0.2 PERCENT ANNUAL CHANCE FLOODPLAIN, ZONE AE (ELEVATION 6) AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY NUMBER 330145; PANEL 0405; SUFFIX E; MAP NUMBER 33017C0405E; EFFECTIVE DATE SEPTEMBER 30, 2015. PARCELS 8 / 11 AND 8 / 12 ARE LOCATED OUTSIDE OF THE 0.2 PERCENT ANNUAL CHANCE FLOODPLAIN AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY NUMBER 330145; PANEL 0405; SUFFIX E; MAP NUMBER 33017C0405E; EFFECTIVE DATE SEPTEMBER 30, 2015.

6.) BASIS OF BEARINGS IS NH STATE PLANE GRID FROM GPS OBSERVATION TAKEN ON JULY 13, 2016.

7.) VERTICAL DATUM IS NAVD88 FROM GPS OBSERVATION TAKEN ON JULY 13, 2016.

8.) JURISDICTIONAL WETLANDS AND HIGHEST OBSERVABLE TIDE LINE (H.O.T.L.) IDENTIFIED AND FLAGGED BY DAMON BURT, N.H.C.W.S. #163 OF FRAGGLE ROCK ENVIRONMENTAL SERVICES. DURING JULY 2016 AND FIELD LOCATED BY McENEANEY SURVEY ASSOCIATES, INC.

9.) PORTIONS OF THE PARCELS ARE SUBJECT TO THE RULES OF THE SHORELAND WATER QUALITY PROTECTION ACT (NH RSA 483-B), THOSE AREAS WITHIN TWO HUNDRED AND FIFTY (250) FEET OF THE LITTLE BAY H.O.T.L. (REFERENCE LINE).

10.) REFERENCE IS MADE TO CERTAIN SEWER EASEMENTS GRANTED TO THE CITY OF DOVER, ALTHOUGH IT APPEARS THAT THE SAID SEWER LINE WAS NEVER CONSTRUCTED.
PARCEL 8 / 9 – S.C.R.D. VOL. 1006, PAGE 450
PARCEL 8 / 11 – S.C.R.D. VOL. 1011, PAGE 244
PARCEL 8 / 12 – S.C.R.D. VOL. 1014, PAGE 904

11.) PARCELS ARE SUBJECT TO ACCESS RIGHTS IN COMMON WITH EACH OTHER.

12.) MEAN HIGH WATER (ELEVATION 3.0) IS BASED ON NATIONAL TIDAL DATUM EPOCH INFORMATION PUBLISHED BY NOAA FOR STATION 8423005, ATLANTIC TERMINALS TI4A NH (https://tidesandcurrents.noaa.gov/datums.html?id=8423005)

13.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES, INC. DATED APRIL 2018 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.

REFERENCE PLANS:

1.) PLAN OF LAND PREPARED FOR LITTLE BAY MARINA & DEVELOPMENT, LLC AND RICHARD J.C. & VICTORIA BENN AND LITTLE BAY MARINA & DEVELOPMENT, LLC, TAX MAP 8, LOT Nos. 9, 10, 11 & 12, DOVER POINT ROAD & LITTLE BAY, CITY of DOVER, COUNTY of STRAFFORD, STATE of NEW HAMPSHIRE. SCALE: 1" = 30'; DATED: APRIL 1, 2018; BY: THIS OFFICE. RECORDED S.C.R.D. PLAN 116-58.

2.) LOT LINE ADJUSTMENT PLAN PREPARED FOR ANN SHINE TAX MAP 8, LOT No. 8, 419 DOVER POINT ROAD AND JOHN ANASTAS & GLORIA ESPOSITO-ANASTAS TAX MAP 8, LOT No. 8B, 419A DOVER POINT ROAD, CITY of DOVER, COUNTY of STRAFFORD, STATE of NEW HAMPSHIRE. SCALE: 1" = 20'; DATED: AUGUST 17, 2018, REVISED THROUGH 9/18/18; BY THIS OFFICE. RECORDED S.C.R.D. PLAN 117-33.

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

16-2123	EXIST. COND.	16-05	23-47
PROJECT NO	TYPE	FIELDBOOK & PAGES	

EXISTING CONDITIONS PLAN
PREPARED FOR
LITTLE BAY MARINA & DEVELOPMENT, LLC
TAX MAP 8, LOT Nos. 9, 10, 11 & 12
DOVER POINT ROAD & LITTLE BAY
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. P 18-___

DRAWN BY: RJM	FILE: W10 CP\2123\16-2123 2018EC
SCALE: 1" = 30'	DATE: NOVEMBER 27, 2018

30 15 0 15 30 60 90 120

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

McEneaney Survey Associates, inc.
P.O. Box 681 – 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742-0911
SURVEYING – PLANNING – CONSULTING

GENERAL NOTES

1. OWNERS OF RECORD:

8 / 9, 10, 11 & 12	LITTLE BAY MARINA & DEVELOPMENT, LLC 111 LOUDON ROAD CONCORD, NEW HAMPSHIRE 03301 S.C.R.D. VOL. 4101, PAGE 409
8 / 9	– DENOTES TAX MAP AND PARCEL NUMBER.

2.

3. ZONING DISTRICT: LITTLE BAY WATERFRONT (LBW)

MINIMUM LOT SIZE	= 10,000 S.F.
MAXIMUM COVERAGE	= 50 PERCENT
MINIMUM FRONTAGE	= 75 FEET
FRONT SETBACK	= 15 FEET
ABUT A STREET SETBACK	= 15 FEET
SIDE SETBACK	= 10 FEET
REAR SETBACK	= 15 FEET
MAXIMUM BUILDING HEIGHT	= 40 FEET

4. PLAN INTENT: TO DEPICT THE PROJECT PARCEL BOUNDARIES AND IMPROVEMENTS AS OF NOVEMBER 2018, PARCELS ARE SERVICED BY MUNICIPAL SEWER AND WATER SUPPLY SYSTEMS.
5. A PORTION OF PARCEL 8 / 9 & PARCEL 8 / 10 IS LOCATED WITHIN THE 0.2 PERCENT ANNUAL CHANCE FLOOD PLAIN, ZONE AE (ELEVATION 6) AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY NUMBER 330145; PANEL 0405; SUFFIX E; MAP NUMBER 33017C0405E; EFFECTIVE DATE SEPTEMBER 30, 2015.
   PARCELS 8 / 11 AND 8 / 12 ARE LOCATED OUTSIDE OF THE 0.2 PERCENT ANNUAL CHANCE FLOODPLAIN AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY NUMBER 330145; PANEL 0405; SUFFIX E; MAP NUMBER 33017C0405E; EFFECTIVE DATE SEPTEMBER 30, 2015.
6. BASIS OF BEARINGS IS NH STATE PLANE GRID FROM GPS OBSERVATION TAKEN ON JULY 13, 2016.
7. VERTICAL DATUM IS NAVD88 FROM GPS OBSERVATION TAKEN ON JULY 13, 2016.
8. JURISDICTIONAL WETLANDS AND HIGHEST OBSERVABLE TIDE LINE (H.O.T.L.) IDENTIFIED AND FLAGGED BY DAMON BURT, N.H.C.W.S. #163 OF FRAGGLE ROCK ENVIRONMENTAL SERVICES. DURING JULY 2016 AND FIELD LOCATED BY McENEANEY SURVEY ASSOCIATES, INC., IN ACCORDANCE WITH CHAPTER 170–27.1 OF THE ZONING ORDINANCE.
9. PORTIONS OF THE PARCELS ARE SUBJECT TO THE RULES OF THE SHORELAND WATER QUALITY PROTECTION ACT (NH RSA 483–B), THOSE AREAS WITHIN TWO HUNDRED AND FIFTY (250) FEET OF THE BELLAMY RIVER H.O.T.L.
10. REFERENCE IS MADE TO CERTAIN SEWER EASEMENTS GRANTED TO THE CITY OF DOVER, ALTHOUGH IT APPEARS THAT THE SAID SEWER LINE WAS NEVER CONSTRUCTED.
    PARCEL 8 / 9 – S.C.R.D. VOL. 1003, PAGE 450
    PARCEL 8 / 11 – S.C.R.D. VOL. 1101, PAGE 244
    PARCEL 8 / 12 – S.C.R.D. VOL. 1014, PAGE 904
11. PARCELS ARE SUBJECT TO ACCESS RIGHTS IN COMMON WITH EACH OTHER.
12. THE OWNER OF RECORD SHALL RECORD AT THE REGISTRY OF DEEDS DOCUMENTATION SUFFICIENT TO PROVIDE NOTICE TO ALL PERSONS THAT MAY ACQUIRE ANY PROPERTY SUBJECT TO THE REQUIREMENTS AND RESPONSIBILITIES DESCRIBED IN THE APPROVED STORMWATER MANAGEMENT PLAN. THE NOTICE SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS FOR RECORDING CONTAINED IN RSA 477 AND 478. THE NOTICE NEED NOT SET FORTH THE REQUIREMENTS AT LENGTH, SO LONG AS IT IS SUFFICIENT TO PROVIDE NOTICE TO PROSPECTIVE PURCHASERS TO THE REQUIREMENTS FOR MAINTENANCE AND REPORTING.

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. ITEMS TO BE REMOVED INCLUDE BUT ARE NOT LIMITED TO: CONCRETE, PAVEMENT AND POLES.
5. IT IS THE CONTRACTORS RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE CONDITIONS OF ALL OF THE PERMIT APPROVALS.
6. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS NOT ALREADY OBTAINED BY THE OWNER AND ARRANGE AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND OFF–SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK, EXCEPT FOR WORK NOTED TO BE COMPLETED BY OTHERS.
8. THE LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATION IS NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.
9. ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF–SITE IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES, AND CODES.
10. EXISTING ("OLD") WATER SERVICES TO THE SUBJECT SITE SHALL BE DISCONNECTED AND SHUT–OFF AT THE WATER MAIN.
11. EXISTING SEWER SERVICES TO BE CUT AND PERMANENTLY CAPPED AT PROPERTY LINE.
12. ALL EROSION CONTROL NOTES SHALL INCLUDE PROVISIONS FOR CONSTRUCTION SEQUENCING, TEMPORARY EROSION CONTROL MEASURES, AND PERMANENT STANDARDS SUCH AS LOAM SPREAD RATE FOR DISTURBED AREAS, RATES OF LIME, TYPE AND RATES FOR FERTILIZER, AND SEED AND MULCH MIXTURE WITH RATES OF APPLICATION.

SITE DATA:

1. THE PARCEL IS SHOWN AS LOT NO. 9, 10, 11 & 12 4 ON MAP 8 OF THE CITY OF DOVER, TAX ASSESSOR'S MAPS.
2. THE PROJECT PARCEL CONTAINS 3.49 ACRES OF LAND.
3. PARKING CALCS:
   RETAIL: 1 PER 275 S.F. 1400 S.F./275 S.F. = 5 SPACES
   RESIDENTIAL UNITS: 24 24 UNITS x (1.4+0.5) = 45 SPACES
   GATHERING SPACES: SLIPS: 42 x .5 = 21 SPACES
   MAX ALLOWED = 72
   PROPOSED: 27 SURFACE PARKING AND 24 SPACES W/IN GARAGES = 51*
   * THE PROJECT PROPOSES GATHERING AND RETAIL SPACES THAT ARE INTENDED TO BE SHARED WITH RESIDENTIAL FOR VISITOR USE AS NEEDED.

SITE NOTES:

1. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A PLAN REFERENCED AND PREPARED BY MCENEANEY SURVEY ASSOCIATES INC. (SEE EXISTING CONDITIONS PLAN IN THIS PLAN SET)
2. THE INTENT OF THIS PLAN IS TO SHOW SITE IMPROVEMENTS ASSOCIATED WITH THE CONSTRUCTION OF 6 MULTI–UNIT CONDOMINIUM BUILDINGS, 1 MIXED–USE COMMERCIAL BUILDING, SURFACE PARKING, DRIVE AISLES, DRAINAGE IMPROVEMENTS, AND UTILITIES.
3. EXTERIOR LIGHTING SHALL BE CUT–OFF TYPE FIXTURES PER CHAPTER 149–14–E AND SHALL PROVIDE LIGHTING DIRECTED ON–SITE ONLY.
4. FIRE DEPARTMENT CONNECTIONS SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13.
5. ALL ON–SITE UTILITIES SHALL BE INSTALLED UNDERGROUND.
6. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY AND STATE CODES.
7. STRIPE PARKING AREAS AS SHOWN INCLUDING HANDICAP SYMBOLS AND PAINTED ISLANDS. ALL MARKINGS SHALL BE CONSTRUCTED USING WHITE TRAFFIC PAINT, MEETING THE REQUIREMENTS OF AASHTO M–248–TYPE N.
8. ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", THE "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS, AND THE AMERICAN WITH DISABILITIES ACT, LATEST EDITIONS.
9. PAINTED ISLANDS SHALL BE 4 INCHES WIDE DIAGONAL LINES 3 FEET ON CENTER.
10. ON–SITE SNOW STORAGE SHALL OCCUR ALONG THE EDGES OF PROPOSED PAVEMENT.
11. LAYOUT OF BUILDING CORNERS SHALL BE PERFORMED BY A LICENSED LAND SURVEYOR AND SHALL BE BASED UPON THE ARCHITECT'S FINAL FOUNDATION PLAN AND ALL SITE LAYOUT SHALL BE PERFORMED BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR UNDER CONTRACT WITH THE CONTRACTOR.
12. SEE DETAILS FOR SIGN LEGENDS.
13. 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.
14. METHODS OF DEMOLITION, CONSTRUCTION AND ERECTION ARE THE CONTRACTOR'S RESPONSIBILITY UNLESS OTHERWISE SPECIFIED. IT IS THE CONTRACTORS' 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.
15. 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.
16. BUILDING ADDRESSES TO BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
17. THE SITE DESIGN IS IN COMPLIANCE WITH THE APPLICABLE ACCESSIBILITY REGULATIONS 2009 IBC AND ANSI STANDARDS.
18. THE SITE SHALL BE MAINTAINED TO PROVIDE ACCESSIBILITY IN ALL WEATHER CONDITIONS.
19. COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM WITH DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.
20. THE SUBJECT PARCEL(S) IS (ARE) SERVED BY MUNICIPAL WATER AND SEWER.
21. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN THE 50 FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR TO ANY EARTH DISTRUBAIN ACTIVITY OCCURS.
22. AS–BUILT PLANS OF THE SITE SHALL BE SUBMITTED ON PAPER AND IN A DIGITAL FORMAT IN PDF AND AUTOCAD DWG, AUTOCAD DXF OR AN ESRI FORMAT TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF PROJECT. AS–BUILT PLANS SHALL BE PREPARED AND CERTIFIED CORRECT BY A L.L.S. OR P.E. DIGITAL FILES SHALL BE GEO–REFERENCED TO NEW HAMPSHIRE STATE PLANE COORDINATES NAD83 AND SHALL BE EXPRESSED IN FEET.
23. A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 58, ARTICLE I, SECTION 58–2 OF THE CODE OF THE CITY OF DOVER.
24. 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 ASSISTANT CITY MANAGER.
25. A PRE–CONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE DESIGN ENGINEER, THE EARTHWORK CONTRACTOR AND THE CITY ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY.
26. 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.
27. BUILDING ADDRESSES SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
28. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL BE ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS.
29. THE FOLLOWING FEDERAL AND STATE PERMITS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY:
    NHDOT AOT: PENDING
    NHDOT WETLANDS/SHORLAND: PENDING
30. LIST ANY VARIANCES OR SPECIAL EXCEPTIONS GRANTED BY THE ZONING BOARD OF ADJUSTMENT OR CONDITIONAL USE PERMITS GRANTED BY THE PLANNING BOARD FOR THE PROPOSED USE OR STRUCTURE, INCLUDING THE CASE NUMBER AND DATE OF DECISION AND ANY CONDITIONS.
    CONDITIONAL USE PERMIT: PENDING

GRADING NOTES:

1. ALL ROAD (INCLUDING PARKING LOT AND DRAINAGE) WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS FOR CONSTRUCTION OF THE CITY OF DOVER, N.H. AND "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION", LATEST EDITION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.
2. CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEERING CONSULTANT APPROVED BY THE OWNER, TO CONDUCT COMPACTION TESTING AND FILL GRADATION MONITORING PER THE ABOVE REFERENCED "STANDARD SPECIFICATIONS".
3. SEE EROSION CONTROL NOTES & DETAIL SHEET FOR TEMPORARY AND PERMANENT EROSION CONTROL MEASURES.
4. ALL DRAINAGE PIPES SHALL BE HDPE OR APPROVED EQUAL UNLESS OTHERWISE NOTED.
5. ALL DISTURBED AREAS NOT OTHERWISE CALLED FOR SURFACE TREATMENT SHALL RECEIVE 6" OF HIGH QUALITY LOAM AND SHALL BE SEEDED WITH GRASS.
6. ALL SITEWORK CONSTRUCTION SHALL BE ADVANCED USING "BEST MANAGEMENT PRACTICES" SANCTIONED BY THE USDA SCS AND NHDES.
7. TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED, UTILIZED AND MAINTAINED UNTIL BASE MATERIALS ARE CONSTRUCTED.
8. CONTRACTOR SHALL PROVIDE A FINISH GRADED SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE AND UNDER RAISED STRUCTURES.
9. DENSITY REQUIREMENTS:

LOCATION	MINIMUM DENSITY
BELOW PAVED OR CONCRETE AREAS	95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREA	90%

   *ALL PERCENTAGES SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH AASHTO STANDARD 180, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH AASHTO STANDARD T–191, T–204, OR T–238 AND T–239.

10. SEE GENERAL EROSION CONTROL NOTES ON DETAIL SHEET.
11. PROVIDE INLET PROTECTION BARRIERS AROUND ALL EXISTING AND PROPOSED STORM DRAINAGE INLETS WITHIN THE WORK LIMITS AND AS SHOWN ON PLAN. MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED AND UPSTREAM AREAS HAVE BEEN STABILIZED.
12. INSPECT SILT BARRIERS AFTER EACH RAIN STORM OF 1/4 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.
13. A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED FOR THIS PROJECT. THE SWPPP MUST INCLUDE THE APPROPRIATE BEST MANAGEMENT PRACTICES (BMP'S) TO MINIMIZE THE DISCHARGE OF POLLUTANTS FROM THE SITE. PARTIES RESPONSIBLE FOR DEVELOPING THE SWPPP SHOULD REFER TO THE EPA NPDES CONSTRUCTION GENERAL PERMITS NOTICE OF INTENT FOR A COMPLETE OUTLINE OR REQUIRED ELEMENTS. THESE PLANS AND THE STORMWATER MANAGEMENT SYSTEM INSPECTION & MAINTENANCE PLAN PREPARED FOR THIS PROJECT MAY BE UTILIZED IN FULFILLING THE REQUIREMENTS.
14. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN THE 50 FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.
15. ALL TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.
16. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE AND APPROVED CONSTRUCTION SIGN SHALL BE IN PLACE PRIOR TO ANY EARTH DISTURBING ACTIVITY.

UTILITY NOTES:

1. THE PROJECT SITE IS SERVED BY CITY WATER AND SEWER.
2. THE BEST AVAILABLE INFORMATION WAS USED TO DETERMINE THE LOCATION AND SIZE OF EXISTING UTILITIES. THE LOCATION IS NOT GUARANTEED BY THE OWNER OR THE ENGINEER. THE EXACT SIZE AND LOCATION OF UTILITIES SHALL BE CONFIRMED IN THE FIELD BY THE CONTRACTOR PRIOR TO COMMENCING WORK. IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO ANTICIPATE CONFLICTS AND REPAIR EXISTING UTILITIES AS NECESSARY TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
3. ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE AS SHOWN. THE CONTRACTOR SHALL VERIFY THEIR EXACT LOCATIONS WITH THE RESPECTIVE UTILITY OWNERS PRIOR TO WORK BEING PERFORMED. CALL DIGSAFE AT 1–888–388–7233 OR "811"
4. ALL PROPOSED UTILITY SERVICES SHALL BE UNDERGROUND WITHIN THE SITE.
5. UNDERGROUND ELECTRIC, TELEPHONE, AND CABLE TV CONDUITS SHALL BE INSTALLED IN ACCORDANCE WITH/PER PSNH, VERIZON, COMCAST, AND UNITIL STANDARDS.
6. PROPOSED INSTALLATION OF UNDERGROUND CONDUITS FOR TELEPHONE, ELECTRIC AND GAS SERVICE SHALL BE COORDINATED WITH THE RESPECTIVE CONTACTS ARE AS FOLLOWS:

ELECTRIC:	EVERSOURCE 1.800.362.7764
CABLE:	COMCAST 603.334.3615
GAS:	UNITIL 866.933.3821

7. SEE ELECTRICAL DRAWINGS AND DETAILS FOR OUTDOOR LIGHTING CONDUIT LOCATIONS.
8. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
9. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
10. SEWAGE LOADING (PER ENV. – Wq 1008.03 TABLE 1008–1)
    23 – 3 BEDROOM RESIDENTIAL TOWNHOMES =
    3 BDRMS x 150 GALS./DAY/BDRM x 23 = 10,350 GPD
    PLUS
    1 – 2 BEDROOM ACCESSORY APT. =
    2 BDRMS x 150 GALS./DAY/BDRM x 1 = 300 GPD
    PLUS
    1 MARINA OFFICE/DRY GOODS STORE @ 16'x20' = 1,400 S.F.
    1,400 S.F. x 5 GPD/100 S.F. + 10 GPD/EMPLOYEE (2) = 90 GPD
    TOTAL = 10,740 GPD
11. THE PROPOSED STRUCTURES SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED UNDER CHAPTER 109–30 OF THE CODE OF THE CITY OF DOVER AND THE 2009 STATE BUILDING CODE.
12. 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.
13. FIRE DEPARTMENT CONNECTIONS SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13.
14. ALL ON–SITE UTILITIES SHALL BE INSTALLED UNDERGROUND.
15. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY AND STATE CODES.
16. BACKFLOW PREVENTORS SHALL BE INSTALLED ON BOTH FIRE AND DOMESTIC WATER LINES.
17. ALL UNUSED WATER SERVICES SHALL BE REMOVED BACK TO THE CORPORATION AT THE MAIN.

LEGEND

S.F.	SQUARE FEET		PROPOSED SIGN
Ac.	ACRE	74	PROPOSED FINISH GRADE
±	MORE OR LESS	x 74.00	PROPOSED SPOT GRADE
(TYP.)	TYPICAL	PD	PROPOSED DRAIN LINE
S.C.R.D.			PAVEMENT WITH CURB
TBR	TO BE REMOVED		SILT BARRIER
	EXISTING UTILITY POLE	PG	PROPOSED GAS
	EXISTING SIGN	PW	PROPOSED WATER
	EXISTING WATER SHUT–OFF		PROPOSED FENCE
	EXISTING WATER VALVE	PE	PROPOSED ELECTRIC
	EXISTING GAS VALVE	PD	PROPOSED DRAIN LINE
	EXISTING HYDRANT	PUD	PROPOSED UNDERDRAIN LINE
	EXISTING LIGHT/SIGNAL POLE		PROPOSED CATCHBASIN
S	EXISTING SEWER MANHOLE		INLET PROTECTION
D	EXISTING DRAINAGE MANHOLE		HANDICAP PARKING SYMBOL
	EXISTING CATCHBASIN		PROPOSED CONCRETE
5'R	PAVEMENT RADIUS		PROPOSED SIDEWALK
SGC	SLOPE GRANITE CURB		PROPOSED POROUS PAVEMENT
VGC	VERTICAL GRANITE CURB		
x 74.00	EXISTING SPOT GRADE		
94	EXISTING GRADE		
OHW	OVERHEAD WIRES		
E	EXISTING ELECTRIC		
W	EXISTING WATER LINE		
S	EXISTING SEWER LINE		
D	EXISTING DRAINAGE LINE		
G	EXISTING GAS LINE		

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILENO.: P18–___

CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-0443

NO.	REVISION	APP'D	DATE
1	AOT SUBMISSION	SJH	1–22–19

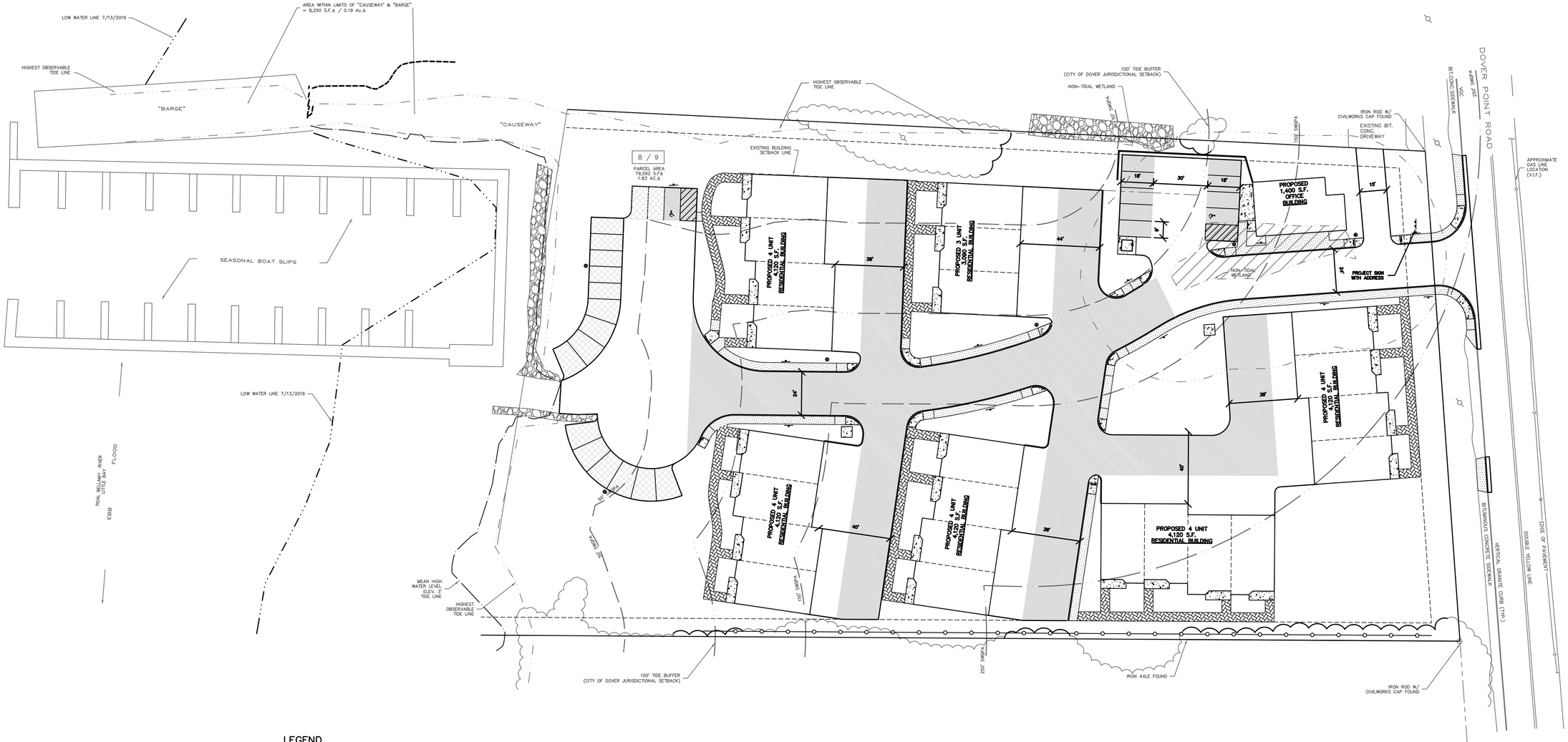
DATE: 2–21–19
SCALE: AS NOTED
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:1788
FILE: SITE.DWG

NOTE SHEET

LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

4



LEGEND

S.F.	SQUARE FEET
Ac.	ACRE
±	MORE OR LESS
(TYP.)	TYPICAL
S.C.R.D.	
TBR	TO BE REMOVED
	EXISTING UTILITY POLE
	EXISTING SIGN
	EXISTING LIGHT/SIGNAL POLE
	PROPOSED SIGN
	PAVEMENT WITH CURB
	PROPOSED FENCE
	HANDICAP PARKING SYMBOL
	PROPOSED CONCRETE
	PROPOSED SIDEWALK
	PROPOSED POROUS PAVEMENT

PARKING ANALYSIS

RETAIL SPACE	1,400 S.F. / 250	= 5.6 SPACES
RECREATION DOCK	5,938 S.F. / 300	= 19.8 SPACES
RECREATION AREA	10,105 S.F. / 300	= 33.7 SPACES
RESIDENTIAL	24 UNITS x 1.6	= 6.4 SPACES
TOTAL		= 65.5 SPACES

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILENO.: P18-___

CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-0443

NO.	REVISION	APP'D	DATE
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SCALE: 1"=20'
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OVERALL SITE PLAN

LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

5

8 / 38D
JOHN ANASTAS
GLORIA ESPOSITO-ANASTAS
419A DOVER POINT ROAD
DOVER, NH 03820
2567 / 760

"CAUSEWAY"

8 / 9
PARCEL AREA
79,592 S.F.±
1.83 AC.±

HIGHEST OBSERVABLE TIDE LINE

100' TIDE BUFFER
(CITY OF DOVER JURISDICTIONAL SETBACK)

NON-TIDAL WETLAND

50' SWQPA

150' SWQPA

250' SWQPA

HEADWALL "B"

OVERHEAD WIRES TO BE REMOVED

OHU

TREES & SHRUBS TO BE REMOVED

CONCRETE TO BE REMOVED

PROPOSED NEW TREELINE

STAIRS TO BE REMOVED

GAS METER (TBR)

BUILDING TO BE REMOVED

MARINA GARAGE / WORKSHOP

APARTMENT ABOVE MARINA SALES & STORE

ELEC. METER (TBR)

GAS

UP W/GUY

CULVERT "C" (TO BE REMOVED)

GRAVEL DRIVE (TO BE REMOVED)

GAS LINE TO BE REMOVED

PAVEMENT TO BE REMOVED

IRON ROD FOUND
CIVILWORKS CAP FOUND

EXISTING BIT. CONC. DRIVEWAY

VGC

BIT.CONC.SIDEWALK

DOVER POINT ROAD

APPROXIMATE GAS LINE LOCATION (V.I.F.)

GRAVEL DRIVE AND PARKING AREA
(TO BE REMOVED)

CONCRETE AND FUEL CUT-OFF VALVE TO BE REMOVED

CONCRETE PAD AND ALL FUEL COMPONENTS TO BE REMOVED

FUEL CUT-OFF VALVE

CONCRETE PAD FUEL TANK COVER NH DES UNDERGROUND STORAGE TANK SITE NUMBER 199902013

PAD FUEL PUMP CONCRETE

CONCRETE FUEL PAD TO BE REMOVED

(TO BE REMOVED)

GRAVEL DRIVE AND PARKING AREA
(TO BE REMOVED)

NON-TIDAL WETLAND

2,304 S.F. OF NON-TIDAL WETLAND TO BE REMOVED

TREES & SHRUBS TO BE REMOVED

SAWCUT LIMITS

CONCRETE RUBBLE PILE TO BE REMOVED

A/C UNITS TO BE REMOVED

ALL GAS CONPONENTS SHALL BE DISCONNECTED AND REMOVED PER LOCAL UTILITY COMPANY STANDARDS

OHW TO BE REMOVED

BUILDING TO BE REMOVED

HOUSE #425

COVERED PORCH & STAIRS TO BE REMOVED

STAIRS TO BE REMOVED

GARAGE TO BE REMOVED

GARAGE

SAWCUT LIMITS

APPROXIMATE WATERLINE LOCATION (V.I.F.)

IRON ROD FOUND
(TO BE REMOVED)

IRON ROD W/
CIVILWORKS CAP FOUND
(TO BE REMOVED)

POOL TO BE REMOVED

DECK & STAIRS TO BE REMOVED

PAVEMENT TO BE REMOVED

GRAVEL TO BE REMOVED

TREE & SHRUBS TO BE REMOVED

CONCRETE TO BE REMOVED

8 / 12
PARCEL AREA
35,046 S.F.±
0.80 AC.±

CB "L"

BITUMINOUS CONCRETE SIDEWALK

VERTICAL GRANITE CURB (TYP.)

DOUBLE YELLOW LINE

EDGE OF PAVEMENT

8 / 10
LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301
4473 / 288

IRON ROD IN CONCRETE MONUMENT FOUND
(TO BE REMOVED)

COTTAGE, DECK AND STEPS TO BE REMOVED

COTTAGE

PROPANE TANK (TBR)

ELEC. METER (TBR)

TREES & SHRUBS TO BE REMOVED

DECK & STAIRS TO BE REMOVED

POOL

DECK

HOUSE

GAS METER

GARAGE

SHED TO BE REMOVED

SHED

8 / 11
PARCEL AREA
20,592 S.F.±
0.47 AC.±

TREES & SHRUBS TO BE REMOVED

PROPOSED NEW TREELINE

APPROXIMATE SEWER LINE LOCATION (V.I.F.)

OHW TO BE REMOVED

ELEC. (TBR) METER

PROPOSED NEW TREELINE

BUILDING TO BE REMOVED

OHW TO BE REMOVED

100' TIDE BUFFER
(CITY OF DOVER JURISDICTIONAL SETBACK)

8 / 13A-1
JOHN F. NEWMICK REVOCABLE TRUST 2001
JOHN F NEWICK, TRUSTEE
431 DOVER POINT ROAD
DOVER, NH 03820
2472 / 010

IRON AXLE FOUND

IRON ROD W/
CIVILWORKS CAP FOUND

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILENO.: P18-___

CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-0443

NO.	REVISION	APP'D	DATE
1	AOT SUBMISSION	SJH	1-22-19

DATE: 2-21-19
SCALE: 1"=20'
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:1788
FILE: SITE.DWG

DEMOLITION PLAN

LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

6

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

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LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

SITE PLAN

7

DRAINAGE SCHEDULE

PDMH 1
RIM=12.75
INV.IN=6.35 (OS–RG1)
INV.OUT=6.35 (PDMH 2)

PDMH 2
RIM=12.25
INV.IN=9.1 (PP1)
INV.IN=5.7 (OS–RG2)
INV.IN=5.6 (PDMH 1)
INV.OUT=5.6 (PDMH 3)

PDMH 3
RIM=9.75
INV.IN=4.7 (OS–RG3)
INV.IN=4.7 (PDMH 2)
INV.OUT=4.7

OS–RG1
INV.IN=(SEE DETAIL)
INV.OUT=6.42 (PDMH 1)

OS–RG2
INV.IN= 7.5 (DP1)
INV.OUT=6.55 (PDMH 2)

OS–RG3
INV.IN=(SEE DETAIL)
INV.OUT=4.8 (PDMH 3)

OS–DP1
INV.IN=(SEE DETAIL)
INV.OUT=8.0 (OS–RG2)

OS–RG4
INV.IN=(SEE DETAIL)
INV.OUT=7.40 (PP7)

POROUS PAVEMENT SCHEDULE

PP 1 (PIPE OUTFALL)
INV.IN= 9.81
INV.OUT=9.10

PP 2 (PIPE OUTFALL)
INV.IN=5.42
INV.OUT=5.42

PP 3 (PIPE OUTFALL)
INV.IN=5.42
INV.OUT=5.42

PP 4 (PIPE OUTFALL)
INV.IN=9.45
INV.OUT=8.95

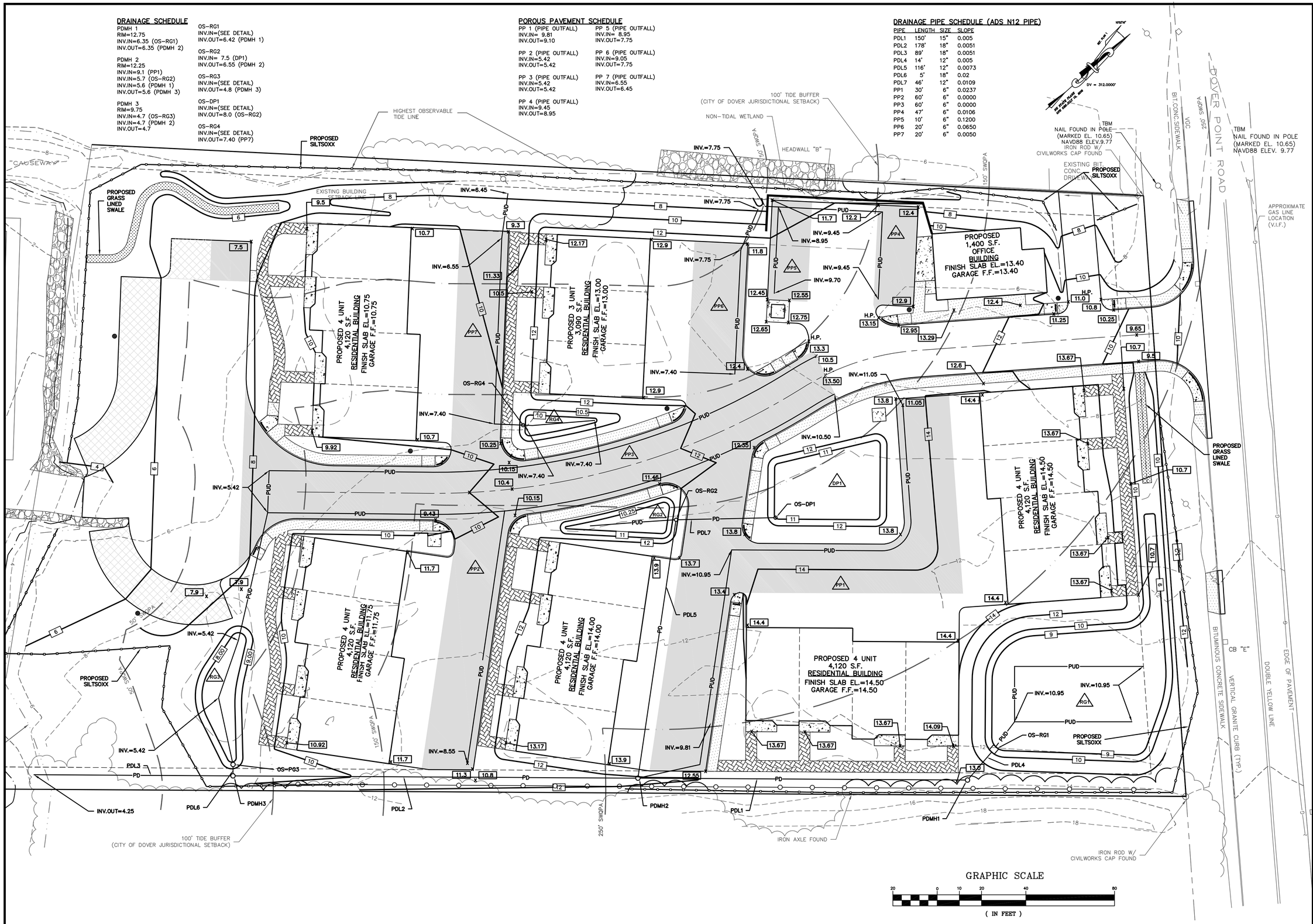
PP 5 (PIPE OUTFALL)
INV.IN= 8.95
INV.OUT=7.75

PP 6 (PIPE OUTFALL)
INV.IN=9.05
INV.OUT=7.75

PP 7 (PIPE OUTFALL)
INV.IN=6.55
INV.OUT=6.45

DRAINAGE PIPE SCHEDULE (ADS N12 PIPE)

PIPE	LENGTH	SIZE	SLOPE
PDL1	150'	15"	0.005
PDL2	178'	18"	0.0051
PDL3	89'	18"	0.0051
PDL4	14'	12"	0.005
PDL5	116'	12"	0.0073
PDL6	5'	18"	0.02
PDL7	46'	12"	0.0109
PP1	30'	6"	0.0237
PP2	60'	6"	0.0000
PP3	60'	6"	0.0000
PP4	47'	6"	0.0106
PP5	10'	6"	0.1200
PP6	20'	6"	0.0650
PP7	20'	6"	0.0050



GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)

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PLANNING FILENO.: P18–___

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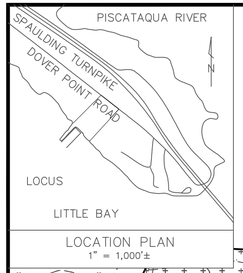
DATE: 2–21–19
SCALE: 1"=20'
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:1788
FILE: SITE.DWG

GRADING, DRAINAGE & EROSION CONTROL PLAN

LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

8



LOCATION PLAN
1" = 1,000'±

WETLAND IMPACT = 2,304 S.F.

50' BUFFER IMPACT = 15,579 S.F.

100' BUFFER IMPACT = 58,203 S.F.

HIGHEST OBSERVABLE TIDE LINE

100' TIDE BUFFER (CITY OF DOVER JURISDICTIONAL SETBACK)

NON-TIDAL WETLAND

"CAUSEWAY"

EXISTING BUILDING SETBACK LINE

PARCEL AREA
79,592 S.F.±
1.83 AC.±

PROPOSED 4 UNIT 4,120 S.F. RESIDENTIAL BUILDING

PROPOSED 3 UNIT 3,090 S.F. RESIDENTIAL BUILDING

PROPOSED 1,400 S.F. OFFICE BUILDING

NON-TIDAL WETLAND

IRON ROD W/ CIVILWORKS CAP FOUND

EXISTING BIT. CONC. DRIVEWAY

DOVER POINT ROAD

APPROXIMATE GAS LINE LOCATION (V.I.F.)

VGC

BIT.CONC.SIDEWALK

150' SWQPA

250' SWQPA

DV = 312.0000'

PROPOSED 4 UNIT 4,120 S.F. RESIDENTIAL BUILDING

PROPOSED 4 UNIT 4,120 S.F. RESIDENTIAL BUILDING

PROPOSED 4 UNIT 4,120 S.F. RESIDENTIAL BUILDING

PROPOSED 4 UNIT 4,120 S.F. RESIDENTIAL BUILDING

BITUMINOUS CONCRETE SIDEWALK

VERTICAL GRANITE CURB (TYP.)

EDGE OF PAVEMENT

DOUBLE YELLOW LINE

IRON AXLE FOUND

IRON ROD W/ CIVILWORKS CAP FOUND

100' TIDE BUFFER (CITY OF DOVER JURISDICTIONAL SETBACK)

GENERAL NOTE:
JURISDICTIONAL WETLAND BOUNDARIES VERIFIED BY GOVE ENVIRONMENTAL SERVICES INC. IN 2018 IN ACCORDANCE WITH 1987 CORPS OF ENGINEERS WETLAND DELINEATION MANUAL TECHNICAL REPORT Y-87-1.

WETLAND NOTES

1. US ARMY CORPS OF ENGINEERS REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, TECHNICAL REPORT ERDC/EL TR-09-19 (OCT 2009).
2. FILED INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, VERSION 7.0. UNITED STATES DEPARTMENT OF AGRICULTURE (2010).
3. NORTH AMERICAN DIGITAL FLORA: NATION WETLAND PLANT LIST, VERSION 2.2.1 (2009)
4. CLASSIFICATION OF WETLANDS AND DEEPWATER HABITATS OF THE UNITED STATES. USFW MANUAL FWS/OBS-79/31 (1979).

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

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PLANNING FILENO.: P18-___

CIVILWORKS NEW ENGINEERING
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
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IMPACT SITE PLAN

LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

9

"CAUSEWAY"

HIGHEST OBSERVABLE TIDE LINE

EXISTING BUILDING SETBACK LINE

8 / 9

PARCEL AREA
79,592 S.F.±
1.83 AC.±

100' TIDE BUFFER
(CITY OF DOVER JURISDICTIONAL SETBACK)

NON-TIDAL WETLAND

HEADWALL "B"

50' SWQPA

150' SWQPA

250' SWQPA

PROPOSED 4 UNIT 4,120 S.F. RESIDENTIAL BUILDING

PROPOSED 3 UNIT 3,090 S.F. RESIDENTIAL BUILDING

PROPOSED 1,400 S.F. OFFICE BUILDING

PROPOSED 2" DOMESTIC SERVICE

PROPOSED 6" FIRE SERVICE

INV.=5.668

INV.=5.205

INV.=3.777

INV.=3.905

INV.=6.266

INV.=5.650

INV.=5.231

PROPOSED WATER SERVICE HUT SEE DETAIL

PROPOSED 2" DOMESTIC FOR DOCK SERVICE

PSMH1

PSMH2

PSMH3

EXISTING SMH

PUD

PW

PS

PG

PE

PD

GV

OHU

TBM
NAIL FOUND IN POLE
(MARKED EL. 10.65)
NAVD88 ELEV.9.77
IRON ROD W/
CIVILWORKS CAP FOUND

TBM
NAIL FOUND IN POLE
(MARKED EL. 10.65)
NAVD88 ELEV. 9.77

EXISTING BIT. CONC. DRIVEWAY

DOVER POINT ROAD

BIT.CONC.SIDEWALK

VGC

APPROXIMATE GAS LINE LOCATION (V.I.F.)

APPROXIMATE WATERLINE LOCATION (V.I.F.)

APPROXIMATE SEWER LINE LOCATION (V.I.F.)

CB "E"

BITUMINOUS CONCRETE SIDEWALK

VERTICAL GRANITE CURB (TYP.)

DOUBLE YELLOW LINE

EDGE OF PAVEMENT

IRON AXLE FOUND

IRON ROD W/ CIVILWORKS CAP FOUND

DV = 312.0000'

SANITARY SEWER SCHEDULE

*EXISTING SMH
RIM=8.88
INV.=3.0

PSMH1
RIM=±12.17
INV.IN=3.54
INV.OUT=3.44

PSMH2
RIM=±13.44
INV.IN=4.0
INV.OUT=3.9

PSMH3
RIM=±11.35
INV.IN=4.61
INV.OUT=4.51

*EXISTING MANHOLE SUBJECT TO CHANGE PENDING ONGOING NHDOT IMPROVEMENTS ALONG DOVER POINT ROAD.

NOTE:
ALL SEWER LATERALS & SEWER MAINS 6" SDR-35, MIN. SLOPE OF 0.005.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILENO.: P18-___

CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-0443

NO.	REVISION	APP'D	DATE
1	AOT SUBMISSION	SJH	1-22-19

DATE: 2-21-19
SCALE: 1"=20'
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:1788
FILE: SITE.DWG

UTILITY PLAN

LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

10

DESCRIPTION

THE INTENT OF THIS PLAN IS TO SHOW THE IMPROVEMENTS ASSOCIATED WITH THE CONSTRUCTION OF (6) MULTI-UNIT BUILDINGS, (1) MIXED USE-COMMERCIAL BUILDING, SITE ACCESS DRIVE, PARKING AREAS, UTILITY INSTALLATION, AND DRAINAGE IMPROVEMENTS.

PROJECT NAME AND LOCATION

LITTLE BAY MARINA & DEVELOPMENT — LATITUDE N43°07'18"
421 DOVER POINT ROAD — LONGITUDE W70°49'58"
DOVER, NH 03820

DISTURBED AREA

±152,438 square feet

SEQUENCE OF MAJOR ACTIVITIES

1. CONTRACTOR SHALL PREPARE THE SWPPP, FILE FOR AND OBTAIN THE NOI A MINIMUM OF 2 WEEKS PRIOR TO COMMENCEMENT OF SITE WORK.
2. PLACE TEMPORARY EROSION AND SEDIMENT CONTROL BMP'S PRIOR TO EARTH MOVING ACTIVITIES.
3. ALL EROSION CONTROL AND PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO COMMENCING EARTH MOVING OPERATIONS.
4. SELECTIVE DEMOLITION.
5. REGRADE SITE TO SUBGRADE.
6. 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 UNDERGROUND UTILITIES AND FOUNDATIONS FOR STRUCTURES.
9. PLACE GRAVELS AND FINE GRADE.
10. STABILIZE, ROADWAYS & PARKING LOTS WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
11. ALL CUT AND FILL SLOPES SHALL BE LOAMED AND SEEDED (AS APPLICABLE) WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
12. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EVERY 1/2" OF RAINFALL.
13. IN ALL CASES THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION AND IN NO CASE SHALL EXCEED 3.5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
14. WHEN ALL SITE WORK IS COMPLETE AND ALL DISTURBED AREAS ARE STABILIZED REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AND FILE THE EPA – N.O.T.

DEFINITIONS

AN AREA SHALL BE CONSIDERED STABLE OF ONE OF THE FOLLOWNG HAS OCCURRED.
1. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED
2. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
3. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED; OR
4. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED

INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES OF EROSION AND SEDIMENT CONTROLS

A. GENERAL

1. CONTRACTOR SHALL PREPARE THE SWPPP, FILE FOR AND OBTAIN THE NOI A MINIMUM OF 2 WEEKS PRIOR TO COMMENCEMENT OF SITE WORK.
2. ALL EROSION CONTROL AND PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO COMMENCING EARTH MOVING OPERATIONS.
3. TEMPORARY WATER DIVERSION MUST BE USED AS NECESSARY UNTIL AREAS ARE STABILIZED.
4. SELECTIVE DEMOLITION.
5. REGRADE SITE TO SUBGRADE
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 UNDERGROUND UTILITIES AND FOUNDATIONS FOR STRUCTURES
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12. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EVERY 1/2" OF RAINFALL.
13. IN ALL CASES THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION AND IN NO CASE SHALL EXCEED 3.5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
14. WHEN ALL SITE WORK IS COMPLETE AND ALL DISTURBED AREAS ARE STABILIZED REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AND FILE THE EPA – N.O.T.

1. Silt Fence
   a. Synthetic filter fabric shall be a pervious sheet of propylene, nylon, polyester or ethylene yarn and shall be certified by the manufacturer or supplier as conforming to the following requirements:

Physical Property	Test	Requirements
Filtering Efficiency	VTM-51	75% minimum
Tensile Strength at 20% Maximum Elongation* Standard Strength 30 lb/lin in (min)	VTM-52	Extra Strength 50 lb/lin in (min)
Flow Rate	VTM-51	0.3 gal/sf/min (min)

* Requirements reduced by 50 percent after six (6) months of installation.

   Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six (6) months of expected usable construction life at a temperature range of 0 degrees F to 120 Degrees F.

   b. The height of a silt fence shall not exceed thirty-six (36) inches.
   c. The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are necessary, filter cloth shall be spliced together only at support post, with a minimum six (6) inch overlap, and securely sealed.
   d. Posts shall be spaced a maximum of ten (10) feet apart at the barrier location and driven securely into the ground (minimum of 12 inches). When extra strength fabric is used without the wire support fence, post spacing shall not exceed 6 feet.
   e. Posts for silt fences shall be 2-inch diameter wood with a minimum length of 5 feet.
   f. Wire fence reinforcement for silt fences using standard strength filter cloth shall be a minimum of 42 inches in height, a minimum of 14 gauge and shall have a maximum mesh spacing of 6 inches.
   g. A trench shall be excavated approximately four (4) inches wide and four (4) inches deep along the line of posts and upslope from the barrier.
   h. When standard strength filter fabric is used, a wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy duty wire staples at least one (1) inch long, tie wires or hog rings. The wire shall extend no more than 36 inches above the original ground surfaces.
   i. The "standard strength" filter fabric shall be stapled or wired to the fence, and eight (8) inches of the fabric shall be extended into the trench. The fabric shall not extend more than 36 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.
   j. When extra strength filter fabric and closer post spacing are used, the wire mesh support fence may be eliminated. In such a case, the filter fabric is stapled or wired directly to the posts with all other provisions of item (i) applying.
   k. The trench shall be backfilled and the soil compacted over the filter fabric.
   l. Silt fences shall be removed when they have served their useful purpose, but not before the upslope areas has been permanently stabilized.

2. Sequence of Installation
   Sediment barriers shall be installed prior to any soil disturbance of the contributing drainage area above them.
3. Maintenance
   a. Check dams and silt fence barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. They shall be repaired if there are any signs of erosion or sedimentation below them. Any required repairs shall be made immediately. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind them, sediment barriers shall be replaced with a temporary check dam.
   b. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier still is necessary, the fabric shall be replaced promptly.
   c. Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately one third (1/3) the height of the barrier.
   d. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform with the existing grade, prepared and seeded.

C. MULCHING

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. 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 14 to 21 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.
2. Application Rate
   Mulch shall be applied at a rate of between 1.5 to 2 tons per acre, or 90 to 100 pounds per 1000 square feet.
3. Guidelines for Winter Mulch Application. When mulch is applied to provide protection over winter (past the growing season) it shall be at a rate of 6,000 pounds of hay or straw per acre. A tackifier may be added to the mulch.
4. 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.
5. Excelsior Matting Excelsior Matting shall be used in place of mulch on all slopes steeper than 3:1.

D. TEMPORARY GRASS COVER

1. Seedbed Preparation
   Apply fertilizer at the rate of 600 pounds per acre of 10-10-10. Apply limestone (equivalent to 50 percent calcium plus magnesium oxide) at a rate of three (3) tons per acre.
2. Seeding
   a. Utilize annual rye grass at a rate of 40 lbs/acre.
   b. Where the soil has been compacted by construction operations, loosen soil to a depth of two (2) inches before applying fertilizer, lime and seed.
   c. Apply seed uniformly by hand, cyclone seeder, or hydroseeder (slurry including seed and fertilizer). Hydroseedings, which include mulch, may be left on soil surface. Seeding rates must be increased 10% when hydroseeding.
3. Maintenance
   Temporary seedings shall be periodically inspected. At a minimum, 95% 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 barriers, check dams, etc.).

E. PERMANENT SEEDING

1. Bedding – stones larger than 1 ½ ", trash, roots, and other debris interfere 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 – 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 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 fertilizer @ 12 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. 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.
5. Provide a minimum of 4 inches (5 inches loose) of topsoil to all areas to be seeded.

F. STORM DRAIN INLET PROTECTION

1. Straw/Hay Bale Inlet Structure
   a. Bales shall be either wire bound or string tied with the bindings oriented around the sides rather than over and under the bales.
   b. Bales shall be placed lengthwise in a single row surrounding the inlet, with the ends of adjacent bales pressed together.
   c. The filter barrier shall be entrenched and backfilled. A trench shall be excavated around the inlet the width of bale to a minimum depth of four (4) inches. After the bales are staked, the excavated soil shall be backfilled and compacted against the filter barrier.
   d. Each bale shall be securely anchored and held in place by at least two (2) stakes or rebars driven through the bale.
   e. Loose straw/hay shall be wedged between bales to prevent water from entering between bales.
   f. All structures should be inspected after every rainstorm and repairs made as necessary.
   g. Sediment should be removed from the devices after the sediment has reached a maximum of one-third the depth of the trap.
   h. Haybales should be removed and the area repaired as soon as the contributing drainage area to the inlet has been completely stabilized.

