NORWAY PLAINS ASSOCIATES, INC.

LAND SURVEYORS • SEPTIC SYSTEM DESIGNERS • CIVIL ENGINEERS

P.O. Box 249
Continental Blvd. (03867)
Rochester, NH 03866-0249
Phone (603) 335-3948
www.norwayplains.com

P. O. Box 268
31 Mooney St.
Alton, NH 03809
Phone & Fax (603) 875-3948

March 10, 2022

Shanna Saunders, Chief Planner
Department of Planning and Development
33 Wakefield Street
Rochester, NH 03867-1917

Re: Case SP-22-8, Diamondback Drive, 716 Salmon Fall Road prepared for Tara Estate Community; Technical Review Group Response.

Dear Shanna:

The following is a summary of action taken to address the comments from the March 3, 2022 TRG comments for the proposed Site Plan amendment Application for Tara Estate Community located at 716 Salmon Fall Road. The response to the comments are in italic.

Planning Dept. Comments (Shanna Saunders):

Please provide turning radius with actual Fire Department vehicles (call Fire Department to obtain those) for within the hammerhead.

- *Spoke with the Tim Wilder to obtain the fire truck information on March 7, 2022.*
- *A fire truck turning plan is provided as part of this response showing that the City of Rochester fire truck can turnaround within the hammerhead.*

Economic Development (Jenn Marsh):

No concerns

Dept. of Public Works (Tim Goldthwaite and Dana Weber):

1)Apply for Ch 218 Stormwater Permit and provide calcs demonstrating required TSS, TN and TP reductions."

- *The Stormwater Management and Erosion Control Permit Application is attached to this letter.*
- *The calculations demonstrating that the Infiltration Basin meets the pollutant removal requirements are provided in an attachment to this response.*

2)Adjust design to provide minimum slope of 0.5% for all 8-inch gravity sewers."

- *All slopes for all sewer pipes have been revised to have a minimum slope of 0.5%.*

Conservation Commission (Ryan O'Conner):
Please ensure that if stockpiles are relocated to other areas within Tara Estates outside of the AOT area, erosion controls are being maintained and proper permitting is in place as necessary.
Ensure the Planning Department is copied on SWPPP reports throughout the project.

- *All stockpiles within the property boundary will have silt sock at the toe. A note has been add to the Sheet C-3 Erosion & Sedimentation Control Plan*

Zoning (Crystal Galloway):
No concerns

Fire Dept. (Tim Wilder):
No Concerns

Police Dept. (Gary Boudreau):
No major concerns, but some thought should be given to the potential for a secondary means of egress for residents in the case of a road blockage on Diamondback prior to the loop.

- *Review of the road layout concluded that there is only on location for the road to enter the loop.*

If you have any questions regarding the revisions made to this plan set, the design itself or any supplemental material submitted to satisfy the conditions of approval, please feel free to call or email me.

Sincerely,

NORWAY PLAINS ASSOCIATES, INC.

By: _____
Paul C. Blanc

Cc: Tara Estate Community

City of Rochester, New Hampshire
PUBLIC WORKS DEPARTMENT
45 Old Dover Road • Rochester, NH 03867
(603) 332-4096 Fax (603) 335-4352
www.rochesternh.net

STORMWATER MANAGEMENT AND EROSION CONTROL PERMIT APPLICATION

APPLICABILITY: Pursuant to Chapter 50 of the General Ordinances, no person shall alter land or engage in any activity which causes or contributes to stormwater runoff discharge, without first having obtained a Stormwater Management Permit (SMP) for land proposed to be altered, or which will be affected by such activity. The owner shall be required to apply to the Department of Public Works and obtain such permit from the Department, prior to undertaking any action. This requirement shall apply to any activity that will disturb or impact a land area greater than 5000 cumulative square feet unless specifically exempted by the ordinance.

INSTRUCTIONS: Please complete this permit application completely and fully. Be sure to review the reverse side. Any omissions may delay the processing of your application and the signing of your permit. This permit is not valid unless it has been signed and numbered in the Shaded Block below. It is recommended that all permittees review Chapter 50 of the General Ordinances of Rochester prior to disturbing significant land areas. The ordinance is available online at the following link http://www.rochesternh.net/Public_Documents/RochesterNH_Clerk/General Ordinances/ and then click on Chapter 50. Permittees are expected to use available best management practices to prevent the degradation of stormwater runoff from the site and the formation of soil erosion. A Stormwater Management and Erosion Control Plan (referred herein as the "Local Stormwater Plan") must be prepared for larger projects as outlined in Section 50.6(b) of the ordinance. Completed applications can be: (1)dropped off at the address above, (2) faxed in its entirety to the fax no. above, or (3) e-mailed as a .pdf attachment to the Assistant City Engineer.

DATE OF APPLICATION: 12-15-2021

APPLICANT INFORMATION			
PROPERTY OWNER NAME: Tara Estates Community			
PROPERTY OWNER ADDRESS: 716 Salmon Falls Road			
CITY, STATE, ZIP: Rochester, NH 03868	PHONE NO. 603-332-4030	FAX NO.	E-MAIL ADDRESS HWilliams@Hynesnet.com
CONTRACTOR OR REPRESENTATIVE NAME: Norway Plains Associates, Inc. - Paul Blanc			
CONTRACTOR ADDRESS: PO Box 249			
CITY, STATE, ZIP Rochester, NH 03866	PHONE NO. 603-335-3948	FAX NO.	E-MAIL ADDRESS PBlanc@NorwayPlains.com

INFORMATION ON PROPERTY TO BE DISTURBED		
PROPERTY LOCATION (STREET ADDRESS) Diamondback Drive		TAX MAP AND LOT NO. (REQUIRED) Tax Map 224 Lot 309
ESTIMATED AREA TO BE DISTURBED (SQ. FT.) 777,330	DISTANCE TO NEAREST WETLAND OR WATER BODY (FT)	50
DID THE PROPERTY TO BE DISTURBED RECEIVE SITE PLAN APPROVAL FROM THE PLANNING BOARD? Yes ■ No ☐ IF SO, WHEN (date of approval)	PURPOSE FOR LAND DISTURBANCE (check all that apply) ☐ single family home construction ☐ commercial development (site plan approved) ■ multi-family residential construction	■ utility construction (water, sewer, drain, gas, etc.) ■ ~~new subdivision with~~ road construction ☐ logging
1986	☐ other (please specify)	

I have reviewed and am familiar with the City of Rochester's Stormwater Management and Erosion Control Ordinance (chapter 50). I agree to allow appropriate officials from the City of Rochester on the property referenced in this application to review and monitor compliance with the ordinance.

Signature of owner or Representative	**Printed Name**	**Date**
Paul C Blanc **See reverse Side More Instructions**	Paul C. Blanc	**Do not write below this line (for official use only)**

PERMIT: Signature below represents that property listed above is permitted to disturb soil provided that all activities are done in accordance with chapter 50 of the General Ordinance of the City of Rochester. Permit not valid unless signed and numbered by an authorized official of Rochester DPW.

Authorized Signature	Permit No.

Is your project of such a size that you are required to file a Stormwater General Permit for Construction Activities Notice of Intent (NOI) to the U.S. Environmental Protection Agency (EPA)? These are required when there is a contiguous disturbed area greater than one acre. See http://cfpub.epa.gov/npdes/stormwater/cgp.cfm for more information.

