



TO: Beverly Mesa-Zendt, AICP  
Planning Director  
City of Portsmouth, NH  
1 Junkins Avenue  
Portsmouth, NH 03801

DATE: 6/22/2022

RE: Map 283, Lot 11  
Wetland Conditional Use Permit

Dear Beverly,

The following is a supplemental to accompany the project plans that demonstrates compliance with the conditional use criteria for the proposed wetland buffer impacts. It is our hope that returning to the Planning Board to re-approve the expired CUP is the only step necessary given that the Conservation Commissions recommendations have not expired and the plans remain unchanged.

Project Overview:

**The property's sole access is via the existing old roadway off Martha Terrace. This roadway is paved with 20-24 feet of pavement width terminating in a cul-de-sac. There is no other alternative access to this buildable area of the lot without utilizing the roadway. The plans call for the removal of the existing failing asphalt surface and its non-functioning catch basins and the replacement of an 18 foot paved roadway that will be curbed to direct stormwater runoff to a small bio-retention area. The existing mature trees along the roadway will remain although there are a few trees proximate to the existing cul-de-sac that will be removed for the creation of stormwater features. The existing impervious coverage in the wetland buffer is 5,718 s.f. and the proposed permanent impacts to the buffer are 4,283 s.f., for the roadway, representing a 25% reduction in permanent buffer impact. Temporary impacts to the buffer are for the creation of the stormwater treatment areas (detention area and level spreader). These impacts require 1,738 s.f. of temporary impact in the buffer which result in stormwater treatment for the roadway.**

**GARREPY PLANNING CONSULTANTS, LLC**  
real estate planning & development

phone: 603.944.7530 email: [garrepy.pc@gmail.com](mailto:garrepy.pc@gmail.com)

*10.1017.40 Conditional Use Approval - 10.1017.50 Criteria for Approval*

*Any proposed development, other than installation of utilities within a right-of-way, shall comply with all of the following criteria:*

*(1) The land is reasonably suited to the use, activity or alteration.*

**The property is presently zoned for single-family residential development and consists of 3.16 acres in the SRA District. The property has over 400 feet of frontage on an existing roadway that has not been maintained for many years other than being plowed by the abutting landowners for access. The property has suitable upland soils outside of the 100-foot wetland buffer for residential development.**

*(2) There is no alternative location outside the wetland buffer that is feasible and reasonable for the proposed use, activity or alteration.*

**There is no other alternative access to the buildable area of the lot without utilizing and improving the existing right-of-way.**

*(3) There will be no adverse impact on the wetland functional values of the site or surrounding properties;*

**Given that there will be a reduction in permanent impact to the buffer by 25% and that new stormwater treatment will be introduced, the proposal will be a net positive impact on the wetlands. Therefore, no adverse impact on the wetland functional values will result.**

*(4) Alteration of the natural vegetative state or managed woodland will occur only to the extent necessary to achieve construction goals; and*

**The existing mature trees along the roadway will remain. Some brush will be removed along the roadway to establish the curbing to direct stormwater to the detention area. The detention pond proximate to the existing cul-de-sac is proposed in an area that is presently disturbed area where the existing catch basin and outfall pipe are located. (See photos attached)**

*(5) The proposal is the alternative with the least adverse impact to areas and environments under the jurisdiction of this Section.*

**There is no other alternative access to the buildable area of the lot without utilizing and improving the existing right-of-way.**

*(6) Any area within the vegetated buffer strip will be returned to a natural state to the extent feasible.*

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**There is no work proposed within the vegetated buffer strip. The vegetated buffer strip shall remain uncut and undisturbed.**

PHOTO A: Looking west towards the proposed detention pond from the existing roadway.



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PHOTO B: Looking westerly upslope towards the existing roadway cul-de-sac at proposed detention pond location.



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PHOTO C: Looking south toward the existing cul-de-sac. Existing mature trees along the westerly side of the roadway to remain. Broken pavement to be removed and replaced. Curbing to be installed along the westerly side of the roadway.



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# 2 LOT SUBDIVISION PLAN FOR

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2. THE PROPERTY IS DESIGNATED AS TAX MAP 283, LOT 11.
3. THE AREA OF THE EXISTING LOT 11 IS 3.16 ACRES (137,549 SQ. FT.)
4. THE CURRENT OWNER FOR TAX MAP 283, LOT 11: FRITZ FAMILY REVOC LIV TRUST, P.O. BOX 524, 50 SHORE DR., NORTHWOOD NH, 03261.  
BK 3338 PG 173.
5. THE ZONING DESIGNATION FOR THE PROPERTY IS (SRA) SINGLE RESIDENCE A DISTRICT.
6. DIMENSIONAL REQUIREMENTS PROVIDED FOR ZONE (SRA) DISTRICT:

MIN. ROAD FRONTAGE	=150'
MIN. LOT DEPTH	=200'
MIN. LOT SIZE	=43,560 SF (1 ACRE)
MIN. ROAD SETBACK	=30'
MIN. REAR SETBACK	=40'
MIN. SIDE SETBACK	=20'
WETLAND/WATERBODY SETBACK	=100'
WETLAND/LIMITED CUT	=50'
WETLAND/VEGETATED BUFFER STRIP	=25'
MAXIMUM STRUCTURE HEIGHT	=35'
SEPTIC SETBACK	=75' HYDRIC SOILS

OVERLAY DISTRICTS: (STEEP SLOPES, SOILS, WETLANDS, CONSERVATION)
7. THE PROPOSED GRADING PLANS ARE CONCEPTUAL AND FINAL LOCATION OF DRIVEWAY, LEACHFIELDS, STRUCTURES, ETC. SHALL BE SUBJECT TO FUTURE PERMIT APPLICATION.
8. THE EXISTING USE OF TM 283 LOT 11 IS VACANT LAND.
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10. SEWER TO BE PROVIDED BY ON-SITE SEPTIC SYSTEMS.
11. WATER TO BE PROVIDED BY MUNICIPAL PUBLIC WATER.
12. RIGHT OF WAY WIDTH DETERMINED BY SURVEY, FIELD INVESTIGATION, RECORDED DEEDS AND PLANS OF REFERENCE.
13. ABUTTING PROPERTY INFORMATION PROVIDED BY A COMBINATION OF ON-LINE TAX MAP DATA AND DATA PROVIDED BY [granitview.unh.edu](http://granitview.unh.edu).
14. SHEET 9 OF 10 THIS SET WILL BE RECORDED, A COMPLETE PLAN SET WILL BE FILED AT THE CITY OF PORTSMOUTH.

17. IF DURING CONSTRUCTION, IT BECOMES APPARENT THAT DEFICIENCIES EXIST IN THE APPROVED DESIGN DRAWINGS, THE OWNER SHALL BE REQUIRED TO CORRECT DEFICIENCIES TO MEET THE REQUIREMENTS OF THE REGULATIONS AT NO EXPENSE TO THE CITY.

18. IF DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE DUE TO ACTUAL SITE CONDITIONS, THE OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE CITY.

19. ELEVATIONS AND COORDINATES ARE BASED ON STATE PLANE COORDINATES FROM A SOLUTION GENERATED BY NGS OPUS ON JUNE 18, 2020 FROM DATA COLLECTED BY THIS OFFICE ON JUNE 18, 2020. THE OPUS SOLUTION IS BASED ON THE NAD 83 (2011) REF. FRAME AND THE NAVD 88.

20. EASEMENT TO BE PROVIDED TO THE CITY OF PORTSMOUTH OVER THE ENTIRE PRIVATE R.O.W. AREA FOR THE PURPOSES OF ACCESSING WATER VALVES AND LEAK DETECTION OF WATER LINES. TO BE RECORDED AT ROCKINGHAM REGISTRY OF DEEDS.



## PROFESSIONAL CONSULTANTS LIST



**N.H. LAND**  
Consultants  
SURVEYING • LAND PLANNING • REAL ESTATE  
*A Veteran Owned Company*

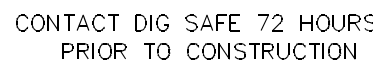
A circular professional engineer seal for the State of New Hampshire. The outer ring contains the text "STATE OF NEW HAMPSHIRE" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by vertical lines. The inner circle contains the text "R. JEFFREY BURD" and "No. 9058" in the center, with "LICENSED" at the bottom.

2) Bund

HEMLOCK WAY REALTY INVESTMENTS, LLC  
10 BRICKETTS MILL ROAD, SUITE C  
HAMPSTEAD, NH 03841  
BK 6330 PG 796

DUBE PLUS CONSTRUCTION,  
10 BRICKETTS MILL ROAD,  
HAMPSTEAD, NH 03841

NHDFS SUBDIVISION : #eSA2021100607  
APPROVED 10/6/2021



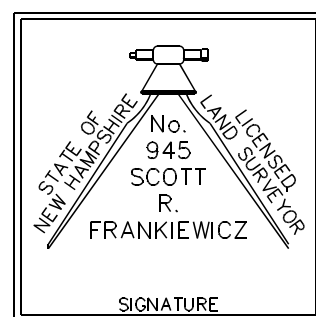
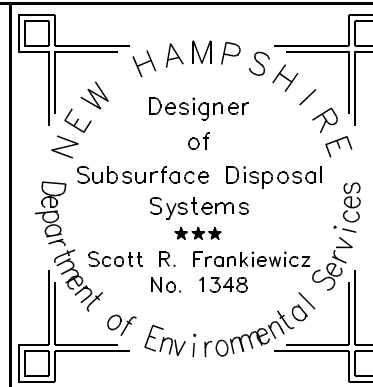
THE LOCATION OF ANY UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. NEW HAMPSHIRE LAND CONSULTANTS, PLLC, MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UTILITIES SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ANY UTILITIES WHETHER THEY BE ABOVE OR BELOW GROUND. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233).

ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO THE CITY OF PORTSMOUTH REGULATIONS AND THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", LATEST EDITION.

# N.H. LAND Consultants

SURVEYING • LAND PLANNING • REAL ESTATE  
A VETERAN OWNED COMPANY

683C FIRST NH TURNPIKE, NORTHWOOD, NH 03261 PH. 603-942-9220 WEBSITE: NHLANDCONSULTANTS.COM



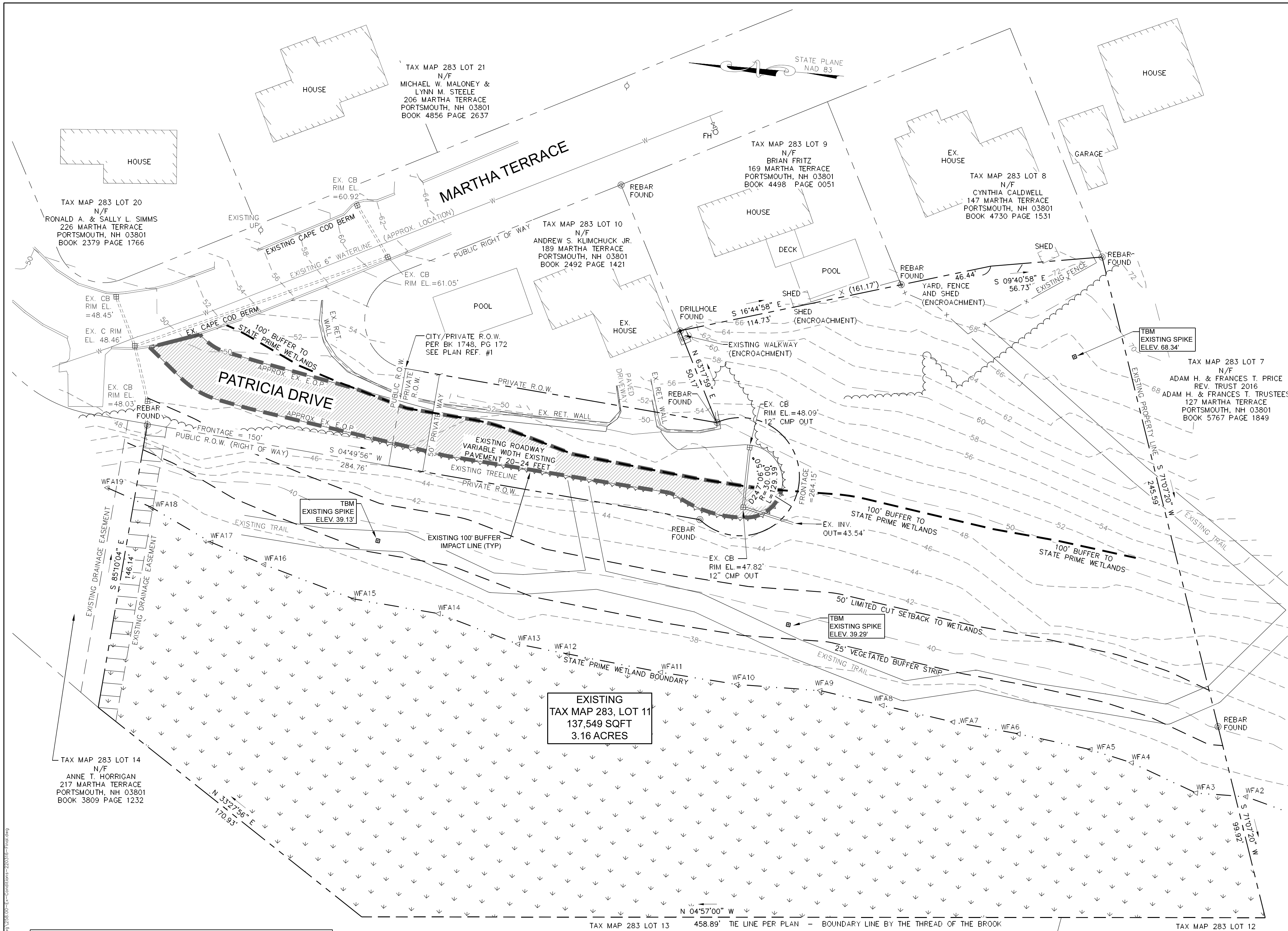
COVER SHEET  
TAX MAP 283 LOT 11  
**DUBE PLUS CONSTRUCTION**  
HEMLOCK WAY, PORTSMOUTH NH 03801  
OWNED BY  
**HEMLOCK WAY**  
**REALTY INVESTMENTS, LLC**  
O BRICKETTS MILL ROAD, SUITE C, HAMPSHIRE, NH 03801  
BOOK 6330 PAGE 796

JOB NO: 258.00
ROCKINGHAM CO.
DATE: SEPTEMBER 23, 2020

CVR

SHT. 1 of 10





**100' WETLAND BUFFER IMPACT AREAS**

EXISTING IMPERVIOUS SURFACE (PAVEMENT AREA) = 5,718 SF

EXISTING OVERALL IMPACT = 5,718 SF

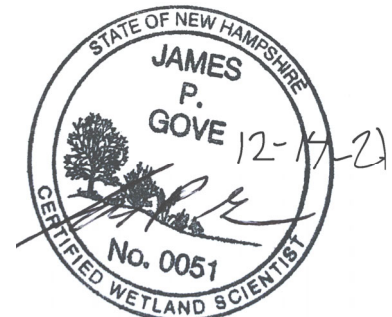
LEGEND	
EXISTING RETAINING WALL	=====
ABUTTERS PROPERTY LINES	-----
SUBJECT PROPERTY LINES	-----
PROPOSED PROPERTY LINES	-----
EXISTING TIE LINE	-----
EDGE OF PAVEMENT	-----
PROPOSED BLDG SETBACK	-----
EXISTING CONTOUR (MNR)	-572-----
EXISTING CONTOUR (MJR)	-570-----
WETLANDS	~~~~~
DRILL HOLE FOUND	⊙
REBAR W/ CAP FOUND	⊙
STONE BOUND FOUND	⊙
EXISTING GATE VALVE & FIRE HYDRANT	⊙

**EXISTING IMPERVIOUS SURFACE (PAVEMENT AREA)**

TAX MAP 283 LOT 13  
N/F  
CITY OF PORTSMOUTH DPW  
P.O. BOX 628  
PORTSMOUTH, NH 03802  
BOOK 2249 PAGE 432

Standards Utilized:

US Army Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1 (Jan 1987), AND Regional Supplement to the Corps of Engineers Wetlands Delineation Manual, Northcentral and Northeast Region, Version 2.0, January 2012 AND Field Indicators for Identifying Hydric Soils in New England, Version 4, May 2017, New England Hydric Soils Technical Committee. Wetlands Delineated by Gove Environmental Services, Inc. staff: James P. Gove, CWS 051, CSS 004 on 6/4/20

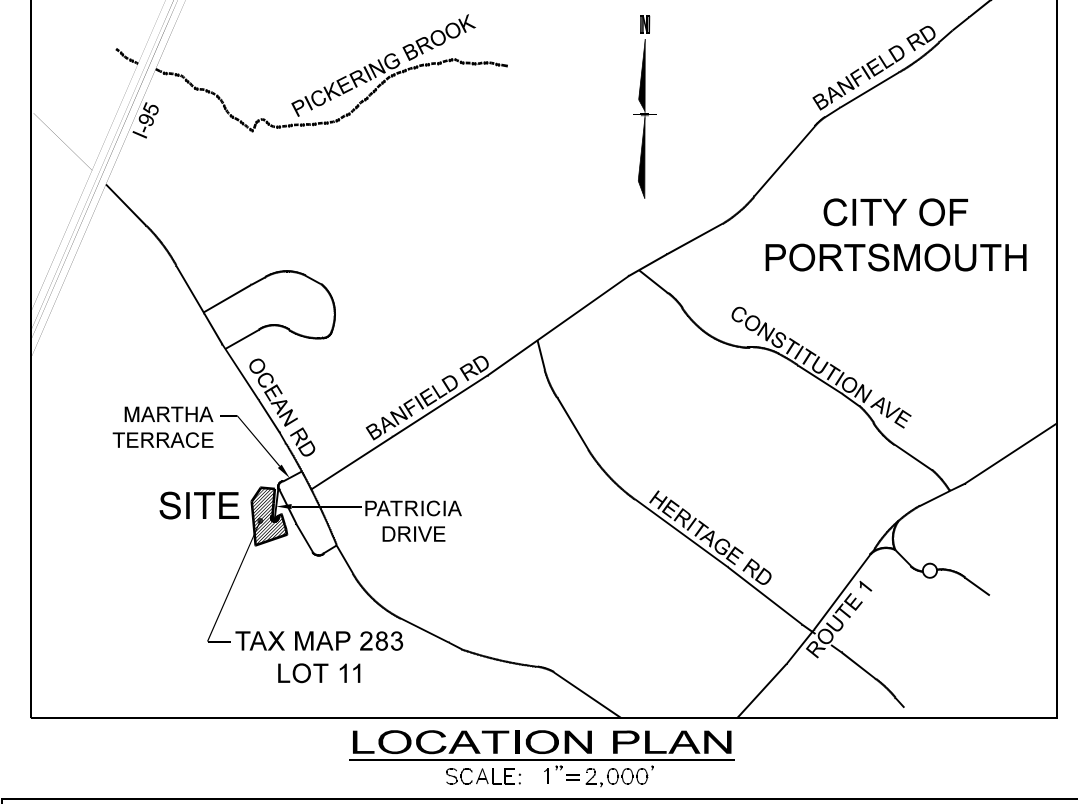


STATE OF NEW HAMPSHIRE  
JAMES P. GOVE  
12-17-21  
No. 0051  
REGISTERED WETLAND SCIENTIST

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I CERTIFY THAT THIS PLAT IS BASED UPON THE PLAN REFERENCES AND A FIELD SURVEY CONDUCTED ON THE GROUND IN SPRING OF 2020, MEETING THE MINIMUM REQUIREMENTS FOR ACCURACY, 1:10,000 AND COMPLETENESS PER THE STATE OF NEW HAMPSHIRE AND THE CITY OF PORTSMOUTH, NH.