TIMING OF CONTROLS/MEASURES

As indicated in the sequence of Major Activities the silt fences 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 personnel 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.

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 exposure of materials and substances during construction to stormwater runoff:

Good Housekeeping:

The following good housekeeping practices will be followed on site during the construction project:

- An effort will be made to store only sufficient amounts of products to do the job.
- 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.
- Manufacturer's recommendations for proper use and disposal will be followed.
- The site superintendent will inspect daily to ensure proper use and disposal of materials.
- Substances will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible all of a product will be used up before disposing of the container.

Hazardous Products:

The following practices will be used to reduce the risks associated with hazardous materials:

- Products will be kept in their original containers unless they are not resealable.
- Original labels and material safety data will be retained for important product information.
- 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:

Petroleum Products:

All on site vehicles will be monitored for leaks and receive regular preventive maintenance 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.

Fertilizers:

Fertilizers used will be applied only in the minimum amounts directed by the specifications. Once applied fertilizer will be worked into the soil to limit exposure to stormwater. Storage will be in a covered shed or enclosed trailers. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid

Paints:

spills.
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 manufacturer's instructions or state and local regulations.

Concrete Trucks:

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:

- 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.
- 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.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- Spills of toxic or hazardous material will be reported to the appropriate state or local government agency, regardless of the size.
- 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 recurs. A description of the spill, its cause, and the cleanup measures will be included.
- The site superintendent responsible for day-to-day site operations will be the spill prevention and cleanup coordinator.

The project proponent is required to manage construction to meet the requirements and intent of RSA 430:53 and AGR 3800 relative to controlling invasive species and controlling fugitive dust in accordance with ENV-A 1002.
AGR 3800 Prohibited Invasive Plant Species Rules

The rule, Agr 3800, states : "No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1, New Hampshire prohibited invasive species list". A complete copy of the rules can be accessed on the internet at http://agriculture.nh.gov/topics/plants_insects.htm.

Env-A 1002 FUGITIVE DUST: Precautions to Prevent, Abate, and Control Fugitive Dust
(a) Any person engaged in any activity within the state that emits fugitive dust, other than 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:

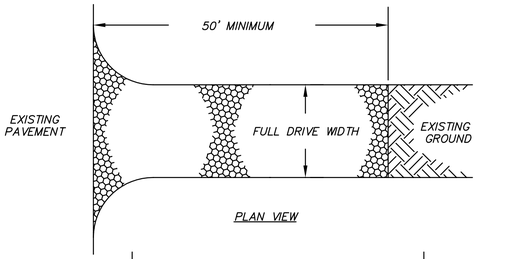
(1) The use of water or hydrophilic material on operations or surfaces, or both;

(2) The application of asphalt, water or hydrophilic material, or tarps or other such covers to material stockpiles;

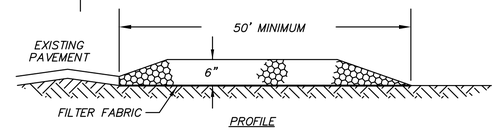
(3) The use of hoods, fans, fabric filters, or other devices to enclose and vent areas where materials prone to producing fugitive dust are handled;

(4) The use of containment methods for sandblasting or similar operations; and

(5) The use of vacuums or other suction devices to collect airborne particulate matter.



PLAN VIEW



PROFILE

NOTES:

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

STABILIZED CONSTRUCTION ENTRANCE

1. SPECIFICATIONS
   A. AGGREGATE SIZE: USE TWO (2) INCHES STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
   B. AGGREGATE THICKNESS: NOT LESS THAN SIX (6) INCHES.
   C. WIDTH TEN (10) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH OF POINTS WHERE INGRESS OR EGRESS OCCURS.
   D. LENGTH: AS REQUIRED, BUT NOT LESS THAN FIFTY (50) FEET. PIPING OF SURFACE WATER UNDER ENTRANCE SHALL BE PROVIDED AS REQUIRED.
   E. GEOTEXTILE: TO BE PLACED OVER THE ENTIRE AREA TO BE COVERED WITH AGGREGATE.
   F. CRITERIA FOR GEOTEXTILE: THE FABRICS SHALL BE TREVIA SPUNBOND 1135, MIRAFI 600X OR EQUAL.
2. MAINTENANCE
   THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH AGGREGATE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

PER 149-10 F:
All site improvements which require blasting of land shall meet the following requirements prior to any blasting occurring.

1. The Applicant shall prepare a pre-blast survey of all structures within five (500) feet of the external boundaries of the proposed lot to be developed. This survey, along with a monitoring plan, shall be on file with the Dover Fire and Rescue. Upon recommendations of the Chief , the planning Board may require a pre-blast survey of all structures within one thousand (1000) feet.
2. The Applicant shall hold a neighborhood meeting to review the blasting plan and pre-blast survey, with representatives of the Fire and Rescue and the blasting company in attendance, prior to any on-site blasting. Abutters within on thousand (1000) feet of the external boundary of the project parcel shall be notified by certified mail (paid for by the applicant) of the meeting no less than ten (10) days prior to the meeting.
3. Permit holders shall be in compliance with NFPA 495, The Code for the Manufacture, Transportation, Storage and Use of Explosive Material, in addition to all other ordinances and codes set forth in the City of Dover Fire Prevention Code, which specifically prohibits the overnight storage of explosive or blasting agents. Further all storage magazines shall be locked in the open position at the end of the days' operation, for easy inspection by City Officials.
4. blasting permits may be obtained by calling the Dover Fire and Rescue during normal business hours. The permits are only active for the dates and time specified on the permit.
5. Permit holders shall hold insurance against claims for damages for personal injury and property which may arise from performance of the work.
6. Hours of operation for the blasting shall be no earlier than 8:00 am and no later than 6:00 pm Monday through Friday, excluding federal holidays.

MAINTENANCE 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.

WINTER CONSTRUCTION NOTES

1. All proposed post-development vegetated areas which do not exhibit a minimum of 85 % vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting, elsewhere. The placement of erosion control blankets or mulch and netting shall not occur over accumulated snow or on frozen ground and shall be completed in advance of thaw or spring melt.
2. All slopes which do not exhibit a minimum of 85% vegetative growth by October 15th, or which are disturbed after October 15th shall be stabilized with stone or erosion control blankets.
3. After October 15th, incomplete road surfaces shall be protected with a minimum of 3-inches of crushed gravel per NHDOT item 403.3, or if construction is to continue through the winter season be cleared of any accumulated snow after each storm event.

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILENO.: P18-___

CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-0443

NO.	REVISION	APP'D	DATE
1	AOT SUBMISSION	SJH	1-22-19

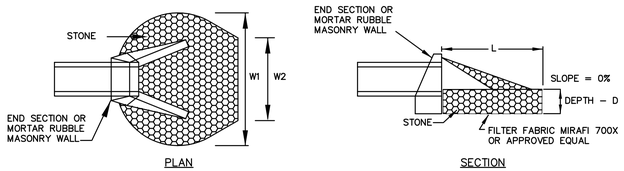
DATE: 2-21-19
SCALE: AS NOTED
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:1788
FILE: SITE.DWG

EROSION CONTROL NOTES

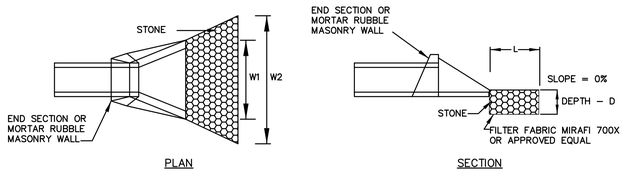
LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

11



STONE APRON OUTLET PROTECTION DETAIL
OUTLET TO DEFINED CHANNEL



STONE APRON OUTLET PROTECTION DETAIL
OUTLET TO FLAT AREA, NON DEFINED CHANNEL

MAINTENANCE

THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIPRAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE OUTLET PROTECTION APRON.

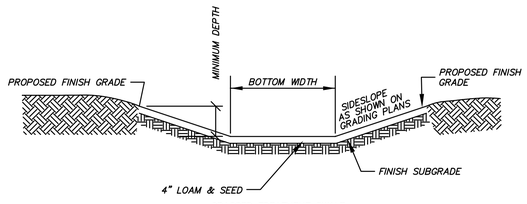
STONE GRADATION

% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE
100	1.5 TO 2.0 D50
85	1.3 TO 1.8 D50
50	1.0 TO 1.5 D50
15	0.3 TO 0.5 D50

CONSTRUCTION SPECIFICATIONS

1. THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIPRAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE ROCK OR GRAVEL USED FOR FILTER OR RIPRAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIPRAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.

RIP RAP OUTLET PROTECTION
NOT TO SCALE



GRASSED TREATMENT SWALE

NOTES:

1. THE FOUNDATION AREA OF THE WATERWAY SHALL BE CLEARED AND GRUBBED OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL. MATERIALS REMOVED SHALL BE DISPOSED OF SO THEY WILL NOT INTERFERE WITH THE CONSTRUCTION OR PROPER FUNCTIONING OF THE WATERWAY.

2. THE WATERWAY SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE AND CROSS SECTION AS REQUIRED TO MEET THE DESIGN CRITERIA. THE WATERWAY SHALL BE FREE OF IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.

3. EARTH FILLS REQUIRED TO MEET SUBGRADE REQUIREMENTS BECAUSE OF OVER EXCAVATION OR TOPOGRAPHY SHALL BE COMPACTED TO THE SAME DENSITY AS THE SURROUNDING SOIL TO PREVENT UNEQUAL SETTLEMENT THAT COULD CAUSE DAMAGE TO THE COMPLETED WATERWAY. EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF SO IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE WATERWAY.

4. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER AS TO MINIMIZE EROSION AND AIR AND WATER POLLUTION. ALL APPROPRIATE STATE AND LOCAL LAWS AND REGULATIONS SHALL BE COMPLIED WITH FOR INSTALLATION.

5. VEGETATION SHALL BE ESTABLISHED IN THE SWALE PRIOR TO ALLOWING STORMWATER RUNOFF TO FLOW THROUGH THE SWALE.

6. MAINTENANCE OF THE VEGETATION IN THE GRASSED WATERWAY IS EXTREMELY IMPORTANT IN ORDER TO PREVENT RILLING, EROSION, AND FAILURE OF THE WATERWAY. MOWING SHOULD BE DONE FREQUENTLY ENOUGH TO CONTROL ENCROACHMENT OF WEEDS AND WOODY VEGETATION AND TO KEEP THE GRASSES IN A VIGOROUS CONDITION. THE VEGETATION SHOULD NOT BE MOWED TOO CLOSELY SO AS TO REDUCE THE EROSION RESISTANCE IN THE WATERWAY.

7. THE WATERWAY SHOULD BE INSPECTED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE THE CONDITION OF THE WATERWAY. RILLS AND DAMAGED AREAS SHOULD BE PROMPTLY REPAIRED AND REVEGETATED AS NECESSARY TO PREVENT FURTHER DETERIORATION.

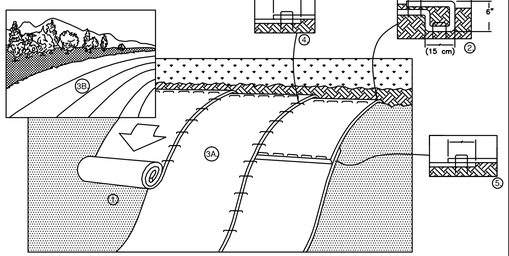
8. PERIODIC APPLICATIONS OF LIME AND FERTILIZER MAY BE NEEDED TO MAINTAIN VIGOROUS GROWTH.

GRASSED TREATMENT SWALE
NOT TO SCALE

STRUCTURE	WIDTH (Ft)	LENGTH (Ft)	SLOPE (Ft/Ft)
TS 1	3.5	110	0.0064
PRE TREATMENT	4	50	±0.005

NORTH AMERICAN GREEN
EROSION CONTROL *Products Guaranteed* SOLUTIONS

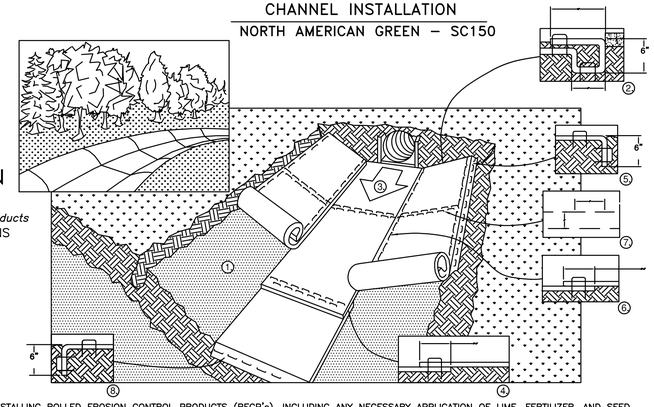
SLOPE INSTALLATION
NORTH AMERICAN GREEN – SC150



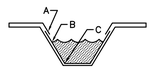
1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
   NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE 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.

NORTH AMERICAN GREEN
EROSION CONTROL *Products Guaranteed* SOLUTIONS

CHANNEL INSTALLATION
NORTH AMERICAN GREEN – SC150



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.

SILTSACK®
SPECIFICATIONS

NOTE: THE SILTSACK WILL BE MANUFACTURED FROM A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS AS SUPPLIED BY AW HARRIS OF PORTSMOUTH OR APPROVED EQUAL

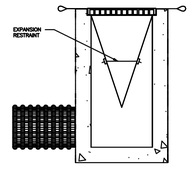
REGULAR FLOW SILTSACK●
(FOR AREAS OF LOW TO MODERATE PRECIPITATION AND RUN-OFF)

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC -1

HI-FLOW SILTSACK●
(FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN-OFF)

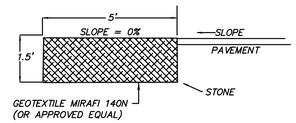
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491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

OIL-ABSORBANT SILTSACK●
(FOR AREAS WHERE THERE IS A CONCERN FOR OIL RUN-OFF OR SPILLS)
DEPENDING ON YOUR PARTICULAR APPLICATION, THE SILTSACK® CAN BE MADE FROM EITHER ONE OF THE ABOVE FABRICS WITH AN OIL-ABSORBANT PILLOW INSERT OR, MADE COMPLETELY FROM AN OIL-ABSORBANT SILTSACK®, WITH A WOVEN PILLOW INSERT.



INSTALLATION DETAIL

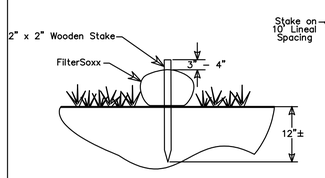
DETAIL OF INLET SEDIMENT CONTROL DEVICE
NOT TO SCALE



GEOTEXTILE MIRAFI 140N (OR APPROVED EQUAL)

NOTES:
1. RIP-RAP APPLICATIONS SHALL CONSIST OF d50 = 6" (MIN) STONE WITH A STONE LAYER THICKNESS OF 1.5' (MIN) ON FILTER FABRIC WITH A 6" THICK (MIN) GRAVEL BASE. SEE GRADING PLAN FOR APRON LOCATIONS.

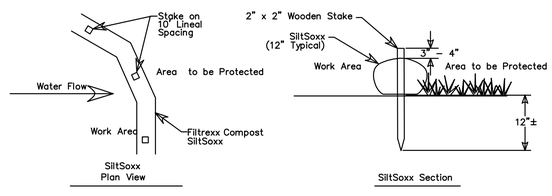
RIP-RAP APRON
NOT TO SCALE



FilterSoxx Section

Notes:
1. All material to meet Filtrexx specifications
2. FilterSoxx compost/jsoil/rock/seed fill to meet application requirements.
3. Compost material to be dispersed on site, as determined by Engineer.

FilterSoxx Staking Details



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

1. SEE EROSION CONTROL NOTES FOR MATERIAL, INSTALLATION AND MAINTENANCE REQUIREMENTS.

Filter Barrier Detail
NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILENO.: P18-___

CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-0443

NO.	REVISION	APP'D	DATE
1	AOT SUBMISSION	SJH	1-22-19

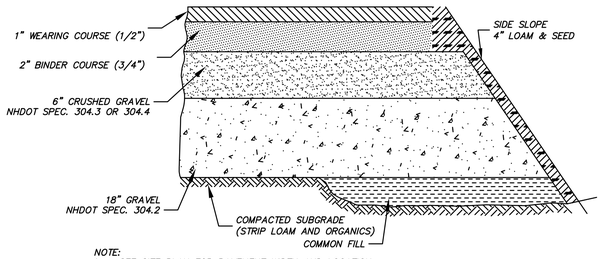
DATE: 2-21-19
SCALE: AS NOTED
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:1788
FILE: SITE.DWG

EROSION CONTROL DETAILS

LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

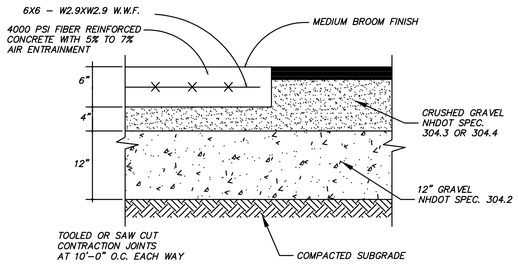
12



NOTE:
1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.
2. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.

TYPICAL PAVEMENT SECTION

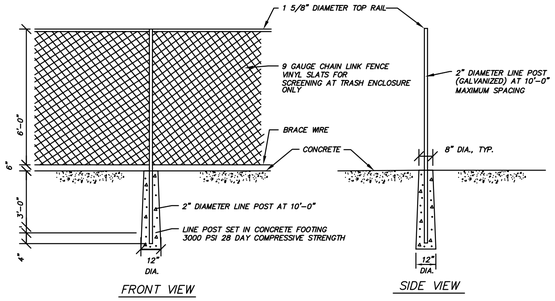
NOT TO SCALE



NOTE: PITCH CONCRETE PAD GRADING TO CENTER

DUMPSTER DETAIL

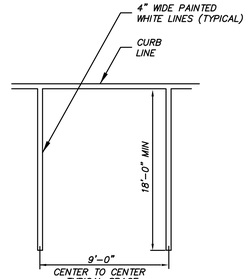
NOT TO SCALE



NOTES:
1. DUMPSTER CHAINLINK FENCE SHALL HAVE GREEN VINYL PRIVACY SLATS.

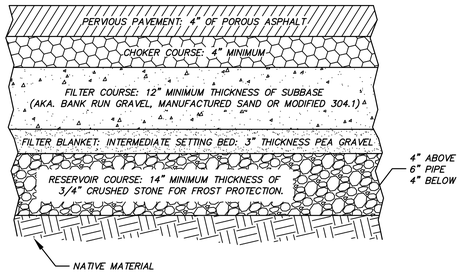
CHAINLINK FENCE DETAIL

NOT TO SCALE



STANDARD PARKING STALL

NOT TO SCALE

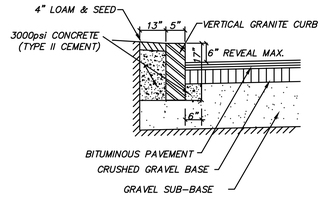


NOTE:
1. SEE SITE PLAN FOR LOCATION OF POROUS PAVEMENT, PAVEMENT WIDTH AND LOCATION.
2. CONSTRUCTION MATERIALS SHALL NOT BE STORED ON THE POROUS PAVEMENT OR BASE MATERIALS.
3. PLACEMENT OF POROUS PAVEMENT AND BASE MATERIALS SHALL BE MONITORED BY THE DESIGN ENGINEER. ADVISE THE CITY ENGINEER AS TO INSTALLATION SCHEDULE.
4. CRUSHED STONE, BANK RUN GRAVEL & CRUSHED GRAVEL MATERIALS SHALL CONFORM WITH MASSDOT STD. SPECIFICATIONS.
5. POROUS PAVEMENT SHALL CONFORM WITH GENERAL POROUS BITUMINOUS PAVING SPECIFICATIONS PREPARED BY THE UNH STORMWATER CENTER 2/14).
6. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.

POROUS PAVEMENT SECTION

NOT TO SCALE

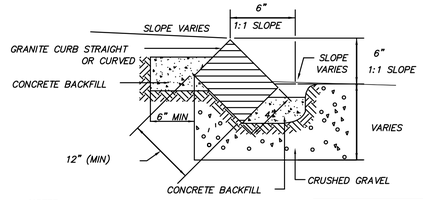
RADIUS	MAX. LENGTH
21'	3'
22'–28'	4'
29'–35'	5'
36'–42'	6'
43'–49'	7'
50'–56'	8'
57'–60'	9'
OVER 60'	10'



NOTES
1. SEE SITE PLAN FOR LIMITS OF CURBING.
2. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
3. MINIMUM LENGTH OF CURB STONES = 3'
4. MAXIMUM LENGTH OF CURB STONES = 10'
5. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES (SEE CHART)
6. ALL RADII 20 FEET AND SMALLER TO BE CONSTRUCTED USING CURVED SECTIONS.

VERTICAL GRANITE CURB

NOT TO SCALE



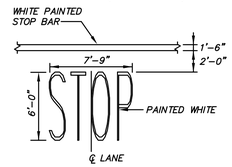
NOTES
1. ADJOINING STONES OF STRAIGHT CURB LAID ON CURVES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH
2. MINIMUM LENGTH OF STRAIGHT CURB STONES = 18"
3. MAXIMUM LENGTH OF STRAIGHT CURB STONES = 8'
4. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES – SEE CHART

RADIUS FOR STONES WITH SQUARE JOINTS	MAXIMUM LENGTH
16'–28'	1'–6"
29'–41'	2'
42'–55'	3'
56'–68'	4'
69'–82'	5'
83'–96'	6'
97'–110'	7'
OVER 110'	8'

SLOPED GRANITE CURBING

NOT TO SCALE

LENGTH AS REQUIRED (SEE SITE PLAN)

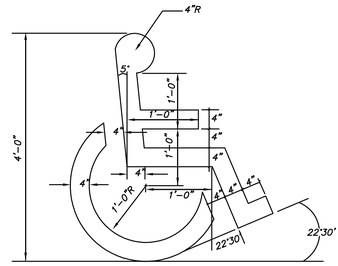


NOTE: PAVEMENT MARKINGS TO BE INSTALLED IN LOCATIONS SHOWN ON THE PLANS. APPLY TWO COATS.

STOP BAR & LEGEND

PAVEMENT MARKINGS

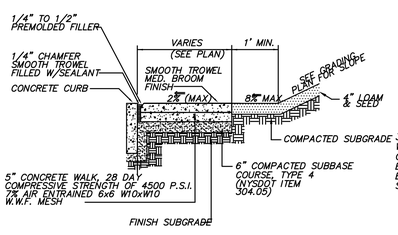
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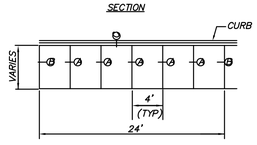
NOTE: SYMBOL TO BE PAINTED IN ALL HANDICAPPED SPACES

PAINTED HANDICAP SYMBOL

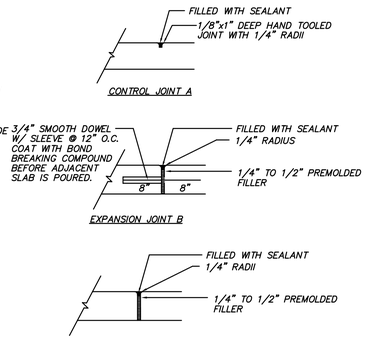
NOT TO SCALE



SECTION

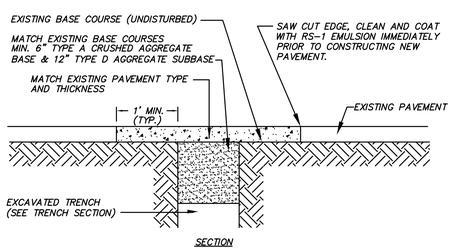


PLAN

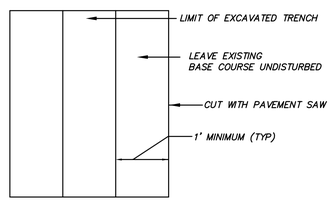


CONCRETE SIDEWALK

NOT TO SCALE



SECTION

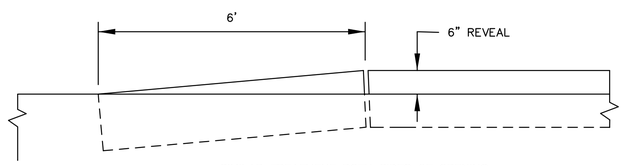


PLAN

ROADWAY TRENCH PATCH DETAIL

NOT TO SCALE

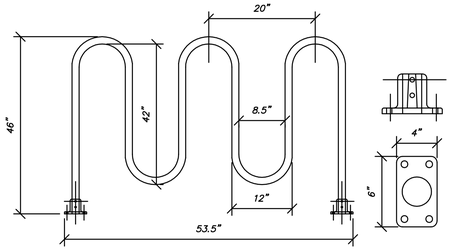
GRANITE CURB & MORTAR JOINTS
SLOPE LAST SECTION TO MEET EXISTING GROUND



SIMILAR TREATMENT BOTH SIDES OF OPENING

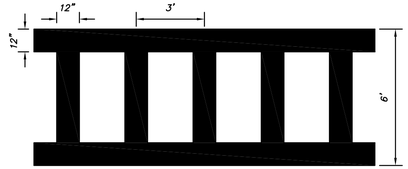
"TIP–DOWN" CURB DETAIL

NOT TO SCALE



BIKE RACK DETAIL

NOT TO SCALE



NOTE:
1. ALL PAINT SHALL BE NORMAL DRYING TRAFFIC PAINT, MEETING THE REQUIREMENTS OF AASHTO M248–TYPE N. PAINT SHALL BE APPLIED AS SPECIFIED BY MANUFACTURER.
2. SYMBOLS & PARKING STALLS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN WITH DISABILITIES ACT.

CROSSWALK MARKING DETAIL

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILENO.: P18–___

CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-0443

NO.	REVISION	APP'D	DATE
1	AOT SUBMISSION	SJH	1–22–19

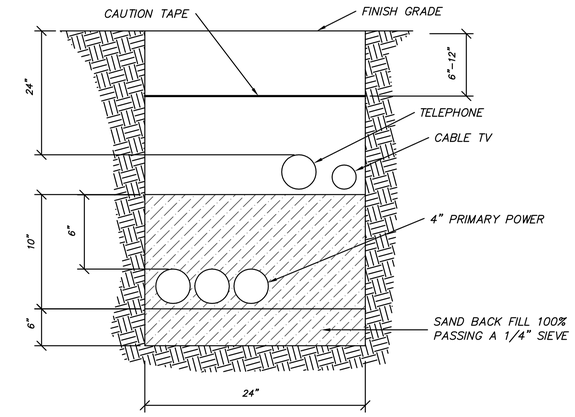
DATE: 2–21–19
SCALE: AS NOTED
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:1788
FILE: SITE.DWG

LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

DETAILS

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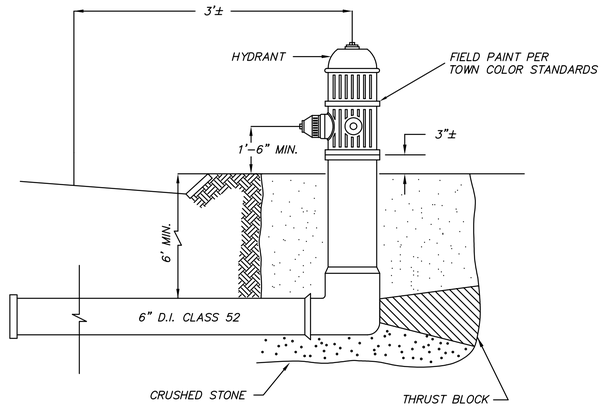


1. TELEPHONE CONDUIT SHALL BE 3" SCHEDULE 40 PVC, WITH STEEL SWEEPS AT RISER POLE, 90° BENDS AND AT BUILDING.
2. LEAVE PULL ROPE IN ALL CONDUITS FOR CABLE INSTALLATION.
3. FOR COMPLETE SPECIFICATIONS SEE "PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE CONSTRUCTION SPECIFICATIONS FOR UNDERGROUND CONDUIT SYSTEMS".
4. CONTRACTOR SHOULD VERIFY THE NUMBER & SIZE OF CONDUIT WITH THE APPROPRIATE UTILITIES.

UTILITY TRENCH

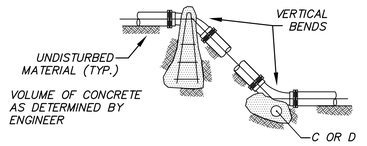
NOT TO SCALE

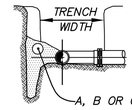
NOTE:
HYDRANT INSTALLATION & OPERATION TO CONFORM TO REGULATIONS OF CITY OF DOVER FIRE DEPARTMENT.

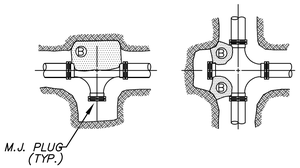


FIRE HYDRANT DETAIL

NOT TO SCALE

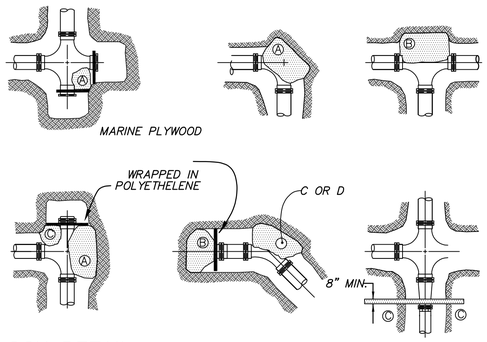






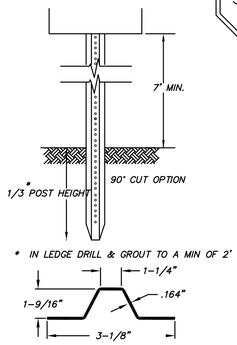
TEST PRESSURE = 200psi	SQUARE FEET OF CONCRETE THRUST BLOCKING BEARING ON UNDISTURBED MATERIAL					
	REACTION TYPE	PIPE SIZE				
		4"	6"	8"	10"	12"
	A 90°	0.89	2.19	3.82	11.14	17.24
	B 180°	0.65	1.55	2.78	8.38	12.00
	C 45°	0.48	1.19	2.12	6.02	9.32
	D 22-1/2°	0.25	0.60	1.06	3.08	4.74
	E 11-1/4°	0.13	0.30	0.54	1.54	2.38

NOTES:
1. POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL, WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO JOINTS SHALL BE COVERED WITH CONCRETE.
2. ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
3. PLACE BOARD IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCKS.
4. WHERE M.J. PIPE IS USED, M.J. PLUG WITH RETAINER GLAND MAY BE SUBSTITUTED FOR END BLOCKINGS.



TRUST BLOCK DETAIL

NOT TO SCALE





R1-1
30" x 30"



R7-8
12" x 18"

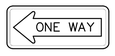


R7-8b
18" X 12"



R4-7

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

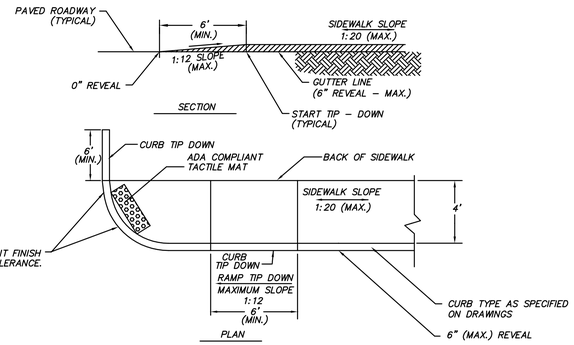


R6-1b

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

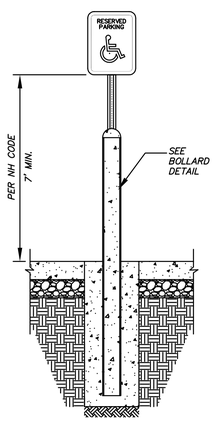
SIGN LEGEND & SIGN POST

NOT TO SCALE



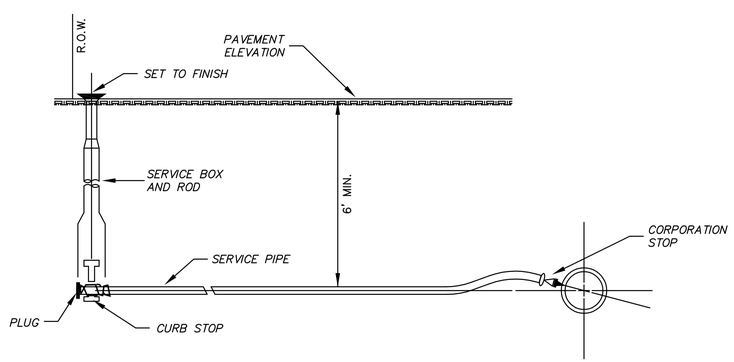
SIDEWALK TIP DOWN RAMP

NOT TO SCALE



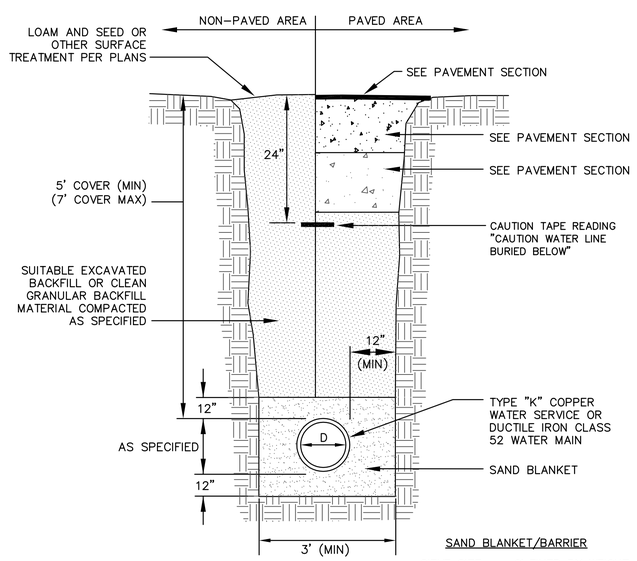
SIGN IN BOLLARD

NOT TO SCALE



TYPICAL WATER SERVICE CONNECTION

NOT TO SCALE



SAND BLANKET/BARRIER

SIEVE SIZE	% FINER BY WEIGHT
1/2"	90 – 100
200	0 – 15

NOTES
1. BACKFILL MATERIAL BELOW PAVED OR CONCRETE AREAS, BEDDING MATERIAL, AND SAND BLANKET SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T 99, METHOD C. SUITABLE BACKFILL MATERIAL BELOW LOAM AREAS SHALL BE COMPACTED TO NOT LESS THAN 90% OF AASHTO T 99, METHOD C.

WATER MAIN TRENCH

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILENO.: P18-___

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CIVIL ENGINEERING
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Dover, New Hampshire 03820
(603) 749-0443

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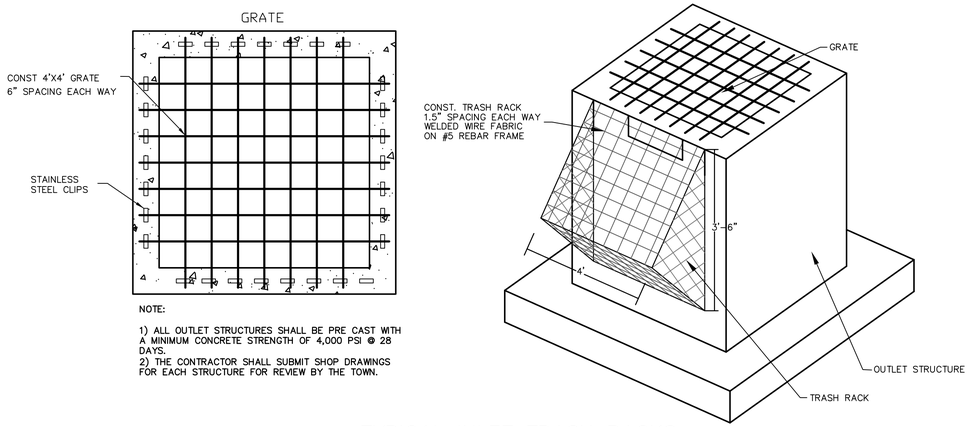
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SCALE: AS NOTED
DRAWN BY: SRD
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LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

DETAILS

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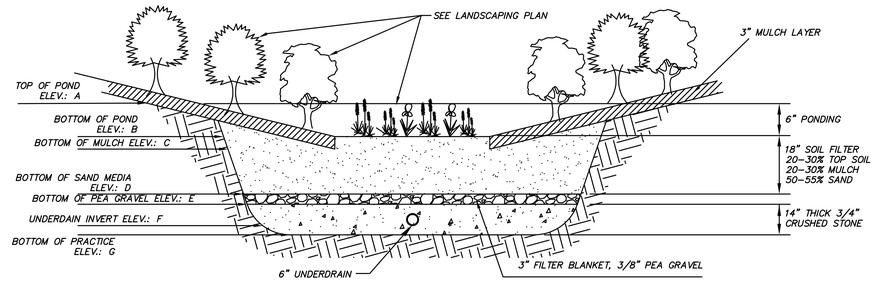


NOTE:

1) ALL OUTLET STRUCTURES SHALL BE PRE CAST WITH A MINIMUM CONCRETE STRENGTH OF 4,000 PSI @ 28 DAYS.
2) THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR EACH STRUCTURE FOR REVIEW BY THE TOWN.

TYPICAL INLET TRASH RACKS

NOT TO SCALE



BIORETENTION POND SYSTEM CHART

POND	POND ELEVATION						
	A	B	C	D	E	F	G
RG1	9.5	9.0	8.75	7.5	7.25	6.42	6.09
RG2	10.75	10.25	10.0	8.75	8.5	7.67	7.34
RG3	8.5	8.0	7.75	6.5	6.25	5.42	5.09
RG4	10.5	10.0	9.75	8.5	8.25	7.40	7.09

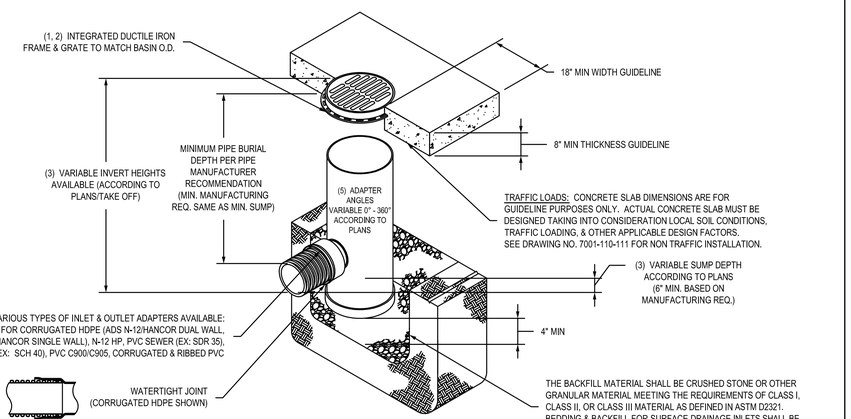
NOTES:

1. CONSTRUCT GRASSED OVERFLOW SPREADER EARLY DURING INITIAL CONSTRUCTION TO ESTABLISH TURF PRIOR TO CONSTRUCTION OF BIORETENTION SYSTEM.
2. DO NOT BEGIN CONSTRUCTION OF THE BIORETENTION AREA UNTIL LAWN AREA ON THE ENTIRE SITE AREA ESTABLISHED WITH AT LEAST 80 PERCENT TURF. FILTER ALL DRAIN INLETS IN THE SEDIMENT FOREBAYS TO PREVENT SILTATION INTO THE BIORETENTION AREA.
3. THE RAIN GARDEN SUBGRADE SHALL BE EXCAVATED TO THE DESIGN DEPTH PLUS TWO (2) INCHES. AT THAT DEPTH FOUR (4) INCHES OF COMPOST SHALL BE TILLED INTO THE EXISTING SOILS SUCH THAT THE SOILS ARE WILL MIXED.
4. DO NOT DRIVE CONSTRUCTION EQUIPMENT ON FILTER SUBGRADE NOR ON THE FILTER MATERIAL. INSTALL FILTER MATERIAL BY MEANS OF AN EXCAVATOR LOCATED ADJACENT TO THE FILTER AREA.
5. MATERIALS: CRUSHED STONE LAYER SHALL MEET NHDOT 304.4. STONE SHALL CONTAIN NO MORE THAN 5% FINES PASSING THE #200 SIEVE. TOPSOIL SHALL CONTAIN 15 TO 25% FINES PASSING THE #200 SIEVE. MULCH SHALL BE SHREDDED HARDWOOD, AGES IN A STOCKPILE OR STORED FOR AT LEAST 12 MONTH. NON-WOVEN GEOTEXTILE BE 4 TO 6 OZ. PER SQUARE YARD WITH A.O.S. OF #70 SIEVE OR LOWER, AND A MINIMUM FLOW RATE OF 125 GAL PER SQUARE FEET. UNDERDRAIN SHALL BE PERFORATED 6" PVC OR TRIPLE WALL PE PIPE; SLOPE 1/4"/FT. MINIMUM.
6. REFER TO LANDSCAPING DRAWINGS FOR GRASS SEED MIXES AND PLANTINGS. FERTILIZATION OF THE FILTER AREA SHALL BE AVOIDED UNLESS ABSOLUTELY NECESSARY TO ESTABLISH VEGETATION.
7. INITIAL ESTABLISHMENT: DURING THE FIRST 2-3 MONTHS OF ESTABLISHMENT WATER THE GARDEN ON A WEEKLY BASIS (TO SUPPLEMENT RAINFALL FOR TOTAL OF 1 INCH PER WEEK).
8. ANNUAL MAINTENANCE: IN THE SPRING OF EACH YEAR, ANY DEAD VEGETATION SHALL BE REMOVED TO ALLOW FOR NEW GROWTH, AND ANY ACCUMULATED SEDIMENT (NORMALLY AT THE ENTRANCE TO THE GARDEN) SHALL ALSO BE REMOVED. DURING THE GROWING SEASON THE RAIN GARDEN SHALL BE WEEDED TWO (2) TIMES AND ADDITIONAL HARDWOOD MULCH SHALL BE ADDED AS NEEDED TO ASSIST IN WEED SUPPRESSION. TURF AT FILTER SHALL BE MOWED NO MORE THAN 3 TIMES PER GROWING SEASON. IF WATER PONDS ON THE SURFACE FOR MORE THAN 24 HOURS DURING THE FIRST YEAR OR 72 HOURS THEREAFTER, THE FILTER SURFACE SHALL BE AERATED WITH DEEP TINES OR THE SURFACE REPLACED.
9. PLANTINGS SHALL BE NATIVE NON-INVASIVE SPECIES, SEE LANDSCAPE ARCHITECT DRAWINGS.

BIORETENTION SYSTEM DETAIL (SEE GRADING PLAN FOR LOCATION)

NOT TO SCALE

NYLOPLAST 18" DRAIN BASIN: 2818AG _ _ X



1 - GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER.
5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.

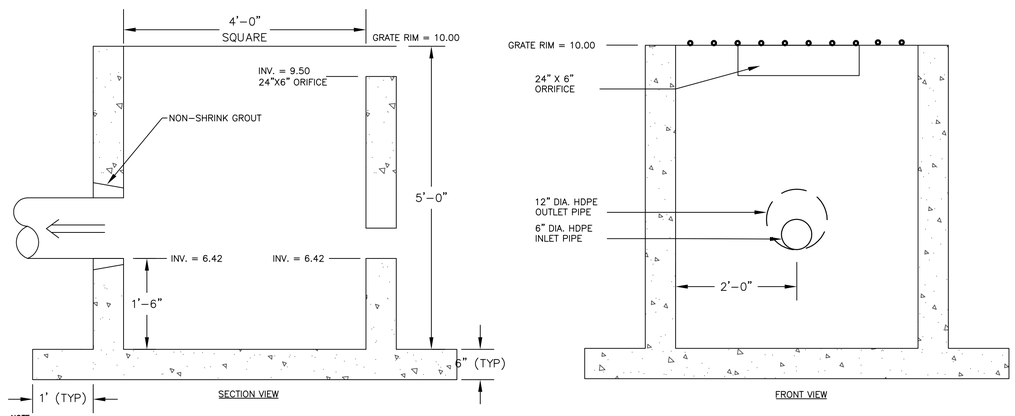
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DETAIL NOTES:

1) DRAIN MANHOLES PDMH1, PDMH2, & PDMH3 TO USE SOLID COVERS.
2) RAINGARDEN AND DETENTION POND OUTLETS TO USE DOME COVERS
3) SEE DRAINAGE PLAN FOR INVERTS, INLETS AND OUTLET LOCATION AND SIZES.

TYPICAL OUTLET STRUCTURES AND MANHOLE DETAIL (OS-RG2)(OS-RG3)(OS-RG4)(OS-DP1)(PDMH1)(PDMH2)(PDMH3)

NOT TO SCALE



NOTE:

1) ALL OUTLET STRUCTURES SHALL BE PRE CAST WITH A MINIMUM CONCRETE STRENGTH OF 4,000 PSI @ 28 DAYS.
2) THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR EACH STRUCTURE FOR REVIEW BY THE TOWN.

OUTLET STRUCTURE 1 (OS-RG1) DETAIL

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILENO.: P18-___

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181 Watson Road, P.O. Box 1166
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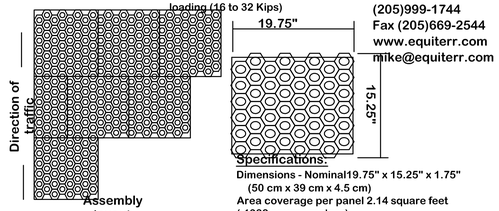
DETAILS

15

GRASS PAVERS DETAIL

H10 to H20 Loading Medium to heavy loading (16 to 32 Kips)

CV Supply
3923 Hwy 61
Columbiana, AL 35051
(205)999-1744
Fax (205)669-2544
www.equiterr.com
mike@equiterr.com



Specifications:

Dimensions - Nominal19.75" x 15.25" x 1.75" (50 cm x 39 cm x 4.5 cm)
Area coverage per panel 2.14 square feet (.1988 square meters)
Weight per panel2.40 pounds (1088 grams)
Material100% recycled HDPE

Sand, loam or fine stone if no grasses needed. Over fill pavers to allow for setting.

Sand, loam or fine stone if no grasses needed. FILL of crushed stone if

NATIVE GRASS

Ground Level - Angular sand or sandy loam topsoil.

Add Gravel or Class 2 additional road medium base

Gravel and natural 75% (¾" - ¼") gravel and 25% sand compacted to 95% modified proctor. (NOTE: Thickness of base will vary depending on loading requirements, loading frequencies, and subsoil conditions.

Existing Base

Dirt

1.75"
1.5"
2"-8"

Mechanical Abrasion holes for enhanced percolation and root growth (90% open area on the top and 37% open area on the bottom)

RK Manufacturing

OVERFLOW PARKING, EMERGENCY VEHICLE ACCESS AREAS, UTILITY ACCESS

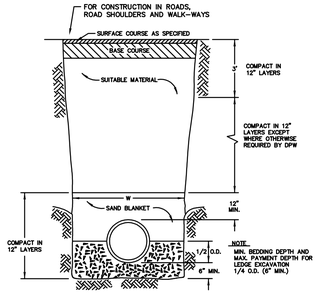
Joint tabs

Stabilizing Cleats - eliminates the need for pinning or stapling

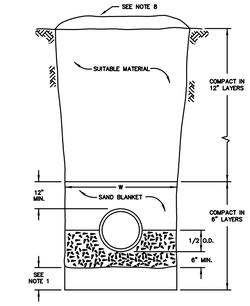
GRASS PAVER DETAIL

NOT TO SCALE

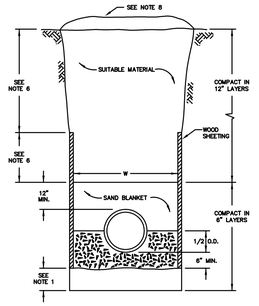
STANDARD TRENCH SECTION



LEDGE CONSTRUCTION



EARTH CONSTRUCTION



EARTH CONSTRUCTION WITH SHEETING

NOTES:

1.) ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE. REFILL WITH BEDDING MATERIAL. SEE ALSO NOTE 7.

2.) BEDDING : SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33 STONE SIZE NO. 67.

100% PASSING	1 INCH SCREEN
90 – 100% PASSING	3/4 INCH SCREEN
20 – 55% PASSING	3/8 INCH SCREEN
0 – 10% PASSING	#4 SIEVE
0 – 5% PASSING	#8 SIEVE

– CRUSHED STONE 1/2 INCH – 1 1/2 INCH MAY BE USED INSTEAD OF SCREENED GRAVEL WHERE ALLOWED BY THE ENGINEER.

3.) SAND BLANKET : CLEAN SAND FREE FROM ORGANIC MATTER SO GRADED THAT 90–100% PASSES A 1/2 INCH SIEVE AND NOT MORE THAN 15% WILL PASS A #200 SIEVE.

4.) SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALK–WAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.

IN CROSS–COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLY RECONSTRUCTION, WHEN NECESSARY, WILL BE PRESERVED.

5.) BASE COURSE , IF ORDERED BY THE ENGINEER, SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE STATE OF NEW HAMPSHIRE, DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS, (D.O.T.).

6.) WOOD SHEETING , IF REQUIRED. WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID–DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.

7.) W = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES; FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.

8.) FOR CROSS COUNTRY CONSTRUCTION , BACKFILL OR FILL SHALL BE MOUNDED TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.

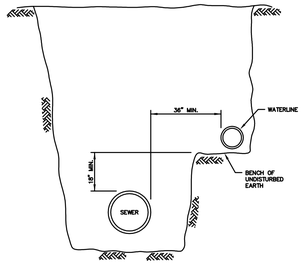
9.) CONCRETE FOR ENCASEMENT SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000#) CONCRETE OF THE NEW HAMPSHIRE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS STANDARD SPECIFICATIONS AS FOLLOWS:

CEMENT: 6.0 BAGS PER CUBIC YARD
WATER : 5.75 GALLONS PER BAG CEMENT
MAXIMUM SIZE OF AGGREGATE: 1 INCH

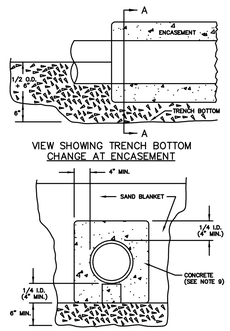
10.) NEW HAMPSHIRE WATER SUPPLY AND POLLUTION CONTROL COMMISSION (NH DES) DESIGN STANDARDS REQUIRE 10 FT. SEPARATION. HOWEVER, SHOULD CONSTRUCTION OPERATIONS REVEAL OR EXPOSE A WATERLINE (MAIN OR SERVICE) RUNNING APPROXIMATELY PARALLEL AND LESS THAN 10 FT. HORIZONTAL FROM THE PROPOSED SEWER INSTALLATION AND WHERE IT IS NOT PRACTICABLE TO RELOCATE THE SEWER, THE FOLLOWING METHODS OF PROTECTION MUST BE EMPLOYED.

A. IF THE WATERLINE CAN BE KEPT AT LEAST 18 INCHES ABOVE AND 3 FEET TO ONE SIDE OF THE SEWER, AS SHOWN AND SUPPORTED ON A BENCH OF ORIGINAL SOIL, NO OTHER PROTECTION IS REQUIRED.

11.) IF FULL CASEMENT IS UTILIZED, DEPTH OF CONCRETE BELOW PIPE SHALL BE 1/4 I.D. (4" MIN.) BLOCK SUPPORT SHALL BE SOLID CONCRETE BLOCKS.



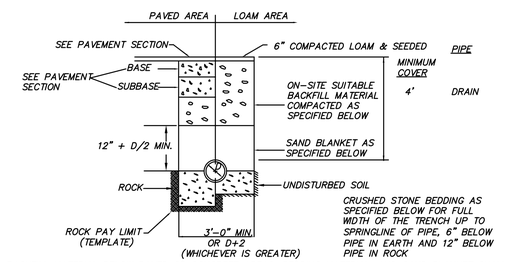
WATER AND SEWER IN SAME TRENCH



VIEW SHOWING TRENCH BOTTOM CHANGE AT ENCASEMENT

SECTION A–A

CONCRETE FULL ENCASEMENT
(SEE NOTE 11)



BACKFILL MATERIAL BELOW PAVED OR CONCRETE AREAS, BEDDING MATERIAL, AND SAND BLANKET SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T 99, METHOD C. SUITABLE BACKFILL MATERIAL BELOW LOAM AREAS SHALL BE COMPACTED TO NOT LESS THAN 90% OF AASHTO T 99, METHOD C.

SAND BLANKET & BEDDING

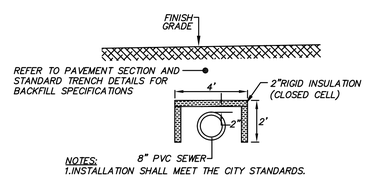
SIEVE SIZE	% FINER BY WEIGHT
1/2"	90 – 100
200	0 – 15
(FOR WATER MAIN BEDDING)	

3/4" CRUSHED STONE BEDDING

SIEVE SIZE	% FINER BY WEIGHT
1"	100
3/4"	90 – 100
1/2"	20 – 50
3/8"	0 – 20
# 4	0 – 5

DRAINAGE TRENCH

NOT TO SCALE



NOTES:
1.INSTALLATION SHALL MEET THE CITY STANDARDS.

