

# NORWAY PLAINS ASSOCIATES, INC.

LAND SURVEYORS • SEPTIC SYSTEM DESIGNERS • CIVIL ENGINEERS

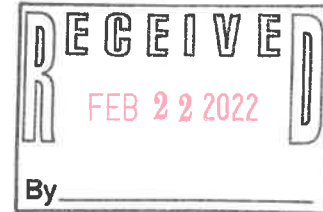
P.O. Box 249  
Continental Blvd. (03867)  
Rochester, NH 03866-0249  
Phone (603) 335-3948  
www.norwayplains.com



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

February 21, 2022

Shanna Saunders, Director  
Planning Department  
City of Rochester  
33 Wakefield Street  
Rochester, NH 03867



**Re: Residential Site Plan Modifications; Tara Estates Community; 716 Salmon Falls Road, Map 224, Lot 309.**

Dear Ms. Saunders:

On behalf of Tara Estates Community, we hereby submit revised plans and Modification to Approved project application for their residential manufacturing housing community located at 716 Salmon Falls Road. The parcel, Tax Map 224, Lot 309 comprising of approximately 263 acres is located in the Agricultural zoning district.

Tara Estates Community originally received approval by the Rochester Planning Board in September of 1986 as an Adult Community comprising of manufactured houses, aka a mobile home park. This approval was to allow the construction of 579 units within the development. Refer to Case D60505 of the Rochester Planning Department. In June of 1989, the City of Rochester Planning Board approved an amendment to the overall project, in which the total allowable number of units that could be constructed were reduced to 567.

Over the past 30 plus years, the past and current owners of the development have been developing the roadways, infrastructure, and constructing house sites. In the past couple of years, with the increased demands of affordable housing, construction has ramped up.

In order to adhere to more aggressive environmental regulations, a closer evaluation of the undeveloped sections of the approved park was necessary. The lower section of Diamondback Drive area, starting a Lark Lane, is one such area. This area of the park has been the material staging area and general borrow pit for the park since the project started construction. With the original approvals not requiring much in the form of stormwater management runoff controls, a reconfiguration of the roadway and placement of the units was warranted.

Keeping the proposed roadway generally in the same location, a new layout was developed that resulted in the same number of sites. The reconfiguration maintains the 20 foot buffers to the abutting lots as required by the original approvals, yields a minimum of 10,000 square feet of land for each unit, and provides at least 75 feet of frontage. Furthermore, the units are set up to adhere to the minimum 30 feet separation between structures, as required by the building and fire codes. A slight modification of the original layout will be the construction of a short dead-end roadway that will provide access to 4 units. The paved roadways will maintain the same width, 22 feet pavement and 2 foot shoulders, as the other roadways within the park.

This new layout also allowed for the collection of all of the runoff from the developed areas and is designed to direct it to a proposed stormwater management area. This stormwater management system consists of a series of catch basin and drainage pipes, a sediment forebay and an infiltration basin. The system was designed in accordance with the City of Rochester Stormwater Regulations (Chapter 218) and the NH Department of Environmental Services (NHDES) Stormwater Regulations. An Alteration of Terrain Permit (AoT-2061) was issued for the earthwork associated with the new stormwater management system.

The new configuration will still be serviced by municipal water and sewer mains located within the development. The construction plans depict the locations and sizes for the water main and gravity sewer mains. All of the utilities, i.e., power, telephone, cable, etc., will be installed underground. In keeping with the existing park aesthetics, small light poles are proposed to be placed along the roadway.

In addition to the Alteration of Terrain permit, a Sewer Connection Permit from NHDES Wastewater Engineering Bureau will be required for the changes to the sanitary sewer collection system. This reconfiguration will not require a NHDES Wetlands permit, as there are no impacts proposed. The owners have submitted and have an active Construction General Permit (CGP) with the EPA consistent to with a development greater than 1 acres in size.

In conclusion, Tara Estates Community is looking to amend their existing approvals for the modified layout of a section within the approved development. This reconfiguration will not expand the park's approved capacity. We look forward to discussing this project with staff and the Planning Board. Thank you for your consideration.

Sincerely,

**NORWAY PLAINS ASSOCIATES, INC.**

A handwritten signature in black ink, appearing to read "Scott A. Lawler", written in a cursive style.

By:  
Scott A. Lawler, PE, Project Engineer

cc: Tara Estates Community



**Amendment to Approved Project**  
**City of Rochester, New Hampshire**

Case # File #D60505 Property Address Diamondback Drive

Type of project: Site Plan ☐; Subdivision ☐; Lot Line Adjustment ☐; Other ☒

Project name Tara Estates - Diamondback Drive

Date of original Planning Board approval September 16, 1986

Description of amendment The proposal is change the layout of 53 sites and the road known as Diamondback on the  
original approved plan from 1986.

Would this affect a wetland or wetland buffer or require a conditional use? Yes ☐ No ☐

Applicant Name: Tara Estates Community Limited Partnership - Heather Williams

Mailing Address: 716 Salmon Falls Road, Rochester, NH 03868

Phone Number: 603-332-4030 Email Address: hwilliams@hynesnet.com

**Please note:** There is a \$125.00 fee for amendments. They are reviewed by the Planning Board and a public hearing is held. Abutters must be renotified by the applicant. The applicant must submit any supplementary materials necessary to explain and support the amendment, such as a narrative and plans. This form, the abutter's list, the fee, and other necessary materials must be submitted by the applicable deadline date.

Name of applicant or agent filling out this form Norway Plains Associates, Inc.

Please check box: Applicant ☒ Agent ☐

Signature of person completing form: Heather Williams, AIF for Tara Estates Community LP Date: 02/17/2022

Signature of property owner (if different): \_\_\_\_\_ Date: \_\_\_\_\_



### Northern Black Racer



Immediately report sightings to NH Fish and Game  
Melissa Dogenahd (603-439-3229) or  
Brendan Clifford (603-944-0835)  
*Please report promptly, noting specific location and date*  
*Photographs strongly encouraged*

NEW HAMPSHIRE FISH AND GAME AOT PERMIT CONDITIONS RELATED TO THREATENED AND ENDANGERED SPECIES:

NORTHERN BLACK RACERS (STATE THREATENED) OCCUR WITHIN THE VICINITY OF THE PROJECT AREA. SITE OPERATORS SHALL BE INFORMED OF THE POTENTIAL PRESENCE OF THIS SPECIES AND SHALL BE PROVIDED FLYER INFORMATION REGARDING THIS SPECIES ALONG WITH NIFG CONTACT INFORMATION. SEE PLAN COVER SHEET AND C-3.

NO TRAPS SHALL BE INCLUDED IN THE DESIGN OF OUTLET CONTROL STRUCTURES.

ALL MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS, EXCEPT FOR SILT FENCE INSTALLED IN ACCORDANCE WITH NIFG-NO. 10, SHALL BE INSTALLED TO PROTECT SLOPE FROM SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN WHEED PLASTIC, GEOTEXTILE, OR MESH. THE TYPE OF PROTECTANT SHALL BE POLYPROPYLENE NETTING OR MESH. SEE PLAN SHEET C-4 FOR SPECS.

ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES SHALL BE REPORTED IMMEDIATELY TO THE NEW HAMPSHIRE FISH AND GAME DEPARTMENT NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT [NHFW@NEWHAMPWILDLIFE.NH.GOV](mailto:NHFW@NEWHAMPWILDLIFE.NH.GOV), EMAIL SUBJECT: 603-271-2461. THE SUBJECT OF THE EMAIL SHOULD BE WILDLIFE SPECIES OBSERVATION. PHOTOGRAPHS SHALL BE PROVIDED FOR VERIFICATION AS FEASIBLE.

THE NEW HAMPSHIRE FISH AND GAME DEPARTMENT SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT.

TAX MAP 224, LOT 309  
OWNER OF RECORD:  
TARA ESTATES COMMUNITY  
718 SALMON FALLS ROAD  
ROCHESTER, NH 03868  
SCRD BOOK 3916, PAGE 72

**TARA ESTATES COMMUNITY**  
**716 SALMON FALLS ROAD**  
**ROCHESTER, NH 03868**  
**(603) 332-4030**

**NORWAY PLAINS ASSOCIATES, INC.**  
**2 CONTINENTAL BOULEVARD**  
**ROCHESTER, NEW HAMPSHIRE 03867**  
**(603) 335-3948**

FILE NO. 109  
PLAN NO. C-3109/SP-2  
DWG. NO. 17149  
F.B. NO.

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 WITHIN 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. (803)-335-3948.

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

# NORWAY PLAINS ASSOCIATES, INC.

2 Continental Blvd., Rochester, N.H. 603-335-3848

STATE AND FEDERAL PERMITS:  
STATE OF NEW HAMPSHIRE PERMIT NUMBERS:

NHDES ALTERATION OF TERRAIN:	AsT 2061
NHDES WETLANDS PERMIT:	NOT REQUIRED
NHDES DAM PERMIT:	NOT REQUIRED
NHDES SUBDIVISION PERMIT:	NOT REQUIRED
NHDES SUBSURFACE SYSTEMS PERMIT:	NOT REQUIRED
NHDES WASTEWATER PERMIT:	REQUIRED
NHDOT DRIVEWAY/ENTRANCE PERMIT:	NOT REQUIRED

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES):

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES):  
NPDES PERMITS ARE ONLY REQUIRED FOR PROJECTS MEETING THE DISTURBED AREA  
CRITERIA BELOW AND HAVING A POINT SOURCE STORMWATER DISCHARGE FROM THE  
SITE TO AN ADJACENT WETLAND OR WATER BODY (I.E. CULVERT, SWALE, ETC.  
OUTLETING TO A WETLAND, CREEK, STREAM OR RIVER).

NPDES PERMIT: REQUIRED

NPDES PERMITS CONSIST OF A NOTICE OF INTENT (NOI) FILED WITH THE ENVIRONMENTAL PROTECTION AGENCY AT LEAST 14 DAYS PRIOR TO CONSTRUCTION COMMENCING AND A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) BEING PREPARED, KEPT ON SITE AND FOLLOWED BY THE CONTRACTOR.

FOR STATUS OF THIS PERMIT, CONTACT THE PROJECT GENERAL CONTRACTOR.

SHEET INDEX		
	COVER	
SHEET E-1	EXISTING FEATURES	1" = 100'
SHEET E-2	APPROVED CONFIGURATION - 1986	1" = 80'
SHEET C-1	OVERALL SITE PLAN	1" = 60'
SHEET C-2	GRADING AND DRAINAGE PLAN	1" = 50'
SHEET C-3	EROSION AND SEDIMENTATION CONTROL PLAN	1" = 50'
SHEET C-4	TEMPORARY EROSION AND SEDIMENTATION CONTROL DETAILS	AS SHOWN
SHEET C-5	PERMANENT EROSION AND SEDIMENTATION CONTROL DETAILS	AS SHOWN
SHEET C-6	DRAINAGE DETAILS	AS SHOWN
SHEET C-7	INFILTRATION BASIN DETAIL	AS SHOWN
SHEET C-8	ROADWAY PLAN	1" = 50'
SHEET C-9	ROADWAY PROFILE	AS SHOWN
SHEET C-10	UTILITY PLAN	1" = 50'
SHEET C-11	GRAVITY SEWER A PROFILE	AS SHOWN
SHEET C-12	GRAVITY SEWER B & C PROFILE	AS SHOWN
SHEET C-13	SANITARY SEWER DETAILS	AS SHOWN
SHEET C-14	UTILITY DETAILS	AS SHOWN
SHEET C-15	CONSTRUCTION DETAILS	AS SHOWN



# LAND SURVEYORS

# CIVIL ENGINEERS

## LEGEND

- PROPERTY LINE
- LIMITS OF JURISDICTIONAL WETLANDS
- EXISTING TREE LINE
- EXISTING CONTOUR LINE
- EXISTING DRAIN LINE
- EXISTING UNDERDRAIN LINE
- NRCS SOIL TYPE BOUNDARY LINE
- EXISTING CATCH BASIN
- EXISTING HYDRANT
- EXISTING TEST PIT LOCATION & NUMBER
- EXISTING WETLANDS
- EXISTING SOIL TYPE

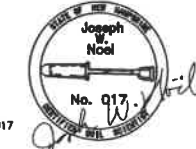
## WETLAND LEGEND

- PF01E - PALUSTRINE BROAD-LEAVED DECIDUOUS FORESTED, SEASONALLY FLOODED/SATURATED
- PF04E - PALUSTRINE NEEDLE-LEAVED EVERGREEN FORESTED, SEASONALLY FLOODED/SATURATED
- PF01/4E - PALUSTRINE BROAD-LEAVED DECIDUOUS/NEEDLE-LEAVED EVERGREEN FORESTED, SEASONALLY FLOODED/SATURATED
- R3UBH - RIVERINE, UPPER PERENNIAL, UNCONSOLIDATED BOTTOM, PERMANENTLY FLOODED
- R4UBJ - RIVERINE, INTERMITTENT, UNCONSOLIDATED BOTTOM, INTERMITTENTLY FLOODED
- U - UPLAND
- SPECIAL MODIFIERS
- X - EXCAVATED



## WETLAND NOTES

- STATE AND FEDERAL JURISDICTIONAL WETLANDS WERE DELINEATED BY N.H. CERTIFIED WETLAND SCIENTIST, BARRY H. KEITH, DURING APRIL AND MAY 2020. WETLANDS MAPPING WAS DONE BY N.H. LICENSED LAND SURVEYORS, NORWAY PLAINS ASSOCIATES, INC. USING GLOBAL POSITIONING SURVEY (GPS) SURVEY METHODS AND IN ACCORDANCE WITH THE FOLLOWING GUIDANCE DOCUMENTS:
  - N.H. CODE OF ADMINISTRATIVE RULES (ENR-WT 406.01(A) WITH THE "TECHNIQUES OUTLINED IN THE 1987 U.S. ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL, TECHNICAL REPORT Y-87-1."
  - U.S. ARMY CORPS OF ENGINEERS, 2012, REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHEASTAL AND NORTHEAST REGION, U.S. ARMY CORPS OF ENGINEERS RESEARCH AND DEVELOPMENT CENTER, ENVIRONMENTAL LABORATORY ERDC/EL TR-09-16.
  - U.S. ARMY CORPS OF ENGINEERS, 2016, NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST REGION, U.S. ARMY CORPS OF ENGINEERS RESEARCH AND DEVELOPMENT CENTER, ENVIRONMENTAL LABORATORY.
  - U.S. FISH AND WILDLIFE SERVICE MANUAL FWS/OBS-79/31 ENTITLED "CLASSIFICATION OF WETLANDS AND DEEPWATER HABITATS OF THE UNITED STATES, COWARD ET AL. 1979."
  - NEW ENGLAND HYDRIC SOILS TECHNICAL COMMITTEE, 2017, 4RD ED., FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION, LOWELL, MA.
  - U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE, 2010, FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 7.0, L.M. VASILAS, G.W. HURT, AND C.V. NOBLE (EDS.), USDA, NRCS, IN COOPERATION WITH THE NATIONAL TECHNICAL COMMITTEE FOR HYDRIC SOILS.



