Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

November 5, 2019

TFM Project No: 47361.00

Juliette Walker, Planning Director
Portsmouth Planning Department
City Hall, 3rd Floor
1 Junkins Avenue
Portsmouth, NH 03801

Re: TAC Review for Condominium Development, Banfield Road, Tax Map 256, Lot 2

Dear: Juliette,

On behalf of our client, Green & Company, we are submitting the following plans and materials for review by the Technical Advisory Committee (TAC). Included with this letter are the following materials:

- Letter of Authorization
- Site Plan Check List
- Subdivision Check List
- Abutters List
- Summary of Fees
- Cost Estimate
- 10 Copies: Waiver Application
- 10 Copies: Traffic Memorandum
- 9 Copies: 11"x17" Plan Set of the "The Village at Banfield Woods", Banfield Road, Portsmouth, NH, Tax Map 256, Lot 2, Dated September 25, 2019, last revised December 23, 2019.
- 1 Copies: 22"x34" Plan Set of the "The Village at Banfield Woods", Banfield Road, Portsmouth, NH, Tax Map 256, Lot 2, Dated September 25, 2019, last revised December 23, 2019.
- 10 Copies: Architectural Plans
- 10 Copies Impact of "Proposed Septic Systems on Wetlands and Impact of the Project on Wildlife", Dated November 2019.
- 10 Copies Impact of "Technical Report of Wetland Functions and Values", Dated June 27, 2019.
- 10 Copies: New Ecopassages to Help Critters Cross the Roads
- 10 Copies: Rendering of Ecopassage at The Village at Banfield Woods
- 10 Copies: Renderings of The Village at Banfield Woods
- 10 Copies: Condominium Documents

- Electronic Copy: Video of
- Electronic Copy: Drainage Report

This proposal is for a multi-family Condominium Site Plan consisting of 22 single-family dwelling units and 1,250 lf of private roadway. This project has been presented before the Technical Advisory Committee, the Planning Board, and the Conservation Commission earlier this year in work sessions. It has also been reviewed by the Conservation Commission at their October 9th, 2019 and December 11th Meetings.

During a meeting on October 18th with planning staff, it was recommended to narrow the roadway from 28' wide (two 12' lanes and a 4' walkway) to 20' wide (two 10' lanes). This is shown on the current set of plans.

We have also attended the November 12th TAC Work Session, where we discussed changes made to the plans based on the Conservation Commission requests and staff input. These included using open grated wildlife passages, narrower roadway, underground stormwater treatment in the roadway and shifting the alignment. These plans reflect the suggested changes and no further concerns were brought up by TAC at the review session.

We look forward to discussing this project with you and the rest of TAC on January 7th, 2020 meeting.

Sincerely,
MSC a division of TFMoran, Inc.

John McTigue, PE, CPESC
Project Manager

THE VILLAGE AT BANFIELD WOODS

BANFIELD ROAD
PORTSMOUTH, NEW HAMPSHIRE

SEPTEMBER 25, 2019
LAST REVISED DECEMBER 23, 2019

GENERAL INFORMATION

OWNER
MAP 256 LOT 2
MAUD HETT REVOCABLE TRUST
334 HUDSON ROAD
STOWE, MA 01775

APPLICANT/PREPARED FOR
MAP 256 LOT 2
GREEN AND COMPANY REAL ESTATE
RICK GREEN
11 LAFAYETTE RD, SUITE X
NORTH HAMPTON, NH 03868

RESOURCE LIST

PLANNING/ZONING DEPARTMENT
1 JUNKINS AVE
PORTSMOUTH, NH 03801
603-610-7216
JULIET WALKER, PLANNING DIRECTOR

BUILDING DEPARTMENT
1 JUNKINS AVE
PORTSMOUTH, NH 03801
603-610-7243
ROBERT MARSILIA,
CHIEF BUILDING INSPECTOR

PUBLIC WORKS
600 PEVERLY HILL RD
PORTSMOUTH, NH 03801
603-427-1530
PETER RICE, PUBLIC WORKS DIRECTOR

POLICE DEPARTMENT
3 JUNKINS AVE
PORTSMOUTH, NH 03801
603-427-1510
ROBERT MERNER, CHIEF

FIRE DEPARTMENT
170 COURT STREET
PORTSMOUTH, NH 03801
603-427-1515
TODD GERMAIN, CHIEF

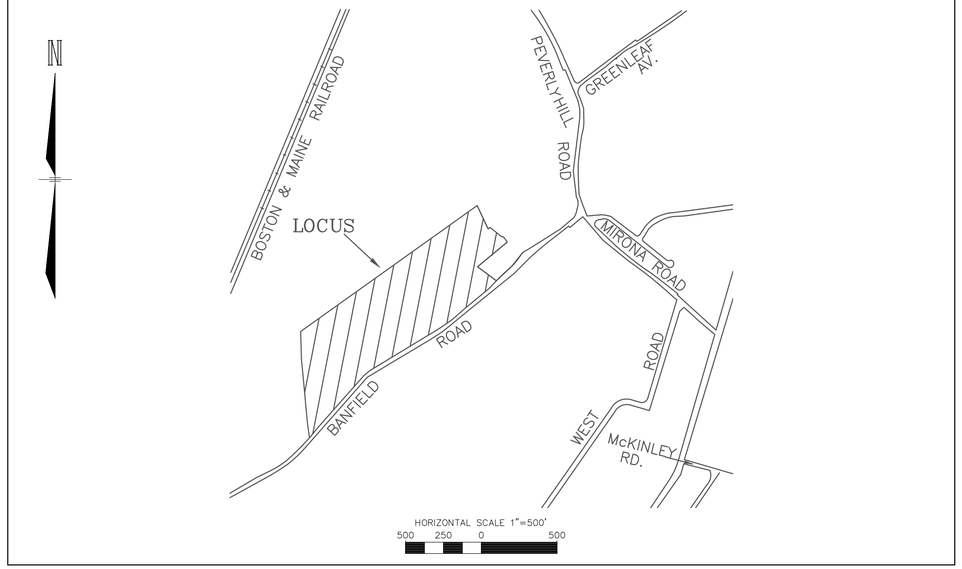
ASSOCIATED PROFESSIONALS

ENVIRONMENTAL SERVICES
GOVE ENVIRONMENTAL SERVICES
8 CONTINENTAL DRIVE
BUILDING 2 – UNIT H
EXETER, NH 03833

SOIL SCIENTIST
GOVE ENVIRONMENTAL SERVICES, INC.
8 CONTINENTAL DRIVE
BUILDING 2 – UNIT H
EXETER, NH 03833
JIM GOVE, CERTIFIED SOIL SCIENTIST

TRAFFIC ENGINEER
STEPHEN G. PERNAW
& COMPANY, INC.
PO BOX 1721
CONCORD, NH 03302
(603) 731-8500
STEPHEN G. PERNAW, PE, PTOE

VICINITY PLAN



INDEX OF SHEETS

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2
COVER
THE VILLAGE AT BANFIELD WOODS
PORTSMOUTH, NH
OWNED BY
WALTER D HETT TRUST
PREPARED FOR
GREEN & COMPANY REAL ESTATE

SCALE: NTS **SEPTEMBER 25, 2019**

DIG SAFE
CONTACT DIG SAFE TO BUSINESS HOURS PRIOR TO CONSTRUCTION

THESE PLANS ARE PERMIT DRAWINGS ONLY AND HAVE NOT BEEN DETAILED FOR CONSTRUCTION OR BIDDING.

REV.	DATE	DESCRIPTION	DR	CK
2	12/27/2019	IN HOUSE REVISIONS	RCK	JJM
1	12/23/19	REVISED PER REGULATORY COMMENTS	RCK	JJM

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

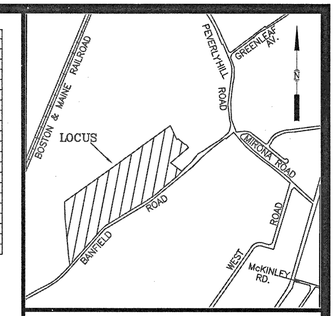
FILE	DR	RCK	FB	–	
47361.00	CK	JJM	CADFILE	COVER	C-00

Dec 27, 2019 - 11:21am
F:\MSC Projects\47361 - Banfield Road - Portsmouth\47361-00 - Green & Co - Banfield Road\Design\Production Drawings\Cover.dwg

SOILS LEGEND:		
SSSS SYMBOL	SSSS MAP NAME	HYDROLOGIC SOIL GROUP
41	CHATFIELD–HOLLIS–ROCK OUTCROP COMPLEX	B
135	CHATFIELD VARIANT–NEWFIELDS COMPLEX	C
538	SQUAMSCOTT FINE SANDY LOAM	C
656	RIDGEBURY FINE SANDY LOAM	C

SOILS LEGEND:	
SLOPE PHASE:	ALPHA SLOPE SYMBOL
0–8%	B
8–15%	C
15–25%	D
25%+	E

LINE	BEARING	DISTANCE
L1	N 14°03'49" W	163.61'
L2	N 62°46'56" E	140.17'
L3	N 60°47'10" E	74.31'
L4	N 61°20'44" E	105.56'
L5	N 60°58'42" E	115.75'
L6	S 40°08'01" E	22.98'
L7	S 48°30'23" E	159.80'
L8	S 45°44'06" E	110.28'
L9	S 58°19'16" W	135.27'
L10	S 53°23'55" W	154.49'
L11	S 51°04'17" W	145.81'
L12	S 46°41'16" W	83.08'
L13	S 48°05'39" W	99.00'
L14	S 52°42'36" W	173.00'
L15	S 57°03'44" W	173.81'
L16	S 60°20'11" W	108.27'
L17	S 57°50'14" W	143.89'
L18	S 59°00'53" W	162.66'
L19	S 60°14'59" W	117.98'
L20	S 59°39'51" W	113.08'
L21	S 58°23'21" W	76.30'



LOCATION PLAN

NOTES:

1. THE PARCEL IS LOCATED IN THE SINGLE RESIDENCE A (SRA) ZONING DISTRICT.
2. THE PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 256 AS LOT 2.
3. THE PARCEL IS LOCATED IN ZONE X AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP), FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, PANEL 270 OF 681, MAP NUMBER 33015C0270E, WITH AN EFFECTIVE DATE OF MAY 17, 2005.
4. DIMENSIONAL REQUIREMENTS:

	REQUIRED:
MINIMUM LOT SIZE:	1 ACRE
LOT AREA PER DWELLING UNIT:	1 ACRE
CONTINUOUS STREET FRONTAGE:	150'
LOT DEPTH:	200'
MINIMUM YARD DIMENSIONS:	
FRONT:	30'
SIDE:	20'
REAR:	40'
MAXIMUM STRUCTURE DIMENSIONS:	
STRUCTURE HEIGHT:	35'(SLOPED ROOF) 30'(FLAT ROOF)
BUILDING COVERAGE:	10%
MINIMUM OPEN SPACE:	50%

PER THE CITY OF PORTSMOUTH ZONING ORDINANCE SECTION 10.520.

5. OWNER OF RECORD:
MAP 256 LOT 2:
THE WALTER D. HETT TRUST
WALTER D. HETT, TRUSTEE
334 HUDSON ROAD
STOW, MA 01775
RCRD BK.#4553 PG.#432
6. PARCEL AREA:
MAP 256 LOT 2:
1,955,150 S.F.
(44.884 ACRES)
7. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
8. THE PURPOSE OF THIS PLAN IS TO SHOW THE BOUNDARY LINES, TOPOGRAPHY AND CURRENT SITE FEATURES OF MAP 256 LOT 2.
9. FIELD SURVEY COMPLETED BY TCE AND EJS IN MAY & JUNE 2019 USING A TOPCON DS103 AND A TOPCON FC-5000 DATA COLLECTOR.
10. HORIZONTAL DATUM IS NAD83 (2011) PER STATIC GPS OBSERVATIONS. THE VERTICAL DATUM IS NAVD88 (GEOID12B) PER STATIC GPS OBSERVATIONS. THE CONTOUR INTERVAL IS 2 FEET.
11. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD DETERMINE.
12. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN, INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE.
13. WETLAND DELINEATION WAS COMPLETED BY GOVE ENVIRONMENTAL SERVICES IN MAY, 2019 IN ACCORDANCE WITH THE 1987 ARMY CORP OF ENGINEERS WETLAND MANUAL AND THE 2012 REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION. FIELD LOCATED BY TFMORAN, INC.
14. SEE SHEET C-02 FOR TEST PIT & LEDGE PROBE LOGS.
15. SOILS 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.
THE SITE SPECIFIC SOIL SURVEY (SSSS) WAS PRODUCED DECEMBER 19, 2019 AND WAS PREPARED BY JAMES P. GOVE, CSS # 004, GOVE ENVIRONMENTAL SERVICES, INC. THE SURVEY AREA IS LOCATED ON BANFIELD ROAD, PORTSMOUTH, NH.
SOILS WERE IDENTIFIED WITH THE NEW HAMPSHIRE STATE–WIDE NUMERICAL SOILS LEGEND, USDA NRCS, DURHAM, NH. ISSUE # 10, JANUARY 2011. THE NUMERIC LEGEND WAS AMENDED TO IDENTIFY THE CORRECT SOIL COMPONENTS OF THE COMPLEX.
HYDROLOGIC SOIL GROUP FROM KSAT VALUES FOR NEW HAMPSHIRE SOILS, SOCIETY OF SOIL SCIENTISTS OF NEW ENGLAND, SPECIAL PUBLICATION NO. 5, SEPTEMBER, 2009.

PLAN REFERENCES:

1. "SUBDIVISION PLAN FOR WALTER D. HETT & THE TEMPLE OF ISRAEL BANFIELD ROAD COUNTY OF ROCKINGHAM PORTSMOUTH, NH", BY MILLETTE, SPRAGUE, AND COLWELL, INC. DATED JUNE 25, 1999 WITH REVISION 3 DATED 12/02/99. RCRD PLAN D–27695.
2. "PROPERTY OF SWIFTWATER GIRL SCOUT COUNCIL, CITY OF PORTSMOUTH" BY JON MOORE DATED AUGUST 1972. RCRD PLAN D–3206

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY THOSE UNDER MY DIRECT SUPERVISION AND ARE THE RESULT OF A FIELD SURVEY CONDUCTED IN JUNE 2019. THIS SURVEY CONFORMS TO THE ACCURACY REQUIREMENTS OF AN URBAN SURVEY OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS. I FURTHER CERTIFY THAT THIS SURVEY IS CORRECT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, AND THE FIELD TRAVERSE SURVEY EXCEEDS A PRECISION OF 1:15,000.

STATE OF NEW HAMPSHIRE · No. 844 · J. COREY COLWELL · SIGNATURE · LICENSED LAND SURVEYOR

12-23-19
DATE

LEGEND:

MAP 254 LOT 1	
AG	ASSESSOR'S MAP NUMBER/ LOT NUMBER
BG	ABOVE GRADE
BK./PG.	BELOW GRADE
EL	BOOK/PAGE
ES	ELEVATION
NRP	EVERSOURCE
I	NATURAL RESOURCE PROTECTION
INV.	INDUSTRIAL
DI	INVERT
LP	DUCTILE IRON
N/F	LEDGE PROBE
PSNH	NOW OR FORMERLY
R	PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
RCP	RURAL
RCRD	REINFORCED CONCRETE PIPE
SRA	ROCKINGHAM COUNTY REGISTRY OF DEEDS
S.F.	SINGLE RESIDENCE A
TBM	SQUARE FEET
TP	TEMPORARY BENCH MARK
	TEST PIT
	TEST PIT/LEDGE PROBE
	MAILBOX
	GUY WIRE
	HYDRANT
	SIGN
	UTILITY POLE W/LIGHT
	UTILITY POLE
	WATER SHUTOFF VALVE
	WATER VALVE
	GAS VALVE
	BOULDER
	PROPERTY LINE
	DRAIN LINE
	EXISTING CONTOUR
	GAS LINE
	OVERHEAD UTILITY LINE
	WATER MAIN
	CHAINLINK FENCE
	STONEWALL
	TREELINE
	WETLAND SETBACK
	EDGE OF WETLAND
	SOILS LINE
	PAVEMENT
	12' RIGHT OF WAY
	WETLANDS
	EXPOSED LEDGE
	100' WIDE ELECTRIC EASEMENT

Graphic Scale in Feet (100 0 100)

REV.	DATE	DESCRIPTION	DR	CK
3	12/23/19	ADDED SOIL MAPPING	MVP	BMK
2	11/11/19	UPDATED WETLAND & BUFFER	MVP	BMK
1	10/2/19	ADDED TEST PIT & LEDGE PROBE LOCATIONS	MVP	BMK

TAX MAP 256 LOT 2
EXISTING CONDITIONS PLAN
BANFIELD ROAD
PORTSMOUTH, NEW HAMPSHIRE
COUNTY OF ROCKINGHAM
OWNED BY
THE WALTER D. HETT TRUST
PREPARED FOR
GREEN & COMPANY REAL ESTATE

SCALE: 1" = 100' (22x34)
1" = 200' (11x17)
SEPTEMBER 25, 2019

TFM MSC — A division of TFMoran, Inc.
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431–2222
Fax (603) 431–0910
www.tfmoran.com

FILE	DR	EJS	FB		
47361-00	CK	BMK	CADFILE	559	S-01

DIG SAFE — MA ME NH RI VT — UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM — CALL 811 TOLL FREE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

Dec 23, 2019 - 8:56am
F:\MSC Projects\47361 - Banfield Road - Portsmouth\47361-00 - Green & Co - Banfield Road\Carlson Survey\Dwgs\47361-00 Survey.dwg

TEST PIT LOG

SITE: BANFIELD RD, PORTSMOUTH
LOGGED BY: JAMES GOVE & BRENDEN WALDEN
DATE: 8/29 & 8/30, 2019

Test Pit #1:
0–8 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
8–30 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: 30 INCHES REFUSAL: 30 INCHES OBSERVED WATER: N/A

Test Pit #2:
0–9 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
9–28 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: 28 INCHES REFUSAL: 28 INCHES OBSERVED WATER: N/A

Test Pit #3:
0–10 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
10–30 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
30–57 INCHES, 2.5Y 5/3, FINE SANDY LOAM, GRANULAR, FRIABLE,
WITH 20% REDOX CONCENTRATIONS
ESHWT: 30 INCHES REFUSAL: 57 INCHES OBSERVED WATER: N/A

Test Pit #4:
0–8 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
8–24 INCHES, 10YR 4/6, FINE SANDY LOAM GRANULAR, FRIABLE
ESHWT: 24 INCHES REFUSAL: 44 INCHES OBSERVED WATER: N/A

Test Pit #5:
0–6 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
6–25 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
25–51 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM,
WITH 10% REDOX CONCENTRATIONS
ESHWT: 25 INCHES REFUSAL: 51 INCHES OBSERVED WATER: N/A

Test Pit #6:
0–8 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
8–28 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
28–60 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM,
WITH 20% REDOX CONCENTRATIONS
ESHWT: 28 INCHES REFUSAL: N/A OBSERVED WATER: N/A

Test Pit #7:
0–10 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
10– 41 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
41–64 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM,
WITH 10% REDOX CONCENTRATIONS
ESHWT: 41 INCHES REFUSAL: N/A OBSERVED WATER: N/A

Test Pit #8:
0–7 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
7–28 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
28–53 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM,
WITH 20% REDOX CONCENTRATIONS
ESHWT: 28 INCHES REFUSAL: 53 INCHES OBSERVED WATER: N/A

Test Pit #10:
0–8 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
8–36 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
36–68 INCHES, 2.5Y 5/3, FINE SANDY LOAM, MASSIVE, FRIABLE,
WITH 20% REDOX CONCENTRATIONS
ESHWT: 36 INCHES REFUSAL: N/A OBSERVED WATER: N/A

Test Pit #11:
0–8 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
8–28 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
28–64 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM,
WITH 10% REDOX CONCETRATIONS
ESHWT: 28 INCHES REFUSAL: 64 INCHES OBSERVED WATER: N/A

Test Pit #13:
0–10 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
10–32 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
32–61 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM,
WITH 10% REDOX CONCENTRATIONS
ESHWT: 32 INCHES REFUSAL: 61 INCHES OBSERVED WATER: N/A

Test Pit #14A:
0–10 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
10–23 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
23–44 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM,
WITH 20% REDOX CONCENTRATIONS
ESHWT: 23 INCHES REFUSAL: 44 INCHES OBSERVED WATER: N/A

Test Pit #14B:
0–6 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
6–32 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
32–57 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM,
WITH 10% REDOX CONCENTRATIONS
ESHWT: 32 INCHES REFUSAL: 57 INCHES OBSERVED WATER: N/A

TEST PIT LOG

SITE: BANFIELD RD, PORTSMOUTH
LOGGED BY: JAMES GOVE & BRENDEN WALDEN
DATE: 8/29 & 8/30, 2019

Test Pit #15:
0–14 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
14–28 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
28–60 INCHES, 2.5Y 5/3, FINE SANDY LOAM, MASSIVE, FIRM,
WITH 40% REDOX CONCENTRATIONS
ESHWT: 28 INCHES REFUSAL: 60 INCHES OBSERVED WATER: N/A

Test pit #16:
0–5 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
5–24 INCHES, 10YR 4/4, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: 24 INCHES REFUSAL: 24 INCHES OBSERVED WATER: N/A

Test Pit #17:
0–6 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
6–34 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
34–60 INCHES, 2.5Y 5/3, FINE SANDY LOAM, MASSIVE, FRIABLE,
WITH 10% REDOX CONCENTRATIONS
ESHWT: 34 INCHES REFUSAL: 60 INCHES OBSERVED WATER: N/A

Test Pit #18:
0–6 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
6–22 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
22–50 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM,
WITH 10% REDOX CONCENTRATIONS
ESHWT: 22 INCHES REFUSAL: 50 INCHES OBSERVED WATER: N/A

Test Pit #19:
0–7 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
7–24 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: 24 INCHES REFUSAL: 24 INCHES OBSERVED WATER: N/A

Test Pit #21:
0–10 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
10–21 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
21–48 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM,
WITH 10% REDOX CONCENTRATIONS
ESHWT: 21 INCHES REFUSAL: 40 INCHES OBSERVED WATER: N/A

Test Pit #22:
0–6 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
6–20 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
20–58 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM,
WITH 10% REDOX CONCENTRATIONS
ESHWT: 20 INCHES REFUSAL: 58 INCHES OBSERVED WATER: N/A

Test Pit #E1:
0–10 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
10–22 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
22–51 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM,
WITH 20% REDOX CONCENTRATIONS
ESHWT: 22 INCHES REFUSAL: 51 INCHES OBSERVED WATER: N/A

Test Pit #E2:
0–5 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
5–28 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: 28 INCHES REFUSAL: 28 INCHES OBSERVED WATER: N/A

Test Pit #E3:
0–8 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
8–32 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
32–74 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM,
WITH 10% REDOX CONCENTRATIONS
ESHWT: 32 INCHES REFUSAL: 74 INCHES OBSERVED WATER: N/A

Test Pit #E4:
0–9 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
9–28 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
28–50 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM,
WITH 10% REDOX CONCENTRATIONS
ESHWT: 28 INCHES REFUSAL: 50 INCHES OBSERVED WATER: N/A

Test Pit #E8:
0–8 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
8–27 INCHES, 2.5Y 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
27–62 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM,
WITH 10% REDOX CONCENTRATIONS
ESHWT: 27 INCHES REFUSAL: N/A OBSERVED WATER: N/A

Test Pit #100:
0–10 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
10–28 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
28–54 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM,
WITH 10% REDOX CONCENTRATIONS
ESHWT: 28 INCHES REFUSAL: 54 INCHES OBSERVED WATER: N/A

Test Pit #600:
0–8 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
8–21 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
21–47 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM,
WITH 10% REDOX CONCENTRATIONS
47–60 INCHES, 2.5Y 5/2, SILT LOAM, MASSIVE, FIRM,
WITH 30% REDOX CONCENTRATIONS
ESHWT: 21 INCHES REFUSAL: N/A OBSERVED WATER: N/A

TEST PIT LOG

SITE: BANFIELD RD, PORTSMOUTH
LOGGED BY: BRENDEN WALDEN, LUKE HURLEY & MIKE COUMO
DATE: OCTOBER, 2019

TEST PIT #5023:
0–2 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
2–24 INCHES, 10YR 5/6, FINE SANDY LOAM, GRANULAR, FRIABLE
24–36 INCHES, 2.5Y 4/4, FINE SANDY LOAM, GRANULAR, FRIABLE
36–44 INCHES, 2.5Y 4/4, FINE SANDY LOAM, GRANULAR, FRIABLE, WITH
10% REDOX CONCENTRATIONS
ESHWT: 36 INCHES REFUSAL: 44 INCHES OBSERVED WATER: N/A

TEST PIT #5024:
0–4 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
4–18 INCHES, 2.5Y 6/4, FINE SANDY LOAM, GRANULAR, FRIABLE
18–32 INCHES, 2.5Y 5/4, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: N/A REFUSAL: 32 INCHES OBSERVED WATER: N/A

TEST PIT #5025:
0–3 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
3–7 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
7–32 INCHES, 10YR 4/4, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: N/A REFUSAL: 32 INCHES OBSERVED WATER: N/A

TEST PIT #5026:
0–2 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
2–6 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
6–22 INCHES, 10YR 5/6, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: N/A REFUSAL: 22 INCHES OBSERVED WATER: N/A

TEST PIT #5027:
0–3 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
3–20 INCHES, 10YR 5/5, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: N/A REFUSAL: 20 INCHES OBSERVED WATER: N/A

TEST PIT #5028:
0–2 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
2–4 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
4–36 INCHES, 10YR 4/4, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: N/A REFUSAL: 36 INCHES OBSERVED WATER: N/A

TEST PIT # 5029:
0–2 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
2–8 INCHES, 10YR 4/3, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
8–24 INCHES, 10YR 5/4, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
24–40 INCHES, 2.5Y 6/4, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
40–44 INCHES, 2.5Y 6/4, GRAVELY FINE SANDY LOAM, GRANULAR FRIABLE, WITH 10% REDOX CONCENTRATIONS
ESHWT: 40 INCHES REFUSAL: 44 INCHES OBSERVED WATER: N/A

TEST PIT #5030:
0–3 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
3–8 INCHES, 2.5Y 6/4, FINE SANDY LOAM, GRANULAR, FRIABLE
8–30 INCHES, 2.5Y 7/4, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
30–40 INCHES, 2.5Y 6/4, GRAVELY FINE SANDY LOAM, MASSIVE, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT: 30 INCHES REFUSAL: 40 INCHES OBSERVED WATER: N/A

TEST PIT #5031:
0–5 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
5–12 INCHES, 10YR 4/4, FINE SANDY LOAM, GRANULAR, FRIABLE
12–24 INCHES, 2.5Y 5/4, FINE SANDY LOAM, GRANULAR, FRIABLE
24–40 INCHES, 2.5Y 6/4, FINE SANDY LOAM, MASSIVE, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT: 24 INCHES REFUSAL: 40 INCHES OBSERVED WATER: N/A

TEST PIT #5032:
0–3 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
3–6 INCHES, 10YR 4/4, FINE SANDY LOAM, GRANULAR, FRIABLE
6–14 INCHES, 2.5Y 5/4, FINE SANDY LOAM, GRANULAR, FRIABLE
14–36 INCHES, 2.5Y 6/4, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: N/A REFUSAL: 36 INCHES OBSERVED WATER: N/A

TEST PIT #5033:
0–2 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
2–15 INCHES, 10YR 5/6, FINE SANDY LOAM, GRANULAR, FRIABLE
15–23 INCHES, 2.5Y 6/4, FINE SANDY LOAM, GRANULAR, FRIABLE
23–52 INCHES, 2.5Y 4/3, FINE SANDY LOAM, MASSIVE, FIRM, WITH 30% REDOX CONCENTRATIONS
ESHWT: 23 INCHES REFUSAL: N/A OBSERVED WATER: N/A

TEST PIT #5034:
0–4 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
4–20 INCHES, 2.5Y 5/4, FINE SANDY LOAM, GRANULAR, FRIABLE
20–36 INCHES, 2.5Y 5/4, FINE SANDY LOAM, MASSIVE, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT: 20 INCHES REFUSAL: 36 INCHES OBSERVED WATER: N/A

TEST PIT #5035:
0–3 INCHES, 10YR 2/2, FINE SANDY LOAM, GRANULAR, FRIABLE
3–23 INCHES, 2.5Y 5/4, FINE SANDY LOAM, GRANULAR, FRIABLE
23–55 INCHES, 2.5Y 5/2, FINE SANDY LOAM, MASSIVE, FIRM, WITH 25% REDOX CONCENTRATIONS
ESHWT: 23 INCHES REFUSAL: N/A OBSERVED WATER: N/A

TEST PIT #5036:
0–2 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
2–12 INCHES, 10YR 4/4, FINE SANDY LOAM, GRANULAR, FRIABLE
12–26 INCHES, 2.5Y 5/3, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
26–34 INCHES, 2.5Y 5/5, GRAVELY FINE SANDY LOAM, MASSIVE, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT: 26 INCHES REFUSAL: 34 INCHES OBSERVED WATER: N/A

TEST PIT #5037:
0–4 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
4–15 INCHES, 2.5Y 5/4, FINE SANDY LOAM, GRANULAR, FRIABLE
15–34 INCHES, 2.5Y 6/4, FINE SANDY LOAM, GRANULAR, FRIABLE
34–40 INCHES, 2.5Y 6/3, FINE SANDY LOAM, MASSIVE, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT: 34 INCHES REFUSAL: 40 INCHES OBSERVED WATER: N/A

TEST PIT #5038:
0–4 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
4–14 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
14–24 INCHES, 6/4, GRAVELY FINE SANDY LOAM, MASSIVE, FIRM
24–60 INCHES, 2.5Y 5/2, SILT LOAM, BLOCKY, FIRM, WITH 25% REDOX CONCENTRATIONS
ESHWT: 24 INCHES REFUSAL: N/A OBSERVED WATER: N/A

TEST PIT #5038B:
0–2 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
2–14 INCHES, 10YR 5/6, FINE SANDY LOAM, GRANULAR, FRIABLE
14–24 INCHES, 2.5Y 6/4, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
24–29 INCHES, 2.5Y 6/3, FINE SANDY LOAM, MASSIVE, FIRM
29–40 INCHES, 2.5Y 6/3, FINE SANDY LOAM, MASSIVE, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT: 29 INCHES REFUSAL: 40 INCHES OBSERVED WATER: N/A

TEST PIT #5039:
0–3 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
3–24 INCHES, 2.5Y 4/6, FINE SANDY LOAM, GRANULAR, FRIBALE
ESHWT: N/A REFUSAL: 24 INCHES OBSERVED WATER: N/A

TEST PIT #5040:
0–3 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
3–30 INCHES, 2.5Y 5/4, FINE SANDY LOAM, GRANULAR, FRIABLE
30–38 INCHES, 2.5Y 5/6, GRAVELY FINE SANDY LOAM, MASSIVE, FIRM
ESHWT: N/A REFUSAL: 38 INCHES OBSERVED WATER: N/A

TEST PIT #5041:
0–3 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIBALE
3–20 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIBALE
ESHWT: N/A REFUSAL: 20 INCHES OBSERVED WATER: N/A

TEST PIT #5084:
0–6 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
6–24 INCHES, 2.5Y 5/6, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
24–38 INCHES, 2.5Y 5/6, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE, WITH 10% REDOX CONCENTRATIONS
ESHWT: 24 INCHES REFUSAL: 38 INCHES OBSERVED WATER: N/A

TEST PIT #5085:
0–4 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
4–24 INCHES, 10YR 5/6, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: N/A REFUSAL: 24 INCHES OBSERVED WATER: N/A

TEST PIT #5086:
0–6 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
6–24 INCHES, 2.5Y 5/6, FINE SANDY LOAM, GRANULAR, FRIABLE
24–68 INCHES, 2.5Y 5/2, FINE SANDY LOAM, MASSIVE, FIRM, WITH 50% REDOX CONCETRATIONS
ESHWT: 24 INCHES REFUSAL: N/A OBSERVED WATER: N/A

TEST PIT #5093:
0–4 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
4–12 INCHES, 10YR 4/3, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
12–22 INCHES, 10YR 5/4, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
22–36 INCHES, 2.5Y 6/4, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: N/A REFUSAL: 36 INCHES OBSERVED WATER: N/A

TEST PIT #5094:
0–2 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
2–12 INCHES, 2.5Y 5/4, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
12–32 INCHES, 2.5Y 6/4, FINE SANDY LOAM, GRANULAR, FRIABLE
32–54 INCHES, 2.5Y 5/4, FINE SANDY LOAM, PLATY, FIRM, WITH 20% REDOX CONCENTRATIONS
ESHWT: 32 INCHES REFUSAL: 54 INCHES OBSERVED WATER: N/A

TEST PIT #5095:
0–2 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
2–12 INCHES, 2.5Y 6/4, FINE SANDY LOAM, GRANULAR, FRIABLE
12–32 INCHES, 2.5Y 7/4, FINE SANDY LOAM, MASSIVE, FIRM WITH 10% REDOX CONCETRATIONS
ESHWT: 12 INCHES REFUSAL: 32 INCHES OBSERVED WATER: N/A

TEST PIT #5096:
0–3 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
3–16 INCHES, 10YR 5/6, FINE SANDY LOAM, GRANULAR, FRIABLE
16–34 INCHES, 2.5Y 6/4, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: N/A REFUSAL: 34 INCHES OBSERVED WATER: N/A

LEDGE PROBES:

NUMBER	DEPTH (IN)	ELEVATION (FT)
5001	47	39.5
5002	52	37.1
5003	32	41.0
5004	36	40.3
5005	32	46.0
5006	36	46.5
5007	36	46.1
5008	24	48.0
5009	30	50.2
5010	34	45.4
5011	22	46.7
5012	42	59.4
5013	24	58.9
5014	30	61.8
5015	24	62.5
5016	32	47.5
5017	48	46.3
5018	46	41.7
5019	32	43.4
5020	46	42.7
5021	41	35.5
5022	66	33.6

TAX MAP 256 LOT 2
TEST PIT LOGS & LEDGE PROBES
BANFIELD ROAD
PORTSMOUTH, NEW HAMPSHIRE
COUNTY OF ROCKINGHAM
OWNED BY
THE WALTER D. HETT TRUST
PREPARED FOR
GREEN & COMPANY REAL ESTATE

SCALE: N.T.S.

SEPTEMBER 25, 2019

REV.	DATE	DESCRIPTION	DR	CK
3	12/23/19	NO REVISIONS THIS SHEET	MVP	BMK
2	11/11/19	NO REVISIONS THIS SHEET	MVP	BMK
1	10/2/19	ADDED THIS SHEET	MVP	BMK

TFM
MSC
A division of TFMoran, Inc.
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431–2222
Fax (603) 431–0910
www.tfmoran.com

FILE	47361-00	DR	EJS	FB	559	S-02
		CK	BMK	CADFILE		

CITY OF PORTSMOUTH PLANNING BOARD

_____ CHAIRPERSON

_____ DATE

N (NAD83(2011))

MAP 256 LOT 3
N/F
SHIRLEY N. GARRETT REV TRUST 2000
BARBERRY LANE
PORTSMOUTH, NH 03801
RCRD BK. # 4298 PG.#633

MAP 255 LOT 3
N/F
WALTER D. HETT TRUST
334 HUDSON ROAD
STOW, MA 01775
RCRD BK.# 4553 PG.# 0436

MAP 255 LOT 1
N/F
TEMPLE OF ISRAEL
200 STATE STREET
PORTSMOUTH, NH 03801

MAP 256 LOT 2-1
N/F
TEMPLE OF ISRAEL
200 STATE STREET
PORTSMOUTH, NH 03801
RCRD BK.# 3465 PG. # 1111

MAP 256 LOT 1
N/F
SWIFT WATER GIRL SCOUT COUNCIL
ONE COMMERCE DRIVE
BEDFORD, NH 03110
RCRD BK.#2167 PG.#147
RCRD PLAN D-3206

MAP 256 LOT 5
N/F
HOPE FOR TOMORROW FOUNDATION
1 STONERIDGE DRIVE
RYE, NH 03870
RCRD BK. # 5783 PG. # 602

MAP 256 LOT 3
N/F
ANDREW R. & CAROL ANN CROTEAU
285 BANFIELD ROAD
PORTSMOUTH, NH 03801
RCRD BK. # 1843 PG. # 336

MAP 256 LOT 1
N/F
RICCI CONSTRUCTION CO INC
225 BANFIELD ROAD
PORTSMOUTH, NH 03801
RCRD BK. # 2527 PG. # 0322

MAP 266 LOT 2
N/F
DENISE ARNOLD
261 BANFIELD ROAD
PORTSMOUTH, NH 03801
RCRD BK. # 3644 PG. # 1763

MAP 266 LOT 1
N/F
RICCI CONSTRUCTION CO INC
225 BANFIELD ROAD
PORTSMOUTH, NH 03801
RCRD BK. # 2527 PG. # 0322

MAP 254 LOT 2
N/F
T. BEYAR REALTY LLC
14 LAFAYETTE ROAD-PO BOX 695
NORTH HAMPTON, NH 03842
RCRD BK.# 4004 PG.# 0763

MAP 254 LOT 1
N/F
RICCI CONSTRUCTION CO INC
225 BANFIELD ROAD
PORTSMOUTH, NH 03801
RCRD BK.# 1743 PG.# 0192

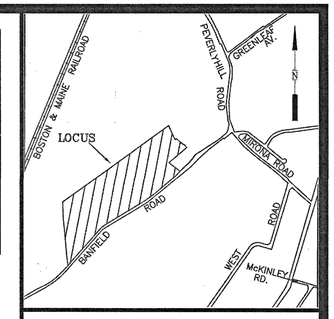
MAP 256 LOT 2
1,955,150 S.F.
(44.884 AC)

COMMON OPEN SPACE
490,718 S.F.
(11.2653 AC.)
(SEE NOTE 4)

LIMITED COMMON AREA:

LCA 1	8,222S.F.
LCA 2	7,950S.F.
LCA 3	13,273S.F.
LCA 4	14,711S.F.
LCA 5	12,809S.F.
LCA 6	7,456S.F.
LCA 7	14,498S.F.
LCA 8	11,231S.F.
LCA 9	13,531S.F.
LCA 10	13,550S.F.
LCA 11	15,500S.F.
LCA 12	12,483S.F.
LCA 13	10,714S.F.
LCA 14	14,387S.F.
LCA 15	18,240S.F.
LCA 16	12,535S.F.
LCA 17	16,067S.F.
LCA 18	11,934S.F.
LCA 19	7,588S.F.
LCA 20	10,339S.F.
LCA 21	16,526S.F.
LCA 22	13,197S.F.

LINE	BEARING	DISTANCE
L1	N 14°03'49" W	163.61'
L2	N 62°46'56" E	140.17'
L3	N 60°47'10" E	74.31'
L4	N 61°20'44" E	105.56'
L5	N 60°58'42" E	115.75'
L6	S 40°08'01" E	22.98'
L7	S 48°30'23" E	159.80'
L8	S 45°44'06" E	110.78'
L9	S 58°19'16" W	135.27'
L10	S 53°23'55" W	154.49'
L11	S 51°04'17" W	145.81'
L12	S 46°41'16" W	83.08'
L13	S 48°05'39" W	99.00'
L14	S 52°42'38" W	173.00'
L15	S 57°03'44" W	173.81'
L16	S 60°20'11" W	108.77'
L17	S 57°50'14" W	143.89'
L18	S 59°00'53" W	162.66'
L19	S 60°14'59" W	117.96'
L20	S 59°39'51" W	113.08'
L21	S 58°23'21" W	76.30'



LOCATION PLAN

NOTES:

1. THE PARCEL IS LOCATED IN THE SINGLE RESIDENCE A (SRA) ZONING DISTRICT.
2. THE PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 256 AS LOT 2.
3. THE PARCEL IS LOCATED IN ZONE X AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP), FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, PANEL 270 OF 681, MAP NUMBER 33015C0270E, WITH AN EFFECTIVE DATE OF MAY 17, 2005.
4. DIMENSIONAL REQUIREMENTS:

	REQUIRED:
MINIMUM LOT SIZE:	1 ACRE
LOT AREA PER DWELLING UNIT:	1 ACRE
CONTINUOUS STREET FRONTAGE:	150'
LOT DEPTH:	200'
MINIMUM YARD DIMENSIONS:	
FRONT:	30'
SIDE:	20'
REAR:	40'
MAXIMUM STRUCTURE DIMENSIONS:	
STRUCTURE HEIGHT:	35'(SLOPED ROOF) 30'(FLAT ROOF)
BUILDING COVERAGE:	10%
MINIMUM OPEN SPACE:	50%

PER THE CITY OF PORTSMOUTH ZONING ORDINANCE SECTION 10.520.

OPEN SPACE RESIDENTIAL PUD (OS-PUD)	REQUIRED:
MINIMUM LOT AREA:	10 ACRES
MINIMUM STREET FRONTAGE:	100'
MINIMUM EXTERNAL YARDS:	
FRONT:	100'
SIDE & REAR:	50'
MINIMUM INTERNAL YARDS:	
FRONT:	20'
SIDE & REAR:	25'
MINIMUM SEPARATION BETWEEN STRUCTURES:	30'
MINIMUM OPEN SPACE:	25%

PER THE CITY OF PORTSMOUTH ZONING ORDINANCE SECTION 10.725

5. OWNER OF RECORD:
MAP 256 LOT 2:
THE WALTER D. HETT TRUST
WALTER D. HETT, TRUSTEE
334 HUDSON ROAD
STOW, MA 01775
RCRD BK.#4553 PG.#432
6. TOTAL PARCEL AREA:

MAP 256 LOT 2:	SUBMITTED AREA:	COMMON AREA:
1,955,150 S.F.	1,955,150 S.F.	1,955,150 S.F.
(44.884 ACRES)	(44.884 ACRES)	(44.884 ACRES)

7. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
8. THE PURPOSE OF THIS PLAN IS TO DEPICT THE COMMON AREAS AND LIMITED COMMON AREAS ASSOCIATED WITH THE OPEN SPACE PLANNED UNIT DEVELOPMENT OF MAP 256 LOT 2. CONSTRUCTION OF UNITS NOT YET BEGUN. THE FINAL METES AND BOUNDS OF THE UNITS AND THEIR ASSIGNED LIMITED COMMON AREAS SHALL BE DETERMINED BY AS-BUILT FLOOR PLANS WITH AN AMENDED CONDOMINIUM SITE PLAN TO BE RECORDED UPON COMPLETION OF EACH UNIT.
9. THESE UNITS ARE FOR RESIDENTIAL USE ONLY.
10. FIELD SURVEY COMPLETED BY TCE AND EJS IN MAY & JUNE 2019 USING A TOPCON DS103 AND A TOPCON FC-5000 DATA COLLECTOR.
11. HORIZONTAL DATUM IS NAD83 (2011) PER STATIC GPS OBSERVATIONS.
12. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD DETERMINE.
13. WETLAND DELINEATION WAS COMPLETED BY GOVE ENVIRONMENTAL SERVICES IN MAY, 2019 IN ACCORDANCE WITH THE 1987 ARMY CORP OF ENGINEERS WETLAND MANUAL AND THE 2012 REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION. FIELD LOCATED BY TFMORAN, INC.
14. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN, INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE.

PLAN REFERENCES:

1. "SUBDIVISION PLAN FOR WALTER D. HETT & THE TEMPLE OF ISRAEL BANFIELD ROAD COUNTY OF ROCKINGHAM PORTSMOUTH, NH", BY MILLETTE, SPRAGUE, AND COLWELL, INC. DATED JUNE 25, 1999 WITH REVISION 3 DATED 12/02/99. RCRD PLAN D-27695.
2. "PROPERTY OF SWIFTWATER GIRL SCOUT COUNCIL, CITY OF PORTSMOUTH" BY JON MOORE DATED AUGUST 1972. RCRD PLAN D-3206

LEGEND:

MAP 254 LOT 1	
AG	ASSESSOR'S MAP NUMBER/ LOT NUMBER
BG	ABOVE GRADE
BK./PG.	BELOW GRADE
NRP	BOOK/PAGE
I	NATURAL RESOURCE PROTECTION
LCA	INDUSTRIAL
MONTBS	LIMITED COMMON AREA
N/F	MONUMENT TO BE SET
PSF	NOW OR FORMERLY
PUD	PROPOSED SEPTIC FIELD
R	PLANNED UNIT DEVELOPMENT
RCRD	RURAL
SRA	ROCKINGHAM COUNTY REGISTRY OF DEEDS
S.F.	SINGLE RESIDENCE A
	SQUARE FEET
	BOULDER
	PROPERTY LINE
	CHAINLINK FENCE
	STONEWALL
	WETLAND SETBACK
	EDGE OF WETLAND
PAVEMENT	100' WIDE ELECTRIC EASEMENT
WETLANDS	12' RIGHT OF WAY
	COMMON OPEN SPACE

I HEREBY CERTIFY THAT THIS PLAN IS ACCURATE AND COMPLIES WITH NHRSA 356-B:20(I). ALL UNITS OR PORTIONS THEREOF DEPICTED ON ANY PORTION OF THE SUBMITTED LAND OTHER THAN WITHIN THE BOUNDARIES OF ANY CONVERTIBLE LAND HAVE NOT YET BEGUN.

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY ME OR BY THOSE UNDER MY DIRECT SUPERVISION. THIS SURVEY IS AN URBAN SURVEY AS CLASSIFIED IN THE NH CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS. I CERTIFY THAT THIS SURVEY WAS MADE ON THE GROUND AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THE TRAVERSE WAS COMPLETED BY TOTAL STATION, WITH A PRECISION GREATER THAN 1:15,000.

STATE OF NEW HAMPSHIRE — No. 844 — COREY COLWELL — LICENSED LAND SURVEYOR

SIGNATURE

LICENSED LAND SURVEYOR

12-23-19

DATE

DIG SAFE — MA ME NH RI VT — CALL 811 TOLL FREE — UTILITIES UNDER GROUND PLANT DAMAGE PREVENTION SYSTEM

CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

100 0 100

Graphic Scale in Feet

REV.	DATE	DESCRIPTION	DR	CK

TFM MSC
A division of TFMoran, Inc.
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
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FILE	DR	EJS	FB		
47361-00	CK	BMK	CADFILE	559	S-03

TAX MAP 256 LOT 2

OPEN SPACE RESIDENTIAL PLANNED UNIT DEVELOPMENT
CONDOMINIUM SITE PLAN
BANFIELD ROAD
PORTSMOUTH, NEW HAMPSHIRE
COUNTY OF ROCKINGHAM
OWNED BY
THE WALTER D. HETT TRUST
PREPARED FOR
GREEN & COMPANY REAL ESTATE

SCALE: 1" = 100' (22x34) 1" = 200' (11x17) **DECEMBER 23, 2019**

Dec 23, 2019 - 4:37pm
F:\MSC Projects\47361 - Banfield Road - Portsmouth\47361-00 - Green & Co - Banfield Road\Carlson Survey\Dwgs\47361-00 Survey.dwg

LEDEND

PROPOSED

- PROPERTY LINE
- ZONING LINE
- EASEMENT
- BASELINE
- FLOODPLAIN
- EDGE OF WATERBODY
- EDGE OF WETLAND
- SETBACK (WETLAND)
- SETBACK (STRUCTURE)
- SETBACK (PARKING)
- SETBACK (LANDSCAPE)
- GRAVEL ROAD
- EOP — EDGE OF PAVEMENT
- VGC — VERTICAL GRANITE CURB
- SGC — SLOPED GRANITE CURB
- CC — CONCRETE CURB
- ICC — INTEGRATED CONCRETE CURB
- BIT — BUTIMINOUS ASPHALT CURB
- CCB — CAPE COD BERM
- SAWCUT
- BUILDING
- BUILDING ROOF OVERHANG
- BUILDING FOUNDATION
- BUILDING ENTRANCE
- OVERHEAD DOOR
- TREE LINE
- FENCE (CHAIN LINK)
- FENCE (WIRE)
- FENCE (STOCKADE)
- GUARDRAIL
- STONE WALL
- RETAINING WALL
- SILT FENCE
- SILT SOCK
- SOIL BOUNDARY
- LIMIT OF GRADING
- XXX — CONTOUR
- TC100.50 / BC100.00 — SPOT GRADE
- ## — PARKING COUNT
- DSLY — YELLOW DOUBLE SOLID LINE
- SSLY — YELLOW SINGLE SOLID LINE
- SSLW — WHITE SINGLE SOLID LINE
- SBLW — WHITE SINGLE BROKEN LINE
- STOP — STOP BAR
- CROSSWALK
- ACCESSIBLE PARKING SYMBOL
- PAVEMENT ARROW
- TRAFFIC FLOW ARROW (NOT PAINTED)
- SIGN (SINGLE POST)
- SIGN (DOUBLE POST)
- SIGN (PYLON)
- SIGN (MONUMENT)
- BOLLARD
- D — DUMPSTER PAD

PROPOSED

- CONCRETE
- GRAVEL
- HEAVY DUTY PAVEMENT
- CONSTRUCTION ENTRANCE
- SNOW STORAGE
- RIPRAP
- INLET PROTECTION
- DRAIN LINE
- DRAINAGE SWALE
- STORMWATER BMP
- S — SEWER LINE
- FM — SEWER FORCE MAIN LINE
- W — WATER LINE
- G — GAS LINE
- OHE — OVERHEAD UTILITY LINE
- UGE — UNDERGROUND UTILITY LINE
- CATCH BASIN
- DRAIN INLET
- OUTLET CONTROL STRUCTURE
- ROOF DRAIN
- DRAIN CLEANOUT
- DRAIN MANHOLE
- FLARED END SECTION
- SEWER CLEAN OUT
- SEWER MANHOLE
- SEWER VENT
- DRAIN/SEWER/WATER PLUG OR CAP
- HYDRANT
- WATER GATE VALVE
- WATER SHUTOFF
- THRUST BLOCK
- WATER METER
- WATER MANHOLE
- WELL
- GAS GATE VALVE
- GAS SHUT OFF
- GAS METER
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- CC — TRAFFIC CONTROL CABINET
- ELECTRIC HANDHOLE
- ELECTRIC PULL BOX
- ELECTRIC METER
- FLOOD LIGHT
- LIGHT POLE
- UTILITY POLE
- GUY POLE
- T — TRANSFORMER PAD
- B-# — BORING LOCATION
- TP-# — TEST PIT LOCATION
- IT-# — INFILTRATION TEST LOCATION
- MW-# — MONITORING WELL

ABBREVIATIONS

GENERAL

ABAN	ABANDON
AC	ACRES
ADJ	ADJUST
APPROX	APPROXIMATE
BC	BOTTOM OF CURB
BIT	BITUMINOUS
BK/PG	BOOK & PAGE
BLDG	BUILDING
BS	BOTTOM OF SLOPE
BW	BOTTOM OF WALL
CONC	CONCRETE
DIA	DIAMETER
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EXIST	EXISTING
FFE	FINISHED FLOOR ELEVATION
FND	FOUNDATION
HP	HIGH POINT
INV	INVERT ELEVATION
IT	INFILTRATION TEST
L	LENGTH
LF	LINEAR FEET
LSA	LANDSCAPE AREA
MAX	MAXIMUM
MIN	MINIMUM
N/F	NOW OR FORMERLY
NTS	NOT TO SCALE
OC	ON CENTER
PERF	PERFORATED
PROP	PROPOSED
R	RADIUS
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
REM	REMOVE
RET	RETAIN
RIM	RIM ELEVATION
S	SLOPE
SF	SQUARE FEET
SW	SIDEWALK
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TP	TEST PIT
TW	TOP OF WALL
TYP	TYPICAL
UG	UNDERGROUND
WCR	ACCESSIBLE WHEELCHAIR RAMP
W/	WITH

UTILITIES

CB	CATCH BASIN
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
COND	CONDUIT
DCB	DOUBLE CATCH BASIN
DIP	DUCTILE IRON PIPE
DMH	DRAIN MANHOLE
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FES	FLARED END SECTION
GT	GREASE TRAP
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	HANDHOLE
HW	HEADWALL
HYD	HYDRANT
LP	LIGHT POLE
OCS	OUTLET CONTROL STRUCTURE
OWS	OIL WATER SEPARATOR
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
SMH	SEWER MANHOLE
TSV	TAPPING SLEEVE, VALVE, AND BOX
UP	UTILITY POLE

DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

GENERAL NOTES

1. THESE PLANS ARE PERMIT DRAWINGS ONLY AND HAVE NOT BEEN DETAILED FOR CONSTRUCTION OR BIDDING.
2. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN, INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
3. THE SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
4. ALL IMPROVEMENTS SHOWN ON THE SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE CITY PLANNING DIRECTOR.
5. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE CITY OF PORTSMOUTH, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. ALL WORK TO CONFORM TO CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS. ALL WORK WITHIN THE RIGHT-OF-WAY OF THE CITY AND/OR STATE SHALL COMPLY WITH APPLICABLE STANDARDS. COORDINATE ALL WORK WITHIN THE RIGHT-OF-WAY WITH APPROPRIATE CITY, COUNTY, AND/OR STATE AGENCY.
6. AN ALTERATION OF TERRAIN PERMIT IS REQUIRED PER ENV-WQ 1503.02. THE SITE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV-WQ 1500 OR AS APPLICABLE.
7. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
8. CONTACT EASEMENT OWNERS PRIOR TO COMMENCING ANY WORK WITHIN THE EASEMENTS.
9. PRIOR TO COMMENCING ANY SITE WORK ALL LIMITS OF WORK SHALL BE CLEARLY MARKED IN THE FIELD.
10. SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.
11. TFMORAN, INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
12. TEMPORARY FENCING SHALL BE PROVIDED AND COVERED WITH A FABRIC MATERIAL TO CONTROL DUST MITIGATION.
13. ALL DEMOLITION SHALL INSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKWAYS, AND ANY OTHER ADJACENT OPERATING FACILITIES. PRIOR WRITTEN PERMISSION FROM THE OWNER/DEVELOPER AND LOCAL PERMITTING AUTHORITY IS REQUIRED IF CLOSURE/OBSTRUCTIONS TO ROADS, STREET, WALKWAYS, AND OTHERS IS DEEMED NECESSARY. CONTRACTOR TO PROVIDE ALTERNATE ROUTES AROUND CLOSURES/OBSTRUCTIONS PER LOCAL/STATE/FEDERAL REGULATIONS.
14. REFER TO ARCHITECTURAL PLANS FOR LAYOUT OF BUILDING FOUNDATIONS AND CONCRETE ELEMENTS WHICH ABUT THE BUILDING SUCH AS STAIRS, SIDEWALKS, LOADING DOCK RAMPS, PADS, AND COMPACTOR PADS. DO NOT USE SITE PLANS FOR LAYOUT OF FOUNDATIONS.
15. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
16. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
17. CONTRACTOR'S GENERAL RESPONSIBILITIES:
    A. BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS, AND STANDARDS.
    B. NOTIFY ENGINEER IN WRITING OF ANY DISCREPANCIES OF PROPOSED LAYOUT AND/OR EXISTING FEATURES.
    C. EMPLOY A LICENSED SURVEYOR TO DETERMINE ALL LINES AND GRADES AND LAYOUT OF SITE ELEMENTS AND BUILDINGS.
    D. THE CONTRACTOR SHALL BE RESPONSIBLE TO BECOME FAMILIAR WITH THE SITE AND ALL SURROUNDING CONDITIONS. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF INTENTIONS AT LEAST 48 HOURS IN ADVANCE.
    E. TAKE APPROPRIATE MEASURES TO REDUCE, TO THE FULLEST EXTENT POSSIBLE, NOISE, DUST AND UNSIGHTLY DEBRIS. CONSTRUCTION ACTIVITIES SHALL BE CARRIED OUT BETWEEN THE HOURS OF 7:00 AM AND 9:00 PM, MONDAY THROUGH FRIDAY IN ACCORDANCE WITH "STANDARD SPECIFICATIONS FOR CONSTRUCTION, PORTSMOUTH, NEW HAMPSHIRE".
    F. MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
    G. IN ACCORDANCE WITH RSA 430:53 AND AGR 3800, THE CONTRACTOR SHALL NOT TRANSPORT INVASIVE SPECIES OFF THE PROPERTY, AND SHALL DISPOSE OF INVASIVE SPECIES ON-SITE IN A LEGAL MANNER.
    H. COORDINATE WITH ALL UTILITY COMPANIES AND CONTRACTORS DIG SAFE 811 OR 888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION.
    I. PROTECT NEW AND EXISTING BURIED UTILITIES DURING INSTALLATION OF ALL SITE ELEMENTS. DAMAGED UTILITIES SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
    J. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROFESSIONAL METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. OTHER PLANS PREPARED BY TFMORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR/THEIR EMPLOYEES/AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE US OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
    K. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
    L. VERIFY LAYOUT OF PROPOSED BUILDING FOUNDATIONS WITH ARCHITECT AND THAT PROPOSED FOUNDATION MEETS PROPERTY LINE SETBACKS PRIOR TO COMMENCING ANY FOUNDATION CONSTRUCTION.
    M. PROVIDE AN AS-BUILT PLAN AT THE COMPLETION OF THE PROJECT TO THE PLANNING DIRECTOR AND PER CITY REGULATIONS.
    N. IF ANY DEVIATIONS FROM THE APPROVED PLANS AND SPECIFICATIONS HAVE BEEN MADE, THE SITE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS STAMPED BY A LICENSED SURVEYOR OR QUALIFIED ENGINEER ALONG WITH A LETTER STAMPED BY A QUALIFIED ENGINEER DESCRIBING ALL SUCH DEVIATIONS, AND BEAR ALL COSTS FOR PREPARING AND FILING ANY NEW PERMITS OR PERMIT AMENDMENTS THAT MAY BE REQUIRED.
    O. AT COMPLETION OF CONSTRUCTION, THE SITE CONTRACTOR SHALL PROVIDE A LETTER CERTIFYING THAT THE PROJECT WAS COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, AND A LETTER STAMPED BY A QUALIFIED ENGINEER THAT THEY HAVE OBSERVED ALL UNDERGROUND DETENTION SYSTEMS, INFILTRATION SYSTEMS, OR FILTERING SYSTEMS PRIOR TO BACKFILL, AND THAT SUCH SYSTEMS CONFORM TO THE APPROVED PLANS AND SPECIFICATIONS.

GRADING NOTES

1. THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV-WQ 1500 AS APPLICABLE.
2. THE CONTRACTOR SHALL PREPARE, MAINTAIN, AND EXECUTE A S.W.P.P.P. IN ACCORDANCE WITH EPA REGULATIONS AND THE CONSTRUCTION GENERAL PERMIT.
3. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ACCURACY OF THE TOPOGRAPHY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ANY EARTHWORK BEING PERFORMED ON THE SITE. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED FOR PAYMENT AFTER EARTHWORK HAS COMMENCED.
5. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT SOIL AND GROUNDWATER CONDITIONS. THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL ENGINEERS RECOMMENDED METHODS TO ADDRESS ANY SOIL AND GROUNDWATER ISSUES THAT ARE FOUND ON SITE.
6. COORDINATE WITH GEOTECHNICAL/STRUCTURAL PLANS FOR SITE PREPARATION AND OTHER BUILDING INFORMATION.
7. COORDINATE WITH ARCHITECTURAL PLANS FOR DETAILED GRADING AT BUILDING, AND SIZE AND LOCATION OF ALL BUILDING SERVICES.
8. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
9. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, PAVEMENT, CURBING, SIDEWALKS, AND ALIGNMENTS.
10. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE, RAMPS AND LOADING AREAS.
11. THE SITE SHALL BE GRADED SO ALL FINISHED PAVEMENT HAS POSITIVE DRAINAGE AND SHALL NOT POND WATER DEEPER THAN 1/4" FOR A PERIOD OF MORE THEN 15 MINUTES AFTER FLOODING.
12. ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED.
13. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SLOPE STABILITY DURING CONSTRUCTION.
14. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, PAVEMENT, CURBING, AND ALIGNMENTS.
15. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
16. ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS AND SHALL MEET LOCAL STANDARDS AND THE REQUIREMENTS OF THE LATEST NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE NHDOT STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
17. STORMWATER DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS, SECTION 603. CATCH BASINS AND DRAIN MANHOLES SHALL CONFORM TO SECTION 604. ALL CATCH BASIN GRATES SHALL BE TYPE B AND CONFORM TO NHDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
18. NO FILL SHALL BE PLACED IN ANY WETLAND AREA, EXCEPT AS SHOWN ON THE WETLAND IMPACT PLAN.
19. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
20. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER AND MULCH.
21. DENSITY REQUIREMENTS:

MINIMUM DENSITY*	LOCATION
95%	BELOW PAVED OR CONCRETE AREAS
95%	TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL
90%	BELOW LOAM AND SEED AREAS

*ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM D-6938.

UTILITY NOTES

1. LENGTH OF PIPE IS FOR CONVENIENCE ONLY. ACTUAL PIPE LENGTH SHALL BE DETERMINED IN THE FIELD.
2. ALL PROPOSED UTILITY WORK, INCLUDING MATERIAL, INSTALLATION, TERMINATION, EXCAVATION, BEDDING, BACKFILL, COMPACTION, TESTING, CONNECTIONS, AND CONSTRUCTION SHALL BE COORDINATED WITH AND COMPLETED IN ACCORDANCE WITH THE APPROPRIATE REQUIREMENTS, CODES, AND STANDARDS OF ALL CORRESPONDING UTILITY ENTITIES AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR THE CONDITION OF THE SITE. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND REPORT DISCREPANCIES TO THE ENGINEER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE, AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (811) AT LEAST 72 HOURS BEFORE DIGGING.
5. CONFIRM UTILITY PENETRATIONS AND INVERT ELEVATIONS ARE COORDINATED PRIOR TO INSTALLATION.
6. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
7. THE EXACT LOCATION OF NEW UTILITY CONNECTIONS SHALL BE DETERMINED BY THE CONTRACTOR IN COORDINATION WITH UTILITY COMPANY, COUNTY AGENCY, AND/OR PRIVATE UTILITY COMPANY.
8. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER THE UTILITY INSTALLATION COMPLETE AND OPERATIONAL.
9. ALL UTILITY COMPANIES REQUIRE INDIVIDUAL CONDUITS. CONTRACTOR TO COORDINATE WITH TELEPHONE, CABLE, AND ELECTRIC COMPANIES REGARDING NUMBER, SIZE, AND TYPE OF CONDUITS REQUIRED PRIOR TO INSTALLATION OF ANY CONDUIT.
10. ON-SITE WATER DISTRIBUTION SHALL BE TO CITY OF PORTSMOUTH STANDARDS AND SPECIFICATIONS. WATER MAINS SHALL HAVE A MINIMUM OF 5.5' COVER. WHERE WATER PIPES CROSS SEWER LINES A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. HORIZONTAL SEPARATION BETWEEN WATER AND SEWER SHALL BE 10' MINIMUM. WHERE A SANITARY LINE CROSSES A WATER LINE, ENCASE THE SANITARY LINE IN 6" THICK CONCRETE FOR A DISTANCE OF 10' EITHER SIDE OF THE CROSSING, OR SUBSTITUTE RUBBER-GASKETED PRESSURE PIPE FOR THE SAME DISTANCE. WHEN SANITARY LINES PASS BELOW WATER LINES, LAY PIPE SO THAT NO JOINT IN THE SANITARY LINE WILL BE CLOSER THAN 3' HORIZONTALLY TO THE WATER LINE.
11. THRUST BLOCKS SHALL BE PROVIDED AT ALL LOCATIONS WHERE WATER LINE CHANGES DIRECTIONS OR CONNECTS TO ANOTHER WATER LINE.
12. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONDUIT AND WIRING TO ALL SIGNS AND LIGHTS. CONDUIT TO BE A MINIMUM OF 24" BELOW FINISH GRADE.
13. ALL PROPOSED UTILITIES SHALL BE UNDERGROUND. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES.
14. THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL INSPECTIONS, TESTING AND RELATED SERVICES AND SUBMIT COPIES OF ACCEPTANCE TO THE OWNER, UNLESS OTHERWISE INDICATED.
15. ALL UTILITY STRUCTURES IN PAVEMENT TO BE SET TO FINISH GRADE REGARDLESS OF ANY ELEVATION SHOWN OTHERWISE.
16. PROVIDE PERMANENT PAVEMENT REPAIR FOR ALL UTILITY TRENCHES IN EXISTING ROAD OR PAVEMENT TO REMAIN. SAW CUT TRENCH, PAVEMENT AND GRANULAR BASE THICKNESS TO MATCH EXISTING PAVEMENT. OBTAIN ALL PERMITS REQUIRED FOR TRENCHING.
17. UNLESS OTHERWISE SPECIFIED, ALL UNDERGROUND STRUCTURES, PIPES, CHAMBERS, ETC. SHALL BE COVERED WITH A MINIMUM OF 18" OF COMPACTED SOIL BEFORE EXPOSURE TO VEHICLE LOADS.
19. THE PROPERTY WILL BE SERVICED BY THE FOLLOWING:

DRAINAGE	PRIVATE
SEWER	SEPTIC SYSTEM
WATER	MUNICIPAL
GAS	UNITIL
ELECTRIC	EVERSOURCE
TELEPHONE	CONSOLIDATED COMMUNICATIONS FKA FAIRPOINT COMMUNICATIONS
CABLE	COMCAST

STATE OF NEW HAMPSHIRE — JOHN J. McTIGUE No. 14950 — LICENSED PROFESSIONAL ENGINEER

STATE OF NEW HAMPSHIRE — JOHN J. McTIGUE No. 14950 — LICENSED PROFESSIONAL ENGINEER

REV.	DATE	DESCRIPTION	DR	CK
2	12/27/2019	IN HOUSE REVISIONS	RCK	JJM
1	12/23/19	NO REVISIONS THIS SHEET	RCK	JJM

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

NOTES & LEGEND

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

SCALE: NTS **SEPTEMBER 25, 2019**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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FILE	DR	FB	–	
47361.00	RCK			C-01
	CK	JJM	CADFILE	NOTES

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F:\MSC Projects\47361 - Banfield Road - Portsmouth\47361-00 - Green & Co - Banfield Road\Design\Production Drawings\Notes.dwg

NOTES:

1. THE PURPOSE OF THIS PLAN IS TO SHOW THE CITY OF PORTSMOUTH WETLAND IMPACTS AND WETLAND BUFFER IMPACTS ASSOCIATED WITH THE CONDOMINIUM DEVELOPMENT OF TAX MAP 256 LOT 2.
2. FIELD SURVEY WAS COMPLETED BY TCE AMD EJS IN MAY & JUNE 2019 USING A TOPCON DS103 AND A TOPCON FC-5000 DATA COLLECTOR.
3. THE PURPOSE OF THE BUILDING FOOTPRINTS SHOWN ON THE PLAN ARE FOR ILLUSTRATIVE PURPOSES ONLY. FOOTPRINTS MAY CHANGE DURING CONSTRUCTION, BUT WILL REMAIN WITHIN REQUIRED SETBACKS. INDIVIDUAL GRADING PLAN ARE REQUIRED FOR EACH AREA OF HOMES TO BE DEVELOPED (PRIOR TO BUILDING PERMIT).
4. DENSITY CALCULATIONS:
   TOTAL LOT AREA: 44.88 ACRES
   WETLAND AREA: 18.97 ACRES
   STEEP SLOPES OVER 15%: 2.20 ACRES
   TOTAL DEVELOPABLE AREA: 23.71 ACRES (REMAINING LAND IS WETLANDS AND STEEP SLOPES OVER 15%)
   MAXIMUM UNITS FOR DEVELOPMENT: 23 SINGLE FAMILY HOUSES
   PROPOSED UNITS FOR OPEN SPACE PLANNED UNIT DEVELOPMENT: 22 THREE (3) BEDROOM UNITS
5. PARKING CALCULATIONS:
   REQUIRED: 1.3 SPACES/UNIT PLUS ONE (1) VISITOR SPACE FOR EVERY 5 DWELLING UNITS.
   TOTAL REQUIRED = 33 SPACES
   PROPOSED: 88 SPACES (2 GARAGED SPACES PER UNIT, PLUS 44 SPACES ON PRIVATE DRIVEWAYS)
6. WETLANDS DELINEATION WAS COMPLETED BY GOVE ENVIRONMENTAL SERVICES IN MAY 2019 AND FIELD LOCATED BY MSC A DIVISION OF TFMORAN, INC.
7. STEEP SLOPE AREAS ARE APPROXIMATE. TOWN REGULATIONS DEFINE SLOPES OF 15% AND GREATER TO BE NON-BUILDABLE.
8. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR THE TOWN OF PORTSMOUTH, NEW HAMPSHIRE, ROCKINGHAM COUNTY, COMMUNITY PANEL NUMBER 0270, EFFECTIVE DATE: MAY 17, 2005, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A FLOOD HAZARD AREA.
9. WETLAND IMPACTS WILL REQUIRE AN APPLICATION TO NHDES WETLANDS BUREAU AND A CONDITIONAL USE PERMIT FROM THE CITY OF PORTSMOUTH. OBTAINING THESE PERMITS WILL DEPEND ON THE WETLAND FUNCTION AND VALUES, AND SENSITIVITY OF THE PROJECT.
10. TESTING FOR SUITABLE AREAS FOR SEPTIC SYSTEMS AND WELLS WILL BE REQUIRED TO CONFIRM THAT SERVICES CAN BE PROVIDED ON SITE, AND/OR AVAILABLE MUNICIPAL SEWER AND WATER CAPACITY WILL NEED TO BE VERIFIED DURING THE DESIGN PROCESS.
11. SITE DEVELOPMENT MAY REQUIRE RETAINING WALLS FOR GRADE CHANGES.
12. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE AT 811.

WETLAND IMPACTS TABLE

WETLAND	WETLAND AREA	TEMPORARY WETLAND IMPACT	PERMANENT WETLAND IMPACT	TEMPORARY BUFFER IMPACT	PERMANENT BUFFER IMPACT
A	815,360 S.F.	1,135 S.F.	2,693 S.F.	720 S.F.	5,858 S.F.
B	26,935 S.F.	0 S.F.	0 S.F.	386 S.F.	297 S.F.
TOTALS	842,295 S.F.	3,828 S.F.		7,261 S.F.	

LEGEND

- PERMANENT WETLAND IMPACT
- TEMPORARY WETLAND IMPACT
- PERMANENT WETLAND BUFFER IMPACT
- TEMPORARY WETLAND BUFFER IMPACT
- P- PERMANENT
- T- TEMPORARY

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

WETLAND IMPACT PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=160' (11"X17")

SCALE: 1"=80' (22"X34") **SEPTEMBER 25, 2019**

STATE OF NEW HAMPSHIRE — JOHN J. MCTIGUE No. 14950 — LICENSED PROFESSIONAL ENGINEER

HORIZONTAL SCALE 1"=20'
80 40 0 80

REV.	DATE	DESCRIPTION	DR	CK
2	12/27/2019	IN HOUSE REVISIONS	RCK	JJM
1	12/03/19	Revised Alignment Per Regulatory Comments	RCK	JJM

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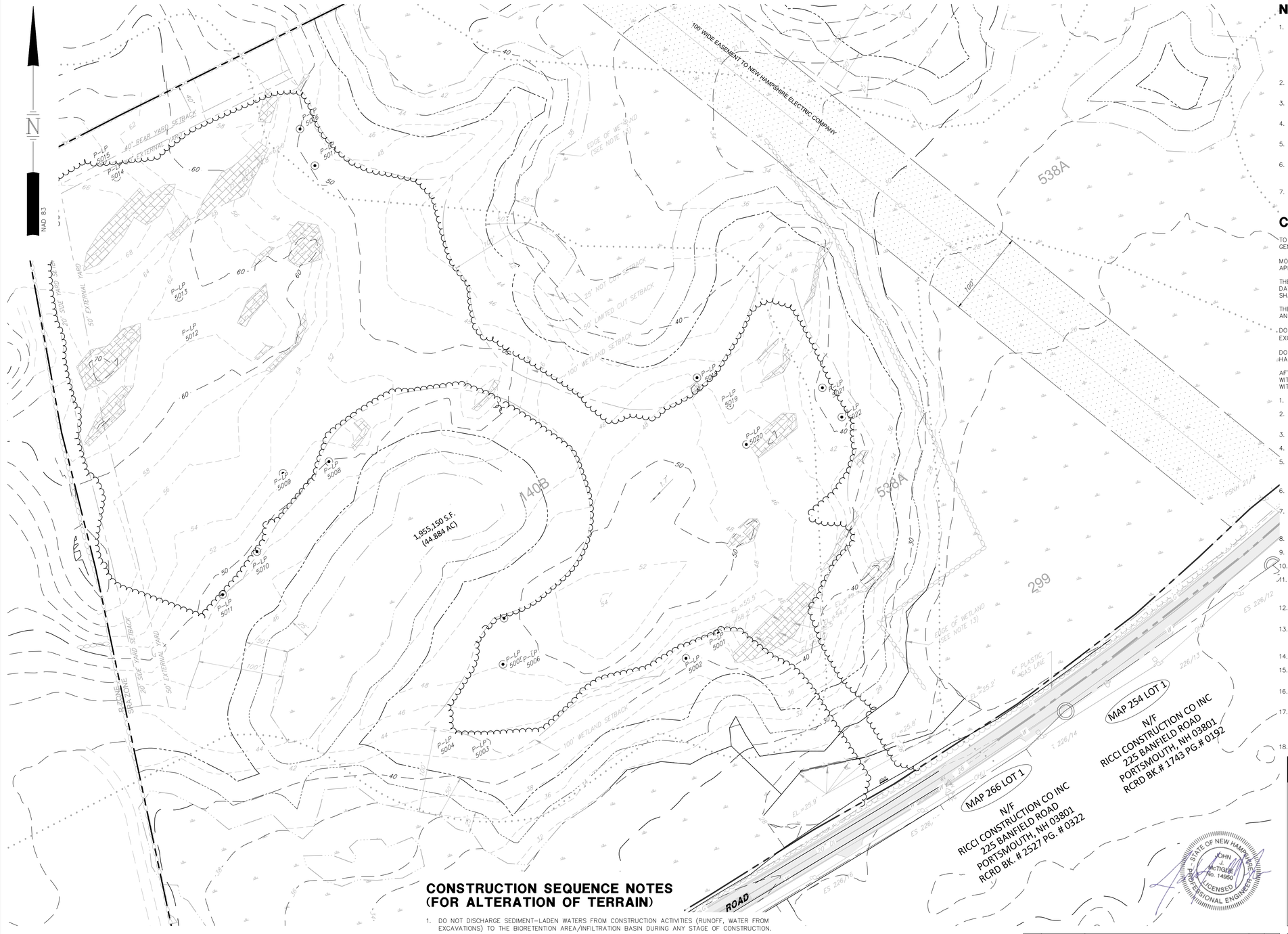
FILE	DR	RCK	FB	–	
47361.00	CK	JJM	CADFILE	WETLAND IMPACT	C-02



NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATIONS, SIZE, AND ELEVATIONS OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS PRIOR TO THE START OF ANY DEMOLITION. THE LOCATIONS SHOWN ON THESE PLANS ARE NOT GUARANTEED BY THE OWNER OR THE ENGINEER. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED DEMOLITION TO DETERMINE APPROPRIATE ACTION TO BE TAKEN BEFORE PROCEEDING WITH THE WORK. IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO ANTICIPATE CONFLICTS AND REPAIR EXISTING UTILITIES AS NECESSARY TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
2. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
3. THE CONTRACTOR SHALL VERIFY ALL SURVEY INFORMATION IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO THE START OF CONSTRUCTION.
4. EXISTING UTILITY SERVICES TO BE DISCONTINUED ARE TO BE CAPPED AS REQUIRED BY THE RESPECTIVE UTILITY COMPANIES.
5. CONSTRUCTION DEBRIS AND INVASIVE SPECIES SHALL BE REMOVED FROM SITE AND DISPOSED OF IN A LEGAL MANNER.
6. PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL PLACE ORANGE CONSTRUCTION FENCING AROUND EACH TREE TO BE RETAINED THROUGHOUT CONSTRUCTION. NO STOCKPILES OF MATERIAL ARE PERMITTED WITHIN THE DRIP LINE OF THE TREES TO BE SAVED.
7. CONTACT THE LANDSCAPE ARCHITECT IMMEDIATELY IF ANY TREES ARE DAMAGED DURING CONSTRUCTION.

CONSTRUCTION SEQUENCE NOTES

TO MINIMIZE EROSION AND SEDIMENTATION DUE TO CONSTRUCTION, CONSTRUCTION SHALL FOLLOW THIS GENERAL CONSTRUCTION SEQUENCE.

MODIFICATIONS TO THE SEQUENCE NECESSARY DUE TO THE CONTRACTOR'S SCHEDULE SHALL INCLUDE APPROPRIATE TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES.

THE CONTRACTOR SHALL SCHEDULE WORK SUCH THAT ANY CONSTRUCTION AREA IS STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE EXCEPT AS NOTED BELOW. NO MORE THAN 5 ACRES OF DISTURBED LAND SHALL BE UNSTABILIZED AT ANY ONE TIME.

THE PROJECT SHALL BE MANAGED SO THAT IT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER ARC 3800 RELATIVE TO INVASIVE SPECIES.

DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE INFILTRATION BASIN.

DO NOT PLACE INFILTRATION SYSTEMS/BIORETENTION AREAS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

AFTER THE BASIN IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE THE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.

1. NOTIFY EASEMENT OWNERS PRIOR TO COMMENCEMENT OF WORK.
2. INSTALL ALL PERIMETER EROSION PROTECTION MEASURES AS INDICATED ON THE PLANS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
3. PONDS AND SWALES SHALL BE INSTALLED BEFORE ROUGH GRADING THE SITE.
4. DURING CONSTRUCTION EVERY EFFORT SHALL BE MADE TO MANAGE SURFACE RUNOFF QUALITY.
5. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT BARRIERS, SEDIMENT TRAPS, ETC. MULCH AND SEED AS REQUIRED. (TEMPORARY SEED MIXTURE OF WINTER RYE APPLIED AT A RATE OF 2.5 LBS/1000 SF SHALL BE USED).
6. CONDUCT MAJOR EARTHWORK, INCLUDING CLEARING AND GRUBBING, WITHIN THE LIMITS OF WORK. ALL CUT AND FILL SLOPES SHALL BE SEEDED WITHIN 72 HOURS AFTER GRADING.
7. ALL STRIPPED TOPSOIL AND OTHER EARTH MATERIALS SHALL BE STOCKPILED OUTSIDE THE IMMEDIATE WORK AND WETLAND AREAS. A SILT BARRIER SHALL BE CONSTRUCTED AROUND THESE PILES IN A MANNER TO PROVIDE ACCESS AND AVOID SEDIMENT OUTSIDE OF THE WORK AREA.
8. CONSTRUCT BUILDING PAD AND COMMENCE NEW BUILDING CONSTRUCTION.
9. CONSTRUCT TEMPORARY CULVERTS AND DIVERSIONS AS REQUIRED.
10. BEGIN PERMANENT AND TEMPORARY INSTALLATION OF SEED AND MULCH.
11. PERFORM EARTHWORK NECESSARY TO ESTABLISH ROUGH GRADING AROUND PARKING FIELDS AND ACCESS DRIVES. MANAGE EXPOSED SOIL SURFACES TO AVOID TRANSPORTING SEDIMENTS INTO WETLANDS. PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
12. INSTALL SUBSURFACE UTILITIES (WATER, SEWER, GAS, ELECTRIC, COMMUNICATIONS, DRAINAGE, DRAINAGE FACILITIES, ETC.).
13. CONSTRUCT PROPOSED ROADWAY, RAIN GARDENS, GRAVEL WETLANDS AND DRAINAGE SWALES. ALL DITCHES, SWALES, AND GRAVEL WETLANDS SHALL BE FULLY STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
14. COMPLETE BUILDING AND ALL OFF-SITE IMPROVEMENTS.
15. COMPLETE SEEDING AND MULCHING. SEED TO BE APPLIED WITH BROADCAST SPREADER OR BY HYDRO-SEEDING, THEN ROLLED, RAKED OR DRAGGED TO ASSURE SEED/SOIL CONTACT.
16. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDED AREAS HAVE BECOME FIRMLY ESTABLISHED AND SITE IMPROVEMENTS ARE COMPLETE.
17. DURING THE COURSE OF THE WORK AND UPON COMPLETION, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT DEPOSITS, EITHER ON OR OFF SITE, INCLUDING CATCH BASINS, AND SUMPS, DRAIN PIPES AND DITCHES, CURB LINES, ALONG SILT BARRIERS, ETC. RESULTING FROM SOIL AND/OR CONSTRUCTION OPERATIONS.
18. SEE WINTER CONSTRUCTION SEQUENCE FOR WORK CONDUCTED AFTER OCTOBER 15TH.

CONSTRUCTION SEQUENCE NOTES (FOR ALTERATION OF TERRAIN)

1. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE BIORETENTION AREA/INFILTRATION BASIN DURING ANY STAGE OF CONSTRUCTION.
2. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.
3. AFTER THE BASIN IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
4. DO NOT PLACE THE BIORETENTION AREA/INFILTRATION SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
5. DO NOT PLACE THE BIORETENTION SYSTEM INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

HORIZONTAL SCALE 1"=60'
60 30 0 60

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

SITE PREPARATION PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=120' (11"X17")

SCALE: 1"=60' (22"X34") **SEPTEMBER 25, 2019**

REV.	DATE	DESCRIPTION	DR	CK
2	12/27/2019	IN HOUSE REVISIONS	RCK	JJM
1	12/23/19	NO REVISIONS THIS SHEET	RCK	JJM

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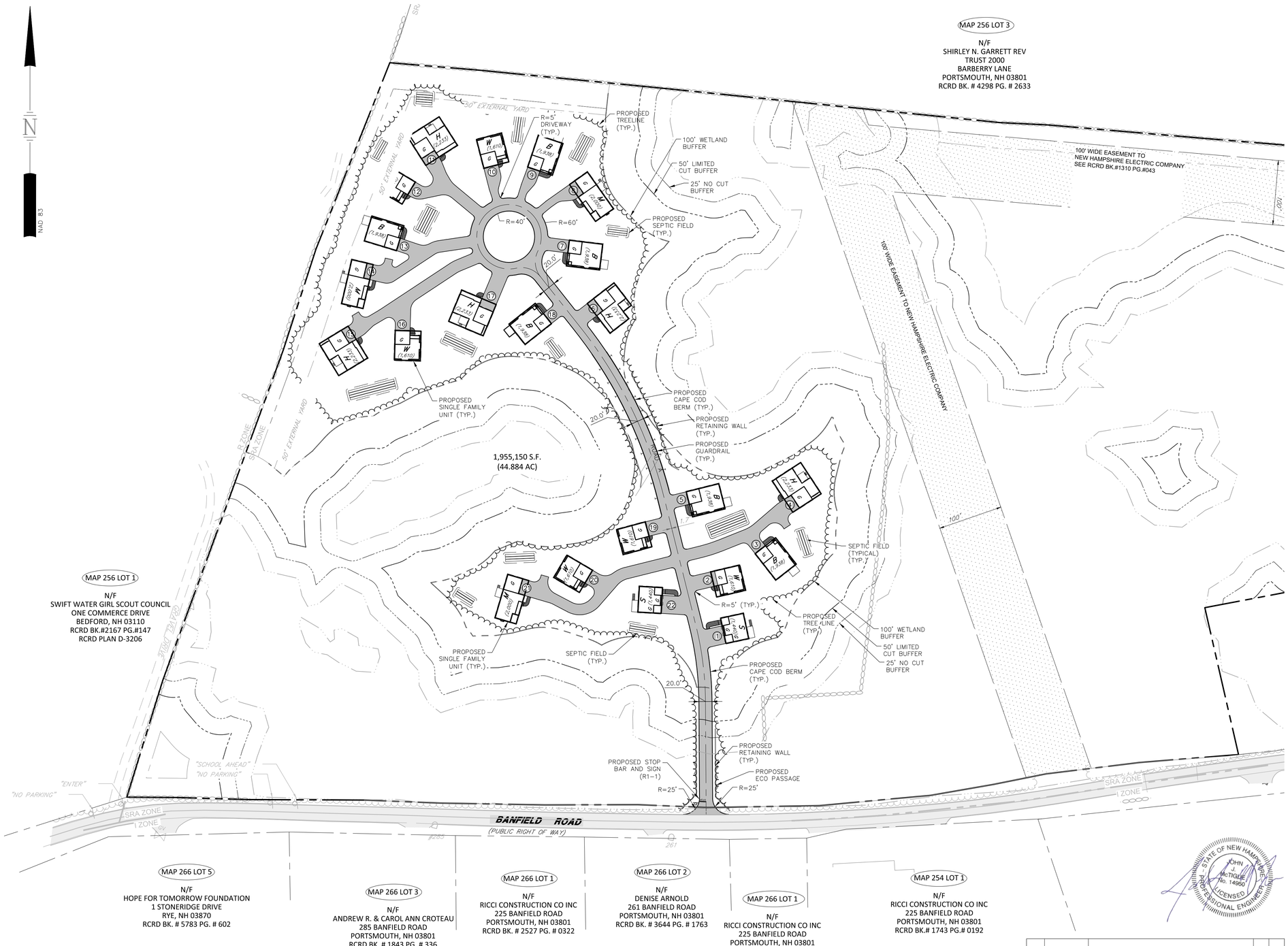

SITE DATA

OWNER OF RECORD OF MAP 256 LOT 02: HETT MAUD REVOCABLE TRUST,
334 HUDSON ROAD, STOW, MA 01775
DEED REFERNCE TO PARCEL IS BK 4553 PG 0432
AREA OF PARCEL = 1,955,150± SF OR 44.88± ACRES

ZONED: SINGLE RESIDENCE A (SRA)
EXISTING USE: N/A
PROPOSED USE: SINGLE FAMILY CONDOMINIUM UNITS

THE PURPOSE OF THIS PLAN IS TO CONSTRUCT A DEVELOPMENT OF 22 SINGLE FAMILY CONDOMINIUM UNITS WITH ASSOCIATED UTILITIES.