SEWER INSULATION DETAIL

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILENO.: P18–___

CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-0443

NO.	REVISION	APP'D	DATE
1	AOT SUBMISSION	SJH	1–22–19

DATE: 2–21–19
SCALE: AS NOTED
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:1788
FILE: SITE.DWG

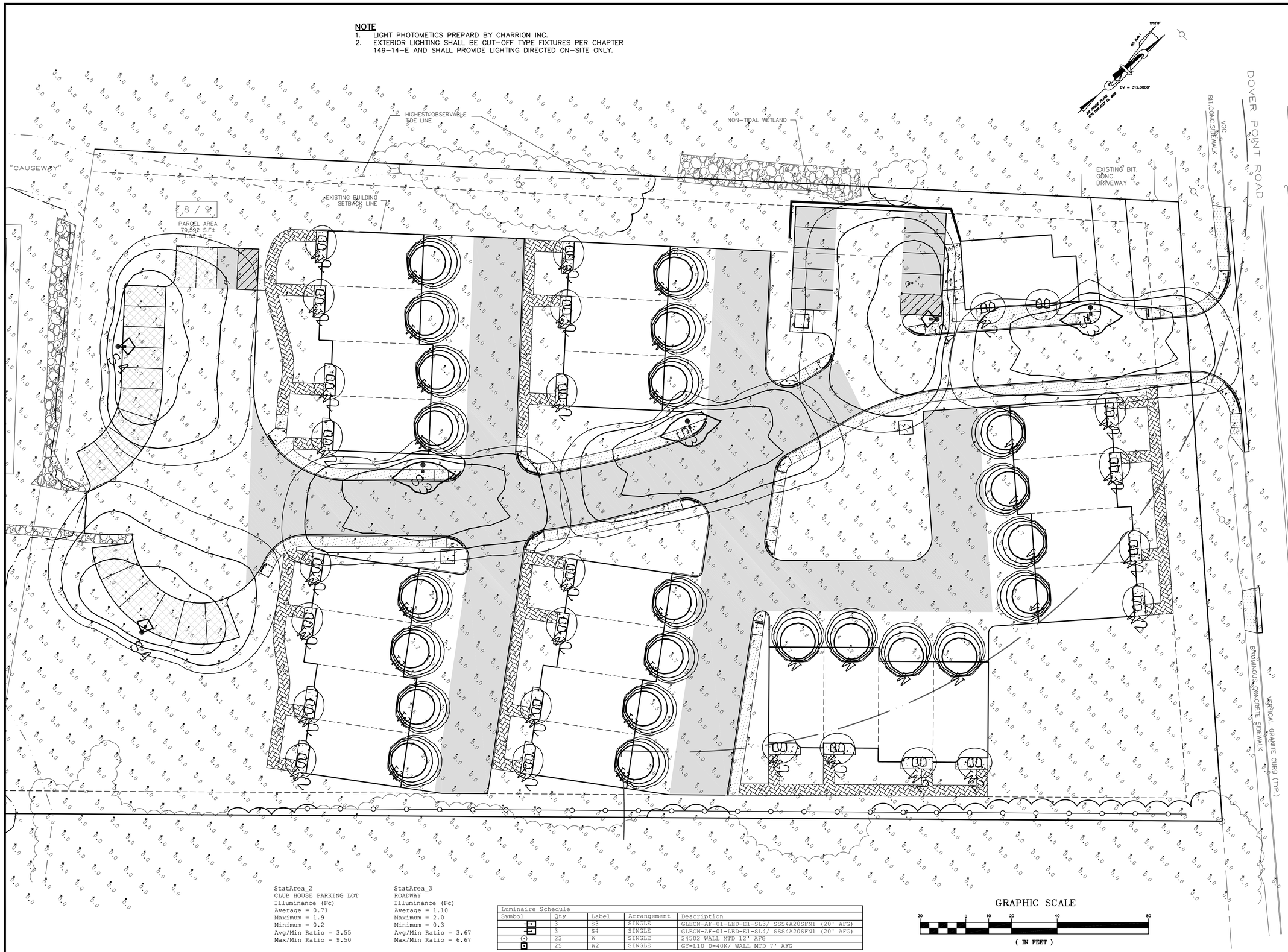
LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

DETAILS

16

NOTE
1. LIGHT PHOTOMETICS PREPARD BY CHARRION INC.
2. EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 149-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.



StatArea_2
CLUB HOUSE PARKING LOT
Illuminance (Fc)
Average = 0.71
Maximum = 1.9
Minimum = 0.2
Avg/Min Ratio = 3.55
Max/Min Ratio = 9.50

StatArea_3
ROADWAY
Illuminance (Fc)
Average = 1.10
Maximum = 2.0
Minimum = 0.3
Avg/Min Ratio = 3.67
Max/Min Ratio = 6.67

Luminaire Schedule				
Symbol	Qty	Label	Arrangement	Description
	3	S3	SINGLE	GLEON-AF-01-LED-E1-SL3/ SSS4A20SFN1 (20' AFG)
	3	S4	SINGLE	GLEON-AF-01-LED-E1-SL4/ SSS4A20SFN1 (20' AFG)
	23	W	SINGLE	24502 WALL MTD 12' AFG
	25	W2	SINGLE	GY-L10 0-40K/ WALL MTD 7' AFG

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILENO.: P18-___

CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-0443

NO.	REVISION	APP'D	DATE
1	AOT SUBMISSION	SJH	1-22-19

DATE: 2-21-19
SCALE: 1"=20'
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:1788
FILE: SITE.DWG

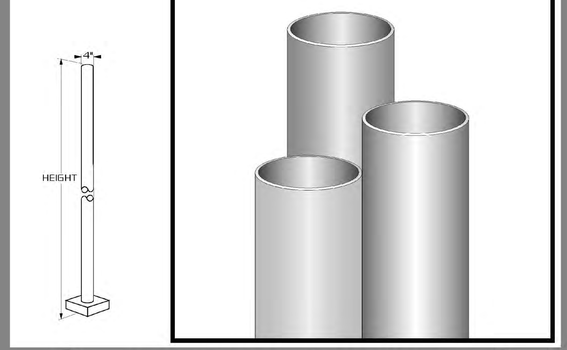
LIGHTING PLAN

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

LITTLE BAY MARINA &
DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

17

RNTA 4"



4" ROUND STRAIGHT ALUMINUM

SPECIFICATIONS

SHAFT: 4" DIAMETER, EXTRUDED FROM 6063 ALLOY ALUMINUM TUBING, HEAT TREATED TO PRODUCE A T6 TEMPER. SHAFT INCLUDES A PERIPHERALLY REINFORCED HAND HOLE FURNISHED WITH COVER. SHAFT IS FURNISHED WITH GROUND LUG LOCATED ON CAST ALUMINUM BASE PLATE.

BASE PLATE: CAST ALUMINUM CONSTRUCTED OF A-356 ALUMINUM ALLOY HEAT TREATED TO PRODUCE A T6 TEMPER. STRUCTURALLY ENGINEERED BASE INCLUDES EIGHT HEAVY WALL REINFORCING VERTICAL GUSSETS. BASE TELESCOPES AND IS CIRCUMFERENTIALLY WELDED TO SHAFT AT BOTH THE OUTSIDE TOP AND INSIDE BOTTOM OF THE BASE.

ANCHORAGE: (4) ANCHOR BOLTS FABRICATED FROM HOT ROLLED STEEL BAR, MINIMUM YIELD STRENGTH OF 50,000 P.S.I. BOLTS HAVE "L" BEND ON ONE END AND ARE THREADED ON THE OTHER END. BOLTS ARE FULLY GALVANIZED AND ARE FURNISHED WITH TWO NUTS AND TWO WASHERS.

BASE COVER: FABRICATED FROM HEAVY WALL ALUMINUM CONSTRUCTION. TWO PIECE COVER ENTIRELY CONCEALS BASE.

FINISH: POLYESTER POWDER COAT-STATE OF THE ART 20 PSI PRESSURE POWER WASH AT 140° TEMPERATURE INCORPORATES FOUR STEP IRON PHOSPHATE PROCESS TO CLEANSE AND PRETREAT THE METAL SURFACE FOR MAXIMUM PAINT ADHESION. ELECTROSTATICALLY APPLIED TEXTURED POLYESTER POWDER TOPCOAT IS BAKED AT 400° TEMPERATURE FOR MAXIMUM HARDNESS AND EXTERIOR DURABILITY.

U.S. ARCHITECTURAL LIGHTING
650 WEST AVENUE O, PALMDALE, CA. 93551
(661) 233-2000
FAX NO. (661) 233-2001
www.usaltg.com

F1-33

McGraw-Edison

DESCRIPTION

The Galleon™ LED luminaire delivers exceptional performance in a highly scalable, low-profile design. Patented, high-efficiency AccuLED Optics™ system provides uniform and energy conscious illumination to walkways, parking lots, roadways, building areas and security lighting applications. IP66 rated and UL/cUL Listed for wet locations.

Catalog #		Type	
Project			
Comments		Date	
Prepared by			

SPECIFICATION FEATURES

Construction
Extruded aluminum driver enclosure thermally isolated from Light Squares for optimal thermal performance. Heavy-wall, die-cast aluminum end caps enclose housing and die-cast aluminum heat sinks. A unique, patent pending interlocking housing and heat sink provides scalability with superior structural rigidity. 3G vibration tested and rated. Optional tool-less hardware available for ease of entry into electrical chamber. Housing is IP66 rated.

Optics
Patented, high-efficiency injection-molded AccuLED Optics technology. Optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optics create consistent distributions with the scalability to meet customized application requirements. Offered standard in 4000K (+/- 275K) CCT 70 CRI. Optional 3000K, 5000K and 6000K CCT.

Electrical
LED drivers are mounted to removable tray assembly for ease of maintenance. 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation. 480V is compatible for use with 480V Wye systems only. Standard with 0-10V dimming. Shipped standard with Eaton proprietary circuit module designed to withstand 10kV of transient line surge. The Galleon LED luminaire is suitable for operation in -40°C to 40°C ambient environments. For applications with ambient temperatures exceeding 40°C, specify the HA (High Ambient) option. Light Squares are IP66 rated. Greater than 90% lumen maintenance expected at 60,000 hours. Available in standard 1A drive current and optional 600mA, 800mA and 1200mA drive currents (nominal).

Mounting
STANDARD ARM MOUNT: Extruded aluminum arm includes internal bolt guides allowing for easy positioning of fixture during mounting. When mounting two or more luminaires at 90° and 120° apart, the EA extended arm may be required. Refer to the arm mounting requirement table. Round pole adapter included. For wall mounting, specify wall mount bracket option. QUICK MOUNT ARM: Adapter is bolted directly to the pole. Quick mount arm slide into place on the adapter and is secured via two screws, facilitating quick and easy installation. The versatile, patent pending, quick mount arm accommodates multiple drill patterns ranging from 1-1/2" to 4-7/8". Removal of the door on the quick mount arm enables wiring of the fixture without having to access the driver compartment. A knock-out enables round pole mounting.

Finish
Housing finished in super durable TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Heat sink is powder coated black. Standard housing colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available.

Warranty
Five-year warranty.

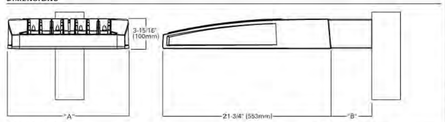


GLEON
GALLEON LED

1-10 Light Squares
Solid State LED

AREA/SITE LUMINAIRE

DIMENSIONS

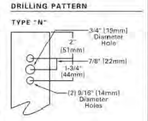


DIMENSION DATA

Number of Light Squares	"A" Width	"B" Standard Arm Length	"B" Optional Arm Length [1]	Weight with Arm (lbs.)	EPA with Arm [2] (Sq. Ft.)
1-4	15-1/2" (394mm)	7" (178mm)	19" (254mm)	33 (15.0 kgs.)	0.96
5-6	21-5/8" (549mm)	7" (178mm)	19" (254mm)	34 (20.9 kgs.)	1.00
7-8	27-5/8" (702mm)	7" (178mm)	13" (330mm)	54 (24.5 kgs.)	1.07
9-10	33-3/4" (857mm)	7" (178mm)	16" (406mm)	63 (28.6 kgs.)	1.12

NOTES: 1. Optional arm length to be used when mounting two, fixtures at 90° on a single pole. 2. EPA calculated with optional arm length.

DRILLING PATTERN



CERTIFICATION DATA
UL/cUL Wet Location Listed
ISO 9001
LM79 / LM80 Compliant
3G Vibration Rated
IP66 Rated
DesignLights Consortium™ Qualified*

ENERGY DATA
Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120V-277V 50/60Hz
347V & 480V 60Hz
-40°C Min. Temperature
40°C Max. Temperature
50°C Max. Temperature (HA Option)

*www.designlights.org

TDI000020EN
2018-08-28 15:31:55

EATON
Powering Business Worldwide

MERU Series

LED GENERAL & EMERGENCY LIGHTING

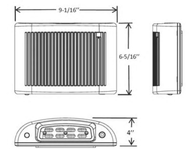
EZ SPEC

PROJECT:
FIXTURE TYPE:
LOCATION:
CONTACT/PHONE:

PRODUCT DESCRIPTION

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





PRODUCT SPECIFICATIONS

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

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

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

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

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

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

ACEM Model (NiCad Battery Backup)

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

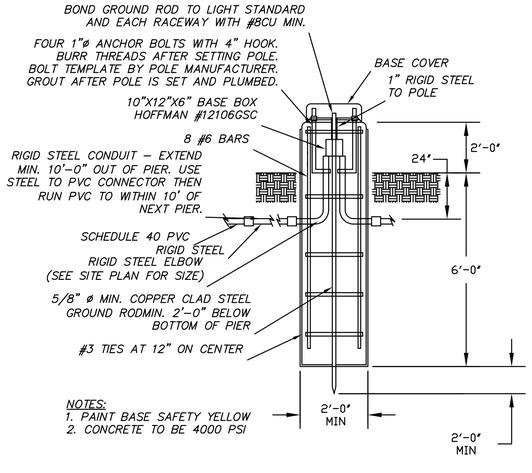
INSTALLATION

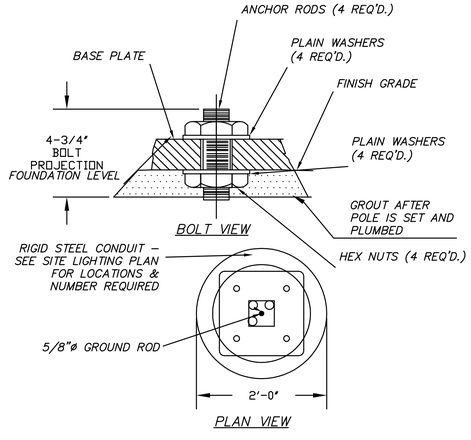
MOUNTING
Suitable for indoor or outdoor wall mounting on junction box, or with surface conduit using the supplied 1/2" threaded top access • Mounting plate has molded universal mounting pattern for simple mounting over junction box.

ORDERING INFORMATION

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

Mule Lighting , Inc. 46 Baker Street Providence, RI 02905 800 556-7690 P 401 941-2929 F www.mulelighting.com





LIGHT POLE BASE

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILENO.: P18–___

CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-0443

NO.	REVISION	APP'D	DATE
1	AOT SUBMISSION	SJH	1–22–19

DATE: 2–21–19
SCALE: AS NOTED
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY: SJH
PROJECT NO: 1788
FILE: SITE.DWG

DETAILS

LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

18

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILENO.: P18-___

CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-0443

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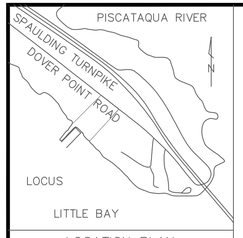
DATE: 2-21-19
SCALE: 1"=20'
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:1788
FILE: SITE.DWG

DOVER LADDER TRUCK MOVEMENT PLAN

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

19



LOCATION PLAN
1" = 1,000'±

SOIL IDENTIFICATION LEGEND

SYMBOL	TAXONOMIC NAME	SOIL GROUP	HYDROLOGIC SOIL
100	UDORTHENTS WET SUBSTRATUM		D
38	ELDRIDGE	C	
943	ELDRIDGE VARIANT	C	
546	WALPOLE	D	

8 / 38D
JOHN ANASTAS
GLORIA ESPOSITO-ANASTAS
419A DOVER POINT ROAD
DOVER, NH 03820
2567 / 760

"CAUSEWAY"
HIGHEST OBSERVABLE TIDE LINE
100' TIDE BUFFER (CITY OF DOVER JURISDICTIONAL SETBACK)
NON-TIDAL WETLAND
HEADWALL "B"
150' SWQPA
250' SWQPA
IRON ROD W/ CIVILWORKS CAP FOUND
EXISTING BIT. CONC. DRIVEWAY
BIT.CONC.SIDEWALK
VGC
DOVER POINT ROAD
APPROXIMATE GAS LINE LOCATION (V.I.F.)
OHU
UP W/GUY
GAS
METER
ELEC. METER
CULVERT "C"
GRAVEL DRIVE
8 / 9
PARCEL AREA
79,592 S.F±
1.83 AC.±
100/943A
MARINA GARAGE / WORKSHOP
APARTMENT ABOVE MARINA SALES & STORE
100/38A
546A
NON-TIDAL WETLAND
GRAVEL DRIVE AND PARKING AREA
FUEL CUT-OFF VALVE
PAD FUEL PUMP CONCRETE
CONCRETE PAD FUEL TANK COVER NH DES UNDERGROUND STORAGE TANK SITE NUMBER 199902013
100/943A
GRAVEL DRIVE AND PARKING AREA
APPROXIMATE WATERLINE LOCATION (V.I.F.)
A/C
G
E
HOUSE #425
GARAGE
IRON ROD FOUND
38A
IRON ROD W/ CIVILWORKS CAP FOUND
8 / 10
LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301
4473 / 288
IRON ROD IN CONCRETE MONUMENT FOUND
POOL
DECK
HOUSE
GAS METER
GARAGE
SHED
8 / 11
PARCEL AREA
20,592 S.F±
0.47 AC.±
8 / 12
PARCEL AREA
35,046 S.F±
0.80 AC.±
CB "E"
BITUMINOUS CONCRETE SIDEWALK
VERTICAL GRANITE CURB (TYP.)
EDGE OF PAVEMENT
DOUBLE YELLOW LINE
APPROXIMATE SEWER LINE LOCATION (V.I.F.)
PROPANE TANK
ELEC. METER
COTTAGE
100' TIDE BUFFER (CITY OF DOVER JURISDICTIONAL SETBACK)
8 / 13A-1
JOHN F. NEWWICK REVOCABLE TRUST 2001
JOHN F NEWICK, TRUSTEE
431 DOVER POINT ROAD
DOVER, NH 03820
2472 / 010
IRON AXLE FOUND
IRON ROD W/ CIVILWORKS CAP FOUND

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)

PREPARED BY LUKE HURLEY, CSS #95, CWS #232

STATE OF NEW HAMPSHIRE LUKE D. HURLEY 1/30/19 No. 095 CERTIFIED SOIL SCIENTIST

STATE OF NEW HAMPSHIRE LUKE D. HURLEY 1/30/19 No. 232 CERTIFIED WETLAND SCIENTIST

*THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE SITE SPECIFICMAPPING STANDARDS FOR NH & VT, SSSNNE SPECIAL PUBLICATION NO. 3

LUKE HURLEY CSS #95, CWS #232

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILENO.: P18-___

CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-0443

NO.	REVISION	APP'D	DATE
1	AOT SUBMISSION	SJH	1-22-19

DATE: 1-21-19
SCALE: 1"=20'
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:1788
FILE: SITE.DWG

SITE SPECIFIC SOILS PLAN

LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

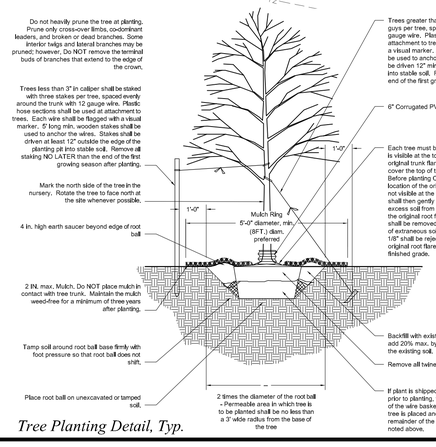
LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

SS-1



Landscape Notes

1. Design is based on drawings by Civilworks New England dated February 2019 and may require adjustment due to actual field conditions.
2. The contractor shall follow best management practices during construction and shall take all means necessary to stabilize and protect the site from erosion.
3. Erosion Control shall be in place prior to construction.
4. Erosion Control to consist of Hay Bales and Erosion Control Fabric shall be staked in place between the work and Water bodies, Wetlands and/or drainage ways prior to any construction.
5. The Contractor shall verify layout and grades and inform the Landscape Architect or Client's Representative of any discrepancies or changes in layout and/or grade relationships prior to construction.
6. It is the contractor's responsibility to verify drawings provided are to the correct scale prior to any bid, estimate or installation. A graphic scale bar has been provided on each sheet for this purpose. If it is determined that the scale of the drawing is incorrect, the landscape architect will provide a set of drawings at the correct scale, at the request of the contractor.
7. Trees to Remain within the construction zone shall be protected from damage for the duration of the project by snow fence or other suitable means of protection to be approved by Landscape Architect or Client's Representative. Snow fence shall be located at the drip line at a minimum and shall include any and all surface roots. Do not fill or mulch on the trunk flare. Do not disturb roots. In order to protect the integrity of the roots, branches, trunk and bark of the tree(s) no vehicles or construction equipment shall drive or park in or on the area within the drip line(s) of the tree(s). Do not store any refuse or construction materials or portalets within the tree protection area.
8. Location, support, protection, and restoration of all existing utilities and appurtenances shall be the responsibility of the Contractor.
9. The Contractor shall verify exact location and elevation of all utilities with the respective utility owners prior to construction. Call DIGSAFE at 1-888-344-7233.
10. The Contractor shall procure any required permits prior to construction.
11. Prior to any landscape construction activities Contractor shall test all existing loam and loam from off-site intended to be used for lawns and plant beds using a thorough sampling throughout the supply. Soil testing shall indicate levels of pH, nitrates, macro and micro nutrients, texture, soluble salts, and organic matter. Contractor shall provide Landscape Architect with test results and recommendations from the testing facility along with soil amendment plans as necessary for the proposed plantings to thrive. All loam to be used on site shall be amended as approved by the Landscape Architect prior to placement.
12. Contractor shall notify landscape architect or owner's representative immediately if at any point during demolition or construction a site condition is discovered which may negatively impact the completed project. This includes, but is not limited to, unforeseen drainage problems, unknown subsurface conditions, and discrepancies between the plan and the site. If a contractor is aware of a potential issue, and does not bring it to the attention of the landscape architect or owner's representative immediately, they may be responsible for the labor and materials associated with correcting the problem.
13. The Contractor shall furnish and plant all plants shown on the drawings and listed thereon. All plants shall be nursery-grown under climatic conditions similar to those in the locality of the project. Plants shall conform to the botanical names and standards of size, culture, and quality for the highest grades and standards as adopted by the American Association of Nurserymen, Inc. in the American Standard of Nursery Stock, American Standards Institute, Inc. 230 Southern Building, Washington, D.C. 20005.
14. A complete list of plants, including a schedule of sizes, quantities, and other requirements is shown on the drawings. In the event that quantity discrepancies or material omissions occur in the plant materials list, the planting plans shall govern.
15. All plants shall be legibly tagged with proper botanical name.
16. The Contractor shall guarantee all plants for not less than one year from time of acceptance.
17. Owner or Owner's Representative will inspect plants upon delivery for conformity to Specification requirements. Such approval shall not affect the right of inspection and rejection during or after the progress of the work. The Owner reserves the right to inspect and/or select all trees at the place of growth and reserves the right to approve a representative sample of each type of shrub, herbaceous perennial, annual, and ground cover at the place of growth. Such sample will serve as a minimum standard for all plants of the same species used in this work.
18. No substitutions of plants may be made without prior approval of the Owner or the Owner's Representative for any reason.
19. All landscaping shall be provided with either of the following
    a. An underground sprinkling system
    b. An outside hose attachment within 150 feet.
20. If an automatic irrigation system is installed, all irrigation valve boxes shall be located within planting bed areas.
21. The contractor is responsible for all plant material from the time their work commences until final acceptance. This includes but is not limited to maintaining all plants in good condition, the security of the plant material once delivered to the site, and watering of plants. Plants shall be appropriately watered prior to, during and after planting. It is the contractor's responsibility to provide water from off site, should it not be available on site.
22. All disturbed areas will be dressed with 6" of topsoil and planted as noted on the plans or seeded except plant beds. Plant beds shall be prepared to a depth of 12" with 75% loam and 25% compost.
23. Trees, ground cover, and shrub beds shall be mulched to a depth of 2" with one-year-old, well-composted, shredded native bark not longer than 4" in length and ½" in width, free of woodchips and sawdust. Mulch for ferns and herbaceous perennials shall be no longer than 1" in length. Trees in lawn areas shall be mulched in a 5' diameter min. saucer. Color of mulch shall be black.
24. In no case shall mulch touch the stem of a plant nor shall mulch ever be more than 3" thick total (including previously applied mulch) over the root ball of any plant.
25. Secondary lateral branches of deciduous trees overhanging vehicular and pedestrian travel ways shall be pruned up to a height of 8' to allow clear and safe passage of vehicles and pedestrians under tree canopy.
26. Snow shall be stored a minimum of 5' from shrubs and trunks of trees.
27. Landscape Architect is not responsible for the means and methods of the contractor.



Tree Planting Detail, Typ.

Plant List

TREES

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Gt	*Gleditsia triancanthos inermis 'Halka'*	Halka Thornless	4	3-3.5" Cal	B&B
Ns	*Nyssa Sylvatica*	Black Tupelo	6	3-3.5" Cal	B&B
Th	*Thuja plicata 'Atrovirens'*	Atrovirens Arborvitae	5	8-10' Ht	B&B
Ua	*Ulmus americana 'Princeton'*	Princeton American Elm	6	3-3.5" Cal	B&B

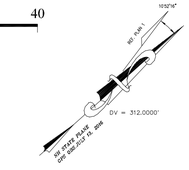
SHRUBS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Arb	*Thuja occidentalis 'Techny'*	Techny Arborvitae	5	6-7' Ht	B&B
Hy	*Hydrangea arborescens 'Incridiball'*	Incridiball Hydrangea	10	5 gal	
Syr	*Syringa meyeri 'Palibin'*	Dwarf Korean Lilac	18	3-4' Ht	B&B
Tax	*Taxus media 'Greenwave'*	Greenwave Yew	10	5 gal	

PERENNIALS, GROUNDCOVERS, VINES and ANNUALS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
An	*Anemone 'Honorine Jobert'*	Windflower	20	1 gal	
Cal	*Calamagrostis acutifolia 'Karl Foerster'*	Feather Reed Grass	187	1 gal	
Hos	*Hosta 'Sum and Substance'*	Sum and Substance Hosta	7	1 gal	
Rud	*Rudbeckia fulgida 'Goldsturm'*	Black-Eyed Susan	167	1 gal	
Sal	*Salvia nemorosa 'Blue Hill'*	Dark Blue Salvia	269	1 gal	
Vm	*Vinca minor 'Bowles'*	Bowles Periwinkle	420	2.5" pots	

0 5 10 20 40



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PLANNING FILENO.: P18-____

CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-0443

NO.	REVISION	APP'D	DATE
0	INITIAL SUBMISSION	VM	1.11.2019
1	PER REVISED SITE PLAN	VM	2.21.2019

DATE: 01-11-19
SCALE: 1"=20'
DRAWN BY: VM
DESIGN BY: VM
APPROVED BY:RW
PROJECT NO:1788
FILE: SITE.DWG

LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

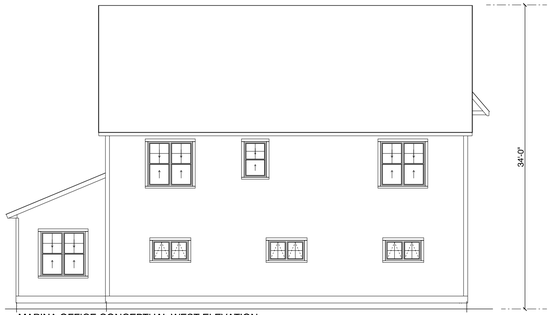
LANDSCAPE PLAN

L-1

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



MARINA OFFICE CONCEPTUAL NORTH ELEVATION



MARINA OFFICE CONCEPTUAL WEST ELEVATION



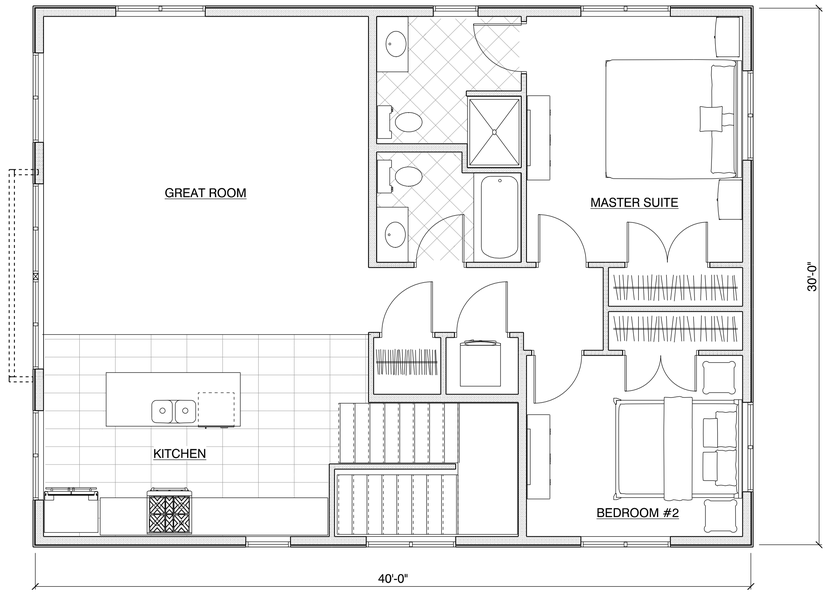
MARINA OFFICE CONCEPTUAL EAST ELEVATION



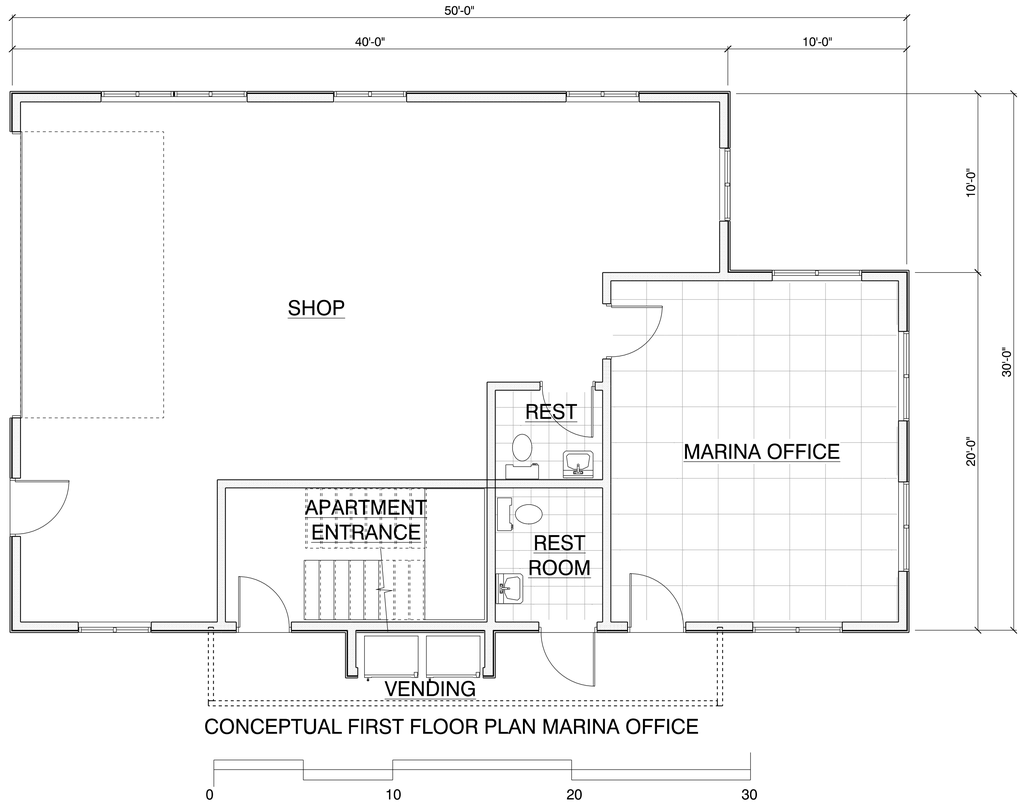
MARINA OFFICE CONCEPTUAL SOUTH ELEVATION







CONCEPTUAL SECOND FLOOR PLAN ACCESSORY APARTMENT



CONCEPTUAL FIRST FLOOR PLAN MARINA OFFICE

mjk
Michael J. Keane Architects, PLLC
ARCHITECTURE
PLANNING
DESIGN
101 Kent Place
Newmarket, NH
03857
603-292-1400
mjkarchitects.com

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CONSULTANTS

REVISIONS

APPROVALS

Accept. only origianl stamp and signature
copies may contain unauthorized modifications

PROJECT

VARIANCE APPLICATION

LITTLE BAY MARINA AND DEVELOPMENT LLC

DOVER POINT ROAD
DOVER,
NH

TITLE

CONCEPTUAL MARINA OFFICE AND ACCESSORY APARTMENT

DRAWN BY: MJK
CHECKED BY: mjk
DATE: Wednesday, May 02, 2018
SCALE: As Noted

DRAWING NO.

A-1

DO NOT SCALE PRINTS



TYPICAL NORTH AND SOUTH ELEVATIONS TOWNHOUSE CONCEPTUAL



TYPICAL WEST ELEVATION TOWNHOUSE CONCEPTUAL





EAST ELEVATION TOWNHOUSE CONCEPTUAL

mjk

Michael J. Keane
Architects, PLLC

ARCHITECTURE
PLANNING
DESIGN

101 Kent Place
Newmarket, NH
03857

603-292-1400
mjkarchitects.com

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PROJECT

VARIANCE APPLICATION

LITTLE BAY MARINA AND DEVELOPMENT LLC

DOVER POINT ROAD
DOVER,
NH

TITLE

CONCEPTUAL ELEVATIONS TYPCAL TOWNHOUSE UNITS

DRAWN BY: MJK

CHECKED BY: mjk

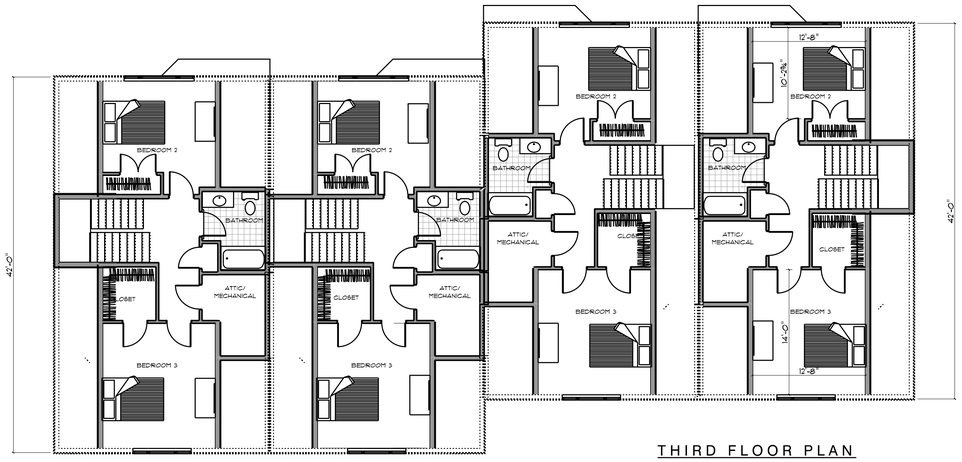
DATE: Wednesday, May 02, 2018

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

DRAWING NO.

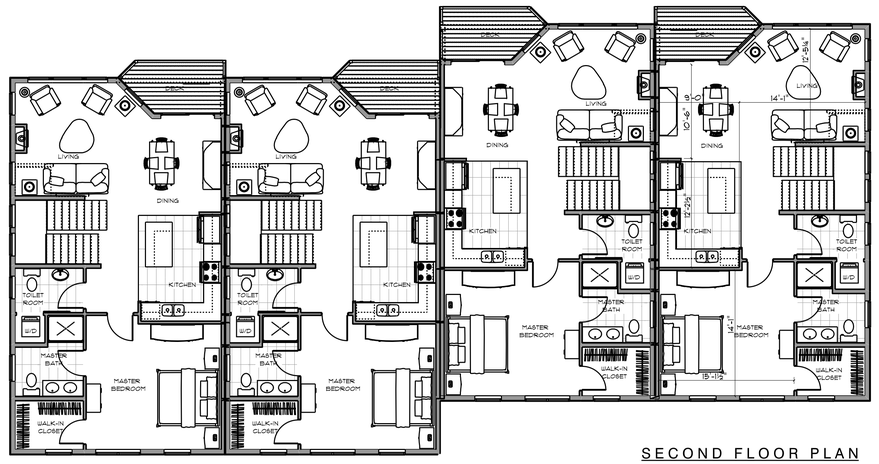
A-2

DO NOT SCALE PRINTS



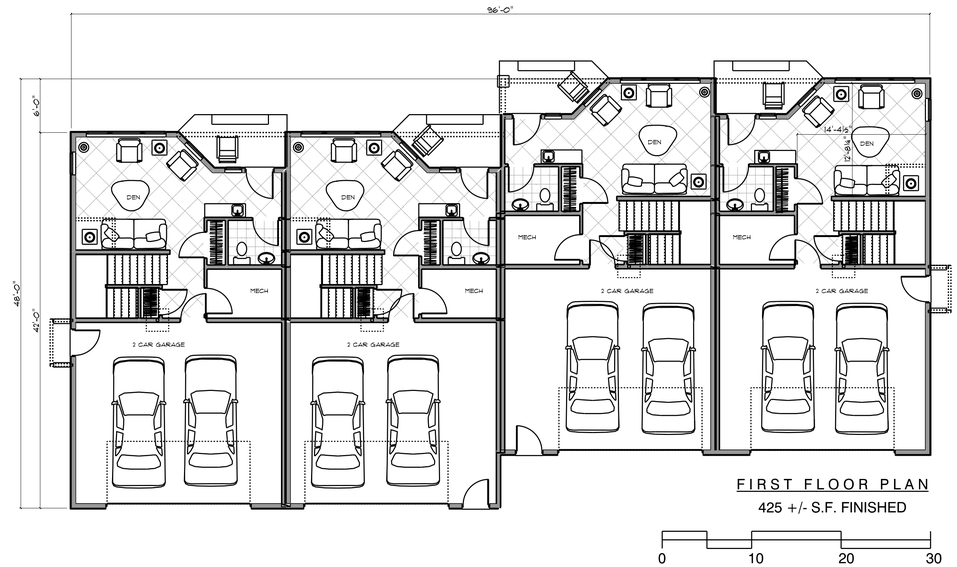
THIRD FLOOR PLAN

730 S.F. +/-



SECOND FLOOR PLAN

980 +/- S.F.



FIRST FLOOR PLAN

425 +/- S.F. FINISHED

mjk
Michael J. Keane Architects, PLLC
ARCHITECTURE
PLANNING
DESIGN
101 Kent Place
Newmarket, NH
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PROJECT

VARIANCE APPLICATION

LITTLE BAY MARINA AND DEVELOPMENT LLC

DOVER POINT ROAD
DOVER,
NH

TITLE

CONCEPTUAL TOWNHOUSE FLOOR PLANS

DRAWN BY: MJK
CHECKED BY: mjk
DATE: Wednesday, May 02, 2018
SCALE: 1/8" = 1'-0"

DRAWING NO.

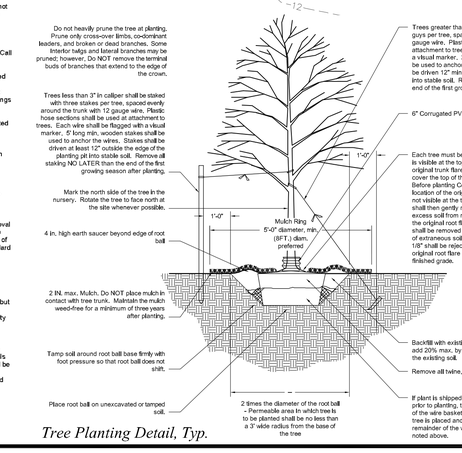
A-3

DO NOT SCALE PRINTS



Landscape Notes

1. Design is based on drawings by Civilworks New England dated January 2019 and may require adjustment due to actual field conditions.
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16. The Contractor shall guarantee all plants for not less than one year from time of acceptance.
17. Owner or Owner's Representative will inspect plants upon delivery for conformity to Specification requirements. Such approval shall not effect the right of inspection and rejection during or after the progress of the work. The Owner reserves the right to inspect and/or select all trees at the place of growth and reserves the right to approve a representative sample of each type of shrub, herbaceous perennial, annual, and ground cover at the place of growth. Such sample will serve as a minimum standard for all plants of the same species used in this work.
18. No substitutions of plants may be made without prior approval of the Owner or the Owner's Representative for any reason.
19. All landscaping shall be provided with either of the following
    a. An underground sprinkling system
    b. An outside hose attachment within 150 feet
20. If an automatic irrigation system is installed, all irrigation valve boxes shall be located within planting bed areas.
21. The contractor is responsible for all plant material from the time their work commences until final acceptance. This includes but is not limited to maintaining all plants in good condition, the security of the plant material once delivered to the site, and watering of plants. Plants shall be appropriately watered prior to, during and after planting. It is the contractor's responsibility to provide water from off site, should it not be available on site.
22. All disturbed areas will be dressed with 6" of topsoil and planted as noted on the plans or seeded except plant beds. Plant beds shall be prepared to a depth of 12" with 75% loam and 25% compost.
23. Trees, ground cover, and shrub beds shall be mulched to a depth of 2" with one-year-old, well-composted, shredded native bark not longer than 4" in length and ½" in width, free of woodchips and sawdust. Mulch for ferns and herbaceous perennials shall be no longer than 1" in length. Trees in lawn areas shall be mulched in a 5' diameter min. saucer. Color of mulch shall be black.
24. In no case shall mulch touch the stem of a plant nor shall mulch ever be more than 3" thick total (including previously applied mulch) over the root ball of any plant.
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26. Snow shall be stored a minimum of 5' from shrubs and trunks of trees.
27. Landscape Architect is not responsible for the means and methods of the contractor.



Tree Planting Detail, Typ.

Plant List

TREES

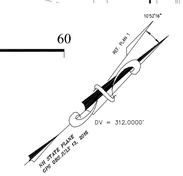
Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Gt	*Gleditsia triacanthos inermis 'Halka'*	Halka Thornless	4	3-3.5" Cal	B&B
Ns	*Nyssa Sylvatica*	Black Tupelo	6	3-3.5" Cal	B&B
Ua	*Ulmus americana 'Princeton'*	Princeton American Elm	6	3-3.5" Cal	B&B

SHRUBS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Hy	*Hydrangea paniculata 'Bombshell'*	Bombshell Hydrangea	10	3 gal	
Syr	*Syringa 'Bloomerang'*	Bloomerang Lilac	18	2-3' Ht	B&B
Tax	*Taxus media 'Ever-Low'*	Ever-Low Yew	10	3 gal	

PERENNIALS, GROUNDCOVERS, VINES and ANNUALS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Cal	*Calamagrostis acutifolia 'Karl Foerster'*	Feather Reed Grass	167	1 gal	
Sal	*Salvia nemorosa 'Blue Hill'*	Dark Blue Salvia	269	1 gal	
Rud	*Rudbeckia fulgida 'Goldsturm'*	Black-Eyed Susan	167	1 gal	
Hos	*Hosta 'Frances Williams'*	Frances Williams Hosta	7	1 gal	
An	*Anemone 'Honorine Jobert'*	Windflower	20	1 gal	
Vm	*Vinca minor 'Bowles'*	Bowles Periwinkle	420	2.5" pots	



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

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILENO.: P18-___

CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-0443

NO.	REVISION	APP'D	DATE
0	INITIAL SUBMISSION	VM	1.11.2019

DATE: 01-11-19
SCALE: 1"=20'
DRAWN BY: VM
DESIGN BY: VM
APPROVED BY:RW
PROJECT NO:1788
FILE: SITE.DWG

LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

LANDSCAPE PLAN

L-1



Landscape Operation & Maintenance Plan For Little Bay Marina

Weekly Tasks

1. Mow and edge lawns if needed. Lawns to be cut to 3.5" height.
2. Prune back any shrubs overhanging curbs or sidewalks.
3. Prune back any groundcover overhanging curbs or sidewalks.
4. Remove litter and leaves from plants, planters, and parking lots.
5. Remove any broken or fallen branches from trees. Remove sucker growth from tree trunks.
6. Remove any weeds larger than 2 inches (5 cm) high or wide from planters. Weeds 2 inches (5 cm) and larger must be removed, not just killed.
7. Replace bark mulch which has been knocked or washed out of planters. Smooth mulch layer if it has been disturbed.
8. Replace decorative rock which has been knocked or washed out of drip strips. Smooth decorative rock surface if it has been disturbed.
9. Check plants for signs of stress, pests or disease. Request authorization to replace other dead or missing plants. Note: Maintenance contractor must request authorization to make replacements within one week of the damage becoming evident.
10. Sweep or blow clean all walkways, curbs, and gutters.
11. Treat for any signs of disease or pest infestation.
12. Complete any items required on the Monthly Checklist.
13. Hand water any plants that are dry and stressed.
14. Check the irrigation system (if there is a system). Make emergency repairs as needed or request authorization to make major repairs. Note: Maintenance contractor must request authorization for repairs within one week of the damage becoming evident.
15. Adjust the irrigation controllers for current water needs of plants.
16. **Gently prune shrubs at appropriate time of year based on species, for shape and form. DO NOT shear.**

Yearly Tasks

Early Spring

1. Prune any tree branches that interfere with public safety. Prune all parking lot and street trees yearly to encourage strong growth.
2. Apply granular fertilizer to shrubs beds and lawns. Be sure to make application prior to a moderate rainfall in drip-irrigated planters so the rain will wash the fertilizer in.
3. Submit receipts to owner's authorized representative as proof of fertilizer purchase.
4. Trim any perennial foliage left in the fall for winter interest to within six inches of the ground.
5. Add new mulch to planters where the mulch depth has been reduced to less than 2 inches (5 cm) thick. Mulch depth shall not exceed 2". Additional mulch not required where shrubs or groundcover completely hide the soil surface from view.
6. Where there is irrigation and after threat of frost is gone, flush out irrigation systems as needed and check for proper operation of each valve zone.

7. Clean or replace plugged sprinkler nozzles. Replace plugged drip emitters.
8. Replace irrigation controller program back-up batteries.

June:

No additional items

July:

No additional items

August:

No additional items

September:

1. Inventory all plant materials. Inventory shall include an exact count of all shrubs and trees, itemized by planter. Replace any dead or missing plants.

October:

1. Prepare irrigation system for winter. Make sure backflow preventer is well insulated or drained prior to first freeze. Blow out pipes using compressed air in areas where freezing could result in breakage.
2. Mow field areas.

November:

1. "WILT-PRUF" broadleaf evergreens when temperature permits.

December:

1. Prune any tree branches that interfere with public safety. Prune all parking lot and street trees yearly to encourage strong growth.

DRAINAGE ANALYSIS

for

LITTLE BAY MARINA

December 2018
Revised: January 2019

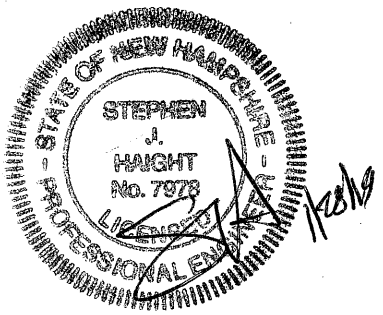
Prepared For:

Little Bay Marina & Development, LLC
111 Loudon Road
Concord, NH 03301

Prepared By:

Civilworks New England
181 Watson Road, P.O. Box 1166
Dover, NH 03820

Stephen J. Haight, PE



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1.0 INTRODUCTION

This is a hydrologic analysis of the subject parcel, Tax Map 08 - Lots 09, 10, 11, and 12. The parcel is located at 423 Dover Point Road, Dover, NH. The site contains approximately 1.87 acres and is bounded on the east by Dover Point Road, the west by Little Bay, residential properties to the north, and commercial property to the south. The watershed of the parcel includes area of the project site. The project site consists of multiple parcels of land shown on Tax Map 08 as Lots 09, 10, 11 and 12. Lot 09 contains 1.87 acres +/- and is developed as a commercial marina with onsite storage, patron parking and access to slips and mooring field. Lots 10, 11 and 12 contain a total of 1.43 acres +/- and are developed as residential housing lots. The lots are located along the shore of Little Bay. On site soils are a mix of udorthents, eldridge, eldridge variant, and Walpole series. All soils are HSG C with the exception of the Walpole series and the Udorthents which are classified as HSG D.

The existing conditions within the property and its watershed have been analyzed using analysis points to compare the pre-development runoff to post-development. The subject parcel is located along Dover Point Road and the majority of the site slopes from east to west. The entirety of the property ultimately drains to Little Bay. The site is broken down into 4 major sub-catchments in order to model the pre-development condition. The largest sub-catchment includes the majority of the southern portion of the parcel, and includes residential housing, gravel and paved parking areas as well as a portion of the upper gravel parking lot of Newick's Restaurant. This sub-catchment drains overland, directly into Little Bay. The other three sub-catchments are made up of the northern and eastern portions of the site. One sub-catchment is made up of the existing residential lot located at 425 Dover Point Road and includes the associated onsite wetland area. This area drains overland and into a culvert which conveys the stormwater, underneath the existing driveway, into a drainage swale along the northern boundary of the site. The remaining two sub-catchments encompass the remaining area of the commercial marina operations which includes gravel and paved parking as well as some of the existing buildings. These two areas drain overland and directly into the drainage swale along the northern boundary before exiting into Little Bay.

The proposed development of the site includes the demolition of all the existing structures as well as the construction of 6 multi-unit residential buildings as well as a mixed use commercial building with the marina offices on the first floor and an apartment above. The development also includes the construction of an access road, parking for the residential and commercial use of the site, utility upgrades, and drainage improvements including the stormwater quality treatment structures of rain gardens, porous pavement, and a treatment swale.

The post development watershed is modeled utilizing the same point of analysis, Little Bay, incorporated in the pre development conditions to allow direct comparison of the peak runoff between the pre and post developed conditions. The post development condition has been divided into sixteen sub-catchments to accurately model the proposed development with the inclusion of rain gardens, porous pavement areas, a detention

pond, and a treatment swale as well as the closed drainage system. The stormwater conveyance systems include an existing swale to the north of the site and a closed drainage system which includes under drains and drain manholes to the south, both of which discharge to Little Bay .

The analysis indicates that the proposed development of the site will have negligible impact on the watershed.

2.0 DRAINAGE ANALYSIS

A comprehensive hydrologic study of this site has been performed utilizing nationally recognized runoff estimating techniques developed by the USDA, Soil Conservation Services (SCS). The technique and runoff models are described in various SCS publications and references as follows:

"Stormwater Management and Erosion Sediment Control Handbook for Urban and Developing Areas in New Hampshire"

"New Hampshire Stormwater Manual Volume 2 - Post-Construction Best Management Practices Selection & Design"

"Civil Engineering Reference Manual, Fifth Edition"

"Open-Channel Hydraulics" Chow.

"Stormwater Modeling System" HydroCAD Ver. 10.0

2.1 DRAINAGE DESIGN PARAMETERS

A brief review of the procedures and parameters used in the drainage study follows:

2.1.1 Watersheds

The watershed and subcatchment areas were delineated using topographic and boundary data provided by McEneaney Survey Associates, Inc of Dover, NH.

2.1.2 Soils

Onsite soil information used to estimate the runoff curve numbers was provided by Luke Hurley of Gove Environmental Services, Inc., a certified wetland scientist:

Hydrologic Drainage Class C: Eldridge
Eldridge Variant

Hydrologic Drainage Class D: Udorthents wet substratum
Walpole

2.1.3 Rainfall Data

Extreme precipitation estimate values from the Northeast Regional Climate Center (NRCC) were utilized in this analysis. As this project is located within the coastal/Great Bay region the NRCC precipitation values have been increased by 15% in accordance with recommendations by the Coastal Risks and Hazards Commission. As such, the analysis has been performed for the 2-year, 10-year, 25-year, and 50-year storm events with 3.66", 5.53", 7.02", and 8.40" rainfall depths respectively. The detention pond has been sized to accommodate the 50-yr storm event.

2.1.4 Runoff Curve Numbers

The SCS runoff curve numbers were used and are summarized within each subcatchment drainage summary in Appendix A.

2.2 EXISTING CONDTIONS

For purposes of this analysis the subject parcel was analyzed as 4 sub-watershed areas that are all analyzed with Little Bay as the summing point.

2.2.1 Table A – Existing Conditions (2, 10, 25, and 50-year storm events)

Watershed	**Pre-Development Volume (af)**	**Pre Development Peak Flows (cfs)**			
Discharge Point	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
Little Bay	0.61	3.47	6.41	8.74	10.90

2.3 DEVELOPED CONDITIONS

The post development watershed was analyzed with 16 sub-watershed areas. Post development watersheds have the same summing point, Little Bay, as the pre development analysis.

