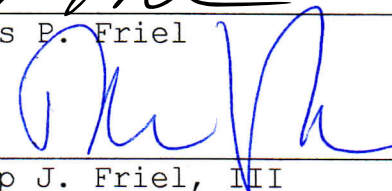


LETTER OF AUTHORIZATION

Thomas P. Friel and Philip J. Friel, III, the owners of property depicted on the Town of Hudson, New Hampshire Assessors Maps as Tax Map 234, Lot 34 (273 Lowell Road), do hereby authorize Hillwood Enterprises, L.P, ("Applicant"), and/or its agents and any engineering firm, or architecture firm or attorneys which Applicant may designate, to execute, submit, and prosecute land use applications and any applicable materials to any local, state and/or federal governmental entities, including but not limited to, applications filed with the Town of Hudson, New Hampshire, and to take any action necessary for the application and permitting process, including but not limited to, attendance and presentation at public hearings, of the said Property.

Dated: April 16, 2020

By:  TF
Thomas P. Friel

By: 
Philip J. Friel, III

LETTER OF AUTHORIZATION

GREENMEADOW GOLF CLUB, INC., a New Hampshire corporation, owner of property depicted on the Town of Hudson, New Hampshire Assessors Maps as Tax Map 234, Lot 5 (11 Steele Road), Tax Map 234, Lot 6 (15 Steele Road), and, Tax Map 239, Lot 1 (43 Steele Road)(collectively, the "Property"), do hereby authorize Hillwood Enterprises, L.P ("Applicant"), and/or its agents and any engineering firm, or architecture firm or attorneys which Applicant may designate, to execute, submit, and prosecute land use applications and any applicable materials to any local, state and/or federal governmental entities, including but not limited to, applications filed with the Town of Hudson, New Hampshire, and to take any action necessary for the application and permitting process, including but not limited to, attendance and presentation at public hearings, of the said Property.

Dated: April 16, 2020

GREENMEADOW GOLF CLUB, INC.

By: _____

Title: Vice President,
duly authorized.



AUTHORIZATION

HILLWOOD ENTERPRISES, L. P., with business address at 5050 W. Tilghman Street, Suite 435, Allentown, PA 18104, hereby authorizes and designates its agents, Smolak & Vaughan LLP, Langan Engineering & Environmental Services, Inc., and Donahue, Tucker & Ciandella, PLLC, to execute, submit, and prosecute land use applications and any applicable materials to any local, state and/or federal governmental entities, including but not limited to, applications filed with the Town of Hudson, New Hampshire, and to take any action necessary for the application and permitting process, including but not limited to, attendance and presentation at public hearings, with respect to the following parcels of the land as Hillwood is authorized by said property owners, for the following properties, including: (a) 11, 15 and 43 Steele Road -- Tax Map 234, Lot 5 (11 Steele Road), Tax Map 234, Lot 6 (15 Steele Road), and, Tax Map 239, Lot 1 (43 Steele Road), owned by Greenmeadow Golf Club, Inc.; and, (b) 273 Lowell Road -- Tax Map 234, Lot 34, owned by Thomas P. Friel and Philip J. Friel, III.

Dated: April 21, 2020

Hillwood Enterprises, L.P.,
a Texas limited partnership

By: AHB, LLC,
a Texas limited liability company
its general partner

By: 
Name: Gary B. Frederick
Title: Sr. Vice President, duly authorized.

**NEW HAMPSHIRE DEPARTMENT OF
ENVIRONMENTAL SERVICES
ALTERATION OF TERRAIN APPLICATION**

for

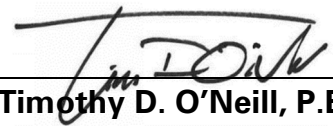
**Hudson Logistic Center
43 Lowell Road
Hudson, New Hampshire**

Prepared For:

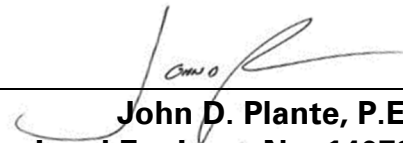
**Hillwood Enterprises, L.P.
5050 w. Tilghman Street, Suit 435
Allentown, PA 18104**

Prepared By:

**Langan Engineering & Environmental Services, Inc.
888 Boylston Street, Suite 510
Boston, MA 02199**



**Timothy D. O'Neill, P.E.
New Hampshire Professional Engineer No. 16259**



**John D. Plante, P.E.
New Hampshire Professional Engineer No. 14072**

**June 2020
Langan Project No. 1510101**

LANGAN

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UNBOUND, LOOSE DOCUMENTS

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Check – Application Fee
Color USGS Map
Legal Right to Undertake Project

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Figure 4	Effective FEMA Flood Map
Figure 5	NRCS Soils Map

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Site Specific Soil Map Plans Existing Color
Site Specific Soil Map Plans Proposed Color
Existing Watershed Map Plans
Proposed Watershed Map Plans

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Appendix C	Proof of Mailings
Appendix D	New Hampshire Department of Environmental Services GIS Maps
Appendix E	NHB Rare Species Letter
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Appendix N	Construction and Long Term Inspection and Maintenance Manuals

PROJECT NARRATIVE

This Alteration of Terrain Application has been prepared in support of the proposed development of approximately 367 acre site located at 43 Steele Road in the Town of Hudson New Hampshire. The existing two parcel site is currently developed as a 39 hole golf course known as Green Meadow Golf Club and is accessed from Steele Road. The existing topography on the site exhibits significant grade changes of up to 90 feet in elevation change. Many high and low points, and rolling topography can be found on site.

The proposed development is the construction and operation of three distribution warehousing facilities known collectively as the Hudson Logistics Center. Three Lots A, B, and C and a subdivision road way will be create from the existing two parcel site. Lot A will include the construction of a $\pm 1,079,700$ sf building with a finished floor elevation ± 142.75 feet, Lot B will include the construction of a $\pm 923,600$ sf building with a finished floor elevation of ± 146.5 ft, and Lot C will include the construction of a $\pm 522,000$ sf building with a finished floor elevation ± 147.50 feet. The current access from Steel road is unable to support the facilities as the main access road. A right of way will be created and new access road constructed for the development. A secondary access is also proposed in the north east section of Lot A. Upgraded utility service lines will be brought to the site within the proposed right of way.

Hydrologically, the site is located in the Merrimack River watershed, which is approximately 5,014 square miles, of which the project site encompasses a nominal amount of approximately 0.075%. The site is part of the Limit Brook – Merrimack River sub-watershed which encompasses approximately the southern three quarters of the Town of Hudson. Under the proposed conditions, the majority of the developed site will drain through closed pipe networks to the stormwater treatment systems before discharging off site at a controlled rate. Existing drainage patterns are being maintained to the greatest extent possible.

The proposed stormwater management system has been designed in accordance with the Town of Hudson current, and soon to be adopted, requirements, the New Hampshire Stormwater Manual, and the New Hampshire Department of Environmental Services. The system incorporates elevated levels of stormwater quality, maintains or decreases the existing peak rate of runoff for all storm events analyzed, and provides above the required groundwater recharge volumes.

Peak Flow Analysis

The project site directs stormwater run-off to two analysis locations under the existing conditions. Watershed A discharges run off directly to the Merrimack River along the western Property line via sheet flow or pipe discharge. Watershed B discharges run off, to wetland systems running north to south through the eastern region of the property west of Lowell Road. This wetlands system includes portions of an unnamed stream to the north and portions of Limit Brook to the south. Both of which ultimately discharge to the Merrimack River.

The proposed watershed analysis utilizes the same two discharge locations under the existing conditions, A and B. The outer limits and overall area analyzed under the proposed conditions is consistent with the existing conditions. Having consistent analysis of overall areas and discharge locations between the existing and proposed conditions ensures the model represents an accurate pre and post construction run off comparison.

The proposed stormwater management plan, discussed in the attached stormwater management report, results in a net reduction of peak offsite flows from watershed A and B. While the impervious area on site will increase, stormwater BMPs have been sized to not only meet but exceed the current regulations for stormwater treatment, flow attenuation and groundwater recharge requirements.

The table below provides a comparison of the peak run off rates from the pre development state to the post development state. Flow comparison is provided for the 2, 10, 25, and 50 year storm events and the percentage reduction in flow is listed for each instance.

Table : Peak Flow Runoff Rate Comparison (cubic-feet per second)

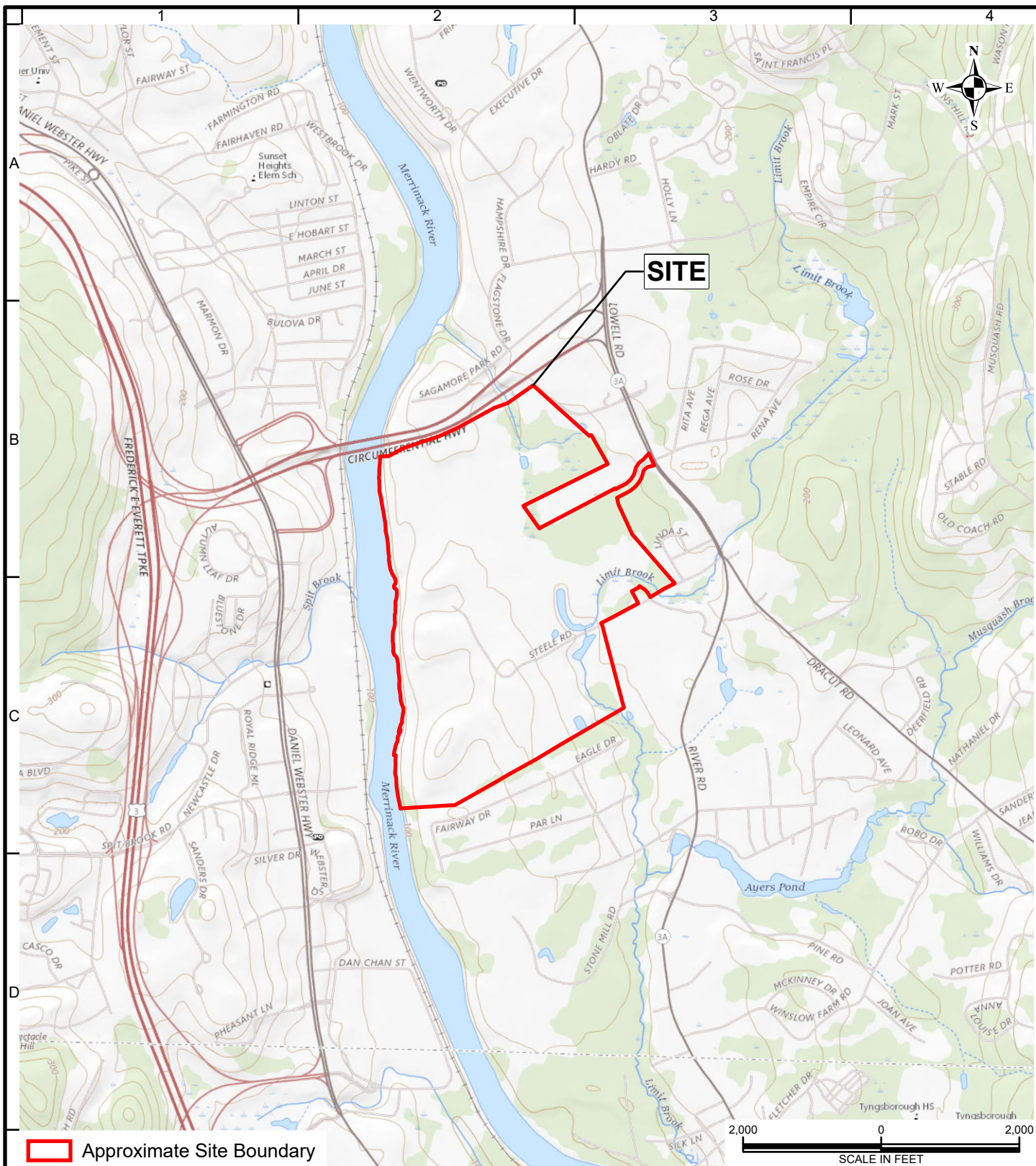
		2-year	10-year	25-year	50-year
A	Pre	29.03	121.42	206.34	297.64
	Post	10.70	68.90	120.91	159.03
	Delta	-63.14%	-43.25%	-41.40%	-46.57%
B	Pre	55.48	228.29	363.62	471.49
	Post	42.54	153.89	238.11	305.32
	Delta	-23.32%	-32.59%	-34.52%	-35.24%

For a more detail explanation of the site watershed and peak flow analysis, please refer to the attached stormwater management report. Stormwater quality, features, conveyance and ground water recharge calculation for the project can also be found in the attached stormwater management report.

Figures

Figure 1

USGS Location Map



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 Collectively known as Langan

Project

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HUDSON

HILLSBOROUGH
 COUNTY

NEW HAMPSHIRE

Drawing Title

**SITE
 LOCATION MAP**

Project No.

151010101

Date

05/18/2020

Scale

1" = 2,000'

Drawn By

MG

Submission Date

Figure

1

Sheet 1 of 5

Figure 2

Aerial Photograph



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05/18/2020

Scale

1" = 1,000'

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MG

Submission Date

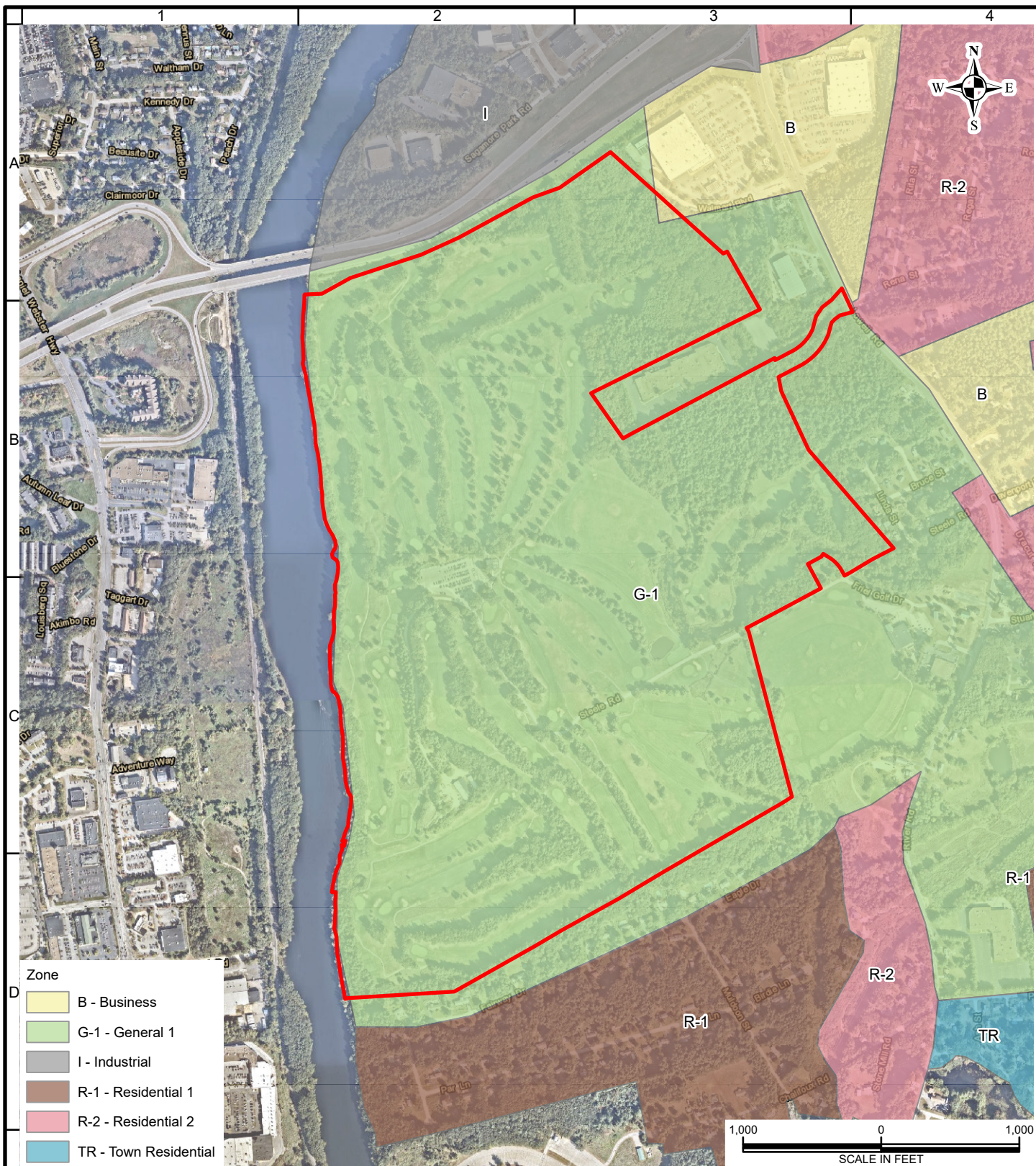
Figure

2

Sheet 2 of 5

Figure 3

Zoning Map



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1" = 1,000'

Drawn By

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Submission Date

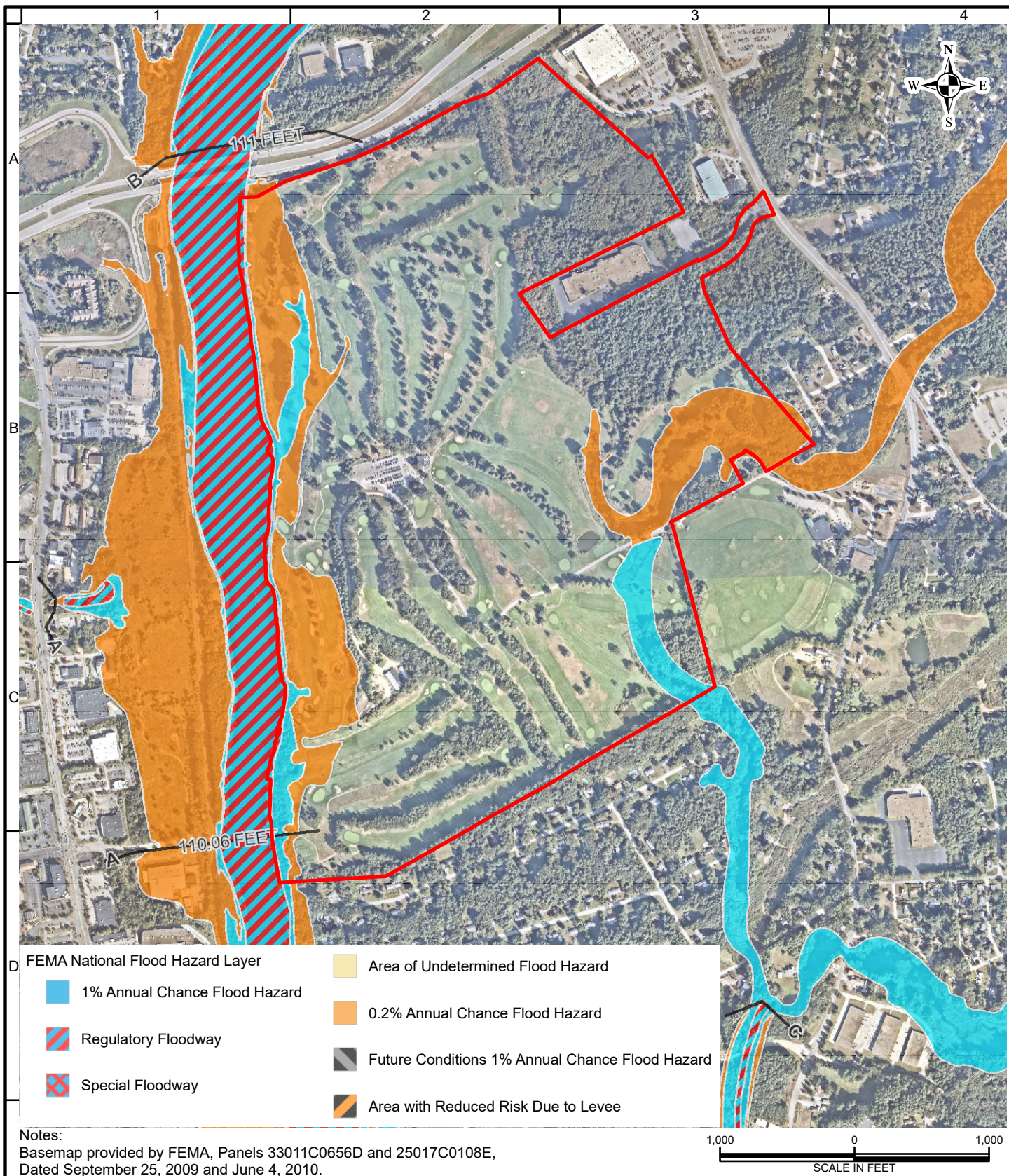
Figure

3

Sheet 3 of 5

Figure 4

Effective FEMA Flood Map



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COUNTY

NEW HAMPSHIRE

Drawing Title

**EFFECTIVE FEMA
FLOOD MAP**

Project No.