DENSITY CALCULATIONS:
TOTAL LOT AREA: 44.88 ACRES
WETLAND AREA: 18.97 ACRES
STEEP SLOPES OVER 15%: 2.20 ACRES
TOTAL DEVELOPABLE AREA: 23.71 ACRES (REMAINING LAND IS WETLANDS AND STEEP SLOPES OVER 15%)
MAXIMUM UNITS FOR DEVELOPMENT: 23 SINGLE FAMILY HOUSES
PROPOSED UNITS FOR OPEN SPACE PLANNED UNIT DEVELOPMENT: 22 THREE (3) BEDROOM UNITS

PARKING CALCULATIONS:
REQUIRED: 1.3 SPACES/UNIT PLUS ONE (1) VISITOR SPACE FOR EVERY 5 DWELLING UNITS.
TOTAL REQUIRED = 33 SPACES

PROPOSED: 88 SPACES (2 GARAGED SPACES PER UNIT, PLUS 44 SPACES ON PRIVATE DRIVEWAYS)

EFFECTIVE IMPERVIOUS SURFACE CALCULATIONS:
IMPERVIOUS AREA/TOTAL LOT AREA = 15,286.5 SF/1,955,150 SF = 0.0539
TOTAL EFFECTIVE IMPERVIOUS SURFACE = 5.39%

NOTES

1. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS NOTED OTHERWISE.
2. LIGHTING, SIGNAGE, LANDSCAPING, AND SCREENING SHALL MEET THE REQUIREMENTS OF THE CITY ZONING ORDINANCE AND SITE PLAN REGULATIONS.
3. ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.

SIGN LEGEND

ID	SIGN	SIZE (INCHES) WIDTH	SIZE (INCHES) HEIGHT	DESIGN (COLORING, TEXT SIZE, SPACING, SHAPE, RETROFLECTIVITY, ETC.)	NO. OF SIGNS
R1-1	STOP	30	30	REFER TO THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS	1

HORIZONTAL SCALE 1"=80'
80 40 0 80

REV.	DATE	DESCRIPTION	DR	CK
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1	12/23/19	NO REVISIONS THIS SHEET	RCK	JJM

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

OVERALL SITE LAYOUT PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=160' (11"X17")

SCALE: 1"=80' (22"X34") **SEPTEMBER 25, 2019**

STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE
No. 14950
LICENSED PROFESSIONAL ENGINEER

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C-04

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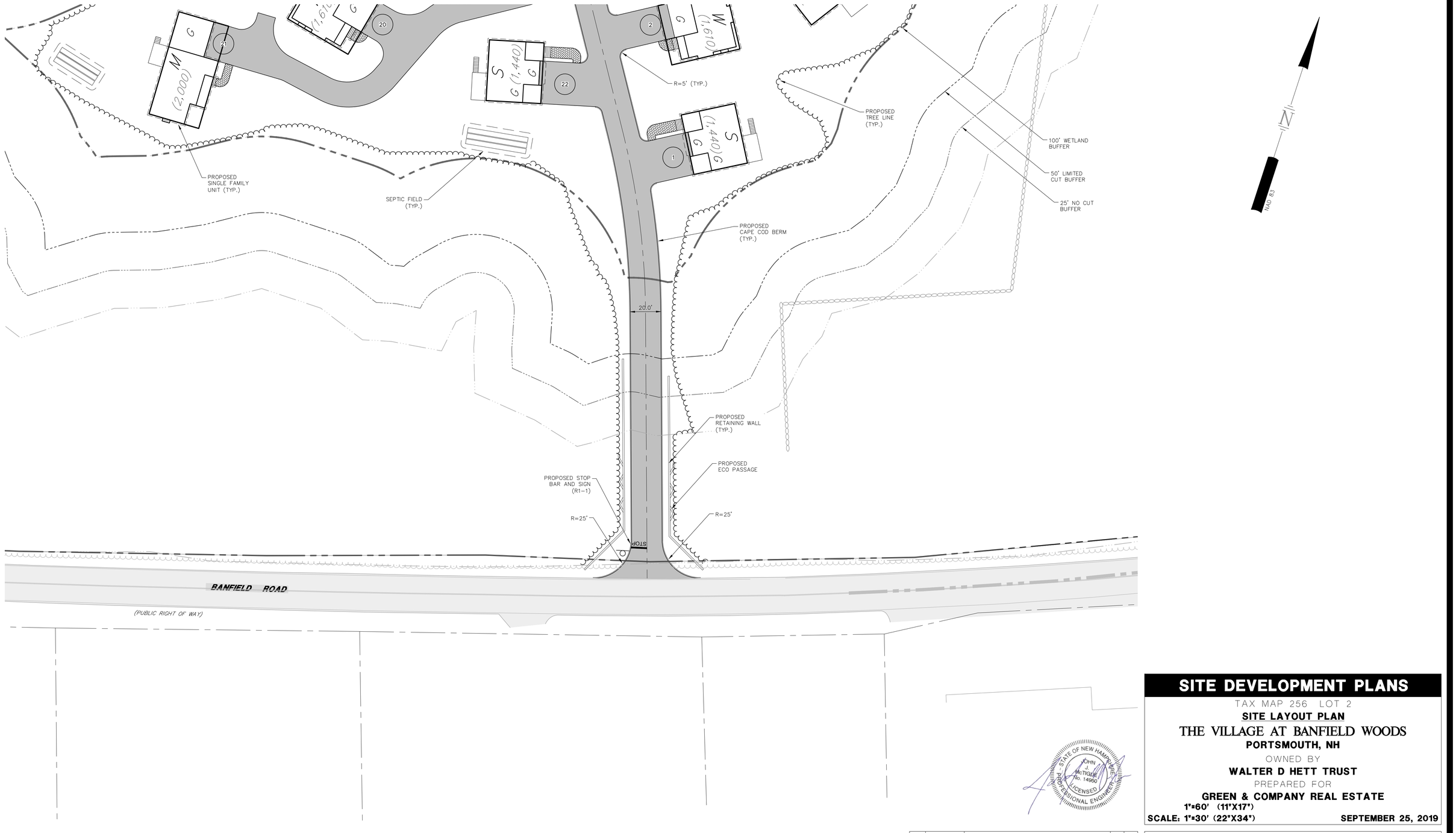

HORIZONTAL SCALE 1"=30'

30 15 0 30

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

SITE LAYOUT PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=60' (11"X17")

SCALE: 1"=30' (22"X34") **SEPTEMBER 25, 2019**

STATE OF NEW HAMPSHIRE JOHN J. McTIGUE No. 14950 LICENSED PROFESSIONAL ENGINEER

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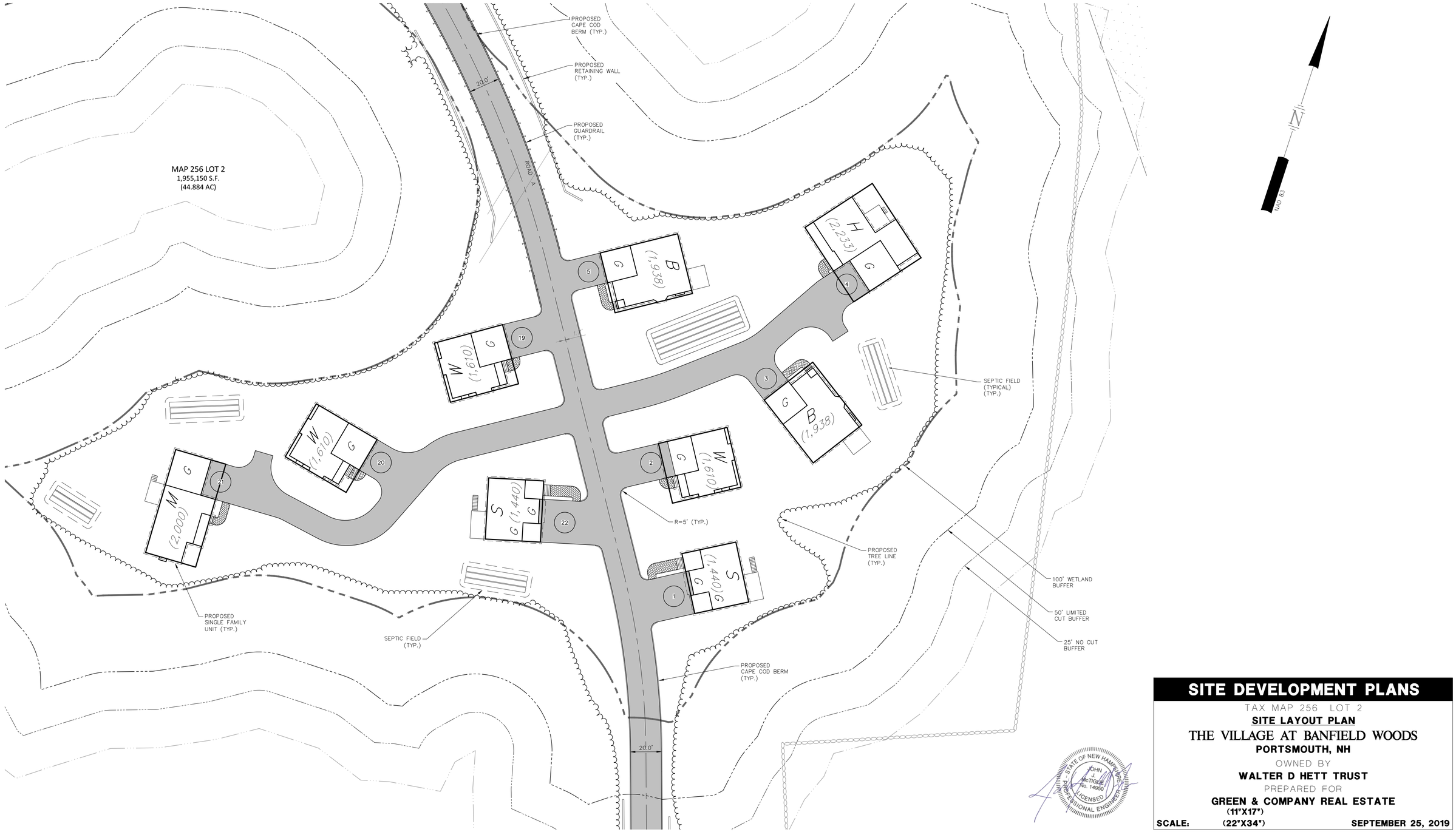

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

SITE LAYOUT PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

SCALE: **(11"X17")** **(22"X34")** **SEPTEMBER 25, 2019**

STATE OF NEW HAMPSHIRE — JOHN J. McTIGUE No. 14950 — LICENSED PROFESSIONAL ENGINEER

HORIZONTAL SCALE 1"=30'
30 15 0 30

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47361.00	RCK	JJM					

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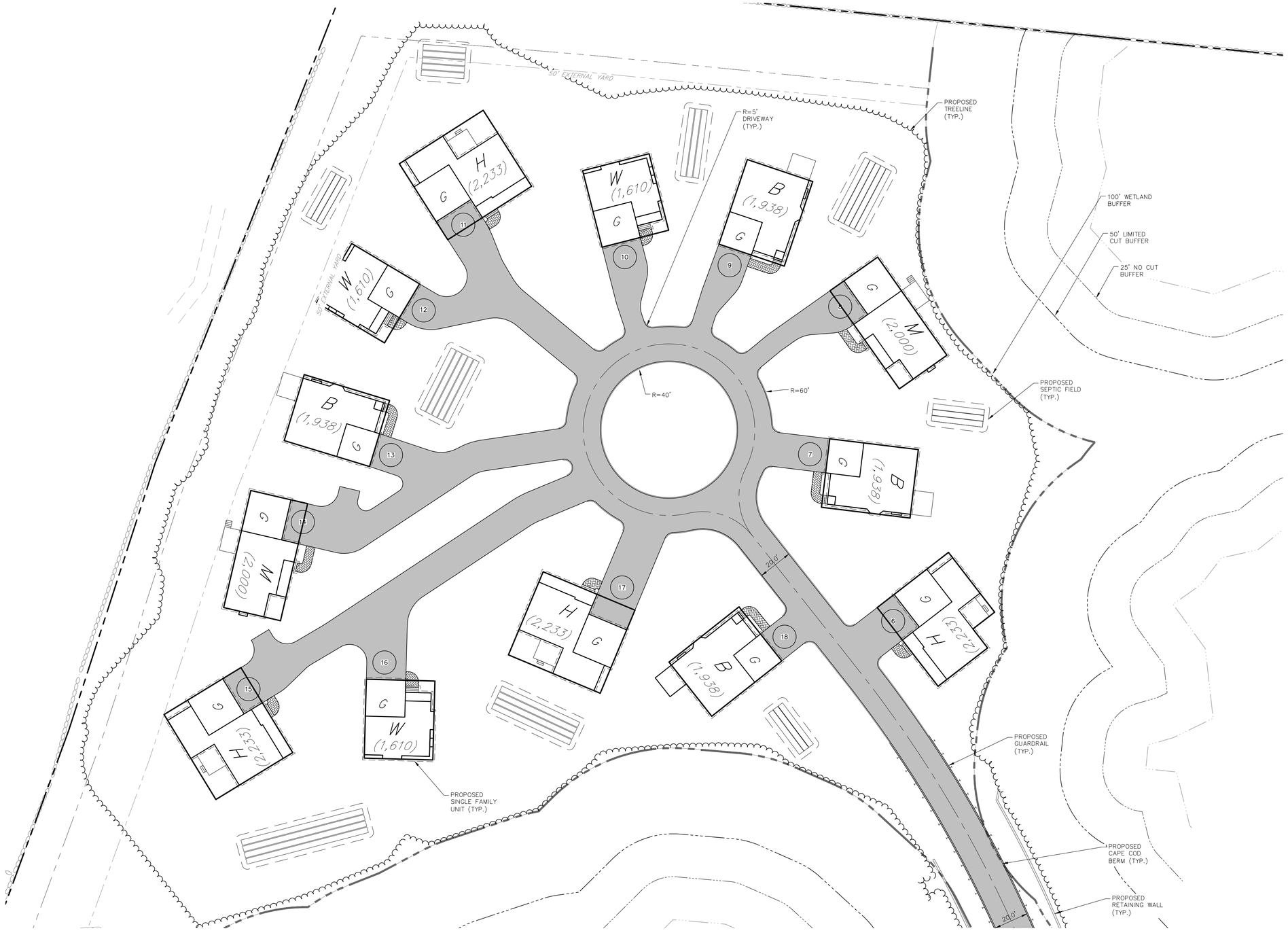

HORIZONTAL SCALE 1"=30'

30 15 0 30

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

SITE LAYOUT PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=60' (11"X17")

SCALE: 1"=30' (22"X34") **SEPTEMBER 25, 2019**

JOHN J. McTIGUE No. 14960 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

REV.	DATE	DESCRIPTION	DR	CK
2	12/27/2019	IN HOUSE REVISIONS	RCK	JJM
1	12/23/19	NO REVISIONS THIS SHEET	RCK	JJM

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47361.00	RCK	JJM	CADFILE	SITELAYOUT	C-07

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SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

OVERALL GRADING & DRAINAGE PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=160' (11"X17")

SCALE: 1"=80' (22"X34") **SEPTEMBER 25, 2019**

STATE OF NEW HAMPSHIRE
JOHN J. MCTIGUE
No. 14960
LICENSED PROFESSIONAL ENGINEER

HORIZONTAL SCALE 1"=80'
80 40 0 80

REV.	DATE	DESCRIPTION	DR	CK
2	12/27/2019	IN HOUSE REVISIONS	RCK	JJM
1	12/23/19	REVISED PER REGULATORY COMMENTS	RCK	JJM

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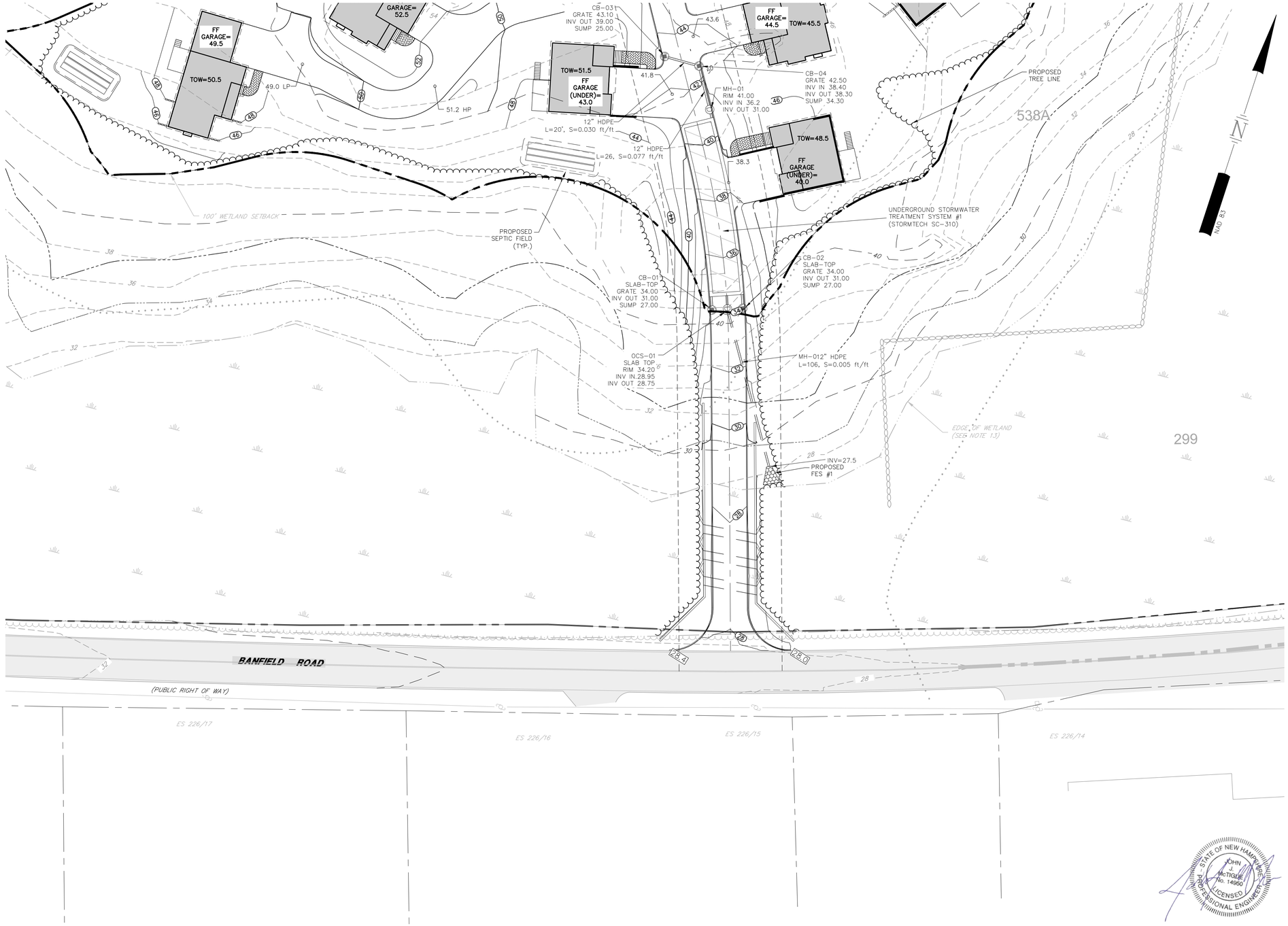

SOIL LEGEND
(PER USDA NRCS WEB SOIL SURVEY)

SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP
38B	ELDRIDGE FINE SANDY LOAM, 3% – 8% SLOPES	C/D
140B	CHATFIELD–HOLLIS–CANTON COMPLEX, 0% – 8%	B
140C	CHATFIELD–HOLLIS–CANTON COMPLEX, 8% – 15%	B
299	UDORTHENTS	–
538A	SQUAMSCOTT FINE SANDY LOAM, 0% – 5%	C/D

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=30'
30 15 0 30

REV.	DATE	DESCRIPTION	DR	CK
2	12/27/2019	IN HOUSE REVISIONS	RCK	JJM
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STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE
No. 14956
LICENSED PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

GRADING & DRAINAGE PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

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47361.00	CK	JJM	CADFILE	GRADINGDRAINAGE	C-09

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

GRADING & DRAINAGE PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

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1"=60' (11"X17")

SCALE: 1"=30' (22"X34") **SEPTEMBER 25, 2019**

JOHN J. McTIGUE No. 14950 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

HORIZONTAL SCALE 1"=30'

30 15 0 30

REV.	DATE	DESCRIPTION	DR	CK
2	12/27/2019	IN HOUSE REVISIONS	RCK	JJM
1	12/23/19	REVISED PER REGULATORY COMMENTS	RCK	JJM

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SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

GRADING & DRAINAGE PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=60' (11"X17")

SCALE: 1"=30' (22"X34") **SEPTEMBER 25, 2019**

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HORIZONTAL SCALE 1"=30'
30 15 0 30

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NOTES

1. ALL CONDOMINIUM UNITS SHALL HAVE FIRE SUPPRESSION SPRINKLERS SYSTEMS INSTALLED.
2. SEE UTILITY NOTES ON NOTES AND LEGEND SHEET (C-02)

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

OVERALL UTILITY PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=160' (11"X17")

SCALE: 1"=80' (22"X34") **SEPTEMBER 25, 2019**

STATE OF NEW HAMPSHIRE — JOHN J. McTIGUE No. 14960 LICENSED PROFESSIONAL ENGINEER

HORIZONTAL SCALE 1"=80'
80 40 0 80

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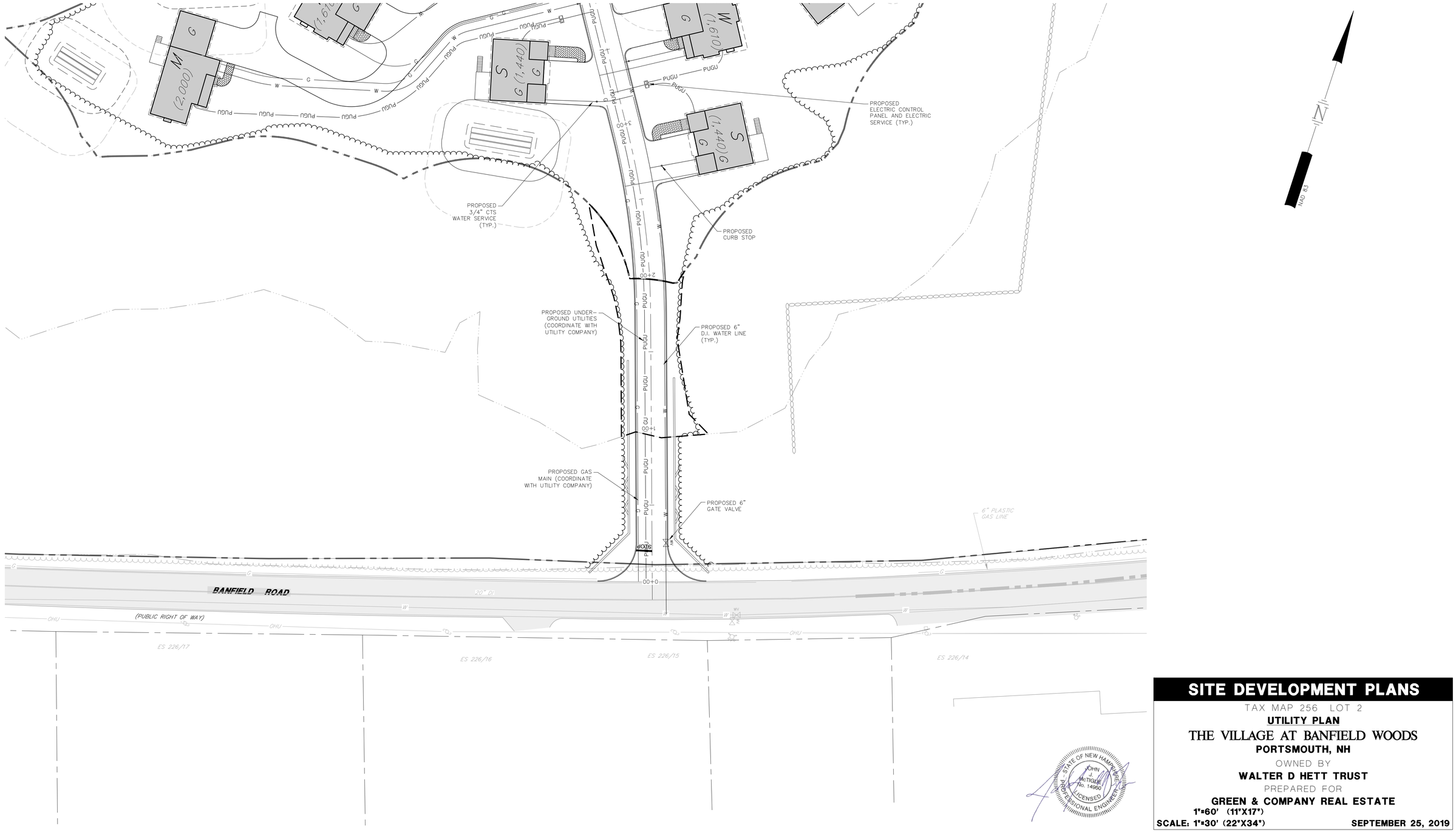

HORIZONTAL SCALE 1"=30'
30 15 0 30

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1	12/23/19	NO REVISIONS THIS SHEET	RCK	JJM

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

UTILITY PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=60' (11"X17")

SCALE: 1"=30' (22"X34") **SEPTEMBER 25, 2019**

STATE OF NEW HAMPSHIRE JOHN J. McTIGUE No. 14960 LICENSED PROFESSIONAL ENGINEER

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MAP 256 LOT 2
1,955,150 S.F.
(44.884 AC)

PROPOSED GAS MAIN (COORDINATE WITH UTILITY COMPANY)

PROPOSED 6" D.I. WATER LINE (TYP.)

PROPOSED UNDERGROUND ELECTRIC UTILITIES (COORDINATE WITH UTILITY COMPANY)

PROPOSED GAS SERVICE (COORDINATE WITH UTILITY COMPANY)

PROPOSED HYDRANT AND VALVE (TYP.)

PROPOSED SEPTIC FIELD (TYP.)

PROPOSED 3/4" CTS WATER SERVICE (TYP.)

PROPOSED CURB STOP

PROPOSED ELECTRIC CONTROL PANEL AND ELECTRIC SERVICE (TYP.)

PROPOSED UNDER-GROUND UTILITIES (COORDINATE WITH UTILITY COMPANY)

PROPOSED 6" D.I. WATER LINE (TYP.)

ROAD A

B (1,938)
H (2,233)
W (1,610)
S (1,440)
M (2,000)

NAD 83

HORIZONTAL SCALE 1"=30'
30 15 0 30

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

UTILITY PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=60' (11"X17")

SCALE: 1"=30' (22"X34") **SEPTEMBER 25, 2019**

STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE
No. 14950
LICENSED PROFESSIONAL ENGINEER

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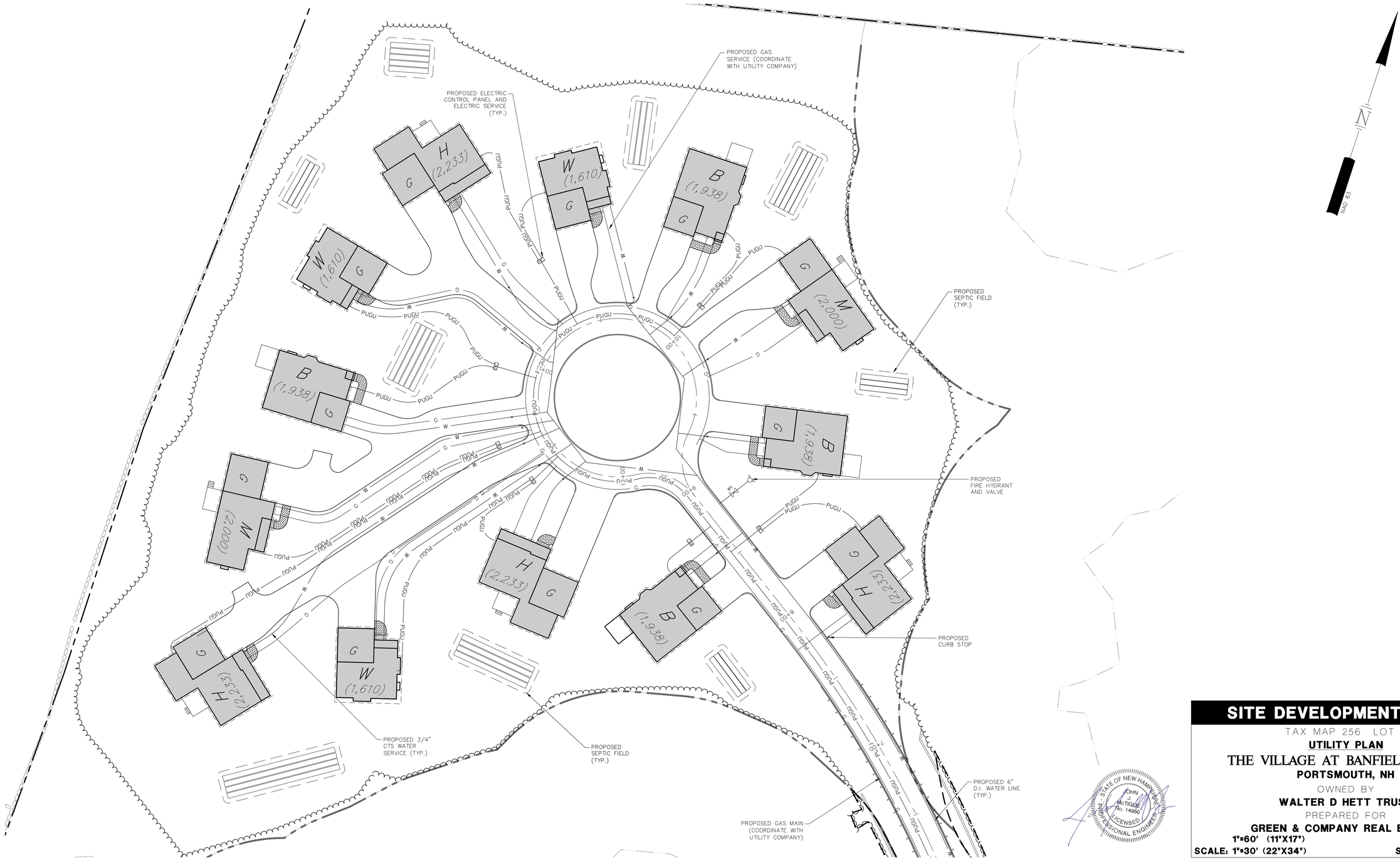

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

UTILITY PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

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HORIZONTAL SCALE 1"=30'

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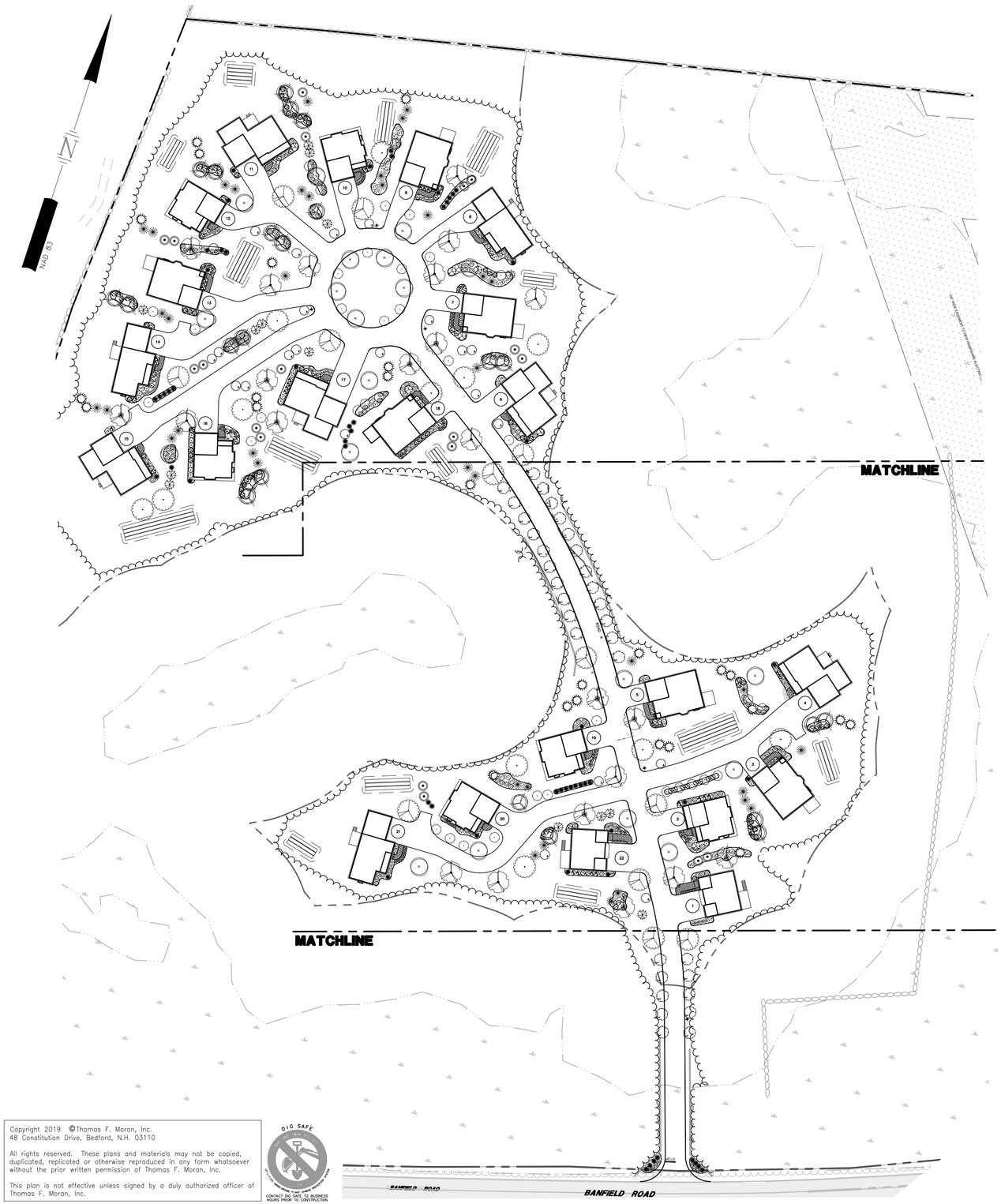

LANDSCAPE NOTES

1. CONTRACTOR WILL LOCATE, VERIFY AND MARK ALL EXISTING AND NEWLY INSTALLED UNDERGROUND UTILITIES PRIOR TO ANY LAWNWORK OR PLANTING. ANY CONFLICTS WHICH MIGHT OCCUR BETWEEN PLANTING AND UTILITIES WILL IMMEDIATELY BE REPORTED TO THE LANDSCAPE ARCHITECT OR OWNERS' REPRESENTATIVE, SO THAT ALTERNATE PLANTING LOCATIONS CAN BE DETERMINED.
2. CONTRACTOR WILL FURNISH AND PLANT ALL PLANTS IN QUANTITIES AS SHOWN ON THIS PLAN. IN CASES OF DISCREPANCY BETWEEN PLAN AND LIST CLARIFY WITH LANDSCAPE ARCHITECT PRIOR TO PLACING PURCHASE ORDER AND AGAIN PRIOR TO PLANTING.
3. SEE PLANTING DETAILS AND IF INCLUDED, SPECIFICATIONS FOR ADDITIONAL INFORMATION.
4. NO SUBSTITUTION OF PLANT MATERIALS WILL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE THE APPROPRIATE ARRANGEMENTS TO PROVIDE ALL PLANTS AND MATERIALS TO ACCOMMODATE PLANTING WITHIN THE TIME ALLOWED BY THE CONSTRUCTION SCHEDULE.
6. PLANTING SHALL BE COMPLETED FROM APRIL 15TH THROUGH OCTOBER 15TH UNLESS OTHERWISE NOTED IN SPECIFICATIONS. THERE WILL BE NO PLANTING DURING JULY AND AUGUST UNLESS SPECIAL PROVISIONS ARE MADE FOR DROUGHT BY PROVIDING ADDITIONAL WATERING.
7. ALL PLANTS WILL BE NURSERY GROWN.
8. PLANTS WILL BE IN ACCORDANCE, AT A MINIMUM, WITH CURRENT EDITION OF "AMERICAN STANDARDS FOR NURSERY STOCK" AS PUBLISHED BY THE AMERICAN HORTICULTURE INDUSTRY ASSOCIATION.
9. TREES WILL BE PRUNED IN ACCORDANCE WITH THE LATEST EDITION OF ANSI A300 PART 1, "TREE, SHRUB AND OTHER WOODY PLANT MAINTENANCE STANDARD PRACTICES".
10. PLANTS MATERIAL IS SUBJECT TO APPROVAL / REJECTION BY THE LANDSCAPE ARCHITECT AT THE SITE AND AT THE NURSERY.
11. ALL PLANTS WILL BE MOVED WITH ROOT SYSTEMS AS SOLID UNITS AND WITH BALLS OF EARTH FIRMLY WRAPPED WITH BURLAP. NO PLANT WILL BE ACCEPTED WHEN BALL OF EARTH SURROUNDING ITS ROOTS HAS BEEN BADLY CRACKED OR BROKEN BEFORE PLANTING. ALL PLANTS THAT CANNOT BE PLANTED AT ONCE WILL BE HEELED-IN BY SETTING IN THE GROUND AND COVERING THE BALLS WITH SOIL AND THEN WATERING. DURING TRANSPORT, ALL PLANT MATERIALS WILL BE WRAPPED WITH WIND PROOF COVERING.
12. NEWLY PLANTED MATERIAL WILL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS TO THE ORIGINAL GRADE OF THE PLANT PRIOR TO DIGGING.
13. PROPOSED TREES OVERHANGING SIDEWALKS, ROADS OR PARKING WILL BEGIN BRANCHING NATURALLY (NOT PRUNED) AT 6' HEIGHT.
14. MULCH FOR PLANTED AREAS (NOT INCLUDING RAIN GARDENS) WILL BE AGED SHREDDED PINE BARK, PARTIALLY DECOMPOSED, DARK BROWN IN COLOR AND FREE OF WOOD CHIPS UNLESS OTHERWISE SHOWN.
15. PLANT MATERIAL WILL BE LOCATED OUTSIDE BUILDING DRIPLINES AND ROOF VALLEY POINTS OF CONCENTRATION TO PREVENT DAMAGE TO PLANTS. CLARIFY DISCREPANCIES WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
16. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED, WILL RECEIVE SIX (6) INCH LOAM AND SEED AT THE DIRECTION OF THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE.
17. TREE STAKES AND WRAP WILL REMAIN IN PLACE FOR NO LESS THAN 6 MONTHS AND NO MORE THAN 1 YEAR. CONTRACTOR WILL REMOVE.
18. ALL PLANT GROUPINGS WILL BE IN MULCH BEDS UNLESS OTHERWISE SPECIFIED OR NOTED ON PLANS. WHERE MULCHED PLANT BED ABUTS LAWN, PROVIDE TURF CUT EDGE.
19. ALL PLANT BEDS WILL INTERSECT WITH PAVEMENT AT 90 DEGREES UNLESS OTHERWISE NOTED ON PLANS.

LANDSCAPE GUARANTEE AND MAINTENANCE NOTES

1. CONTRACTOR WILL BE RESPONSIBLE FOR ALL MEANS, METHODS AND TECHNIQUES OF WATERING.
2. CONTRACTOR WILL BEGIN WATERING IMMEDIATELY AFTER PLANTING. ALL PLANTS WILL BE THOROUGHLY WATERED TWICE DURING THE FIRST 24 HOUR PERIOD AFTER PLANTING. ALL PLANTS WILL BE WATERED WEEKLY, OR MORE OFTEN, IF NECESSARY DURING THE FIRST GROWING SEASON BUT NOT LESS THAN ONE YEAR.
3. WATER ALL LAWNS AS REQUIRED. DO NOT LET NEWLY PLANTED LAWNS DRY OUT DURING THE FIRST FOUR WEEKS MINIMUM.
4. ALL NEW LAWNS WILL BE MAINTAINED AND MOWED A MINIMUM THREE (3) TIMES BEFORE REQUESTING REVIEW BY LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE FOR ACCEPTANCE. MAINTENANCE AND MOWING WILL CONTINUE UNTIL ACCEPTED BY LANDSCAPE ARCHITECT OR OWNERS' REPRESENTATIVE IS ISSUED IN WRITING.
5. THE CONTRACTOR WILL MAINTAIN AND GUARANTEE ALL PLANTINGS TO BE IN GOOD HEALTHY, FLOURISHING AND ACCEPTABLE CONDITION FOR A PERIOD OF ONE (1) YEAR BEGINNING AT THE DATE OF ACCEPTANCE BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE. ALL GRASSES, TREES AND SHRUBS THAT, IN THE OPINION OF THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE SHOWING LESS THAN 80% HEALTHY GROWTH AT THE END OF ONE (1) YEAR PERIOD WILL BE IMMEDIATELY REPLACED BY THE CONTRACTOR.
6. DECIDUOUS PLANT MATERIAL INSTALLED AFTER SEPTEMBER 30 AND BEFORE APRIL 15 WILL NOT BE REVIEWED THAT SEASON FOR ACCEPTANCE DUE TO STAGE OF LEAF PHYSIOLOGY. THIS PLANT MATERIAL WILL NOT BE REVIEWED UNTIL FOLLOWING GROWING SEASON. GUARANTEE PERIOD WILL BEGIN ONLY AFTER ACCEPTANCE BY LANDSCAPE ARCHITECT OR OWNERS' REPRESENTATIVE.
7. EVERGREEN PLANT MATERIAL INSTALLED AFTER OCTOBER 30 AND BEFORE APRIL 15 WILL NOT BE REVIEWED THAT SEASON FOR ACCEPTANCE DUE TO END OF GROWTH SEASON. THIS PLANT MATERIAL WILL NOT BE REVIEWED UNTIL FOLLOWING GROWING SEASON. GUARANTEE PERIOD WILL BEGIN ONLY AFTER ACCEPTANCE BY LANDSCAPE ARCHITECT OR OWNERS' REPRESENTATIVE.

HYDROSEEDING NOTES

1. HYDROSEEDING MAY BE USED AS AN ALTERNATE METHOD OF SEEDING. THE APPLICATION OF LIMESTONE AS NECESSARY, FERTILIZER AND GRASS SEED MAY BE ACCOMPLISHED IN ONE OPERATION BY THE USE OF A SPRAYING MACHINE APPROVED BY THE LANDSCAPE ARCHITECT OR CIVIL ENGINEER. THE MATERIALS SHALL BE MIXED WITH WATER IN THE MACHINE AND SHALL CONFORM TO RELATIVE REQUIREMENTS OF SECTION 644 OF NH. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. (FOR MASSACHUSETTS PROJECTS PLUG IN – SECTION 765.65 OF MASS. DPW CURRENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES).

INVASIVE PLANT NOTES

1. EXISTING NON-NATIVE, INVASIVE PLANT SPECIES WILL BE IDENTIFIED, REMOVED, DESTROYED AND LEGALLY DISPOSED OF OFF-SITE IN ACCORDANCE WITH THE LATEST UNIVERSITY OF NEW HAMPSHIRE COOPERATIVE EXTENSION METHODS OF DISPOSING NON-NATIVE INVASIVE PLANTS. SEE "MANAGE AND CONTROL INVASIVES" AND PROPERLY DISPOSE OF INVASIVE PLANTS".

PRICING & CONSTRUCTION DOCUMENT NOTES

1. CONTRACTOR WILL PRICE PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE PLANTINGS GRAPHICALLY SHOWN ON THESE DRAWINGS OR IN PLANT LIST, WHICHEVER IS GREATER. IN CASES OF DISCREPANCY BETWEEN PLAN AND LIST CLARIFY WITH LANDSCAPE ARCHITECT PRIOR TO PLACING PURCHASE ORDER AND AGAIN PRIOR TO PLANTING.
2. CONTRACTOR WILL VERIFY PRIOR TO PRICING IF SITE SOILS ARE VERY POORLY DRAINING OR IF LEDGE IS PRESENT. IF CONTRACTOR ENCOUNTERS VERY POORLY DRAINING SOILS (BATH TUB EFFECT) OR LEDGE THAT IMPACTS PROPOSED PLANTING PLAN, NOTIFY LANDSCAPE ARCHITECT OR OWNERS' REPRESENTATIVE FOR DIRECTION PRIOR TO PRICING AND AGAIN PRIOR TO PERFORMING ANY WORK.
3. PARKING AREA PLANTED ISLANDS WILL HAVE MINIMUM OF 1'-0" TOPSOIL PLACED TO THE TOP OF CURB ELEVATION. REMOVE ALL CONSTRUCTION DEBRIS BEFORE PLACING TOPSOIL.
4. EXISTING TREES SHOWN ON THE PLAN WILL REMAIN UNDISTURBED. ALL EXISTING TREES SHOWN TO REMAIN WILL BE PROTECTED WITH A 4-FOOT SNOW FENCE PLACED AT THE DRIP LINE OF THE BRANCHES OR AT 8 FEET MINIMUM FROM THE TREE TRUNK.
5. CONTRACTOR WILL STAKE OR PLACE ON GROUND ALL PROPOSED PLANT MATERIALS PER PLAN. CONTACT LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
6. COORDINATE WITH LANDSCAPE ARCHITECT'S CONTRACTED NUMBER OF SITE VISITS WHEN PLANNING FOR INSPECTION. NOTIFY LANDSCAPE ARCHITECT 72 HOURS MINIMUM IN ADVANCE OF REQUESTED SITE VISIT.
7. CONTRACTOR WILL DEVELOP A WRITTEN WATERING SCHEDULE AND WILL SUBMIT WATERING SCHEDULE TO OWNERS' REPRESENTATIVE. CONTRACTOR WILL WATER ALL NEW PLANTS INCLUDING LAWNS THAT ARE NOT "IRRIGATED" VIA A PERMANENT IRRIGATION SYSTEM FOR THE FIRST 12 MONTHS.

PORTSMOUTH NOTES

1. THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNER'S WILL BE RESPONSIBLE FOR THE MAINTENANCE AND OF ALL REQUIRED SCREENING AND LANDSCAPE MATERIALS INDICATED ON THESE PLAN(S).
2. ALL REQUIRED PLANT MATERIAL WILL BE TENDED TO AND KEPT FREE OF REFUSE AND DEBRIS.
3. ALL REQUIRED FENCES AND WALLS WILL BE MAINTAINED IN GOOD REPAIR.
4. THE PROPERTY OWNER WILL BE RESPONSIBLE TO REMOVE AND REPLACE DEAD OR DISEASED PLANT MATERIALS IMMEDIATELY WITH THE SAME TYPE, SIZE AND QUANTITY OF PLANT MATERIALS AS ORIGINALLY INSTALLED, UNLESS ALTERNATIVE PLANTINGS ARE REQUESTED, JUSTIFIED AND APPROVED BY THE PLANNING BOARD OR PLANNING DIRECTOR.
5. ALL IMPROVEMENTS SHOWN ON THIS PLAN WILL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THIS PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES WILL BE MADE TO THIS PLAN WITHOUT THE WRITTEN APPROVAL OF THE PORTSMOUTH PLANNING BOARD OR PLANNING DIRECTOR.
6. THE LANDSCAPE PLAN WILL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.

SEEDING NOTES

1. SLOPES UP TO AND INCLUDING 3:1 GRADE, SEED WILL BE NEW ENGLAND EROSION CONTROL & RESTORATION MIX PER NEW ENGLAND WETLANDS PLANTS INC., AMHERST, MA.
2. SLOPES STEEPER THAN 3:1 GRADE, SEED WILL BE NEW ENGLAND EROSION CONTROL & RESTORATION MIX PER NEW ENGLAND WETLANDS PLANTS INC., AMHERST, MA. SEE CIVIL FOR ADDITIONAL EROSION CONTROL MEASURES.
3. GENERAL SEED WILL BE NHDOT SPECIFICATION SECTION 644, TABLE 644-1-PARK SEED TYPE 15, INCLUDING NOTES TO TABLE 1, 2 & 3.

HORIZONTAL SCALE 1"=60'
60 30 0 60

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SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

OVERALL LANDSCAPE PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=120' (11"X17")

SCALE: 1"=60' (22"X34") **SEPTEMBER 25, 2019**

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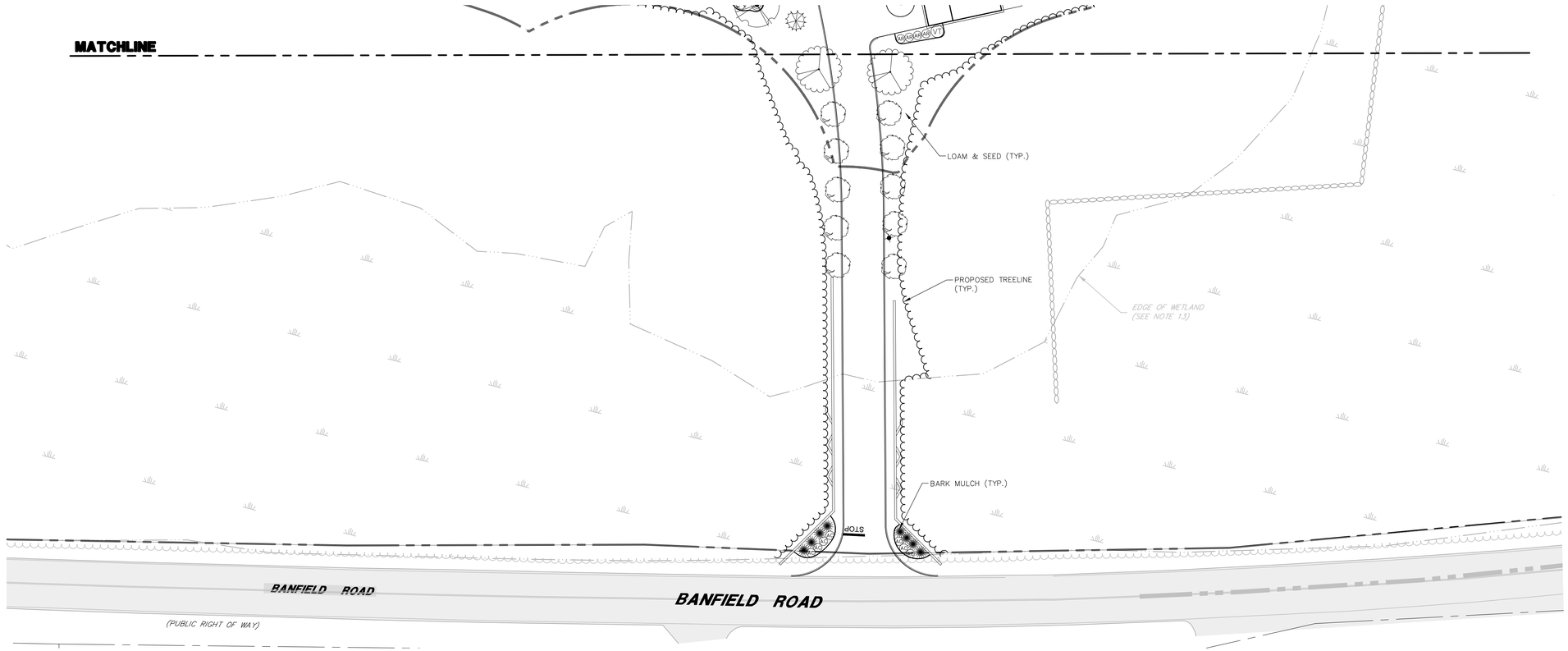

LANDSCAPE LEGEND

SYMBOL	QTY	BOTANICAL NAME COMMON NAME	SIZE	REMARKS
SHADE TREES				
	12	ACER RUBRUM 'OCTOBER GLORY' **OCTOBER GLORY RED MAPLE	3" TO 3 1/2" CAL.	B&B
	12	ACER SACCHARUM 'COMMEMORATION' **COMMEMORATION SUGAR MAPLE	3" TO 3 1/2" CAL.	B&B
	23	BETULA N. 'HERITAGE' *RIVER BIRCH	12' TO 14' CLUMP	B&B
	20	NYSSA SYLVATICA *BLACK GUM	2 1/2 TO 3" CAL.	B&B
	12	QUERCUS ALBA *WHITE OAK	3" TO 3 1/2" CAL.	B&B
	11	QUERCUS RUBRA *RED OAK	3" TO 3 1/2" CAL.	B&B

LANDSCAPE LEGEND

SYMBOL	QTY	BOTANICAL NAME COMMON NAME	SIZE	REMARKS
SMALL/FLOWERING TREES				
	32	CARPINUS CAROLINIANA *AMERICAN HORNBEAM	2" TO 2 1/2" CAL.	B&B
	36	CRATAEGUS CRUSGALLI INERMIS **THORNLESS COCKSPUR HAWTHORN	2 1/2" TO 3" CAL.	B&B
	24	PRUNUS VIRGINIANA 'SCHUBERT' *CANADA RED CHERRY	2 1/2" TO 3" CAL.	B&B
EVERGREEN TREES				
	19	ABIES BALSAMAE *BALSAM FIR	6' TO 7'	B&B
	14	JUNIPERUS VIRGINIANA *EASTERN RED CEDAR	6' TO 7'	B&B
	38	PICEA GLAUCA WHITE SPRUCE	7' TO 8'	B&B
	25	PINUS STROBUS *WHITE PINE	6' TO 7'	B&B

LANDSCAPE LEGEND

SYMBOL	QTY	BOTANICAL NAME COMMON NAME	SIZE	REMARKS
DECIDUOUS SHRUB				
	10	AMELANCHEIR CANADENSIS SHADBLOW SERVICEBERRY	5' TO 6' CLUMP	B&B
	26	CLETHRA ALNIFOLIA 'COMPACTA' **COMPACT SUMMERSWEET	7 GAL.	CONT.
	54	CORNUS SERICEA 'ALLEMAN'S COMPACTA' **ALLEMAN'S COMPACT RED-OSIER DOGWOOD	3' TO 4'	CONT.
	43	PHYSOCARPUS O. 'BURGUNDY CANDY' **BURGUNDY CANDY NINEBARK	2 GAL.	CONT.
VD	7	VIBURNUM DENTATUM *ARROWWOOD VIBURNUM	4' TO 5'	B&B
VT	19	VIBURNUM TRILOBUM *AMERIVAN CRANBERRY VIBURNUM	4' TO 5'	B&B
VP	6	VIBURNUM PRUNIFOLIUM *BLACKHAW VIBURNUM	4' TO 5'	B&B

LANDSCAPE LEGEND

SYMBOL	QTY	BOTANICAL NAME COMMON NAME	SIZE	REMARKS
EVERGREEN SHRUB				
	23	ARCTOSTAPHYLOS UVA-URSI *BEARBERRY	1 GAL.	CONT.
AC	26	AZALEA 'GIRARD'S CRIMSON' GIRARD'S CRIMSON AZALEA	3 GAL.	CONT.
AR	26	AZALEA 'GIRARD'S RENEE MICHELE' GIRARD'S RENEE MICHELE AZALEA	3 GAL.	CONT.
	40	RHODODENDRON 'ROSEUM PINK' **ROSEUM PINK CATAWBA RHODODENDRON	7 GAL.	CONT.
	20	ILEX GLABRA 'COMPACTA' **COMPACT INKBERRY	3 GAL.	CONT.
	25	JUNIPERUS H. 'BAR HARBOR' *BAR HARBOR JUNIPER	3 GAL.	CONT.
	127	JUNIPERUS C. 'ANGELICA BLUE' ANGELICA BLUE JUNIPER	5 GAL.	CONT.
	14	PINUS M. 'MOPS' MOPS MUGO PINE	3 GAL.	CONT.
	58	THUJA O. NIGRA DARK AMERICAN ARBORVITAE	5' TO 6'	B&B

*NATIVE
** IMPROVED NATIVE

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HORIZONTAL SCALE 1"=30'
30 15 0 30

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SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

LANDSCAPE PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=60' (11"X17")

SCALE: 1"=30' (22"X34") **SEPTEMBER 25, 2019**

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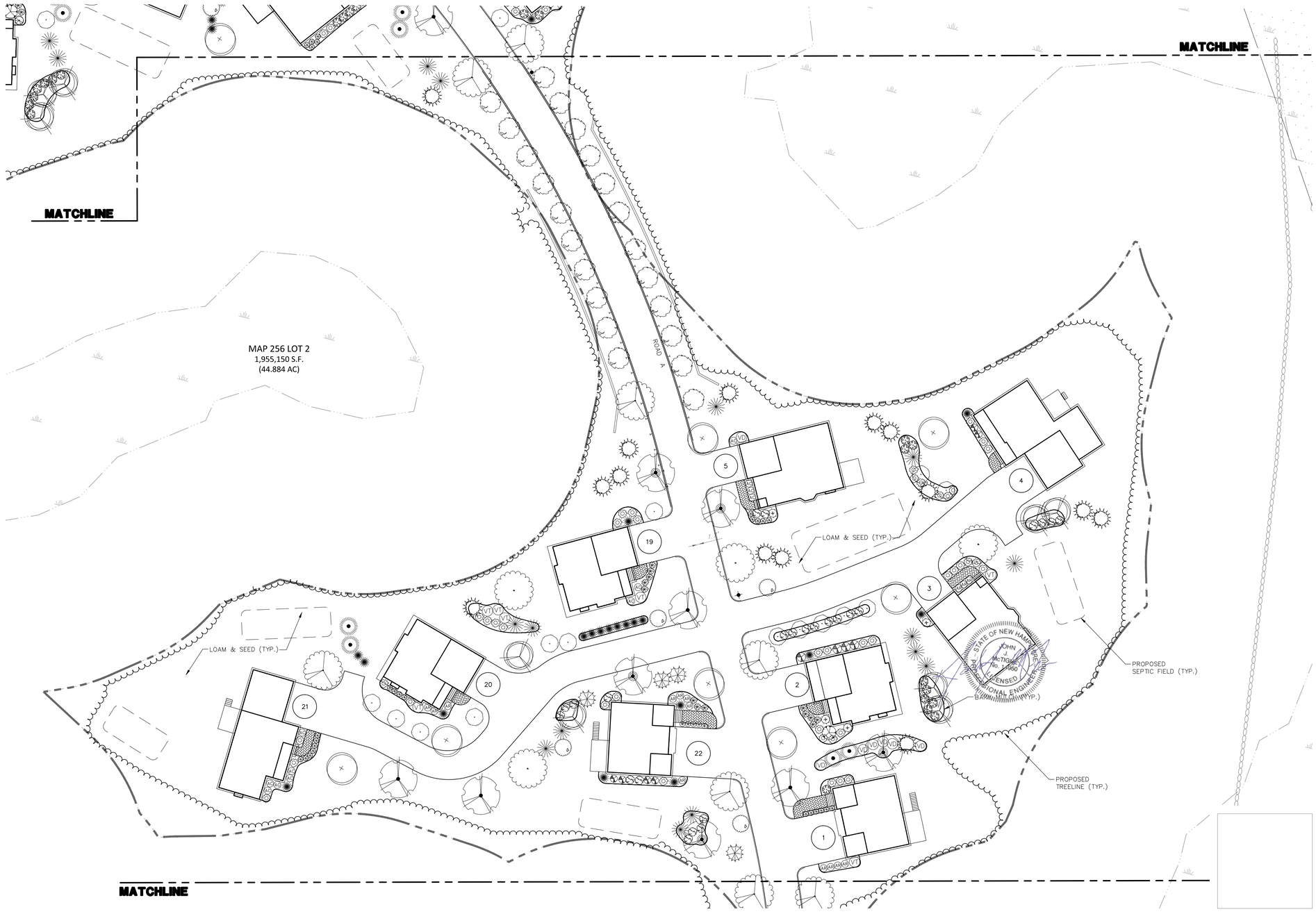

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

LANDSCAPE PLAN

THE VILLAGE AT BANFIELD WOODS

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HORIZONTAL SCALE 1"=30'

30 15 0 30

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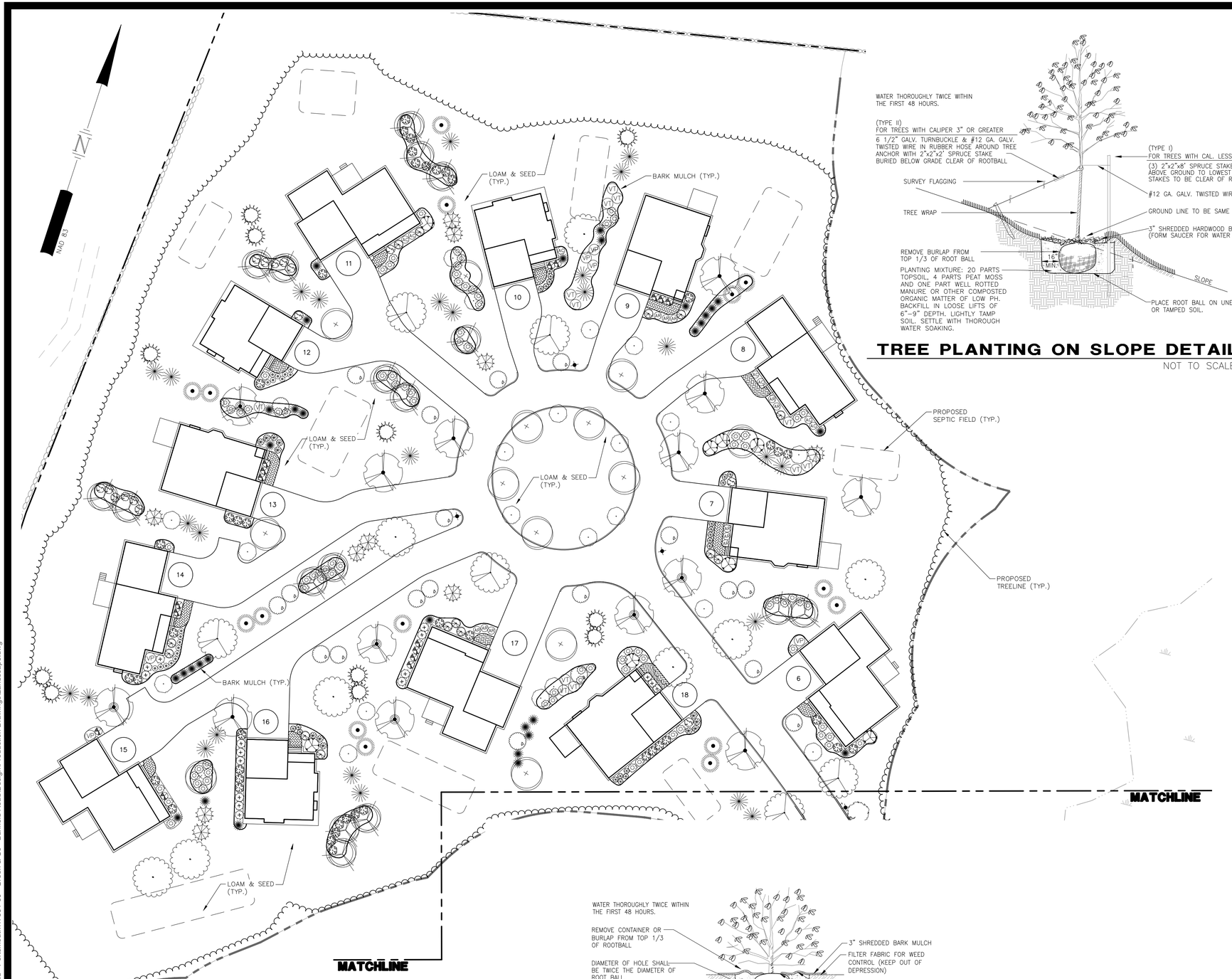
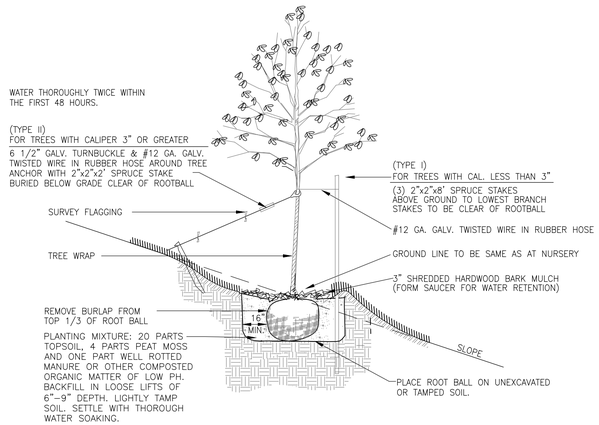
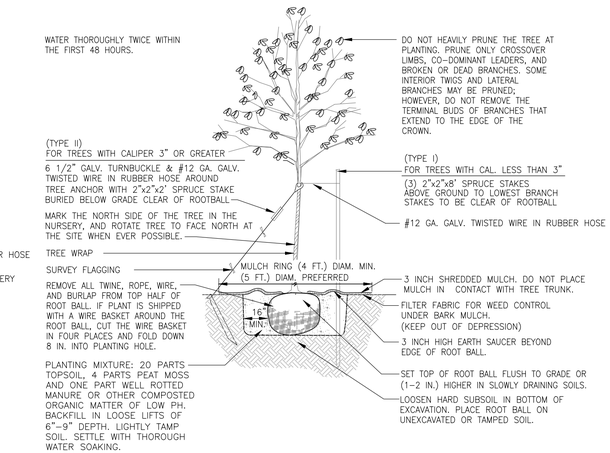




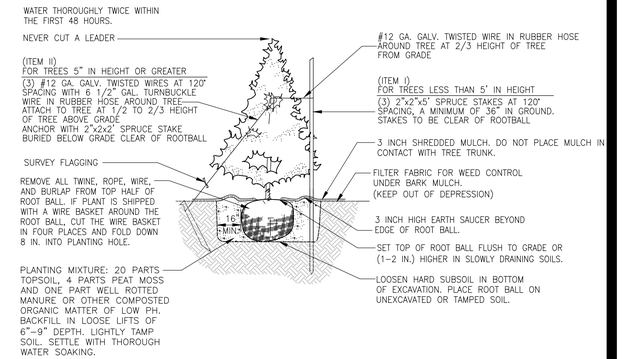
TREE PLANTING ON SLOPE DETAIL

NOT TO SCALE



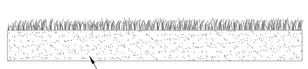
DECIDUOUS TREE PLANTING

NOT TO SCALE



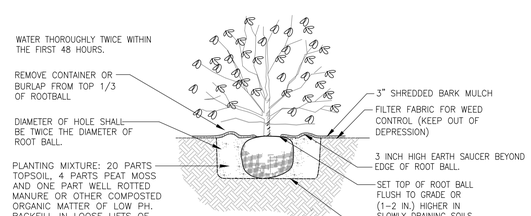
EVERGREEN PLANTING

NOT TO SCALE



LOAM & SEED

NOT TO SCALE



SHRUB PLANTING

NOT TO SCALE

HORIZONTAL SCALE 1"=30'

30 15 0 30

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

LANDSCAPE PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

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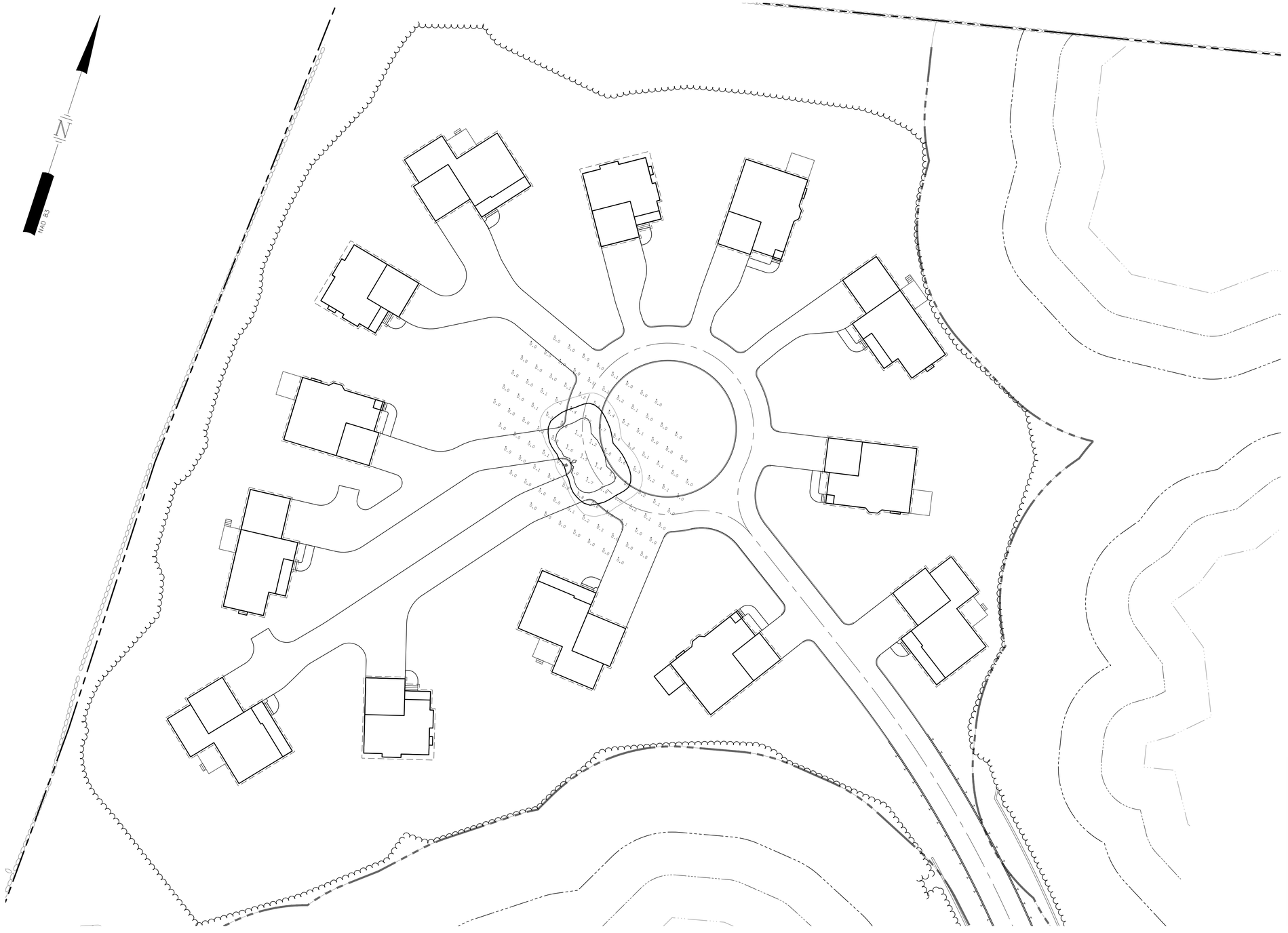

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

LIGHTING PLAN

THE VILLAGE AT BANFIELD WOODS

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SCALE: 1"=30' (22"X34") **SEPTEMBER 25, 2019**

Luminaire Schedule				
Symbol	Qty	Label	Arrangement	Description
☒	1	P4	SINGLE	COL18-IV-48VLED-NW-350-HS-PT/ MOUNTED ON 12' WOOD POLE PROVIDED BY OTHERS

HORIZONTAL SCALE 1"=30'

30 15 0 30

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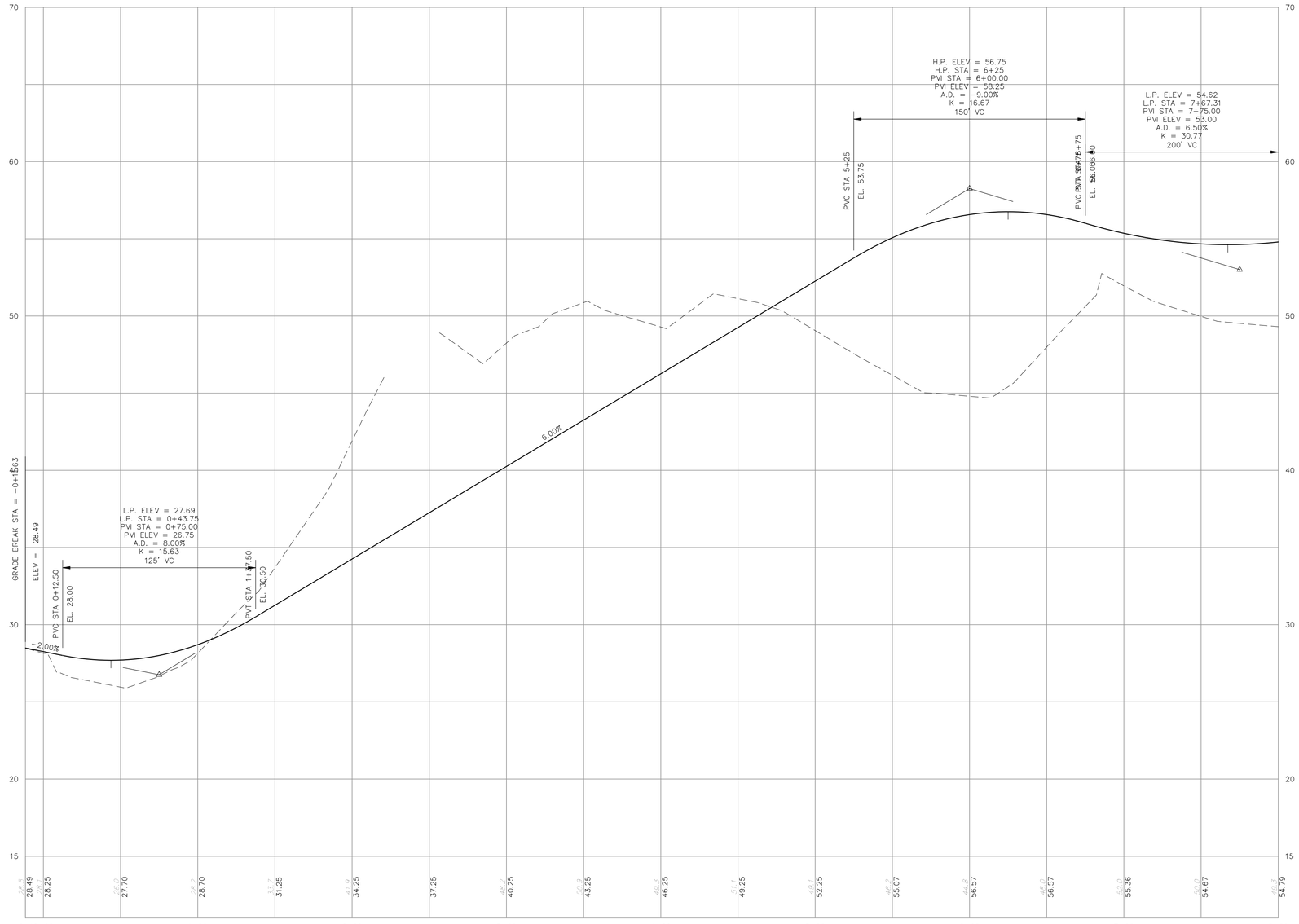

ROAD-A_ALTERNATE

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

ROAD-A PROFILE

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=80' (11"X17")

SCALE: 1"=40' (22"X34") **SEPTEMBER 25, 2019**

STATE OF NEW HAMPSHIRE — JOHN J. MCTIGUE No. 14980 — LICENSED PROFESSIONAL ENGINEER

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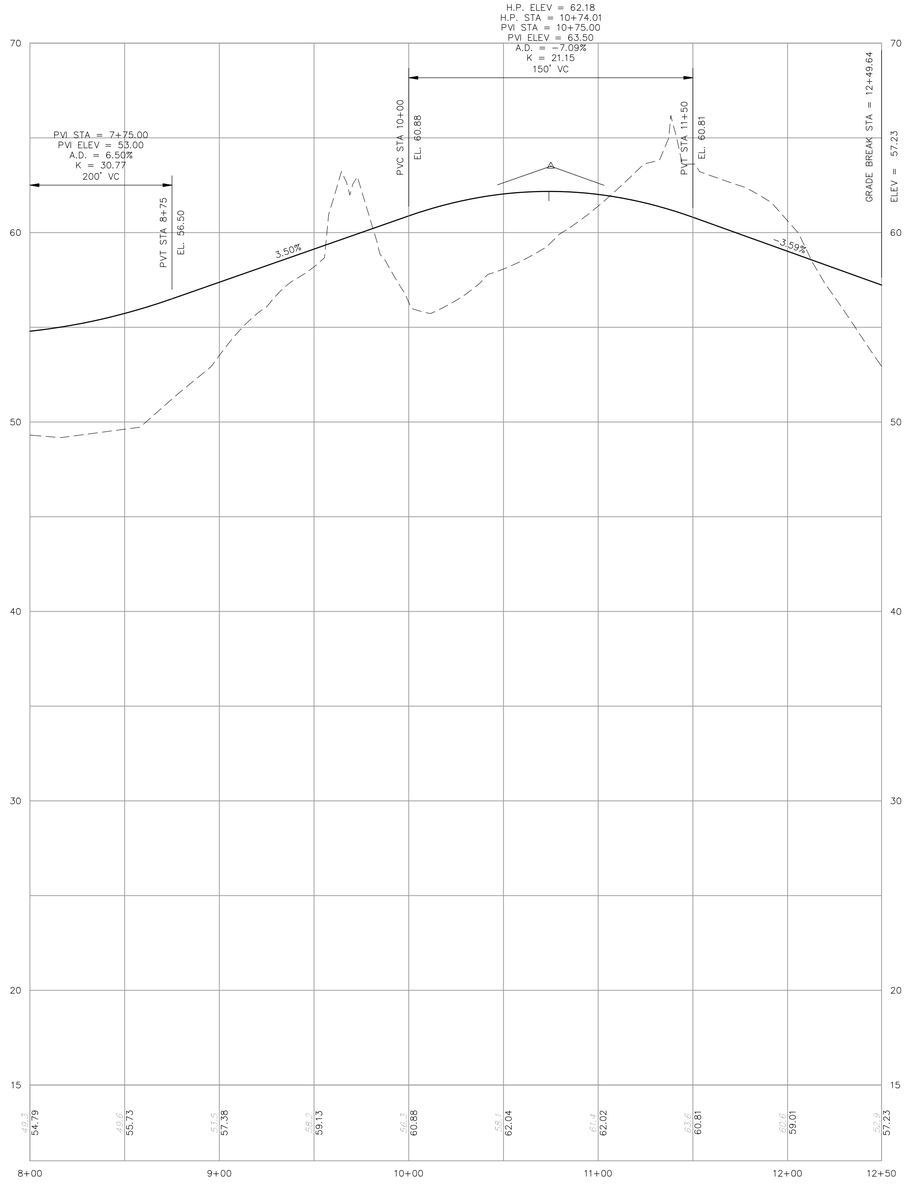

ROAD-A_ALTERNATE

HORIZONTAL SCALE 1"=40'
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SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

ROAD-A PROFILE

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

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1"=80 (11"X17")

SCALE: 1"=40' (22"X34") **SEPTEMBER 25, 2019**

STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE
No. 14960
LICENSED
PROFESSIONAL ENGINEER

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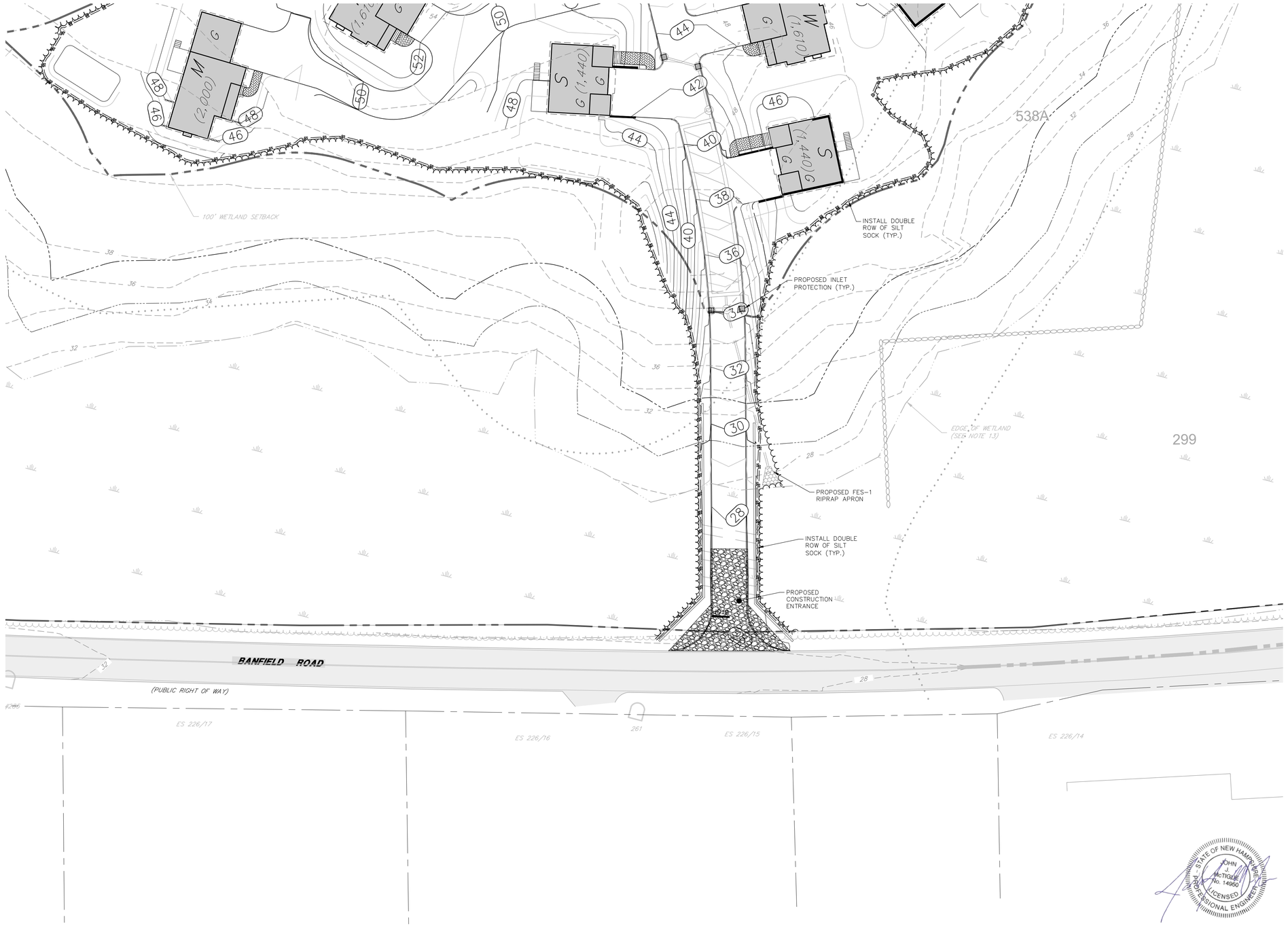

NOTES

1. SEE GENERAL EROSION CONTROL NOTES ON THE EROSION CONTROL DETAIL SHEET AND THE APPROVED SWPPP.
2. INSTALL SILT BARRIER ALONG THE PERIMETER OF THE AREA TO BE DISTURBED AS FIRST ORDER OF WORK.
3. PROVIDE INLET PROTECTION BARRIERS AROUND ALL EXISTING AND PROPOSED STORM DRAINAGE INLETS WITHIN THE WORK LIMITS AND MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED. INLET PROTECTION BARRIERS SHALL BE IN PLACE AT ALL CATCH BASINS PRIOR TO THE DISTURBANCE OF SOIL.
4. DUST CONTROL SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. IT SHALL BE ACCOMPLISHED BY THE UNIFORM APPLICATION OF CALCIUM CHLORIDE AT THE RATE OF 1-1/2 POUNDS PER SQUARE YARD BY MEANS OF A LIME SPREADER OR OTHER APPROVED METHOD. WATER MAY ALSO BE USED FOR DUST CONTROL, AND APPLIED BY SPRINKLING WITH WATER TRUCK DISTRIBUTORS, AS REQUIRED.
5. THE SITE WILL REQUIRE A USEPA NPDES PERMIT FOR STORMWATER DISCHARGE FOR THE SITE CONSTRUCTION SINCE THE DISTURBANCE EXCEEDS ONE ACRE. THE CONSTRUCTION SITE OPERATOR SHALL DEVELOP AND IMPLEMENT A CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH EPA REGULATIONS AND THE CONSTRUCTION GENERAL PERMIT WHICH SHALL REMAIN ON SITE AND MADE ACCESSIBLE TO THE PUBLIC. THE SITE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE. A COMPLETED NOTICE OF TERMINATION (NOT) SHALL BE SUBMITTED TO NPDES PERMITTING AUTHORITY WITHIN 30 DAYS AFTER EITHER OF THE FOLLOWING CONDITIONS HAVE BEEN MET: FINAL STABILIZATION HAS BEEN ACHIEVED ON ALL PORTIONS OF THE SITE FOR WHICH THE PERMITTEE IS RESPONSIBLE FOR, OR ANOTHER OPERATOR/PERMITTEE HAS ASSUMED CONTROL OVER ALL AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED.
6. SILT PROTECTION MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS CONTAINED IN THIS PLAN SET.
7. CONSTRUCT JUTE MATTING ON ALL SLOPES STEEPER THAN 3:1, DISTURBED AREAS SLOPING TOWARDS WETLANDS AND ALL LOCATIONS SHOWN ON PLAN.
8. INSPECT EROSION CONTROL MEASURES WEEKLY AND AFTER EACH RAIN STORM OF 0.10" OR GREATER. REPAIR/MODIFY SILT BARRIER AS NECESSARY TO MAXIMIZE FILTER EFFICIENCY. REMOVE SEDIMENT WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.
9. PROVIDE SILT BARRIERS AT THE BASE OF CUT AND FILL SLOPES UNTIL COMPLETION OF THE PROJECT OR UNTIL VEGETATION BECOMES ESTABLISHED ON SLOPES. EROSION PROTECTION BELOW FILL SLOPES SHALL BE PLACED IMMEDIATELY AFTER CLEARING, PRIOR TO EMBANKMENT CONSTRUCTION.
10. ALL DISTURBED AREAS SHALL BE REVEGETATED AS QUICKLY AS POSSIBLE. ALL CUT AND FILL SLOPES SHALL BE SEEDED WITHIN 72 HOURS AFTER GRADING.
11. ALL WORK AREAS TO BE STABILIZED AT THE END OF EACH WORK DAY AND PRIOR TO ANY PREDICTED SIGNIFICANT RAIN EVENT.
12. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
    A. BASE COURSE GRAVELS ARE INSTALLED IN AREAS TO BE PAVED
    B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
    C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED
    D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED
13. ALL CATCH BASINS, MANHOLES, AND DRAIN LINES SHALL BE THOROUGHLY CLEANED OF ALL SEDIMENT AND DEBRIS AFTER ALL AREAS HAVE BEEN STABILIZED.
14. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SLOPE STABILITY DURING CONSTRUCTION.
15. THE EROSION CONTROL PRACTICES SHOWN ON THESE PLANS ARE ILLUSTRATIVE ONLY AND SHALL BE SUPPLEMENTED BY THE SITE CONTRACTOR AS NEEDED.
16. EROSION CONTROL BERM MAY BE USED IN PLACE OF ONE LAYER OF SILT SOCK.
17. TURBIDITY CURTAIN TO BE USED IN PLACE OF DOUBLE LAYER OF SILT SOCK WHEN STANDING WATER IS ENCOUNTERED.