2.3.1 Table B – Developed Conditions (2, 10, 25, and 50-year storm events)

Watershed	**Post-Development Volume (af)**	**Post Development Peak Flows (cfs)**			
Discharge Point	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
Little Bay	0.80	3.75	6.01	7.83	9.49

Comparison Chart

Watershed	Pre/**Post-Development Volume (af)**	Pre/**Post Development Peak Flows (cfs)**			
Discharge Point	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
Little Bay	0.61/**0.80**	3.47/**3.75**	6.41/**6.01**	8.74/**7.83**	10.90/**9.49**

APPENDIX A

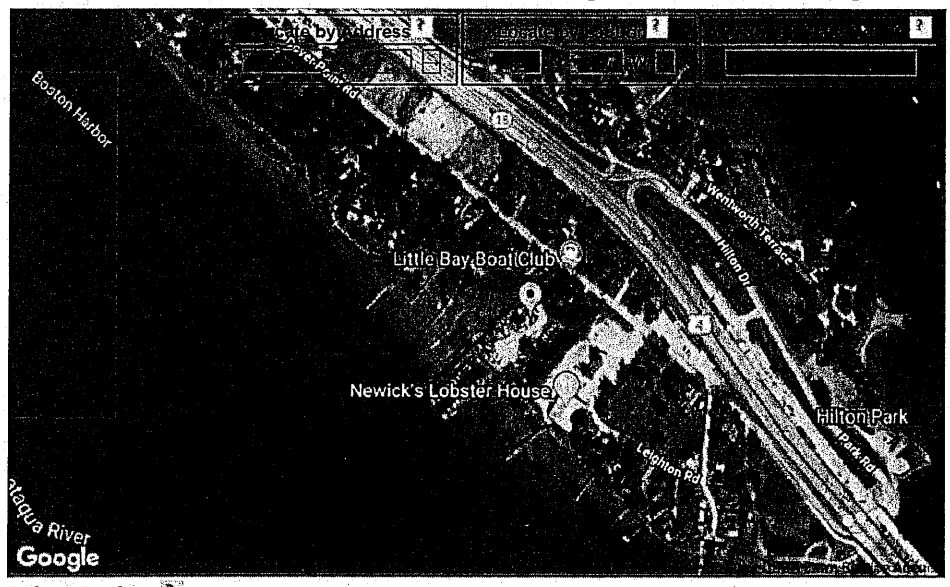
HYDROLOGIC CALCULATIONS

About this Project **Data & Products** **Daily Monitoring** **Documentation**

Select Product

- Extreme Precipitation Tables - HTML
- Extreme Precipitation Tables - Text/CSV
- Partial Duration Series - by Point
- Partial Duration Series - by Station
- Distribution Curves - Graphical
- Distribution Curves - Text/TBL
- Intensity Frequency Duration Graphs
- Precipitation Frequency Duration Graphs
- GIS Data Files
- Regional/State Maps

Select Location *Grxedn0fdfn#wkhp ds#wr#sdfh#hp dunhu/#ru#hqwhu#ggruhvv#ru#dlwxgh2rrqj lwxgh1*



Select Options

Smoothing: No

Submit

Version 1.12 Copyright 2010-2018.
This project is a joint collaboration between:

Northeast Regional Climate Center (NRCC) Cornell University

Natural Resources Conservation Service (NRCS) USDA NRCS

Contact: precip@cornell.edu

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	
Location	
Longitude	70.833 degrees West
Latitude	43.122 degrees North
Elevation	0 feet
Date/Time	Thu, 12 Jul 2018 21:09:54 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day		+15%
1yr	0.26	0.40	0.50	0.65	0.81	1.03	**1yr**	0.70	0.98	1.21	1.55	2.01	2.63	2.88	**1yr**	2.33	2.77	3.17	3.90	4.49	**1yr**	3.03
2yr	0.32	0.49	0.61	0.81	1.02	1.29	**2yr**	0.88	1.17	1.51	1.92	2.47	3.18	3.53	**2yr**	2.81	3.39	3.89	4.63	5.26	**2yr**	3.66
5yr	0.37	0.57	0.72	0.97	1.23	1.59	**5yr**	1.07	1.45	1.86	2.40	3.10	4.02	4.52	**5yr**	3.56	4.35	4.97	5.86	6.62	**5yr**	
10yr	0.41	0.64	0.81	1.10	1.43	1.86	**10yr**	1.23	1.70	2.20	2.85	3.70	4.81	5.46	**10yr**	4.26	5.25	5.99	7.01	7.88	**10yr**	5.53
25yr	0.47	0.74	0.95	1.31	1.74	2.29	**25yr**	1.50	2.11	2.72	3.57	4.67	6.10	7.01	**25yr**	5.39	6.74	7.66	8.89	9.93	**25yr**	7.02
50yr	0.52	0.84	1.07	1.50	2.02	2.69	**50yr**	1.74	2.48	3.22	4.24	5.57	7.30	8.47	**50yr**	6.46	8.15	9.24	10.64	11.83	**50yr**	8.40
100yr	0.59	0.95	1.22	1.73	2.35	3.16	**100yr**	2.03	2.92	3.79	5.03	6.64	8.74	10.25	**100yr**	7.73	9.85	11.15	12.74	14.10	**100yr**	
200yr	0.65	1.06	1.38	1.98	2.74	3.72	**200yr**	2.36	3.44	4.49	5.99	7.93	10.46	12.39	**200yr**	9.26	11.92	13.45	15.27	16.81	**200yr**	
500yr	0.77	1.26	1.65	2.39	3.35	4.61	**500yr**	2.89	4.27	5.58	7.50	10.0	13.29	15.94	**500yr**	11.76	15.33	17.24	19.40	21.23	**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	0.36	0.44	0.60	0.73	0.89	**1yr**	0.63	0.87	0.92	1.30	1.64	2.23	2.48	**1yr**	1.97	2.38	2.81	3.22	3.91	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.18	**2yr**	0.86	1.16	1.36	1.83	2.35	3.03	3.42	**2yr**	2.69	3.29	3.78	4.50	5.02	**2yr**
5yr	0.35	0.54	0.67	0.92	1.16	1.40	**5yr**	1.01	1.37	1.61	2.14	2.76	3.75	4.15	**5yr**	3.32	3.99	4.65	5.47	6.17	**5yr**
10yr	0.38	0.59	0.73	1.02	1.32	1.60	**10yr**	1.14	1.56	1.81	2.42	3.10	4.33	4.82	**10yr**	3.83	4.63	5.36	6.33	7.11	**10yr**
25yr	0.44	0.66	0.82	1.18	1.55	1.90	**25yr**	1.34	1.86	2.10	2.81	3.60	4.72	5.84	**25yr**	4.18	5.62	6.55	7.68	8.57	**25yr**
50yr	0.48	0.73	0.91	1.30	1.75	2.17	**50yr**	1.51	2.12	2.35	3.15	4.02	5.34	6.75	**50yr**	4.73	6.49	7.60	8.90	9.88	**50yr**
100yr	0.53	0.80	1.01	1.46	2.00	2.48	**100yr**	1.72	2.42	2.63	3.51	4.47	6.02	7.80	**100yr**	5.33	7.50	8.83	10.32	11.38	**100yr**
200yr	0.59	0.89	1.12	1.62	2.26	2.82	**200yr**	1.95	2.76	2.93	3.91	4.96	6.77	9.00	**200yr**	5.99	8.66	10.25	11.97	13.12	**200yr**
500yr	0.68	1.02	1.31	1.90	2.70	3.38	**500yr**	2.33	3.31	3.40	4.51	5.70	7.90	10.88	**500yr**	6.99	10.46	12.49	14.59	15.82	**500yr**

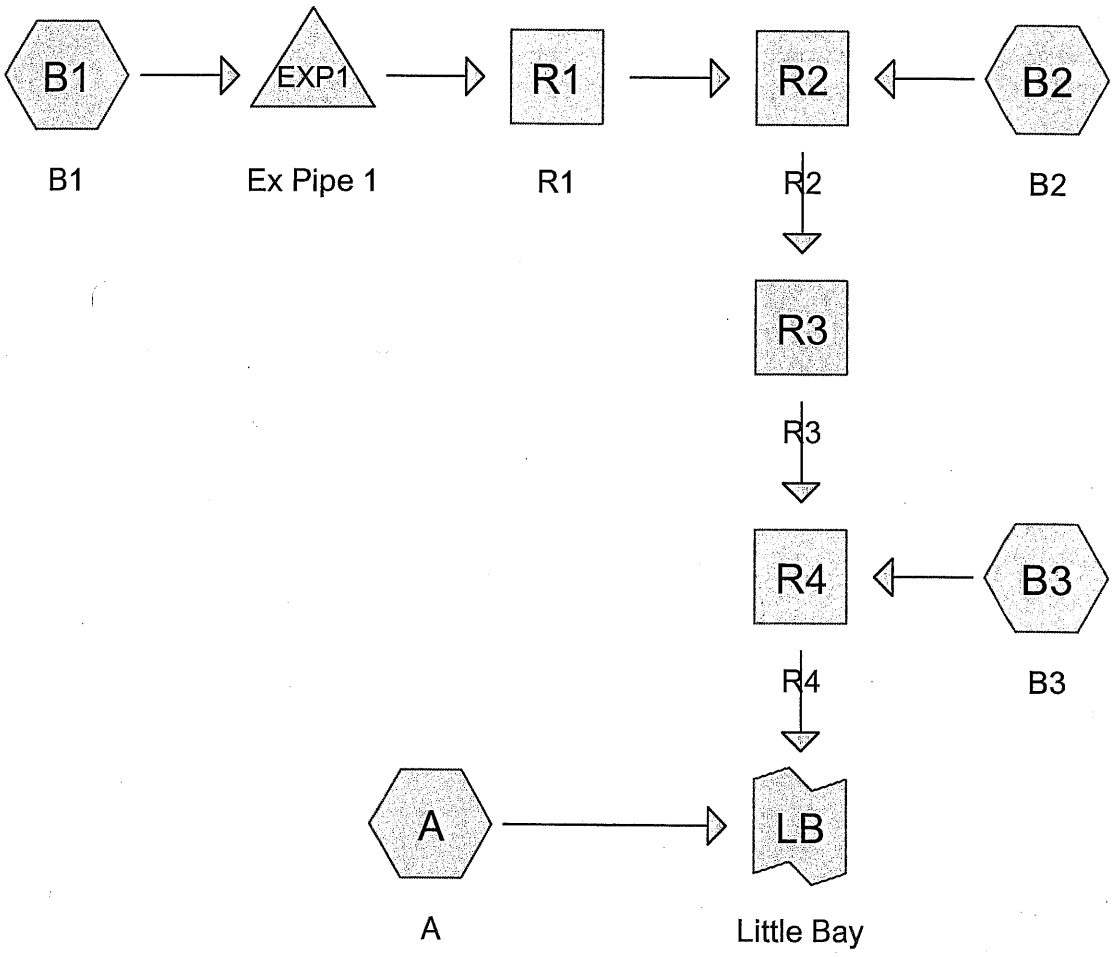
Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.53	0.72	0.88	1.08	**1yr**	0.76	1.06	1.25	1.75	2.22	2.97	3.11	**1yr**	2.63	2.99	3.53	4.32	4.96	**1yr**
2yr	0.33	0.51	0.63	0.85	1.05	1.26	**2yr**	0.91	1.23	1.48	1.96	2.51	3.38	3.65	**2yr**	2.99	3.51	4.03	4.78	5.56	**2yr**
5yr	0.40	0.61	0.76	1.04	1.32	1.60	**5yr**	1.14	1.56	1.87	2.52	3.23	4.29	4.89	**5yr**	3.79	4.70	5.30	6.28	7.06	**5yr**
10yr	0.46	0.71	0.88	1.23	1.58	1.94	**10yr**	1.37	1.90	2.26	3.08	3.91	5.28	6.10	**10yr**	4.67	5.87	6.69	7.72	8.62	**10yr**
25yr	0.56	0.86	1.06	1.52	2.00	2.52	**25yr**	1.73	2.46	2.91	4.03	5.06	7.53	8.20	**25yr**	6.67	7.88	8.95	10.17	11.24	**25yr**
50yr	0.65	0.99	1.24	1.78	2.39	3.05	**50yr**	2.06	2.98	3.54	4.93	6.17	9.39	10.27	**50yr**	8.31	9.88	11.16	12.51	13.76	**50yr**
100yr	0.76	1.15	1.44	2.09	2.86	3.70	**100yr**	2.47	3.62	4.30	6.05	7.54	11.70	12.87	**100yr**	10.35	12.37	13.93	15.42	16.85	**100yr**
200yr	0.89	1.34	1.69	2.45	3.42	4.50	**200yr**	2.95	4.40	5.24	7.43	9.20	14.61	16.14	**200yr**	12.93	15.52	17.39	19.00	20.64	**200yr**
500yr	1.09	1.63	2.09	3.04	4.32	5.81	**500yr**	3.73	5.68	6.79	9.77	12.02	19.61	21.77	**500yr**	17.35	20.93	23.34	25.04	27.01	**500yr**

Powered by ACIS
Northeast Regional Climate Center

A-1

EXISTING WATERSHEDS



Subcat Reach Pond Link

Routing Diagram for 1788-Pre
Prepared by {enter your company name here}, Printed 1/21/2019
HydroCAD® 10.00 s/n 03240 © 2011 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.896	70	Woods, Good, HSG C (A, B1)
1.823	74	>75% Grass cover, Good, HSG C (A, B1, B2, B3)
0.053	77	Woods, Good, HSG D (B1)
0.928	96	Gravel surface, HSG C (A, B1, B2, B3)
0.278	98	Unconnected pavement, HSG C (A, B1, B2, B3)
0.223	98	Unconnected roofs, HSG C (A, B1, B2, B3)
0.010	98	Water Surface, HSG C (Pool) (A)
4.212	**81**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
4.159	HSG C	A, B1, B2, B3
0.053	HSG D	B1
0.000	Other	
4.212		**TOTAL AREA**

A – 1

NODE LISTING – 2-YR

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: A Runoff Area=123,127 sf 9.42% Impervious Runoff Depth=1.76"
Flow Length=664' Tc=26.7 min UI Adjusted CN=80 Runoff=2.42 cfs 0.416 af

Subcatchment B1: B1 Runoff Area=27,823 sf 14.71% Impervious Runoff Depth=1.35"
Flow Length=202' Tc=18.7 min UI Adjusted CN=74 Runoff=0.48 cfs 0.072 af

Subcatchment B2: B2 Runoff Area=17,482 sf 22.91% Impervious Runoff Depth=2.24"
Flow Length=197' Tc=13.6 min UI Adjusted CN=86 Runoff=0.62 cfs 0.075 af

Subcatchment B3: B3 Runoff Area=15,032 sf 17.26% Impervious Runoff Depth=1.69"
Flow Length=96' Slope=0.0400 '/' Tc=9.8 min UI Adjusted CN=79 Runoff=0.46 cfs 0.049 af

Reach R1: R1 Avg. Flow Depth=0.26' Max Vel=0.25 fps Inflow=0.44 cfs 0.072 af
n=0.070 L=52.0' S=0.0010 '/' Capacity=4.80 cfs Outflow=0.43 cfs 0.072 af

Reach R2: R2 Avg. Flow Depth=0.34' Max Vel=0.38 fps Inflow=0.91 cfs 0.147 af
n=0.070 L=30.0' S=0.0017 '/' Capacity=6.33 cfs Outflow=0.91 cfs 0.147 af

Reach R3: R3 Avg. Flow Depth=0.21' Max Vel=0.62 fps Inflow=0.91 cfs 0.147 af
n=0.050 L=175.0' S=0.0040 '/' Capacity=13.72 cfs Outflow=0.86 cfs 0.147 af

Reach R4: R4 Avg. Flow Depth=0.27' Max Vel=0.61 fps Inflow=1.12 cfs 0.196 af
n=0.050 L=85.0' S=0.0029 '/' Capacity=11.76 cfs Outflow=1.11 cfs 0.196 af

Pond EXP1: Ex Pipe 1 Peak Elev=5.42' Storage=70 cf Inflow=0.48 cfs 0.072 af
6.0" Round Culvert n=0.021 L=46.5' S=0.0189 '/' Outflow=0.44 cfs 0.072 af

Link LB: Little Bay Inflow=3.47 cfs 0.611 af
Primary=3.47 cfs 0.611 af

Total Runoff Area = 4.212 ac Runoff Volume = 0.611 af Average Runoff Depth = 1.74"
87.85% Pervious = 3.700 ac 12.15% Impervious = 0.512 ac

A – 1

NODE LISTING – 10-YR

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: A Runoff Area=123,127 sf 9.42% Impervious Runoff Depth=3.36"
Flow Length=664' Tc=26.7 min UI Adjusted CN=80 Runoff=4.64 cfs 0.791 af

Subcatchment B1: B1 Runoff Area=27,823 sf 14.71% Impervious Runoff Depth=2.79"
Flow Length=202' Tc=18.7 min UI Adjusted CN=74 Runoff=1.04 cfs 0.149 af

Subcatchment B2: B2 Runoff Area=17,482 sf 22.91% Impervious Runoff Depth=3.96"
Flow Length=197' Tc=13.6 min UI Adjusted CN=86 Runoff=1.08 cfs 0.133 af

Subcatchment B3: B3 Runoff Area=15,032 sf 17.26% Impervious Runoff Depth=3.26"
Flow Length=96' Slope=0.0400 '/' Tc=9.8 min UI Adjusted CN=79 Runoff=0.90 cfs 0.094 af

Reach R1: R1 Avg. Flow Depth=0.31' Max Vel=0.27 fps Inflow=0.59 cfs 0.149 af
n=0.070 L=52.0' S=0.0010 '/' Capacity=4.80 cfs Outflow=0.59 cfs 0.149 af

Reach R2: R2 Avg. Flow Depth=0.46' Max Vel=0.45 fps Inflow=1.54 cfs 0.281 af
n=0.070 L=30.0' S=0.0017 '/' Capacity=6.33 cfs Outflow=1.53 cfs 0.281 af

Reach R3: R3 Avg. Flow Depth=0.29' Max Vel=0.75 fps Inflow=1.53 cfs 0.281 af
n=0.050 L=175.0' S=0.0040 '/' Capacity=13.72 cfs Outflow=1.46 cfs 0.281 af

Reach R4: R4 Avg. Flow Depth=0.38' Max Vel=0.76 fps Inflow=2.08 cfs 0.375 af
n=0.050 L=85.0' S=0.0029 '/' Capacity=11.76 cfs Outflow=2.06 cfs 0.375 af

Pond EXP1: Ex Pipe 1 Peak Elev=6.06' Storage=488 cf Inflow=1.04 cfs 0.149 af
6.0" Round Culvert n=0.021 L=46.5' S=0.0189 '/' Outflow=0.59 cfs 0.149 af

Link LB: Little Bay Inflow=6.41 cfs 1.167 af
Primary=6.41 cfs 1.167 af

Total Runoff Area = 4.212 ac Runoff Volume = 1.167 af Average Runoff Depth = 3.32"
87.85% Pervious = 3.700 ac 12.15% Impervious = 0.512 ac

A – 1

10-YR STORM SUMMARY

Summary for Subcatchment A: A

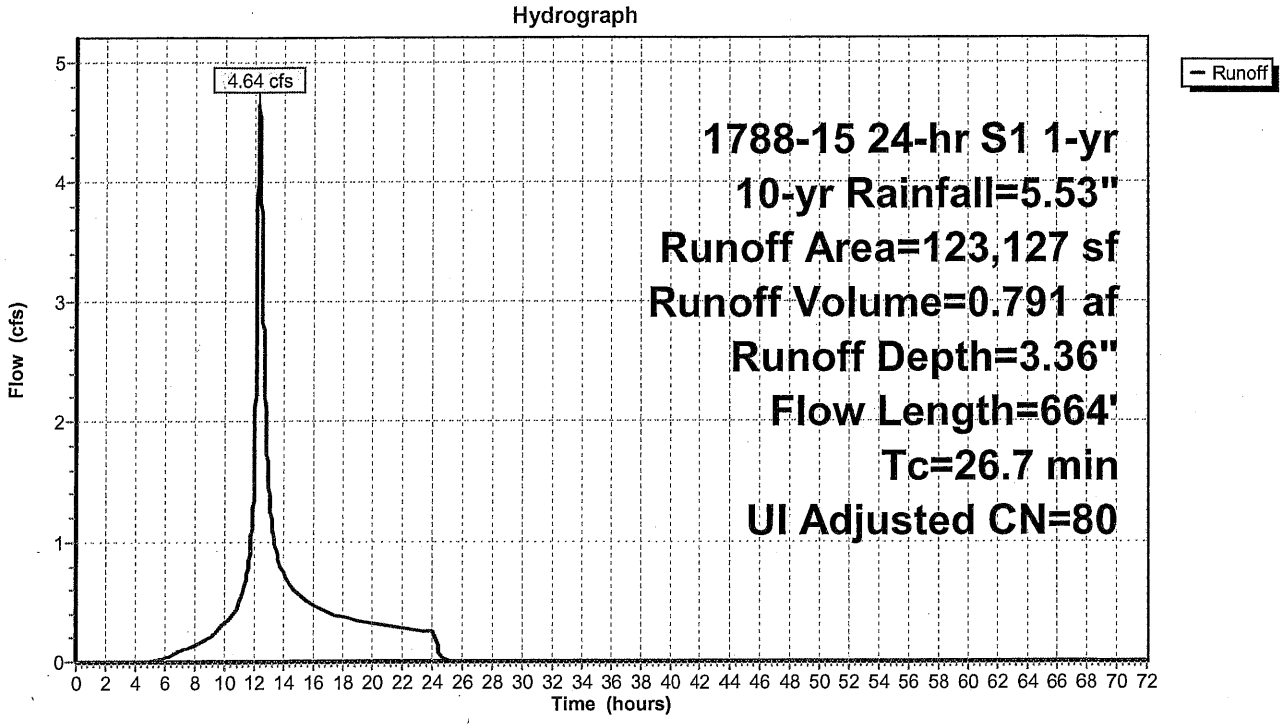
Runoff = 4.64 cfs @ 12.31 hrs, Volume= 0.791 af, Depth= 3.36"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

	Area (sf)	CN	Description
	25,732	70	Woods, Good, HSG C
	53,180	74	>75% Grass cover, Good, HSG C
	32,614	96	Gravel surface, HSG C
	5,918	98	Unconnected pavement, HSG C
	5,231	98	Unconnected roofs, HSG C
*	452	98	Water Surface, HSG C (Pool)
	123,127	81	Weighted Average, UI Adjusted CN = 80
	111,526		90.58% Pervious Area
	11,601		9.42% Impervious Area
	11,149		96.10% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.8	100	0.0270	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.66"
5.6	204	0.0150	0.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	67	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.0	293	0.0240	2.49		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
26.7	664	Total			

Subcatchment A: A



Summary for Subcatchment B1: B1

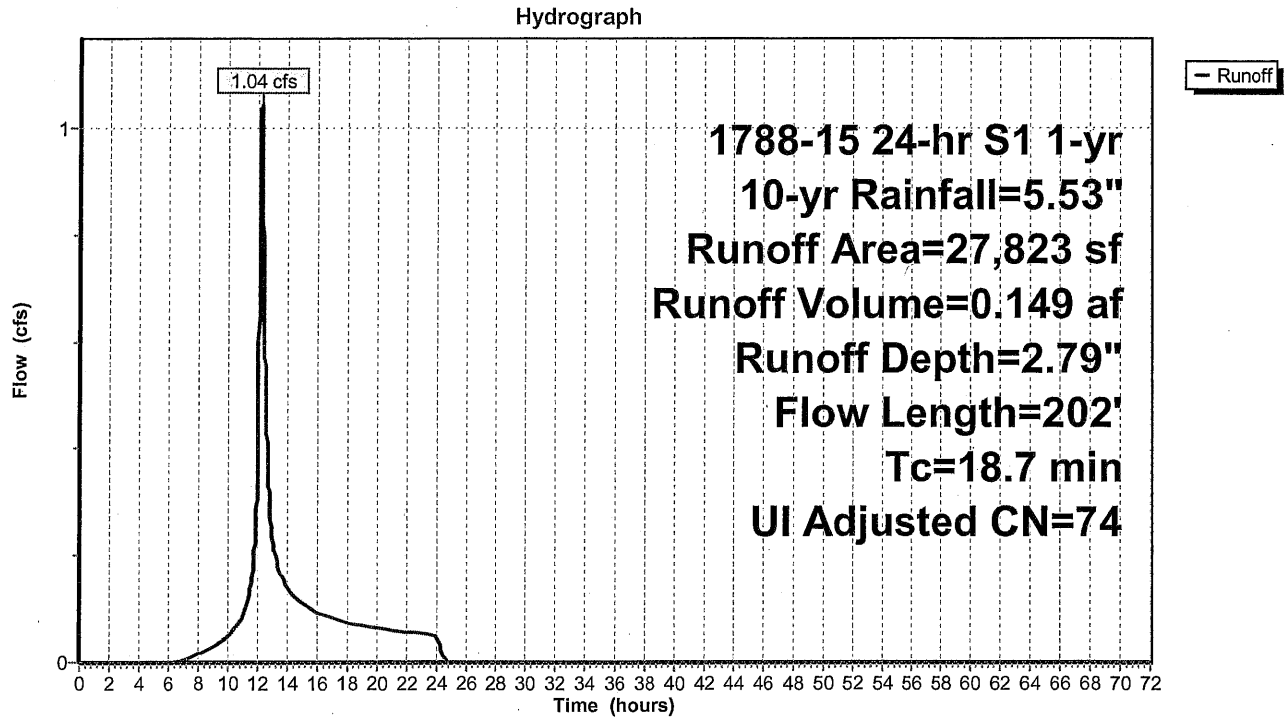
Runoff = 1.04 cfs @ 12.20 hrs, Volume= 0.149 af, Depth= 2.79"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

Area (sf)	CN	Description
13,290	70	Woods, Good, HSG C
8,085	74	>75% Grass cover, Good, HSG C
44	96	Gravel surface, HSG C
3,400	98	Unconnected pavement, HSG C
693	98	Unconnected roofs, HSG C
2,311	77	Woods, Good, HSG D
27,823	76	Weighted Average, UI Adjusted CN = 74
23,730		85.29% Pervious Area
4,093		14.71% Impervious Area
4,093		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	20	0.0200	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.66"
12.3	80	0.0440	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.66"
2.7	102	0.0160	0.63		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.7	202	Total			

Subcatchment B1: B1



Summary for Subcatchment B2: B2

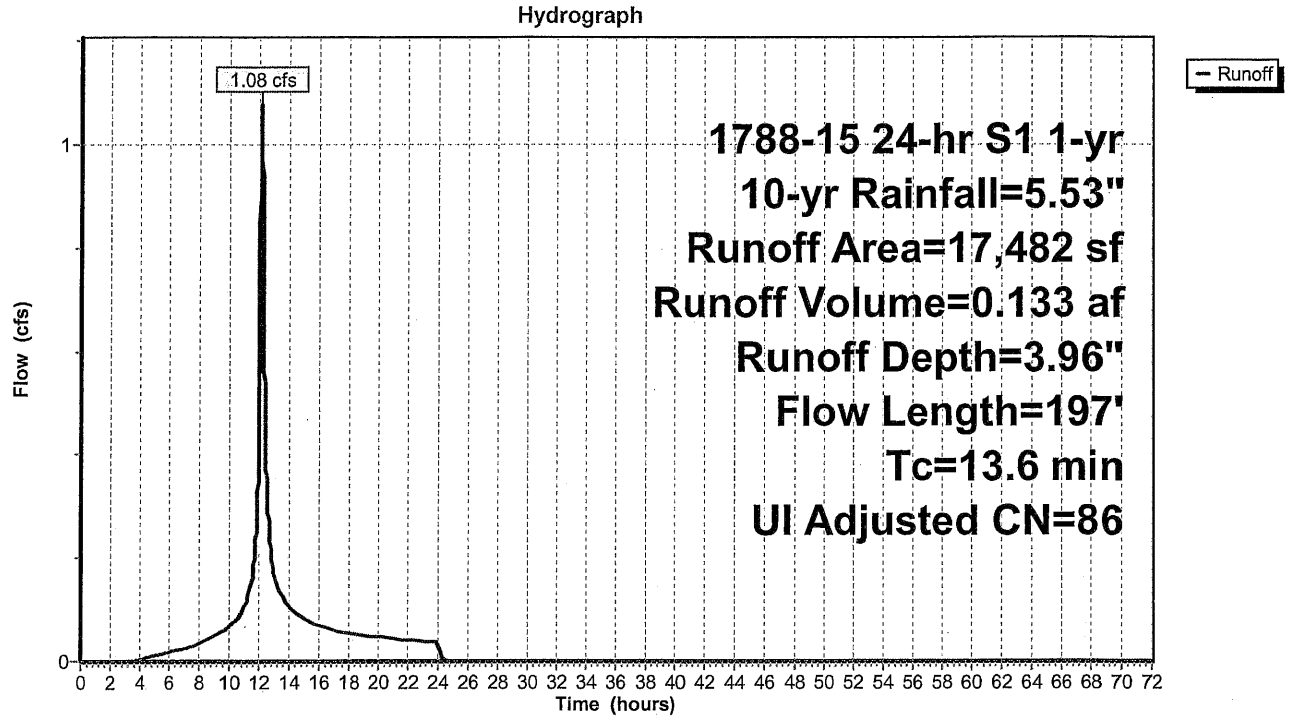
Runoff = 1.08 cfs @ 12.13 hrs, Volume= 0.133 af, Depth= 3.96"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

Area (sf)	CN	Description
7,339	74	>75% Grass cover, Good, HSG C
6,138	96	Gravel surface, HSG C
2,781	98	Unconnected pavement, HSG C
1,224	98	Unconnected roofs, HSG C
17,482	87	Weighted Average, UI Adjusted CN = 86
13,477		77.09% Pervious Area
4,005		22.91% Impervious Area
4,005		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	15	0.0100	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.66"
6.7	58	0.0380	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.66"
1.0	106	0.0120	1.76		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	18	0.1830	2.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.6	197	Total			

Subcatchment B2: B2



Summary for Subcatchment B3: B3

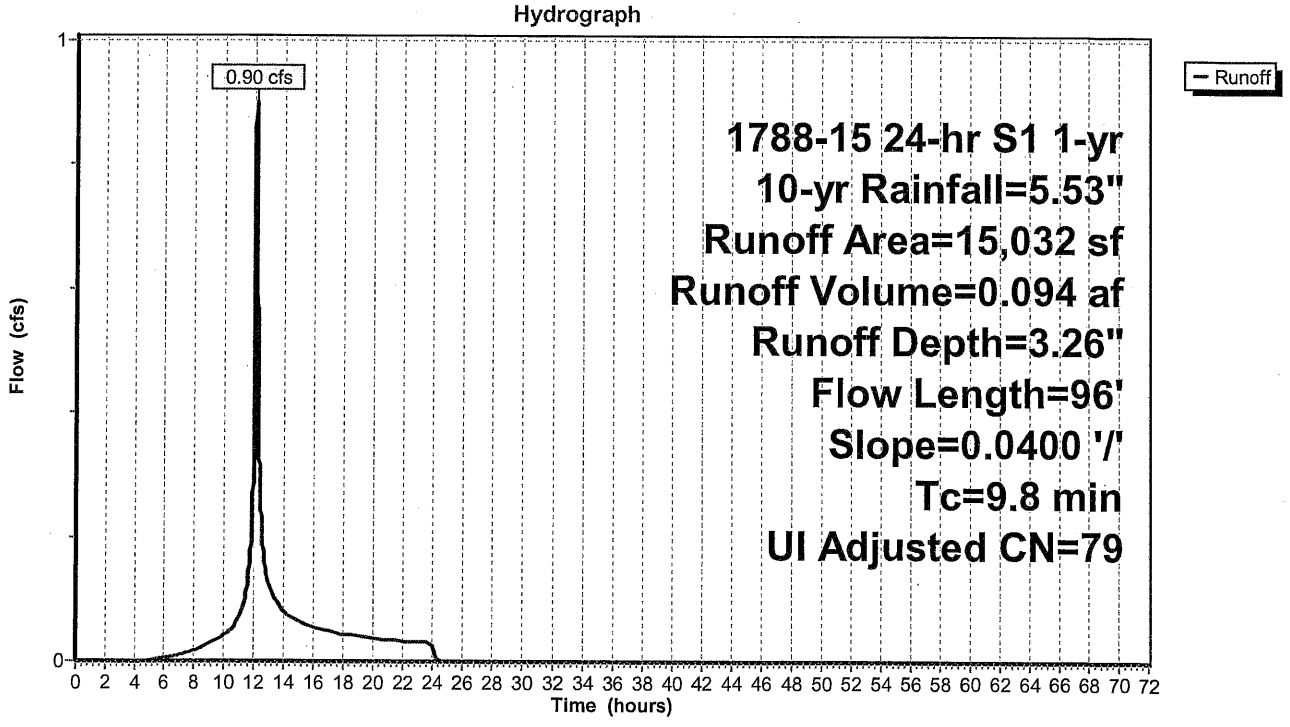
Runoff = 0.90 cfs @ 12.08 hrs, Volume= 0.094 af, Depth= 3.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

Area (sf)	CN	Description
10,816	74	>75% Grass cover, Good, HSG C
1,622	96	Gravel surface, HSG C
25	98	Unconnected pavement, HSG C
2,569	98	Unconnected roofs, HSG C
15,032	81	Weighted Average, UI Adjusted CN = 79
12,438		82.74% Pervious Area
2,594		17.26% Impervious Area
2,594		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	96	0.0400	0.16		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.66"

Subcatchment B3: B3



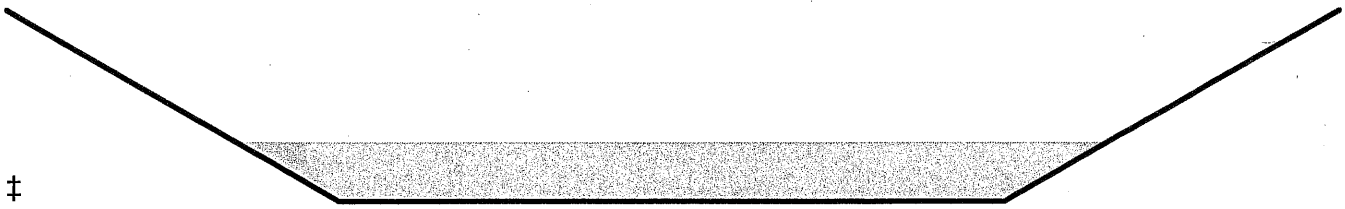
Summary for Reach R1: R1

Inflow Area = 0.639 ac, 14.71% Impervious, Inflow Depth = 2.79" for 10-yr event
Inflow = 0.59 cfs @ 12.45 hrs, Volume= 0.149 af
Outflow = 0.59 cfs @ 12.49 hrs, Volume= 0.149 af, Atten= 0%, Lag= 2.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.27 fps, Min. Travel Time= 3.2 min
Avg. Velocity = 0.11 fps, Avg. Travel Time= 7.7 min

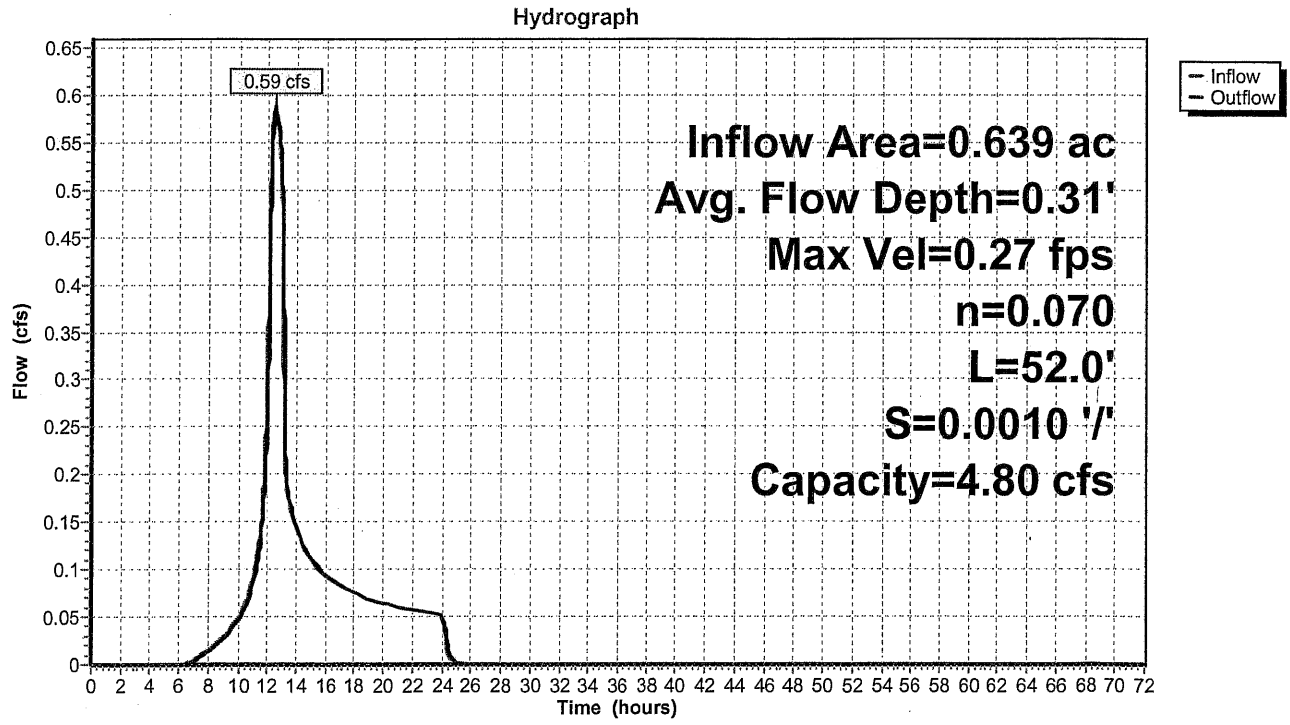
Peak Storage= 111 cf @ 12.49 hrs
Average Depth at Peak Storage= 0.31'
Bank-Full Depth= 1.00' Flow Area= 9.0 sf, Capacity= 4.80 cfs

6.00' x 1.00' deep channel, n= 0.070
Side Slope Z-value= 3.0 '/' Top Width= 12.00'
Length= 52.0' Slope= 0.0010 '/'
Inlet Invert= 3.95', Outlet Invert= 3.90'



‡

Reach R1: R1



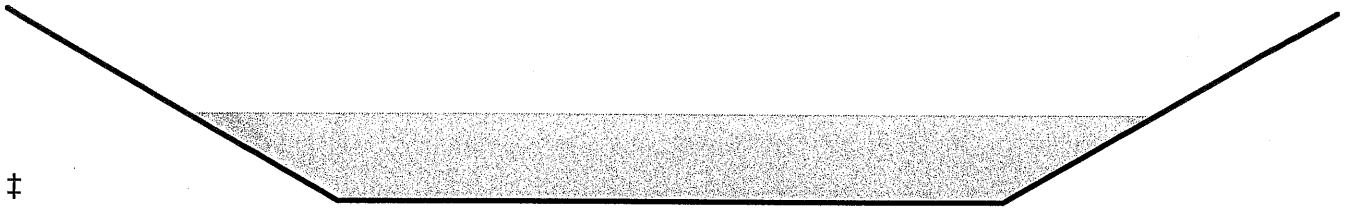
Summary for Reach R2: R2

Inflow Area = 1.040 ac, 17.87% Impervious, Inflow Depth = 3.25" for 10-yr event
Inflow = 1.54 cfs @ 12.14 hrs, Volume= 0.281 af
Outflow = 1.53 cfs @ 12.16 hrs, Volume= 0.281 af, Atten= 0%, Lag= 0.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.45 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 0.16 fps, Avg. Travel Time= 3.2 min

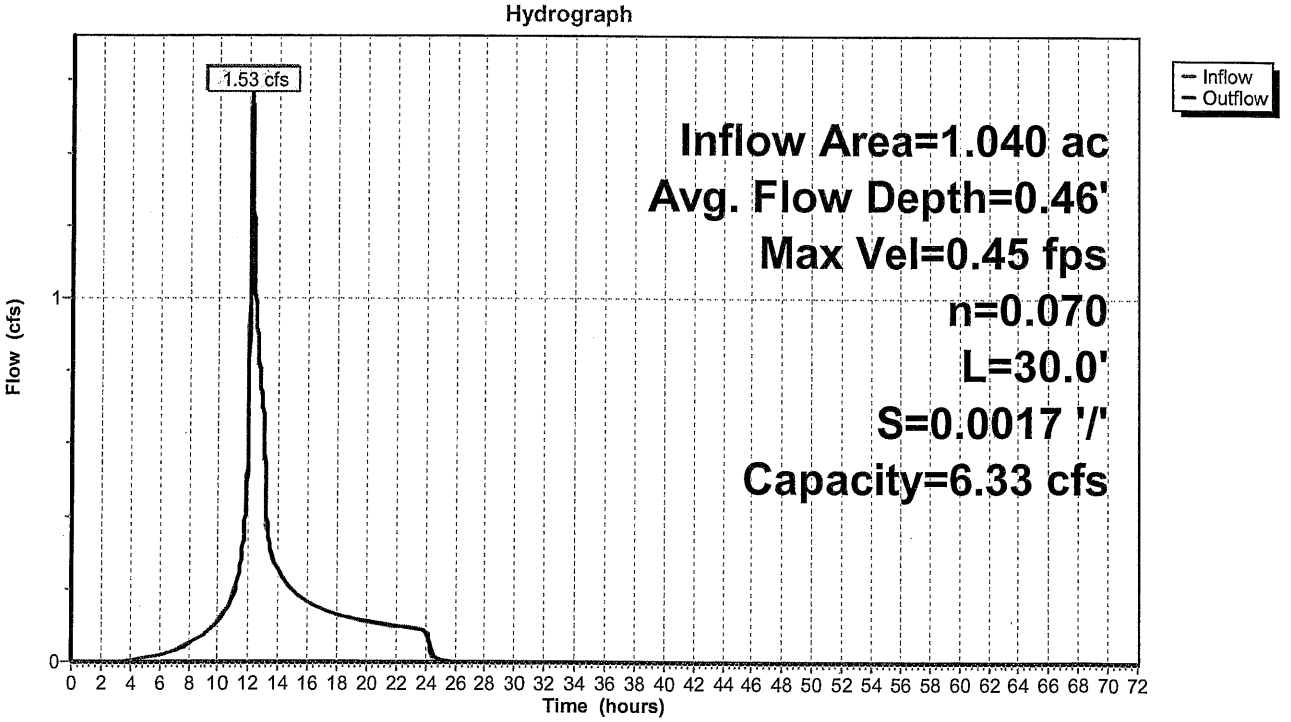
Peak Storage= 101 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.46'
Bank-Full Depth= 1.00' Flow Area= 9.0 sf, Capacity= 6.33 cfs

6.00' x 1.00' deep channel, n= 0.070
Side Slope Z-value= 3.0 '/' Top Width= 12.00'
Length= 30.0' Slope= 0.0017 '/'
Inlet Invert= 3.90', Outlet Invert= 3.85'



‡

Reach R2: R2



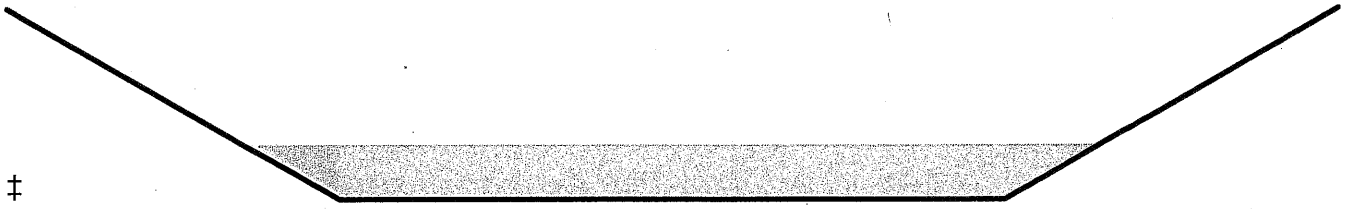
Summary for Reach R3: R3

Inflow Area = 1.040 ac, 17.87% Impervious, Inflow Depth = 3.25" for 10-yr event
Inflow = 1.53 cfs @ 12.16 hrs, Volume= 0.281 af
Outflow = 1.46 cfs @ 12.21 hrs, Volume= 0.281 af, Atten= 5%, Lag= 2.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.75 fps, Min. Travel Time= 3.9 min
Avg. Velocity = 0.25 fps, Avg. Travel Time= 11.5 min

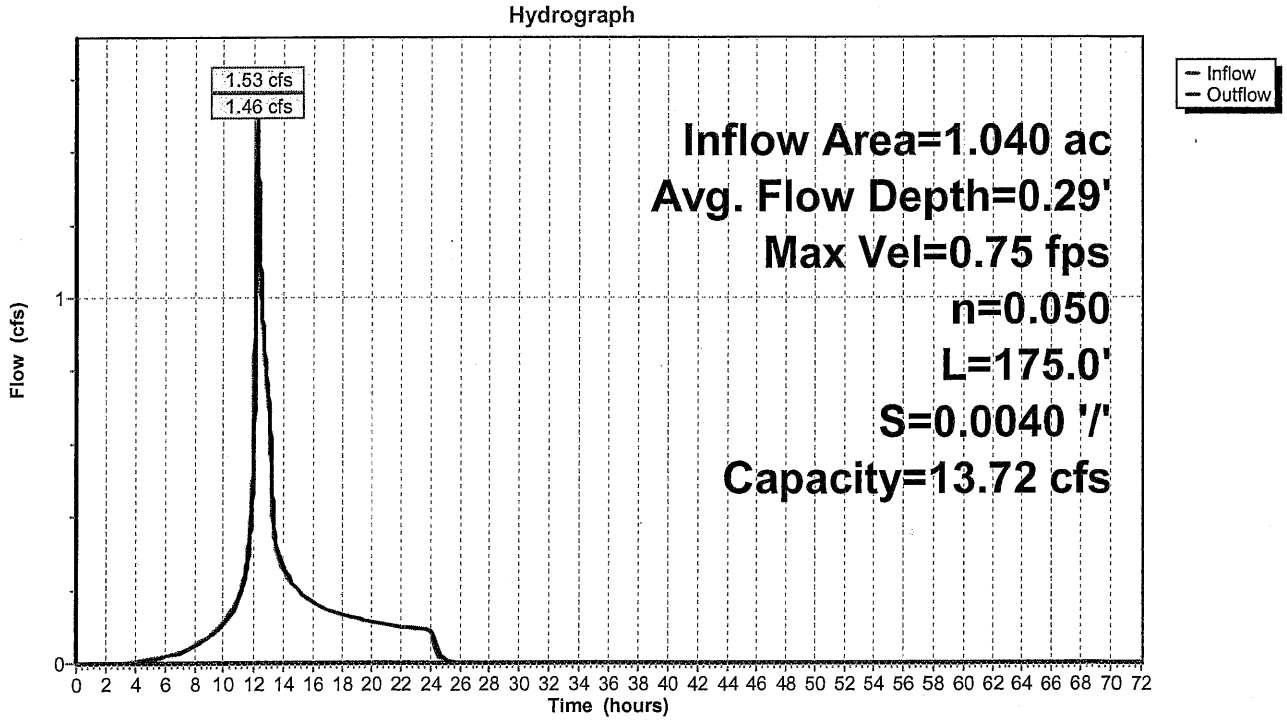
Peak Storage= 342 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 1.00' Flow Area= 9.0 sf, Capacity= 13.72 cfs

6.00' x 1.00' deep channel, n= 0.050 Earth, long dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 12.00'
Length= 175.0' Slope= 0.0040 '/'
Inlet Invert= 3.80', Outlet Invert= 3.10'



‡

Reach R3: R3



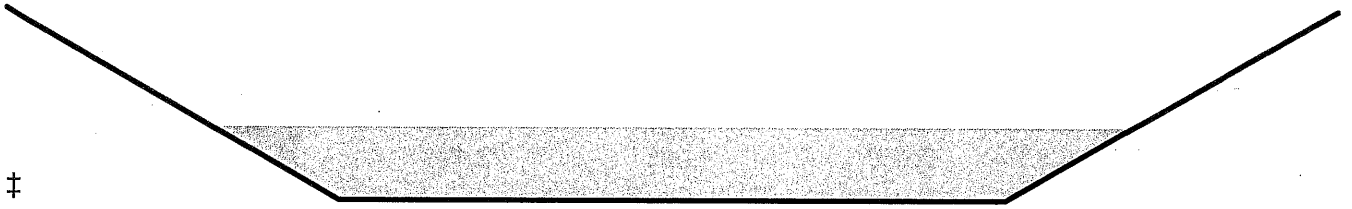
Summary for Reach R4: R4

Inflow Area = 1.385 ac, 17.72% Impervious, Inflow Depth = 3.25" for 10-yr event
Inflow = 2.08 cfs @ 12.16 hrs, Volume= 0.375 af
Outflow = 2.06 cfs @ 12.18 hrs, Volume= 0.375 af, Atten= 1%, Lag= 1.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.76 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 0.25 fps, Avg. Travel Time= 5.7 min

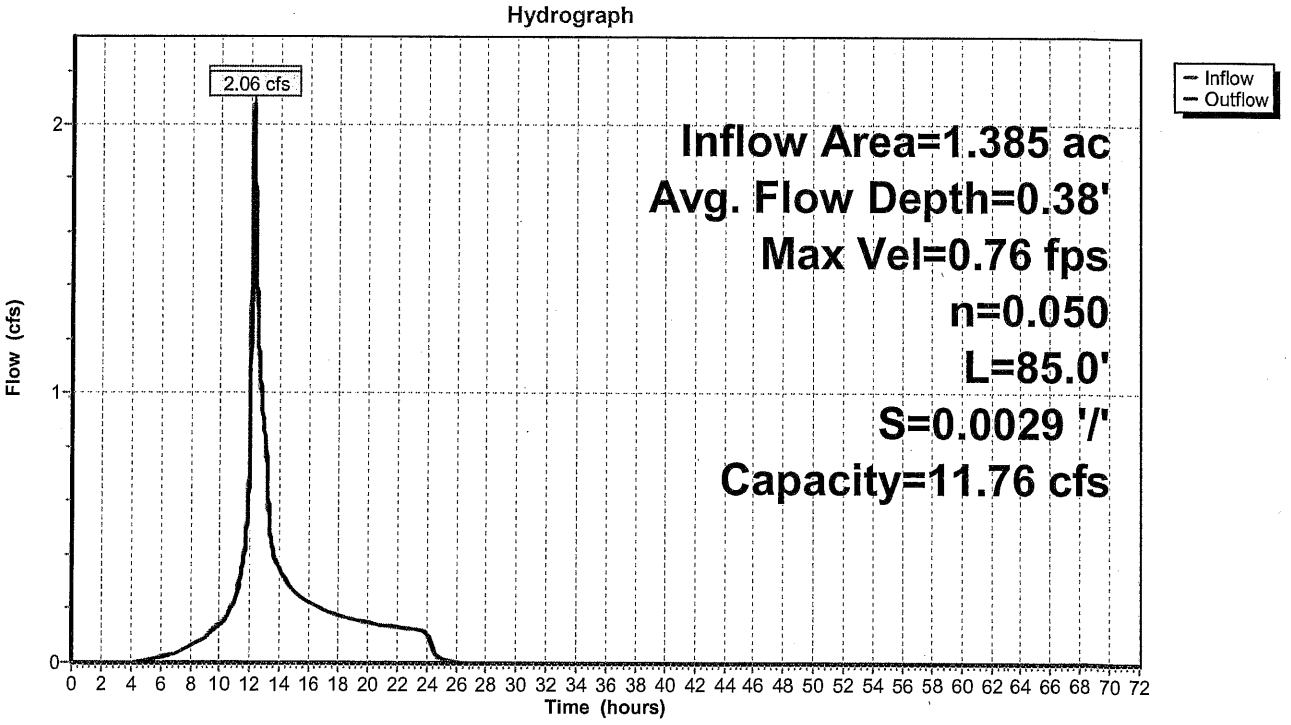
Peak Storage= 231 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.38'
Bank-Full Depth= 1.00' Flow Area= 9.0 sf, Capacity= 11.76 cfs

6.00' x 1.00' deep channel, n= 0.050 Earth, long dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 12.00'
Length= 85.0' Slope= 0.0029 '/'
Inlet Invert= 3.10', Outlet Invert= 2.85'



‡

Reach R4: R4



Summary for Pond EXP1: Ex Pipe 1

Inflow Area = 0.639 ac, 14.71% Impervious, Inflow Depth = 2.79" for 10-yr event
Inflow = 1.04 cfs @ 12.20 hrs, Volume= 0.149 af
Outflow = 0.59 cfs @ 12.45 hrs, Volume= 0.149 af, Atten= 43%, Lag= 14.7 min
Primary = 0.59 cfs @ 12.45 hrs, Volume= 0.149 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 6.06' @ 12.45 hrs Surf.Area= 1,082 sf Storage= 488 cf
Flood Elev= 7.00' Surf.Area= 5,828 sf Storage= 3,190 cf

Plug-Flow detention time= 3.5 min calculated for 0.149 af (100% of inflow)
Center-of-Mass det. time= 3.5 min (889.4 - 885.8)

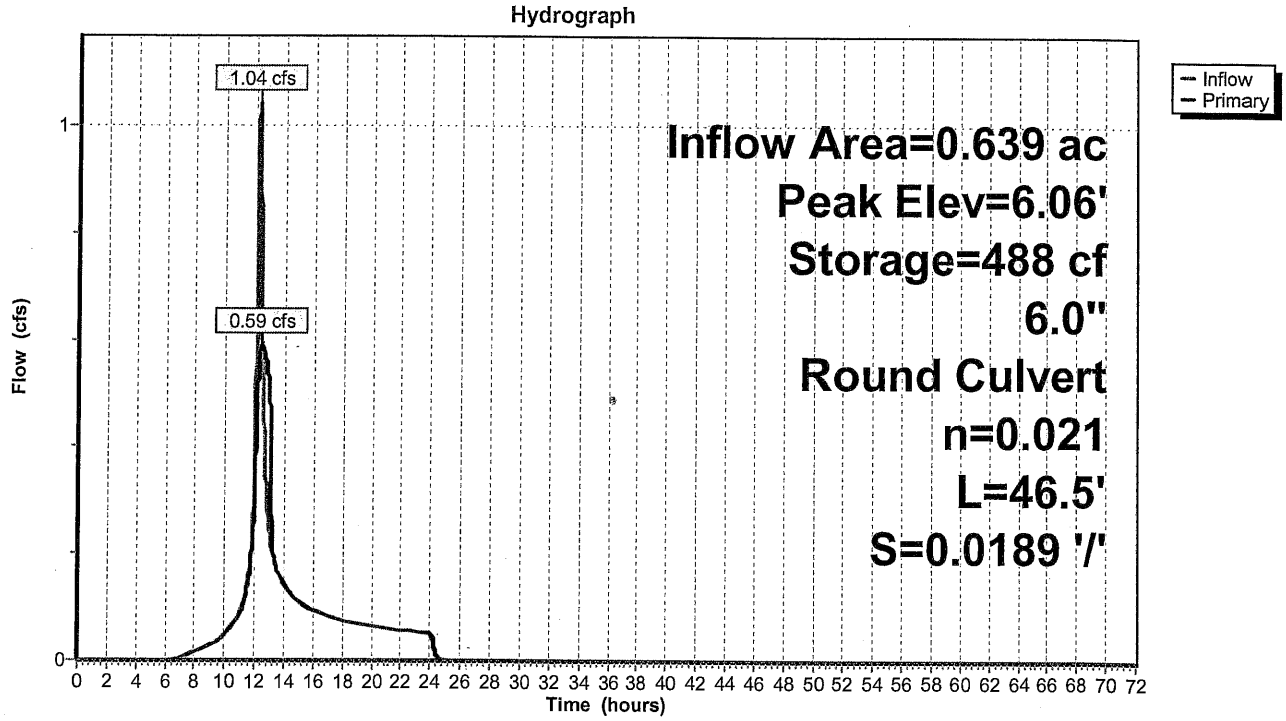
Volume	Invert	Avail.Storage	Storage Description
#1	4.83'	3,190 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
4.83	4	8.0	0	0	4
5.60	507	168.0	143	143	2,246
6.00	962	180.9	289	432	2,611
6.50	2,304	243.8	792	1,224	4,739
7.00	5,828	352.0	1,966	3,190	9,871

Device	Routing	Invert	Outlet Devices
#1	Primary	4.83'	**6.0" Round Culvert** L= 46.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 4.83' / 3.95' S= 0.0189 '/' Cc= 0.900 n= 0.021 Corrugated metal, Flow Area= 0.20 sf