151010101

Date

05/18/2020

Scale

1" = 1,000'

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Submission Date

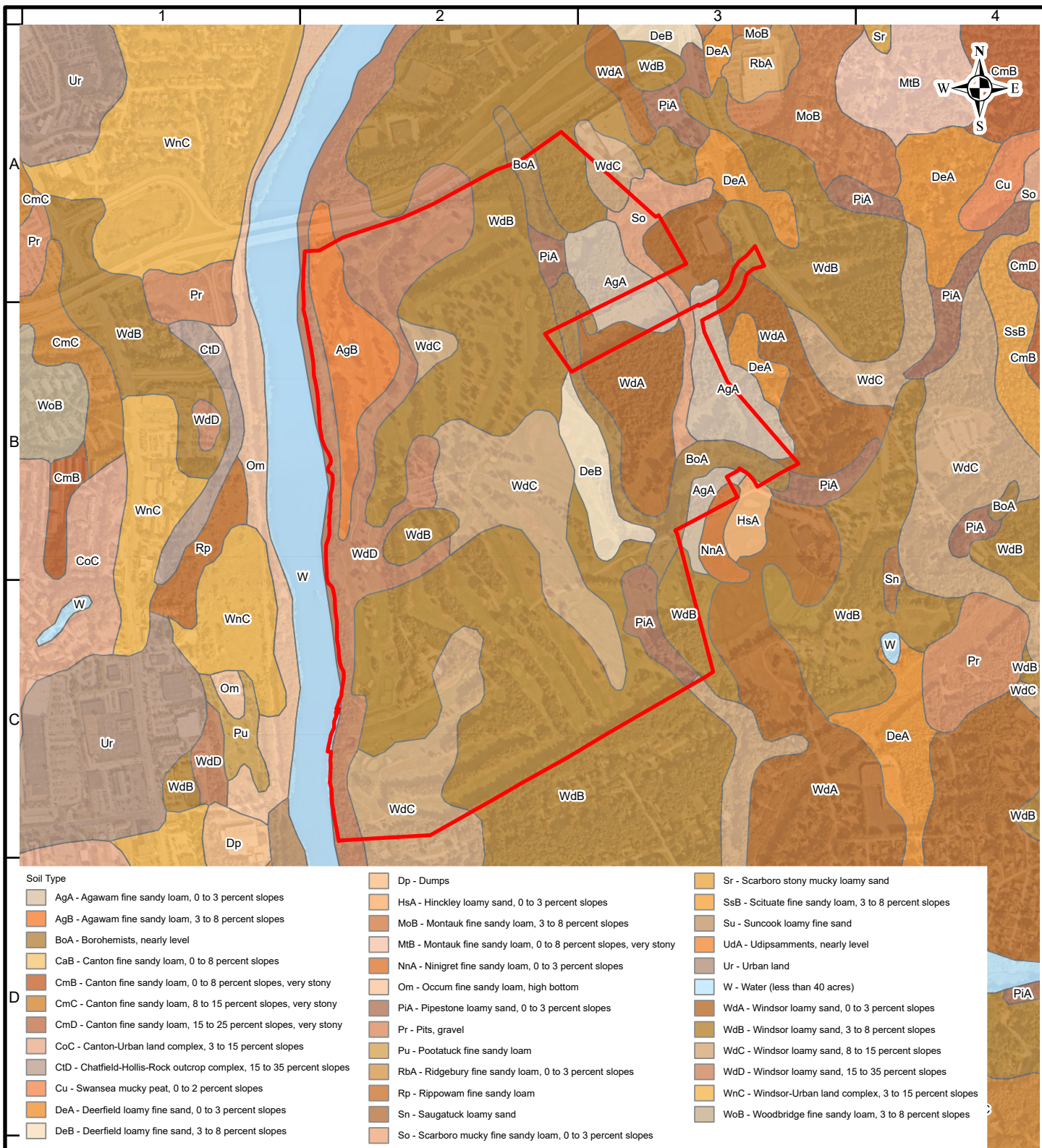
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Sheet 4 of 5

Figure 5

NRCS Soils Map



Notes:

Soils data downloaded from the USDA Soil Survey Geographic (SSURGO) database on 3/25/2020.

1,200 0 1,200
SCALE IN FEET

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COUNTY

NEW HAMPSHIRE

Drawing Title

NRCS SOILS MAP

Project No.

151010101

Date

05/18/2020

Scale

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Drawn By

MG

Submission Date

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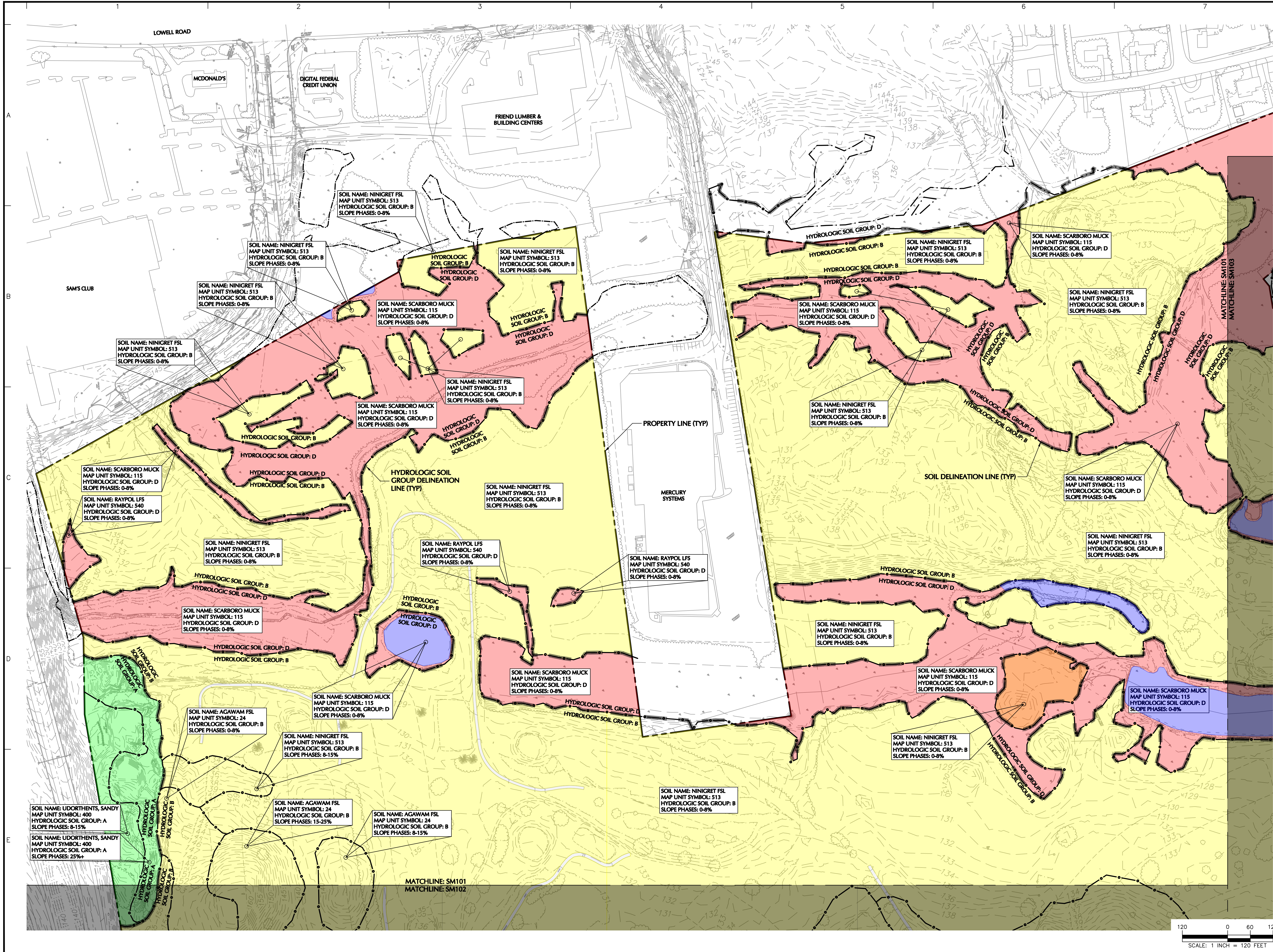
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Sheet 5 of 5

Drawings

**Complete Set of Design Drawings
(Under Separate Cover)**

Site Specific Soil Map Plans Existing Color



NOTE:
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THE SITE SPECIFIC SOIL SURVEY WAS PRODUCED MAY 4, 2020, AND WAS PREPARED BY JAMES P. GOVE, CSS # 004, GOVE ENVIRONMENTAL SERVICES, INC. THE LOCATION OF THE SOIL SURVEY IS AT LOWELL AND STEELE ROADS IN HUDSON, NH.
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SOIL MAP SYMBOL	SOIL MAP UNIT NAME	HISS CONVERSION	HSG
4	FOOTATUCK VFSL	371	B
24	AGAWAM FSL	211	B
115	SCARBORO MUCK	611	D
400	UDORTHERENTS, SANDY	211	A
513	NINIGRET FSL	311	B
540	RAYPOL LFS	511	D
699	URBAN LAND	N/A	IMPERVIOUS
917	NINIGRET VARIANT (SWPD)	411	C
PONDS	OPEN WATER	N/A	N/A

SLOPE PHASES: 0-8% = B 8-15% = C 15-25% = D 25%+ = E

LEGEND	
PROPERTY LINE	---
SOIL DELINEATION LINE	---
HYDROLOGIC SOIL GROUP DELINEATION LINE	---
HYDRAULIC SOIL GROUP A	Green
HYDRAULIC SOIL GROUP B	Yellow
HYDRAULIC SOIL GROUP D	Pink
IMPERVIOUS	Blue
SURFACE WATER	Blue

Date	Description	No.
------	-------------	-----

Revisions

Signature _____ Date _____

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Project

PROJECT HUDSON

MAP No. 239, LOT No. 1

HUDSON NEW HAMPSHIRE

Drawing Title

**SITE SPECIFIC SOIL
MAP PLAN I
EXISTING COLOR**

Project No. 151010101 Drawing No.

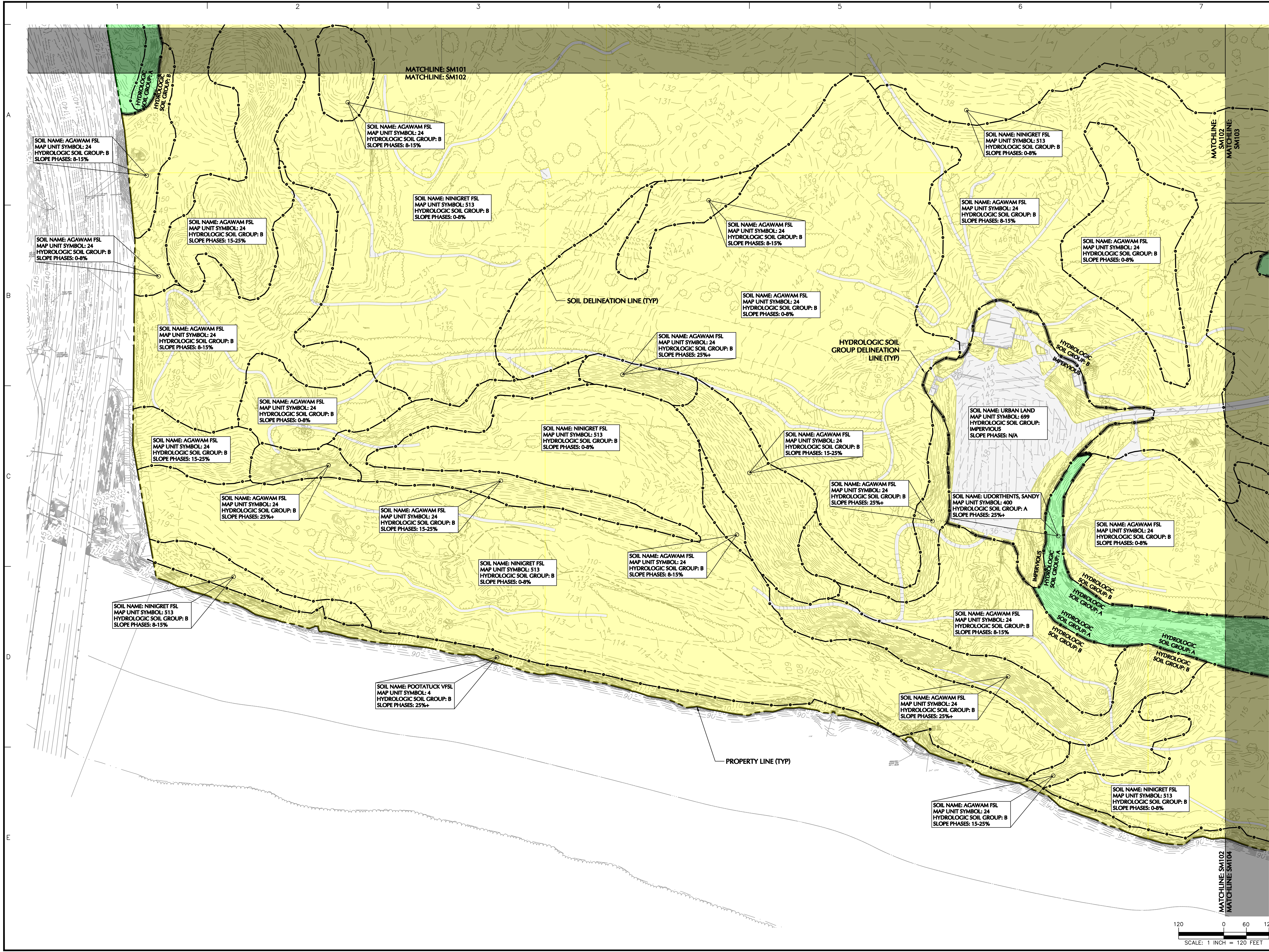
Date 05/22/2020

Drawn By RJS

Checked By NLK

**SSSM101
EX**

Sheet 19 of 10



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24	AGAWAM FSL	211	B
115	SCARBORO MUCK	611	D
400	UDORTHENTS, SANDY	211	A
513	NINIGRET FSL	311	B
540	RAYPOL LFS	511	D
699	URBAN LAND	N/A	IMPERVIOUS
917	NINIGRET VARIANT (SWPD)	411	C
PONDS	OPEN WATER	N/A	N/A

SLOPE PHASES: 0-8% = B 8-15% = C 15-25% = D 25%+ = E

LEGEND	
PROPERTY LINE	---
SOIL DELINEATION LINE	—•—
HYDROLOGIC SOIL GROUP DELINEATION LINE	---
HYDRAULIC SOIL GROUP A	Green
HYDRAULIC SOIL GROUP B	Yellow
HYDRAULIC SOIL GROUP D	Red
IMPERVIOUS	Blue
SURFACE WATER	Blue

Date	Description	No.
Revisions		
Signature _____ Date _____		

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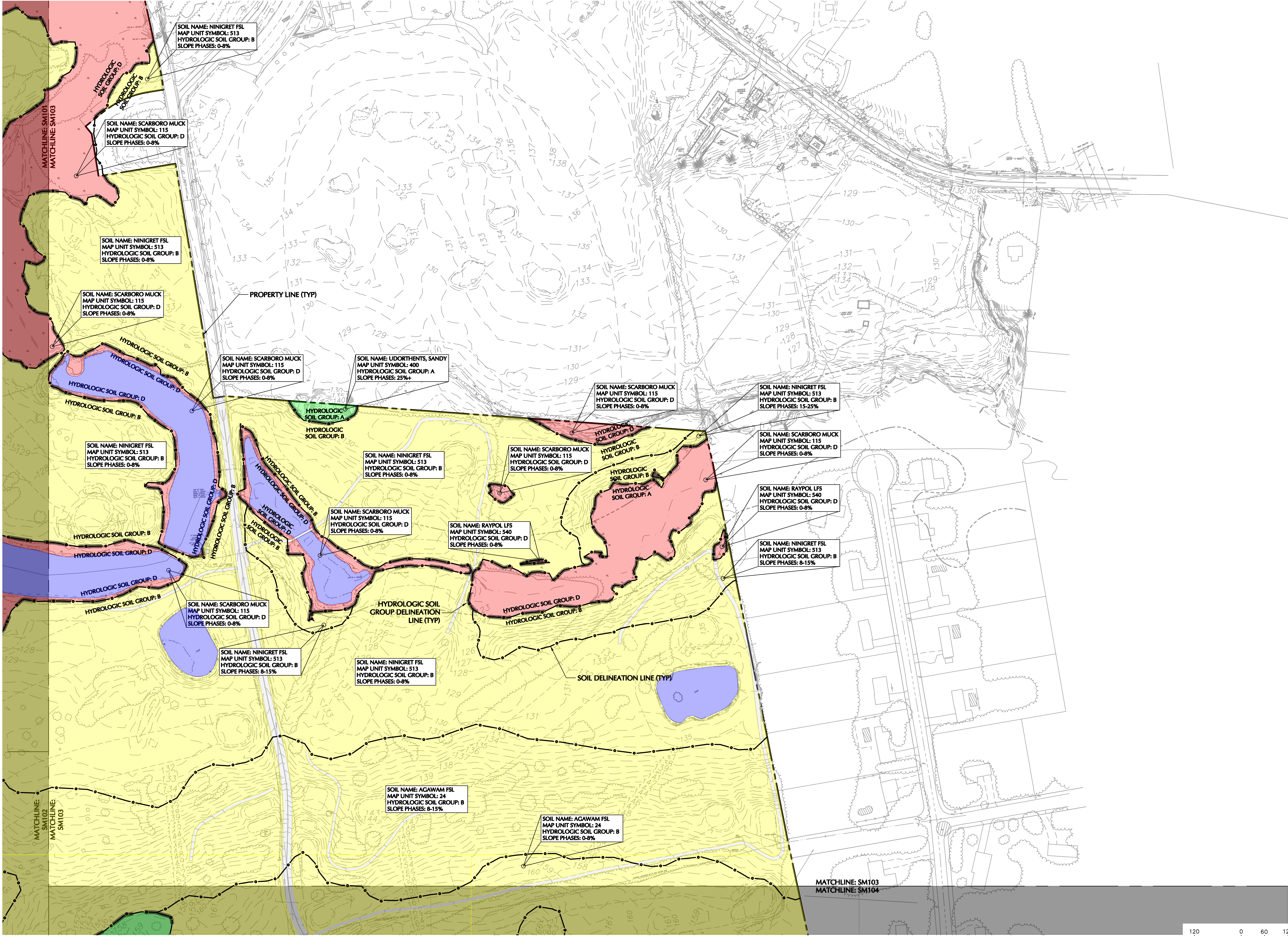
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HUDSON NEW HAMPSHIRE

Drawing Title

**SITE SPECIFIC SOIL
MAP PLAN II
EXISTING COLOR**

Project No. 151010101	Drawing No. SSSM102 EX
Date 05/22/2020	
Drawn By RJS	
Checked By NLK	Sheet 20 of 10



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400	UDORTHENTS, SANDY	211	A
513	NINIGRET FSL	311	B
540	RAYPOL LFS	511	D
699	URBAN LAND	N/A	IMPERVIOUS
917	NINIGRET VARIANT (SWPD)	411	C
PONDS	OPEN WATER	N/A	N/A

SLOPE PHASES: 0-8% = B 8-15% = C 15-25% = D 25%+ = E

LEGEND	
PROPERTY LINE	---
SOIL DELINEATION LINE	—●—
HYDROLOGIC SOIL GROUP DELINEATION LINE	---
HYDRAULIC SOIL GROUP A	
HYDRAULIC SOIL GROUP B	
HYDRAULIC SOIL GROUP D	
IMPERVIOUS	
SURFACE WATER	

Date	Description	No.
Revisions		
Signature _____ Date _____		

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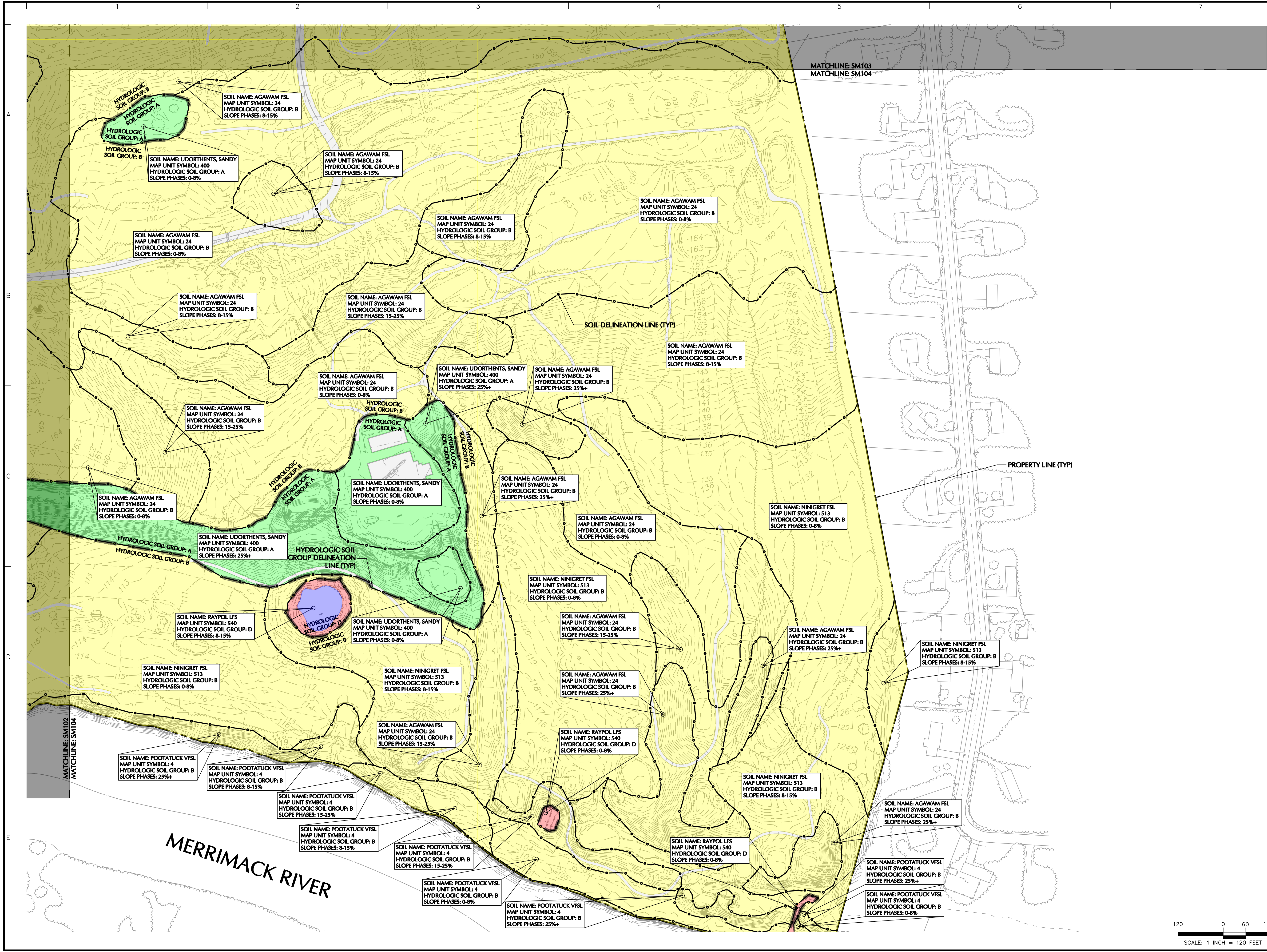
MAP No. 239, LOT No. 1