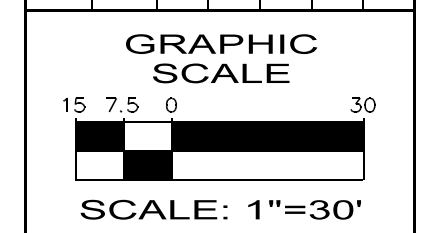
12/14/2021



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  - R.C.R.D. PLAN #C8102, RECORDED SEPTEMBER 18, 1978, TITLED: "LOT LINE REVISION, LAND OF LEVESQUE AND GERACI, PORTSMOUTH NH", PREPARED BY: JOHN W. DURGIN ASSOCIATES INC., ENGINEERS, SURVEYORS & DESIGNERS OF PORTSMOUTH AND ROCHESTER, DATED SEPTEMBER 1978, SCALE: 1"=50', APPROVED BY PORTSMOUTH PLANNING BOARD ON SEPTEMBER 18, 1978.
  - R.C.R.D. PLAN #D33328, RECORDED DECEMBER 6, 2005, TITLED: "SUBDIVISION AND LOT LINE RELOCATION PLAN, MAP 283 - LOTS 7 & 11", PREPARED FOR: ADAM H. & FRANCES PRICE AND ADAM H. PRICE & FRITZ FAMILY REV. LIVING TRUST, 127 MARTHA TERRACE & PATRICIA DRIVE, PORTSMOUTH NH, PREPARED BY: AMBIT ENGINEERING, INC., CIVIL ENGINEERS & LAND SURVEYORS, PORTSMOUTH NH., SCALE: 1"=50', DATED MARCH 2005, APPROVED BY PORTSMOUTH PLANNING BOARD ON OCTOBER 24, 2005.

REVISIONS	
NO.	DESCRIPTION
15	10/12/2021 FINAL APPROVED PLANS FOR RECORDING
16	12/14/2021 ADDED NOTING TO FINAL PLANS
19	03/16/2022 REVISED PER DPW COMMENTS FOR FINAL PLANS



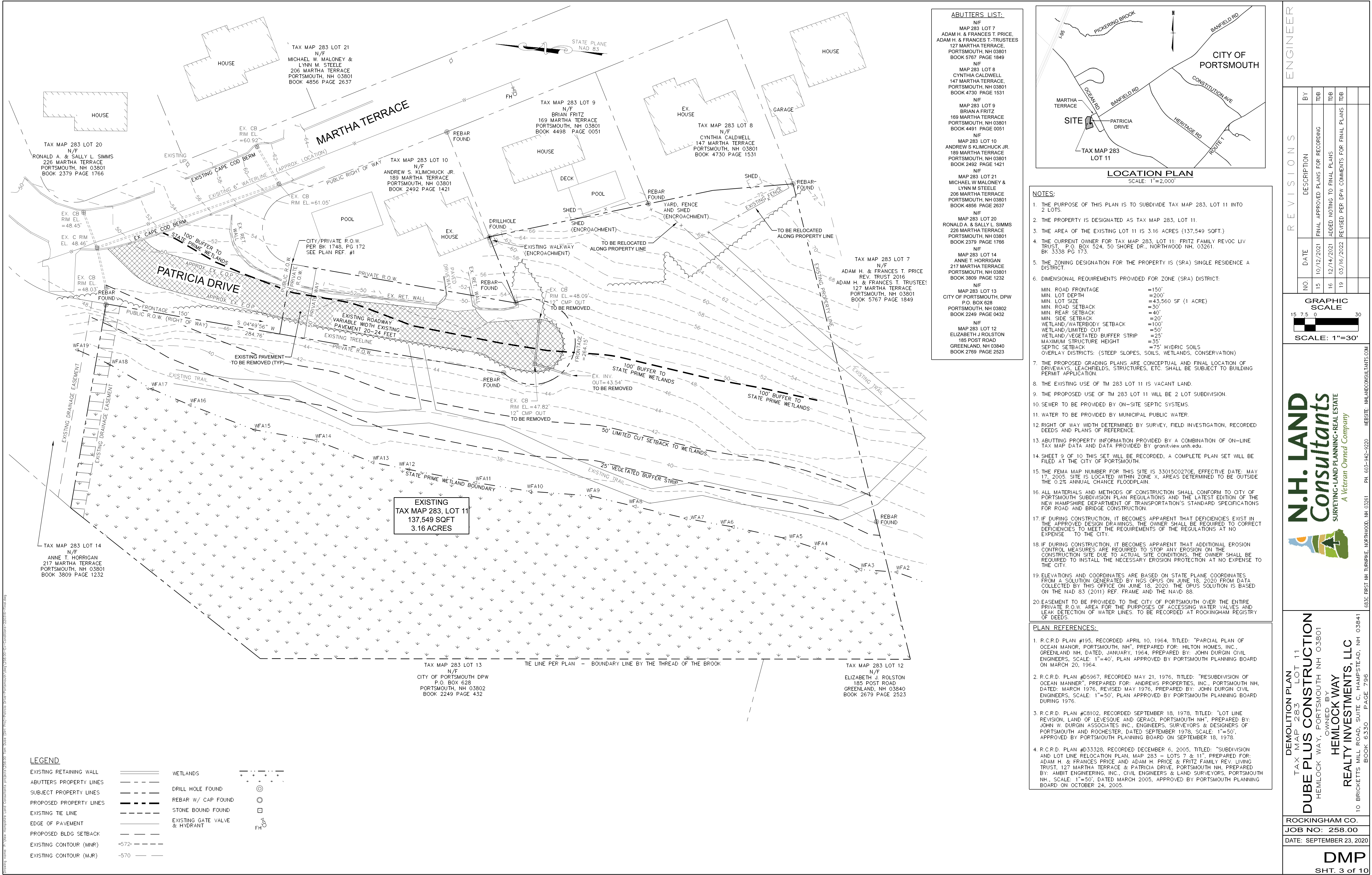
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EXISTING CONDITIONS PLAN  
TAX MAP 283 LOT 11  
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OWNED BY  
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BOOK 6330 PAGE 796

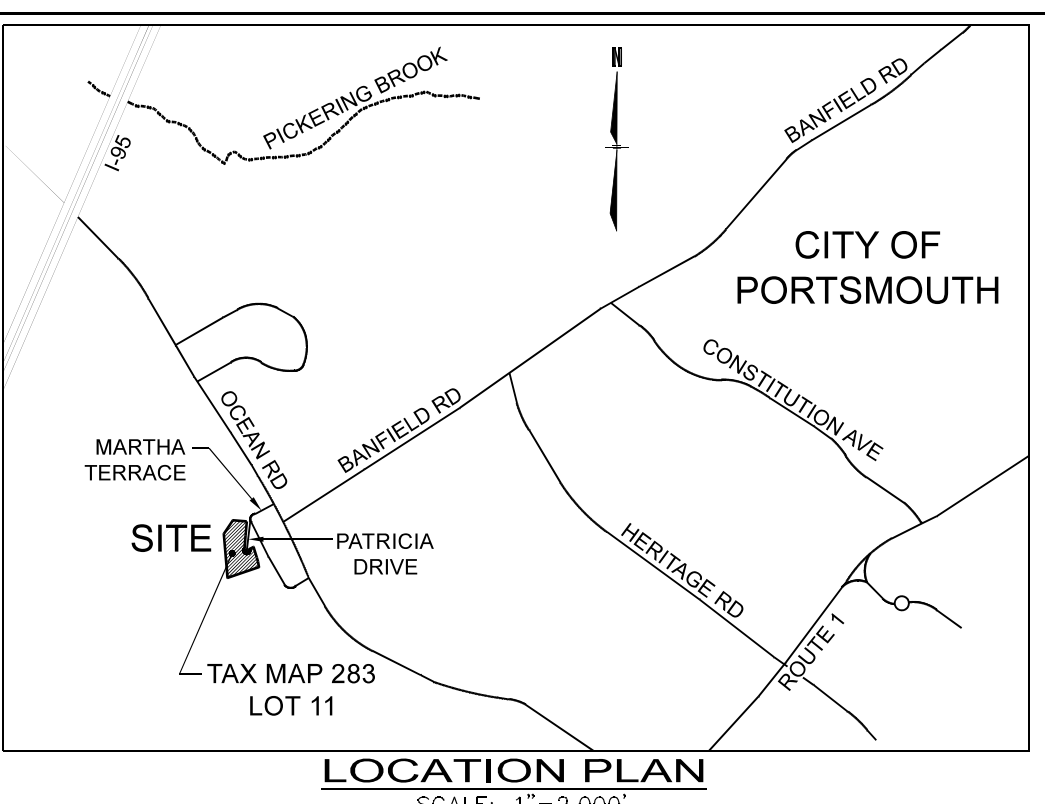
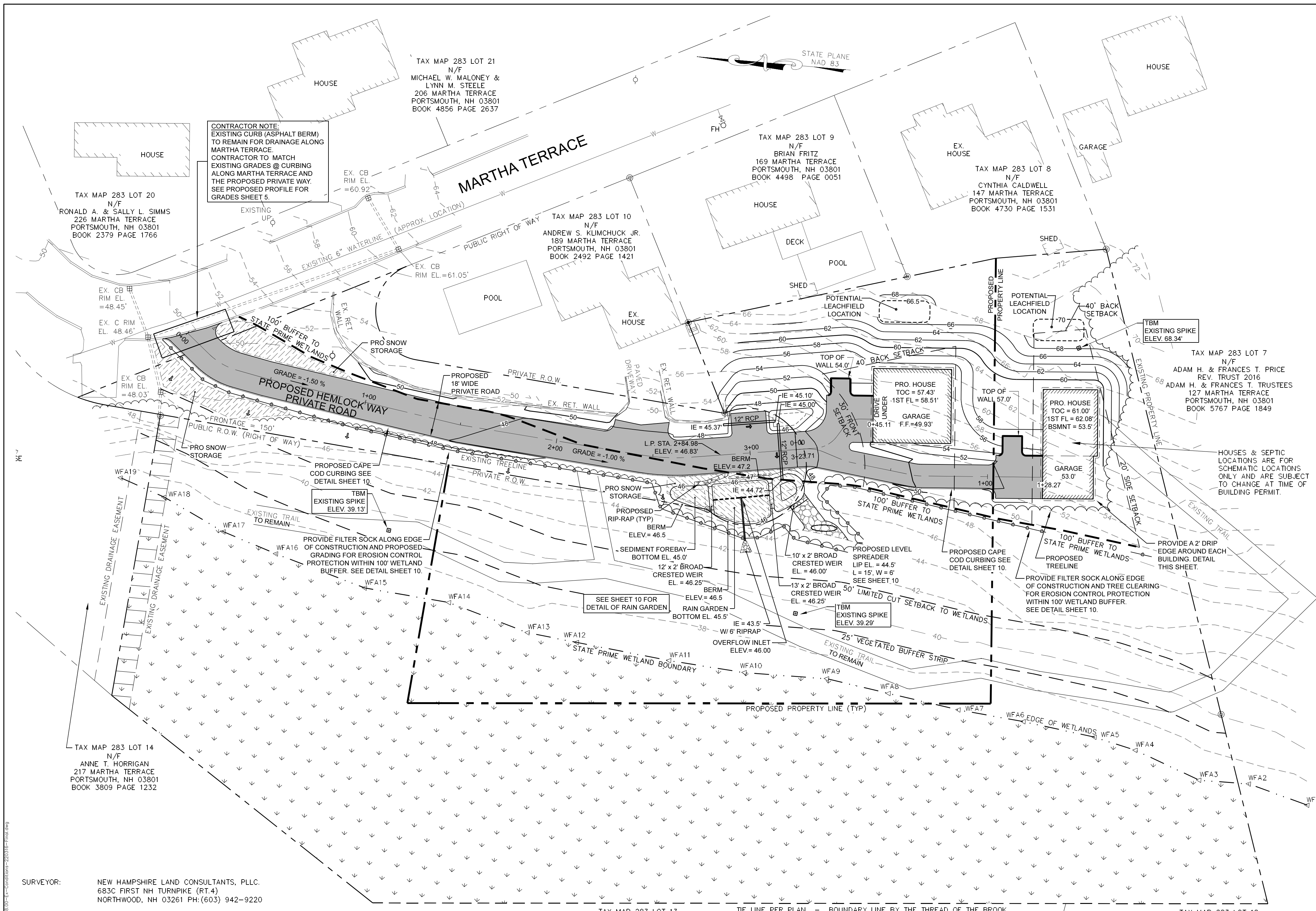
ROCKINGHAM CO.  
JOB NO: 258.00  
DATE: SEPTEMBER 23, 2020

**ECP**  
SHT. 2 of 10









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  - R.C.R.D. PLAN #033328, RECORDED DECEMBER 6, 2005, TITLED: "SUBDIVISION AND LOT LINE RELOCATION PLAN, MAP 283 - LOTS 7 & 11", PREPARED FOR: ADAM H. & FRANCES T. PRICE AND ADAM H. PRICE & FRITZ FAMILY REV. LIVING TRUST, 127 MARTHA TERRACE & PATRICIA DRIVE, PORTSMOUTH NH, PREPARED BY: AMBIT ENGINEERING, INC., CIVIL ENGINEERS & LAND SURVEYORS, PORTSMOUTH NH, SCALE: 1"=50', DATED MARCH 2005, APPROVED BY PORTSMOUTH PLANNING BOARD ON OCTOBER 24, 2005.

**LEGEND**

EXISTING RETAINING WALL	=====	WETLANDS	~~~~~
ABUTTERS PROPERTY LINES	-----	DRILL HOLE FOUND	⊙
SUBJECT PROPERTY LINES	-----	REBAR W/ CAP FOUND	⊙
PROPOSED PROPERTY LINES	-----	STONE BOUND FOUND	⊙
EXISTING TIE LINE	-----	EXISTING GATE VALVE & HYDRANT	⊙
EDGE OF PAVEMENT	-----		
PROPOSED BLDG SETBACK	-----		
EXISTING CONTOUR (MNR)	-572-----		
EXISTING CONTOUR (MJR)	-570-----		

SURVEYOR: NEW HAMPSHIRE LAND CONSULTANTS, PLLC.  
683C FIRST NH TURNPIKE (RT.4)  
NORTHWOOD, NH 03261 PH: (603) 942-9220

WETLAND/SOIL SCIENTIST: COVE ENVIRONMENTAL SERVICES, INC.  
8 CONTINENTAL DR., BLDG. 2, UNIT H,  
EXETER, NH 03833 PH: (603) 778-0644

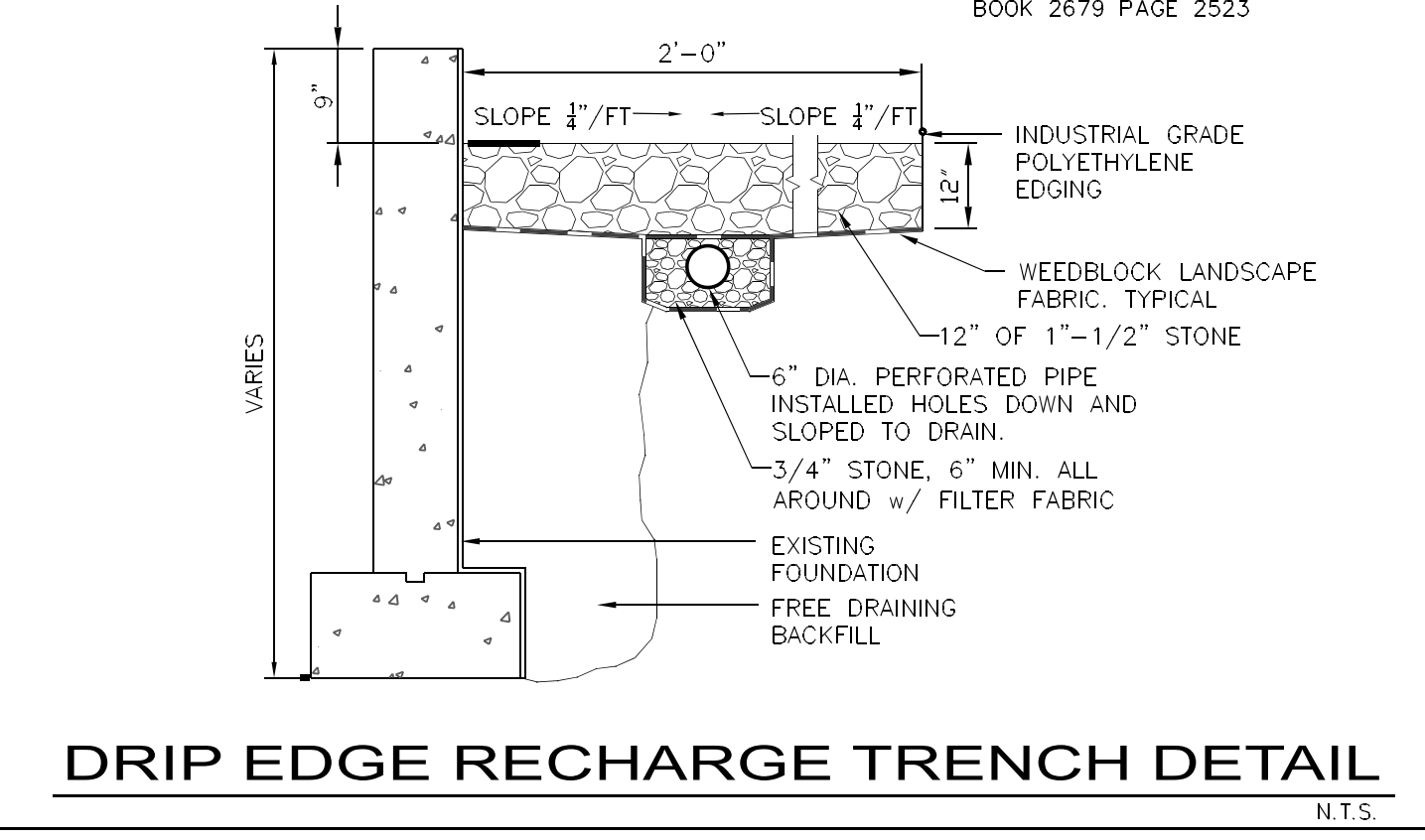
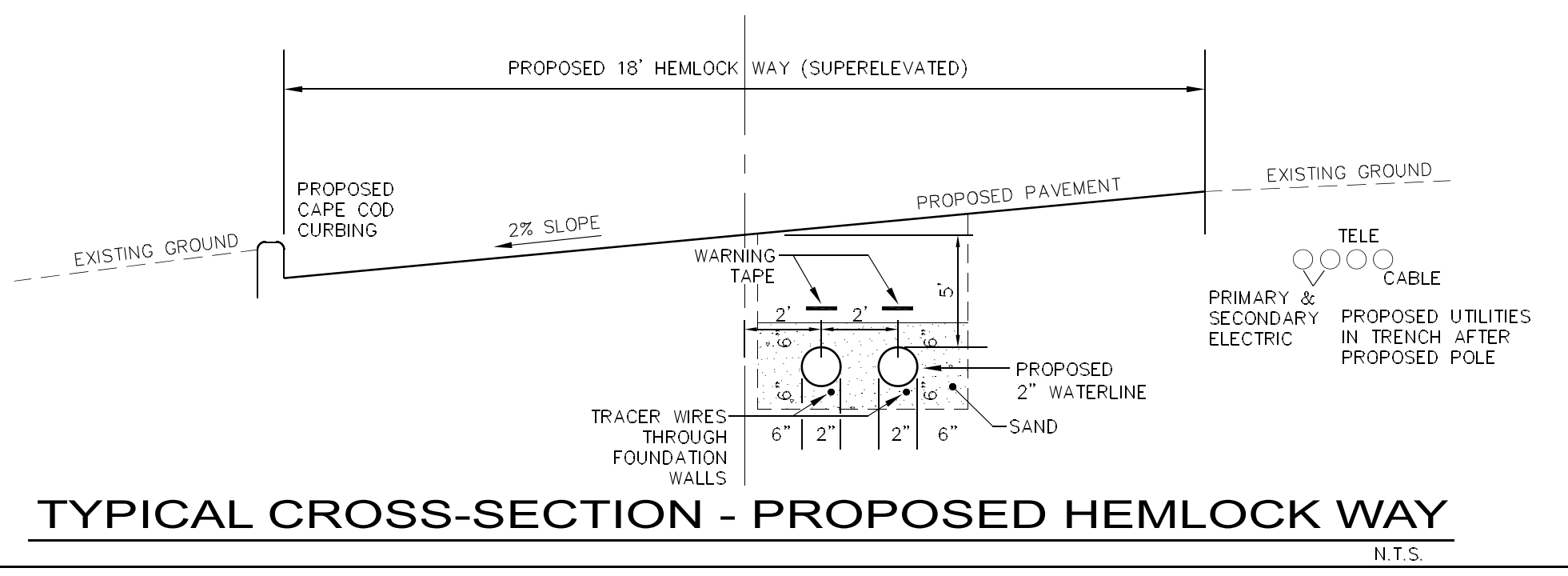
WETLANDS WERE DELINEATED ON JUNE 4, 2020 AND LOCATED DURING JUNE 2020

ZONE: SRA  
LOT SIZE: 1 ACRES  
FRONTAGE: 150'  
LOT DEPTH: 200'  
FRONT SETBACK: 30'  
SIDE SETBACK: 20'  
REAR SETBACK: 40'

SOILS: 140B/C CHATFIELD-HOLLIS-CANTON COMPLEX

CHATFIELD - NHDES GROUP 4  
HOLLIS - NHDES GROUP 4  
CANTON - NHDES GROUP 2

LOT SIZE USING GROUP 4 SLOPE C = 48,000 SQ FT  
WITH PUBLIC WATER = 24,000 SQ FT.