TEST PITS CONDUCTED: NOVEMBER 25, 2020  
BY: JOSEPH W. NOEL, NEW HAMPSHIRE CERTIFIED SOIL SCIENTIST #017  
PURPOSE: SITE-SPECIFIC SOIL MAPPING & STORM WATER PLANNING

**TEST PIT 1**  
3-0 INCHES PARTIALLY DECOMPOSED ORGANIC MATTER  
0-9 INCHES DARK BROWN (10YR 3/3) FINE SANDY LOAM, FRAGILE, GRANULAR  
9-24 INCHES DARK YELLOWISH BROWN (10YR 4/6) LOAMY FINE SAND AND LOAMY VERY FINE SAND, FRAGILE, MASSIVE  
24-34 INCHES DARK YELLOWISH BROWN (10YR 4/4) LOAMY FINE SAND, VERY FRAGILE, MASSIVE  
34-144 INCHES LIGHT YELLOWISH BROWN (10YR 6/4) SAND, LOOSE, SINGLE GRAIN (SOME SLOPING STRATA/BEDDING PLAINS OF GRAVELLY SAND WITH HIGH CHROMA RELIC MOTTLING)

SEASONAL HIGH WATER TABLE NONE TO 144"  
OBSERVED WATER TABLE NONE TO 144"  
RESTRICTIVE HORIZON NONE TO 144"  
BEDROCK NONE TO 144"  
NOTE: EOLIAN CAP OVER ICE-CONTACT STRATIFIED DRIFT PARENT MATERIAL

**TEST PIT 2**  
2-0 INCHES PARTIALLY DECOMPOSED ORGANIC MATTER  
0-8 INCHES DARK BROWN (10YR 3/3) FINE SANDY LOAM, FRAGILE, GRANULAR  
8-18 INCHES STRONG BROWN (7.5YR 4/6) FINE SANDY LOAM, FRAGILE, BLOODY  
18-34 INCHES LIGHT OLIVE BROWN (2.5Y 5/4) LOAMY FINE SAND, FRAGILE, BLOODY  
34-44 INCHES STRONG BROWN (7.5YR 4/6) VERY GRAVELLY SAND, LOOSE, SINGLE GRAIN  
44-72 INCHES LIGHT YELLOWISH BROWN (10YR 6/4) SAND, VERY FRAGILE, MASSIVE  
72-98 INCHES PALE BROWN (10YR 6/3) FINE SAND, FRAGILE, MASSIVE  
98-132 INCHES LIGHT YELLOWISH BROWN (2.5Y 6/4) SAND, VERY FRAGILE, MASSIVE

SEASONAL HIGH WATER TABLE NONE TO 132"  
OBSERVED WATER TABLE NONE TO 132"  
RESTRICTIVE HORIZON NONE TO 132"  
BEDROCK NONE TO 132"  
NOTE: EOLIAN CAP OVER ICE-CONTACT STRATIFIED DRIFT PARENT MATERIAL

**TEST PIT 3**  
2-0 INCHES PARTIALLY DECOMPOSED ORGANIC MATTER  
0-8 INCHES DARK BROWN (10YR 3/3) FINE SANDY LOAM, FRAGILE, GRANULAR  
8-28 INCHES DARK YELLOWISH BROWN (10YR 4/6) LOAMY FINE SAND, FRAGILE, MASSIVE  
28-108 INCHES LIGHT GRAY (10YR 7/2) VERY FINE SAND AND FINE SAND, FRAGILE, MASSIVE

SEASONAL HIGH WATER TABLE NONE TO 108"  
OBSERVED WATER TABLE NONE TO 108"  
RESTRICTIVE HORIZON NONE TO 108"  
BEDROCK NONE TO 108"  
NOTE: GLACIOFLUVIAL DEPOSITS NO STRATIFIED LAYERS OF COARSE MATERIAL

**TEST PIT 4**  
2-0 INCHES PARTIALLY DECOMPOSED ORGANIC MATTER  
0-9 INCHES DARK BROWN (10YR 3/3) FINE SANDY LOAM, FRAGILE, GRANULAR  
9-30 INCHES DARK YELLOWISH BROWN (10YR 4/6) LOAMY SAND, VERY FRAGILE, MASSIVE  
30-60 INCHES LIGHT BROWNISH GRAY (10YR 6/2) FINE SAND WITH SOME VERY FINE SAND, FRAGILE, MASSIVE (SOME HORIZONTAL RELIC HIGH CHROMA CONCENTRATIONS)

SEASONAL HIGH WATER TABLE NONE TO 96" (POSSIBLY CLOSE TO LIMIT OF EXCAVATION)  
OBSERVED WATER TABLE NONE TO 96"  
RESTRICTIVE HORIZON NONE TO 96"  
BEDROCK NONE TO 96"  
NOTE: GLACIOFLUVIAL DEPOSITS NO STRATIFIED LAYERS OF COARSE MATERIAL

**TEST PIT 5 (TRUNCATED PROFILE IN FLOOR OF PIT)**  
0-8 INCHES DARK GRAYISH BROWN (10YR 4/2) SANDY LOAM FILL MATERIAL, FRAGILE, MASSIVE  
8-30 INCHES LIGHT OLIVE BROWN (2.5Y 5/4) SAND, FRAGILE, MASSIVE, COMMON DISTINCT REDOX FEATURES  
30-60 INCHES OLIVE GRAY (5Y 5/2) VERY FINE SANDY LOAM TO SILT, FRAGILE TO FIRM, MASSIVE, COMMON DISTINCT REDOX FEATURES  
60-72 INCHES PALE BROWN (10YR 6/3) VERY FINE SAND, FIRM, MASSIVE, COMMON DISTINCT REDOX FEATURES

SEASONAL HIGH WATER TABLE @ 8" (SEEPS)  
OBSERVED WATER TABLE @ 30" (SEEPS)  
RESTRICTIVE HORIZON @ 30"  
BEDROCK NONE TO 72"  
NOTE: UDORTHENTS, SOMEWHAT POORLY DRAINED GLACIOFLUVIAL DEPOSITS

**TEST PIT 6 (TRUNCATED PROFILE IN FLOOR OF PIT)**  
0-12 INCHES LIGHT OLIVE BROWN (2.5Y 5/4) GRAVELLY SANDY LOAM FILL MATERIAL, FRAGILE, MASSIVE  
12-84 INCHES PALE BROWN (10YR 6/3) FINE SAND, FRAGILE, MASSIVE

SEASONAL HIGH WATER TABLE NONE TO 84"  
OBSERVED WATER TABLE NONE TO 84"  
RESTRICTIVE HORIZON NONE TO 84"  
BEDROCK NONE TO 84"  
NOTE: UDORTHENTS, WELL DRAINED GLACIOFLUVIAL DEPOSITS

TEST PITS CONDUCTED: JULY 28, 2020  
BY: ASHLEY ROW  
PURPOSE: CONFIRM SEASONAL HIGH WATER

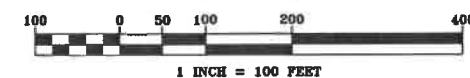
## TEST PIT 7

SEASONAL HIGH WATER TABLE NONE TO 228"  
OBSERVED WATER TABLE NONE TO 228"  
RESTRICTIVE HORIZON NONE TO 228"  
BEDROCK NONE TO 228"

TAX MAP 224, LOT 309  
OWNER OF RECORD:  
TARA ESTATES COMMUNITY  
716 SALMON FALLS ROAD  
ROCHESTER, NH 03868  
SCRD BOOK 3916, PAGE 72

EXISTING FEATURES PLAN  
TAX MAP 224, LOT 309  
DIAMONDBACK DRIVE  
ROCHESTER, NH

PREPARED FOR:  
TARA ESTATES COMMUNITY  
SEPTEMBER 2020  
GRAPHIC SCALE



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 WITHIN 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.

FILE NO. 109  
PLAN NO. C-3109/SP-2  
DWG. NO. 17149  
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

E-1

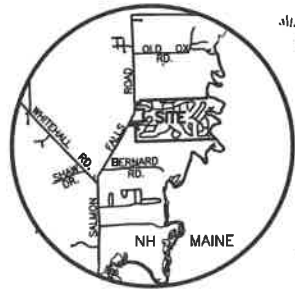
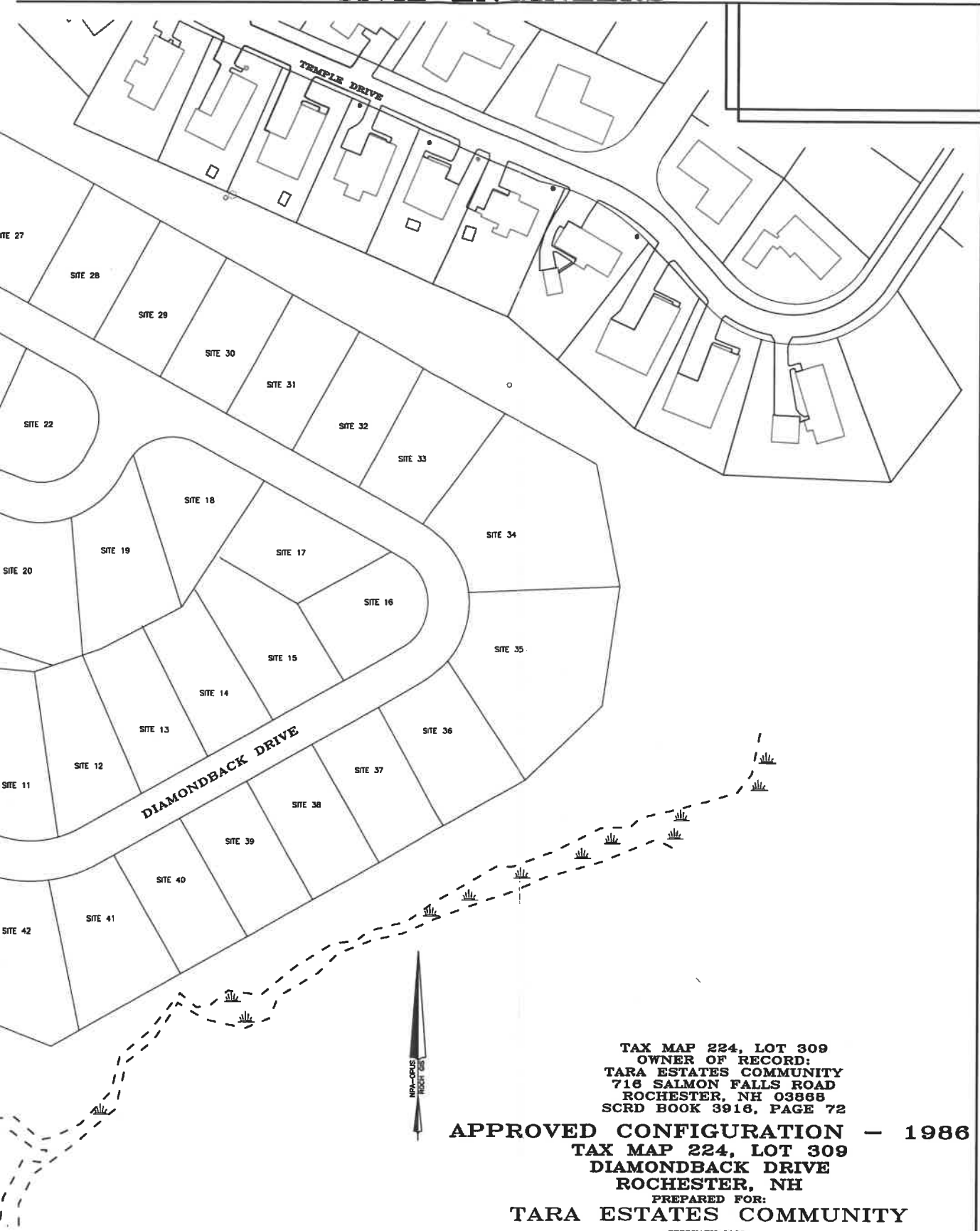
# LAND SURVEYORS

# CIVIL ENGINEERS

## LEGEND

- PROPERTY LINE
- - - JURISDICTIONAL WETLANDS
- ~~~~~ EXISTING TREE LINE
- ⊕ EXISTING HYDRANT
- ⊙ EXISTING CATCH BASIN
- ▭ PROPOSED BUILDING
- PROPOSED PAVEMENT
- - - PROPOSED AREA OF DISTURBANCE
- ~~~~~ PROPOSED TREE LINE

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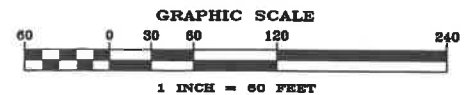
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N.T.S