Primary OutFlow Max=0.59 cfs @ 12.45 hrs HW=6.06' TW=4.26' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.59 cfs @ 3.00 fps)

Pond EXP1: Ex Pipe 1

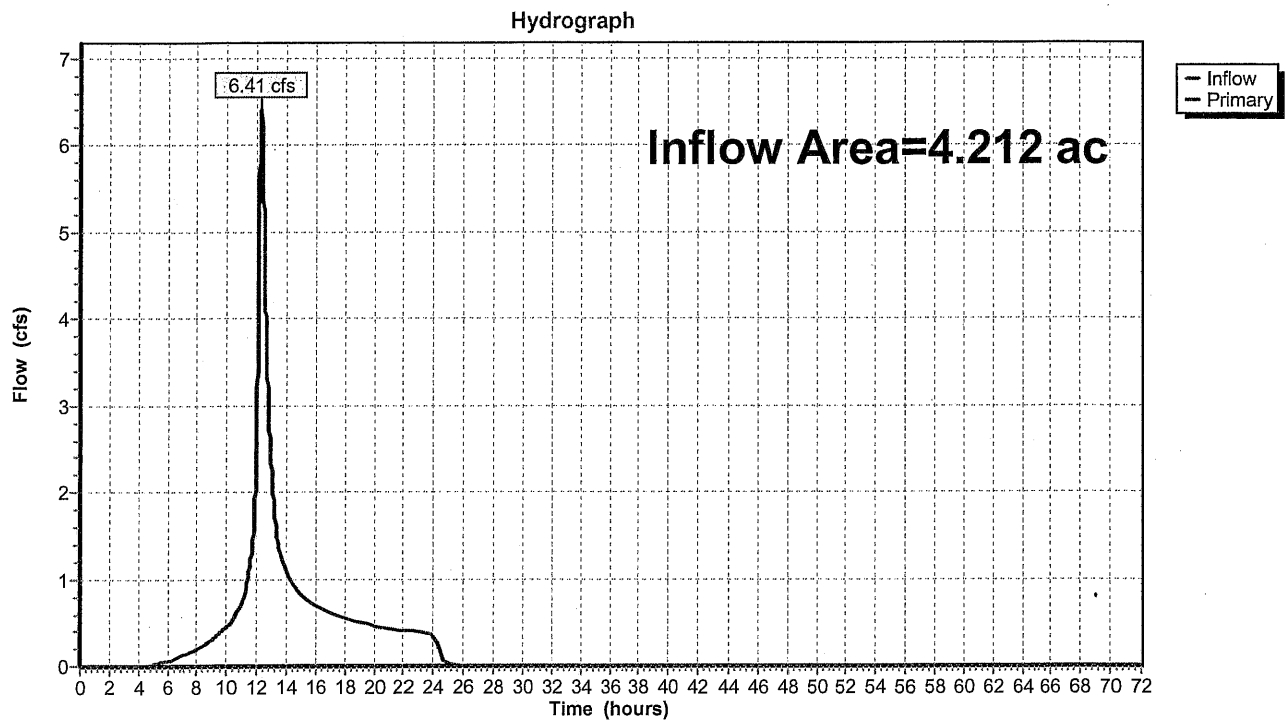


Summary for Link LB: Little Bay

Inflow Area = 4.212 ac, 12.15% Impervious, Inflow Depth = 3.32" for 10-yr event
Inflow = 6.41 cfs @ 12.28 hrs, Volume= 1.167 af
Primary = 6.41 cfs @ 12.28 hrs, Volume= 1.167 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link LB: Little Bay



A – 1

NODE LISTING – 25-YR

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: A Runoff Area=123,127 sf 9.42% Impervious Runoff Depth=4.71"
Flow Length=664' Tc=26.7 min UI Adjusted CN=80 Runoff=6.48 cfs 1.110 af

Subcatchment B1: B1 Runoff Area=27,823 sf 14.71% Impervious Runoff Depth=4.06"
Flow Length=202' Tc=18.7 min UI Adjusted CN=74 Runoff=1.52 cfs 0.216 af

Subcatchment B2: B2 Runoff Area=17,482 sf 22.91% Impervious Runoff Depth=5.38"
Flow Length=197' Tc=13.6 min UI Adjusted CN=86 Runoff=1.44 cfs 0.180 af

Subcatchment B3: B3 Runoff Area=15,032 sf 17.26% Impervious Runoff Depth=4.60"
Flow Length=96' Slope=0.0400 '/' Tc=9.8 min UI Adjusted CN=79 Runoff=1.26 cfs 0.132 af

Reach R1: R1 Avg. Flow Depth=0.33' Max Vel=0.28 fps Inflow=0.65 cfs 0.216 af
n=0.070 L=52.0' S=0.0010 '/' Capacity=4.80 cfs Outflow=0.65 cfs 0.216 af

Reach R2: R2 Avg. Flow Depth=0.53' Max Vel=0.49 fps Inflow=1.96 cfs 0.396 af
n=0.070 L=30.0' S=0.0017 '/' Capacity=6.33 cfs Outflow=1.96 cfs 0.396 af

Reach R3: R3 Avg. Flow Depth=0.33' Max Vel=0.81 fps Inflow=1.96 cfs 0.396 af
n=0.050 L=175.0' S=0.0040 '/' Capacity=13.72 cfs Outflow=1.88 cfs 0.396 af

Reach R4: R4 Avg. Flow Depth=0.45' Max Vel=0.84 fps Inflow=2.80 cfs 0.529 af
n=0.050 L=85.0' S=0.0029 '/' Capacity=11.76 cfs Outflow=2.78 cfs 0.529 af

Pond EXP1: Ex Pipe 1 Peak Elev=6.42' Storage=1,056 cf Inflow=1.52 cfs 0.216 af
6.0" Round Culvert n=0.021 L=46.5' S=0.0189 '/' Outflow=0.65 cfs 0.216 af

Link LB: Little Bay Inflow=8.74 cfs 1.639 af
Primary=8.74 cfs 1.639 af

Total Runoff Area = 4.212 ac Runoff Volume = 1.639 af Average Runoff Depth = 4.67"
87.85% Pervious = 3.700 ac 12.15% Impervious = 0.512 ac

A – 1

NODE LISTING – 50-YR

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: A Runoff Area=123,127 sf 9.42% Impervious Runoff Depth=6.00"
Flow Length=664' Tc=26.7 min UI Adjusted CN=80 Runoff=8.19 cfs 1.414 af

Subcatchment B1: B1 Runoff Area=27,823 sf 14.71% Impervious Runoff Depth=5.28"
Flow Length=202' Tc=18.7 min UI Adjusted CN=74 Runoff=1.98 cfs 0.281 af

Subcatchment B2: B2 Runoff Area=17,482 sf 22.91% Impervious Runoff Depth=6.72"
Flow Length=197' Tc=13.6 min UI Adjusted CN=86 Runoff=1.78 cfs 0.225 af

Subcatchment B3: B3 Runoff Area=15,032 sf 17.26% Impervious Runoff Depth=5.88"
Flow Length=96' Slope=0.0400 '/' Tc=9.8 min UI Adjusted CN=79 Runoff=1.60 cfs 0.169 af

Reach R1: R1 Avg. Flow Depth=0.34' Max Vel=0.29 fps Inflow=0.69 cfs 0.281 af
n=0.070 L=52.0' S=0.0010 '/' Capacity=4.80 cfs Outflow=0.69 cfs 0.281 af

Reach R2: R2 Avg. Flow Depth=0.58' Max Vel=0.52 fps Inflow=2.34 cfs 0.506 af
n=0.070 L=30.0' S=0.0017 '/' Capacity=6.33 cfs Outflow=2.33 cfs 0.506 af

Reach R3: R3 Avg. Flow Depth=0.37' Max Vel=0.87 fps Inflow=2.33 cfs 0.506 af
n=0.050 L=175.0' S=0.0040 '/' Capacity=13.72 cfs Outflow=2.25 cfs 0.506 af

Reach R4: R4 Avg. Flow Depth=0.51' Max Vel=0.90 fps Inflow=3.46 cfs 0.675 af
n=0.050 L=85.0' S=0.0029 '/' Capacity=11.76 cfs Outflow=3.43 cfs 0.675 af

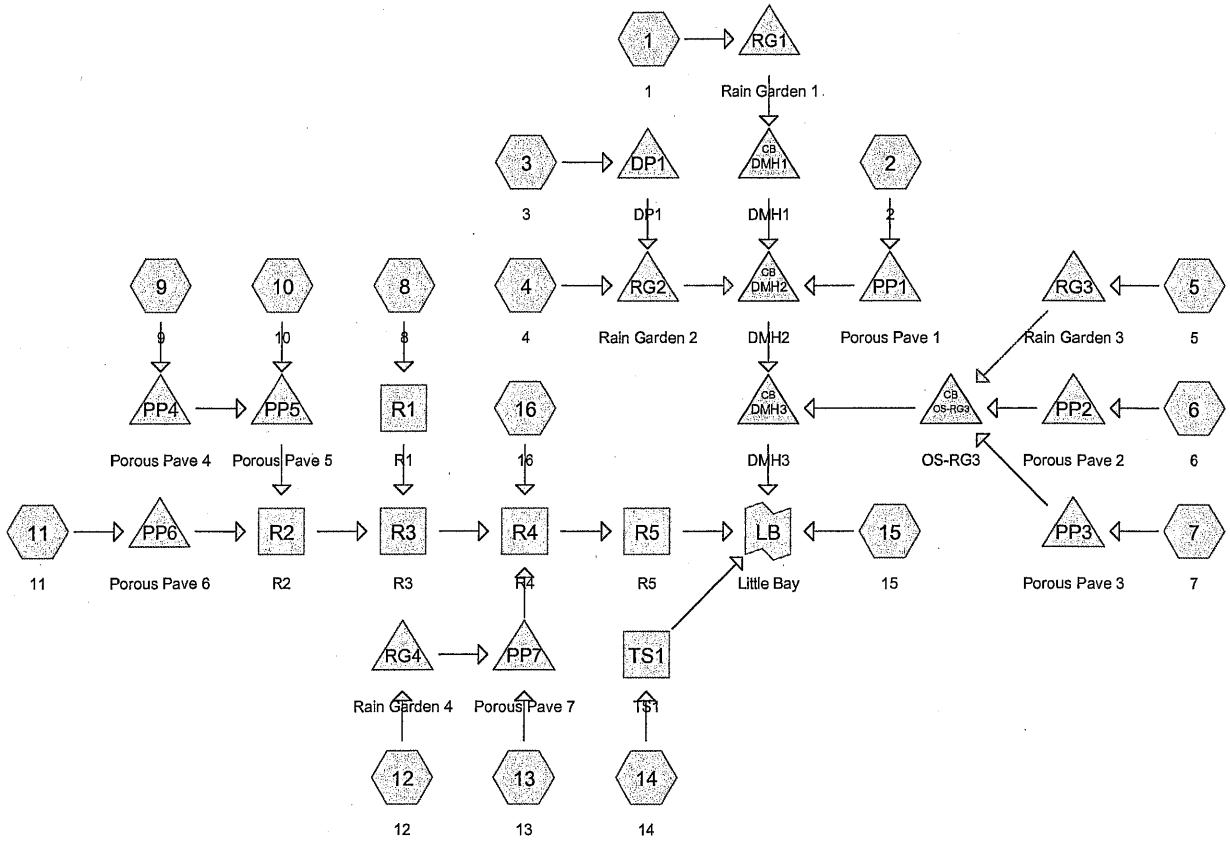
Pond EXP1: Ex Pipe 1 Peak Elev=6.67' Storage=1,711 cf Inflow=1.98 cfs 0.281 af
6.0" Round Culvert n=0.021 L=46.5' S=0.0189 '/' Outflow=0.69 cfs 0.281 af

Link LB: Little Bay Inflow=10.90 cfs 2.089 af
Primary=10.90 cfs 2.089 af

Total Runoff Area = 4.212 ac Runoff Volume = 2.089 af Average Runoff Depth = 5.95"
87.85% Pervious = 3.700 ac 12.15% Impervious = 0.512 ac

A-2

DEVELOPED WATERSHEDS



Subcat Reach Pond Link

Routing Diagram for 1788-Post

Prepared by {enter your company name here}, Printed 1/21/2019

HydroCAD® 10.00 s/n 03240 © 2011 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.328	70	Woods, Good, HSG C (1, 5, 15)
1.433	74	>75% Grass cover, Good, HSG C (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16)
0.289	96	Gravel surface, HSG C (1)
1.586	98	Paved parking, HSG C (1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15)
0.576	98	Roofs, HSG C (1, 4, 5, 8, 12, 14)
4.212	**88**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
4.212	HSG C	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16
0.000	HSG D	
0.000	Other	
4.212		**TOTAL AREA**

A – 2

NODE LISTING – 2-YR

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: 1 Runoff Area=55,061 sf 41.31% Impervious Runoff Depth>2.49"
Flow Length=126' Tc=14.4 min CN=89 Runoff=2.10 cfs 0.263 af

Subcatchment 2: 2 Runoff Area=13,289 sf 96.31% Impervious Runoff Depth>3.31"
Flow Length=27' Slope=0.0100 '/' Tc=0.2 min CN=97 Runoff=1.03 cfs 0.084 af

Subcatchment 3: 3 Runoff Area=3,525 sf 1.02% Impervious Runoff Depth>1.35"
Flow Length=81' Slope=0.0290 '/' Tc=9.7 min CN=74 Runoff=0.08 cfs 0.009 af

Subcatchment 4: 4 Runoff Area=5,425 sf 75.94% Impervious Runoff Depth>2.78"
Flow Length=68' Slope=0.0120 '/' Tc=12.0 min CN=92 Runoff=0.25 cfs 0.029 af

Subcatchment 5: 5 Runoff Area=20,950 sf 26.66% Impervious Runoff Depth>1.68"
Flow Length=359' Tc=20.7 min CN=79 Runoff=0.45 cfs 0.067 af

Subcatchment 6: 6 Runoff Area=12,870 sf 88.41% Impervious Runoff Depth>3.09"
Flow Length=15' Slope=0.0750 '/' Tc=1.7 min CN=95 Runoff=0.96 cfs 0.076 af

Subcatchment 7: 7 Runoff Area=6,009 sf 89.13% Impervious Runoff Depth>3.09"
Flow Length=27' Slope=0.0200 '/' Tc=2.9 min CN=95 Runoff=0.44 cfs 0.036 af

Subcatchment 8: 8 Runoff Area=6,740 sf 30.82% Impervious Runoff Depth>1.83"
Flow Length=161' Slope=0.0500 '/' Tc=9.8 min CN=81 Runoff=0.23 cfs 0.024 af

Subcatchment 9: 9 Runoff Area=1,205 sf 67.63% Impervious Runoff Depth>2.60"
Flow Length=12' Slope=0.0100 '/' Tc=3.2 min CN=90 Runoff=0.08 cfs 0.006 af

Subcatchment 10: 10 Runoff Area=3,052 sf 89.19% Impervious Runoff Depth>3.09"
Flow Length=16' Slope=0.0160 '/' Tc=3.4 min CN=95 Runoff=0.22 cfs 0.018 af

Subcatchment 11: 11 Runoff Area=3,725 sf 83.84% Impervious Runoff Depth>2.99"
Flow Length=18' Slope=0.0390 '/' Tc=2.6 min CN=94 Runoff=0.27 cfs 0.021 af

Subcatchment 12: 12 Runoff Area=4,318 sf 71.56% Impervious Runoff Depth>2.69"
Flow Length=34' Slope=0.0890 '/' Tc=3.1 min CN=91 Runoff=0.29 cfs 0.022 af

Subcatchment 13: 13 Runoff Area=5,669 sf 90.26% Impervious Runoff Depth>3.20"
Flow Length=18' Tc=1.3 min CN=96 Runoff=0.43 cfs 0.035 af

Subcatchment 14: 14 Runoff Area=7,934 sf 54.15% Impervious Runoff Depth>2.32"
Flow Length=60' Slope=0.0480 '/' Tc=6.2 min CN=87 Runoff=0.40 cfs 0.035 af

Subcatchment 15: 15 Runoff Area=27,197 sf 40.11% Impervious Runoff Depth>1.98"
Flow Length=170' Tc=20.7 min CN=83 Runoff=0.69 cfs 0.103 af

Subcatchment 16: 16 Runoff Area=6,490 sf 0.00% Impervious Runoff Depth>1.35"
Flow Length=36' Slope=0.1670 '/' Tc=2.5 min CN=74 Runoff=0.22 cfs 0.017 af

Reach R1: R1 Avg. Flow Depth=0.14' Max Vel=0.24 fps Inflow=0.23 cfs 0.024 af
n=0.070 L=26.0' S=0.0019 '/' Capacity=6.79 cfs Outflow=0.22 cfs 0.024 af

Reach R2: R2 Avg. Flow Depth=0.09' Max Vel=2.28 fps Inflow=0.31 cfs 0.044 af
n=0.050 L=16.0' S=0.2406 '/' Capacity=11.48 cfs Outflow=0.31 cfs 0.044 af

Reach R3: R3 Avg. Flow Depth=0.27' Max Vel=0.27 fps Inflow=0.51 cfs 0.068 af
n=0.070 L=44.0' S=0.0011 '/' Capacity=5.22 cfs Outflow=0.49 cfs 0.067 af

Reach R4: R4 Avg. Flow Depth=0.20' Max Vel=0.69 fps Inflow=0.90 cfs 0.139 af
n=0.050 L=77.0' S=0.0053 '/' Capacity=15.83 cfs Outflow=0.89 cfs 0.139 af

Reach R5: R5 Avg. Flow Depth=0.22' Max Vel=0.55 fps Inflow=0.89 cfs 0.139 af
n=0.050 L=185.0' S=0.0029 '/' Capacity=11.72 cfs Outflow=0.82 cfs 0.138 af

Reach TS1: TS1 Avg. Flow Depth=0.23' Max Vel=0.33 fps Inflow=0.40 cfs 0.035 af
n=0.120 L=110.0' S=0.0064 '/' Capacity=1.28 cfs Outflow=0.32 cfs 0.035 af

Pond DMH1: DMH1 Peak Elev=6.91' Inflow=1.00 cfs 0.252 af
15.0" Round Culvert n=0.012 L=150.0' S=0.0050 '/' Outflow=1.00 cfs 0.252 af

Pond DMH2: DMH2 Peak Elev=6.24' Inflow=1.44 cfs 0.362 af
18.0" Round Culvert n=0.012 L=178.0' S=0.0051 '/' Outflow=1.44 cfs 0.362 af

Pond DMH3: DMH3 Peak Elev=5.44' Inflow=2.10 cfs 0.527 af
18.0" Round Culvert n=0.012 L=89.0' S=0.0051 '/' Outflow=2.10 cfs 0.527 af

Pond DP1: DP1 Peak Elev=11.20' Storage=306 cf Inflow=0.08 cfs 0.009 af
Outflow=0.00 cfs 0.002 af

Pond OS-RG3: OS-RG3 Peak Elev=5.49' Inflow=0.69 cfs 0.165 af
18.0" Round Culvert n=0.012 L=5.0' S=0.0200 '/' Outflow=0.69 cfs 0.165 af

Pond PP1: Porous Pave 1 Peak Elev=10.20' Storage=1,688 cf Inflow=1.03 cfs 0.084 af
6.0" Round Culvert n=0.012 L=30.0' S=0.0237 '/' Outflow=0.28 cfs 0.079 af

Pond PP2: Porous Pave 2 Peak Elev=5.90' Storage=1,964 cf Inflow=0.96 cfs 0.076 af
6.0" Round Culvert n=0.012 L=60.0' S=0.0000 '/' Outflow=0.19 cfs 0.066 af

Pond PP3: Porous Pave 3 Peak Elev=5.79' Storage=877 cf Inflow=0.44 cfs 0.036 af
6.0" Round Culvert n=0.012 L=60.0' S=0.0000 '/' Outflow=0.12 cfs 0.032 af

Pond PP4: Porous Pave 4 Peak Elev=9.58' Storage=132 cf Inflow=0.08 cfs 0.006 af
6.0" Round Culvert n=0.012 L=47.0' S=0.0106 '/' Outflow=0.04 cfs 0.006 af

Pond PP5: Porous Pave 5 Peak Elev=9.25' Storage=179 cf Inflow=0.26 cfs 0.024 af
6.0" Round Culvert n=0.012 L=10.0' S=0.1200 '/' Outflow=0.18 cfs 0.024 af

Pond PP6: Porous Pave 6 Peak Elev=9.29' Storage=365 cf Inflow=0.27 cfs 0.021 af
6.0" Round Culvert n=0.012 L=20.0' S=0.0650 '/' Outflow=0.12 cfs 0.021 af

Pond PP7: Porous Pave 7 Peak Elev=7.02' Storage=640 cf Inflow=0.68 cfs 0.057 af
6.0" Round Culvert n=0.012 L=20.0' S=0.0050 '/' Outflow=0.32 cfs 0.055 af

Pond RG1: Rain Garden 1 Peak Elev=9.03' Storage=2,740 cf Inflow=2.10 cfs 0.263 af
Outflow=1.00 cfs 0.252 af

Pond RG2: Rain Garden 2 Peak Elev=8.17' Storage=98 cf Inflow=0.25 cfs 0.031 af
Outflow=0.23 cfs 0.031 af

Pond RG3: Rain Garden 3 Peak Elev=6.30' Storage=263 cf Inflow=0.45 cfs 0.067 af
Primary=0.40 cfs 0.066 af Secondary=0.00 cfs 0.000 af Outflow=0.40 cfs 0.066 af

Pond RG4: Rain Garden 4 Peak Elev=7.72' Storage=43 cf Inflow=0.29 cfs 0.022 af
6.0" Round Culvert n=0.012 L=35.0' S=0.0000 '/' Outflow=0.27 cfs 0.022 af

Link LB: Little Bay Inflow=3.75 cfs 0.803 af
Primary=3.75 cfs 0.803 af

Total Runoff Area = 4.212 ac Runoff Volume = 0.844 af Average Runoff Depth = 2.41"
48.67% Pervious = 2.050 ac 51.33% Impervious = 2.162 ac

A – 2

NODE LISTING – 10-YR

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: 1 Runoff Area=55,061 sf 41.31% Impervious Runoff Depth>4.26"
Flow Length=126' Tc=14.4 min CN=89 Runoff=3.52 cfs 0.449 af

Subcatchment 2: 2 Runoff Area=13,289 sf 96.31% Impervious Runoff Depth>5.18"
Flow Length=27' Slope=0.0100 '/' Tc=0.2 min CN=97 Runoff=1.57 cfs 0.132 af

Subcatchment 3: 3 Runoff Area=3,525 sf 1.02% Impervious Runoff Depth>2.78"
Flow Length=81' Slope=0.0290 '/' Tc=9.7 min CN=74 Runoff=0.18 cfs 0.019 af

Subcatchment 4: 4 Runoff Area=5,425 sf 75.94% Impervious Runoff Depth>4.59"
Flow Length=68' Slope=0.0120 '/' Tc=12.0 min CN=92 Runoff=0.40 cfs 0.048 af

Subcatchment 5: 5 Runoff Area=20,950 sf 26.66% Impervious Runoff Depth>3.24"
Flow Length=359' Tc=20.7 min CN=79 Runoff=0.87 cfs 0.130 af

Subcatchment 6: 6 Runoff Area=12,870 sf 88.41% Impervious Runoff Depth>4.94"
Flow Length=15' Slope=0.0750 '/' Tc=1.7 min CN=95 Runoff=1.50 cfs 0.122 af

Subcatchment 7: 7 Runoff Area=6,009 sf 89.13% Impervious Runoff Depth>4.94"
Flow Length=27' Slope=0.0200 '/' Tc=2.9 min CN=95 Runoff=0.69 cfs 0.057 af

Subcatchment 8: 8 Runoff Area=6,740 sf 30.82% Impervious Runoff Depth>3.45"
Flow Length=161' Slope=0.0500 '/' Tc=9.8 min CN=81 Runoff=0.43 cfs 0.044 af

Subcatchment 9: 9 Runoff Area=1,205 sf 67.63% Impervious Runoff Depth>4.38"
Flow Length=12' Slope=0.0100 '/' Tc=3.2 min CN=90 Runoff=0.13 cfs 0.010 af

Subcatchment 10: 10 Runoff Area=3,052 sf 89.19% Impervious Runoff Depth>4.94"
Flow Length=16' Slope=0.0160 '/' Tc=3.4 min CN=95 Runoff=0.34 cfs 0.029 af

Subcatchment 11: 11 Runoff Area=3,725 sf 83.84% Impervious Runoff Depth>4.83"
Flow Length=18' Slope=0.0390 '/' Tc=2.6 min CN=94 Runoff=0.42 cfs 0.034 af

Subcatchment 12: 12 Runoff Area=4,318 sf 71.56% Impervious Runoff Depth>4.49"
Flow Length=34' Slope=0.0890 '/' Tc=3.1 min CN=91 Runoff=0.47 cfs 0.037 af

Subcatchment 13: 13 Runoff Area=5,669 sf 90.26% Impervious Runoff Depth>5.06"
Flow Length=18' Tc=1.3 min CN=96 Runoff=0.66 cfs 0.055 af

Subcatchment 14: 14 Runoff Area=7,934 sf 54.15% Impervious Runoff Depth>4.06"
Flow Length=60' Slope=0.0480 '/' Tc=6.2 min CN=87 Runoff=0.69 cfs 0.062 af

Subcatchment 15: 15 Runoff Area=27,197 sf 40.11% Impervious Runoff Depth>3.63"
Flow Length=170' Tc=20.7 min CN=83 Runoff=1.27 cfs 0.189 af

Subcatchment 16: 16 Runoff Area=6,490 sf 0.00% Impervious Runoff Depth>2.79"
Flow Length=36' Slope=0.1670 '/' Tc=2.5 min CN=74 Runoff=0.47 cfs 0.035 af

Reach R1: R1 Avg. Flow Depth=0.21' Max Vel=0.31 fps Inflow=0.43 cfs 0.044 af
n=0.070 L=26.0' S=0.0019 '/' Capacity=6.79 cfs Outflow=0.42 cfs 0.044 af

Reach R2: R2 Avg. Flow Depth=0.12' Max Vel=2.68 fps Inflow=0.52 cfs 0.072 af
n=0.050 L=16.0' S=0.2406 '/' Capacity=11.48 cfs Outflow=0.52 cfs 0.072 af

Reach R3: R3 Avg. Flow Depth=0.37' Max Vel=0.33 fps Inflow=0.91 cfs 0.116 af
n=0.070 L=44.0' S=0.0011 '/' Capacity=5.22 cfs Outflow=0.89 cfs 0.116 af

Reach R4: R4 Avg. Flow Depth=0.27' Max Vel=0.83 fps Inflow=1.54 cfs 0.240 af
n=0.050 L=77.0' S=0.0053 '/' Capacity=15.83 cfs Outflow=1.53 cfs 0.240 af

Reach R5: R5 Avg. Flow Depth=0.31' Max Vel=0.67 fps Inflow=1.53 cfs 0.240 af
n=0.050 L=185.0' S=0.0029 '/' Capacity=11.72 cfs Outflow=1.45 cfs 0.239 af

Reach TS1: TS1 Avg. Flow Depth=0.32' Max Vel=0.40 fps Inflow=0.69 cfs 0.062 af
n=0.120 L=110.0' S=0.0064 '/' Capacity=1.28 cfs Outflow=0.57 cfs 0.061 af

Pond DMH1: DMH1 Peak Elev=6.95' Inflow=1.08 cfs 0.436 af
15.0" Round Culvert n=0.012 L=150.0' S=0.0050 '/' Outflow=1.08 cfs 0.436 af

Pond DMH2: DMH2 Peak Elev=6.34' Inflow=1.79 cfs 0.620 af
18.0" Round Culvert n=0.012 L=178.0' S=0.0051 '/' Outflow=1.79 cfs 0.620 af

Pond DMH3: DMH3 Peak Elev=5.62' Inflow=3.04 cfs 0.912 af
18.0" Round Culvert n=0.012 L=89.0' S=0.0051 '/' Outflow=3.04 cfs 0.912 af

Pond DP1: DP1 Peak Elev=11.22' Storage=328 cf Inflow=0.18 cfs 0.019 af
Outflow=0.04 cfs 0.012 af

Pond OS-RG3: OS-RG3 Peak Elev=5.69' Inflow=1.29 cfs 0.291 af
18.0" Round Culvert n=0.012 L=5.0' S=0.0200 '/' Outflow=1.29 cfs 0.291 af

Pond PP1: Porous Pave 1 Peak Elev=10.36' Storage=2,065 cf Inflow=1.57 cfs 0.132 af
6.0" Round Culvert n=0.012 L=30.0' S=0.0237 '/' Outflow=0.41 cfs 0.125 af

Pond PP2: Porous Pave 2 Peak Elev=6.10' Storage=2,461 cf Inflow=1.50 cfs 0.122 af
6.0" Round Culvert n=0.012 L=60.0' S=0.0000 '/' Outflow=0.27 cfs 0.110 af

Pond PP3: Porous Pave 3 Peak Elev=5.92' Storage=1,046 cf Inflow=0.69 cfs 0.057 af
6.0" Round Culvert n=0.012 L=60.0' S=0.0000 '/' Outflow=0.20 cfs 0.053 af

Pond PP4: Porous Pave 4 Peak Elev=9.64' Storage=148 cf Inflow=0.13 cfs 0.010 af
6.0" Round Culvert n=0.012 L=47.0' S=0.0106 '/' Outflow=0.07 cfs 0.010 af

Pond PP5: Porous Pave 5 Peak Elev=9.37' Storage=212 cf Inflow=0.41 cfs 0.039 af
6.0" Round Culvert n=0.012 L=10.0' S=0.1200 '/' Outflow=0.30 cfs 0.038 af

Pond PP6: Porous Pave 6 Peak Elev=9.38' Storage=425 cf Inflow=0.42 cfs 0.034 af
6.0" Round Culvert n=0.012 L=20.0' S=0.0650 '/' Outflow=0.22 cfs 0.034 af

Pond PP7: Porous Pave 7 Peak Elev=7.23' Storage=815 cf Inflow=1.06 cfs 0.092 af
6.0" Round Culvert n=0.012 L=20.0' S=0.0050 '/' Outflow=0.47 cfs 0.090 af

Pond RG1: Rain Garden 1 Peak Elev=9.43' Storage=4,630 cf Inflow=3.52 cfs 0.449 af
Outflow=1.08 cfs 0.436 af

Pond RG2: Rain Garden 2 Peak Elev=8.39' Storage=124 cf Inflow=0.40 cfs 0.059 af
Outflow=0.36 cfs 0.059 af

Pond RG3: Rain Garden 3 Peak Elev=7.55' Storage=354 cf Inflow=0.87 cfs 0.130 af
Primary=0.82 cfs 0.129 af Secondary=0.00 cfs 0.000 af Outflow=0.82 cfs 0.129 af

Pond RG4: Rain Garden 4 Peak Elev=7.99' Storage=61 cf Inflow=0.47 cfs 0.037 af
6.0" Round Culvert n=0.012 L=35.0' S=0.0000 '/' Outflow=0.43 cfs 0.037 af

Link LB: Little Bay Inflow=6.01 cfs 1.400 af
Primary=6.01 cfs 1.400 af

Total Runoff Area = 4.212 ac Runoff Volume = 1.450 af Average Runoff Depth = 4.13"
48.67% Pervious = 2.050 ac 51.33% Impervious = 2.162 ac

A – 2

10-YR STORM SUMMARY

Summary for Subcatchment 1: 1

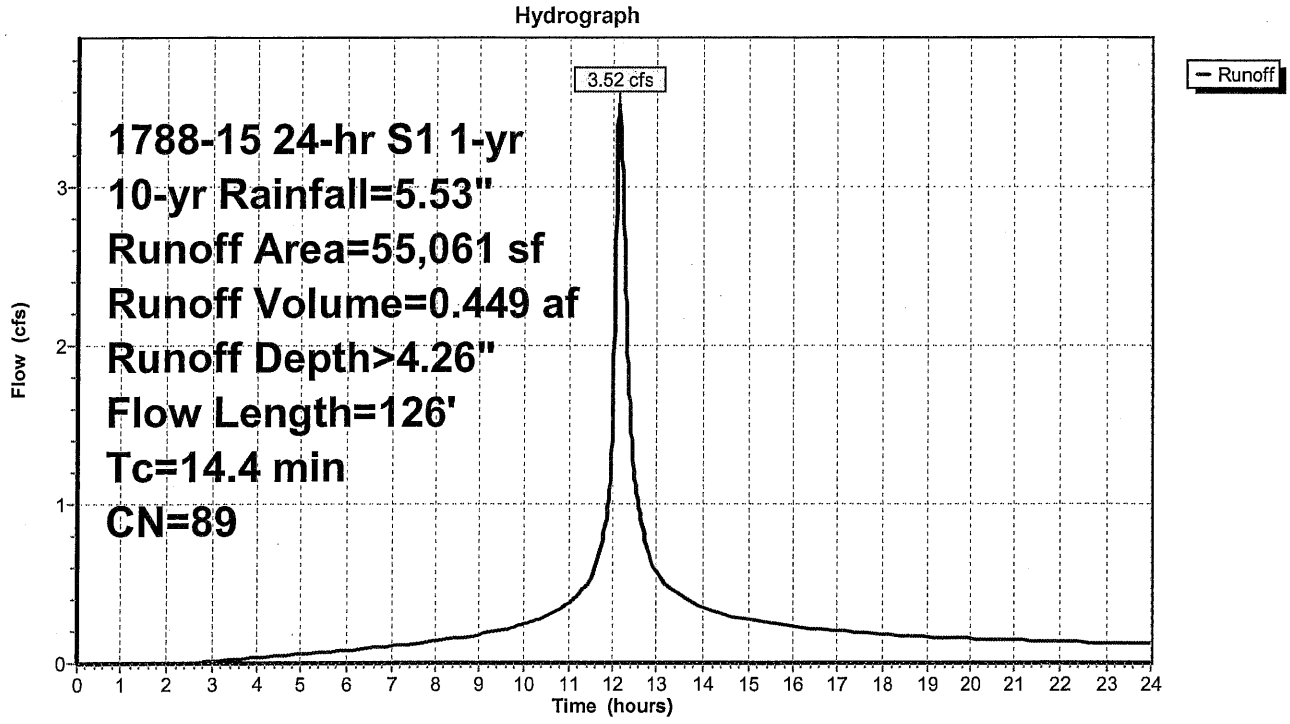
Runoff = 3.52 cfs @ 12.14 hrs, Volume= 0.449 af, Depth> 4.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

Area (sf)	CN	Description
4,002	70	Woods, Good, HSG C
15,736	74	>75% Grass cover, Good, HSG C
12,578	96	Gravel surface, HSG C
13,905	98	Paved parking, HSG C
8,840	98	Roofs, HSG C
55,061	89	Weighted Average
32,316		58.69% Pervious Area
22,745		41.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	48	0.0830	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.66"
8.1	78	0.0420	0.16		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.66"
14.4	126	Total			

Subcatchment 1: 1



Summary for Subcatchment 2: 2

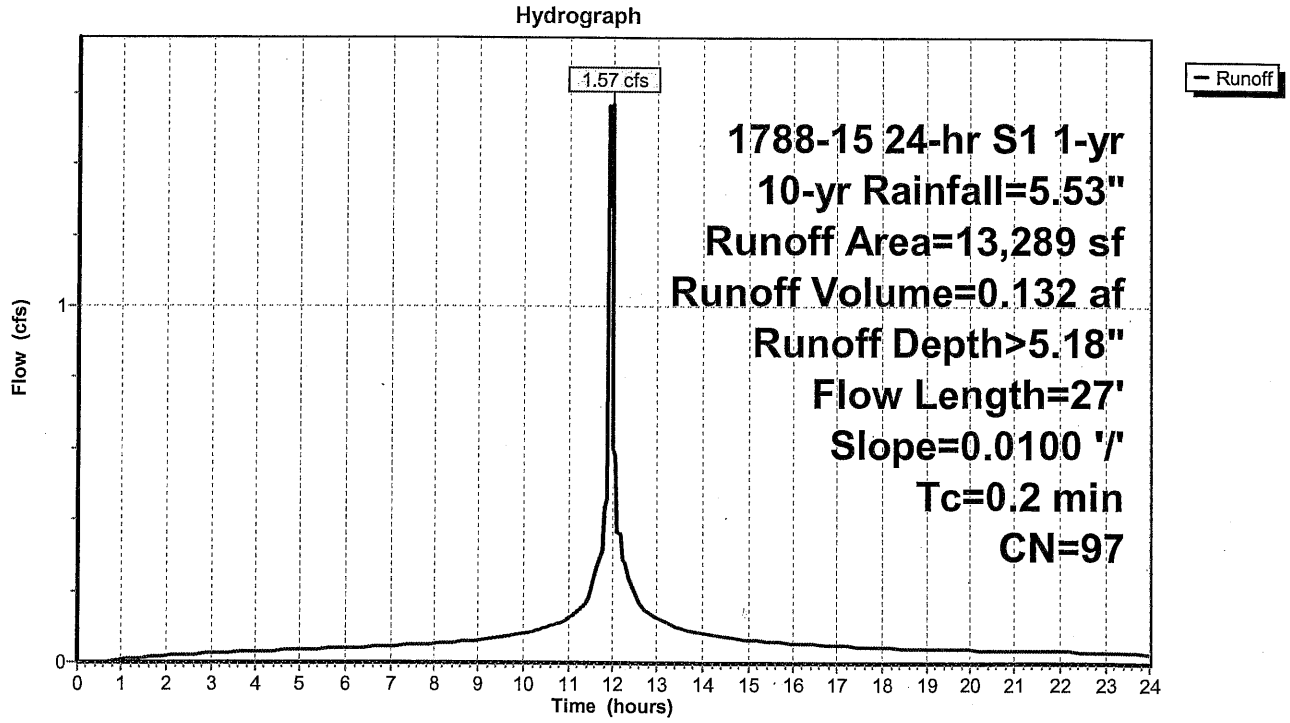
Runoff = 1.57 cfs @ 11.99 hrs, Volume= 0.132 af, Depth> 5.18"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

Area (sf)	CN	Description
491	74	>75% Grass cover, Good, HSG C
12,798	98	Paved parking, HSG C
13,289	97	Weighted Average
491		3.69% Pervious Area
12,798		96.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	27	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps

Subcatchment 2: 2



Summary for Subcatchment 3: 3

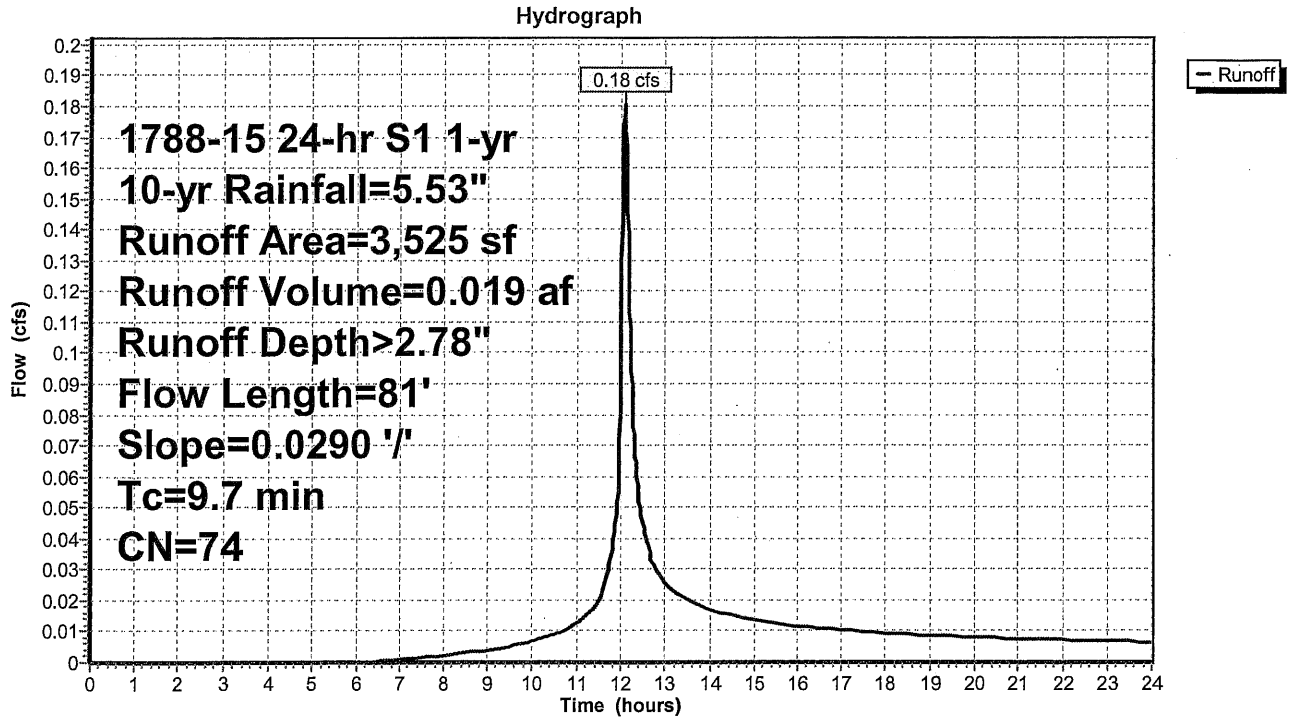
Runoff = 0.18 cfs @ 12.08 hrs, Volume= 0.019 af, Depth> 2.78"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

Area (sf)	CN	Description
3,489	74	>75% Grass cover, Good, HSG C
36	98	Paved parking, HSG C
3,525	74	Weighted Average
3,489		98.98% Pervious Area
36		1.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	81	0.0290	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.66"

Subcatchment 3: 3



Summary for Subcatchment 4: 4

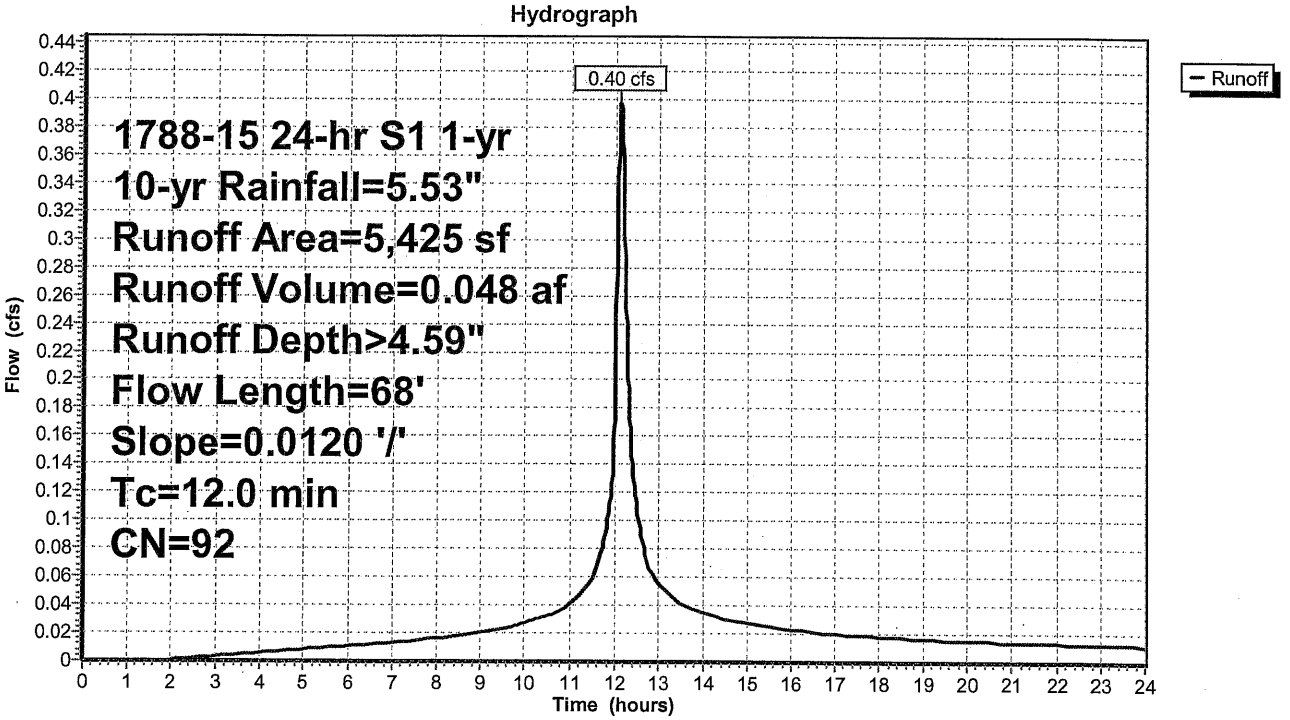
Runoff = 0.40 cfs @ 12.11 hrs, Volume= 0.048 af, Depth> 4.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

Area (sf)	CN	Description
1,305	74	>75% Grass cover, Good, HSG C
4,120	98	Roofs, HSG C
5,425	92	Weighted Average
1,305		24.06% Pervious Area
4,120		75.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	68	0.0120	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.66"

Subcatchment 4: 4



Summary for Subcatchment 5: 5

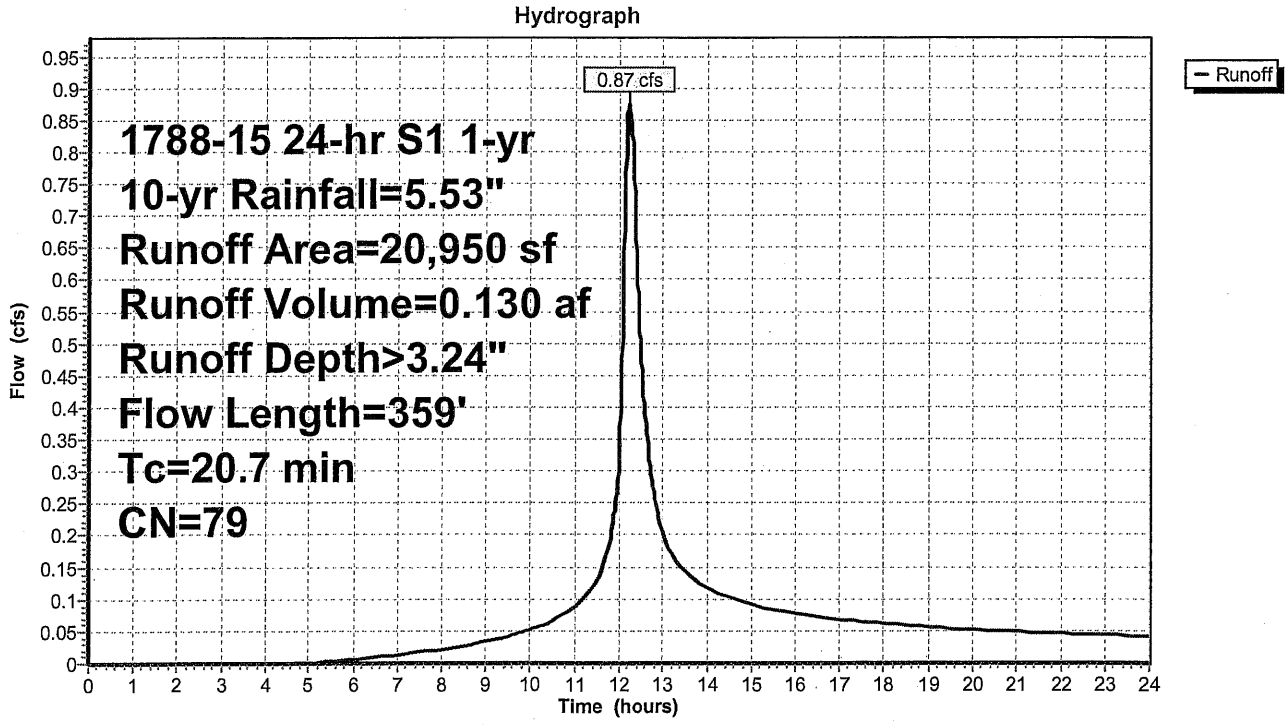
Runoff = 0.87 cfs @ 12.23 hrs, Volume= 0.130 af, Depth> 3.24"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

Area (sf)	CN	Description
7,010	70	Woods, Good, HSG C
8,355	74	>75% Grass cover, Good, HSG C
1,465	98	Paved parking, HSG C
4,120	98	Roofs, HSG C
20,950	79	Weighted Average
15,365		73.34% Pervious Area
5,585		26.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	32	0.1700	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.66"
12.9	68	0.0100	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.66"
4.4	259	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.7	359	Total			

Subcatchment 5: 5



Summary for Subcatchment 6: 6

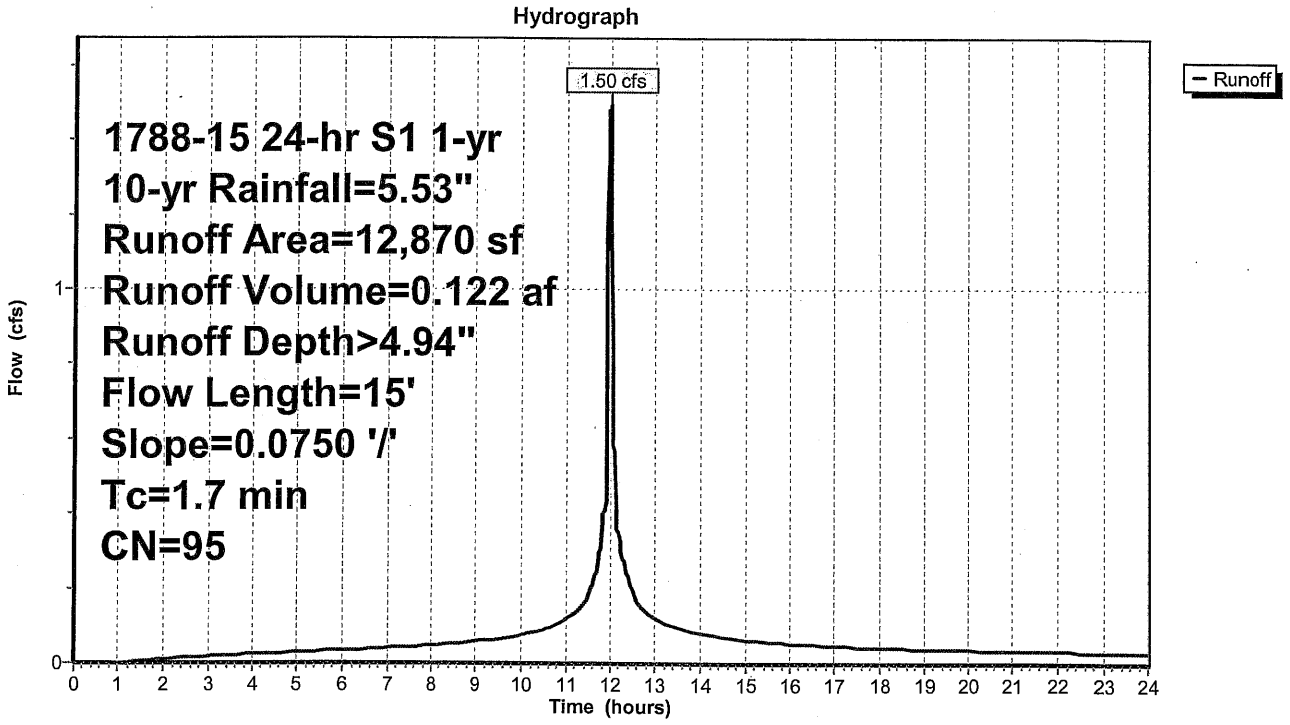
Runoff = 1.50 cfs @ 12.00 hrs, Volume= 0.122 af, Depth> 4.94"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

Area (sf)	CN	Description
1,491	74	>75% Grass cover, Good, HSG C
11,379	98	Paved parking, HSG C
12,870	95	Weighted Average
1,491		11.59% Pervious Area
11,379		88.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	15	0.0750	0.15		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.66"

Subcatchment 6: 6



Summary for Subcatchment 7: 7

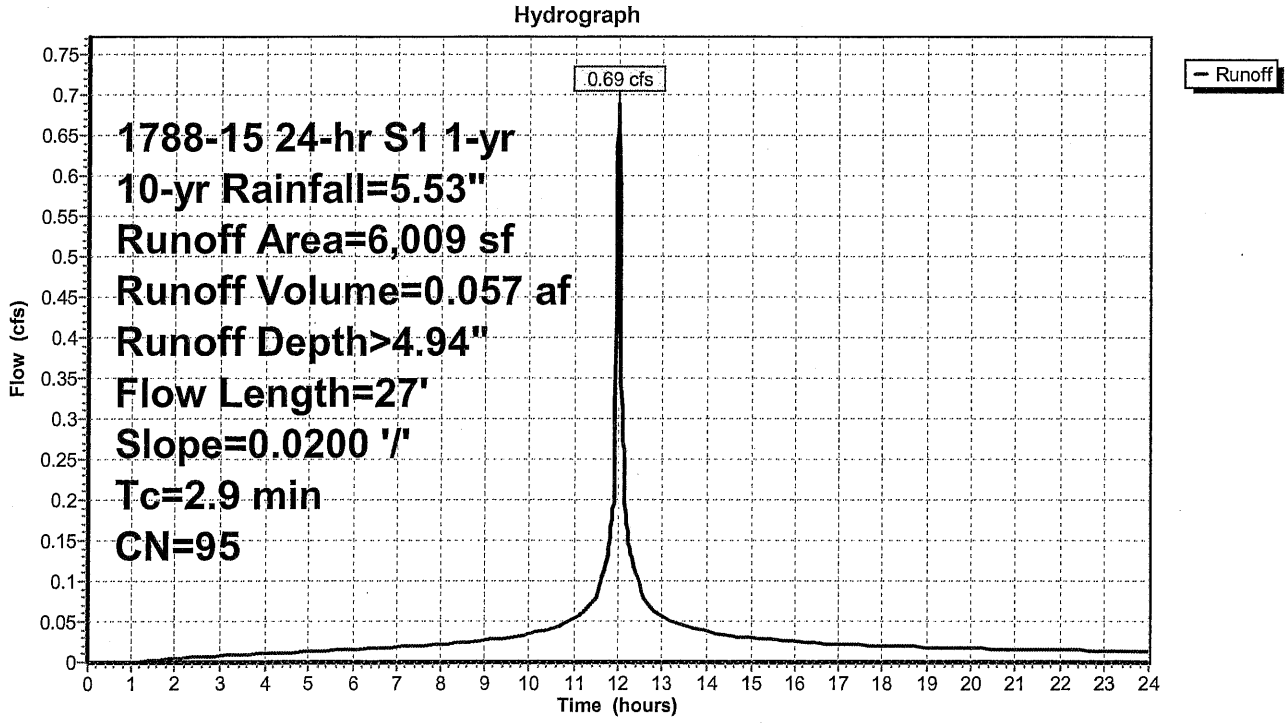
Runoff = 0.69 cfs @ 12.01 hrs, Volume= 0.057 af, Depth> 4.94"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