STATE OF NEW HAMPSHIRE  
R. JEFFREY BURD  
No. 9058  
LICENSED PROFESSIONAL ENGINEER

R. J. Burd

REVISIONS	NO.	DATE	DESCRIPTION
BY	15	10/12/2021	FINAL APPROVED PLANS FOR RECORDING
TDE	16	12/14/2021	ADDED NOTING TO FINAL PLANS
TDE	19	03/16/2022	REVISED PER UPV COMMENTS FOR FINAL PLANS

**GRAPHIC SCALE**  
15 7.5 0 30  
SCALE: 1"=30'

**N.H. LAND Consultants**  
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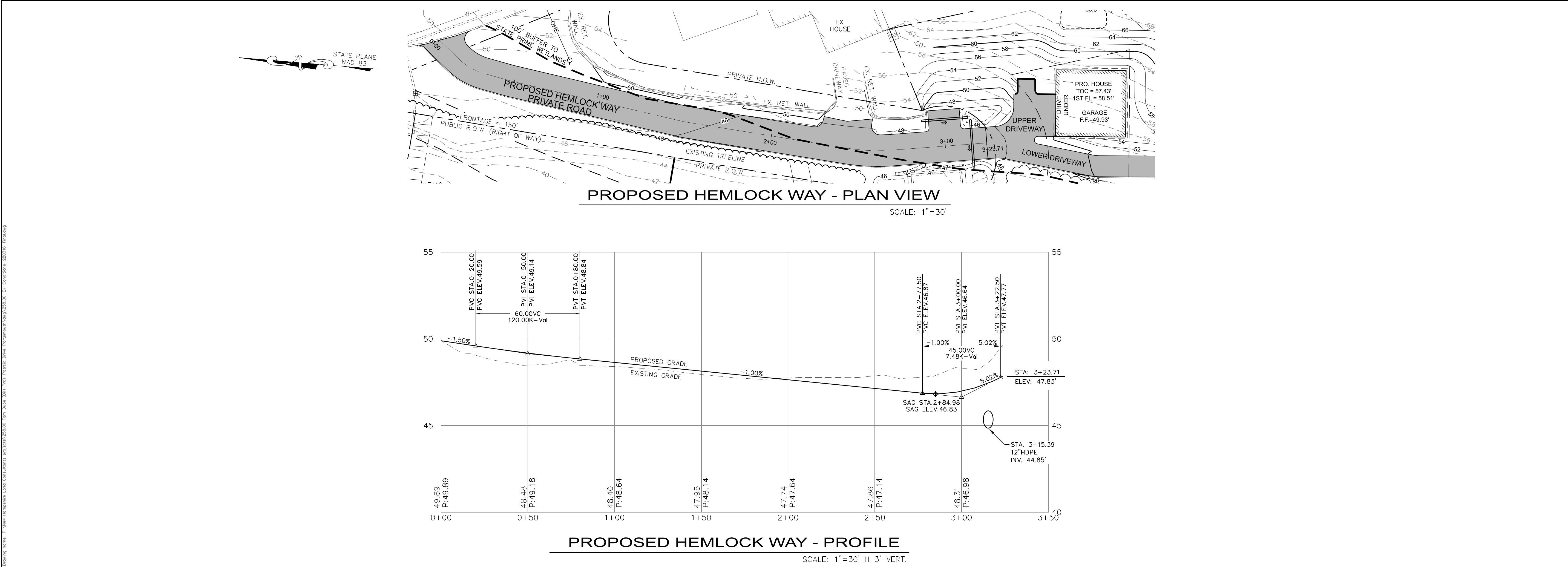
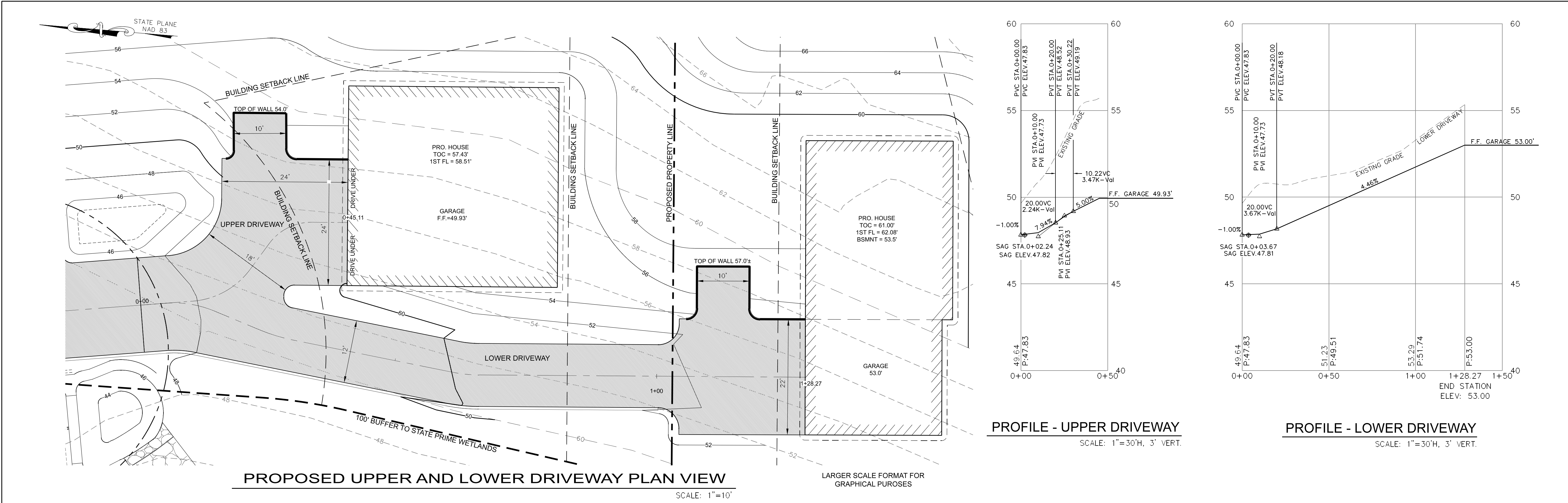
**PROPOSED GRADING PLAN  
TAX MAP 283 LOT 11  
DUBE PLUS CONSTRUCTION**  
HEMLOCK WAY, PORTSMOUTH NH 03801  
OWNED BY  
HEMLOCK WAY  
REALTY INVESTMENTS, LLC  
10 BRICKETTS MILL ROAD, SUITE C, HAMPSHIRE, NH 03841  
BOOK 6330 PAGE 796

**ROCKINGHAM CO.**  
JOB NO: 258.00  
DATE: SEPTEMBER 23, 2020

**PGP**  
SHT. 4 of 10



Drawing name: P:\NH\Residence and Consultants\projects\258.00 - Hemlock Way\258.00 - Hemlock Way.dwg  
Drawing title: P:\NH\Residence and Consultants\projects\258.00 - Hemlock Way\258.00 - Hemlock Way.dwg  
Drawing date: 10/12/2021  
Drawing by: R. Jeffrey Burd  
Drawing checked: R. Jeffrey Burd  
Drawing scale: 1"=30' H, 3' VERT.  
Drawing sheet: 5 of 10



STATE OF NEW HAMPSHIRE

R. JEFFREY BURD

No. 9058

PROFESSIONAL ENGINEER

12/16/2022

12/14/2021

10/12/2021

15

REVISIONS

DESCRIPTION

DATE

NO.

BY

TDE

TDE

TDE

TDE

15

16

19

15

16

19

10/12/2021

12/14/2021

03/16/2022

10/12/2021

12/14/2021

03/16/2022

FINAL APPROVED PLANS FOR RECORDING

ADDED NOTING TO FINAL PLANS

REVISED PER DPW COMMENTS FOR FINAL PLANS

FINAL APPROVED PLANS FOR RECORDING

ADDED NOTING TO FINAL PLANS

REVISED PER DPW COMMENTS FOR FINAL PLANS

SCALE

AS SHOWN

N.H. LAND

Consultants

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1683C FIRST NH TURNPIKE, NORTHWOOD, NH 03261

PH 603-942-9220

WEBSITE: NHLANDCONSULTANTS.COM

PROPOSED DRIVEWAY PLAN & PROFILES

TAX MAP 283 LOT 11

DUBE PLUS CONSTRUCTION

HEMLOCK WAY, PORTSMOUTH, NH 03801

OWNED BY

HEMLOCK WAY

REALTY INVESTMENTS, LLC

10 BRICKETTS MILL ROAD, SUITE C, HAMPSHIRE, NH 03841

BOOK 6330 PAGE 796

ROCKINGHAM CO.

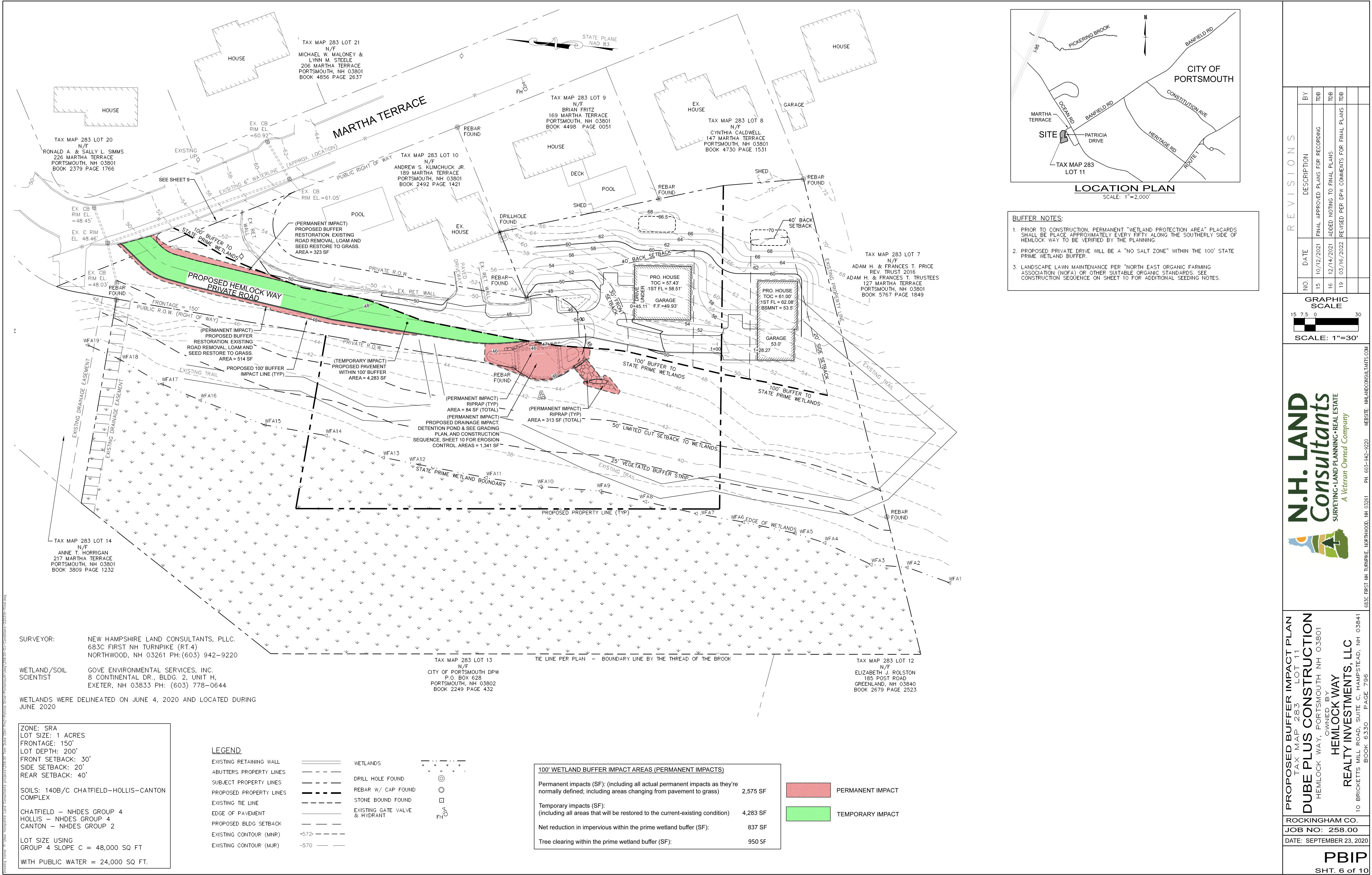
JOB NO: 258.00

DATE: SEPTEMBER 23, 2020

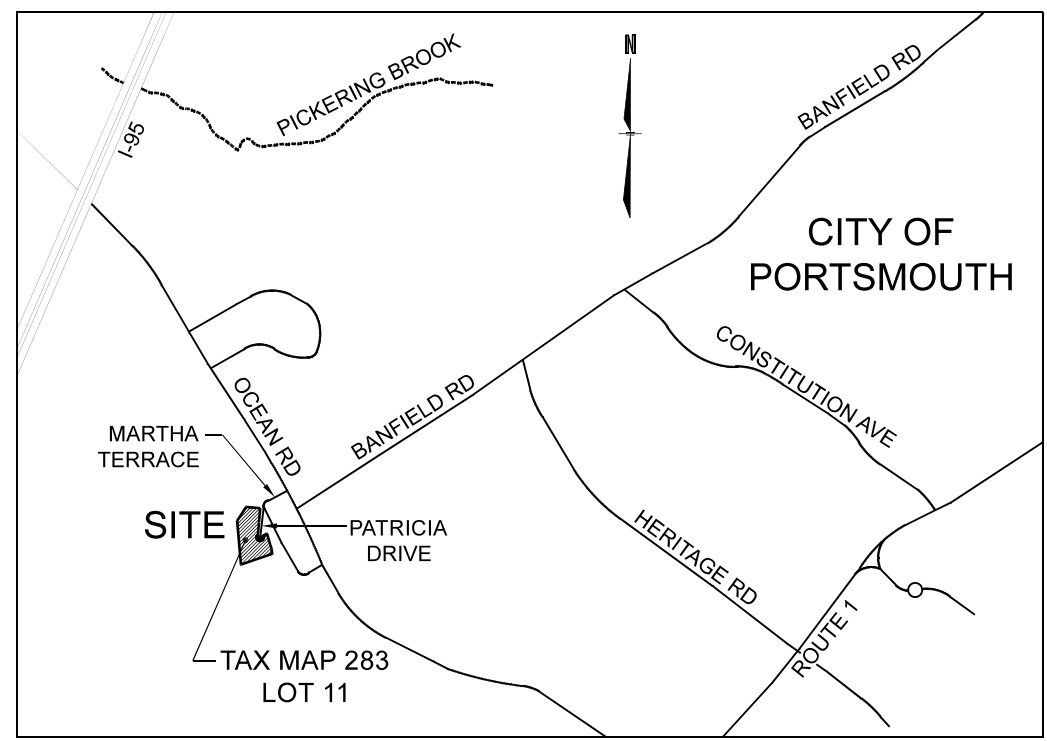
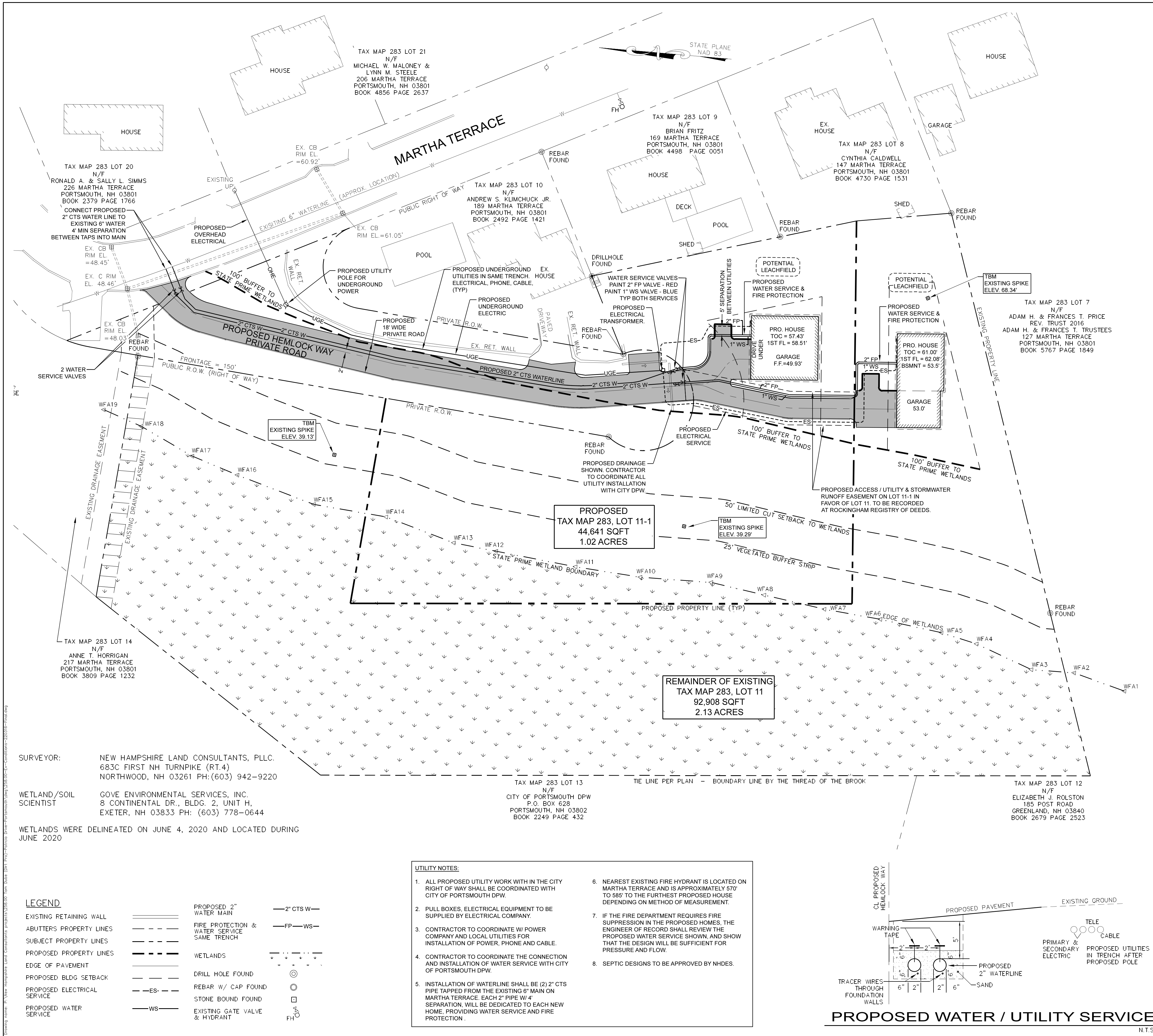
PDPP