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.**

TAX MAP 224, LOT 309  
OWNER OF RECORD:  
TARA ESTATES COMMUNITY  
716 SALMON FALLS ROAD  
ROCHESTER, NH 03868  
SCRD BOOK 3916, PAGE 72  
**APPROVED CONFIGURATION - 1986**  
TAX MAP 224, LOT 309  
DIAMONDBACK DRIVE  
ROCHESTER, NH  
PREPARED FOR:  
**TARA ESTATES COMMUNITY**  
FEBRUARY 2022



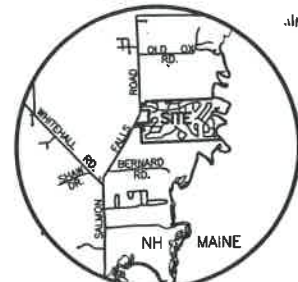
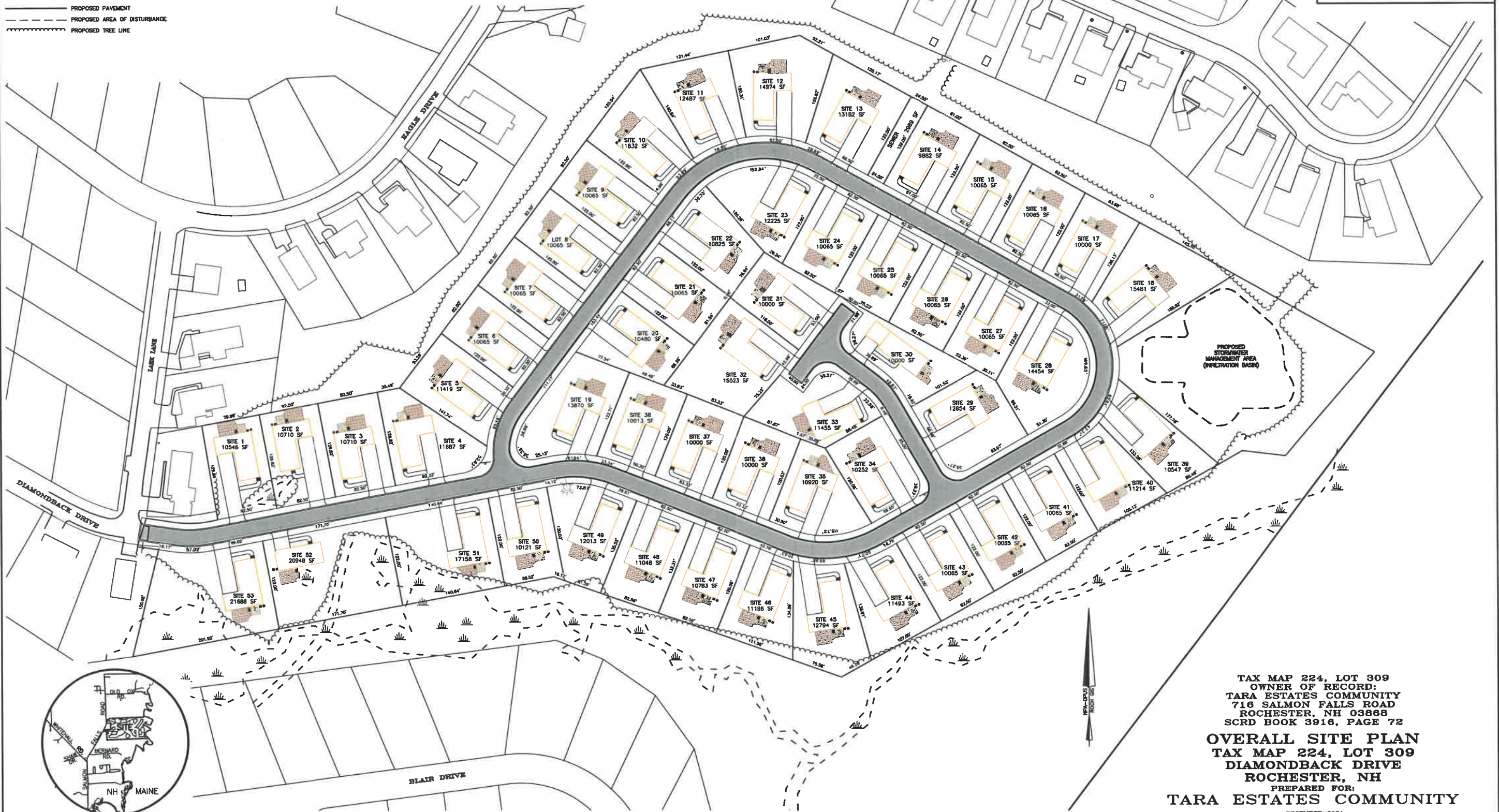
2 Continental Blvd., Rochester, N.H. 603-335-3948



LEGEND

- PROPERTY LINE
- - - JURISDICTIONAL WETLANDS
- EXISTING TREE LINE
- ⊗ EXISTING HYDRANT
- ⊕ EXISTING CATCH BASIN
- ▭ PROPOSED BUILDING
- PROPOSED PAVEMENT
- - - PROPOSED AREA OF DISTURBANCE
- PROPOSED TREE LINE

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TAX MAP 224, LOT 309  
OWNER OF RECORD:  
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716 SALMON FALLS ROAD  
ROCHESTER, NH 03868  
SCRD BOOK 3916, PAGE 72  
**OVERALL SITE PLAN**  
TAX MAP 224, LOT 309  
DIAMONDBACK DRIVE  
ROCHESTER, NH  
PREPARED FOR:  
TARA ESTATES COMMUNITY



FILE NO. 109  
PLAN NO. C-2993/SP-2  
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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



Drawing Location: 17149.DWG 17149 SP-2.dwg  
Date: 17 Feb 2022 - 12:11 pm

## LAND SURVEYORS

## CIVIL ENGINEERS



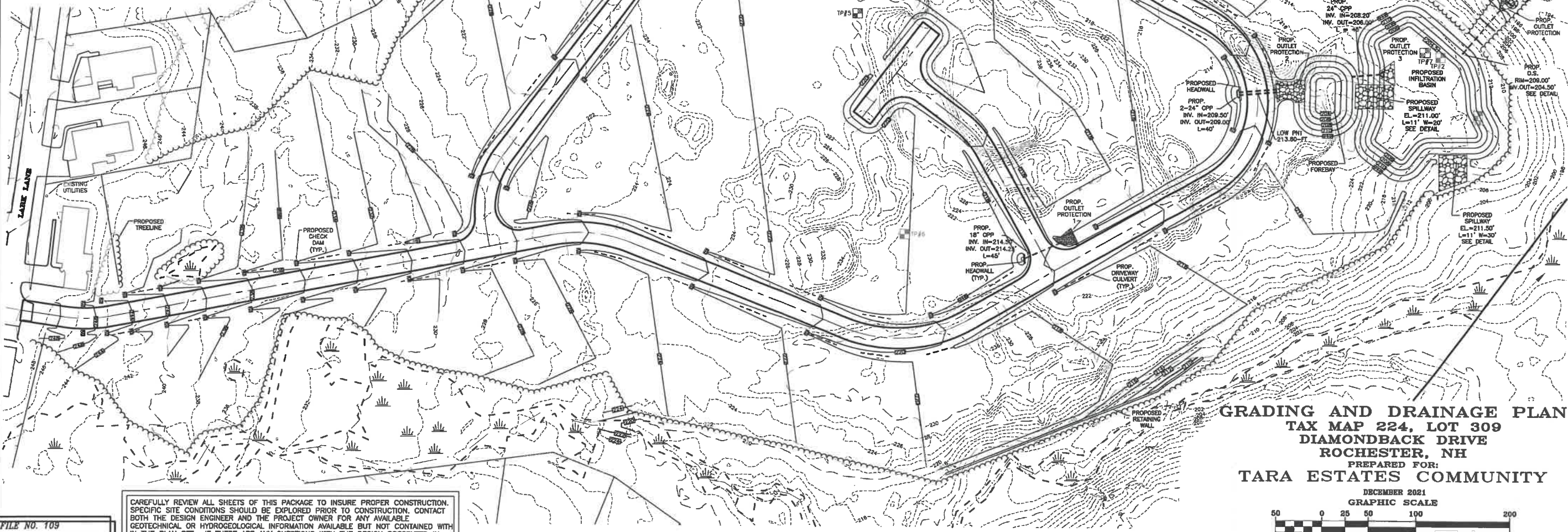
REVISION:  
8/3/2021 - INFILTRATION BASIN BOTTOM CHANGE  
ELEVATION FROM 208.0' TO 204.3'  
FOREBAY OUTLET, CULVERT INVERT FROM  
208.2' TO 205.2'  
12/14/2021 - ADD NOTES

- LEGEND**
- PROPERTY LINE
  - JURISDICTIONAL WETLANDS
  - EXISTING TREE LINE
  - EXISTING DRAIN LINE
  - EXISTING CONTOUR LINE
  - EXISTING TEST PIT
  - PROPOSED SPOT GRADE
  - PROPOSED TREE LINE
  - PROPOSED DRAIN LINE
  - PROPOSED CONTOUR LINE
  - PROPOSED FLARED END SECTION (FES)
  - CORRUGATED POLYETHYLENE PIPE
  - PROPOSED OUTLET PROTECTION

ALL OBSERVATIONS OF NORTHERN BLACK RACER SNAKES ENCOUNTERED FROM THE  
END OF SEPTEMBER THROUGH THE MONTH OF APRIL MUST BE IMMEDIATELY  
REPORTED TO THE NEW HAMPSHIRE FISH AND GAME DEPARTMENT 603-271-2461.  
PLEASE ATTEMPT TO PHOTOGRAPH THE SPECIES IF POSSIBLE.

### GRADING AND DRAINAGE NOTES

- ALL HOUSES WILL HAVE DRIP EDGES WITH 4 INCH PERFORATED PIPES  
DIRECTED INTO THE ROADSIDE DITCH LINE ON DIAMONDBACK DRIVE.
- ALL LOTS WILL BE GRADED SUCH THAT STORMWATER RUNOFF IS DIRECTED  
INTO THE ROADSIDE DITCH LINE ON DIAMONDBACK DRIVE.
- ANY EXISTING CATCH BASINS WITHIN THE PROJECT AREA SHALL HAVE  
SUMPS FILLED WITH CONCRETE. NO PROPOSED STRUCTURES SHALL HAVE  
SUMPS.



**GRADING AND DRAINAGE PLAN**  
**TAX MAP 224, LOT 309**  
**DIAMONDBACK DRIVE**  
**ROCHESTER, NH**  
**PREPARED FOR:**  
**TARA ESTATES COMMUNITY**

DECEMBER 2021  
GRAPHIC SCALE



(IN FEET)  
1 INCH = 50 FT.

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

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.

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

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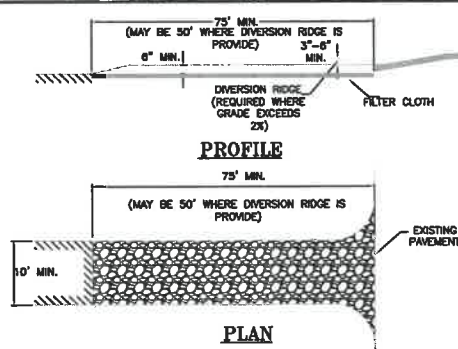
C-2





REVISIONS  
8/3/2021 - ADD SEDIMENT TRAP LOCATIONS  
12/14/2021 - ADD CONSTRUCTION EXIT DETAIL  
ADD NOTES

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



**TEMPORARY CONSTRUCTION EXIT**  
NOT TO SCALE

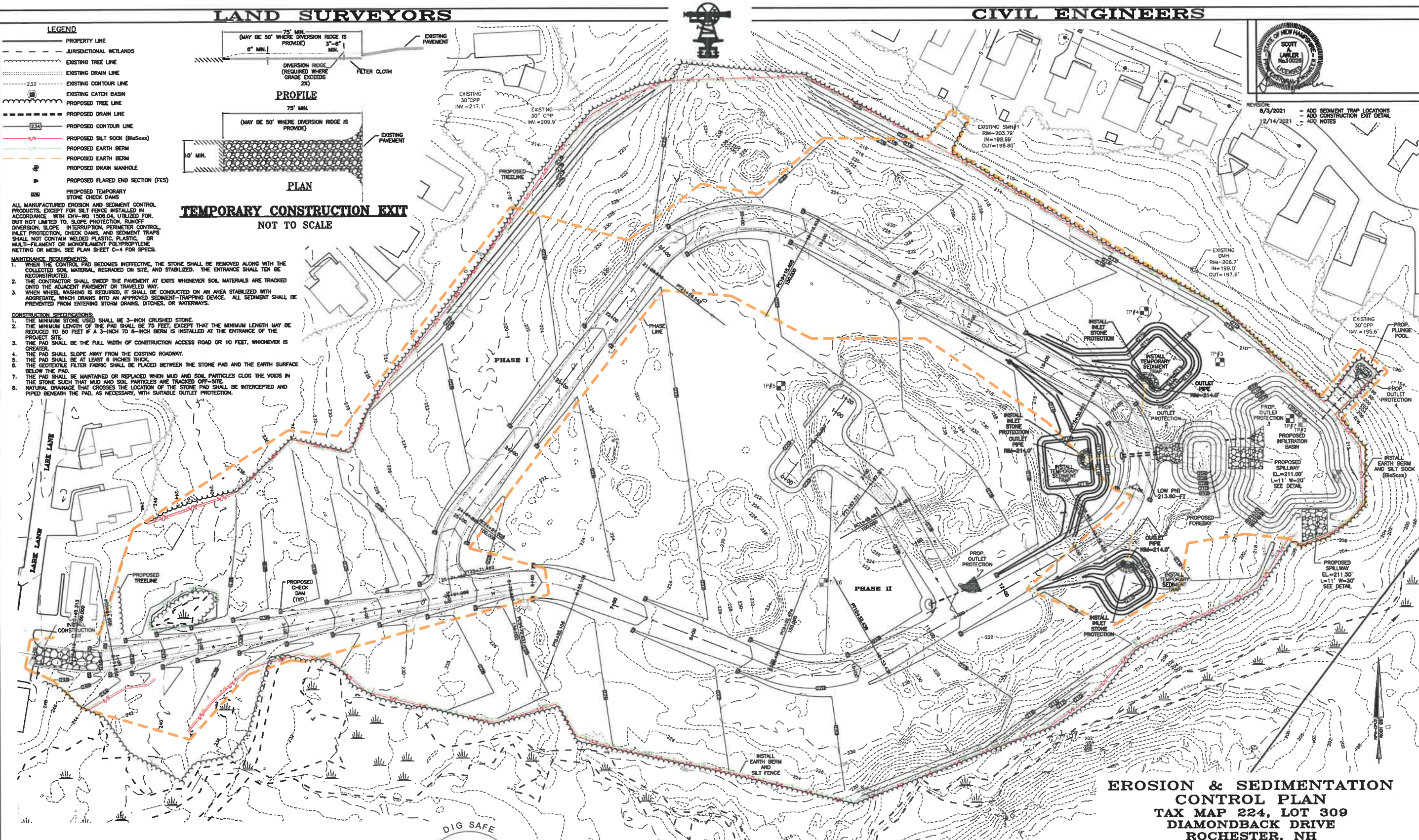
ALL MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS, EXCEPT FOR SILT FENCE, INSTALLED IN ACCORDANCE WITH ENV-WD 1509.04, UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERCEPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN WELDED PLASTIC, PLASTIC, OR MULTI-PLASTIC OR MONOPLASTIC POLYPROPYLENE NETTING OR MESH. SEE PLAN SHEET C-4 FOR SPECS.