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

EROSION CONTROL PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

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SCALE: 1"=30' (22"X34") **SEPTEMBER 25, 2019**

STATE OF NEW HAMPSHIRE — JOHN J. McTIGUE No. 14960 LICENSED PROFESSIONAL ENGINEER

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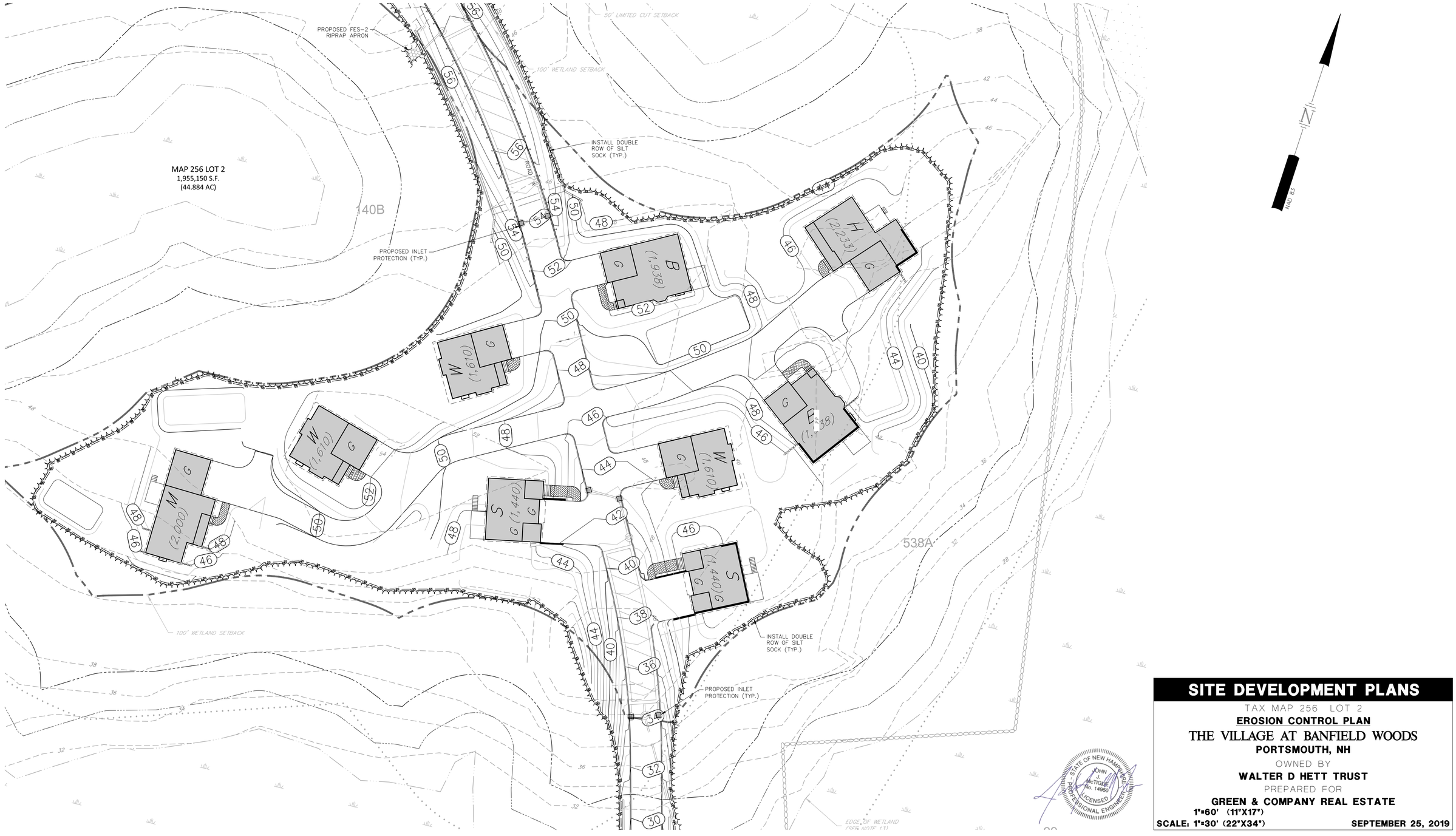

HORIZONTAL SCALE 1"=30'
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SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

EROSION CONTROL PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

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JOHN J. ACTIGUE No. 14960 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

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SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

EROSION CONTROL PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

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HORIZONTAL SCALE 1"=30'

30 15 0 30

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SOIL CHARACTERISTICS

THE SOIL IN THE VICINITY OF THE SITE CONSIST OF CHATFIELD–HOLLIS–CANTON AND SQUAMSCOTT FINE SANDY LOAM, THE MAJORITY OF THE SOIL IS HSG TYPE B.

DISTURBED AREA

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 330,672 SQUARE FEET (7.60 ACRES). CONSTRUCTION SHALL BE PHASED TO LIMIT DISTURBED AREAS TO LESS THAN 5 ACRES.

CRITICAL NOTE: THIS DRAWING IS PROVIDED FOR GENERAL GUIDANCE. ALL SPECIAL EROSION CONTROL MEASURES MUST BE EXECUTED IN ACCORDANCE WITH CURRENT STATE AND LOCAL REGULATIONS, APPROVED SWPPP AND PERMIT REQUIREMENTS.

SEQUENCE OF MAJOR ACTIVITIES

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE AND TEMPORARY EROSION CONTROL MEASURES PER APPROVED SWPPP IF REQUIRED.
2. DEMOLISH EXISTING SITE WORK DESIGNATED FOR REMOVAL.
3. COMPLETE MAJOR GRADING OF SITE.
4. CONSTRUCT BUILDING PAD, STORMWATER SYSTEM, AND SITE UTILITIES.
5. CONSTRUCT PARKING LOT.
6. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND SITE IS STABILIZED, REMOVE ALL INLET PROTECTION, SILT BARRIERS AND SEDIMENT THAT HAS BEEN TRAPPED BY THESE DEVICES.
7. CONSULT APPROVED SWPPP FOR CONDITIONS RELATED TO NOTICE OF TERMINATION, IF REQUIRED.

EROSION AND SEDIMENT CONTROLS AND STABILIZATION PRACTICES

STABILIZATION SHALL BE INITIATED ON ALL LOAM STOCKPILES AND DISTURBED AREAS WHERE CONSTRUCTION ACTIVITY WILL NOT OCCUR FOR MORE THAN TWENTY ONE (21) CALENDAR DAYS BY THE FOURTEENTH (14TH) DAY AFTER CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED IN THAT AREA. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:

1. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
2. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
3. A MINIMUM OF 3" OF NON–EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR
4. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

DURING CONSTRUCTION, RUNOFF WILL BE DIVERTED AROUND THE SITE WITH EARTH DIKES, PIPING OR STABILIZED CHANNELS WHERE POSSIBLE. SHEET RUNOFF FROM THE SITE WILL BE FILTERED THROUGH SILT BARRIERS. ALL STORM DRAIN INLETS SHALL BE PROVIDED WITH BARRIER FILTERS. STONE RIPRAP SHALL BE PROVIDED AT THE OUTLETS OF DRAINAGE PIPES WHERE EROSIVE VELOCITIES ARE ENCOUNTERED.

OFF SITE VEHICLE TRACKING

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED.

INSTALLATION, MAINTENANCE AND INSPECTION OF EROSION AND SEDIMENT CONTROLS

A. GENERAL

THESE ARE THE GENERAL INSPECTION AND MAINTENANCE PRACTICES THAT WILL BE USED TO IMPLEMENT THE PLAN.

1. STABILIZATION OF ALL SWALES, DITCHES AND PONDS IS REQUIRED PRIOR TO DIRECTING FLOW TO THEM.
2. THE SMALLEST PRACTICAL PORTION OF THE SITE WILL BE DENUDED AT ONE TIME. (5 AC MAX)
3. ALL CONTROL MEASURES WILL BE INSPECTED AT LEAST ONCE EACH WEEK AND FOLLOWING ANY STORM EVENT OF 0.10" OR GREATER.
4. ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT.
5. BUILT UP SEDIMENT WILL BE REMOVED FROM SILT BARRIER WHEN IT HAS REACHED ONE THIRD THE HEIGHT OF THE BARRIER.
6. ALL DIVERSION DIKES WILL BE INSPECTED AND ANY BREACHES PROMPTLY REPAIRED.
7. TEMPORARY SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND UNHEALTHY GROWTH.
8. A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION.
9. THE CONTRACTOR'S SITE SUPERINTENDENT WILL BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES, AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.

B. FILTERS / BARRIERS

1. SILT SOCKS

   A. KNOTTED MESH NETTING MATERIAL SHALL BE DELIVERED TO SITE IN A 5 MIL CONTINUOUS, TUBULAR, HDPE 3/8" MATERIAL, FILLED WITH COMPOST CONFORMING TO THE FOLLOWING REQUIREMENTS:

PHYSICAL PROPERTY	TEST	REQUIREMENTS
PH	TMECC 04.11–A	5.0 TO 8.0
PARTICLE SIZE	TMECC 02.02–B	2" SIEVE AND MIN. 60% GREATER THAN THE ⅜" SIEVE
MOISTURE CONTENT		STND TESTING < 60%

   MATERIAL SHALL BE RELATIVELY FREE OF INERT OR FOREIGN MAN–MADE MATERIALS

   MATERIAL SHALL BE WEED FREE AND DERIVED FROM A WELL–DECOMPOSED SOURCE OF ORGANIC MATTER, FREE FROM ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH.

   B. SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK SHALL BE REMOVED ONCE IT HAS REACHED 1/3 OF THE EXPOSED HEIGHT OF THE SILT SOCK.

   C. SILT BARRIER SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREAS HAS BEEN PERMANENTLY STABILIZED.

2. SEQUENCE OF INSTALLATION

   SEDIMENT BARRIERS SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM.

3. MAINTENANCE

   A. SILT BARRIERS SHALL BE INSPECTED WEEKLY AND IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. THEY SHALL BE REPAIRED IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM.

   B. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.

   C. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE THIRD (1/3) THE HEIGHT OF THE BARRIER.

   D. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFIRM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

C. MULCHING

1. TIMING

   IN ORDER FOR MULCH TO BE EFFECTIVE, IT MUST BE IN PLACE PRIOR TO MAJOR STORM EVENTS. THERE ARE TWO (2) TYPES OF STANDARDS WHICH SHALL BE USED TO ASSURE THIS:

   A. APPLY MULCH PRIOR TO ANY STORM EVENT.

   THIS IS APPLICABLE WHEN WORKING WITHIN 100' OF WETLANDS. IT WILL BE NECESSARY TO CLOSELY MONITOR WEATHER PREDICTIONS, USUALLY BY CONTACTING THE NATIONAL WEATHER SERVICE, TO HAVE ADEQUATE WARNING OF SIGNIFICANT STORMS.

   B. REQUIRED MULCHING WITHIN A SPECIFIED TIME PERIOD.

   THE TIME PERIOD CAN RANGE FROM 14 TO 21 DAYS OF INACTIVITY ON AN AREA, WHERE THE LENGTH OF TIME VARIES WITH SITE CONDITIONS. PROFESSIONAL JUDGMENT SHALL BE USED TO EVALUATE THE INTERACTION OF SITE CONDITIONS (SOIL ERODIBILITY, SEASON OF YEAR, EXTENT OF DISTURBANCE, PROXIMITY TO SENSITIVE RESOURCES, ETC.) AND THE POTENTIAL IMPACT OF EROSION ON ADJACENT AREAS TO CHOOSE AN APPROPRIATE TIME RESTRICTION.

2. GUIDELINES FOR WINTER MULCH APPLICATION.

   WHEN MULCH IS APPLIED TO PROVIDE PROTECTION OVER WINTER (PAST THE GROWING SEASON) IT SHALL BE AT A RATE OF 6,000 POUNDS OF HAY OR STRAW PER ACRE. A TACKIFIER MAY BE ADDED TO THE MULCH.

3. MAINTENANCE

   ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED.

D. VEGETATIVE PRACTICE

1. AFTER ROUGH GRADING OF THE SUBGRADE HAS BEEN COMPLETED AND APPROVED, THE SUB GRADE SURFACE SHALL BE SCARIFIED TO A DEPTH OF 4". THEN, FURNISH AND INSTALL A LAYER OF LOAM PROVIDING A ROLLED THICKNESS AS SPECIFIED IN THESE PLANS. ANY DEPRESSIONS WHICH MAY OCCUR DURING ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM, REGRADED AND REROLLED UNTIL THE SURFACE IS TRUE TO THE FINISHED LINES AND GRADES. ALL LOAM NECESSARY TO COMPLETE THE WORK UNDER THIS SECTION SHALL BE SUPPLIED BY THE SITE SUBCONTRACTOR.
2. ALL LARGE STIFF CLODS, LUMPS, BRUSH, ROOTS, DEBRIS, GLASS, STUMPS, LITTER AND OTHER FOREIGN MATERIAL, AS WELL AS STONES OVER 1" IN DIAMETER, SHALL BE REMOVED FROM THE LOAM AND DISPOSED OF OFF SITE. THE LOAM SHALL BE RAKED SMOOTH AND EVEN.
3. THE LOAM SHALL BE PREPARED TO RECEIVE SEED BY REMOVING STONES, FOREIGN OBJECTS AND GRADING TO ELIMINATE WATER POCKETS AND IRREGULARITIES PRIOR TO PLACING SEED. FINISH GRADING SHALL RESULT IN STRAIGHT UNIFORM GRADES AND SMOOTH, EVEN SURFACES WITHOUT IRREGULARITIES TO LOW POINTS.
4. SHAPE THE AREAS TO THE LINES AND GRADES REQUIRED. THE SITE SUBCONTRACTOR'S ATTENTION IS DIRECTED TO THE SCHEDULING OF LOAMING AND SEEDING OF GRADED AREAS TO PERMIT SUFFICIENT TIME FOR THE STABILIZATION OF THESE AREAS. IT SHALL BE THE SITE SUBCONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE AREAS DURING THE CONSTRUCTION PERIOD AND REGRADE, LOAM AND RESEED ANY DAMAGED AREAS.
5. ALL AREAS DISTURBED BY CONSTRUCTION WITHIN THE PROPERTY LINES AND NOT COVERED BY STRUCTURES, PAVEMENT, OR MULCH SHALL BE LOAMED AND SEEDED.
6. LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 2 TONS PER ACRE IN ORDER TO PROVIDE A PH VALUE OF 5.5 TO 6.5.
7. FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. FERTILIZER APPLICATION RATE SHALL BE 500 POUNDS PER ACRE OF 10–20–20 FERTILIZER.
8. SOIL CONDITIONERS AND FERTILIZER SHALL BE APPLIED AT THE RECOMMENDED RATES AND SHALL BE THOROUGHLY WORKED INTO THE LOAM. LOAM SHALL BE RAKED UNTIL THE SURFACE IS FINELY PULVERIZED, SMOOTH AND EVEN, AND THEN COMPACTED TO AN EVEN SURFACE CONFORMING TO THE REQUIRED LINES AND GRADES WITH APPROVED ROLLERS WEIGHING BETWEEN 4 1/2 POUNDS AND 5 1/2 POUNDS PER INCH OF WIDTH.
9. SEED SHALL BE SOWN AT THE RATE SHOWN BELOW. SOWING SHALL BE DONE ON A CALM, DRY DAY, PREFERABLY BY MACHINE, BUT IF BY HAND, ONLY BY EXPERIENCED WORKMEN. IMMEDIATELY BEFORE SEEDING, THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4" AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH.
10. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AT A RATE OF 1.5 TO 2 TONS PER ACRE. MULCH THAT BLOWS OR WASHES AWAY SHALL BE REPLACED IMMEDIATELY AND ANCHORED USING APPROPRIATE TECHNIQUES FROM THE EROSION AND SEDIMENT CONTROL HANDBOOK.
11. THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED WITH GRASS SHALL BE RESEEDED, AND ALL NOXIOUS WEEDS REMOVED.
12. THE SITE SUBCONTRACTOR SHALL PROTECT AND MAINTAIN THE SEEDED AREAS UNTIL ACCEPTED, INCLUDING CUTTING, AS SPECIFIED HEREIN AFTER UNDER MAINTENANCE AND PROTECTION.
13. UNLESS OTHERWISE APPROVED, SEEDING SHALL BE DONE DURING THE APPROXIMATE PERIODS OF EARLY SPRING TO SEPTEMBER 30, WHEN SOIL CONDITIONS AND WEATHER ARE SUITABLE FOR SUCH WORK. IN NO CASE SHALL THE WEED CONTENT EXCEED 1 PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH STATE AND FEDERAL SEED LAWS. FOR TEMPORARY PLANTINGS AFTER SEPTEMBER 30, TO EARLY SPRING AND FOR TEMPORARY PROTECTION OF DISTURBED AREAS:

    A. FOLLOW ABOVE SLOPE, LOAM DEPTH AND GRADING REQUIREMENTS.
    B. FERTILIZER SHALL BE SPREAD AND WORKED INTO THE SURFACE AT A RATE OF 300 POUNDS PER ACRE.

    MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES:

WINTER RYE (FALL SEEDING)	2.5 LBS/1,000 SF
OATS (SPRING SEEDING)	2.0 LBS/1,000 SF
MULCH	1.5 TONS/ACRE

E. CATCH BASIN INLET PROTECTION

1. INLET BASKET STRUCTURE

   A. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY PRIOR TO DISTURBING PAVEMENT AND SHALL REMAIN IN PLACE AND MAINTAINED UNTIL PAVEMENT BINDER COURSE IS COMPLETE.

   B. MOLD 6X6, 42 LB. WIRE SUPPORT AROUND INLET FRAME AND GRATE AND EXTEND 6" BEYOND SIDES. SECURE FILTER FABRIC TO WIRE SUPPORT.

   C. THE FILTER FABRIC SHALL BE A GEOTEXTILE FABRIC; POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE OR POLYVINYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:

      GRAB STRENGTH: 45 LB. MINIMUM IN ANY PRINCIPAL DIRECTION (ASTM D1682)
      MULLEN BURST STRENGTH: MIN. 60PSI (ASTM D774)

   D. THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 20 U.S. STANDARD SIEVE AND A MINIMUM PERMEABILITY OF 120 GPM.

   E. THE INLET PROTECTION SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM REACHING THE DRAINAGE SYSTEM AND/OR CAUSING SURFACE FLOODING.

   F. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT, OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED.

F. WINTER CONSTRUCTION SEQUENCE

1. ALL PROPOSED POST–DEVELOPMENT LANDSCAPED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1 AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE PLACEMENT OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENT.
2. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
3. AFTER OCTOBER 15TH, ALL TRAVEL SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3" OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOWFALL AFTER EACH STORM EVENT.

TIMING OF CONTROLS/MEASURES

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES, SILT BARRIERS SHALL BE INSTALLED PRIOR TO COMMENCING ANY CLEARING OR GRADING OF THE SITE. STRUCTURAL CONTROLS SHALL BE INSTALLED CONCURRENTLY WITH THE APPLICABLE ACTIVITY. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN TWENTY ONE (21) DAYS WILL BE STABILIZED WITH A TEMPORARY SEED AND MULCH WITHIN FOURTEEN (14) DAYS OF THE LAST DISTURBANCE. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, SILT BARRIERS AND ANY EARTH/DIKES WILL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED.

WASTE DISPOSAL

1. ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN SECURELY LIDDED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN A DUMPSTER. NO CONSTRUCTION WASTE MATERIALS WILL BE BURIED ON SITE. ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT.
2. HAZARDOUS WASTE
   ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.
3. SANITARY WASTE
   ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

SPILL PREVENTION

1. MATERIAL MANAGEMENT PRACTICES
   THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:

   GOOD HOUSEKEEPING:
   THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ON SITE DURING THE CONSTRUCTION PROJECT:

   A. AN EFFORT WILL BE MADE TO STORE ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB.

   B. ALL MATERIALS STORED ON SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.

   C. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.

   D. THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS.

   E. SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.

   F. WHENEVER POSSIBLE ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.

   HAZARDOUS PRODUCTS:
   THE FOLLOWING PRACTICES WILL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:

   A. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.

   B. ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION.

   C. SURPLUS PRODUCT THAT MUST BE DISPOSED OF WILL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.

2. PRODUCT SPECIFICATION PRACTICES
   THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:

   PETROLEUM PRODUCTS:
   ALL ON SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

   FERTILIZERS:
   FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS. ONCE APPLIED FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER. STORAGE WILL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

   PAINTS:
   ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE DISPOSED OF PROPERLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

   CONCRETE TRUCKS:
   CONCRETE TRUCKS WILL DISCHARGE AND WASH OUT SURPLUS CONCRETE OR DRUM WASH WATER IN A CONTAINED AREA DESIGNATED ON SITE.

SPILL CONTROL PRACTICES

IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

A. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.

B. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST AND PLASTIC OR METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.

C. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.

D. THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.

E. SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.

F. THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM RECURRING AND HOW TO CLEANUP THE SPILL IF IT RECURS. A DESCRIPTION OF THE SPILL, ITS CAUSE, AND THE CLEANUP MEASURES WILL BE INCLUDED.

G. THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY–TO–DAY SITE OPERATIONS WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.

DUST CONTROL

THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL METHODS SHALL INCLUDE, BUT NOT LIMITED TO SPRINKLING WATER ON EXPOSED AREAS, COVERING LOADED DUMP TRUCKS LEAVING THE SITE, AND TEMPORARY MULCHING. DUST CONTROL MEASURES SHALL BE UTILIZED SO AS TO PREVENT THE MIGRATION OF DUST FROM THE SITE TO ABUTTING AREAS.

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

EROSION CONTROL NOTES

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

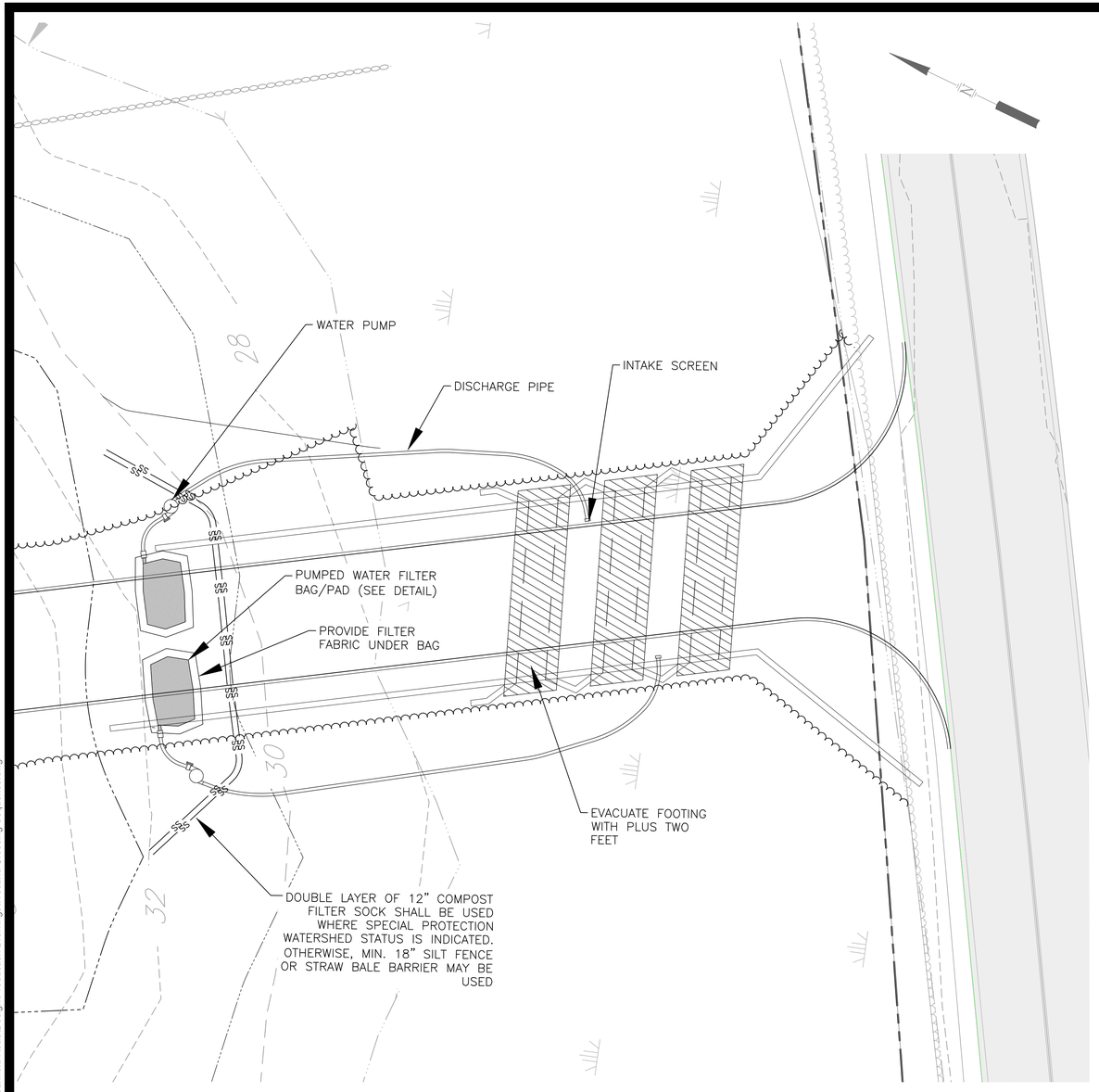
SCALE: NTS **SEPTEMBER 25, 2019**

REV.	DATE	DESCRIPTION	DR	CK
2	12/27/2019	IN HOUSE REVISIONS	RCK	JJM
1	12/23/19	NO REVISIONS THIS SHEET	RCK	JJM

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472–4488
Fax (603) 472–9747
www.tfmoran.com

FILE	DR	RCK	FB	–	
47361.00	CK	JJM	CADFILE	NOTES	C–26

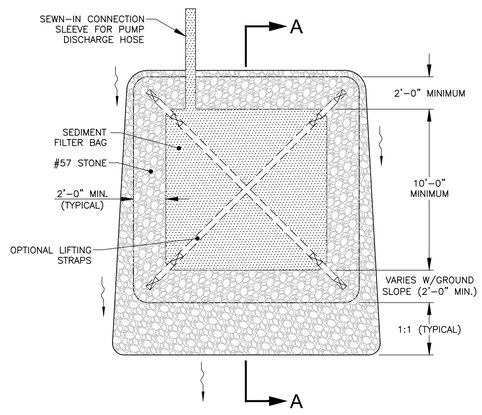
DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



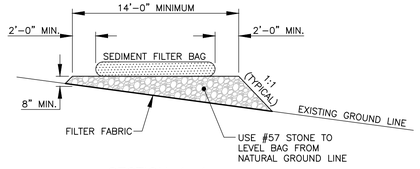
TYPICAL WETLAND CROSSING - OPEN TRENCH
NOT TO SCALE

NOTES:

1. GRUBBING SHALL NOT TAKE PLACE WITHIN 50' OF TOP-OF-BANK UNTIL ALL MATERIALS REQUIRED TO COMPLETE CROSSING ARE ON SITE AND OPEN BOTTOM BOX CULVERT IS READY FOR INSTALLATION.
2. WATER ACCUMULATING WITH IN THE WORK AREA SHALL BE PUMPED TO A SEDIMENT BAG OR SEDIMENT TRAP PRIOR TO DISCHARGING INTO ANY RECEIVING SURFACE WATER.
3. HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS AND EQUIPMENT REFUELING AREAS SHALL BE LOCATED AT LEAST 100' BACK FROM THE TOP OF WETLAND BANK.
4. ALL EXCESS EXCAVATED MATERIAL SHALL BE IMMEDIATELY REMOVED FROM THE WETLAND CROSSING AREA.
5. ALL DISTURBED AREAS WITHIN 50' OF TOP-OF-BANK SHALL BE BLANKETED OR MATTED WITHIN 24 HOURS OF INITIAL DISTURBANCE UNLESS OTHERWISE AUTHORIZED. APPROPRIATE WETLAND PROTECTION SHALL BE PROVIDED WITHIN THE CHANNEL.
6. PROVIDE SECONDARY CONTAINMENT TO CAPTURE DRIPS, SPILLS, OR LEAKS OF FUEL OR OIL.



PLAN VIEW



SECTION A-A

SEDIMENT FILTER BAG WITH GRAVEL PAD
NOT TO SCALE

WETLAND CROSSING – SEQUENCE OF CONSTRUCTION

THE PLACEMENT OF THESE STRUCTURES WILL BE DONE IN THE ORDER AS NUMBERED BELOW. EACH SEQUENCE BELOW WILL BE COMPLETED BEFORE THE NEXT STEP IN THE SEQUENCE COMMENCES. NO STEPS WILL BE REMOVED.

THE TIME OF WETLAND DISTURBANCE WILL BE LIMITED AND WILL BE SCHEDULED DURING LOW FLOW OR NO FLOW CONDITIONS.

1. AT WETLAND CROSSINGS, A WETLAND BANK BUFFER AREA SHOULD BE MAINTAINED TO THE LARGEST EXTENT FEASIBLE. ON BUFFERS, CLEARING, SOD DISTURBANCE, EXCAVATION, AND EQUIPMENT TRAFFIC SHOULD BE MINIMIZED. ACTIVITIES SUCH AS STACKING CUT LOGS, DISCHARGING RAIN WATER FROM TRENCHES, WELDING PIPE JOINTS, STORING PIPE SECTIONS, REFUELING AND MAINTAINING EQUIPMENT SHOULD BE ACCOMPLISHED OUTSIDE OF THESE BUFFERS.
2. INSTALL APPROPRIATE SEDIMENT BARRIER DOWNSLOPE OF ALL SPOIL/EXCAVATION FROM CROSSING AREAS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
   a. NOTE: THE SEDIMENT BARRIER FOR THE SPOIL CROSSING AREAS MUST BE A MINIMUM OF 10' FROM TOP OF STREAM BANK.
3. INSTALL WATER PUMP. IF A LEVEL AREA IS REQUIRED, GRADE THE PUMP AREA, THEN PLACE A 4" LAYER OF #57 STONE OR REINFORCED EROSION CONTROL BLANKET.
4. DURING THE EXCAVATION FOR THE PLACEMENT OF THE WETLAND CROSSING:
   a. ALL WATER THAT NEEDS TO BE PUMPED FROM THE EXCAVATED TRENCH AREA WILL BE REMOVED BY DISCHARGE THROUGH A PUMPED WATER FILTER BAG. SEE FILTER BAG PAD DETAIL.
   b. IF THE AREA THAT THE BAG IS PLACED ON IS GREATER THAN 5% SLOPE, THEN A PUMPED WATER FILTER BAG PAD WILL BE CONSTRUCTED. SEE FILTER BAG PAD DETAIL.
5. EXCAVATE MATERIAL FOR TRENCH AREA. THE MATERIAL WILL THEN BE PLACED IN THE DESIGNATED AREAS. KEEP WETLAND BANK TOPSOIL SEPARATE FOR LATER USE.
6. INSTALL CROSSING
   a. INSTALL CULVERT FOOTING.
      – FOOTINGS WILL BE CONSTRUCTED / ACCESSED FROM THE APPROPRIATE SIDE OF NORRIS BROOK USING OAK STREET EXTENSION AS APPROPRIATE. THERE WILL BE NO TEMPORARY ACCESS ACROSS NORRIS BROOK DURING CONSTRUCTION.
   b. INSTALL BOX CULVERT.
   c. BACKFILL WILL THEN BE PLACED AROUND AND OR ON THE FOOTING AND BOX CULVERT. BACK FILL AND COMPACTED IN A MAXIMUM OF 12" LIFTS.
7. THE WETLAND BANKS AND SURROUNDING AREA WILL BE RESTORED TO ORIGINAL CONTOURS. ALL DISTURBED AREAS WILL BE SEEDED AND MULCHED.
8. THE PUMPING OF WATER TO THE WATER FILTER BAG AS SHOWN IN STEP 4 OF THE INSTALLATION WILL CONTINUE DURING RESTORATION PROCEDURES.
9. THE SPOIL FROM CROSSING PLACEMENT AREAS WILL BE REGRADED, SEEDED AND MULCHED.
   a. THE SILT BARRIER DOWNSLOPE OF THE SPOIL FROM CROSSING PLACEMENT AREAS WILL REMAIN IN PLACE AND MAINTAINED UNTIL PERMANENT VEGETATED STABILIZATION IS ACHIEVED.
   b. PERMANENT STABILIZATION WILL BE ACHIEVED WHEN A UNIFORM 85% VEGETATIVE COVER OF THE ENTIRE SEEDED AREA IS ESTABLISHED.
11. REMOVE PUMPED WATER FILTER BAGS. THE AREA UTILIZED FOR THE PUMPED WATER FILTER BAG/PAD WILL BE REGRADED, SEEDED AND MULCHED.
12. THE PUMPING AREA AS SHOWN IN INSTALLATION SEQUENCE 4 WILL BE REGRADED, SEEDED AND MULCHED.
13. ALL AREAS THAT WERE DISTURBED DURING THE CONSTRUCTION OF THE WETLAND CROSSING WILL BE RETURNED TO THEIR ORIGINAL CONTOURS. SILT BARRIERS WILL BE PLACED DOWNSLOPE OF ANY AREAS THAT WILL BE REGRADED. THE AREAS WILL BE SEEDED AND MULCHED AS PER THE EROSION CONTROL NOTES, WILL REMAIN IN PLACE AND MAINTAINED UNTIL PERMANENT VEGETATED STABILIZATION IS ACHIEVED.
14. UPON COMPLETION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED, OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION.

SEDIMENT FILTER BAG GENERAL NOTES:

1. CONTRACTOR SHALL EXERCISE CAUTION NOT TO BURST OR DAMAGE THE SEDIMENT FILTER BAG WHEN PUMPING.
2. THE LENGTH AND WIDTH OF THE TEMPORARY SEDIMENT BAG SHOWN ON THIS DRAWING MAY VARY PER VENDOR SPECIFICATIONS. THE MINIMUM "FOOTPRINT" OF THE BAG SHALL BE 10 x 15 FEET.
3. SEDIMENT FILTER BAGS SHALL BE EQUIPPED WTH A SEWN-IN SLEEVE OF SUFFICIENT SIZE TO ACCEPT A MINIMUM 4 INCH DIAMEMTER PUMP DISCHARGE HOSE. THE DISCHARGE HOSE SHOULD BE EXTENDED INTO THIS SLEEVE A MINIMUM OF 6 INCHES AND BE TIGHTLY SECURED WITH A HOSE CLAMP OR OTHER SUITABLE MEANS TO PREVENT LEAKAGE. HOSE CONNECTION THROUGH A SLIT IN THE BAG WILL NOT BE ACCEPTABLE.
4. THE PUMP DISCHARGE HOSE CONNECTION SLEEVE SHALL BE SECURELY TIED OFF DURING DISPOSAL OF THE SEDIMENT FILTER BAG IN ORDER TO PREVENT LEAKAGE OF COLLECTED SEDIMENTS.
5. SEDIMENT FILTER BAG SHALL BE MAINTAINED AND REPLACED WHEN ONE HALF FULL OF SEDIMENT OR IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

WETLAND CROSSING SEQUENCE OF CONSTRUCTION

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

SCALE: NTS **SEPTEMBER 25, 2019**

STATE OF NEW HAMPSHIRE — JOHN J. MCTIGUE No. 14960 — LICENSED PROFESSIONAL ENGINEER

REV.	DATE	DESCRIPTION	DR	CK
2	12/27/2019	IN HOUSE REVISIONS	RCK	JJM
1	12/23/19	NO REVISIONS THIS SHEET	RCK	JJM

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FILE	DR	RCK	FB	–	
47361.00	CK	JJM	CADFILE	WETLAND CROSSING SEQUENCE	C-27

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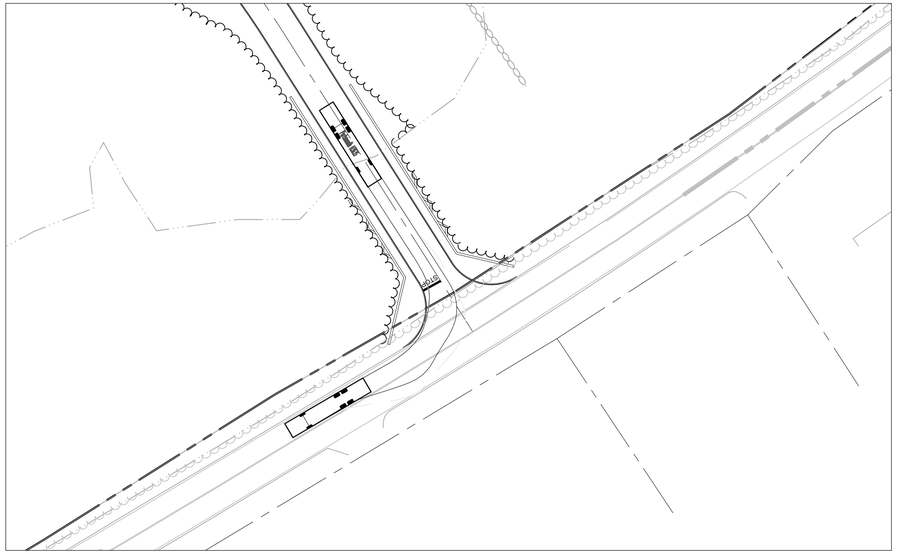
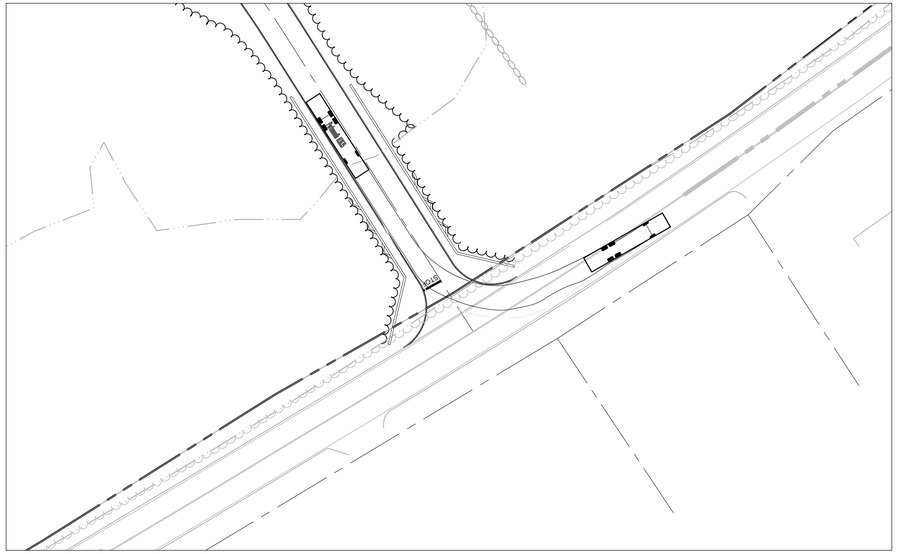
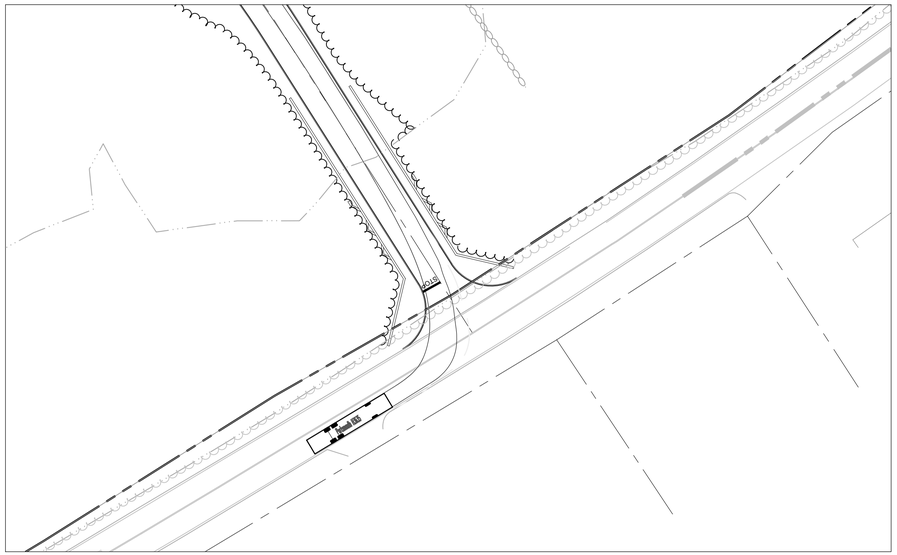


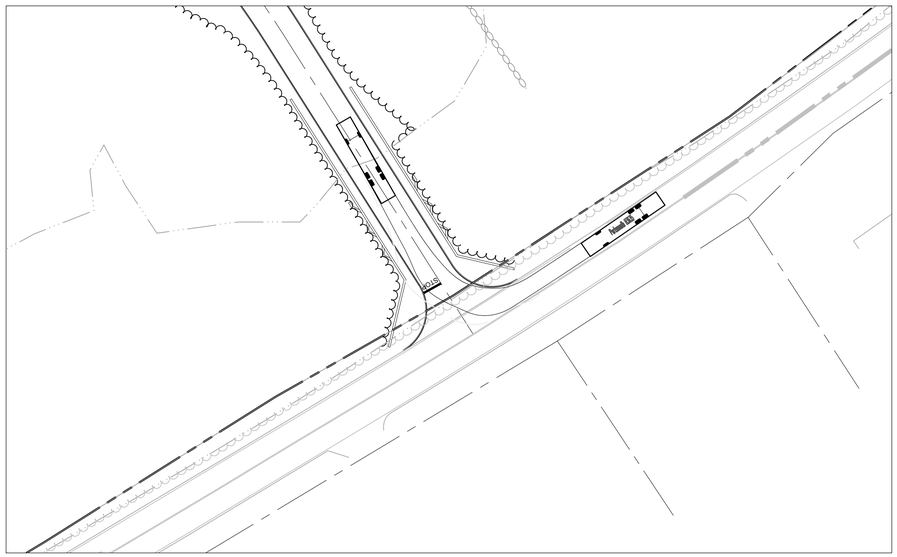
FIRE TRUCK TURNING FROM ROAD–A SOUTHWEST ONTO BANFIELD ROAD



FIRE TRUCK TURNING FROM ROAD–A NORTHEAST ONTO BANFIELD ROAD



FIRE TRUCK DRIVING NORTHEAST TURNING ONTO ROAD–A



FIRE TRUCK DRIVING SOUTHWEST TURNING ONTO ROAD–A

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

PORTSMOUTH H3635 MOVEMENT PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

(11"X17")

SCALE: NTS (22"X34") **SEPTEMBER 25, 2019**

JOHN J. McTIGUE No. 14960 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

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47361.00	RCK	JJM	FB	–
			CADFILE	TRUCK MOVEMENT

C–28

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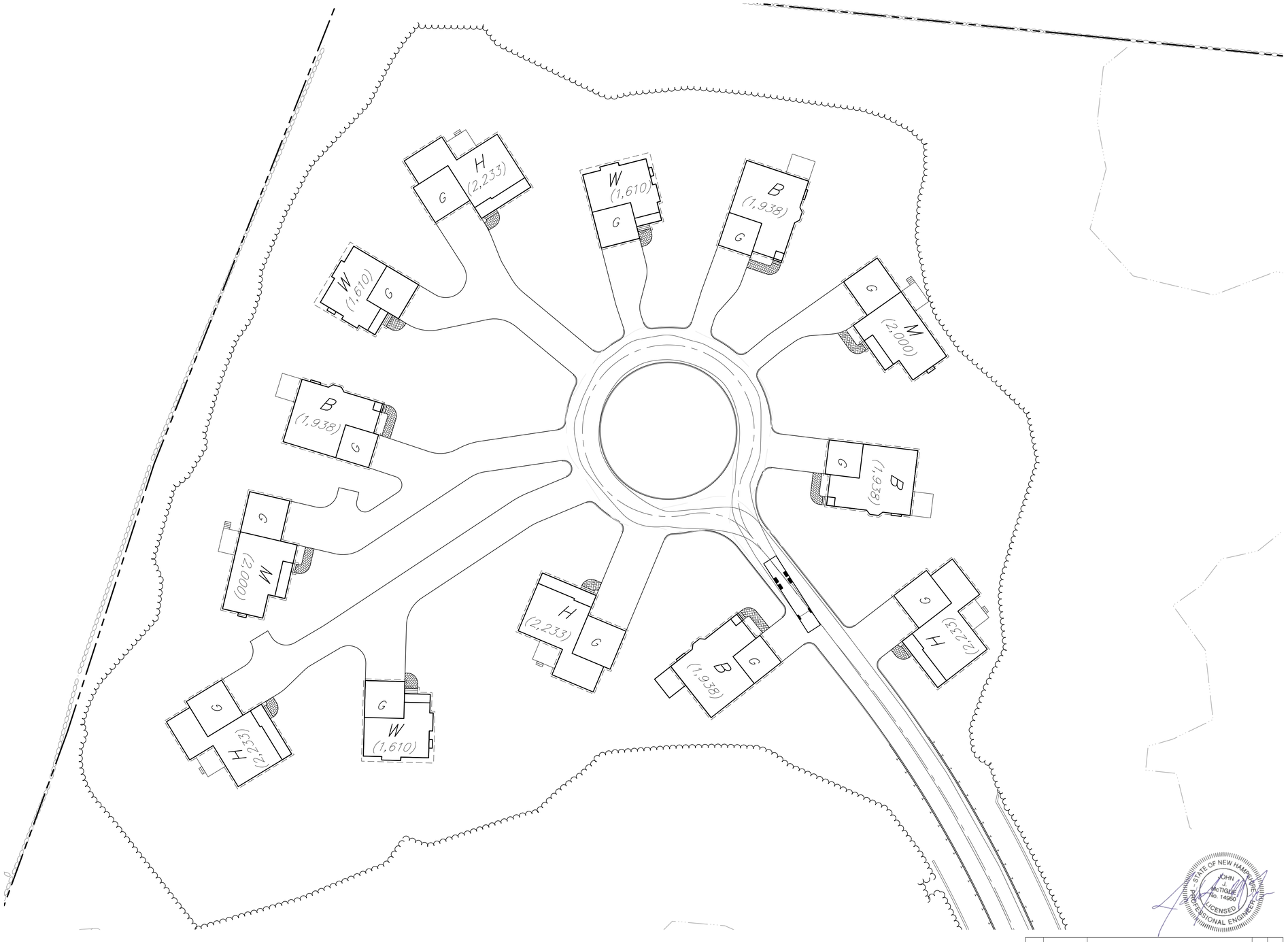

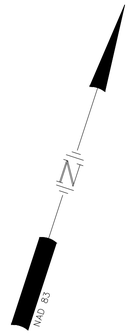

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

PORTSMOUTH H3635 MOVEMENT PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=60' (11"X17")

SCALE: 1"=30' (22"X34") **SEPTEMBER 25, 2019**

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HORIZONTAL SCALE 1"=30'
30 15 0 30

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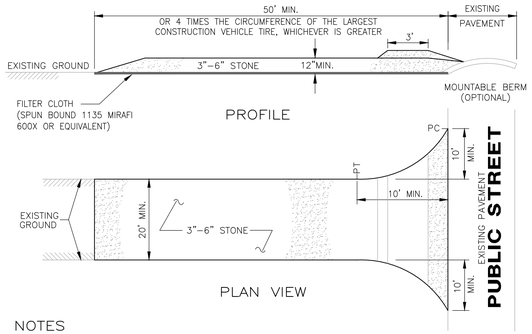
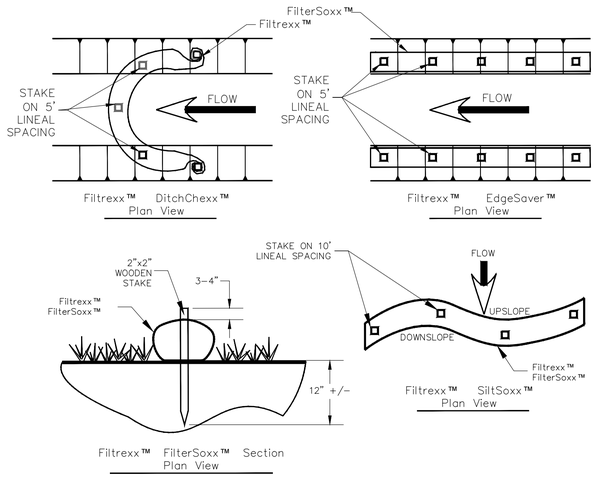


NOTES

1. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE SURFACE.
2. WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
3. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
4. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS–OF–WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
5. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN STORM EVENT.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE



NOTES:

1. ALL MATERIAL TO MEET Filtrexx™ SPECIFICATIONS
2. FilterSoxx™ COMPOST/SOIL/ROCK/SEED FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.
4. SIZE OF SOCK TO BE PER MANUFACTURER'S SPECIFICATIONS

FILTREXX™ FILTERSOXX™ STAKING

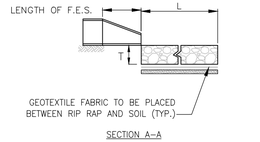
NOT TO SCALE

MAINTENANCE:

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

CONSTRUCTION SPECIFICATIONS:

1. THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIP RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE ROCK OR GRAVEL USED FOR FILTER OR RIP RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP RAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12".
4. STONE FOR THE RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
5. ADD ANIMAL SCREEN TO FLARED END SECTION OUTLET.



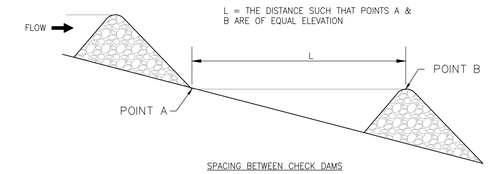
RIP RAP DIMENSIONS

LOCATION	PFES 01	PFES 02
d50 STONE SIZE:	6"	6"
LENGTH OF APRON (L):	12'	8'
WIDTH OF APRON (W):	10'	6'
DEPTH OF RIP RAP (T):	12"	12"

% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE (INCHES)
100	9.00 TO 12.00
85	7.80 TO 10.80
50	6.00 TO 9.00
15	1.80 TO 3.00

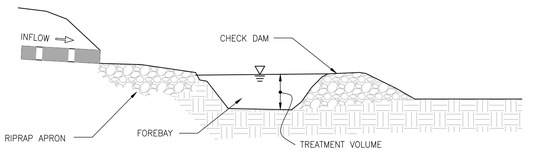
RIP RAP AND FLARED END SECTION WITH OUTLET PROTECTION

NOT TO SCALE



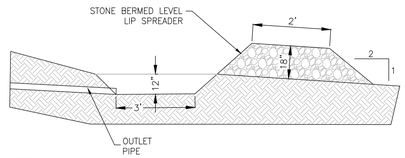
STONE CHECK DAM

NOT TO SCALE



SEDIMENT FOREBAY DETAIL

NOT TO SCALE

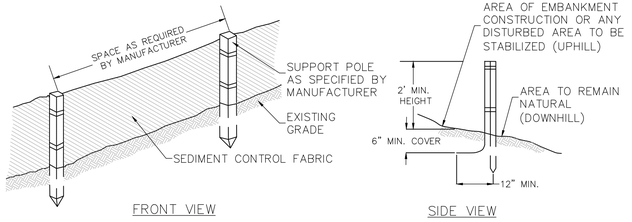


NOTES:

1. LENGTH OF LEVEL SPREADER SHALL BE 10 FEET.
2. BERM OF THE LEVEL LIP SHALL CONSIST OF CRUSHED ROCK WITH A 3/4" TO 3" DIAMETER SIZE GRADATION.
3. THE BOTTOM AND BACK OF THE SPREADER CHANNEL SHALL BE LINED WITH EROSION CONTROL MATTING.
4. THE LEVEL SPREADER BASE SHALL BE INSTALLED AT 0% GRADE (LEVEL).
5. AN ANIMAL SCREEN SHALL BE PLACED ON THE PIPE OUTLET.
6. 3–INCH STONE RIP RAP SHALL BE PLACED AT THE PIPE OUTLET (6–INCHES DEEP, 2 FEET WIDE BY 3 FEET LONG).

LEVEL SPREADER

NOT TO SCALE

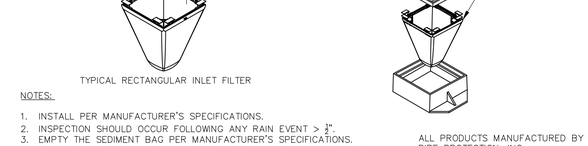


NOTES

1. THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR BEST MANAGEMENT PRACTICE FOR SILT FENCES, OF THE NEW HAMPSHIRE STORMWATER MANUAL, DECEMBER 2008.
2. THE HEIGHT OF THE BARRIER SHALL NOT EXCEED 36 INCHES.
3. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6–INCH OVERLAP, AND SECURELY SEALED. SEE MANUFACTURER'S RECOMMENDATIONS.
4. POSTS SHALL BE SPACED A MAXIMUM OF 10 FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 16 INCHES). WHEN EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL BE AS MANUFACTURER RECOMMENDS.
5. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 6 INCHES WIDE AND 6 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER IN ACCORDANCE WITH RECOMMENDATIONS.
6. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE, AND WILL EXTEND TO A MINIMUM OF 8 INCHES INTO THE TRENCH. FILTER FABRIC SHALL NOT BE STAPLED INTO EXISTING TREES.
7. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.
8. FILTER BARRIERS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
9. FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL, AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
10. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
11. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE–THIRD THE HEIGHT OF THE BARRIER.
12. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED, SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

SILT FENCE

NOT TO SCALE



NOTES:

1. INSTALL PER MANUFACTURER'S SPECIFICATIONS.
2. INSPECTION SHOULD OCCUR FOLLOWING ANY RAIN EVENT > ½".
3. EMPTY THE SEDIMENT BAG PER MANUFACTURER'S SPECIFICATIONS.
4. REMOVED CAKED ON SILT FROM SEDIMENT BAG AND FLUSH WITH MEDIUM SPRAY WITH OPTIMAL FILTRATION.
5. REPLACE BAG IF TORN OR PUNCTURED TO > ½" DIAMETER ON LOWER HALF OF BAG.

ALL PRODUCTS MANUFACTURED BY INLET & PIPE PROTECTION, INC.
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INLET PROTECTION

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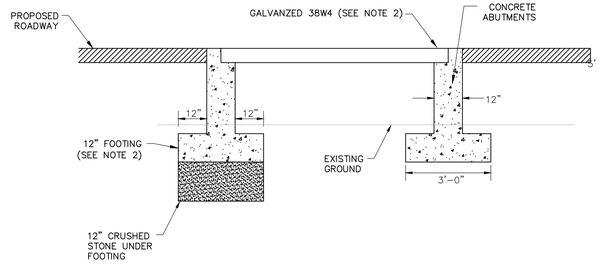

NOTES

1. CONCRETE SHALL BE 5000 PSI.
2. GRATING TO BE EQUIVALENT TO 38W4 (4–1/2" X 3/8") SMOOTH GRATING – GALVANIZED – LOAD BANDING AS PROVIDED BY LAUREL CUSTOM GRATING, LLC.
3. ALL REINFORCEMENT PER ASTM A–615–75.
4. DESIGN LOAD: H–20 LOADING
5. ABUTMENT TO BE DESIGNED BY A STRUCTURAL ENGINEER PRIOR TO INSTALLATION.

ECO PASSAGE DETAIL

NOT TO SCALE

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STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE No. 14950
LICENSED PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

DETAILS

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

SCALE: NTS **SEPTEMBER 25, 2019**

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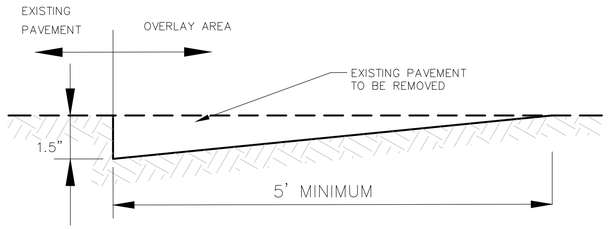
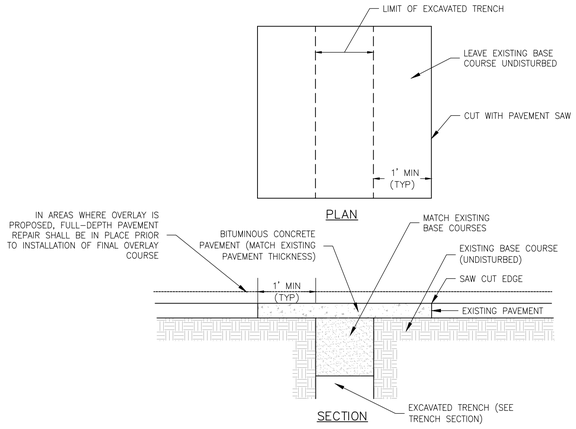


NOTES:

1. USE KEY JOINT AT ALL LOCATIONS WHERE OVERLAY MEETS EXISTING PAVEMENT.
2. NEW PAVEMENT SHALL BE FLUSH WITH EXISTING PAVEMENT AND SHALL MEET OVERLAY GRADE WHERE IT ABUTS EXISTING PAVEMENT TO BE OVERLAYED.

KEY JOINT DETAIL

NOT TO SCALE



TRENCH PATCH

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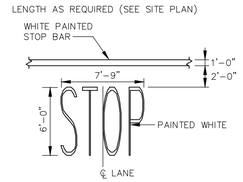
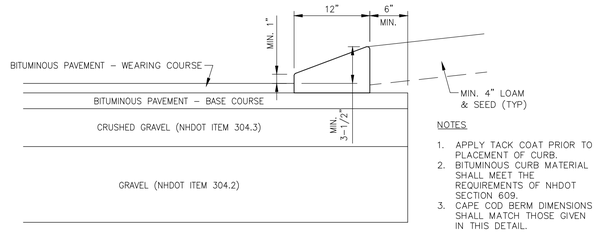


NOTES

1. TRAFFIC PAINT SHALL BE APPLIED AS SPECIFIED BY THE MANUFACTURER AND SHALL MEET THE REQUIREMENTS OF AASHTO M248 TYPE "F". APPLY TWO COATS.
2. SYMBOLS AND PARKING STALLS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT, LATEST EDITION.

STOP BAR & LEGEND

NOT TO SCALE

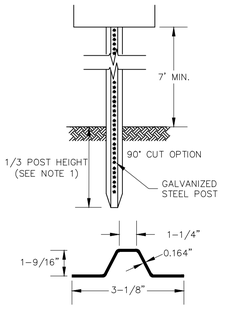


NOTES

1. APPLY TACK COAT PRIOR TO PLACEMENT OF CURB.
2. BITUMINOUS CURB MATERIAL SHALL MEET THE REQUIREMENTS OF NHDOT SECTION 609.
3. CAPE COD BERM DIMENSIONS SHALL MATCH THOSE GIVEN IN THIS DETAIL.

CAPE COD BERM

NOT TO SCALE

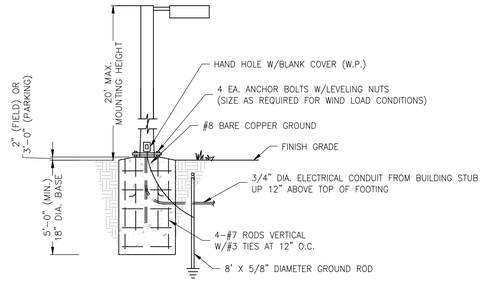


LENGTH: AS REQUIRED
WEIGHT PER LINEAR FOOT: 2.50 LBS (MIN)
HOLES: 3/8" DIAMETER, 1" C–C FULL LENGTH
STEEL: SHALL CONFORM TO ASTM A–499 (GRADE 60) OR ASTM A–576 (GRADE 1070 – 1080)
FINISH: SHALL BE PAINTED WITH 2 COATS OF AN APPROVED MEDIUM GREEN BAKED–ON OR AIR–DRIED PAINT OF WEATHER RESISTANT QUALITY. ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

NOTE:
1. WHERE LEDGE APPLICATION EXISTS, DRILL & GROUT TO A MINIMUM OF 2'.
2. ALL SIGNAGE SHALL FOLLOW THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES STANDARDS AND NHDOT STANDARDS.
3. SIGN, HARDWARE, AND INSTALLATION SHALL CONFORM TO THE LATEST NHDOT STANDARD SPECIFICATIONS.

SIGN POST

NOT TO SCALE

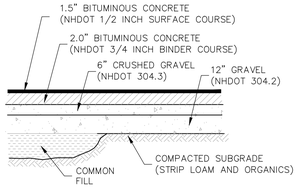


NOTES

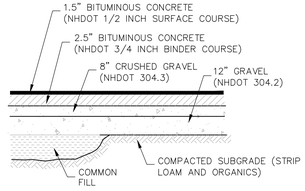
1. BASE SHOWN IS PROTOTYPICAL. VERIFY THAT LIGHT POLE BASE INSTALLED MEETS LIGHT POLE MANUFACTURER'S SPECIFICATIONS. COORDINATE WITH ELECTRICAL CONTRACTOR.
2. WHERE LIGHT POLE BASES ARE PLACED IN AREAS NOT PROTECTED BY CURBING, A 3'–0" REVEAL OF BASE IS REQUIRED WITH REVEAL TO BE PAINTED SAFETY YELLOW. WHERE LIGHT POLE BASES ARE PLACED IN FIELD APPLICATIONS OR PROTECTED BY CURBING, THE BASE IS TO BE PLACED 2" ABOVE FINISHED GRADE.
3. BASE CONCRETE TO BE 4,000 PSI, SMOOTH FINISH.
4. POLES SHALL BE FACTORY CUT TO PROVIDE REQUIRED MOUNTING HEIGHTS.

LIGHT POLE BASE

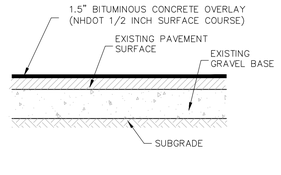
NOT TO SCALE



STANDARD DUTY PAVEMENT



HEAVY DUTY PAVEMENT



OVERLAY

NOTES

1. SEE GRADING & EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS–SLOPE.
2. PROVIDE CLEAN BUTT TO EXISTING PAVEMENT– USE TACK COAT. A TACK COAT SHALL ALSO BE PLACED BETWEEN GRAVEL COURSE AND SUCCESSIVE LAYERS OF BITUMINOUS CONCRETE. SPECIFICALLY, A TACK COAT SHALL BE PLACED ATOP THE BINDER COURSE PAVEMENT PRIOR TO PLACING THE WEARING COURSE.
3. REMOVE ALL LOAM AND/OR YIELDING MATERIAL BELOW PAVEMENT.
4. BITUMINOUS MATERIALS SHALL CONFORM TO NHDOT SPECIFICATION SECTION 401.
5. BITUMINOUS CONCRETE SHALL BE COMPACTED TO AT LEAST 92.5% OF THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM D2041 OR AASHTO T209. PLACEMENT TEMPERATURES OF BITUMINOUS CONCRETE MIXES, IN GENERAL, RANGE BETWEEN 270 AND 310 DEGREES FAHRENHEIT.
6. PAVEMENT BASE COURSE AGGREGATE SHALL CONFORM TO NHDOT SPECIFICATION SECTION 304, ITEM 304.3 AND COMPACTED TO A MINIMUM OF 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY.
7. PAVEMENT SUBBASE COURSE AGGREGATE AND AGGREGATE FOR SUBGRADE REPAIR AREAS SHALL BE SUITABLE FOR USE AS STRUCTURAL FILL AND BE PROOF ROLLED AND COMPACTED TO 95% MODIFIED PROCTOR MAXIMUM DRY DENSITY.
8. THE EXPOSED SOIL SUBGRADE SHOULD BE PROOF ROLLED PRIOR TO THE PLACEMENT OF SUBBASE GRAVEL, AND SOFT AREAS SHOULD BE REPAIRED AND REPLACED.
9. ALL PARKING SPACES SHALL BE STANDARD DUTY. ALL OTHER LOCATIONS SHALL BE HEAVY DUTY.

PAVEMENT SECTIONS

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

DETAILS

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

SCALE: NTS **SEPTEMBER 25, 2019**

REV.	DATE	DESCRIPTION	DR	CK
2	12/27/2019	IN HOUSE REVISIONS	RCK	JJM
1	12/23/19	NO REVISIONS THIS SHEET	RCK	JJM

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Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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Phone (603) 472–4488
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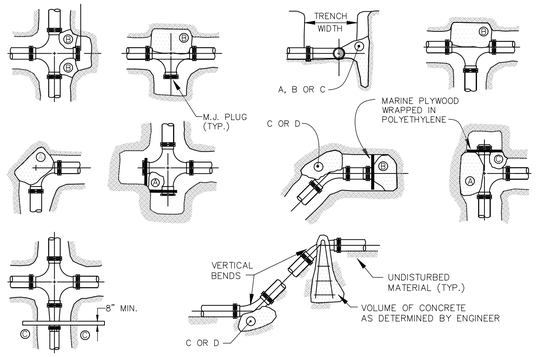
www.tfmoran.com

FILE	DR	RCK	FB	–	C–31
47361.00	CK	JJM	CADFILE	DETAILS	

DIG SAFE
811 OR 1-888-DIG-SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

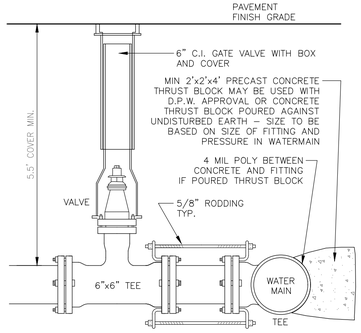


NOTES

1. POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL, WHERE TRENCH WALL HAS BEEN DISTURBED. EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO PIPE JOINTS SHALL BE COVERED WITH CONCRETE.
2. ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
3. PLACE BOARD IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCKS.
4. WHERE MECHANICAL JOINT PIPE IS USED, MECHANICAL JOINT PLUG WITH RETAINER GLAND MAY BE SUBSTITUTED FOR END BLOCKINGS.
5. INSTALLATION AND STANDARD DIMENSIONAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE CITY/TOWN ESTABLISHED RULES AND PROCEDURES.

TEST PRESSURE = 200psi	SQUARE FEET OF CONCRETE THRUST BLOCKING BEARING ON UNDISTURBED MATERIAL					
	REACTION TYPE		PIPE SIZE			
			4"	6"	8"	10"	12"
	A	90°	0.89	2.19	3.82	11.14	17.24
	B	180°	0.65	1.55	2.78	8.38	12.00
	C	45°	0.48	1.19	2.12	6.02	9.32
	D	22–1/2°	0.25	0.60	1.06	3.08	4.74
	E	11–1/4°	0.13	0.30	0.54	1.54	2.38

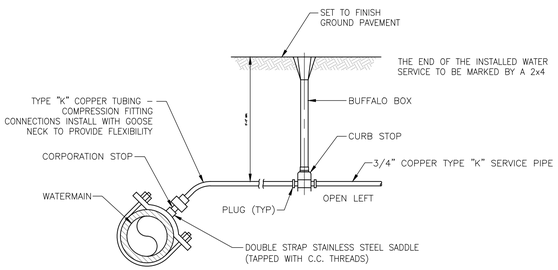
THRUST BLOCKS
NOT TO SCALE



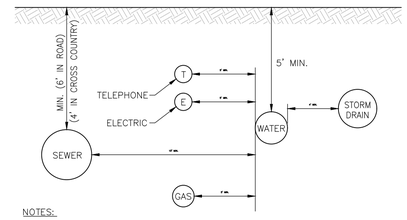
NOTES:

1. POLYETHYLENE PIPE WITH TRACER WIRE MAY BE USED IN LIEU OF TYPE "K" COPPER TUBING.
2. VALVE TO OPEN LEFT.

BURIED GATE VALVE
NOT TO SCALE



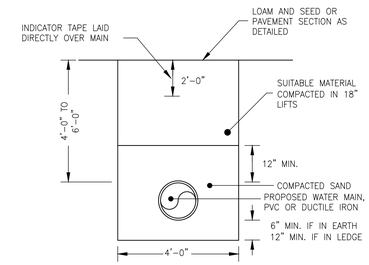
WATER SERVICE CONNECTION - COPPER PIPE
NOT TO SCALE



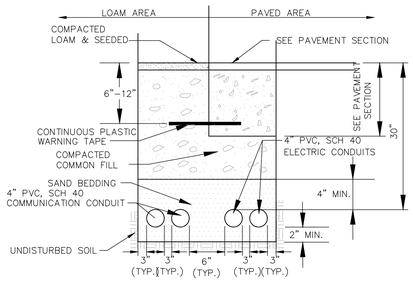
NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO EXETER DPW TECHNICAL SPECIFICATIONS.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.

TYPICAL UTILITY SEPARATION
NOT TO SCALE



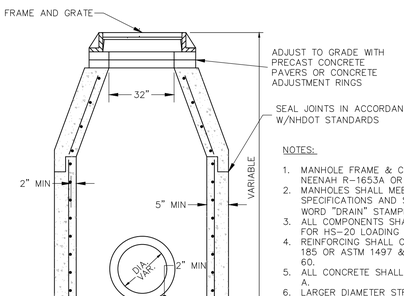
WATER MAIN TRENCH
NOT TO SCALE



NOTES

1. ELECTRIC SERVICE INSTALLATION AND STANDARD DIMENSIONAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL CODES.
2. COMMUNICATION SERVICE INSTALLATION SHALL MEET ALL CONSTRUCTION REQUIREMENTS.
3. ACTUAL NUMBER OF CONDUITS TO BE DETERMINED BY RESPECTIVE COMPANIES.
4. VERIFY INSTALLATION REQUIREMENTS WITH RESPECTIVE COMPANIES.

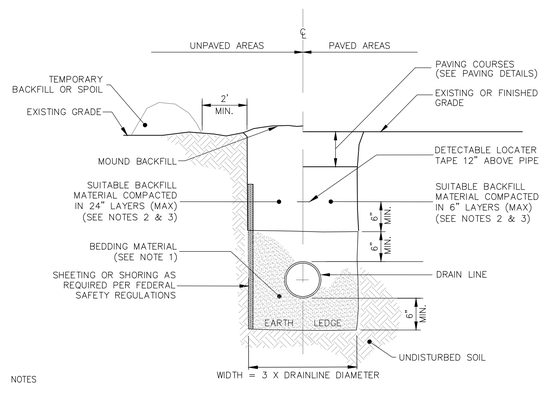
ELECTRIC/COMMUNICATIONS CONDUIT
NOT TO SCALE



NOTES:

1. MANHOLE FRAME & COVER: SHALL BE NEENAH R–1653A OR APPROVED EQUAL.
2. MANHOLES SHALL MEET NHDOT SPECIFICATIONS AND SHALL HAVE THE WORD "DRAIN" STAMPED ON THE COVER.
3. ALL COMPONENTS SHALL BE DESIGNED FOR HS–20 LOADING
4. REINFORCING SHALL CONFORM TO ASTM 185 OR ASTM 1497 & ASTM A615, GRADE 60.
5. ALL CONCRETE SHALL BE NHDOT CLASS A.
6. LARGER DIAMETER STRUCTURES SHALL BE USED AS REQUIRED DUE TO NUMBER, ANGLE OR SIZE OF PIPES AT THE STRUCTURE.
7. ALL CASTINGS SHALL BE MADE IN THE USA.

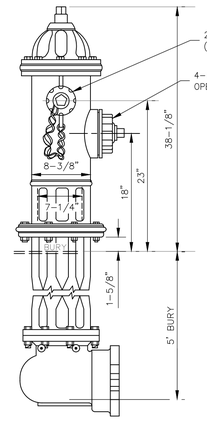
DRAIN MANHOLE
NOT TO SCALE



NOTES

1. BEDDING – BEDDING FOR PIPES SHALL CONSIST OF PREPARING THE BOTTOM OF THE TRENCH TO SUPPORT THE ENTIRE LENGTH OF THE PIPE AT A UNIFORM SLOPE AND ALIGNMENT. CRUSHED STONE SHALL BE USED TO BED THE PIPE TO THE ELEVATION SHOWN ON THE DRAWINGS. NORMAL PIPE BEDDING IS CRUSHED STONE TO THE HAUNCH OF THE PIPE AND SAND BEDDING 6" ABOVE THE CROWN. IF THE TOP OF THE PIPE IS LESS THAN 30" FROM FINISH GRADE, BED PIPE COMPLETELY IN STONE UP TO 6" ABOVE PIPE CROWN. UNDERDRAIN TO HAVE 4" MINIMUM OF STONE OVER PIPE OR AS NECESSARY TO BE IN CONTACT WITH GRAVEL LAYER OF SELECTS ABOVE.
2. COMPACTION – ALL BACKFILL SHALL BE COMPACTED AT OR NEAR OPTIMUM MOISTURE CONTENT BY PNEUMATIC TAMPERS, VIBRATORY COMPACTORS OR OTHER APPROVED MEANS. BACKFILL BENEATH PAVED SURFACES SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T99, METHOD C.
3. SUITABLE MATERIAL – IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS; PIECES OF PAVEMENT; ORGANIC MATTER; TOP SOIL; ALL WET OR SOFT MUCK, PEAT, OR CLAY; ALL EXCAVATED LEDGE MATERIAL; ROCKS OVER 6" IN LARGEST DIMENSION; FROZEN EARTH AND ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.
4. BASE COURSE AND PAVEMENT – SHALL MEET THE REQUIREMENT OF THE NHDOT LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DIVISION 300 AND 400 RESPECTIVELY.

TRENCH FOR DRAIN LINE
NOT TO SCALE

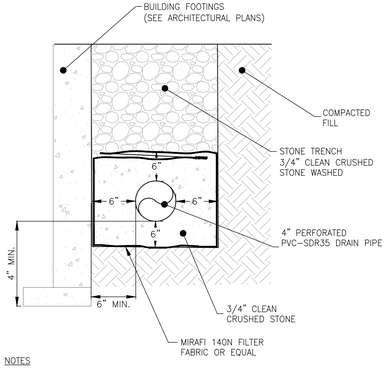


THREE–WAY HYDRANT KENNEDY K–81A
GUARDIAN
ELMIRA, N.Y.

SPECIFICATIONS

1. 150 PSI WORKING PRESSURE
2. 300 PSI TEST PRESSURE
3. HYDRANT DRAIN SHALL BE PLUGGED
4. DRY TOP DESIGN VALVE SHALL OPEN WHEN OPERATING NUT IS TURNED CLOCKWISE AND BE SO INDICATED ON HYDRANT
5. OPERATING NUT SHALL BE STANDARD AWWA PENTAGON OPERATING NUT WITH 1 1/2" POINT TO FLAT DIMENSION
6. THREADS SHALL BE NATIONAL STANDARD HOSE THREAD NOZZLES

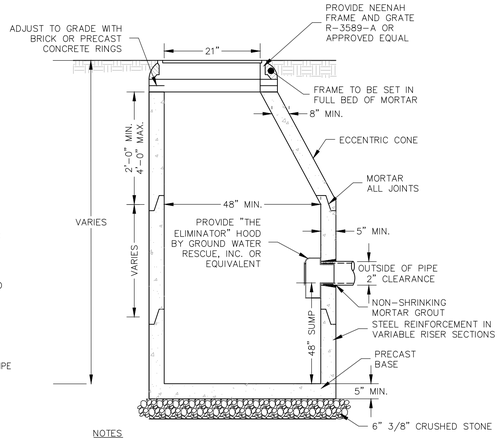
PORTSMOUTH FIRE HYDRANT
NOT TO SCALE



NOTES

1. FOR MINIMUM DIMENSIONAL REQUIREMENT REFER TO THE GEOTECHNICAL REPORT PREPARED BY JOHN TURNER COUNSULTING, INC. ON JULY 3, 2013.

FOUNDATION DRAIN LINES
NOT TO SCALE



NOTES

1. ALL SECTIONS SHALL BE PRECAST CONCRETE NHDOT CLASS AA, 4,000 PSI.
2. CATCH BASINS SHALL MEET NHDOT SPECIFICATIONS.
3. ALL COMPONENTS SHALL BE DESIGNED FOR HS–20 LOADING.
4. LARGER DIAMETER STRUCTURES SHALL BE USED AS REQUIRED DUE TO NUMBER, ANGLE OR SIZE OF PIPES AT THE STRUCTURE.
5. ALL CASTINGS SHALL BE MADE IN THE USA.

ECCENTRIC CATCH BASIN WITH HOODED OUTLET
NOT TO SCALE

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

REV.	DATE	DESCRIPTION	DR	CK
2	12/27/2019	IN HOUSE REVISIONS	RCK	JJM
1	12/23/19	NO REVISIONS THIS SHEET	RCK	JJM

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

DETAILS

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

SCALE: NTS **SEPTEMBER 25, 2019**

STATE OF NEW HAMPSHIRE – JOHN J. McTIGUE No. 14950 – LICENSED PROFESSIONAL ENGINEER

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Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
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FILE	DR	RCK	FB	–	C–32
47361.00	CK	JJM	CADFILE	DETAILS	

Dec 27, 2019 - 11:26am
F:\MSC Projects\47361 - Banfield Road - Portsmouth\47361-00 - Green & Co - Banfield Road\Design\Production Drawings\Details.dwg

STORMTECH PRODUCT SPECIFICATIONS

1.0 GENERAL
1.1 STORMTECH CHAMBERS ARE DESIGNED TO CONTROL STORMWATER RUNOFF. AS A SUBSURFACE RETENTION SYSTEM, STORMTECH CHAMBERS RETAIN AND ALLOW EFFECTIVE INFILTRATION OF WATER INTO THE SOIL. AS A SUBSURFACE DETENTION SYSTEM, STORMTECH CHAMBERS DETAIN AND ALLOW FOR THE METERED FLOW OF WATER TO AN OUTFALL.

2.0 CHAMBER PARAMETERS
2.1 THE CHAMBER SHALL BE INJECTION MOLDED OF POLYPROPYLENE RESIN TO BE INHERENTLY RESISTANT TO ENVIRONMENTAL STRESS CRACKING (ESCR), AND TO MAINTAIN ADEQUATE STIFFNESS THROUGH HIGHER TEMPERATURES EXPERIENCED DURING INSTALLATION AND SERVICE.

2.2 THE NOMINAL CHAMBER DIMENSIONS OF THE STORMTECH SC-740 SHALL BE 30 INCHES TALL, 51 INCHES WIDE AND 90.7 INCHES LONG. SC-310 SHALL BE 16 INCHES TALL, 34 INCHES WIDE AND 85.4 INCHES LONG.

2.3 THE CHAMBER SHALL HAVE A CONTINUOUSLY CURVED SECTION PROFILE.

2.4 THE CHAMBER SHALL BE OPEN-BOTTOMED.

2.5 THE CHAMBER SHALL INCORPORATE AN OVERLAPPING CORRUGATION JOINT SYSTEM TO ALLOW CHAMBER ROWS OF ALMOST ANY LENGTH TO BE CREATED. THE OVERLAPPING CORRUGATION JOINT SYSTEM SHALL BE EFFECTIVE WHILE ALLOWING A CHAMBER TO BE TRIMMED TO SHORTEN ITS OVERALL LENGTH.

2.6 THE NOMINAL STORAGE VOLUME OF A JOINED STORMTECH SC-740 CHAMBER SHALL BE 74.9 CUBIC FEET PER CHAMBER WHEN INSTALLED PER STORMTECH'S TYPICAL DETAILS (INCLUDES THE VOLUME OF CRUSHED ANGULAR STONE WITH AN ASSUMED 40% POROSITY). THIS EQUATES TO 2.2 CUBIC FEET OF STORAGE/SQUARE FOOT OF BED.

2.7 THE CHAMBER SHALL HAVE FORTY-EIGHT ORIFICES PENETRATING THE SIDEWALLS TO ALLOW FOR LATERAL CONVEYANCE OF WATER.

2.8 THE CHAMBER SHALL HAVE TWO ORIFICES NEAR ITS TOP TO ALLOW FOR EQUALIZATION OF AIR PRESSURE BETWEEN ITS INTERIOR AND EXTERIOR.

2.9 THE CHAMBER SHALL HAVE BOTH OF ITS ENDS OPEN TO ALLOW FOR UNIMPEDED HYDRAULIC FLOWS AND VISUAL INSPECTIONS DOWN A ROW'S ENTIRE LENGTH.

2.10 THE CHAMBER SHALL HAVE 14 CORRUGATIONS.

2.11 THE CHAMBER SHALL HAVE A CIRCULAR, INDENTED, FLAT SURFACE ON THE TOP OF THE CHAMBER FOR AN OPTIONAL 4-INCH INSPECTION PORT OR CLEAN-OUT.

2.12 THE CHAMBER SHALL BE ANALYZED AND DESIGNED USING AASHTO METHODS FOR THERMOPLASTIC CULVERTS CONTAINED IN THE LRFD BRIDGE DESIGN SPECIFICATIONS, 2ND EDITION, INCLUDING INTERIM SPECIFICATIONS THROUGH 2001. DESIGN LIVE LOAD SHALL BE THE AASHTO HS20 TRUCK. DESIGN SHALL CONSIDER EARTH AND LIVE LOADS AS APPROPRIATE FOR THE MINIMUM TO MAXIMUM SPECIFIED DEPTH OF FILL.

2.13 THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2000 CERTIFIED FACILITY.

3.0 END CAP PARAMETERS
3.1 THE END CAP SHALL BE INJECTION MOLDED OF POLYPROPYLENE RESIN TO BE INHERENTLY RESISTANT TO ENVIRONMENTAL STRESS CRACKING, AND TO MAINTAIN ADEQUATE STIFFNESS THROUGH HIGHER TEMPERATURES EXPERIENCED DURING INSTALLATION AND SERVICE.

3.2 THE END CAP SHALL BE DESIGNED TO FIT INTO ANY CORRUGATION OF A CHAMBER, WHICH ALLOWS: CAPPING A CHAMBER THAT HAS ITS LENGTH TRIMMED; SEGMENTING ROWS INTO STORAGE BASINS OF VARIOUS LENGTHS.

3.3 THE END CAP SHALL HAVE SAW GUIDES TO ALLOW EASY CUTTING FOR VARIOUS DIAMETERS OF PIPE THAT MAY BE USED TO INLET THE SYSTEM.

3.4 THE END CAP SHALL HAVE EXCESS STRUCTURAL ADEQUACIES TO ALLOW CUTTING AN ORIFICE OF ANY SIZE AT ANY INVERT ELEVATION.

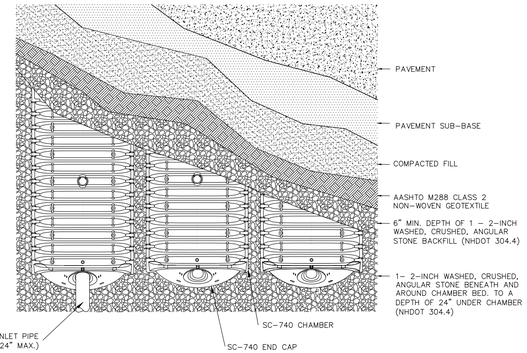
3.5 THE PRIMARY FACE OF AN END CAP SHALL BE CURVED OUTWARD TO RESIST HORIZONTAL LOADS GENERATED NEAR THE EDGES OF BEDS.