SHT. 5 of 10









- NOTES:
- THE PURPOSE OF THIS PLAN IS TO SUBDIVIDE TAX MAP 283, LOT 11 INTO 2 LOTS.
  - THE PROPERTY IS DESIGNATED AS TAX MAP 283, LOT 11.
  - THE AREA OF THE EXISTING LOT 11 IS 3.16 ACRES (137,549 SQFT.)
  - THE CURRENT OWNER FOR TAX MAP 283, LOT 11: FRITZ FAMILY REVOC LIV TRUST, P.O. BOX 524, 50 SHORE DR., NORTHWOOD NH, 03261. BK. 3338 PG. 173.
  - THE ZONING DESIGNATION FOR THE PROPERTY IS (SRA) SINGLE RESIDENCE A DISTRICT.
  - DIMENSIONAL REQUIREMENTS PROVIDED FOR ZONE (SRA) DISTRICT:
    - MIN. ROAD FRONTAGE = 150'
    - MIN. LOT DEPTH = 200'
    - MIN. LOT SIZE = 43,560 SF (1 ACRE)
    - MIN. ROAD SETBACK = 30'
    - MIN. REAR SETBACK = 40'
    - MIN. SIDE SETBACK = 20'
    - WETLAND/WATERBODY SETBACK = 100'
    - WETLAND/LIMITED CUT = 50'
    - WETLAND/VEGETATED BUFFER STRIP = 25'
    - MAXIMUM STRUCTURE HEIGHT = 35'
    - SEPTIC SETBACK = 75' HYDRIC SOILS
    - OVERLAY DISTRICTS: (STEEP SLOPES, SOILS, WETLANDS, CONSERVATION)
  - THE PROPOSED GRADING PLANS ARE CONCEPTUAL AND FINAL LOCATION OF DRIVEWAYS, LEACHFIELDS, STRUCTURES, ETC. SHALL BE SUBJECT TO BUILDING PERMIT APPLICATION.
  - THE EXISTING USE OF TM 283 LOT 11 IS VACANT LAND.
  - THE PROPOSED USE OF TM 283 LOT 11 WILL BE 2 LOT SUBDIVISION.
  - SEWER TO BE PROVIDED BY ON-SITE SEPTIC SYSTEMS.
  - WATER TO BE PROVIDED BY MUNICIPAL PUBLIC WATER.
  - RIGHT OF WAY WIDTH DETERMINED BY SURVEY, FIELD INVESTIGATION, RECORDED DEEDS AND PLANS OF REFERENCE.
  - ABUTTING PROPERTY INFORMATION PROVIDED BY A COMBINATION OF ON-LINE TAX MAP DATA AND DATA PROVIDED BY [granitview.unh.edu](http://granitview.unh.edu).
  - SHEET 9 OF 10 THIS SET WILL BE RECORDED, A COMPLETE PLAN SET WILL BE FILED AT THE CITY OF PORTSMOUTH.
  - THE FEMA MAP NUMBER FOR THIS SITE IS 33015C0270E, EFFECTIVE DATE, MAY 17, 2005. SITE IS LOCATED WITHIN ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
  - ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO CITY OF PORTSMOUTH SUBDIVISION PLAN REGULATIONS AND THE LATEST EDITION OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
  - IF DURING CONSTRUCTION, IT BECOMES APPARENT THAT DEFICIENCIES EXIST IN THE APPROVED DESIGN DRAWINGS, THE OWNER SHALL BE REQUIRED TO CORRECT DEFICIENCIES TO MEET THE REQUIREMENTS OF THE REGULATIONS AT NO EXPENSE TO THE CITY.
  - IF DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE DUE TO ACTUAL SITE CONDITIONS, THE OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE CITY.
  - ELEVATIONS AND COORDINATES ARE BASED ON STATE PLANE COORDINATES FROM A SOLUTION GENERATED BY NGS OPUS ON JUNE 18, 2020 FROM DATA COLLECTED BY THIS OFFICE ON JUNE 18, 2020. THE OPUS SOLUTION IS BASED ON THE NAD 83 (2011) REF. FRAME AND THE NAVD 88.
  - EASEMENT TO BE PROVIDED TO THE CITY OF PORTSMOUTH OVER THE ENTIRE PRIVATE R.O.W. AREA FOR THE PURPOSES OF ACCESSING WATER VALVES AND LEAK DETECTION OF WATER LINES. TO BE RECORDED AT ROCKINGHAM REGISTRY OF DEEDS.

- PLAN REFERENCES:
- R.C.R.D. PLAN #195, RECORDED APRIL 10, 1964, TITLED: "PARCIAL PLAN OF OCEAN MANOR, PORTSMOUTH, NH", PREPARED FOR: HILTON HOMES, INC., GREENLAND NH, DATED, JANUARY, 1964, PREPARED BY: JOHN DURGIN CIVIL ENGINEERS, SCALE: 1"=40', PLAN APPROVED BY PORTSMOUTH PLANNING BOARD ON MARCH 20, 1964.
  - R.C.R.D. PLAN #05967, RECORDED MAY 21, 1976, TITLED: "RESUBDIVISION OF OCEAN MANNER", PREPARED FOR: ANDREWS PROPERTIES, INC., PORTSMOUTH NH, DATED: MARCH 1976, REVISED MAY 1976, PREPARED BY: JOHN DURGIN CIVIL ENGINEERS, SCALE: 1"=50', PLAN APPROVED BY PORTSMOUTH PLANNING BOARD DURING 1976.
  - R.C.R.D. PLAN #08102, RECORDED SEPTEMBER 18, 1978, TITLED: "LOT LINE REVISION, LAND OF LEVESQUE AND GERACI, PORTSMOUTH NH", PREPARED BY: JOHN W. DURGIN ASSOCIATES INC., ENGINEERS, SURVEYORS & DESIGNERS OF PORTSMOUTH AND ROCHESTER, DATED SEPTEMBER 1978, SCALE: 1"=50', APPROVED BY PORTSMOUTH PLANNING BOARD ON SEPTEMBER 18, 1978.
  - R.C.R.D. PLAN #033328, RECORDED DECEMBER 6, 2005, TITLED: "SUBDIVISION AND LOT LINE RELOCATION PLAN, MAP 283 - LOTS 7 & 11", PREPARED FOR: ADAM H. & FRANCES PRICE AND ADAM H. PRICE & FRITZ FAMILY REV. LIVING TRUST, 127 MARTHA TERRACE & PATRICIA DRIVE, PORTSMOUTH NH, PREPARED BY: AMBIT ENGINEERING, INC., CIVIL ENGINEERS & LAND SURVEYORS, PORTSMOUTH NH., SCALE: 1"=50', DATED MARCH 2005, APPROVED BY PORTSMOUTH PLANNING BOARD ON OCTOBER 24, 2005.

STATE OF NEW HAMPSHIRE  
R. JEFFREY BURD  
No. 9058  
LICENSED  
PROFESSIONAL ENGINEER

REVISIONS

NO.	DATE	DESCRIPTION
15	10/12/2021	FINAL APPROVED PLANS FOR RECORDING
16	12/14/2021	ADDED NOTING TO FINAL PLANS
19	03/16/2022	REVISED PER DPW COMMENTS FOR FINAL PLANS

GRAPHIC SCALE

15 7.5 0 30

SCALE: 1"=30'

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PROPOSED UTILITY PLAN  
TAX MAP 283 LOT 11  
DUBE PLUS CONSTRUCTION  
HEMLOCK WAY, PORTSMOUTH NH 03801  
OWNED BY  
HEMLOCK WAY  
REALTY INVESTMENTS, LLC  
10 BRICKETTS MILL ROAD, SUITE C, HAMPSTEAD, NH 03841  
BOOK 6330 PAGE 796

ROCKINGHAM CO.  
JOB NO: 258.00  
DATE: SEPTEMBER 23, 2020

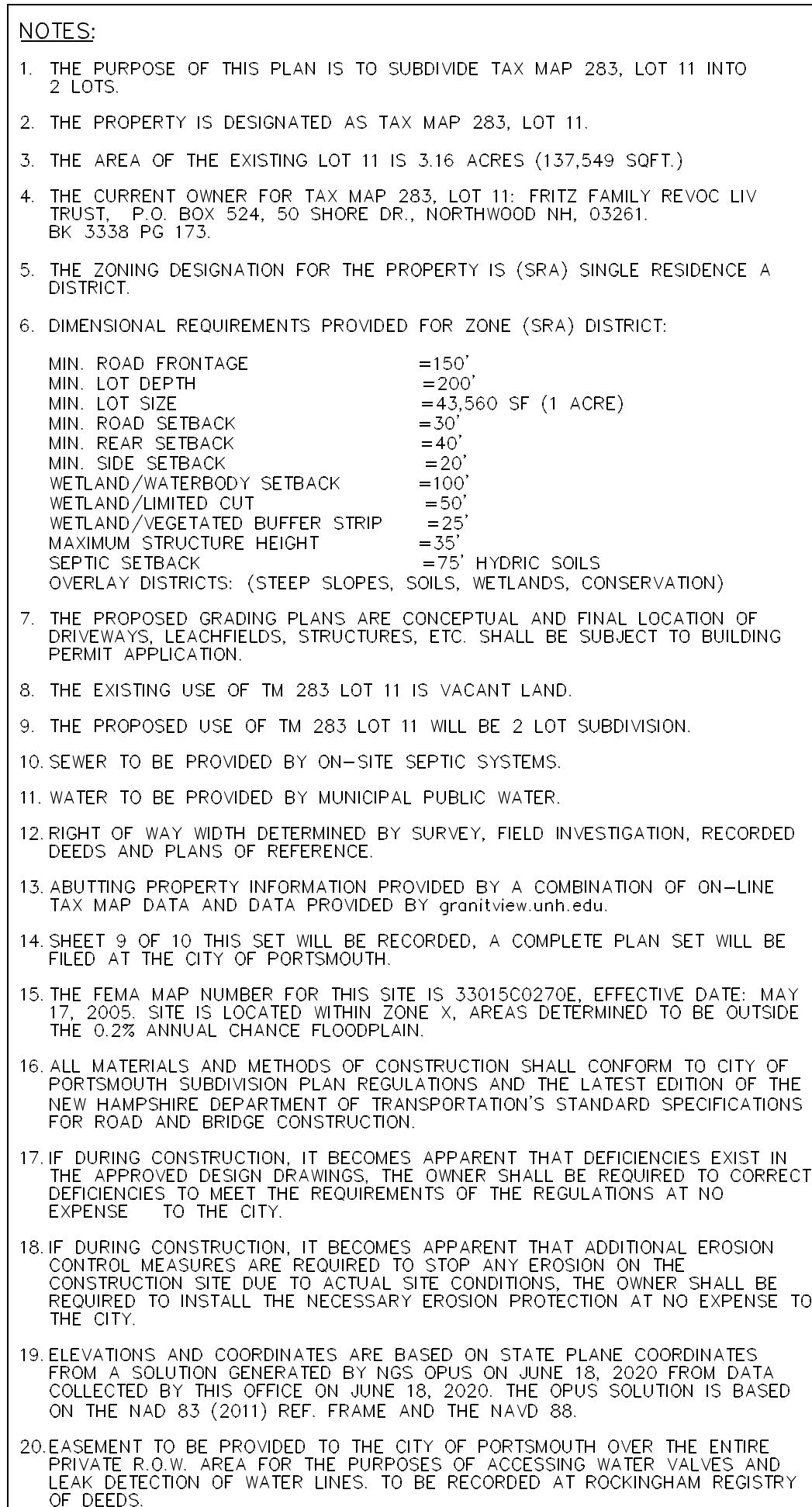
PUP  
SHT. 7 of 10





ZONE: SRA  
 LOT SIZE: 1 ACRES  
 FRONTAGE: 150'  
 LOT DEPTH: 200'  
 FRONT SETBACK: 30'  
 SIDE SETBACK: 20'  
 REAR SETBACK: 40'  
 SOILS: 140B/C CHATFIELD-HOLLIS-CANTON  
 COMPLEX  
 CHATFIELD - NHDES GROUP 4  
 HOLLIS - NHDES GROUP 4  
 CANTON - NHDES GROUP 2  
 LOT SIZE USING  
 GROUP 4 SLOPE C = 48,000 SQ FT  
 WITH PUBLIC WATER = 24,000 SQ FT.

TEST PIT #1 DATE: 5-28-20 PERFORMED BY: SCOTT FRANKIEWICZ PERMIT #1348	TEST PIT #2 DATE: 5-28-20 PERFORMED BY: SCOTT FRANKIEWICZ PERMIT #1348	TEST PIT #3 DATE: 5-28-20 PERFORMED BY: SCOTT FRANKIEWICZ PERMIT #1348	TEST PIT #4 DATE: 5-28-20 PERFORMED BY: SCOTT FRANKIEWICZ PERMIT #1348	TEST PIT #5 DATE: 5-28-20 PERFORMED BY: SCOTT FRANKIEWICZ PERMIT #1348	TEST PIT #6 DATE: 5-28-20 PERFORMED BY: SCOTT FRANKIEWICZ PERMIT #1348	TEST PIT #7 DATE: 5-28-20 PERFORMED BY: JAMES GOVE, CSS	TEST PIT #8 DATE: 5-28-20 PERFORMED BY: JAMES GOVE, CSS
0 – 6” Topsoil	0 – 6” Topsoil	0 – 6” Topsoil	0 – 6” Topsoil	0 – 6” Topsoil	0 – 6” Topsoil	0 – 5” Fine Sandy Loam Granular, Friable 10YR 3/2 - Very Dark Grayish Brown	0 – 5” Fine Sandy Loam Granular, Friable 10YR 3/2 - Very Dark Grayish Brown
6-24” Loamy Sand Granular/Friable 7.5 YR 5/6 – Strong Brown	6-30” Loamy Sand Granular/Friable 7.5 YR 5/6 – Strong Brown	6-30” Loamy Sand Granular/Friable 7.5 YR 5/6 – Strong Brown	6-26” Loamy Sand Granular/Friable 7.5 YR 5/6 – Strong Brown	6-36” Gravelly Sand Granular/Friable 7.5 YR 5/6 – Strong Brown	6-34” Gravelly Sand Granular/Friable 7.5 YR 5/6 – Strong Brown	5-30” Fine Sandy Loam Granular/Friable 10 YR 4/6 – Dark Yellowish Brown	5-20” Fine Sandy Loam Granular/Friable 10 YR 4/6 – Dark Yellowish Brown
24-60” Loam Sand Granular/Firm in place 2.5Y 5/6 – Light Olive Brown	30-56” Sand Granular/Firm in place 2.5Y 5/6 – Light Olive Brown	30-56” Sand Granular/Firm in place 2.5Y 5/6 – Light Olive Brown	26-70” Sand Granular/Firm in place 2.5Y 5/6 – Light Olive Brown	36-60” Gravelly Sand Granular/Firm in place 2.5Y 5/6 – Light Olive Brown	34-60” Gravelly Sand Granular/Firm in place 2.5Y 5/6 – Light Olive Brown	30-60” Fine Sandy Loam Clay/Firm 2.5Y 5/3 – Light Olive Brown	20-60” Fine Sandy Loam Clay/Firm 2.5Y 5/3 – Light Olive Brown
ESHWT = 24” Roots to 24” No ledge observed No water observed Many stones throughout hole Perc Rate = 10 min/inch	ESHWT = 30” Roots to 30” No ledge observed No water observed Many stones throughout hole Perc Rate = 10 min/inch	ESHWT = 30” Roots to 30” No ledge observed No water observed Many stones throughout hole Perc Rate = 10 min/inch	ESHWT = 26” Roots to 26” No ledge observed No water observed Many stones throughout hole Perc Rate = 10 min/inch	ESHWT = 36” Roots to 36” No ledge observed No water observed Many stones throughout hole Perc Rate = 10 min/inch	ESHWT = 34” Roots to 34” No ledge observed No water observed Many stones throughout hole Perc Rate = 10 min/inch	ESHWT = 30” No ledge observed No water observed Termination @ 60”	ESHWT = 20” No ledge observed No water observed Termination @ 60”



PLAN REFERENCES:
1. R.C.R.D. PLAN #195, RECORDED APRIL 10, 1964, TITLED: "PARCIAL PLAN OF ANCEA MANOR, PORTSMOUTH, NH", PREPARED FOR: HILTON HOMES, INC., GREENLAND NH, DATED, JANUARY, 1964, PREPARED BY: JOHN DURGIN CIVIL ENGINEERS, SCALE: "1"=40', PLAN APPROVED BY PORTSMOUTH PLANNING BOARD ON MARCH 20, 1964.
2. R.C.R.D. PLAN #05967, RECORDED MAY 21, 1976, TITLED: "RESUBDIVISION OF ANCEA MANNER", PREPARED FOR: ANDREWS PROPERTIES, INC., PORTSMOUTH NH, DATED MARCH 1976, REVISED MAY 1976, PREPARED BY: JOHN DURGIN CIVIL ENGINEERS, SCALE: "1"=50', PLAN APPROVED BY PORTSMOUTH PLANNING BOARD DURING 1976.
3. R.C.R.D. PLAN #C8102, RECORDED SEPTEMBER 18, 1978, TITLED: "LOT LINE REVISION LAND OF DEVESQUE AND GERARD PORTSMOUTH NH", PREPARED BY: JOHN W. DURGIN ASSOCIATES INC., ENGINEERS, SURVEYORS & DESIGNERS OF PORTSMOUTH AND ROCHESTER, DATED SEPTEMBER 1978, SCALE: "1"=50', APPROVED BY PORTSMOUTH PLANNING BOARD ON SEPTEMBER 18, 1978.
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LEGEND		
EXISTING RETAINING WALL	=====	WETLANDS
ABUTTERS PROPERTY LINES	-----	
SUBJECT PROPERTY LINES	-----	DRILL HOLE FOUND
PROPOSED PROPERTY LINES	=====	REBAR W/ CAP FOUND
EXISTING TIE LINE	-----	STONE BOUND FOUND
EDGE OF PAVEMENT	-----	EXISTING GATE VALVE & HYDRANT
PROPOSED BLDG SETBACK	-----	
EXISTING CONTOUR (MNR)	-572- -----	
EXISTING CONTOUR (MJR)	-570 -----	

**PROPOSED CONDITIONS PLAN**  
TAX MAP 283 LOT 11  
**DUBE PLUS CONSTRUCTION**  
HEMLOCK WAY, PORTSMOUTH NH 03801

OWNED BY  
**HEMLOCK WAY**  
**REALTY INVESTMENTS, LLC**  
10 BRICKETS MILL ROAD, SUITE C, HAMPSTEAD, NH 03841  
BOOK 6330 PAGE 796