■ Yes ☐ No

If so, has an NOI been filed with the EPA? ■ Yes ☐ No

Have you prepared a Stormwater Pollution Prevention Plan (SWPPP) as required by the EPA stormwater program? **If so, please attach a copy of the plan to this application**. ■ Yes ☐ No

If you are disturbing less than one acre of continuous area with your project, are you doing any of the following (check as applicable)?

■ Disturbing a cumulative area exceeding 20,000 sq. ft., unless the disturbance is solely related to construction or reconstruction of a street or road?	☐ Constructing more than three residential dwellings in the same subdivision or housing project at a time.
☐ Phasing more than three building lots per year in an existing or proposed subdivision.	☐ Constructing utilities requiring contiguous ground disturbance of more than 20,000 square feet outside the limits of an existing paved roadway.
☐ Performing work in or within 35 feet of a permanent or intermittent vernal pool, stream, or bog; within 35 feet of poorly drained or very poorly drained soils, or floodplain; disturbing areas exceeding 2,000 sq. ft. of highly erodible soils, or disturbing areas containing slope lengths exceeding 25 feet on slopes greater than 15 percent. (“critical areas”)	

If any of the blocks above are checked, you are required to prepare and submit a Stormwater Management and Erosion Control Plan (Local Stormwater Plan). The plan shall be unique to the site and contain all the information required by sections 50.8 and 50.9 of the ordinance. A Federal SWPPP may be substituted for this plan provided that the SWPPP addresses all the elements of the Local Stormwater Plan.

If you are not required to prepare a SWPPP or a Local Stormwater Plan, briefly describe below what Best Management Practices (BMP’s) you intend to use to prevent the movement of contaminated or large quantities of stormwater offsite or into water bodies, stormdrains, wetlands, or to prevent or control soil erosion. **Permit will not be issued without BMP description.**

Prepare sketch of site below. Show prominent features including property lines, structures, streets, critical areas, utilities, and proposed BMPs. If you have a separate site plan, septic design plan, lot plan, or similar plan, you may mark it up and attach it to this application. Sketch not required if a SWPPP or Local Stormwater Plan must be filed.

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LEGEND

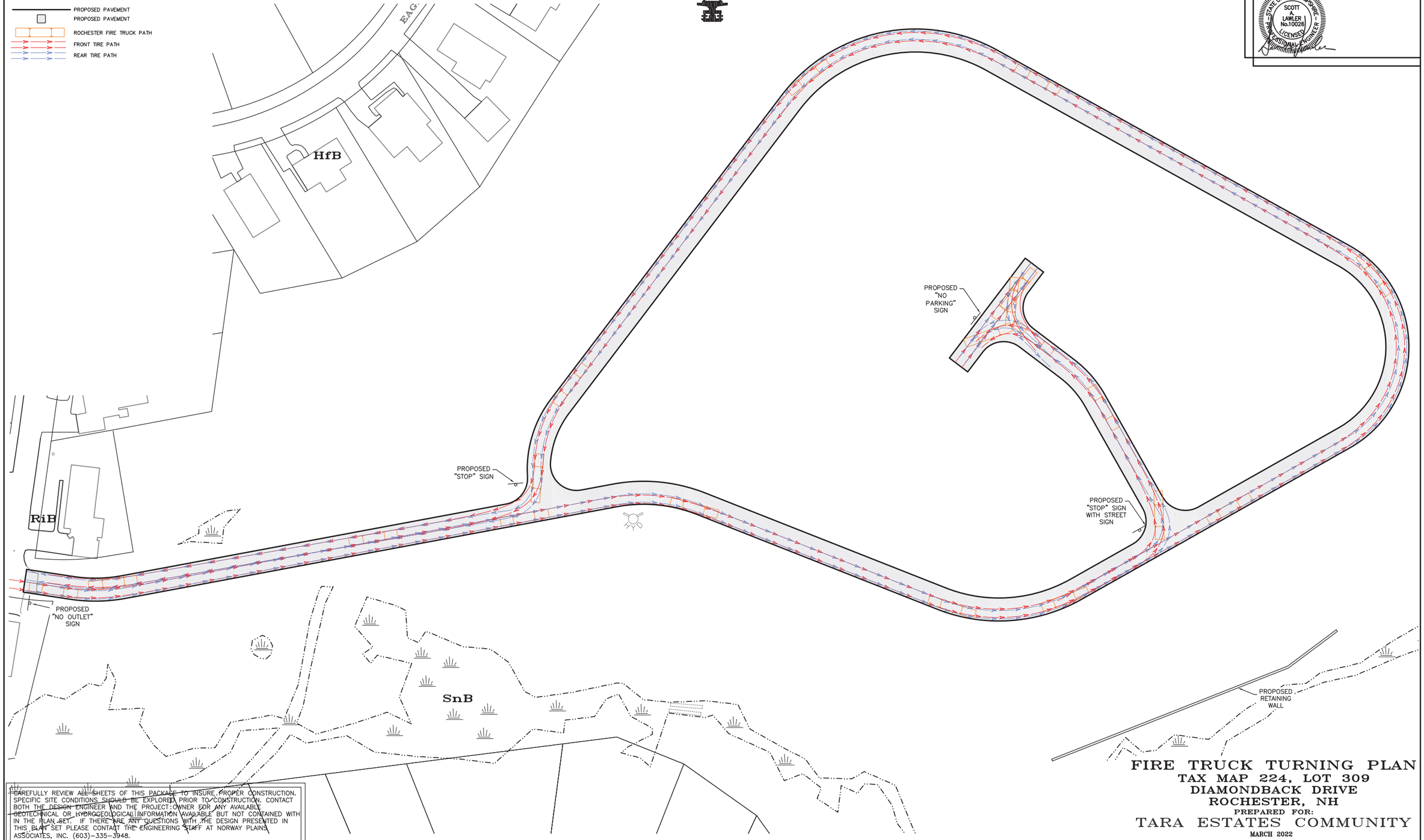
PROPOSED PAVEMENT

PROPOSED PAVEMENT

ROCHESTER FIRE TRUCK PATH

FRONT TIRE PATH

REAR TIRE PATH



STATE OF NEW HAMPSHIRE
SCOTT A. LAWLER No.10026 LICENSED PROFESSIONAL ENGINEER

CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITH IN THE PLAN SET. IF THERE ARE ANY QUESTIONS WITH THE DESIGN PRESENTED IN THIS PLAN SET PLEASE CONTACT THE ENGINEERING STAFF AT NORWAY PLAINS ASSOCIATES, INC. (603)-335-3948.

FIRE TRUCK TURNING PLAN

TAX MAP 224, LOT 309

DIAMONDBACK DRIVE

ROCHESTER, NH

PREPARED FOR:

TARA ESTATES COMMUNITY

MARCH 2022

GRAPHIC SCALE

50 0 15 50 100 120

1 INCH = 50 FEET

31 Mooney Street, Alton, N.H. 603-875-3948

NORWAY PLAINS ASSOCIATES, INC.