Area (sf)	CN	Description
653	74	>75% Grass cover, Good, HSG C
5,356	98	Paved parking, HSG C
6,009	95	Weighted Average
653		10.87% Pervious Area
5,356		89.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	14	0.0200	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.66"
0.0	7	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	6	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	27	Total			

Subcatchment 7: 7



Summary for Subcatchment 8: 8

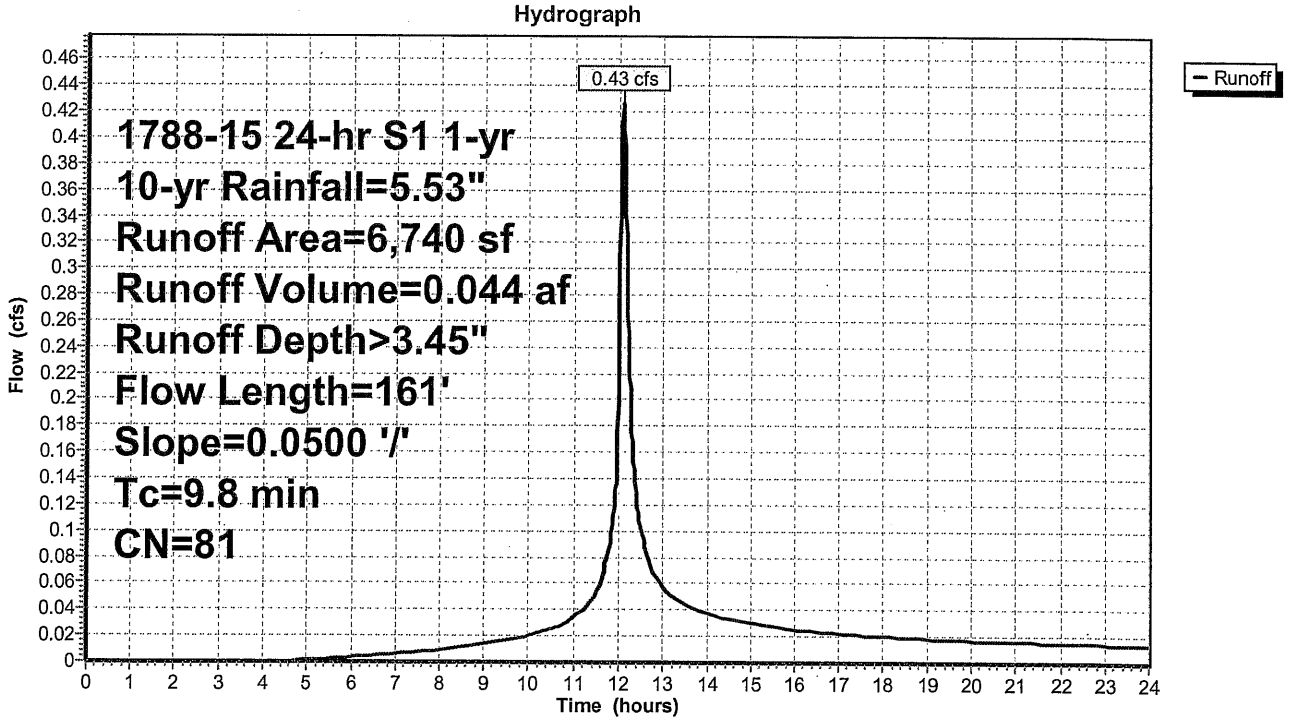
Runoff = 0.43 cfs @ 12.08 hrs, Volume= 0.044 af, Depth> 3.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

Area (sf)	CN	Description
4,663	74	>75% Grass cover, Good, HSG C
1,277	98	Paved parking, HSG C
800	98	Roofs, HSG C
6,740	81	Weighted Average
4,663		69.18% Pervious Area
2,077		30.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0500	0.18		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.66"
0.6	61	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.8	161	Total			

Subcatchment 8: 8



Summary for Subcatchment 9: 9

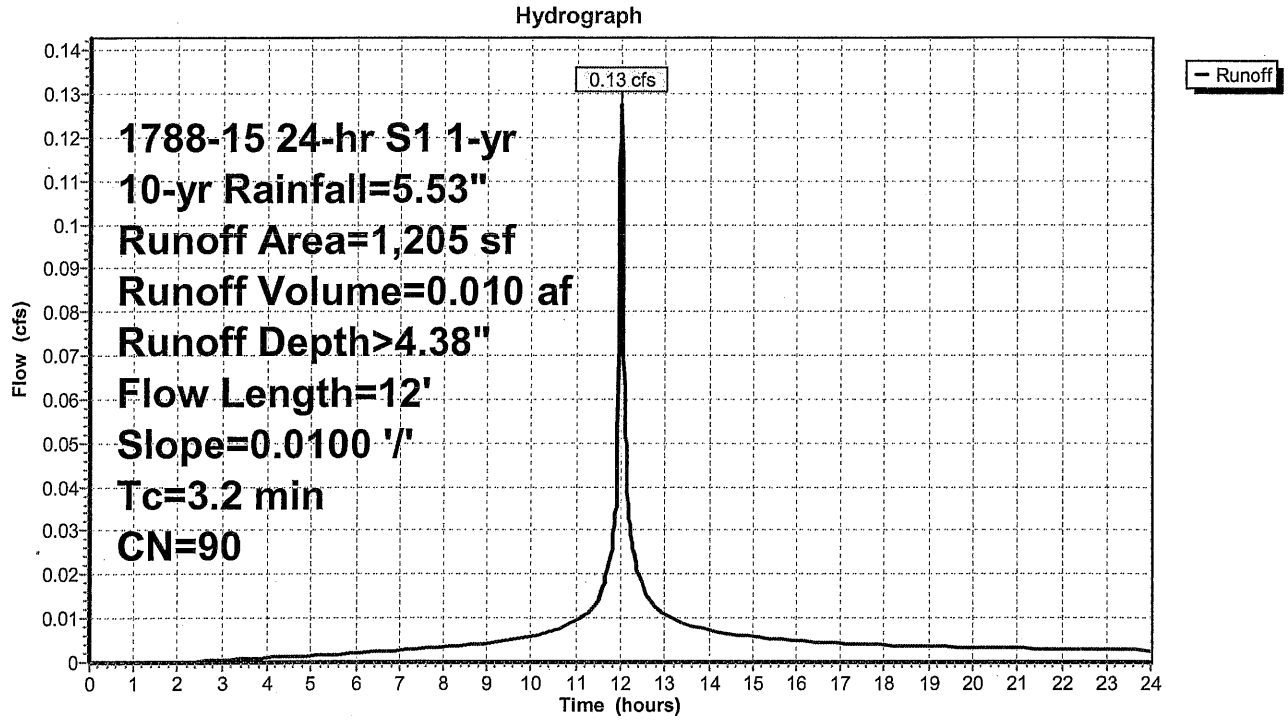
Runoff = 0.13 cfs @ 12.01 hrs, Volume= 0.010 af, Depth> 4.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

Area (sf)	CN	Description
390	74	>75% Grass cover, Good, HSG C
815	98	Paved parking, HSG C
1,205	90	Weighted Average
390		32.37% Pervious Area
815		67.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	12	0.0100	0.06		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.66"

Subcatchment 9: 9



Summary for Subcatchment 10: 10

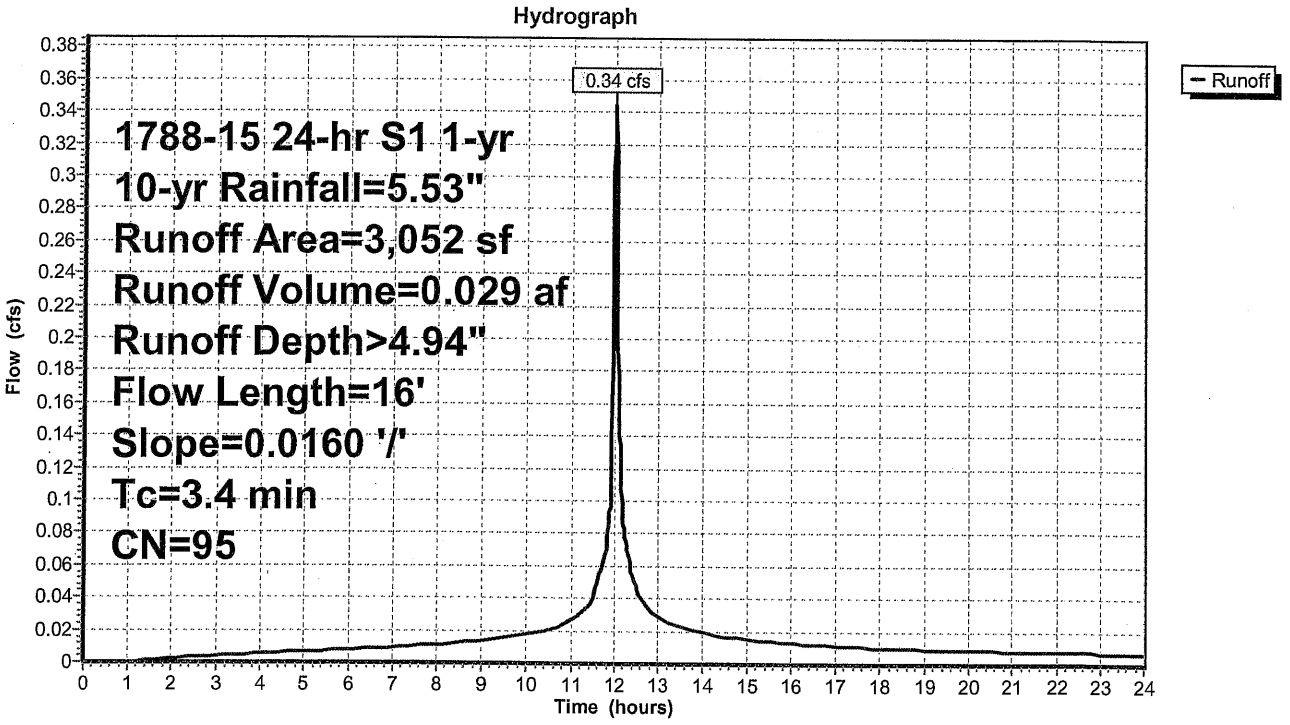
Runoff = 0.34 cfs @ 12.01 hrs, Volume= 0.029 af, Depth> 4.94"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

Area (sf)	CN	Description
330	74	>75% Grass cover, Good, HSG C
2,722	98	Paved parking, HSG C
3,052	95	Weighted Average
330		10.81% Pervious Area
2,722		89.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	16	0.0160	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.66"

Subcatchment 10: 10



Summary for Subcatchment 11: 11

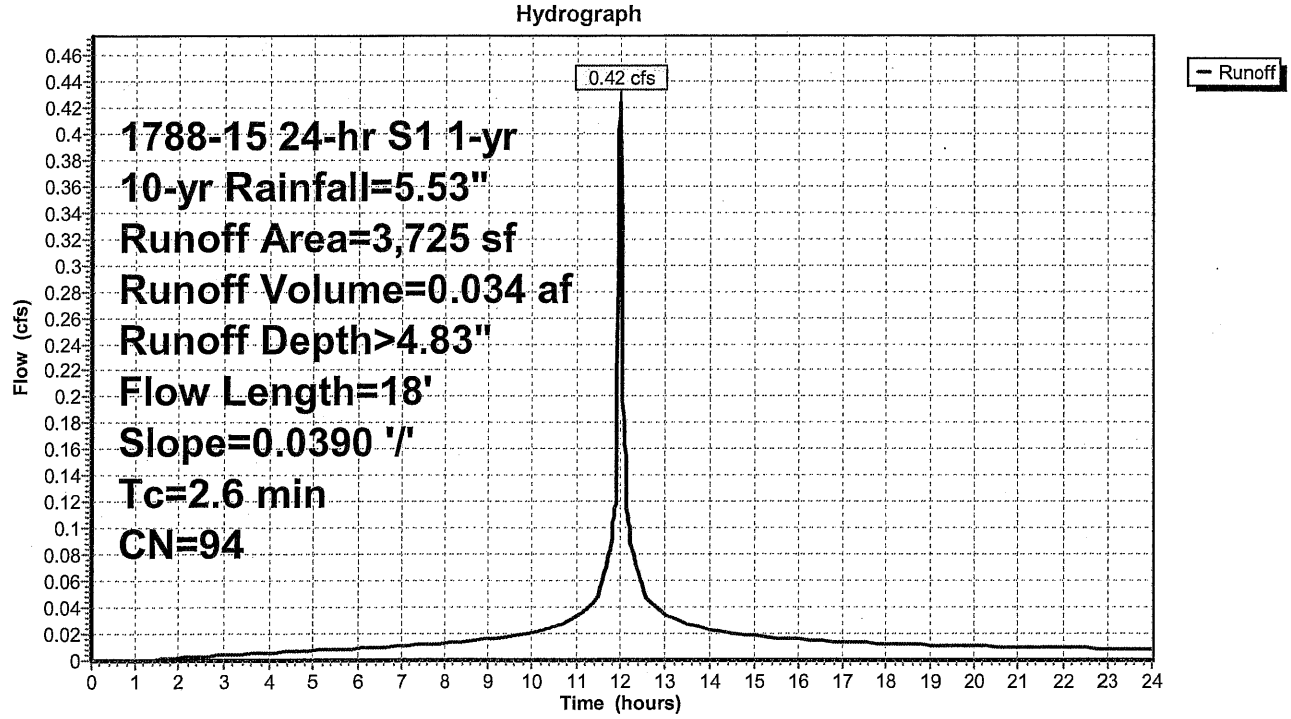
Runoff = 0.42 cfs @ 12.00 hrs, Volume= 0.034 af, Depth> 4.83"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

Area (sf)	CN	Description
602	74	>75% Grass cover, Good, HSG C
3,123	98	Paved parking, HSG C
3,725	94	Weighted Average
602		16.16% Pervious Area
3,123		83.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	18	0.0390	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.66"

Subcatchment 11: 11



Summary for Subcatchment 12: 12

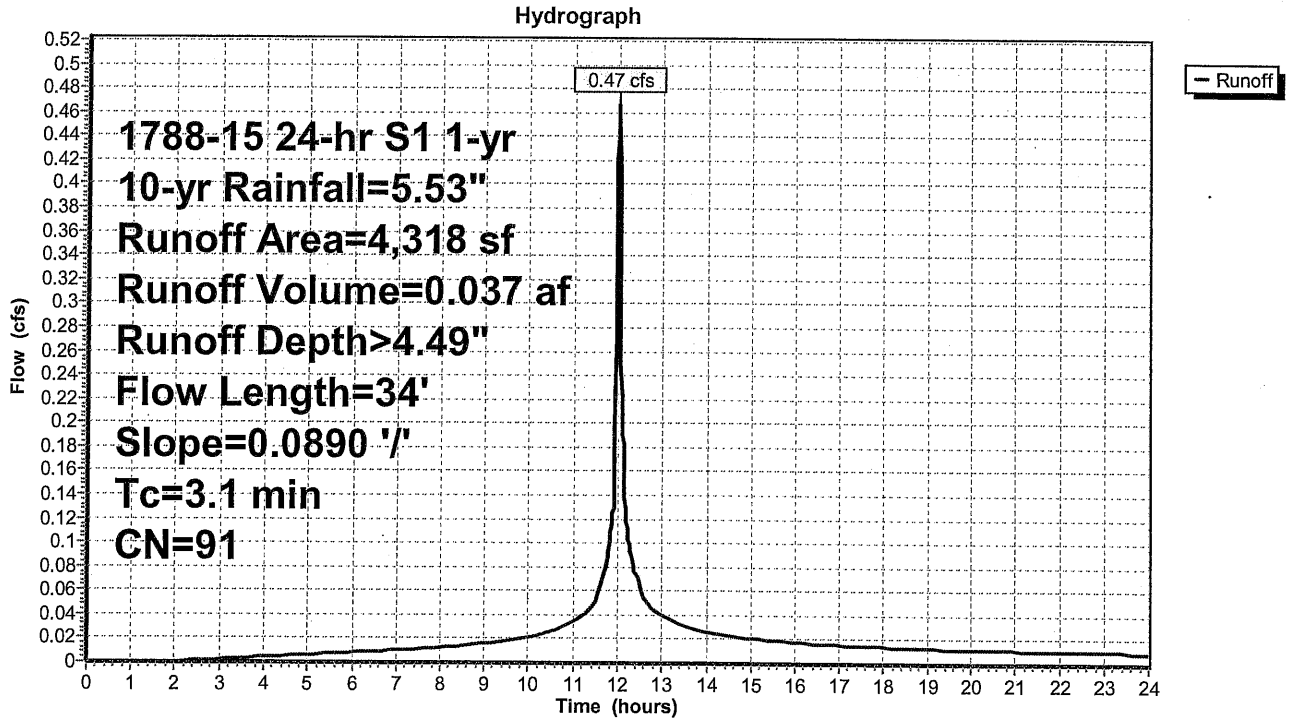
Runoff = 0.47 cfs @ 12.01 hrs, Volume= 0.037 af, Depth> 4.49"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

Area (sf)	CN	Description
1,228	74	>75% Grass cover, Good, HSG C
3,090	98	Roofs, HSG C
4,318	91	Weighted Average
1,228		28.44% Pervious Area
3,090		71.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	34	0.0890	0.18		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.66"

Subcatchment 12: 12



Summary for Subcatchment 13: 13

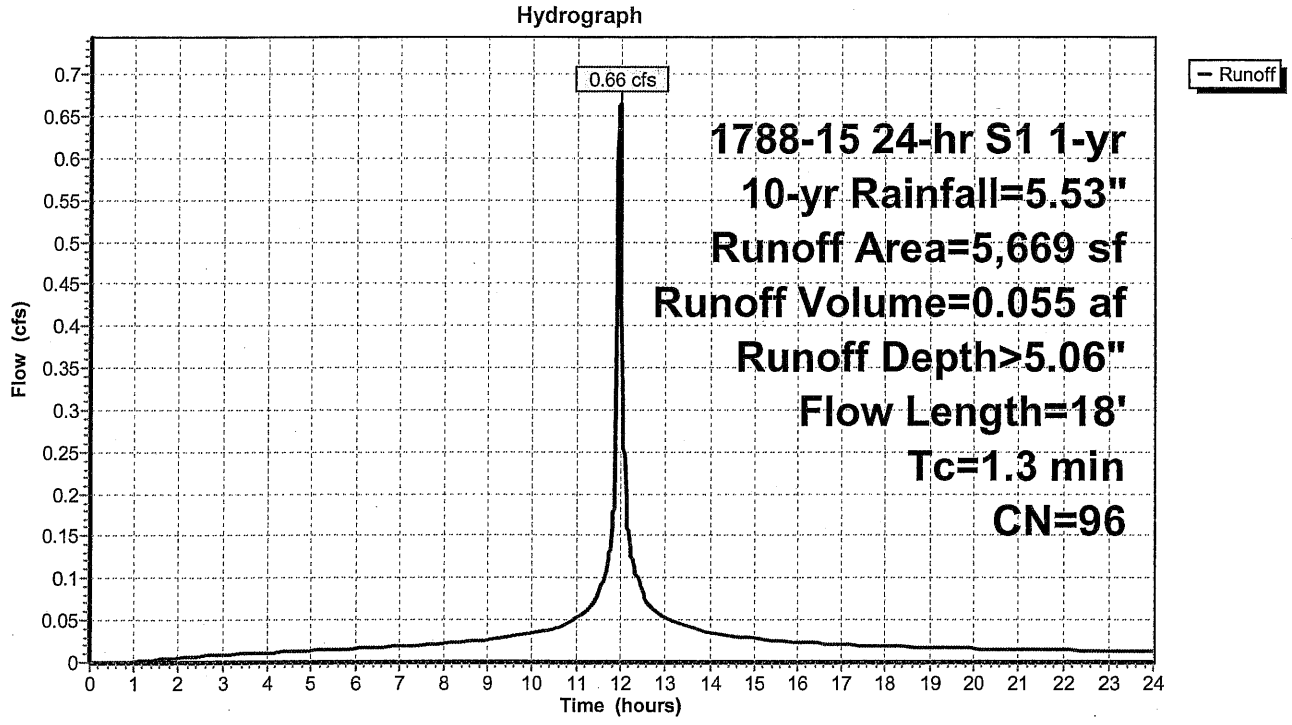
Runoff = 0.66 cfs @ 11.99 hrs, Volume= 0.055 af, Depth> 5.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

Area (sf)	CN	Description
552	74	>75% Grass cover, Good, HSG C
5,117	98	Paved parking, HSG C
5,669	96	Weighted Average
552		9.74% Pervious Area
5,117		90.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	11	0.0750	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.66"
0.0	7	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	18	Total			

Subcatchment 13: 13



Summary for Subcatchment 14: 14

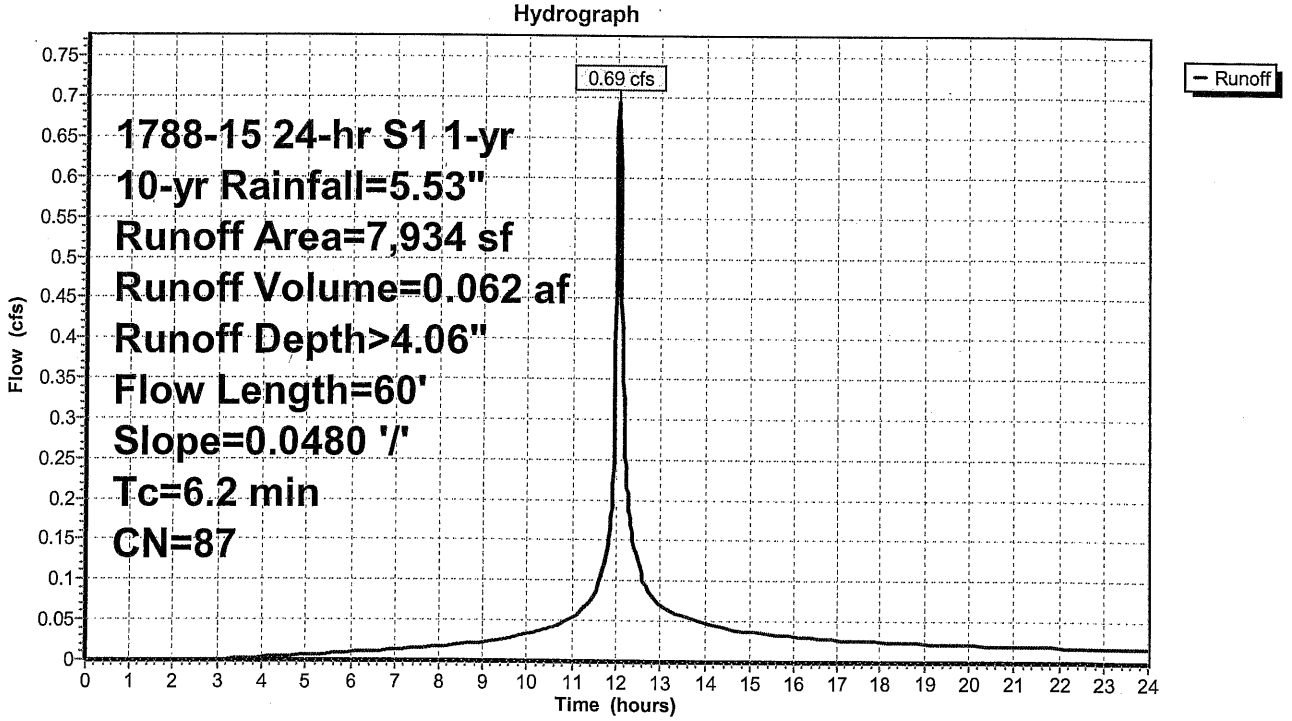
Runoff = 0.69 cfs @ 12.04 hrs, Volume= 0.062 af, Depth> 4.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

Area (sf)	CN	Description
3,638	74	>75% Grass cover, Good, HSG C
176	98	Paved parking, HSG C
4,120	98	Roofs, HSG C
7,934	87	Weighted Average
3,638		45.85% Pervious Area
4,296		54.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	60	0.0480	0.16		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.66"

Subcatchment 14: 14



Summary for Subcatchment 15: 15

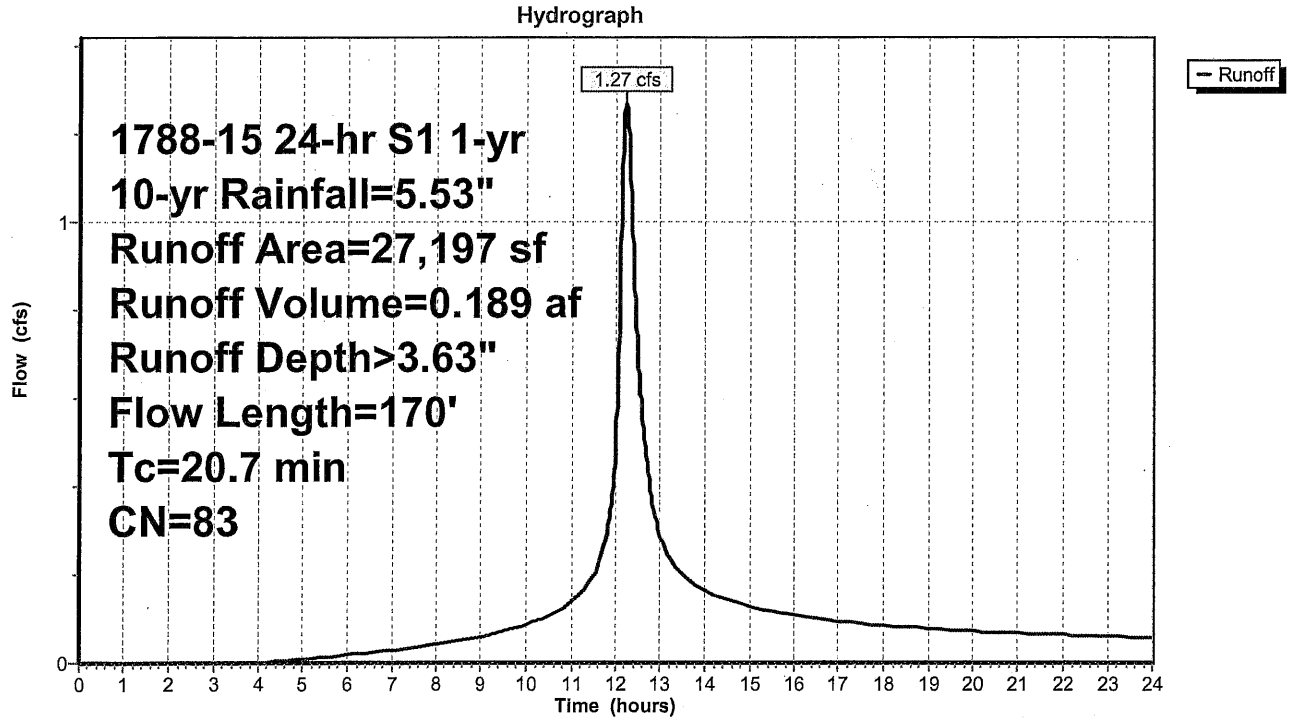
Runoff = 1.27 cfs @ 12.23 hrs, Volume= 0.189 af, Depth> 3.63"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

Area (sf)	CN	Description
3,284	70	Woods, Good, HSG C
13,004	74	>75% Grass cover, Good, HSG C
10,909	98	Paved parking, HSG C
27,197	83	Weighted Average
16,288		59.89% Pervious Area
10,909		40.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	28	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.66"
10.3	72	0.0200	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.66"
0.8	70	0.0450	1.48		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.7	170	Total			

Subcatchment 15: 15



Summary for Subcatchment 16: 16

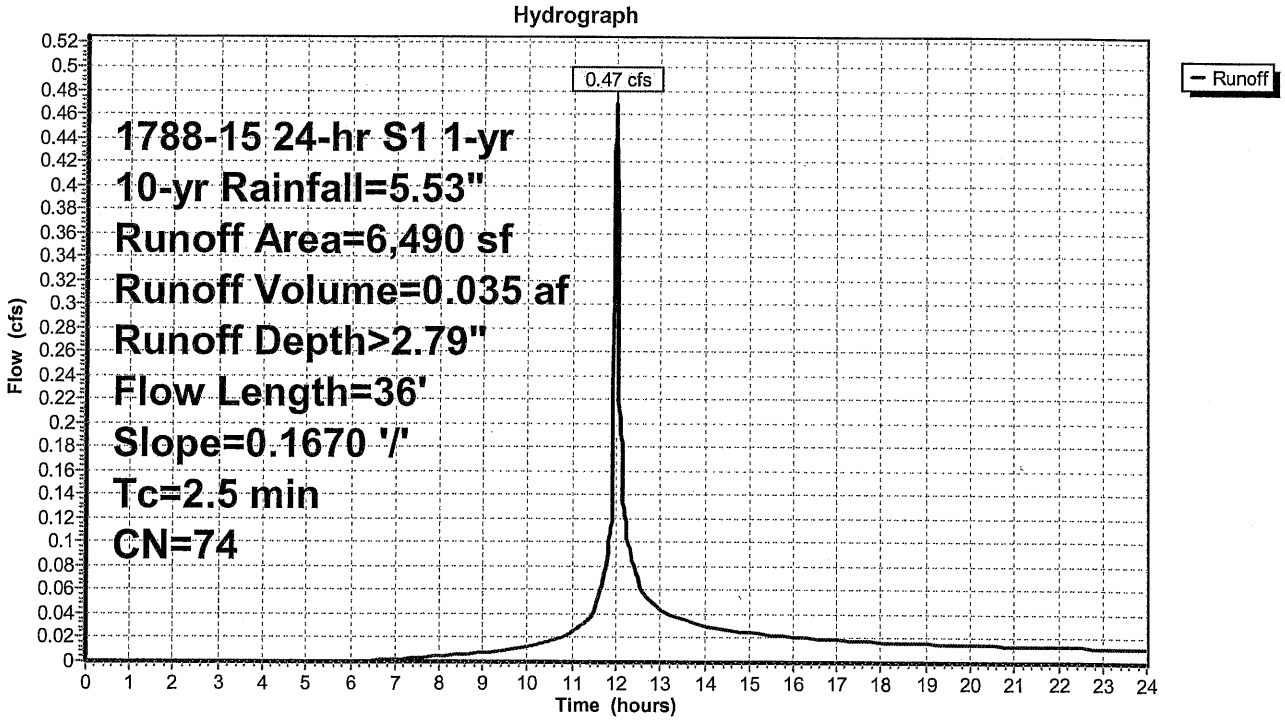
Runoff = 0.47 cfs @ 12.01 hrs, Volume= 0.035 af, Depth> 2.79"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1788-15 24-hr S1 1-yr 10-yr Rainfall=5.53"

Area (sf)	CN	Description
6,490	74	>75% Grass cover, Good, HSG C
6,490		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	36	0.1670	0.24		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.66"

Subcatchment 16: 16



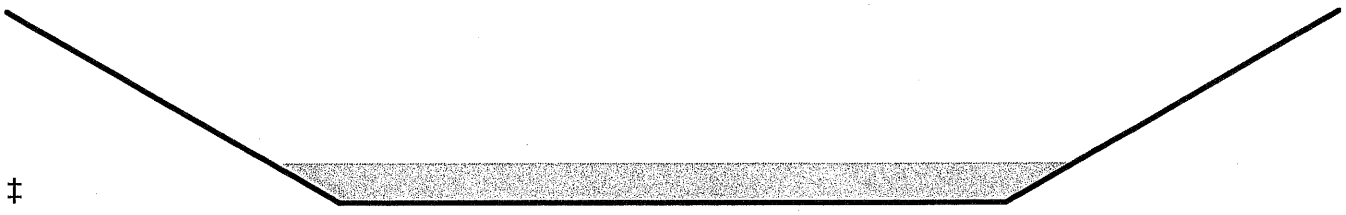
Summary for Reach R1: R1

Inflow Area = 0.155 ac, 30.82% Impervious, Inflow Depth > 3.45" for 10-yr event
Inflow = 0.43 cfs @ 12.08 hrs, Volume= 0.044 af
Outflow = 0.42 cfs @ 12.10 hrs, Volume= 0.044 af, Atten= 2%, Lag= 1.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.31 fps, Min. Travel Time= 1.4 min
Avg. Velocity = 0.10 fps, Avg. Travel Time= 4.4 min

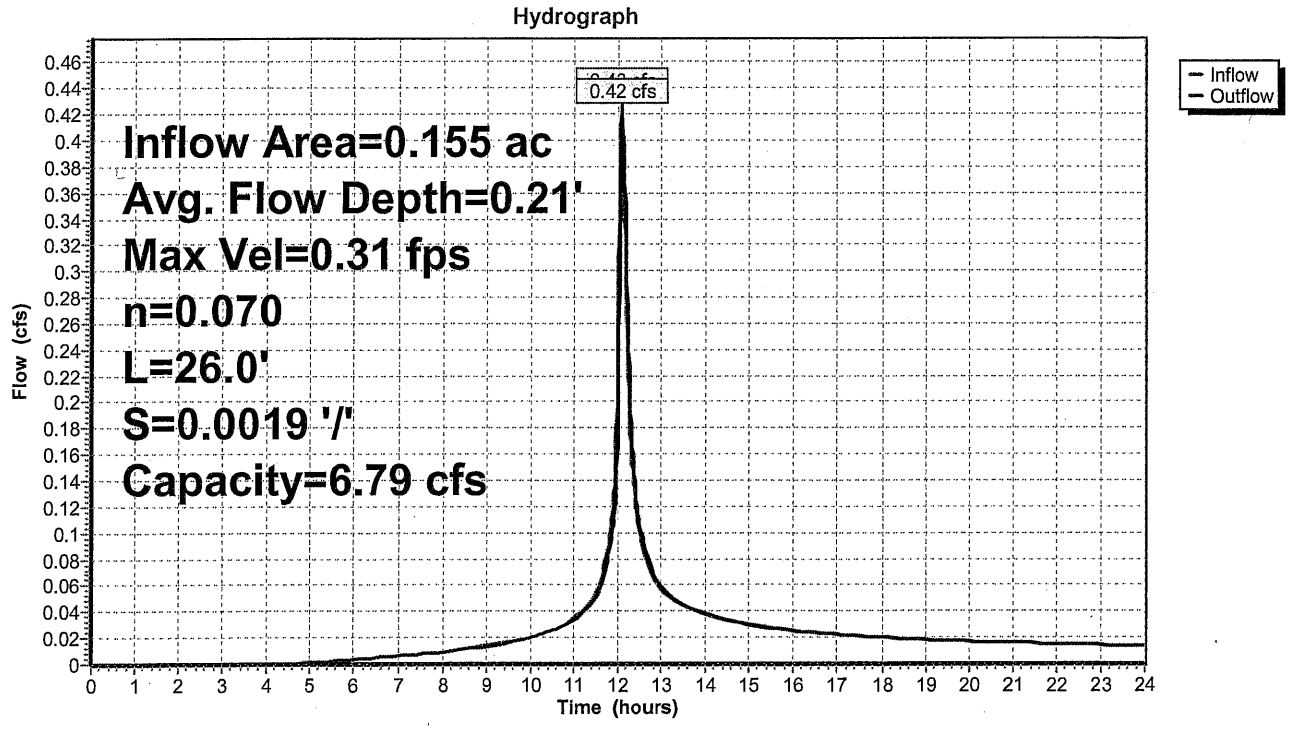
Peak Storage= 36 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 9.0 sf, Capacity= 6.79 cfs

6.00' x 1.00' deep channel, n= 0.070
Side Slope Z-value= 3.0 '/' Top Width= 12.00'
Length= 26.0' Slope= 0.0019 '/'
Inlet Invert= 3.95', Outlet Invert= 3.90'



‡

Reach R1: R1



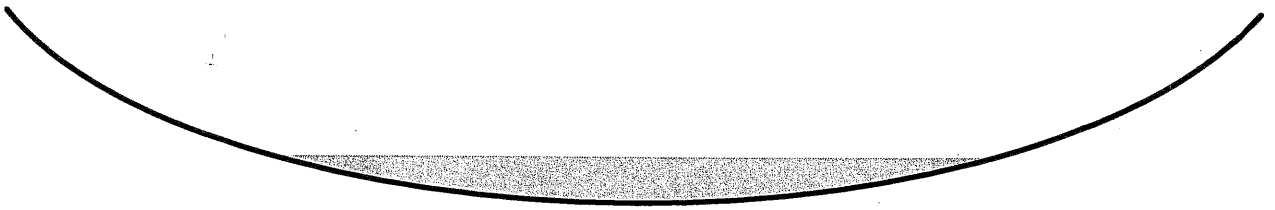
Summary for Reach R2: R2

Inflow Area = 0.183 ac, 83.44% Impervious, Inflow Depth > 4.71" for 10-yr event
Inflow = 0.52 cfs @ 12.05 hrs, Volume= 0.072 af
Outflow = 0.52 cfs @ 12.05 hrs, Volume= 0.072 af, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.68 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.09 fps, Avg. Travel Time= 0.2 min

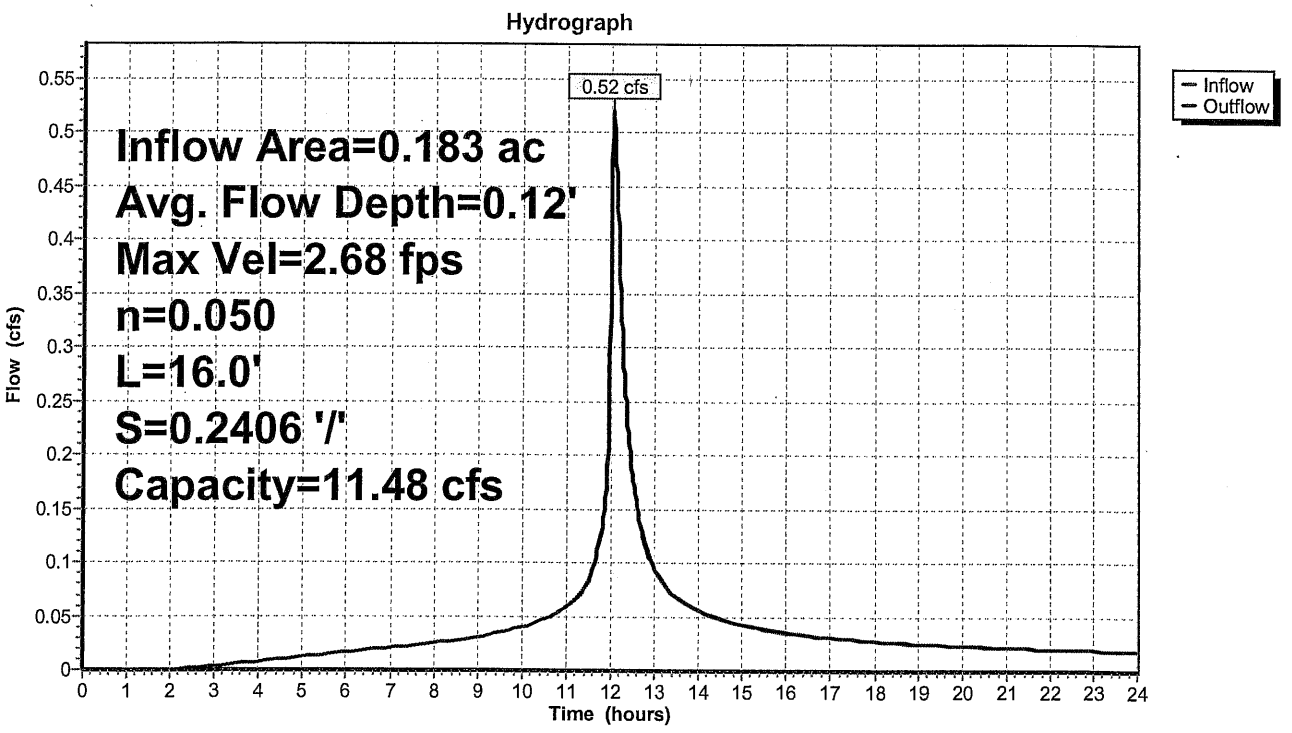
Peak Storage= 3 cf @ 12.05 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 0.50' Flow Area= 1.7 sf, Capacity= 11.48 cfs

5.00' x 0.50' deep Parabolic Channel, n= 0.050 Earth, long dense weeds
Length= 16.0' Slope= 0.2406 '/'
Inlet Invert= 7.75', Outlet Invert= 3.90'



‡

Reach R2: R2



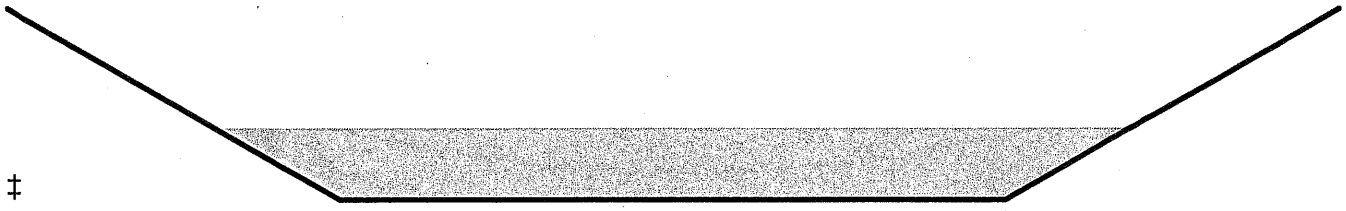
Summary for Reach R3: R3

Inflow Area = 0.338 ac, 59.35% Impervious, Inflow Depth > 4.13" for 10-yr event
Inflow = 0.91 cfs @ 12.08 hrs, Volume= 0.116 af
Outflow = 0.89 cfs @ 12.11 hrs, Volume= 0.116 af, Atten= 3%, Lag= 1.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.33 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 0.11 fps, Avg. Travel Time= 6.6 min

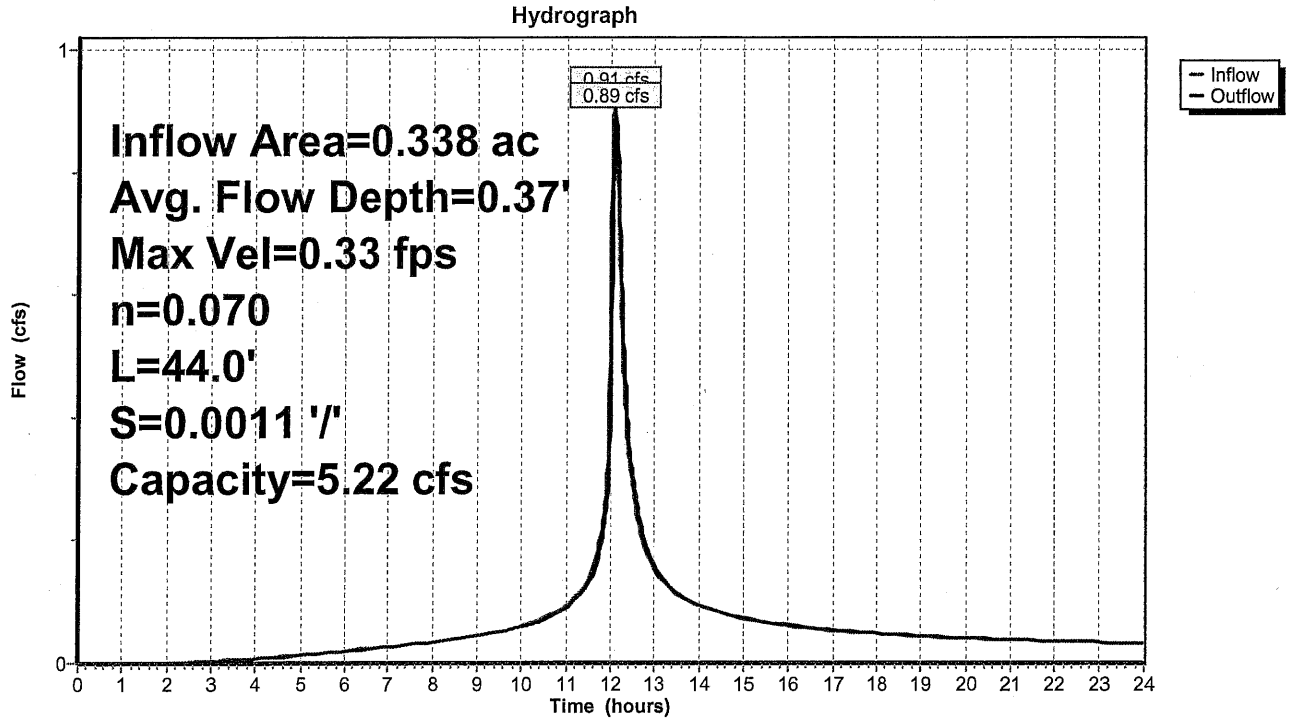
Peak Storage= 117 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.37'
Bank-Full Depth= 1.00' Flow Area= 9.0 sf, Capacity= 5.22 cfs

6.00' x 1.00' deep channel, n= 0.070
Side Slope Z-value= 3.0 '/' Top Width= 12.00'
Length= 44.0' Slope= 0.0011 '/'
Inlet Invert= 3.90', Outlet Invert= 3.85'



‡

Reach R3: R3



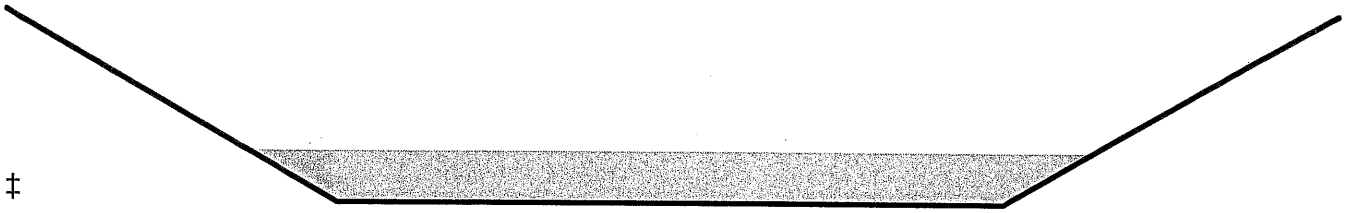
Summary for Reach R4: R4

Inflow Area = 0.716 ac, 54.31% Impervious, Inflow Depth > 4.03" for 10-yr event
Inflow = 1.54 cfs @ 12.11 hrs, Volume= 0.240 af
Outflow = 1.53 cfs @ 12.12 hrs, Volume= 0.240 af, Atten= 1%, Lag= 0.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.83 fps, Min. Travel Time= 1.5 min
Avg. Velocity = 0.29 fps, Avg. Travel Time= 4.4 min

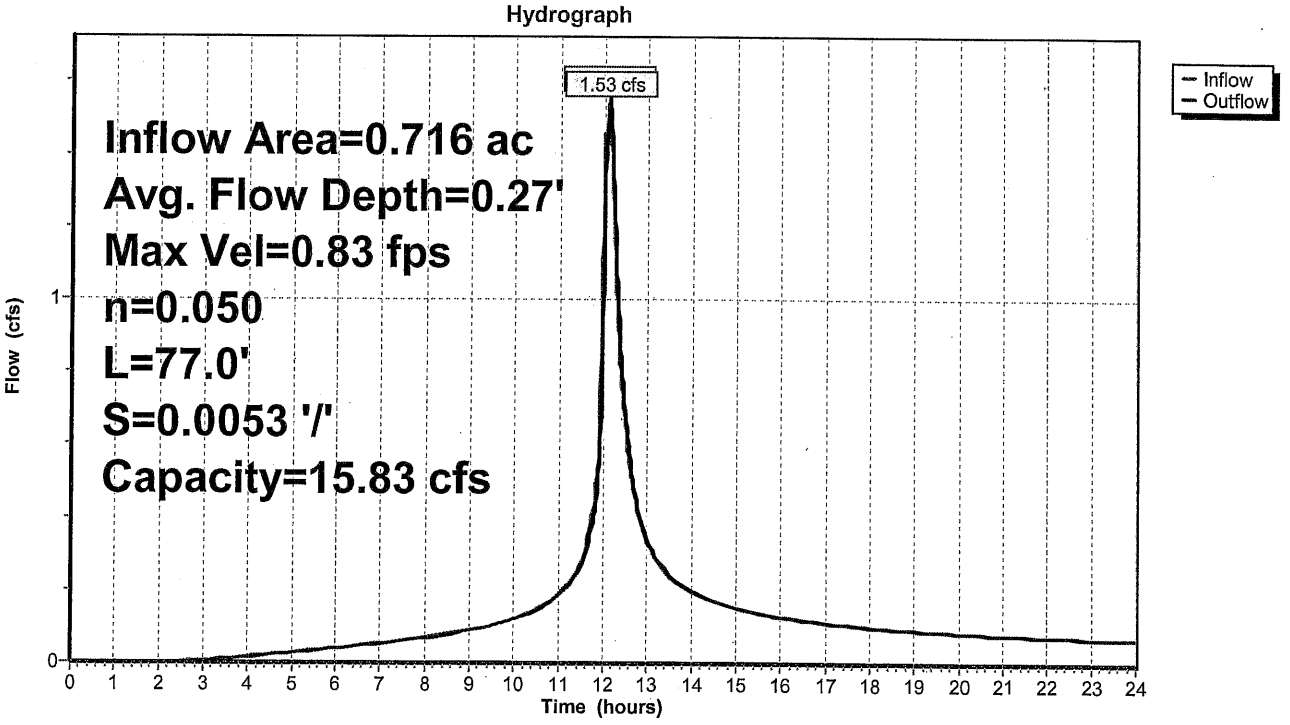
Peak Storage= 141 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 1.00' Flow Area= 9.0 sf, Capacity= 15.83 cfs

6.00' x 1.00' deep channel, n= 0.050 Earth, long dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 12.00'
Length= 77.0' Slope= 0.0053 '/'
Inlet Invert= 3.80', Outlet Invert= 3.39'



‡

Reach R4: R4



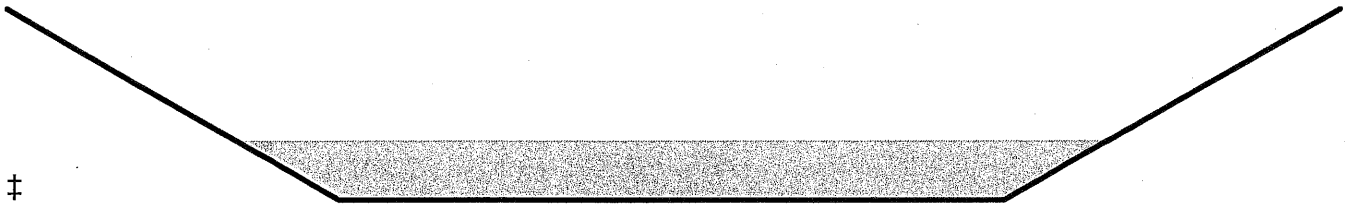
Summary for Reach R5: R5

Inflow Area = 0.716 ac, 54.31% Impervious, Inflow Depth > 4.02" for 10-yr event
Inflow = 1.53 cfs @ 12.12 hrs, Volume= 0.240 af
Outflow = 1.45 cfs @ 12.16 hrs, Volume= 0.239 af, Atten= 5%, Lag= 2.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.67 fps, Min. Travel Time= 4.6 min
Avg. Velocity = 0.24 fps, Avg. Travel Time= 12.7 min

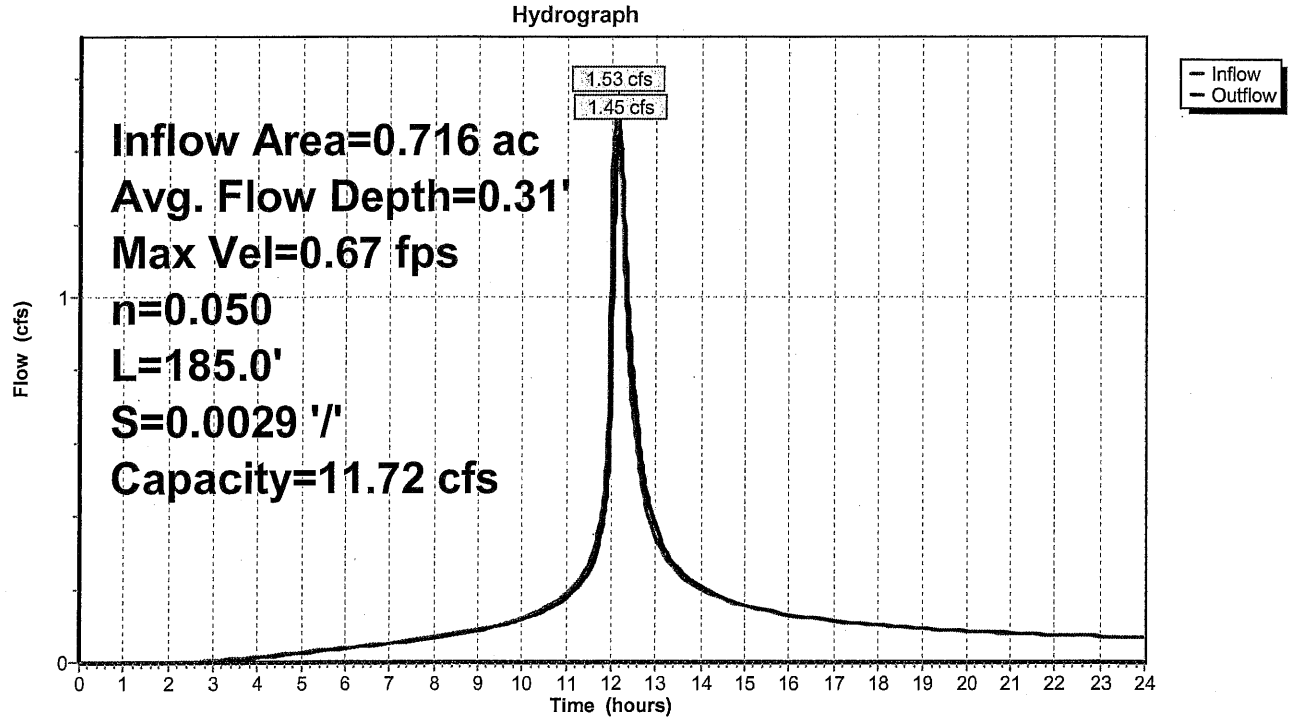
Peak Storage= 399 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.31'
Bank-Full Depth= 1.00' Flow Area= 9.0 sf, Capacity= 11.72 cfs