**ROCKINGHAM CO.**  
**JOB NO: 258.00**  
**DATE: SEPTEMBER 23, 2020**



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6832 FIRST NH TURNPIKE, NORTHWOOD, NH 03261    PH. 603-942-9220    WEBSITE: [NHLANDCONSULTANTS.COM](http://NHLANDCONSULTANTS.COM)

REV IS I O N S			
NO.	DATE	DESCRIPTION	BY
15	10/12/2021	FINAL APPROVED PLANS FOR RECORDING	TDB
16	12/14/2021	ADDED NOTING TO FINAL PLANS	TDB
19	03/16/2022	REVISED PER DPW COMMENTS FOR FINAL PLANS	TDB

**GRAPHIC SCALE**



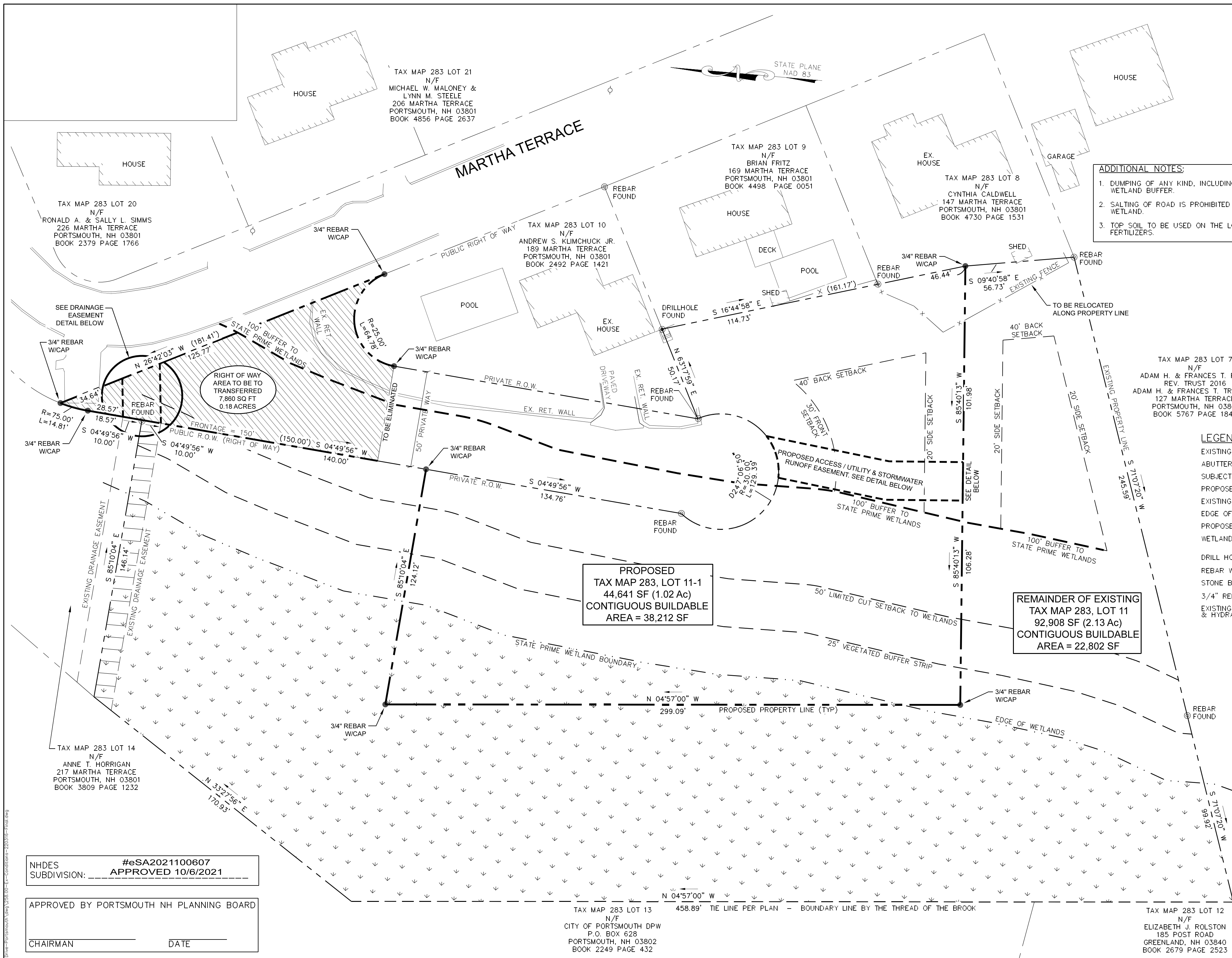
SCALE: 1"=30'



**DESIGNER OF**  
Subsurface Disposal  
Systems  
\*\*\*  
Scott & Frankiewicz  
No. 1348  
**Contractors of Environmental Services**

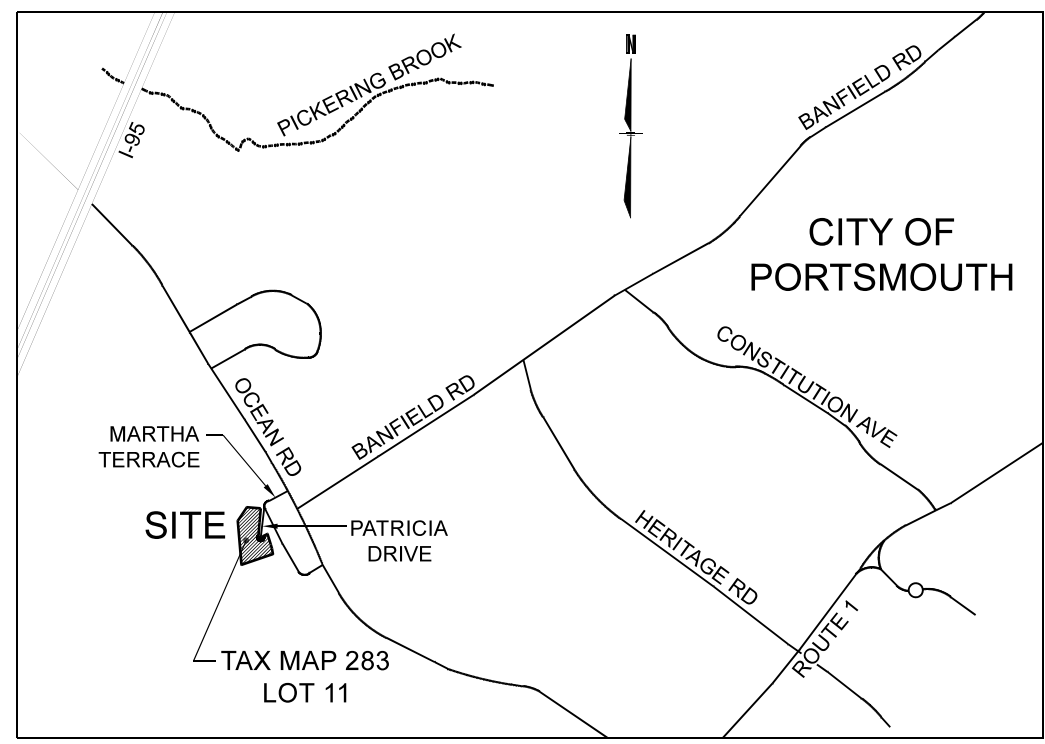
6832 FIRST NH TURNPIKE, NORTHWOOD, NH 03261    PH. 603-942-9220    WEBSITE: [NHLANDCONSULTANTS.COM](http://NHLANDCONSULTANTS.COM)





ADDITIONAL NOTES:

1. DUMPING OF ANY KIND, INCLUDING LANDSCAPE DEBRIS IS PROHIBITED IN WETLAND BUFFER.
2. SALTING OF ROAD IS PROHIBITED DUE TO CLOSE PROXIMITY TO A PRIME WETLAND.
3. TOP SOIL TO BE USED ON THE LOTS SHALL NOT INCLUDE PESTICIDES AND FERTILIZERS.



NOTES:

1. THE PURPOSE OF THIS PLAN IS TO SUBDIVIDE TAX MAP 283, LOT 11 INTO 2 LOTS.
2. THE PROPERTY IS DESIGNATED AS TAX MAP 283, LOT 11.
3. THE AREA OF THE EXISTING LOT 11 IS 3.16 ACRES (137,549 SQFT.).
4. THE CURRENT OWNER FOR TAX MAP 283, LOT 11, FRITZ FAMILY REVOC LIV TRUST, BOX 524, 50 SHORE DR., NORTHWOOD NH, 03261. BK 3338 PG 173.
5. THE ZONING DESIGNATION FOR THE PROPERTY IS (SRA) SINGLE RESIDENCE A DISTRICT.
6. DIMENSIONAL REQUIREMENTS PROVIDED FOR ZONE (SRA) DISTRICT.

MIN. ROAD FRONTAGE	=150'
MIN. LOT DEPTH	=200'
MIN. LOT SIZE	=43,560 SF (1 ACRE)
MIN. ROAD SETBACK	=30'
MIN. REAR SETBACK	=40'
MIN. SIDE SETBACK	=20'
WETLAND/WATERBODY SETBACK	=100'
WETLAND/LIMITED CUT	=50'
WETLAND/VEGETATED BUFFER STRIP	=25'
MAXIMUM STRUCTURE HEIGHT	=35'
SEPTIC SETBACK	=75' HYDRIC SOILS
OVERLAY DISTRICTS: (STEEP SLOPES, SOILS, WETLANDS, CONSERVATION)	

3. THE PROPOSED GRADING PLANS ARE CONCEPTUAL AND FINAL LOCATION OF DRIVEWAYS, LEACHFIELDS, STRUCTURES, ETC. SHALL BE SUBJECT TO BUILDING PERMIT APPLICATION.
8. THE EXISTING USE OF TM 283 LOT 11 IS VACANT LAND.
9. THE PROPOSED USE OF TM 283 LOT 11 WILL BE 2 LOT SUBDIVISION.
10. SEWER TO BE PROVIDED BY ON-SITE SEPTIC SYSTEMS.
11. WATER TO BE PROVIDED BY MUNICIPAL PUBLIC WATER.
12. RIGHT OF WAY WIDTH DETERMINED BY SURVEY, FIELD INVESTIGATION, RECORDED DEEDS AND PLANS OF REFERENCE.
13. ABUTTING PROPERTY INFORMATION PROVIDED BY A COMBINATION OF ON-LINE TAX MAP DATA AND DATA PROVIDED BY [grantview.unh.edu](http://grantview.unh.edu).
14. SHEET 9 OF 10 OF THIS SET WILL BE RECORDED, A COMPLETE PLAN SET WILL BE FILED AT THE CITY OF PORTSMOUTH.
15. THE FEMA MAP NUMBER FOR THIS SITE IS 330150C0270E, EFFECTIVE DATE: MAY 17, 2005. SITE IS LOCATED WITHIN ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
16. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO CITY OF PORTSMOUTH SUBDIVISION PLAN REGULATIONS AND THE LATEST EDITION OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
17. IF DURING CONSTRUCTION, IT BECOMES APPARENT THAT DEFICIENCIES EXIST IN THE APPROVED DESIGN DRAWINGS, THE OWNER SHALL BE REQUIRED TO CORRECT DEFICIENCIES TO MEET THE REQUIREMENTS OF THE REGULATIONS AT NO EXPENSE TO THE CITY.
18. IF DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE DUE TO ACTUAL SITE CONDITIONS, THE OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE CITY.
19. ELEVATIONS AND COORDINATES ARE BASED ON STATE PLANE COORDINATES FROM A SOLUTION GENERATED BY NGS OPUS ON JUNE 18, 2020 FROM DATA COLLECTED BY THIS OFFICE ON JUNE 18, 2020. THE OPUS SOLUTION IS BASED ON THE NAD 83 (2011) REF. FRAME AND THE NAVD 88.
20. EASEMENT TO BE PROVIDED TO THE CITY OF PORTSMOUTH OVER THE ENTIRE PRIVATE P.D.W. AREA FOR THE PURPOSES OF ACCESSING WATER VALVES AND LEACHFIELD OF WATER LINES. TO BE RECORDED AT ROCKINGHAM REGISTRY OF DEEDS.

PLAN REFERENCES:

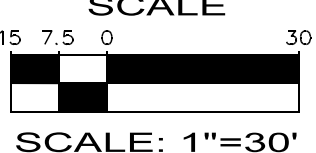
1. R.C.P.D. PLAN #191, RECORDED APRIL 10, 1964, TITLED: "PARCIAL PLAN OF OCEAN MANOR, PORTSMOUTH, NH", PREPARED FOR: HILTON HOMES, INC., GREENLAND NH, DATED, JANUARY, 1964, PREPARED BY: JOHN DURGIN CIVIL ENGINEERS, SCALE: 1"=40', PLAN APPROVED BY PORTSMOUTH PLANNING BOARD ON MARCH 20, 1964.
2. R.C.R.D. PLAN #05967, RECORDED MAY 21, 1976, TITLED: "RESUBDIVISION OF OCEAN MANNER", PREPARED FOR: ANDREWS PROPERTIES, INC., PORTSMOUTH NH, DATED: MARCH 1976, REVISED MAY 1976, PREPARED BY: JOHN DURGIN CIVIL ENGINEERS, SCALE: 1"=50', PLAN APPROVED BY PORTSMOUTH PLANNING BOARD DURING 1976.
3. R.C.R.D. PLAN #C8102, RECORDED SEPTEMBER 18, 1978, TITLED: "LOT LINE REVISION, LAND OF LEVESQUE AND GERACI, PORTSMOUTH NH", PREPARED BY: JOHN DURGIN ASSOCIATES INC., ENGINEERS, SURVEYORS & DESIGNERS OF PORTSMOUTH AND ROCHESTER, DATED SEPTEMBER 1978, SCALE: 1"=50', APPROVED BY PORTSMOUTH PLANNING BOARD ON SEPTEMBER 18, 1978.
4. R.C.R.D. PLAN #03328, RECORDED DECEMBER 6, 2005, TITLED: "SUBDIVISION AND LOT LINE RELOCATION PLAN, MAP 283 - LOTS 7 & 11", PREPARED FOR: ADAM H. & FRANCES PRICE AND ADAM H. PRICE & FRITZ FAMILY REV. LIVING TRUST, 127 MARATHA TERRACE & PATRICIA DRIVE, PORTSMOUTH NH, PREPARED BY: AMBIT ENGINEERING, INC., CIVIL ENGINEERS & LAND SURVEYORS, PORTSMOUTH NH, 1"=11", DATED MARCH 2005, APPROVED BY PORTSMOUTH PLANNING BOARD ON OCTOBER 24, 2005.

BUFFER NOTES:

1. PRIOR TO CONSTRUCTION, PERMANENT "WETLAND PROTECTION AREA" PLACARDS SHALL BE PLACED APPROXIMATELY EVERY FIFTY ALONG THE SOUTHERLY SIDE OF HEMLOCK WAY TO BE VERIFIED BY THE PLANNING.
2. PROPOSED PRIVATE DRIVE WILL BE A "NO SALT ZONE" WITHIN THE 100' STATE PRIME WETLAND BUFFER.
3. LANDSCAPE LAWN MAINTENANCE PER "NORTH EAST ORGANIC FARMING ASSOCIATION (NOFA) OR OTHER SUITABLE ORGANIC STANDARDS. SEE CONSTRUCTION SEQUENCE ON SHEET 10 FOR ADDITIONAL SEEDING NOTES.

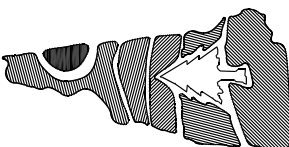
R E V I S I O N S			
NO.	DATE	DESCRIPTION	BY
15	10/12/2021	FINAL APPROVED PLANS FOR RECORDING	TDE
16	12/14/2021	ADDED NOTHING TO FINAL PLANS	TDE
19	03/16/2022	REVISED PER DPW COMMENTS FOR FINAL PLANS	TDE

## GRAPHIC



583C FIRST NH TURNPIKE, NORTHWOOD, NH 03261 PH: 603-942-9220 WEBSITE: NHLANDCONSULTANTS.COM

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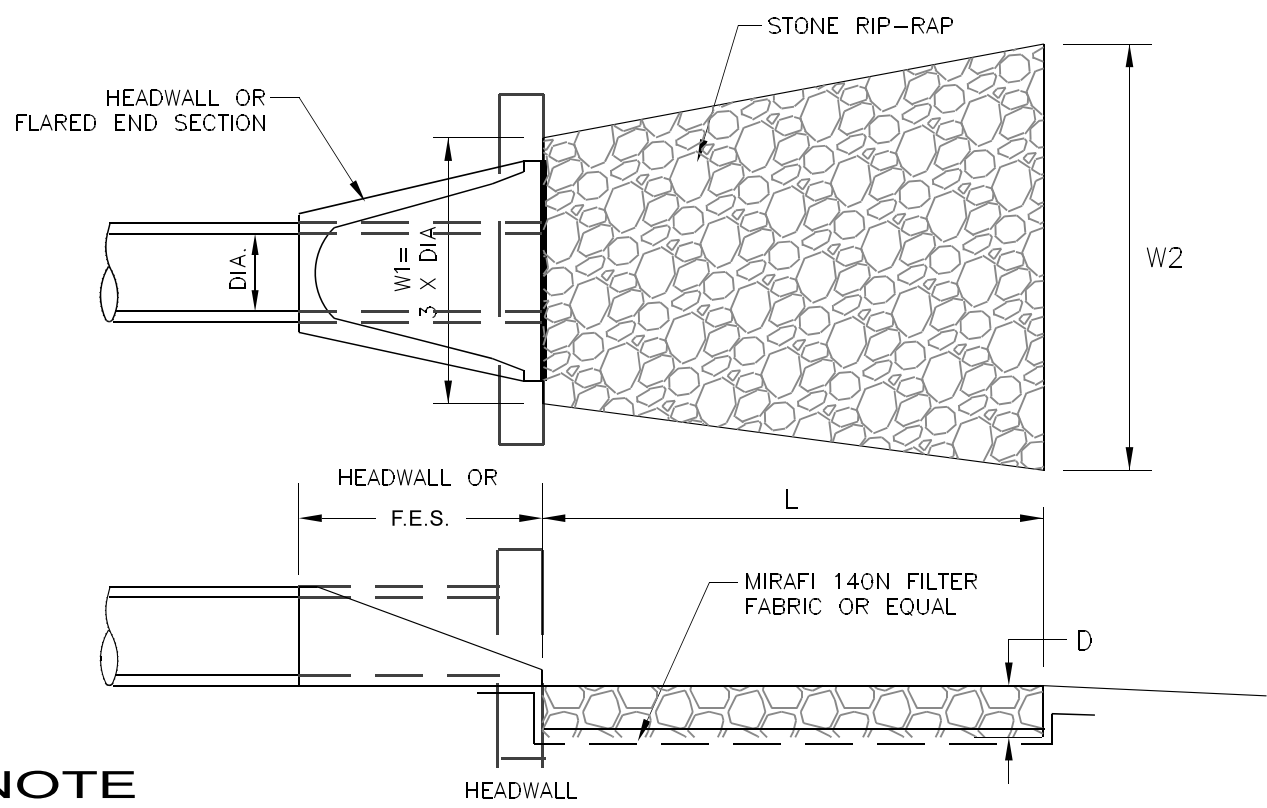
PROPOSED SUBDIVISION PLAN  
TAX MAP 283 LOT 11  
**DUBE PLUS CONSTRUCTION**  
HEMLOCK WAY, PORTSMOUTH NH 03801  
OWNED BY  
**HEMLOCK WAY**  
**REALTY INVESTMENTS, LLC**  
10 BRICKETTS MILL ROAD, SUITE C, HAMFSTEAD, NH 03841  
BOOK 6330 PAGE 796