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Methods for Determining the design storage volume of a BMP to reach a known P/N load reduction when both impervious and pervious drainage areas are present

Step 1: Determine desired P/N load Reduction target in percentage

City of Rochester Requirements:
Total Phosphorus : **50%**
Total Nitrogen: **50%**

Step 2: Identify Contributing Impervious (IA) and Pervious (PA) drainage areas

Refer to HydroCAD Model for contributing areas

IA **16.89** acres
PA **7.26** acres

Step 3: Determine the structural BMP type. For infiltration systems, determine the appropriate infiltration rate for the location of the BMP in the watershed

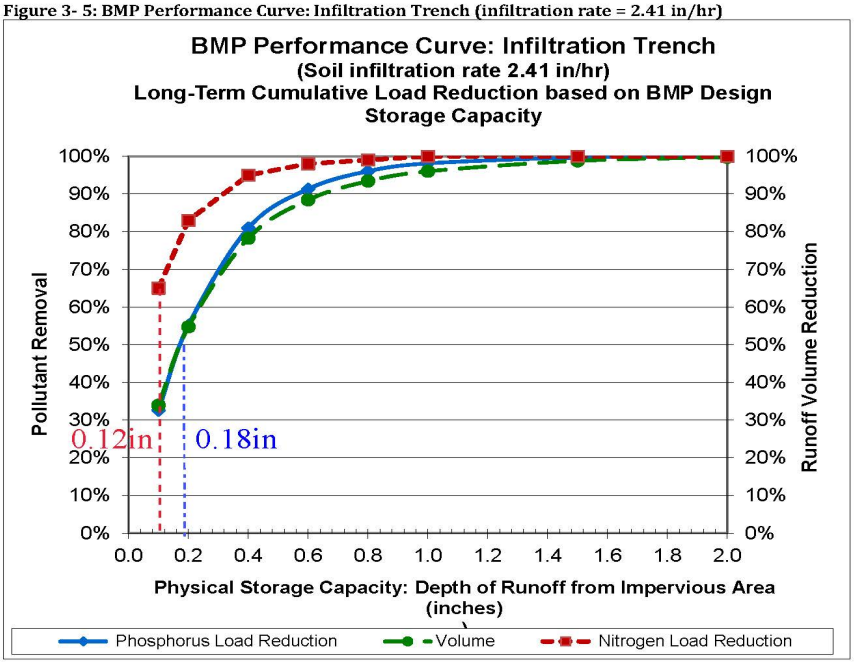
BMP Selection: **Infiltration Basin**

Design Infiltration Rate (Ksat): **3.0 in/hour** (based on SSSNNE for **Winsor** Soils)

Step 4: Determine BMP storage volume needed (BMP-Volumes - IA) in inches of impervious surface runoff by utilizing BMP Performance Curves

Use Infiltration Trench with IR = 2.41 in/hr BMP Performance Curve

Figure 3- 5: BMP Performance Curve: Infiltration Trench (infiltration rate = 2.41 in/hr)



Step 4 continued:

Using the curves for the desired 50% load reduction:

BMP-Volumes-IA (Phosphorus) Runoff Depth (inches) = **0.18**

BMP-Volumes-IA (Nitrogen) Runoff Depth (inches) = **0.12**

BMP-Volumes-IA(cf) = BMP-Volume-IA(in) x IA(acre) x 3,600(cf/acre-in)

BMP - Volumes - IA (Phosphorus) cubic feet = **10945**

BMP - Volumes - IA (Nitrogen) cubic feet = **7296**

Step 5: Determine BMP storage volume needed (BMP-Volumes - PA) in inches of pervious surface for the commutative hydrological soils group (HSGs) based on the performance charts used in Step 4

Use Table 3-4 below for each HSGs

Table 3- 4: Developed Land Pervious Area Runoff Depths based on Precipitation depth and Hydrological

Developed Land Pervious Area Runoff Depths based on Precipitation depth and Hydrological Soil Groups					
Rainfall Depth, Inches	Runoff Depth, inches				
	Pervious HSGA	Pervious HSG B	Pervious HSG C	Pervious HSGC/D	Pervious HSG D
0.10	0.00	0.00	0.00	0.00	0.00
0.20	0.00	0.00	0.01	0.02	0.02
0.40	0.00	0.00	0.03	0.05	0.06
0.50	0.00	0.01	0.05	0.07	0.09
0.60	0.01	0.02	0.06	0.09	0.11
0.80	0.02	0.03	0.09	0.13	0.16
1.00	0.03	0.04	0.12	0.17	0.21
1.20	0.04	0.05	0.14	0.27	0.39
1.50	0.08	0.11	0.39	0.55	0.72
2.00	0.14	0.22	0.69	0.89	1.08

Notes: Runoff depths derived from combination of volumetric runoff coefficients from Table 5 of *Small Storm Hydrology and Why it is Important for the Design of Stormwater Control Practices* , (Pitt, 1999), and using the Stormwater Management Model (SWMM) in continuous model mode for hourly precipitation data for Boston, MA, 1998-2002.

BMP-Volumes-PA (Phosphorus) Runoff Depth (inches) = **0.00**

BMP-Volumes-PA (Nitrogen) Runoff Depth (inches) = **0.00**

BMP-Volumes-PA(cf) = BMP-Volume-PA(in) x PA(acre) x 3,600(cf/acre-in)

BMP - Volumes -PA (Phosphorus) cubic feet = **0**

BMP - Volumes - PA (Nitrogen) cubic feet = **0**

Step 6: Determine Minimum Total BMP storage volume needed for both Impervious and Pervious runoff (BMP-Volumes - IA + BMP-Volumes-PA) in cubic feet to achieve required Load Reduction

Total BMP-Volume-IP+PA(cf) = BMP-Volume-IA(cf) + BMP-Volume-PA(cf)

Total BMP-Volume-IP+PA(cf) for Phosphorus (cf)= **10945**
Total BMP-Volume-IP+PA(cf) for Nitrogen (cf)= **7296**

Step 7: Determine Total provided BMP Volume in cubic feet

Infiltration Basin Volume (cf) = Volume of Ponded Area (cf)

Refer to HydroCAD Pond volume data:
Volume below the lowest outlet structure (cf) = **55837**

Total provided BMP Volume (cf) = **55837**

Step 8: Verify Proposed BMP Volume is greater than Required BMP Volume for desired Load Reduction for Phosphorus and Nitrogen

Total BMP Volume >= Required BMP Volume for Phosphorus
55837 cubic feet >= **10945** cubic feet

Total BMP Volume >= Required BMP Volume for Nitrogen
55837 cubic feet >= **7296** cubic feet