3.6 THE END CAP SHALL BE MANUFACTURED IN AN ISO 9001:2000 CERTIFIED FACILITY.

STORMTECH GENERAL NOTES

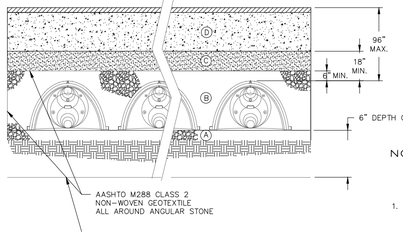
1. STORMTECH LLC ("STORMTECH") REQUIRES INSTALLING CONTRACTORS TO USE AND UNDERSTAND STORMTECH'S LATEST INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION.
2. OUR TECHNICAL SERVICES DEPARTMENT OFFERS INSTALLATION CONSULTATIONS TO INSTALLING CONTRACTORS. CONTACT OUR TECHNICAL SERVICES REPRESENTATIVE AT LEAST 30 DAYS PRIOR TO SYSTEM INSTALLATION TO ARRANGE A PRE-INSTALLATION CONSULTATION. OUR REPRESENTATIVES CAN THEN ANSWER QUESTIONS OR ADDRESS COMMENTS ON THE STORMTECH CHAMBER SYSTEM AND INFORM THE INSTALLING CONTRACTOR OF THE MINIMUM INSTALLATION REQUIREMENTS BEFORE BEGINNING THE SYSTEM'S CONSTRUCTION. CALL 1-888-892-2694 TO SPEAK TO A TECHNICAL SERVICE REPRESENTATIVE OR VISIT WWW.STORMTECH.COM TO RECEIVE A COPY OF OUR INSTALLATION INSTRUCTIONS.
3. STORMTECH'S REQUIREMENTS FOR SYSTEMS WITH PAVEMENT DESIGN (ASPHALT, CONCRETE PAVERS, ETC.): MINIMUM COVER IS 18 INCHES NOT INCLUDING PAVEMENT; MAXIMUM COVER IS 96 INCHES INCLUDING PAVEMENT. FOR INSTALLATIONS THAT DO NOT INCLUDE PAVEMENT, WHERE RUTTING FROM VEHICLES MAY OCCUR, MINIMUM REQUIRED COVER IS 24 INCHES, MAXIMUM COVER IS 96 INCHES.
4. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE DESIGN ENGINEER.
5. AASHTO M288 CLASS 2 NON-WOVEN GEOTEXTILE (FILTER FABRIC) MUST BE USED AS INDICATED IN THE PROJECT PLANS.
6. STONE PLACEMENT BETWEEN CHAMBERS ROWS AND AROUND PERIMETER MUST FOLLOW INSTRUCTIONS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
7. BACKFILLING OVER THE CHAMBERS MUST FOLLOW REQUIREMENTS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
8. THE CONTRACTOR MUST REFER TO STORMTECH'S INSTALLATION INSTRUCTIONS FOR A TABLE OF ACCEPTABLE VEHICLE LOADS AT VARIOUS DEPTHS OF COVER. THIS INFORMATION IS ALSO AVAILABLE AT STORMTECH'S WEBSITE: WWW.STORMTECH.COM. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING VEHICLES THAT EXCEED STORMTECH'S REQUIREMENTS FROM TRAVELING ACROSS OR PARKING OVER THE STORMWATER SYSTEM. TEMPORARY FENCING, WARNING TAPE AND APPROPRIATELY LOCATED SIGNS ARE COMMONLY USED TO PREVENT UNAUTHORIZED VEHICLES FROM ENTERING SENSITIVE CONSTRUCTION AREAS.
9. THE CONTRACTOR MUST APPLY EROSION AND SEDIMENT CONTROL MEASURES TO PROTECT THE STORMWATER SYSTEM DURING ALL PHASES OF SITE CONSTRUCTION PER LOCAL CODES AND DESIGN ENGINEER'S SPECIFICATIONS.
10. STORMTECH PRODUCT WARRANTY IS LIMITED. SEE CURRENT PRODUCT WARRANTY FOR DETAILS. TO ACQUIRE A COPY CALL STORMTECH AT 1-888-892-2694 OR VISIT WWW.STORMTECH.COM.
11. ADS TO REVIEW DESIGN PRIOR TO CONSTRUCTION. TFMORAN, INC. TO WITNESS THE INSTALLATION OF BOTH STORMTECHS AND PROVIDE STATEMENT STATING THAT BOTH SYSTEMS WERE INSTALLED PER PLAN.

MATERIAL LOCATION	DESCRIPTION	AASHTO M43 DESIGNATION	AASHTO M145 DESIGNATION	COMPACTION/DENSITY REQUIREMENT
ⓓ FILL MATERIAL FROM 18" TO GRADE ABOVE CHAMBERS	ANY SOIL/ROCK MATERIALS, NATIVE SOILS OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS	N/A	N/A	PREPARE PER ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
Ⓒ FILL MATERIAL FOR 6" TO 18" ELEVATION ABOVE CHAMBERS (24" FOR UNPAVED INSTALLATIONS)	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES.	3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	A-1 A-2 A-3	COMPACT IN 6" LIFTS TO A MINIMUM 95% STANDARD PROCTOR DENSITY. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 LBS. DYNAMIC FORCE NOT TO EXCEED 20,000 LBS.
Ⓑ EMBEDMENT STONE SURROUNDING AND TO A 6" ELEVATION ABOVE CHAMBERS	DOUBLE WASHED ANGULAR STONE WITH THE MAJORITY OF PARTICLES BETWEEN 3/4 - 2 INCH	3, 357, 4, 467, 5, 56, 57	N/A	NO COMPACTION REQUIRED
Ⓐ FOUNDATION STONE BELOW CHAMBERS	DOUBLE WASHED ANGULAR STONE WITH THE MAJORITY OF PARTICLES BETWEEN 3/4 - 2 INCH	3, 357, 4, 467, 5, 56, 57	N/A	PLATE COMPACT OR ROLL TO ACHIEVE A 95% STANDARD PROCTOR DENSITY



STORMTECH SC-740 CHAMBER SYSTEM PLAN VIEW DETAIL

NOT TO SCALE



NOTES

1. THE INSTALLER SHALL NOT ALLOW ANY VEHICULAR OR CONSTRUCTION EQUIPMENT TRAVEL TO OCCUR ACROSS THE PROPOSED RECHARGE BASIN AREA AT ANY TIME EXCEPT DURING EXCAVATION OF TOPSOIL, SUBSOIL AND OTHER MATERIALS NOT SUITABLE FOR BED BOTTOM CONDITIONS.
2. CAUTION SHOULD BE EXERCISED DURING SITE PREPARATION TO AVOID COMPACTION OF THE INFILTRATIVE SURFACE.

ACCEPTABLE FILL MATERIALS STORMTECH SC-310 CHAMBER SYSTEM

NOT TO SCALE

UNDERGROUND STORMWATER DETENTION SYSTEM OPERATION AND MAINTENANCE PLAN

THE OWNER IS RESPONSIBLE FOR THE MAINTENANCE AND OPERATION OF THE PROPOSED STORMWATER COLLECTION SYSTEM INCLUDING ROUTINE INSPECTION, CLEANING AND MAINTENANCE OF MANHOLES, DEEP SUMP HOODED CATCH BASINS, CLEAN OUTS, UNDERGROUND DETENTION SYSTEMS AND REGULAR STREET SWEEPING.

SCHEDULE FOR INSPECTION AND MAINTENANCE AFTER CONSTRUCTION:

STREET SWEEPING

-STREET SWEEPING EFFORTS SHALL BE CONDUCTED AT LEAST ONCE A MONTH OUTSIDE OF WINTER MONTHS.

-SAND SWEPT FROM THE ROADWAYS AND PARKING LOTS WILL BE REMOVED TO AN APPROVED OFF-SITE LOCATION.

DEEP SUMP CATCH BASINS & LEACHING CATCH BASINS

-INLETS SHOULD BE CLEANED ANNUALLY AND INSPECTED SEMI-ANNUALLY.

-ALL SEDIMENTS, FLOATABLES, AND HYDROCARBONS SHOULD BE PROPERLY HANDLED AND DISPOSED OF, IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL GUIDELINES AND REGULATIONS.

UNDERGROUND DETENTION SYSTEMS (STORMTECH ISOLATOR SC-740 CHAMBER OR EQUAL)

-ISOLATOR ROWS AND PIPE HEADERS SHALL BE INSPECTED IMMEDIATELY AFTER COMPLETION OF THE SITE'S CONSTRUCTION. THE NORMAL INSPECTION SCHEDULE AFTER CONSTRUCTION FOR ISOLATOR ROWS IS SEMI ANNUAL UNTIL AN UNDERSTANDING OF THE SITE'S CHARACTERISTICS IS DEVELOPED. PIPE HEADERS SHOULD BE INSPECTED QUARTERLY AFTER CONSTRUCTION.

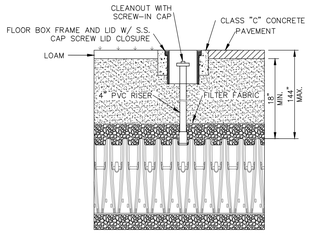
-INSPECTION OF THE ISOLATOR ROW SHALL INVOLVE A VISUAL CHECK USING EITHER THE INSPECTION PORTS OR AN ACCESS MANHOLE.

-IF UPON VISUAL INSPECTION OF THE ISOLATOR ROW, IT IS FOUND THAT SEDIMENT HAS ACCUMULATED TO AN AVERAGE DEPTH EXCEEDING 3 INCHES, CLEANOUT IS REQUIRED.

-CLEANOUT OF SEDIMENT WITHIN THE PIPE HEADER IS REQUIRED WHEN THE SEDIMENT VOLUME HAS REDUCED THE STORAGE AREA BY 25% OR THE DEPTH OF SEDIMENT HAS REACHED APPROXIMATELY 25% OF THE DIAMETER OF THE STRUCTURE.

-CLEANOUT OF THE ACCUMULATED MATERIAL IN THE PIPE HEADER SHOULD BE ACCOMPLISHED BY VACUUM PUMPING. CLEANOUT SHOULD BE PERFORMED DURING DRY WEATHER AND CARE SHOULD BE TAKEN TO AVOID FLUSHING SEDIMENTS OUT THROUGH THE OUTLET PIPES AND INTO THE CHAMBER ROWS.

A SITE MAINTENANCE LOG WILL BE KEPT. THIS LOG WILL RECORD THE DATES WHEN MAINTENANCE TASKS WERE COMPLETED, THE PERSON WHO COMPLETED THE TASK, AND ANY OBSERVATIONS OF MALFUNCTIONS IN COMPONENTS OF THE STORMWATER MANAGEMENT SYSTEM. CALL 1-888-892-2694 TO SPEAK TO A TECHNICAL REPRESENTATIVE OR VISIT WWW.STORMTECH.COM.

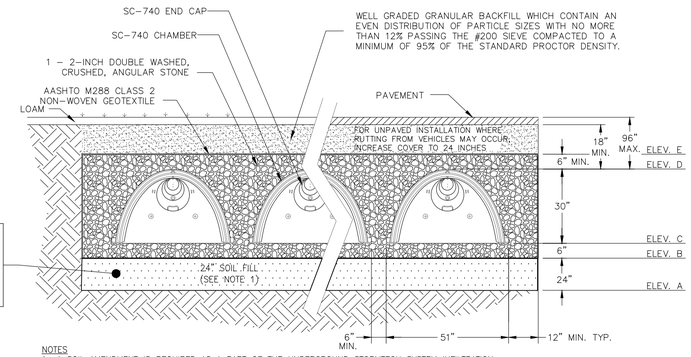


STORMTECH CHAMBER SYSTEM INSPECTION PORT DETAIL

NOT TO SCALE

	STORMTECH CHAMBER SYSTEM 1
ELEV. E	197.50
ELEV. D	197.00
ELEV. C	194.50
ELEV. OUTLET	194.51
ELEV. INLET(S)	194.51
ELEV. B	194.00
ELEV. A	192.00

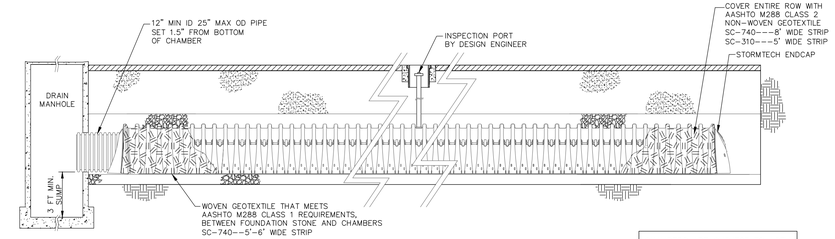
AMENDED SOIL
- ASTM C-33 CONCRETE SAND (50%-55% BY VOLUME)
- LOAMY SAND TOPSOIL WITH 15-25% FINES PASSING THE NUMBER 200 SIEVE (20%-30% BY VOLUME)
- MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULTH WITH LESS THAN 5% PASSING THE NO. 200 SIEVE (20%-30% BY VOLUME)



NOTES
1. A SOIL AMENDMENT IS REQUIRED AS A PART OF THE UNDERGROUND STORMTECH SYSTEM INFILTRATION.
2. THE TARGET INFILTRATION RATE FOR THE PROPOSED FILL BENEATH THE SYSTEM SHALL BE 10 INCHES PER HOUR, AS DETERMINED BY LABORATORY TESTING METHODS DESCRIBED IN ENV-WQ 1504.14(e). LABORATORY RESULTS ARE TO BE SUBMITTED TO DES WITHIN 7 DAYS OF TESTING.
3. THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12 FOR EARTH AND LIVE LOADS WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCE.

STORMTECH SC-740 CHAMBER SYSTEM TYPICAL CROSS SECTION DETAIL

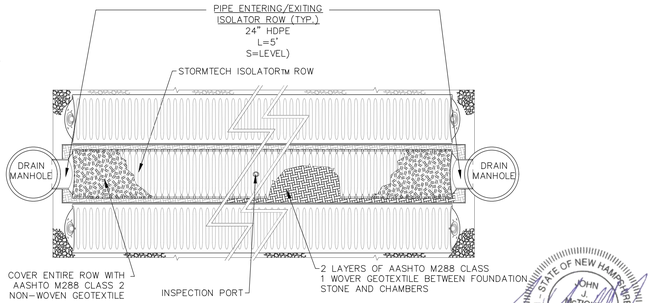
NOT TO SCALE



STORMTECH ISOLATOR™ ROW PROFILE VIEW DETAIL

NOT TO SCALE

CHAMBERS ARE SUBJECT TO ASTM F2418 FOR POLYPROPYLENE AND ASTM 2787 FOR STRUCTURAL DESIGN



STORMTECH ISOLATOR™ ROW PLAN VIEW DETAIL

NOT TO SCALE

STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE
No. 14950
LICENSED PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

DETAILS

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

SCALE: NTS **SEPTEMBER 25, 2019**

REV.	DATE	DESCRIPTION	DR	CK
2	12/27/2019	IN HOUSE REVISIONS	RCK	JJM
1	12/23/19	NO REVISIONS THIS SHEET	RCK	JJM

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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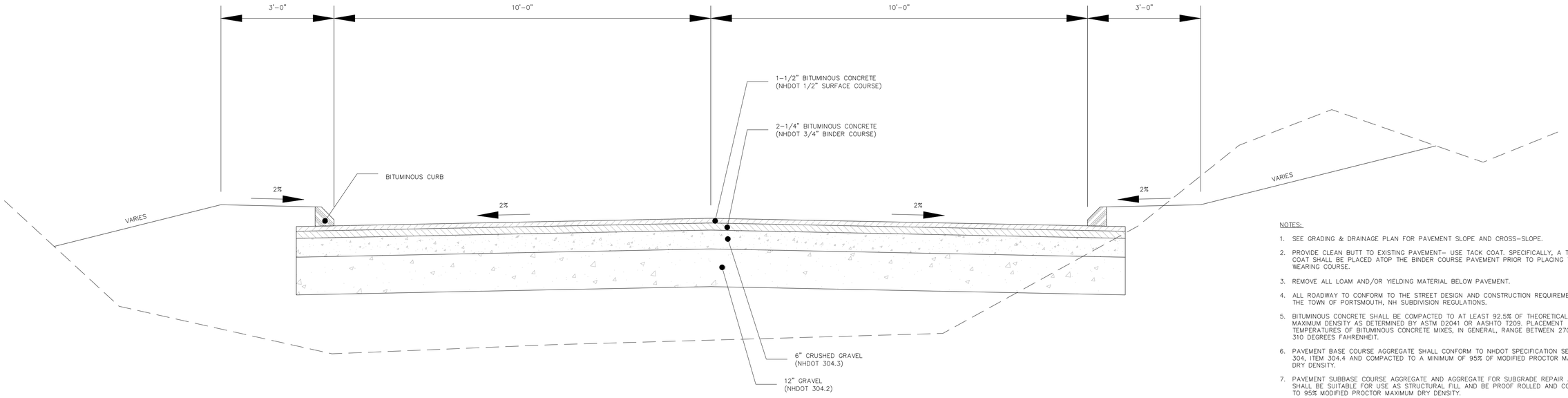
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR	CK			
47361.00	RCK	JJM	FB	CADFILE	– DETAILS

C-33

DIG SAFE
CALL DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

Dec 27, 2019 - 11:26am
F:\MSC Projects\47361 - Banfield Road - Portsmouth\47361-00 - Green & Co - Banfield Road\Design\Production Drawings\Details.dwg

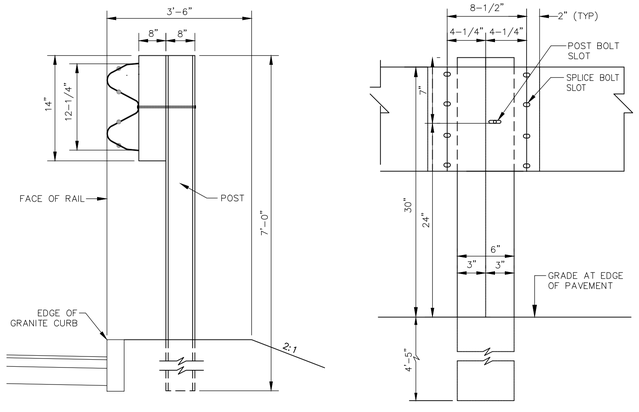


ROADWAY TYPCIAL SECTION

NOT TO SCALE

NOTES:

1. SEE GRADING & DRAINAGE PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
2. PROVIDE CLEAN BUTT TO EXISTING PAVEMENT- USE TACK COAT. SPECIFICALLY, A TACK COAT SHALL BE PLACED ATOP THE BINDER COURSE PAVEMENT PRIOR TO PLACING THE WEARING COURSE.
3. REMOVE ALL LOAM AND/OR YIELDING MATERIAL BELOW PAVEMENT.
4. ALL ROADWAY TO CONFORM TO THE STREET DESIGN AND CONSTRUCTION REQUIREMENTS IN THE TOWN OF PORTSMOUTH, NH SUBDIVISION REGULATIONS.
5. BITUMINOUS CONCRETE SHALL BE COMPACTED TO AT LEAST 92.5% OF THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM D2041 OR AASHTO T209. PLACEMENT TEMPERATURES OF BITUMINOUS CONCRETE MIXES, IN GENERAL, RANGE BETWEEN 270 AND 310 DEGREES FAHRENHEIT.
6. PAVEMENT BASE COURSE AGGREGATE SHALL CONFORM TO NHDOT SPECIFICATION SECTION 304, ITEM 304.4 AND COMPACTED TO A MINIMUM OF 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY.
7. PAVEMENT SUBBASE COURSE AGGREGATE AND AGGREGATE FOR SUBGRADE REPAIR AREAS SHALL BE SUITABLE FOR USE AS STRUCTURAL FILL AND BE PROOF ROLLED AND COMPACTED TO 95% MODIFIED PROCTOR MAXIMUM DRY DENSITY.
8. THE EXPOSED SOIL SUBGRADE SHOULD BE PROOF ROLLED PRIOR TO THE PLACEMENT OF SUBBASE GRAVEL, AND SOFT AREAS SHOULD BE REPAIRED AND REPLACED.



TYPICAL SIDEVIEW WITH FASTENERS

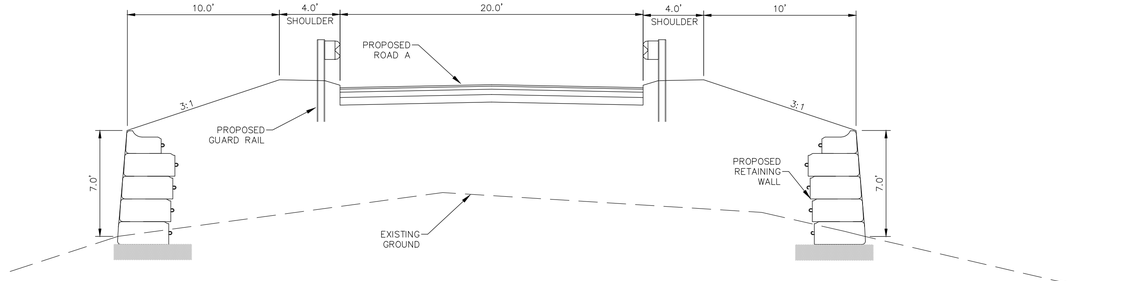
GUARDRAIL SPLICE AT POST

NOTES:

1. GUARDRAIL TO CONFORM TO NHDOT SPECIFICATIONS 606.

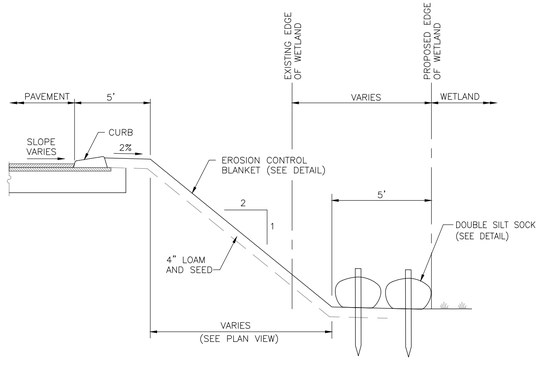
METAL BEAM GUARDRAIL

NOT TO SCALE



2ND RETAINING WALL TYPICAL SECTION

NOT TO SCALE



SLOPE STABILIZATION ADJACENT TO WETLANDS

FOR EROSION CONTROL — NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

DETAILS

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

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STATE OF NEW HAMPSHIRE
JOHN J. McTIGUE
No. 14960
LICENSED PROFESSIONAL ENGINEER

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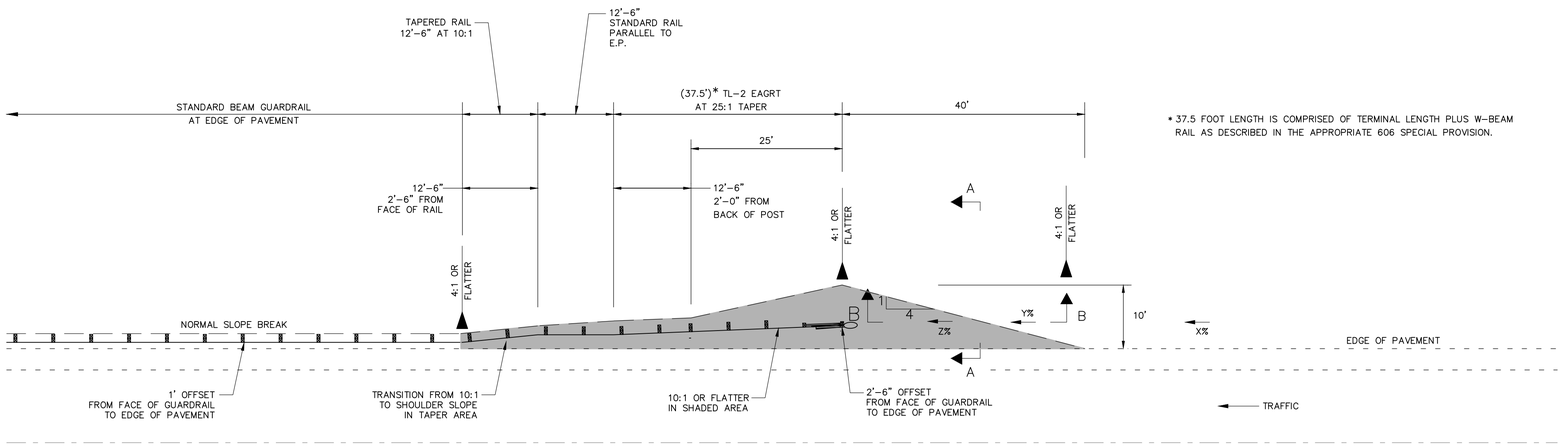
47361.00	CK	JJM	CADFILE	DETAILS	

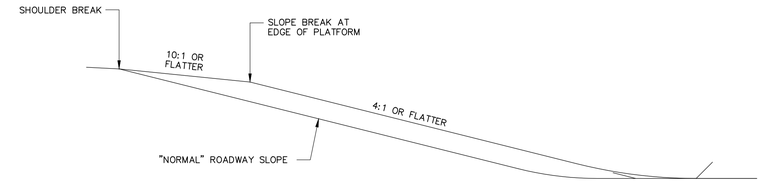


* 37.5 FOOT LENGTH IS COMPRISED OF TERMINAL LENGTH PLUS W-BEAM RAIL AS DESCRIBED IN THE APPROPRIATE 606 SPECIAL PROVISION.

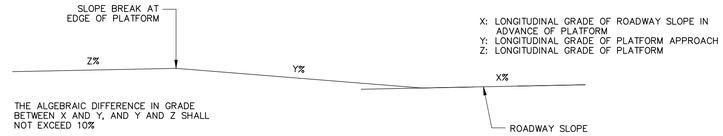
TL-2 EAGRT UNIT

PREFERRED PLATFORM FOR OFFSET ENERGY ABSORBING GUARDRAIL TERMINAL (EAGRT)

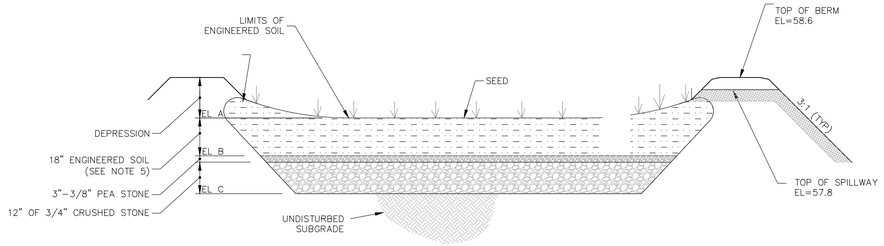
NOT TO SCALE



SECTION A-A
PLATFORM SLOPE GRADING



SECTION B-B
PLATFORM APPROACH GRADING



BIORETENTION SYSTEM MAINTENANCE

MAINTENANCE SCHEDULE TO BEGIN AFTER CONSTRUCTION IS FINISHED AND BASIN STABILIZATION IS COMPLETE.

1. CONTRACTOR AND LAND OWNERS TO PERFORM SCHEDULED MAINTENANCE ON THE BIORETENTION SYSTEM IN ACCORDANCE WITH THE STORMWATER OPERATION AND MAINTENANCE MANUAL.

	ELEVATION TABLE		
	RAIN GARDEN		
A	56.5	56.00	56.00
B	55.0	54.50	54.50
C	53.75	53.25	53.50
D	56.8	53.3	53.2

BIORETENTION DETAIL

NOT TO SCALE

NOTE: SEE PLANS FOR BED, BERM AND OVERFLOW ELEVATIONS

* SEE UNDERGROUND STORAGE DETAIL FOR PLACEMENT OF UNDERDRAIN FOR SYSTEM AREA #1

SEEDING

1. USE NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR MOIST SITES BY NEW ENGLAND WETLAND PLANTS, INC. OR EQUIVALENT.
2. SEED AT A RATE OF 1LB/1250SF. APPLY TO BARE SOIL. LIGHTLY MULCH WITH CLEAN WEED FREE STRAW.

BIORETENTION SYSTEM CONSTRUCTION

1. CLEAR AND GRUB THE AREA WHERE THE BIORETENTION SYSTEMS ARE TO BE LOCATED. STOCKPILE LOAM FOR REUSE ON SLOPES.
2. GRADE BIORETENTION SYSTEM ACCORDING TO PLAN AND DETAILS. SIDE SLOPES SHALL HAVE 6" LOAM AND SEED AND A SLOPE NOT TO EXCEED 3:1. BOTTOM OF BIORETENTION SYSTEM AREAS TO BE CONSTRUCTED WITH MANUFACTURED SOIL (SEE BIORETNETION SYSTEM CONSTRUCTION DETAIL).
3. BOTTOM OF THE BIORETENTION SYSTEM TO BE SEEDED WITH NEW ENGLAND EROSION CONTROL/RESTORATION MIX THAT MEETS NH STATE STANDARDS.
4. SOIL SPECIFICATION TO CONFORM TO THE LATEST UNH STORMWATER CENTER BIORETENTION SOIL SPECIFICATIONS. A COPY OF THE 2017 UNHSC BIORETENTION SPECIFICATION ARE INCLUDED IN THE STORMWATER OPERATION AND MAINTENANCE MANUAL.
5. THE CONTRACTOR SHALL TAKE MEASURES TO PREVENT EQUIPMENT & VEHICLE TRAFFIC FROM DRIVING IN THE AREA OF THE PROPOSED BIORETENTION SYSTEM AREA DURING CONSTRUCTION.

BIORETENTION SYSTEM

NOT TO SCALE

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

DETAILS

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47361.00	CK	JJM	CADFILE	DETAILS	C-35

City of Portsmouth, New Hampshire

Site Plan Application Checklist

This site plan application checklist is a tool designed to assist the applicant in the planning process and for preparing the application for Planning Board review. A pre-application conference with a member of the planning department is strongly encouraged as additional project information may be required depending on the size and scope. The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all site plan review requirements. Please refer to the Site Plan review regulations for full details.

Applicant Responsibilities (Section 2.5.2): Applicable fees are due upon application submittal along with required attachments. The application shall be complete as submitted and provide adequate information for evaluation of the proposed site development. Waiver requests must be submitted in writing with appropriate justification.

Name of Owner/Applicant: The Walter D. Hett Trust / Green & Company Real Estate Date Submitted: 12/23/19

Phone Number: 603-964-7572 E-mail: gousewing1@gmail.com

Site Address: 0 Banfield Road Map: 256 Lot: 2

Zoning District: Single Residence A Lot area: 1,955,150 sq. ft.

Application Requirements			
☑	**Required Items for Submittal**	**Item Location (e.g. Page or Plan Sheet/Note #)**	**Waiver Requested**
☐	Fully executed and signed Application form. **(2.5.2.3)**	Submitted Online	N/A
☐	All application documents, plans, supporting documentation and other materials provided in digital Portable Document Format (PDF). **(2.5.2.8)**	Submitted Online	N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	Statement that lists and describes "green" building components and systems. **(2.5.3.1A)**	N/A	
☐	Gross floor area and dimensions of all buildings and statement of uses and floor area for each floor. **(2.5.3.1B)**	Attached	N/A
☐	Tax map and lot number, and current zoning of all parcels under Site Plan Review. **(2.5.3.1C)**	S-03	N/A
☐	Owner's name, address, telephone number, and signature. Name, address, and telephone number of applicant if different from owner. **(2.5.3.1D)**	C-00	N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	Names and addresses (including Tax Map and Lot number and zoning districts) of all direct abutting property owners (including properties located across abutting streets) and holders of existing conservation, preservation or agricultural preservation restrictions affecting the subject property. **(2.5.3.1E)**	S-03	N/A
☐	Names, addresses and telephone numbers of all professionals involved in the site plan design. **(2.5.3.1F)**	C-00	N/A
☐	List of reference plans. **(2.5.3.1G)**	S-03	N/A
☐	List of names and contact information of all public or private utilities servicing the site. **(2.5.3.1H)**	C-00/C-02	N/A

Site Plan Specifications			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	Full size plans shall not be larger than 22 inches by 34 inches with match lines as required, unless approved by the Planning Director. Submittals shall be a minimum of 11 inches by 17 inches as specified by Planning Dept. staff. **(2.5.4.1A)**	Required on all plan sheets	N/A
☐	Scale: Not less than 1 inch = 60 feet and a graphic bar scale shall be included on all plans. **(2.5.4.1B)**	Required on all plan sheets	N/A
☐	GIS data should be referenced to the coordinate system New Hampshire State Plane, NAD83 (1996), with units in feet. **(2.5.4.1C)**	All Sheets	N/A
☐	Plans shall be drawn to scale. **(2.5.4.1D)**	Required on all plan sheets	N/A
☐	Plans shall be prepared and stamped by a NH licensed civil engineer. **(2.5.4.1D)**	C-00 - C-34	N/A
☐	Wetlands shall be delineated by a NH certified wetlands scientist and so stamped. **(2.5.4.1E)**	S-01	N/A
☐	Title (name of development project), north point, scale, legend. **(2.5.4.2A)**	S-03	N/A
☐	Date plans first submitted, date and explanation of revisions. **(2.5.4.2B)**	All Sheets	N/A
☐	Individual plan sheet title that clearly describes the information that is displayed. **(2.5.4.2C)**	Required on all plan sheets	N/A
☐	Source and date of data displayed on the plan. **(2.5.4.2D)**	S-01	N/A

Site Plan Specifications			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	A note shall be provided on the Site Plan stating: "All conditions on this Plan shall remain in effect in perpetuity pursuant to the requirements of the Site Plan Review Regulations." **(2.5.4.2E)**	C-04	N/A
☐	Plan sheets submitted for recording shall include the following notes: a. "This Site Plan shall be recorded in the Rockingham County Registry of Deeds." b. "All improvements shown on this Site Plan shall be constructed and maintained in accordance with the Plan by the property owner and all future property owners. No changes shall be made to this Site Plan without the express approval of the Portsmouth Planning Director." **(2.13.3)**	C-02	N/A
☐	Plan sheets showing landscaping and screening shall also include the following additional notes: a. "The property owner and all future property owners shall be responsible for the maintenance, repair and replacement of all required screening and landscape materials." b. "All required plant materials shall be tended and maintained in a healthy growing condition, replaced when necessary, and kept free of refuse and debris. All required fences and walls shall be maintained in good repair." c. "The property owner shall be responsible to remove and replace dead or diseased plant materials immediately with the same type, size and quantity of plant materials as originally installed, unless alternative plantings are requested, justified and approved by the Planning Board or Planning Director." **(2.13.4)**	C-16	N/A

Site Plan Specifications – Required Exhibits and Data			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
	1. Existing Conditions: (2.5.4.3A)		
☐	a. Surveyed plan of site showing existing natural and built features;	S-01	
☐	b. Zoning boundaries;	S-01	
☐	c. Dimensional Regulations;	S-01, Note 4	
☐	d. Wetland delineation, wetland function and value assessment;	S-01, Attached	
☐	e. SFHA, 100-year flood elevation line and BFE data.	S-01	
	2. Buildings and Structures: (2.5.4.3B)		
☐	a. Plan view: Use, size, dimensions, footings, overhangs, 1st fl. elevation;	Attached	
☐	b. Elevations: Height, massing, placement, materials, lighting, façade treatments;	Attached	
☐	c. Total Floor Area;	Attached	
☐	d. Number of Usable Floors;	Attached	
☐	e. Gross floor area by floor and use.	Attached	
	3. Access and Circulation: (2.5.4.3C)		
☐	a. Location/width of access ways within site;	C-04 - C-07	
☐	b. Location of curbing, right of ways, edge of pavement and sidewalks;	C-04 - C-07	
☐	c. Location, type, size and design of traffic signing (pavement markings);	C-04 - C-07	
☐	d. Names/layout of existing abutting streets;	S-01	
☐	e. Driveway curb cuts for abutting prop. and public roads;	S-01	
☐	f. If subdivision; Names of all roads, right of way lines and easements noted;	S-03	
☐	g. AASHTO truck turning templates, description of minimum vehicle allowed being a WB-50 (unless otherwise approved by TAC).		YES
	4. Parking and Loading: (2.5.4.3D)		
☐	a. Location of off street parking/loading areas, landscaped areas/buffers;	C-04 - C-07/C-17 - C-19	
☐	b. Parking Calculations (# required and the # provided).	C-04	
	5. Water Infrastructure: (2.5.4.3E)		
☐	a. Size, type and location of water mains, shut-offs, hydrants & Engineering data;	C-12 - C-15	
☐	b. Location of wells and monitoring wells (include protective radii).	N/A	
	6. Sewer Infrastructure: (2.5.4.3F)		
☐	a. Size, type and location of sanitary sewage facilities & Engineering data.	C-12 - C-15	
	7. Utilities: (2.5.4.3G)		
☐	a. The size, type and location of all above & below ground utilities;	C-12 - C-15	
☐	b. Size type and location of generator pads, transformers and other fixtures.	TBD (UTILITY COMPANY)	

Site Plan Specifications – Required Exhibits and Data			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	**8. Solid Waste Facilities: (2.5.4.3H)**		
☐	a. The size, type and location of solid waste facilities.	N/A	
	9. Storm water Management: (2.5.4.3I)		
☐	a. The location, elevation and layout of all storm-water drainage.	C-08 - C-11	
	10. Outdoor Lighting: (2.5.4.3J)		
☐	a. Type and placement of all lighting (exterior of building, parking lot and any other areas of the site) and; b. photometric plan.	C-19	
☐	**11.** Indicate where dark sky friendly lighting measures have been implemented. **(10.1)**	C-19	
	12. Landscaping: (2.5.4.3K)		
☐	a. Identify all undisturbed area, existing vegetation and that which is to be retained;	C-17 - C-19	
☐	**b.** Location of any irrigation system and water source.	TBD	
	13. Contours and Elevation: (2.5.4.3L)		
☐	a. Existing/Proposed contours (2 foot minimum) and finished grade elevations.	C-08 - C-11	
	14. Open Space: (2.5.4.3M)		
☐	a. Type, extent and location of all existing/proposed open space.	S-03	
☐	**15. All easements, deed restrictions and non-public rights of ways. (2.5.4.3N)**	S-03	
☐	**16. Location of snow storage areas and/or off-site snow removal. (2.5.4.3O)**	N/A	
☐	**17. Character/Civic District (All following information shall be included): (2.5.4.3Q)**	N/A	
	a. Applicable Building Height (10.5A21.20 & 10.5A43.30);		
	b. Applicable Special Requirements (10.5A21.30);		
	c. Proposed building form/type (10.5A43);		
	d. Proposed community space (10.5A46).		

Other Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	Traffic Impact Study or Trip Generation Report, as required. (*Four (4) hardcopies of the full study/report and Six (6) summaries to be submitted with the Site Plan Application*) **(3.2.1-2)**	Attached	
☐	Indicate where Low Impact Development Design practices have been incorporated. **(7.1)**	N/A	
☐	Indicate whether the proposed development is located in a wellhead protection or aquifer protection area. Such determination shall be approved by the Director of the Dept. of Public Works. **(7.3.1)**	See Drainage Analysis	
☐	Indicate where measures to minimize impervious surfaces have been implemented. **(7.4.3)**	See Drainage Analysis	
☐	Calculation of the maximum effective impervious surface as a percentage of the site. **(7.4.3.2)**	C-04	
☐	Stormwater Management and Erosion Control Plan. (*Four (4) hardcopies of the full plan/report and Six (6) summaries to be submitted with the Site Plan Application*) **(7.4.4.1)**	Attached	

Final Site Plan Approval Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	All local approvals, permits, easements and licenses required, including but not limited to: a. Waivers; b. Driveway permits; c. Special exceptions; d. Variances granted; e. Easements; f. Licenses. **(2.5.3.2A)**	C-00	
☐	Exhibits, data, reports or studies that may have been required as part of the approval process, including but not limited to: a. Calculations relating to stormwater runoff; b. Information on composition and quantity of water demand and wastewater generated; c. Information on air, water or land pollutants to be discharged, including standards, quantity, treatment and/or controls; d. Estimates of traffic generation and counts pre- and post-construction; e. Estimates of noise generation; f. A Stormwater Management and Erosion Control Plan; g. Endangered species and archaeological / historical studies; h. Wetland and water body (coastal and inland) delineations; i. Environmental impact studies. **(2.5.3.2B)**	Stormwater Drainage Report N/A N/A Traffic Memorandum N/A C-08 - C-11, C-23 - C-25 NHB19-1641 S-01 Attached	

Final Site Plan Approval Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	A document from each of the required private utility service providers indicating approval of the proposed site plan and indicating an ability to provide all required private utilities to the site. **(2.5.3.2D)**	Attached	
☐	A list of any required state and federal permit applications required for the project and the status of same. **(2.5.3.2E)**	C-00	

Applicant's Signature: _____ **Date:** 12/23/19

City of Portsmouth, New Hampshire

Subdivision Application Checklist

This subdivision application checklist is a tool designed to assist the applicant in the planning process and for preparing the application for Planning Board review. A pre-application conference with a member of the planning department is strongly encouraged as additional project information may be required depending on the size and scope. The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all subdivision review requirements. Please refer to the Subdivision review regulations for full details.

Applicant Responsibilities (Section III.C): Applicable fees are due upon application submittal along with required number of copies of the Preliminary or final plat and supporting documents and studies. Please consult with Planning staff for submittal requirements.

Owner: The Walter D. Hett Trust Date Submitted: 12/23/19

Applicant: Green & Company Real Estate

Phone Number: 603-964-7572 E-mail: grousewing1@gmail.com

Site Address 1: 0 Banfield Road Map: 256 Lot: 2

Site Address 2: _____ Map: _____ Lot: _____

Application Requirements			
☑	**Required Items for Submittal**	**Item Location (e.g. Page or Plan Sheet/Note #)**	**Waiver Requested**
☐	Completed Application form. **(III.C.2-3)**	Submitted Online	N/A
☐	All application documents, plans, supporting documentation and other materials provided in digital Portable Document Format (PDF). **(III.C.4)**	Submitted Online	N/A

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
☐	Name and address of record owner, any option holders, descriptive name of subdivision, engineer and/or surveyor or name of person who prepared the plat. **(Section IV.1/V.1)**	C-00	☑ Preliminary Plat ☑ Final Plat	N/A

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
☐	**Preliminary Plat** Names and addresses of all adjoining property owners. **(Section IV.2)** **Final Plat** Names and addresses of all abutting property owners, locations of buildings within one hundred (100) feet of the parcel, and any new house numbers within the subdivision. **(Section V.2)**	S-03	☑ Preliminary Plat ☑ Final Plat	N/A
☐	North point, date, and bar scale. **(Section IV.3/V3)**	Required on all Plan Sheets	☑ Preliminary Plat ☑ Final Plat	N/A
☐	Zoning classification and minimum yard dimensions required. **(Section IV.4/V.4)**	S-03, Note 4	☑ Preliminary Plat ☑ Final Plat	N/A
☐	**Preliminary Plat** Scale (not to be smaller than one hundred (100) feet = 1 inch) and location map (at a scale of 1" = 1000'). **(Section IV.5)** **Final Plat** Scale (not to be smaller than 1"=100'), Location map (at a scale of 1"=1,000') showing the property being subdivided and its relation to the surrounding area within a radius of 2,000 feet. Said location map shall delineate all streets and other major physical features that my either affect or be affected by the proposed development. **(Section V.5)**	S-03	☑ Preliminary Plat ☑ Final Plat	N/A
☐	Location and approximate dimensions of all existing and proposed property lines including the entire area proposed to be subdivided, the areas of proposed lots, and any adjacent parcels in the same ownership. **(Section IV.6)**	S-03	☑ Preliminary Plat ☑ Final Plat	
☐	Dimensions and areas of all lots and any and all property to be dedicated or reserved for schools, parks, playgrounds, or other public purpose. Dimensions shall include radii and length of all arcs and calculated bearing for all straight lines. **(Section V.6/ IV.7)**	S-03	☑ Preliminary Plat ☑ Final Plat	N/A
☐	Location, names, and present widths of all adjacent streets, with a designation as to whether public or private and approximate location of existing utilities to be used. Curbs and sidewalks shall be shown. **(Section IV.8/V.7)**	S-01	☑ Preliminary Plat ☑ Final Plat	

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
☐	Location of significant physical features, including bodies of water, watercourses, wetlands, railroads, important vegetation, stone walls and soils types that my influence the design of the subdivision. **(Section IV.9/V.8)**	S-01	☑ Preliminary Plat ☑ Final Plat	
☐	**Preliminary Plat** Proposed locations, widths and other dimensions of all new streets and utilities, including water mains, storm and sanitary sewer mains, catch basins and culverts, street lights, fire hydrants, sewerage pump stations, etc. **(Section IV.10)** **Final Plat** Proposed locations and profiles of all proposed streets and utilities, including water mains, storm and sanitary sewer mains, catchbasins and culverts, together with typical cross sections. Profiles shall be drawn to a horizontal scale of 1"=50' and a vertical scale of 1"=5', showing existing centerline grade, existing left and right sideline grades, and proposed centerline grade. **(Section V.9)**	C-04 - C-07 C-08 - C-11 C-12 - C-15 C-21 - C-22	☑ Preliminary Plat ☑ Final Plat	
☐	When required by the Board, the plat shall be accompanied by profiles of proposed street grades, including extensions for a reasonable distance beyond the subject land; also grades and sizes of proposed utilities. **(Section IV.10)**	C-21 - C-22	☑ Preliminary Plat ☑ Final Plat	
☐	Base flood elevation (BFE) for subdivisions involving greater than five (5) acres or fifty (50) lots. **(Section IV.11)**	S-03, Note 3	☑ Preliminary Plat ☑ Final Plat	
☐	For subdivisions of five (5) lots or more, or at the discretion of the Board otherwise, the preliminary plat shall show contours at intervals no greater than two (2) feet. Contours shall be shown in dotted lines for existing natural surface and in solid lines for proposed final grade, together with the final grade elevations shown in figures at all lot corners. If existing grades are not to be changed, then the contours in these areas shall be solid lines. **(Section IV.12/ V.12)**	S-01 (existing) C-08 - C-11 (proposed)	☑ Preliminary Plat ☑ Final Plat	

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
☐	Dates and permit numbers of all necessary permits from governmental agencies from which approval is required by Federal or State law. **(Section V.10)**	S-00	☐ Preliminary Plat ☑ Final Plat	
☐	For subdivisions involving greater than five (5) acres or fifty (50) lots, the final plat shall show hazard zones and shall include elevation data for flood hazard zones. **(Section V.11)**	N/A	☐ Preliminary Plat ☑ Final Plat	
☐	Location of all permanent monuments. **(Section V.12)**	S-03	☐ Preliminary Plat ☑ Final Plat	

General Requirements[1]			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	**1. Basic Requirements: (VI.1)**		
☐	a. Conformity to Official Plan or Map	All Sheets	
☐	b. Hazards	N/A	
☐	c. Relation to Topography	S-01	
☐	d. Planned Unit Development	S-01	
☐	**2. Lots: (VI.2)**		
☐	a. Lot Arrangement	S-03	
☐	b. Lot sizes	S-03	
☐	c. Commercial and Industrial Lots	S-03	
☐	**3. Streets: (VI.3)**		
☐	a. Relation to adjoining Street System	S-03	
☐	b. Street Rights-of-Way	S-03	
☐	c. Access	S-03	
☐	d. Parallel Service Roads	S-03	
☐	e. Street Intersection Angles	C-XX	
☐	f. Merging Streets	N/A	
☐	g. Street Deflections and Vertical Alignment	C-21 - C-22	
☐	h. Marginal Access Streets	N/A	
☐	i. Cul-de-Sacs	C-XX	
☐	j. Rounding Street Corners	C-XX	
☐	k. Street Name Signs	TBD	
☐	l. Street Names	TBD	
☐	m. Block Lengths	N/A	
☐	n. Block Widths	N/A	
☐	o. Grade of Streets	C-08 - C-11	
☐	p. Grass Strips	C-16 - C-19	
☐	**4. Curbing: (VI.4)**	C-04 - C-07	
☐	**5. Driveways: (VI.5)**	C-04 - C-07	
☐	**6. Drainage Improvements: (VI.6)**	C-08 - C-11	
☐	**7. Municipal Water Service: (VI.7)**	C-12 - C-15	
☐	**8. Municipal Sewer Service: (VI.8)**	N/A	
☐	**9. Installation of Utilities: (VI.9)**		
☐	a. All Districts	C-12 - C-15	
☐	b. Indicator Tape	C-12 - C-15	
☐	**10. On-Site Water Supply: (VI.10)**	See Attached	
☐	**11. On-Site Sewage Disposal Systems: (VI.11)**	C-12 - C-15	
☐	**12. Open Space: (VI.12)**		
☐	a. Natural Features	S-01	
☐	b. Buffer Strips	S-03	
☐	c. Parks	N/A	
☐	d. Tree Planting	C-16 - C-19	
☐	**13. Flood Hazard Areas: (VI.13)**	N/A	
☐	a. Permits		
☐	b. Minimization of Flood Damage		
☐	c. Elevation and Flood-Proofing Records		
☐	d. Alteration of Watercourses		
☐	**14. Erosion and Sedimentation Control (VI.14)**	C-23 - C-25	

☑	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
☐ ☐ ☐	**15. Easements (VI.15)** a. Utilities b. Drainage	S-03	
☐	**16. Monuments: (VI.16)**	S-03	
☐	**17. Benchmarks: (VI.17)**	S-03	
☐	**18. House Numbers (VI.18)**	TBD	

Design Standards			
	Required Items for Submittal	**Indicate compliance and/or provide explanation as to alternative design**	**Waiver Requested**
☐	**1. Streets have been designed according to the design standards required under Section (VII.1).** a. Clearing b. Excavation c. Rough Grade and Preparation of Sub-Grade d. Base Course e. Street Paving f. Side Slopes g. Approval Specifications h. Curbing i. Sidewalks j. Inspection and Methods	YES	
☐	**2. Storm water Sewers and Other Drainage Appurtenances have been designed according to the design standards required under Section (VII.2).** a. Design b. Standards of Construction	YES	
☐	**3. Sanitary Sewers have been designed according to the design standards required under Section (VII.3).** a. Design b. Lift Stations c. Materials d. Construction Standards	NA	
☐	**4. Water Mains and Fire Hydrants have been designed according to the design standards required under Section (VII.4).** a. Connections to Lots b. Design and Construction c. Materials d. Notification Prior to Construction	Yes	

Applicant's/Representative's Signature: _____ **Date:** 12/23/19

[1] See City of Portsmouth, NH Subdivision Rules and Regulations for details.

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

December 23, 2019

Juliet Walker, Planning Director
City of Portsmouth Planning Department
1 Junkins Avenue
Portsmouth, NH 03801

RE: Waiver Requests for Condominium Development, Banfield Road, Tax Map 256, Lot 2

Dear Ms. Walker:
On behalf of our client, we respectfully submit the following waiver requests as part of the submittal of The Village at Banfield Woods Condominium Development Plan:

Waiver Request for Subdivision Rules and Regulations, Section VI(3)(I) Cul-de-Sacs: "The maximum length of a cul-de-sac shall generally be five hundred (500) feet unless otherwise approved by the Board.".

Explanation: The proposed cul-de-sac is located 900' from the street. There is no feasible means to create a second access to the uplands on this site without impacting additional wetland and wetland buffer impacts. Each house will have sprinkler fire suppression systems installed. Fire hydrants are proposed in two locations along the proposed road, the first fire hydrant is located 450 feet from the proposed entrance to the site and the second fire hydrant is located 450 feet from the first fire hydrant.

Waiver Request for Site Plan Review Regulations, Article 2.5.4(3)(c) Access and Circulation: "Use current AASHTO truck turning templates descriptions with the minimum vehicle allowed being a WB-50, unless otherwise approved by the TAC."

Explanation: This is a residential property and not a business. Widening out the entrance and enlarging the cul-de-sac would create more impervious area and is not required for this site. It is accessible by the Portsmouth's fire truck.

We look forward to your review of these waiver requests. If you require additional information please let us know.

Respectfully,
MSC a division of TFMoran, Inc.

Jack McTigue, PE
Project Manager

TFMoran, Inc.
48 Constitution Drive, Bedford, NH 03110
T(603) 472-4488 www.tfmoran.com

MSC a division of TFMoran, Inc.
170 Commerce Way–Suite 102, Portsmouth, NH 03801
T(603) 431-2222 www.tfmoran.com

Stephen G. Pernaw & Company, Inc.

P.O. Box 1721 • Concord, NH 03302
tel: (603) 731-8500 • fax: (866) 929-6094 • sgp@ pernaw.com

Transportation: Engineering • Planning • Design

M E M O R A N D U M

Ref: 1939A

To: Michael Green
Green & Company

From: Stephen G. Pernaw, P.E., PTOE

Subject: Proposed Residential Development
Portsmouth, New Hampshire

Date: June 25, 2019

Thank you for sending along the conceptual site plan that shows a 22-unit residential condominium development on the west side of Banfield Road in Portsmouth, New Hampshire. To assist you with your deliberations with the City Planning Department, our office has conducted a trip generation analysis and preliminary trip distribution analysis for this development. The purpose of this memorandum is to summarize the results of these analyses:

Proposed Development – According to the plan entitled *"Conceptual Site Plan A"* prepared by TFM, Inc. (see Attachment 1), the proposed development involves the construction of 22 detached dwelling units with one point of access on Banfield Road. This new intersection will be located approximately midway between Peverly Hill Road and Constitution Avenue.

Trip Generation - To estimate the quantity of vehicle-trips that will be produced by the proposed residential development, Pernaw & Company, Inc. considered the standard trip generation rates and equations published by the Institute of Transportation Engineers[1] (ITE). Land Use Code LUC 220: Multifamily Housing (Low-Rise) is the most applicable category for a condominium development, and the number of dwelling units was utilized as the independent variable. Table 1 shows that this development will generate approximately 10 (AM) and 12 (PM) vehicle-trips during the weekday commuter peak hour periods (see Attachments 2 & 3). Consequently, this development is clearly not a major traffic generator.

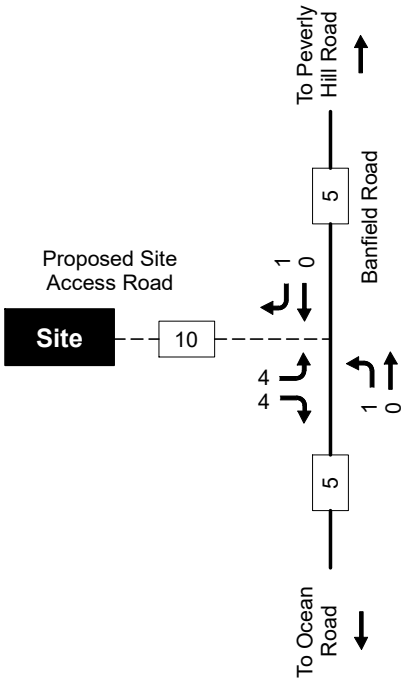
Trip Distribution - The preliminary trip distribution analysis indicates that approximately 50% of the site traffic will travel to/from points north on Banfield Road; with the remainder traveling to/from the south. Figure 1 shows the likely distribution of site traffic on Banfield Road, with the net increase totaling only +6 vehicles during the PM peak hour period. This translates into one additional vehicle every 10 minutes, on average, during the peak hour periods. Hourly increases of this order of magnitude simply will not significantly alter the prevailing traffic operations at nearby intersections.

[1] Institute of Transportation Engineers, *Trip Generation*, 10th Edition (Washington, D.C., 2017)

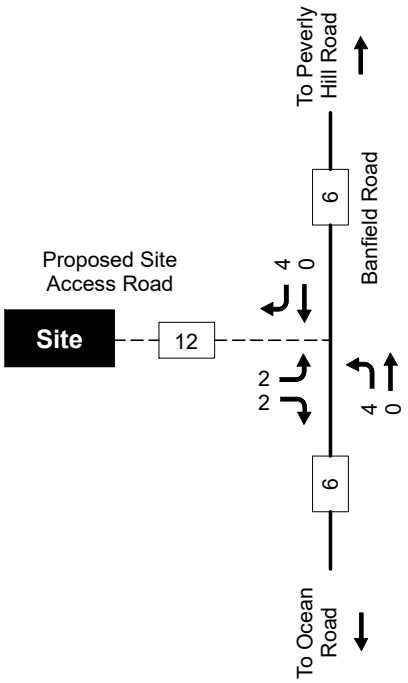
Table 1 — Trip Generation Summary

		22 Residential Condominiums [1]
Weekday Total		
	Entering	81 veh
	Exiting	81 veh
	Total	162 trips
Weekday AM Peak Hour		
	Entering	2 veh
	Exiting	8 veh
	Total	10 trips
Weekday PM Peak Hour		
	Entering	8 veh
	Exiting	4 veh
	Total	12 trips
Saturday Total		
	Entering	90 veh
	Exiting	90 veh
	Total	180 trips
Saturday Peak Hour		
	Entering	8 veh
	Exiting	7 veh
	Total	15 trips
Sunday Total		
	Entering	69 veh
	Exiting	69 veh
	Total	138 trips
Sunday Peak Hour		
	Entering	8 veh
	Exiting	7 veh
	Total	15 trips

[1] ITE Land Use Code 220 - Multifamily Housing (Low-Rise)



AM PEAK HOUR



PM PEAK HOUR

NORTH

1939A

Figure 1

Site Generated Traffic Volumes

Traffic Evaluation, Proposed Residential Development, Portsmouth, New Hampshire

Findings & Conclusions

1. Access to the proposed 22-unit residential condominium development is proposed via a new two-way site access road that will extend from the west side of Banfield Road approximately midway between Peverly Hill Road and Constitution Avenue.

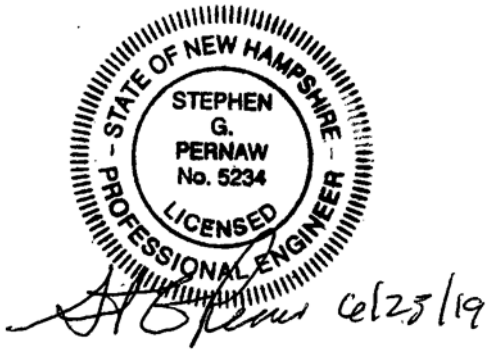
2. The trip generation analysis indicates that the proposed development will generate approximately 10 vehicle-trips during the weekday AM peak hour and 12 vehicle-trips during the weekday PM peak hour.

3. The trip distribution analysis indicates that approximately 50% of the site vehicles will travel to/from points north on Banfield Road, with the remainder traveling to/from points south.

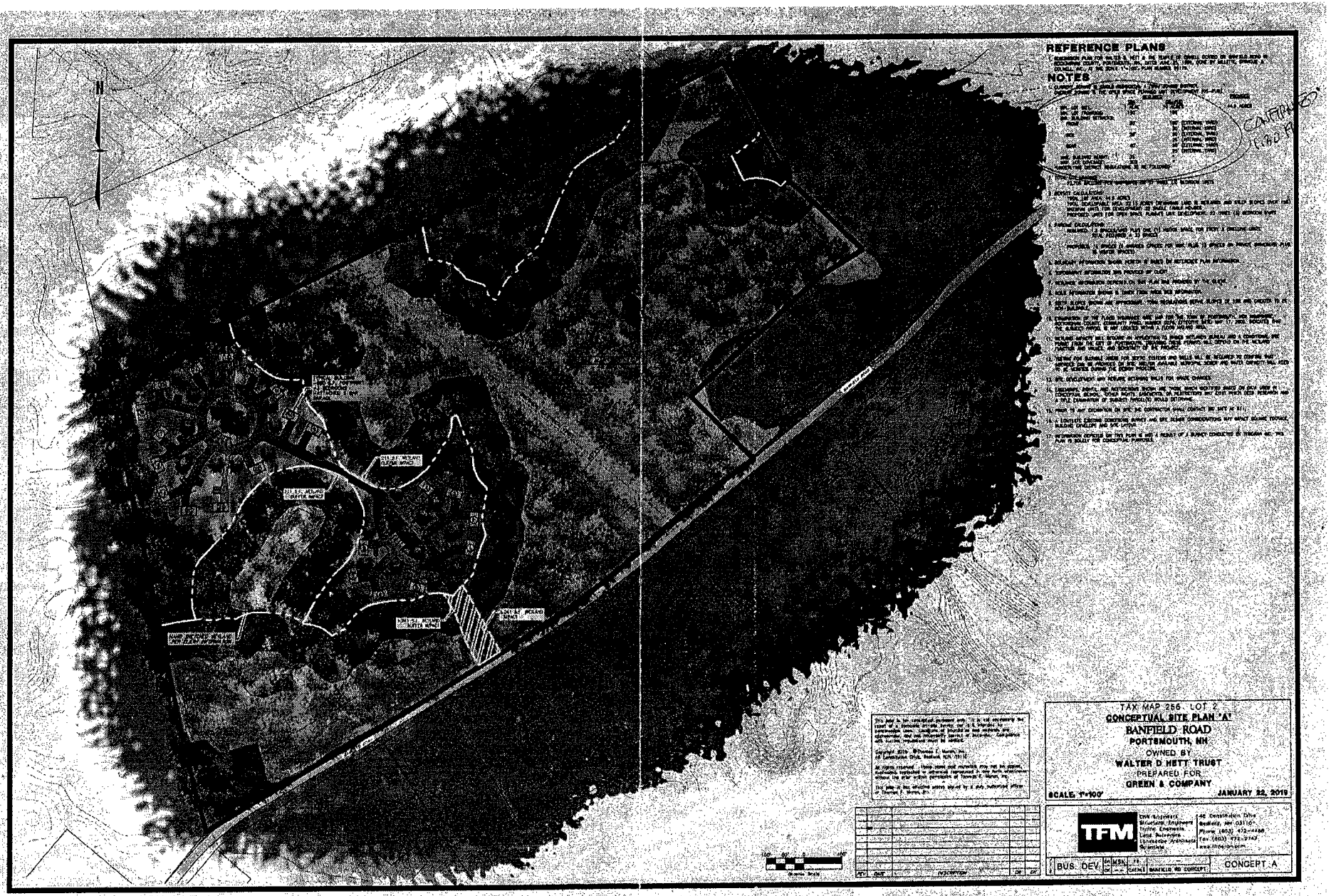
4. Traffic increases of this order of magnitude will not significantly impact operations at nearby intersections. The impacts of site traffic will diminish further as drivers disperse at nearby intersections.

5. The proposed driveway intersection on Banfield Road should operate under STOP sign control (MUTCD R1-1) on the minor approach and include the installation of an 18-inch white stop line. Installation of a four-inch double yellow centerline on the site access road is considered optional, but desirable.

Attachments



ATTACHMENTS



Attachment 1

Trip Generation Summary

Alternative: Trip Rate Method
Phase:
Project: 1939A

Open Date: 5/24/2019
Analysis Date: 5/24/2019

ITE	Land Use		Weekday Average Daily Trips			Weekday AM Peak Hour of Adjacent Street Traffic			Weekday PM Peak Hour of Adjacent Street Traffic		
		*	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
220	LOW-RISE 1		81	80	161	2	8	10	8	4	12
	22 Dwelling Units										
Unadjusted Volume			81	80	161	2	8	10	8	4	12
Internal Capture Trips			0	0	0	0	0	0	0	0	0
Pass-By Trips			0	0	0	0	0	0	0	0	0
Volume Added to Adjacent Streets			81	80	161	2	8	10	8	4	12

Total Weekday Average Daily Trips Internal Capture = 0 Percent
Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent
Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition
TRIP GENERATION 10, TRAFFICWARE, LLC

Attachment 2

Trip Generation Summary

Alternative: Trip Rate Method
Phase:
Project: 1939A

Open Date: 5/24/2019
Analysis Date: 5/24/2019

		Saturday Average Daily Trips				Saturday Peak Hour of Generator				Sunday				Sunday Peak Hour of Generator			
ITE	Land Use	*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total
220	LOW-RISE 1		90	89	179				15		69	69	138				15
	22 Dwelling Units																
Unadjusted Volume			90	89	179		0	0	0		69	69	138		0	0	0
Internal Capture Trips			0	0	0		0	0	0		0	0	0		0	0	0
Pass-By Trips			0	0	0		0	0	0		0	0	0		0	0	0
Volume Added to Adjacent Streets			90	89	179		0	0	0		69	69	138		0	0	0

Total Saturday Average Daily Trips Internal Capture = 0 Percent

Total Saturday Peak Hour of Generator Internal Capture = 0 Percent

Total Sunday Internal Capture = 0 Percent

Total Sunday Peak Hour of Generator Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition

TRIP GENERATION 10, TRAFFICWARE, LLC

PRELIMINARY TRIP DISTRIBUTION ANALYSIS

A. Work Destination Report - Where Workers are Employed Who Live in the Selection Area - by County Subdivisions

Total All Jobs

Jobs Counts by County Subdivisions Where Workers are Employed - All Jobs		Gateway %			Gateway Allocation			
		Ban N A	Herit S B	Oce W C	Ban N A	Herit S B	Oce W C	
OUTBOUND	Count							
Portsmouth city (Rockingham, NH)	4,324	0.50	0.25	0.25	2162	1081	1081	4324
Dover city (Strafford, NH)	578	1.00			578	0	0	578
Exeter town (Rockingham, NH)	387		0.50	0.50	0	194	194	388
Manchester city (Hillsborough, NH)	334			1.00	0	0	334	334
Boston city (Suffolk, MA)	327			1.00	0	0	327	327
Newington town (Rockingham, NH)	296	0.50		0.50	148	0	148	296
Hampton town (Rockingham, NH)	288		0.90	0.10	0	259	29	288
Durham town (Strafford, NH)	281	1.00			281	0	0	281
Nashua city (Hillsborough, NH)	235			1.00	0	0	235	235
Salem town (Rockingham, NH)	208			1.00	0	0	208	208
	7258				3169	1534	2556	7259
					43.7%	21.1%	35.2%	100%
					44	21	35	100

ARCHITECTURAL PLANS

Condominium Development
Banfield Road
Tax Map 256, Lot 2
December 5, 2019

This Page is intentionally Blank

Balmalcolm

540.126.v12 ER

Artform Home Plans
603-431-9559

Dear Builders and Home Buyers,

In addition to our Terms and Conditions (the "Terms", available on ArtformHomePlans.com), please be aware of the following:

As defined in the Terms, this is a Design Drawing and may not yet have Construction Drawings (CDs) or the CDs may not reflect design changes. During the conversion of a Design Drawing to Construction Drawings, changes may be necessary including, but not limited to, dimensional changes or changes to the framing and structural supports.

We require that our designs be built substantially as shown in the Drawings. Markups agreed to by Builder and Home Buyer must still be approved by Artform, and may require additional changes, such as structural updates. While we attempt to accommodate requested changes where possible and reasonable, including considerations of design integrity, any and all changes to Drawings must be approved in writing by Artform. It is recommended that you have your Design Drawings updated by Artform prior to attaching any Drawing to any builder agreement. Artform shall not be responsible for the misuse of or unauthorized alterations to any of its Drawings.

- To maintain design integrity, we pay particular attention to features on the front facade, including but not limited to door surrounds, window casings, finished porch column sizes, and roof friezes. While we may allow builders to add their own flare to aesthetic elements, we don't allow our designs to be stripped of critical details. Any such alterations require the express written consent of Artform.
- Increasing or decreasing ceiling heights requires adjustments to window sizes and other exterior elements.

We are not responsible for typographical errors. Home Buyer shall give thoughtful consideration to all drawings and documents provided to them and shall be solely responsible for ensuring that they understand features in the home that are important to them.

Balmalcolm

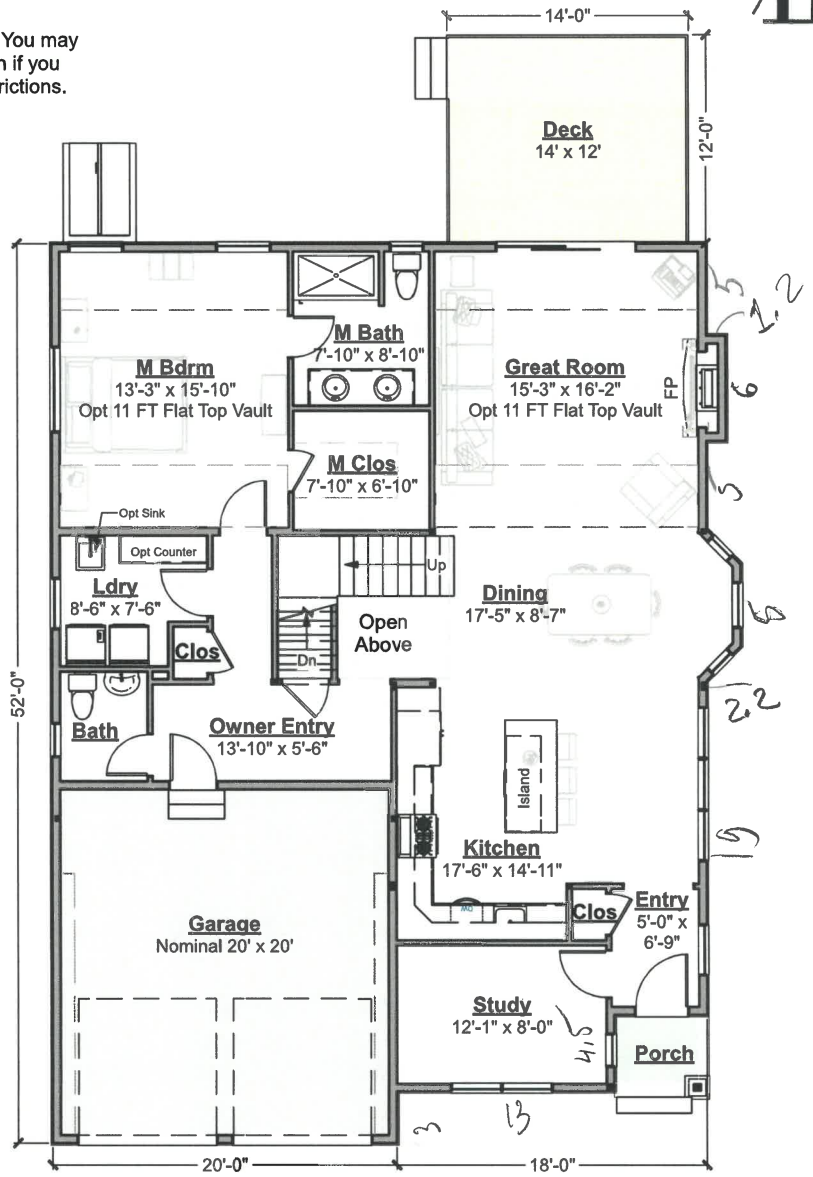
540.126.v12 ER

Artform Home Plans
603-431-9559

Balmalcolm

540.126.v12 ER

Artform Home Plans
603-431-9559



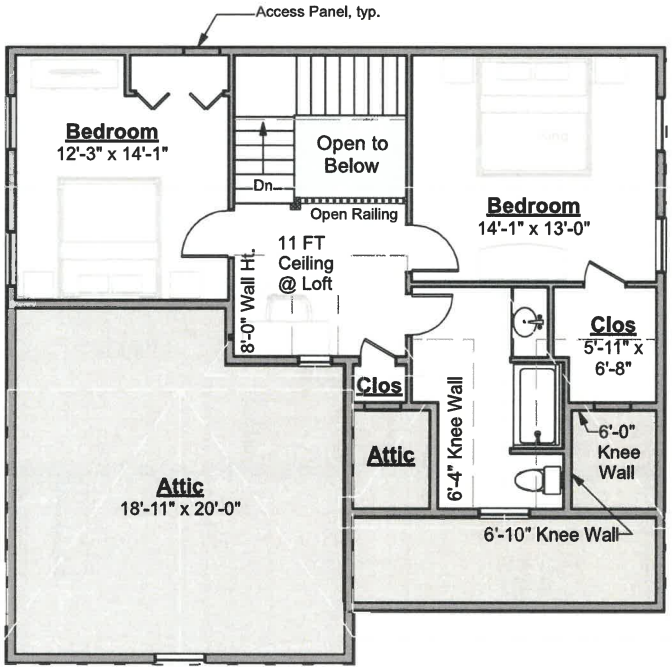
Living Area this Floor: 1515 sq ft
First Floor - 9 FT Ceiling unless noted otherwise

First Floor Plan
Scale: 3/32"=1'

Balmalcolm

540.126.v12 ER

Artform Home Plans
603-431-9559



Living Area this Floor: 755 sq ft
First Floor - 9 FT Ceiling unless noted otherwise

Second Floor Plan
Scale: 3/32"=1'

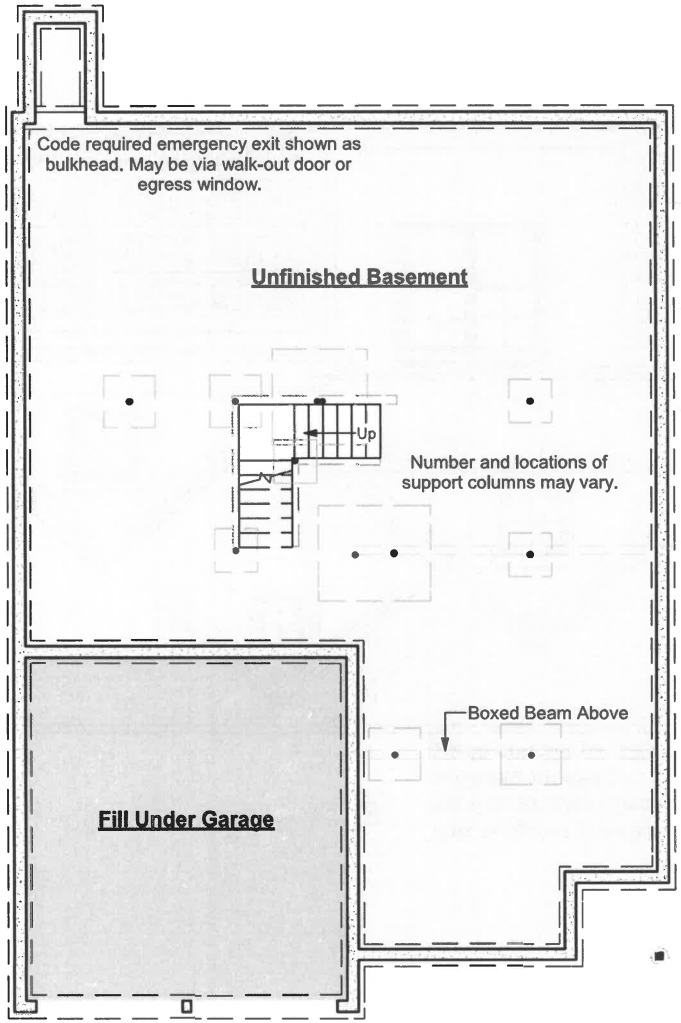
Balmalcolm

540.126.v12 ER

Artform Home Plans
603-431-9559

IMPORTANT BASEMENT NOTES:

- Unless an area is specifically designed as "no posts", additional posts may be required.
- Unless specifically noted otherwise, basement beams will be framed below the floor joists.
- Basement spaces accommodate utilities, mechanical equipment and the horizontal movement of plumbing pipes, electrical wires and heating ducts. Both as part of any Construction Drawings produced based on this design and as future decisions made by the builder, changes to accommodate these items must be expected.
- Basement window locations are dependent on site conditions and utility locations. Clarify number and location with your builder.

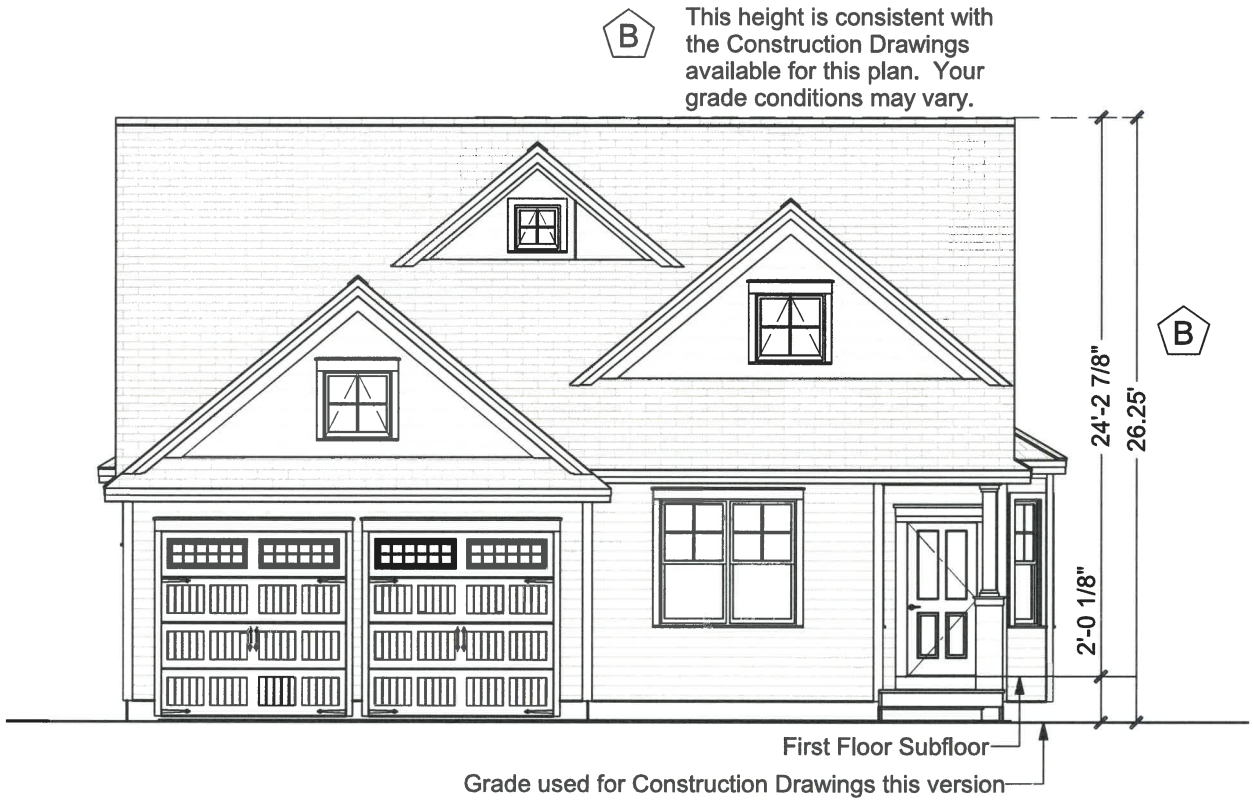


Foundation Plan
Scale: 3/32"=1'

Balmalcolm

540.126.v12 ER

Artform Home Plans
603-431-9559



Front Elevation
Scale: 3/32"=1'

Balmalcolm

540.126.v12 ER

Artform Home Plans
603-431-9559

Right Elevation
Scale: 3/32"=1'

Balmalcolm

540.126.v12 ER

Artform Home Plans
603-431-9559

Rear Elevation
Scale: 3/32"=1'

Balmalcolm

540.126.v12 ER

Artform Home Plans
603-431-9559

Left Elevation
Scale: 3/32"=1'

Hennessy Premier, 34 x 30

294.129.v2

Artform Home Plans
603-431-9559

Some items shown are optional and/ or may vary. Builder's written specifications always govern.

1. Gas fireplace and it's surround or mantel
2. Kitchen - island, cabinet style & trim, countertop material, etc.
3. Door styles and trim
4. Window grilles and trim, window treatments
5. Stair balusters or low walls at stairs
6. Lighting
7. Material selections (flooring, siding, roofing, paint colors, etc.)
8. Other furnishings
9. Landscaping, paving and walkways
10. Gutters, shutters and other exterior trim components
11. Deck size, railing style, stair location, etc.
12. Amount of exposed basement and/or wood framed walls at basement.

These images are not of any specific building site. Sun and view through windows will vary, as will the site around the house on the exterior and the slope of the land.

Hennessy Premier, 34 x 30

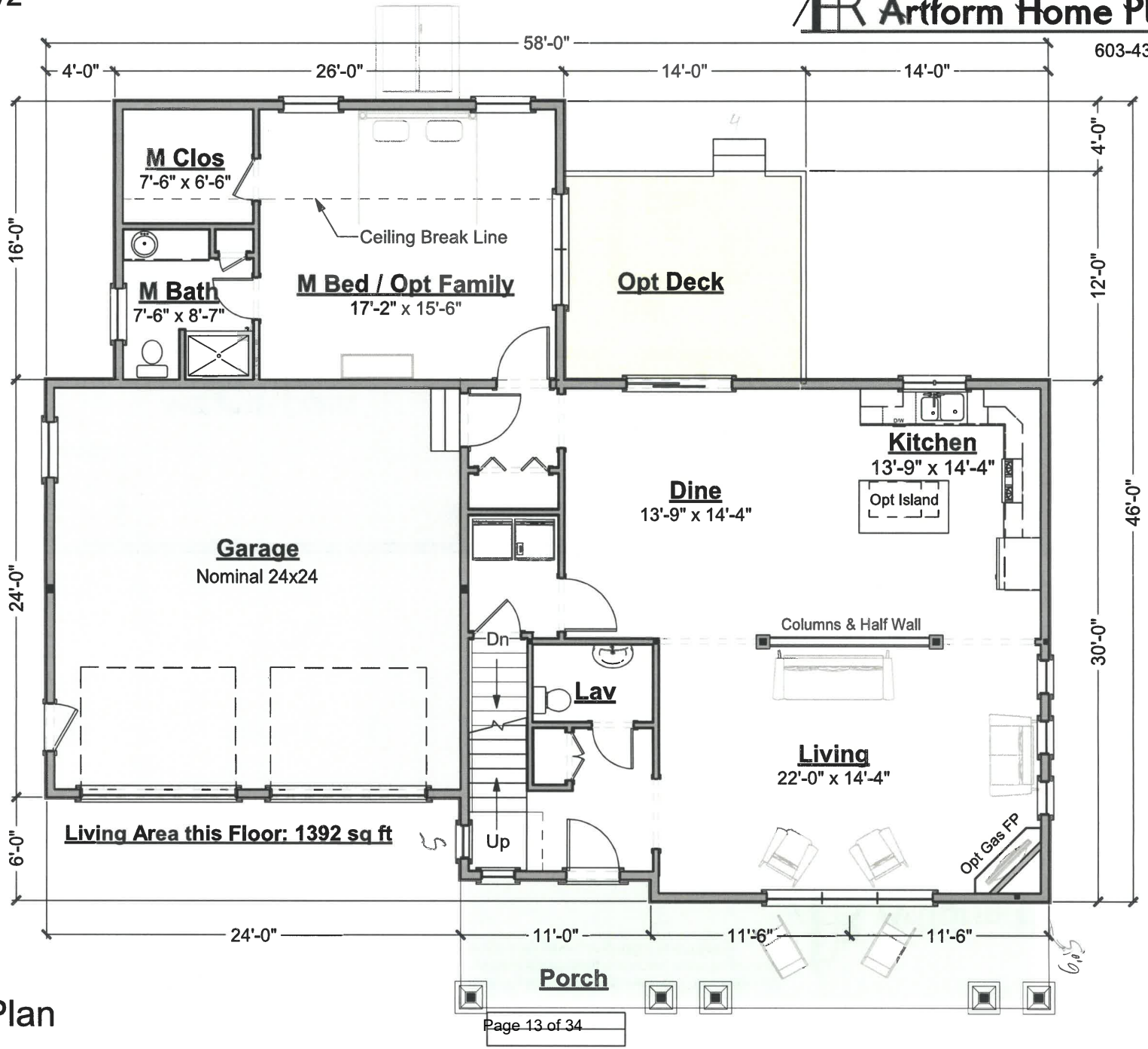
294.129.v2

Artform Home Plans
603-431-9559

Hennessy Premier, 34 x 30

294.129.v2

Artform Home Plans
603-431-9559



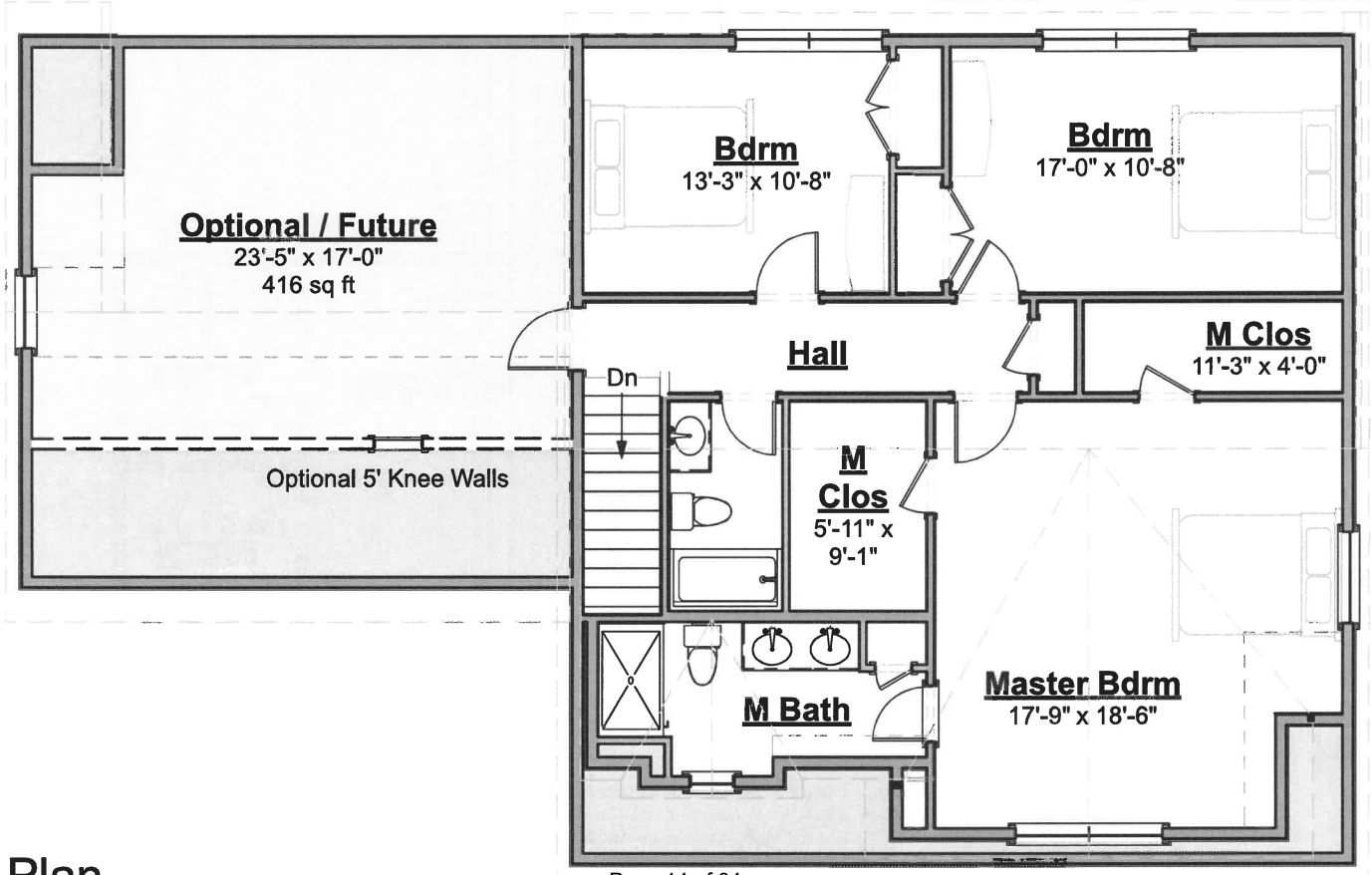
First Floor Plan

Hennessy Premier, 34 x 30

294.129.v2

Artform Home Plans
603-431-9559

Living Area this Floor: 1501 sq ft

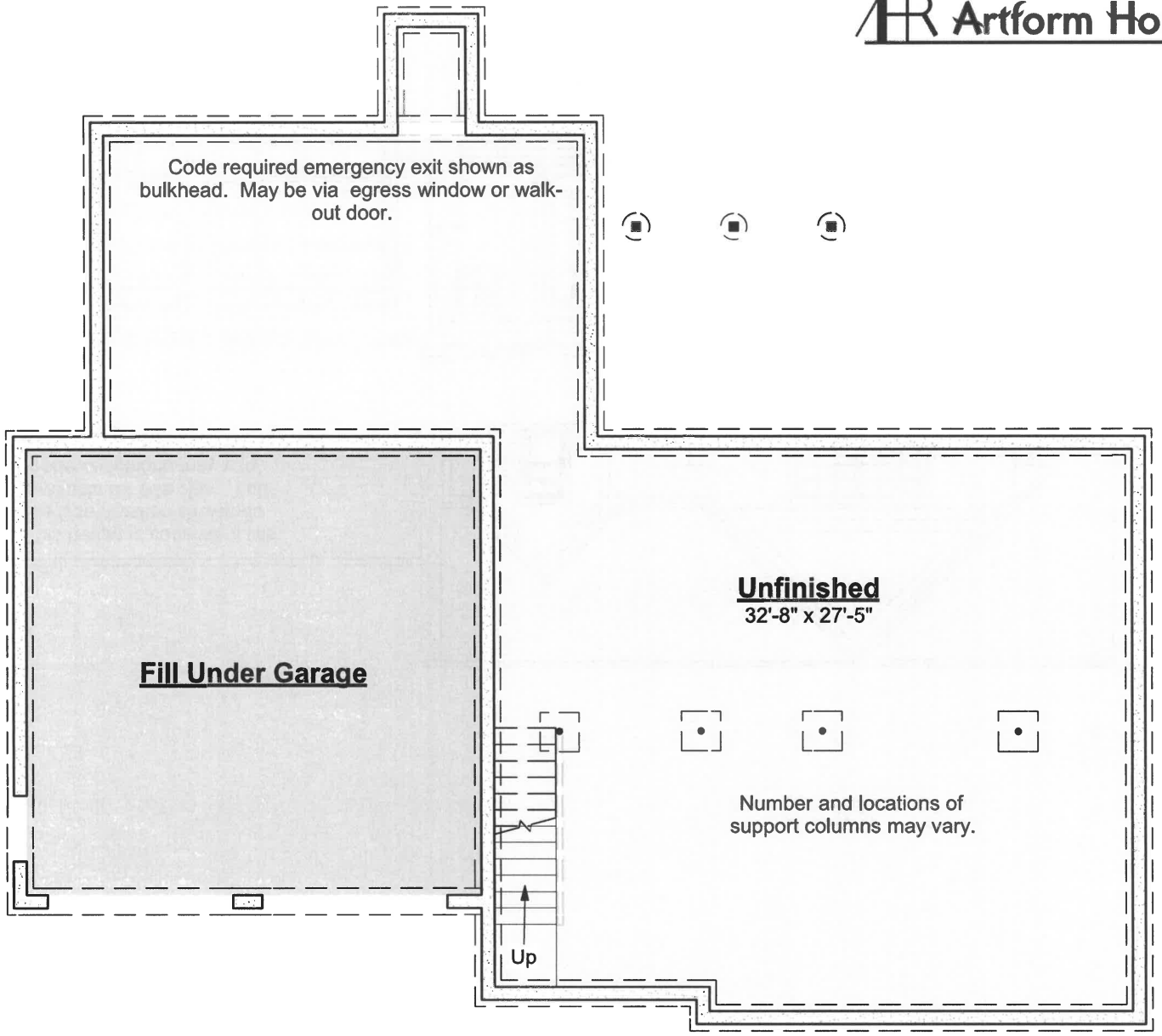


Second Floor Plan

Hennessy Premier, 34 x 30

294.129.v2

Artform Home Plans
603-431-9559



Foundation Plan

Hennessy Premier, 34 x 30

294.129.v2

Artform Home Plans
603-431-9559

Front Elevation

Hennessy Premier, 34 x 30

294.129.v2

Artform Home Plans
603-431-9559

Right Elevation

Hennessy Premier, 34 x 30

294.129.v2

Artform Home Plans
603-431-9559

Rear Elevation

Hennessy Premier, 34 x 30

294.129.v2

Artform Home Plans
603-431-9559

Left Elevation

May Tullip

318.127.v2 KL

Artform Home Plans

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1. Gas fireplace and it's surround or mantel
2. Kitchen - island, cabinet style & trim, countertop material, etc.
3. Door styles and trim
4. Window grilles and trim, window treatments
5. Stair balusters or low walls at stairs
6. Lighting
7. Material selections (flooring, siding, roofing, paint colors, etc.)
8. Other furnishings
9. Landscaping, paving and walkways
10. Gutters, shutters and other exterior trim components
11. Deck size, railing style, stair location, etc.
12. Amount of exposed basement and/or wood framed walls at basement.