- CUT AND CLEAR TREES, REMOVE EXISTING PAVEMENT WITHIN LIMIT OF WORK (PROPOSED TREE LINE), UNLESS OTHERWISE NOTED. ALL STUMPS, BRANCHES, TOPS AND BRUSH TO BE PROPERLY DISPOSED OF, PREFERABLY OFF SITE.
2. CONSTRUCT TEMPORARY EROSION AND PERMANENT EROSION CONTROL FACILITIES (DETENTION BASIN, DIVERSION BERM, GRASS SWALE) PRIOR TO ANY EARTH MOVING OPERATION.
3. ALL AREAS SHALL BE PROTECTED FROM EROSION. SIDE SLOPES AND DETENTION POND SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
4. POND SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE (BEFORE ROUGH GRADING THE SITE).
5. ALL STORM DRAINAGE SYSTEMS SUCH AS DETENTION/RETENTION BASINS, LEVEL SPREADERS SHALL BE PROTECTED FROM EROSION. ALL STORM DRAINAGE SYSTEMS SHALL BE STABILIZED PRIOR TO DIRECTING FLOW INTO THEM.
6. CONSTRUCT TEMPORARY CULVERTS, DIVERSION DITCHES/SWALES OR BERMS AS REQUIRED TO MINIMIZE THE EROSION EFFECTS OF STORMWATER RUNOFF DURING ALL CONSTRUCTION ACTIVITIES. TEMPORARY WATER DIVERSION (SWALES, BASINS, ETC.) MUST BE USED AS NECESSARY UNTIL AREAS STABILIZED.
7. ALL MATERIAL SUITABLE FOR USE AS TOPSOIL SHALL BE STOCKPILED IN UPLANDS AREAS. ALL STOCKPILES SHALL BE SEEDDED WITH WINTER RYE AND, IF NECESSARY, SURROUNDED WITH SILT FENCE, AND/OR STRAW BALES, IN ORDER TO PREVENT OR CONTAIN SOIL EROSION.
8. ALL MATERIAL SUITABLE FOR FILL OR SELECT MATERIAL SHALL BE STOCKPILED IN UPLANDS AREAS. ALL STOCKPILES SHALL BE SURROUNDED WITH SILT FENCE, AND/OR STRAW BALES, IN ORDER TO CONTAIN SOIL EROSION.
9. REMOVE ALL IMPROPER ROADWAY MATERIAL WITHIN 18" OF SUBGRADE. REPLACE WITH COMPACTED GRANULAR FILL ACCEPTABLE TO THE STATE/TOWN SPECIFICATIONS. ALL SUITABLE FILL MATERIAL SHALL BE COMPACTED TO AT LEAST 95% OF THE DRY WEIGHT AS DETERMINED BY MODIFIED PROCTOR TESTING (ASTM D-1556) REQUIREMENTS.
10. CONSTRUCT ALL UNDERGROUND UTILITIES INCLUDING, BUT NOT LIMITED TO DRAIN, DATA, CABLE AND POWER.
11. ROUGH GRADE SITE WITHIN LIMIT OF WORK AND COMMENCE CONSTRUCTION OF ROADWAY.
12. SITE SHALL BE STABILIZED WITHIN 72 HOURS OF FINISHED GRADE.
13. COMPLETE ROADWAY SLOPE GRADING/EMBANKMENT CONSTRUCTION. ALL SLOPES SHALL BE STABILIZED AND SEEDDED IMMEDIATELY AFTER GRADING. THE CONTRACTOR SHALL STABILIZE SLOPES WITH APPROPRIATE SEEDING PROGRAM OR JUTE MAT, WHEREVER SPECIFIED. ALL CUT AND FILL SLOPES SHALL BE SEEDDED/LOADED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
14. APPLY TOPSOIL TO SITE SLOPES AND OTHER AREAS DISTURBED BY CONSTRUCTION. TOPSOIL USED SHALL BE NATIVE ORGANIC MATERIAL SCREENED AS TO BE FREE FROM ROOTS, BRANCHES, STONES, AND OTHER DELETERIOUS MATERIALS. TOPSOIL SHALL BE APPLIED SO AS TO PROVIDE A MINIMUM OF A 4-INCH COMPACTED THICKNESS. UPON COMPLETION OF TOPSOILING, FINISHED SECTIONS ARE TO BE LIMED, SEEDDED, AND MULCHED; CONSERVATION SEED MIX SHALL BE USED ALONG PROPOSED PRIVATE OPEN WILDFLOWER MIX TO BE USED IN DETENTION BASIN AND OTHER OPEN AREAS. THE CONTRACTOR SHALL INSPECT COMPLETED SECTIONS OF WORK ON A REGULAR BASIS AND REMEDY ANY PROBLEM AREAS UNTIL A HEALTHY STAND OF GRASS IS ESTABLISHED.
15. MAINTAIN, REPAIR, AND REPLACE TEMPORARY EROSION CONTROL MEASURES AS NECESSARY FOR A MINIMUM PERIOD OF 12 MONTHS FOLLOWING SUBSTANTIAL COMPLETION.
16. AFTER STABILIZATION (12 MONTHLY FOLLOWING SUBSTANTIAL COMPLETION), REMOVE AND PROPERLY DISPOSE OF TEMPORARY EROSION CONTROL MEASURES, PREFERABLY OFF SITE.
17. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.

- A: BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED.
- B: A MINIMUM OF 85 PERCENT VEGETATED GROWTH HAS BEEN ESTABLISHED.
- C: A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED.
- D: OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

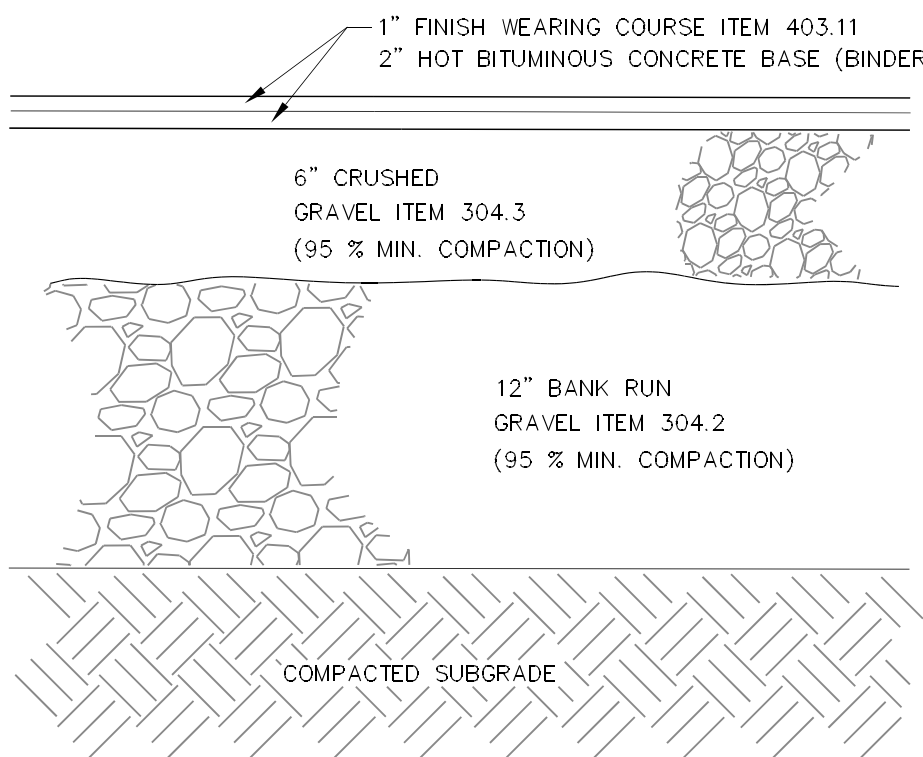
NOT TO SCALE



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.

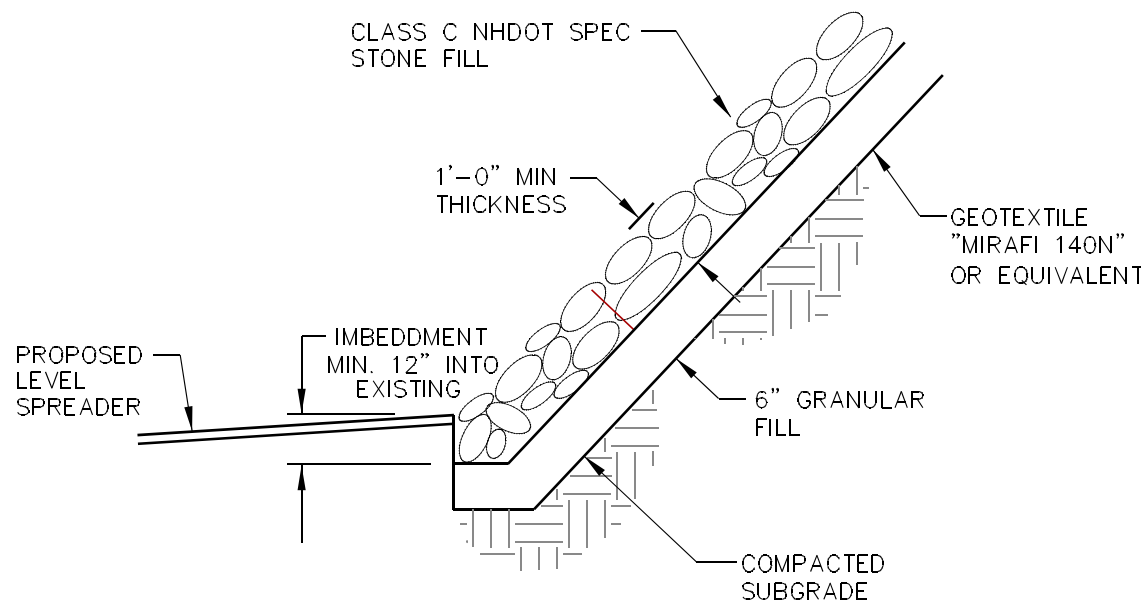
THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIPRAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE CHECKED TO SEE THAT OBSTRUCTIONS ARE NOT OCCURRING. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, SEDIMENT AND LOGS. COULD BE CHECKED THE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE OUTLET PROTECTION APRON.

NOT TO SCALE

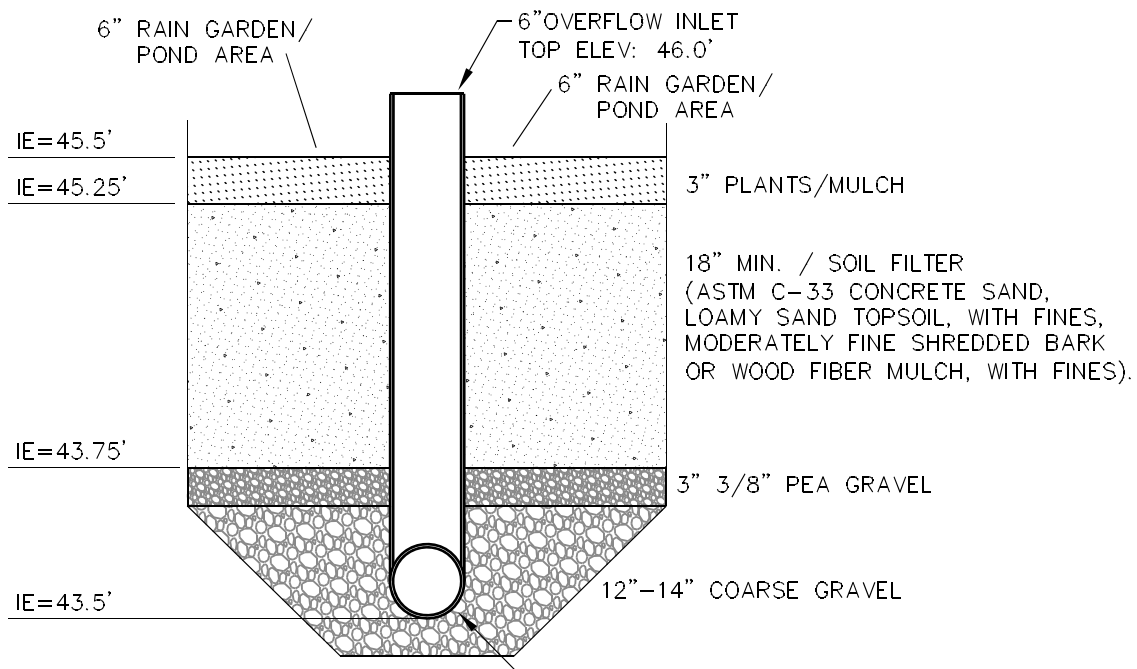


ALL PAVEMENT, BASE MATERIALS AND WORKMANSHIP TO BE IN COMPLIANCE WITH N.H.D.O.T. "STANDARDS FOR ROAD AND BRIDGE CONSTRUCTION" LATEST EDITION, AND THE CITY OF PORTSMOUTH PUBLICS WORKS DIVISION.

NOT TO SCALE

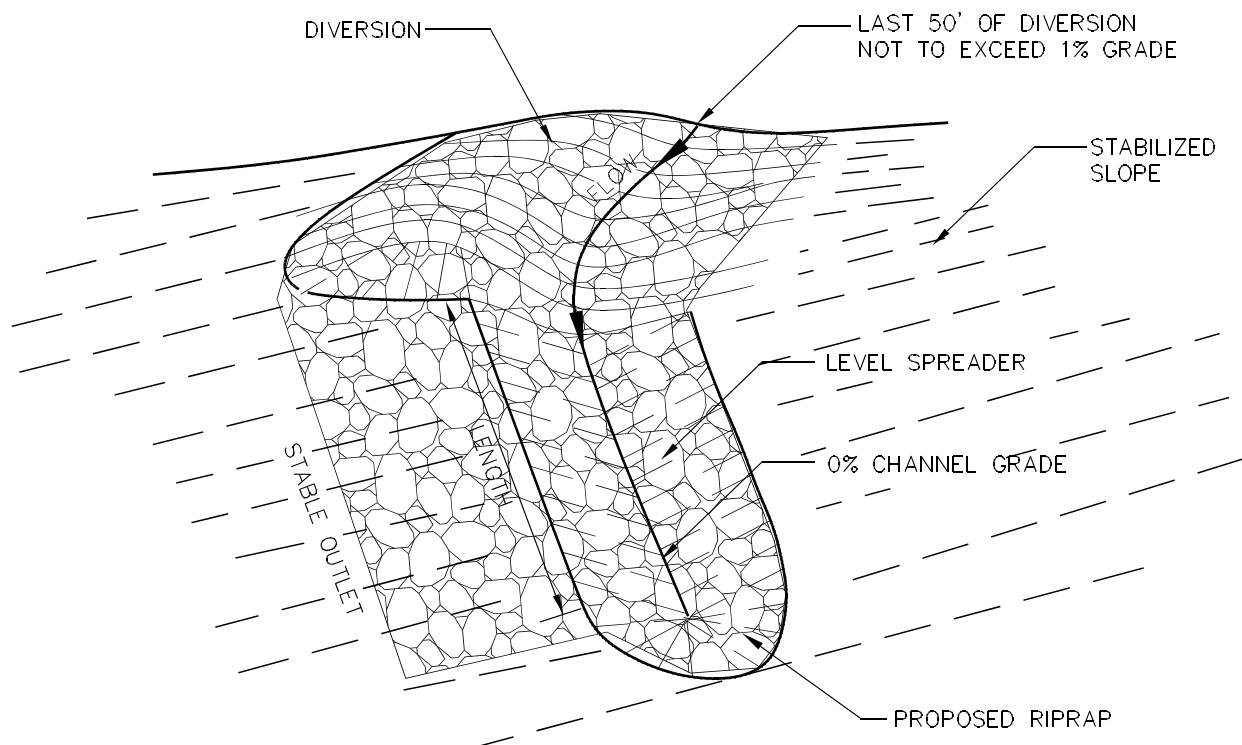


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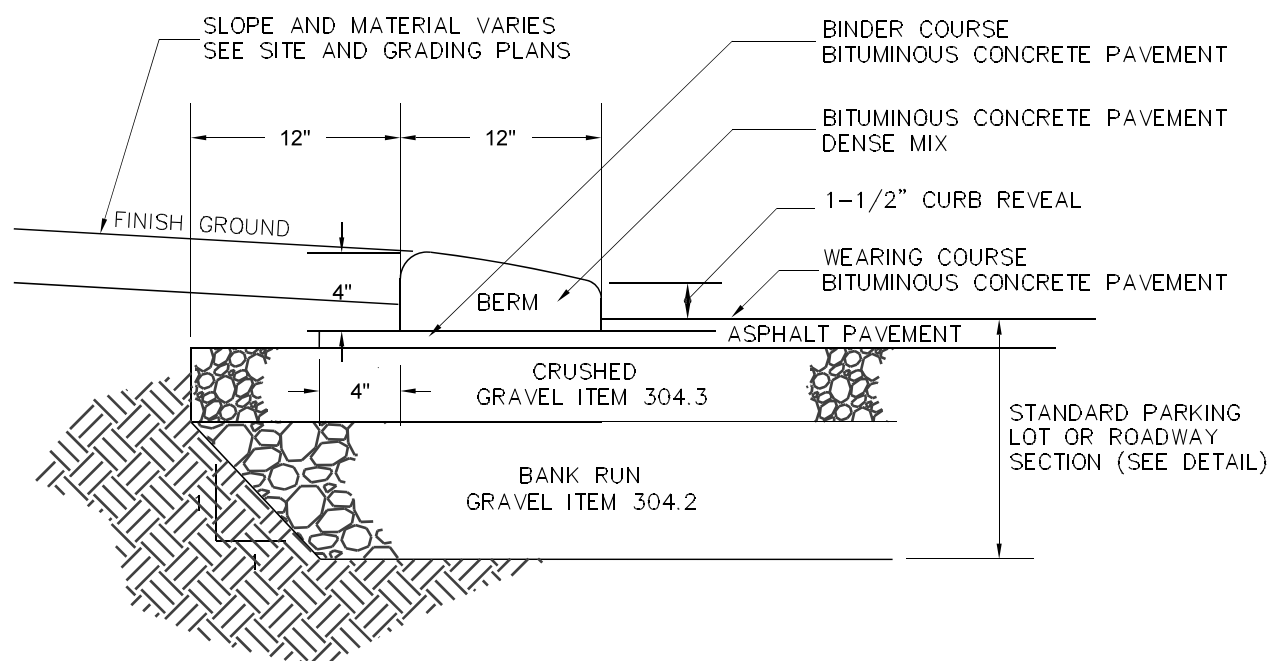


1. THE INLET/OUTLET APRON SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE RIP-RAP SHALL CONFORM TO THE SPECIFIED GRADATION (d50=2").
3. GEOTECHNICAL FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP-RAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES (ALL SIDES).
4. RIP-RAP MAY BE PLACED BY EQUIPMENT (AS TO PREVENT SEGREGATION OF THE STONE SIZES) AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION.