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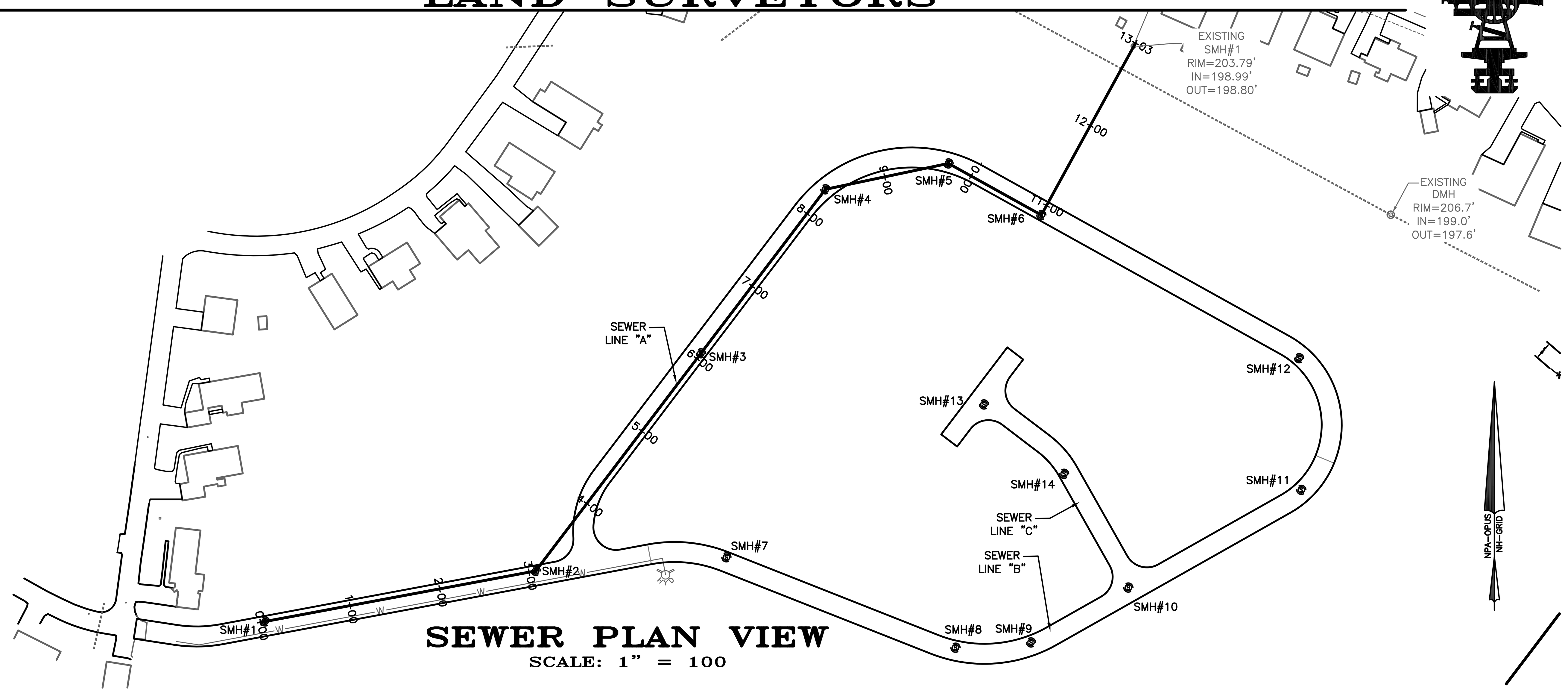
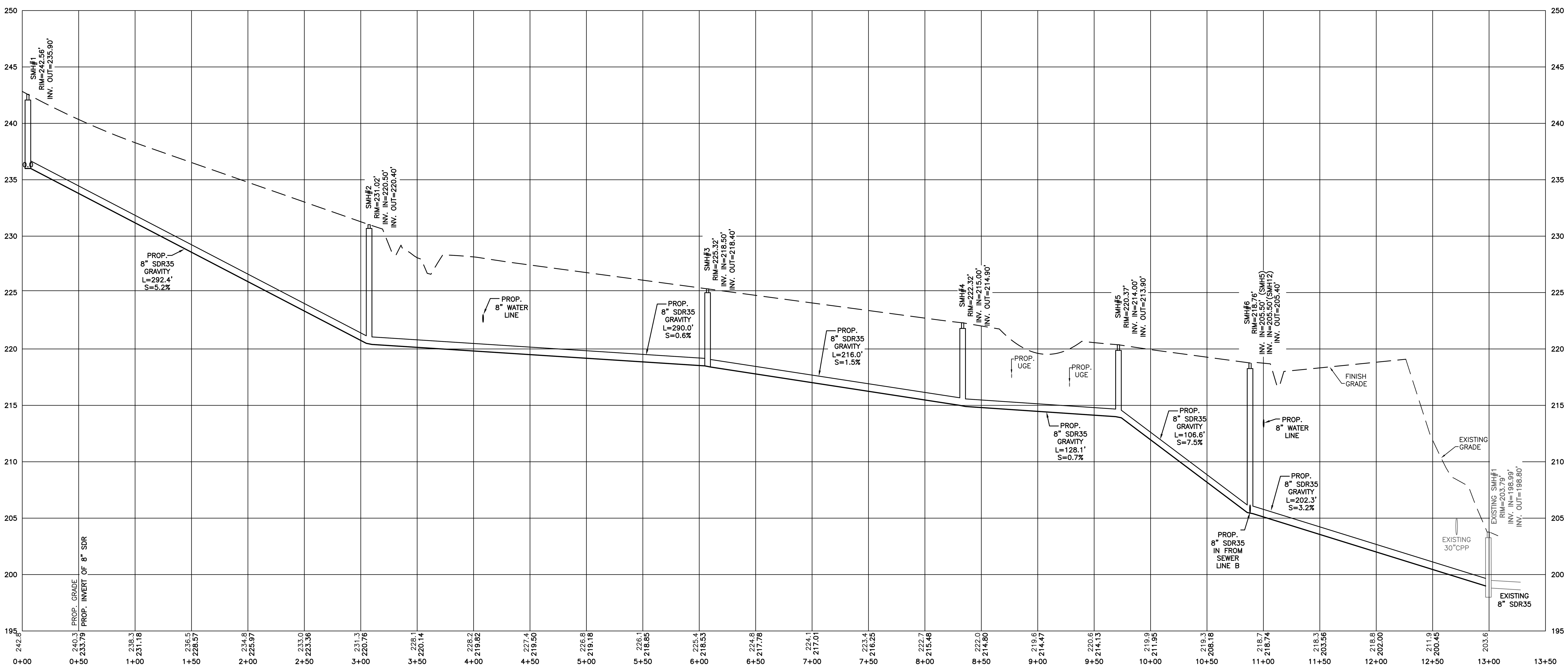


SEWER PLAN VIEW
SCALE: 1" = 100



Station	PROP. GRADE	PROP. INVERT OF 8" SDR
0+00	242.8	
0+50	240.3	233.79
1+00	238.3	231.18
1+50	236.5	228.57
2+00	234.8	225.97
2+50	233.0	223.36
3+00	231.3	220.76
3+50	228.1	220.14
4+00	228.2	219.82
4+50	227.4	219.50
5+00	226.8	219.18
5+50	226.1	218.85
6+00	225.4	218.53
6+50	224.8	217.78
7+00	224.1	217.01
7+50	223.4	216.25
8+00	222.7	215.48
8+50	222.0	214.80
9+00	219.6	214.47
9+50	220.6	214.13
10+00	219.9	211.95
10+50	219.3	208.18
11+00	218.7	218.74
11+50	218.3	203.56
12+00	218.8	202.00
12+50	211.9	200.45
13+00	203.6	
13+50		

GRAVITY SEWER PROFILE
SCALE: 1" = 50' (HORZ.)
1" = 5' (VERT.)