**MAINTENANCE REQUIREMENTS:**

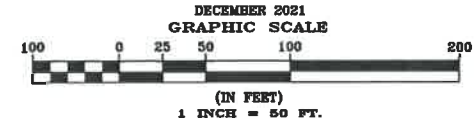
1. WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHALL BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL, REGRADED ON SITE, AND STABILIZED. THE ENTRANCE SHALL THEN BE RECONSTRUCTED.
2. THE CONTRACTOR SHALL SWEEP THE PAVEMENT AT EXITS WHENEVER SOIL MATERIALS ARE TRACKED ONTO THE ADJACENT PAVEMENT 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 8 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.



**EROSION & SEDIMENTATION  
CONTROL PLAN**  
TAX MAP 224, LOT 309  
DIAMONDBACK DRIVE  
ROCHESTER, NH  
PREPARED FOR:  
**TARA ESTATES COMMUNITY**



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

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 WITHIN 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.



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# TEMPORARY VEGETATION SEEDING RECOMMENDATIONS

SPECIES	PER ACRE BUSHELS (BU) OR POUNDS (LBS.)	PER 1,000-SF	REMARKS
WINTER RYE	2.5 BU OR 112 LBS.	2.5 LBS.	BEST FOR FALL SEEDING. SEED FROM AUGUST 15 TO SEPTEMBER 15 FOR BEST COVER. SEED TO A DEPTH OF 1 INCH.
OATS	2.5 BU OR 80 LBS.	2.0 LBS.	BEST FOR SPRING SEEDING. SEED NO LATER THAN MAY 15 FOR SUMMER PROTECTION. SEED TO A DEPTH OF 1 INCH.
ANNUAL RYE GRASS	40 LBS.	1.0 LB.	GROWS QUICKLY, BUT IS OF SHORT DURATION. USE WHERE APPEARANCES ARE IMPORTANT. SEED EARLY SPRING AND/OR BETWEEN AUGUST 15 AND SEPTEMBER 15. COVER THE SEED WITH NO MORE THAN 0.25 INCH OF SOIL.
PERENNIAL RYE GRASS	30 LBS.	0.7 LBS.	BEST FOR FALL SEEDING. SEED FROM AUGUST 15 TO SEPTEMBER 15 FOR BEST COVER. SEED TO A DEPTH OF 1 INCH.

## SOURCES:

1. NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3, TABLE 4-1
2. MINNICK, E.L. AND H.T. MARSHALL, (AUGUST, 1992)

## TEMPORARY VEGETATION:

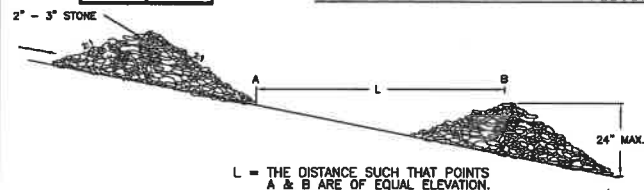
- SPECIFICATIONS:**
1. INSTALL NEEDED EROSION AND SEDIMENT CONTROL MEASURES SUCH AS SILTATION BARRIERS, DIVERSIONS, AND SEDIMENT TRAPS.
  2. GRADE AS NEEDED FOR THE ACCESS OF EQUIPMENT FOR SEEDING PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING.
  3. RUNOFF SHALL BE DIVERTED FROM THE SEEDING AREA.
  4. ON SLOPES 4:1 OR STEEPER, THE FINAL PREPARATION SHALL INCLUDE CREATING HORIZONTAL GROOVES PERPENDICULAR TO THE DIRECTION OF THE SLOPE TO CATCH SEED AND REDUCE RUNOFF.
- SEEDING PREPARATION:**
1. STONES AND TRASH SHALL BE REMOVED SO AS NOT TO INTERFERE WITH THE SEEDING AREA.
  2. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
  3. IF APPLICABLE, FERTILIZER AND ORGANIC SOIL AMENDMENTS SHALL BE APPLIED DURING THE GROWING SEASON.
  4. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. FERTILIZER SHALL BE RESTRICTED TO LIME, WOOD ASH OR LOW PHOSPHATE AND SLOW RELEASE NITROGEN VARIETIES, UNLESS A SOIL TEST WARRANTS OTHERWISE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER AND LIMESTONE MAY BE APPLIED AT THE FOLLOWING RATES:
- LIMESTONE APPLICATION RATE = 3 TONS/ACRE (138 LB./1,000-SF)  
EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE
- FERTILIZER APPLICATION RATE = 870 LB./ACRE (20 LB./1,000-SF)  
\*LOW PHOSPHATE FERTILIZER (8-0-4) OR EQUIVALENT

- SEEDING:**
1. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL CULTPACKER TYPE SEEDER OR HYDRO SEEDER (SLURRY INCLUDING SEED AND FERTILIZER). NORMAL SEEDING DEPTH IS FROM 1/4 TO 1/2 INCH. HYDROSEEDING THAT INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
  2. TEMPORARY SEED SHALL TYPICALLY OCCUR PRIOR TO SEPTEMBER 15.
  3. AREAS SEEDING BETWEEN MAY 15 AND AUGUST 15 SHALL BE COVERED WITH HAY OR STRAW MULCH, ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE DESCRIBED IN THE NHSSM, VOL. 3.
  4. VEGETATED GROWTH COVERING AT LEAST 60% OF THE DISTURBED AREA SHALL BE ACHIEVED PRIOR TO OCTOBER 15. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT OTHER TEMPORARY STABILIZATION MEASURES FOR OVER WINTER PROTECTION.

- MAINTENANCE REQUIREMENTS:**
1. TEMPORARY SEEDING SHALL BE INSPECTED WEEKLY AFTER ANY RAINFALL EXCEEDING 1/2 INCH IN 24 HOURS ON ACTIVE CONSTRUCTION SITES. SEEDING SHALL BE RESEEDING JUST PRIOR TO SEPTEMBER 15, TO ASCERTAIN WHETHER ADDITIONAL SEEDING IS REQUIRED TO PROVIDE STABILIZATION OVER THE WINTER PERIOD.
  2. BASED ON INSPECTION, AREAS SHALL BE RESEEDING TO ACHIEVE FULL STABILIZATION OF EXPOSED SOILS. IF IT IS TOO LATE IN THE PLANTING SEASON TO APPLY ADDITIONAL SEED, THEN OTHER TEMPORARY STABILIZATION MEASURES SHALL BE IMPLEMENTED.
  3. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND AREAS SHALL BE RESEEDING, WITH OTHER TEMPORARY MEASURES (E.G. MULCH, ETC.) USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.

SPACING BETWEEN CHECK DAMS	
SLOPE (FT/FT)	LENGTH (FT)
0.020	75
0.030	50
0.040	37
0.050	30
0.060	25
0.080	19
0.100	15
0.120	13
0.150	10

## DRAINAGE WAY CROSS-SECTION



## SPACING BETWEEN STONE CHECK DAMS

- CONSTRUCTION SPECIFICATIONS:**
1. STRUCTURES SHALL BE INSTALLED ACCORDING TO THE DIMENSIONS SHOWN ON THE PLANS AT THE APPROPRIATE SPACING.
  2. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER SO THAT EROSION, AIR AND WATER POLLUTION WILL BE MINIMIZED.
  3. STRUCTURES SHALL BE REMOVED FROM THE CHANNEL WHEN THEIR USEFUL LIFE HAS BEEN COMPLETED.

- MAINTENANCE NOTES:**
1. TEMPORARY GRADE STABILIZATION STRUCTURES SHALL BE INSPECTED AFTER EACH STORM AND ONLY DURING PROLONGED STORM EVENTS. ANY DAMAGE TO THE STRUCTURES SHALL BE REPAIRED IMMEDIATELY.
  2. PARTICULAR ATTENTION SHALL BE GIVEN TO END RUN AND EROSION AT THE DOWNSTREAM TOE OF THE STRUCTURE.
  3. WHEN REMOVING THE STRUCTURES, THE DISTURBED AREAS SHALL BE BROUGHT UP TO EXISTING CHANNEL GRADE AND THE AREAS PREPARED, SEEDING AND MULCHED.
  4. SEDIMENT SHALL BE REMOVED FROM BEHIND THE STRUCTURES WHEN IT REACHES 1/2 THE ORIGINAL HEIGHT OF THE STRUCTURE.

## STONE CHECK DAM INSTALLATION DETAIL

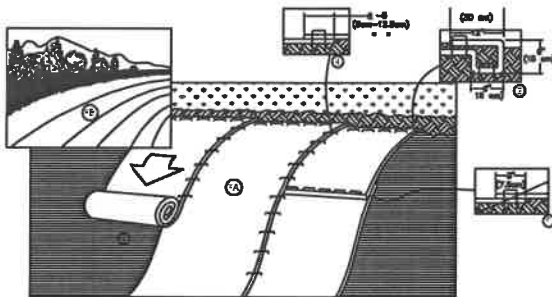
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## NORTH AMERICAN GREEN

EROSION CONTROL PRODUCTS  
Guaranteed SOLUTIONS  
14606 HIGHWAY 41 NORTH  
DUNSMITH, IN 47728  
602-772-0940  
www.nagreen.com



## SLOPE INSTALLATION

### GENERAL NOTES:

1. AVOID THE USE OF WELDED PLASTIC OR BIODEGRADABLE PLASTIC NETTING OR THREAD (E.G. POLYPROPYLENE) IN EROSION CONTROL MATTING. THERE ARE NUMEROUS DOCUMENTED CASES OF SNAKES, TURTLES, WATERFOWL, AND OTHER WILDLIFE BEING TRAPPED AND KILLED IN EROSION CONTROL MATTING WITH SYNTHETIC NETTING AND THREAD. THEREFORE, THE USE OF BIONET SC150BN BIODEGRADABLE MATTING OR THE LIKE IS MANDATORY TO PROTECT WILDLIFE IN THE PROJECT AREA.

1. ALL BLANKET AND MATS SHALL BE INSPECTED WEEKLY DURING THE CONSTRUCTION PERIOD, AND AFTER ANY RAINFALL EVENT EXCEEDING 1/2 INCH IN A 24-HOUR PERIOD.
2. ANY FAILURE SHALL BE REPAIRED IMMEDIATELY. IF WASHOUT OF THE SLOPE, DISPLACEMENT OF THE MAT, OR DAMAGE TO THE MAT OCCURS, THE AFFECTED SLOPE SHALL BE REPAIRED AND RESEEDING, AND THE AFFECTED AREA OF MAT SHALL BE RE-INSTALLED.

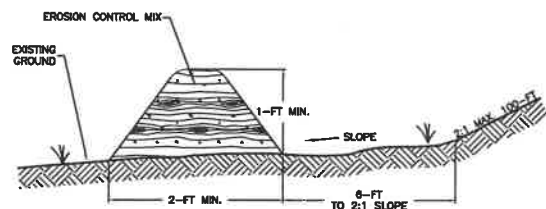
### CONSTRUCTION SPECIFICATIONS:

1. MANUFACTURER'S INSTALLATION INSTRUCTIONS.
  - A. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
  - NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
  - B. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP'S IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30CM) OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAPLES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAPLES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP'S.
  - C. ROLL THE RECP'S (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. RECP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAPLES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE, WHEN USING THE DOT SYSTEM, STAPLES/STAPLES SHALL BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
  - D. THE EDGES OF PARALLEL RECP'S MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) OVERLAP DEPENDING ON RECP'S TYPE.
  - E. CONSECUTIVE RECP'S SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP'S WIDTH.
2. SITE PREPARATION.
  - A. PROPER SITE PREPARATION IS ESSENTIAL TO ENSURE COMPLETE CONTACT OF THE PROTECTION MATTING WITH THE SOIL.
  - B. GRADE AND SHAPE AREA IF INSTALLATION.
  - C. REMOVE ALL ROCKS, CLODS, TRASH, VEGETATIVE OR OTHER OBSTRUCTIONS SO THAT THE INSTALLED BLANKETS WILL HAVE DIRECT CONTACT WITH THE SOIL.
  - D. PREPARE SEEDING BY LOOSENING 2-3 INCHES OF TOPSOIL ABOVE FINAL GRADE.
  - E. INCORPORATE AMENDMENTS, SUCH AS LIME AND FERTILIZER, INTO SOIL ACCORDING TO SOIL TEST AND THE SEEDING PLAN.
3. SEEDING.
  - A. SEED AREA BEFORE BLANKET INSTALLATION FOR EROSION CONTROL AND RE-VEGETATION. SEEDING AFTER MAT INSTALLATION IS OFTEN SPECIFIED FOR TURF REINFORCEMENT APPLICATIONS. WHEN SEEDING PRIOR TO BLANKET INSTALLATION, ALL CHECK SLOTS AND OTHER AREAS DISTURBED DURING INSTALLATION MUST BE RESEEDING.
  - B. WHEN SOIL FILLING IS SPECIFIED, SEED THE MATTING AND THE ENTIRE DISTURBED AREA AFTER INSTALLATION AND PRIOR TO FILLING THE MAT WITH SOIL.