HUDSON NEW HAMPSHIRE

Drawing Title

**SITE SPECIFIC SOIL
MAP PLAN III
EXISTING COLOR**

Project No. 151010101	Drawing No. SSSM103 EX
Date 05/22/2020	
Drawn By RJS	
Checked By NLK	Sheet 21 of 10



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540	RAYPOL LFS	511	D
699	URBAN LAND	N/A	IMPERVIOUS
917	NINIGRET VARIANT (SWPD)	411	C
PONDS	OPEN WATER	N/A	N/A

SOLOPHASES: 0-8% = B 8-15% = C 15-25% = D 25%+ = E

LEGEND

PROPERTY LINE	---
SOIL DELINEATION LINE	—•—
HYDROLOGIC SOIL GROUP DELINEATION LINE	—•—
HYDRAULIC SOIL GROUP A	
HYDRAULIC SOIL GROUP B	
HYDRAULIC SOIL GROUP D	
IMPERVIOUS	
SURFACE WATER	

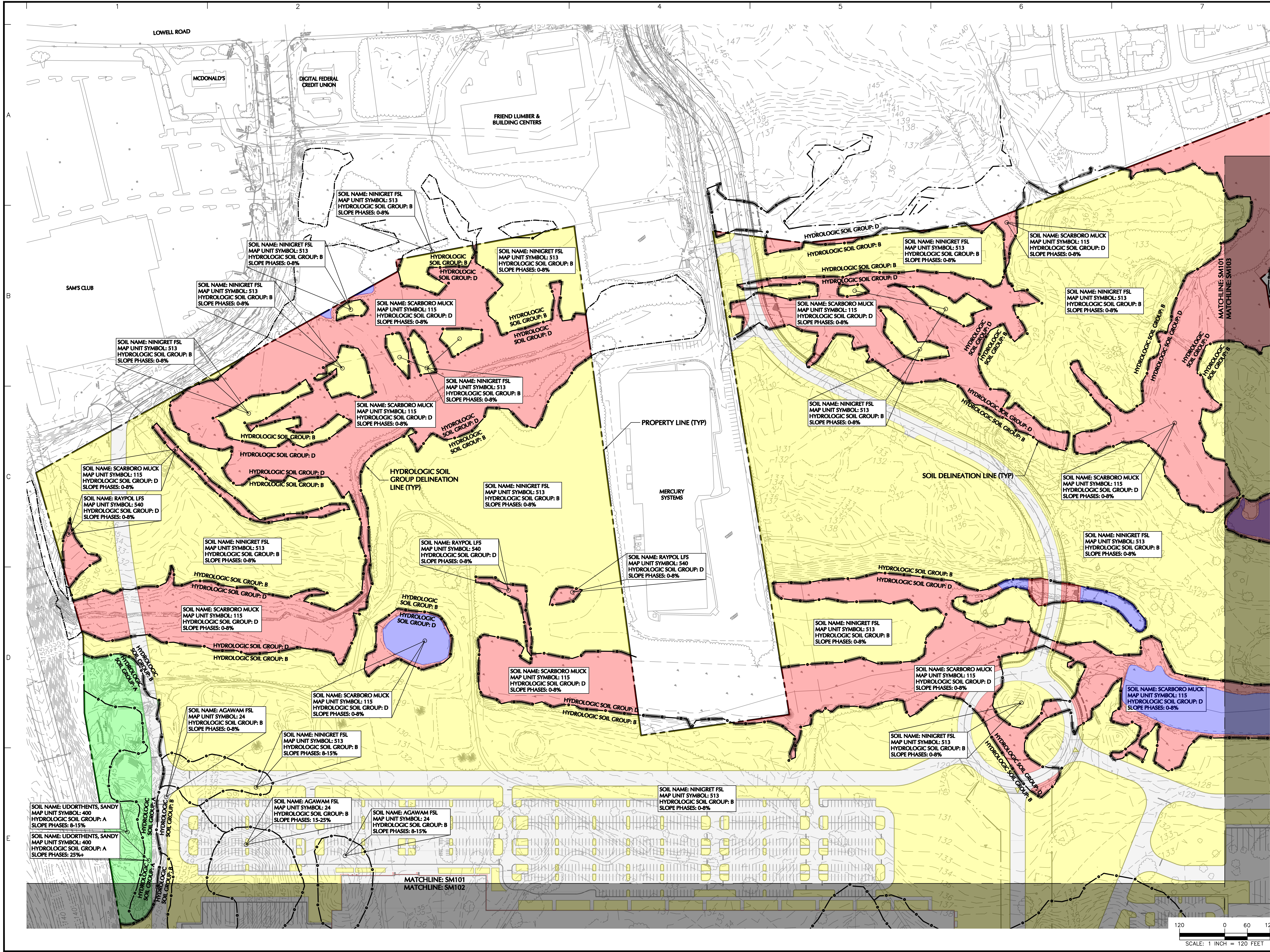
Date	Description	No.
Revisions		
Signature _____ Date _____		
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Project		
PROJECT HUDSON		
MAP No. 239, LOT No. 1		
HUDSON NEW HAMPSHIRE		
Drawing Title		
SITE SPECIFIC SOIL MAP PLAN IV EXISTING COLOR		
Project No.		Drawing No.
151010101		SSSM104 EX
Date		
05/22/2020		
Drawn By		
Checked By		Sheet 22 of 10
RJS		
NLK		

120 0 60 120

SCALE: 1 INCH = 120 FEET

Date: 6/11/2020 Time: 09:17 User: rshlichting Style Table: Langan.stb Layout: COLOR SOIL MAP IV Document Code: 151010101-0203-CA101-0108

Site Specific Soil Map Plan Proposed Color



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THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, INTENDED FOR INFILTRATION REQUIREMENTS BY THE NH DES ALTERATION OF TERRAIN BUREAU. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE. THERE IS A REPORT THAT ACCOMPANIES THIS MAP.

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HYDROLOGIC SOIL GROUPS ARE DETERMINED FROM SSSNNE SPECIAL PUBLICATION NUMBER 5, 'KSTAT VALUES FOR NEW HAMPSHIRE SOILS', SEPTEMBER, 2009.

SOIL MAP SYMBOL	SOIL MAP UNIT NAME	HISS CONVERSION	HSG
4	POOTATUCK VFSL	371	B
24	AGAWAM FSL	211	B
115	SCARBORO MUCK	611	D
400	UDORTHERNTS, SANDY	211	A
513	NINIGRET FSL	311	B
540	RAYPOL LFS	511	D
699	URBAN LAND	N/A	IMPERVIOUS
917	NINIGRET VARIANT (SWPD)	411	C
PONDS	OPEN WATER	N/A	N/A

SLOPE PHASES: 0-8% = B 8-15% = C 15-25% = D 25%+ = E

LEGEND	
PROPERTY LINE	---
SOIL DELINEATION LINE	---
HYDROLOGIC SOIL GROUP DELINEATION LINE	---
HYDRAULIC SOIL GROUP A	---
HYDRAULIC SOIL GROUP B	---
HYDRAULIC SOIL GROUP D	---
IMPERVIOUS	---
SURFACE WATER	---

Date	Description	No.
------	-------------	-----

Revisions

Signature _____ Date _____

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Project

PROJECT HUDSON

MAP No. 239, LOT No. 1

HUDSON NEW HAMPSHIRE

Drawing Title

**SITE SPECIFIC SOIL
MAP PLAN I
PROPOSED COLOR**

Project No. 151010101 Drawing No.

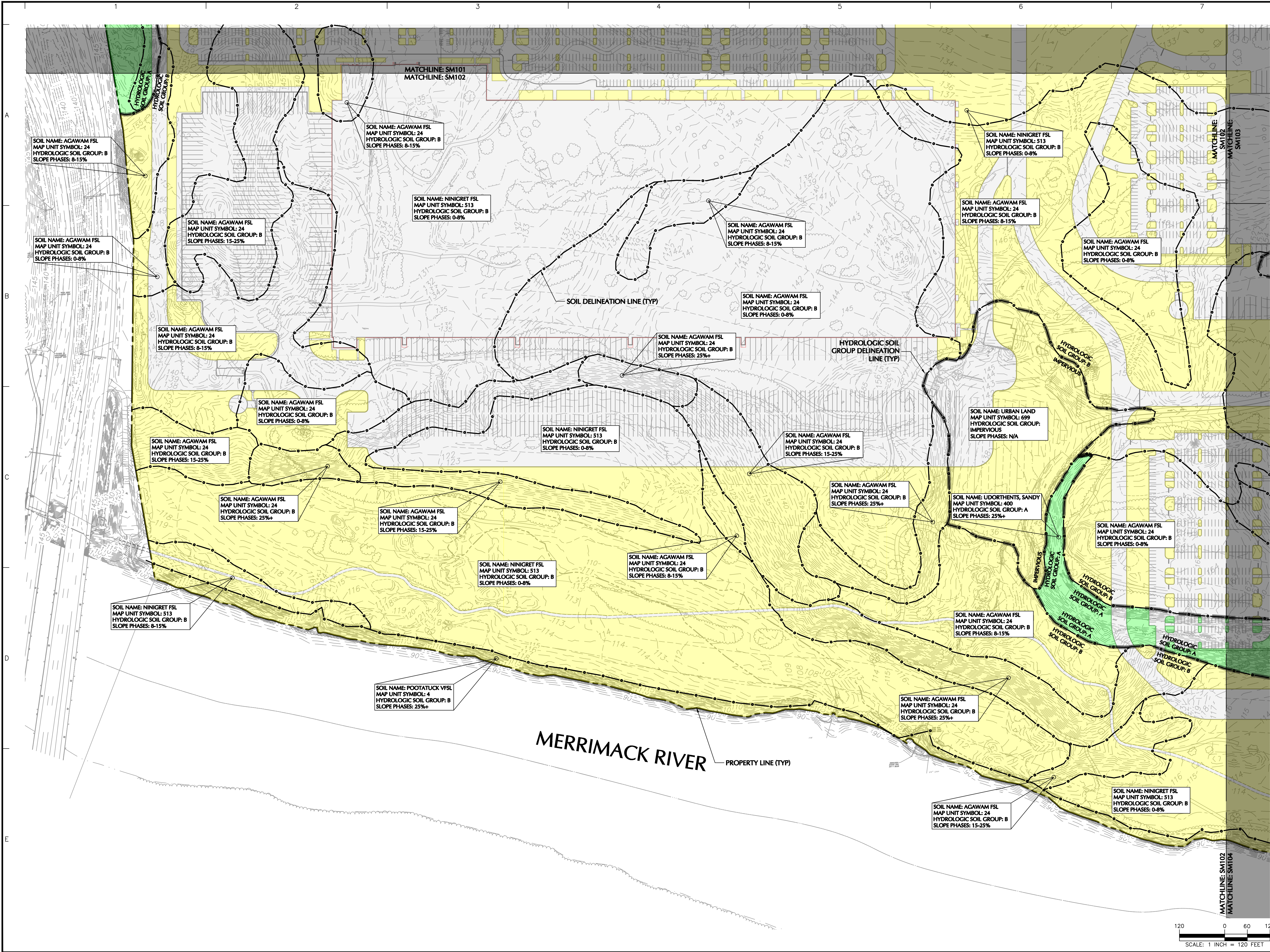
Date 05/22/2020

Drawn By RJS

Checked By NLK

**SSSM101
PR**

Sheet 23 of 10



NOTE:
THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, INTENDED FOR INFILTRATION REQUIREMENTS BY THE NH DES ALTERATION OF TERRAIN BUREAU. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE. THERE IS A REPORT THAT ACCOMPANIES THIS MAP.
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SOIL MAP SYMBOL	SOIL MAP UNIT NAME	HISS CONVERSION	HSG
4	POOTATUCK VFSL	371	B
24	AGAWAM FSL	211	B
115	SCARBORO MUCK	611	D
400	UDORTHENTS, SANDY	211	A
513	NINIGRET FSL	311	B
540	RAYPOL LFS	511	D
699	URBAN LAND	N/A	IMPERVIOUS
917	NINIGRET VARIANT (SWPD)	411	C
PONDS	OPEN WATER	N/A	N/A

SLOPE PHASES: 0-8% = B 8-15% = C 15-25% = D 25%+ = E

LEGEND	
PROPERTY LINE	---
SOIL DELINEATION LINE	—●—
HYDROLOGIC SOIL GROUP DELINEATION LINE	---
HYDRAULIC SOIL GROUP A	
HYDRAULIC SOIL GROUP B	
HYDRAULIC SOIL GROUP D	
IMPERVIOUS	
SURFACE WATER	

Date	Description	No.
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Project

PROJECT HUDSON

MAP No. 239, LOT No. 1

HUDSON NEW HAMPSHIRE

Drawing Title

**SITE SPECIFIC SOIL
MAP PLAN II
PROPOSED COLOR**

Project No. 151010101 Drawing No.

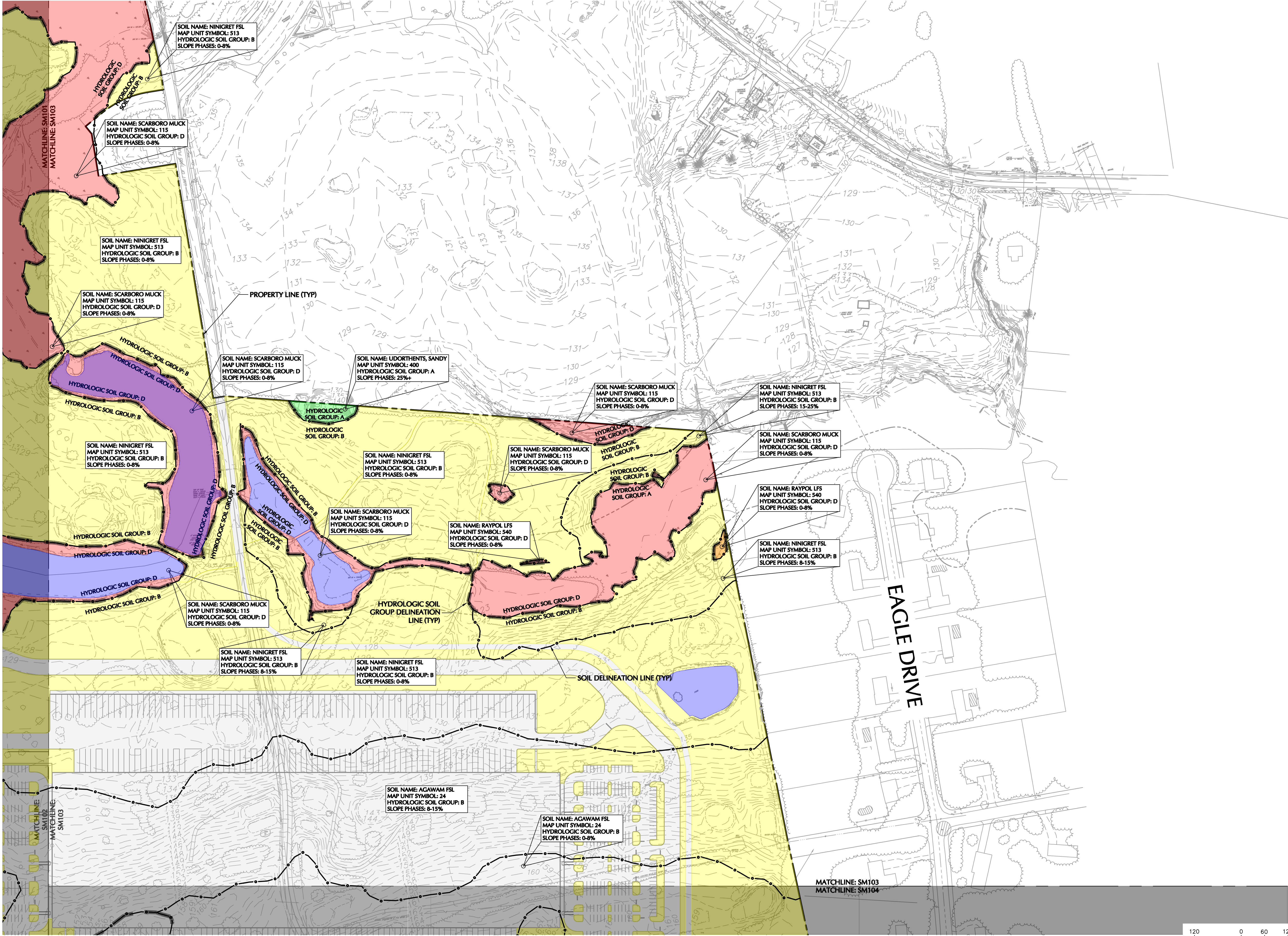
Date 05/22/2020

Drawn By RJS

Checked By NLK

**SSSM102
PR**

Sheet 24 of 10



NOTE:

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4	POOTATUCK VFSL	371	B
24	AGAWAM FSL	211	B
115	SCARBORO MUCK	611	D
400	UDORTHENTS, SANDY	211	A
513	NINIGRET FSL	311	B
540	RAYPOL LFS	511	D
699	URBAN LAND	N/A	IMPERVIOUS
917	NINIGRET VARIANT (SWPD)	411	C
PONDS	OPEN WATER	N/A	N/A

SLOPE PHASES: 0-8% = B 8-15% = C 15-25% = D 25%+ = E

LEGEND	
PROPERTY LINE	---
SOIL DELINEATION LINE	—•—•—•—
HYDROLOGIC SOIL GROUP DELINEATION LINE	—•—•—•—
HYDRAULIC SOIL GROUP A	
HYDRAULIC SOIL GROUP B	
HYDRAULIC SOIL GROUP D	
IMPERVIOUS	
SURFACE WATER	

Date	Description	No.
Revisions		
Signature _____ Date _____		

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Project

PROJECT HUDSON

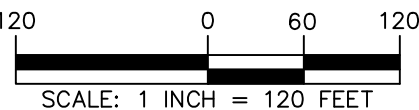
MAP No. 239, LOT No. 1

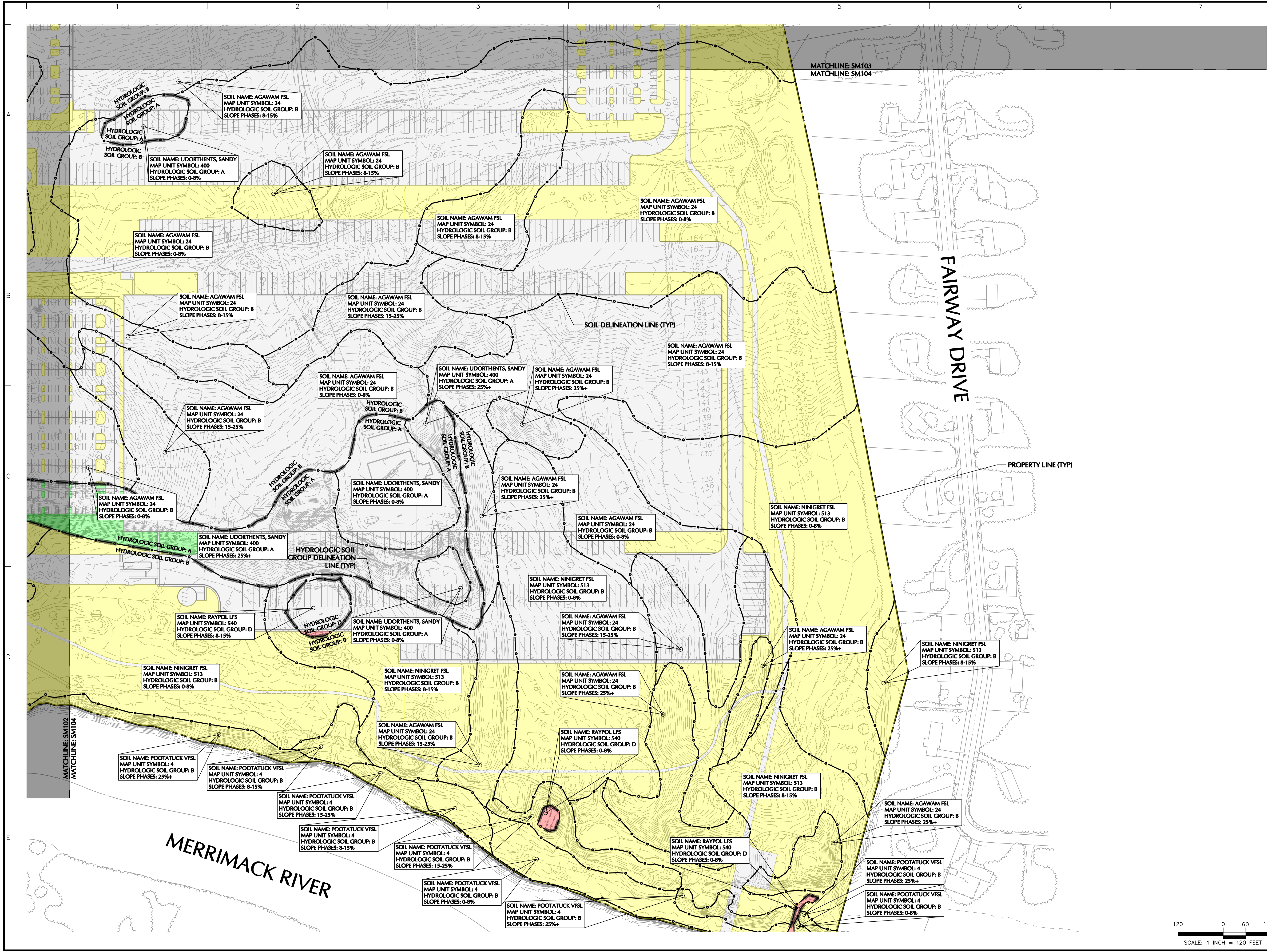
HUDSON NEW HAMPSHIRE

Drawing Title

**SITE SPECIFIC SOIL
MAP PLAN III
PROPOSED COLOR**

Project No. 151010101	Drawing No. SSSM103 PR
Date 05/22/2020	
Drawn By RJS	
Checked By NLK	Sheet 25 of 10