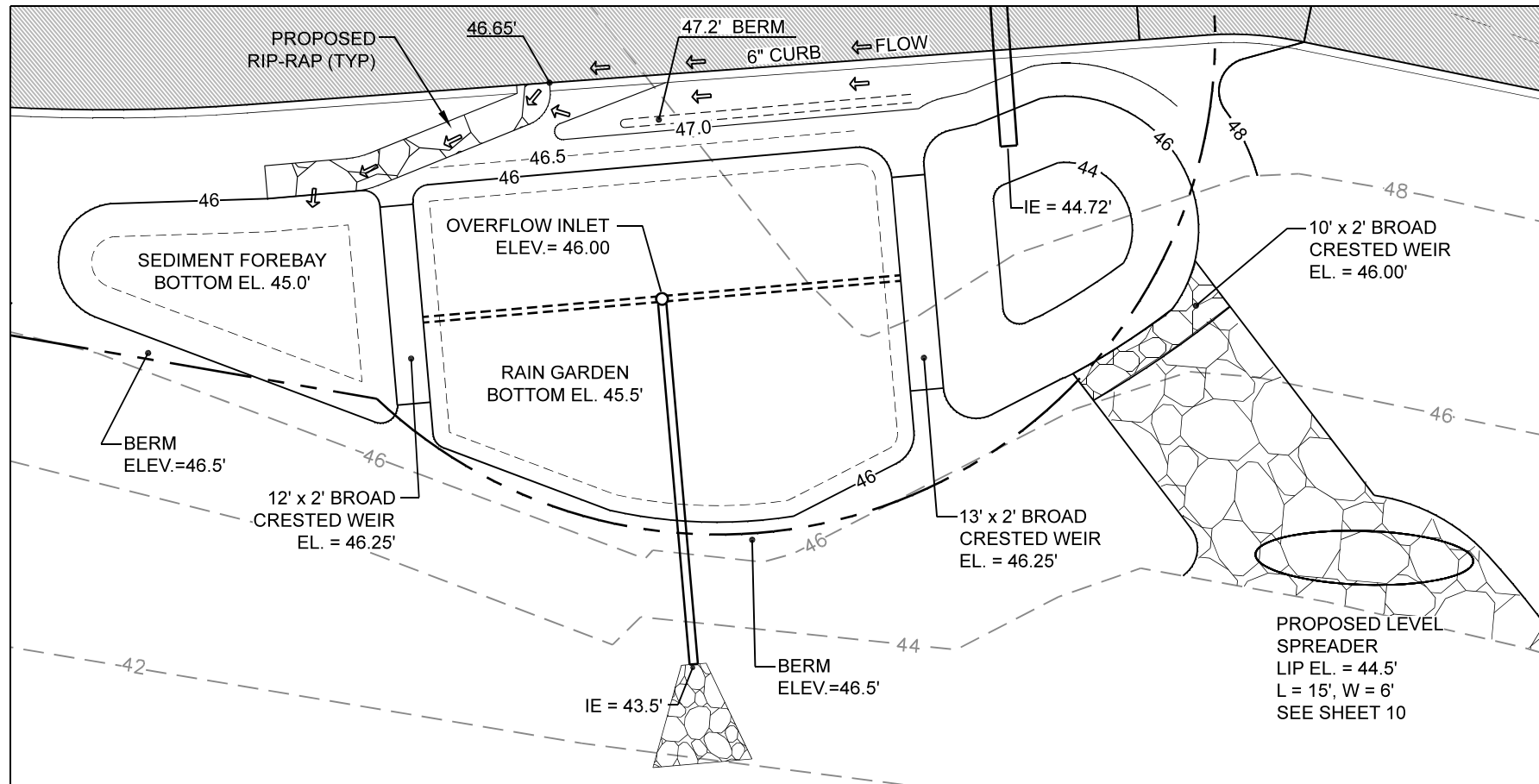
1. THE OUTLET PROTECTION SHALL BE CHECKED AT LEAST BI-ANNUALLY AND AFTER EVERY SIGNIFICANT RAIN EVENT. IF THE RIPRAP HAS BEEN DISPLACED, UNDERMINED, OR DAMAGED, IT SHALL BE REPAIRED OR REPLACED IMMEDIATELY.
2. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING.
3. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS AND SEDIMENT THAT COULD CHANGE THE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES.
4. ALL REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID DAMAGE TO THE OUTLET PROTECTION APRON.



NOT TO SCALE



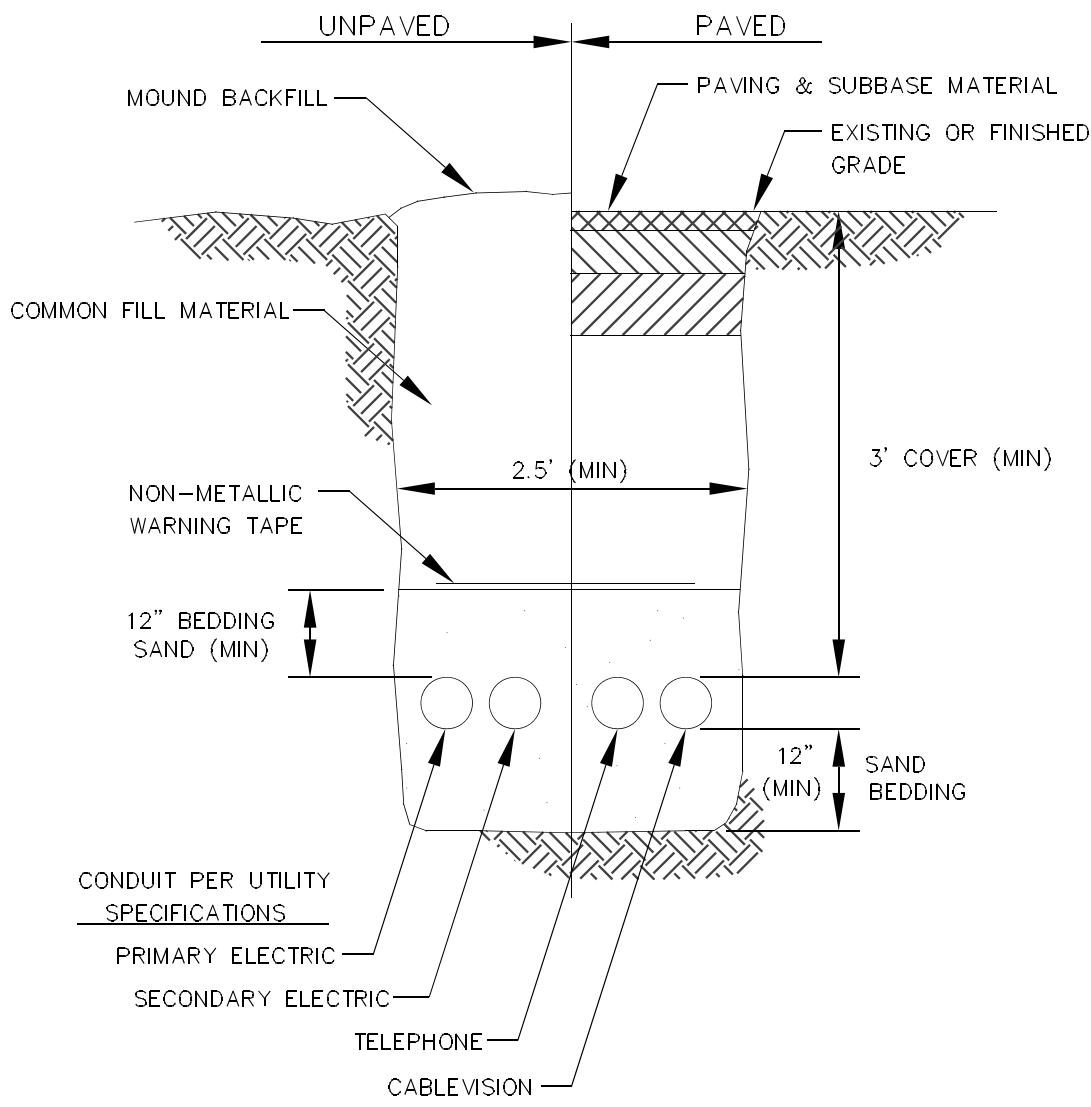
NOT TO SCALE



SCALE: 1"=10'

THE LEVEL SPREADER SHOULD BE CHECKED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE IF THE LIP HAS BEEN DAMAGED AND TO DETERMINE THAT THE DESIGN CONDITIONS HAVE NOT CHANGED. ANY DETRIMENTAL SEDIMENT ACCUMULATION SHOULD BE REMOVED. IF RILLING HAS TAKEN PLACE ON THE LIP, THEN THE DAMAGE SHOULD BE REPAIRED AND REVEGETATED. THE VEGETATION SHOULD BE MOVED OCCASIONALLY TO CONTROL WEEDS AND THE ENCROACHMENT OF WOODY VEGETATION. CLIPPINGS SHOULD BE REMOVED AND DISPOSED OF OUTSIDE THE SPREADER AND AWAY FROM THE OUTLET AREA. FERTILIZATION SHOULD BE DONE AS NECESSARY TO KEEP THE VEGETATION HEALTHY AND DENSE.

7) PERIODIC INSPECTION AND REQUIRED MAINTENANCE SHALL BE PERFORMED.



NOT TO SCALE

R. J. Burd

R E V I S I O N S				
	NO.	DATE	DESCRIPTION	BY
	15	10/12/2021	FINAL APPROVED PLANS FOR RECORDING	TDB
	16	12/14/2021	ADDED NOTING TO FINAL PLANS	TDB
	19	03/16/2022	REVISED PER DPW COMMENTS FOR FINAL PLANS	TDB

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DETAIL SHEET  
 TAX MAP 283 LOT 11  
**BE PLUS CONSTRUCTION**  
 MLOCK WAY, PORTSMOUTH NH 03801  
 OWNED BY  
**HEMLOCK WAY**  
**REALTY INVESTMENTS, LLC**  
 KETTS MILL ROAD, SUITE C, HAMFSTEAD, NH 03841  
 BOOK 6330 PAGE 796

ROCKINGHAM CO.
JOB NO: 258.00

DATE: SEPTEMBER 23, 2020

DET

SHT. 10 of 10

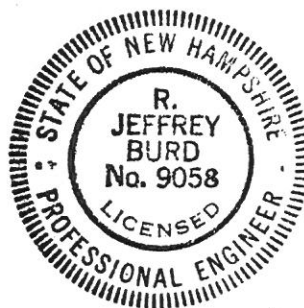


**DRAINAGE ANALYSIS**

Prepared for:  
**DUBE PLUS CONSTRUCTION**  
**TAX MAP 283 LOT 11**  
**PATRICIA DRIVE**  
**PORTSMOUTH, NH**

Prepared by:  
**NEW HAMPSHIRE LAND CONSULTANTS, PLLC**  
**683C FIRST NH TURNPIKE**  
**NORTHWOOD, NH 03261**  
**&**  
**RJB ENGINEERING**  
**JEFFREY BURD, P.E.**

Project Number:  
258.00



*RJBurd*



## **1. Table of Contents**

1. Narrative of the project with summary table of peak discharge rates
2. Drainage analysis-Full Pre & Post summary of the 10-YR
3. Conclusion

## **PROJECT NARATIVE**



## **Narrative**

### **Introduction**

This drainage analysis details the surface water drainage patterns on a parcel located at Patricia Drive in Portsmouth, NH. Using HydroCAD to model storm events this analysis estimates the amount of storm water surface runoff from this site before and after the proposed parking lot and sidewalk. The design of this project will decrease the runoff.

The proposed improvements are on Patricia Drive and Tax Map 283 Lot 11. The applicant, Dube Plus Construction wishes to rebuild Patricia Drive and construct 2 single family homes. We are proposing 2 small detention basins to control the runoff from the reconstructed road, driveways and yards. The houses will be constructed with drip edges and all roof runoff will be infiltrated via the drip edge.

The area that has been analyzed is all upland, Chatfield-Hollis-Canton, Sandy Loam soils (Hydro group B soils) as categorized by the Soil Conservation District.

The following section explains the methods used to determine the runoff quantities generated by the existing conditions site. The objective of this analysis is to obtain surface storm water runoff flow data. This information is compared to evaluate whether there may be an impact to existing drainage system in the area.

### **Methodology**

The drainage analysis performed utilizes nationally recognized techniques developed by the USDA, Soil Conservation Service (SCS). The techniques and models used for this analysis are described in "Urban Hydrology for Small Watersheds, Technical Release Number 55" dated 1986 and in USDOT Federal Highway Administration (FHA) "Hydraulic Design of Highway Culverts" dated September 1985.

Design computations were based on a Type III 24-hour storm event as recommended for New Hampshire. 10 year – 24-hour event of 4.92 inches of precipitation respectively was analyzed. Pre and Post-development conditions were analyzed by the same method. An investigation was conducted to confirm published watershed soil and vegetative characteristics that were used for the input program "HydroCAD Storm water Modeling System, Version 10.00-25". Tabulated summaries of the results are shown in the results section of this report.

### **Procedure**

To begin the stormwater study, the limits and areas of the watershed for this development were identified. The existing watershed area is treated as 1 sub-catchment. The proposed development watershed area is treated as 5 sub-catchments. Weighted runoff curve numbers (CN) were calculated for each sub-catchment watershed area. Runoff curve numbers were chosen based on site investigation, TR-55, USDA Agriculture Handbook 590 (1997), and USDA Soil Conservation Service Soil Survey, issued October 1994. The value of CN depends on soil type, vegetative cover and hydraulic conditions of the land surface. Surface water run off rate and total volume during and after a storm event is also influenced by: slope of the land, area of the watershed, hydraulic length of watershed, and ponds and swamps. In addition, the amount of surface runoff produced by a given storm event is a function of the duration and intensity of the storm.

Pre-development and post-development conditions for the watershed were analyzed by the method outlined in USDA Soil Conservation Service Soil Survey, issued October 1994. Using this post-development information, computer generated hydrographs were calculated and peak runoff rates determined for each specific storm event.

The entire area to be developed will disturb approximately 34,000 square feet. Re-graded areas along the edge of construction will ultimately become stabilized and generally resume their pre-development characteristics.



### **RAINFALL CHARACTERISTICS**

This drainage report includes proposed conditions analysis for the site. The model was constructed using the USDA SCS TR-20 Method within the HydroCAD Stormwater Modeling System. The curve numbers were developed using the SCS TR-55 Runoff Curve numbers for Urban Areas. A Type III SCS 24-hour rainfall distribution was utilized in analyzing the data for a 10 Yr – 24 Hr (4.92") storm-event, to assure the adequacy of the proposed structure.

### **RAINFALL CHARACTERISTICS**

This drainage report includes proposed conditions analysis for the site. The model was constructed using the USDA SCS TR-20 Method within the HydroCAD Stormwater Modeling System. The curve numbers were developed using the SCS TR-55 Runoff Curve numbers for Urban Areas.

### **SEDIMENT & EROSION CONTROL PLANS BEST MANAGEMENT PRACTICES (BMP's)**

**Reference: Sheet - Proposed Conditions Plan  
General Details**

The proposed site development is protected from erosion and the roadways and abutting properties are protected from sediment by the use of Best Management Practices as outlined in the Stormwater Management & Erosion & Sediment Control Handbook for Urban & Developing Areas in New Hampshire. Any area disturbed by construction will be re-stabilized within 45 days and abutting properties and wetlands will not be adversely affected by this development. All swales and drainage structures will be constructed and stabilized prior to having run-off directed to them.

#### **1 Filtrexx sock/Construction Fence**

The plan set demonstrates the location of filtrexx sock for sediment control. In areas where the limits of construction need to be emphasized to operators, construction fence for added visibility will be installed. The Erosion and Sediment Control Details, has the specifications for installation and maintenance of the silt fence. Orange construction fence will be VISI Perimeter Fence by Conwed Plastic Fencing, or equal. The four-foot fencing is to be installed using six-foot posts at least two feet in the ground with six to eight feet spacing.

#### **2 Drainage Swales / Stormwater Conveyance Channels**

Drainage swales will be stabilized with vegetation for long term cover as outlined below, and using seed mixture C. As a general rule, velocities in the swale should not exceed 3.0 feet per second for a vegetated swale although velocities as high as 4.5 FPS are allowed under certain soil conditions. The use of jute matting will aid in the stabilization of vegetation.

### 3 Vegetated Stabilization

All areas that are disturbed during construction will be stabilized with vegetated material within 45 days of breaking ground. Construction will be managed in such a manner that erosion is prevented and that no abutter's property will be subjected to any siltation, unless otherwise permitted. All areas to be planted with grass for long-term cover will follow the specification and on Sheet E-1 using seeding mixture C, as follows:

Mixture	Pounds per Acre	Pounds per 1,000 Sq. Ft.
Tall Fescue	20	0.45
Creeping Red Fescue	20	0.45
Birdsfoot Trefoil	<u>8</u>	<u>0.20</u>
Total	48	1.10

### 4 Stabilized Construction Entrance

A temporary gravel construction entrance provides an area where mud can be dislodged from tires before the vehicle leaves the construction site to reduce the amount of mud and sediment transported onto paved municipal and state roads. The stone size for the pad should be between 1 and 2-inch coarse aggregate, and the pad itself constructed to a minimum length of 50' for the full width of the access road. The aggregate should be placed at least six inches thick. A plan view and profile are shown on Sheet E1 - Sediment and Erosion Control Detail Plan.

### 5 Environmental Dust Control

Dust will be controlled on the site by the use of multiple Best Management Practices. Mulching and temporary seeding will be the first line of protection to be utilized where problems occur. If dust problems are not solved by these applications, the use of water and calcium chloride can be applied. Calcium chloride will be applied at a rate that will keep the surface moist but not cause pollution.

### 7 Construction Sequence

1. Cut and remove trees and pavement in construction areas as directed or required.
2. Construct and/or install temporary and permanent sediment erosion and detention control facilities, as required (swales, berms, level spreaders, etc. Erosion, sediment and detention control facilities shall be installed and stabilized prior to any earth moving operation, and prior to directing run-off to them.
3. Clear, cut, grub, and dispose of debris in approved facilities.
4. Excavate and stockpile topsoil / loam. All disturbed areas shall be stabilized immediately after grading.
5. Begin permanent and temporary seeding and mulching. All cut and fill slopes and disturbed areas shall be seeded and mulched as required, or directed.



6. Daily, or as required, construct temporary berms, drainage ditches, check dams, sediment traps, etc. to prevent erosion on the site and prevent any siltation of abutting waters or property.
7. Inspect and maintain all erosion and sediment control measures during construction.
8. Complete permanent seeding and landscaping.
9. Remove temporary erosion control measures after seeding areas have established themselves and site improvements are complete. Smooth and re-vegetate all disturbed areas.
10. All drainage structures will be constructed and stabilized prior to having run-off being directed to them.

## **9 Temporary Erosion Control Measures**

1. The smallest practical area of land shall be exposed at any one time.
2. Erosion, sediment and detention measures shall be installed as shown on the plans and at locations as required, or directed by the engineer.
3. All disturbed areas shall be returned to original grades and elevations. Disturbed areas shall be loamed with a minimum of 4" of loam and seeded with not less than 1.10 pound of seed per 1,000 square feet (48 pounds per acre) of area.
4. Silt fences and other barriers shall be inspected periodically and after every rainstorm during the life of the project. All damaged areas shall be repaired, sediment deposits shall periodically be removed and properly disposed of.
5. After all disturbed areas have been stabilized, the temporary erosion control measures are to be removed and the area disturbed by the removal smoothed and revegetated.
6. Areas must be seeded and mulched within 5 days of final grading, permanently stabilized within 15 days of final grading, or temporarily stabilized within 45 days of initial disturbance of soil.

## **10 Inspection and Maintenance Schedule**

Fencing will be inspected during and after storm events to ensure that the fence still has integrity and is not allowing sediment to pass. Sediment build-up will be removed if it is deeper than six inches.