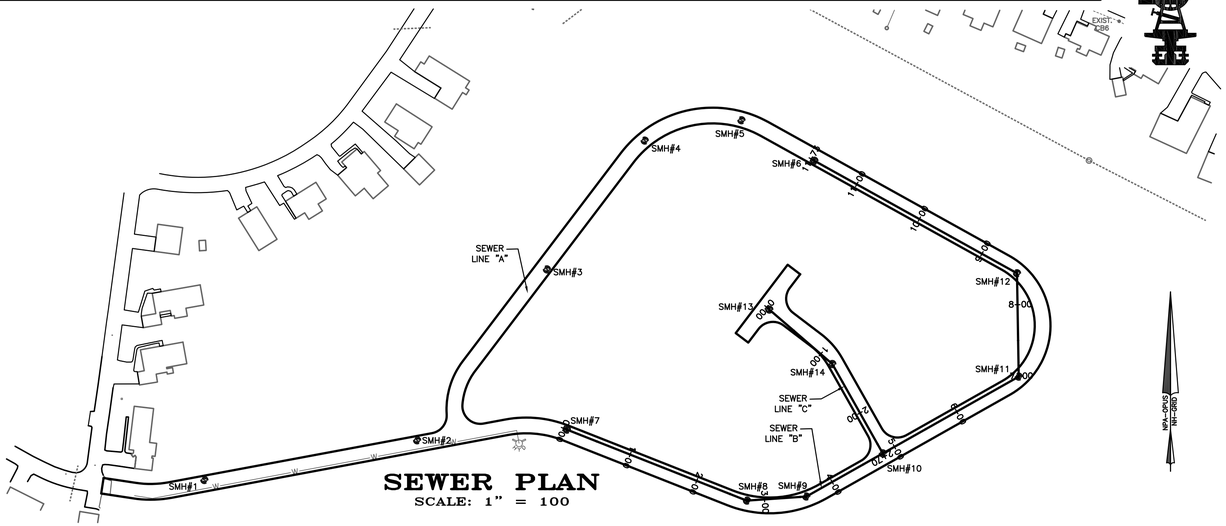
GRAVITY SEWER LINE A PROFILE
TAX MAP 224, LOT 309
DIAMONDBACK DRIVE
ROCHESTER, NH
PREPARED FOR:
TARA ESTATES COMMUNITY
JANUARY 2022

C-11

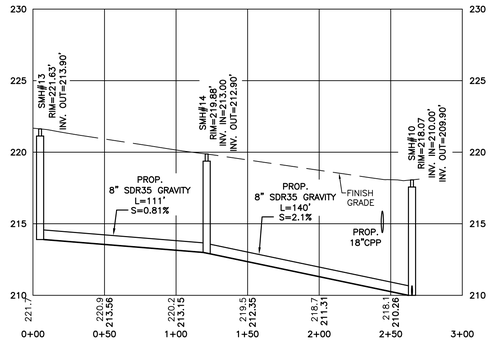
FILE NO. 109
PLAN NO. C-2993/SP-2
DWG. NO. 17149 SP-2
F.B. NO.

31 Mooney Street, Alton, N.H. 603-875-3948
NORWAY PLAINS ASSOCIATES, INC.
2 Continental Blvd., Rochester, N.H. 603-335-3948

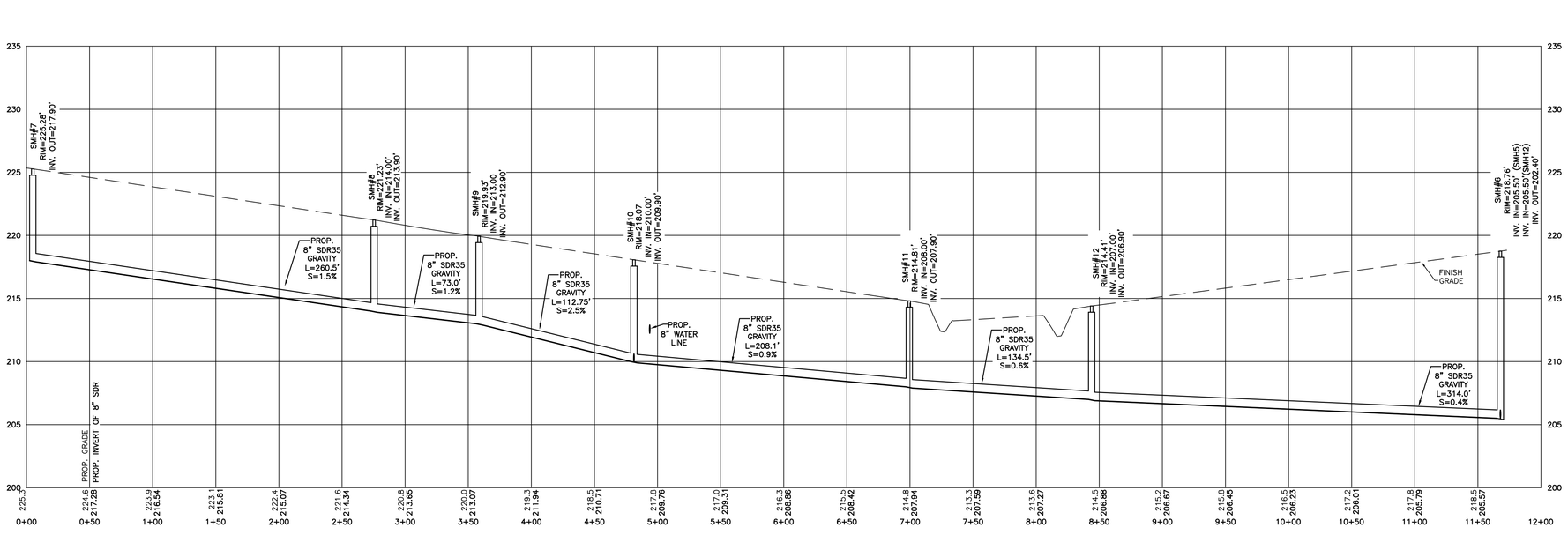
REVISION:
3/3/2022–SEWER PIPE SLOPE



SEWER PLAN
SCALE: 1" = 100



GRAVITY SEWER C PROFILE
SCALE: 1" = 50' (HORZ.)
1" = 5' (VERT.)



GRAVITY SEWER B PROFILE
SCALE: 1" = 50' (HORZ.)
1" = 5' (VERT.)

GRAVITY SEWER LINE B & C PROFILE
TAX MAP 224, LOT 309
DIAMONDBACK DRIVE
ROCHESTER, NH
PREPARED FOR:
TARA ESTATES COMMUNITY
JANUARY 2022

C-12

FILE NO. 109
PLAN NO. C-2993/SP-2
DWG. NO. 17149 SP-2
F.B. NO.

31 Mooney Street, Alton, N.H. 603-875-3948

NORWAY PLAINS ASSOCIATES, INC.