NOTE:

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24	AGAWAM FSL	211	B
115	SCARBORO MUCK	611	D
400	UDORTHENTS, SANDY	211	A
513	NINIGRET FSL	311	B
540	RAYPOL LFS	511	D
699	URBAN LAND	N/A	IMPERVIOUS
917	NINIGRET VARIANT (SWPD)	411	C
PONDS	OPEN WATER	N/A	N/A

SOLOPHASES: 0-8% = B 8-15% = C 15-25% = D 25%+ = E

LEGEND

PROPERTY LINE	---
SOIL DELINEATION LINE	—•—
HYDROLOGIC SOIL GROUP DELINEATION LINE	---
HYDRAULIC SOIL GROUP A	Green
HYDRAULIC SOIL GROUP B	Yellow
HYDRAULIC SOIL GROUP D	Red
IMPERVIOUS	White
SURFACE WATER	Blue

Date	Description	No.
Revisions		
Signature _____ Date _____		

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Project

PROJECT HUDSON

MAP No. 239, LOT No. 1

HUDSON NEW HAMPSHIRE

Drawing Title

**SITE SPECIFIC SOIL
MAP PLAN IV
PROPOSED COLOR**

Project No.	Drawing No.
151010101	SSSM104 PR
Date	
05/22/2020	
Drawn By	
Checked By	
RJS	
NLK	

Sheet 26 of 10

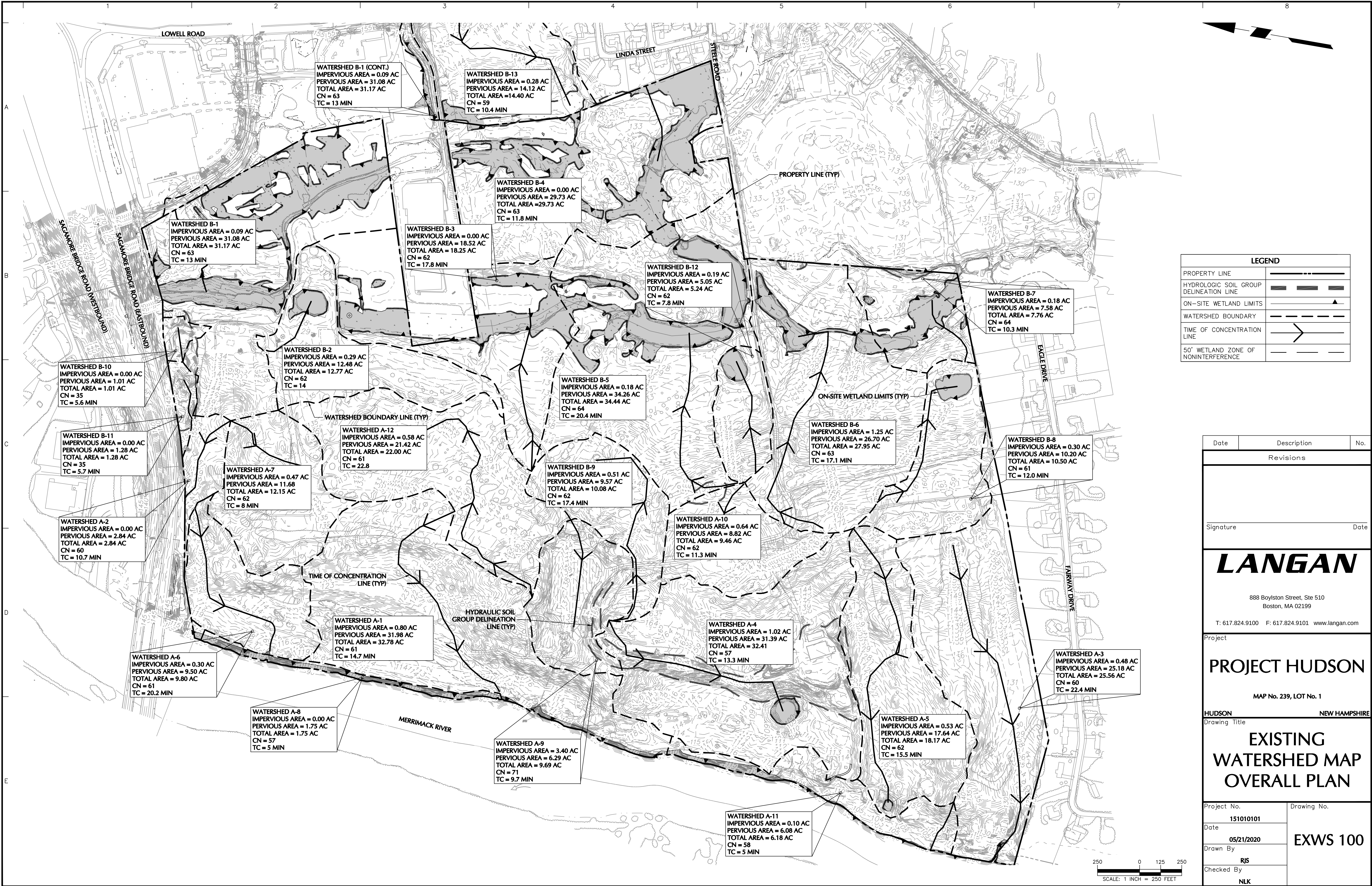
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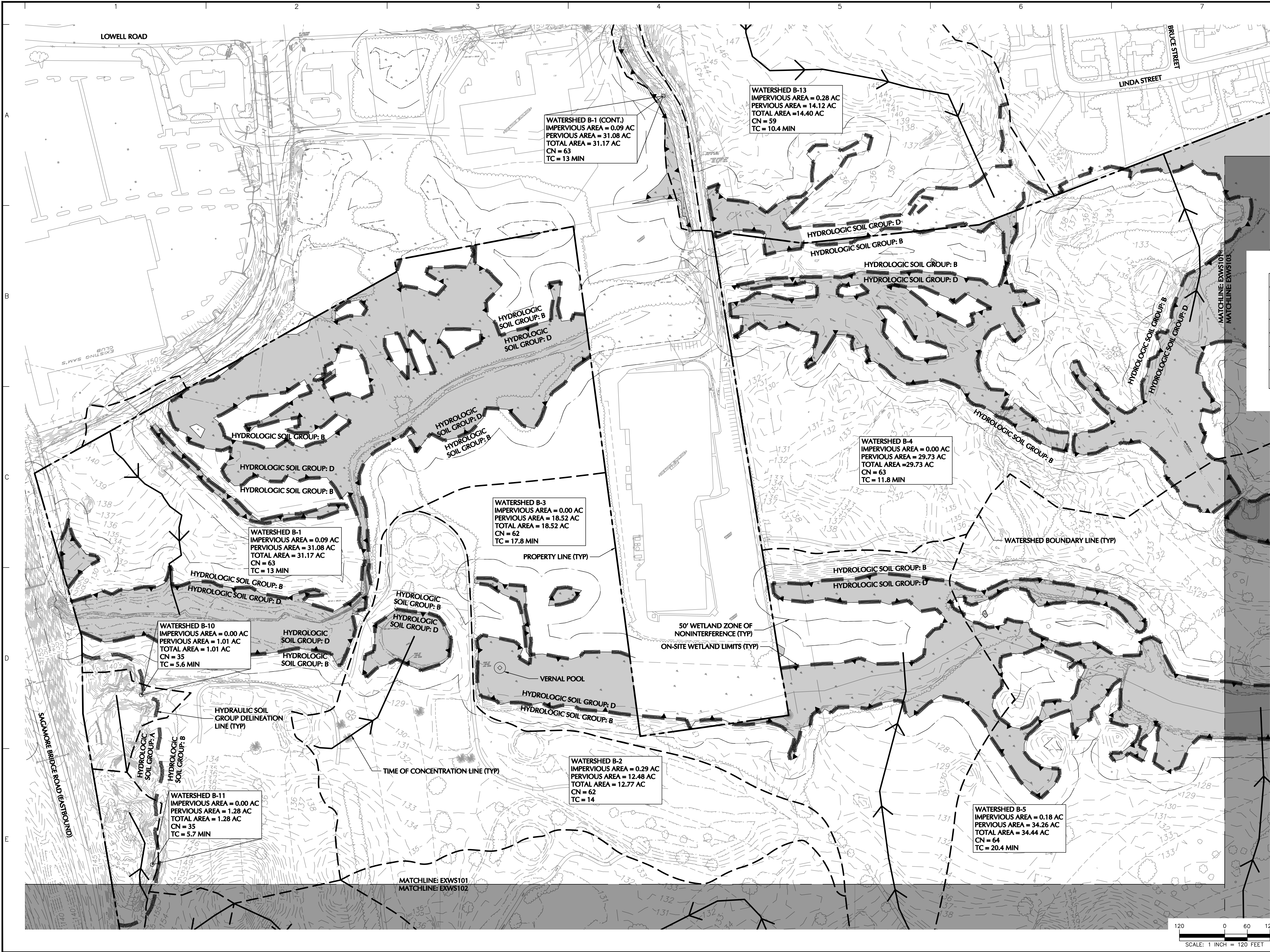
120 0 60 120

Project No. 151010101

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Existing Watershed Map Plans





LEGEND	
PROPERTY LINE	---
HYDROLOGIC SOIL GROUP DELINEATION LINE	---
ON-SITE WETLAND LIMITS	---
WATERSHED BOUNDARY	---
TIME OF CONCENTRATION LINE	---
50' WETLAND ZONE OF NONINTERFERENCE	---

Date	Description	No.
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Revisions		
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Signature	Date
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Project

PROJECT HUDSON

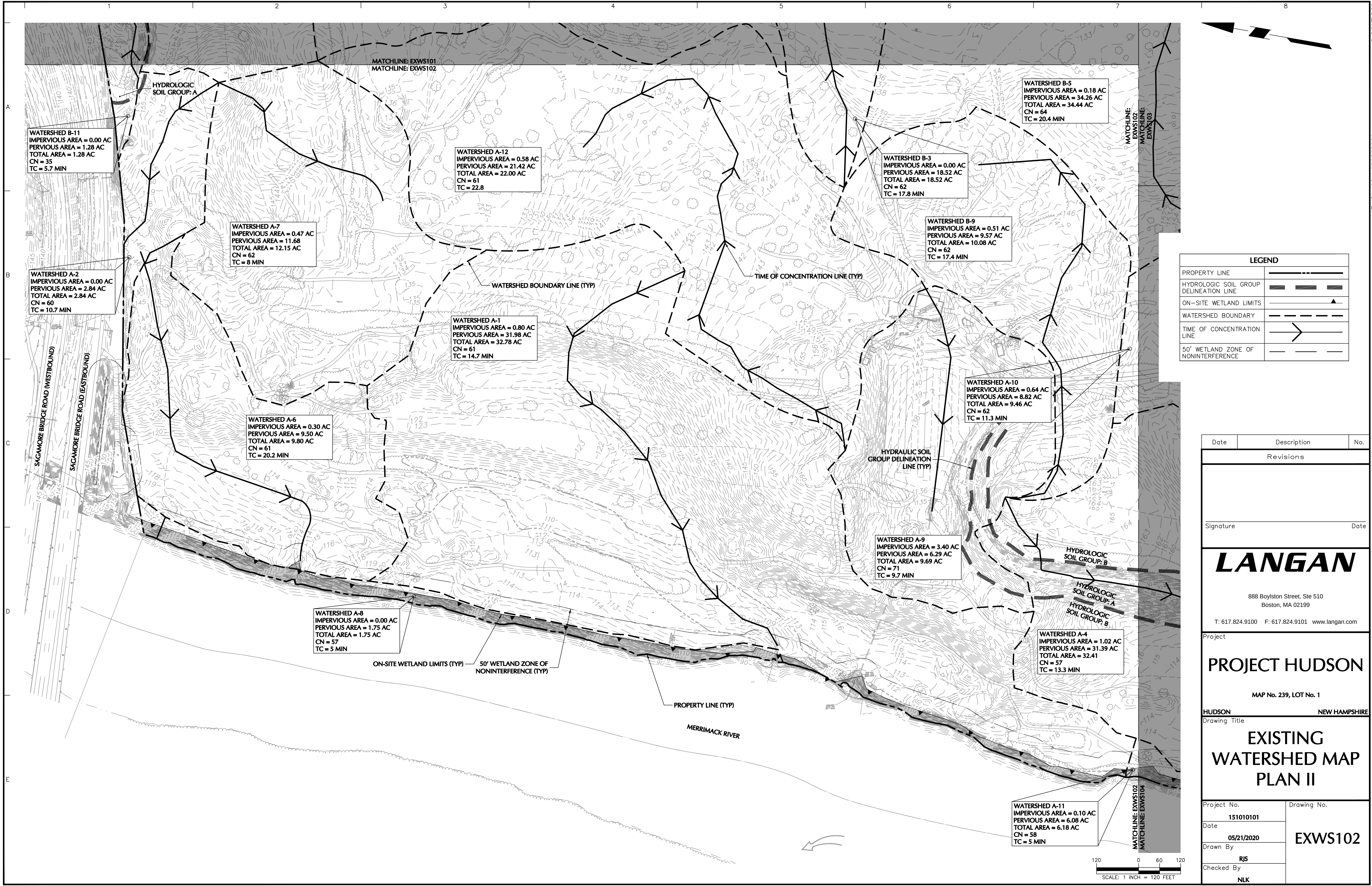
MAP No. 239, LOT No. 1

HUDSON NEW HAMPSHIRE

Drawing Title

EXISTING WATERSHED MAP PLAN I

Project No.	Drawing No.
151010101	EXWS 101
Date	
05/21/2020	
Drawn By	
RJS	
Checked By	
NLK	





LEGEND	
PROPERTY LINE	---
HYDROLOGIC SOIL GROUP DELINEATION LINE	---
ON-SITE WETLAND LIMITS	---
WATERSHED BOUNDARY	---
TIME OF CONCENTRATION LINE	---
50' WETLAND ZONE OF NONINTERFERENCE	---

Date	Description	No.
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Revisions		
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Signature	Date
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Project

PROJECT HUDSON

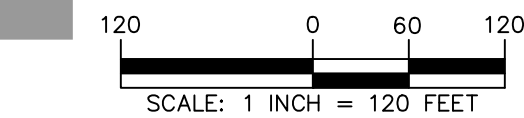
MAP No. 239, LOT No. 1

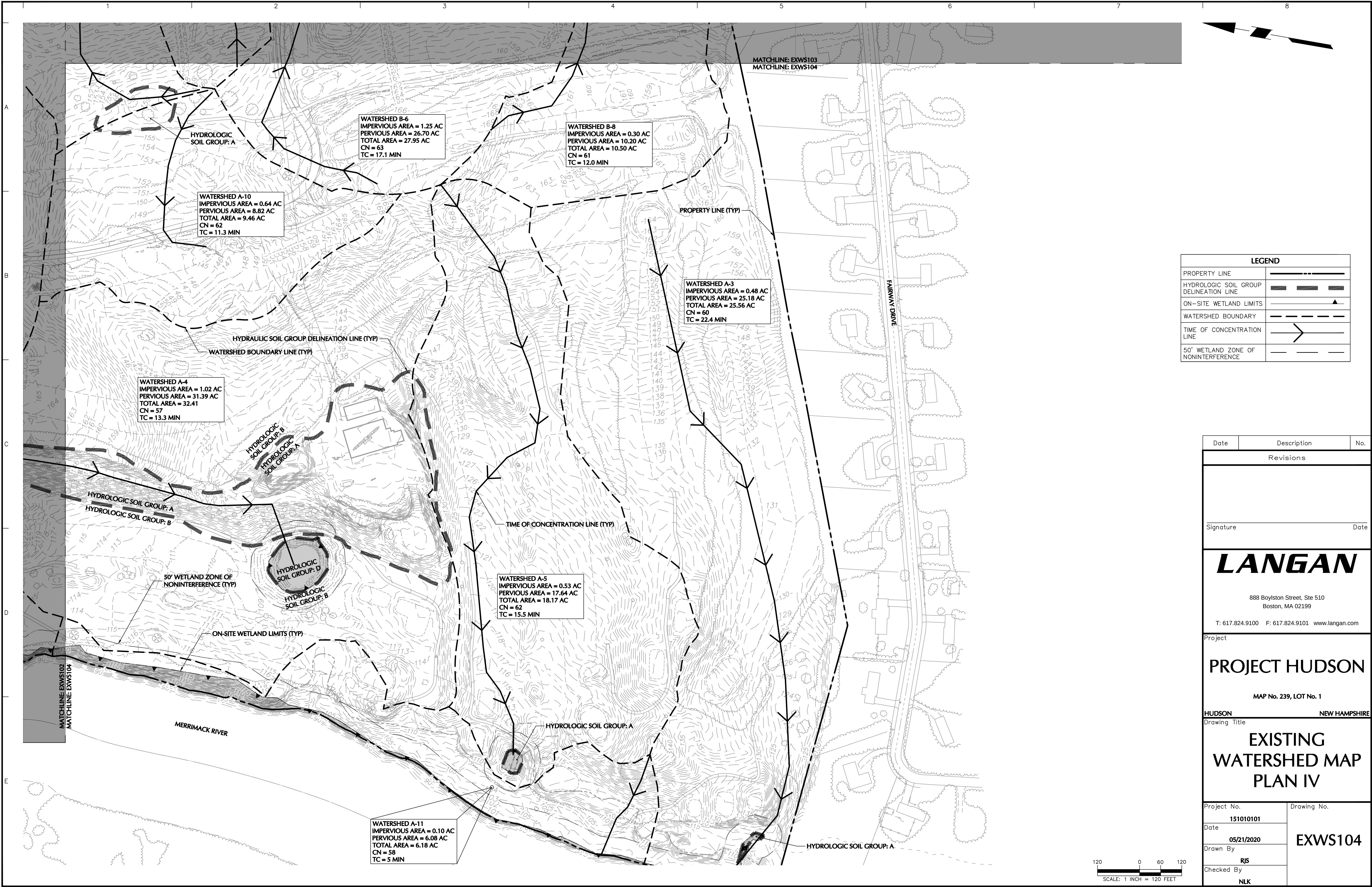
HUDSON NEW HAMPSHIRE

Drawing Title

**EXISTING
WATERSHED MAP
PLAN III**

Project No. 151010101	Drawing No. EXWS103
Date 05/21/2020	
Drawn By RJS	
Checked By NLK	





LEGEND	
PROPERTY LINE	---
HYDROLOGIC SOIL GROUP DELINEATION LINE	---
ON-SITE WETLAND LIMITS	---
WATERSHED BOUNDARY	---
TIME OF CONCENTRATION LINE	---
50' WETLAND ZONE OF NONINTERFERENCE	---

Date	Description	No.
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Revisions		
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Signature	Date
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Project