These images are not of any specific building site. Sun and view through windows will vary, as will the site around the house on the exterior and the slope of the land.

May Tullip

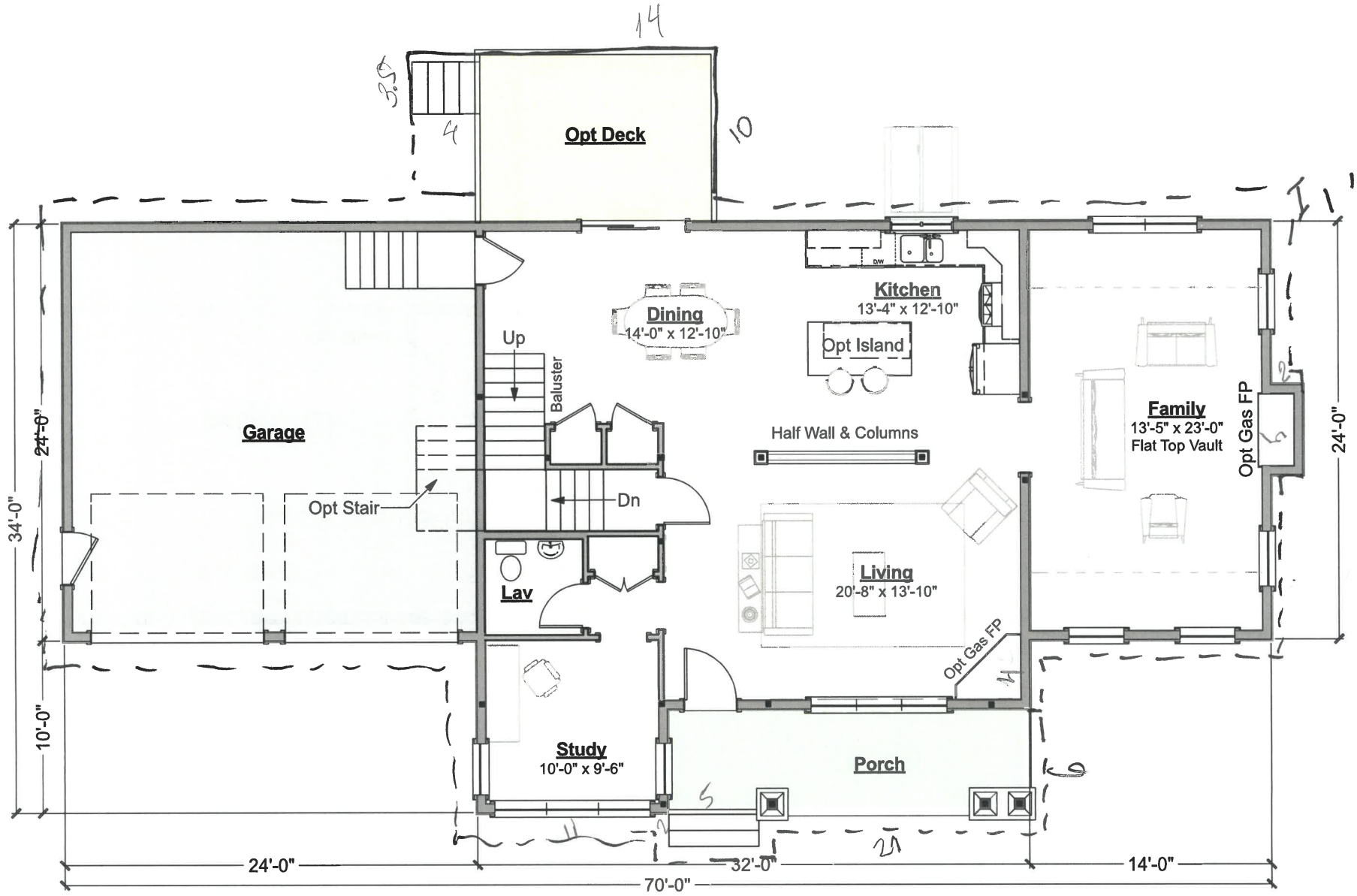
318.127.v2 KL

Artform Home Plans

May Tullip

318.127.v2 KL

Artform Home Plans

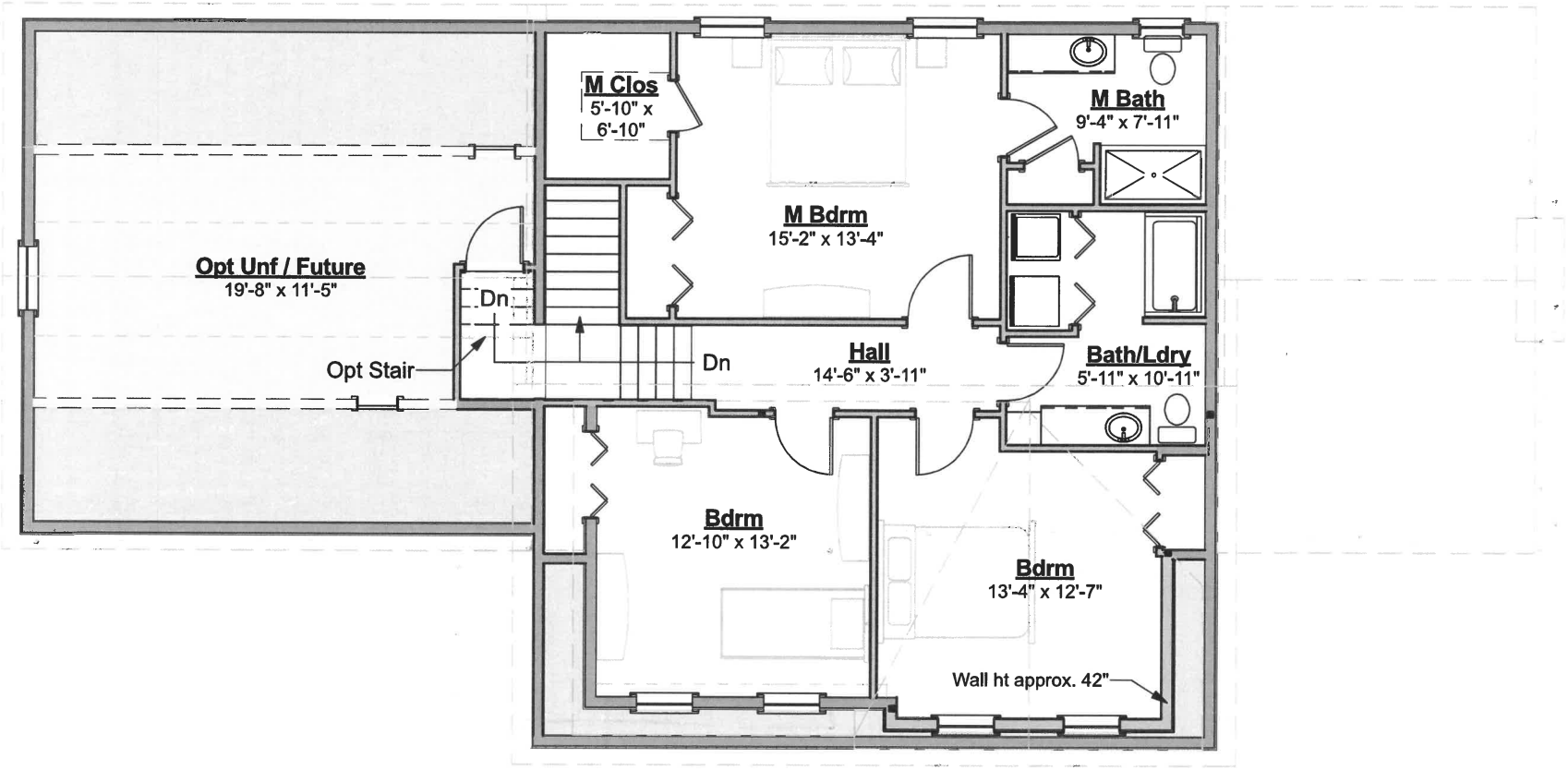


First Floor Plan

May Tullip

318.127.v2 KL

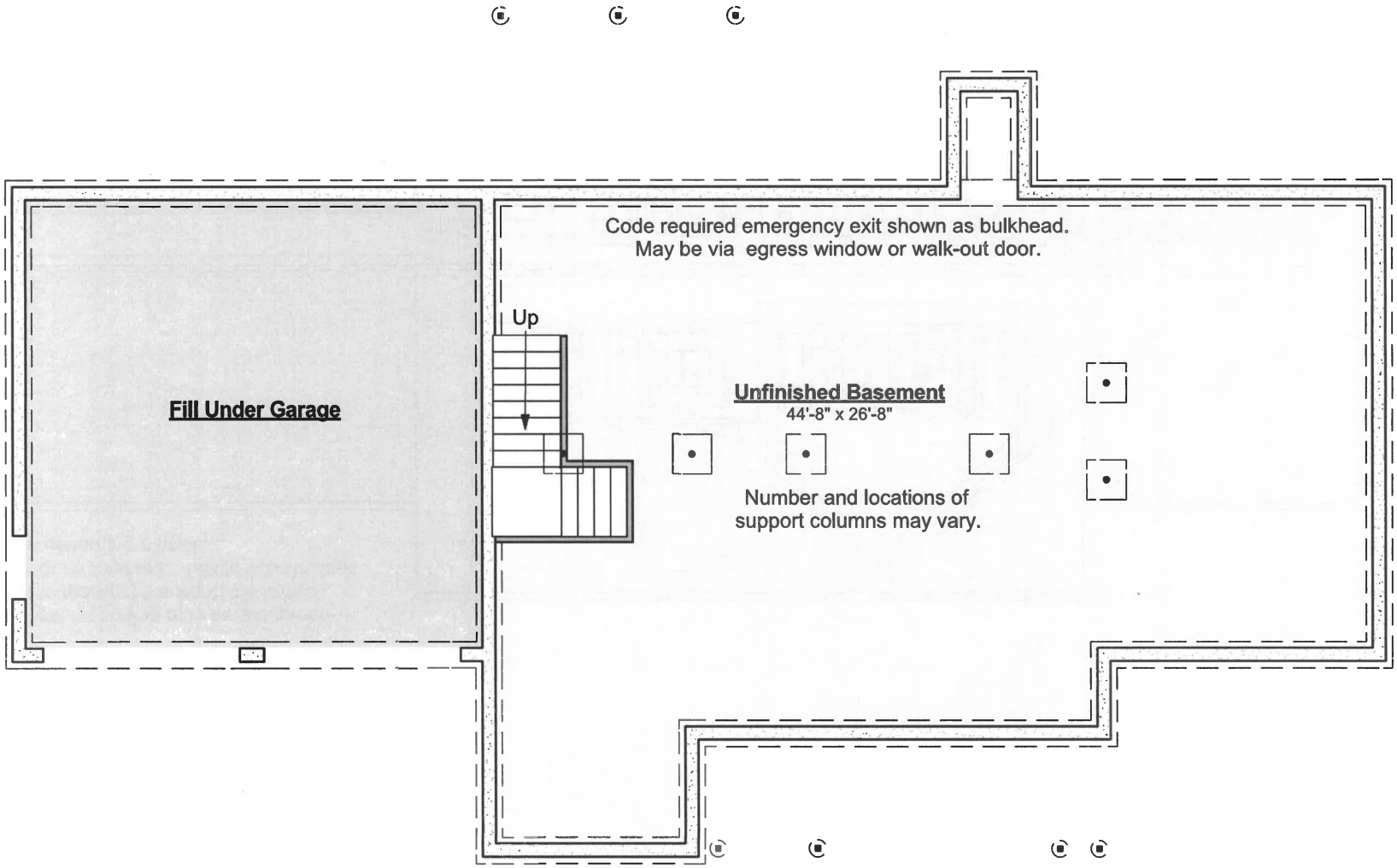
Artform Home Plans



Second Floor Plan

May Tullip
318.127.v2 KL

Artform Home Plans



Foundation Plan

May Tullip

318.127.v2 KL

Artform Home Plans

AFHP Default Grade *1 is 1'-9" below first floor subfloor for consistency in how we list height on the web site. The distance to grade is often more. Talk to your builder.

*3 Height for zoning may be measured from the grade at the front, the lowest grade or an average. Talk to your builder and/or governing officials.

Front Elevation

May Tullip

318.127.v2 KL

Artform Home Plans

Right Elevation

May Tullip

318.127.v2 KL

Artform Home Plans

Rear Elevation

May Tullip

318.127.v2 KL

Artform Home Plans

Left Elevation

FRONT ELEVATION

THE WESTFORD

TO BE CONSTRUCTED AT

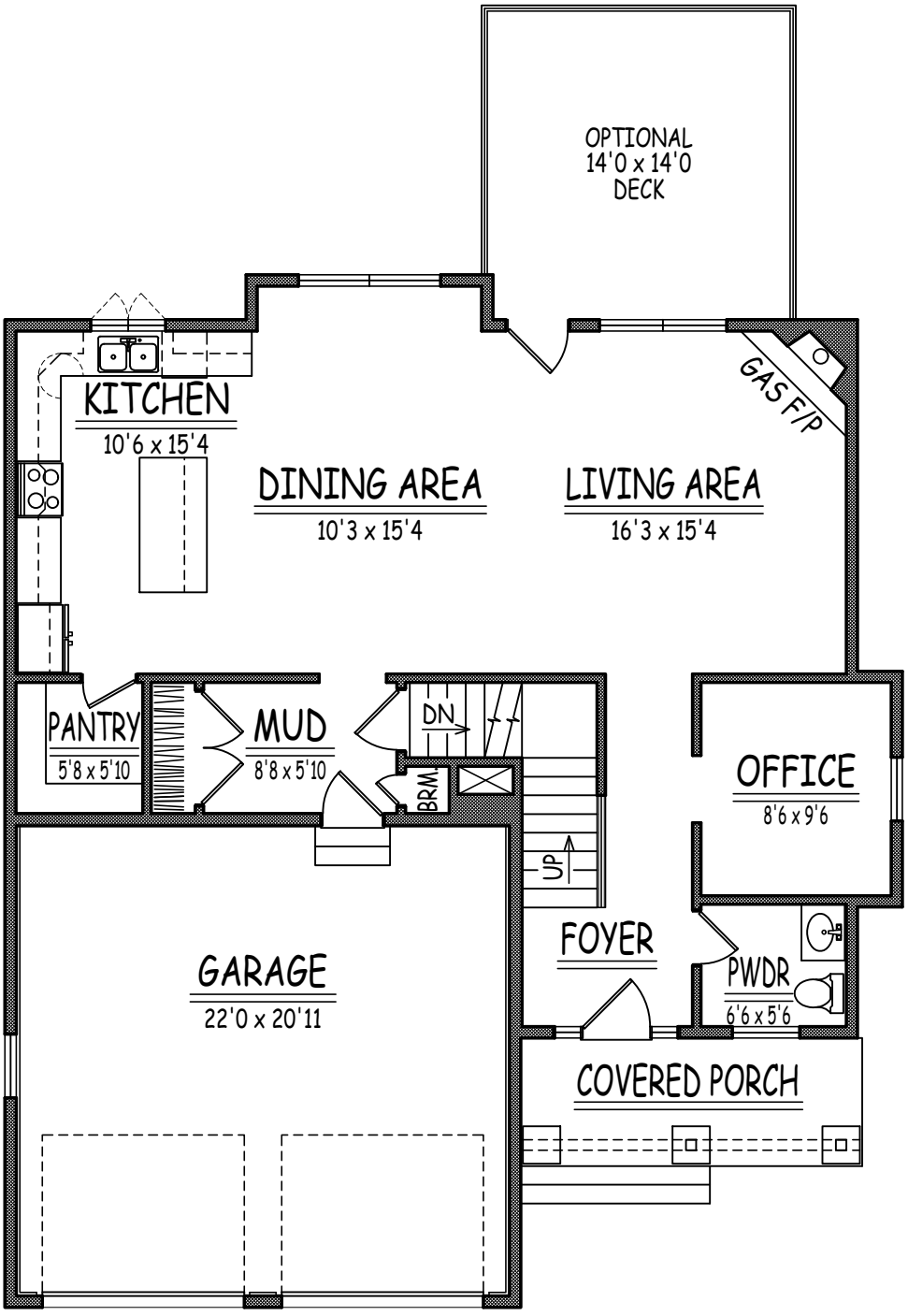
PAGE FARM OF
ATKINSON, NH

A PLANNED DEVELOPMENT BY GREEN & COMPANY REAL ESTATE

SQUARE FOOTAGE TABLE

TOTALS EXCLUDE UNFINISHED/STORAGE, GARAGE & OPEN AREAS

PLAN	SQ. FTG.
FIRST FLOOR	1,047
SECOND FLOOR	1,126
BONUS ROOM	309
TOTAL: W/ BONUS	2,482
TOTAL: W/O BONUS	2,173



FIRST FLOOR PLAN

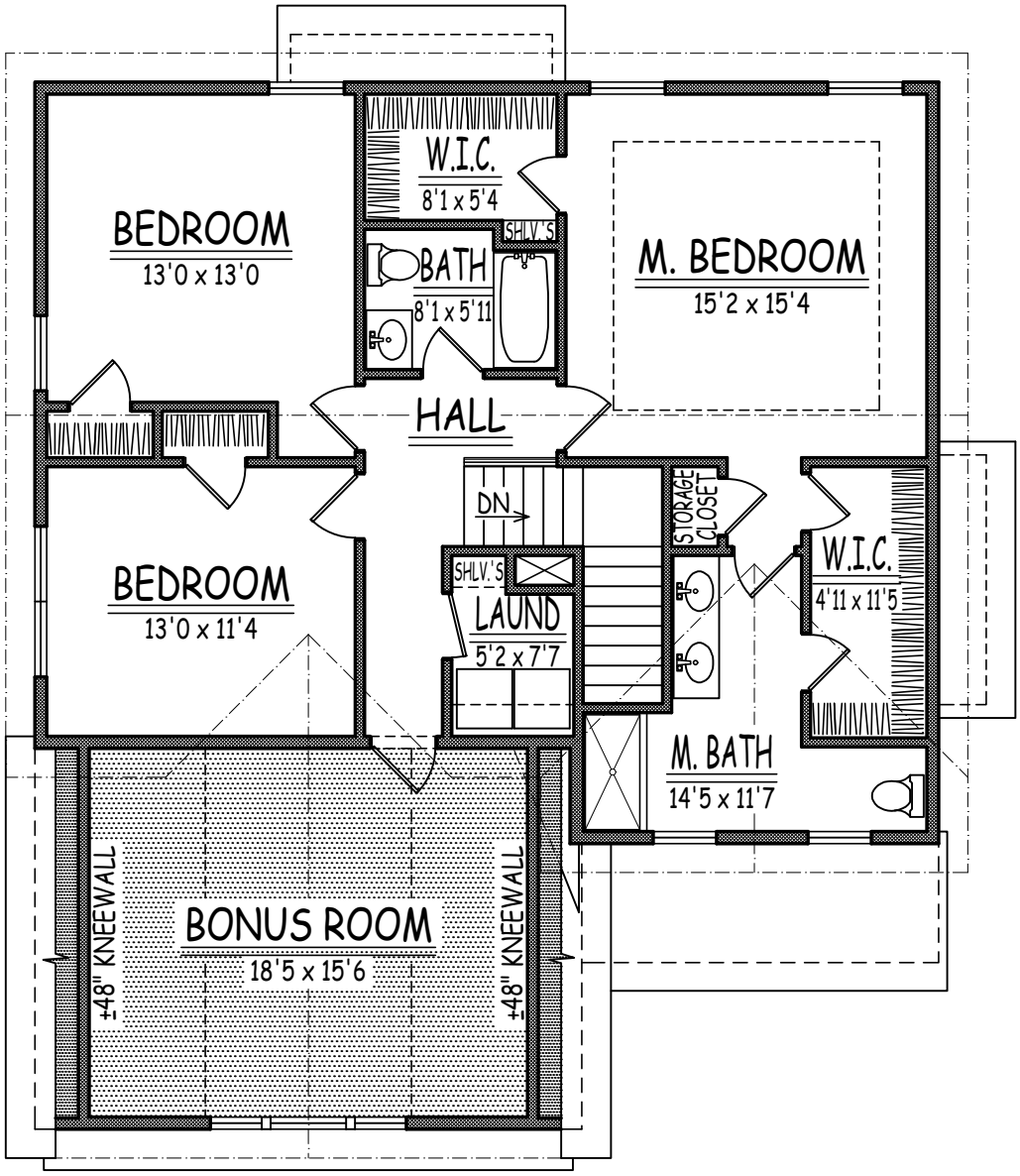
1,047 SQUARE FEET

THE WESTFORD

TO BE CONSTRUCTED AT

PAGE FARM OF
ATKINSON, NH

A PLANNED DEVELOPMENT BY GREEN & COMPANY REAL ESTATE



SECOND FLOOR PLAN

1,126 SQUARE FEET

THE WESTFORD

TO BE CONSTRUCTED AT

PAGE FARM OF
ATKINSON, NH

A PLANNED DEVELOPMENT BY GREEN & COMPANY REAL ESTATE

905.120 High Skipper Mate

	Main	Future	Apt	Main + Future	Main + Apt	All
Living Area	2295 SF	0 SF	0 SF	2295 SF	2295 SF	2295 SF
Bedrooms	3	1	0	4	3	4
Baths	2.5	0.0	0.0	2.5	2.5	2.5

Note - this design has not yet been built. It's here to offer a starting point for customization. It's priced so that changes that do not increase the size significantly will be at no additional charge. Hourly design fees will apply if you make changes.

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- Increasing ceiling heights usually requires adjustments to window sizes and other exterior elements.

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905.120 High Skipper Mate

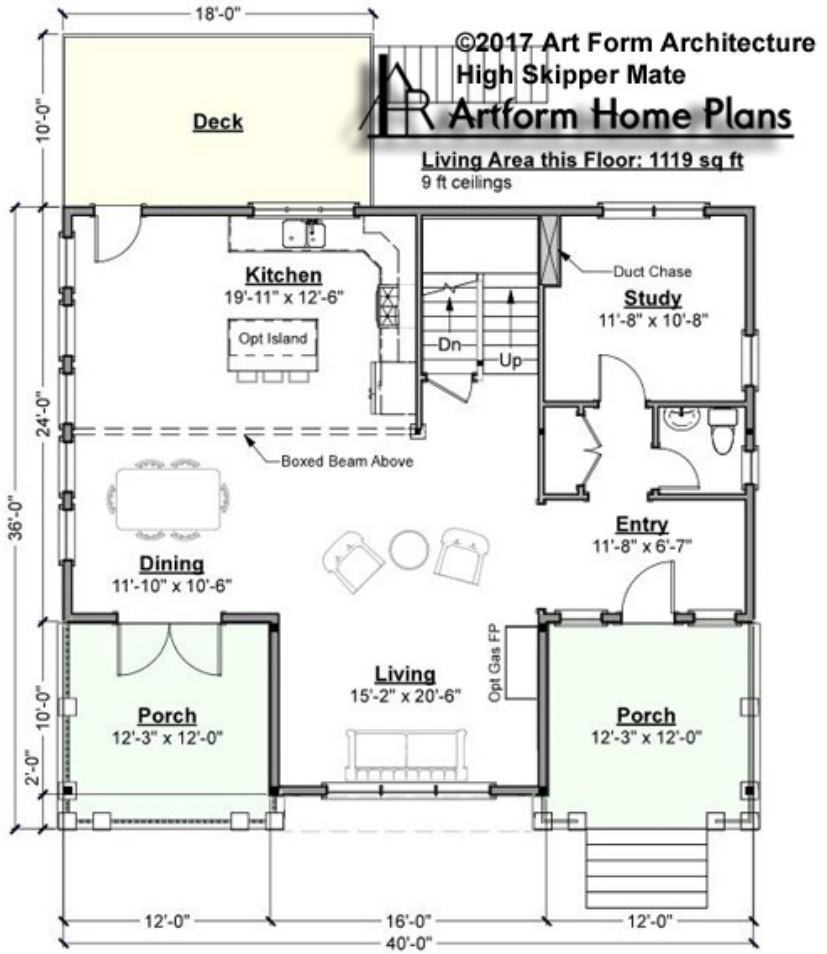
Artform Home Plans

First Floor

	Area	Beds	Baths
Main	1119 SF	0	0.5
Future	0 SF	1	0
Apt	0 SF	0	0
Total	**1119 SF**	**1**	**0.5**

Ceiling Height	
Shown	9'-0"
Possible*	8'-0"

* See Major Change information on plan page for cost



905.120 High Skipper Mate

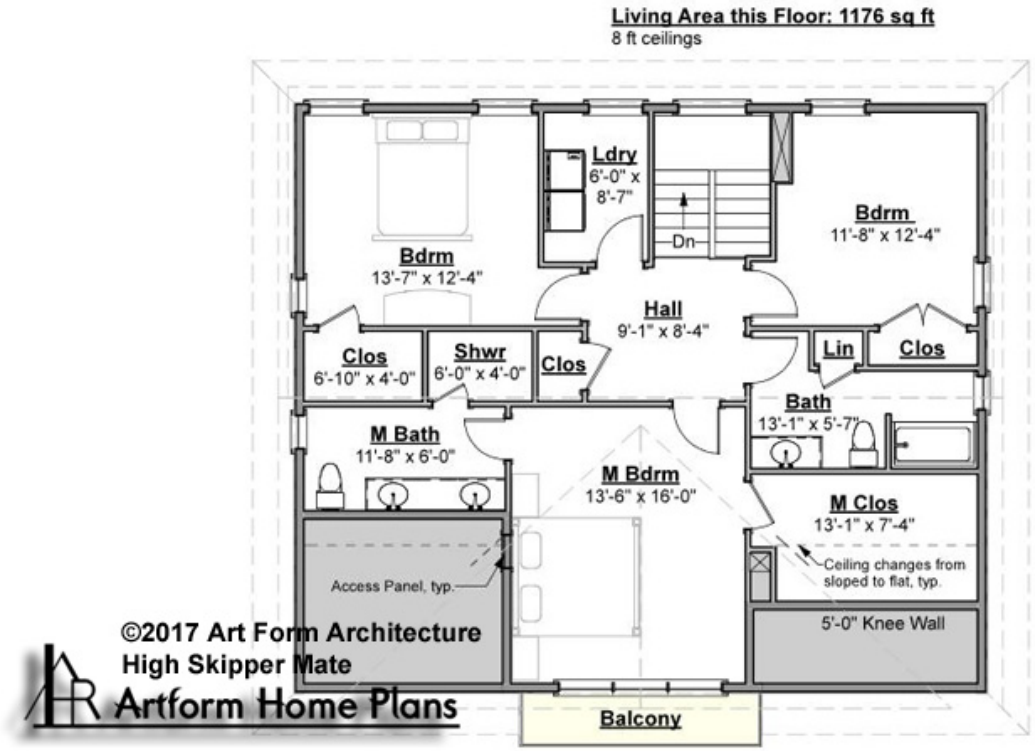
Artform Home Plans

Second Floor

	Area	Beds	Baths
Main	1176 SF	3	2
Future	0 SF	0	0
Apt	0 SF	0	0
Total	**1176 SF**	**3**	**2**

Ceiling Height	
Shown	8'-0"
Possible*	8'-0"

* See Major Change information on plan page for cost



CRS 905.120 High Skipper Mate

905.120 High Skipper Mate

Artform Home Plans

Basement Floor

	Area	Beds	Baths
Main	0 SF	0	0
Future	0 SF	0	0
Apt	0 SF	0	0
Total	**0 SF**	**0**	**0**

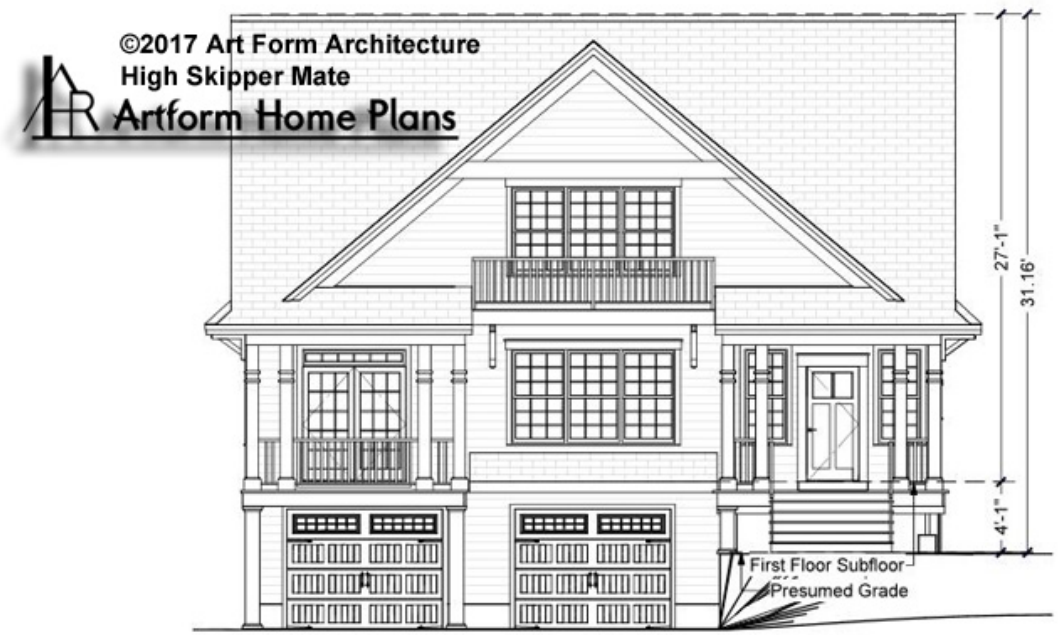
Ceiling Height	
Shown	7'-8"
Possible*	7'-8"

* See Major Change information on plan page for cost

905.120 High Skipper Mate

Artform Home Plans

Front Elevation

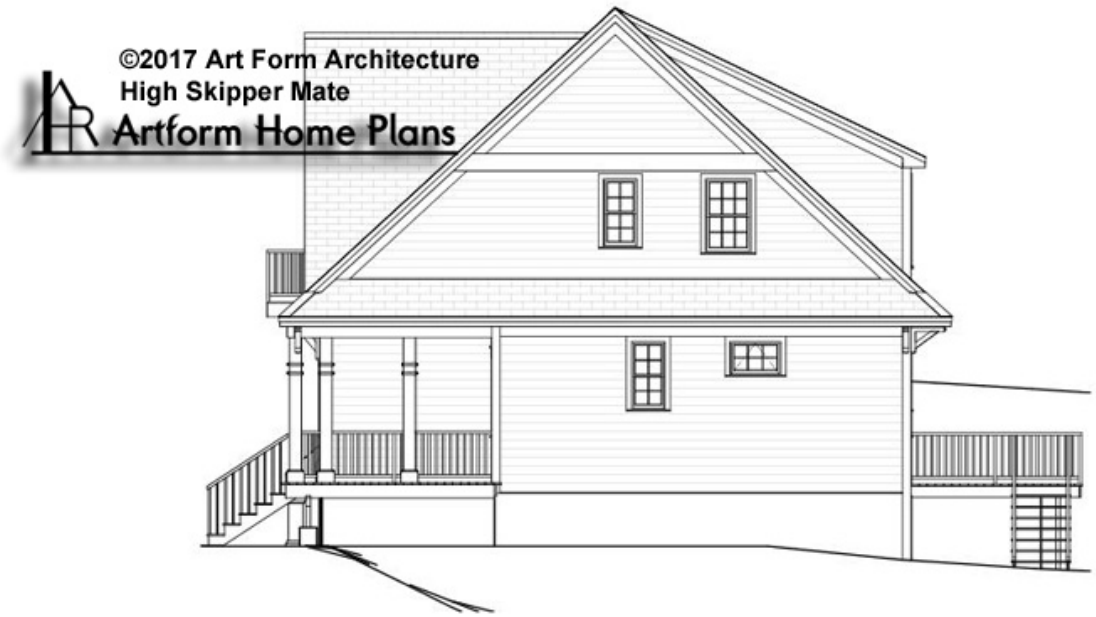


CRS 905.120 High Skipper Mate

905.120 High Skipper Mate

Artform Home Plans

Right Elevation

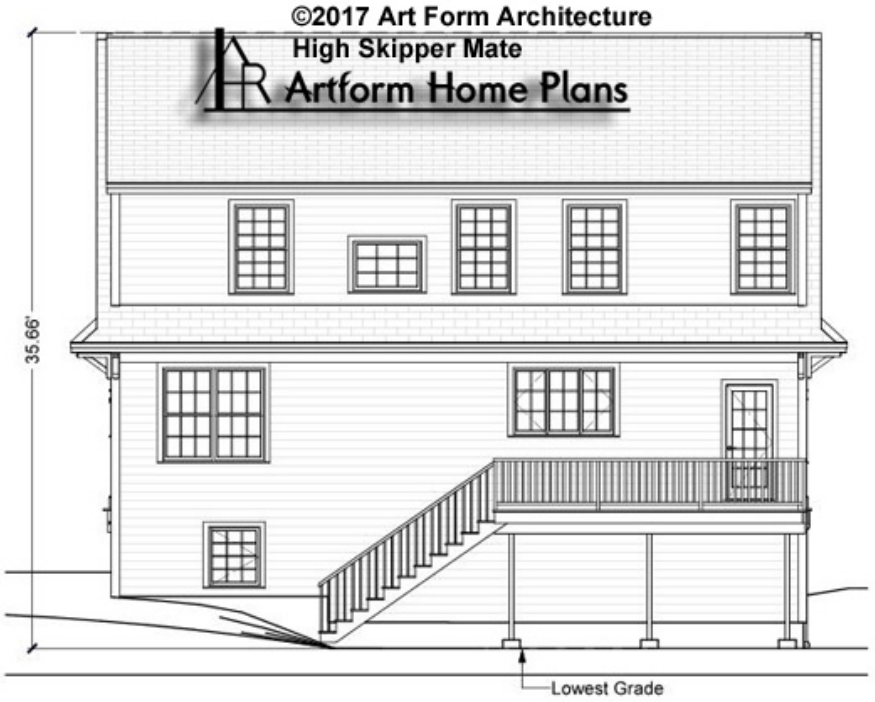


CRS 905.120 High Skipper Mate

905.120 High Skipper Mate

Artform Home Plans

Rear Elevation



CRS 905.120 High Skipper Mate

905.120 High Skipper Mate

Artform Home Plans

Left Elevation

CRS 905.120 High Skipper Mate

ADDITIONAL ARCHITECTURAL PLAN

Condominium Development
Banfield Road
Tax Map 256, Lot 2
December 3, 2019

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905.120 High Skipper Mate

	Main	Future	Apt	Main + Future	Main + Apt	All
Living Area	2295 SF	0 SF	0 SF	2295 SF	2295 SF	2295 SF
Bedrooms	3	1	0	4	3	4
Baths	2.5	0.0	0.0	2.5	2.5	2.5

Note - this design has not yet been built. It's here to offer a starting point for customization. It's priced so that changes that do not increase the size significantly will be at no additional charge. Hourly design fees will apply if you make changes.

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905.120 High Skipper Mate

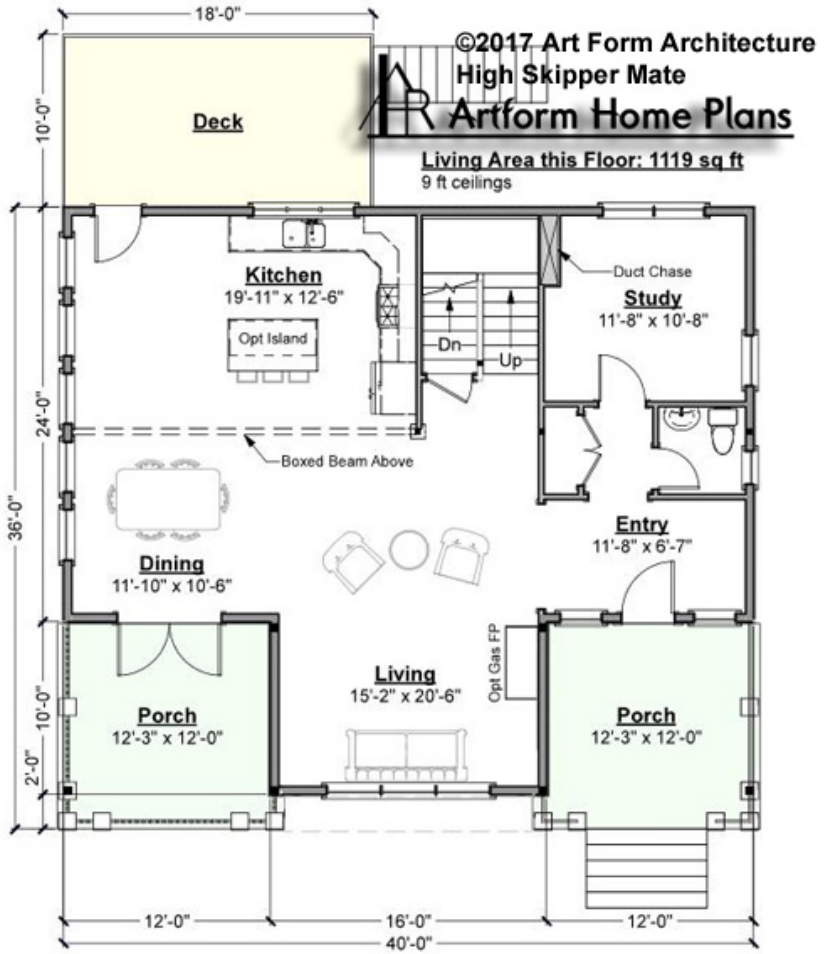
Artform Home Plans

First Floor

	Area	Beds	Baths
Main	1119 SF	0	0.5
Future	0 SF	1	0
Apt	0 SF	0	0
Total	**1119 SF**	**1**	**0.5**

Ceiling Height	
Shown	9'-0"
Possible*	8'-0"

* See Major Change information on plan page for cost



905.120 High Skipper Mate

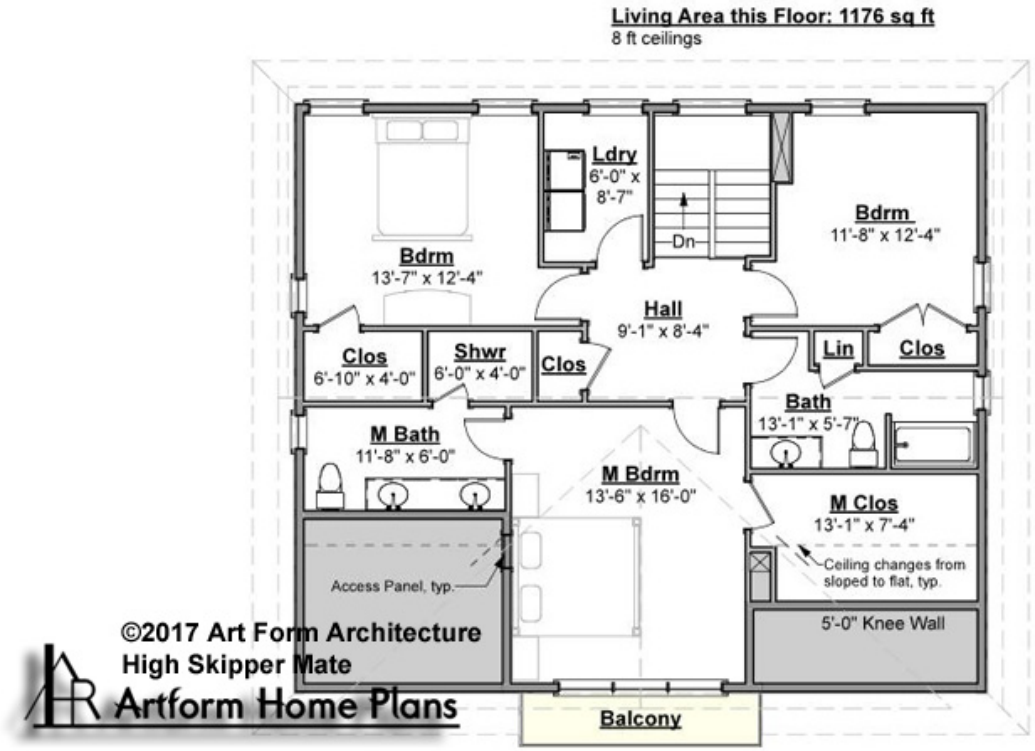
Artform Home Plans

Second Floor

	Area	Beds	Baths
Main	1176 SF	3	2
Future	0 SF	0	0
Apt	0 SF	0	0
Total	**1176 SF**	**3**	**2**

Ceiling Height	
Shown	8'-0"
Possible*	8'-0"

* See Major Change information on plan page for cost



CRS 905.120 High Skipper Mate

905.120 High Skipper Mate

Artform Home Plans

Basement Floor

	Area	Beds	Baths
Main	0 SF	0	0
Future	0 SF	0	0
Apt	0 SF	0	0
Total	**0 SF**	**0**	**0**

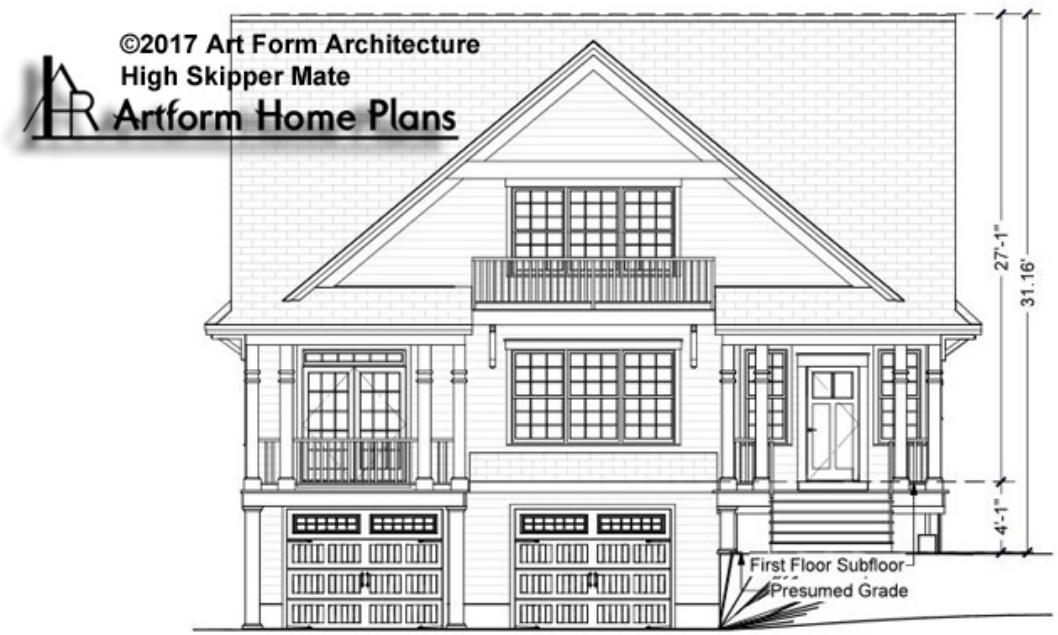
Ceiling Height	
Shown	7'-8"
Possible*	7'-8"

* See Major Change information on plan page for cost

905.120 High Skipper Mate

Artform Home Plans

Front Elevation

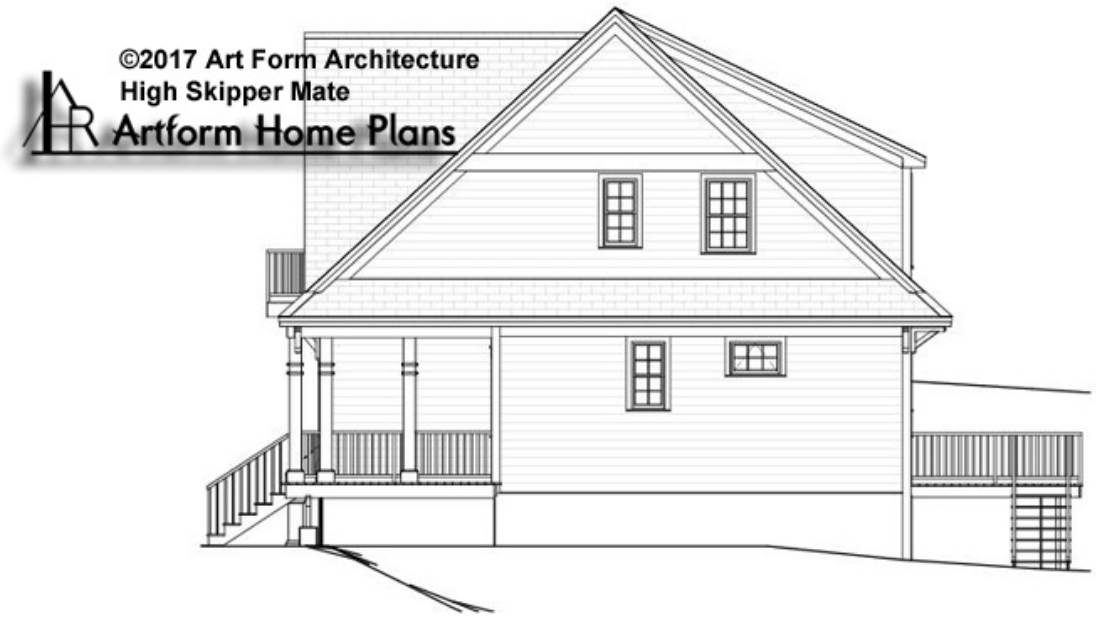


CRS 905.120 High Skipper Mate

905.120 High Skipper Mate

Artform Home Plans

Right Elevation

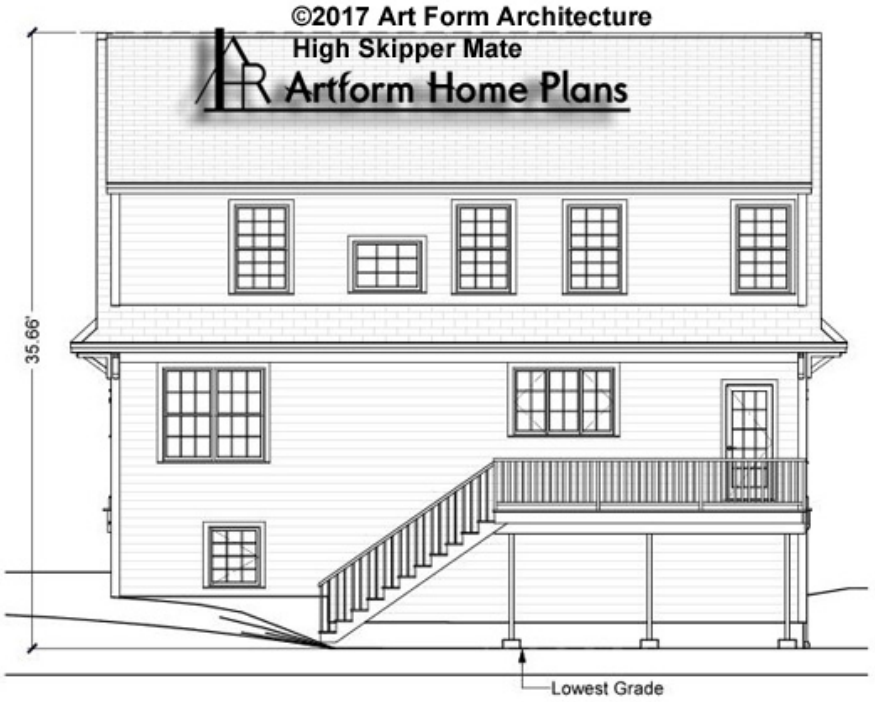


CRS 905.120 High Skipper Mate

905.120 High Skipper Mate

Artform Home Plans

Rear Elevation



CRS 905.120 High Skipper Mate

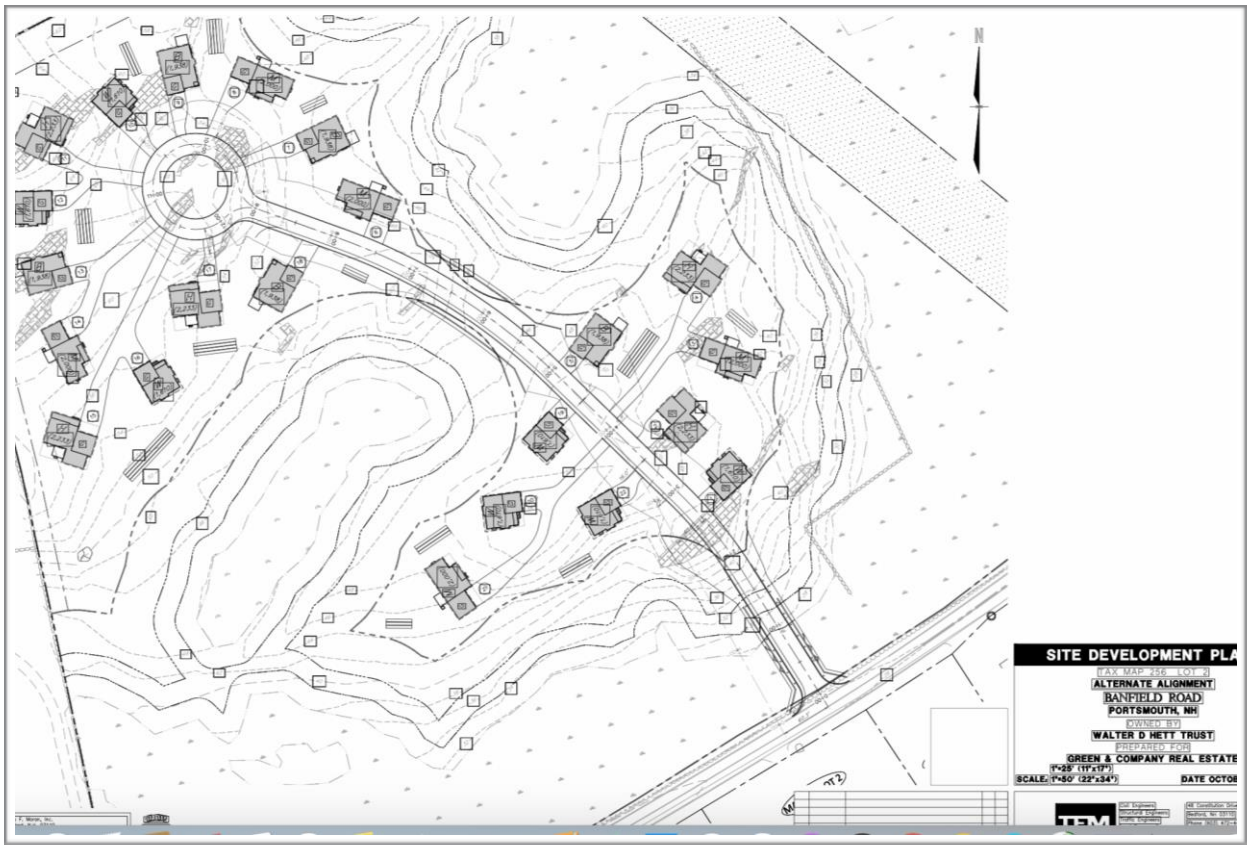
905.120 High Skipper Mate

Artform Home Plans

Left Elevation

CRS 905.120 High Skipper Mate

Site Development Project off



Banfield Road, Portsmouth

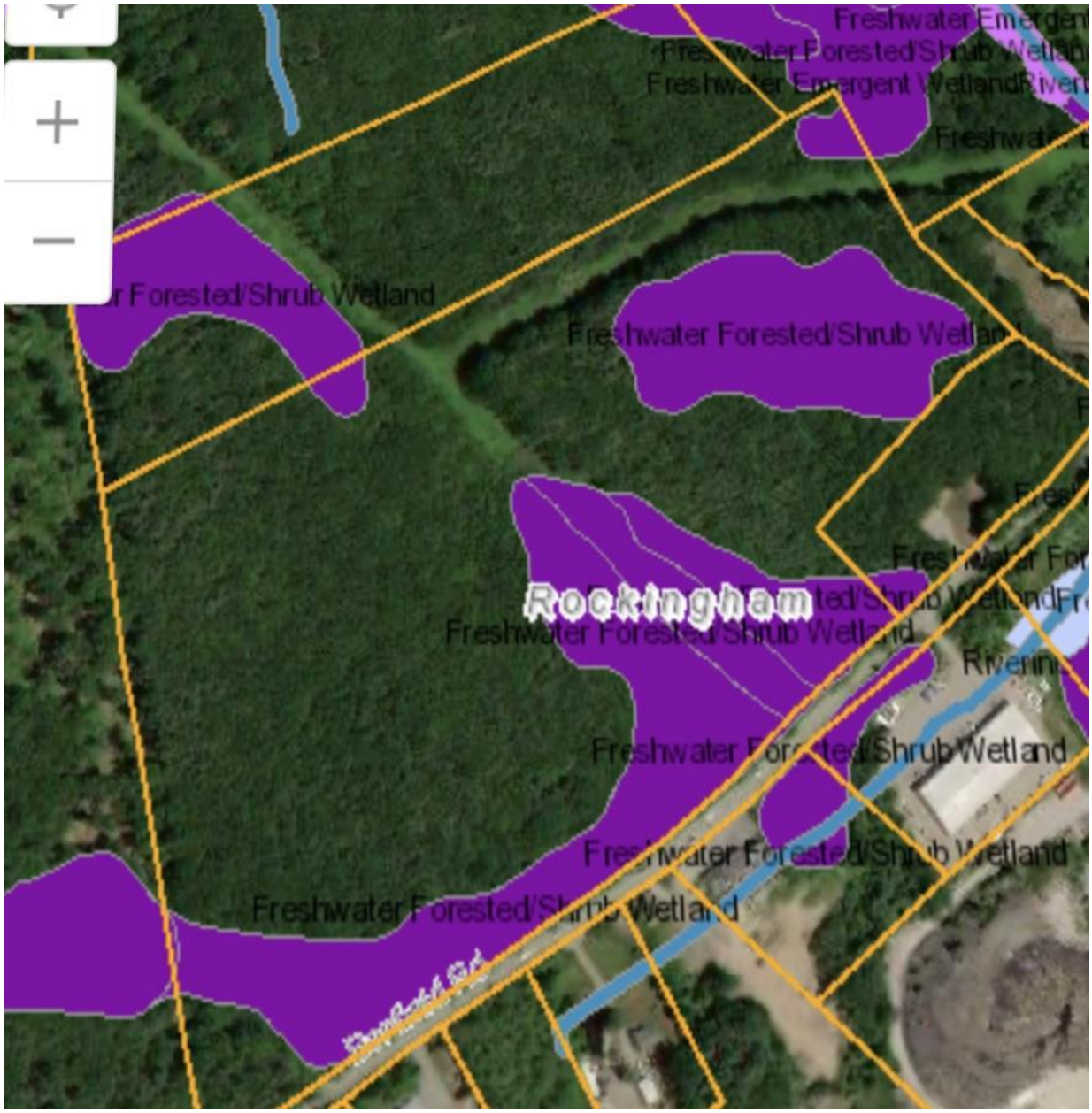
Impact of Proposed Septic Systems on Wetlands and Impact of the Project on Wildlife

Prepared by Gove Environmental Services, Inc.

November 2019

Wetlands & Wildlife

Summary of Natural Resources Onsite



The site is located north of Banfield Road. To the north is forested land. To the east is development. To the south is development. To the west is forested land. The site is forested with the exception of power lines that traverse the property north-south and a portion of the property east-west. Large wetland areas were identified by NH Granit View (see above) and onsite wetland delineation expanded the wetland areas.

For the most part, the site drains from north to south, with the drainage crossing Banfield Road and entering a stream that flows to the northeast. Potential vernal pools were found on the eastern portion of the site. Further investigations in April of 2019, found that the two onsite potential vernal pools that were closest to the development, did not support vernal pool activity. The wetlands are located on fine textured soils. The wetlands are typical red maple swamps intermixed with scrub-shrub wetlands. Emergent wetland occur along the power line, and are maintained by cutting. For the most part, these are typical forested wetlands that are common in this portion of New Hampshire. Similar wetlands lay to the west and north of the site.

The uplands are a bedrock controlled landscape with fine textured soils. There is no sandy or gravelly outwash on the site. The forest is a mix of upland hardwoods and white pine. This is

a typical forested upland for this portion of New Hampshire. Similar uplands lay to the west and north of the site.

Wildlife is expected to move through the ecotones. Ecotones are the transition areas between two biomes, where two communities meet and integrate. While a wildlife study was done on the site, this time of year is not ideal for direct observations or tracking.

It has been documented that wildlife corridors include power lines, edges of upland/wetland transitions, and abrupt changes in topography. Therefore, we expect wildlife movement from the west to the east along the wetland boundaries, movement from the north to south along both the wetland boundaries and the power lines. There are some abrupt topographic changes in the western portion of the site which has the potential to create a corridor of wildlife movement.

IMPACTS

The development is proposed for the western portion of the site, leaving approximately two-thirds of the site, from middle to east, undisturbed. The development will be accessed from Banfield Road, crossing the wetland, and then being clustered into two lobes of upland.

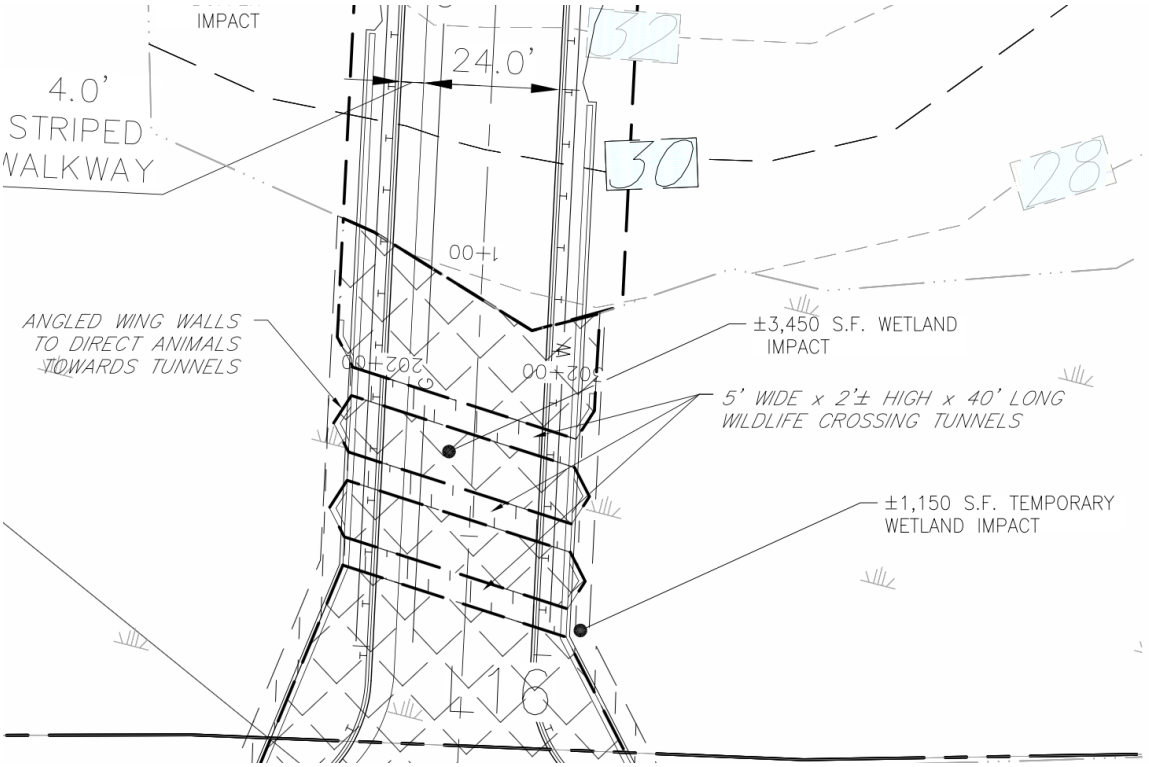
Any development into a forested area will impact wildlife. There are the direct impacts to loss of habitat. Thus there is a direct impact to the wetlands adjacent Banfield Road where the access to the buildable uplands is proposed. The footprint of the direct impact is relatively small in relation to the overall wetland complex on the site. While the direct impacts have been minimized by crossing at the narrowest point, a small amount of habitat will be directly lost.

The remaining development does not have any direct wetland impact. The impacts are to upland habitat. The direct impacts will be to areas used for feeding or for nesting/denning. Dead cavity trees, used for nesting, will be removed, thus impacting some birds species. Small mammals will also be impacted, as the larger cracks in the bedrock are used for denning, as are the deeper soil spaces between the bedrock. There will be a removal of food since the oaks, maples, birch and poplar all have seeds that are food for small to large mammals.

Because similar wetland and upland habitats lay to the north and west of the site, the birds and mammals utilizing the site can find suitable habitat within the same local.

The indirect impacts are to corridors of wildlife movement. In the wetlands, movement of reptiles and amphibians takes place in both the wetlands and in the ecotone between upland and wetlands. The access road through the uplands can create a barrier to that movement.

To mitigate for that access road becoming a barrier to reptiles and amphibians, the project is proposing three open grate culverts that would have natural bottoms. The open grate provides sunlight and allows the growth of vegetation in the natural bottom. The sunlight allows the reptiles and amphibians



to see a potential predator that might be in or near the openings. Wing wall will direct turtles, snakes and frogs toward the openings and away from attempting to scale the slope and cross on the road surface. While this does not make the wetland crossing invisible to reptiles and amphibians, it does provide safer access form one side of the road to the other.

Small mammals will also use the tunnels, though some mammals, such as fox, will simply leap onto the road shoulder and dart across.

Larger mammals, such as deer and coyote, will be similar to the fox. These larger mammals are not deterred by a relatively low topographic change cause by the access road.

There will be indirect impacts to the corridor that lies between the two lobes of the development envelope. The east/west corridor that lies in the saddle between the two development lobes is focused along and through the isolated wetland that lies to the west of the proposed access road.

Wildlife movement is to/from the wetland to the east, through the upland saddle, through or beside the isolated wetland, and to the wetland drainage to the west. Larger mammals often will simply avoid the development altogether and move to the north of the development through forested uplands, or to the south along the wetlands on Banfield Road.

Smaller mammals, such as skunks, raccoons, fox, opossum, etc, will find the access road, now that it has been raised to accommodate infiltration drainage, has become a barrier to west/east movement. The raised roadbed with its retaining wall, will force the small mammals toward and into both development lobes.

As a mitigating measure, the project is proposing a box culvert that would allow east/west access for the small mammals without being forced into the development areas. Again, this does not make this crossing invisible to wildlife movement, but it does provide an alternative access for wildlife.

With regard to the potential vernal pools on the site, these are located in the eastern area that will remain undeveloped. The closest point to any of the potential vernal pools of the development envelop is over 100 feet away. The majority of the radius around even the closest vernal pool is being left undisturbed. In April of 2019. No vernal pool activity was documented in the two onsite potential areas that are to the west of the powerline. Thus, there is not projected to be any impacts to the vernal pools viability.

SEPTIC SYSTEMS

The design of septic systems has come a long way. Size of leach field, separation of solids, elevation above seasonal high water tables and setbacks from wetland have created systems that are efficient and nonpolluting. The State of New

Hampshire has setbacks of 50 feet lateral distance from poorly drained wetlands.

There have been no documented degradation of wetlands from septic systems if properly designed, installed and maintained. Further, these are fine textured soils that have reaction sites on the soil particles that adsorb nutrients from leachate.

The proposed systems in this project are over 100 feet lateral distance from the poorly drained wetlands. This is a 100% safety factor that has been built in by the setbacks required by the City of Portsmouth.

It is my opinion that the septic systems will have no impact on the wetlands.

Complied by James Gove, CWS, CSS, CPSC, CPESC

November 4, 2019

Amended 11-18-2019

Bruce Peninsula National Park

New ecopassages to help critters cross the road

Wildlife is benefitting from the installation of ecopassages at Bruce Peninsula National Park.

Eco-passages are specialized wildlife tunnels which allow animals to safely cross busy roads. They are especially important in areas where a road fragments critical habitat and prevents animals from reaching their breeding grounds.

Our scientists have identified seven high priority locations for ecopassages in Bruce Peninsula National Park. These are areas where we've traditionally seen a high number of road deaths or injuries to reptiles and amphibians because of cars, also known as "hotspots".

Animals which try to cross the road in these areas will encounter a specialized fence. Snakes, turtles and small mammals such as rodents are not able to crawl over, or dig under these fences. Instead they are redirected to a tunnel. These tunnels are specially designed to be more attractive to reptiles and amphibians by allowing sunlight through the top so these cold blooded creatures (ectotherms) don't have to go into cold, dark places to get where they are going.

We continue to monitor how well this system works, and so far, results are positive. We have already photographed many different animals using these tunnels and have made improvements to the original design we started using in 2012. We are confident we are on the right path to help at risk species such as snapping turtle, massasauga rattlesnake, eastern ribbon snake and several others.

The fencing leads animals to the opening and each end of the ecopassage.

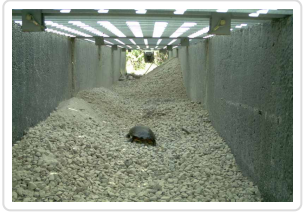
Next time you visit us at Bruce Peninsula National Park watch for the metal grates on the roads. Those are your sign that we're working hard to help protect the creatures which share this magnificent place with us.

Specialized fence to direct animals towards the ecopassages





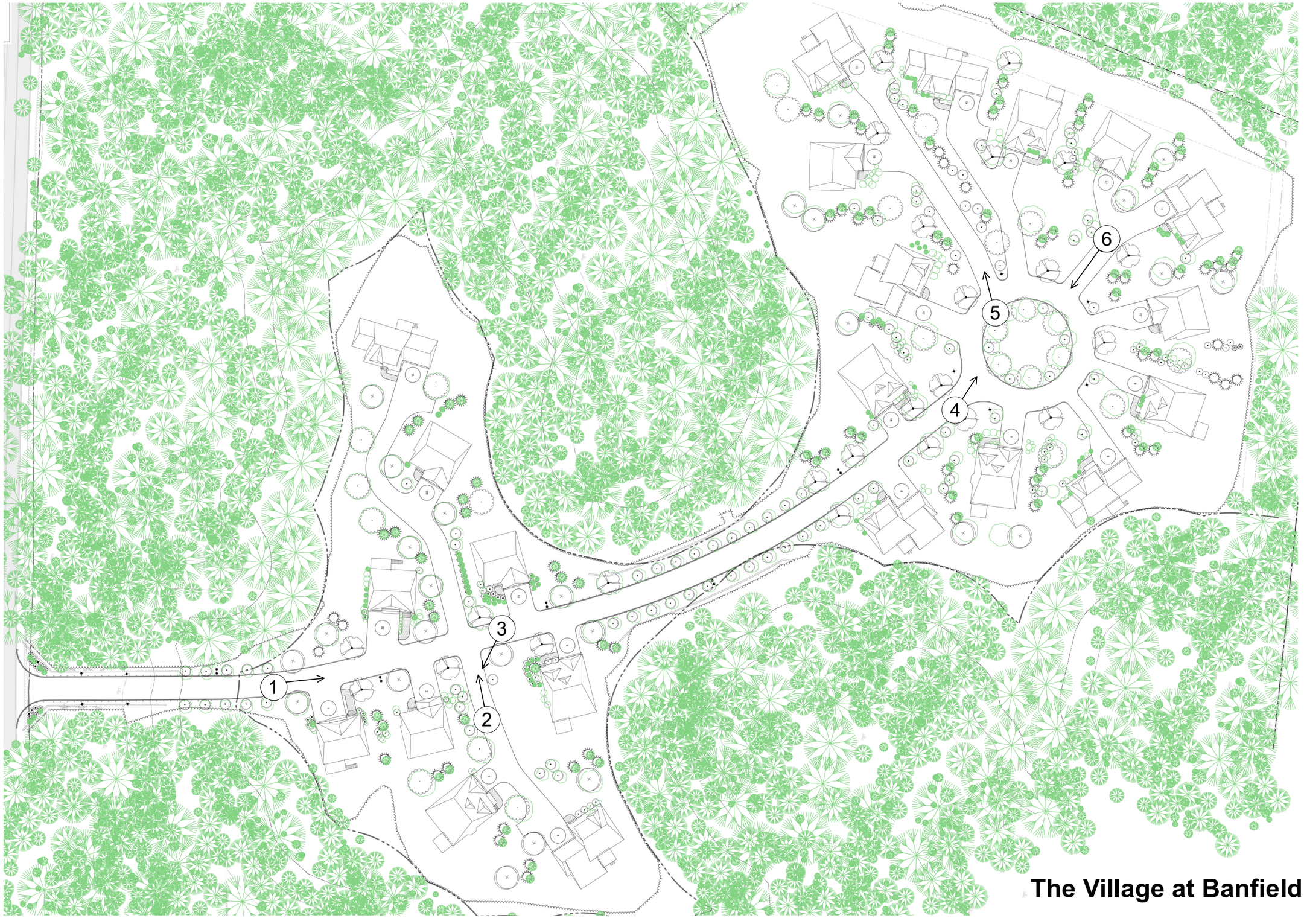


Date modified :

2019-05-18

Rendering of Ecopassage at The Village at Banfield Woods



The Village at Banfield Woods

The Village at Banfield Woods

The Village at Banfield Woods

The Village at Banfield Woods

The Village at Banfield Woods

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The Village at Banfield Woods

DECLARATION OF CONDOMINIUM
OF
BANFIELD WOODS CONDOMINIUM, PORTSMOUTH, NEW HAMPSHIRE

This Declaration is made this _____ day of _____, 2020 by Green & Co. Building & Development Corp., a Massachusetts corporation with a place of business at 11 Lafayette Road, North Hampton, New Hampshire 03862, and its successors or assigns, ("Declarant") for the purpose of submitting certain property described in this Declaration to condominium usage and to ownership in accordance with the provisions of the Condominium Act, New Hampshire Revised Statues Annotated, Chapter 356-B, now and as hereafter may be amended. .

ARTICLE 1
SUBMISSION OF PROPERTY

The Declarant hereby submits land located in the City of Portsmouth, Rockingham County, New Hampshire, consisting of approximately ___acres, more or less, situated on the westerly side of Banfield Road, and more particularly described in **Exhibit A** hereto ("Land"), together with the buildings and other improvements heretofore or hereafter constructed thereon, and all easements, rights and appurtenances thereto described in said **Exhibit A**, or as shown on plans of said land, all of which are owned by the Declarant, to the provisions of the Condominium Act, in order to create a plan of condominium ownership in such property containing up to twenty two (22) units, as shown on the following plan; See plan of land entitled, "Condominium Site Plan," project for "Banfield Woods, Banfield Road, Portsmouth, New Hampshire 03801" prepared by TF Moran, Inc. **dated _____ and recorded in the Rockingham County Registry of Deeds as Plan #D-_____.**

ARTICLE 2
DEFINITIONS

As provided in Section 12, I of the Condominium Act capitalized terms not otherwise defined in this Declaration or in the Bylaws attached hereto as Exhibit B, as amended from time to time, shall have the meanings specified in Section 3 of the Condominium Act. The following terms are expressly defined herein:

(a) "Building" means any building constructed on a Unit or on the Limited Common Area assigned to a Unit as permitted herein, which Buildings shall be owned by the Unit Owner of the Unit.

(b) "Bylaws" mean the Bylaws provided for the self-government of the Condominium attached hereto, as amended from time to time.

(c) "Common Area" means all parts of the Property other than the Units, as more fully set forth in Article 5 of this Declaration and in the Site Plans, and includes the Limited Common Area.

(d) "Condominium" means "Banfield Woods Condominium", the condominium established by this Declaration.

(e) "Condominium Act" means Chapter 356-B of the New Hampshire Revised Statutes Annotated, as amended.

(f) "Condominium Plan" or "Plans" or "Plat" means the plan entitled Condominium Site Plan," project for, "Banfield Woods, Banfield Road, Portsmouth, NH 03811," prepared by TF Moran, Inc. **dated _ and recorded in the Rockingham County Registry of Deeds as Plan #D-_____,** and any revisions thereof, recorded in the Registry simultaneously herewith or recorded subsequently pursuant to the Condominium Act, and any updated or amended site or floor plans.

(g) Limited Common Area" means all those certain portions of the Common Area which are assigned to each Unit, 15 feet on either side of each unit, 30 feet behind each unit and 20 feet in front of each unit, or to the edge of pavement, whichever is less. Such Limited Common Area shall be restricted for use by the owner(s) of each such Unit, as more fully set forth in this Declaration and in the Plans, and additional limited common area as Declarant may determine in the future.

(k) "Majority of the Owners" means the Owners of the Units to which more than fifty one percent (51%) of the votes in the Unit Owners' Association appertain. Any specified percentage of the Owners means the Owners of Units to which the specified percentage of the votes in the Unit Owners' Association appertain.

(l) "Owner" or "Unit Owner" means any Person or Persons who holds or hold fee simple title to a Unit. No mortgagee shall be deemed to be an Owner until such mortgagee has acquired such title pursuant to foreclosure or any procedure in lieu of foreclosure.

(m) "Percentage Interest" or "Undivided Percentage Interest" means the interest of each Unit in the Common Area as set forth in **Exhibit E** of this Declaration and as may be amended hereafter, which may be expressed as a fraction.

(n) "Registry" means the Rockingham County Registry of Deeds, or any then applicable real property recording office.

(o) “Property” means the Land and the buildings and all other improvements heretofore and hereafter constructed thereon, and all easements, rights and appurtenances thereto, and all articles of personal property intended for common use in connection therewith which are submitted to the Condominium by this Declaration, as amended from time to time.

(p) “Rules” means those rules and regulations adopted from time to time by the Association relative to the use of the Condominium, provided they are not in conflict with the condominium Act, the Declaration or the Bylaws, the City of Portsmouth Zoning Ordinance and the conditions on the plat approved by the Planning Board.

(q) "Site Plan" means the plat of the land submitted to the Condominium Act by this Declaration, which plat is being recorded in the Registry simultaneously herewith. Such term shall include, as appropriate, any such plat recorded in the Registry: (i) subsequently pursuant to RSA 356-B: 20, III, and 356-B:21 or any other provisions of the Condominium Act, or (ii) subsequently for the purpose of amending any previously recorded plat, as the case may be.

(r) "Unit" means a unit as defined by the Condominium Act, which is bounded and described (i) as shown on the Condominium Site Plan; (ii) Floor Plan; and (iii) as provided in Article 4, below.

(S) “Unit Owners’ Association” or “Association” means all of the Owners acting as a group in accordance with this Declaration and Bylaws.

ARTICLE 3
STATUTORY REQUIREMENTS

The following information is provided pursuant to the provisions of the Condominium Act:

(a) Name: The name of the Condominium is “Banfield Woods Condominium.”

(b) Location: The Condominium is located on Banfield Road, City of Portsmouth, Rockingham County, New Hampshire.

ARTICLE 4
DIVISION OF PROPERTY

The property, together with all buildings and improvements thereon, is hereby divided into twenty two (22) separate freehold condominium units, hereinafter referred to as Units #1, #2, #3, #4, #5, #6, #7, #8, #9, #10, #11, #12, #13, #14, #15, #16, #17, #18, #19, #20, #21 and #22,. The layout, numerical designation, dimensions and area of each Unit are shown on the Condominium Site Plan.

A. The boundaries of the Units are defined as follows:

The Units shall be Land Units, the vertical boundaries being coextensive with the area identified as such Unit on the Site Plan and the horizontal boundaries being from the center of the earth to the upper edge of the atmosphere and includes the entirety of any building or addition to buildings or improvements to be constructed on the land and includes all rights above the land and any existing building and improvements or any building or improvements constructed within the Land Unit. For the purposes of RSA 356-B, the Condominium Plan shall serve as the Floor Plan for each Land Unit declared herein. In the event a building is constructed within the Land Unit, upon completion of the foundation, a Floor Plan, certified as required by RSA 356-B:20 shall also be recorded, provided the boundary of the Land Unit shall remain the unit boundary.

ARTICLE 5
DESCRIPTION OF COMMON AREAS

Common Areas are set forth on the Condominium Plan Common Areas include, but are not limited to, the following:

SECTION A. All open space, common utilities, walkways, and paths.

SECTION B. All roadways servicing the Condominium and shown on the Plat shall be private and shall be maintained as Common Area by the Association.

ARTICLE 6
DESCRIPTION OF LIMITED COMMON AREA

Limited Common Area (herein "LCA") is defined as a portion of the Common Area which has been reserved for the exclusive use of the specific Unit or Units to which the Limited Common Area is assigned.

Limited Common Area shall be assigned as set forth in these Condominium Instruments. The "Condominium Instruments" is a term collectively referring to the Declaration, the By-Laws, and the Condominium Site Plan, and the building envelopes depicted on the Condominium Site Plan and recorded pursuant to the provisions of the Condominium Act. To the extent there is a conflict within the Condominium Instruments regarding the assignment of the Limited Common Area to a specific Unit, the assignment of Limited Common Area as set forth on the Condominium Plan shall control.

Reassignment of the LCA is expressly permitted if the reassignment complies with the Condominium Instruments and RSA 356-B, as amended. However, LCA may not be reassigned without the express written permission of the Unit Owner(s) who possesses the exclusive use of the LCA. Any reassignment of the LCA must be recorded in the Rockingham Registry of Deeds to be effective.

It is the intention of the Declarant that the following portions of the Common Area shall be exclusively assigned as LCA:

1. The land shown on the Condominium Plan and which includes the septic system serving the appurtenant units and the appurtenant driveways.

2. All piping, wiring, cable, facilities, improvements, utilities, propane tanks, septic tank or other portions of the Common Area contained within any Limited Common Area shall be exclusively assigned to such appurtenant Units, except the piping, duct work or other improvements which serve the condominium as a whole.

SECTION A. Subject to the restrictions, easements, covenants, conditions, and terms set forth in these Condominium Instruments, the Condominium Act, the ordinance of the City of Portsmouth, and any documents of record, the Owner of the Unit which possesses the assignment and exclusive use of Limited Common Area shall be permitted to encroach upon, use and possess the Limited Common Area. The Declarant shall provide for lawn mowing and landscape maintenance, operation and maintenance of the septic systems, driveway plowing, and walkway snow shoveling within the Limited Common Areas and Unit (collectively referred to as "Maintenance"). The Board of Directors shall be responsible for the Maintenance when its takes control of the Association.

The exterior of Units shall be kept in good repair by the Unit Owner and maintained to the aesthetic and repair standards set forth in this Declaration and By-Laws. Failure of a Unit owner to maintain its Unit to such standards shall give cause to the Association to enter the Limited Common Area to effectuate such repairs or maintenance and to invoice the Unit Owner for the expense thereof.

SECTION B. The LCA, including any improvements or developments, shall run with and be appurtenant to the Unit to which it is assigned and shall automatically pass with the title to the Unit whether or not the LCA is expressly conveyed.

ARTICLE 7
ALLOCATION OF UNDIVIDED INTERESTS ("COMMON INTERESTS")

There is hereby allocated to each Unit an undivided interest in the Common Areas as set forth on **Exhibit E** attached hereto and made a part hereof, under the column "Common Interest". Said undivided interest appurtenant to each Unit is herein called the "common interest". The interest appurtenant to each Unit are shown on **Exhibit E**. The common interest appurtenant to each Unit will have a permanent character and shall not be altered without the consent of the owner of each Unit affected thereby. The common interest appurtenant to each Unit will not be separated from said Unit even though not expressly mentioned or described in the conveyance or other instrument. The Common Areas will remain equal and undivided and no right shall exist to partition or divide any part thereof except as may be provided in the New Hampshire Condominium Law.

ARTICLE 8
PARKING

Subject to regulation by the Association of Unit Owners (as set forth in the Condominium By-Laws to be recorded with this Declaration as well as Rules and Regulations to be adopted) the Unit owners shall have the exclusive right to park vehicles in the portion of the Limited Common Area associated with his/her Unit as shown on the Plan.

ARTICLE 9
EASEMENTS

SECTION A. Each Unit shall have appurtenant thereto non-exclusive easements in the Common Areas designed for such purposes for ingress to, egress from, and utility services for such Unit, and in the other Common Areas for their use according to their respective purposes, subject always to the exclusive or limited use of the Limited Common Areas as herein provided. These non-exclusive easement rights include, but are not limited to, the right to for the purposes of maintenance or repair of same and any Common Area. If any Unit or Common Area encroaches on any other Unit or Common Area, a valid easement for such encroachment and the maintenance and use thereof so long as it continues shall exist;

SECTION B. To the extent permitted by New Hampshire Revised Statutes Annotated Section 356-B:42 II, as amended from time to time or any successor statute, the Association of Unit Owners shall have the irrevocable power as attorney in fact on behalf of all of the Unit Owners and their successors in title to grant easements through the Common Areas and accept easements benefiting the condominium or any portion thereof;

SECTION C. Declarant hereby expressly reserves the right to grant easements to the owners of abutting property, as well as to the City of Portsmouth, private utilities, electric utilities or gas line utilities, telephone utilities or cable utilities, and any other utilities over, under and through the common and Limited Common Areas of the Condominium for whatever use may be made thereof.

ARTICLE 10
STATEMENT OF PURPOSES, USE, AND RESTRICTIONS.

The Units, Common Areas, and Limited Common Areas shall be occupied subject to the following rules and restrictions:

SECTION A. The Developer shall have the right to transact any business on the Condominium property necessary to consummate sales of Condominium units; including, but not limited to the right to maintain models, having signs identifying units, maintaining employees in the offices, use of the Common Areas and facilities on the Condominium property, and to show units for sale. All furniture and furnishings and equipment in the model units, signs, and all items pertaining to sales shall not be considered Common Areas and facilities and shall remain the property of the Developer. In the event there are unsold Condominium units, Developer's

right as the owner of said unsold units shall be the same as all other unit owners in the Condominium; and the Developer, as the owner of the Condominium units, shall contribute the common expenses in the same manner as other Condominium unit owners once an Occupancy Permit has been issued and the Developer, as the owner of the Condominium units, shall have a vote in the Association for each unsold Condominium unit.