6.00' x 1.00' deep channel, n= 0.050 Earth, long dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 12.00'
Length= 185.0' Slope= 0.0029 '/'
Inlet Invert= 3.39', Outlet Invert= 2.85'



‡

Reach R5: R5



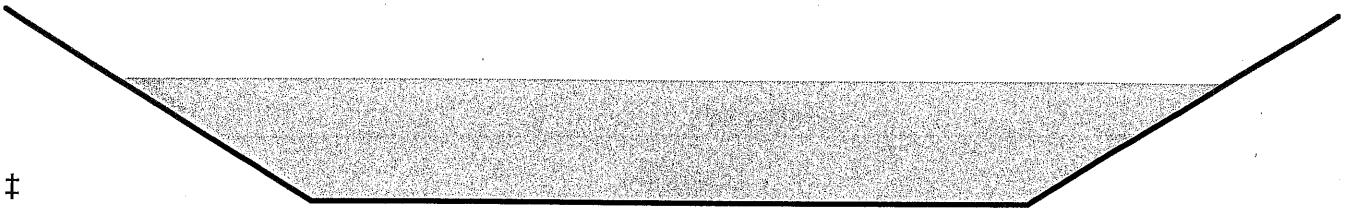
Summary for Reach TS1: TS1

Inflow Area = 0.182 ac, 54.15% Impervious, Inflow Depth > 4.06" for 10-yr event
Inflow = 0.69 cfs @ 12.04 hrs, Volume= 0.062 af
Outflow = 0.57 cfs @ 12.08 hrs, Volume= 0.061 af, Atten= 18%, Lag= 2.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.40 fps, Min. Travel Time= 4.6 min
Avg. Velocity = 0.13 fps, Avg. Travel Time= 13.8 min

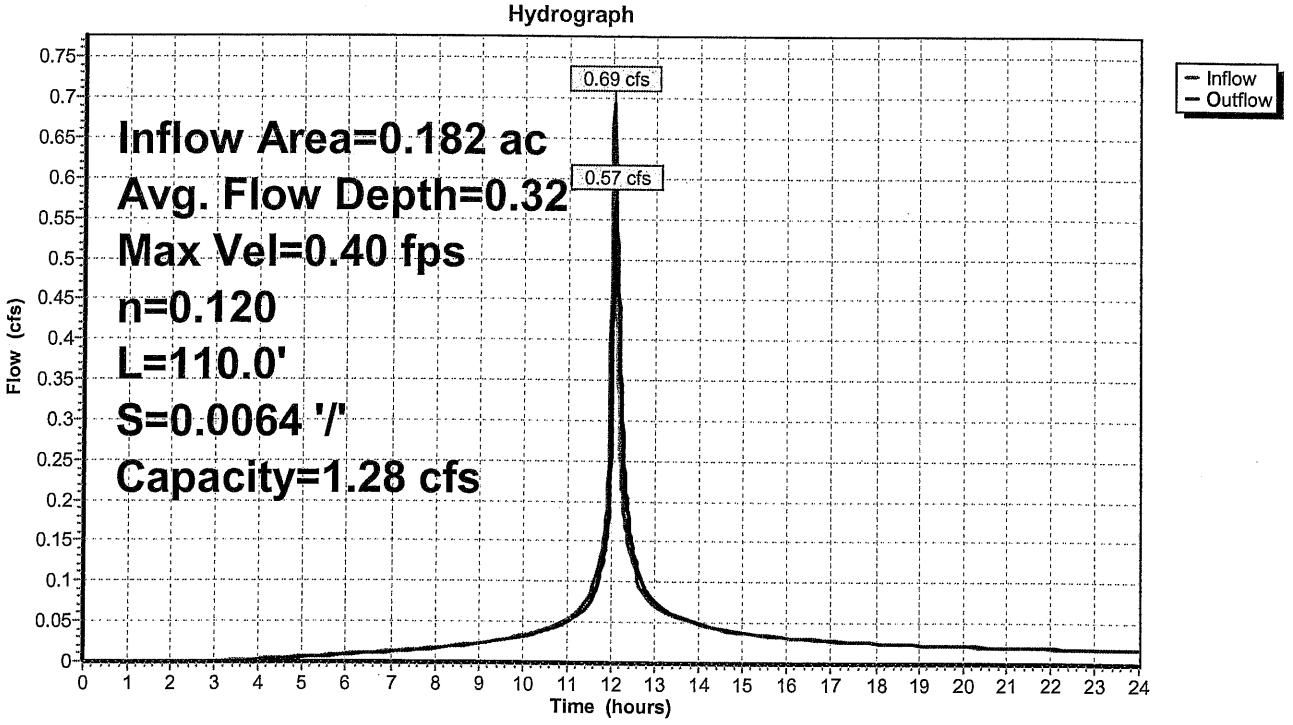
Peak Storage= 157 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.32'
Bank-Full Depth= 0.50' Flow Area= 2.5 sf, Capacity= 1.28 cfs

3.50' x 0.50' deep channel, n= 0.120
Side Slope Z-value= 3.0 '/' Top Width= 6.50'
Length= 110.0' Slope= 0.0064 '/'
Inlet Invert= 5.50', Outlet Invert= 4.80'



‡

Reach TS1: TS1



Summary for Pond DMH1: DMH1

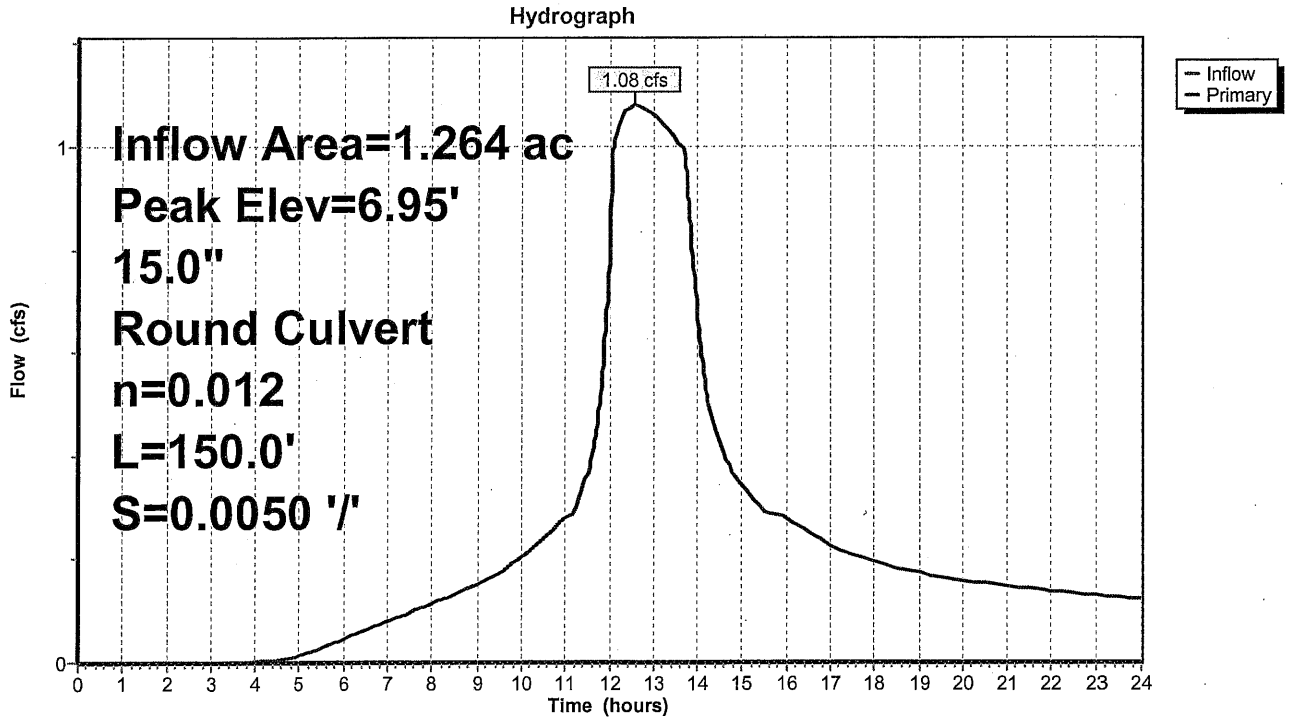
Inflow Area = 1.264 ac, 41.31% Impervious, Inflow Depth > 4.14" for 10-yr event
Inflow = 1.08 cfs @ 12.56 hrs, Volume= 0.436 af
Outflow = 1.08 cfs @ 12.56 hrs, Volume= 0.436 af, Atten= 0%, Lag= 0.0 min
Primary = 1.08 cfs @ 12.56 hrs, Volume= 0.436 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 6.95' @ 12.28 hrs
Flood Elev= 12.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	6.35'	**15.0" Round Culvert** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 6.35' / 5.60' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.08 cfs @ 12.56 hrs HW=6.94' TW=6.28' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 1.08 cfs @ 2.76 fps)

Pond DMH1: DMH1



Summary for Pond DMH2: DMH2

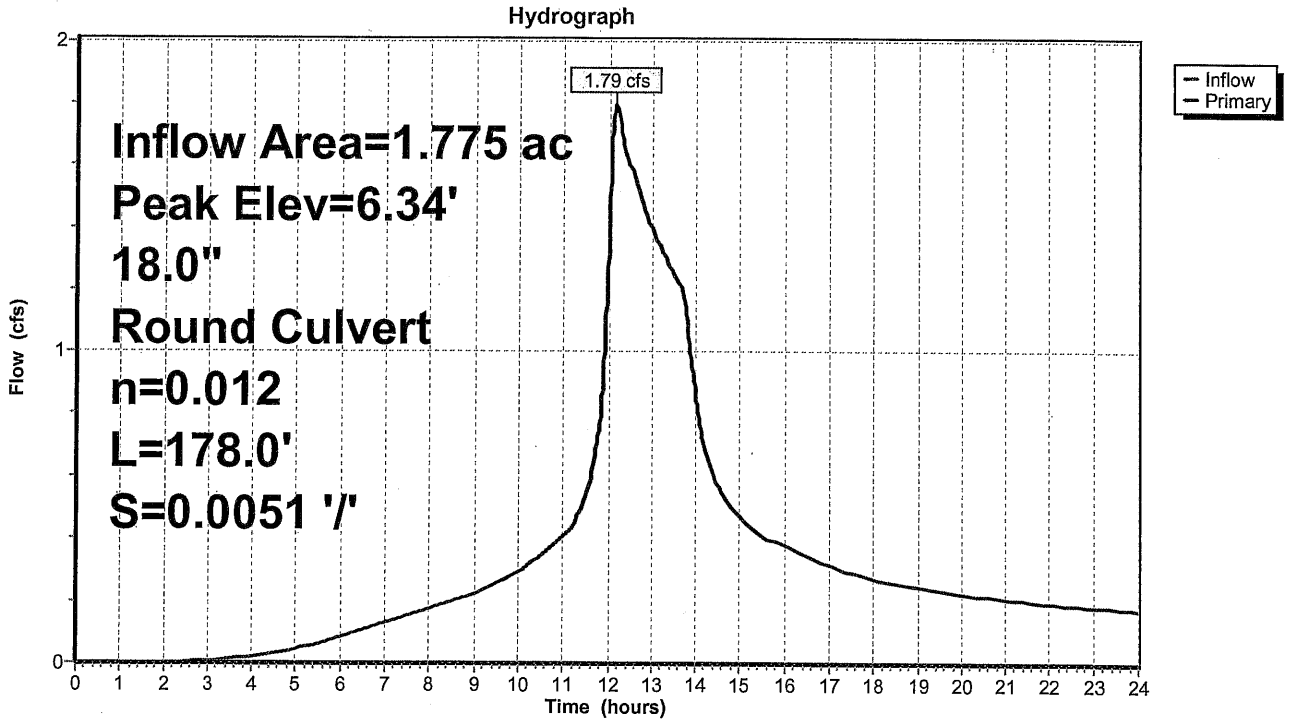
Inflow Area = 1.775 ac, 51.36% Impervious, Inflow Depth > 4.19" for 10-yr event
Inflow = 1.79 cfs @ 12.17 hrs, Volume= 0.620 af
Outflow = 1.79 cfs @ 12.17 hrs, Volume= 0.620 af, Atten= 0%, Lag= 0.0 min
Primary = 1.79 cfs @ 12.17 hrs, Volume= 0.620 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 6.34' @ 12.19 hrs
Flood Elev= 12.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	5.60'	**18.0" Round Culvert** L= 178.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 5.60' / 4.70' S= 0.0051 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=1.79 cfs @ 12.17 hrs HW=6.34' TW=5.60' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.79 cfs @ 3.03 fps)

Pond DMH2: DMH2



Summary for Pond DMH3: DMH3

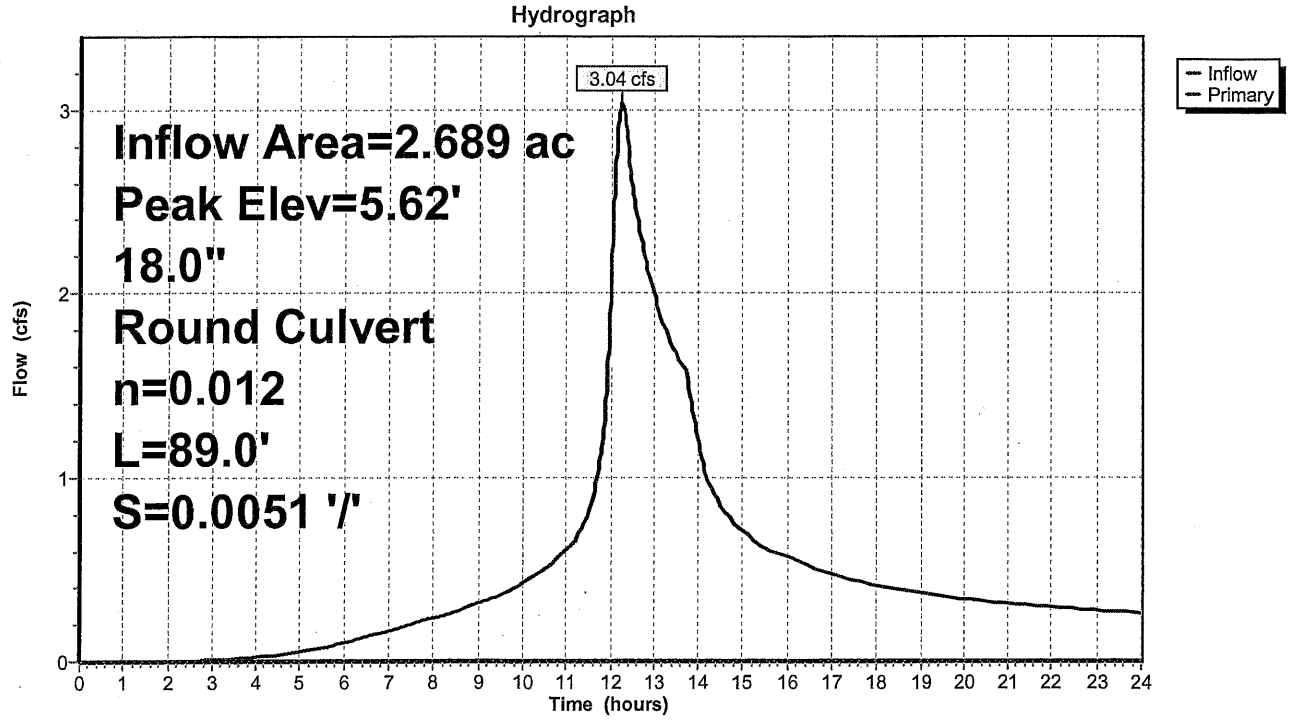
Inflow Area = 2.689 ac, 52.95% Impervious, Inflow Depth > 4.07" for 10-yr event
Inflow = 3.04 cfs @ 12.25 hrs, Volume= 0.912 af
Outflow = 3.04 cfs @ 12.25 hrs, Volume= 0.912 af, Atten= 0%, Lag= 0.0 min
Primary = 3.04 cfs @ 12.25 hrs, Volume= 0.912 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 5.62' @ 12.25 hrs
Flood Elev= 9.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	4.70'	**18.0" Round Culvert** L= 89.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 4.70' / 4.25' S= 0.0051 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=3.04 cfs @ 12.25 hrs HW=5.62' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 3.04 cfs @ 3.83 fps)

Pond DMH3: DMH3



Summary for Pond DP1: DP1

Inflow Area = 0.081 ac, 1.02% Impervious, Inflow Depth > 2.78" for 10-yr event
Inflow = 0.18 cfs @ 12.08 hrs, Volume= 0.019 af
Outflow = 0.04 cfs @ 12.58 hrs, Volume= 0.012 af, Atten= 78%, Lag= 30.0 min
Primary = 0.04 cfs @ 12.58 hrs, Volume= 0.012 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 11.22' @ 12.58 hrs Surf.Area= 1,550 sf Storage= 328 cf
Flood Elev= 12.00' Surf.Area= 1,939 sf Storage= 1,688 cf

Plug-Flow detention time= 266.8 min calculated for 0.012 af (62% of inflow)
Center-of-Mass det. time= 119.5 min (994.7 - 875.2)

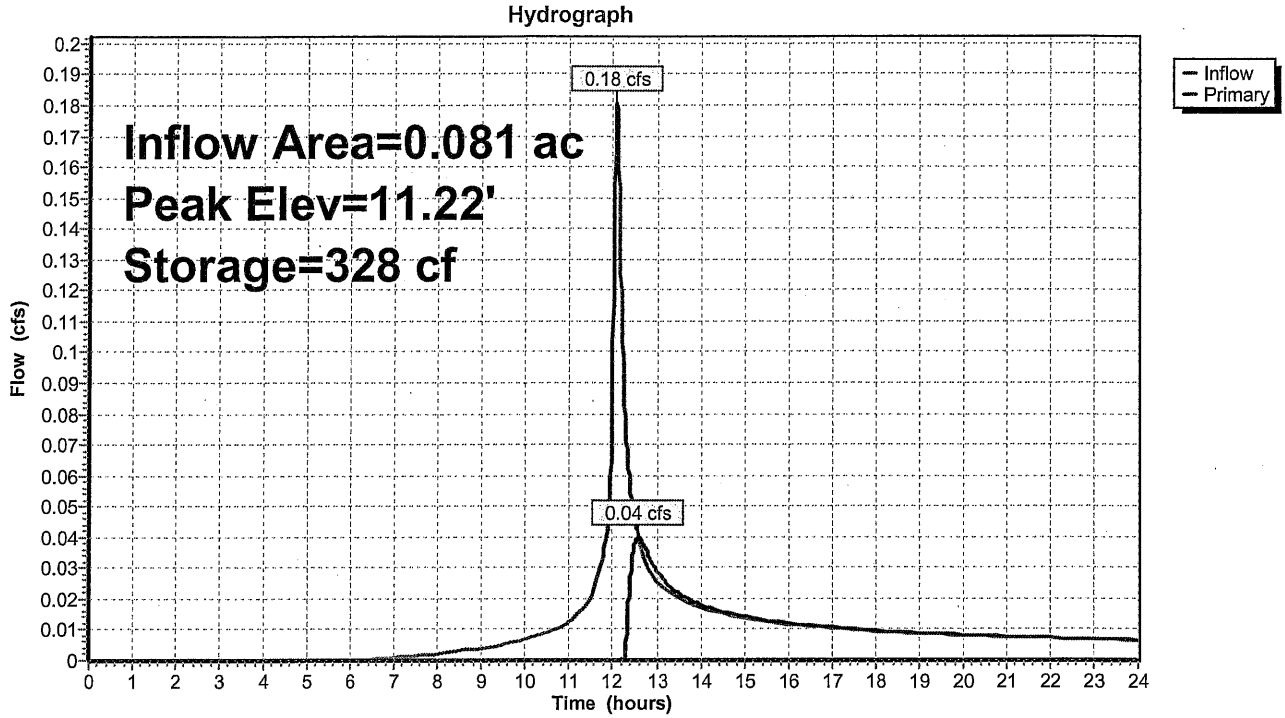
Volume	Invert	Avail.Storage	Storage Description
#1	11.00'	1,688 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
11.00	1,449	153.9	0	0	1,449
12.00	1,939	172.8	1,688	1,688	1,967

Device	Routing	Invert	Outlet Devices
#1	Primary	8.00'	**12.0" Round Culvert** L= 46.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.00' / 7.50' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	11.20'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.04 cfs @ 12.58 hrs HW=11.22' TW=8.05' (Dynamic Tailwater)
↑—**1=Culvert** (Passes 0.04 cfs of 6.24 cfs potential flow)
↑—**2=Orifice/Grate** (Weir Controls 0.04 cfs @ 0.45 fps)

Pond DP1: DP1


Hydrograph
Inflow Area=0.081 ac
Peak Elev=11.22'
Storage=328 cf
0.18 cfs
0.04 cfs
Inflow
Primary
Flow (cfs)
Time (hours)
0 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.1 0.11 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19 0.2
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Summary for Pond OS-RG3: OS-RG3

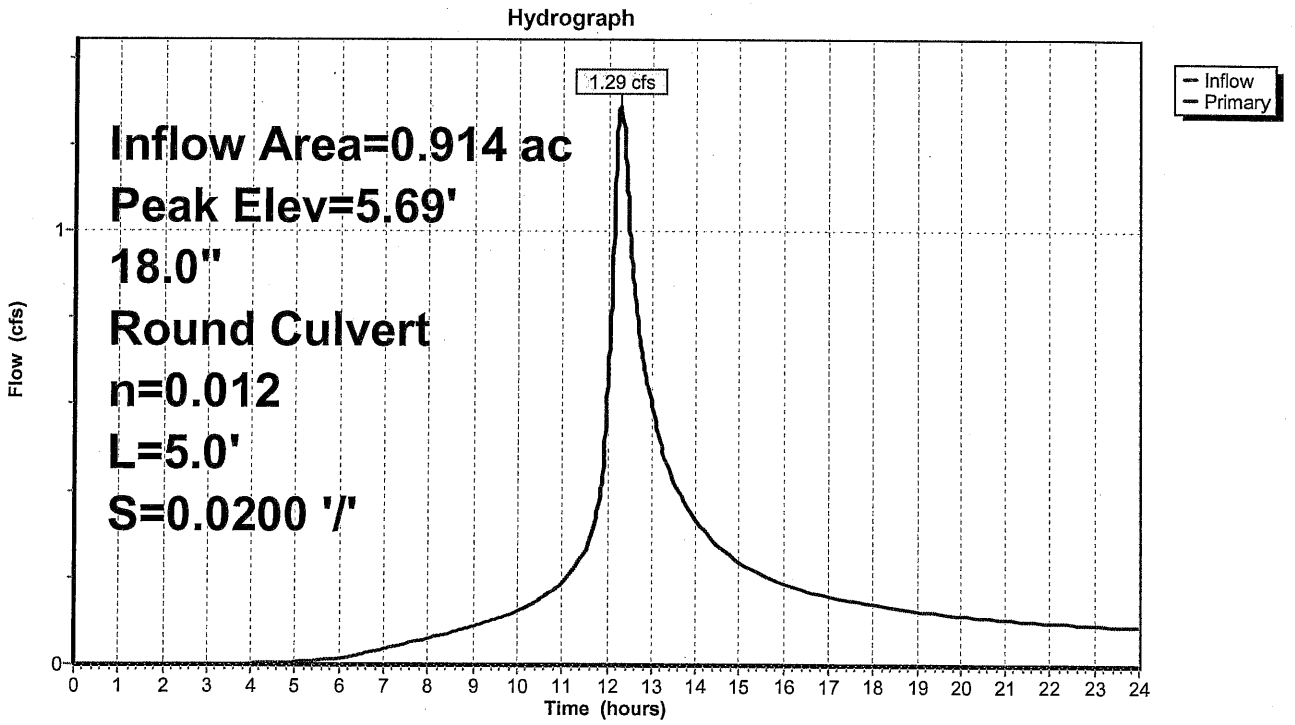
Inflow Area = 0.914 ac, 56.04% Impervious, Inflow Depth > 3.82" for 10-yr event
Inflow = 1.29 cfs @ 12.29 hrs, Volume= 0.291 af
Outflow = 1.29 cfs @ 12.29 hrs, Volume= 0.291 af, Atten= 0%, Lag= 0.0 min
Primary = 1.29 cfs @ 12.29 hrs, Volume= 0.291 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 5.69' @ 12.27 hrs
Flood Elev= 8.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	4.80'	**18.0" Round Culvert** L= 5.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 4.80' / 4.70' S= 0.0200 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=1.31 cfs @ 12.29 hrs HW=5.69' TW=5.62' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 1.31 cfs @ 1.72 fps)

Pond OS-RG3: OS-RG3



Summary for Pond PP1: Porous Pave 1

Inflow Area = 0.305 ac, 96.31% Impervious, Inflow Depth > 5.18" for 10-yr event
Inflow = 1.57 cfs @ 11.99 hrs, Volume= 0.132 af
Outflow = 0.41 cfs @ 12.11 hrs, Volume= 0.125 af, Atten= 74%, Lag= 7.2 min
Primary = 0.41 cfs @ 12.11 hrs, Volume= 0.125 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 9.81' Surf.Area= 6,674 sf Storage= 771 cf
Peak Elev= 10.36' @ 12.11 hrs Surf.Area= 6,674 sf Storage= 2,065 cf (1,294 cf above start)
Flood Elev= 12.55' Surf.Area= 6,674 sf Storage= 4,812 cf (4,041 cf above start)

Plug-Flow detention time= 217.3 min calculated for 0.108 af (82% of inflow)
Center-of-Mass det. time= 57.6 min (810.0 - 752.4)

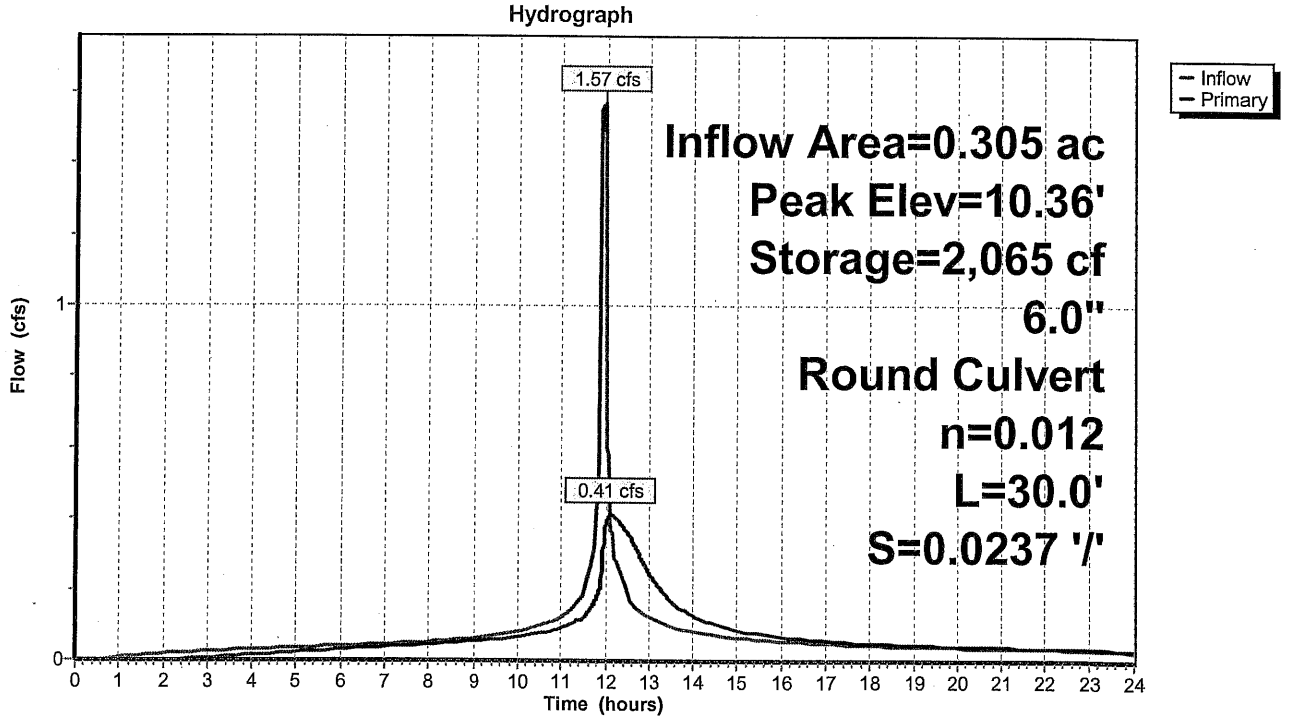
Volume	Invert	Avail.Storage	Storage Description
#1	9.48'	4,812 cf	**Porous Pave 1 (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
9.48	6,674	591.7	0.0	0	0	6,674
10.64	6,674	591.7	35.0	2,710	2,710	7,360
10.89	6,674	591.7	20.0	334	3,043	7,508
11.89	6,674	591.7	10.0	667	3,711	8,100
12.22	6,674	591.7	20.0	440	4,151	8,295
12.55	6,674	591.7	30.0	661	4,812	8,491

Device	Routing	Invert	Outlet Devices
#1	Primary	9.81'	**6.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 9.81' / 9.10' S= 0.0237 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.41 cfs @ 12.11 hrs HW=10.36' TW=6.31' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.41 cfs @ 2.10 fps)

Pond PP1: Porous Pave 1



Summary for Pond PP2: Porous Pave 2

Inflow Area = 0.295 ac, 88.41% Impervious, Inflow Depth > 4.94" for 10-yr event
Inflow = 1.50 cfs @ 12.00 hrs, Volume= 0.122 af
Outflow = 0.27 cfs @ 12.27 hrs, Volume= 0.110 af, Atten= 82%, Lag= 16.4 min
Primary = 0.27 cfs @ 12.27 hrs, Volume= 0.110 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 5.42' Surf.Area= 7,034 sf Storage= 788 cf
Peak Elev= 6.10' @ 12.27 hrs Surf.Area= 7,034 sf Storage= 2,461 cf (1,673 cf above start)
Flood Elev= 8.20' Surf.Area= 7,034 sf Storage= 5,135 cf (4,347 cf above start)

Plug-Flow detention time= 270.5 min calculated for 0.092 af (76% of inflow)
Center-of-Mass det. time= 94.9 min (864.4 - 769.5)

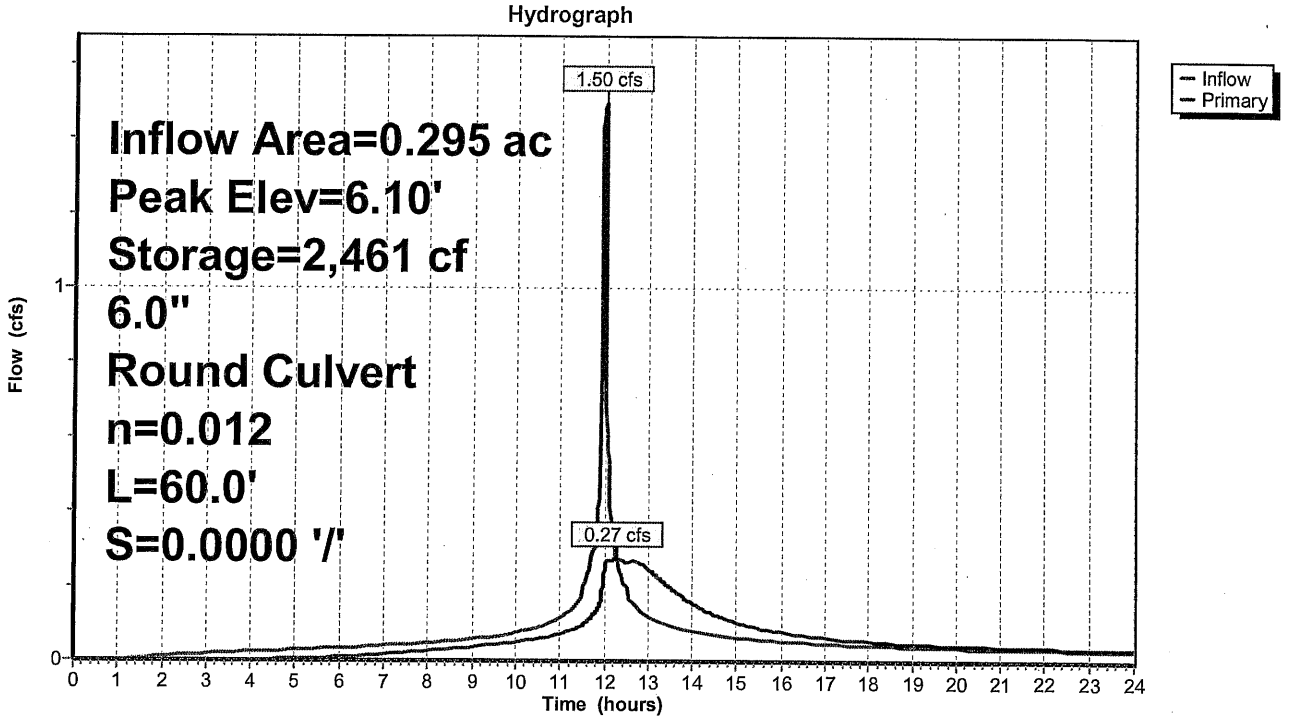
Volume	Invert	Avail.Storage	Storage Description
#1	5.10'	5,135 cf	**Porous Pave 1 (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
5.10	7,034	869.8	0.0	0	0	7,034
6.26	7,034	869.8	35.0	2,856	2,856	8,043
6.51	7,034	869.8	20.0	352	3,208	8,260
7.51	7,034	869.8	10.0	703	3,911	9,130
7.84	7,034	869.8	20.0	464	4,375	9,417
8.20	7,034	869.8	30.0	760	5,135	9,730

Device	Routing	Invert	Outlet Devices
#1	Primary	5.42'	**6.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 5.42' / 5.42' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.27 cfs @ 12.27 hrs HW=6.10' TW=5.69' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.27 cfs @ 1.40 fps)

Pond PP2: Porous Pave 2



Summary for Pond PP3: Porous Pave 3

Inflow Area = 0.138 ac, 89.13% Impervious, Inflow Depth > 4.94" for 10-yr event
Inflow = 0.69 cfs @ 12.01 hrs, Volume= 0.057 af
Outflow = 0.20 cfs @ 12.15 hrs, Volume= 0.053 af, Atten= 71%, Lag= 8.5 min
Primary = 0.20 cfs @ 12.15 hrs, Volume= 0.053 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 5.42' Surf.Area= 3,624 sf Storage= 406 cf
Peak Elev= 5.92' @ 12.15 hrs Surf.Area= 3,624 sf Storage= 1,046 cf (640 cf above start)
Flood Elev= 8.20' Surf.Area= 3,624 sf Storage= 2,646 cf (2,240 cf above start)

Plug-Flow detention time= 250.1 min calculated for 0.043 af (76% of inflow)
Center-of-Mass det. time= 71.6 min (841.9 - 770.3)

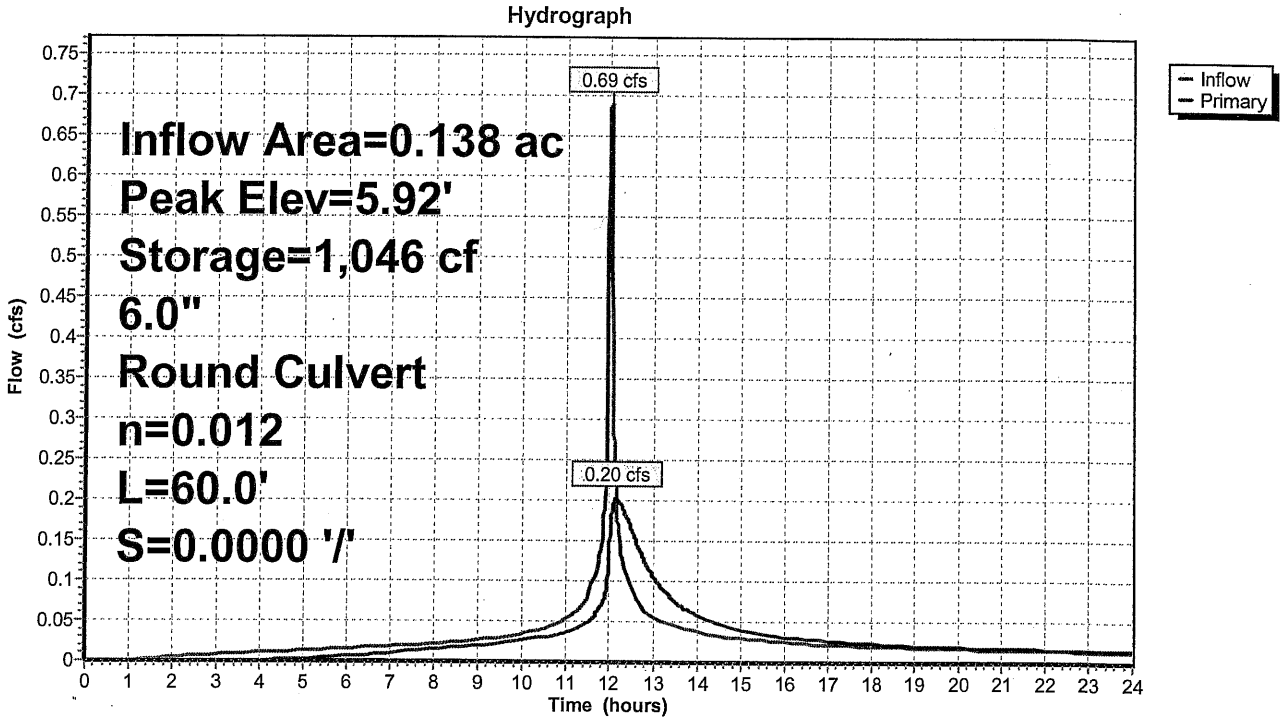
Volume	Invert	Avail.Storage	Storage Description
#1	5.10'	2,646 cf	**Porous Pave 1 (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
5.10	3,624	612.4	0.0	0	0	3,624
6.26	3,624	612.4	35.0	1,471	1,471	4,334
6.51	3,624	612.4	20.0	181	1,653	4,487
7.51	3,624	612.4	10.0	362	2,015	5,100
7.84	3,624	612.4	20.0	239	2,254	5,302
8.20	3,624	612.4	30.0	391	2,646	5,522

Device	Routing	Invert	Outlet Devices
#1	Primary	5.42'	**6.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 5.42' / 5.42' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.20 cfs @ 12.15 hrs HW=5.92' TW=5.62' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.20 cfs @ 1.27 fps)

Pond PP3: Porous Pave 3



Summary for Pond PP4: Porous Pave 4

Inflow Area = 0.028 ac, 67.63% Impervious, Inflow Depth > 4.38" for 10-yr event
Inflow = 0.13 cfs @ 12.01 hrs, Volume= 0.010 af
Outflow = 0.07 cfs @ 12.06 hrs, Volume= 0.010 af, Atten= 43%, Lag= 2.9 min
Primary = 0.07 cfs @ 12.06 hrs, Volume= 0.010 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 9.45' Surf.Area= 810 sf Storage= 94 cf
Peak Elev= 9.64' @ 12.06 hrs Surf.Area= 810 sf Storage= 148 cf (54 cf above start)
Flood Elev= 12.20' Surf.Area= 810 sf Storage= 586 cf (492 cf above start)

Plug-Flow detention time= 205.9 min calculated for 0.008 af (77% of inflow)
Center-of-Mass det. time= 21.5 min (823.1 - 801.6)

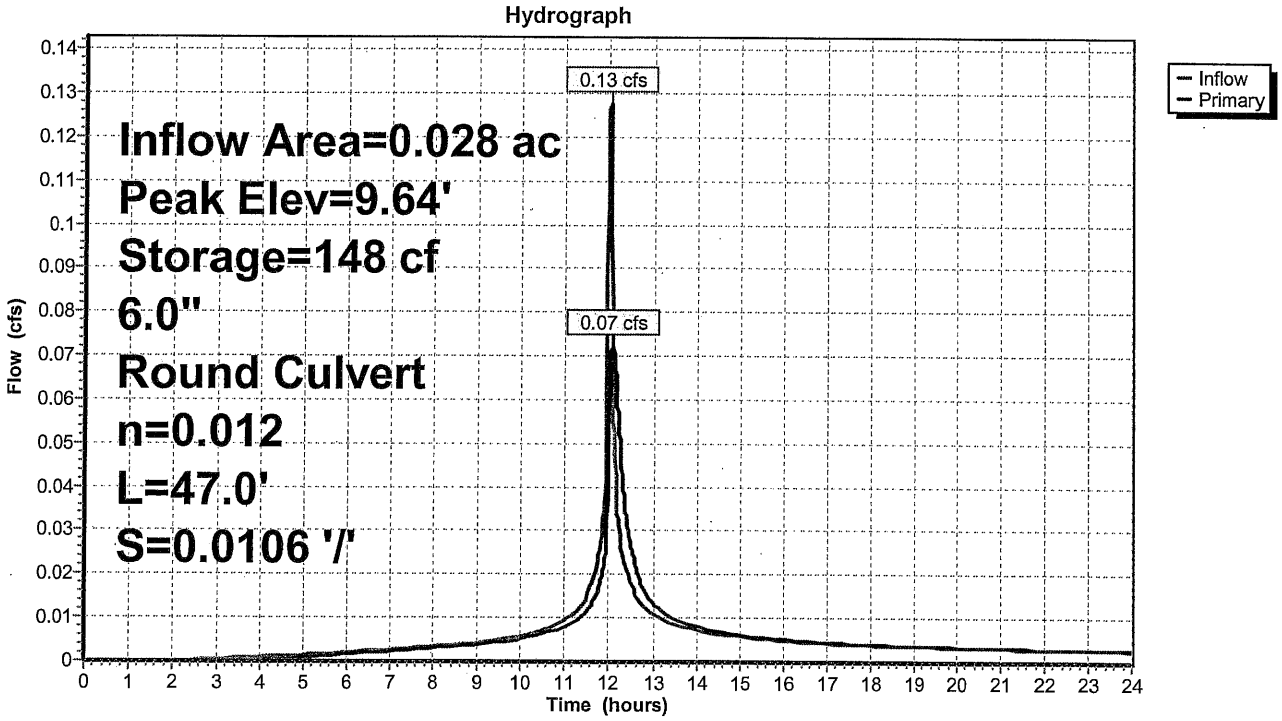
Volume	Invert	Avail.Storage	Storage Description
#1	9.12'	586 cf	**Porous Pave 1 (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
9.12	810	126.0	0.0	0	0	810
10.28	810	126.0	35.0	329	329	956
10.53	810	126.0	20.0	41	369	988
11.53	810	126.0	10.0	81	450	1,114
11.87	810	126.0	20.0	55	505	1,157
12.20	810	126.0	30.0	80	586	1,198

Device	Routing	Invert	Outlet Devices
#1	Primary	9.45'	**6.0" Round Culvert** L= 47.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 9.45' / 8.95' S= 0.0106 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.07 cfs @ 12.06 hrs HW=9.64' TW=9.37' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 0.07 cfs @ 1.55 fps)

Pond PP4: Porous Pave 4



Summary for Pond PP5: Porous Pave 5

Inflow Area = 0.098 ac, 83.09% Impervious, Inflow Depth > 4.76" for 10-yr event
Inflow = 0.41 cfs @ 12.01 hrs, Volume= 0.039 af
Outflow = 0.30 cfs @ 12.05 hrs, Volume= 0.038 af, Atten= 25%, Lag= 2.3 min
Primary = 0.30 cfs @ 12.05 hrs, Volume= 0.038 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 8.95' Surf.Area= 810 sf Storage= 94 cf
Peak Elev= 9.37' @ 12.05 hrs Surf.Area= 810 sf Storage= 212 cf (118 cf above start)
Flood Elev= 11.70' Surf.Area= 810 sf Storage= 586 cf (492 cf above start)

Plug-Flow detention time= 80.7 min calculated for 0.036 af (93% of inflow)
Center-of-Mass det. time= 12.0 min (796.1 - 784.1)

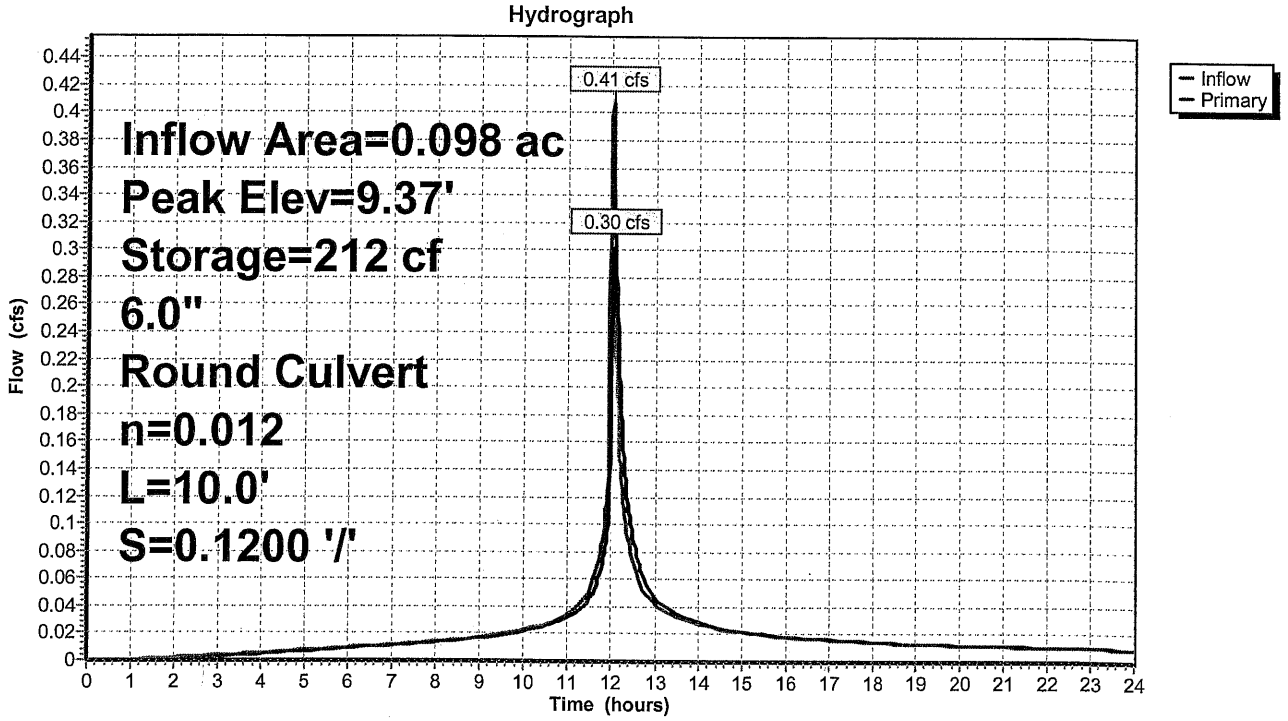
Volume	Invert	Avail.Storage	Storage Description
#1	8.62'	586 cf	**Porous Pave 1 (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
8.62	810	126.0	0.0	0	0	810
9.78	810	126.0	35.0	329	329	956
10.03	810	126.0	20.0	41	369	988
11.03	810	126.0	10.0	81	450	1,114
11.37	810	126.0	20.0	55	505	1,157
11.70	810	126.0	30.0	80	586	1,198

Device	Routing	Invert	Outlet Devices
#1	Primary	8.95'	**6.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 8.95' / 7.75' S= 0.1200 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.30 cfs @ 12.05 hrs HW=9.37' TW=7.87' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.30 cfs @ 1.73 fps)

Pond PP5: Porous Pave 5



Summary for Pond PP6: Porous Pave 6

Inflow Area = 0.086 ac, 83.84% Impervious, Inflow Depth > 4.83" for 10-yr event
Inflow = 0.42 cfs @ 12.00 hrs, Volume= 0.034 af
Outflow = 0.22 cfs @ 12.05 hrs, Volume= 0.034 af, Atten= 49%, Lag= 3.1 min
Primary = 0.22 cfs @ 12.05 hrs, Volume= 0.034 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 9.05' Surf.Area= 1,826 sf Storage= 211 cf
Peak Elev= 9.38' @ 12.05 hrs Surf.Area= 1,826 sf Storage= 425 cf (214 cf above start)
Flood Elev= 11.80' Surf.Area= 1,826 sf Storage= 1,320 cf (1,109 cf above start)

Plug-Flow detention time= 176.1 min calculated for 0.029 af (83% of inflow)
Center-of-Mass det. time= 28.0 min (805.1 - 777.1)

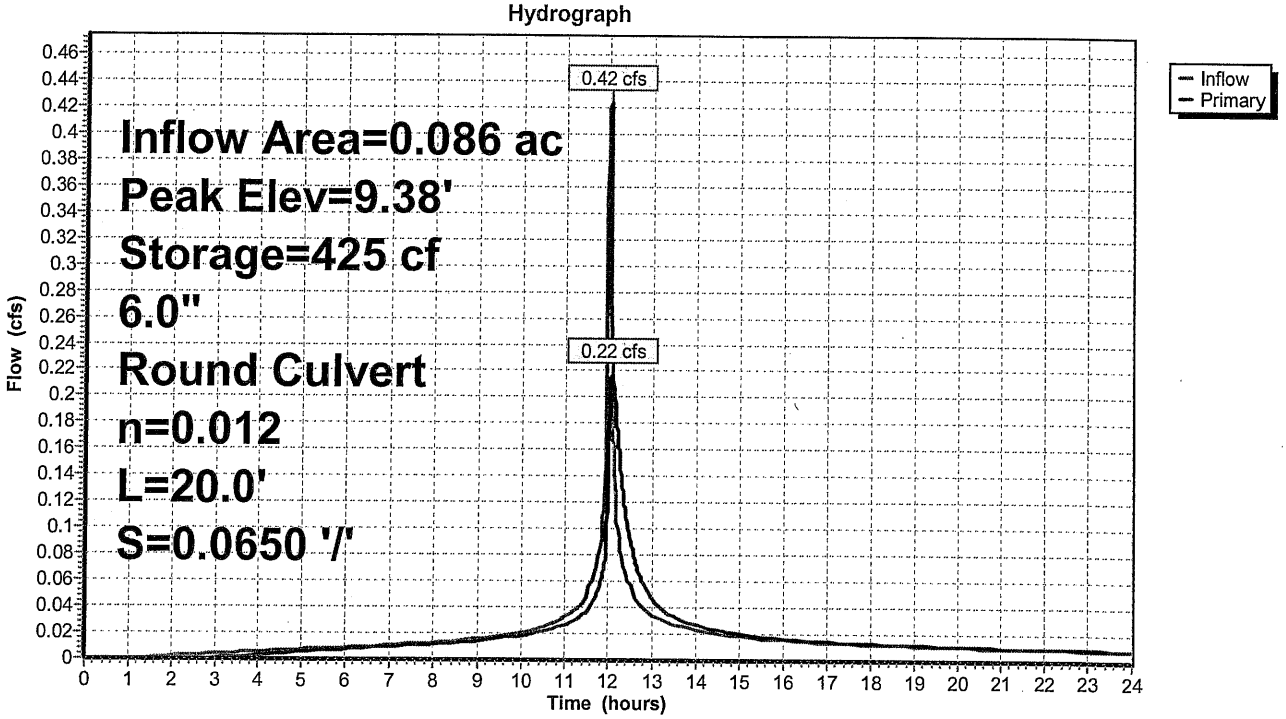
Volume	Invert	Avail.Storage	Storage Description
#1	8.72'	1,320 cf	**Porous Pave 1 (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
8.72	1,826	191.7	0.0	0	0	1,826
9.88	1,826	191.7	35.0	741	741	2,048
10.13	1,826	191.7	20.0	91	833	2,096
11.13	1,826	191.7	10.0	183	1,015	2,288
11.47	1,826	191.7	20.0	124	1,139	2,353
11.80	1,826	191.7	30.0	181	1,320	2,416

Device	Routing	Invert	Outlet Devices
#1	Primary	9.05'	**6.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 9.05' / 7.75' S= 0.0650 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.22 cfs @ 12.05 hrs HW=9.38' TW=7.87' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.22 cfs @ 1.55 fps)

Pond PP6: Porous Pave 6



Summary for Pond PP7: Porous Pave 7

Inflow Area = 0.229 ac, 82.18% Impervious, Inflow Depth > 4.81" for 10-yr event
Inflow = 1.06 cfs @ 12.00 hrs, Volume= 0.092 af
Outflow = 0.47 cfs @ 12.11 hrs, Volume= 0.090 af, Atten= 56%, Lag= 6.5 min
Primary = 0.47 cfs @ 12.11 hrs, Volume= 0.090 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 6.55' Surf.Area= 2,298 sf Storage= 265 cf
Peak Elev= 7.23' @ 12.11 hrs Surf.Area= 2,298 sf Storage= 815 cf (550 cf above start)
Flood Elev= 9.30' Surf.Area= 2,298 sf Storage= 1,661 cf (1,396 cf above start)

Plug-Flow detention time= 110.1 min calculated for 0.084 af (91% of inflow)
Center-of-Mass det. time= 25.0 min (802.3 - 777.3)