PROJECT HUDSON

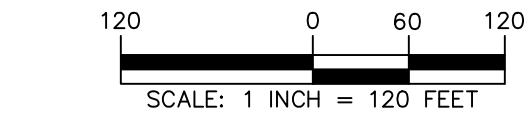
MAP No. 239, LOT No. 1

HUDSON NEW HAMPSHIRE

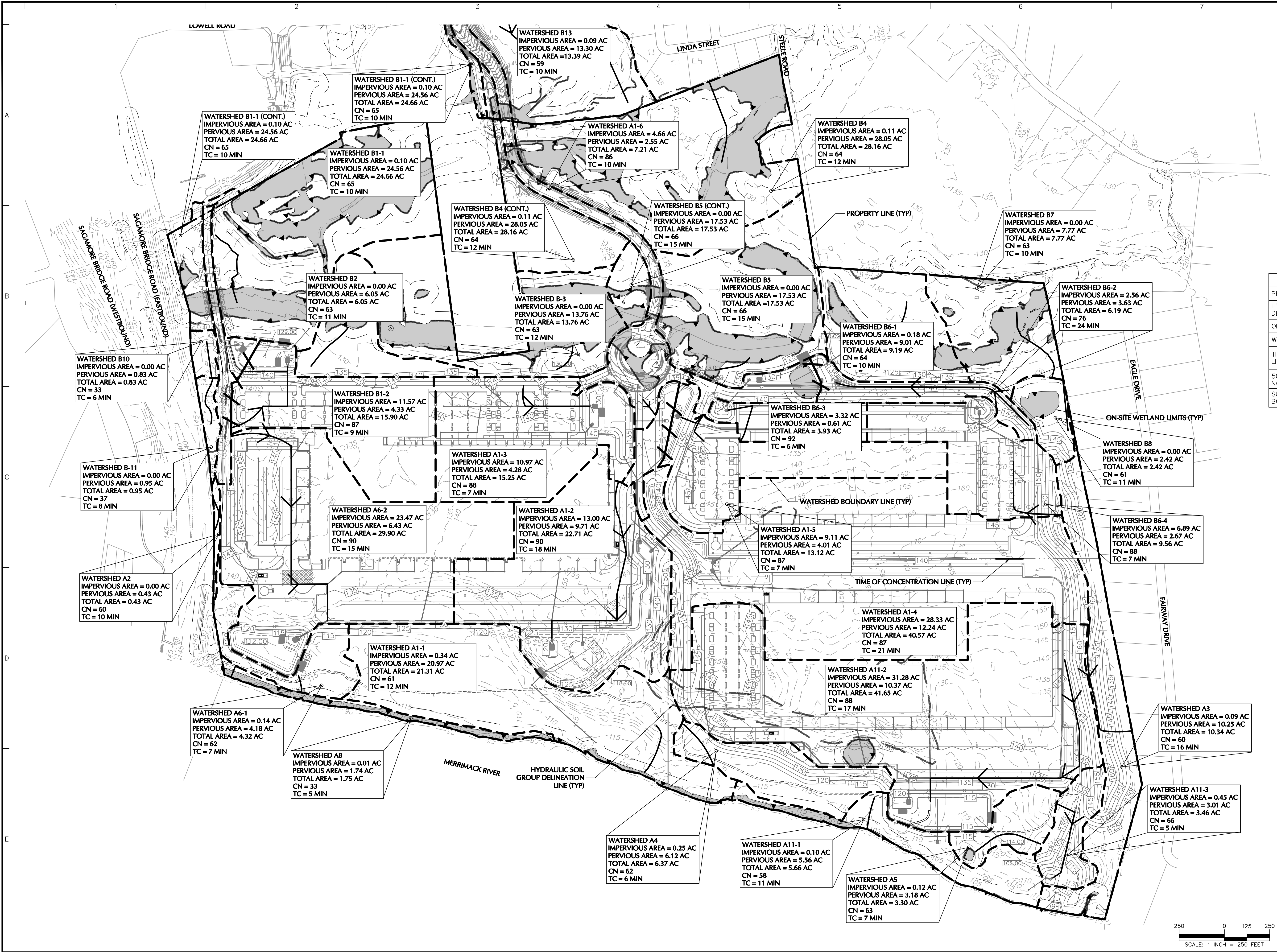
Drawing Title

**EXISTING
WATERSHED MAP
PLAN IV**

Project No.	Drawing No.
151010101	EXWS104
Date	
05/21/2020	
Drawn By	
RJS	
Checked By	
NLK	



Proposed Watershed Map Plans



LEGEND	
PROPERTY LINE	---
HYDROLOGIC SOIL GROUP DELINEATION LINE	---
ON-SITE WETLAND LIMITS	---
WATERSHED BOUNDARY	---
TIME OF CONCENTRATION LINE	---
50' WETLAND ZONE OF NONINTERFERENCE	---
SUB-WATERSHED BOUNDARY	---

Date	Description	No.
------	-------------	-----

Revisions

Signature _____ Date _____

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Project

PROJECT HUDSON

MAP No. 239, LOT No. 1

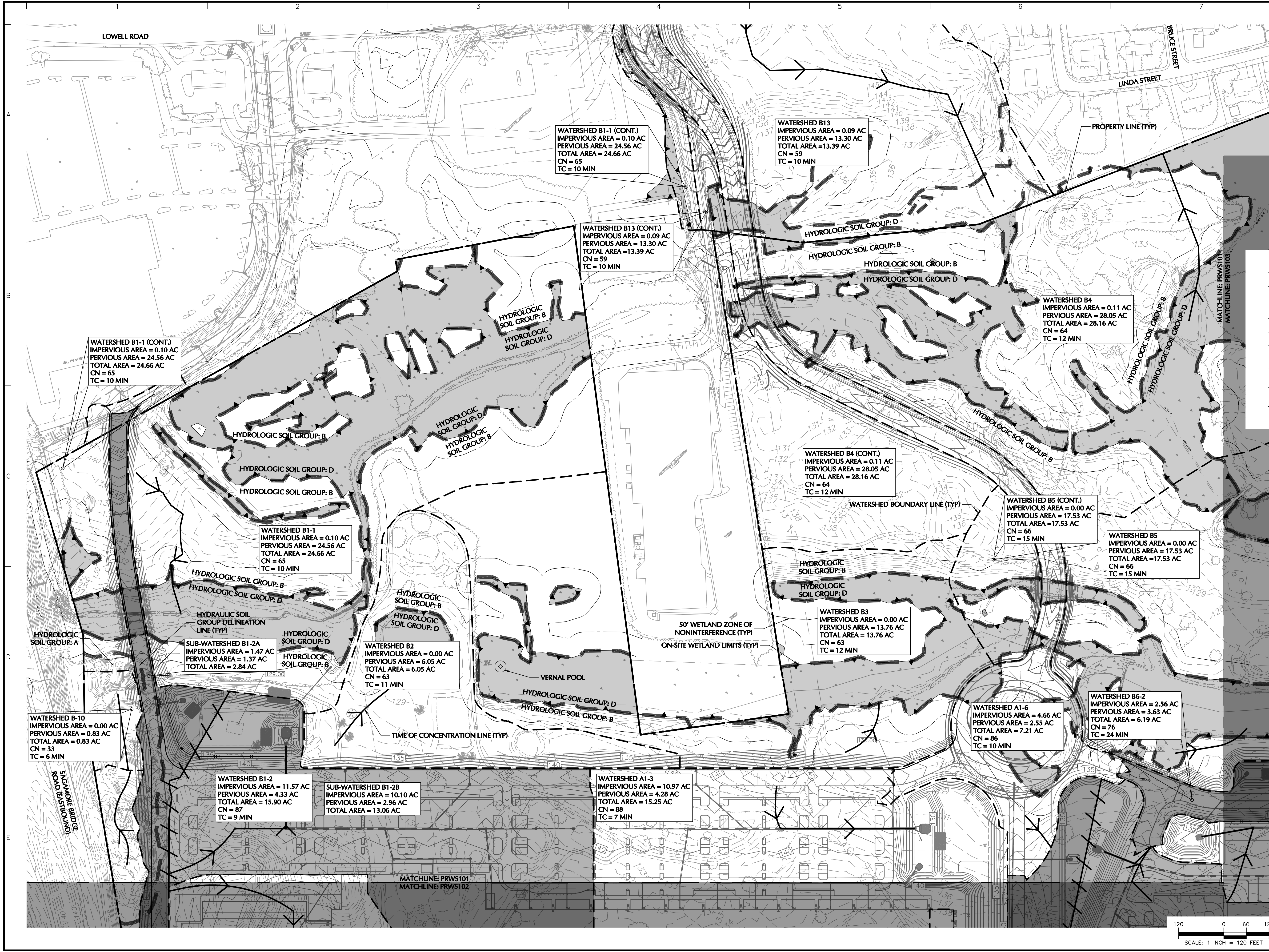
HUDSON NEW HAMPSHIRE

Drawing Title

PROPOSED WATERSHED MAP OVERALL PLAN

Project No.	Drawing No.
151010101	PRWS 100
Date	
05/21/2020	
Drawn By	
RJS	
Checked By	
NLK	





LEGEND	
PROPERTY LINE	---
HYDROLOGIC SOIL GROUP DELINEATION LINE	---
ON-SITE WETLAND LIMITS	---
WATERSHED BOUNDARY	---
TIME OF CONCENTRATION LINE	---
50' WETLAND ZONE OF NONINTERFERENCE	---
SUB-WATERSHED BOUNDARY	---

Date	Description	No.
------	-------------	-----

Revisions		
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Signature _____ Date _____

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Project

PROJECT HUDSON

MAP No. 239, LOT No. 1

HUDSON NEW HAMPSHIRE

Drawing Title

PROPOSED WATERSHED MAP PLAN I

Project No. 151010101 Drawing No.

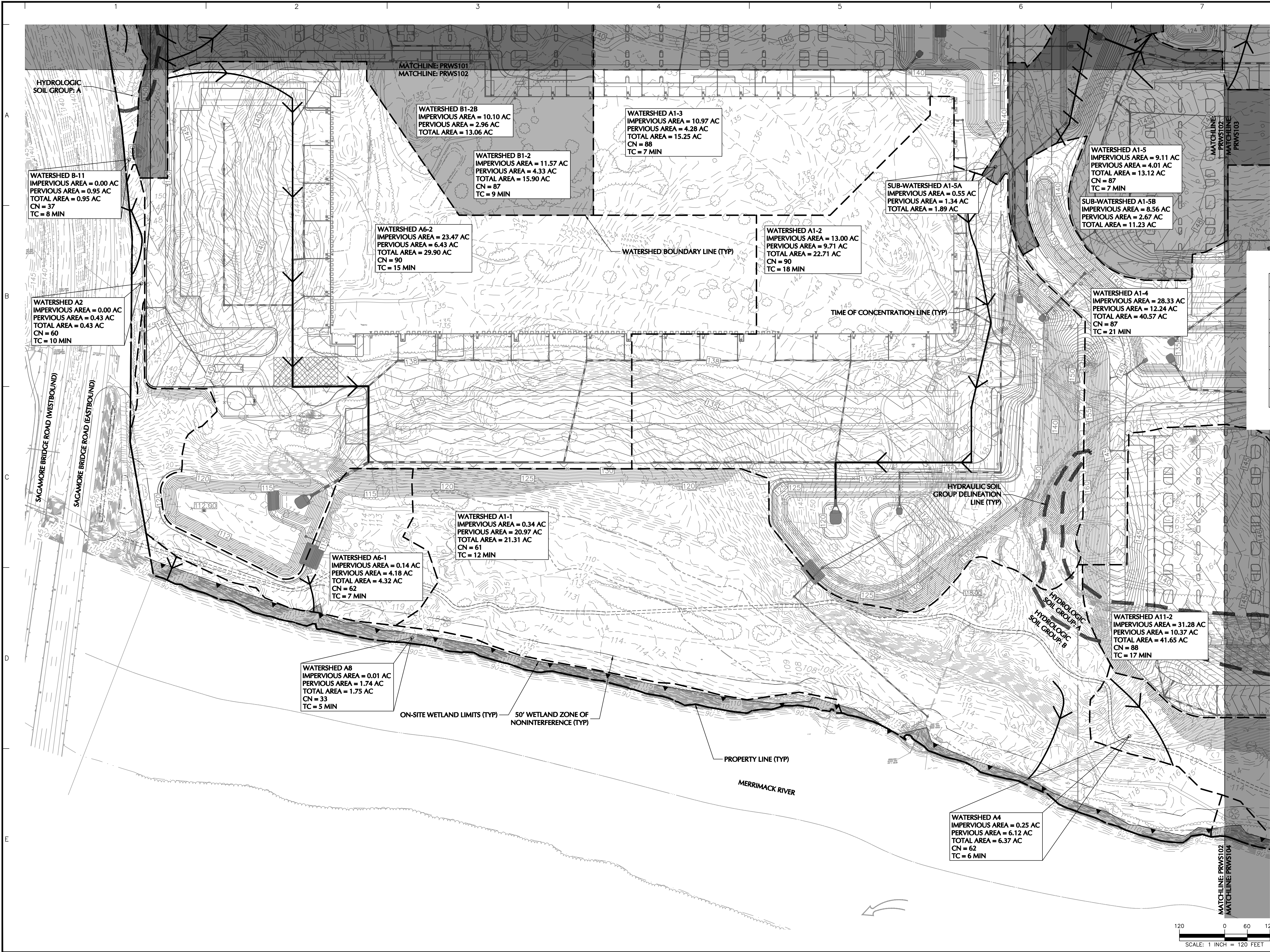
Date 05/21/2020

Drawn By RJS

Checked By NLK

PRWS101





LEGEND	
PROPERTY LINE	---
HYDROLOGIC SOIL GROUP DELINEATION LINE	---
ON-SITE WETLAND LIMITS	---
WATERSHED BOUNDARY	---
TIME OF CONCENTRATION LINE	---
50' WETLAND ZONE OF NONINTERFERENCE	---
SUB-WATERSHED BOUNDARY	---

Date	Description	No.
------	-------------	-----

Revisions

Signature _____ Date _____

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Project

PROJECT HUDSON

MAP No. 239, LOT No. 1

HUDSON NEW HAMPSHIRE

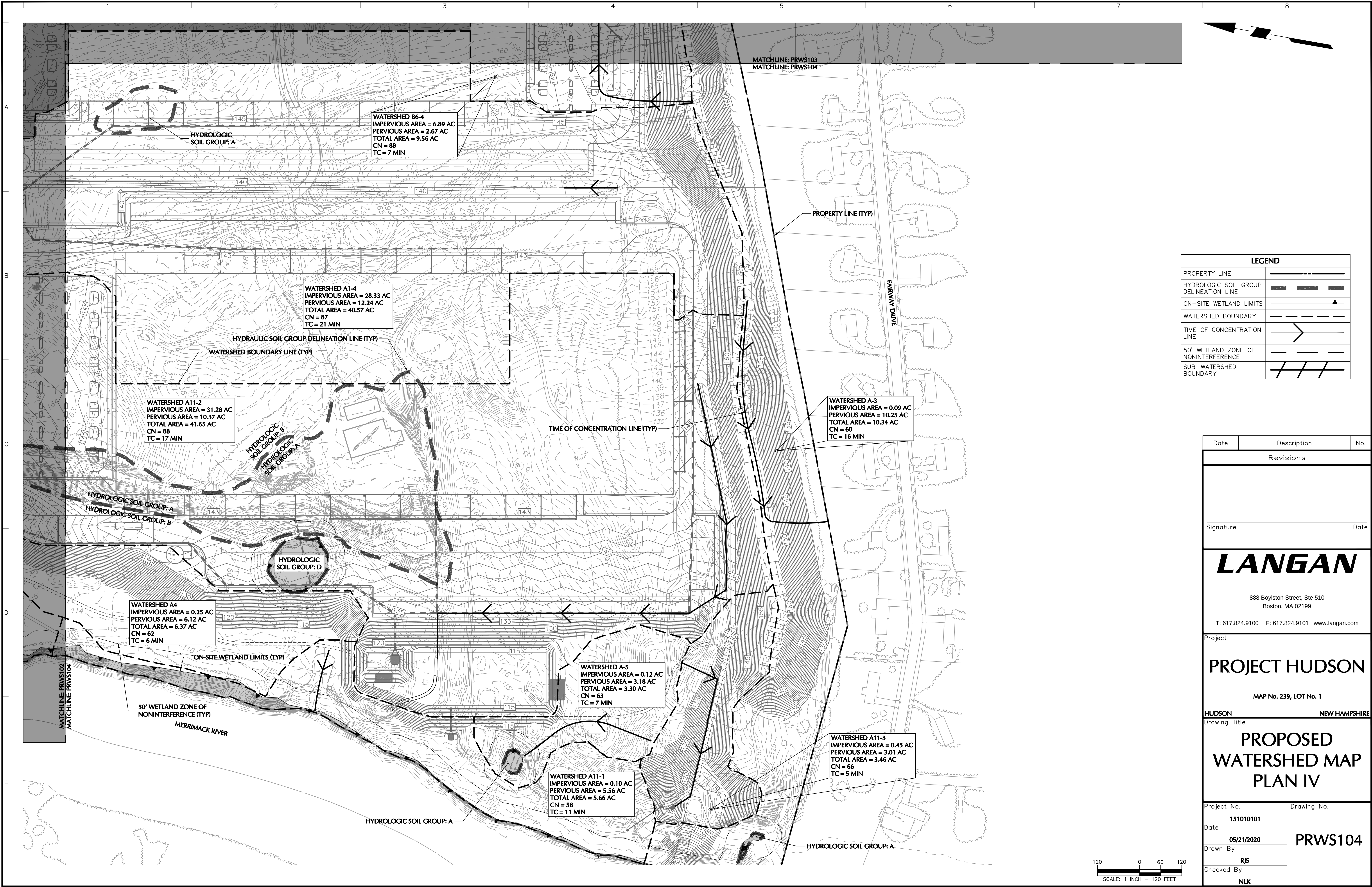
Drawing Title

**PROPOSED
WATERSHED MAP
PLAN II**

Project No. 151010101	Drawing No. PRWS102
Date 05/21/2020	
Drawn By RJS	
Checked By NLK	

120 0 60 120
SCALE: 1 INCH = 120 FEET





LEGEND	
PROPERTY LINE	---
HYDROLOGIC SOIL GROUP DELINEATION LINE	---
ON-SITE WETLAND LIMITS	---
WATERSHED BOUNDARY	---
TIME OF CONCENTRATION LINE	---
50' WETLAND ZONE OF NONINTERFERENCE	---
SUB-WATERSHED BOUNDARY	---

Date	Description	No.
------	-------------	-----

Revisions		
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Signature _____ Date _____

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Project

PROJECT HUDSON

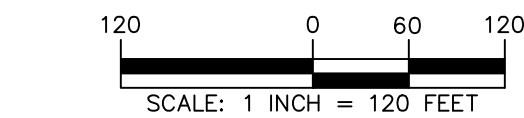
MAP No. 239, LOT No. 1

HUDSON NEW HAMPSHIRE

Drawing Title

**PROPOSED
WATERSHED MAP
PLAN IV**

Project No. 151010101	Drawing No. PRWS104
Date 05/21/2020	
Drawn By RJS	
Checked By NLK	



APPENDICES

APPENDIX A

Copy of: Signed Application Form; Check – Application Fee



ALTERATION OF TERRAIN PERMIT APPLICATION

Water Division/ Alteration of Terrain Bureau/ Land Resources Management
Check the Status of your Application: www.des.nh.gov/onestop



RSA/ Rule: RSA 485-A:17, Env-Wq 1500

Administrative Use Only	Administrative Use Only	Administrative Use Only	File Number:
			Check No.
			Amount:
			Initials:

1. APPLICANT INFORMATION (INTENDED PERMIT HOLDER)

Applicant Name: Hillwood Enterprises, L.P.		Contact Name: Justin Dunn	
Email: justin.dunn@hillwood.com		Daytime Telephone: 617-824-9100	
Mailing Address: 5050 W. Tilgham St., Suite 435			
Town/City: Allentown		State: PA	Zip Code: 18104

2. APPLICANT'S AGENT INFORMATION If none, check here: ☐

Business Name: Langan Engineering & Environmental Service		Contact Name: Nathan Kirschner	
Email: NKirschner@Langan.com		Daytime Telephone: 617-824-9100	
Address: 888 Boylston Street			
Town/City: Boston		State: MA	Zip Code: 02116

3. PROPERTY OWNER INFORMATION (IF DIFFERENT FROM APPLICANT)

Applicant Name: Green Meadow Golf Club, Inc.		Contact Name: Ryan Friel	
Email: rfriel@friegolf.com		Daytime Telephone: 603-882-8893	
Mailing Address: 55 Marsh Road			
Town/City: Hudson		State: NH	Zip Code: 03501

4. PROPERTY OWNER'S AGENT INFORMATION If none, check here: ☐

Business Name: Welts, White & Fontaine, PC		Contact Name: Thomas J. Leonard	
Email: tjleonard@lawyersnh.com		Daytime Telephone: 603-883-0797	
Address: 29 Factory Street, PO Box 507			
Town/City: Nashua		State: NH	Zip Code: 03061

5. CONSULTANT INFORMATION If none, check here: ☐

Engineering Firm: Langan Engineering & Environmental Service		Contact Name: Nathan Kirschner	
Email: NKirschner@Langan.com		Daytime Telephone: 617-824-9100	
Address: 888 Boylston Street			
Town/City: Boston		State: MA	Zip Code: 02116

ridge.mauck@des.nh.gov or (603) 271-2147

NHDES Alteration of Terrain Bureau, PO Box 95, Concord, NH 03303-0095

www.des.nh.gov

6. PROJECT TYPE

☐ Excavation Only ☐ Residential ☒ Commercial ☐ Golf Course ☐ School ☐ Municipal
☐ Agricultural ☐ Land Conversion ☐ Other:

7. PROJECT LOCATION INFORMATION

Project Name: Huson Logistics Center

Street/Road Address: Lowell Road

Town/City: Town of Hudson

County: Hillsborough

Tax Map: 234; 239

Block:

Lot Number: 5, 34, 35; 1

Unit:

 Location Coordinates: 42°43'5.86"N; 71°25'55.71"W ☒ Latitude/Longitude ☐ UTM ☐ State Plane

Post-development, will the proposed project withdraw from or directly discharge to any of the following? If yes, identify the purpose.

1. Stream or Wetland Purpose: Maintain Existing Stormwater Discharge Locations	☒ Yes ☐ No	☐ Withdrawal	☒ Discharge
2. Man-made pond created by impounding a stream or wetland Purpose: Stormwater Management / Treatment	☒ Yes ☐ No	☐ Withdrawal	☒ Discharge
3. Unlined pond dug into the water table Purpose:	☐ Yes ☒ No	☐ Withdrawal	☐ Discharge

Post-development, will the proposed project discharge to:

- A surface water impaired for phosphorus and/or nitrogen? ☒ No ☐ Yes - include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen
- A Class A surface water or Outstanding Resource Water? ☒ No ☐ Yes - include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen
- A lake or pond not covered previously? ☒ No ☐ Yes - include information to demonstrate that project will not cause net increase in phosphorus in the lake or pond

 Is the project a High Load area? ☐ Yes ☒ No

If yes, specify the type of high load land use or activity: _____

Is the project within a Water Supply Intake Protection Area (WSIPA)?