SECTION B. None of the twenty (22) residential units shall be used for any purpose except residential purposes.

SECTION C. Nothing shall be done or kept in any unit or in the Common Areas or Limited Common Areas, which will increase the rate of insurance in those areas without the prior written consent of the Owners' Association. No owner shall permit anything to be done or kept in his Unit or in the Common Areas or Limited Common Areas which will result in the cancellation of insurance of any unit or any part of the Common Areas or Limited Common Areas, which would be in violation of any law. No waste will be permitted in the Common Areas or the Limited Common Areas.

SECTION D. Units shall be used solely for residential purposes and for uses accessory thereto as may be permitted from time to time by the zoning ordinances of the City of Portsmouth. Notwithstanding the restrictions of this paragraph, the Declarant and its successors in interest may, until all of the residential Units shall have been sold by the Declarant or such successor(s), use unsold Units as models for purposes of promoting the sale or leasing of Units.

SECTION E. DESIGN AND PLAN APPROVAL.

(1) All buildings and structures shall be architecturally designed in keeping with traditional styles as determined by the Declarant. The Declarant, at Declarant’s sole discretion, subject to federal, state, and/or municipal approvals, if applicable, reserves the right to approve the plans and specifications of all residences and other structures for as long as the Declarant is the owner of any Unit in the condominium. At such time as the Declarant relinquishes its control to the Association, the responsibility and/or authority for any architectural approvals in accordance with the Declaration and By-Laws shall become the responsibility of the Board of Directors of the Association or any subcommittee of the Association appointed to perform that task. The Declarant reserves the right to turn over responsibility for architectural approvals to the Association at any time prior to its conveyance of the last Unit it owns.

(2) No construction of any kind shall be commenced on any Unit nor shall any exterior addition or change or alteration be made to any structure nor shall utility lines be erected or installed until plans for the foregoing have been approved in writing by the Declarant at Declarant’s sole discretion, subject to federal, state, and/or municipal approvals, if applicable. A copy of such plans shall be provided to the Association for its records.

(3) The architectural integrity of the buildings and the Units shall be preserved, and to that end, no awnings, antennas, and no exterior change, addition, structure, projection, decoration or other feature which is visible from the exterior of a Unit, shall be erected or placed upon or attached to the buildings or any Unit, or any part of either, unless previously approved by the

Declarant, at Declarant's sole discretion, subject to federal, state, and/or municipal approvals, if applicable,. This subparagraph, however, shall not restrict the right of the Owner(s) of each Unit to decorate the interiors of the Unit as said Owner(s) may desire;

SECTION F. ARCHITECTURAL FEATURES

(1) Renovations of the Units must be in keeping with the architectural character of the condominium.

(2) Without limiting the generality of the foregoing, all renovations, including the painting, repairing and replacing of exterior doors, door frames, windows, window frames, roofs, siding, porches, decks, entries and other exterior features of the buildings shall be subject to the review and approval of the Board of Directors or its subcommittee established for this purpose prior to commencement of the work.

SECTION G. No animals, livestock, or poultry of any kind shall be raised, bred, or kept in any unit or in any of the Common Areas or Limited Common Areas without the express written permission of the Board of Directors. Pets shall be allowed only with the written permission of the Board of Directors and such permission may be withdrawn should the pets become a nuisance to other unit owners. Owners shall strictly comply with all rules and regulations concerning pets as may be adopted by the Association. No exotic pets are allowed. Pets shall be kept under control of their owners at all times and shall not be allowed to run loose except in the presence and under the control of their owner. The board of directors may make further provisions in the Rules for the control and regulation of household pets on the property. The owner of a unit where a pet is kept or maintained shall be responsible for the maintenance of said pet, and any costs incurred by the association in enforcing the rules prescribed or to be prescribed by the Board of Directors for the control and regulation of pets and each such owner, by electing to keep a pet, shall be deemed to indemnify and hold the Board harmless against such loss or liability resulting from said pet. Owner shall comply with all town ordinances related to pets and pet laws.

SECTION H. The Declarant has adopted and the Association Board may amend from time to time detailed rules and regulations for the use and enjoyment of the Common Areas, for avoiding noxious or offensive activity which may disturb the occupants of any Unit, and for the occupants of any Unit, and for the general governing of the Condominium, consistent with, and not in conflict with, this Declaration and the Bylaws. All Owners and their tenants, guests and licensees will strictly comply with said rules and regulations.

SECTION I. Units may be rented. All rental agreements shall be documented by a written lease for a term of not less than six (6) months. The lease shall be subject to the Declaration, Bylaws and Rules and Regulations of the Condominium.

SECTION J. The Declarant shall be responsible for arranging stormwater and drainage system monitoring and maintence, septic system monitoring and maintenance, wetland buffer monitoring, snow removal and lawn mowing within the Common Areas and Limited Common Areas as a Common Expense.

SECTION K. Declarant reserves the right to make use of unsold Units as may facilitate the completion, construction or sale of the Condominium, including the right to enter all Units, and Limited Common Areas, upon reasonable notice to the Owner thereof, or Common Areas for construction purposes. Declarant reserves the right to store materials, to maintain a sales office or a rental office in any unsold Units, to show such Units for sale or lease, and to display appropriate signs, at Declarant's sole discretion, in conjunction therewith, on unsold buildings or building envelopes, and has the right to implement any other marketing signage anywhere in the entire development.

SECTION L. SIGNS. No sign of any kind, towels, blankets or laundry of any kind, shall be displayed to the public view on or from any unit without the prior written consent of the Board of Directors. No commercial or advertising signs of any kind shall be erected, placed, permitted or maintained on any common area or limited common area or improvement except such signs as may be approved by the Association for the operation of the condominium or for the sale of Units within the condominium. Declarant shall be permitted, at Declarant's sole discretion, to place signs advertising the sale or lease of units, along with development signage, entrance way signage, directional and temporary signage. Display of the United States Flag shall be regulated by RSA 356-B:47-a and rules and regulations adopted thereunder by the Owners' Association and any applicable Zoning and Planning Regulations of the City of Portsmouth.

SECTION M. MOBILE HOMES AND TEMPORARY STRUCTURES. Mobile homes or structures of any kind or character, whether temporary or otherwise, shall not be permitted on any common area or limited common area. However, Declarant, at Declarant's sole discretion, may maintain a trailer for development purposes.

SECTION N. NO VEHICLE STORAGE. No commercial vehicles, pleasure or commercial boats or vessels of any kind, motor homes, campers, trailers, school buses, all-terrain vehicles, off road vehicles or snow mobiles shall be used in the condominium nor shall they be stored within the common area or limited common area, including, but not limited to parking areas and trails. Golf carts may be allowed on the premises subject to the approval of the Declarant, at Declarant's sole discretion, and subject to the approval of the Association after the Declarant relinquishes control. None of the above referenced vehicles may be kept on the premises except out of sight of the roadway, behind the structure or properly screened from the roadway and abutters or if the same be kept stored in a garage or outbuilding conforming to these covenants. Unregistered or uninspected automobiles or automobiles being repaired, refinished, restored or otherwise brought onto the premises for a period of more than seven (7) days shall be stored in a garage or other enclosed structure.

SECTION O. TREE REMOVAL. Only the Declarant shall be permitted to cut trees on the property. No unit owner shall be permitted to cut any tree(s) without the express written permission of the Declarant. All clearing shall comply with the City of Portsmouth's land use regulations and ordinances.

SECTION P. No noxious or offensive activities shall be carried on in any unit or in the Common Areas or Limited Common Areas, nor shall anything be done therein which may become an annoyance or nuisance to the other unit owners.

SECTION Q. There shall be no violation of the rules of the use of the units, Common Area, or Limited Common Area as adopted by the Owners' Association and furnished in writing to the owners. The Declarant, until such time as the Owners' Association is formed, and thereafter the Owners' Association are authorized to adopt such rules.

SECTION R. Insofar as may be necessary, the Developer and persons that they may select shall have the right of ingress and egress over, upon, and across the Common Area and Limited Common Area and the right to store materials thereon and to make such other use thereof as may be reasonable, necessary, and incidental to construction and complete development and sale of the project, but the Declarant and the persons to whom he has granted this permission shall not unduly interfere with the unit owners or persons living in the units and their rights to use the Common Area and Limited Common Area and facilities.

SECTION S. No unit owner shall paint or otherwise decorate or change the appearance or the type of exterior siding of any portion of the exterior of his/her unit.

SECTION T. No unit owner shall make any alterations to his/her unit; provided, however, any unit owner shall have the right to make interior decorating improvements or any interior changes which do not affect any facilities, which are shared with the other units.

SECTION U. ADDITIONAL PROVISIONS.

The following are prohibited:

(1) Clotheslines;

(2) Above ground swimming pools;

(3) Antennas or satellite dishes with diameters larger than 24 inches;

(4) Additions or outbuildings or appurtenances unless prior approval has been obtained;

(5) Any basketball hoops, soccer nets or other personal property in the right-of-way;

SECTION V. OPEN SPACE USE LIMITATIONS. The Declarant on behalf of itself and its successors in interest covenants that "Open Space" as depicted on the Condominium Site Plan, is and shall forever be and remain subject to the following restrictions, which covenants and restrictions shall bind the Declarant, its successors in interest, and the Owner of each Unit:

(a) The purpose of the Open Space after completion of the proposed improvements depicted on the Condominium Site Plan is to retain the area in its scenic and open space;

(c) It shall be maintained in perpetuity as open space.

(f) Upon completion of the proposed improvements, no filling or excavation of soil or other alteration of topography or cutting or removal of standing trees shall be allowed, except those that present an imminent threat to person or property. In addition, trees may be removed in accordance with accepted silvacultural forest practices as outlined in the publication entitled Good Forestry Practices in the Granite State by the Society for the Protection of NH Forests. No disturbance of other natural features shall be allowed unless such activities are commonly necessary to maintain the existing natural environment of the open space.

(g) There shall be no dumping or depositing of trash, debris, stumps, yard waste, hazardous fluid or materials, vehicle bodies or parts within the Open Space.

(h) No discharge of firearms or shooting with a bow and arrow or trapping of animals shall be permitted upon the Open Space in violation of RSA 207:3-a, as amended.

(i) The "Open Space" comprises a portion of the Common Area of the Condominium. As such, maintenance, if any, in the Open Space will be performed pursuant to the other provisions of this Declaration and the Bylaws. Costs for the maintenance, monitoring and annual reporting of the Open Space will be treated as a Common Expense and paid by the Unit Owners in accordance with the provisions of this Declaration.

(j) Such reasonable rules and regulations as may from time to time be promulgated by the Condominium Association for "open space recreational uses."

(m) Acceptance of any deed for any Unit within the condominium constitutes acknowledgment by the purchaser of the existence of these restrictions and agreement to be bound by it and that said purchaser will not take any action which might violate any provision hereof.

SECTION W. PERMITTED USES OF OPEN SPACE

(a) The Declarant, its successors or assigns, reserve the right to perform cutting, grading, planting and seeding on the common area or limited common area for construction and to install and maintain drainage structures as needed in the development of the condominium.

(b) The Declarant, its successors or assigns, reserve the right to grant utility easements on the common area or limited common area to install and maintain utilities as needed in the development of the condominium.

(c) Dead, diseased, unsafe or fallen trees, saplings, shrubs and ground cover may be removed by the Declarant, its successors or assigns.

SECTION Y. STORMWATER MANAGEMENT, WETLANDS

(a) The Association will monitor and maintain the storm water systems contained in the Condominium.

(b) The Association will be responsible for and shall monitor and maintain the septic systems within the Association according to acceptable Best Practices for septic system maintenance and care.

(c) The Declarant will mark the wetland buffer by affixing Conservation/Buffer medallions on the trees at the perimeter of the wetland buffer to make all Condominium Owners and Guest aware of the wetland buffer. The wetland buffer is governed by Article 10 of the Portsmouth Zoning Ordinance and more specifically Article 10.1014.20, titled "Wetland Buffers. The purpose of a wetland buffer is to reduce erosion and sedimentation into the adjacent wetland, vernal pool or water body, to aid in the control of nonpoint source pollution, to provide a vegetative cover for filtration of runoff, to protect wildlife habitat, and to help preserve ecological balance.

ARTICLE 11
ENFORCEMENT OF RESTRICTIONS

If any person or entity shall violate or attempt to violate any of the rules or restrictions set forth in this Declaration, in the By-Laws or in any rules or regulations adopted by the Association of Unit Owners, the Association may commence legal action against said person or entity or against the owner(s) of any Units within which such violation are occurring, either to prevent or abate such violation, or to recover damages caused by such violation or both. In the event of a successful prosecution, the Association of Unit Owners will be entitled to receive its costs, including reasonable attorney's fees, as part of its judgment against the defendant.

If the Association of Unit Owners shall fail to enforce this or any one or more of the covenants set forth in this Declaration or any rule contained in the By-Laws or any rules of the Association of Unit Owners after receiving written request to do so from any Unit Owner within the condominium, then any such Unit Owner may attempt to enforce said requirements by giving ten (10) days' prior written notice to the person violating them, followed by legal proceedings either to enjoin the violation or to recover damages or other compensation, including reasonable collection costs and attorney's fees if the court deems it appropriate under the circumstances.

Notwithstanding anything in this Declaration or in the By-Laws to the contrary, no Unit Owner shall be liable for any violations except such as occur during his or her Unit ownership.

ARTICLE 12
INSURANCE

1. Insurance Required. Pursuant to Section 43 of the Condominium Act, the Board of Directors shall obtain (i) a master casualty policy affording fire and extended coverage in an amount equal to the full replacement value of the common structures within the Condominium; (ii) a master liability policy covering the Association, the Board, the Manager and agents or employees of the foregoing with respect to the Condominium, and all Owners and other persons entitled to occupy any portion of the Condominium; and (iii) such other policies as specified hereinbelow; which insurance shall be governed by the following provisions to the extent obtainable or possible:

(a) Fire insurance with standard extended coverage endorsement, vandalism and malicious mischief endorsements insuring all the common buildings in the Condominium including without limitation all portions of the interior of such buildings are for insurance purposes normally deemed to constitute part of the building and customarily covered by such insurance, such as heating and air conditioning and other service machinery, interior walls, all finished wall surfaces, ceiling and floor surfaces including any wall to wall floor coverings, bathroom and kitchen cabinets and heating and lighting fixtures, except for improvements which exceed a total value of One Thousand Dollars ($1,000.00) and are not reported to the insurer, such insurance to be in an amount at least equal to the replacement value of the buildings and to be payable to the board as trustee for the Owners and their mortgagees as their respective interests may appear.

(b) Public liability insurance in such amounts as the Board may from time to time determine, but in no event shall the limits of liability be less than One Million Dollars ($1,000,000.00) for bodily injury and property damage per occurrence, insuring the Association and all individuals referred to in Section I (ii) above, against any liability to anyone, and with cross liability coverage with respect to liability claims of anyone insured thereunder against any other insured thereunder. The insurance, however, shall not insure against individual liability for negligence occurring within a Unit or within the Limited Common Area to which a Unit has exclusive use.

c) Workmen's compensation insurance as required by law.

d) Such other insurance as the Board may determine.

2. General Insurance Provisions.

(a) The Board shall deal with the insurer or insurance agent in connection with the adjusting of all claims under insurance policies provided for under Paragraph 1 above and shall review with the insurer or insurance agent, at least annually, the coverage under said policies, said review to include an appraisal of improvements within the Condominium, and shall make any necessary changes in the policy provided for under Paragraph 1 (a) above (prior to the expiration date set forth in any agreed amount endorsement contained in said policy) in order to meet the coverage requirements of such Paragraph.

(b) The Board shall be required to make every effort to see that all policies of physical damage insurance provide for under Paragraph 1 above : (i) shall contain waivers of subrogation by the insurer as to claims against the Association, its employees and agents, members of the Board, the Manager, Owners and members of the family of any Owner who reside with said Owner, except in cases of arson and fraud; (ii) shall contain a waiver of defense of invalidity or prejudice on account of the conduct of any of the Owners over which the Association has "no control"; (iii) shall contain a waiver of defense of invalidity or prejudice by failure of the insured, or Owners collectively, to comply with any warranty or condition with regard to any portion of the Condominium over which the insured, or Owners collectively, have no control; (iv) shall provide that such policies may not be canceled or substantially modified without at least thirty (30) days written notice to all of the insureds thereunder and all mortgagees of Units in the Condominium; (v) shall provide that in no event shall the insurance under said policies be brought into contribution with insurance purchased individually by Owners or their mortgagees; (vi) shall exclude policies obtained by individual Owners for consideration under any "no other insurance" clause; and (vii) shall provide that until the expiration of thirty (30) days after the insurer gives notice in writing to the mortgagee of any Unit, the mortgagee's insurance coverage will not be affected or jeopardized by any act or conduct of the Owner of such Unit, the other Owners, the Board of Directors, or any of their agents, employees or household members, nor canceled for non-payment of premiums.

3. Individual Policies. All Owners shall obtain, at his own expense, insurance insuring his own unit and all buildings thereon and insurance against loss or damage to personal property used or incidental to the occupancy of the Unit, additional living expense, vandalism or malicious mischief, theft, personal liability and the like.

(a) Each Owner shall obtain additional insurance for his own benefit and at his own expense. No such policy shall be written so as to decrease the coverage under any of the policies obtained by the Board pursuant to paragraph 1(a) above, and each Owner hereby assigns to the Board the proceeds to be applied pursuant to the terms hereof as if produced by such coverage. Copies of all such policies (except policies covering only personal property, owned or supplied by individual Owners) shall be filed with the Association.

(b) Each Owner shall obtain insurance for his own benefit and at his own expense insuring all personal property presently or hereafter located in his Unit or Limited Common Area, any floor coverings, appliances and other personal property not covered in the master policy, and any insurance deductible that the unit may be assessed and all improvements.

(c) Each Owner, prior to commencement of construction of such improvements, shall notify the Board of all improvements to his Unit (except personal property other than fixtures) which exceed a total value of One Thousand Dollars ($1,000.00).

(d) Each Owner shall obtain liability insurance with respect to his ownership and/or use of his Unit.

4. Notice to Unit Owners. When any policy of insurance has been obtained on behalf of the Association, written notice of the obtainment thereof and of any subsequent changes therein

or termination thereof shall be promptly furnished to each Unit Owner by the Secretary of the Association. Such notice shall be sent by U.S. Mail, return receipt requested, to all Unit Owners of record at the address of their respective Units and to such other addresses as any of them may have designated to the Secretary; or such notice may be hand delivered by the Secretary or Manager obtains a receipt of acceptance of such notice from the Unit Owner.

ARTICLE 13
CONDEMNATION

If part of the project shall be taken or condemned by any authority having the power of eminent domain such that no Unit or any part thereof is taken, then all compensation and damages for on account of the taking or the common elements, exclusive of compensation for consequential damages to certain affected Units, shall be payable to the President of the Association as Trustee for all Unit Owners and Mortgagees according to the loss or damage to their respective interests in such common elements. The Association shall have the right to act on behalf of the Unit Owners with respect to all issues related to the taking and compensation affecting the common elements. Such proceeds shall, subject to the prior rights of such mortgagees, become a part of the reserve funds of the Association.

If any Unit or a part thereof is taken, the Unit Owners directly affected by such taking and their respective mortgagees shall represent and negotiate for themselves with respect to the damages affecting their respective Units. The awards so made shall, subject to the prior rights of mortgagees, be used and distributed by the Trustee first to restore the Units on the remaining land of the project in the same manner as provided for restoration under Section 13 hereof to the extent possible, attempting to rebuild the building, containing new units of the same number, size and basic plan as the units taken, with any excess award distributed in accordance with the provisions of this section.

ARTICLE 14
REVIEW OF INSURANCE

The Association will review not less frequently than annually the adequacy of its insurance program and will, if requested by Unit Owners report to each Unit Owner in writing the Association's conclusions and actions taken, from time to time. Such review shall include an appraisal of all improvements to the project by a representative of the insurance carrier writing the Master Policy. Also, the Association shall provide each Unit Owner with notices describing each new policy of insurance and all amendments and terminations thereof, as and when occurring, in the same manner as it provides notices of Association meetings as set forth in the By-Laws, all as required by New Hampshire Revised Statutes Annotated, Section 356-B:43 II, or any successor statute.

ARTICLE 15
AMENDMENTS TO THE CONDOMINIUM AND TERMINATION

This Declaration, the By-Laws, the Floor Plan, the Condominium Plan or any other condominium instruments (as defined by New Hampshire Revised Statutes Annotated Chapter

356-B) may be amended from time to time, or this condominium may be terminated, only in strict compliance with New Hampshire Revised Statutes Annotated Section 356-B:34, as amended from time to time, or any successor statute. In no event shall such amendments be made without the consent of at least 2/3 of the Unit Owners.

ARTICLE 16
DEFINITIONS

All terms and expressions used in this Declaration which are defined in New Hampshire Revised Statutes Annotated Chapter 356-B shall have the same meanings here unless the context otherwise requires.

ARTICLE 17
PARTIAL INVALIDITY

The invalidity of any provision of this Declaration shall not impair or affect the validity of the remainder of this Declaration and all valid provisions shall remain enforceable and in effect notwithstanding such invalidity.

ARTICLE 18
MORTGAGES

1. Notice to Board. An Owner who mortgages his Condominium Unit shall notify the Board of the name and address of his mortgagee, and shall file a conformed copy of the mortgage with the Board. The Board shall maintain suitable records pertaining to such mortgages.

2. Notice of Action. Upon written request to the Unit Owners' Association, identifying the name and address of the holder, insurer or guarantor and the Unit number or address, any such Eligible Mortgage Holder or Eligible Insurer or Guarantor will be entitled to timely written notice of:

(a) Any condemnation loss or any casualty loss which affects a material portion of the Condominium or any Unit on which there is a first mortgage held, insured, or guaranteed by such Eligible Mortgage holder or Eligible Insurer or Guarantor, as applicable;

(b) Any delinquency in the payment of assessments or charges owed by an Owner of a Unit subject to a first mortgage held, insured or guaranteed by such Eligible Mortgage Holder or Eligible Insurer or Guarantor, which remains uncured for a period of 60 days.

(c) Any lapse, cancellation or material modification of any insurance policy or fidelity bond maintained by the Owners' Association;

(d) Any proposed action which the Declaration, these Bylaws or the Condominium Act, requires the consent of a specified percentage of mortgage holders.

3. Notice of Default. The Board shall give written notice to an owner of any default by the Owner in the performance of any obligations under the Act, Declaration or Bylaws and, if such default is not cured within thirty (30) days, shall send a copy of such notice to each holder of a mortgage covering such Unit whose name and address has theretofore been furnished to the Board. No suit or other proceeding may be brought to foreclose the lien for any assessment levied pursuant to the Declaration or these Bylaws except after ten (10) days written notice to the holder of the first mortgage on the Unit which is the subject matter of such suit or proceeding.

4. Notice of Damage. The Board of Directors shall notify (i) the mortgagee of a Unit whenever damage to the Unit covered by the mortgage exceeds One Thousand Dollars ($1,000.00) and the Board is made aware of such damage; and (ii) all the mortgagees whenever damage to the Common Area exceeds Ten Thousand Dollars ($10,000.00).

5. Examination of Books. Each Owner and each mortgagee shall be permitted to examine the books on account of the Condominium at reasonable times, on business days, but, with respect to Owners, not more often than once a month.

DECLARATION OF THE BANFIELD WOODS CONDOMINIUM EXECUTED as of the day and year first above written.

GREEN & CO BUILDING AND DEVELOPMENT CO, INC.

_____ By: _____

Witness Richard W. Green, President
Duly Authorized

STATE OF NEW HAMPSHIRE
COUNTY OF ROCKINGHAM, ss.

This instrument was acknowledged before me on _____, 2020, by Richard W. Green, President of Green & Co Building and Development Co. Inc.

_____
Notary Public
Printed Name: _____
My Commission Expires: _____

EXHIBIT A

LEGAL DESCRIPTION

EXHIBIT B

EXHIBIT C

CONVERTIBLE LAND

EXHIBIT D

EXHIBIT E

COMMON INTEREST

Unit No.	Common Interest
1	1/22
2	1/22
3	1/22
4	1/22
5	1/22
6	1/22
7	1/22
8	1/22
9	1/22
10	1/22
11	1/22
12	1/22
13	1/22
14	1/22
15	1/22
16	1/22
17	1/22
18	1/22
19	1/22
20	1/22
21	1/22
22	1/22

BYLAWS
OF
BANFIELD WOODS CONDOMINIUM OWNERS ASSOCIATION

1. PURPOSE AND DEFINITIONS

Purpose. The administration of Banfield Woods Condominium (the "Condominium") shall be governed by these By-Laws which are annexed to the Declaration of Banfield Woods Condominium (the "Declaration") and are made a part thereof.

Definitions. Certain of the terms used in these By-Laws have been defined in the Declaration and, when used herein, shall have the same meaning as set forth in the Declaration, unless the context clearly indicates a different meaning therefor.

Applicability of By-Laws. The provisions of these By-Laws are applicable to all of the property which now constitutes or hereafter may be added to the Condominium, and to the use and occupancy thereof.

2. MEMBERS AND MEETINGS

A. Members and Voting Rights. Each unit owner and the Declarant, until such time as all of the Declarant's development rights have expired or been terminated (each an "Owner" and collectively the "Owners") shall be a member of Banfield Woods Condominium Owner's Association. The membership of the Association shall consist of all of the Owners. The Owner of each Unit shall be entitled to one (1) vote.

B. Transfer of Membership. Membership in the Association may be transferred only as an incident to the transfer of title to a Unit and shall become effective upon recordation of a deed of conveyance to the said Unit.

C. Annual Meeting. The annual meeting of the members shall be held on the second Monday of March, for the purpose of electing officers and for the transaction of such other business as may come before the meeting.

D. Regular Meetings. Regular meetings of the Board of Directors shall be held in accordance with the provisions of RSA 356-B: 37-c at such time and place as shall be determined, from time to time, by a majority of the directors, but at least quarterly meetings shall be held during each twelve month period after the annual meeting of the Unit Owners' Association. Notice of regular meetings of the Board of Directors shall be posted to the community and given to each director, personally or by mail, e-mail, telephone or telegraph, at least five (5) business days prior to the day named for such meeting, except that no notice shall be required for a regular meeting held immediately after, and at the same place as the annual meeting of the Association. Directors may attend vote and participate at meetings by telephone or E-Mail pursuant to RSA 356-B:37-b. Pursuant to RSA 356-B:37-c (II) at least once per

quarter the Board shall hold open regular meeting to afford owners an opportunity to common on any matter affecting the Association. Notice of the meeting and any materials distributed to the Board shall be available to the owner pursuant to RSA 356-B:37 (c) (III) and (IV).

E. Special Meetings. Special meetings of the Owners may be called at any time for the purpose of considering matters which, by the terms of the Declaration, these By-Laws, or the Condominium Act, (the "Act"), require the approval of the Owners, or for any other reasonable purposes. Special meetings shall be called by the President upon at least three (3) days written notice prior to the date of the meeting.

F. Contents of Notice. Pursuant to RSA 356-B:37 (I) and 356-B:37-a, it shall be the duty of the clerk or secretary, to send to all owners of record, at least twenty-one (21) days in advance of any meeting notice of any meeting. Said Notice shall state the time, place and purpose of the meeting and shall be sent to the unit owners at the addresses on file with the Association. The clerk or secretary shall attest that the notice was sent to the list of owners attached to the affidavit at the addresses on file with the association in the manner conforming with RSA 356-B: 37-a.Any such notice shall be deemed waived by any Owner who expressly waives the same in writing or who is present in person or by proxy at any such meeting.

G. Quorum. The presence in person or by proxy at the commencement of any meeting of the Association of Unit Owners of two thirds of the Unit Owners shall constitute a quorum at all meetings of the Unit Owners. In determining a quorum, the term "all Unit Owners" in this paragraph will not include Units the title of which is held by the Association. Pursuant to RSA 356-B: 38 (III) if a quorum is not met for an annual meeting, the board shall reschedule the meeting within sixty days and provide proper notice and proxies.

H. (1). Number of Directors and Initial Selection of Board. The Board of Directors shall be composed of three (3) persons. Until the election of the Board of Directors takes place at the first annual meeting of the Unit Owners' Association, the Board of Directors shall consist of such persons as shall have been designated by the Declarant. Thereafter, anything in these Bylaws to the contrary notwithstanding, until seven (7) years after the date of recordation of this Declaration, or until ninety percent (90%) of the Units have been conveyed by the Declarant, whichever occurs later, the members of the Board of Directors shall be selected and designated by the Declarant. The Declarant shall have the right in its sole discretion to replace such Directors as may be so selected and designated by it, and to select and designated their successors. The Declarant may relinquish its rights hereunder at any prior time. Directors shall consist only of Owners or spouses of Owners, or, where a Person which is an Owner is not a natural person, any natural person having authority to execute deeds in behalf of such person.

(2). Election and Term of Office. The initial Board of Directors shall be elected to staggered terms of one, two and three years. Thereafter, each Director shall serve a three (3) year term and one Director shall be elected at every annual meeting. At the expiration of the initial term of office of each director, his successor shall serve a term of three (3) years and each director shall hold office until his successor has been appointed or elected as appropriate.

I. Voting and Minutes. At any meeting of the Association, the Owners shall be entitled to cast their votes for each condominium unit owned as provided in the Declaration. The

majority vote of all Unit Owners shall be required to adopt decisions at any meeting of the Association. Any Owner may attend and vote at such meeting in person or by proxy. The provisions of the Condominium Act shall govern all votes (including proxy votes and the votes of units owned by more than one person) at meetings of the Association. Pursuant to RSA 356-B: 37 (VI) the Board of Directors shall make copies of the minutes of all meetings available to the unit owners within 60 days of the date of the meeting or 15 days of the date the minutes are approved by the Board whichever occurs first. The association may opt to provide the minutes electronically or post them on the association website in which case the owners shall be informed of the web address.

J. Budget Ratification. Pursuant to RSA 356-B:40-c (I) the board of directors shall annually adopt a budget for the unit owners' association for consideration by the unit owners at a meeting. The board of directors shall, within 30 days of adoption of the proposed budget, provide the owners a summary of the budget, including any reserves and a statement of the basis on which any reserves are calculated and funded. The board of directors shall set a date not less than 10 days or more than 60 days after providing the budget summary to consider the ratification of the budget. Unless at that meeting, 2/3 of all unit owners reject the budget the budget is ratified whether or not a quorum is present. If no budget is proposed or the proposed budget is rejected, the last budget ratified by the owners shall be in effect until a new budget is ratified by the owners. Pursuant to RSA 356-B:40-c (II) the board of directors at any time may propose a special assessment which shall be ratified by the owners. The assessment shall be in accordance with the provisions of RSA 356-B:40-c (III).

3. POWERS

Powers and Duties. The Association shall have all of the powers and responsibilities assigned by the New Hampshire Condominium Act, RSA 356-B, as amended from time to time or any successor statute. Without limiting the generality of the preceding sentence, the Association will have all of the powers and duties necessary for the administration of the affairs of the condominium. Said powers and duties shall include, but not be limited to, the following:

A. Operation, care, upkeep and maintenance of the common areas;

B. The employment, dismissal and replacement of agents and employees to facilitate the operation, care, upkeep and maintenance of the common areas;

C. To make or cause to be made additional improvements on and as part of the common areas (subject to Article VII, Section 2 below);

D. To acquire, hold, manage, convey and encumber title to real property (including but not limited to condominium Units conveyed to or acquired by the Association) in the name of and on behalf of the Association;

E. To grant easements through the common areas and to accept easements benefitting the condominium or any portion thereof;

F. The assessment and collection of the common expenses from the Unit Owners, and the enforcement of liens to secure unpaid assessments, pursuant to RSA Section 356-B:46, as amended from time to time, or any successor statute;

G. The adoption and amendment of rules and regulations covering the details of the operation and use of the condominium, the common areas or any portion thereof;

H. Opening of bank accounts on behalf of the Association and designating the signatories required for such accounts;

I. Obtaining and administering insurance for the condominium as set forth in the Declaration;

J. Repairing, restoring or replacing common areas after damage or destruction, or as a result of eminent domain proceedings, as provided in the By-Laws;

K. Procuring legal and accounting services necessary or proper in the operation of the condominium or the enforcement of these By-Laws;

L. The assessment of costs or damages against any Unit Owner whose actions have proximately caused damages to the common areas;

M. Payment of any amount necessary to discharge any lien or encumbrance levied against the entire condominium or any part thereof which may in the opinion of the Association constitute a lien against the condominium or against the common areas, rather than merely against the interests of particular Unit Owners (where one or more Owners are responsible for the existence of such lien, they shall be jointly and severally liable for the cost of discharging it and the costs incurred by the Association by reason of said lien or liens);

N. All other powers granted by the Declaration or these By-Laws, permitted by law or enjoyed by associations of this kind.

4. OFFICERS

A. Officers. The officers of the Association shall be a president, a treasurer and a secretary, all of whom shall be appointed by the Unit Owners. Such other officers and assistant officers as may be deemed necessary may be appointed by the Association. Any two or more offices may be held by the same person. Pursuant to RSA 356-B:35 (II), the board of directors/officers shall have a fiduciary relationship to members of the unit owners' association.

B. Appointment and Term of Office. The officers of the Association shall be appointed at the annual meeting. If the appointment of officers shall not be made at such meeting, such appointment shall be made as soon thereafter as conveniently may be. Each officer shall hold office until his successor shall have been duly appointed and shall have qualified or until his death or until he shall resign or shall have been removed in the manner hereinafter provided.

C. Removal. Any officer or agent may be removed by the Association whenever, in its judgment, the best interests of the Association will be served thereby, but such removal shall be without prejudice to the contract rights, if any, of the person so removed. Appointment of an officer or agent shall not in and of itself create contract rights. Removal of officers or directors shall be by a vote held in accordance with RSA 356-B: 40-b.

D. Vacancies. A vacancy in any office because of death, resignation, removal, disqualification, or otherwise may be filled by the Association for the unexpired portion of the term.

E. President. The president shall be the principal executive officer of the Association and shall in general supervise and control all of the business and affairs of the corporation. He shall, when present, preside at all meetings of the unit owners at meetings of the Association. He may sign with the secretary or with any other proper officer of the Association, deeds, mortgages, bonds, contracts, or other instruments which the Association has authorized to be executed, except in cases where the signing and execution thereof shall be expressly delegated by the Association or by these bylaws to some other officer or agent of the Association, or which is required by law to be otherwise signed or executed; and in general shall perform all duties incident to the office of president and such other duties as may be prescribed by the Association from time to time.

F. The Secretary. The secretary shall: (a) keep the minutes of the proceedings of the annual meeting in one or more books provided for that purpose; (b) see that all notices are duly given in accordance with the provisions of these bylaws or as required by law; (c) be custodian of the Unit Owner records of the Association; (d) keep a register of the post office address of each Unit Owner which shall be furnished to the secretary by such Unit Owner; (e) have general charge of the books of the Association; and (f) in general perform all duties incident to the office of secretary and such other duties as from time to time may be assigned to him by the president or by the Association.

G. The Treasurer. The treasurer if any is appointed and, if none, then the president shall: (a) have charge and custody of and be responsible for all funds and securities of the Association; (b) receive and give receipts for monies due and payable to the Association from any source whatsoever and deposit all such monies in the name of the Association in such banks, trust companies, or other depositories as may be authorized by the Association; (c) in general perform all of the duties incident to the office of treasurer and such other duties as from time to time may be assigned to him by the president or by the Association.

H. Execution of Instruments. All checks, drafts, notes, deeds, acceptances, conveyances, contracts or other instruments shall be signed on behalf of the Association by such person or persons as shall be provided authority by general or special resolution of the Association or, in the absence of any such resolution applicable to such instrument, by the President and by the Treasurer.

5. INTERIM MANAGEMENT BY DECLARANT

From and after the date of the recording of these By-Laws, the Declarant shall exercise all powers and responsibilities assigned by these By-Laws, the Declaration and by the New Hampshire Condominium Act to the Association of Unit Owners, and the Officers until such time as it turns over said powers and responsibilities to the Unit Owners. Said transfer of said powers and responsibilities shall in no event occur later than the first to occur of (1) the time at which the Declarants have completed the passing of title to third party purchasers of Units to which are assigned a total of 90% of the undivided interest in the common areas, or (2) the expiration of seven (7) years from the date of the incorporation of the Association. No contract binding the Association of Unit Owners, or the Unit Owners as a group, which shall have been entered into during the period of Declarant's control as described in this Article shall be binding after the termination of the Declarant's control unless ratified or renewed with the consent or affirmative vote of Unit Owners of a majority of the Units in the Association of Unit Owners.

6. COMMON EXPENSES

A. Common Expenses. The Owner of each Unit shall be liable for and shall pay as and when assessed a share of common expenses in proportion to his or her common interest. Common expenses will include all charges, costs and expenses of every kind incurred by or on behalf of the Association for and in connection with the administration of the condominium, including without limitation all charges for taxes (except real property taxes or other such taxes which are or may hereafter be assessed separately on each Unit and the common interest appurtenant thereto or the personal property or any other interest of a Unit Owner) assessments, insurance, liability for loss or damage arising out of or in connection with the common areas or any fire, accident or nuisance thereon, the cost of repair, reinstatement, rebuilding and replacement of facilities in the common areas, wages, accounting and legal fees, management fees and all other necessary expenses of upkeep, maintenance, management and operation incurred on or for the common areas. The common expenses may also include such amount as the Association may deem proper to make up any deficit in the reserve. Common expenses will also include all common expense assessments against all Units, title to which is held by the Association.

B. Capital Improvements. Whenever in the judgment of the Association the common areas should be improved by new construction, any such new or replacement construction may be made by the Association only after obtaining approval of all Units. If such approval is so obtained, the cost thereof shall constitute a part of the common expenses.

C. Reserves. The Association shall assess as a common expense an amount or amounts on a monthly basis for the purpose of establishing and maintaining a general operating reserve and general replacement reserve, against anticipated future outlays for operations or for maintenance or replacement of facilities within the common areas or equipment or other property held by the Association in connection with the condominium. The size of any such reserve shall be reviewed at each annual meeting of the Association. The funds will be deposited in a responsible bank and may be intermingled with the Association's general operating account, or segregated in a separate account, in the Association's discretion.

Any such reserve may be used at the discretion of the Association to meet any deficiencies in operating funds from time to time resulting from higher than expected operating expenses and maintenance costs, or any delinquency by any Unit Owner or Owners in the payment of assessment for common expenses. Said reserve shall not operate to exempt any Owner from liability to contribute his or her proportionate share of such expenses or to pay any such assessments thereof and any funds withdrawn from said reserve for the purpose of making up any delinquency shall be reimbursed upon the payment of such delinquent assessments. The proportionate interest of each Owner in said reserve shall not be withdrawn or assigned separately but shall be deemed to be transferred with each Unit even though not mentioned or described expressly in the instrument of transfer.

D. Expenses for Limited Common Areas. Common expenses relating to the limited common areas shall be charged in accordance with Article 6, Section A of the Declaration.

i. Maintenance and Repair. The Board of Directors shall be responsible for the maintenance, repair and replacement (unless necessitated by the negligence, misuse or neglect of an Owner, or of a person gaining access with said Owner's actual or implied consent, in which case such expenses shall be charged to such Owner) of all Limited Common Area, whether located inside or outside of the Units, the costs of which shall be charged to all Owners as a Common Expense except the cost of repairing and replacing Limited Common Area shall be assessed to the units assigned such Limited Common Area.

E. Books. The Association will maintain books of account for common expenses for the common areas, general operating reserves and replacement reserves, in accordance with generally recognized accounting practices, and will have such books of account available for inspection by each Owner or his authorized representative at reasonable business hours. The Association will not less frequently than annually render or cause to be rendered a statement to each Owner of all receipts and disbursements during the preceding year and the balances of the various accounts.

F. Enforcement. The Association of Unit Owners shall have a lien on every Unit for unpaid assessments of common expenses levied against the Unit, which may be applicable to said Unit, in accordance with the provisions of the New Hampshire Condominium Act. Reference is made to RSA Section 356-B:46, as amended from time to time, and any successor statute, describing the enforcement of the Association's lien rights.

G. Delinquent Assessments. In the event an assessment is not paid within thirty (30) days of the date it is due and payable, the Association, through its Board of Directors, may proceed to enforce and collect the said assessment, with interest at the maximum lawful rate of eighteen percent (18%) per annum, whichever is greater, against the unit Owner owing the same in the manner set forth in RSA 356-B:46. Each delinquent unit Owner shall be responsible for attorney's fees, interest and costs incurred by the Association incident to the collection of such delinquent assessments or enforcement of any lien held by the Association for unpaid assessments.

H. Assessments. The Association shall determine the amounts and frequency of assessments for common expenses. In determining the amount, the Association shall in its discretion set a figure for a reasonable prospective period (up to one year) sufficient to accumulate and pay when due the anticipated common expenses for that period. In determining the frequency of the payments, the Association has full discretion to levy the assessments on a quarterly basis or as otherwise determined by the Association. If at the end of any assessment period it is determined that the assessments were estimated too low, the deficiency may be forthwith assessed by the Association and paid by the Unit Owners as a special assessment or assessments.

I. Expense to Unit Owner. No one shall obstruct, commit any waste in or otherwise cause any damage beyond reasonable wear and tear to the Common Area and any one causing such damage shall pay the expense incurred by the Association in repairing same.

8. GENERAL PROVISIONS

A. Violations. In the event of a violation other than non-payment violation of the Declaration, these By-Laws, or the applicable portions of the Act, the Association, by direction of its Board of Directors, may notify the unit owner by written notice of such breach, and if such violation shall continue for a period of thirty (30) days from the date of this notice, the Association, through its Board of Directors, shall have the right to treat such violation as an intentional and inexcusable and material breach of the Declaration, the By-Laws, or the pertinent provisions of the Condominium Act, and the Association may then, at its option, have the following election: (a) an action at law to recover for its damage on behalf of the Association or on behalf of the other unit owners; (b) an action in equity to enforce performance on the part of the unit owner; or (c) an action in equity for such equitable relief as may be necessary under the circumstances, including injunctive relief. Failure on the part of the Association to maintain such an action at law or in equity within ninety (90) days from date of a written request, signed by a unit owner, sent to the Board of Directors, shall authorize any unit Owner to bring an action in equity or suit at law on account of the violation. Any violations which are deemed by the Board of Directors to be a hazard to public health may be corrected immediately as an emergency matter. The Association shall be entitled to collect all legal fees incurred as a result of any such action or any action instituted for collection of any unpaid assessments.

B. Waiver. The failure of the Association of Unit Owners to insist in any one or more instances upon strict performance of or compliance with any of the covenants of the Owner hereunder, or to exercise any right or option herein contained or to serve any notice, or to institute any action or summary proceeding, shall not be construed as a waiver or a relinquishment for the future, of such covenant or option or right, but such covenant or option or right shall continue and remain in full force and effect.

C. Notices. All notices to Unit Owners shall be deemed given if hand delivered or sent by Registered or Certified Mail, Return Receipt Requested, to the Owner, addressed to the Owner's address appearing on the records of the Association. Any notice given or mailed to one

co-Owner shall be presumed to have been properly given to any other co-Owner, regardless of whether a separate notice was given or sent to said other co-Owner. When any policy of insurance has been obtained on behalf of the Association, written notice of the obtainment thereof and of any subsequent changes therein or termination thereof shall be promptly furnished to each Unit Owner by the Secretary of the Association. Pursuant to the provisions of RSA 356-B:43 (II) all notices shall be sent in accordance with the provisions of the last sentence of RSA 356-B:37-a.

D. Amendment. Except as otherwise provided in the Condominium Act and this Declaration and Bylaws, this Declaration and Bylaws may only be amended by agreement of at least two thirds (2/3) of the Owners, provided, however, that (i) any such amendment shall be executed by such two thirds (2/3) of the Owners or by the President and Treasurer of the Association accompanied by a certification of vote of the Secretary; (ii) evidence of such amendment shall be duly recorded at the Registry pursuant to Section 34 IV, of the Condominium Act; (iii) no amendment to the Declaration shall be adopted that could interfere with the construction, sale, lease or other disposition or use of such Units; (iv) no such amendment shall be contrary to the provisions of the Condominium Act. Any approval of amendments by Mortgagees shall be subject to the provisions of and limitations of RSA 356-B.

E. Resale by Purchaser. In the event of any resale of a unit or any interest therein by any person (other than the Declarant or its successors in interest) the prospective Unit Owner shall have the right to obtain from the Association, prior to the contract date of the disposition, the following:

i. A statement of any capital expenditures and major maintenance expenditures anticipated by the Association within the current or succeeding two fiscal years;

ii. A statement of the status and amount of any reserve for the major maintenance or replacement fund, and any portion of such fund earmarked for any specified project by the Association;

iii. A copy of the income statement and balance sheet of the Association for the last fiscal year for which such statement is available;

iv. A statement of the status of any pending suits or judgments in which the Association is a defendant;

v. A statement setting forth what insurance coverage is provided for all Unit Owners by the Association and what additional insurance coverage would normally be secured by each individual Unit Owner;

vi. A statement that any improvements or alterations made to the Unit or the limited common area assigned thereto by the prior Unit Owner are not known to be in violation of the Declaration.

The President of the Association or any other Officer of the Association shall furnish such statements upon written request of any prospective Unit Owner within ten (10) days of the receipt of such request.

Said statement once issued shall be binding upon the Association, and every other Unit Owner. The Association may establish a fee to be charged to the Unit Owner in consideration of issuing said statement, which fee shall not exceed $10.00 for each request, unless a higher amount is permitted by law.

F. Notices to or from Mortgagees

i. Notice to Board. A Unit Owner who mortgages his condominium unit shall notify the Board of the name and address of his mortgagee and the principal amount of such mortgage. The Board shall maintain suitable records pertaining to such mortgages.

ii. Reporting. The Board, whenever so requested in writing by a mortgagee of a condominium unit, shall promptly report any then unpaid assessments for common expenses due from, or any other default by, the Owner of the mortgaged condominium unit. The Board shall be entitled to require a fee of Ten Dollars ($10.00) for each report provided a mortgagee.

iii. Default. The Board shall give written notice to an Owner of any default by the Owner in the performance of any obligations under the Condominium Instruments and, if such default is not cured within thirty (30) days, shall send a copy of such notice to each holder of a mortgage covering such unit whose name and address has theretofore been furnished to the Board. No suit or other proceeding may be brought to foreclose the lien for any assessment levied pursuant to the Declaration or these By-Laws except after ten (10) days written notice to the holder of the first mortgage on the unit which is the subject matter of such suit or proceeding.

Dated this ____ day of _____, 2020.

GREEN & CO BUILDING AND DEVELOPMENT CO, INC.

_____ By: _____

Witness Richard W. Green, President
Duly Authorized

STATE OF NEW HAMPSHIRE
COUNTY OF ROCKINGHAM, ss.

This instrument was acknowledged before me on _____, 2020, by Richard W. Green, Manager of Midlands Investments, LLC, a New Hampshire limited liability company.

_____
Notary Public
Printed Name: _____
My Commission Expires: _____

Job #47361.00

DRAINAGE ANALYSIS SUMMARY

F O R

The Village at Banfield Woods

0 Banfield Road
County of Rockingham
Portsmouth, New Hampshire

Tax Map 256, Lot 2

December 23, 2019

Prepared By:

TFM®

MSC
A division of TFMoran, Inc.

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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1.0 SUMMARY

This drainage study was completed to assess the pre- and post-development runoff rates for the proposed subdivision for the 2-year, 10-year, 25-year, and the 50-year storm events. The flows remained relatively the same, though there is a slight increase in the 25 and 50-year post-development conditions.

In addition, Best Management Practices were developed to formulate a plan that assures stormwater quality both during and after construction. The following summarizes the findings from the study.

1.1 - Pre- and Post-Development Flow Comparison

The pre- and post-development watershed areas have been analyzed for each of the six lots. Table 1 compares pre- and post-development peak runoff rates during all storm events analyzed for each Point of Interest.

The drainage flows remain relatively the same for the Pre-Development and Post Development Drainage Flows.

2-Year (Flow - cfs)		2-Year (Volume - cf)		10-Year (Flow - cfs)		25-Year (Flow - cfs)		50-Year (Flow - cfs)	
Pre-Dev.	Post Dev.	Pre-Dev.	Post Dev.	Pre-Dev.	Post Dev.	Pre-Dev.	Post Dev.	Pre-Dev.	Post Dev.
0.3	0.3	2,618	2,618	1.5	1.5	2.2	2.2	3.0	3.0
5.1	4.8	100,114	108,646	17.5	17.5	22.0	22.3	38.0	41.9
		102,732	111,264						

Table 1 - Pre and Post Flows

1.2 – Best Management Practices

Best Management Practices have been incorporated into the drainage design which provide for temporary erosion control measures during the construction process and permanent erosion control measures after construction is complete. Temporary measures include construction sequencing, silt barriers and provisions for stabilization of inactive areas. Permanent erosion control measures include turf establishment on all disturbed areas that have not been paved, one bioretention area and two underground stormwater treatment areas using Stormtech chambers.

2.0 - PROJECT DESCRIPTION

The existing lot is a 44.884 acre. The proposed development will only effect 17% of the lot with a 5% impervious cover.

The proposal is for a multi-family condominium site comprising of 22 single-family dwelling units. This project has been before the Technical Advisory Committee, the Planning Board, and the conservation commission earlier this year in work sessions. This site has a significant amount of upland, surrounded by wetlands. We have worked on solutions to minimize impacts to the wetlands and their 100' buffers.

The disturbance on the lot is limited to the western section of the lot. This is the area focused on for the drainage report. The calculations show that the proposed drainage flows remain the same as the existing drainage flows.

3.0 - CALCULATION METHODS

The design storms analyzed in this study are the 2-year, 10-year, 25-year and the 50-year, 24-hour storm events. The software program, HydroCAD version 10.00[1] was utilized to calculate the peak runoff rates from these storm events. The program estimates the peak rates using the TR-20 method. A Type III storm pattern was used in the model. Rainfall frequencies for the analyzed region were also incorporated into the model. Rainfall frequencies from the Northeast Regional Climate Center were used to determine the storm-event intensities, see Table 2. Design standards were taken from the New Hampshire Stormwater Manual, December 2008[2].

PRECIPITATION ESTIMATES	
Storm-Event (yr)	Rainfall (in)
2	3.24
10	4.91
25	6.23
50	7.46

Table 2 - Precipitaytion Estimates

Time of Concentration is the time it takes for water to flow from the most hydraulically remote point to the watershed outlet following the route that takes the longest watercourse length. This time is determined by calculating the time it takes runoff to travel this route under one of three hydrologic conditions: sheet flow, shallow concentrated flow or channel flow. Because the Intensity-Duration-Frequency (IDF) curve is steep with short T_C's, estimating the actual intensity is subject to error and

[1] HydroCAD version 10.00, HydroCAD Software Solutions LLC, Chocorua, NH, 2013.
[2] New Hampshire Stormwater Manual: Volume One - Stormwater and Antidegradation, December 2008; Volume Two - Post-Construction Best Management Practices Selection and Design, December 2008; Volume Three - Erosion and Sediment Controls During Construction, December 2008.

overestimates actual runoff. Due to this, the T_C's are adjusted to a minimum of 5 minutes.

The National Resources Conservation Service (NRCS) Web Soil shows the soil in the area to be developed as being (799) Urban land – Canton complex, 3 to 8 percent slopes, with a listed hydrologic soil group (HSG) rating of Type A. HSG are soils grouped by similar runoff potential undergoing similar storm and cover conditions. When Type A soil are thoroughly wet they have high infiltration rates (low runoff potential). These soils are mostly deep, well drained to excessively drained sands or gravelly sands. They have a high rate of water transmission. A small portion of (699) Urban land exists along the norther edge of the property where it abuts Albany Street. This is not being developed and was not analyzed. See Appendix G for more detail.

The default infiltration rates were determined using per NHDES rule ENV-Wq 1504.14, using SSSNNE Special Publication No. 5, K_{sat} Values for New Hampshire Soils, September 2009. The lowest K_{sat} value in the range for the most limiting layer located 0 to 5 feet below the proposed bottom of the practice was determined. The design K_{sat} was calculated using ½ this value.

The area where infiltration is being used to treat the stormwater is under the Stormtech #2 System. The soils here was a 135 Chatfield Variant-Newfields Complex and a Chatfield-Hollis Rock Outcrop Variant. The Hollis, Chatfield, Chatfield Variant and the Newfields Complex have a low K_{sat} rate of 0.6 in/hr. The design K_{sat} was calculates as 0.3 in/hr.

Test Pits 5037, 6, and 5038b and 2-A were excavated in this area. The Estimated Seasonal High Water Table (ESHWT) were encountered at 44.9, 47.5 and 47.5 respectively. Bedrock was encountered below this at 44.9, 45.8 and 46.6. The bottom of the stormtech system was set 3' above the highest recorded ESHWT

4.0 – PRE-DEVELOPMENT CONDITION

There are nine watershed areas that have been used to identify the pre-development conditions. The pre-development watersheds are depicted on the attached plan entitled "Pre-Development Drainage Plan," Appendix I - Sheet D-1.

Except for a small portion in the northeast corner of the lot, stormwater from offsite and onsite drain to two 'valleys' in the property. The first of these areas is orientated in a north/south direction near the middle of the property. The second area is orientated in the east/west direction, just north of Banfield Road. Wetlands exists in both of these areas.

The two low areas direct the water to two culverts near the middle of the property that direct water under Banfield road to the property to the south of Banfield Road.

See Table 1 for Pre-development Stormwater Flows Offsite. Appendix A in this Drainage Study documents the peak runoff rates. Appendix B and C in this Drainage Study documents the computations for these peak stormwater flows.

5.0 – POST-DEVELOPMENT CONDITION

There are 22 drainage areas that have been used to define identify the post development conditions. Post-development watershed areas are depicted on the attached plan entitled "Post-Development Drainage Plan," Appendix I - Sheet D-2.

Table 1 summarizes the Post-Development Stormwater Flows Offsite for the 2-year, 10-year, 25-year and 50-year Type III storm events for the watershed areas. Appendix A in this Drainage Study documents the peak runoff rates. Appendix D and E in this Drainage Study documents the computations for these peak stormwater flows.

One bioretention area and two underground treatment areas (Stormtech Systems) will treat the stormwater from the road, as well as a portion of the drives and roofs. The remainder of the roof runoff will be treated by the buffers. A forebay near the front of the island in the cul-de-sac will provide pretreatment prior to the water entering the Bioretention Area 1. Isolator rows will be used to pretreat runoff entering the Stormtech Systems. Stormtech System #2 will infiltrate stormwater back into the existing ground. Biorention Area #1 and Stormtech System #1 will filter the water through engineered media to treat the stormwater.

For a 2-Year storm event, there is little change in the flow characteristics of the stormwater leaving the site. Similar to the pre-development condition, most of the water on the property will infiltrate into the ground to recharge the water table.

For all the storm events analyzed, the runoff from site remains the same or a slight increase than the existing runoff. The proposed storm flows will have no adverse effects on the abutting properties.

Table 3 - Post Development Stormwater Flows Offsite

6.0 – BMP EFFICIENCIES

Appendix B of Volume 2 of the New Hampshire Stormwater [3] list the pollutant removal efficiencies of various BMP's. The bioretention area and filtration practices are listed as having a 90% efficiency for removing Total Suspended Solids (TSS) and 65% efficiencies in removing Total Nitrogen (TN) and Total Phosphorous (TP). The infiltration practice is listed as having a 90% efficiency for removing Total Suspended

[3] New Hampshire Stormwater Manual: Volume One - Stormwater and Antidegradation, December 2008; Volume Two - Post-Construction Best Management Practices Selection and Design, December 2008; Volume Three - Erosion and Sediment Controls During Construction, December 2008.

Solids (TSS) and 60% efficiencies in removing Total Nitrogen (TN) and 65% efficiencies in removing Total Phosphorous (TP).

7.0 – LOW IMPACT DESIGN

Low Impact Design (LID) is utilized in the design and implementation of this project. This site is laid out to provide the maximum greenspace for the proposed development. The total are of the lot is 44.884 acre (1,955,150 sf). The total proposed disturbed area is 7.591 acres (330,672 sf) or 17% of the lot. The total impervious area on the lot, including roofs, is 2.228 acres (97,030 sf). This is only 5% impervious cover on the lot.

The original lot had 28' wide roadway (tw0 12' lanes and a 4' walkway) and a cul-de-sac was reduce from having and exterior 90' arc to a exterior 60' arc. This totaled approximately 16,400 sf or 35% reduction in impervious roadway.

The impervious roadway is being captured and treated using the Bioretention Area #1 is using soil and plant based media to filter and treat the stormwater. The Stormtech #1 system is using engineered soil to treat and attenuate stormwater flows. Stormtech System #2 is being used to treat and infiltrate the stormwater back into the ground. Refer to section 6 for the pollutant efficiency removal rates.

Groundwater is being recharged in the infiltration of stormwater back into the ground in the Stormtech #2. In the April 2009 article titled "Managing Stormwater with Low Impact Development Practices: Addressing Barriers to LID" it speaks of LID's as "practices that manage stormwater by minimizing impervious cover and by using natural or man-made systems to filter and recharge stormwater into the ground. Roads, parking lots, and other types of impervious cover are the most significant contributors to stormwater runoff".

The project has been designed to treat and infiltrate stormwater back into the ground, which is an excellent use of Low Impact Design.

8.0 – BEST MANAGEMENT PRACTICES

All soil erosion and sediment control measures shall be in accordance with regulations and principles as outlined in the *New Hampshire Stormwater Manual, Volumes Two and Three, December 2008*. The intent of the outlined measures is to minimize erosion and sedimentation during construction, stabilize and protect the site from erosion after construction is complete and mitigate any adverse impacts to stormwater quality resulting from development. Best Management Practices for this project include:

- Temporary practices to be implemented during construction.

- Permanent practices to be implemented after construction.

8.1 – Temporary Practices:

1. Erosion, sediment, and stormwater detention measures must be installed as directed by the engineer.

2. All disturbed areas, as well as loam stockpiles, shall be seeded and contained by a silt barrier.

3. Silt barriers must be installed prior to any construction commencing. All erosion control devices including silt barriers and storm drain inlet filters shall be inspected at least once per week and following any rainfall. All necessary maintenance shall be completed within twenty-four (24) hours.

4. Any silt barriers found to be failing must be replaced immediately. Sediment is to be removed from behind the silt fence if found to be one-third the height of the silt barrier or greater.

5. Any area of the site, which has been disturbed and where construction activity will not occur for more than twenty-one (21) days, shall be temporarily stabilized by mulching and seeding.

6. No construction materials shall be buried on-site.

7. After all areas have been stabilized, temporary practices are to be removed, and the area they are removed from must be smoothed and revegetated.

8. Areas must be temporarily stabilized within 14 days of disturbance, or seeded and mulched within 3 days of final stabilization.

9. After November 15th, incomplete driveways or parking areas must be protected with a minimum of 3" of crushed gravel, meeting the standards of NHDOT item 304.3.

10. An area is considered stabilized if it has met one of the following:

    a) A minimum of 85% vegetative growth has been established.
    b) Base course gravel has been installed in areas to be paved.
    c) Stone, rip rap, or any other non-erosive material has been installed with a minimum thickness of 3".
    d) Erosion control blankets have been installed.

8.2 – Permanent Practices:

The objectives for developing permanent Best Management Practices for this site include the following:

1. Maintain existing runoff flow characteristics.
    a) Drainage is structured to minimize any offsite increase in runoff

2. Treatment BMP's are established to ensure the water quality.

3. Maintenance schedules are set to safeguard the long term working of the stormwater BMP's.

8.0 – CONCLUSION

We recognize the increases in runoff in the 25 and 50-year frequency storm events and will have these eliminated prior to final approval. The proposed development of the lot located at 0 Banfield Road, Portsmouth, NH, will have no adverse effects on surrounding properties. There will be little to not change stormwater runoff characteristics for the lot. Appropriate erosion and sediment control practices will be implemented to reduce possible erosion and siltation. Best Management Practices will be developed in accordance with the *New Hampshire Stormwater Manual, Volumes Two and Three, December 2008* to formulate a plan that assures stormwater quality both during and after construction.

Submitted by,

MSC a division of TFMoran, Inc.

Jack McTigue, PE

Project Manager

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APPENDIX A – Extreme Precipitation Tables

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Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.793 degrees West
Latitude	43.041 degrees North
Elevation	0 feet
Date/Time	Tue, 22 Oct 2019 08:54:52 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.82	1.04	**1yr**	0.71	0.98	1.22	1.57	2.04	2.68	2.95	**1yr**	2.37	2.83	3.25	3.97	4.59	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.52	1.95	2.50	3.24	3.60	**2yr**	2.86	3.46	3.97	4.71	5.36	**2yr**
5yr	0.37	0.58	0.73	0.98	1.25	1.61	**5yr**	1.08	1.47	1.89	2.44	3.16	4.10	4.62	**5yr**	3.63	4.44	5.08	5.98	6.76	**5yr**
10yr	0.41	0.65	0.82	1.12	1.45	1.90	**10yr**	1.25	1.73	2.24	2.91	3.77	4.91	5.58	**10yr**	4.35	5.36	6.14	7.17	8.05	**10yr**
25yr	0.48	0.76	0.97	1.34	1.78	2.35	**25yr**	1.54	2.15	2.79	3.65	4.77	6.23	7.16	**25yr**	5.51	6.89	7.88	9.12	10.15	**25yr**
50yr	0.54	0.86	1.10	1.54	2.08	2.77	**50yr**	1.79	2.53	3.30	4.35	5.71	7.46	8.67	**50yr**	6.61	8.33	9.53	10.93	12.10	**50yr**
100yr	0.60	0.97	1.25	1.78	2.43	3.27	**100yr**	2.09	2.99	3.92	5.19	6.82	8.95	10.48	**100yr**	7.92	10.08	11.52	13.11	14.43	**100yr**
200yr	0.68	1.11	1.43	2.05	2.84	3.85	**200yr**	2.45	3.53	4.64	6.17	8.15	10.72	12.68	**200yr**	9.49	12.19	13.94	15.74	17.21	**200yr**
500yr	0.80	1.32	1.72	2.50	3.49	4.79	**500yr**	3.01	4.40	5.80	7.76	10.31	13.63	16.31	**500yr**	12.07	15.69	17.92	20.04	21.75	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.72	0.89	**1yr**	0.63	0.87	0.92	1.32	1.67	2.25	2.57	**1yr**	1.99	2.47	2.88	3.16	3.92	**1yr**
2yr	0.32	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.37	1.82	2.34	3.08	3.49	**2yr**	2.73	3.36	3.86	4.59	5.11	**2yr**
5yr	0.35	0.54	0.67	0.92	1.18	1.41	**5yr**	1.01	1.38	1.61	2.12	2.73	3.83	4.26	**5yr**	3.39	4.09	4.77	5.61	6.32	**5yr**
10yr	0.39	0.60	0.74	1.03	1.33	1.61	**10yr**	1.15	1.57	1.81	2.39	3.06	4.43	4.96	**10yr**	3.92	4.77	5.55	6.52	7.31	**10yr**
25yr	0.44	0.67	0.84	1.20	1.58	1.91	**25yr**	1.36	1.87	2.10	2.76	3.54	4.76	6.03	**25yr**	4.21	5.80	6.82	7.97	8.84	**25yr**
50yr	0.49	0.74	0.92	1.33	1.79	2.18	**50yr**	1.54	2.13	2.35	3.07	3.94	5.38	6.99	**50yr**	4.76	6.73	7.97	9.28	10.23	**50yr**
100yr	0.54	0.82	1.03	1.49	2.04	2.49	**100yr**	1.76	2.43	2.63	3.42	4.36	6.05	8.11	**100yr**	5.36	7.79	9.33	10.81	11.82	**100yr**
200yr	0.60	0.91	1.15	1.66	2.32	2.84	**200yr**	2.00	2.77	2.94	3.78	4.82	6.79	9.40	**200yr**	6.01	9.03	10.92	12.62	13.69	**200yr**
500yr	0.70	1.04	1.34	1.95	2.78	3.39	**500yr**	2.40	3.32	3.42	4.32	5.50	7.92	11.42	**500yr**	7.01	10.98	13.45	15.51	16.59	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.29	0.44	0.54	0.72	0.89	1.09	**1yr**	0.77	1.06	1.26	1.74	2.20	3.02	3.16	**1yr**	2.67	3.04	3.61	4.40	5.09	**1yr**
2yr	0.34	0.52	0.64	0.86	1.07	1.27	**2yr**	0.92	1.24	1.48	1.96	2.51	3.45	3.71	**2yr**	3.06	3.57	4.10	4.86	5.68	**2yr**
5yr	0.40	0.62	0.77	1.05	1.34	1.62	**5yr**	1.15	1.59	1.88	2.53	3.24	4.37	4.97	**5yr**	3.87	4.78	5.41	6.39	7.17	**5yr**
10yr	0.47	0.72	0.89	1.25	1.61	1.98	**10yr**	1.39	1.93	2.28	3.10	3.93	5.38	6.19	**10yr**	4.76	5.96	6.79	7.85	8.76	**10yr**
25yr	0.58	0.88	1.09	1.56	2.05	2.57	**25yr**	1.77	2.51	2.95	4.06	5.12	7.86	8.30	**25yr**	6.95	7.98	9.07	10.33	11.41	**25yr**
50yr	0.67	1.02	1.27	1.83	2.46	3.13	**50yr**	2.12	3.06	3.59	4.98	6.27	9.84	10.38	**50yr**	8.71	9.98	11.30	12.71	13.95	**50yr**
100yr	0.79	1.19	1.49	2.16	2.96	3.81	**100yr**	2.55	3.73	4.36	6.13	7.69	12.31	12.97	**100yr**	10.90	12.47	14.07	15.65	17.05	**100yr**
200yr	0.92	1.39	1.76	2.55	3.55	4.65	**200yr**	3.07	4.55	5.32	7.55	9.44	15.45	16.23	**200yr**	13.67	15.61	17.54	19.27	20.86	**200yr**
500yr	1.14	1.70	2.19	3.18	4.52	6.04	**500yr**	3.90	5.90	6.90	9.97	12.40	20.87	21.84	**500yr**	18.47	21.00	23.47	25.36	27.25	**500yr**

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APPENDIX B – PRE DRAINAGE

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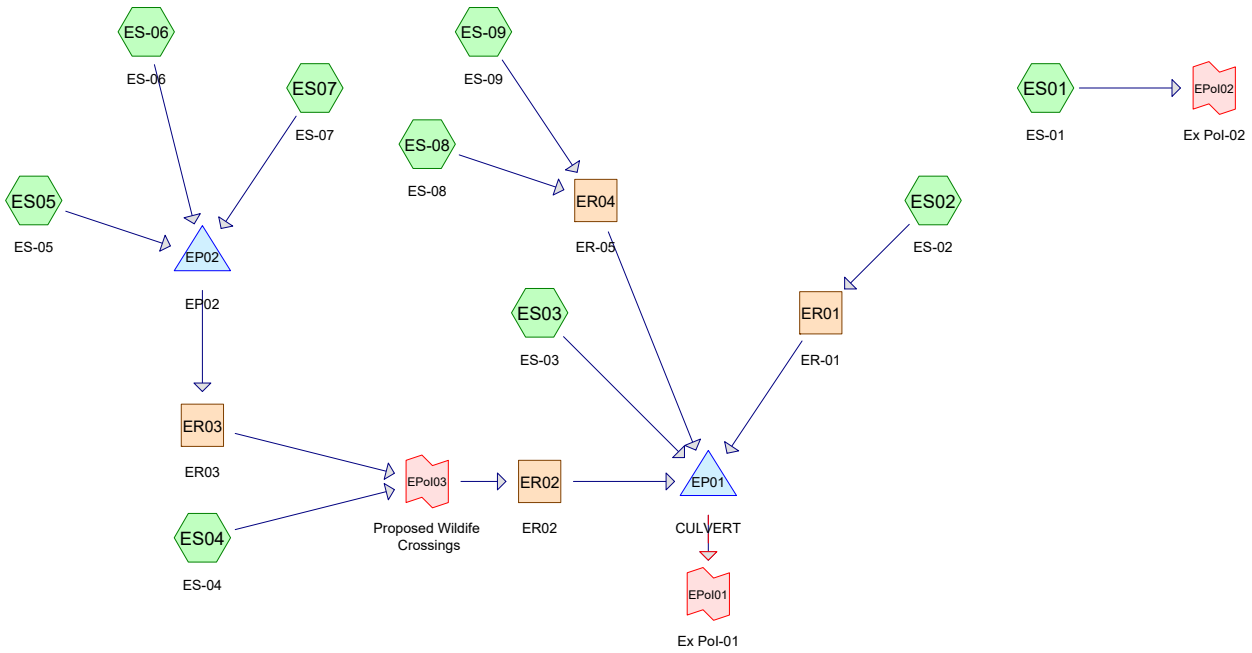
PRE-DEVELOPMENT DRAINAGE



Subcat Reach Pond Link

Routing Diagram for 477361-00_PRE-&-POST_2019-12-23
Prepared by {enter your company name here}, Printed 12/26/2019
HydroCAD® 10.00-25 s/n 00866 © 2019 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
193,756	48	Brush, Good, HSG B (ES-06, ES-08, ES-09, ES01, ES02, ES03, ES04, ES05, ES07)
533,404	65	Brush, Good, HSG C (ES01, ES02, ES03, ES04, ES05)
49,454	73	Brush, Good, HSG D (ES-08, ES-09)
29,191	82	Dirt roads, HSG B (ES-09, ES03)
94,776	87	Dirt roads, HSG C (ES-08, ES-09, ES03)
7,821	98	Paved parking, HSG B (ES04)
23,298	98	Paved parking, HSG C (ES03, ES04)
1,593,806	55	Woods, Good, HSG B (ES-06, ES-08, ES-09, ES01, ES02, ES03, ES04, ES05, ES07)
474,138	70	Woods, Good, HSG C (ES-08, ES-09, ES01, ES02, ES03, ES04, ES05)
2,999,644	**61**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
1,824,574	HSG B	ES-06, ES-08, ES-09, ES01, ES02, ES03, ES04, ES05, ES07
1,125,616	HSG C	ES-08, ES-09, ES01, ES02, ES03, ES04, ES05
49,454	HSG D	ES-08, ES-09
0	Other	
2,999,644		**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment ES-06: ES-06 Runoff Area=57,815 sf 0.00% Impervious Runoff Depth>0.23"
Flow Length=374' Tc=29.7 min CN=54 Runoff=0.1 cfs 1,114 cf

Subcatchment ES-08: ES-08 Runoff Area=202,445 sf 0.00% Impervious Runoff Depth>0.45"
Flow Length=695' Tc=37.3 min CN=61 Runoff=0.9 cfs 7,657 cf

Subcatchment ES-09: ES-09 Runoff Area=1,037,949 sf 0.00% Impervious Runoff Depth>0.41"
Flow Length=1,835' Tc=75.9 min CN=60 Runoff=2.7 cfs 35,504 cf

Subcatchment ES01: ES-01 Runoff Area=59,626 sf 0.00% Impervious Runoff Depth>0.53"
Flow Length=415' Tc=53.2 min CN=63 Runoff=0.3 cfs 2,618 cf

Subcatchment ES02: ES-02 Runoff Area=501,769 sf 0.00% Impervious Runoff Depth>0.31"
Flow Length=740' Tc=95.8 min CN=57 Runoff=0.8 cfs 12,885 cf

Subcatchment ES03: ES-03 Runoff Area=502,318 sf 2.45% Impervious Runoff Depth>0.70"
Flow Length=800' Tc=40.5 min CN=67 Runoff=4.0 cfs 29,259 cf

Subcatchment ES04: ES-04 Runoff Area=477,519 sf 3.94% Impervious Runoff Depth>0.49"
Flow Length=1,231' Tc=53.0 min CN=62 Runoff=2.0 cfs 19,425 cf

Subcatchment ES05: ES-05 Runoff Area=117,704 sf 0.00% Impervious Runoff Depth>0.23"
Flow Length=350' Slope=0.0200 '/' Tc=43.1 min CN=54 Runoff=0.2 cfs 2,251 cf

Subcatchment ES07: ES-07 Runoff Area=42,499 sf 0.00% Impervious Runoff Depth>0.23"
Flow Length=250' Tc=27.5 min CN=54 Runoff=0.1 cfs 820 cf

Reach ER01: ER-01 Avg. Flow Depth=0.02' Max Vel=0.20 fps Inflow=0.8 cfs 12,885 cf
n=0.050 L=537.0' S=0.0065 '/' Capacity=1,413.2 cfs Outflow=0.6 cfs 12,088 cf

Reach ER02: ER02 Avg. Flow Depth=0.05' Max Vel=0.20 fps Inflow=2.0 cfs 19,425 cf
n=0.080 L=635.0' S=0.0058 '/' Capacity=703.8 cfs Outflow=1.2 cfs 17,837 cf

Reach ER03: ER03 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.0 cfs 0 cf
n=0.080 L=981.0' S=0.0180 '/' Capacity=1,122.7 cfs Outflow=0.0 cfs 0 cf

Reach ER04: ER-05 Avg. Flow Depth=0.05' Max Vel=0.34 fps Inflow=3.2 cfs 43,160 cf
n=0.080 L=682.0' S=0.0161 '/' Capacity=2,431.4 cfs Outflow=2.7 cfs 41,218 cf

Pond EP01: CULVERT Peak Elev=23.39' Storage=1,313 cf Inflow=5.1 cfs 100,402 cf
Primary=5.1 cfs 100,114 cf Secondary=0.0 cfs 0 cf Outflow=5.1 cfs 100,114 cf

Pond EP02: EP02 Peak Elev=43.33' Storage=4,182 cf Inflow=0.3 cfs 4,185 cf
Outflow=0.0 cfs 0 cf

Link EPoI01: Ex PoI-01 Inflow=5.1 cfs 100,114 cf
Primary=5.1 cfs 100,114 cf

Link EPoI02: Ex PoI-02 Inflow=0.3 cfs 2,618 cf
Primary=0.3 cfs 2,618 cf

Link EPoI03: Proposed Wildife Crossings Inflow=2.0 cfs 19,425 cf
Primary=2.0 cfs 19,425 cf

Total Runoff Area = 2,999,644 sf Runoff Volume = 111,532 cf Average Runoff Depth = 0.45"
98.96% Pervious = 2,968,525 sf 1.04% Impervious = 31,119 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment ES-06: ES-06 Runoff Area=57,815 sf 0.00% Impervious Runoff Depth>0.87"
Flow Length=374' Tc=29.7 min CN=54 Runoff=0.6 cfs 4,182 cf

Subcatchment ES-08: ES-08 Runoff Area=202,445 sf 0.00% Impervious Runoff Depth>1.30"
Flow Length=695' Tc=37.3 min CN=61 Runoff=3.3 cfs 21,951 cf

Subcatchment ES-09: ES-09 Runoff Area=1,037,949 sf 0.00% Impervious Runoff Depth>1.22"
Flow Length=1,835' Tc=75.9 min CN=60 Runoff=10.4 cfs 105,420 cf

Subcatchment ES01: ES-01 Runoff Area=59,626 sf 0.00% Impervious Runoff Depth>1.43"
Flow Length=415' Tc=53.2 min CN=63 Runoff=0.9 cfs 7,106 cf

Subcatchment ES02: ES-02 Runoff Area=501,769 sf 0.00% Impervious Runoff Depth>1.02"
Flow Length=740' Tc=95.8 min CN=57 Runoff=3.5 cfs 42,714 cf

Subcatchment ES03: ES-03 Runoff Area=502,318 sf 2.45% Impervious Runoff Depth>1.72"
Flow Length=800' Tc=40.5 min CN=67 Runoff=11.0 cfs 72,103 cf

Subcatchment ES04: ES-04 Runoff Area=477,519 sf 3.94% Impervious Runoff Depth>1.36"
Flow Length=1,231' Tc=53.0 min CN=62 Runoff=6.8 cfs 54,186 cf

Subcatchment ES05: ES-05 Runoff Area=117,704 sf 0.00% Impervious Runoff Depth>0.86"
Flow Length=350' Slope=0.0200 '/' Tc=43.1 min CN=54 Runoff=1.0 cfs 8,470 cf

Subcatchment ES07: ES-07 Runoff Area=42,499 sf 0.00% Impervious Runoff Depth>0.87"
Flow Length=250' Tc=27.5 min CN=54 Runoff=0.5 cfs 3,076 cf

Reach ER01: ER-01 Avg. Flow Depth=0.06' Max Vel=0.37 fps Inflow=3.5 cfs 42,714 cf
n=0.050 L=537.0' S=0.0065 '/' Capacity=1,413.2 cfs Outflow=3.2 cfs 41,238 cf

Reach ER02: ER02 Avg. Flow Depth=0.13' Max Vel=0.36 fps Inflow=6.8 cfs 60,741 cf
n=0.080 L=635.0' S=0.0058 '/' Capacity=703.8 cfs Outflow=5.3 cfs 57,681 cf

Reach ER03: ER03 Avg. Flow Depth=0.02' Max Vel=0.18 fps Inflow=0.4 cfs 8,010 cf
n=0.080 L=981.0' S=0.0180 '/' Capacity=1,122.7 cfs Outflow=0.3 cfs 6,555 cf

Reach ER04: ER-05 Avg. Flow Depth=0.13' Max Vel=0.60 fps Inflow=12.1 cfs 127,371 cf
n=0.080 L=682.0' S=0.0161 '/' Capacity=2,431.4 cfs Outflow=11.4 cfs 123,828 cf

Pond EP01: CULVERT Peak Elev=25.00' Storage=20,869 cf Inflow=21.6 cfs 294,850 cf
Primary=17.5 cfs 294,308 cf Secondary=0.0 cfs 0 cf Outflow=17.5 cfs 294,308 cf

Pond EP02: EP02 Peak Elev=43.57' Storage=8,134 cf Inflow=2.0 cfs 15,728 cf
Outflow=0.4 cfs 8,010 cf

Link EPol01: Ex Pol-01 Inflow=17.5 cfs 294,308 cf
Primary=17.5 cfs 294,308 cf

Link EPoI02: Ex PoI-02 Inflow=0.9 cfs 7,106 cf
Primary=0.9 cfs 7,106 cf

Link EPoI03: Proposed Wildife Crossings Inflow=6.8 cfs 60,741 cf
Primary=6.8 cfs 60,741 cf

Total Runoff Area = 2,999,644 sf Runoff Volume = 319,208 cf Average Runoff Depth = 1.28"
98.96% Pervious = 2,968,525 sf 1.04% Impervious = 31,119 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment ES-06: ES-06 Runoff Area=57,815 sf 0.00% Impervious Runoff Depth>1.56"
Flow Length=374' Tc=29.7 min CN=54 Runoff=1.2 cfs 7,501 cf

Subcatchment ES-08: ES-08 Runoff Area=202,445 sf 0.00% Impervious Runoff Depth>2.14"
Flow Length=695' Tc=37.3 min CN=61 Runoff=5.7 cfs 36,105 cf

Subcatchment ES-09: ES-09 Runoff Area=1,037,949 sf 0.00% Impervious Runoff Depth>2.03"
Flow Length=1,835' Tc=75.9 min CN=60 Runoff=18.5 cfs 175,528 cf

Subcatchment ES01: ES-01 Runoff Area=59,626 sf 0.00% Impervious Runoff Depth>2.31"
Flow Length=415' Tc=53.2 min CN=63 Runoff=1.5 cfs 11,461 cf

Subcatchment ES02: ES-02 Runoff Area=501,769 sf 0.00% Impervious Runoff Depth>1.76"
Flow Length=740' Tc=95.8 min CN=57 Runoff=6.5 cfs 73,761 cf

Subcatchment ES03: ES-03 Runoff Area=502,318 sf 2.45% Impervious Runoff Depth>2.68"
Flow Length=800' Tc=40.5 min CN=67 Runoff=17.6 cfs 112,156 cf

Subcatchment ES04: ES-04 Runoff Area=477,519 sf 3.94% Impervious Runoff Depth>2.22"
Flow Length=1,231' Tc=53.0 min CN=62 Runoff=11.7 cfs 88,267 cf

Subcatchment ES05: ES-05 Runoff Area=117,704 sf 0.00% Impervious Runoff Depth>1.55"
Flow Length=350' Slope=0.0200 '/' Tc=43.1 min CN=54 Runoff=2.1 cfs 15,204 cf

Subcatchment ES07: ES-07 Runoff Area=42,499 sf 0.00% Impervious Runoff Depth>1.56"
Flow Length=250' Tc=27.5 min CN=54 Runoff=0.9 cfs 5,518 cf

Reach ER01: ER-01 Avg. Flow Depth=0.09' Max Vel=0.48 fps Inflow=6.5 cfs 73,761 cf
n=0.050 L=537.0' S=0.0065 '/' Capacity=1,413.2 cfs Outflow=6.2 cfs 71,779 cf

Reach ER02: ER02 Avg. Flow Depth=0.19' Max Vel=0.45 fps Inflow=11.7 cfs 106,863 cf
n=0.080 L=635.0' S=0.0058 '/' Capacity=703.8 cfs Outflow=9.8 cfs 103,103 cf

Reach ER03: ER03 Avg. Flow Depth=0.04' Max Vel=0.28 fps Inflow=2.0 cfs 20,408 cf
n=0.080 L=981.0' S=0.0180 '/' Capacity=1,122.7 cfs Outflow=1.1 cfs 18,596 cf

Reach ER04: ER-05 Avg. Flow Depth=0.18' Max Vel=0.75 fps Inflow=21.4 cfs 211,633 cf
n=0.080 L=682.0' S=0.0161 '/' Capacity=2,431.4 cfs Outflow=20.6 cfs 207,252 cf

Pond EP01: CULVERT Peak Elev=25.80' Storage=89,940 cf Inflow=40.1 cfs 494,290 cf
Primary=22.0 cfs 493,547 cf Secondary=0.0 cfs 0 cf Outflow=22.0 cfs 493,547 cf

Pond EP02: EP02 Peak Elev=43.63' Storage=9,395 cf Inflow=4.0 cfs 28,223 cf
Outflow=2.0 cfs 20,408 cf

Link EPoI01: Ex PoI-01 Inflow=22.0 cfs 493,547 cf
Primary=22.0 cfs 493,547 cf

Link EPoI02: Ex PoI-02 Inflow=1.5 cfs 11,461 cf
Primary=1.5 cfs 11,461 cf

Link EPoI03: Proposed Wildife Crossings Inflow=11.7 cfs 106,863 cf
Primary=11.7 cfs 106,863 cf

Total Runoff Area = 2,999,644 sf Runoff Volume = 525,501 cf Average Runoff Depth = 2.10"
98.96% Pervious = 2,968,525 sf 1.04% Impervious = 31,119 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment ES-06: ES-06 Runoff Area=57,815 sf 0.00% Impervious Runoff Depth>2.30"
Flow Length=374' Tc=29.7 min CN=54 Runoff=1.9 cfs 11,095 cf

Subcatchment ES-08: ES-08 Runoff Area=202,445 sf 0.00% Impervious Runoff Depth>3.01"
Flow Length=695' Tc=37.3 min CN=61 Runoff=8.3 cfs 50,804 cf

Subcatchment ES-09: ES-09 Runoff Area=1,037,949 sf 0.00% Impervious Runoff Depth>2.88"
Flow Length=1,835' Tc=75.9 min CN=60 Runoff=27.0 cfs 248,777 cf

Subcatchment ES01: ES-01 Runoff Area=59,626 sf 0.00% Impervious Runoff Depth>3.21"
Flow Length=415' Tc=53.2 min CN=63 Runoff=2.2 cfs 15,940 cf

Subcatchment ES02: ES-02 Runoff Area=501,769 sf 0.00% Impervious Runoff Depth>2.55"
Flow Length=740' Tc=95.8 min CN=57 Runoff=9.8 cfs 106,782 cf

Subcatchment ES03: ES-03 Runoff Area=502,318 sf 2.45% Impervious Runoff Depth>3.65"
Flow Length=800' Tc=40.5 min CN=67 Runoff=24.2 cfs 152,579 cf

Subcatchment ES04: ES-04 Runoff Area=477,519 sf 3.94% Impervious Runoff Depth>3.10"
Flow Length=1,231' Tc=53.0 min CN=62 Runoff=16.7 cfs 123,487 cf

Subcatchment ES05: ES-05 Runoff Area=117,704 sf 0.00% Impervious Runoff Depth>2.29"
Flow Length=350' Slope=0.0200 '/' Tc=43.1 min CN=54 Runoff=3.3 cfs 22,498 cf

Subcatchment ES07: ES-07 Runoff Area=42,499 sf 0.00% Impervious Runoff Depth>2.30"
Flow Length=250' Tc=27.5 min CN=54 Runoff=1.5 cfs 8,161 cf

Reach ER01: ER-01 Avg. Flow Depth=0.12' Max Vel=0.56 fps Inflow=9.8 cfs 106,782 cf
n=0.050 L=537.0' S=0.0065 '/' Capacity=1,413.2 cfs Outflow=9.5 cfs 104,513 cf

Reach ER02: ER02 Avg. Flow Depth=0.24' Max Vel=0.52 fps Inflow=16.7 cfs 155,221 cf
n=0.080 L=635.0' S=0.0058 '/' Capacity=703.8 cfs Outflow=14.5 cfs 150,909 cf

Reach ER03: ER03 Avg. Flow Depth=0.06' Max Vel=0.39 fps Inflow=4.6 cfs 33,864 cf
n=0.080 L=981.0' S=0.0180 '/' Capacity=1,122.7 cfs Outflow=2.6 cfs 31,734 cf

Reach ER04: ER-05 Avg. Flow Depth=0.23' Max Vel=0.88 fps Inflow=31.2 cfs 299,582 cf
n=0.080 L=682.0' S=0.0161 '/' Capacity=2,431.4 cfs Outflow=30.4 cfs 294,553 cf

Pond EP01: CULVERT Peak Elev=26.15' Storage=154,639 cf Inflow=59.7 cfs 702,554 cf
Primary=23.7 cfs 629,942 cf Secondary=14.3 cfs 71,647 cf Outflow=38.0 cfs 701,589 cf