## **DRAINAGE ANALYSIS PRE & POST**

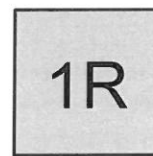
**Pre-Conditions Drainage Analysis**  
**Full summary**  
**10 YR – 24 HR rainfall = 4.92”**





Ex.

pavement/grass/woods



Existing



**Routing Diagram for Ex drainage**

Prepared by Brown Engineering and Surveying, LLC, Printed 12/22/2020  
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## Ex drainage

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Page 2

### Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.158	61	>75% Grass cover, Good, HSG B (1S)
0.180	98	Pavement (1S)
0.438	55	Woods, Good, HSG B (1S)
<b>0.775</b>	<b>66</b>	<b>TOTAL AREA</b>

## Ex drainage

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Page 3

### Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.596	HSG B	1S
0.000	HSG C	
0.000	HSG D	
0.180	Other	1S
<b>0.775</b>		<b>TOTAL AREA</b>



**Ex drainage**

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Page 4

**Ground Covers (all nodes)**

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.158	0.000	0.000	0.000	0.158	>75% Grass cover, Good	1S
0.000	0.000	0.000	0.000	0.180	0.180	Pavement	1S
0.000	0.438	0.000	0.000	0.000	0.438	Woods, Good	1S
<b>0.000</b>	<b>0.596</b>	<b>0.000</b>	<b>0.000</b>	<b>0.180</b>	<b>0.775</b>	<b>TOTAL AREA</b>	

**Ex drainage***Type III 24-hr 10 yr 24 hr Rainfall=4.92"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Ex.**

Runoff Area=33,769 sf 23.17% Impervious Runoff Depth&gt;1.53"

Tc=5.0 min CN=66 Runoff=1.46 cfs 0.099 af

**Reach 1R: Existing**

Inflow=1.46 cfs 0.099 af

Outflow=1.46 cfs 0.099 af

**Total Runoff Area = 0.775 ac Runoff Volume = 0.099 af Average Runoff Depth = 1.53"**  
**76.83% Pervious = 0.596 ac 23.17% Impervious = 0.180 ac**

**Ex drainage**

Type III 24-hr 10 yr 24 hr Rainfall=4.92"

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**Summary for Subcatchment 1S: Ex. pavement/grass/woods**

Runoff = 1.46 cfs @ 12.09 hrs, Volume= 0.099 af, Depth&gt; 1.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 yr 24 hr Rainfall=4.92"

	Area (sf)	CN	Description
*	7,823	98	Pavement
	19,073	55	Woods, Good, HSG B
	6,873	61	>75% Grass cover, Good, HSG B
	33,769	66	Weighted Average
	25,946		76.83% Pervious Area
	7,823		23.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, 1

**Summary for Reach 1R: Existing**

Inflow Area = 0.775 ac, 23.17% Impervious, Inflow Depth &gt; 1.53" for 10 yr 24 hr event

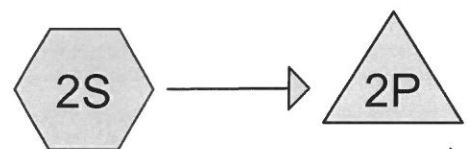
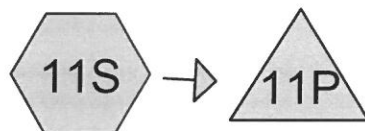
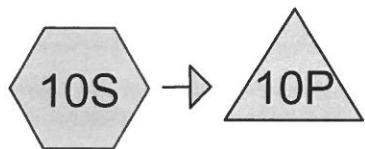
Inflow = 1.46 cfs @ 12.09 hrs, Volume= 0.099 af

Outflow = 1.46 cfs @ 12.09 hrs, Volume= 0.099 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

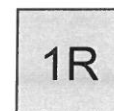
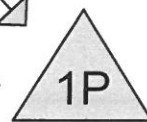


**Pro-Conditions Drainage Analysis**  
**Full summary**  
**10 YR – 24 HR rainfall = 4.92”**



Yard area

Det. Pond



Pro. pavement

Det. Pond

Proposed



#### Routing Diagram for Pro drainage

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**Pro drainage**

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**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
0.498	61	>75% Grass cover, Good, HSG B (1S, 2S, 3S)
0.074	98	Impervious (house) (10S, 11S)
0.150	98	Pavement (1S)
0.054	55	Woods, Good, HSG B (2S, 3S)
<b>0.775</b>	<b>71</b>	<b>TOTAL AREA</b>

**Pro drainage**

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**Soil Listing (all nodes)**

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.552	HSG B	1S, 2S, 3S
0.000	HSG C	
0.000	HSG D	
0.223	Other	1S, 10S, 11S
<b>0.775</b>		<b>TOTAL AREA</b>

**Pro drainage**

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**Ground Covers (all nodes)**

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.498	0.000	0.000	0.000	0.498	>75% Grass cover, Good	1S, 2S, 3S
0.000	0.000	0.000	0.000	0.074	0.074	Impervious (house)	10S, 11S
0.000	0.000	0.000	0.000	0.150	0.150	Pavement	1S
0.000	0.054	0.000	0.000	0.000	0.054	Woods, Good	2S, 3S
<b>0.000</b>	<b>0.552</b>	<b>0.000</b>	<b>0.000</b>	<b>0.223</b>	<b>0.775</b>	<b>TOTAL AREA</b>	



**Pro drainage**

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**Pipe Listing (all nodes)**

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	2P	45.00	44.72	28.0	0.0100	0.012	12.0	0.0	0.0

**Pro drainage**

Type III 24-hr 10 yr 24 hr Rainfall=4.92"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

<b>Subcatchment 1S: Pro. pavement</b>	Runoff Area=19,758 sf 33.02% Impervious Runoff Depth>2.05" Tc=5.0 min CN=73 Runoff=1.17 cfs 0.078 af
<b>Subcatchment 2S: Yard area</b>	Runoff Area=6,223 sf 0.00% Impervious Runoff Depth>1.13" Tc=5.0 min CN=60 Runoff=0.19 cfs 0.013 af
<b>Subcatchment 3S: Yard area</b>	Runoff Area=4,583 sf 0.00% Impervious Runoff Depth>1.07" Tc=5.0 min CN=59 Runoff=0.13 cfs 0.009 af
<b>Subcatchment 10S: House 1</b>	Runoff Area=1,680 sf 100.00% Impervious Runoff Depth>4.35" Tc=5.0 min CN=98 Runoff=0.19 cfs 0.014 af
<b>Subcatchment 11S: House 2</b>	Runoff Area=1,524 sf 100.00% Impervious Runoff Depth>4.35" Tc=5.0 min CN=98 Runoff=0.17 cfs 0.013 af
<b>Reach 1R: Proposed</b>	Inflow=0.21 cfs 0.051 af Outflow=0.21 cfs 0.051 af
<b>Pond 1P: Det. Pond</b>	Peak Elev=46.54' Storage=2,190 cf Inflow=1.35 cfs 0.091 af Outflow=0.19 cfs 0.041 af
<b>Pond 2P: Det. Pond</b>	Peak Elev=45.21' Storage=22 cf Inflow=0.19 cfs 0.013 af 12.0" Round Culvert n=0.012 L=28.0' S=0.0100 '/' Outflow=0.18 cfs 0.013 af
<b>Pond 10P: drip edge</b>	Peak Elev=55.45' Storage=208 cf Inflow=0.19 cfs 0.014 af Outflow=0.02 cfs 0.014 af
<b>Pond 11P: drip edge</b>	Peak Elev=58.37' Storage=114 cf Inflow=0.17 cfs 0.013 af Outflow=0.04 cfs 0.013 af

**Total Runoff Area = 0.775 ac Runoff Volume = 0.127 af Average Runoff Depth = 1.97"**  
**71.19% Pervious = 0.552 ac 28.81% Impervious = 0.223 ac**

**Pro drainage**

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Type III 24-hr 10 yr 24 hr Rainfall=4.92"

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**Summary for Subcatchment 1S: Pro. pavement**

Runoff = 1.17 cfs @ 12.08 hrs, Volume= 0.078 af, Depth> 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10 yr 24 hr Rainfall=4.92"

Area (sf)	CN	Description
* 6,525	98	Pavement
13,233	61	>75% Grass cover, Good, HSG B
19,758	73	Weighted Average
13,233		66.98% Pervious Area
6,525		33.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, 1

**Summary for Subcatchment 2S: Yard area**

Runoff = 0.19 cfs @ 12.09 hrs, Volume= 0.013 af, Depth> 1.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10 yr 24 hr Rainfall=4.92"

Area (sf)	CN	Description
5,186	61	>75% Grass cover, Good, HSG B
1,037	55	Woods, Good, HSG B
6,223	60	Weighted Average
6,223		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, 1

**Summary for Subcatchment 3S: Yard area**

Runoff = 0.13 cfs @ 12.09 hrs, Volume= 0.009 af, Depth> 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10 yr 24 hr Rainfall=4.92"

Area (sf)	CN	Description
1,310	55	Woods, Good, HSG B
3,273	61	>75% Grass cover, Good, HSG B
4,583	59	Weighted Average
4,583		100.00% Pervious Area



**Pro drainage**

Type III 24-hr 10 yr 24 hr Rainfall=4.92"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, 1

**Summary for Subcatchment 10S: House 1**

Runoff = 0.19 cfs @ 12.07 hrs, Volume= 0.014 af, Depth> 4.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 yr 24 hr Rainfall=4.92"

Area (sf)	CN	Description
* 1,680	98	Impervious (house)
1,680		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, 1

**Summary for Subcatchment 11S: House 2**

Runoff = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af, Depth> 4.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 yr 24 hr Rainfall=4.92"

Area (sf)	CN	Description
* 1,524	98	Impervious (house)
1,524		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, 1

**Summary for Reach 1R: Proposed**

Inflow Area = 0.702 ac, 21.35% Impervious, Inflow Depth > 0.87" for 10 yr 24 hr event  
Inflow = 0.21 cfs @ 12.75 hrs, Volume= 0.051 af  
Outflow = 0.21 cfs @ 12.75 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Pond 1P: Det. Pond**

Inflow Area = 0.596 ac, 25.11% Impervious, Inflow Depth > 1.83" for 10 yr 24 hr event  
Inflow = 1.35 cfs @ 12.09 hrs, Volume= 0.091 af  
Outflow = 0.19 cfs @ 12.76 hrs, Volume= 0.041 af, Atten= 86%, Lag= 40.3 min  
Primary = 0.19 cfs @ 12.76 hrs, Volume= 0.041 af

**Pro drainage**

Type III 24-hr 10 yr 24 hr Rainfall=4.92"

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Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 46.54' @ 12.76 hrs Surf.Area= 1,165 sf Storage= 2,190 cf

Flood Elev= 47.00' Surf.Area= 1,238 sf Storage= 2,746 cf

Plug-Flow detention time= 191.9 min calculated for 0.041 af (46% of inflow)

Center-of-Mass det. time= 103.1 min ( 908.8 - 805.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	2,746 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	507	0	0
46.00	1,080	1,587	1,587
47.00	1,238	1,159	2,746

Device	Routing	Invert	Outlet Devices
#1	Primary	46.50'	<b>10.0' long x 2.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

**Primary OutFlow** Max=0.18 cfs @ 12.76 hrs HW=46.54' (Free Discharge)

1=Broad-Crested Rectangular Weir (Weir Controls 0.18 cfs @ 0.49 fps)

**Summary for Pond 2P: Det. Pond**

Inflow Area = 0.143 ac, 0.00% Impervious, Inflow Depth > 1.13" for 10 yr 24 hr event  
 Inflow = 0.19 cfs @ 12.09 hrs, Volume= 0.013 af  
 Outflow = 0.18 cfs @ 12.11 hrs, Volume= 0.013 af, Atten= 4%, Lag= 1.1 min  
 Primary = 0.18 cfs @ 12.11 hrs, Volume= 0.013 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 45.21' @ 12.11 hrs Surf.Area= 114 sf Storage= 22 cf

Flood Elev= 47.00' Surf.Area= 327 sf Storage= 407 cf

Plug-Flow detention time= 5.0 min calculated for 0.013 af (99% of inflow)

Center-of-Mass det. time= 2.9 min ( 831.2 - 828.3 )

Volume	Invert	Avail.Storage	Storage Description
#1	45.00'	407 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.00	91	0	0
46.00	198	145	145
47.00	327	263	407

Device	Routing	Invert	Outlet Devices
#1	Primary	45.00'	<b>12.0" Round Culvert</b> L= 28.0' Ke= 0.500

**Pro drainage**

Type III 24-hr 10 yr 24 hr Rainfall=4.92"

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Inlet / Outlet Invert= 45.00' / 44.72' S= 0.0100 ' /' Cc= 0.900  
 n= 0.012, Flow Area= 0.79 sf

**Primary OutFlow** Max=0.18 cfs @ 12.11 hrs HW=45.21' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 0.18 cfs @ 2.26 fps)

**Summary for Pond 10P: drip edge**

Inflow Area = 0.039 ac, 100.00% Impervious, Inflow Depth > 4.35" for 10 yr 24 hr event  
 Inflow = 0.19 cfs @ 12.07 hrs, Volume= 0.014 af  
 Outflow = 0.02 cfs @ 11.50 hrs, Volume= 0.014 af, Atten= 89%, Lag= 0.0 min  
 Discarded = 0.02 cfs @ 11.50 hrs, Volume= 0.014 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3  
 Peak Elev= 55.45' @ 12.73 hrs Surf.Area= 144 sf Storage= 208 cf  
 Flood Elev= 56.00' Surf.Area= 144 sf Storage= 288 cf

Plug-Flow detention time= 72.6 min calculated for 0.014 af (100% of inflow)  
 Center-of-Mass det. time= 71.8 min ( 806.2 - 734.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	54.00'	288 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
54.00	144	0	0
56.00	144	288	288

Device	Routing	Invert	Outlet Devices
#1	Discarded	54.00'	<b>6.000 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=0.02 cfs @ 11.50 hrs HW=54.02' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.02 cfs)

**Summary for Pond 11P: drip edge**

Inflow Area = 0.035 ac, 100.00% Impervious, Inflow Depth > 4.35" for 10 yr 24 hr event  
 Inflow = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af  
 Outflow = 0.04 cfs @ 11.80 hrs, Volume= 0.013 af, Atten= 75%, Lag= 0.0 min  
 Discarded = 0.04 cfs @ 11.80 hrs, Volume= 0.013 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3  
 Peak Elev= 58.37' @ 12.43 hrs Surf.Area= 306 sf Storage= 114 cf  
 Flood Elev= 60.00' Surf.Area= 306 sf Storage= 612 cf

Plug-Flow detention time= 14.6 min calculated for 0.013 af (100% of inflow)  
 Center-of-Mass det. time= 13.9 min ( 748.4 - 734.5 )



**Pro drainage**

Type III 24-hr 10 yr 24 hr Rainfall=4.92"

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Volume	Invert	Avail.Storage	Storage Description
#1	58.00'	612 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
58.00	306	0	0
60.00	306	612	612

Device	Routing	Invert	Outlet Devices
#1	Discarded	58.00'	<b>6.000 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=0.04 cfs @ 11.80 hrs HW=58.02' (Free Discharge)  
↑ **1=Exfiltration** (Exfiltration Controls 0.04 cfs)

## **CONCLUSION**

**Pre vs Pro comparison  
Discharge Point 1R**

Storm Yr/24 hr	Existing CFS	Proposed CFS	Difference
10	1.46	0.21	-1.25

**Conclusion**

The intent of this report is to evaluate the re-construction of Patricia Drive and the improvement to two proposed parcels. We have evaluated the watersheds area on the property. We have determined that two small basins will control all stormwater run-off from the reconstruction of Patricia Drive and new construction area.

A Site Specific, Terrain Alteration Permit (RSA 485: A-17) is **not** required for this site plan due to the area of disturbance is less than 100,000 square feet for AOT and a SWPPP is **not** required as the disturbance is less than 1 acre.

Respectfully Submitted,

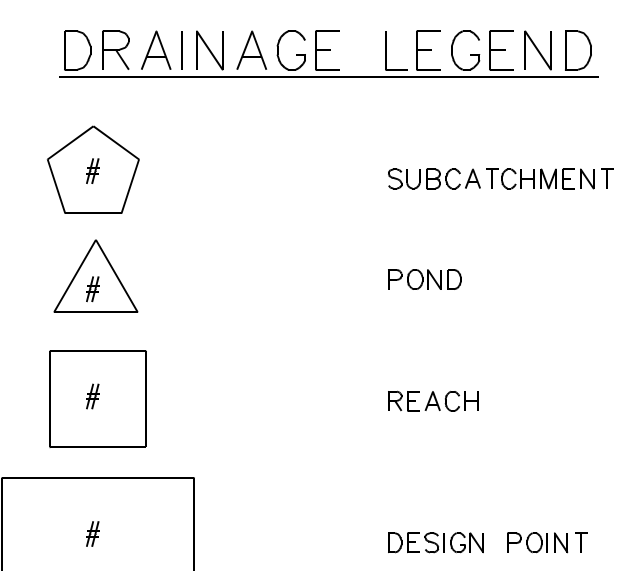
New Hampshire Land Consultants, PLLC

Scott R Frankiewicz, LLS  
Project Manager

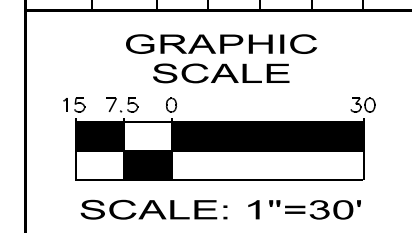
Jeff Burd, PE  
Project Engineer



## **PRE & POST WATERSHED PLANS**



R E V I S I O N S			
NO.	DATE	DESCRIPTION	BY



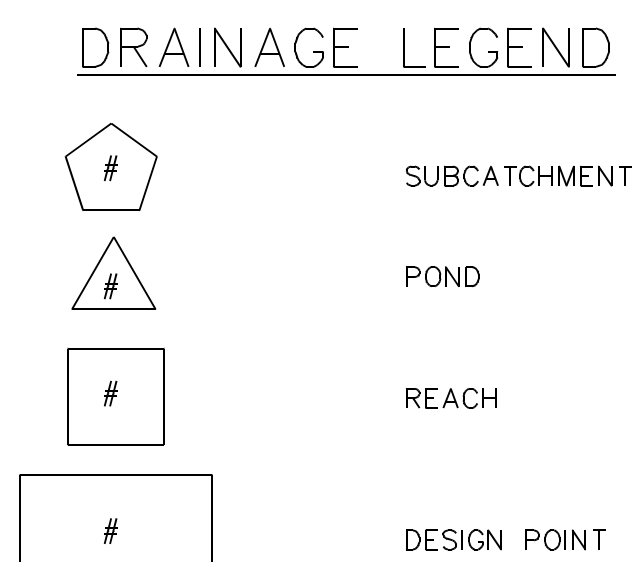
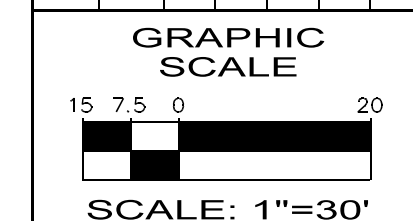
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**EXISTING WATERSHED PLAN**  
TAX MAP 283 LOT 11  
**DUBE PLUS CONSTRUCTION**  
PATRICIA DRIVE, PORTSMOUTH NH 03801  
OWNED BY  
**FRITZ FAMILY REVOC LIV TRUST,**  
**EDGAR H FRITZ, TRUSTEE**  
P.O. BOX 524, 50 SHORE DR, NORTHWOOD NH, 03261  
BOOK 3338 PAGE 0173

ROCKINGHAM CO.
JOB NO: 258.00
DATE: DECEMBER 23, 2020

EW  
SHT. 1 of 2



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PROPOSED WATERSHED PLAN  
TAX MAP 283 LOT 11  
**DUBE PLUS CONSTRUCTION**  
PATRICIA DRIVE, PORTSMOUTH NH 03801  
OWNED BY  
**FRITZ FAMILY REVOC LIV TRUST,  
EDGAR H FRITZ, TRUSTEE**  
P.O. BOX 524, 50 SHORE DR, NORTHWOOD NH, 03261  
BOOK 3338 PAGE 0173

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DATE: DECEMBER 23, 2020

**PW**  
SHT. 2 of 2