☐ Yes ☒ No

Is the project within a Groundwater Protection Area (GPA)?

☒ Yes ☐ No

Will the well setbacks identified in Env-Wq 1508.02 be met?

☒ Yes ☐ No

 Existing wells are inactive
and to be removed

 Note: Guidance document titled "[Using NHDES's OneStop WebGIS to Locate Protection Areas](#)" is available online. For more details on the restrictions in these areas, read Chapter 3.1 in Volume 2 of the NH Stormwater Manual.

 Is any part of the property within the 100-year floodplain? ☒ Yes ☐ No

 If yes: Cut volume: 0 cubic feet within the 100-year floodplain

 Fill volume: 0 cubic feet within the 100-year floodplain

☒ Project **IS** within $\frac{1}{4}$ mile of a designated river Name of River: Merrimack River - NHRIV700061206-24

☐ Project is **NOT** within $\frac{1}{4}$ mile of a designated river

☐ Project **IS** within a Coastal/Great Bay Region community - include info required by Env-Wq 1503.08(l) if applicable

☒ Project is **NOT** within a Coastal/Great Bay Region community
8. BRIEF PROJECT DESCRIPTION (PLEASE DO NOT REPLY "SEE ATTACHED")

The project proposes the redevelopment of Greenmeadow Golf Club into the Hudson Logistics Center. The subject site is rough 372.13 acres and is located off Lowell Rd and Steele Rd. The existing 39 hole golf course is proposed to be turned in to three new distribution and logistic building. The three buildings will total an approximate, combine footprint of 2,603,400 sf. The construction will include associated truck courts, roadways, parking lots, utilities, landscaping, retaining walls and stormwater management features. The property will be accessed primarily via a new dedicated subdivision road off of Lowell Road and a secondary access off to the west of the the existing Sam's Club building along Lowell Road.

9. IF APPLICABLE, DESCRIBE ANY WORK STARTED PRIOR TO RECEIVING PERMIT

10. ADDITIONAL REQUIRED INFORMATION

A. Date a copy of the application was sent to the municipality as required by Env-Wq 1503.05(e)¹: 06/23/2020

(Attach proof of delivery)

B. Date a copy of the application was sent to the local river advisory committee if required by Env-Wq 1503.05(e)²: 6/23/2020

(Attach proof of delivery)

C. Type of plan required: ☐ Land Conversion ☒ Detailed Development ☐ Excavation, Grading & Reclamation ☐ Steep Slope

D. Additional plans required: ☒ Stormwater Drainage & Hydrologic Soil Groups ☒ Source Control ☐ Chloride Management

E. Total area of disturbance: _____ square feet ±10 mil

F. Additional impervious cover as a result of the project: _____ square feet (use the “-” symbol to indicate a net reduction in impervious coverage).

±6.4 mil

plus ±5.9 mil

Total final impervious cover: _____ square feet

G. Total undisturbed cover: _____ square feet ±5.8 mil

H. Number of lots proposed: 4

I. Total length of roadway: _____ linear feet ±3,400 LFT

J. Name(s) of receiving water(s): NHRIV700061206-13 (UNNAMED BROOK - TO MERRIMACK RIVER); NHRIV700061206-23 (MUSQUASH BROOK - LIMIT BROOK); NHRIV700061206-24 (MERRIMACK RIVER)

K. Identify all other NHDES permits required for the project, and for each indicate whether an application has been filed and is pending, or if the required approval has been issued provide the permit number, registration date, or approval letter number, as applicable.

Type of Approval	Application Filed?	Status	
		Pending	If Issued:
1. Water Supply Approval	☐ Yes ☒ No ☐ N/A	☐	Permit number:
2. Wetlands Permit	☒ Yes ☐ No ☐ N/A	☒	Permit number:
3. Shoreland Permit	☒ Yes ☐ No ☐ N/A	☒	Permit number:
4. UIC Registration	☐ Yes ☒ No ☐ N/A	☐	Registration date:
5. Large/Small Community Well Approval	☐ Yes ☒ No ☐ N/A	☐	Approval letter date:
6. Large Groundwater Withdrawal Permit	☐ Yes ☒ No ☐ N/A	☐	Permit number:
7. Other:	☒ Yes ☐ No	☒	Permit number: NHDES Wetlands Bureau Major Impact Dredge and Fill Application

L. List all species identified by the Natural Heritage Bureau as threatened or endangered or of concern: Persius Dusky Wing, Arrow-head Rattlebox, River Birth, Wild Lupine, Eastern Box Turtle

M. Using NHDES's Web GIS OneStop program (www2.des.state.nh.us/gis/onestop/), with the Surface Water Impairment layer turned on, list the impairments identified for each receiving water. If no pollutants are listed, enter “N/A.”
Aluminum, Chlorophyll-a, Escherichia coli

N. Did the applicant/applicant's agent have a pre-application meeting with AOT staff? ☒ Yes ☐ No

If yes, name of staff member: Ridgely Mauck, P.E - Program Supervisor – Permitting & Bethann McCarthy, P.E.

O. Will blasting of bedrock be required? ☐ Yes ☒ No If yes, estimated quantity of blast rock: _____ cubic yards

If yes, standard blasting BMP notes must be placed on the plans, available at:

<http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-10-12.pdf>

NOTE: If greater than 5,000 cubic yards of blast rock will be generated, a groundwater monitoring program must be developed and submitted to NHDES. Contact AOT staff for additional detail.

¹ Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the governing body of each municipality in which the project is proposed.

² Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the Local River Advisory Committee, if the project is within ¼ mile of a designated river.

11. CHECK ALL APPLICATION ATTACHMENTS THAT APPLY (SUBMIT WITH APPLICATION IN ORDER LISTED)**LOOSE:**

- ☒ Signed application form: des.nh.gov/organization/divisions/water/aot/index.htm (with attached proof(s) of delivery)
- ☒ Check for the application fee: des.nh.gov/organization/divisions/water/aot/fees.htm
- ☒ Color copy of a USGS map with the property boundaries outlined (1" = 2,000' scale)
- ☒ If Applicant is not the property owner, proof that the applicant will have a legal right to undertake the project on the property if a permit is issued to the applicant.

BIND IN A REPORT IN THE FOLLOWING ORDER:

- ☒ Copy of the signed application form & application checklist (des.nh.gov/organization/divisions/water/aot/index.htm)
- ☒ Copy of the check
- ☒ Copy of the USGS map with the property boundaries outlined (1" = 2,000' scale)
- ☒ Narrative of the project with a summary table of the peak discharge rate for the off-site discharge points
- ☒ Web GIS printout with the "Surface Water Impairments" layer turned on - <http://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx>
- ☒ Web GIS printouts with the AOT screening layers turned on - <http://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx>
- ☒ NHB letter using DataCheck Tool – www.nhdfi.org/about-forests-and-lands/bureaus/natural-heritage-bureau/
- ☒ The Web Soil Survey Map with project's watershed outlined – websoilsurvey.nrcs.usda.gov
- ☒ Aerial photograph (1" = 2,000' scale with the site boundaries outlined)
- ☒ Photographs representative of the site
- ☒ Groundwater Recharge Volume calculations (one worksheet for each permit application):
des.nh.gov/organization/divisions/water/aot/documents/bmp_worksh.xls
- ☒ BMP worksheets (one worksheet for each treatment system):
des.nh.gov/organization/divisions/water/aot/documents/bmp_worksh.xls
- ☒ Drainage analysis, stamped by a professional engineer (see Application Checklist for details)
- ☒ Riprap apron or other energy dissipation or stability calculations
- ☒ Site Specific Soil Survey report, stamped and with a certification note prepared by the soil scientist that the survey was done in accordance with the Site Specific Soil Mapping standards, *Site-Specific Soil Mapping Standards for NH & VT, SSSNNE Special Publication No. 3*. Information to be gathered at a future date. Included in the Stormwater Management Report
- ☐ Infiltration Feasibility Report (example online) [Env-Wq 1503.08(f)(3)]
- ☐ Registration and Notification Form for Storm Water Infiltration to Groundwater (UIC Registration-for underground systems only, including drywells and trenches): Applicability is TBD pending results of additional geotechnical investigation including infiltration testing.
(http://des.nh.gov/organization/divisions/water/dwgb/dwspp/gw_discharge)
- ☒ Inspection and maintenance manual with, if applicable, long term maintenance agreements [Env-Wq 1503.08(g)]
- ☒ Source control plan Refer to Stormwater Management Report

PLANS:

- ☒ One set of design plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details)
- ☒ Pre & post-development color coded soil plans on 11" x 17" (see Application Checklist for details)
- ☒ Pre & post-development drainage area plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details)

100-YEAR FLOODPLAIN REPORT:

- ☒ All information required in Env-Wq 1503.09, submitted as a separate report.

ADDITIONAL INFORMATION RE: NUTRIENTS, CLIMATE

- ☒ See Checklist for Details

- ☒ REVIEW APPLICATION FOR COMPLETENESS & CONFIRM INFORMATION LISTED ON THE APPLICATION IS INCLUDED WITH SUBMITTAL.

12. REQUIRED SIGNATURES

NLK By initialing here, I acknowledge that I am required by Env-Wq 1503.20(e) to submit a copy of all approved documents to the department in PDF format on a CD within one week after permit approval.

By signing below, I certify that:

- The information contained in or otherwise submitted with this application is true, complete, and not misleading to the best of my knowledge and belief;
- I understand that the submission of false, incomplete, or misleading information constitutes grounds for the department to deny the application, revoke any permit that is granted based on the information, and/or refer the matter to the board of professional engineers established by RSA 310-A:3 if I am a professional engineer; and
- I understand that I am subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641.

☐ **APPLICANT**

☒ **APPLICANT'S AGENT:**

Signature: 

Date: 6/22/2020

Name (print or type): Nathan Kirschner

Title: Senior Project Manager

☐ **PROPERTY OWNER**

☒ **PROPERTY OWNER'S AGENT:**

Signature: 

Date: 6/22/2020

Name (print or type): Nathan Kirschner

Title: Senior Project Manager

ATTACHMENT A: ALTERATION OF TERRAIN PERMIT APPLICATION CHECKLIST

Check the box to indicate the item has been provided or provide an explanation why the item does not apply.

DESIGN PLANS

- ☒ Plans printed on 34 - 36" by 22 - 24" white paper
- ☒ PE stamp
- ☒ Wetland delineation
- ☒ Temporary erosion control measures
- ☒ Treatment for all stormwater runoff from impervious surfaces such as roadways (including gravel roadways), parking areas, and non-residential roof runoff. Guidance on treatment BMPs can be found in Volume 2, Chapter 4 of the NH Stormwater Management Manual.
- ☒ Pre-existing 2-foot contours
- ☒ Proposed 2-foot contours
- ☐ Drainage easements protecting the drainage/treatment structures To be determined at a later date in coordination with local authority.
- ☒ Compliance with the Wetlands Bureau, RSA 482- A <http://des.nh.gov/organization/divisions/water/wetlands/index.htm>. Note that artificial detention in wetlands is not allowed.
- ☒ Compliance with the Comprehensive Shoreland Protection Act, RSA 483-B. <http://des.nh.gov/organization/divisions/water/wetlands/cspa>
- ☒ Benches. Benching is needed if you have more than 20 feet change in elevation on a 2:1 slope, 30 feet change in elevation on a 3:1 slope, 40 feet change in elevation on a 4:1 slope.
- ☐ Check to see if any proposed ponds need state Dam permits. Pending local approval of stormwater management system, proposed ponds will be sent for state Dam permit review.
<http://des.nh.gov/organization/divisions/water/dam/documents/damdef.pdf>

DETAILS

- ☒ Typical roadway x-section
- ☒ Detention basin with inverts noted on the outlet structure
- ☐ Stone berm level spreader Not in use.
- ☒ Outlet protection – riprap aprons Use of pre-formed scour holes.
- ☒ A general installation detail for an erosion control blanket
- ☒ Silt fences or mulch berm
- ☒ Storm drain inlet protection. Note that since hay bales must be embedded 4 inches into the ground, they are not to be used on hard surfaces such as pavement.
- ☒ Hay bale barriers
- ☐ Stone check dams Not in use.
- ☒ Gravel construction exit
- ☒ Temporary sediment trap
- ☒ The treatment BMP's proposed
- ☒ Any innovative BMP's proposed

CONSTRUCTION SEQUENCE/EROSION CONTROL

- ☒ Note that the project is to be managed in a manner that meets the requirements and intent of RSA 430:53 and Chapter Agr 3800 relative to invasive species.
- ☒ Note that perimeter controls shall be installed prior to earth moving operations.
- ☒ Note that temporary water diversion (swales, basins, etc) must be used as necessary until areas are stabilized.
- ☒ Note that ponds and swales shall be installed early on in the construction sequence (before rough grading the site).
- ☒ Note that all ditches and swales shall be stabilized prior to directing runoff to them.
- ☒ Note that all roadways and parking lots shall be stabilized within 72 hours of achieving finished grade.
- ☒ Note that all cut and fill slopes shall be seeded/loamed within 72 hours of achieving finished grade
- ☒ Note that all erosion controls shall be inspected weekly AND after every half-inch of rainfall.
- ☒ Note the limits on the open area allowed, see Env-Wq 1505.02 for detailed information.

Example note: 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.

- ☒ Note the definition of the word “stable”

Example note: An area shall be considered stable if one of the following has occurred:

- Base course gravels have been installed in areas to be paved.
- A minimum of 85 percent vegetated growth has been established.
- A minimum of 3 inches of non-erosive material such stone or riprap has been installed.
- Or, erosion control blankets have been properly installed.

- ☒ Note the limit of time an area may be exposed

Example note: All areas shall be stabilized within 45 days of initial disturbance.

- ☒ Provide temporary and permanent seeding specifications. (Reed canary grass is listed in the Green Book; however, this is a problematic species according to the Wetlands Bureau and therefore should not be specified)
- ☒ Provide winter construction notes that meet or exceed our standards.

Standard Winter Notes:

- All proposed vegetated areas that do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, 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 melt events.
 - All ditches or swales which do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, shall be stabilized temporarily with stone or erosion control blankets appropriate for the design flow conditions.
 - After October 15, 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.
- ☒ Note at the end of the construction sequence that “Lot disturbance, other than that shown on the approved plans, shall not commence until after the roadway has the base course to design elevation and the associated drainage is complete and stable.” – This note is applicable to single/duplex family subdivisions, when lot development is not part of the permit.

DRAINAGE ANALYSES

ridge.mauck@des.nh.gov or (603) 271-2147

NHDES Alteration of Terrain Bureau, PO Box 95, Concord, NH 03303-0095

www.des.nh.gov

Please double-side 8 ½" × 11" sheets where possible but, **do not** reduce the text such that more than one page fits on one side.

- ☒ PE stamp
- ☒ Rainfall amount obtained from the Northeast Regional Climate Center- <http://precip.eas.cornell.edu/>. Include extreme precipitation table as obtained from the above referenced website.
- ☒ Drainage analyses, in the following order:
 - Pre-development analysis: Drainage diagram.
 - Pre-development analysis: Area Listing and Soil Listing.
 - Pre-development analysis: Node listing 1-year (if applicable), 2-year, 10-year and 50-year.
 - Pre-development analysis: Full summary of the 10-year storm.
 - Post-development analysis: Drainage diagram.
 - Post-development analysis: Area Listing and Soil Listing.
 - Post-development analysis: Node listing for the 2-year, 10-year and 50-year.
 - Post-development analysis: Full summary of the 10-year storm.
- ☒ Review the Area Listing and Soil Listing reports
 - Hydrologic soil groups (HSG) match the HSGs on the soil maps provided.
 - There is the same or less HSG A soil area after development (check for each HSG).
 - There is the same or less "woods" cover in the post-development.
 - Undeveloped land was assumed to be in "good" condition.
 - The amount of impervious cover in the analyses is correct.

Note: A good check is to subtract the total impervious area used in the pre analysis from the total impervious area used in the post-analysis. For residential projects without demolition occurring, a good check is to take this change in impervious area, subtract out the roadway and divide the remaining by the number of houses/units proposed. Do these numbers make sense?

- ☒ Check the storage input used to model the ponds.
- ☒ Check to see if the artificial berms pass the 50-year storm, i.e., make sure the constructed berms on ponds are not overtopped.
- ☒ Check the outlet structure proposed and make sure it matches that modeled.
- ☒ Check to see if the total areas in the pre and post analyses are same.
- ☒ Confirm the correct NRCS storm type was modeled (Coos, Carroll & Grafton counties are Type II, all others Type III).

PRE- AND POST-DEVELOPMENT DRAINAGE AREA PLANS

- ☒ Plans printed on 34 - 36" by 22 - 24" on white paper.
- ☒ Submit these plans separate from the soil plans.
- ☒ A north arrow.
- ☒ A scale.
- ☒ Labeled subcatchments, reaches and ponds.
- ☒ Tc lines.
- ☒ A clear delineation of the subcatchment boundaries.
- ☒ Roadway station numbers.
- ☒ Culverts and other conveyance structures.

PRE AND POST-DEVELOPMENT COLOR-CODED SOIL PLANS

- ☒ 11" × 17" sheets suitable, as long as it is readable.
- ☒ Submit these plans separate from the drainage area plans.
- ☒ A north arrow.
- ☒ A scale.
- ☒ Name of the soil scientist who performed the survey and date the soil survey took place.
- ☒ 2-foot contours (5-foot contours if application is for a gravel pit) as well as other surveyed features.
- ☒ Delineation of the soil boundaries and wetland boundaries.
- ☒ Delineation of the subcatchment boundaries.
- ☒ Soil series symbols (e.g., 26).
- ☒ A key or legend which identifies each soil series symbol and its associated soil series name (e.g., 26 = Windsor).
- ☒ The hydrologic soil group color coding (A = Green, B = yellow, C= orange, D=red, Water=blue, & Impervious = gray).

Please note that excavation projects (e.g., gravel pits) have similar requirements to that above, however the following are common exceptions/additions:

- ☐ Drainage report is not needed if site does not have off-site flow.
- ☐ 5 foot contours allowed rather than 2 foot.
- ☐ No PE stamp needed on the plans.
- ☐ Add a note to the plans that the applicant must submit to the Department of Environmental Services a written update of the project and revised plans documenting the project status every five years from the date of the Alteration of Terrain permit.
- ☐ Add reclamation notes.

Not Applicable

See NRCS publication titled: *Vegetating New Hampshire Sand and Gravel Pits* for a good resource, it is posted online at:
<http://des.nh.gov/organization/divisions/water/aot/categories/publications>.

ADDITIONAL INFORMATION RE: NUTRIENTS, CLIMATE

- ☒ If project will discharge stormwater to a surface water impaired for phosphorus and/or nitrogen, include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen.
- ☒ If project will discharge stormwater to a Class A surface water or Outstanding Resource Water, include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen.
- ☒ If project will discharge stormwater to a lake or pond not covered previously, include information to demonstrate that project will not cause net increase in phosphorus in the lake or pond.
- ☒ If project is within a Coastal/Great Bay Region community, include info required by Env-Wq 1503.08(I) if applicable.

Treasurer, State of New Hampshire
539911

Customer Copy
Hillwood Investment Properties, L.P. (01500)
Stub 1 of 1

Check No. 76773
Check Date 06/04/2020

Invoice Number	Date	Description	Gross Amount	Deductions	Amount Paid
06012020.125625.01	06/01/20	Alteration of Terrain-	125,625.01		125,625.01
TOTALS			\$125,625.01	\$0.00	\$125,625.01

Hillwood Investment Properties, L.P.
3000 Turtle Creek Blvd
Dallas TX 75219

Bank of America, N.A.
Dallas, Texas
32.2
1110

CHECK NO. 76773

539911

Date	Amount
06/04/2020	\$***125,625.01

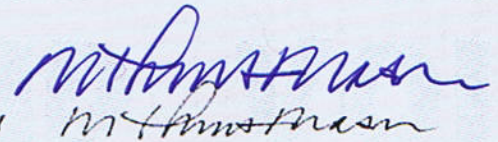
Void if Not Cashied in 90 Days

ONE HUNDRED TWENTY FIVE THOUSAND SIX HUNDRED TWENTY FIVE AND 01/100***** DOLLARS

Pay To The
Order Of:

Treasurer, State of New Hampshire
25 Capitol Street., Rm. 121
Concord NH 03301

BY



Authorized Signature

⑈0000076773⑈ ⑆111000025⑆ 488020289627⑈

APPENDIX B

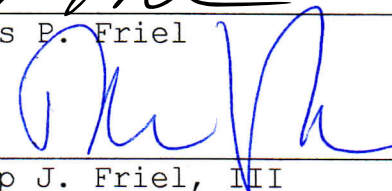
Authorization Letters

LETTER OF AUTHORIZATION

Thomas P. Friel and Philip J. Friel, III, the owners of property depicted on the Town of Hudson, New Hampshire Assessors Maps as Tax Map 234, Lot 34 (273 Lowell Road), do hereby authorize Hillwood Enterprises, L.P, ("Applicant"), and/or its agents and any engineering firm, or architecture firm or attorneys which Applicant may designate, to execute, submit, and prosecute land use applications and any applicable materials to any local, state and/or federal governmental entities, including but not limited to, applications filed with the Town of Hudson, New Hampshire, and to take any action necessary for the application and permitting process, including but not limited to, attendance and presentation at public hearings, of the said Property.