## TEMPORARY EROSION CONTROL

## BioNet SC150BN BIODEGRADABLE DETAIL

NOT TO SCALE



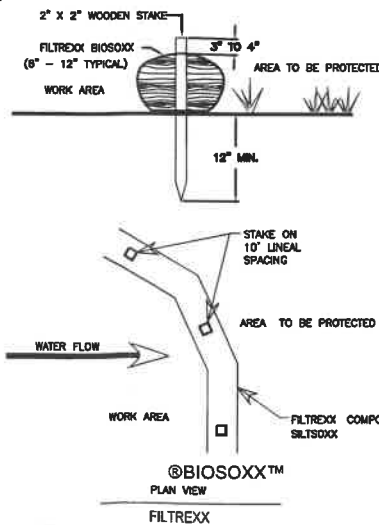
## EROSION CONTROL MIX EARTH BERM CROSS-SECTION

- MAINTENANCE REQUIREMENTS:**
1. EROSION CONTROL MIX BERMS SHOULD BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
  2. EROSION CONTROL MIX BERMS SHOULD BE REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM.
  3. IF THERE ARE SIGNS OF BREACHING OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, THE EROSION CONTROL MIX BERM SHOULD BE REPLACED WITH OTHER MEASURES TO INTERCEPT AND TRAP SEDIMENT (SUCH AS A DIVERSION BERM DIRECTING RUNOFF TO A SEDIMENT TRAP OR BASIN).
  4. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT.
  5. SEDIMENT DEPOSITS MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE THIRD (1/3) OF THE HEIGHT OF THE BARRIER.
  6. EROSION CONTROL MIX BERMS SHOULD BE RESEEDING OR REPLACED AS NEEDED.
  7. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE BARRIER IS NO LONGER REQUIRED SHOULD BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND RESEEDING.

### CONSTRUCTION SPECIFICATIONS:

1. EROSION CONTROL MIX CAN BE MANUFACTURED ON OR OFF OF THE PROJECT SITE.
2. EROSION CONTROL MIX MUST CONSIST PRIMARILY OF ORGANIC MATERIAL, SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR ACCEPTABLE MANUFACTURED PRODUCTS.
3. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS WILL NOT BE ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.
4. COMPOSITION OF THE EROSION CONTROL MIX SHOULD BE AS FOLLOWS:
  - A. EROSION CONTROL MIX SHALL BE A WELL GRADED MIXTURE OF PARTICLE SIZES FREE OF REFUSE, PHYSICAL CONTAMINANTS, MATERIAL TOXIC TO PLANT GROWTH AND MAY NOT CONTAIN ROCKS LESS THAN 4-INCHES IN DIAMETER.
  - B. ORGANIC MATTER = 25-55% DRY WEIGHT BASIS
  - C. PARTICLES PASSING BY WEIGHT:
 

SCREEN-PASSING BY WEIGHT:	
2-INCH	100%
1-INCH	90-100%
3/4-INCH	70-100%
1/4-INCH	30-75%
  - D. THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED.
  - E. THE MIX SHOULD CONTAIN NO SILTS, CLAYS OR FINE SANDS.
  - F. SOLUBLE SALTS CONTENT < 4.0 mmhos/cm
  - G. pH OF THE MIX SHOULD BE BETWEEN 5.0 AND 8.0
5. THE BARRIER MUST BE PLACED ALONG A RELATIVELY LEVEL CONTOUR.
6. IT MAY BE NECESSARY TO CUT TALL GRASSES AND WOODY VEGETATION TO AVOID CREATING VOIDS AND BRIDGES IN THE BARRIER THAT WOULD ENABLE PORES TO WASH UNDER THE BARRIER THROUGH THE GRASS BLADES OR PLANT STEMS.
7. THE BARRIER MUST BE A MINIMUM OF 12-INCHES TALL AS MEASURED ON THE UPHILL SIDE OF THE BARRIER.
8. THE BARRIER MUST BE A MINIMUM OF 2-FT WIDE.



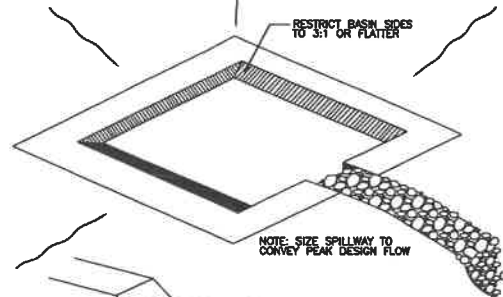
### NOTES:

1. ALL MATERIAL TO MEET SPECIFICATIONS. BIODEGRADABLE WOVEN MATERIAL.
2. COMPOST MATERIAL TO BE DISPERSED ON SITE UP SLOPE FROM PROTECTED AREA.

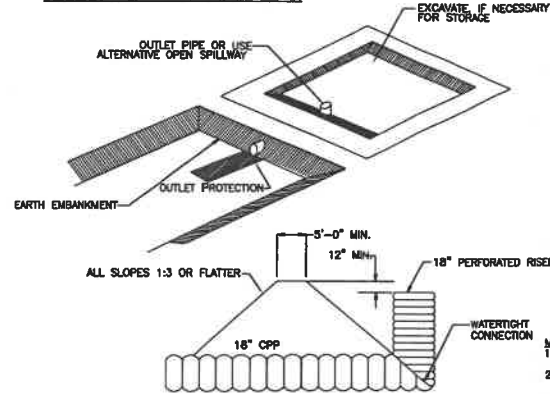
## BIOSOXX DETAIL

N.T.S.

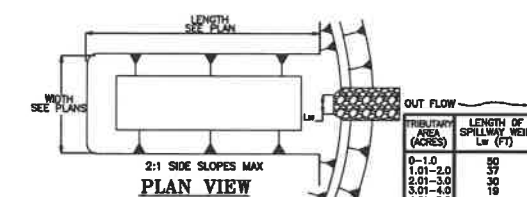
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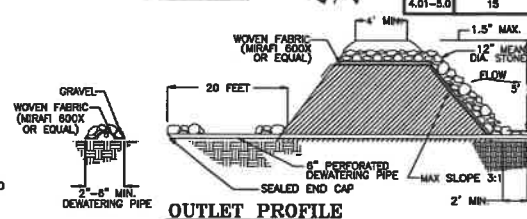
## TYPICAL OPEN SPILLWAY



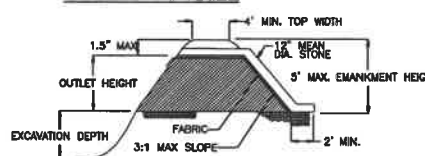
## EMBANKMENT SECTION THRU RISER



## PLAN VIEW



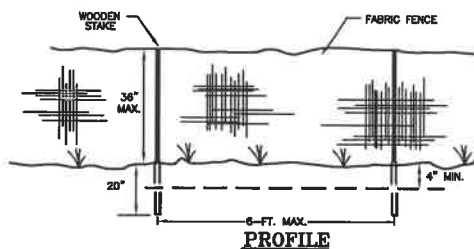
## OUTLET PROFILE



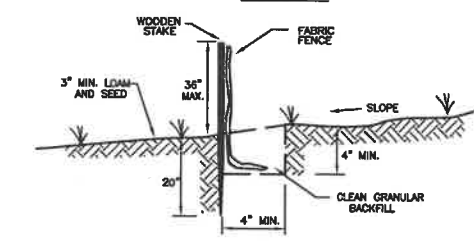
## ALTERNATE OUTLET PROFILE



## SEDIMENT TRAP



## PROFILE



## CROSS-SECTION

- MAINTENANCE REQUIREMENTS:**
1. FENCES SHALL BE INSPECTED AND MAINTAINED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALLS.
  2. SEDIMENT DEPOSITION SHALL BE REMOVED, AT A MINIMUM, WHEN DEPOSITION ACCUMULATES TO ONE-HALF THE HEIGHT OF THE FENCE, AND MOVED TO AN APPROPRIATE LOCATION SO THE SEDIMENT IS NOT READILY TRANSPORTED BACK TOWARD THE SILT FENCE.
  3. SILT FENCES SHALL BE REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM, IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM. SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM.
  4. SHALL THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE, THE BARRIER SHALL BE REPLACED PROMPTLY.
  5. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND RESEEDING.
  6. IF THERE IS EVIDENCE OF END FLOW ON PROPERLY INSTALLED BARRIERS, EXTEND BARRIERS UPHILL OR CONSIDER REPLACING THEM WITH OTHER MEASURES, SUCH AS TEMPORARY DIVERSIONS AND SEDIMENT TRAPS.
  7. SILT FENCES HAVE A USEFUL LIFE OF ONE SEASON, OR LONGER CONSTRUCTION PROJECTS, SILT FENCE SHALL BE REPAIRED PERIODICALLY AS REQUIRED TO MAINTAIN EFFECTIVENESS.

### CONSTRUCTION SPECIFICATIONS:

1. FENCES SHALL BE USED IN AREAS WHERE EROSION WILL OCCUR ONLY IN THE FORM OF SHEET EROSION AND THERE IS NO CONCENTRATION OF WATER IN A CHANNEL, OR DRAINAGE WAY ABOVE THE FENCE. SEDIMENT BARRIERS SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM.
2. THE MAXIMUM CONTRIBUTING DRAINAGE AREA ABOVE THE FENCE SHALL BE LESS THAN 1 ACRE PER 100 LINEAR FEET OF FENCE.
3. THE MAXIMUM LENGTH OF SLOPE ABOVE THE FENCE SHALL BE 100 FEET:
  - A. THE MAXIMUM SLOPE ABOVE THE FENCE SHALL BE 2:1.
  - B. FENCES SHALL BE INSTALLED FOLLOWING THE CONTOUR OF THE LAND AS CLOSELY AS POSSIBLE, AND THE ENDS OF THE FENCE SHALL BE FLARED UPSLOPE.
  - C. THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 4 INCHES IN DEPTH AND INCHES IN WIDTH IN A TRENCH EXCAVATED INTO THE GROUND, OR IF SITE CONDITIONS INCLUDE FROZEN GROUND, LEDGE, OR THE PRESENCE OF HEAVY ROOTS, THE BASE OF THE FABRIC SHALL BE EMBEDDED WITH A MINIMUM THICKNESS OF 8 INCHES OF 3/4-INCH STONE.
  - D. THE SOIL SHALL BE COMPACTED OVER THE EMBEDDED FABRIC.
  - E. SUPPORT POSTS SHALL BE SIZED AND ANCHORED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS WITH MAXIMUM POST SPACING OF 6 FEET.
  - F. ANCHORED SECTIONS OF THE FENCE SHALL BE OVERLAPPED BY A MINIMUM OF 6 INCHES (24 INCHES IS PREFERRED), FOLDED AND STAPLED TO A SUPPORT POST. IF METAL POSTS ARE USED, FABRIC SHALL BE WIRE-TIED DIRECTLY TO THE POSTS WITH THREE DIAGONAL TIES.
  - G. SILT FENCING SHALL NOT BE STAPLED OR NAILED TO TREES.
  - H. THE FILTER FABRICUS SHALL BE A MINIMUM OF 12 INCHES IN DEPTH AND INCHES IN WIDTH IN A TRENCH EXCAVATED INTO THE GROUND, OR IF SITE CONDITIONS INCLUDE FROZEN GROUND, LEDGE, OR THE PRESENCE OF HEAVY ROOTS, THE BASE OF THE FABRIC SHALL BE EMBEDDED WITH A MINIMUM THICKNESS OF 8 INCHES OF 3/4-INCH STONE.
  - I. THE HEIGHT OF A SILT FENCE SHALL NOT EXCEED 36 INCHES AS HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUPPORT TO CAUSE FAILURE OF THE FABRIC.
  - J. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL, CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPICED TOGETHER ONLY AT SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP, AND SECURELY SEALED.
  - K. A MANUFACTURED SILT FENCE SYSTEM WITH INTEGRAL POSTS MAY BE USED.
  - L. POST SPACING SHALL NOT EXCEED 6 FEET.
  - M. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES WIDE AND 4 INCHES DEEP ALONG THE LINE OF POSTS AND UP GROUND FROM THE BARRIER.
  - N. THE STANDARD STRENGTH OF FILTER FABRIC SHALL BE STAPLED OR WIED TO THE POST, AND 6 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
  - O. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.
  - P. SILT FENCE MAY BE INSTALLED BY "SLICING" USING MECHANICAL EQUIPMENT SPECIFICALLY DESIGNED FOR THIS PROCEDURE. THE SLICING METHOD USES AN IMPLEMENT TOWED BEHIND A TRACTOR TO "FLOW" OR SLICE THE SILT FENCE MATERIAL INTO THE SOIL. THE SLICING METHOD MINIMALLY DISRUPTS THE SOIL UPHILL AND SLIGHTLY DISPLACES THE SOIL, MAINTAINING THE SOIL'S PROFILE AND CREATING AN OPTIMAL CONDITION FOR SUBSEQUENT MECHANICAL COMPACTION.
  - Q. SILT FENCES SHALL BE INSTALLED WITH "SMILES" OR "J-HOOKS" TO REDUCE THE DRAINAGE AREA THAT ANY SEDIMENT WILL IMPOUND.
  - R. THE ENDS OF THE FENCE SHALL BE TURNED UPHILL.
  - S. SILT FENCES PLACED AT THE TOE OF A SLOPE SHALL BE SET AT LEAST 6 FEET FROM THE TOE TO ALLOW SPACE FOR SHALLOW PONDING AND TO ALLOW FOR MAINTENANCE ACCESS WITHOUT DISTURBING THE SLOPE.
  - T. SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED.