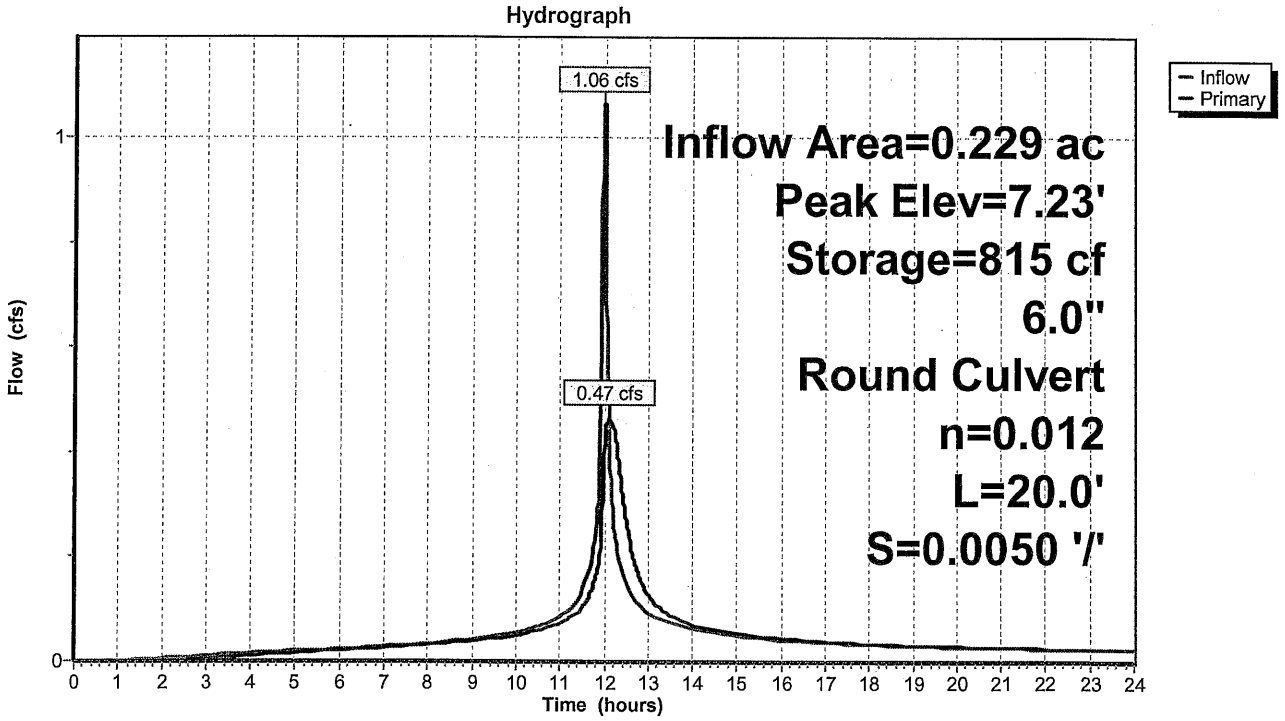
Volume	Invert	Avail.Storage	Storage Description
#1	6.22'	1,661 cf	**Porous Pave 1 (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
6.22	2,298	239.8	0.0	0	0	2,298
7.38	2,298	239.8	35.0	933	933	2,576
7.63	2,298	239.8	20.0	115	1,048	2,636
8.63	2,298	239.8	10.0	230	1,278	2,876
8.97	2,298	239.8	20.0	156	1,434	2,957
9.30	2,298	239.8	30.0	228	1,661	3,037

Device	Routing	Invert	Outlet Devices
#1	Primary	6.55'	**6.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 6.55' / 6.45' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.47 cfs @ 12.11 hrs HW=7.23' TW=4.07' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.47 cfs @ 2.37 fps)

Pond PP7: Porous Pave 7



Summary for Pond RG1: Rain Garden 1

Inflow Area = 1.264 ac, 41.31% Impervious, Inflow Depth > 4.26" for 10-yr event
Inflow = 3.52 cfs @ 12.14 hrs, Volume= 0.449 af
Outflow = 1.08 cfs @ 12.56 hrs, Volume= 0.436 af, Atten= 69%, Lag= 24.8 min
Primary = 1.08 cfs @ 12.56 hrs, Volume= 0.436 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 6.42' Surf.Area= 4,313 sf Storage= 498 cf
Peak Elev= 9.43' @ 12.54 hrs Surf.Area= 5,158 sf Storage= 4,630 cf (4,132 cf above start)
Flood Elev= 10.10' Surf.Area= 6,034 sf Storage= 8,417 cf (7,918 cf above start)

Plug-Flow detention time= 84.4 min calculated for 0.424 af (95% of inflow)
Center-of-Mass det. time= 40.1 min (855.0 - 814.9)

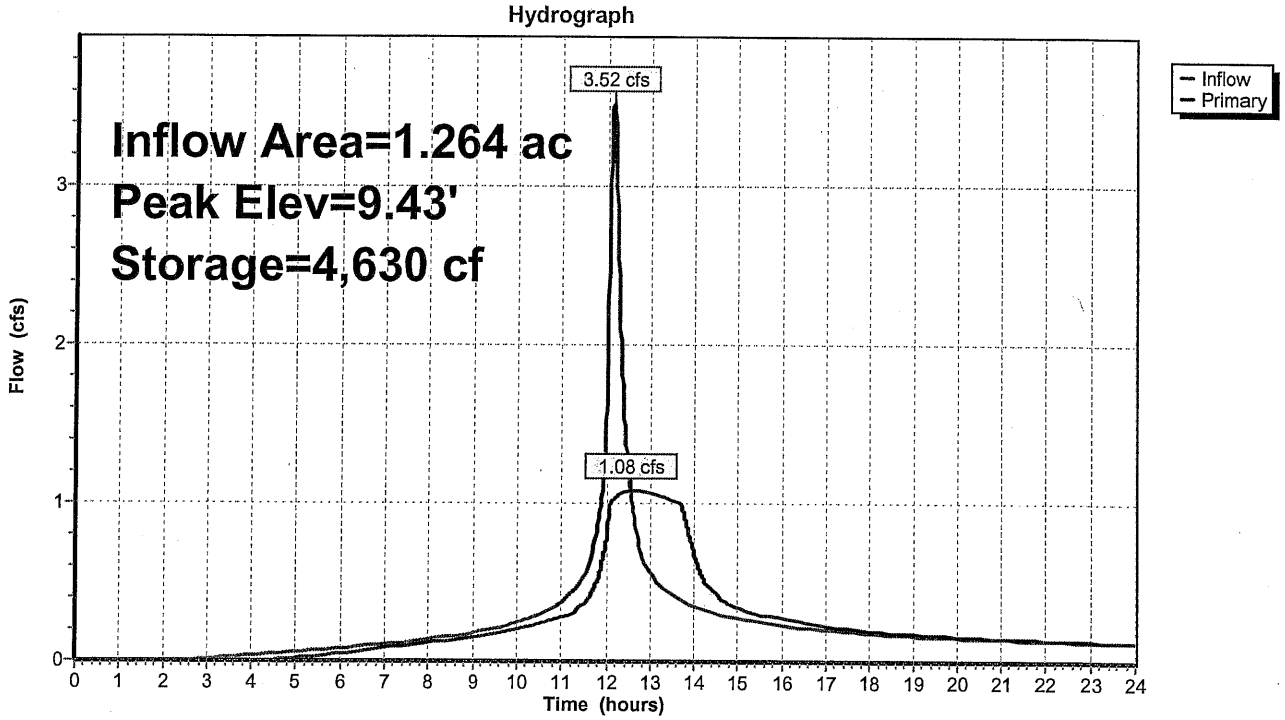
Volume	Invert	Avail.Storage	Storage Description
#1	6.09'	8,417 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
6.09	4,313	341.3	0.0	0	0	4,313
7.25	4,313	341.3	35.0	1,751	1,751	4,709
7.50	4,313	341.3	20.0	216	1,967	4,794
9.00	4,313	341.3	10.0	647	2,614	5,306
9.50	5,311	481.6	100.0	2,402	5,015	14,496
10.10	6,034	489.4	100.0	3,401	8,417	15,165

Device	Routing	Invert	Outlet Devices
#1	Primary	6.42'	**12.0" Round Culvert** L= 14.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 6.42' / 6.35' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	6.42'	**6.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 6.42' / 6.42' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#3	Device 1	9.50'	**24.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#4	Device 1	10.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.08 cfs @ 12.56 hrs HW=9.43' TW=6.94' (Dynamic Tailwater)
└**1=Culvert** (Passes 1.08 cfs of 4.70 cfs potential flow)
  ├**2=Culvert** (Outlet Controls 1.08 cfs @ 5.51 fps)
  ├**3=Orifice/Grate** (Controls 0.00 cfs)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

Pond RG1: Rain Garden 1



Summary for Pond RG2: Rain Garden 2

Inflow Area = 0.205 ac, 46.44% Impervious, Inflow Depth > 3.47" for 10-yr event
Inflow = 0.40 cfs @ 12.11 hrs, Volume= 0.059 af
Outflow = 0.36 cfs @ 12.16 hrs, Volume= 0.059 af, Atten= 9%, Lag= 2.9 min
Primary = 0.36 cfs @ 12.16 hrs, Volume= 0.059 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 7.67' Surf.Area= 338 sf Storage= 39 cf
Peak Elev= 8.39' @ 12.16 hrs Surf.Area= 338 sf Storage= 124 cf (85 cf above start)
Flood Elev= 11.00' Surf.Area= 594 sf Storage= 551 cf (512 cf above start)

Plug-Flow detention time= 28.3 min calculated for 0.058 af (98% of inflow)
Center-of-Mass det. time= 6.3 min (841.9 - 835.6)

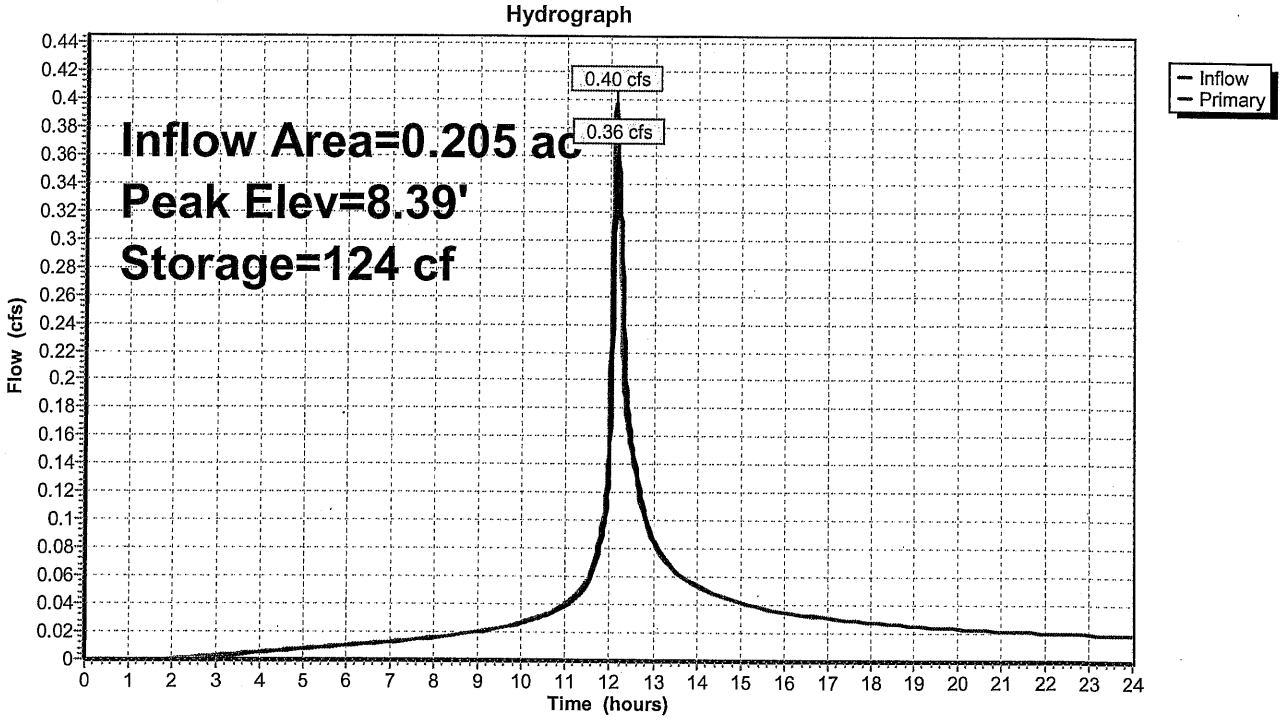
Volume	Invert	Avail.Storage	Storage Description
#1	7.34'	551 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
7.34	338	106.9	0.0	0	0	338
8.50	338	106.9	35.0	137	137	462
8.75	338	106.9	20.0	17	154	489
10.25	338	106.9	10.0	51	205	649
10.75	505	116.3	100.0	209	414	825
11.00	594	121.0	100.0	137	551	919

Device	Routing	Invert	Outlet Devices
#1	Primary	6.55'	**12.0" Round Culvert** L= 116.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 6.55' / 5.70' S= 0.0073 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	7.67'	**6.0" Round Culvert** L= 35.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 7.67' / 7.67' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#3	Device 1	10.75'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.36 cfs @ 12.16 hrs HW=8.39' TW=6.33' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.36 cfs of 3.82 cfs potential flow)
  ├─**2=Culvert** (Barrel Controls 0.36 cfs @ 1.83 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond RG2: Rain Garden 2



Summary for Pond RG3: Rain Garden 3

Inflow Area = 0.481 ac, 26.66% Impervious, Inflow Depth > 3.24" for 10-yr event
Inflow = 0.87 cfs @ 12.23 hrs, Volume= 0.130 af
Outflow = 0.82 cfs @ 12.29 hrs, Volume= 0.129 af, Atten= 6%, Lag= 3.9 min
Primary = 0.82 cfs @ 12.29 hrs, Volume= 0.129 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 5.42' Surf.Area= 631 sf Storage= 73 cf
Peak Elev= 7.55' @ 12.29 hrs Surf.Area= 631 sf Storage= 354 cf (281 cf above start)
Flood Elev= 9.00' Surf.Area= 1,049 sf Storage= 1,217 cf (1,144 cf above start)

Plug-Flow detention time= 25.7 min calculated for 0.127 af (98% of inflow)
Center-of-Mass det. time= 7.6 min (871.2 - 863.6)

Volume	Invert	Avail.Storage	Storage Description
#1	5.09'	1,217 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

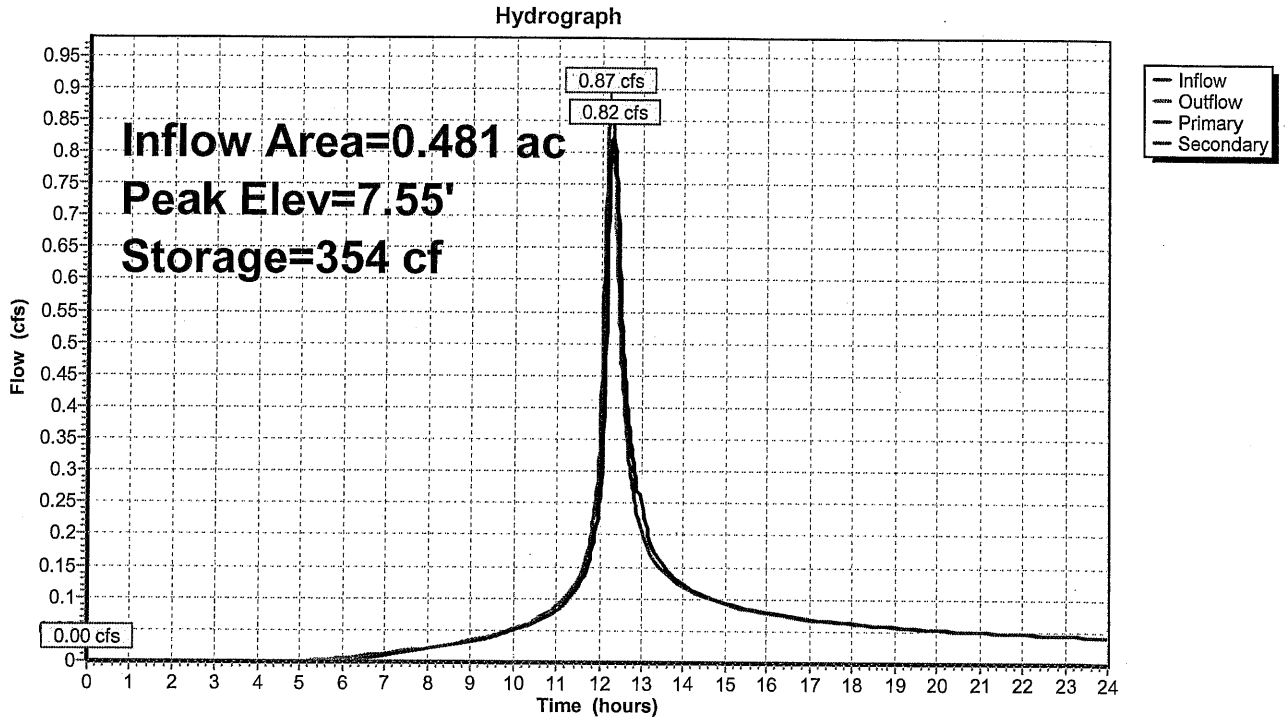
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
5.09	631	129.7	0.0	0	0	631
6.25	631	129.7	35.0	256	256	781
6.50	631	129.7	20.0	32	288	814
8.00	631	129.7	10.0	95	382	1,008
8.50	833	139.2	100.0	365	747	1,223
9.00	1,049	148.6	100.0	469	1,217	1,450

Device	Routing	Invert	Outlet Devices
#1	Primary	5.42'	**6.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 5.42' / 5.42' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Secondary	8.50'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.82 cfs @ 12.29 hrs HW=7.55' TW=5.69' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.82 cfs @ 4.20 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=5.42' TW=4.80' (Dynamic Tailwater)
↑**2=Orifice/Grate** (Controls 0.00 cfs)

Pond RG3: Rain Garden 3



Summary for Pond RG4: Rain Garden 4

Inflow Area = 0.099 ac, 71.56% Impervious, Inflow Depth > 4.49" for 10-yr event
Inflow = 0.47 cfs @ 12.01 hrs, Volume= 0.037 af
Outflow = 0.43 cfs @ 12.03 hrs, Volume= 0.037 af, Atten= 7%, Lag= 1.1 min
Primary = 0.43 cfs @ 12.03 hrs, Volume= 0.037 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 7.17' Surf.Area= 193 sf Storage= 5 cf
Peak Elev= 7.99' @ 12.03 hrs Surf.Area= 193 sf Storage= 61 cf (56 cf above start)
Flood Elev= 10.75' Surf.Area= 438 sf Storage= 271 cf (265 cf above start)

Plug-Flow detention time= 11.8 min calculated for 0.037 af (99% of inflow)
Center-of-Mass det. time= 4.6 min (800.6 - 796.0)

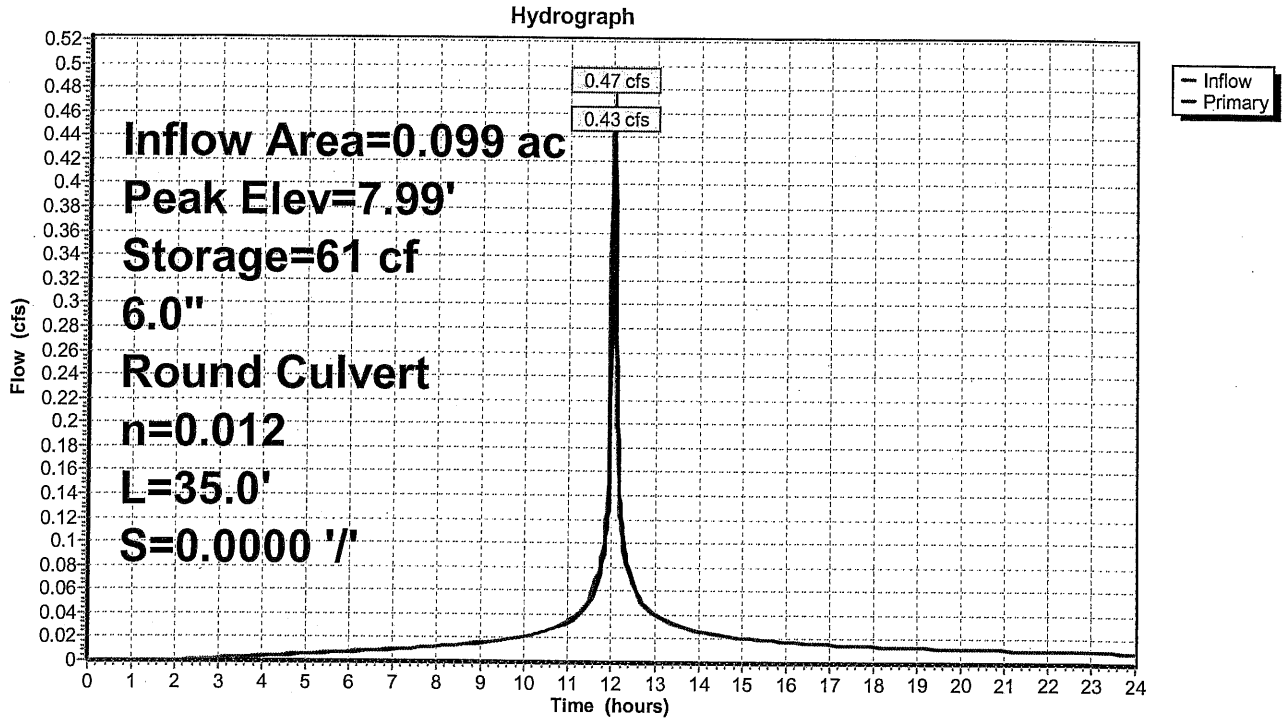
Volume	Invert	Avail.Storage	Storage Description
#1	7.09'	271 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
7.09	193	74.0	0.0	0	0	193
8.25	193	74.0	35.0	78	78	279
8.50	193	74.0	20.0	10	88	297
10.00	193	74.0	10.0	29	117	408
10.50	438	104.3	100.0	154	271	841

Device	Routing	Invert	Outlet Devices
#1	Primary	7.17'	**6.0" Round Culvert**
			L= 35.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 7.17' / 7.17' S= 0.0000 '/' Cc= 0.900
			n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.43 cfs @ 12.03 hrs HW=7.99' TW=7.18' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.43 cfs @ 2.20 fps)

Pond RG4: Rain Garden 4

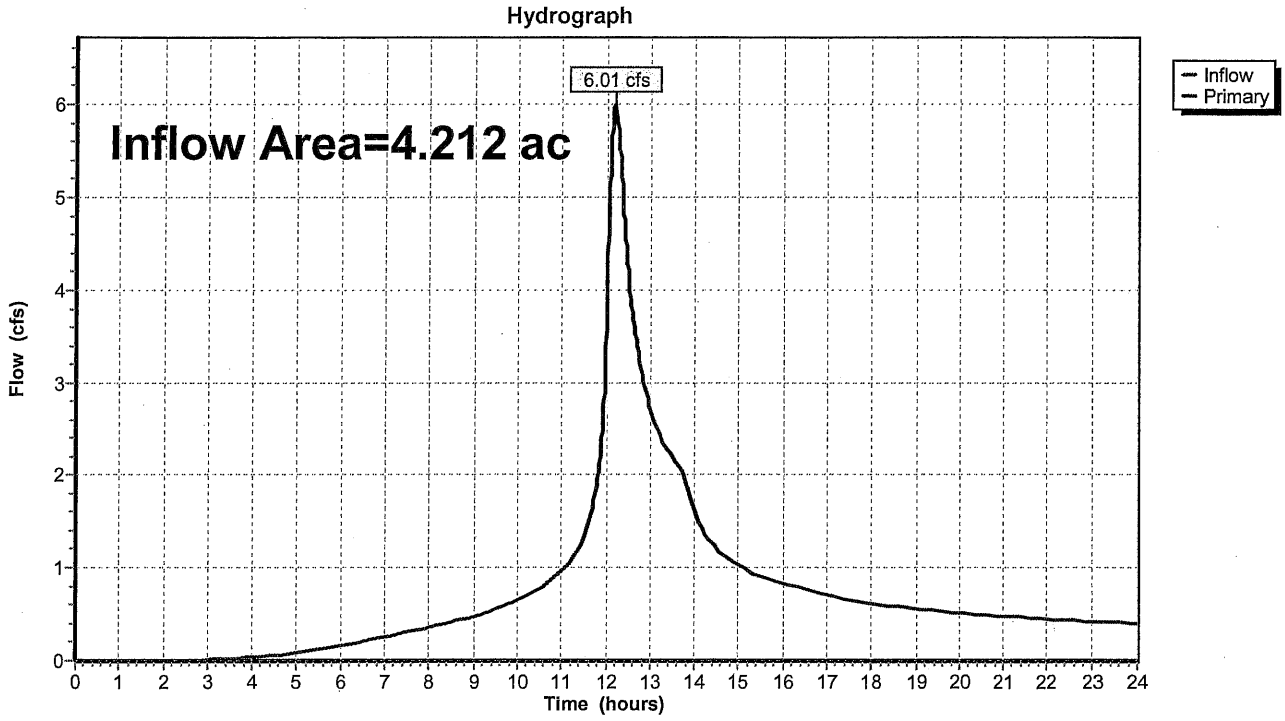


Summary for Link LB: Little Bay

Inflow Area = 4.212 ac, 51.33% Impervious, Inflow Depth > 3.99" for 10-yr event
Inflow = 6.01 cfs @ 12.20 hrs, Volume= 1.400 af
Primary = 6.01 cfs @ 12.20 hrs, Volume= 1.400 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link LB: Little Bay



A – 2

NODE LISTING – 25-YR

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: 1 Runoff Area=55,061 sf 41.31% Impervious Runoff Depth>5.70"
Flow Length=126' Tc=14.4 min CN=89 Runoff=4.64 cfs 0.601 af

Subcatchment 2: 2 Runoff Area=13,289 sf 96.31% Impervious Runoff Depth>6.66"
Flow Length=27' Slope=0.0100 '/' Tc=0.2 min CN=97 Runoff=2.00 cfs 0.169 af

Subcatchment 3: 3 Runoff Area=3,525 sf 1.02% Impervious Runoff Depth>4.04"
Flow Length=81' Slope=0.0290 '/' Tc=9.7 min CN=74 Runoff=0.26 cfs 0.027 af

Subcatchment 4: 4 Runoff Area=5,425 sf 75.94% Impervious Runoff Depth>6.05"
Flow Length=68' Slope=0.0120 '/' Tc=12.0 min CN=92 Runoff=0.52 cfs 0.063 af

Subcatchment 5: 5 Runoff Area=20,950 sf 26.66% Impervious Runoff Depth>4.57"
Flow Length=359' Tc=20.7 min CN=79 Runoff=1.23 cfs 0.183 af

Subcatchment 6: 6 Runoff Area=12,870 sf 88.41% Impervious Runoff Depth>6.42"
Flow Length=15' Slope=0.0750 '/' Tc=1.7 min CN=95 Runoff=1.92 cfs 0.158 af

Subcatchment 7: 7 Runoff Area=6,009 sf 89.13% Impervious Runoff Depth>6.42"
Flow Length=27' Slope=0.0200 '/' Tc=2.9 min CN=95 Runoff=0.88 cfs 0.074 af

Subcatchment 8: 8 Runoff Area=6,740 sf 30.82% Impervious Runoff Depth>4.81"
Flow Length=161' Slope=0.0500 '/' Tc=9.8 min CN=81 Runoff=0.59 cfs 0.062 af

Subcatchment 9: 9 Runoff Area=1,205 sf 67.63% Impervious Runoff Depth>5.84"
Flow Length=12' Slope=0.0100 '/' Tc=3.2 min CN=90 Runoff=0.17 cfs 0.013 af

Subcatchment 10: 10 Runoff Area=3,052 sf 89.19% Impervious Runoff Depth>6.42"
Flow Length=16' Slope=0.0160 '/' Tc=3.4 min CN=95 Runoff=0.44 cfs 0.037 af

Subcatchment 11: 11 Runoff Area=3,725 sf 83.84% Impervious Runoff Depth>6.30"
Flow Length=18' Slope=0.0390 '/' Tc=2.6 min CN=94 Runoff=0.55 cfs 0.045 af

Subcatchment 12: 12 Runoff Area=4,318 sf 71.56% Impervious Runoff Depth>5.95"
Flow Length=34' Slope=0.0890 '/' Tc=3.1 min CN=91 Runoff=0.61 cfs 0.049 af

Subcatchment 13: 13 Runoff Area=5,669 sf 90.26% Impervious Runoff Depth>6.54"
Flow Length=18' Tc=1.3 min CN=96 Runoff=0.85 cfs 0.071 af

Subcatchment 14: 14 Runoff Area=7,934 sf 54.15% Impervious Runoff Depth>5.49"
Flow Length=60' Slope=0.0480 '/' Tc=6.2 min CN=87 Runoff=0.92 cfs 0.083 af

Subcatchment 15: 15 Runoff Area=27,197 sf 40.11% Impervious Runoff Depth>5.01"
Flow Length=170' Tc=20.7 min CN=83 Runoff=1.73 cfs 0.261 af

Subcatchment 16: 16 Runoff Area=6,490 sf 0.00% Impervious Runoff Depth>4.06"
Flow Length=36' Slope=0.1670 '/' Tc=2.5 min CN=74 Runoff=0.68 cfs 0.050 af

Reach R1: R1 Avg. Flow Depth=0.25' Max Vel=0.34 fps Inflow=0.59 cfs 0.062 af
n=0.070 L=26.0' S=0.0019 '/' Capacity=6.79 cfs Outflow=0.58 cfs 0.062 af

Reach R2: R2 Avg. Flow Depth=0.13' Max Vel=2.90 fps Inflow=0.67 cfs 0.094 af
n=0.050 L=16.0' S=0.2406 '/' Capacity=11.48 cfs Outflow=0.67 cfs 0.094 af

Reach R3: R3 Avg. Flow Depth=0.44' Max Vel=0.37 fps Inflow=1.23 cfs 0.156 af
n=0.070 L=44.0' S=0.0011 '/' Capacity=5.22 cfs Outflow=1.20 cfs 0.156 af

Reach R4: R4 Avg. Flow Depth=0.32' Max Vel=0.92 fps Inflow=2.06 cfs 0.324 af
n=0.050 L=77.0' S=0.0053 '/' Capacity=15.83 cfs Outflow=2.05 cfs 0.323 af

Reach R5: R5 Avg. Flow Depth=0.37' Max Vel=0.74 fps Inflow=2.05 cfs 0.323 af
n=0.050 L=185.0' S=0.0029 '/' Capacity=11.72 cfs Outflow=1.96 cfs 0.322 af

Reach TS1: TS1 Avg. Flow Depth=0.38' Max Vel=0.44 fps Inflow=0.92 cfs 0.083 af
n=0.120 L=110.0' S=0.0064 '/' Capacity=1.28 cfs Outflow=0.78 cfs 0.083 af

Pond DMH1: DMH1 Peak Elev=7.10' Inflow=1.57 cfs 0.586 af
15.0" Round Culvert n=0.012 L=150.0' S=0.0050 '/' Outflow=1.57 cfs 0.586 af

Pond DMH2: DMH2 Peak Elev=6.47' Inflow=2.32 cfs 0.831 af
18.0" Round Culvert n=0.012 L=178.0' S=0.0051 '/' Outflow=2.32 cfs 0.831 af

Pond DMH3: DMH3 Peak Elev=5.77' Inflow=3.88 cfs 1.227 af
18.0" Round Culvert n=0.012 L=89.0' S=0.0051 '/' Outflow=3.88 cfs 1.227 af

Pond DP1: DP1 Peak Elev=11.25' Storage=374 cf Inflow=0.26 cfs 0.027 af
Outflow=0.17 cfs 0.020 af

Pond OS-RG3: OS-RG3 Peak Elev=5.84' Inflow=1.58 cfs 0.396 af
18.0" Round Culvert n=0.012 L=5.0' S=0.0200 '/' Outflow=1.58 cfs 0.396 af

Pond PP1: Porous Pave 1 Peak Elev=10.49' Storage=2,370 cf Inflow=2.00 cfs 0.169 af
6.0" Round Culvert n=0.012 L=30.0' S=0.0237 '/' Outflow=0.49 cfs 0.162 af

Pond PP2: Porous Pave 2 Peak Elev=6.25' Storage=2,822 cf Inflow=1.92 cfs 0.158 af
6.0" Round Culvert n=0.012 L=60.0' S=0.0000 '/' Outflow=0.37 cfs 0.145 af

Pond PP3: Porous Pave 3 Peak Elev=6.02' Storage=1,173 cf Inflow=0.88 cfs 0.074 af
6.0" Round Culvert n=0.012 L=60.0' S=0.0000 '/' Outflow=0.26 cfs 0.069 af

Pond PP4: Porous Pave 4 Peak Elev=9.68' Storage=160 cf Inflow=0.17 cfs 0.013 af
6.0" Round Culvert n=0.012 L=47.0' S=0.0106 '/' Outflow=0.09 cfs 0.013 af

Pond PP5: Porous Pave 5 Peak Elev=9.46' Storage=238 cf Inflow=0.53 cfs 0.051 af
6.0" Round Culvert n=0.012 L=10.0' S=0.1200 '/' Outflow=0.38 cfs 0.050 af

Pond PP6: Porous Pave 6 Peak Elev=9.45' Storage=468 cf Inflow=0.55 cfs 0.045 af
6.0" Round Culvert n=0.012 L=20.0' S=0.0650 '/' Outflow=0.29 cfs 0.044 af

Pond PP7: Porous Pave 7 Peak Elev=7.43' Storage=956 cf Inflow=1.37 cfs 0.120 af
6.0" Round Culvert n=0.012 L=20.0' S=0.0050 '/' Outflow=0.59 cfs 0.118 af

Pond RG1: Rain Garden 1 Peak Elev=9.67' Storage=5,963 cf Inflow=4.64 cfs 0.601 af
Outflow=1.57 cfs 0.586 af

Pond RG2: Rain Garden 2 Peak Elev=8.81' Storage=156 cf Inflow=0.64 cfs 0.083 af
Outflow=0.61 cfs 0.083 af

Pond RG3: Rain Garden 3 Peak Elev=8.19' Storage=511 cf Inflow=1.23 cfs 0.183 af
Primary=0.97 cfs 0.182 af Secondary=0.00 cfs 0.000 af Outflow=0.97 cfs 0.182 af

Pond RG4: Rain Garden 4 Peak Elev=8.20' Storage=75 cf Inflow=0.61 cfs 0.049 af
6.0" Round Culvert n=0.012 L=35.0' S=0.0000 '/' Outflow=0.56 cfs 0.049 af

Link LB: Little Bay Inflow=7.83 cfs 1.892 af
Primary=7.83 cfs 1.892 af

Total Runoff Area = 4.212 ac Runoff Volume = 1.947 af Average Runoff Depth = 5.55"
48.67% Pervious = 2.050 ac 51.33% Impervious = 2.162 ac

A – 2

NODE LISTING – 50-YR

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: 1 Runoff Area=55,061 sf 41.31% Impervious Runoff Depth>7.05"
Flow Length=126' Tc=14.4 min CN=89 Runoff=5.67 cfs 0.742 af

Subcatchment 2: 2 Runoff Area=13,289 sf 96.31% Impervious Runoff Depth>8.04"
Flow Length=27' Slope=0.0100 '/' Tc=0.2 min CN=97 Runoff=2.40 cfs 0.204 af

Subcatchment 3: 3 Runoff Area=3,525 sf 1.02% Impervious Runoff Depth>5.27"
Flow Length=81' Slope=0.0290 '/' Tc=9.7 min CN=74 Runoff=0.34 cfs 0.036 af

Subcatchment 4: 4 Runoff Area=5,425 sf 75.94% Impervious Runoff Depth>7.41"
Flow Length=68' Slope=0.0120 '/' Tc=12.0 min CN=92 Runoff=0.62 cfs 0.077 af

Subcatchment 5: 5 Runoff Area=20,950 sf 26.66% Impervious Runoff Depth>5.84"
Flow Length=359' Tc=20.7 min CN=79 Runoff=1.56 cfs 0.234 af

Subcatchment 6: 6 Runoff Area=12,870 sf 88.41% Impervious Runoff Depth>7.80"
Flow Length=15' Slope=0.0750 '/' Tc=1.7 min CN=95 Runoff=2.30 cfs 0.192 af

Subcatchment 7: 7 Runoff Area=6,009 sf 89.13% Impervious Runoff Depth>7.79"
Flow Length=27' Slope=0.0200 '/' Tc=2.9 min CN=95 Runoff=1.06 cfs 0.090 af

Subcatchment 8: 8 Runoff Area=6,740 sf 30.82% Impervious Runoff Depth>6.10"
Flow Length=161' Slope=0.0500 '/' Tc=9.8 min CN=81 Runoff=0.74 cfs 0.079 af

Subcatchment 9: 9 Runoff Area=1,205 sf 67.63% Impervious Runoff Depth>7.19"
Flow Length=12' Slope=0.0100 '/' Tc=3.2 min CN=90 Runoff=0.20 cfs 0.017 af

Subcatchment 10: 10 Runoff Area=3,052 sf 89.19% Impervious Runoff Depth>7.79"
Flow Length=16' Slope=0.0160 '/' Tc=3.4 min CN=95 Runoff=0.53 cfs 0.046 af

Subcatchment 11: 11 Runoff Area=3,725 sf 83.84% Impervious Runoff Depth>7.67"
Flow Length=18' Slope=0.0390 '/' Tc=2.6 min CN=94 Runoff=0.66 cfs 0.055 af

Subcatchment 12: 12 Runoff Area=4,318 sf 71.56% Impervious Runoff Depth>7.31"
Flow Length=34' Slope=0.0890 '/' Tc=3.1 min CN=91 Runoff=0.74 cfs 0.060 af

Subcatchment 13: 13 Runoff Area=5,669 sf 90.26% Impervious Runoff Depth>7.92"
Flow Length=18' Tc=1.3 min CN=96 Runoff=1.02 cfs 0.086 af

Subcatchment 14: 14 Runoff Area=7,934 sf 54.15% Impervious Runoff Depth>6.83"
Flow Length=60' Slope=0.0480 '/' Tc=6.2 min CN=87 Runoff=1.14 cfs 0.104 af

Subcatchment 15: 15 Runoff Area=27,197 sf 40.11% Impervious Runoff Depth>6.32"
Flow Length=170' Tc=20.7 min CN=83 Runoff=2.16 cfs 0.329 af

Subcatchment 16: 16 Runoff Area=6,490 sf 0.00% Impervious Runoff Depth>5.28"
Flow Length=36' Slope=0.1670 '/' Tc=2.5 min CN=74 Runoff=0.88 cfs 0.066 af

Reach R1: R1 Avg. Flow Depth=0.29' Max Vel=0.37 fps Inflow=0.74 cfs 0.079 af
n=0.070 L=26.0' S=0.0019 '/' Capacity=6.79 cfs Outflow=0.73 cfs 0.079 af

Reach R2: R2 Avg. Flow Depth=0.14' Max Vel=3.05 fps Inflow=0.79 cfs 0.115 af
n=0.050 L=16.0' S=0.2406 '/' Capacity=11.48 cfs Outflow=0.79 cfs 0.115 af

Reach R3: R3 Avg. Flow Depth=0.50' Max Vel=0.39 fps Inflow=1.50 cfs 0.193 af
n=0.070 L=44.0' S=0.0011 '/' Capacity=5.22 cfs Outflow=1.47 cfs 0.193 af

Reach R4: R4 Avg. Flow Depth=0.36' Max Vel=0.99 fps Inflow=2.54 cfs 0.402 af
n=0.050 L=77.0' S=0.0053 '/' Capacity=15.83 cfs Outflow=2.53 cfs 0.402 af

Reach R5: R5 Avg. Flow Depth=0.42' Max Vel=0.80 fps Inflow=2.53 cfs 0.402 af
n=0.050 L=185.0' S=0.0029 '/' Capacity=11.72 cfs Outflow=2.44 cfs 0.400 af

Reach TS1: TS1 Avg. Flow Depth=0.43' Max Vel=0.47 fps Inflow=1.14 cfs 0.104 af
n=0.120 L=110.0' S=0.0064 '/' Capacity=1.28 cfs Outflow=0.97 cfs 0.103 af

Pond DMH1: DMH1 Peak Elev=7.31' Inflow=2.31 cfs 0.726 af
15.0" Round Culvert n=0.012 L=150.0' S=0.0050 '/' Outflow=2.31 cfs 0.726 af

Pond DMH2: DMH2 Peak Elev=6.67' Inflow=3.26 cfs 1.028 af
18.0" Round Culvert n=0.012 L=178.0' S=0.0051 '/' Outflow=3.26 cfs 1.028 af

Pond DMH3: DMH3 Peak Elev=5.95' Inflow=4.99 cfs 1.523 af
18.0" Round Culvert n=0.012 L=89.0' S=0.0051 '/' Outflow=4.99 cfs 1.523 af

Pond DP1: DP1 Peak Elev=11.27' Storage=406 cf Inflow=0.34 cfs 0.036 af
Outflow=0.28 cfs 0.028 af

Pond OS-RG3: OS-RG3 Peak Elev=6.01' Inflow=1.74 cfs 0.495 af
18.0" Round Culvert n=0.012 L=5.0' S=0.0200 '/' Outflow=1.74 cfs 0.495 af

Pond PP1: Porous Pave 1 Peak Elev=10.62' Storage=2,655 cf Inflow=2.40 cfs 0.204 af
6.0" Round Culvert n=0.012 L=30.0' S=0.0237 '/' Outflow=0.56 cfs 0.197 af

Pond PP2: Porous Pave 2 Peak Elev=6.46' Storage=3,132 cf Inflow=2.30 cfs 0.192 af
6.0" Round Culvert n=0.012 L=60.0' S=0.0000 '/' Outflow=0.47 cfs 0.178 af

Pond PP3: Porous Pave 3 Peak Elev=6.12' Storage=1,298 cf Inflow=1.06 cfs 0.090 af
6.0" Round Culvert n=0.012 L=60.0' S=0.0000 '/' Outflow=0.29 cfs 0.085 af

Pond PP4: Porous Pave 4 Peak Elev=9.73' Storage=172 cf Inflow=0.20 cfs 0.017 af
6.0" Round Culvert n=0.012 L=47.0' S=0.0106 '/' Outflow=0.11 cfs 0.016 af

Pond PP5: Porous Pave 5 Peak Elev=9.55' Storage=264 cf Inflow=0.63 cfs 0.062 af
6.0" Round Culvert n=0.012 L=10.0' S=0.1200 '/' Outflow=0.44 cfs 0.061 af

Pond PP6: Porous Pave 6 Peak Elev=9.51' Storage=507 cf Inflow=0.66 cfs 0.055 af
6.0" Round Culvert n=0.012 L=20.0' S=0.0650 '/' Outflow=0.35 cfs 0.054 af

Pond PP7: Porous Pave 7 Peak Elev=7.75' Storage=1,076 cf Inflow=1.65 cfs 0.146 af
6.0" Round Culvert n=0.012 L=20.0' S=0.0050 '/' Outflow=0.73 cfs 0.144 af

Pond RG1: Rain Garden 1 Peak Elev=9.83' Storage=6,841 cf Inflow=5.67 cfs 0.742 af
Outflow=2.31 cfs 0.726 af

Pond RG2: Rain Garden 2 Peak Elev=9.44' Storage=178 cf Inflow=0.89 cfs 0.105 af
Outflow=0.86 cfs 0.105 af

Pond RG3: Rain Garden 3 Peak Elev=8.53' Storage=775 cf Inflow=1.56 cfs 0.234 af
Primary=1.03 cfs 0.232 af Secondary=0.09 cfs 0.001 af Outflow=1.12 cfs 0.233 af

Pond RG4: Rain Garden 4 Peak Elev=8.48' Storage=87 cf Inflow=0.74 cfs 0.060 af
6.0" Round Culvert n=0.012 L=35.0' S=0.0000 '/' Outflow=0.69 cfs 0.060 af

Link LB: Little Bay Inflow=9.49 cfs 2.355 af
Primary=9.49 cfs 2.355 af

Total Runoff Area = 4.212 ac Runoff Volume = 2.414 af Average Runoff Depth = 6.88"
48.67% Pervious = 2.050 ac 51.33% Impervious = 2.162 ac

APPENDIX B

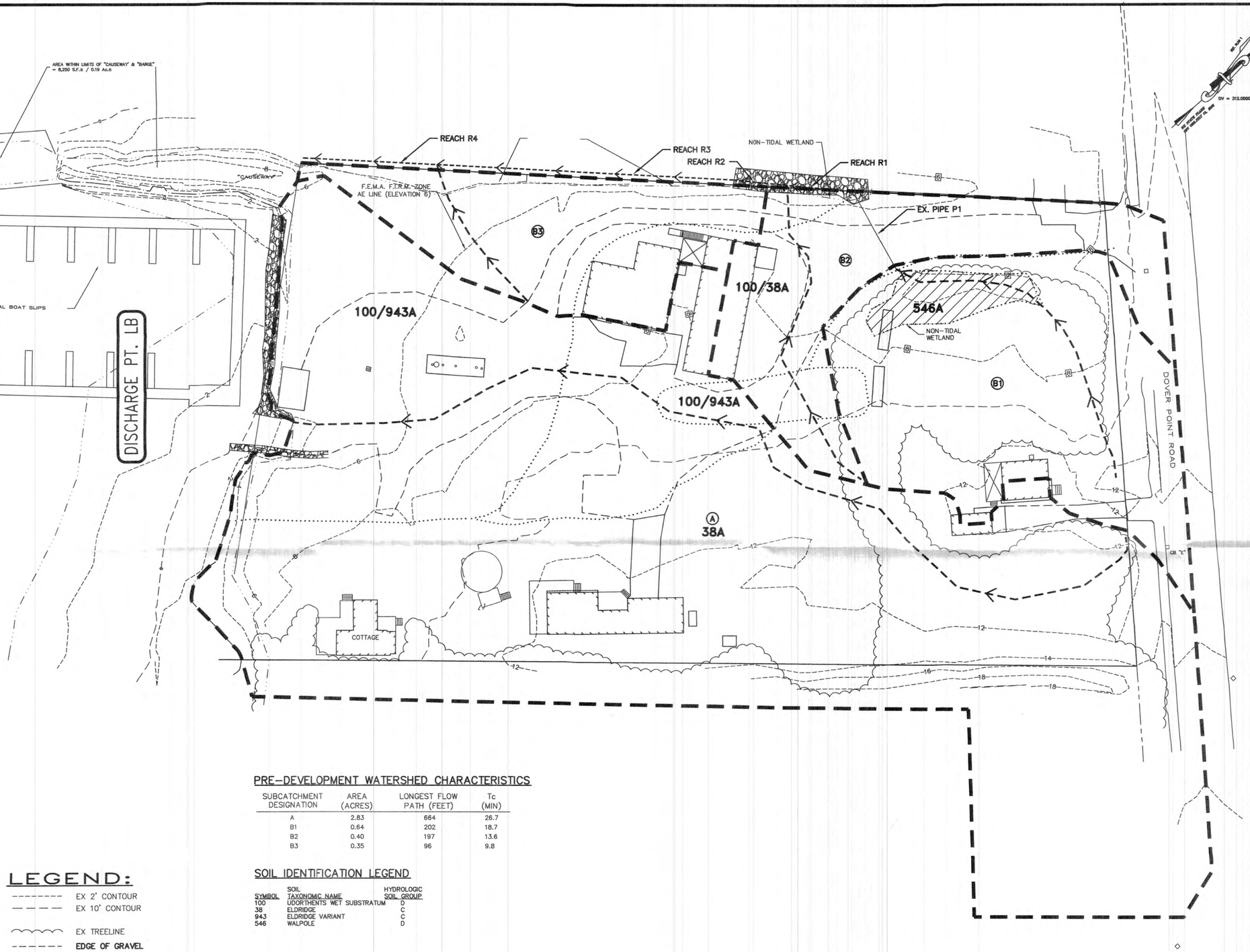
MAPS

B – 1

PRE-DEVELOPED CONDITIONS

B – 2

POST-DEVELOPED CONDITIONS



PRE-DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
A	2.83	664	26.7
B1	0.64	202	18.7
B2	0.40	197	13.6
B3	0.35	96	9.8

SOIL IDENTIFICATION LEGEND

SYMBOL	SOIL TAXONOMIC NAME	HYDROLOGIC SOIL GROUP
100	UDORTHENTS WET SUBSTRATUM	D
38	ELDRIDGE	C
943	ELDRIDGE VARIANT	C
546	WALPOLE	D

LEGEND:

- EX 2' CONTOUR
- EX 10' CONTOUR
- EX TREELINE
- EDGE OF GRAVEL
- PROPERTY LINE
- SUBCATCHMENT BOUNDARY
- LONGEST FLOW PATH WITH DIRECTION OF FLOW
- (5) SUBCATCHMENT DESIGNATION
- SSSS BOUNDARY
- BzB SSSS DESIGNATION

NOTES:

1. SOILS DATA FROM SITE-SPECIFIC SOIL SURVEY REPORT AND MAP, LITTLE BAY MARINA, DOVER, NH, DATED JANUARY 16, 2019, PRODUCED BY GOVE ENVIRONMENTAL SERVICES, INC.
2. TOPOGRAPHIC INFORMATION TAKEN FROM "PLAN OF LAND" PREPARED FOR LITTLE BAY MARINA & DEVELOPMENT, LLC AND RICHARD J.C. & VICTORIA BENN, TAX MAP 8, LOT NOS. 9, 10, 11, & 12 DOVER POINT ROAD & LITTLE BAY, CITY OF DOVER, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE, DATED APRIL 1, 2019 PREPARED BE MCENEANEY SURVEY ASSOCIATES, INC.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILENO.: P18-___

CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1166
Dover, New Hampshire 03820
(603) 749-9443

NO.	REVISION	APP'D	DATE

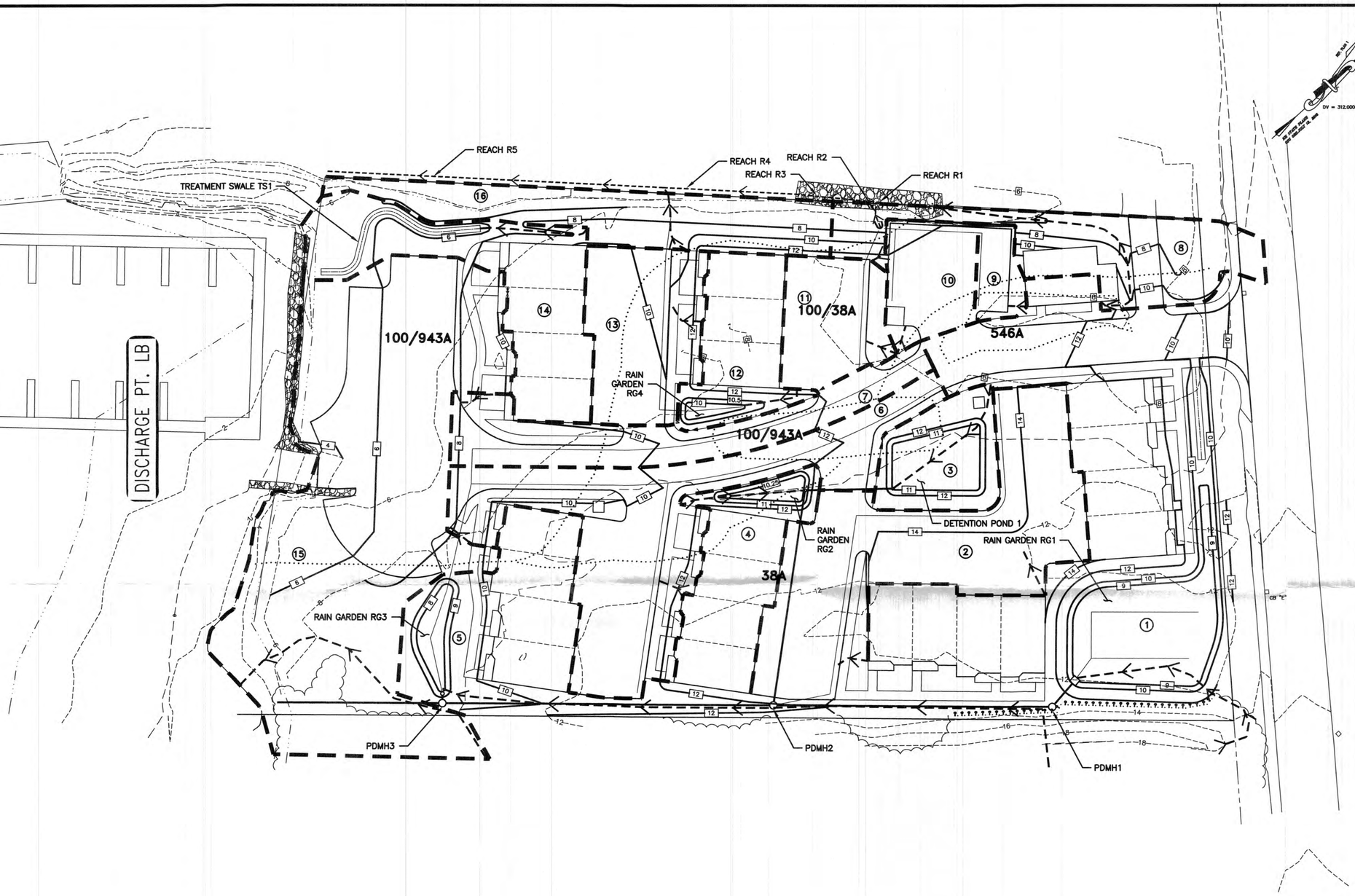
DATE: 6-18-18
SCALE: 1"=30'
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:17788
FILE: Dm.DWG

PRE DEVELOPMENT WATERSHED PLAN

LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

W-1



LEGEND:

- EX 2' CONTOUR
- EX 10' CONTOUR
- EX TREELINE
- PROPOSED TREELINE
- PROPERTY LINE
- SUBCATCHMENT BOUNDARY
- LONGEST FLOW PATH WITH DIRECTION OF FLOW
- (5) SUBCATCHMENT DESIGNATION
- SSSS BOUNDARY
- BzB SSSS DESIGNATION

POST-DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
1	1.26	126	14.4
2	0.31	27	0.2
3	0.08	81	9.7
4	0.12	68	12.0
5	0.48	359	20.7
6	0.30	15	1.7
7	0.14	27	2.9
8	0.15	161	9.8
9	0.03	12	3.2
10	0.07	16	3.4
11	0.09	18	2.6
12	0.10	34	3.1
13	0.13	18	1.3
14	0.18	60	6.2
15	0.62	170	20.7
16	0.15	36	2.5

SOIL IDENTIFICATION LEGEND

SYMBOL	SOIL TAXONOMIC NAME	HYDROLOGIC SOIL GROUP
100	UDORTHENTS WET SUBSTRATUM	D
38	ELDRIDGE	C
943	ELDRIDGE VARIANT	C
546	WALPOLE	D

NOTES:

1. SOILS DATA FROM SITE-SPECIFIC SOIL SURVEY REPORT AND MAP, LITTLE BAY MARINA, DOVER, NH, DATED JANUARY 16, 2019, PRODUCED BY GOVE ENVIRONMENTAL SERVICES, INC.
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GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILENO.: P18-____

CIVILWORKS NEW ENGLAND
CIVIL ENGINEERING
181 Watson Road, P.O. Box 1186
Dover, New Hampshire 03820
(603) 749-0443

NO.	REVISION	APP'D	DATE

DATE: 6-18-18
SCALE: 1"=30'
DRAWN BY: SRD
DESIGN BY: SRD
APPROVED BY:SJH
PROJECT NO:1788
FILE: Drn.DWG

POST DEVELOPMENT WATERSHED PLAN

LITTLE BAY MARINA & DEVELOPMENT, LLC
111 LOUDON ROAD
CONCORD, NH 03301

LITTLE BAY MARINA
DOVER POINT ROAD
DOVER, NH

W-2