Dated: April 16, 2020

By:  TF
Thomas P. Friel

By: 
Philip J. Friel, III

LETTER OF AUTHORIZATION

GREENMEADOW GOLF CLUB, INC., a New Hampshire corporation, owner of property depicted on the Town of Hudson, New Hampshire Assessors Maps as Tax Map 234, Lot 5 (11 Steele Road), Tax Map 234, Lot 6 (15 Steele Road), and, Tax Map 239, Lot 1 (43 Steele Road)(collectively, the "Property"), do hereby authorize Hillwood Enterprises, L.P ("Applicant"), and/or its agents and any engineering firm, or architecture firm or attorneys which Applicant may designate, to execute, submit, and prosecute land use applications and any applicable materials to any local, state and/or federal governmental entities, including but not limited to, applications filed with the Town of Hudson, New Hampshire, and to take any action necessary for the application and permitting process, including but not limited to, attendance and presentation at public hearings, of the said Property.

Dated: April 16, 2020

GREENMEADOW GOLF CLUB, INC.

By: _____

Title: Vice President,
duly authorized.



AUTHORIZATION

HILLWOOD ENTERPRISES, L. P., with business address at 5050 W. Tilghman Street, Suite 435, Allentown, PA 18104, hereby authorizes and designates its agents, Smolak & Vaughan LLP, Langan Engineering & Environmental Services, Inc., and Donahue, Tucker & Ciandella, PLLC, to execute, submit, and prosecute land use applications and any applicable materials to any local, state and/or federal governmental entities, including but not limited to, applications filed with the Town of Hudson, New Hampshire, and to take any action necessary for the application and permitting process, including but not limited to, attendance and presentation at public hearings, with respect to the following parcels of the land as Hillwood is authorized by said property owners, for the following properties, including: (a) 11, 15 and 43 Steele Road -- Tax Map 234, Lot 5 (11 Steele Road), Tax Map 234, Lot 6 (15 Steele Road), and, Tax Map 239, Lot 1 (43 Steele Road), owned by Greenmeadow Golf Club, Inc.; and, (b) 273 Lowell Road -- Tax Map 234, Lot 34, owned by Thomas P. Friel and Philip J. Friel, III.

Dated: April 21, 2020

Hillwood Enterprises, L.P.,
a Texas limited partnership

By: AHB, LLC,
a Texas limited liability company
its general partner

By: 
Name: Gary B. Frederick
Title: Sr. Vice President, duly authorized.

APPENDIX C

Proof of Mailings

888 Boylston Street, Suite 510 Boston, MA 02199 T: 617.824.9100 F: 617.824.9101

To:

Gene Porter

LAC Chair

Lower Merrimack River Local Advisory
Committee

77 Concord Street

Nashua, NH 03064

Phone No:

(603) 417-6570 x6564

Date:

6/22/2020

Project No.

151010101

Re:

Hudson Logistics Center

43 Steele Road

Hudson, NH

Via:

☒ Fed Ex: ☐ Priority ☐ Standard ☐ 2-Day
☐ 1st Class Mail ☐ Hand Delivery

Items:

☐ Prints ☐ Letter ☐ Other
☐ Sepia ☒ Drawings ☒ Reports
☐ Other _____

Copies:

Dwg. No.:

Description:

1

-

NHDES Alteration of Terrain Application

1

-

Hudson Logistic Center Site Plan & Wetlands Conditional Use
Applications drawing set

1

-

Hudson Logistics Center Lot Line Adjustment / Subdivision Plan

1

-

Stormwater Management Report – Hudson Logistic Center

☒ For Your Information
☐ For Review and Comment

☐ For Your Use
☐ For Approval

☐ As Requested By: _____
☐ Other: _____

Remarks:

Gene, Please find enclosed the NHDES Alteration of Terrain Application Submission Materials that have distributed to the NHDES Land Resources Management Alteration of Terrain Bureau. Should you need anything additional please don't hesitate to contact me at either nkirschner@langan.com or 860.398.0196.

Copies To:

Justin Dunn - Hillwood

John Smolak- Smolak & Vaughan, LLP

Justin Pasay- Donahue, Tucker & Ciandella, PLLC

From:

Nate Kirschner

888 Boylston Street, Suite 510 Boston, MA 02199 T: 617.824.9100 F: 617.824.9101

To:

Mr. Brian Groth

Town Planner

Town of Hudson Planning Dept.

12 School Street

Hudson, NH

Phone No:

(603) 886-6008

Date:

6/22/2020

Project No.

151010101

Re:

Hudson Logistics Center

43 Steele Road

Hudson, NH

Via:

☒ Fed Ex: ☐ Priority ☐ Standard ☐ 2-Day
☐ 1st Class Mail ☐ Hand Delivery

Items:

☐ Prints ☐ Letter ☐ Other
☐ Sepia ☒ Drawings ☒ Reports
☐ Other _____

Copies:

Dwg. No.:

Description:

1

-

NHDES Alteration of Terrain Application
Hudson Logistic Center Site Plan & Wetlands Conditional Use
Applications drawing set

1

-

Hudson Logistics Center Lot Line Adjustment / Subdivision Plan

1

-

Stormwater Management Report – Hudson Logistic Center

☒ For Your Information

☐ For Your Use

☐ As Requested By: _____

☐ For Review and Comment

☐ For Approval

☐ Other: _____

Remarks:

Brian, Please find enclosed the NHDES Alteration of Terrain Application Submission Materials that have distributed to the NHDES Land Resources Management Alteration of Terrain Bureau. Should you need anything additional please don't hesitate to contact me at either nkirschner@langan.com or 860.398.0196.

Copies To:

Justin Dunn - Hillwood

John Smolak- Smolak & Vaughan, LLP

Justin Pasay- Donahue, Tucker & Ciandella, PLLC

From:

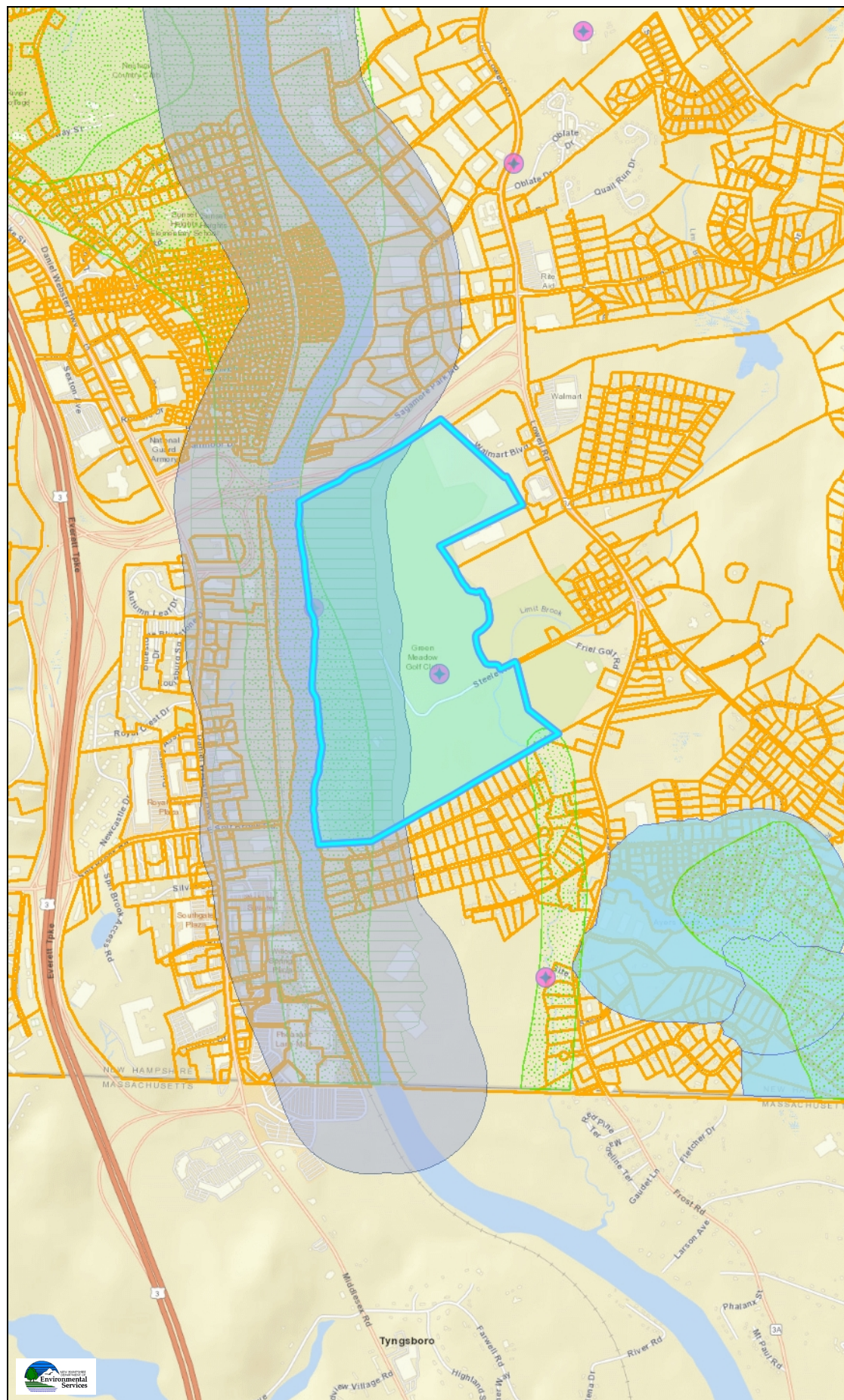
Nate Kirschner

Include copies of the Fed Ex shipping labels if available

APPENDIX D

New Hampshire Department of Environmental Services GIS Maps

Hudson Logistic Center



Legend

- Coastal and Great Bay Regional Communities
- Designated Rivers Quarter Mile Buffer
- Public Water Supply Wells
- Groundwater Classification / GA1
- Groundwater Classification / GA2
- Water Supply Intake Protect Areas
- Wellhead Protection Areas
- Class A Lakes with a Quarter Mile Buffer
- Class A - All Features
- All Lakes, with a Quarter Mile Buffer
- Outstanding Resource Water Watersheds
- Surface Waters with Impairment 2016 with Quarter Mile Buffer
- Watersheds with Chloride Impairments 2016
- Parcels - polygons

Map Scale

1: 25,000

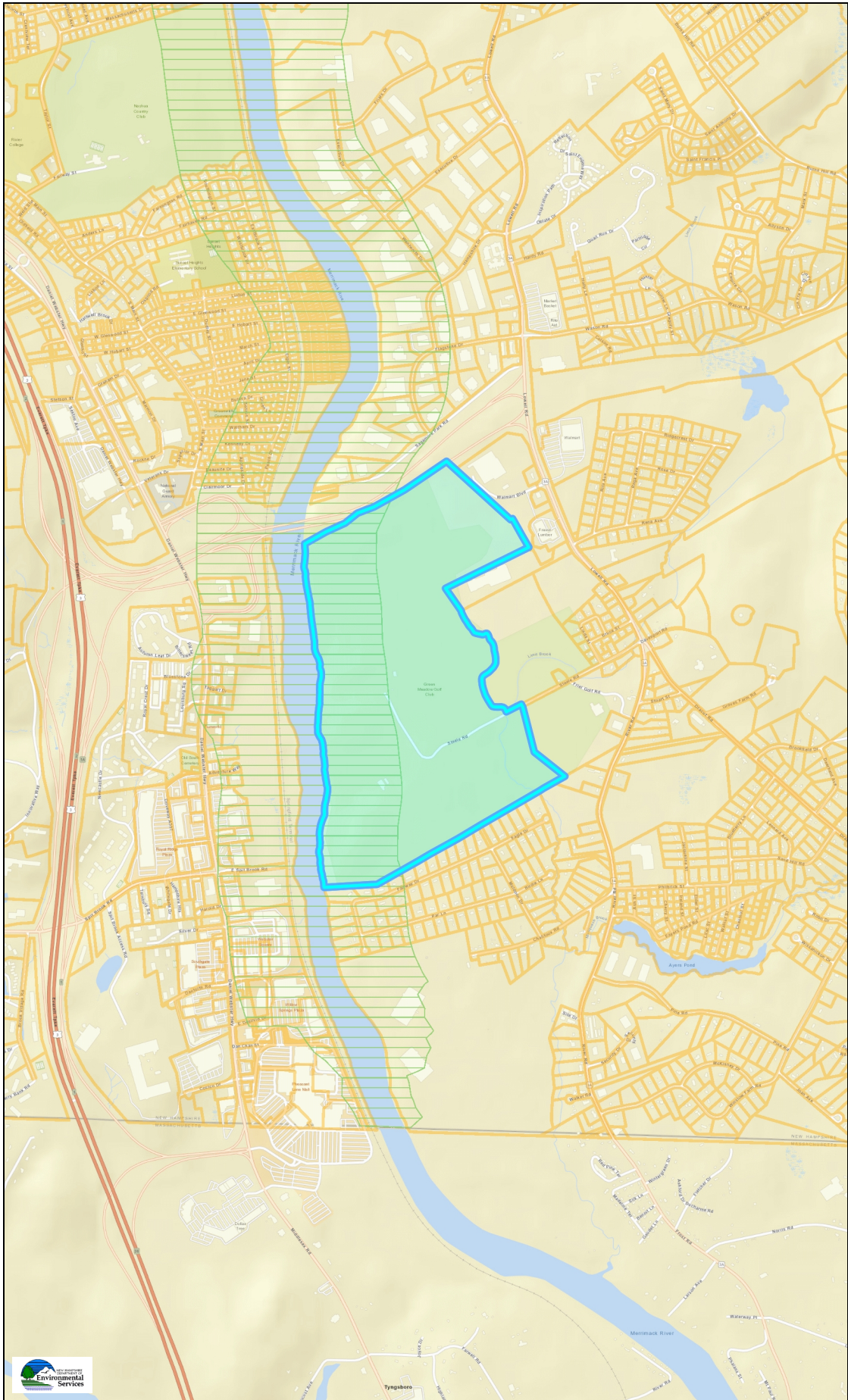
© NH DES, <http://des.nh.gov>

Map Generated: 4/30/2020



Notes

Hudson Logistic Center



Legend

-  Surface Waters with Impairment 2016 with Quarter Mile Buffer
-  Parcels - polygons

Map Scale

1: 25,000

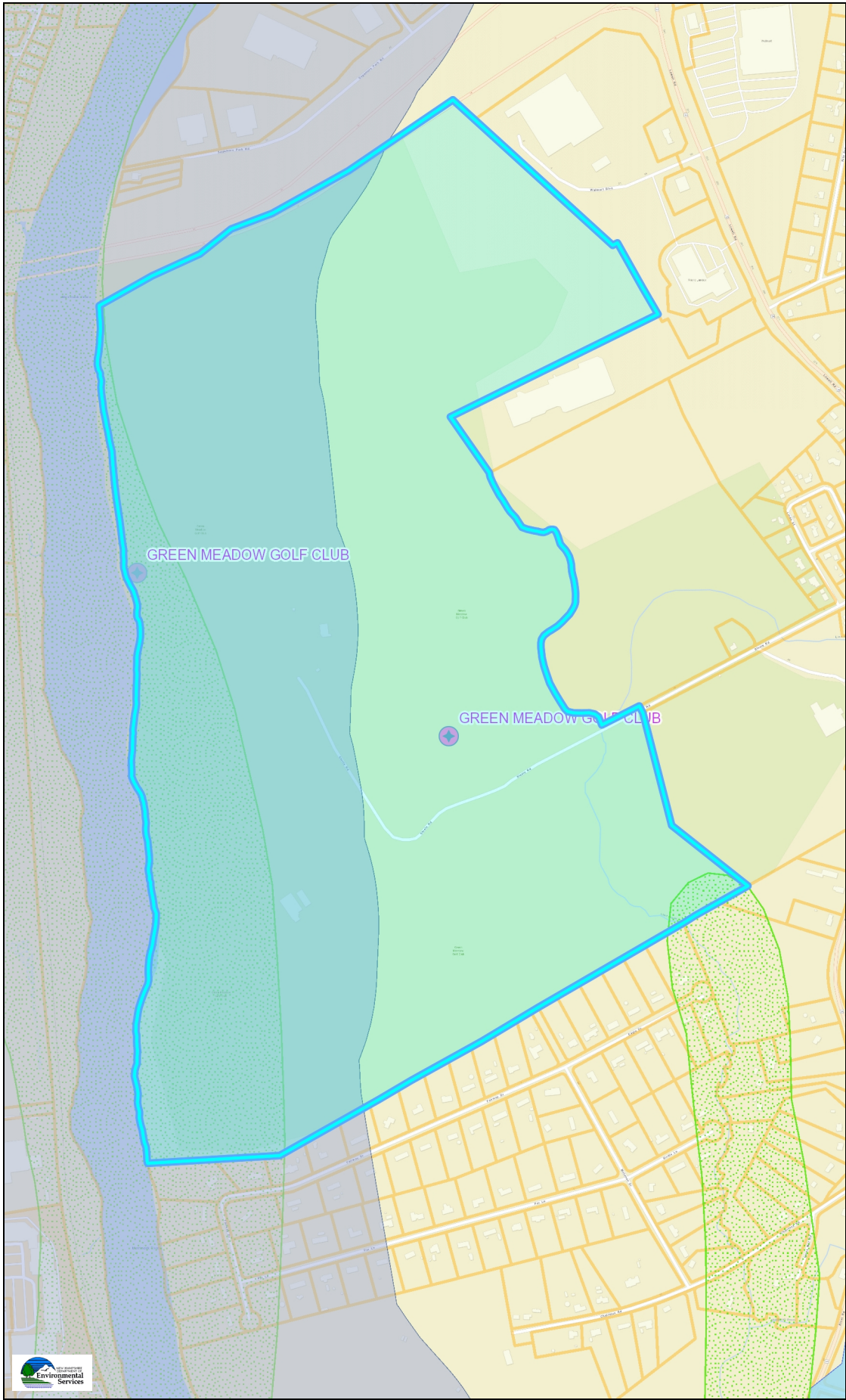
© NH DES, <http://des.nh.gov>

Map Generated: 4/30/2020



Notes

Hudson Logistic Center



Legend

- Coastal and Great Bay Regional Communities
- Designated Rivers Quarter Mile Buffer
- Public Water Supply Wells
- Groundwater Classification / GA1
- Groundwater Classification / GA2
- Water Supply Intake Protection Areas
- Wellhead Protection Areas
- Class A Lakes with a Quarter Mile Buffer
- Class A - All Features
- All Lakes, with a Quarter Mile Buffer
- Outstanding Resource Water Watersheds
- Surface Waters with Impairment 2016 with Quarter Mile Buffer
- Watersheds with Chloride Impairments 2016
- Parcels - polygons

Map Scale

1: 10,000

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Map Generated: 4/30/2020



Notes

APPENDIX E

NHB Rare Species Letter

CONFIDENTIAL – NH Dept. of Environmental Services review

Memo

NH NATURAL HERITAGE BUREAU
NHB DATACHECK RESULTS LETTER

To: Luke Hurley, Gove Environmental Services, Inc.
8 Continental Drive
Exeter, NH 03833

From: Amy Lamb, NH Natural Heritage Bureau

Date: 04/02/2020 (valid for one year from this date)

Re: Review by NH Natural Heritage Bureau

NHB File ID: NHB20-0672

Town: Hudson

Location: Tax Maps: 234-5 & 239-1

Description: The project involves redevelopment of the Green Meadow Golf Course for industrial/Warehouse uses. Two access roads are proposed to gain access from Lowell Road. The remainder of the development will be situated within the limits of the current golf course.

cc: Melissa Doperalski, Certified Wildlife Biologist, NH Fish & Game Dept.; Kim Tuttle Wildlife Biologist, NH Fish & Game Dept.; Ridgely Mauck, P.E., Program Supervisor, NHDES Alteration of Terrain Bureau; Craig Rennie, CWS, CWB, Inland Wetland Supervisor, NHDES Wetlands Bureau

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments: Please refer to project area map and overview context map below (pages 3 and 4).

NHB recommends the following:

River Birch:

Survey entire Merrimack River bank for river birch (*Betula nigra*). This tree species can be identified by bark and twigs, so identification can occur at any time. Mature catkins are present from the end of May – June.

Flag trees and take GPS points at any locations where found.

Email digital information (survey report, diagnostic information used to confirm the species if found, and GPS points) to Amy.Lamb@dncr.nh.gov, 603-892-5162.

Arrow-head rattlebox:

Survey dry sandy areas in the project site, including but not limited to, along the edges of the manicured fairways and along the forested edge of the riverbank, for arrow-head rattlebox (*Crotalaria sagittalis*). This species is a State Endangered native plant, and the only record in NH is in close proximity to the site.

Flag and take GPS points at any locations where found. Contact Amy Lamb immediately if any plants are located. Amy.Lamb@dncr.nh.gov, 603-892-5162.

Persius Dusky Wing & Wild Lupine:

A State-Endangered invertebrate species, Persius Dusky Wing, has been documented near the project area. This species has an obligate relationship with the State-Threatened plant species wild lupine (*Lupinus perennis* ssp. *perennis*). Although the NHB database does not have a corresponding wild lupine record in the immediate vicinity, the nature of this symbiotic relationship implies that lupine was also present in the vicinity at one time.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

CONFIDENTIAL – NH Dept. of Environmental Services review

Memo

NH NATURAL HERITAGE BUREAU
NHB DATACHECK RESULTS LETTER

Additionally, the Persius Dusky Wing database record states that the species was observed on a lupine plant (page 5). The overview map (second map; page 4) shows other nearby wild lupine records that are in the NHB database.

Survey “old field” dry sandy areas in the project site, including but not limited to, along the edges of the manicured fairways and along the forested edge of the riverbank, for wild lupine (*Lupinus perennis* ssp. *perennis*). This species generally flowers from mid-May to the first week in July (5/15 – 7/7).

Flag and take GPS points at any locations where found. Contact Amy Lamb immediately if any plants are located.

Please email Melissa Doperalski at NH Fish & Game Department the survey results, as this information will be considered when discussing the Persius Dusky Wing.