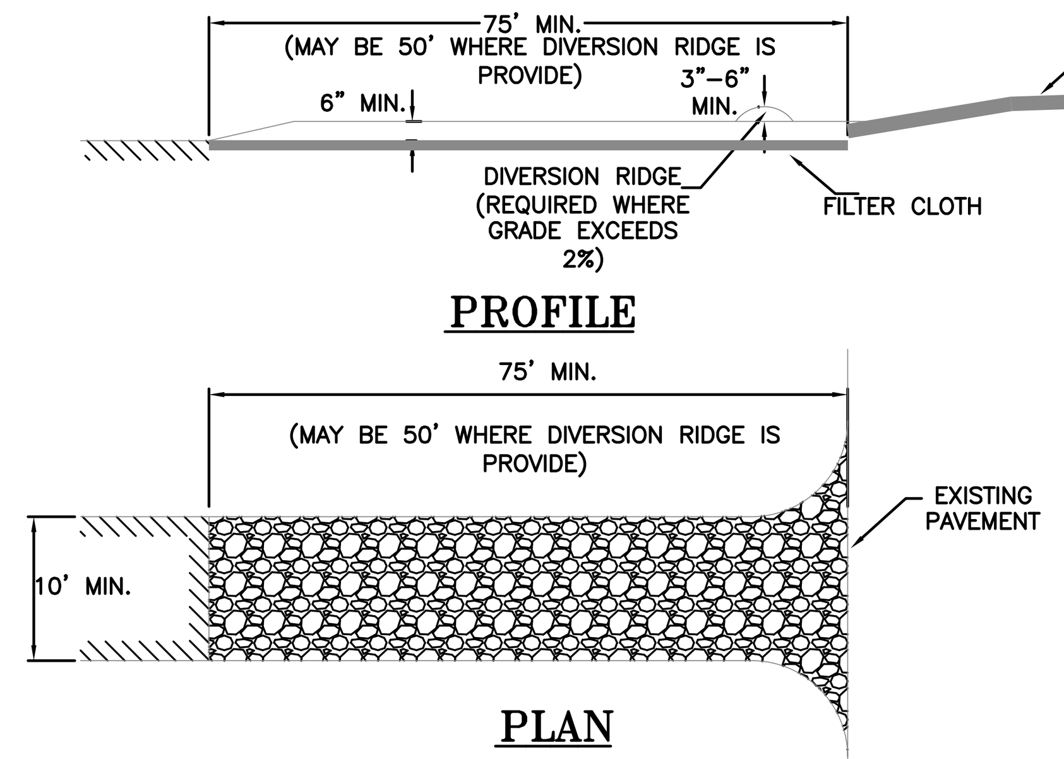
2 Continental Blvd., Rochester, N.H. 603-335-3948

LAND SURVEYORS — CIVIL ENGINEERS

LEGEND

- PROPERTY LINE
- JURISDICTIONAL WETLANDS
- EXISTING TREE LINE
- EXISTING DRAIN LINE
- EXISTING CONTOUR LINE
- EXISTING CATCH BASIN
- PROPOSED TREE LINE
- PROPOSED DRAIN LINE
- PROPOSED CONTOUR LINE
- PROPOSED SILT SOCK (BioSoxx)
- PROPOSED EARTH BERM
- PROPOSED EARTH BERM
- PROPOSED DRAIN MANHOLE
- PROPOSED FLARED END SECTION (FES)
- PROPOSED TEMPORARY STONE CHECK DAMS

ALL MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS, EXCEPT FOR SILT FENCE INSTALLED IN ACCORDANCE WITH ENV–WQ 1506.04, UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN WELDED PLASTIC, PLASTIC, OR MULTI–FILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH. SEE PLAN SHEET C–4 FOR SPECS.



TEMPORARY CONSTRUCTION EXIT

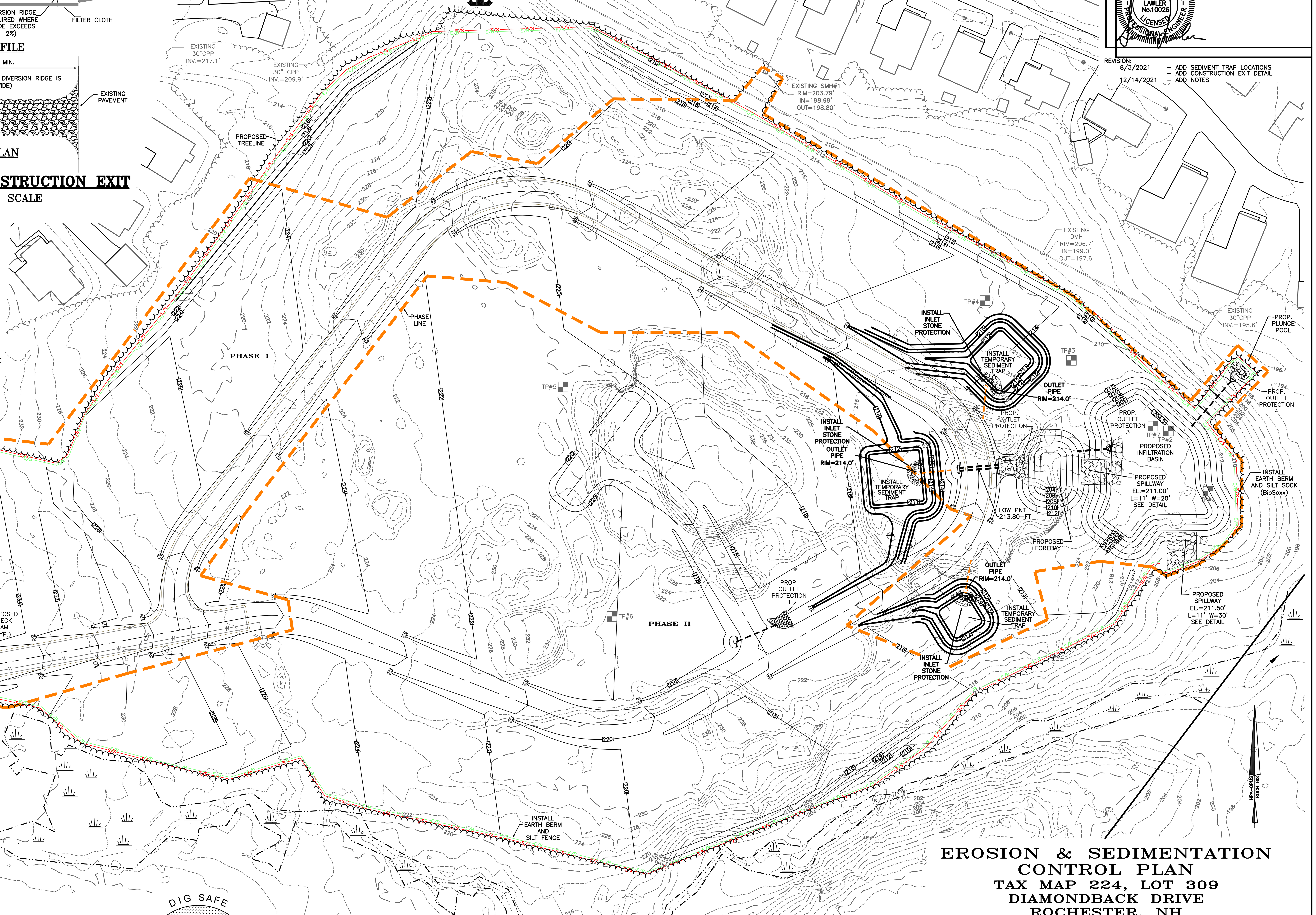
NOT TO SCALE

MAINTENANCE REQUIREMENTS:

1. WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHALL BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL, REGRADED ON SITE, AND STABILIZED. THE ENTRANCE SHALL TEN BE RECONSTRUCTED.
2. THE CONTRACTOR SHALL SWEEP THE PAVEMENT AT EXITS WHENEVER SOIL MATERIALS ARE TRACKED ONTO THE ADJACENT PAVEMENT OR TRAVELED WAY.
3. WHEN WHEEL WASHING IS REQUIRED, IT SHALL BE CONDUCTED ON AN AREA STABILIZED WITH AGGREGATE, WHICH DRAINS INTO AN APPROVED SEDIMENT–TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.