## SILTATION CONTROL FENCE DETAIL

NOT TO SCALE

## TEMPORARY EROSION & SEDIMENTATION CONTROL

TAX MAP 224, LOT 309  
DIAMONDBACK DRIVE  
ROCHESTER, NH

PREPARED FOR:  
TARA ESTATES COMMUNITY

DECEMBER 2021

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

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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 WITHIN 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.

## WINTER STABILIZATION & CONSTRUCTION PRACTICES:

- MAINTENANCE REQUIREMENTS:**
1. MAINTENANCE MEASURES SHALL BE PERFORMED THROUGHOUT CONSTRUCTION, INCLUDING OVER THE WINTER PERIOD. AFTER EACH RAINFALL, SNOWSTORM, OR PERIOD OF THAWING AND RUNOFF, THE SITE CONTRACTOR SHALL CONDUCT INSPECTION OF ALL INSTALLED EROSION CONTROL PRACTICES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUED FUNCTION.
  2. FOR ANY AREA STABILIZED BY TEMPORARY OR PERMANENT SEEDING PRIOR TO THE ONSET OF THE WINTER SEASON, THE CONTRACTOR SHALL CONDUCT AN INSPECTION IN THE SPRING TO ASCERTAIN THE CONDITION OF THE VEGETATION AND REPAIR ANY DAMAGED AREAS OR BARE SPOTS AND RESEED AS REQUIRED TO ACHIEVE AN ESTABLISHED VEGETATIVE COVER (AT LEAST 85% OF AREA VEGETATED WITH HEALTHY, VIGOROUS GROWTH).

- SPECIFICATIONS:**
- THE FOLLOWING STABILIZATION TECHNIQUES SHALL BE EMPLOYED DURING THE PERIOD FROM OCTOBER 15 THROUGH MAY 15.
1. THE AREA OF EXPOSED, UNSTABILIZED SOIL SHALL BE LIMITED TO 1-ACRE AND SHALL BE PROTECTED AGAINST EROSION BY THE METHODS DISCUSSED IN N.H.S.M. VOL. 3 AND ELSEWHERE IN THIS PLAN SET, PRIOR TO ANY THAW OR SPRING MELT EVENT.
  2. STABILIZATION AS FOLLOWS SHALL BE COMPLETED WITHIN A DAY OF ESTABLISHING THE GRADE THAT IS FINAL OR THAT OTHERWISE WILL EXIST FOR MORE THAN 5 DAYS.
    - A. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF LESS THAN 15% WHICH DO NOT EXHIBIT A MINIMUM 85% VEGETATIVE GROWTH BY OR ARE DISTURBED AFTER OCTOBER 15, SHALL BE SEEDING AND COVERED WITH 3 TO 4 TONS OF HAY OR STRAW MULCH PER ACRE SECURED WITH ANCHORED NETTING, OR 2 INCHES OF EROSION CONTROL MIX (REFER TO N.H.S.M. VOL. 3 FOR SPECIFICATION).
    - B. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF GREATER THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OR ARE DISTURBED AFTER OCTOBER 15, SHALL BE SEEDING AND COVERED WITH A PROPERLY INSTALLED EROSION CONTROL BLANKET OR WITH A MINIMUM OF 4 INCHES OF EROSION CONTROL MIX, UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER. NOTE THAT COMPOST BLANKETS SHALL NOT EXCEED 2 INCHES IN THICKNESS OR THEY MAY OVERHEAT.

3. ALL STONE COVERED SLOPES MUST BE CONSTRUCTED AND STABILIZED BY OCTOBER 15.
4. INSTALLATION OF ANCHORED HAY MULCH OR EROSION CONTROL MIX SHALL NOT OCCUR OVER SNOW OF GREATER THAN 1 INCH IN DEPTH.
5. ALL MULCH APPLIED DURING WINTER SHALL BE ANCHORED (I.E. BY NETTING, TRACKING, WOOD CELLULOSE FIBER).
6. WITHIN 24 HOURS OF STOCKPILING SOIL, MATERIALS SHALL BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR WITH A 4 INCH LAYER OF EROSION CONTROL MIX. MULCH SHALL BE REESTABLISHED PRIOR TO ANY RAIN OR SNOWFALL. NO SOIL STOCKPILE SHALL BE PLACED (EVEN COVERED WITH MULCH) WITHIN 100-FT OF ANY WETLAND OR OTHER WATER RESOURCE AREA.
7. FROZEN MATERIAL (I.E. FROST LAYER REMOVED DURING WINTER CONSTRUCTION) SHALL BE STOCKPILED SEPARATELY AND IN A LOCATION AWAY FROM ANY AREA NEEDING PROTECTION. FROZEN MATERIAL STOCKPILES CAN MELT IN SPRING AND BECOME UNDESIRABLE AND IMPROBABLE TO TRANSPORT DUE TO HIGH SOIL MOISTURE CONTENT.
8. INSTALLATION OF EROSION CONTROL BLANKETS SHALL NOT OCCUR OVER SNOW OF GREATER THAN 1 INCH IN DEPTH OR ON FROZEN GROUND.
9. ALL STONE COVERED DITCHES AND CHANNELS SHALL BE CONSTRUCTED BY SEPTEMBER 1. ALL DITCHES AND SWALES WHICH DO NOT EXHIBIT 85% VEGETATIVE GROWTH BY OR ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS AS DETERMINED BY A PROFESSIONAL ENGINEER.
10. A MINIMUM OF 6 INCHES OF EROSION CONTROL MIX SHALL BE USED TO RE-GRADE THE DITCH AS REQUIRED TO PROVIDE ADEQUATE CROSS-SECTION AFTER ALLOWING FOR PLACEMENT OF THE STONE.
11. ALL STONE LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY OCTOBER 15.
12. SEDIMENT BARRIERS AND CHANNELS SHALL BE CONSTRUCTED AND STABILIZED PRIOR TO THE WINTER PERIOD. THE WINTER PERIOD SHALL BE PROTECTED WITH A MINIMUM 3 INCH LAYER OF SAND AND GRAVEL WITH A GRADATION THAT IS LESS THAN 12% OF THE SAND PORTION, OR MATERIAL PASSING THE NUMBER 4 SIEVE, BY WEIGHT, PASSES THE NUMBER 200 SIEVE.

## GENERAL CONSTRUCTION PHASING:

1. **STABILIZATION:**
  - A SITE IS DEEMED STABILIZED WHEN IT IS IN A CONDITION IN WHICH THE SOIL ON SITE WILL NOT EXPERIENCE ACCELERATED OR UNNATURAL EROSION UNDER THE CONDITIONS OF A 10-YEAR STORM EVENT, SUCH AS BUT NOT LIMITED TO:
    - a) A MINIMUM OF 85% VEGETATIVE COVER HAS BEEN ESTABLISHED;
    - b) A MINIMUM OF 3-INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR A CERTIFIED COMPOST BLANKET HAS BEEN INSTALLED; OR
    - c) BASE COURSE GRAVELS HAVE BEEN INSTALLED.
2. **TEMPORARY STABILIZATION:**
  - ALL AREAS OF EXPOSED OR DISTURBED SOIL SHALL BE TEMPORARILY STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 45 DAYS FROM THE TIME OF INITIAL DISTURBANCE, UNLESS A SHORTER TIME IS SPECIFIED BY LOCAL AUTHORITIES, THE CONSTRUCTION SEQUENCE APPROVED AS PART OF THE ISSUED PERMIT OR AN INDEPENDENT MONITOR.
3. **PERMANENT STABILIZATION:**
  - ALL AREAS OF EXPOSED OR DISTURBED SOIL SHALL BE PERMANENTLY STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 3 DAYS FOLLOWING FINAL GRADING.
4. **MAXIMUM AREA OF DISTURBANCE:**
  - THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, NO MORE THAN 5 ACRES SHALL BE DISTURBED (NOT STABILIZED) AT ANY TIME.
5. ONLY DISTURB, CLEAR, OR GRADE AREAS NECESSARY FOR CONSTRUCTION.
6. FLAG OR OTHERWISE DELINEATE AREAS NOT TO BE DISTURBED.
7. EXCLUDE VEHICLES AND CONSTRUCTION EQUIPMENT FROM THESE AREAS TO PRESERVE NATURAL VEGETATION.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN THE AMOUNT NECESSARY TO COMPLETE FINISHED GRADING AND BE PROTECTED FROM EROSION.
9. STOCKPILES, BORROW AREAS AND SPOILS SHALL BE STABILIZED AS DESCRIBED UNDER "SOIL STOCKPILE PRACTICES".
10. SLOPES SHALL NOT BE CREATED SO CLOSE TO PROPERTY LINES AS TO ENDANGER ADJOINING PROPERTIES WITHOUT ADEQUATE PROTECTION AGAINST SEDIMENTATION, EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED DAMAGE.
11. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND/OR OTHER OBJECTIONABLE MATERIALS.
12. AREAS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3-INCHES PRIOR TO PLACEMENT OF TOPSOIL. TOPSOIL SHALL BE PLACED WITHOUT SIGNIFICANT COMPACTION PROVIDE A LOOSE BEDDING FOR PLACEMENT OF SEED.
13. ALL FILLS SHALL BE COMPACTED IN ACCORDANCE WITH PROJECT SPECIFICATIONS TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES, SITE UTILITIES, CONDUITS AND OTHER FACILITIES SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
14. IN GENERAL, FILLS SHALL BE COMPACTED IN LAYERS RANGING FROM 6 TO 24 INCHES IN THICKNESS. THE CONTRACTOR SHALL REVIEW THE PROJECT GEOTECHNICAL REPORT AND/OR THE "PROJECT SPECIFIC PHASING NOTES" FOR SPECIFIC GUIDANCE.
15. ANY AND ALL FILL MATERIAL SHALL BE FREE OF BRUSH, RUBBISH, ROCKS (LARGER THAN 3/4" THE DEPTH OF THE LIFT BEING INSTALLED), LOGS, STUMPS, BUILDING DEBRIS, FROZEN MATERIAL, AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY LIFTS.
16. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE (I.E. CLAY, SILT) MATERIALS ARE SUSCEPTIBLE TO ACCELERATED SETTLEMENT AND POTENTIAL ACCELERATED EROSION. WORK IN AREAS OF THESE MATERIALS SHALL BE PERFORMED UNDER THE DIRECTION OF A PROFESSIONAL ENGINEER.
17. THE OUTER FACE OF THE FILL SLOPE SHALL BE ALLOWED TO STAY LOOSE, NOT ROLLED OR COMPACTED, OR BLADE SMOOTHED. A BALDOZER MAY RUN UP AND DOWN THE FILL SLOPE SO THE DOZER TRACKS (OLEAF TRACKS) CREATE GROOVES PERPENDICULAR TO THE SLOPE. IF THE SOIL IS NOT TOO MOIST, EXCESSIVE COMPACTION WILL NOT OCCUR. SEE "SURFACE ROUGHENING" IN THE N.H.S.M. VOL. 3.
18. ROUGHEN THE SURFACE OF ALL SLOPES DURING THE CONSTRUCTION OPERATION TO RETAIN WATER, INCREASE INFILTRATION AND FACILITATE VEGETATION ESTABLISHMENT.
19. USE SLOPE BREAKS, SUCH AS DIVERSIONS, BENCHES, OR CONTOUR FURROWS AS APPROPRIATE TO REDUCE THE LENGTH OF CUT-FILL SLOPES TO LIMIT SHEET AND RILL EROSION AND PREVENT GULLY EROSION. ALL BENCHES SHALL BE KEPT FREE OF SEDIMENT DURING ALL PHASES OF CONSTRUCTION.
20. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE EVALUATED BY A PROFESSIONAL ENGINEER (PREFERABLY THE DESIGN ENGINEER) TO DETERMINE IF THE PROPOSED DESIGN SHALL BE REVISED TO PROPERLY MANAGE THE CONDITION.
21. STABILIZE ALL GRADED AREAS (AS ABOVE) WITH VEGETATION, CRUSHED STONE, COMPOST BLANKET, OR OTHER GROUND COVER AS SOON AS GRADING IS COMPLETE OR IF WORK IS INTERRUPTED FOR 21 WORKING DAYS OR MORE. USE MULCH OR OTHER APPROVED METHODS TO STABILIZE AREAS TEMPORARILY WHERE FINAL GRADING MUST BE DELAYED.
22. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.
23. THE PROJECT SHALL BE CONDUCTED TO MEET ALL REQUIREMENTS AND INTENT OF RSA 430:35 AND CHAPTER ARG 3800 RELATIVE TO INVASIVE SPECIES.

ABOVE NOTES EXCERPTED, ADAPTED AND REFERENCED FROM "NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3 CONSTRUCTION PHASE EROSION AND SEDIMENT CONTROLS, DECEMBER 2008" (N.H.S.M. VOL. 3)

## RIP-RAP GRADATION

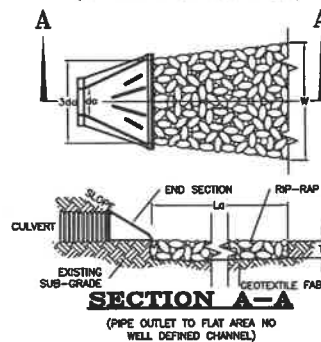
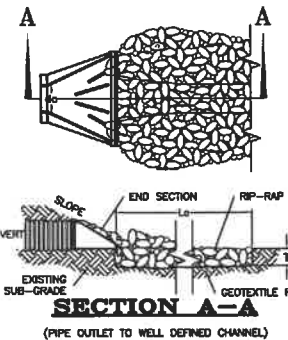
% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE (INCHES)
100	3 TO 6
85	4 TO 5
50	4 TO 3
15	1 TO 2

% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE (INCHES)
100	13.5 TO 18
85	11.7 TO 16.2
50	9 TO 13.5
15	2.7 TO 4.5

% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE (INCHES)
100	18 TO 24
85	13.5 TO 21.6
50	12 TO 18
15	3.6 TO 6

## APRON DIMENSION TABLE

OUTLET PROT. #	PIPE OUTLET	W <sub>1</sub>	W	L <sub>1</sub>	T	d50
1	18" CPP	5'	20'	18'	9"	3"
2	DOUBLE 24" CPP	12'	48'	34'	27"	9"
3	24" CPP	6'	33'	27'	27"	9"
4	18" CPP	5'	17'	13'	12"	4"



### NOTES:

1. ALL PIPE CULVERTS SHALL HAVE END SECTIONS OR HEADWALLS. END SECTION MATERIAL AND MANUFACTURER SHALL MATCH THAT OF THE PIPE CULVERT.
2. THE LARGEST RIP-RAP SIZE DETERMINED DURING HYDROLOGIC ANALYSIS HAS BEEN USED FOR ALL OUTLETS FOR ECONOMY AND SIMPLICITY.
3. APRON LENGTHS, WIDTHS AND THICKNESSES HAVE BEEN ROUNDED UP TO WHOLE NUMBERS FOR EASE OF CONSTRUCTION.