Pond EP02: EP02 Peak Elev=43.71' Storage=10,912 cf Inflow=6.3 cfs 41,754 cf
Outflow=4.6 cfs 33,864 cf

Link EPoI01: Ex PoI-01 Inflow=38.0 cfs 701,589 cf
Primary=38.0 cfs 701,589 cf

Link EPoI02: Ex PoI-02 Inflow=2.2 cfs 15,940 cf
Primary=2.2 cfs 15,940 cf

Link EPoI03: Proposed Wildife Crossings Inflow=16.7 cfs 155,221 cf
Primary=16.7 cfs 155,221 cf

Total Runoff Area = 2,999,644 sf Runoff Volume = 740,125 cf Average Runoff Depth = 2.96"
98.96% Pervious = 2,968,525 sf 1.04% Impervious = 31,119 sf

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APPENDIX C – PRE DRAINAGE (10 Yr Storm Event)

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Summary for Subcatchment ES-06: ES-06

Runoff = 0.6 cfs @ 12.52 hrs, Volume= 4,182 cf, Depth> 0.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
53,080	55	Woods, Good, HSG B
4,735	48	Brush, Good, HSG B
57,815	54	Weighted Average
57,815		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.8	100	0.0500	0.06		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.23"
3.9	274	0.0550	1.17		**Shallow Concentrated Flow, Shallow Channel** Woodland Kv= 5.0 fps
29.7	374	Total			

Summary for Subcatchment ES-08: ES-08

Runoff = 3.3 cfs @ 12.58 hrs, Volume= 21,951 cf, Depth> 1.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
118,122	55	Woods, Good, HSG B
9,358	48	Brush, Good, HSG B
34,901	70	Woods, Good, HSG C
4,004	87	Dirt roads, HSG C
36,060	73	Brush, Good, HSG D
202,445	61	Weighted Average
202,445		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.2	100	0.0400	0.06		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.23"
8.7	505	0.0378	0.97		**Shallow Concentrated Flow, Shallow Channel** Woodland Kv= 5.0 fps
0.4	90	0.0156	3.35	1,072.87	**Channel Flow, Channel Flow** Area= 320.0 sf Perim= 184.2' r= 1.74' n= 0.080 Earth, long dense weeds
37.3	695	Total			

Summary for Subcatchment ES-09: ES-09

Runoff = 10.4 cfs @ 13.12 hrs, Volume= 105,420 cf, Depth> 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
683,123	55	Woods, Good, HSG B
28,491	82	Dirt roads, HSG B
38,028	48	Brush, Good, HSG B
245,080	70	Woods, Good, HSG C
29,833	87	Dirt roads, HSG C
13,394	73	Brush, Good, HSG D
1,037,949	60	Weighted Average
1,037,949		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.6	100	0.0300	0.05		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.23"
15.1	808	0.0320	0.89		**Shallow Concentrated Flow, Shallow Channel** Woodland Kv= 5.0 fps
27.1	515	0.0040	0.32		**Shallow Concentrated Flow, Shallow Channel** Woodland Kv= 5.0 fps
2.1	412	0.0170	3.28	594.29	**Channel Flow, Channel Flow** Area= 181.4 sf Perim= 115.3' r= 1.57' n= 0.080 Earth, long dense weeds
75.9	1,835	Total			

Summary for Subcatchment ES01: ES-01

Runoff = 0.9 cfs @ 12.79 hrs, Volume= 7,106 cf, Depth> 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
22,538	55	Woods, Good, HSG B
1,033	48	Brush, Good, HSG B
19,283	70	Woods, Good, HSG C
16,772	65	Brush, Good, HSG C
59,626	63	Weighted Average
59,626		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
49.1	100	0.0100	0.03		**Sheet Flow, Sheet-Flow** Woods: Dense underbrush n= 0.800 P2= 3.23"
3.4	205	0.0400	1.00		**Shallow Concentrated Flow, Shallow Concentrated** Woodland Kv= 5.0 fps
0.7	110	0.0100	2.68	374.84	**Channel Flow, Channel Flow** Area= 140.0 sf Perim= 80.9' r= 1.73' n= 0.080 Earth, long dense weeds
53.2	415	Total			

Summary for Subcatchment ES02: ES-02

Runoff = 3.5 cfs @ 13.48 hrs, Volume= 42,714 cf, Depth> 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
266,948	55	Woods, Good, HSG B
82,830	48	Brush, Good, HSG B
22,446	70	Woods, Good, HSG C
129,545	65	Brush, Good, HSG C
501,769	57	Weighted Average
501,769		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.2	100	0.0200	0.04		**Sheet Flow, Shallow** Woods: Dense underbrush n= 0.800 P2= 3.23"
58.0	550	0.0010	0.16		**Shallow Concentrated Flow, Shallow Channel** Woodland Kv= 5.0 fps
0.6	90	0.0100	2.41	714.05	**Channel Flow, Concentrated** Area= 296.0 sf Perim= 200.0' r= 1.48' n= 0.080 Earth, long dense weeds
95.8	740	Total			

Summary for Subcatchment ES03: ES-03

Runoff = 11.0 cfs @ 12.60 hrs, Volume= 72,103 cf, Depth> 1.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
83,560	55	Woods, Good, HSG B
700	82	Dirt roads, HSG B
16,947	48	Brush, Good, HSG B
88,106	70	Woods, Good, HSG C
60,939	87	Dirt roads, HSG C
12,297	98	Paved parking, HSG C
239,769	65	Brush, Good, HSG C
502,318	67	Weighted Average
490,021		97.55% Pervious Area
12,297		2.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.2	100	0.0400	0.06		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.23"
12.3	700	0.0360	0.95		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
40.5	800	Total			

Summary for Subcatchment ES04: ES-04

Runoff = 6.8 cfs @ 12.79 hrs, Volume= 54,186 cf, Depth> 1.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
229,189	55	Woods, Good, HSG B
18,645	48	Brush, Good, HSG B
7,821	98	Paved parking, HSG B
63,560	70	Woods, Good, HSG C
11,001	98	Paved parking, HSG C
147,303	65	Brush, Good, HSG C
477,519	62	Weighted Average
458,697		96.06% Pervious Area
18,822		3.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.2	100	0.0200	0.04		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.23"
9.7	421	0.0210	0.72		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
6.1	710	0.0070	1.95	699.40	**Channel Flow, Channel Flow** Area= 358.0 sf Perim= 254.0' r= 1.41' n= 0.080 Earth, long dense weeds
53.0	1,231	Total			

Summary for Subcatchment ES05: ES-05

Runoff = 1.0 cfs @ 12.72 hrs, Volume= 8,470 cf, Depth> 0.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
99,579	55	Woods, Good, HSG B
17,348	48	Brush, Good, HSG B
762	70	Woods, Good, HSG C
15	65	Brush, Good, HSG C
117,704	54	Weighted Average
117,704		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.2	100	0.0200	0.04		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.23"
5.9	250	0.0200	0.71		**Shallow Concentrated Flow, Shallow Channel** Woodland Kv= 5.0 fps
43.1	350	Total			

Summary for Subcatchment ES07: ES-07

Runoff = 0.5 cfs @ 12.48 hrs, Volume= 3,076 cf, Depth> 0.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
37,667	55	Woods, Good, HSG B
4,832	48	Brush, Good, HSG B
42,499	54	Weighted Average
42,499		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	100	0.0600	0.07		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.23"
3.5	150	0.0200	0.71		**Shallow Concentrated Flow, Shallow Channel** Woodland Kv= 5.0 fps
27.5	250	Total			

Summary for Reach ER01: ER-01

Inflow Area = 501,769 sf, 0.00% Impervious, Inflow Depth > 1.02" for 10-YR event
Inflow = 3.5 cfs @ 13.48 hrs, Volume= 42,714 cf
Outflow = 3.2 cfs @ 14.17 hrs, Volume= 41,238 cf, Atten= 8%, Lag= 41.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.37 fps, Min. Travel Time= 24.1 min
Avg. Velocity = 0.23 fps, Avg. Travel Time= 39.7 min

Peak Storage= 4,599 cf @ 13.77 hrs
Average Depth at Peak Storage= 0.06'
Bank-Full Depth= 2.00' Flow Area= 470.0 sf, Capacity= 1,413.2 cfs

135.00' x 2.00' deep channel, n= 0.050 Scattered brush, heavy weeds
Side Slope Z-value= 50.0 '/' Top Width= 335.00'
Length= 537.0' Slope= 0.0065 '/'
Inlet Invert= 26.50', Outlet Invert= 23.00'

‡

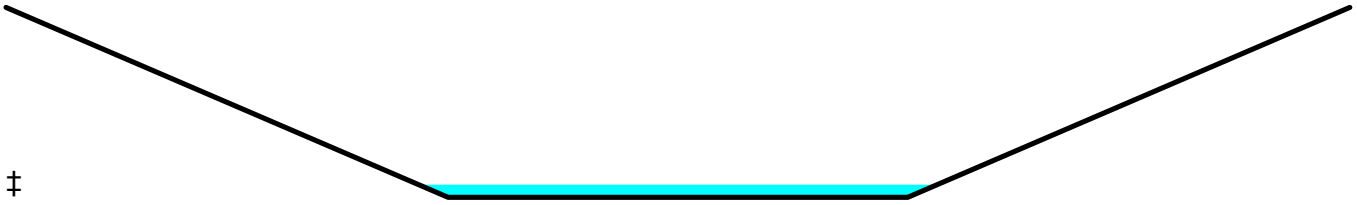
Summary for Reach ER02: ER02

Inflow Area = 695,537 sf, 2.71% Impervious, Inflow Depth > 1.05" for 10-YR event
Inflow = 6.8 cfs @ 12.79 hrs, Volume= 60,741 cf
Outflow = 5.3 cfs @ 13.63 hrs, Volume= 57,681 cf, Atten= 23%, Lag= 49.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.36 fps, Min. Travel Time= 29.7 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 54.3 min

Peak Storage= 9,364 cf @ 13.13 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 2.00' Flow Area= 408.0 sf, Capacity= 703.8 cfs

104.00' x 2.00' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 50.0 '/' Top Width= 304.00'
Length= 635.0' Slope= 0.0058 '/'
Inlet Invert= 25.70', Outlet Invert= 22.00'



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Summary for Reach ER03: ER03

Inflow Area = 218,018 sf, 0.00% Impervious, Inflow Depth > 0.44" for 10-YR event
Inflow = 0.4 cfs @ 14.85 hrs, Volume= 8,010 cf
Outflow = 0.3 cfs @ 18.11 hrs, Volume= 6,555 cf, Atten= 32%, Lag= 195.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.18 fps, Min. Travel Time= 89.4 min
Avg. Velocity = 0.18 fps, Avg. Travel Time= 89.4 min

Peak Storage= 1,611 cf @ 16.62 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 2.00' Flow Area= 358.0 sf, Capacity= 1,122.7 cfs

104.00' x 2.00' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 50.0 25.0 '/' Top Width= 254.00'
Length= 981.0' Slope= 0.0180 '/'
Inlet Invert= 43.50', Outlet Invert= 25.80'

‡

Summary for Reach ER04: ER-05

Inflow Area = 1,240,394 sf, 0.00% Impervious, Inflow Depth > 1.23" for 10-YR event
Inflow = 12.1 cfs @ 13.05 hrs, Volume= 127,371 cf
Outflow = 11.4 cfs @ 13.60 hrs, Volume= 123,828 cf, Atten= 6%, Lag= 32.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.60 fps, Min. Travel Time= 19.0 min
Avg. Velocity = 0.32 fps, Avg. Travel Time= 35.6 min

Peak Storage= 12,944 cf @ 13.28 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 3.00' Flow Area= 569.4 sf, Capacity= 2,431.4 cfs

146.00' x 3.00' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 17.0 12.2 '/' Top Width= 233.60'
Length= 682.0' Slope= 0.0161 '/'
Inlet Invert= 33.00', Outlet Invert= 22.00'

‡

Summary for Pond EP01: CULVERT

Inflow Area = 2,940,018 sf, 1.06% Impervious, Inflow Depth > 1.20" for 10-YR event
Inflow = 21.6 cfs @ 13.64 hrs, Volume= 294,850 cf
Outflow = 17.5 cfs @ 14.19 hrs, Volume= 294,308 cf, Atten= 19%, Lag= 33.1 min
Primary = 17.5 cfs @ 14.19 hrs, Volume= 294,308 cf
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 25.00' @ 14.19 hrs Surf.Area= 33,174 sf Storage= 20,869 cf

Plug-Flow detention time= 9.7 min calculated for 293,696 cf (100% of inflow)
Center-of-Mass det. time= 8.8 min (958.1 - 949.3)

Volume	Invert	Avail.Storage	Storage Description
#1	22.00'	349,966 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
22.00	10	40.0	0	0	10
24.00	5,297	274.3	3,691	3,691	5,879
25.00	33,326	789.9	17,303	20,995	49,546
26.00	194,732	2,359.1	102,872	123,867	442,774
27.00	258,992	2,650.0	226,100	349,966	558,757

Device	Routing	Invert	Outlet Devices
#1	Primary	22.40'	**15.0" Round RCP_Round 15"** L= 33.5' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 22.40' / 22.35' S= 0.0015 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#2	Primary	22.40'	**15.0" Round RCP_Round 15"** L= 33.5' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 22.40' / 22.35' S= 0.0015 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#3	Secondary	25.93'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=17.5 cfs @ 14.19 hrs HW=25.00' (Free Discharge)
└**1=RCP_Round 15"** (Barrel Controls 8.8 cfs @ 7.15 fps)
└**2=RCP_Round 15"** (Barrel Controls 8.8 cfs @ 7.15 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=22.00' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond EP02: EP02

Inflow Area = 218,018 sf, 0.00% Impervious, Inflow Depth > 0.87" for 10-YR event
Inflow = 2.0 cfs @ 12.61 hrs, Volume= 15,728 cf
Outflow = 0.4 cfs @ 14.85 hrs, Volume= 8,010 cf, Atten= 78%, Lag= 134.5 min
Primary = 0.4 cfs @ 14.85 hrs, Volume= 8,010 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 43.57' @ 14.85 hrs Surf.Area= 18,786 sf Storage= 8,134 cf

Plug-Flow detention time= 291.5 min calculated for 8,010 cf (51% of inflow)
Center-of-Mass det. time= 150.2 min (1,070.1 - 919.9)

Volume	Invert	Avail.Storage	Storage Description
#1	43.00'	17,987 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
43.00	10,339	760.4	0	0	10,339
44.00	26,935	899.1	17,987	17,987	28,674

Device	Routing	Invert	Outlet Devices
#1	Primary	43.53'	**25.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.4 cfs @ 14.85 hrs HW=43.57' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.4 cfs @ 0.48 fps)

Summary for Link EPoI01: Ex PoI-01

Inflow Area = 2,940,018 sf, 1.06% Impervious, Inflow Depth > 1.20" for 10-YR event
Inflow = 17.5 cfs @ 14.19 hrs, Volume= 294,308 cf
Primary = 17.5 cfs @ 14.19 hrs, Volume= 294,308 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link EPoI02: Ex PoI-02

Inflow Area = 59,626 sf, 0.00% Impervious, Inflow Depth > 1.43" for 10-YR event
Inflow = 0.9 cfs @ 12.79 hrs, Volume= 7,106 cf
Primary = 0.9 cfs @ 12.79 hrs, Volume= 7,106 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link EPoI03: Proposed Wildife Crossings

Inflow Area = 695,537 sf, 2.71% Impervious, Inflow Depth > 1.05" for 10-YR event
Inflow = 6.8 cfs @ 12.79 hrs, Volume= 60,741 cf
Primary = 6.8 cfs @ 12.79 hrs, Volume= 60,741 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

APPENDIX D – POST DRAINAGE

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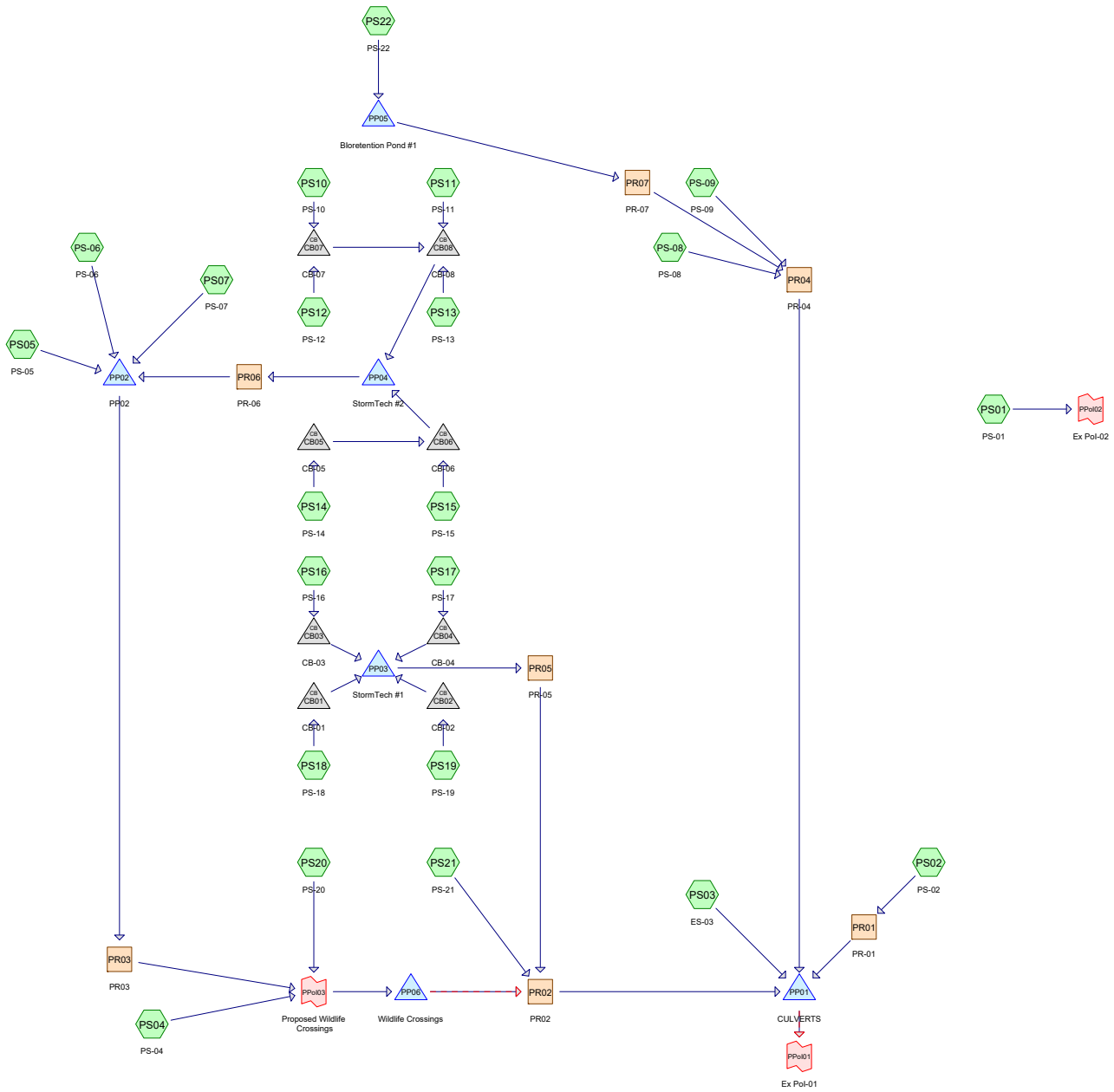
POST DEVELOPMENT DRAINAGE



Subcat Reach Pond Link

Routing Diagram for 477361-00_PRE-&-POST_2019-12-23
Prepared by {enter your company name here}, Printed 12/26/2019
HydroCAD® 10.00-25 s/n 00866 © 2019 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
196,904	61	>75% Grass cover, Good, HSG B (PS-06, PS-08, PS-09, PS03, PS04, PS05, PS07, PS10, PS11, PS12, PS13, PS14, PS15, PS16, PS17, PS18, PS19, PS20, PS21, PS22)
19,563	74	>75% Grass cover, Good, HSG C (PS-08, PS-09, PS03)
205,658	48	Brush, Good, HSG B (PS-06, PS-08, PS-09, PS01, PS02, PS03, PS04, PS05, PS07, PS18, PS19, PS20, PS21)
580,120	65	Brush, Good, HSG C (PS-08, PS-09, PS01, PS02, PS03, PS04, PS05, PS19)
29,191	82	Dirt roads, HSG B (PS-09, PS03)
93,758	87	Dirt roads, HSG C (PS-08, PS-09, PS03)
20,697	98	Paved parking, HSG B (PS-06, PS-09, PS03, PS04, PS05)
22,029	98	Paved parking, HSG C (PS-09, PS03, PS04)
42,996	98	Paved roads w/curbs & sewers, HSG B (PS-08, PS10, PS11, PS12, PS13, PS14, PS15, PS16, PS17, PS18, PS19, PS20, PS21, PS22)
40,436	98	Roofs, HSG B (PS-06, PS-08, PS-09, PS03, PS04, PS05, PS07, PS10, PS11, PS16, PS17, PS18, PS19, PS20, PS21)
1,991	98	Roofs, HSG C (PS-08, PS-09)
1,290,867	55	Woods, Good, HSG B (PS-06, PS-08, PS-09, PS01, PS02, PS03, PS04, PS05, PS07)
455,436	70	Woods, Good, HSG C (PS-08, PS-09, PS01, PS02, PS03, PS04, PS05)
2,999,646	**62**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
1,826,749	HSG B	PS-06, PS-08, PS-09, PS01, PS02, PS03, PS04, PS05, PS07, PS10, PS11, PS12, PS13, PS14, PS15, PS16, PS17, PS18, PS19, PS20, PS21, PS22
1,172,897	HSG C	PS-08, PS-09, PS01, PS02, PS03, PS04, PS05, PS19
0	HSG D	
0	Other	
2,999,646		**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PS-06: PS-06 Runoff Area=66,271 sf 7.81% Impervious Runoff Depth>0.42"
Flow Length=337' Tc=16.9 min CN=60 Runoff=0.3 cfs 2,327 cf

Subcatchment PS-08: PS-08 Runoff Area=161,113 sf 3.46% Impervious Runoff Depth>0.54"
Flow Length=599' Tc=13.3 min CN=63 Runoff=1.3 cfs 7,184 cf

Subcatchment PS-09: PS-09 Runoff Area=1,008,724 sf 0.85% Impervious Runoff Depth>0.45"
Flow Length=1,835' Tc=75.9 min CN=61 Runoff=3.0 cfs 37,508 cf

Subcatchment PS01: PS-01 Runoff Area=59,626 sf 0.00% Impervious Runoff Depth>0.53"
Flow Length=415' Tc=53.2 min CN=63 Runoff=0.3 cfs 2,618 cf

Subcatchment PS02: PS-02 Runoff Area=501,769 sf 0.00% Impervious Runoff Depth>0.31"
Flow Length=740' Tc=95.8 min CN=57 Runoff=0.8 cfs 12,885 cf

Subcatchment PS03: ES-03 Runoff Area=483,639 sf 4.39% Impervious Runoff Depth>0.79"
Flow Length=800' Tc=40.5 min CN=69 Runoff=4.5 cfs 31,935 cf

Subcatchment PS04: PS-04 Runoff Area=460,720 sf 4.98% Impervious Runoff Depth>0.49"
Flow Length=1,231' Tc=52.0 min CN=62 Runoff=1.9 cfs 18,750 cf

Subcatchment PS05: PS-05 Runoff Area=117,261 sf 8.10% Impervious Runoff Depth>0.42"
Flow Length=375' Tc=41.3 min CN=60 Runoff=0.4 cfs 4,075 cf

Subcatchment PS07: PS-07 Runoff Area=36,582 sf 5.18% Impervious Runoff Depth>0.32"
Flow Length=316' Tc=28.1 min CN=57 Runoff=0.1 cfs 973 cf

Subcatchment PS10: PS-10 Runoff Area=32,518 sf 52.85% Impervious Runoff Depth>1.50"
Flow Length=483' Tc=13.2 min CN=81 Runoff=1.0 cfs 4,056 cf

Subcatchment PS11: PS-11 Runoff Area=12,209 sf 59.04% Impervious Runoff Depth>1.64"
Flow Length=452' Tc=7.5 min CN=83 Runoff=0.5 cfs 1,669 cf

Subcatchment PS12: PS-12 Runoff Area=1,840 sf 77.17% Impervious Runoff Depth>2.20"
Flow Length=139' Tc=5.0 min CN=90 Runoff=0.1 cfs 338 cf

Subcatchment PS13: PS-13 Runoff Area=1,952 sf 73.82% Impervious Runoff Depth>2.03"
Flow Length=139' Tc=5.0 min CN=88 Runoff=0.1 cfs 330 cf

Subcatchment PS14: PS-14 Runoff Area=1,052 sf 74.52% Impervious Runoff Depth>2.12"
Flow Length=96' Tc=5.0 min CN=89 Runoff=0.1 cfs 186 cf

Subcatchment PS15: PS-15 Runoff Area=1,178 sf 68.17% Impervious Runoff Depth>1.87"
Flow Length=96' Tc=5.0 min CN=86 Runoff=0.1 cfs 183 cf

Subcatchment PS16: PS-16 Runoff Area=9,386 sf 59.61% Impervious Runoff Depth>1.64"
Flow Length=117' Tc=5.6 min CN=83 Runoff=0.4 cfs 1,283 cf

Subcatchment PS17: PS-17 Runoff Area=13,165 sf 48.14% Impervious Runoff Depth>1.36"
Flow Length=166' Tc=7.3 min CN=79 Runoff=0.5 cfs 1,498 cf

Subcatchment PS18: PS-18 Runoff Area=7,105 sf 45.43% Impervious Runoff Depth>1.12"
Flow Length=124' Tc=5.0 min CN=75 Runoff=0.2 cfs 663 cf

Subcatchment PS19: PS-19 Runoff Area=7,178 sf 43.80% Impervious Runoff Depth>1.18"
Flow Length=164' Tc=5.0 min CN=76 Runoff=0.2 cfs 705 cf

Subcatchment PS20: PS-20 Runoff Area=4,304 sf 35.13% Impervious Runoff Depth>0.75"
Flow Length=128' Tc=5.0 min CN=68 Runoff=0.1 cfs 270 cf

Subcatchment PS21: PS-21 Runoff Area=4,053 sf 39.48% Impervious Runoff Depth>0.80"
Flow Length=124' Tc=5.0 min CN=69 Runoff=0.1 cfs 271 cf

Subcatchment PS22: PS-22 Runoff Area=8,001 sf 37.17% Impervious Runoff Depth>1.12"
Flow Length=128' Slope=0.0250 '/' Tc=5.0 min CN=75 Runoff=0.2 cfs 747 cf

Reach PR01: PR-01 Avg. Flow Depth=0.02' Max Vel=0.20 fps Inflow=0.8 cfs 12,885 cf
n=0.050 L=537.0' S=0.0065 '/' Capacity=1,413.2 cfs Outflow=0.6 cfs 12,088 cf

Reach PR02: PR02 Avg. Flow Depth=0.03' Max Vel=0.24 fps Inflow=0.9 cfs 23,417 cf
n=0.050 L=668.0' S=0.0055 '/' Capacity=1,097.9 cfs Outflow=0.9 cfs 22,105 cf

Reach PR03: PR03 Avg. Flow Depth=0.00' Max Vel=0.19 fps Inflow=0.1 cfs 469 cf
n=0.080 L=894.0' S=0.0187 '/' Capacity=1,142.3 cfs Outflow=0.0 cfs 20 cf

Reach PR04: PR-04 Avg. Flow Depth=0.05' Max Vel=0.35 fps Inflow=3.3 cfs 44,729 cf
n=0.080 L=682.0' S=0.0161 '/' Capacity=2,431.4 cfs Outflow=2.8 cfs 42,810 cf

Reach PR05: PR-05 Avg. Flow Depth=0.02' Max Vel=0.23 fps Inflow=0.2 cfs 4,143 cf
n=0.100 L=46.0' S=0.0326 '/' Capacity=155.3 cfs Outflow=0.2 cfs 4,132 cf

Reach PR06: PR-06 Avg. Flow Depth=0.01' Max Vel=0.12 fps Inflow=0.0 cfs 834 cf
n=0.100 L=193.0' S=0.0301 '/' Capacity=149.1 cfs Outflow=0.0 cfs 762 cf

Reach PR07: PR-07 Avg. Flow Depth=0.00' Max Vel=0.17 fps Inflow=0.0 cfs 47 cf
n=0.080 L=682.0' S=0.0161 '/' Capacity=992.5 cfs Outflow=0.0 cfs 37 cf

Pond CB01: CB-01 Peak Elev=31.28' Inflow=0.2 cfs 663 cf
12.0" Round Culvert n=0.013 L=5.0' S=0.0040 '/' Outflow=0.2 cfs 663 cf

Pond CB02: CB-02 Peak Elev=31.29' Inflow=0.2 cfs 705 cf
12.0" Round Culvert n=0.013 L=5.0' S=0.0040 '/' Outflow=0.2 cfs 705 cf

Pond CB03: CB-03 Peak Elev=39.32' Inflow=0.4 cfs 1,283 cf
12.0" Round Culvert n=0.013 L=20.0' S=0.0300 '/' Outflow=0.4 cfs 1,283 cf

Pond CB04: CB-04 Peak Elev=38.63' Inflow=0.5 cfs 1,498 cf
12.0" Round Culvert n=0.013 L=26.0' S=0.0808 '/' Outflow=0.5 cfs 1,498 cf

Pond CB05: CB-05 Peak Elev=51.57' Inflow=0.1 cfs 186 cf
6.0" Round Culvert n=0.013 L=18.0' S=0.0056 '/' Outflow=0.1 cfs 186 cf

Pond CB06: CB-06 Peak Elev=51.43' Inflow=0.1 cfs 369 cf
6.0" Round Culvert n=0.013 L=22.0' S=0.0091 '/' Outflow=0.1 cfs 369 cf

Pond CB07: CB-07 Peak Elev=51.65' Inflow=1.1 cfs 4,394 cf
12.0" Round Culvert n=0.013 L=18.0' S=0.0056 '/' Outflow=1.1 cfs 4,394 cf

Pond CB08: CB-08 Peak Elev=51.58' Inflow=1.6 cfs 6,393 cf
12.0" Round Culvert n=0.013 L=26.0' S=0.0077 '/' Outflow=1.6 cfs 6,393 cf

Pond PP01: CULVERTS Peak Elev=23.35' Storage=1,218 cf Inflow=4.8 cfs 108,937 cf
Primary=4.8 cfs 108,645 cf Secondary=0.0 cfs 0 cf Outflow=4.8 cfs 108,645 cf

Pond PP02: PP02 Peak Elev=43.54' Storage=7,669 cf Inflow=0.7 cfs 8,138 cf
Outflow=0.1 cfs 469 cf

Pond PP03: StormTech #1 Peak Elev=31.24' Storage=1,396 cf Inflow=1.3 cfs 4,149 cf
Outflow=0.2 cfs 4,143 cf

Pond PP04: StormTech #2 Peak Elev=52.66' Storage=4,948 cf Inflow=1.7 cfs 6,762 cf
Discarded=0.0 cfs 1,180 cf Primary=0.0 cfs 834 cf Outflow=0.0 cfs 2,014 cf

Pond PP05: Bloretention Pond #1 Peak Elev=55.01' Storage=699 cf Inflow=0.2 cfs 747 cf
Outflow=0.0 cfs 47 cf

Pond PP06: Wildlife Crossings Peak Elev=27.70' Storage=4,316 cf Inflow=1.9 cfs 19,040 cf
Primary=0.7 cfs 18,957 cf Secondary=0.1 cfs 57 cf Outflow=0.8 cfs 19,014 cf

Link PPoI01: Ex PoI-01 Inflow=4.8 cfs 108,645 cf
Primary=4.8 cfs 108,645 cf

Link PPoI02: Ex PoI-02 Inflow=0.3 cfs 2,618 cf
Primary=0.3 cfs 2,618 cf

Link PPoI03: Proposed Wildlife Crossings Inflow=1.9 cfs 19,040 cf
Primary=1.9 cfs 19,040 cf

Total Runoff Area = 2,999,646 sf Runoff Volume = 130,452 cf Average Runoff Depth = 0.52"
95.73% Pervious = 2,871,497 sf 4.27% Impervious = 128,149 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PS-06: PS-06 Runoff Area=66,271 sf 7.81% Impervious Runoff Depth>1.24"
Flow Length=337' Tc=16.9 min CN=60 Runoff=1.4 cfs 6,865 cf

Subcatchment PS-08: PS-08 Runoff Area=161,113 sf 3.46% Impervious Runoff Depth>1.45"
Flow Length=599' Tc=13.3 min CN=63 Runoff=4.6 cfs 19,433 cf

Subcatchment PS-09: PS-09 Runoff Area=1,008,724 sf 0.85% Impervious Runoff Depth>1.28"
Flow Length=1,835' Tc=75.9 min CN=61 Runoff=10.8 cfs 107,969 cf

Subcatchment PS01: PS-01 Runoff Area=59,626 sf 0.00% Impervious Runoff Depth>1.43"
Flow Length=415' Tc=53.2 min CN=63 Runoff=0.9 cfs 7,106 cf

Subcatchment PS02: PS-02 Runoff Area=501,769 sf 0.00% Impervious Runoff Depth>1.02"
Flow Length=740' Tc=95.8 min CN=57 Runoff=3.5 cfs 42,714 cf

Subcatchment PS03: ES-03 Runoff Area=483,639 sf 4.39% Impervious Runoff Depth>1.87"
Flow Length=800' Tc=40.5 min CN=69 Runoff=11.7 cfs 75,498 cf

Subcatchment PS04: PS-04 Runoff Area=460,720 sf 4.98% Impervious Runoff Depth>1.36"
Flow Length=1,231' Tc=52.0 min CN=62 Runoff=6.7 cfs 52,297 cf

Subcatchment PS05: PS-05 Runoff Area=117,261 sf 8.10% Impervious Runoff Depth>1.23"
Flow Length=375' Tc=41.3 min CN=60 Runoff=1.7 cfs 12,052 cf

Subcatchment PS07: PS-07 Runoff Area=36,582 sf 5.18% Impervious Runoff Depth>1.05"
Flow Length=316' Tc=28.1 min CN=57 Runoff=0.5 cfs 3,194 cf

Subcatchment PS10: PS-10 Runoff Area=32,518 sf 52.85% Impervious Runoff Depth>2.90"
Flow Length=483' Tc=13.2 min CN=81 Runoff=2.0 cfs 7,857 cf

Subcatchment PS11: PS-11 Runoff Area=12,209 sf 59.04% Impervious Runoff Depth>3.09"
Flow Length=452' Tc=7.5 min CN=83 Runoff=0.9 cfs 3,143 cf

Subcatchment PS12: PS-12 Runoff Area=1,840 sf 77.17% Impervious Runoff Depth>3.79"
Flow Length=139' Tc=5.0 min CN=90 Runoff=0.2 cfs 581 cf

Subcatchment PS13: PS-13 Runoff Area=1,952 sf 73.82% Impervious Runoff Depth>3.58"
Flow Length=139' Tc=5.0 min CN=88 Runoff=0.2 cfs 583 cf

Subcatchment PS14: PS-14 Runoff Area=1,052 sf 74.52% Impervious Runoff Depth>3.68"
Flow Length=96' Tc=5.0 min CN=89 Runoff=0.1 cfs 323 cf

Subcatchment PS15: PS-15 Runoff Area=1,178 sf 68.17% Impervious Runoff Depth>3.38"
Flow Length=96' Tc=5.0 min CN=86 Runoff=0.1 cfs 332 cf

Subcatchment PS16: PS-16 Runoff Area=9,386 sf 59.61% Impervious Runoff Depth>3.09"
Flow Length=117' Tc=5.6 min CN=83 Runoff=0.8 cfs 2,417 cf

Subcatchment PS17: PS-17 Runoff Area=13,165 sf 48.14% Impervious Runoff Depth>2.72"
Flow Length=166' Tc=7.3 min CN=79 Runoff=0.9 cfs 2,985 cf

Subcatchment PS18: PS-18 Runoff Area=7,105 sf 45.43% Impervious Runoff Depth>2.37"
Flow Length=124' Tc=5.0 min CN=75 Runoff=0.5 cfs 1,406 cf

Subcatchment PS19: PS-19 Runoff Area=7,178 sf 43.80% Impervious Runoff Depth>2.46"
Flow Length=164' Tc=5.0 min CN=76 Runoff=0.5 cfs 1,471 cf

Subcatchment PS20: PS-20 Runoff Area=4,304 sf 35.13% Impervious Runoff Depth>1.81"
Flow Length=128' Tc=5.0 min CN=68 Runoff=0.2 cfs 651 cf

Subcatchment PS21: PS-21 Runoff Area=4,053 sf 39.48% Impervious Runoff Depth>1.89"
Flow Length=124' Tc=5.0 min CN=69 Runoff=0.2 cfs 639 cf

Subcatchment PS22: PS-22 Runoff Area=8,001 sf 37.17% Impervious Runoff Depth>2.37"
Flow Length=128' Slope=0.0250 '/' Tc=5.0 min CN=75 Runoff=0.5 cfs 1,583 cf

Reach PR01: PR-01 Avg. Flow Depth=0.06' Max Vel=0.37 fps Inflow=3.5 cfs 42,714 cf
n=0.050 L=537.0' S=0.0065 '/' Capacity=1,413.2 cfs Outflow=3.2 cfs 41,238 cf

Reach PR02: PR02 Avg. Flow Depth=0.10' Max Vel=0.48 fps Inflow=7.1 cfs 75,906 cf
n=0.050 L=668.0' S=0.0055 '/' Capacity=1,097.9 cfs Outflow=5.4 cfs 72,756 cf

Reach PR03: PR03 Avg. Flow Depth=0.03' Max Vel=0.27 fps Inflow=1.5 cfs 19,050 cf
n=0.080 L=894.0' S=0.0187 '/' Capacity=1,142.3 cfs Outflow=1.0 cfs 17,409 cf

Reach PR04: PR-04 Avg. Flow Depth=0.13' Max Vel=0.59 fps Inflow=11.6 cfs 127,463 cf
n=0.080 L=682.0' S=0.0161 '/' Capacity=2,431.4 cfs Outflow=10.9 cfs 123,998 cf

Reach PR05: PR-05 Avg. Flow Depth=0.06' Max Vel=0.37 fps Inflow=0.7 cfs 8,269 cf
n=0.100 L=46.0' S=0.0326 '/' Capacity=155.3 cfs Outflow=0.7 cfs 8,253 cf

Reach PR06: PR-06 Avg. Flow Depth=0.05' Max Vel=0.32 fps Inflow=0.6 cfs 4,857 cf
n=0.100 L=193.0' S=0.0301 '/' Capacity=149.1 cfs Outflow=0.5 cfs 4,765 cf

Reach PR07: PR-07 Avg. Flow Depth=0.00' Max Vel=0.17 fps Inflow=0.0 cfs 75 cf
n=0.080 L=682.0' S=0.0161 '/' Capacity=992.5 cfs Outflow=0.0 cfs 61 cf

Pond CB01: CB-01 Peak Elev=31.42' Inflow=0.5 cfs 1,406 cf
12.0" Round Culvert n=0.013 L=5.0' S=0.0040 '/' Outflow=0.5 cfs 1,406 cf

Pond CB02: CB-02 Peak Elev=31.43' Inflow=0.5 cfs 1,471 cf
12.0" Round Culvert n=0.013 L=5.0' S=0.0040 '/' Outflow=0.5 cfs 1,471 cf

Pond CB03: CB-03 Peak Elev=39.45' Inflow=0.8 cfs 2,417 cf
12.0" Round Culvert n=0.013 L=20.0' S=0.0300 '/' Outflow=0.8 cfs 2,417 cf

Pond CB04: CB-04 Peak Elev=38.79' Inflow=0.9 cfs 2,985 cf
12.0" Round Culvert n=0.013 L=26.0' S=0.0808 '/' Outflow=0.9 cfs 2,985 cf

Pond CB05: CB-05 Peak Elev=51.63' Inflow=0.1 cfs 323 cf
6.0" Round Culvert n=0.013 L=18.0' S=0.0056 '/' Outflow=0.1 cfs 323 cf

Pond CB06: CB-06 Peak Elev=51.51' Inflow=0.2 cfs 655 cf
6.0" Round Culvert n=0.013 L=22.0' S=0.0091 '/' Outflow=0.2 cfs 655 cf

Pond CB07: CB-07 Peak Elev=51.98' Inflow=2.1 cfs 8,437 cf
12.0" Round Culvert n=0.013 L=18.0' S=0.0056 '/' Outflow=2.1 cfs 8,437 cf

Pond CB08: CB-08 Peak Elev=52.14' Inflow=3.1 cfs 12,163 cf
12.0" Round Culvert n=0.013 L=26.0' S=0.0077 '/' Outflow=3.1 cfs 12,163 cf

Pond PP01: CULVERTS Peak Elev=24.99' Storage=20,678 cf Inflow=21.4 cfs 313,490 cf
Primary=17.5 cfs 312,908 cf Secondary=0.0 cfs 0 cf Outflow=17.5 cfs 312,908 cf

Pond PP02: PP02 Peak Elev=43.61' Storage=9,050 cf Inflow=3.0 cfs 26,876 cf
Outflow=1.5 cfs 19,050 cf

Pond PP03: StormTech #1 Peak Elev=32.43' Storage=3,070 cf Inflow=2.6 cfs 8,280 cf
Outflow=0.7 cfs 8,269 cf

Pond PP04: StormTech #2 Peak Elev=53.87' Storage=6,986 cf Inflow=3.2 cfs 12,818 cf
Discarded=0.0 cfs 1,315 cf Primary=0.6 cfs 4,857 cf Outflow=0.6 cfs 6,172 cf

Pond PP05: Bloretention Pond #1 Peak Elev=56.43' Storage=1,508 cf Inflow=0.5 cfs 1,583 cf
Outflow=0.0 cfs 75 cf

Pond PP06: Wildlife Crossings Peak Elev=27.83' Storage=5,429 cf Inflow=6.7 cfs 70,356 cf
Primary=0.7 cfs 30,277 cf Secondary=5.9 cfs 36,737 cf Outflow=6.7 cfs 67,014 cf

Link PPoI01: Ex PoI-01 Inflow=17.5 cfs 312,908 cf
Primary=17.5 cfs 312,908 cf

Link PPoI02: Ex PoI-02 Inflow=0.9 cfs 7,106 cf
Primary=0.9 cfs 7,106 cf

Link PPoI03: Proposed Wildlife Crossings Inflow=6.7 cfs 70,356 cf
Primary=6.7 cfs 70,356 cf

Total Runoff Area = 2,999,646 sf Runoff Volume = 351,098 cf Average Runoff Depth = 1.40"
95.73% Pervious = 2,871,497 sf 4.27% Impervious = 128,149 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PS-06: PS-06 Runoff Area=66,271 sf 7.81% Impervious Runoff Depth>2.07"
Flow Length=337' Tc=16.9 min CN=60 Runoff=2.5 cfs 11,404 cf

Subcatchment PS-08: PS-08 Runoff Area=161,113 sf 3.46% Impervious Runoff Depth>2.33"
Flow Length=599' Tc=13.3 min CN=63 Runoff=7.7 cfs 31,305 cf

Subcatchment PS-09: PS-09 Runoff Area=1,008,724 sf 0.85% Impervious Runoff Depth>2.12"
Flow Length=1,835' Tc=75.9 min CN=61 Runoff=18.9 cfs 177,848 cf

Subcatchment PS01: PS-01 Runoff Area=59,626 sf 0.00% Impervious Runoff Depth>2.31"
Flow Length=415' Tc=53.2 min CN=63 Runoff=1.5 cfs 11,461 cf

Subcatchment PS02: PS-02 Runoff Area=501,769 sf 0.00% Impervious Runoff Depth>1.76"
Flow Length=740' Tc=95.8 min CN=57 Runoff=6.5 cfs 73,761 cf

Subcatchment PS03: ES-03 Runoff Area=483,639 sf 4.39% Impervious Runoff Depth>2.87"
Flow Length=800' Tc=40.5 min CN=69 Runoff=18.3 cfs 115,546 cf

Subcatchment PS04: PS-04 Runoff Area=460,720 sf 4.98% Impervious Runoff Depth>2.22"
Flow Length=1,231' Tc=52.0 min CN=62 Runoff=11.4 cfs 85,187 cf

Subcatchment PS05: PS-05 Runoff Area=117,261 sf 8.10% Impervious Runoff Depth>2.05"
Flow Length=375' Tc=41.3 min CN=60 Runoff=3.0 cfs 20,040 cf

Subcatchment PS07: PS-07 Runoff Area=36,582 sf 5.18% Impervious Runoff Depth>1.80"
Flow Length=316' Tc=28.1 min CN=57 Runoff=1.0 cfs 5,498 cf

Subcatchment PS10: PS-10 Runoff Area=32,518 sf 52.85% Impervious Runoff Depth>4.09"
Flow Length=483' Tc=13.2 min CN=81 Runoff=2.8 cfs 11,070 cf

Subcatchment PS11: PS-11 Runoff Area=12,209 sf 59.04% Impervious Runoff Depth>4.30"
Flow Length=452' Tc=7.5 min CN=83 Runoff=1.3 cfs 4,376 cf

Subcatchment PS12: PS-12 Runoff Area=1,840 sf 77.17% Impervious Runoff Depth>5.07"
Flow Length=139' Tc=5.0 min CN=90 Runoff=0.2 cfs 777 cf

Subcatchment PS13: PS-13 Runoff Area=1,952 sf 73.82% Impervious Runoff Depth>4.84"
Flow Length=139' Tc=5.0 min CN=88 Runoff=0.2 cfs 788 cf

Subcatchment PS14: PS-14 Runoff Area=1,052 sf 74.52% Impervious Runoff Depth>4.96"
Flow Length=96' Tc=5.0 min CN=89 Runoff=0.1 cfs 434 cf

Subcatchment PS15: PS-15 Runoff Area=1,178 sf 68.17% Impervious Runoff Depth>4.63"
Flow Length=96' Tc=5.0 min CN=86 Runoff=0.1 cfs 454 cf

Subcatchment PS16: PS-16 Runoff Area=9,386 sf 59.61% Impervious Runoff Depth>4.30"
Flow Length=117' Tc=5.6 min CN=83 Runoff=1.1 cfs 3,365 cf

Subcatchment PS17: PS-17 Runoff Area=13,165 sf 48.14% Impervious Runoff Depth>3.88"
Flow Length=166' Tc=7.3 min CN=79 Runoff=1.3 cfs 4,258 cf

Subcatchment PS18: PS-18 Runoff Area=7,105 sf 45.43% Impervious Runoff Depth>3.48"
Flow Length=124' Tc=5.0 min CN=75 Runoff=0.7 cfs 2,058 cf

Subcatchment PS19: PS-19 Runoff Area=7,178 sf 43.80% Impervious Runoff Depth>3.58"
Flow Length=164' Tc=5.0 min CN=76 Runoff=0.7 cfs 2,140 cf

Subcatchment PS20: PS-20 Runoff Area=4,304 sf 35.13% Impervious Runoff Depth>2.80"
Flow Length=128' Tc=5.0 min CN=68 Runoff=0.3 cfs 1,003 cf

Subcatchment PS21: PS-21 Runoff Area=4,053 sf 39.48% Impervious Runoff Depth>2.89"
Flow Length=124' Tc=5.0 min CN=69 Runoff=0.3 cfs 976 cf

Subcatchment PS22: PS-22 Runoff Area=8,001 sf 37.17% Impervious Runoff Depth>3.48"
Flow Length=128' Slope=0.0250 '/' Tc=5.0 min CN=75 Runoff=0.7 cfs 2,318 cf

Reach PR01: PR-01 Avg. Flow Depth=0.09' Max Vel=0.48 fps Inflow=6.5 cfs 73,761 cf
n=0.050 L=537.0' S=0.0065 '/' Capacity=1,413.2 cfs Outflow=6.2 cfs 71,779 cf

Reach PR02: PR02 Avg. Flow Depth=0.15' Max Vel=0.61 fps Inflow=12.0 cfs 131,371 cf
n=0.050 L=668.0' S=0.0055 '/' Capacity=1,097.9 cfs Outflow=10.5 cfs 128,002 cf

Reach PR03: PR03 Avg. Flow Depth=0.07' Max Vel=0.44 fps Inflow=5.5 cfs 38,652 cf
n=0.080 L=894.0' S=0.0187 '/' Capacity=1,142.3 cfs Outflow=3.3 cfs 36,726 cf

Reach PR04: PR-04 Avg. Flow Depth=0.18' Max Vel=0.74 fps Inflow=20.1 cfs 209,221 cf
n=0.080 L=682.0' S=0.0161 '/' Capacity=2,431.4 cfs Outflow=19.3 cfs 204,912 cf

Reach PR05: PR-05 Avg. Flow Depth=0.11' Max Vel=0.57 fps Inflow=2.5 cfs 11,806 cf
n=0.100 L=46.0' S=0.0326 '/' Capacity=155.3 cfs Outflow=2.2 cfs 11,788 cf

Reach PR06: PR-06 Avg. Flow Depth=0.12' Max Vel=0.55 fps Inflow=4.8 cfs 9,699 cf
n=0.100 L=193.0' S=0.0301 '/' Capacity=149.1 cfs Outflow=2.3 cfs 9,617 cf

Reach PR07: PR-07 Avg. Flow Depth=0.00' Max Vel=0.17 fps Inflow=0.0 cfs 83 cf
n=0.080 L=682.0' S=0.0161 '/' Capacity=992.5 cfs Outflow=0.0 cfs 68 cf

Pond CB01: CB-01 Peak Elev=31.52' Inflow=0.7 cfs 2,058 cf
12.0" Round Culvert n=0.013 L=5.0' S=0.0040 '/' Outflow=0.7 cfs 2,058 cf

Pond CB02: CB-02 Peak Elev=31.53' Inflow=0.7 cfs 2,140 cf
12.0" Round Culvert n=0.013 L=5.0' S=0.0040 '/' Outflow=0.7 cfs 2,140 cf

Pond CB03: CB-03 Peak Elev=39.53' Inflow=1.1 cfs 3,365 cf
12.0" Round Culvert n=0.013 L=20.0' S=0.0300 '/' Outflow=1.1 cfs 3,365 cf

Pond CB04: CB-04 Peak Elev=38.90' Inflow=1.3 cfs 4,258 cf
12.0" Round Culvert n=0.013 L=26.0' S=0.0808 '/' Outflow=1.3 cfs 4,258 cf

Pond CB05: CB-05 Peak Elev=51.67' Inflow=0.1 cfs 434 cf
6.0" Round Culvert n=0.013 L=18.0' S=0.0056 '/' Outflow=0.1 cfs 434 cf

Pond CB06: CB-06 Peak Elev=51.57' Inflow=0.3 cfs 889 cf
6.0" Round Culvert n=0.013 L=22.0' S=0.0091 '/' Outflow=0.3 cfs 889 cf

Pond CB07: CB-07 Peak Elev=52.36' Inflow=3.0 cfs 11,847 cf
12.0" Round Culvert n=0.013 L=18.0' S=0.0056 '/' Outflow=3.0 cfs 11,847 cf

Pond CB08: CB-08 Peak Elev=52.66' Inflow=4.3 cfs 17,011 cf
12.0" Round Culvert n=0.013 L=26.0' S=0.0077 '/' Outflow=4.3 cfs 17,011 cf

Pond PP01: CULVERTS Peak Elev=25.85' Storage=97,812 cf Inflow=39.2 cfs 520,239 cf
Primary=22.3 cfs 519,466 cf Secondary=0.0 cfs 0 cf Outflow=22.3 cfs 519,466 cf

Pond PP02: PP02 Peak Elev=43.73' Storage=11,412 cf Inflow=7.8 cfs 46,559 cf
Outflow=5.5 cfs 38,652 cf

Pond PP03: StormTech #1 Peak Elev=32.68' Storage=3,281 cf Inflow=3.7 cfs 11,821 cf
Outflow=2.5 cfs 11,806 cf

Pond PP04: StormTech #2 Peak Elev=54.39' Storage=7,167 cf Inflow=4.5 cfs 17,899 cf
Discarded=0.0 cfs 1,399 cf Primary=4.8 cfs 9,699 cf Outflow=4.8 cfs 11,098 cf

Pond PP05: Bloretention Pond #1 Peak Elev=56.91' Storage=2,234 cf Inflow=0.7 cfs 2,318 cf
Outflow=0.0 cfs 83 cf

Pond PP06: Wildlife Crossings Peak Elev=27.89' Storage=6,044 cf Inflow=11.5 cfs 122,916 cf
Primary=0.7 cfs 31,618 cf Secondary=10.7 cfs 86,988 cf Outflow=11.4 cfs 118,606 cf

Link PPol01: Ex Pol-01 Inflow=22.3 cfs 519,466 cf
Primary=22.3 cfs 519,466 cf

Link PPol02: Ex Pol-02 Inflow=1.5 cfs 11,461 cf
Primary=1.5 cfs 11,461 cf

Link PPol03: Proposed Wildlife Crossings Inflow=11.5 cfs 122,916 cf
Primary=11.5 cfs 122,916 cf

Total Runoff Area = 2,999,646 sf Runoff Volume = 566,068 cf Average Runoff Depth = 2.26"
95.73% Pervious = 2,871,497 sf 4.27% Impervious = 128,149 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PS-06: PS-06 Runoff Area=66,271 sf 7.81% Impervious Runoff Depth>2.92"
Flow Length=337' Tc=16.9 min CN=60 Runoff=3.7 cfs 16,142 cf

Subcatchment PS-08: PS-08 Runoff Area=161,113 sf 3.46% Impervious Runoff Depth>3.24"
Flow Length=599' Tc=13.3 min CN=63 Runoff=10.9 cfs 43,506 cf

Subcatchment PS-09: PS-09 Runoff Area=1,008,724 sf 0.85% Impervious Runoff Depth>2.98"
Flow Length=1,835' Tc=75.9 min CN=61 Runoff=27.3 cfs 250,468 cf

Subcatchment PS01: PS-01 Runoff Area=59,626 sf 0.00% Impervious Runoff Depth>3.21"
Flow Length=415' Tc=53.2 min CN=63 Runoff=2.2 cfs 15,940 cf

Subcatchment PS02: PS-02 Runoff Area=501,769 sf 0.00% Impervious Runoff Depth>2.55"
Flow Length=740' Tc=95.8 min CN=57 Runoff=9.8 cfs 106,782 cf

Subcatchment PS03: ES-03 Runoff Area=483,639 sf 4.39% Impervious Runoff Depth>3.86"
Flow Length=800' Tc=40.5 min CN=69 Runoff=24.8 cfs 155,624 cf

Subcatchment PS04: PS-04 Runoff Area=460,720 sf 4.98% Impervious Runoff Depth>3.10"
Flow Length=1,231' Tc=52.0 min CN=62 Runoff=16.3 cfs 119,175 cf

Subcatchment PS05: PS-05 Runoff Area=117,261 sf 8.10% Impervious Runoff Depth>2.90"
Flow Length=375' Tc=41.3 min CN=60 Runoff=4.4 cfs 28,380 cf

Subcatchment PS07: PS-07 Runoff Area=36,582 sf 5.18% Impervious Runoff Depth>2.61"
Flow Length=316' Tc=28.1 min CN=57 Runoff=1.4 cfs 7,944 cf

Subcatchment PS10: PS-10 Runoff Area=32,518 sf 52.85% Impervious Runoff Depth>5.22"
Flow Length=483' Tc=13.2 min CN=81 Runoff=3.6 cfs 14,155 cf

Subcatchment PS11: PS-11 Runoff Area=12,209 sf 59.04% Impervious Runoff Depth>5.46"
Flow Length=452' Tc=7.5 min CN=83 Runoff=1.6 cfs 5,553 cf

Subcatchment PS12: PS-12 Runoff Area=1,840 sf 77.17% Impervious Runoff Depth>6.27"
Flow Length=139' Tc=5.0 min CN=90 Runoff=0.3 cfs 962 cf

Subcatchment PS13: PS-13 Runoff Area=1,952 sf 73.82% Impervious Runoff Depth>6.04"
Flow Length=139' Tc=5.0 min CN=88 Runoff=0.3 cfs 982 cf

Subcatchment PS14: PS-14 Runoff Area=1,052 sf 74.52% Impervious Runoff Depth>6.15"
Flow Length=96' Tc=5.0 min CN=89 Runoff=0.2 cfs 540 cf

Subcatchment PS15: PS-15 Runoff Area=1,178 sf 68.17% Impervious Runoff Depth>5.81"
Flow Length=96' Tc=5.0 min CN=86 Runoff=0.2 cfs 570 cf

Subcatchment PS16: PS-16 Runoff Area=9,386 sf 59.61% Impervious Runoff Depth>5.46"
Flow Length=117' Tc=5.6 min CN=83 Runoff=1.3 cfs 4,270 cf

Subcatchment PS17: PS-17 Runoff Area=13,165 sf 48.14% Impervious Runoff Depth>5.00"
Flow Length=166' Tc=7.3 min CN=79 Runoff=1.7 cfs 5,488 cf

Subcatchment PS18: PS-18 Runoff Area=7,105 sf 45.43% Impervious Runoff Depth>4.55"
Flow Length=124' Tc=5.0 min CN=75 Runoff=0.9 cfs 2,696 cf

Subcatchment PS19: PS-19 Runoff Area=7,178 sf 43.80% Impervious Runoff Depth>4.67"
Flow Length=164' Tc=5.0 min CN=76 Runoff=0.9 cfs 2,791 cf

Subcatchment PS20: PS-20 Runoff Area=4,304 sf 35.13% Impervious Runoff Depth>3.78"
Flow Length=128' Tc=5.0 min CN=68 Runoff=0.4 cfs 1,357 cf

Subcatchment PS21: PS-21 Runoff Area=4,053 sf 39.48% Impervious Runoff Depth>3.89"
Flow Length=124' Tc=5.0 min CN=69 Runoff=0.4 cfs 1,314 cf

Subcatchment PS22: PS-22 Runoff Area=8,001 sf 37.17% Impervious Runoff Depth>4.55"
Flow Length=128' Slope=0.0250 '/' Tc=5.0 min CN=75 Runoff=1.0 cfs 3,037 cf

Reach PR01: PR-01 Avg. Flow Depth=0.12' Max Vel=0.56 fps Inflow=9.8 cfs 106,782 cf
n=0.050 L=537.0' S=0.0065 '/' Capacity=1,413.2 cfs Outflow=9.5 cfs 104,513 cf

Reach PR02: PR02 Avg. Flow Depth=0.20' Max Vel=0.72 fps Inflow=17.1 cfs 189,088 cf
n=0.050 L=668.0' S=0.0055 '/' Capacity=1,097.9 cfs Outflow=16.4 cfs 185,111 cf

Reach PR03: PR03 Avg. Flow Depth=0.11' Max Vel=0.56 fps Inflow=9.8 cfs 58,855 cf
n=0.080 L=894.0' S=0.0187 '/' Capacity=1,142.3 cfs Outflow=6.5 cfs 56,586 cf

Reach PR04: PR-04 Avg. Flow Depth=0.22' Max Vel=0.85 fps Inflow=28.9 cfs 294,047 cf
n=0.080 L=682.0' S=0.0161 '/' Capacity=2,431.4 cfs Outflow=28.1 cfs 289,121 cf

Reach PR05: PR-05 Avg. Flow Depth=0.17' Max Vel=0.72 fps Inflow=5.2 cfs 15,088 cf
n=0.100 L=46.0' S=0.0326 '/' Capacity=155.3 cfs Outflow=4.2 cfs 15,046 cf

Reach PR06: PR-06 Avg. Flow Depth=0.17' Max Vel=0.68 fps Inflow=7.4 cfs 14,468 cf
n=0.100 L=193.0' S=0.0301 '/' Capacity=149.1 cfs Outflow=4.3 cfs 14,383 cf

Reach PR07: PR-07 Avg. Flow Depth=0.00' Max Vel=0.17 fps Inflow=0.0 cfs 90 cf
n=0.080 L=682.0' S=0.0161 '/' Capacity=992.5 cfs Outflow=0.0 cfs 74 cf

Pond CB01: CB-01 Peak Elev=31.60' Inflow=0.9 cfs 2,696 cf
12.0" Round Culvert n=0.013 L=5.0' S=0.0040 '/' Outflow=0.9 cfs 2,696 cf

Pond CB02: CB-02 Peak Elev=31.61' Inflow=0.9 cfs 2,791 cf
12.0" Round Culvert n=0.013 L=5.0' S=0.0040 '/' Outflow=0.9 cfs 2,791 cf

Pond CB03: CB-03 Peak Elev=39.61' Inflow=1.3 cfs 4,270 cf
12.0" Round Culvert n=0.013 L=20.0' S=0.0300 '/' Outflow=1.3 cfs 4,270 cf

Pond CB04: CB-04 Peak Elev=39.00' Inflow=1.7 cfs 5,488 cf
12.0" Round Culvert n=0.013 L=26.0' S=0.0808 '/' Outflow=1.7 cfs 5,488 cf

Pond CB05: CB-05 Peak Elev=51.70' Inflow=0.2 cfs 540 cf
6.0" Round Culvert n=0.013 L=18.0' S=0.0056 '/' Outflow=0.2 cfs 540 cf

Pond CB06: CB-06 Peak Elev=51.63' Inflow=0.3 cfs 1,109 cf
6.0" Round Culvert n=0.013 L=22.0' S=0.0091 '/' Outflow=0.3 cfs 1,109 cf

Pond CB07: CB-07 Peak Elev=52.63' Inflow=3.7 cfs 15,117 cf
12.0" Round Culvert n=0.013 L=18.0' S=0.0056 '/' Outflow=3.7 cfs 15,117 cf

Pond CB08: CB-08 Peak Elev=53.32' Inflow=5.4 cfs 21,652 cf
12.0" Round Culvert n=0.013 L=26.0' S=0.0077 '/' Outflow=5.4 cfs 21,652 cf

Pond PP01: CULVERTS Peak Elev=26.19' Storage=161,989 cf Inflow=59.3 cfs 734,369 cf
Primary=23.9 cfs 643,259 cf Secondary=18.0 cfs 90,108 cf Outflow=41.9 cfs 733,367 cf

Pond PP02: PP02 Peak Elev=43.82' Storage=13,421 cf Inflow=12.1 cfs 66,850 cf
Outflow=9.8 cfs 58,855 cf

Pond PP03: StormTech #1 Peak Elev=33.93' Storage=3,297 cf Inflow=4.7 cfs 15,245 cf
Outflow=5.2 cfs 15,088 cf

Pond PP04: StormTech #2 Peak Elev=55.25' Storage=7,178 cf Inflow=5.6 cfs 22,761 cf
Discarded=0.0 cfs 1,464 cf Primary=7.4 cfs 14,468 cf Outflow=7.4 cfs 15,932 cf

Pond PP05: Bloretention Pond #1 Peak Elev=57.32' Storage=2,946 cf Inflow=1.0 cfs 3,037 cf
Outflow=0.0 cfs 90 cf

Pond PP06: Wildlife Crossings Peak Elev=27.94' Storage=6,629 cf Inflow=16.4 cfs 177,118 cf
Primary=0.7 cfs 33,005 cf Secondary=15.6 cfs 139,722 cf Outflow=16.4 cfs 172,728 cf

Link PPol01: Ex Pol-01 Inflow=41.9 cfs 733,367 cf
Primary=41.9 cfs 733,367 cf

Link PPol02: Ex Pol-02 Inflow=2.2 cfs 15,940 cf
Primary=2.2 cfs 15,940 cf

Link PPol03: Proposed Wildlife Crossings Inflow=16.4 cfs 177,118 cf
Primary=16.4 cfs 177,118 cf

Total Runoff Area = 2,999,646 sf Runoff Volume = 787,676 cf Average Runoff Depth = 3.15"
95.73% Pervious = 2,871,497 sf 4.27% Impervious = 128,149 sf

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APPENDIX E – POST DRAINAGE (10 Yr Storm Event)

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Summary for Subcatchment PS-06: PS-06

Runoff = 1.4 cfs @ 12.27 hrs, Volume= 6,865 cf, Depth> 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
28,767	55	Woods, Good, HSG B
23,522	61	>75% Grass cover, Good, HSG B
3,252	98	Roofs, HSG B
1,921	98	Paved parking, HSG B
8,809	48	Brush, Good, HSG B
66,271	60	Weighted Average
61,098		92.19% Pervious Area
5,173		7.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0100	0.13		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.23"
3.9	237	0.0400	1.00		**Shallow Concentrated Flow, Shallow Channel** Woodland Kv= 5.0 fps
16.9	337	Total			

Summary for Subcatchment PS-08: PS-08

Runoff = 4.6 cfs @ 12.20 hrs, Volume= 19,433 cf, Depth> 1.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
46,936	55	Woods, Good, HSG B
20,969	61	>75% Grass cover, Good, HSG B
4,907	98	Roofs, HSG B
574	98	Paved roads w/curbs & sewers, HSG B
12,763	48	Brush, Good, HSG B
31,818	70	Woods, Good, HSG C
2,986	87	Dirt roads, HSG C
96	98	Roofs, HSG C
4,004	74	>75% Grass cover, Good, HSG C
36,060	65	Brush, Good, HSG C
161,113	63	Weighted Average
155,536		96.54% Pervious Area
5,577		3.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	100	0.0700	0.28		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.23"
7.0	409	0.0378	0.97		**Shallow Concentrated Flow, Shallow Channel** Woodland Kv= 5.0 fps
0.4	90	0.0156	3.35	1,072.87	**Channel Flow, Channel Flow** Area= 320.0 sf Perim= 184.2' r= 1.74' n= 0.080 Earth, long dense weeds
13.3	599	Total			

Summary for Subcatchment PS-09: PS-09

Runoff = 10.8 cfs @ 13.12 hrs, Volume= 107,969 cf, Depth> 1.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
617,015	55	Woods, Good, HSG B
28,491	82	Dirt roads, HSG B
30,297	61	>75% Grass cover, Good, HSG B
4,840	98	Roofs, HSG B
1,746	98	Paved parking, HSG B
38,028	48	Brush, Good, HSG B
237,225	70	Woods, Good, HSG C
29,833	87	Dirt roads, HSG C
5,861	74	>75% Grass cover, Good, HSG C
1,895	98	Roofs, HSG C
99	98	Paved parking, HSG C
13,394	65	Brush, Good, HSG C
1,008,724	61	Weighted Average
1,000,144		99.15% Pervious Area
8,580		0.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.6	100	0.0300	0.05		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.23"
15.1	808	0.0320	0.89		**Shallow Concentrated Flow, Shallow Channel** Woodland Kv= 5.0 fps
27.1	515	0.0040	0.32		**Shallow Concentrated Flow, Shallow Channel** Woodland Kv= 5.0 fps
2.1	412	0.0170	3.28	594.29	**Channel Flow, Channel Flow** Area= 181.4 sf Perim= 115.3' r= 1.57' n= 0.080 Earth, long dense weeds
75.9	1,835	Total			

Summary for Subcatchment PS01: PS-01

Runoff = 0.9 cfs @ 12.79 hrs, Volume= 7,106 cf, Depth> 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
22,538	55	Woods, Good, HSG B
1,033	48	Brush, Good, HSG B
19,283	70	Woods, Good, HSG C
16,772	65	Brush, Good, HSG C
59,626	63	Weighted Average
59,626		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
49.1	100	0.0100	0.03		**Sheet Flow, Sheet-Flow** Woods: Dense underbrush n= 0.800 P2= 3.23"
3.4	205	0.0400	1.00		**Shallow Concentrated Flow, Shallow Concentrated** Woodland Kv= 5.0 fps
0.7	110	0.0100	2.68	374.84	**Channel Flow, Channel Flow** Area= 140.0 sf Perim= 80.9' r= 1.73' n= 0.080 Earth, long dense weeds
53.2	415	Total			

Summary for Subcatchment PS02: PS-02

Runoff = 3.5 cfs @ 13.48 hrs, Volume= 42,714 cf, Depth> 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
266,948	55	Woods, Good, HSG B
82,830	48	Brush, Good, HSG B
22,446	70	Woods, Good, HSG C
129,545	65	Brush, Good, HSG C
501,769	57	Weighted Average
501,769		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.2	100	0.0200	0.04		**Sheet Flow, Shallow** Woods: Dense underbrush n= 0.800 P2= 3.23"
58.0	550	0.0010	0.16		**Shallow Concentrated Flow, Shallow Channel** Woodland Kv= 5.0 fps
0.6	90	0.0100	2.41	714.05	**Channel Flow, Concentrated** Area= 296.0 sf Perim= 200.0' r= 1.48' n= 0.080 Earth, long dense weeds

95.8 740 Total

Summary for Subcatchment PS03: ES-03

Runoff = 11.7 cfs @ 12.59 hrs, Volume= 75,498 cf, Depth> 1.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
40,124	55	Woods, Good, HSG B
12,167	61	>75% Grass cover, Good, HSG B
700	82	Dirt roads, HSG B
4,736	98	Roofs, HSG B
2,839	98	Paved parking, HSG B
16,947	48	Brush, Good, HSG B
78,475	70	Woods, Good, HSG C
9,698	74	>75% Grass cover, Good, HSG C
60,939	87	Dirt roads, HSG C
172	98	Roofs, HSG B
13,486	98	Paved parking, HSG C
243,356	65	Brush, Good, HSG C
483,639	69	Weighted Average
462,406		95.61% Pervious Area
21,233		4.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.2	100	0.0400	0.06		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.23"
12.3	700	0.0360	0.95		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
40.5	800	Total			

Summary for Subcatchment PS04: PS-04

Runoff = 6.7 cfs @ 12.78 hrs, Volume= 52,297 cf, Depth> 1.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
197,100	55	Woods, Good, HSG B
14,531	48	Brush, Good, HSG B
19,750	61	>75% Grass cover, Good, HSG B
3,431	98	Roofs, HSG B
11,081	98	Paved parking, HSG B
65,427	70	Woods, Good, HSG C
8,444	98	Paved parking, HSG C
140,956	65	Brush, Good, HSG C
460,720	62	Weighted Average
437,764		95.02% Pervious Area
22,956		4.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.2	100	0.0200	0.04		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.23"
9.7	421	0.0210	0.72		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
5.1	710	0.0100	2.34	835.95	**Channel Flow, Channel Flow** Area= 358.0 sf Perim= 254.0' r= 1.41' n= 0.080 Earth, long dense weeds
52.0	1,231	Total			

Summary for Subcatchment PS05: PS-05

Runoff = 1.7 cfs @ 12.64 hrs, Volume= 12,052 cf, Depth> 1.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
51,246	55	Woods, Good, HSG B
38,387	61	>75% Grass cover, Good, HSG B
6,393	98	Roofs, HSG B
3,110	98	Paved parking, HSG B
17,348	48	Brush, Good, HSG B
762	70	Woods, Good, HSG C
15	65	Brush, Good, HSG C
117,261	60	Weighted Average
107,758		91.90% Pervious Area
9,503		8.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.2	100	0.0200	0.04		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.23"
4.1	275	0.0500	1.12		**Shallow Concentrated Flow, Shallow Channel** Woodland Kv= 5.0 fps
41.3	375	Total			

Summary for Subcatchment PS07: PS-07

Runoff = 0.5 cfs @ 12.47 hrs, Volume= 3,194 cf, Depth> 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
20,193	55	Woods, Good, HSG B
7,467	61	>75% Grass cover, Good, HSG B
1,895	98	Roofs, HSG B
0	98	Paved roads w/curbs & sewers, HSG B
7,027	48	Brush, Good, HSG B
36,582	57	Weighted Average
34,687		94.82% Pervious Area
1,895		5.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.23"
18.2	50	0.0300	0.05		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.23"
5.1	216	0.0200	0.71		**Shallow Concentrated Flow, Shallow Channel** Woodland Kv= 5.0 fps
28.1	316	Total			

Summary for Subcatchment PS10: PS-10

Runoff = 2.0 cfs @ 12.18 hrs, Volume= 7,857 cf, Depth> 2.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
0	55	Woods, Good, HSG B
15,332	61	>75% Grass cover, Good, HSG B
3,954	98	Roofs, HSG B
13,232	98	Paved roads w/curbs & sewers, HSG B
0	48	Brush, Good, HSG B
32,518	81	Weighted Average
15,332		47.15% Pervious Area
17,186		52.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0100	0.13		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.23"
0.3	383	0.0150	21.93	438.64	**Channel Flow, Channel Flow** Area= 20.0 sf Perim= 10.2' r= 1.96' n= 0.013 Asphalt, smooth
13.2	483	Total			

Summary for Subcatchment PS11: PS-11

Runoff = 0.9 cfs @ 12.11 hrs, Volume= 3,143 cf, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
0	55	Woods, Good, HSG B
5,001	61	>75% Grass cover, Good, HSG B
1,845	98	Roofs, HSG B
5,363	98	Paved roads w/curbs & sewers, HSG B
0	48	Brush, Good, HSG B
12,209	83	Weighted Average
5,001		40.96% Pervious Area
7,208		59.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	69	0.0200	0.16		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.23"
0.3	383	0.0150	21.93	438.64	**Channel Flow, Channel Flow** Area= 20.0 sf Perim= 10.2' r= 1.96' n= 0.013 Asphalt, smooth
7.5	452	Total			

Summary for Subcatchment PS12: PS-12

Runoff = 0.2 cfs @ 12.07 hrs, Volume= 581 cf, Depth> 3.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
0	55	Woods, Good, HSG B
420	61	>75% Grass cover, Good, HSG B
0	98	Roofs, HSG B
1,420	98	Paved roads w/curbs & sewers, HSG B
0	48	Brush, Good, HSG B
1,840	90	Weighted Average
420		22.83% Pervious Area
1,420		77.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	3	0.0200	0.08		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.23"
0.1	136	0.0100	17.91	358.14	**Channel Flow, Channel Flow** Area= 20.0 sf Perim= 10.2' r= 1.96' n= 0.013 Asphalt, smooth
4.3					**Direct Entry, Min Tc of 5 Min**
5.0	139	Total			

Summary for Subcatchment PS13: PS-13

Runoff = 0.2 cfs @ 12.07 hrs, Volume= 583 cf, Depth> 3.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
0	55	Woods, Good, HSG B
511	61	>75% Grass cover, Good, HSG B
0	98	Roofs, HSG B
1,441	98	Paved roads w/curbs & sewers, HSG B
0	48	Brush, Good, HSG B
1,952	88	Weighted Average
511		26.18% Pervious Area
1,441		73.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	3	0.0200	0.08		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.23"
0.1	136	0.0100	17.91	358.14	**Channel Flow, Channel Flow** Area= 20.0 sf Perim= 10.2' r= 1.96' n= 0.013 Asphalt, smooth
4.3					**Direct Entry, Min Tc of 5 Min**
5.0	139	Total			

Summary for Subcatchment PS14: PS-14

Runoff = 0.1 cfs @ 12.07 hrs, Volume= 323 cf, Depth> 3.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
0	55	Woods, Good, HSG B
268	61	>75% Grass cover, Good, HSG B
0	98	Roofs, HSG B
784	98	Paved roads w/curbs & sewers, HSG B
0	48	Brush, Good, HSG B
1,052	89	Weighted Average
268		25.48% Pervious Area
784		74.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	3	0.0200	0.08		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.23"
0.1	93	0.0100	17.91	358.14	**Channel Flow, Channel Flow** Area= 20.0 sf Perim= 10.2' r= 1.96' n= 0.013 Asphalt, smooth
4.3					**Direct Entry, Min Tc of 5 Min**
5.0	96	Total			

Summary for Subcatchment PS15: PS-15

Runoff = 0.1 cfs @ 12.07 hrs, Volume= 332 cf, Depth> 3.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
0	55	Woods, Good, HSG B
375	61	>75% Grass cover, Good, HSG B
0	98	Roofs, HSG B
803	98	Paved roads w/curbs & sewers, HSG B
0	48	Brush, Good, HSG B
1,178	86	Weighted Average
375		31.83% Pervious Area
803		68.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	3	0.0200	0.08		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.23"
0.1	93	0.0100	17.91	358.14	**Channel Flow, Channel Flow** Area= 20.0 sf Perim= 10.2' r= 1.96' n= 0.013 Asphalt, smooth
4.3					**Direct Entry, Min Tc of 5 Min**
5.0	96	Total			

Summary for Subcatchment PS16: PS-16

Runoff = 0.8 cfs @ 12.09 hrs, Volume= 2,417 cf, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
0	55	Woods, Good, HSG B
3,791	61	>75% Grass cover, Good, HSG B
611	98	Roofs, HSG B
4,984	98	Paved roads w/curbs & sewers, HSG B
0	48	Brush, Good, HSG B
9,386	83	Weighted Average
3,791		40.39% Pervious Area
5,595		59.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.0200	0.15		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.23"
0.0	67	0.0400	35.81	716.29	**Channel Flow, Channel Flow** Area= 20.0 sf Perim= 10.2' r= 1.96' n= 0.013 Asphalt, smooth
5.6	117	Total			

Summary for Subcatchment PS17: PS-17

Runoff = 0.9 cfs @ 12.11 hrs, Volume= 2,985 cf, Depth> 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
0	55	Woods, Good, HSG B
6,828	61	>75% Grass cover, Good, HSG B
1,688	98	Roofs, HSG B
4,649	98	Paved roads w/curbs & sewers, HSG B
0	48	Brush, Good, HSG B
13,165	79	Weighted Average
6,828		51.86% Pervious Area
6,337		48.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	68	0.0200	0.16		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.23"
0.1	98	0.0300	31.02	620.33	**Channel Flow, Channel Flow** Area= 20.0 sf Perim= 10.2' r= 1.96' n= 0.013 Asphalt, smooth
7.3	166	Total			

Summary for Subcatchment PS18: PS-18

Runoff = 0.5 cfs @ 12.08 hrs, Volume= 1,406 cf, Depth> 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
0	55	Woods, Good, HSG B
2,280	61	>75% Grass cover, Good, HSG B
688	98	Roofs, HSG B
2,540	98	Paved roads w/curbs & sewers, HSG B
1,597	48	Brush, Good, HSG B
7,105	75	Weighted Average
3,877		54.57% Pervious Area
3,228		45.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	22	0.2500	0.35		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.23"
0.1	102	0.0300	31.02	620.33	**Channel Flow, Channel Flow** Area= 20.0 sf Perim= 10.2' r= 1.96' n= 0.013 Asphalt, smooth
3.8					**Direct Entry, Min Tc of 5 Min**
5.0	124	Total			

Summary for Subcatchment PS19: PS-19

Runoff = 0.5 cfs @ 12.08 hrs, Volume= 1,471 cf, Depth> 2.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
0	55	Woods, Good, HSG B
3,467	61	>75% Grass cover, Good, HSG B
853	98	Roofs, HSG B
2,291	98	Paved roads w/curbs & sewers, HSG B
545	48	Brush, Good, HSG B
22	65	Brush, Good, HSG C
7,178	76	Weighted Average
4,034		56.20% Pervious Area
3,144		43.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	44	0.0600	0.23		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.23"
0.1	120	0.0300	31.02	620.33	**Channel Flow, Channel Flow** Area= 20.0 sf Perim= 10.2' r= 1.96' n= 0.013 Asphalt, smooth
1.6					**Direct Entry, Min Tc of 5 Min**
5.0	164	Total			

Summary for Subcatchment PS20: PS-20

Runoff = 0.2 cfs @ 12.08 hrs, Volume= 651 cf, Depth> 1.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
0	55	Woods, Good, HSG B
758	61	>75% Grass cover, Good, HSG B
657	98	Roofs, HSG B
855	98	Paved roads w/curbs & sewers, HSG B
2,034	48	Brush, Good, HSG B
4,304	68	Weighted Average
2,792		64.87% Pervious Area
1,512		35.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	22	0.3300	0.39		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.23"
0.0	106	0.0600	43.86	877.27	**Channel Flow, Channel Flow** Area= 20.0 sf Perim= 10.2' r= 1.96' n= 0.013 Asphalt, smooth
4.1					**Direct Entry, Min Tc of 5 Min**
5.0	128	Total			

Summary for Subcatchment PS21: PS-21

Runoff = 0.2 cfs @ 12.08 hrs, Volume= 639 cf, Depth> 1.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
0	55	Woods, Good, HSG B
287	61	>75% Grass cover, Good, HSG B
514	98	Roofs, HSG B
1,086	98	Paved roads w/curbs & sewers, HSG B
2,166	48	Brush, Good, HSG B
4,053	69	Weighted Average
2,453		60.52% Pervious Area
1,600		39.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	22	0.3300	0.39		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.23"
0.0	102	0.0600	43.86	877.27	**Channel Flow, Channel Flow** Area= 20.0 sf Perim= 10.2' r= 1.96' n= 0.013 Asphalt, smooth
4.1					**Direct Entry, Min Tc of 5 Min**
5.0	124	Total			

Summary for Subcatchment PS22: PS-22

Runoff = 0.5 cfs @ 12.08 hrs, Volume= 1,583 cf, Depth> 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.91"

Area (sf)	CN	Description
0	55	Woods, Good, HSG B
5,027	61	>75% Grass cover, Good, HSG B
0	98	Roofs, HSG B
2,974	98	Paved roads w/curbs & sewers, HSG B
0	48	Brush, Good, HSG B
8,001	75	Weighted Average
5,027		62.83% Pervious Area
2,974		37.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	128	0.0250	3.87	7.74	**Channel Flow, Channel Flow** Area= 2.0 sf Perim= 20.2' r= 0.10' n= 0.013 Asphalt, smooth
4.4					**Direct Entry, Min Tc of 5 Min**
5.0	128	Total			

Summary for Reach PR01: PR-01

Inflow Area = 501,769 sf, 0.00% Impervious, Inflow Depth > 1.02" for 10-YR event
Inflow = 3.5 cfs @ 13.48 hrs, Volume= 42,714 cf
Outflow = 3.2 cfs @ 14.17 hrs, Volume= 41,238 cf, Atten= 8%, Lag= 41.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.37 fps, Min. Travel Time= 24.1 min
Avg. Velocity = 0.23 fps, Avg. Travel Time= 39.7 min

Peak Storage= 4,599 cf @ 13.77 hrs
Average Depth at Peak Storage= 0.06'
Bank-Full Depth= 2.00' Flow Area= 470.0 sf, Capacity= 1,413.2 cfs

135.00' x 2.00' deep channel, n= 0.050 Scattered brush, heavy weeds
Side Slope Z-value= 50.0 '/' Top Width= 335.00'
Length= 537.0' Slope= 0.0065 '/'
Inlet Invert= 26.50', Outlet Invert= 23.00'

‡

Summary for Reach PR02: PR02

Inflow Area = 776,774 sf, 11.56% Impervious, Inflow Depth > 1.17" for 10-YR event
Inflow = 7.1 cfs @ 12.81 hrs, Volume= 75,906 cf
Outflow = 5.4 cfs @ 13.55 hrs, Volume= 72,756 cf, Atten= 23%, Lag= 44.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.48 fps, Min. Travel Time= 23.3 min
Avg. Velocity = 0.25 fps, Avg. Travel Time= 43.7 min

Peak Storage= 7,618 cf @ 13.16 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 2.00' Flow Area= 408.0 sf, Capacity= 1,097.9 cfs

104.00' x 2.00' deep channel, n= 0.050 Scattered brush, heavy weeds
Side Slope Z-value= 50.0 '/' Top Width= 304.00'
Length= 668.0' Slope= 0.0055 '/'
Inlet Invert= 25.70', Outlet Invert= 22.00'

‡

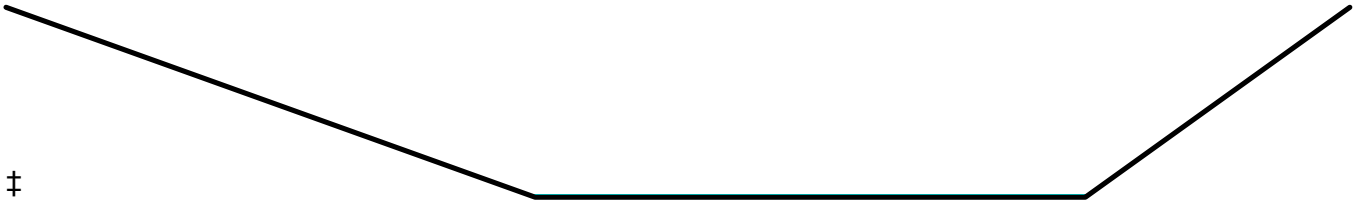
Summary for Reach PR03: PR03

Inflow Area = 270,863 sf, 16.77% Impervious, Inflow Depth > 0.84" for 10-YR event
Inflow = 1.5 cfs @ 13.34 hrs, Volume= 19,050 cf
Outflow = 1.0 cfs @ 15.23 hrs, Volume= 17,409 cf, Atten= 36%, Lag= 113.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.27 fps, Min. Travel Time= 54.3 min
Avg. Velocity = 0.21 fps, Avg. Travel Time= 71.3 min

Peak Storage= 3,179 cf @ 14.32 hrs
Average Depth at Peak Storage= 0.03'
Bank-Full Depth= 2.00' Flow Area= 358.0 sf, Capacity= 1,142.3 cfs

104.00' x 2.00' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 50.0 25.0 '/' Top Width= 254.00'
Length= 894.0' Slope= 0.0187 '/'
Inlet Invert= 43.50', Outlet Invert= 26.80'



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Summary for Reach PR04: PR-04

Inflow Area = 1,177,838 sf, 1.45% Impervious, Inflow Depth > 1.30" for 10-YR event
Inflow = 11.6 cfs @ 13.10 hrs, Volume= 127,463 cf
Outflow = 10.9 cfs @ 13.64 hrs, Volume= 123,998 cf, Atten= 6%, Lag= 32.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.59 fps, Min. Travel Time= 19.3 min
Avg. Velocity = 0.32 fps, Avg. Travel Time= 35.8 min

Peak Storage= 12,656 cf @ 13.32 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 3.00' Flow Area= 569.4 sf, Capacity= 2,431.4 cfs

146.00' x 3.00' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 17.0 12.2 '/' Top Width= 233.60'
Length= 682.0' Slope= 0.0161 '/'
Inlet Invert= 33.00', Outlet Invert= 22.00'