Eastern Box Turtle:

Contact Melissa Doperalski, Certified Wildlife Biologist, Nongame and Endangered Species Program, NH Fish & Game Department about protected wildlife species. Melissa.Doperalski@wildlife.nh.gov, 603-271-1738.

Invertebrate Species

	State ¹	Federal	Notes
Persius Dusky Wing (<i>Erynnis persius persius</i>)*	E	--	Contact Melissa Doperalski, (603) 271-1738.

Plant species

	State ¹	Federal	Notes
arrow-head rattlebox (<i>Crotalaria sagittalis</i>)*	E	--	
river birch (<i>Betula nigra</i>)*	T	--	The population could be deleteriously affected by any project activities that alter the hydrology of its habitat, by increased sedimentation, and by increased nutrients/pollutants in stormwater runoff.
wild lupine (<i>Lupinus perennis</i> ssp. <i>perennis</i>)	T	--	

Vertebrate species

	State ¹	Federal	Notes
Eastern Box Turtle (<i>Terrapene carolina</i>)	E	--	Contact Melissa Doperalski, (603) 271-1738.

¹Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

Please contact Melissa Doperalski, NH Fish & Game Department, Nongame Program (603) 271-1738.

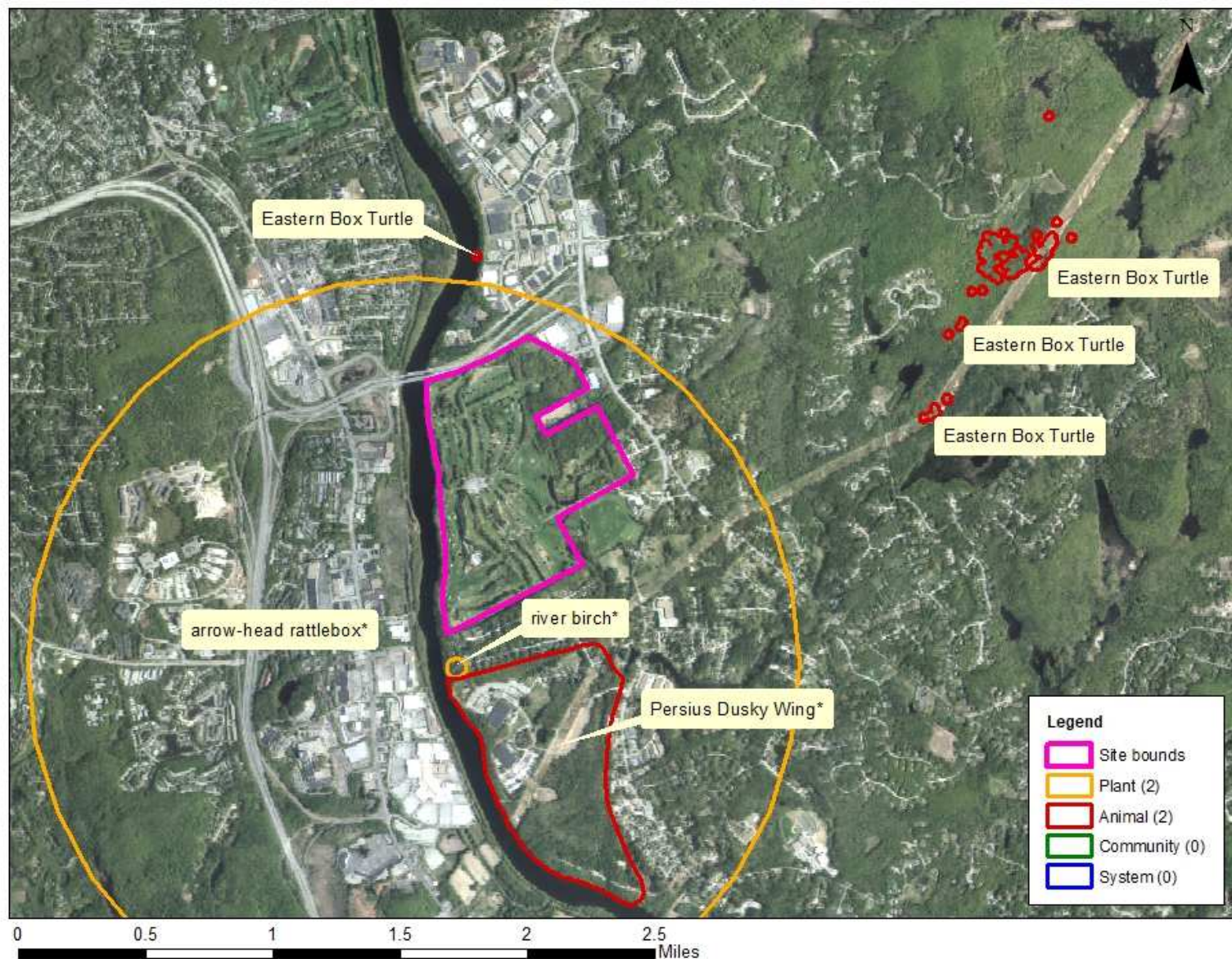
A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

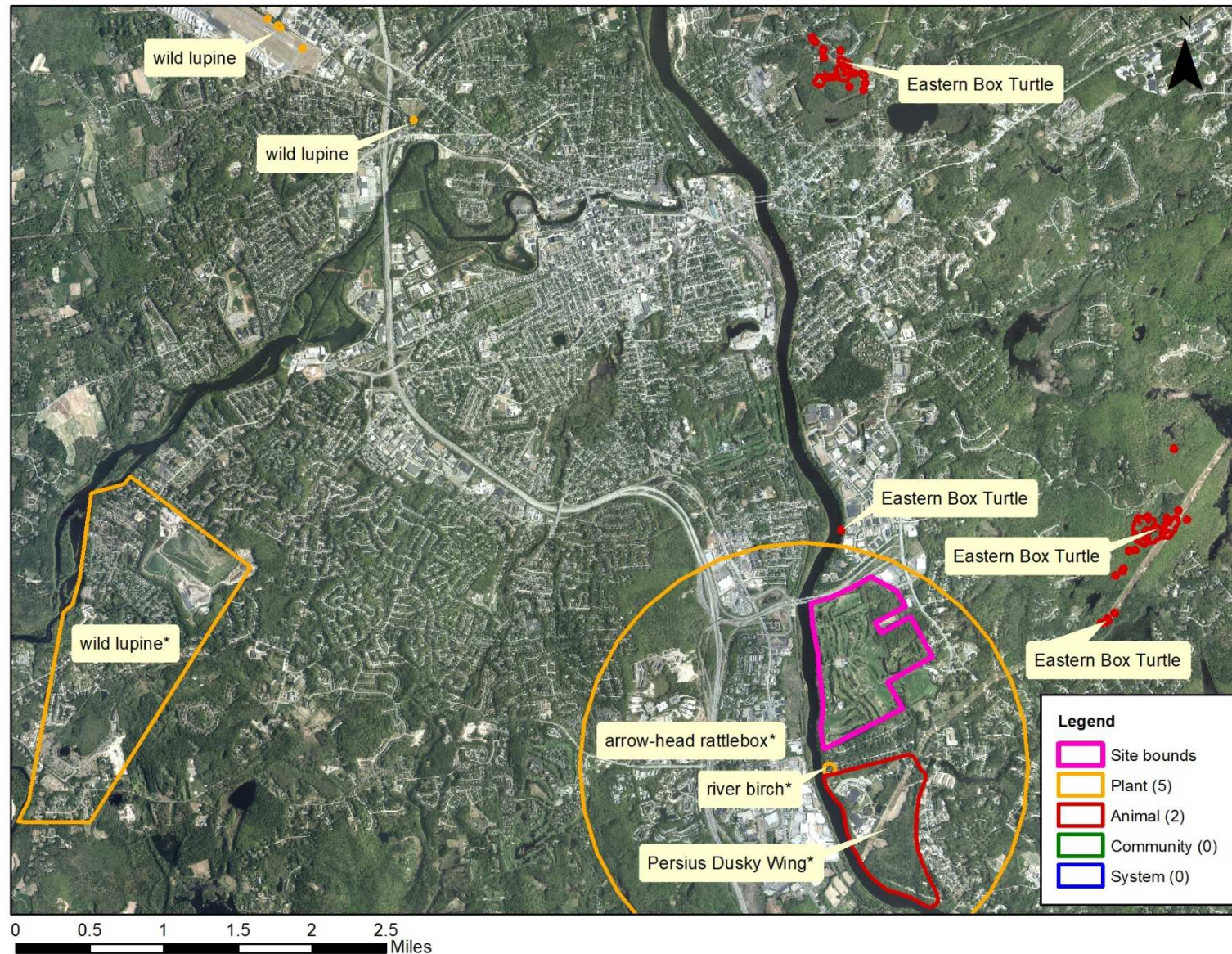
CONFIDENTIAL – NH Dept. of Environmental Services review

NHB20-0672



CONFIDENTIAL – NH Dept. of Environmental Services review

NHB20-0672



New Hampshire Natural Heritage Bureau - Animal Record

Persius Dusky Wing (*Erynnis persius persius*)**Legal Status**

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Imperiled due to rarity or vulnerability
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 1975: 1 female observed ovipositing on Lupine.
General Area: --
General Comments: --
Management: --
Comments:

Location

Survey Site Name: Chalifaux Road
Managed By: Hi-Tension Realty Corp.

County: Hillsborough
Town(s): Hudson
Size: 282.1 acres Elevation:

Precision: Within 1.5 miles of the area indicated on the map (location information is vague or uncertain).

Directions: Chalifaux Road west of Rte 3A.

Dates documented

First reported: 1975 Last reported: 1975-05-24

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Plant Record

arrow-head rattlebox (*Crotalaria sagittalis*)**Legal Status**

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Not ranked (need more information)

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 1958: In limited numbers. Specimen collected.
General Area: Sandplain.
General Comments: First New Hampshire record.
Management: --
Comments:

Location

Survey Site Name: Merrimack River
Managed By: Hi-Tension Realty Corp.

County: Hillsborough
Town(s): Nashua
Size: 4586.1 acres Elevation:

Precision: Within 1.5 miles of the area indicated on the map (location information is vague or uncertain).

Directions: Nashua, Merrimack River. Sandplain of western side of Merrimack River ca. 1 to 2 miles south of city.

Dates documented

First reported: 1958-09-11 Last reported: 1958-09-11

New Hampshire Natural Heritage Bureau - Plant Record

river birch (*Betula nigra*)**Legal Status**

Federal: Not listed
State: Listed Threatened

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Poor quality, condition and/or landscape context ('D' on a scale of A-D).
Comments on Rank: 1 tree seen.

Detailed Description: 1985: 1 tree found, vigorous and mature. On a bench 15 feet above the river.
General Area: Moist bottom land in open light of western aspect. With *Acer saccharinum*, *Quercus rubra*.
General Comments: Searches farther upstream are needed.
Management: --
Comments:

Location

Survey Site Name: Riverbluff West of Chalifoux Road
Managed By:

County: Hillsborough
Town(s): Hudson
Size: 2.8 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Small, steep bluff along the Merrimack River, due west of Chalifoux Road, just north of 'Sander's'.

Dates documented

First reported: 1985 Last reported: 1985-06-07

New Hampshire Natural Heritage Bureau - Plant Record

wild lupine (*Lupinus perennis* ssp. *perennis*)**Legal Status**

Federal: Not listed
 State: Listed Threatened

Conservation Status

Global: Apparently secure but with cause for concern
 State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
 Comments on Rank: --

Detailed Description: 2005: 8 plants (clump of stems apparently rising from a common rootstock) with 42 stems, 60% mature and 40% seedlings or immature. Scattered over a more than 0.1 ha area. 30% were vegetative, 20% had mature fruit, and the remainder were in bud (5%), in flower (35%), or with immature fruit (10%). Most of the plants growing in the open had been partially cut by mowing (35% of the population).

General Area: 2005: Human-maintained grassland, probably former ***pitch pine - scrub oak woodland***, and wooded edge. Dominant species are *Festuca rubra* (red fescue), *Schizachyrium scoparium* (little bluestem), *Quercus alba* (white oak), *Q. rubra* (red oak), and *Q. coccinea* (scarlet oak). Other associated species include *Danthonia spicata* (poverty oatgrass), *Hieracium* spp. (hawkweed), *Acer rubrum* (red maple), *Carex tonsa* (shaved sedge), *Rumex acetosella* (red sorrel), *Oenothera perennis* (small evening primrose), *Lechea intermedia* (intermediate pinweed), *Achillea millefolium* (yarrow), and *Carex pensylvanica* (Pennsylvanian sedge).

General Comments: --

Management Comments: 2005: Routine, regular mowing occurs. For the more exposed plants, mowing had removed flowers/fruit, preventing fruit maturity and seed dispersal. Recommend delaying mowing until October 1, and avoiding chemical applications, spills, re-grading, plowing, or fill.

Location

Survey Site Name: Boire Field Airport
 Managed By:

County: Hillsborough

Town(s): Nashua

Size: 1.8 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2005: Take NH Rte. 101A south to Charron Ave. in Nashua. Turn right on Pine Hill Rd., then right onto Perimeter Rd. and continue to an airport gate (prior permission required). Plants are in a grassy area near woods at the NE edge of the grass runway at the SE end of the airport property.

Dates documented

First reported: 2005-06-23

Last reported: 2005-06-23

New Hampshire Natural Heritage Bureau - Plant Record

wild lupine (*Lupinus perennis* ssp. *perennis*)**Legal Status**

Federal: Not listed
State: Listed Threatened

Conservation Status

Global: Apparently secure but with cause for concern
State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Poor quality, condition and/or landscape context ('D' on a scale of A-D).
Comments on Rank: Single non-flowering plant.

Detailed Description: 2018: Searched for but not found. 2010: 1 vegetative plant, vigor feeble. 2009: 1 vegetative plant. 2006: 2 plants, one in flower.

General Area: 2010: Similar habitat description. 2009: Slope above railroad tracks. Dominant species are *Pinus strobus* (white pine), *Pinus rigida* (pitch pine), and *Quercus ilicifolia* (scrub oak). Other associated species are *Vaccinium angustifolium* (lowbush blueberry) and *Comptonia peregrina* (sweet fern). Some yard waste and trash dumping in the vicinity from houses upslope. 2006: Associated species include: lowbush blueberry (*Vaccinium angustifolium*), scrub oak (*Quercus ilicifolia*) and sweet fern (*Comptonia peregrina*).

General Comments: --

Management Comments: 2009: Far enough from railroad tracks that it should not be affected by train travel or foot traffic on the tracks.

Location

Survey Site Name: Short Ave
Managed By:

County: Hillsborough
Town(s): Nashua
Size: .4 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2010, 2009: From Broad Street heading east turn left onto Blue Hill Avenue/Pine Hill Rd. At a sharp curve in the road park at a dirt parking area next to the railroad tracks. Go to the train tracks and head SE toward Broad St. Go about 193 railroad ties and the plant is on the east side of the tracks just below the end of the cemetery fence, which runs along the top of the slope (42.771333N, 71.489683W).

Dates documented

First reported: 2006-06-26 Last reported: 2010-06-14

New Hampshire Natural Heritage Bureau - Plant Record

wild lupine (*Lupinus perennis* ssp. *perennis*)**Legal Status**

Federal: Not listed
State: Listed Threatened

Conservation Status

Global: Apparently secure but with cause for concern
State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 1965: Specimen collected.
General Area: 1965: Roadside sandy area near river.
General Comments: --
Management: --
Comments:

Location

Survey Site Name: Nashua, near Nashua River
Managed By:

County: Hillsborough
Town(s): Nashua
Size: 1161.3 acres Elevation:

Precision: Within 1.5 miles of the area indicated on the map (location information is vague or uncertain).

Directions: "Along Hollis Depot Road in sandy area. Vicinity of Nashua River."

Dates documented

First reported: 1965 Last reported: 1965-06-30

New Hampshire Natural Heritage Bureau - Animal Record

Eastern Box Turtle (*Terrapene carolina*)**Legal Status**

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2017-2019: Turtle 7010: Radiotracked female. Turtle 7011: Radiotracked male. Turtle 7012: Radiotracked male. Turtle 7013: Radiotracked female. Turtle 7014: Radiotracked female. 2016: Adult male tracked via telemetry. Initial capture on 6/2. First recapture on 6/7. Second recapture on 6/30. Second adult male captured and tagged on 9/9. 2014: Adult female tracked via telemetry. Believed to have laid eggs during telemetry survey, but no direct evidence.

General Area: 2016: Powerline right-of-way with dense shrub cover. Appalachian oak - pine forest on either side of right-of-way. 2014: Moving between woods and adjacent powerline corridor.

General Comments: --
Management: --
Comments:

Location

Survey Site Name: Musquash Brook
Managed By: Hamblett

County: Hillsborough
Town(s): Hudson
Size: 45.5 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: --

Dates documented

First reported: 2014-06-18
Last reported: 2019-09-10

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

APPENDIX F

Site Photo Log



LANGAN

888 Boylston Street, Suite 510
Boston, MA 02199

T: 617.824.9100 F: 617.824.9101 www.langan.com

Langan Engineering & Environmental Services, Inc.
Langan Engineering, Environmental, Surveying, Landscape
Architecture and Geology, D.P.C.

Langan International
Collectively known as Langan

Project

**HUDSON LOGISTICS
CENTER**
HUDSON

HILLSBOROUGH
COUNTY

NEW HAMPSHIRE

Drawing Title

**PHOTO LOCATION
MAP**

Project No.

151010101

Date

03/26/2020

Scale

1" = 1,000'

Drawn By

MG

Submission Date

Figure

1



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9



Photo 10



Photo 11



Photo 12



Photo 13



Photo 14



Photo 15



Photo 16



Photo 17



Photo 18



Photo 19



Photo 20

APPENDIX G

Groundwater Recharge Volume Calculations

Water Quality Volume and Groundwater Recharge Volume Summary

Water Quality Volume & Groundwater Recharge Compliance (CF)		
WQv		In Excess of Required
Required	513,757	
90% TSS Provided	795,765	282,008
80% TSS Provided	30,000	30,000
TBD% TSS Dry Ext. Det.	143,256	143,256
GRv		
Required	130,733	
Total Provided	795,765	665,032

Notes

- Required Groundwater Recharge Volumes based on the NHDES worksheet "Groundwater Recharge Volume (GRV) Calculation" worksheet found in appendix F of this report.
- Provided Groundwater Recharge Volume is based on the volume of water captured by infiltration features below the lowest out opportunity from the feature.
- Additional detail and explanation can found in the attach Stormwater Management Report.

APPENDIX H

BMP Worksheets



INFILTRATION PRACTICE CRITERIA (Env-Wq 1508.06)

Type/Node Name: **Infiltration Basin A1-2**

Enter the type of infiltration practice (e.g., basin, trench) and the node name in the drainage analysis, if applicable

Yes		Have you reviewed Env-Wq 1508.06(a) to ensure that infiltration is allowed?	
22.71	ac	A = Area draining to the practice	
13.00	ac	A _I = Impervious area draining to the practice	
0.57	decimal	I = percent impervious area draining to the practice, in decimal form	
0.57	unitless	R _v = Runoff coefficient = 0.05 + (0.9 x I)	
12.84	ac-in	WQV = 1" x R _v x A	
46,593	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
11,648	cf	25% x WQV (check calc for sediment forebay volume)	
Sed. Forebay		Method of pretreatment? (not required for clean or roof runoff)	
12,114	cf	V _{SED} = sediment forebay volume, if used for pretreatment	← ≥ 25%WQV
251,423	cf	V = volume ¹ (attach a stage-storage table)	← ≥ WQV
14,200	sf	A _{SA} = surface area of the bottom of the pond	
1.50	iph	K _{sat} _{DESIGN} = design infiltration rate ²	
26.2	hours	T _{DRAIN} = drain time = V / (A _{SA} * I _{DESIGN})	← ≤ 72-hrs
118.00	feet	E _{BTM} = elevation of the bottom of the basin	
114.75	feet	E _{SHWT} = elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
106.00	feet	E _{ROCK} = elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
3.25	feet	D _{SHWT} = separation from SHWT	← ≥ * ³
12.0	feet	D _{ROCK} = separation from bedrock	← ≥ * ³
	ft	D _{amend} = Depth of amended soil, if applicable due high infiltration rate	← ≥ 24"
	ft	D _T = depth of trench, if trench proposed	← 4 - 10 ft
	Yes/No	If a trench or underground system is proposed, observation well provided ⁴	
		If a trench is proposed, material in trench	
On-site Soils		If a basin is proposed, basin floor material	
Yes	Yes/No	If a basin is proposed, the perimeter should be curvilinear, basin floor shall be flat.	
4.0	:1	If a basin is proposed, pond side slopes	← ≥ 3:1
125.41	ft	Peak elevation of the 10-year storm event (infiltration can be used in analysis)	
127.92	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
129.00	ft	Elevation of the top of the practice (if a basin, this is the elevation of the berm)	
YES		10 peak elevation ≤ Elevation of the top of the trench? ⁵	← yes
YES		If a basin is proposed, 50-year peak elevation ≤ Elevation of berm?	← yes

1. Volume below the lowest invert of the outlet structure and excludes forebay volume
2. K_{sat}_{DESIGN} includes a factor of safety. See Env-Wq 1504.14 for requirements for determining the infiltr. rate
3. 1' separation if treatment not required; 4' for treatment in GPAs & WSIPAs; & 3' in all other areas.
4. Clean, washed well graded diameter of 1.5 to 3 inches above the in-situ soil.
5. If 50-year peak elevation exceeds top of trench, the overflow must be routed in HydroCAD as secondary discharge.

Designer's Notes:

Multiple Teirs in Pond, only lowest bottom of pond area (elevation 118) used in Drain Time calculation