CONSTRUCTION SPECIFICATIONS:

1. THE MINIMUM STONE USED SHALL BE 3–INCH CRUSHED STONE.
2. THE MINIMUM LENGTH OF THE PAD SHALL BE 75 FEET, EXCEPT THAT THE MINIMUM LENGTH MAY BE REDUCED TO 50 FEET IF A 3–INCH TO 6–INCH BERM IS INSTALLED AT THE ENTRANCE OF THE PROJECT SITE.
3. THE PAD SHALL BE THE FULL WIDTH OF CONSTRUCTION ACCESS ROAD OR 10 FEET, WHICHEVER IS GREATER.
4. THE PAD SHALL SLOPE AWAY FROM THE EXISTING ROADWAY.
5. THE PAD SHALL BE AT LEAST 6 INCHES THICK.
6. THE GEOTEXTILE FILTER FABRIC SHALL BE PLACED BETWEEN THE STONE PAD AND THE EARTH SURFACE BELOW THE PAD.
7. THE PAD SHALL BE MAINTAINED OR REPLACED WHEN MUD AND SOIL PARTICLES CLOG THE VOIDS IN THE STONE SUCH THAT MUD AND SOIL PARTICLES ARE TRACKED OFF–SITE.
8. NATURAL DRAINAGE THAT CROSSES THE LOCATION OF THE STONE PAD SHALL BE INTERCEPTED AND PIPED BENEATH THE PAD, AS NECESSARY, WITH SUITABLE OUTLET PROTECTION.



REVISION:
8/3/2021 – ADD SEDIMENT TRAP LOCATIONS
– ADD CONSTRUCTION EXIT DETAIL
12/14/2021 – ADD NOTES

STATE OF NEW HAMPSHIRE — SCOTT A. LAWLER No.10026 LICENSED PROFESSIONAL ENGINEER

ALL STOCKPILES THAT ARE RELOCATED WITHIN TARA ESTATES PROPERTY BOUNDARY MUST HAVE EROSION CONTROLS MEASURE IN PLACE.

CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITH IN THE PLAN SET. IF THERE ARE ANY QUESTIONS WITH THE DESIGN PRESENTED IN THIS PLAN SET PLEASE CONTACT THE ENGINEERING STAFF AT NORWAY PLAINS ASSOCIATES, INC. (603)–335–3948.

DIG SAFE — 1-888-344-7233 CALL TOLL FREE — UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

FILE NO. 109
PLAN NO. C–2993/SP–2
DWG. NO. 17149 SP–2
F.B. NO.

EROSION & SEDIMENTATION CONTROL PLAN

TAX MAP 224, LOT 309
DIAMONDBACK DRIVE
ROCHESTER, NH

PREPARED FOR:

TARA ESTATES COMMUNITY

DECEMBER 2021

GRAPHIC SCALE

100 0 25 50 100 200

(IN FEET)
1 INCH = 50 FT.

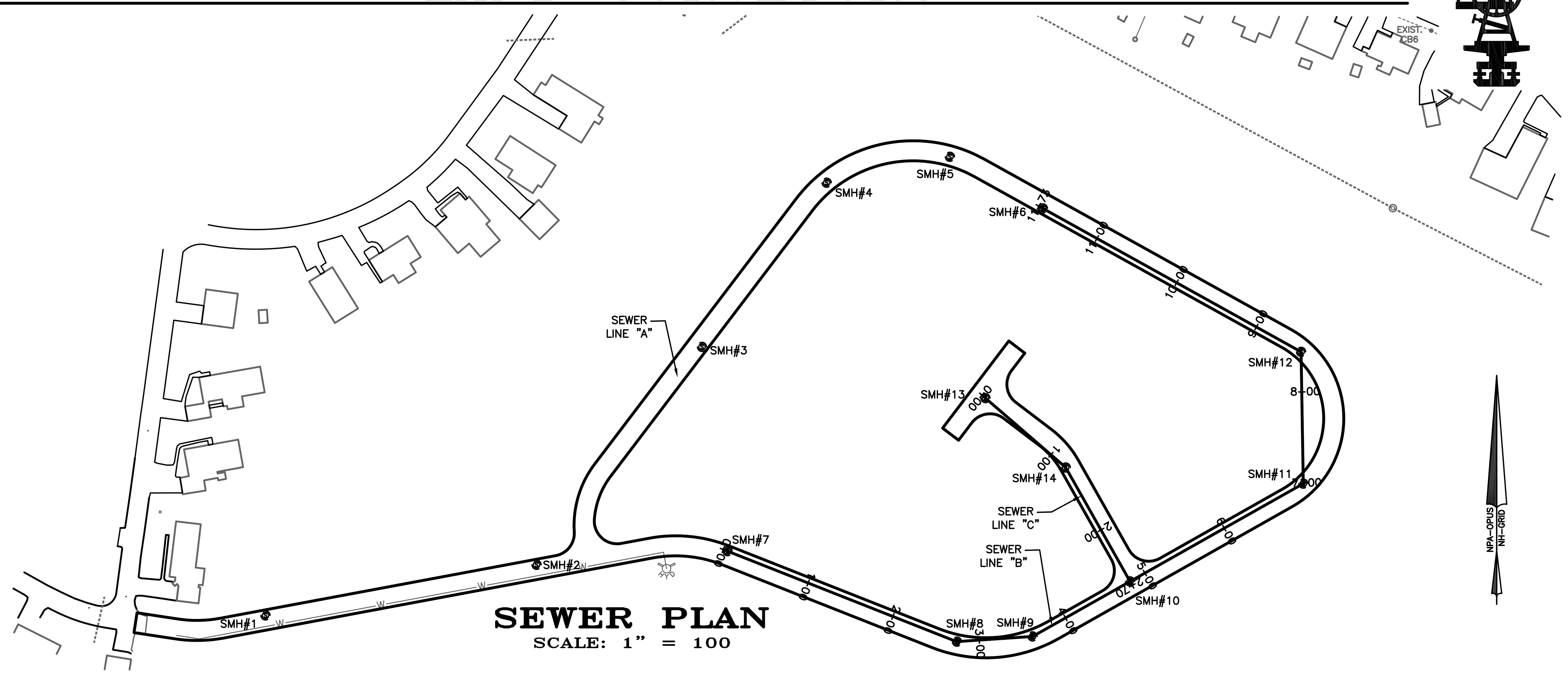
C–3

31 Mooney Street, Alton, N.H. 603–875–3948

NORWAY PLAINS ASSOCIATES, INC.