‡

Summary for Reach PR05: PR-05

Inflow Area = 36,834 sf, 49.69% Impervious, Inflow Depth > 2.69" for 10-YR event
Inflow = 0.7 cfs @ 12.49 hrs, Volume= 8,269 cf
Outflow = 0.7 cfs @ 12.56 hrs, Volume= 8,253 cf, Atten= 3%, Lag= 4.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.37 fps, Min. Travel Time= 2.1 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 3.9 min

Peak Storage= 85 cf @ 12.52 hrs
Average Depth at Peak Storage= 0.06'
Bank-Full Depth= 1.00' Flow Area= 80.0 sf, Capacity= 155.3 cfs

30.00' x 1.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 50.0 '/' Top Width= 130.00'
Length= 46.0' Slope= 0.0326 '/'
Inlet Invert= 27.50', Outlet Invert= 26.00'

‡

Summary for Reach PR06: PR-06

Inflow Area = 50,749 sf, 56.83% Impervious, Inflow Depth > 1.15" for 10-YR event
Inflow = 0.6 cfs @ 12.76 hrs, Volume= 4,857 cf
Outflow = 0.5 cfs @ 13.13 hrs, Volume= 4,765 cf, Atten= 19%, Lag= 22.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.32 fps, Min. Travel Time= 10.2 min
Avg. Velocity = 0.17 fps, Avg. Travel Time= 18.5 min

Peak Storage= 283 cf @ 12.96 hrs
Average Depth at Peak Storage= 0.05'
Bank-Full Depth= 1.00' Flow Area= 80.0 sf, Capacity= 149.1 cfs

30.00' x 1.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 50.0 '/' Top Width= 130.00'
Length= 193.0' Slope= 0.0301 '/'
Inlet Invert= 49.80', Outlet Invert= 44.00'

‡

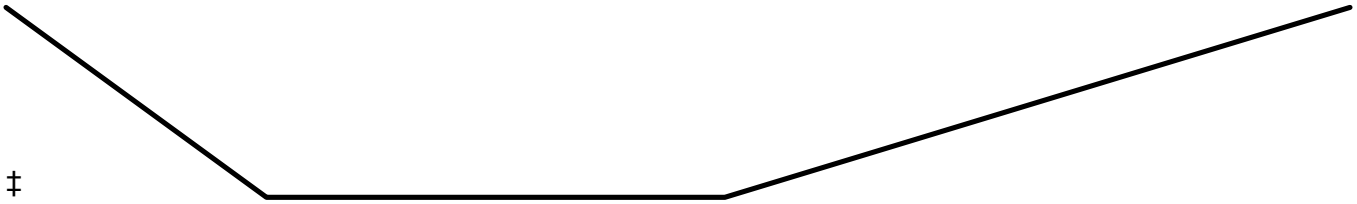
Summary for Reach PR07: PR-07

Inflow Area = 8,001 sf, 37.17% Impervious, Inflow Depth > 0.11" for 10-YR event
Inflow = 0.0 cfs @ 24.00 hrs, Volume= 75 cf
Outflow = 0.0 cfs @ 24.00 hrs, Volume= 61 cf, Atten= 1%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.17 fps, Min. Travel Time= 65.8 min
Avg. Velocity = 0.17 fps, Avg. Travel Time= 65.8 min

Peak Storage= 7 cf @ 24.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 2.00' Flow Area= 346.0 sf, Capacity= 992.5 cfs

88.00' x 2.00' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 25.0 60.0 '/' Top Width= 258.00'
Length= 682.0' Slope= 0.0161 '/'
Inlet Invert= 33.00', Outlet Invert= 22.00'



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Summary for Pond CB01: CB-01

Inflow Area = 7,105 sf, 45.43% Impervious, Inflow Depth > 2.37" for 10-YR event
Inflow = 0.5 cfs @ 12.08 hrs, Volume= 1,406 cf
Outflow = 0.5 cfs @ 12.08 hrs, Volume= 1,406 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.5 cfs @ 12.08 hrs, Volume= 1,406 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 31.42' @ 12.08 hrs
Flood Elev= 34.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	31.00'	**12.0" Round Culvert** L= 5.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 31.00' / 30.98' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.4 cfs @ 12.08 hrs HW=31.41' (Free Discharge)
1=Culvert (Barrel Controls 0.4 cfs @ 2.13 fps)

Summary for Pond CB02: CB-02

Inflow Area = 7,178 sf, 43.80% Impervious, Inflow Depth > 2.46" for 10-YR event
Inflow = 0.5 cfs @ 12.08 hrs, Volume= 1,471 cf
Outflow = 0.5 cfs @ 12.08 hrs, Volume= 1,471 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.5 cfs @ 12.08 hrs, Volume= 1,471 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 31.43' @ 12.08 hrs
Flood Elev= 34.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	31.00'	**12.0" Round Culvert** L= 5.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 31.00' / 30.98' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.5 cfs @ 12.08 hrs HW=31.42' (Free Discharge)
1=Culvert (Barrel Controls 0.5 cfs @ 2.15 fps)

Summary for Pond CB03: CB-03

Inflow Area = 9,386 sf, 59.61% Impervious, Inflow Depth > 3.09" for 10-YR event
Inflow = 0.8 cfs @ 12.09 hrs, Volume= 2,417 cf
Outflow = 0.8 cfs @ 12.09 hrs, Volume= 2,417 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.8 cfs @ 12.09 hrs, Volume= 2,417 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 39.45' @ 12.09 hrs
Flood Elev= 43.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	39.00'	**12.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 39.00' / 38.40' S= 0.0300 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.7 cfs @ 12.09 hrs HW=39.44' (Free Discharge)
1=Culvert (Inlet Controls 0.7 cfs @ 2.25 fps)

Summary for Pond CB04: CB-04

Inflow Area = 13,165 sf, 48.14% Impervious, Inflow Depth > 2.72" for 10-YR event
Inflow = 0.9 cfs @ 12.11 hrs, Volume= 2,985 cf
Outflow = 0.9 cfs @ 12.11 hrs, Volume= 2,985 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.9 cfs @ 12.11 hrs, Volume= 2,985 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 38.79' @ 12.11 hrs
Flood Elev= 42.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	38.30'	**12.0" Round Culvert** L= 26.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.30' / 36.20' S= 0.0808 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.9 cfs @ 12.11 hrs HW=38.78' (Free Discharge)
1=Culvert (Inlet Controls 0.9 cfs @ 2.37 fps)

Summary for Pond CB05: CB-05

Inflow Area = 1,052 sf, 74.52% Impervious, Inflow Depth > 3.68" for 10-YR event
Inflow = 0.1 cfs @ 12.07 hrs, Volume= 323 cf
Outflow = 0.1 cfs @ 12.07 hrs, Volume= 323 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.1 cfs @ 12.07 hrs, Volume= 323 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 51.63' @ 12.07 hrs
Flood Elev= 53.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	51.40'	**6.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.40' / 51.30' S= 0.0056 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.1 cfs @ 12.07 hrs HW=51.63' (Free Discharge)
1=Culvert (Barrel Controls 0.1 cfs @ 1.68 fps)

Summary for Pond CB06: CB-06

Inflow Area = 2,230 sf, 71.17% Impervious, Inflow Depth > 3.52" for 10-YR event
Inflow = 0.2 cfs @ 12.07 hrs, Volume= 655 cf
Outflow = 0.2 cfs @ 12.07 hrs, Volume= 655 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.2 cfs @ 12.07 hrs, Volume= 655 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 51.51' @ 12.07 hrs
Flood Elev= 53.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	51.20'	**6.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.20' / 51.00' S= 0.0091 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.2 cfs @ 12.07 hrs HW=51.50' (Free Discharge)
1=Culvert (Barrel Controls 0.2 cfs @ 2.29 fps)

Summary for Pond CB07: CB-07

Inflow Area = 34,358 sf, 54.15% Impervious, Inflow Depth > 2.95" for 10-YR event
Inflow = 2.1 cfs @ 12.18 hrs, Volume= 8,437 cf
Outflow = 2.1 cfs @ 12.18 hrs, Volume= 8,437 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.18 hrs, Volume= 8,437 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 51.98' @ 12.18 hrs
Flood Elev= 54.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	51.00'	**12.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.00' / 50.90' S= 0.0056 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.1 cfs @ 12.18 hrs HW=51.98' (Free Discharge)
1=Culvert (Barrel Controls 2.1 cfs @ 3.38 fps)

Summary for Pond CB08: CB-08

Inflow Area = 48,519 sf, 56.17% Impervious, Inflow Depth > 3.01" for 10-YR event
Inflow = 3.1 cfs @ 12.15 hrs, Volume= 12,163 cf
Outflow = 3.1 cfs @ 12.15 hrs, Volume= 12,163 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.1 cfs @ 12.15 hrs, Volume= 12,163 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 52.14' @ 12.15 hrs
Flood Elev= 54.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	50.80'	**12.0" Round Culvert** L= 26.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.80' / 50.60' S= 0.0077 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.0 cfs @ 12.15 hrs HW=52.13' (Free Discharge)
1=Culvert (Barrel Controls 3.0 cfs @ 3.87 fps)

Summary for Pond PP01: CULVERTS

Inflow Area = 2,940,020 sf, 4.36% Impervious, Inflow Depth > 1.28" for 10-YR event
Inflow = 21.4 cfs @ 13.63 hrs, Volume= 313,490 cf
Outflow = 17.5 cfs @ 14.17 hrs, Volume= 312,908 cf, Atten= 18%, Lag= 32.5 min
Primary = 17.5 cfs @ 14.17 hrs, Volume= 312,908 cf
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 24.99' @ 14.17 hrs Surf.Area= 32,944 sf Storage= 20,678 cf

Plug-Flow detention time= 9.7 min calculated for 312,258 cf (100% of inflow)
Center-of-Mass det. time= 8.8 min (960.1 - 951.3)

Volume	Invert	Avail.Storage	Storage Description
#1	22.00'	347,907 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
22.00	10	40.0	0	0	10
24.00	5,297	274.3	3,691	3,691	5,879
25.00	33,326	789.9	17,303	20,995	49,546
26.00	194,474	2,151.9	102,768	123,763	368,395
27.00	255,187	2,316.1	224,144	347,907	426,819

Device	Routing	Invert	Outlet Devices
#1	Primary	22.40'	**15.0" Round RCP_Round 15"** L= 33.5' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 22.40' / 22.35' S= 0.0015 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf

#2	Primary	22.40'	**15.0" Round RCP_Round 15"** L= 33.5' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 22.40' / 22.35' S= 0.0015 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#3	Secondary	25.93'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=17.5 cfs @ 14.17 hrs HW=24.99' (Free Discharge)
└**1=RCP_Round 15"** (Barrel Controls 8.8 cfs @ 7.13 fps)
└**2=RCP_Round 15"** (Barrel Controls 8.8 cfs @ 7.13 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=22.00' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond PP02: PP02

Inflow Area = 270,863 sf, 16.77% Impervious, Inflow Depth > 1.19" for 10-YR event
Inflow = 3.0 cfs @ 12.50 hrs, Volume= 26,876 cf
Outflow = 1.5 cfs @ 13.34 hrs, Volume= 19,050 cf, Atten= 50%, Lag= 50.1 min
Primary = 1.5 cfs @ 13.34 hrs, Volume= 19,050 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 43.61' @ 13.34 hrs Surf.Area= 19,612 sf Storage= 9,050 cf

Plug-Flow detention time= 179.0 min calculated for 19,050 cf (71% of inflow)
Center-of-Mass det. time= 76.7 min (985.6 - 908.9)

Volume	Invert	Avail.Storage	Storage Description
#1	43.00'	17,987 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
43.00	10,339	760.4	0	0	10,339
44.00	26,935	899.1	17,987	17,987	28,674

Device	Routing	Invert	Outlet Devices
#1	Primary	43.53'	**25.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.5 cfs @ 13.34 hrs HW=43.61' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 1.5 cfs @ 0.72 fps)

Summary for Pond PP03: StormTech #1

Inflow Area = 36,834 sf, 49.69% Impervious, Inflow Depth > 2.70" for 10-YR event
Inflow = 2.6 cfs @ 12.09 hrs, Volume= 8,280 cf
Outflow = 0.7 cfs @ 12.49 hrs, Volume= 8,269 cf, Atten= 73%, Lag= 23.7 min
Primary = 0.7 cfs @ 12.49 hrs, Volume= 8,269 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 32.43' @ 12.49 hrs Surf.Area= 2,567 sf Storage= 3,070 cf

Plug-Flow detention time= 134.2 min calculated for 8,269 cf (100% of inflow)
Center-of-Mass det. time= 133.4 min (958.0 - 824.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	30.30'	1,807 cf	**24.83'W x 102.88'L x 2.33'H Field A** 5,961 cf Overall - 1,445 cf Embedded = 4,517 cf x 40.0% Voids
#2A	30.80'	1,445 cf	**ADS_StormTech RC-310 +Cap** x 98 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 98 Chambers in 7 Rows
#3	30.30'	63 cf	**4.00'D x 5.00'H MH**
		3,314 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	28.00'	**12.0" Round Culvert** L= 106.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 28.00' / 27.50' S= 0.0047 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	28.50'	**2.0" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 2	30.30'	**10.000 in/hr Exfiltration over Surface area**
#4	Device 1	32.30'	**12.0" Horiz. HorizontalOrifice** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.7 cfs @ 12.49 hrs HW=32.43' (Free Discharge)
└**1=Culvert** (Passes 0.7 cfs of 5.7 cfs potential flow)
  └**2=Orifice** (Orifice Controls 0.2 cfs @ 9.54 fps)
    └**3=Exfiltration** (Passes 0.2 cfs of 0.6 cfs potential flow)
  └**4=HorizontalOrifice** (Weir Controls 0.5 cfs @ 1.17 fps)

Summary for Pond PP04: StormTech #2

Inflow Area = 50,749 sf, 56.83% Impervious, Inflow Depth > 3.03" for 10-YR event
Inflow = 3.2 cfs @ 12.14 hrs, Volume= 12,818 cf
Outflow = 0.6 cfs @ 12.76 hrs, Volume= 6,172 cf, Atten= 81%, Lag= 37.1 min
Discarded = 0.0 cfs @ 9.05 hrs, Volume= 1,315 cf
Primary = 0.6 cfs @ 12.76 hrs, Volume= 4,857 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 53.87' @ 12.76 hrs Surf.Area= 3,325 sf Storage= 6,986 cf

Plug-Flow detention time= 248.4 min calculated for 6,172 cf (48% of inflow)
Center-of-Mass det. time= 133.5 min (951.9 - 818.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	50.50'	2,984 cf	**30.00'W x 110.42'L x 3.50'H Field A** 11,594 cf Overall - 4,135 cf Embedded = 7,459 cf x 40.0% Voids
#2A	51.00'	4,135 cf	**ADS_StormTech SC-740 +Cap** x 90 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 90 Chambers in 6 Rows
#3	50.50'	72 cf	**4.00'D x 5.70'H Vertical Cone/Cylinder**
		7,190 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	51.00'	**15.0" Round Culvert** L= 18.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.00' / 49.80' S= 0.0667 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	52.20'	**1.2" Vert. Orifice** C= 0.600
#3	Device 1	53.75'	**15.0" Horiz. Top of Stand Pipe** C= 0.600 Limited to weir flow at low heads
#4	Discarded	50.50'	**0.300 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 9.05 hrs HW=50.56' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.6 cfs @ 12.76 hrs HW=53.87' (Free Discharge)
└**1=Culvert** (Passes 0.6 cfs of 8.8 cfs potential flow)
  ├**2=Orifice** (Orifice Controls 0.0 cfs @ 6.12 fps)
  └**3=Top of Stand Pipe** (Weir Controls 0.5 cfs @ 1.12 fps)

Summary for Pond PP05: Bloretention Pond #1

Inflow Area = 8,001 sf, 37.17% Impervious, Inflow Depth > 2.37" for 10-YR event
Inflow = 0.5 cfs @ 12.08 hrs, Volume= 1,583 cf
Outflow = 0.0 cfs @ 24.00 hrs, Volume= 75 cf, Atten= 100%, Lag= 715.2 min
Primary = 0.0 cfs @ 24.00 hrs, Volume= 75 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 56.43' @ 24.00 hrs Surf.Area= 1,411 sf Storage= 1,508 cf

Plug-Flow detention time= 447.8 min calculated for 75 cf (5% of inflow)
Center-of-Mass det. time= 252.8 min (1,087.2 - 834.4)

Volume	Invert	Avail.Storage	Storage Description
#1	53.33'	5,635 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
53.33	1,227	140.7	0.0	0	0	1,227
54.50	1,227	140.7	40.0	574	574	1,392
56.00	1,227	140.1	20.0	368	942	1,603
57.00	1,677	159.6	100.0	1,446	2,388	2,091
58.00	2,184	178.4	100.0	1,925	4,313	2,624
58.10	2,696	205.8	100.0	244	4,557	3,462
58.50	2,696	205.8	100.0	1,078	5,635	3,545

Device	Routing	Invert	Outlet Devices
#1	Primary	53.50'	**12.0" Round Culvert** L= 152.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 53.50' / 47.90' S= 0.0368 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	53.50'	**0.2" Vert. Orifice/Grate** C= 0.600
#3	Device 1	57.50'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.0 cfs @ 24.00 hrs HW=56.43' (Free Discharge)
└**1=Culvert** (Passes 0.0 cfs of 5.9 cfs potential flow)
  └**2=Orifice/Grate** (Orifice Controls 0.0 cfs @ 8.23 fps)
  └**3=Orifice/Grate** (Controls 0.0 cfs)

Summary for Pond PP06: Wildlife Crossings

Inflow Area = 735,887 sf, 9.50% Impervious, Inflow Depth > 1.15" for 10-YR event
Inflow = 6.7 cfs @ 12.78 hrs, Volume= 70,356 cf
Outflow = 6.7 cfs @ 12.82 hrs, Volume= 67,014 cf, Atten= 1%, Lag= 2.7 min
Primary = 0.7 cfs @ 12.82 hrs, Volume= 30,277 cf
Secondary = 5.9 cfs @ 12.82 hrs, Volume= 36,737 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 27.83' @ 12.82 hrs Surf.Area= 9,857 sf Storage= 5,429 cf

Plug-Flow detention time= 43.7 min calculated for 67,014 cf (95% of inflow)
Center-of-Mass det. time= 21.5 min (966.1 - 944.6)

Volume	Invert	Avail.Storage	Storage Description
#1	25.50'	7,358 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
25.50	10	40.0	0	0	10
26.00	141	144.3	31	31	1,540
27.00	2,025	318.1	900	932	7,940
28.00	12,270	467.3	6,427	7,358	17,273

Device	Routing	Invert	Outlet Devices
#1	Primary	25.80'	**5.0" W x 1.7" H Box Culvert X 3.00** L= 33.5' RCP, square edge headwall, Ke= 0.500

Inlet / Outlet Invert= 25.80' / 25.75' S= 0.0015 '/' Cc= 0.900
n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.06 sf
#2 Secondary 27.70' **50.0' long x 35.0' breadth Broad-Crested Rectangular Weir**
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.7 cfs @ 12.82 hrs HW=27.83' (Free Discharge)
1=Culvert (Barrel Controls 0.7 cfs @ 4.08 fps)

Secondary OutFlow Max=5.9 cfs @ 12.82 hrs HW=27.83' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 5.9 cfs @ 0.95 fps)

Summary for Link PPol01: Ex Pol-01

Inflow Area = 2,940,020 sf, 4.36% Impervious, Inflow Depth > 1.28" for 10-YR event
Inflow = 17.5 cfs @ 14.17 hrs, Volume= 312,908 cf
Primary = 17.5 cfs @ 14.17 hrs, Volume= 312,908 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link PPol02: Ex Pol-02

Inflow Area = 59,626 sf, 0.00% Impervious, Inflow Depth > 1.43" for 10-YR event
Inflow = 0.9 cfs @ 12.79 hrs, Volume= 7,106 cf
Primary = 0.9 cfs @ 12.79 hrs, Volume= 7,106 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link PPol03: Proposed Wildlife Crossings

Inflow Area = 735,887 sf, 9.50% Impervious, Inflow Depth > 1.15" for 10-YR event
Inflow = 6.7 cfs @ 12.78 hrs, Volume= 70,356 cf
Primary = 6.7 cfs @ 12.78 hrs, Volume= 70,356 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

APPENDIX F – BMP WORKSHEETS

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FILTRATION PRACTICE DESIGN CRITERIA
(Env-Wq 1508.07)

Type/Node Name: **PP03-STORMTECH #1**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable

		Have you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a)?	
0.85	ac	A = Area draining to the practice	
0.42	ac	A_I = Impervious area draining to the practice	
0.50	decimal	I = percent impervious area draining to the practice, in decimal form	
0.50	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.42	ac-in	WQV= 1" x Rv x A	
1,526	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
382	cf	25% x WQV (check calc for sediment forebay volume)	
1,145	cf	75% x WQV (check calc for surface sand filter volume)	
Isolator Row		Method of Pretreatment? (not required for clean or roof runoff)	
NA	cf	V_{SED} = sediment forebay volume, if used for pretreatment	← ≥ 25%WQV
2,567	sf	A_{SA} = surface area of the practice	
NA	iph	$Ksat_{DESIGN}$ = design infiltration rate[1]	
Yes	Yes/No	If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?	
-	hours	T_{DRAIN} = drain time = V / (A_{SA} * I_{DESIGN})	← ≤ 72-hrs
28.30	feet	E_{FC} = elevation of the bottom of the filter course material[2]	
27.30	feet	E_{UD} = invert elevation of the underdrain (UD), if applicable	
NA	feet	E_{SHWT} = elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
NA	feet	E_{ROCK} = elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
1.00	feet	$D_{FC\ to\ UD}$ = depth to UD from the bottom of the filter course	← ≥ 1'
#VALUE!	feet	$D_{FC\ to\ ROCK}$ = depth to bedrock from the bottom of the filter course	← ≥ 1'
#VALUE!	feet	$D_{FC\ to\ SHWT}$ = depth to SHWT from the bottom of the filter course	← ≥ 1'
33.93	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
34.60	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	← yes

If a surface sand filter or underground sand filter is proposed:

YES	ac	Drainage Area check.	← < 10 ac
3,246	cf	V = volume of storage[3] (attach a stage-storage table)	← ≥ 75%WQV
18.0	inches	D_{FC} = filter course thickness	← 18", or 24" if within GPA
Sheet		Note what sheet in the plan set contains the filter course specification	
Yes	Yes/No	Access grate provided?	← yes

If a bioretention area is proposed:

YES	ac	Drainage Area no larger than 5 ac?	← **yes**
	cf	V = volume of storage[3] (attach a stage-storage table)	← **≥ WQV**
	inches	D_{FC} = filter course thickness	← **18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification	
	:1	Pond side slopes	← **≥3:1**
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	

If porous pavement is proposed:

		Type of pavement proposed (concrete? Asphalt? Pavers? Etc)	
	acres	A_{SA} = surface area of the pervious pavement	
	:1	ratio of the contributing area to the pervious surface area	← **≤ 5:1**
	inches	D_{FC} = filter course thickness	← **12", or 18" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course spec.	← **304.1 sand**

1. Rate of the limiting layer (either the filter course or the underlying soil). $Ksat_{design}$ includes factor of safey. See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

Stage-Area-Storage for Pond PP03: StormTech #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
30.30	**2,567**	0
30.35	2,567	52
30.40	2,567	103
30.45	2,567	155
30.50	2,567	207
30.55	2,567	259
30.60	2,567	310
30.65	2,567	362
30.70	2,567	414
30.75	2,567	466
30.80	2,567	517
30.85	2,567	619
30.90	2,567	721
30.95	2,567	822
31.00	2,567	923
31.05	2,567	1,022
31.10	2,567	1,121
31.15	2,567	1,219
31.20	2,567	1,315
31.25	2,567	1,411
31.30	2,567	1,505
31.35	2,567	1,598
31.40	2,567	1,690
31.45	2,567	1,780
31.50	2,567	1,868
31.55	2,567	1,955
31.60	2,567	2,040
31.65	2,567	2,123
31.70	2,567	2,204
31.75	2,567	2,282
31.80	2,567	2,357
31.85	2,567	2,429
31.90	2,567	2,496
31.95	2,567	2,558
32.00	2,567	2,617
32.05	2,567	2,674
32.10	2,567	2,728
32.15	2,567	2,781
32.20	2,567	2,832
32.25	2,567	2,884
32.30	2,567	2,936
32.35	2,567	2,988
32.40	2,567	3,039
32.45	2,567	3,091
32.50	2,567	3,143
32.55	2,567	3,194
32.60	2,567	3,246
32.65	2,567	3,281
32.70	2,567	3,282
32.75	2,567	3,282
32.80	2,567	3,283
32.85	2,567	3,283
32.90	2,567	3,284
32.95	2,567	3,285
33.00	2,567	3,285
33.05	2,567	3,286
33.10	2,567	3,287
33.15	2,567	3,287
33.20	2,567	3,288
33.25	2,567	3,288
33.30	2,567	3,289
33.35	2,567	3,290
33.40	2,567	3,290
33.45	2,567	3,291
33.50	2,567	3,292
33.55	2,567	3,292
33.60	2,567	3,293
33.65	2,567	3,293
33.70	2,567	3,294
33.75	2,567	3,295
33.80	2,567	3,295
33.85	2,567	3,296
33.90	2,567	3,297
33.95	2,567	3,297
34.00	2,567	3,298
34.05	2,567	3,298
34.10	2,567	3,299
34.15	2,567	3,300
34.20	2,567	3,300
34.25	2,567	3,301
34.30	2,567	3,302
34.35	2,567	3,302
34.40	2,567	3,303
34.45	2,567	3,304
34.50	2,567	3,304
34.55	2,567	3,305
34.60	2,567	3,305
34.65	2,567	3,306
34.70	2,567	3,307
34.75	2,567	3,307
34.80	2,567	3,308
34.85	2,567	3,309
34.90	2,567	3,309
34.95	2,567	3,310
35.00	2,567	3,310
35.05	2,567	3,311
35.10	2,567	3,312
35.15	2,567	3,312
35.20	2,567	3,313
35.25	2,567	3,314
35.30	2,567	**3,314**

INFILTRATION PRACTICE CRITERIA
(Env-Wq 1508.06)

Type/Node Name: **PP04 STORMTECH #2**

Enter the type of infiltration practice (e.g., basin, trench) and the node name in the drainag

		Have you reviewed Env-Wq 1508.06(a) to ensure that infiltration is allowed?
1.17	ac	A = Area draining to the practice
0.66	ac	A_I = Impervious area draining to the practice
0.57	decimal	I = percent impervious area draining to the practice, in decimal form
0.56	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)
0.65	ac-in	WQV= 1" x Rv x A
2,373	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")
593	cf	25% x WQV (check calc for sediment forebay volume)
Isolator Row		Method of pretreatment? (not required for clean or roof runoff)
NA	cf	V_{SED} = sediment forebay volume, if used for pretreatment
3,800	cf	V = volume[1] (attach a stage-storage table)
3,325	sf	A_{SA} = surface area of the bottom of the pond
0.30	iph	$Ksat_{DESIGN}$ = design infiltration rate[2]
28.6	hours	T_{DRAIN} = drain time = V / (A_{SA} * I_{DESIGN})
50.50	feet	E_{BTM} = elevation of the bottom of the basin
47.50	feet	E_{SHWT} = elevation of SHWT (if none found, enter the lowest elevation of the t
46.50	feet	E_{ROCK} = elevation of bedrock (if none found, enter the lowest elevation of the
3.00	feet	D_{SHWT} = separation from SHWT
4.0	feet	D_{ROCK} = separation from bedrock
NA	ft	D_{amend} = Depth of amended soil, if applicable due high infiltation rate
NA	ft	D_T = depth of trench, if trench proposed
NA	Yes/No	If a trench or underground system is proposed, observation well provided[4]
NA		If a trench is proposed, material in trench
Crushed Stone		If a basin is proposed, basin floor material
Square	Yes/No	If a basin is proposed, the perimeter should be curvilinear, basin floor shall be
Undergrnd	:1	If a basin is proposed, pond side slopes
53.87	ft	Peak elevation of the 10-year storm event (infiltration can be used in analysis)
55.25	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)
56.00	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		If a basin is proposed, 50-year peak elevation ≤ Elevation of berm?

1. Volume below the lowest invert of the outlet structure and excludes forebay volume
2. $Ksat_{DESIGN}$ includes a factor of safety. See Env-Wq 1504.14 for requirements for determining the i
3. 1' separation if treatment not required; 4' for treatment in GPAs & WSIPAs; & 3' in all other area
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 sec

Designer's Notes:

ge analysis, if applicable

← ≥ 25%WQV
← ≥ WQV

← ≥ 72-hrs

est pit)
test pit)
← ≥ *
← ≥ *
← ≥ 24"
← 4 - 10 ft

flat.
← ≥3:1

)
)
)
← yes
← yes

infiltr. rate
s.

ondary discharge.

Stage-Area-Storage for Pond PP04: StormTech #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
50.50	**3,325**	0
50.60	3,325	134
50.70	3,325	268
50.80	3,325	401
50.90	3,325	535
51.00	3,325	669
51.10	3,325	945
51.20	3,325	1,221
51.30	3,325	1,495
51.40	3,325	1,768
51.50	3,325	2,038
51.60	3,325	2,306
51.70	3,325	2,571
51.80	3,325	2,834
51.90	3,325	3,094
52.00	3,325	3,351
52.10	3,325	3,604
52.20	3,325	3,854
52.30	3,325	4,099
52.40	3,325	4,341
52.50	3,325	4,578
52.60	3,325	4,809
52.70	3,325	5,035
52.80	3,325	5,254
52.90	3,325	5,466
53.00	3,325	5,670
53.10	3,325	5,864
53.20	3,325	6,045
53.30	3,325	6,208
53.40	3,325	6,355
53.50	3,325	6,493
53.60	3,325	6,627
53.70	3,325	6,761
53.80	3,325	6,895
53.90	3,325	7,028
54.00	3,325	7,162
54.10	3,325	7,164
54.20	3,325	7,165
54.30	3,325	7,166
54.40	3,325	7,167
54.50	3,325	7,169
54.60	3,325	7,170
54.70	3,325	7,171
54.80	3,325	7,172
54.90	3,325	7,174
55.00	3,325	7,175
55.10	3,325	7,176
55.20	3,325	7,177
55.30	3,325	7,179
55.40	3,325	7,180
55.50	3,325	7,181
55.60	3,325	7,182
55.70	3,325	7,184
55.80	3,325	7,185
55.90	3,325	7,186
56.00	3,325	7,187
56.10	3,325	7,189
56.20	3,325	**7,190**

FILTRATION PRACTICE DESIGN CRITERIA
(Env-Wq 1508.07)

Type/Node Name: **PP-05 BIORETENTION AREA #1**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable

		Have you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a)?	
0.18	ac	A = Area draining to the practice	
0.07	ac	A_I = Impervious area draining to the practice	
0.37	decimal	I = percent impervious area draining to the practice, in decimal form	
0.38	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.07	ac-in	WQV= 1" x Rv x A	
256	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
64	cf	25% x WQV (check calc for sediment forebay volume)	
192	cf	75% x WQV (check calc for surface sand filter volume)	
Forbay		Method of Pretreatment? (not required for clean or roof runoff)	
140	cf	V_{SED} = sediment forebay volume, if used for pretreatment	← ≥ 25%WQV
1,227	sf	A_{SA} = surface area of the practice	
NA	iph	$Ksat_{DESIGN}$ = design infiltration rate[1]	
Yes	Yes/No	If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?	
-	hours	T_{DRAIN} = drain time = V / (A_{SA} * I_{DESIGN})	← ≤ 72-hrs
54.50	feet	E_{FC} = elevation of the bottom of the filter course material[2]	
53.50	feet	E_{UD} = invert elevation of the underdrain (UD), if applicable	
NA	feet	E_{SHWT} = elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
NA	feet	E_{ROCK} = elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
1.00	feet	$D_{FC\ to\ UD}$ = depth to UD from the bottom of the filter course	← ≥ 1'
#VALUE!	feet	$D_{FC\ to\ ROCK}$ = depth to bedrock from the bottom of the filter course	← ≥ 1'
#VALUE!	feet	$D_{FC\ to\ SHWT}$ = depth to SHWT from the bottom of the filter course	← ≥ 1'
57.32	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
58.00	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	← yes

If a surface sand filter or underground sand filter is proposed:

YES	ac	Drainage Area check.	← < 10 ac
	cf	V = volume of storage[3] (attach a stage-storage table)	← ≥ 75%WQV
	inches	D_{FC} = filter course thickness	← 18", or 24" if within GPA
Sheet		Note what sheet in the plan set contains the filter course specification	
	Yes/No	Access grate provided?	← yes

If a bioretention area is proposed:

YES	ac	Drainage Area no larger than 5 ac?	← **yes**
2,970	cf	V = volume of storage[3] (attach a stage-storage table)	← **≥ WQV**
18.0	inches	D_{FC} = filter course thickness	← **18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	← **≥3:1**
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	

If porous pavement is proposed:

		Type of pavement proposed (concrete? Asphalt? Pavers? Etc)	
	acres	A_{SA} = surface area of the pervious pavement	
	:1	ratio of the contributing area to the pervious surface area	← **≤ 5:1**
	inches	D_{FC} = filter course thickness	← **12", or 18" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course spec.	← **304.1 sand**

1. Rate of the limiting layer (either the filter course or the underlying soil). $Ksat_{design}$ includes factor of safey. See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

Hydrograph for Pond PP03: StormTech #1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.0	0	30.30	0.0
0.50	0.0	0	30.30	0.0
1.00	0.0	0	30.30	0.0
1.50	0.0	0	30.30	0.0
2.00	0.0	0	30.30	0.0
2.50	0.0	0	30.30	0.0
3.00	0.0	0	30.30	0.0
3.50	0.0	0	30.30	0.0
4.00	0.0	0	30.30	0.0
4.50	0.0	0	30.30	0.0
5.00	0.0	0	30.30	0.0
5.50	0.0	0	30.30	0.0
6.00	0.0	0	30.30	0.0
6.50	0.0	0	30.30	0.0
7.00	0.0	0	30.30	0.0
7.50	0.0	0	30.30	0.0
8.00	0.0	1	30.30	0.0
8.50	0.0	3	30.30	0.0
9.00	0.0	6	30.31	0.0
9.50	0.0	9	30.31	0.0
10.00	0.0	14	30.32	0.0
10.50	0.1	22	30.32	0.1
11.00	0.1	32	30.34	0.1
11.50	0.2	69	30.38	0.1
12.00	**1.6**	**884**	**31.05**	**0.2**
12.50	**0.6**	**2,661**	**32.44**	**0.7**
13.00	0.3	2,570	32.34	0.3
13.50	0.2	2,542	32.30	0.2
14.00	0.2	2,509	32.27	0.2
14.50	0.1	2,427	32.18	0.2
15.00	0.1	2,317	32.06	0.2
15.50	0.1	2,179	31.92	0.2
16.00	0.1	2,015	31.78	0.2
16.50	0.1	1,831	31.65	0.2
17.00	0.1	1,638	31.52	0.2
17.50	0.1	1,438	31.39	0.2
18.00	0.1	1,229	31.26	0.2
18.50	0.1	1,017	31.13	0.2
19.00	0.1	807	31.00	0.2
19.50	0.0	600	30.89	0.2
20.00	0.0	395	30.74	0.2
20.50	0.0	199	30.52	0.1
21.00	0.0	25	30.33	0.1
21.50	0.0	13	30.31	0.0
22.00	0.0	12	30.31	0.0
22.50	0.0	11	30.31	0.0
23.00	0.0	11	30.31	0.0
23.50	0.0	10	30.31	0.0
24.00	0.0	10	30.31	0.0

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APPENDIX G – NRCS WEB SOILS SURVEY

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United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Rockingham County, New Hampshire

Banfield - Portsmouth, NH

September 13, 2019

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

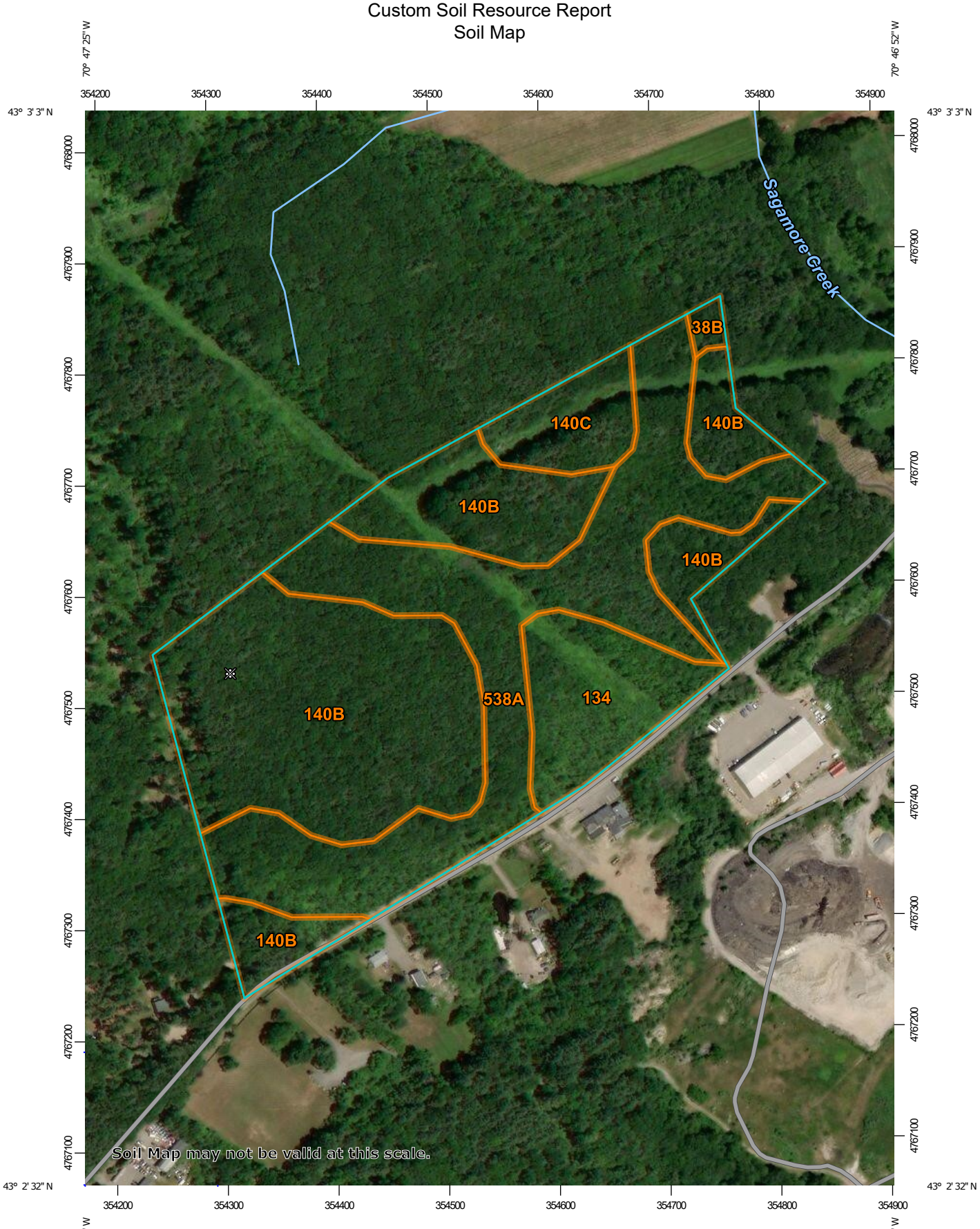
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:4,710 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 20, Sep 7, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Jun 14, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
38B	Eldridge fine sandy loam, 3 to 8 percent slopes	0.3	0.7%
134	Maybid silt loam	4.5	10.0%
140B	Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky	22.1	48.5%
140C	Chatfield-Hollis-Canton complex, 8 to 15 percent slopes, rocky	2.5	5.5%
538A	Squamscott fine sandy loam, 0 to 5 percent slopes	16.1	35.4%
Totals for Area of Interest		**45.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it

was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Rockingham County, New Hampshire

38B—Eldridge fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9cnb
Elevation: 90 to 1,000 feet
Mean annual precipitation: 30 to 55 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 120 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Eldridge and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eldridge

Setting

Parent material: Outwash over glaciolacustrine

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 23 inches: loamy fine sand
H3 - 23 to 62 inches: loamy very fine sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Hydric soil rating: No

Minor Components

Squamscott

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Boxford

Percent of map unit: 5 percent
Hydric soil rating: No

Well drained inclusion
Percent of map unit: 5 percent
Hydric soil rating: No

Scitico
Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

134—Maybid silt loam

Map Unit Composition
Maybid and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Maybid

Setting
Landform: Marine terraces
Parent material: Silty and clayey marine deposits

Typical profile
H1 - 0 to 9 inches: silt loam
H2 - 9 to 26 inches: silty clay loam
H3 - 26 to 63 inches: silty clay

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Moderate (about 8.8 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Minor Components

Ossipee
Percent of map unit: 10 percent
Landform: Swamps
Hydric soil rating: Yes

Scitico
Percent of map unit: 10 percent
Landform: Marine terraces
Hydric soil rating: Yes

Not named wet
Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

140B—Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky

Map Unit Setting
National map unit symbol: 2w82m
Elevation: 380 to 1,070 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition
Chatfield, very stony, and similar soils: 35 percent
Hollis, very stony, and similar soils: 25 percent
Canton, very stony, and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chatfield, Very Stony

Setting
Landform: Ridges, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile
Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 2 inches: fine sandy loam
Bw - 2 to 30 inches: gravelly fine sandy loam
2R - 30 to 40 inches: bedrock

Properties and qualities
Slope: 0 to 8 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: 20 to 41 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Canton, Very Stony

Setting

Landform: Hills, moraines, ridges
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 8 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Hollis, Very Stony

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope

Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 7 inches: gravelly fine sandy loam
Bw - 7 to 16 inches: gravelly fine sandy loam
2R - 16 to 26 inches: bedrock

Properties and qualities

Slope: 0 to 8 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: 8 to 23 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Newfields, very stony

Percent of map unit: 5 percent
Landform: Moraines, hills, ground moraines
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Freetown

Percent of map unit: 5 percent
Landform: Depressions, marshes, swamps, kettles, bogs
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Walpole, very stony

Percent of map unit: 3 percent
Landform: Depressions, outwash plains, depressions, deltas, outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Rock outcrop
Percent of map unit: 2 percent
Landform: Hills, ridges
Hydric soil rating: Unranked

140C—Chatfield-Hollis-Canton complex, 8 to 15 percent slopes, rocky

Map Unit Setting
National map unit symbol: 2w82s
Elevation: 0 to 980 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition
Chatfield, very stony, and similar soils: 35 percent
Canton, very stony, and similar soils: 25 percent
Hollis, very stony, and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chatfield, Very Stony

Setting
Landform: Ridges, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile
Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 2 inches: fine sandy loam
Bw - 2 to 30 inches: gravelly fine sandy loam
2R - 30 to 40 inches: bedrock

Properties and qualities
Slope: 8 to 15 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: 20 to 41 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Hollis, Very Stony

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 7 inches: gravelly fine sandy loam
Bw - 7 to 16 inches: gravelly fine sandy loam
2R - 16 to 26 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: 8 to 23 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Canton, Very Stony

Setting

Landform: Hills, moraines, ridges
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Linear, convex
Across-slope shape: Convex

Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Freetown

Percent of map unit: 5 percent
Landform: Marshes, swamps, kettles, bogs, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Newfields, very stony

Percent of map unit: 5 percent
Landform: Ground moraines, moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Scarboro, very stony

Percent of map unit: 3 percent
Landform: Outwash deltas, drainageways, outwash terraces, depressions
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave, linear
Hydric soil rating: Yes

Rock outcrop
Percent of map unit: 2 percent
Landform: Hills, ridges
Hydric soil rating: Unranked

538A—Squamscott fine sandy loam, 0 to 5 percent slopes

Map Unit Setting
National map unit symbol: 9cp9
Elevation: 90 to 1,000 feet
Mean annual precipitation: 30 to 55 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 120 to 180 days
Farmland classification: Farmland of local importance

Map Unit Composition
Squamscott and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Squamscott

Setting
Landform: Marine terraces

Typical profile
H1 - 0 to 4 inches: fine sandy loam
H2 - 4 to 12 inches: loamy sand
H3 - 12 to 19 inches: fine sand
H4 - 19 to 65 inches: silt loam

Properties and qualities
Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.6 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Minor Components

Maybid

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Scitico

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Eldridge

Percent of map unit: 5 percent
Hydric soil rating: No

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APPENDIX H
TEST PIT LOGS

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SITE-SPECIFIC SOIL SURVEY REPORT
THE VILLAGES AT BANFIELD ROAD
PORTSMOUTH, NH
GES # 2017071

1. MAPPING STANDARDS

Site-Specific Soil Mapping Standards for New Hampshire and Vermont. SSSNNE Special Publication No. 3, Version 5.0, December 2017. This map product is within the technical standards of the National Cooperative Soil Survey. It is a special product, intended for the submission to NH DES Alteration of Terrain. It was produced by a professional soil scientist and is not a product of the USDA Natural Resource Conservation Service.

2. DATE SOIL MAP PRODUCED
December 19, 2019

3. GEOGRAPHIC LOCATION AND SIZE OF SITE

Approximately 23 acres of the 44.8 acre lot was soil mapped. Tax map 256, Lot 2. The site is located in the City of Portsmouth, NH.

4. PURPOSE OF THE SOIL MAP

The preparation of this map was requested by TFM. The purpose was to meet the requirements of NH Alteration of Terrain.

5. SOIL IDENTIFICATION LEGEND

SSSS SYM.	SSSS MAP NAME	HYDROLOGIC SOIL GRP.
41	Chatfield-Hollis-Rock Outcrop Complex	B
135	Chatfield Variant-Newfields Complex	C
538	Squamscott fine sandy loam	C
656	Ridgebury fine sandy loam	C

SLOPE PHASE:

0-8%	B	8-15%	C	15-25%	D
25%+	E				

8 Continental Dr Bldg 2 Unit H, Exeter, NH 03833-7526
Ph (603) 778 0644 / *Fax* (603) 778 0654
info@gesinc.biz
www.gesinc.biz

6. SOIL MAP UNIT DESCRIPTIONS

41 – Chatfield-Hollis-Rock Outcrop Complex is located in bedrock-controlled landscapes. A soil complex is a mix of soil types that are too interwoven to be able to separate at the scale of the soil map. Chatfield is the largest component of the complex at 50%. Hollis is the next component at 30%. The last component is Rock Outcrop at 20%. Chatfield is a loamy glacial till soil that is 20 to 40 inches deep to bedrock. The Hollis has a depth of 10 to 20 inches to bedrock. Rock Outcrop is exposed ledge. The hydrologic group for Chatfield is B. The hydrologic group for Hollis is C/D. There is no hydrologic group for Rock Outcrop, as it is impervious surface. The hydrologic group for this complex was assigned as B, as that represents the largest component of the complex.

135 – Chatfield Variant-Newfields Complex is located in bedrock-controlled landscapes. This is a case where the state-wide soil legend is not adequate to classify the soil types that are intermixed in the soil complex. While Newfields is present in the soil complex map unit, it is not one of the major components. Woodbridge is more dominant than Newfields. Newfields is a moderately well drained loose glacial till soil that has a hydrologic group of B. Woodbridge is a moderately will drained soil on dense glacial till and has a hydrologic group of C. Numerous test pits were conducted on site. At the end of the investigations, 37 Woodbridge soils, 32 Chatfield soil, and 6 Newfields were recorded on the site. So, Woodbridge is the largest component of this soil complex. The Chatfield Variant is a moderately well drained soil that is 20 to 40 inches deep. In this case, there were Chatfield Variant soils that had a dense till layer above the bedrock, which would make the hydrologic soil group for these pits more appropriately identified as C. Based upon the major component of this soil complex and based upon the Chatfield Variant soil profiles, this soil complex map unit was assigned a hydrologic group of C.

538 – Squamscott fine sandy loam is a poorly drained sand over marine silts soil that is commonly found along the Seacoast of New Hampshire. In this case, this soil represents the largest wetland on site. Inclusions would be Scitico silt loam and Ridgebury fine sandy loam.

656 – Ridgebury fine sandy loam is a poorly drained loamy soil that developed on dense glacial tills. These areas commonly have a perched water table. Inclusions would be Walpole fine sandy loam.

7. RESPONSIBLE SOIL SCIENTIST

James P. Gove, C.S.S. #004

8. OTHER DISTINGUISHING FEATURES OF SITE

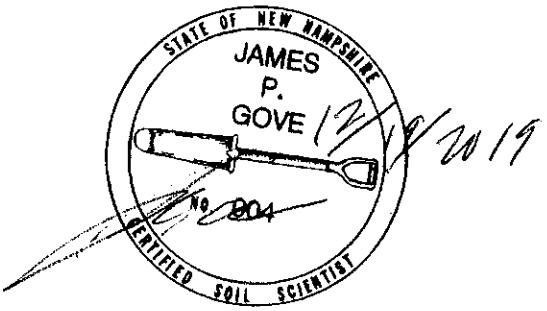
This site has numerous rock outcrops at the higher elevations.

9. MAXIMUM SIZE OF LIMITING INCLUSIONS

15%

10. SPECIAL FEATURE SYMBOLS

None used.



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135D
135B
538B
135C
41C
135D
135C
538B
135B
Include as 538B
135B
135D
135C
41C
135B
135C
41D
135C
135D
41C
135C
135B
135D
656B
135B
135D
135C
538B
135B
538B
135C
656B
135B
538B
135C
135B
BANFIELD ROAD (PUBLIC RIGHT OF WAY)
100' WIDE EASEMENT TO NEW HAMPSHIRE ELECTRIC COMPANY
PROPOSED LOT #2
1,955,237 S.F.
44.8861 ACRES
538A
140B
299
656B
538A
538A
299
140B
MAP 266 LOT 1
N/F
RICCI CONSTRUCTION CO INC
225 BANFIELD ROAD
PORTSMOUTH, NH 03801
RCRD BK. # 2527 PG. # 0322
MAP 266 LOT 2
N/F
DENISE ARNOLD
261 BANFIELD ROAD
PORTSMOUTH, NH 03801
RCRD BK. # 3644 PG. # 1763
MAP 266 LOT 1
N/F
RICCI CONSTRUCTION CO INC
225 BANFIELD ROAD
PORTSMOUTH, NH 03801
RCRD BK. # 2527 PG. # 0322
MAP 254 LOT 1
N/F
RICCI CONSTRUCTION CO INC
225 BANFIELD ROAD
PORTSMOUTH, NH 03801
RCRD BK.# 1743 PG.# 0192
6 LOT 1
N/F
IRL SCOUT COUNCIL
MMERCE DRIVE
RD, NH 03110
.#2167 PG.#147
PLAN D-3206
MAP 266 LOT 3

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Test Pit Log
Banfield Rd
Date:
Logged By: Brenden Walden, Luke Hurley & Mike Coumo

Test Pit #5027:
0-3 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
3-20 INCHES, 10YR 5/5, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: N/A REFUSAL: 20 INCHES OBSERVED WATER: N/A

Test Pit #5026:
0-2 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
2-6 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
6-22 INCHES, 10YR 5/6, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: N/A REFUSAL: 22 INCHES OBSERVED WATER: N/A

Test Pit #5028:
0-2 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
2-4 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
4-36 INCHES, 10YR 4/4, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: N/A REFUSAL: 36 INCHES OBSERVED WATER: N/A

Test Pit #5093:
0-4 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
4-12 INCHES, 10YR 4/3, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
12-22 INCHES, 10YR 5/4, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
22-36 INCHES, 2.5Y 6/4, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: N/A REFUSAL: 36 INCHES OBSERVED WATER: N/A

Test Pit # 5029:
0-2 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
2-8 INCHES, 10YR 4/3, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
8-24 INCHES, 10YR 5/4, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
24-40 INCHES, 2.5Y 6/4, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
40-44 INCHES, 2.5Y 6/4, GRAVELY FINE SANDY LOAM, GRANULAR FRIABLE, WITH 10% REDOX CONCENTRATIONS
ESHWT: 40 INCHES REFUSAL: 44 INCHES OBSERVED WATER: N/A

Test Pit #5094:
0-2 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
2-12 INCHES, 2.5Y 5/4, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
12-32 INCHES, 2.5Y 6/4, FINE SANDY LOAM, GRANULAR, FRIABLE
32-54 INCHES, 2.5Y 5/4, FINE SANDY LOAM, PLATY, FIRM, WITH 20% REDOX CONCENTRATIONS

ESHWT: 32 INCHES REFUSAL: 54 INCHES OBSERVED WATER: N/A

Test Pit #5038:
0-3 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
3-8 INCHES, 2.5Y 6/4, FINE SANDY LOAM, GRANULAR, FRIABLE
8-30 INCHES, 2.5Y 7/4, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
30-40 INCHES, 2.5Y 6/4, GRAVELY FINE SANDY LOAM, MASSIVE, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT: 30 INCHES REFUSAL: 40 INCHES OBSERVED WATER: N/A

Test Pit #5095:
0-2 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
2-12 INCHES, 2.5Y 6/4, FINE SANDY LOAM, GRANULAR, FRIABLE
12-32 INCHES, 2.5Y 7/4, FINE SANDY LOAM, MASSIVE, FIRMWITH 10% REDOX CONCETRATIONS
ESHWT: 12 INCHES REFUSAL: 32 INCHES OBSERVED WATER: N/A

Test Pit #5040/62
0-3 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
3-30 INCHES, 2.5Y 5/4, FINE SANDY LOAM, GRANULAR, FRIABLE
30-38 INCHES, 2.5Y 5/6, GRAVELY FINE SANDY LOAM, MASSIVE, FIRM
ESHWT: N/A REFUSAL: 38 INCHES OBSERVED WATER: N/A

Test Pit #5041/63:
0-3 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIBALE
3-20 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIBALE
ESHWT: N/A REFUSAL: 20 INCHES OBSERVED WATER: N/A

Test Pit #5039/61:
0-3 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
3-24 INCHES, 2.5Y 4/6, FINE SANDY LOAM, GRANULAR, FRIBALE
ESHWT: N/A REFUSAL: 24 INCHES OBSERVED WATER: N/A

Test Pit #5096:
0-3 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
3-16 INCHES, 10YR 5/6, FINE SANDY LOAM, GRANULAR, FRIABLE
16-34 INCHES, 2.5Y 6/4, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: N/A REFUSAL: 34 INCHES OBSERVED WATER: N/A

Test Pit #5038B:
0-2 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
2-14 INCHES, 10YR 5/6, FINE SANDY LOAM, GRANULAR, FRIABLE
14-24 INCHES, 2.5Y 6/4, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
24-29 INCHES, 2.5Y 6/3, FINE SANDY LOAM, MASSIVE, FIRM
29-40 INCHES, 2.5Y 6/3, FINE SANDY LOAM, MASSIVE, FIRM, WITH 10% REDOX CONCENTRATIONS

ESHWT: 29 INCHES REFUSAL: 40 INCHES OBSERVED WATER: N/A

Test Pit #5037/59:
0-4 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
4-15 INCHES, 2.5Y 5/4, FINE SANDY LOAM, GRANULAR, FRIABLE
15-34 INCHES, 2.5Y 6/4, FINE SANDY LOAM, GRANULAR, FRIABLE
34-40 INCHES, 2.5Y 6/3, FINE SANDY LOAM, MASSIVE, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT: 34 INCHES REFUSAL: 40 INCHES OBSERVED WATER: N/A

Test Pit #5036/57:
0-2 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
2-12 INCHES, 10YR 4/4, FINE SANDY LOAM, GRANULAR, FRIABLE
12-26 INCHES, 2.5Y 5/3, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
26-34 INCHES, 2.5Y 5/5, GRAVELY FINE SANDY LOAM, MASSIVE, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT: 26 INCHES REFUSAL: 34 INCHES OBSERVED WATER: N/A

Test Pit #5035/58:
0-3 INCHES, 10YR 2/2, FINE SANDY LOAM, GRANULAR, FRIABLE
3-23 INCHES, 2.5Y 5/4, FINE SANDY LOAM, GRANULAR, FRIABLE
23-55 INCHES, 2.5Y 5/2, FINE SANDY LOAM, MASSIVE, FIRM, WITH 25% REDOX CONCENTRATIONS
ESHWT: 23 INCHES REFUSAL: N/A OBSERVED WATER: N/A

Test Pit #5034/56:
0-4 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
4-20 INCHES, 2.5Y 5/4, FINE SANDY LOAM, GRANULAR, FRIABLE
20-36 INCHES, 2.5Y 5/4, FINE SANDY LOAM, MASSIVE, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT: 20 INCHES REFUSAL: 36 INCHES OBSERVED WATER: N/A

Test Pit #5033:
0-2 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
2-15 INCHES, 10YR 5/6, FINE SANDY LOAM, GRANULAR, FRIABLE
15-23 INCHES, 2.5Y 6/4, FINE SANDY LOAM, GRANULAR, FRIABLE
23-52 INCHES, 2.5Y 4/3, FINE SANDY LOAM, MASSIVE, FIRM, WITH 30% REDOX CONCENTRATIONS
ESHWT: 23 INCHES REFUSAL: N/A OBSERVED WATER: N/A

Test Pit #5031:
0-5 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
5-12 INCHES, 10YR 4/4, FINE SANDY LOAM, GRANULAR, FRIABLE
12-24 INCHES, 2.5Y 5/4, FINE SANDY LOAM, GRANULAR, FRIABLE
24-40 INCHES, 2.5Y 6/4, FINE SANDY LOAM, MASSIVE, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT: 24 INCHES REFUSAL: 40 INCHES OBSERVED WATER: N/A

Test Pit #5032:

0-3 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
3-6 INCHES, 10YR 4/4, FINE SANDY LOAM, GRANULAR, FRIABLE
6-14 INCHES, 2.5Y 5/4, FINE SANDY LOAM, GRANULAR, FRIABLE
14-36 INCHES, 2.5Y 6/4, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: N/A REFUSAL: 36 INCHES OBSERVED WATER: N/A

Test Pit #5084/52:
0-6 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
6-24 INCHES, 2.5Y 5/6, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE
24-38 INCHES, 2.5Y 5/6, GRAVELY FINE SANDY LOAM, GRANULAR, FRIABLE, WITH 10% REDOX CONCENTRATIONS
ESHWT: 24 INCHES REFUSAL: 38 INCHES OBSERVED WATER: N/A

Test Pit #5038/51:
0-4 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
4-14 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
14-24 INCHES, 6/4, GRAVELY FINE SANDY LOAM, MASSIVE, FIRM
24-60 INCHES, 2.5Y 5/2, SILT LOAM, BLOCKY, FIRM, WITH 25% REDOX CONCENTRATIONS
ESHWT: 24 INCHES REFUSAL: N/A OBSERVED WATER: N/A

Test Pit #5086/53:
0-6 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
6-24 INCHES, 2.5Y 5/6, FINE SANDY LOAM, GRANULAR, FRIABLE
24-68 INCHES, 2.5Y 5/2, FINE SANDY LOAM, MASSIVE, FIRM, WITH 50% REDOX CONCENTRATIONS
ESHWT: 24 INCHES REFUSAL: N/A OBSERVED WATER: N/A

Test Pit #5085/54:
0-4 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
4-24 INCHES, 10YR 5/6, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: N/A REFUSAL: 24 INCHES OBSERVED WATER: N/A

Test Pit #5023:
0-2 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
2-24 INCHES, 10YR 5/6, FINE SANDY LOAM, GRANULAR, FRIABLE
24-36 INCHES, 2.5Y 4/4, FINE SANDY LOAM, GRANULAR, FRIABLE
36-44 INCHES, 2.5Y 4/4, FINE SANDY LOAM, GRANULAR, FRIABLE, WITH 10% REDOX CONCENTRATIONS
ESHWT: 36 INCHES REFUSAL: 44 INCHES OBSERVED WATER: N/A

Test Pit #5024:
0-4 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
4-18 INCHES, 2.5Y 6/4, FINE SANDY LOAM, GRANULAR, FRIABLE
18-32 INCHES, 2.5Y 5/4, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: N/A REFUSAL: 32 INCHES OBSERVED WATER: N/A

Test Pit #5025:
0-3 INCHES, 10YR 3/2, FINE SANDY LOAM, GRANULAR, FRIABLE
3-7 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
7-32 INCHES, 10YR 4/4, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: N/A REFUSAL: 32 INCHES OBSERVED WATER: N/A

Number	**ESHWT**	**REFUSAL**	**DEPTH**
LEDGE PROBES			
5001	N/A	47	47
5002	N/A	N/A	52
5003	N/A	32	32
5004	N/A	36	36
5005	N/A	32	32
5006	N/A	36	36
5007	N/A	36	36
5008	N/A	24	24
5009	N/A	30	30
5010	N/A	34	34
5011	N/A	22	22
5012	N/A	42	42
5013	N/A	24	24
5014	N/A	30	30
5015	N/A	24	24
5016	N/A	32	32
5017	N/A	48	48
5018	N/A	N/A	46
5019	N/A	32	32
5020	N/A	46	46
5021	N/A	N/A	41
5022	N/A	N/A	66

Test Pit Log
Banfield Rd, Portsmouth
Logged By: Brenden Walden & James Gove
Date: 8/29 & 8/30, 2019

Test Pit #1:
0-8 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
8-30 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: 30 INCHES REFUSAL: 30 INCHES OBSERVED WATER: N/A

Test Pit #2:
0-9 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
9-28 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: 28 INCHES REFUSAL: 28 INCHES OBSERVED WATER: N/A

Test Pit #3:
0-10 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
10-30 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
30-57 INCHES, 2.5Y 5/3, FINE SANDY LOAM, GRANULAR, FRIABLE, WITH 20% REDOX CONCENTRATIONS
ESHWT: 30 INCHES REFUSAL: 57 INCHES OBSERVED WATER: N/A

Test Pit #4:
0-8 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
8-24 INCHES, 10YR 4/6, FINE SANDY LOAM GRANULAR, FRIABLE
ESHWT: 24 INCHES REFUSAL: 44 INCHES OBSERVED WATER: N/A

Test Pit #5:
0-6 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
6-25 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
25-51 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM, WITH 10% REDOX, CONCENTRATIONS
ESHWT: 25 INCHES REFUSAL: 51 INCHES OBSERVED WATER: N/A

Test Pit #6:
0-8 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
8-28 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
28-60 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM, WITH 20% REDOX CONCENTRATIONS
ESHWT: 28 INCHES REFUSAL: N/A OBSERVED WATER: N/A

Test Pit #7:
0-10 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
10- 41 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
41-64 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT:41 INCHES REFUSAL: N/A OBSERVED WATER: N/A

Test Pit #8:
0-7 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
7-28 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
28-53 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM, WITH 20% REDOX CONCENTRATIONS
ESHWT:28 INCHES REFUSAL: 53 INCHES OBSERVED WATER: N/A

Test Pit #10:
0-8 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
8-36 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
36-68 INCHES, 2.5Y 5/3, FINE SANDY LOAM, MASSIVE, FRIABLE, WITH 20% REDOX CONCENTRATIONS
ESHWT: 36 INCHES REFUSAL: N/A OBSERVED WATER: N/A

Test Pit #11:
0-8 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
8-28 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
28-64 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM, WITH 10% REDOX CONCETRATIONS
ESHWT:28 INCHES REFUSAL: 64 INCHES OBSERVED WATER: N/A

Test Pit #13:
0-10 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
10-32 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
32-61 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT: 32 INCHES REFUSAL: 61 INCHES OBSERVED WATER: N/A

Test Pit #14A:
0-10 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
10-23 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
23-44 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM, WITH 20% REDOX CONCENTRATIONS
ESHWT: 23 INCHES REFUSAL: 44 INCHES OBSERVED WATER: N/A

Test Pit #14B:
0-6 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
6-32 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
32-57 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM, WITH 10 % REDOX CONCENTRATIONS
ESHWT: 32 INCHES REFUSAL: 57 INCHES OBSERVED WATER: N/A

Test Pit #15:
0-14 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
14-28 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
28-60 INCHES, 2.5Y 5/3, FINE SANDY LOAM, MASSIVE, FIRM, WITH 40% REDOX CONCENTRATIONS
ESHWT: 28 INCHES REFUSAL: 60 INCHES OBSERVED WATER: N/A

Test pit #16:
0-5 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
5-24 INCHES, 10YR 4/4, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: 24 INCHES REFUSAL: 24 INCHES OBSERVED WATER: N/A

Test Pit #17:
0-6 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
6-34 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
34-60 INCHES, 2.5Y 5/3, FINE SANDY LOAM, MASSIVE, FRIABLE, WITH 10% REDOX CONCENTRATIONS
ESHWT: 34 INCHES REFUSAL: 60 INCHES OBSERVED WATER: N/A

Test Pit #18:
0-6 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
6-22 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
22-50 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT: 22 INCHES REFUSAL: 50 INCHES OBSERVED WATER: N/A

Test Pit #19:
0-7 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
7-24 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: 24 INCHES REFUSAL: 24 INCHES OBSERVED WATER: N/A

Test Pit #21:
0-10 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
10-21 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
21-48 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT: 21 INCHES REFUSAL: 40 INCHES OBSERVED WATER: N/A

Test Pit #22:
0-6 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
6-20 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
20-58 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT: 20 INCHES REFUSAL: 58 INCHES OBSERVED WATER: N/A

Test Pit #E1:
0-10 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
10-22 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
22-51 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM, 20% REDOX CONCENTRATIONS
ESHWT: 22 INCHES REFUSAL: 51 INCHES OBSERVED WATER: N/A

Test Pit #E2:
0-5 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
5-28 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
ESHWT: 28 INCHES REFUSAL: 28 INCHES OBSERVED WATER: N/A

Test Pit #E3:
0-8 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
8-32 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
32-74 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT:32 INCHES REFUSAL: 74 INCHES OBSERVED WATER: N/A

Test Pit #E4:
0-9 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
9-28 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
28-50 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT: 28 INCHES REFUSAL: 50 INCHES OBSERVED WATER: N/A

Test Pit #E8:
0-8 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
8-27 INCHES, 2.5Y 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
27-62 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT:27 INCHES REFUSAL: N/A OBSERVED WATER: N/A

Test Pit #100:
0-10 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
10-28 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
28-54 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM, WITH 10% REDOX CONCENTRATIONS
ESHWT: 28 INCHES REFUSAL: 54 INCHES OBSERVED WATER: N/A

Test Pit #600:
0-8 INCHES, 10YR 3/3, FINE SANDY LOAM, GRANULAR, FRIABLE
8-21 INCHES, 10YR 4/6, FINE SANDY LOAM, GRANULAR, FRIABLE
21-47 INCHES, 2.5Y 5/3, FINE SANDY LOAM, PLATY, FIRM, WITH 10% REDOX CONCENTRATIONS
47-60 INCHES, 2.5Y 5/2, SILT LOAM, MASSIVE, FIRM, WITH 305 REDOX CONCENTRATIONS
ESHWT: 21 INCHES REFUSAL: N/A OBSERVED WATER: N/A

APPENDIX I
NHDES ONE STOP DATA MAPPER

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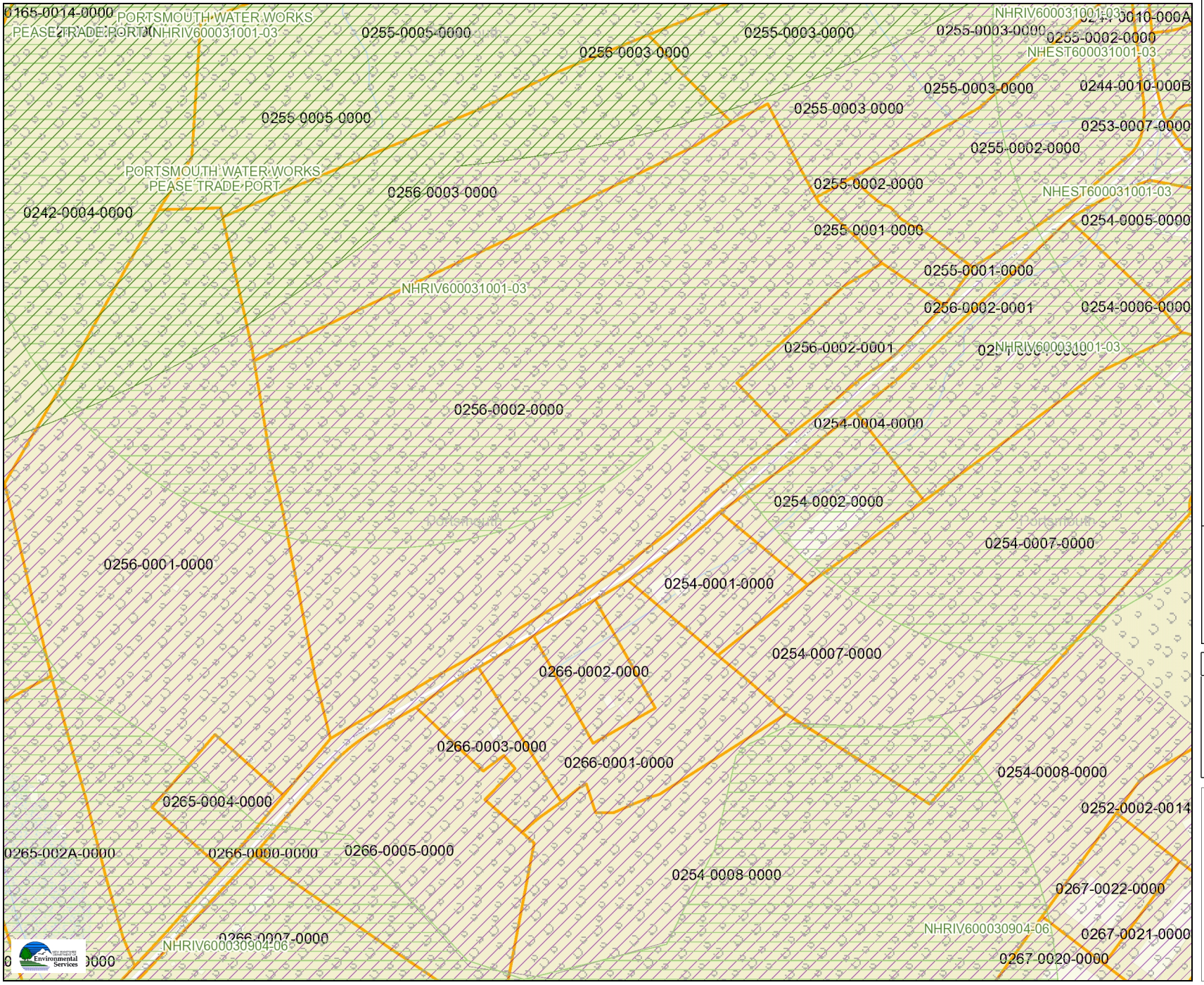
Banfield Road - Portsmouth, NH



Legend

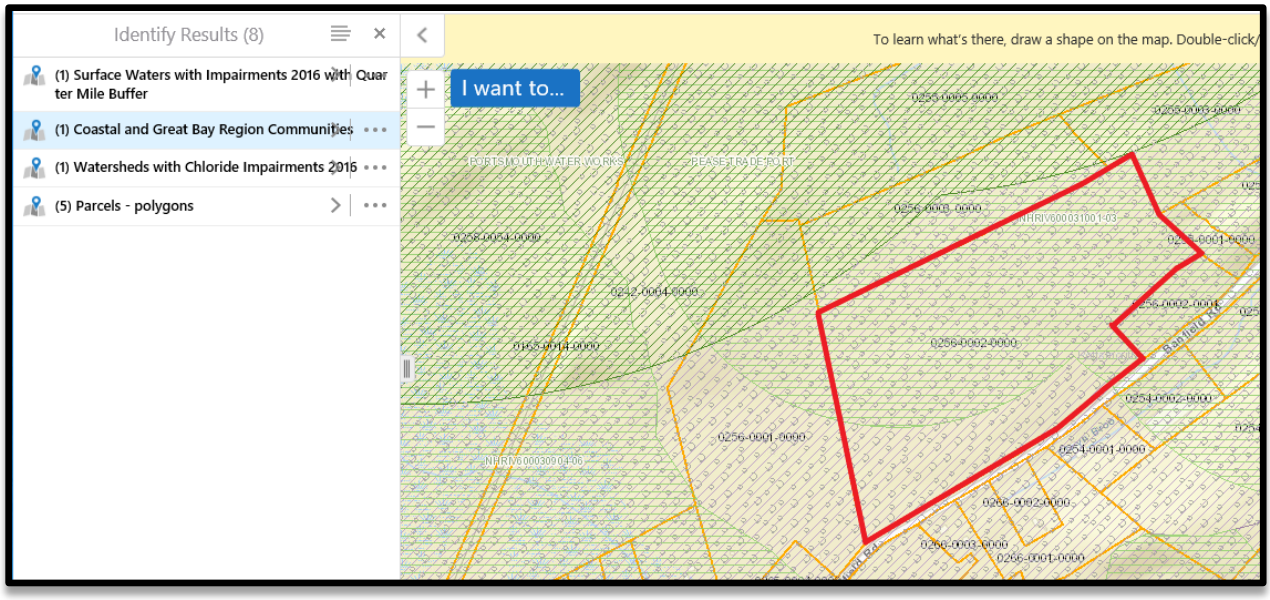
- Coastal and Great Bay Regi Communities
- Designated Rivers Quarterm Buffer
- Public Water Supply Wells
- Groundwater Classification A GA1
- Groundwater Classification A GA2
- Water Supply Intake Protect Areas
- Wellhead Protection Areas
- Lakes with a Quarter Mile Bu
- All Features
- All Lakes, with a Quarter Mil Buffer
- Outstanding Resource Wate Watersheds
- Surface Waters with Impairm 2016 with Quarter Mile Buffe
- Watersheds with Chloride Impairments 2016
- Parcels - polygons

Map Scale

1: 5,000

Map Generated: 10/3/2019

Notes



Description

Assessment Unit ID (AUID): NHRIV600031001-03
Assessment Unit Name: SAGAMORE CREEK

Beach (Y/N?): N

Impairments related to stormwater: Chloride, Escherichia coli

Metadata

Details

- AUID

  NHRIV600031001-03 NHRIV600031001-03 N/A

- FID

  387 387 N/A

- Waterbodyi

  NHRIV600031001-03 NHRIV600031001-03 N/A

- Waterbodyn

  SAGAMORE CREEK SAGAMORE CREEK N/A

- Impairment

  Chloride, Escherichia coli

Details

- FID

  8 8 N/A
- OBJECTID_1

  3282 3282 N/A
- AUID

  NHRIV600031001-03 NHRIV600031001-03 N/A
- Shape_Leng

  17891.5112 17891.5112 N/A
- QAQC

  Good Good N/A
- Method

  10m DEM, 24k NHHD Burned and Catchment Walled 10m DEM, 24k NHHD Burned and Catchment Walled N/A
- Mod_Date

  Apr 8, 2013 8:00 PM Apr 8, 2013 8:00 PM N/A
- CYCLE

  2014 2014 N/A
- USE_ID

  952 952 N/A
- IMPAIRMENT

  138 138 N/A
- IMPAIRMEN2

  Chloride Chloride N/A
- DESCATEGOR

  5-M

APPENDIX I

PRE AND POST DRAINAGE PLANS

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N

NAD 83

LEGEND

- FLOW PATH (Tc LINE)
- REACH
- SOIL GROUP BREAK LINE
- EXISTING LOT LINE
- LIMITS OF SUBCATCHMENT
- PS4 — EXISTING SUBCATCHMENT NODE
- PR1 — EXISTING REACH
- PC1 — EXISTING POND AREA AND CULVERT NODE
- POIX — POINT OF INTEREST

ES01 ES02 ES03 ES04 ES05 ES06 ES07 ES08 ES09

EP01 EPoI01 EPoI02 EPoI03

ER01 ER02 ER03 ER05

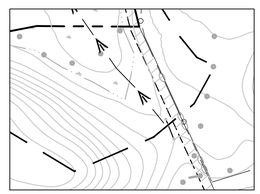
140B 140C 538A 33A 38B 299

NRP ZONE SRA ZONE

BANFIELD ROAD
(PUBLIC RIGHT OF WAY)

SOIL LEGEND
(PER USDA NRCS WEB SOIL SURVEY)

SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP
38B	ELDRIDGE FINE SANDY LOAM 3 TO 8 PERCENT SLOPES	C/D
140B	CHATFIELD–HOLLIS–CANTON COMPLEX 0 TO 8 PERCENT SLOPES, ROCKY	B
140C	CHATFIELD–HOLLIS–CANTON COMPLEX 8 TO 15 PERCENT SLOPES, ROCKY	B
538A	SQUAMSCOTT FINE SANDY LOAM 0 TO 5 PERCENT SLOPES	C/D



SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

PRE-DRAINAGE PLAN OVERALL

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

WALTER D HETT TRUST

PREPARED FOR

GREEN & COMPANY REAL ESTATE

1"=200' (11"X17")

SCALE: 1"=100' (22"X34") **SEPTEMBER 25, 2019**

HORIZONTAL SCALE 1"=100'
100 50 0 100

REV.	DATE	DESCRIPTION	DR	CK

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FILE	DR	RCK	FB	–	
47361.00	CK	JJM	CADFILE	PRE-POST_DRAINAGE	D-01

Dec 24, 2019 - 10:43am
F:\MSC Projects\47361 - Banfield Road - Portsmouth\47361-00 - Green & Co - Banfield Road\Design\Production Drawings\Pre-Post_Drainage.dwg

LEGEND

- FLOW PATH (Tc LINE)
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- SOIL GROUP BREAK LINE
- EXISTING LOT LINE
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SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

POST-DRAINAGE PLAN OVERALL

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

OWNED BY

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HORIZONTAL SCALE 1"=100'
100 50 0 100

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47361.00	CK	JJM	CADFILE	PRE–POST_DRAINAGE	D–02

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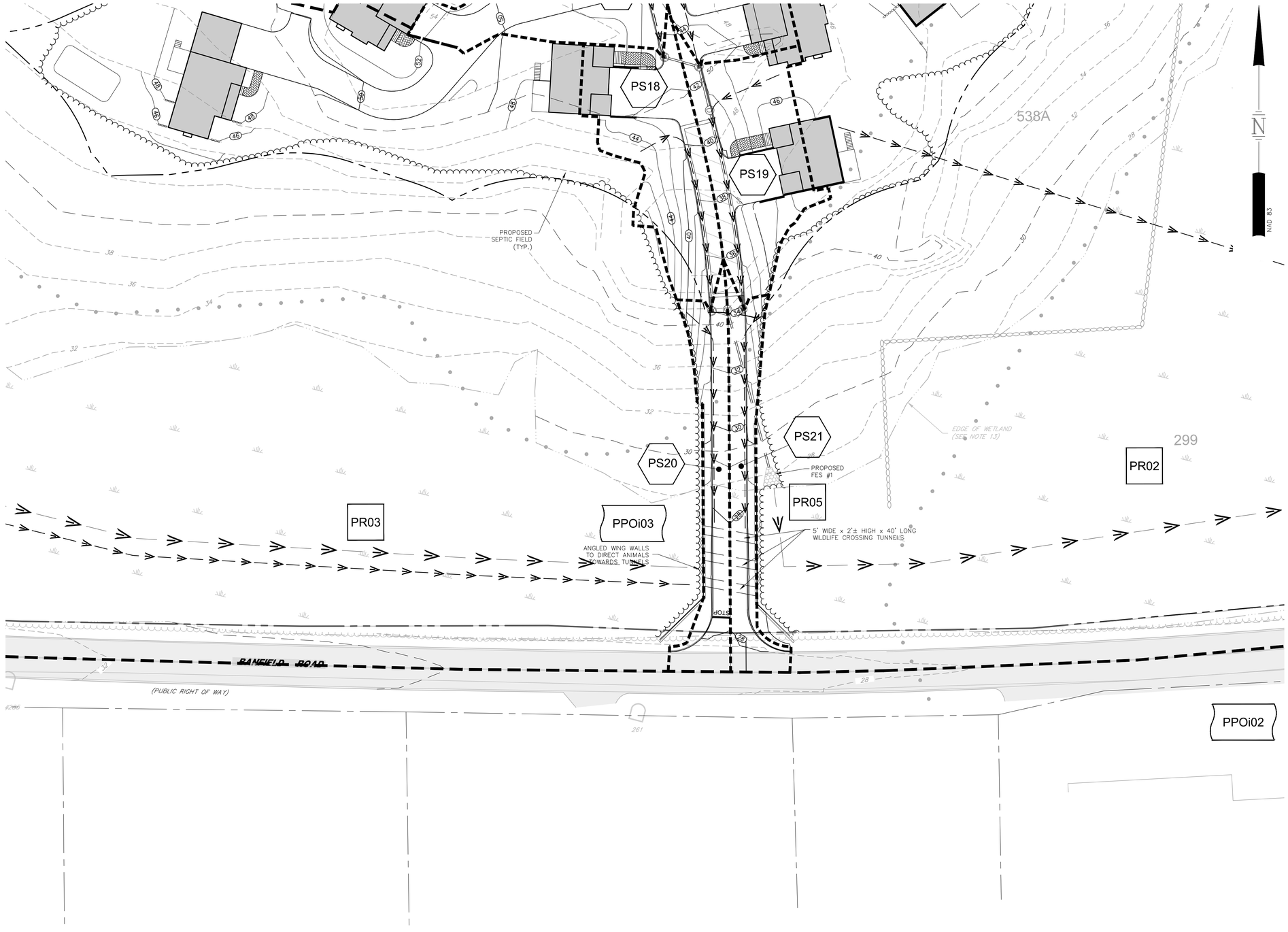

LEGEND

- FLOW PATH (Tc LINE)
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SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

POST DRAINAGE PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

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1"=60' (11"X17")

SCALE: 1"=30' (22"X34") **SEPTEMBER 25, 2019**

HORIZONTAL SCALE 1"=30'
30 15 0 30

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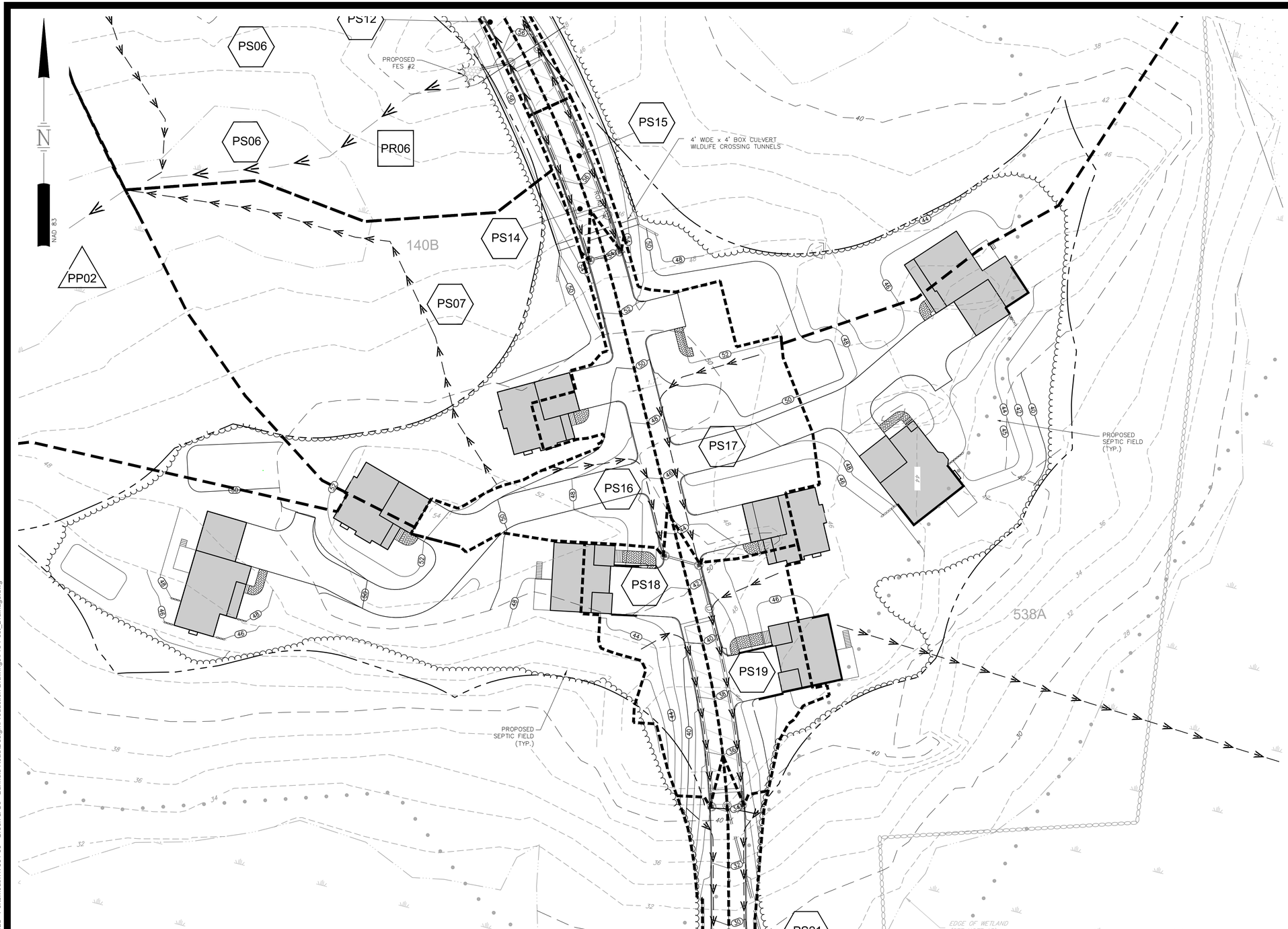

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SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

POST DRAINAGE PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

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HORIZONTAL SCALE 1"=30'
30 15 0 30

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LEGEND

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SITE DEVELOPMENT PLANS

TAX MAP 256 LOT 2

POST DRAINAGE PLAN

THE VILLAGE AT BANFIELD WOODS

PORTSMOUTH, NH

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SCALE: 1"=30' (22"X34") **SEPTEMBER 25, 2019**

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30 15 0 30

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