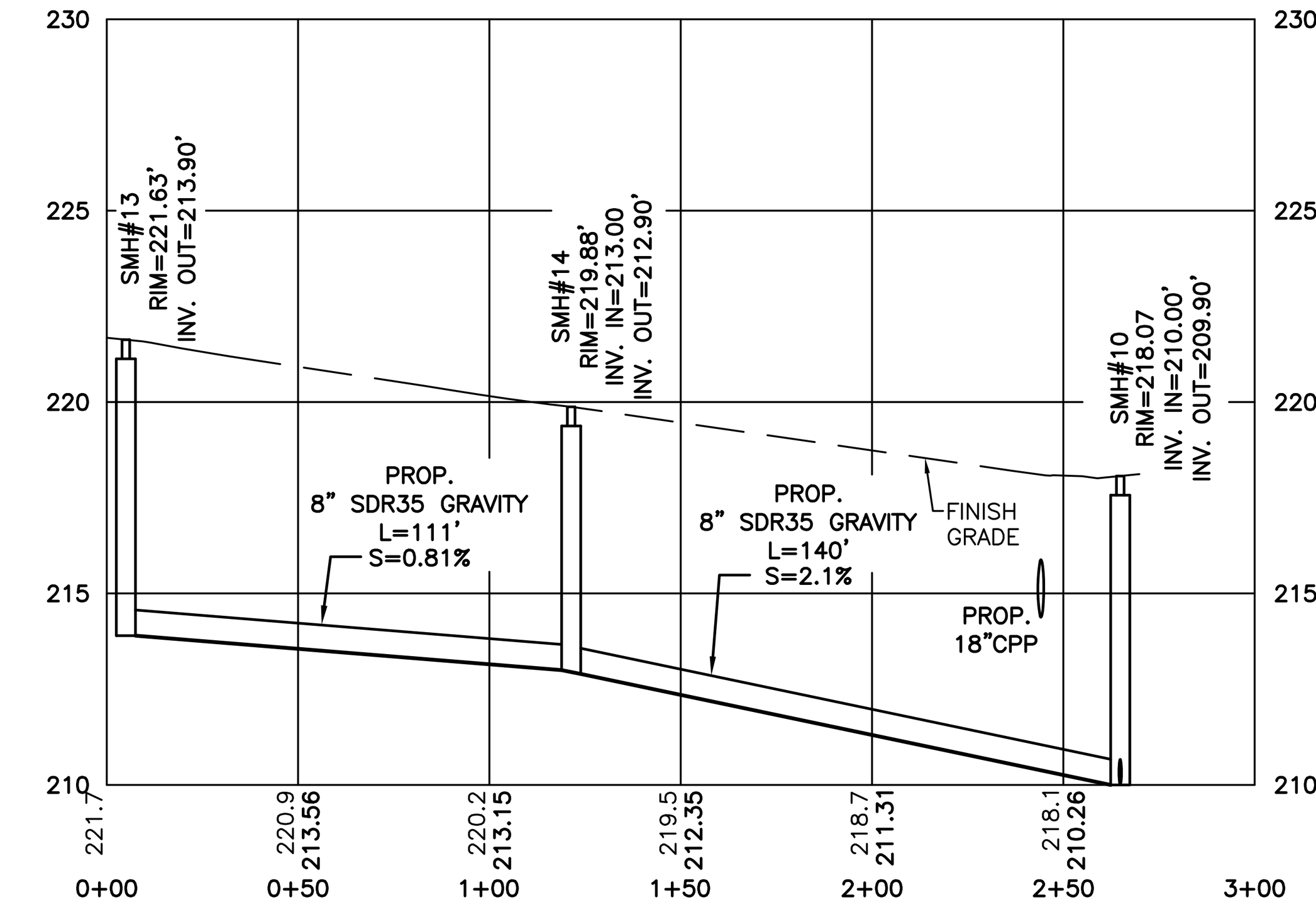
2 Continental Blvd., Rochester, N.H. 603–335–3948

REVISION:
3/3/2022–SEWER PIPE SLOPE



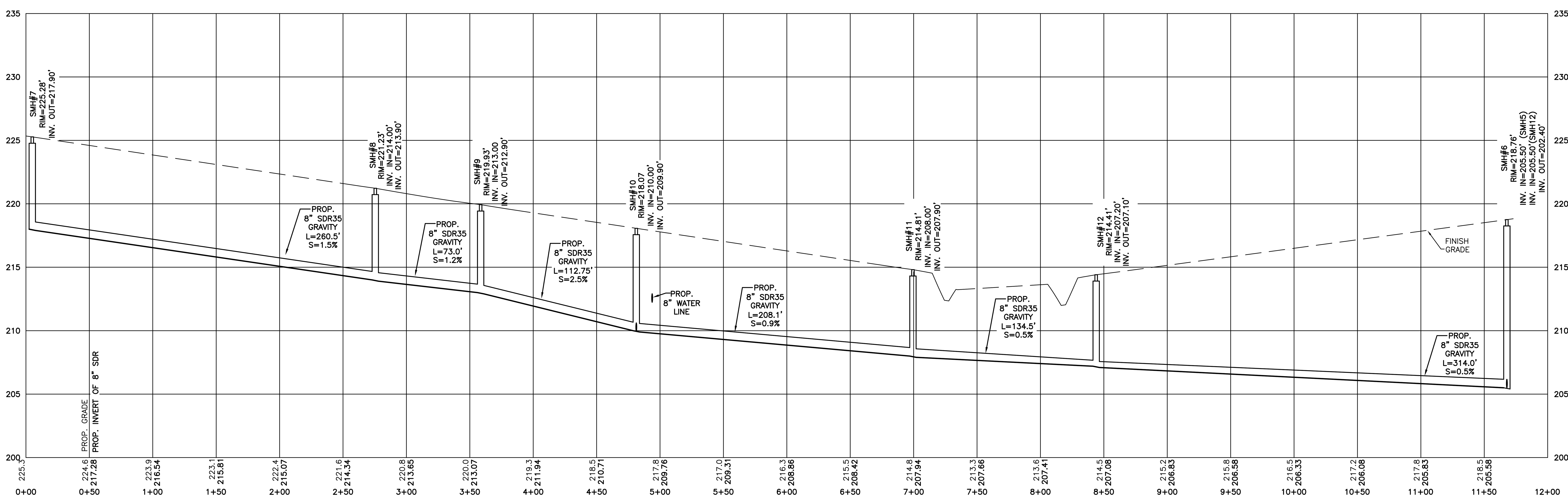
SEWER PLAN

SCALE: 1" = 100



GRAVITY SEWER C PROFILE

SCALE: 1" = 50' (HORZ.)
1" = 5' (VERT.)



GRAVITY SEWER B PROFILE

SCALE: 1" = 50' (HORZ.)
1" = 5' (VERT.)

FILE NO. 109
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DWG. NO. 17149 SP-2
F.B. NO.

GRAVITY SEWER LINE B & C PROFILE

TAX MAP 224, LOT 309
DIAMONDBACK DRIVE
ROCHESTER, NH
PREPARED FOR:
TARA ESTATES COMMUNITY
JANUARY 2022

C-12