### CONSTRUCTION SPECIFICATIONS:

1. PREPARE THE SUB-GRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIP-RAP TO THE GRADES SHOWN ON THE PLANS.
2. MINIMUM 6" SAND/GRAVEL BEDDING OR GEOTEXTILE FABRIC REQUIRED UNDER ALL RIP-RAP.
3. THE ROCK OR GRAVEL USED FOR FILTER OR RIP-RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
4. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF 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 (2) PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
5. 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.
6. RIP-RAP SIZE CHOSEN FOR THE WORST CASE OF ALL OUTLETS. ALL RIP-RAP USED FOR PIPE OUTLET PROTECTION WILL HAVE THE SAME GRADATION AND THICKNESS.

### MAINTENANCE NOTES:

1. OUTLETS SHALL BE INSPECTED AND CLEANED ANNUALLY AND AFTER ANY MAJOR STORM EVENT. ANY EROSION OR DAMAGE TO THE RIP-RAP SHALL BE REPAIRED IMMEDIATELY.
2. THE CHANNEL IMMEDIATELY DOWNSTREAM FROM THE OUTLET SHOULD BE CHECKED TO SEE THAT NO EROSION IS OCCURRING.
3. 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.

## PIPE OUTLET PROTECTION DETAIL

## DUST CONTROL PRACTICES:

1. APPLY DUST CONTROL MEASURES AS NECESSARY TO MAINTAIN CONTROL OF DUST ON SITE.
2. **WATER APPLICATION:**
  - A) MOISTEN EXPOSED SOIL SURFACES PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST.
  - B) AVOID EXCESSIVE APPLICATION OF WATER THAT WOULD RESULT IN MOBILIZING SEDIMENT AND SUBSEQUENT DEPOSITION IN NATURAL WATERBODIES.
3. **STONE APPLICATION:**
  - A) COVER SURFACE WITH CRUSHED OR COARSE GRAVEL.
  - B) IN AREAS NEAR WATERWAYS USE ONLY CHEMICALLY STABILIZED OR WASHED AGGREGATE.
4. REFER TO "NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3 CONSTRUCTION PHASE EROSION AND SEDIMENT CONTROLS, DECEMBER 2008" FOR OTHER ALLOWABLE DUST CONTROL PRACTICES (I.E. COMMERCIAL TACKIFIERS OR CHEMICAL TREATMENTS SUCH AS CALCIUM CHLORIDE, ETC.)

## STOCKPILE PRACTICES:

1. LOCATE STOCKPILES A MINIMUM OF 50-FT. AWAY FROM CONCENTRATED FLOWS OF STORMWATER, DRAINAGE COURSES OR INLETS.
2. PROTECT ALL STOCKPILES FROM STORMWATER RUN-ON USING TEMPORARY PERIMETER MEASURES SUCH AS DIVERSIONS, BERRIS, SANDBAGS OR OTHER APPROVED PRACTICES.
3. STOCKPILES SHALL BE SURROUNDED BY SEDIMENT BARRIERS AS DESCRIBED ON THE PLANS AND IN N.H.S.M. VOL. 3, TO PREVENT MIGRATION OF MATERIAL BEYOND THE IMMEDIATE CONTAINING THE STOCKPILE.
4. IMPLEMENT WIND EROSION CONTROL PRACTICES AS APPROPRIATE ON ALL STOCKPILED MATERIAL.
5. PLACE BAGGED MATERIALS ON PALLETS OR UNDERCOVER.
6. **PROTECTION OF INACTIVE STOCKPILES:**
  - A) INACTIVE SOIL STOCKPILES SHALL BE COVERED WITH ANCHORED TARPS OR PROTECTED WITH SOIL STABILIZATION MEASURES (TEMPORARY SEED AND MULCH OR OTHER TEMPORARY STABILIZATION PRACTICES) AND TEMPORARY PERIMETER SEDIMENT BARRIERS (I.E. SILT FENCE, ETC.) AT ALL TIMES.
  - B) INACTIVE STOCKPILES OF CONCRETE RUBBLE, ASPHALT CONCRETE RUBBLE, AGGREGATE MATERIALS, AND SIMILAR MATERIALS SHALL BE PROTECTED WITH TEMPORARY SEDIMENT PERIMETER BARRIERS (I.E. SILT FENCE, ETC.) AT ALL TIMES. IF THE MATERIALS ARE A SOURCE OF DUST, THEY SHALL ALSO BE COVERED.
7. **PROTECTION OF ACTIVE STOCKPILES:**
  - A) ALL STOCKPILES SHALL BE SURROUNDED WITH TEMPORARY LINEAR SEDIMENT BARRIERS (I.E. SILT FENCE, ETC.) PRIOR TO THE ONSET OF PRECIPITATION. PERIMETER BARRIERS SHALL BE MAINTAINED AT ALL TIMES, AND ADJUSTED AS NEEDED TO ACCOMMODATE THE DELIVERY AND REMOVAL OF MATERIAL FROM THE STOCKPILE. THE INTEGRITY OF THE BARRIER SHALL BE INSPECTED AT THE END OF EACH WORKING DAY.
  - B) WHEN A STORM IS PREDICTED, STOCKPILES SHALL BE PROTECTED WITH AN ANCHORED PROTECTIVE COVERING.

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

## PERMANENT VEGETATION:

### SPECIFICATIONS:

#### SITE PREPARATION:

1. INSTALL NEEDED EROSION AND SEDIMENT CONTROL MEASURES SUCH AS SILTATION BARRIERS, DIVERSIONS, AND SEDIMENT TRAPS.
2. GRADE AS NEEDED FOR THE ACCESS OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING.
3. RUNOFF SHALL BE DIVERTED FROM THE SEEDBED AREA.
4. ON SLOPES 4:1 OR STEEPER, THE FINAL PREPARATION SHALL INCLUDE CREATING HORIZONTAL GROOVES PERPENDICULAR TO THE DIRECTION OF THE SLOPE TO CATCH SEED AND REDUCE RUNOFF.

#### SEEDBED PREPARATION:

1. WORK LINE AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING TOOTH HARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OPERATION SHALL BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED. ALL BUT CLAY AND SILT SOILS SHALL BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE. MULCH MAY BE APPLIED TO EARTH MOVING OPERATIONS.
2. REMOVE FROM THE SURFACE ALL STONES ZINCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, CONCRETE CLOUDS, LUMPS, TRASH OR OTHER UNSUITABLE MATERIAL.
3. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE TILLED AND FIRMED AS ABOVE.
4. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
5. IF APPLICABLE, FERTILIZER AND ORGANIC SOIL AMENDMENTS SHALL BE APPLIED DURING THE GROWING SEASON.
6. APPLY LIME AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. FERTILIZER SHALL BE RESTRICTED TO LIME, WOOD ASH OR LOW PHOSPHATE AND LOW RELEASE NITROGEN VARIETIES, UNLESS A SOIL TEST WARRANTS OTHERWISE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER AND LIMESTONE MAY BE APPLIED AT THE FOLLOWING RATES:

LIMESTONE APPLICATION RATE = 3 TONS/ACRE (138 LB./1,000-SF)  
\*EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE

FERTILIZER APPLICATION RATE = 870 LB./ACRE (20 LB./1,000-SF)  
\*LOW PHOSPHATE FERTILIZER (5-0-4) OR EQUIVALENT

#### SEEDING:

1. INOCULATE ALL LEGUME SEED WITH THE CORRECT TYPE OF INOCULANT.
2. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). NORMAL SEEDING DEPTH IS FROM 1/4 TO 1/2 INCH. SEEDING IN LATE SUMMER AT LEAST 35% OF THE SEED SHALL BE HARD SEED (UNCOATED). IF SEEDING CANNOT BE DONE WITHIN THE SPECIFIED SEEDING DATES, MULCH ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE DESCRIBED IN THE N.H.S.M. VOL. 3, AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.
3. AREAS SEEDING BETWEEN MAY 15 AND AUGUST 15 SHALL BE COVERED WITH HAY OR STRAW MULCH, ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE DESCRIBED IN THE N.H.S.M. VOL. 3.
4. VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED AREA SHALL BE ACHIEVED PRIOR TO OCTOBER 15. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT OTHER TEMPORARY STABILIZATION MEASURES FOR OVER WINTER PROTECTION.

#### HYDROSEEDING:

1. WHEN HYDROSEEDING (HYDRAULIC APPLICATION), PREPARE THE SEEDBED AS SPECIFIED ABOVE OR BY HAND RAKING TO LOOSEN AND SMOOTH THE SOIL AND REMOVE SURFACE STONES LARGER THAN 1/2 INCHES IN DIAMETER.
2. SLOPES MUST BE NO STEEPER THAN 2:1 (2 FEET HORIZONTALLY BY 1 FOOT VERTICALLY).
3. LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. THE USE OF FIBER MULCH ON CRITICAL AREAS IS NOT RECOMMENDED (UNLESS IT IS USED TO HOLD STRAW OR HAY). BETTER PROTECTION IS GAINED BY USING STRAW MULCH AND HOLDING IT WITH ADHESIVE MATERIALS OR 500 POUNDS PER ACRE OF WOOD FIBER MULCH.
4. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.

#### MAINTENANCE REQUIREMENTS:

1. PERMANENT SEEDING AREAS SHALL BE INSPECTED AT LEAST MONTHLY DURING THE COURSE OF CONSTRUCTION. INSPECTION, MAINTENANCE AND CORRECTIVE ACTIONS SHALL CONTINUE UNTIL THE OWNER ASSUMES PERMANENT OPERATION OF THE SITE.
2. SEEDING AREAS SHALL BE MOVED AS REQUIRED TO MAINTAIN A HEALTHY STAND OF VEGETATION. MOVING MUST BE FREQUENT AND FREQUENTLY DEPEND OF TYPE OF GRASS COVER.
3. BASED ON INSPECTION, AREAS SHALL BE RESEEDING TO ACHIEVE FULL STABILIZATION OF EXPOSED SOILS.
4. AT A MINIMUM 85% OF THE SOIL SURFACE SHALL BE COVERED BY VEGETATION.
5. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND AREAS SHALL BE RESEEDING, WITH OTHER TEMPORARY MEASURES (I.E. MULCH, ETC.) USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.

## PERMANENT VEGETATION SEEDING RECOMMENDATIONS

USE	MIXTURE	SPECIES	LB./ACRE	LB./1,000-SF
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	TALL FESCUE	20	0.45
		CREeping RED FESCUE	20	0.45
		REDTOP TOTAL	42	0.95
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER	A	TALL FESCUE	20	0.45
		CREeping RED FESCUE	20	0.45
		REDTOP TOTAL	42	0.95
LIGHTLY USED PARKING LOTS, OOD AREAS, UNUSED LANDS, AND LOW INTENSITY RECREATION SITES	A	TALL FESCUE	20	0.45
		CREeping RED FESCUE	20	0.45
		REDTOP TOTAL	42	0.95
PLAY AREAS AND ATHLETIC FIELDS (TOPSOIL ESSENTIAL FOR GOOD TURF)	F	CREeping RED FESCUE	50	1.15
		KENTUCKY BLUEGRASS	50	1.15
		TOTAL	100	2.30

#### SOURCES:

1. NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3, TABLES 4-2 AND 4-3
2. MINNICK, E.L. AND H.T. MARSHALL, (AUGUST 1992)

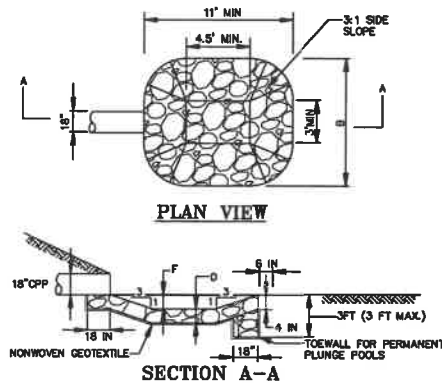
## PROJECT SPECIFIC CONSTRUCTION PHASING:

1. REFER TO THE "GENERAL CONSTRUCTION PHASING" NOTES PRIOR TO COMMENCING CONSTRUCTION IN ACCORDANCE WITH THE FOLLOWING PHASING. THE "GENERAL CONSTRUCTION PHASING" NOTES APPLY TO THE OVERALL CONSTRUCTION AND SHALL BE ADHERED TO.
2. INSTALL ALL TEMPORARY SEDIMENT CONTROL BARRIERS (I.E. SILT FENCE, EROSION CONTROL MIX BERM, STONE CHECK DAMS, ETC.) AROUND THE OUTER PERIMETER OF THE CONSTRUCTION SITE AS DEPICTED ON SHEET C-2 PRIOR TO EARTH MOVING OPERATIONS.
3. INSTALL ORANGE SNOW FENCE AROUND THE PERIMETER OF THE INFILTRATION BASINS AND THE FENCE SHALL REMAIN IN PLACE UNTIL CONSTRUCTION OF THE BASINS HAS STARTED.
4. CLEAR, GRUB AND STRIP THE SITE. STUMPS, BRUSH AND OTHER ORGANIC WASTE SHALL BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS.
5. INSTALL A TEMPORARY CONSTRUCTION EXIT AT THE LOCATION OF THE PROPOSED ROAD AT THE INTERSECTION OF DIAMONDBACK DRIVE AND LARK LANE. MAINTAIN AS DIRECTED BY THE TEMPORARY CONSTRUCTION EXIT DETAIL.
6. STOCKPILE STRIPPED TOPSOIL AND CUT MATERIAL TO BE REUSED ON SITE IN AN APPROPRIATE LOCATION IN ACCORDANCE WITH THE "SOIL STOCKPILE PRACTICES". MAINTAIN THE STOCKPILES AS DIRECTED IN THE "SOIL STOCKPILE PRACTICES".
7. INSTALL TEMPORARY SEDIMENT TRAPS AS SHOWN ON SHEET C-3. SEE SHEET C-4 FOR SEDIMENT TRAP DETAILS.
8. ALL PONDS AND SWALES MUST BE INSTALLED BEFORE ROUGH GRADING OF THE SITE.
9. PERFORM THE NECESSARY CUTS AND FILLS TO CONSTRUCT THE INFILTRATION BASIN AS DEPICTED ON SHEET C-2 AND IN ACCORDANCE WITH THE INFILTRATION BASIN DETAILS SHOWN ON SHEET C-2.
10. SUBGRADE IS ACHIEVED INSTALL REMAINING SEDIMENT CONTROL BARRIERS AS STABILIZED.
11. ALL DITCHES/SWALES/AND BASINS SHALL BE STABILIZED PRIOR TO ALL GRADING RUNOFF TO THEM.
12. PERFORM THE NECESSARY CUTS AND FILLS TO SUBGRADE IN ROADWAY.
  - A) INSTALL REQUIRED FILLS IN MAXIMUM 8-INCH LIFTS AND COMPACT EACH LIFT TO 95% MAXIMUM PROCTOR DENSITY.
13. AS SUBGRADE IS ACHIEVED INSTALL REMAINING SEDIMENT CONTROL BARRIERS WITHIN THE SITE (I.E. ADDITIONAL SILT FENCE, CHECK DAMS AND SEDIMENT CONTROLS, ETC.).
14. INSTALL A CLOSED DRAINAGE SYSTEM COMPONENTS (I.E. PIPE CULVERTS AND CATCH BASINS) PER THE CORRESPONDING DETAILS AND AS SHOWN ON SHEET C-2 AND C-8.
15. ALL CUT AND FILL SLOPES AND LAWN AREAS NOT TO BE PAVED SHALL BE LOOSELY SEEDING FOR PERMANENT VEGETATION AND STABILIZATION AS DESCRIBED UNDER THE "PERMANENT VEGETATION PRACTICES" WITHIN 3 DAYS OF ACHIEVING FINAL GRADE.
16. INSTALL ALL GRAVEL BASE AND CRUSHED GRAVEL MATERIALS FOR THE ROADWAY AS SPECIFIED IN THE CORRESPONDING DETAILS.
17. THE PAVED AREAS SHALL BE STABILIZED (CONSTRUCTED TO GRAVEL BASE COURSE) WITHIN 3 DAYS OF ACHIEVING FINISHED SUBGRADE ELEVATIONS.
18. PAVEMENT SURFACES AS SOON AS POSSIBLE AFTER THE INSTALLATION OF THE GRAVEL BASE AND CRUSHED GRAVEL, IN ORDER TO LIMIT THE SOIL EROSION AND POLLUTION OF THE GRAVEL MATERIALS WITH ORGANIC MATERIALS. IN NO CASE SHALL AREAS TO BE PAVED BE LEFT UNPROTECTED THROUGHOUT THE WINTER MONTHS.
19. ALL DISTURBED AREAS SHALL BE STABILIZED AS SOON AS POSSIBLE. IN NO CASE SHALL ANY DISTURBED AREA BE LEFT UN-STABILIZED FOR LONGER THAN 21 DAYS. IF NECESSARY TEMPORARY STABILIZATION MEASURES AS DISCUSSED IN THE "GENERAL CONSTRUCTION PHASING NOTES" AND N.H.S.M. VOL. 3 SHOULD BE EMPLOYED.

### MAINTENANCE INSPECTIONS:

1. DURING CONSTRUCTION ALL TEMPORARY AND PERMANENT SEDIMENT, EROSION CONTROL, AND STORMWATER MANAGEMENT PRACTICES SHOULD BE INSPECTED WEEKLY AFTER EVERY 1/2 INCH OF RAINFALL, AND ANNUALLY.
2. EXCESS SEDIMENT SHOULD BE REMOVED FROM TEMPORARY SEDIMENT, EROSION CONTROL, AND STORMWATER MANAGEMENT PRACTICES WHEN IT REACHES PRESCRIBED THRESHOLDS DISCUSSED IN THE DETAILS FOR EACH PRACTICE.
3. ALL DAMAGED TEMPORARY AND PERMANENT SEDIMENT, EROSION CONTROL, AND STORMWATER MANAGEMENT PRACTICES SHOULD BE REPAIRED OR REPLACED IMMEDIATELY UPON NOTICE.
4. SEDIMENT SHALL BE DISPOSED OF PROPERLY EITHER ON SITE OR OFF SITE. PROJECT COMPLETION AND STABILIZATION.
  1. UPON PROJECT COMPLETION, ONCE THE SITE IS DEEMED STABILIZED (VEGETATION IS GERMINATED), THE TEMPORARY SEDIMENT CONTROL BARRIERS AND EROSION CONTROL PRACTICES SHALL BE REMOVED. ANY DISTURBANCE CREATED DURING REMOVAL SHALL BE REPAIRED IN AN APPROPRIATE MANNER.
  2. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM ALL SWALES, CHECK DAMS AND THE SEDIMENT FOREBAY TO THE INFILTRATION BASIN.

## ENVIRONMENTAL MONITOR



CONSTRUCTION SPECIFICATIONS

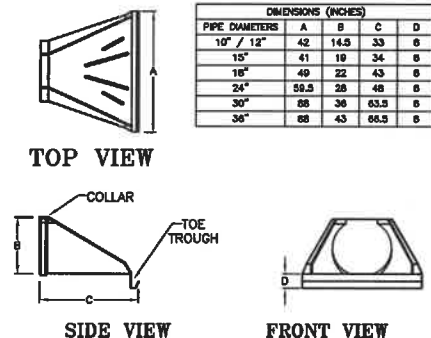
- USE SPECIFIED CLASS OF RIPRAP.
- USE NONWOVEN GEOTEXTILE AND PROTECT FROM PUNCHING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE.
- PREPARE THE SUBGRADE FOR THE PLUNGE POOL TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
- EMBED THE GEOTEXTILE A MINIMUM OF 4 INCHES AND EXTEND THE GEOTEXTILE A MINIMUM OF 6 INCHES BEYOND THE EDGE OF THE SCOUR HOLE.
- STONE FOR THE PLUNGE POOL MAY BE PLACED BY EQUIPMENT. CONSTRUCT TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. DELIVER AND PLACE THE STONE FOR THE PLUNGE POOL IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE STONE FOR THE PLUNGE POOL IN A MANNER TO PREVENT DAMAGE TO THE GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
- AT THE PLUNGE POOL OUTLET, PLACE THE STONE SO THAT IT MEETS THE EXISTING GRADE.
- MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

FLAIED END SECTION DETAIL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

- USE SPECIFIED CLASS OF RIPRAP.
- USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCHING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE.
- PREPARE THE SUBGRADE FOR THE PLUNGE POOL TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
- EMBED THE GEOTEXTILE A MINIMUM OF 4 INCHES AND EXTEND THE GEOTEXTILE A MINIMUM OF 6 INCHES BEYOND THE EDGE OF THE SCOUR HOLE.
- STONE FOR THE PLUNGE POOL MAY BE PLACED BY EQUIPMENT. CONSTRUCT TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. DELIVER AND PLACE THE STONE FOR THE PLUNGE POOL IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE STONE FOR THE PLUNGE POOL IN A MANNER TO PREVENT DAMAGE TO THE GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
- AT THE PLUNGE POOL OUTLET, PLACE THE STONE SO THAT IT MEETS THE EXISTING GRADE.
- MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.



FLAIED END SECTION DETAIL

NOT TO SCALE

PIPE DIAMETERS	A	B	C	D
10" / 12"	42	14.5	33	6
15"	41	10	34	6
18"	40	22	43	6
24"	50.5	28	48	6
30"	68	36	63.5	6
36"	88	43	86.5	6

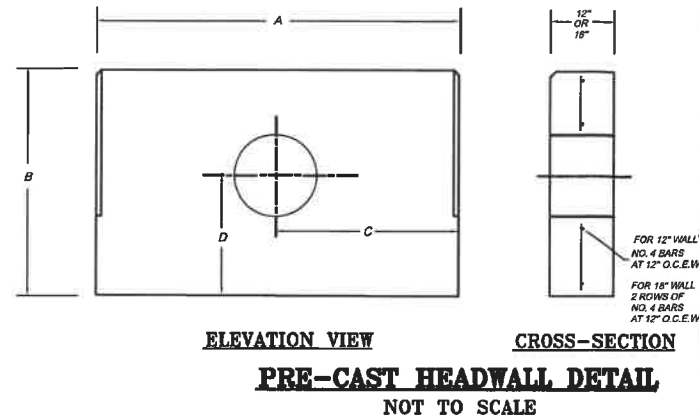


- NOTES:
- PIPES MAY BE INSTALLED BY EXCAVATING AN OPEN TRENCH WITH SIDE SLOPES OF 1:1 MAXIMUM TO A DEPTH OF 4-FT. INSTALLATIONS DEEPER THAN 4-FT REQUIRE THE USE OF A TRENCH BOX.
  - PIPE MATERIALS SHALL BE AS SPECIFIED ON THE DESIGN PLAN.
  - SAND BLANKET MAY BE OMITTED FOR REINFORCED CONCRETE PIPE.

DRAINAGE PIPE TRENCH INSTALLATION DETAIL

NOT TO SCALE

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.



ELEVATION VIEW

CROSS-SECTION

PRE-CAST HEADWALL DETAIL

NOT TO SCALE

PIPE DIA.	A	B	C	D	APPROX. WEIGHT
12"	48"	60"	24"	36"	3,000 LBS.
15"	84"	72"	42"	57.5"	6,300 LBS.
18"	84"	72"	42"	57"	6,300 LBS.
21"	120"	84"	60"	40.5"	10,500 LBS.
24"	120"	84"	60"	42"	10,500 LBS.
27"	120"	84"	60"	43.5"	10,500 LBS.
30"	120"	84"	60"	45"	10,500 LBS.
36"	192"	96"	96"	48"	18,200 LBS.
42"	192"	96"	96"	51"	18,200 LBS.
48"	192"	96"	96"	54"	18,200 LBS.

\* 1" CHAMFER ON EXPOSED EDGES  
 \* CONCRETE TO TEST 4300 PSI  
 @ 28 DAYS

SPECIAL SIZES NOT LISTED CAN BE MFG. UPON REQUEST

INSTALLATION NOTES:

- ANTI-SEEP COLLARS SHALL BE MADE PLASTIC IF BEING USED WITH PLASTIC PIPE. ANTI-SEEP COLLARS SHALL BE GALVANIZED SHEET STEEL IF BEING USED WITH CORRUGATED METAL PIPE AND SHALL BE POURED CONCRETE IF BEING USED WITH REINFORCED CONCRETE PIPE.
- ANTI-SEEP COLLAR SHALL BE WATERPROOF AND HAVE A WATERPROOF CONNECTION TO THE OUTLET PIPE.
- A NUMBER OF ANTI-SEEP COLLARS SHALL BE PLACED ALONG THE PIPE IN A SPACING THAT INCREASES THE PIPE LENGTH BY 15%.

SOURCES FOR PLASTIC ANTI-SEEP COLLARS FOR USE WITH PLASTIC PIPE:

- THE FOLLOWING ARE A FEW MANUFACTURERS OF PLASTIC ANTI-SEEP COLLARS. COLLARS FROM THESE MANUFACTURERS MAY BE USED WITH BOTH SMOOTH WALLED AND CORRUGATED OUTSIDE WALLED PIPE.

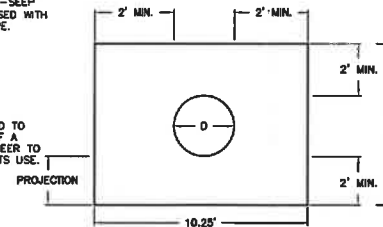
McRIP MANUFACTURING  
 16 MESERVE ROAD  
 DURHAM, NH 03824  
 PHONE: (603) 858-5176  
 FAX: (603) 858-2074  
 E-MAIL: info@trenchdom.com

SCHER DRAINAGE PRODUCTS  
 203 SOUTH MONROE STREET  
 OREGON, MO 64473  
 PHONE: (860)-446-2343

- IT IS ALSO SUGGESTED THAT LOCAL SUPPLIERS BE CONTACTED TO ENQUIRER ABOUT SUITABLE ANTI-SEEP COLLAR PRODUCTS. IF A POSSIBLE ALTERNATIVE IS FOUND CONTACT THE DESIGN ENGINEER TO ENSURE ITS APPROPRIATENESS AND TO GET APPROVAL FOR ITS USE.

COLLAR DIMENSION TABLE

O	W	H
18	10.25	6



ANTI-SEEP COLLAR DETAIL

NOT TO SCALE

DRAINAGE DETAILS  
 TAX MAP 224, LOT 309  
 DIAMONDBACK DRIVE  
 ROCHESTER, NH

PREPARED FOR:  
 TARA ESTATES COMMUNITY

DECEMBER 2021

C-6

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

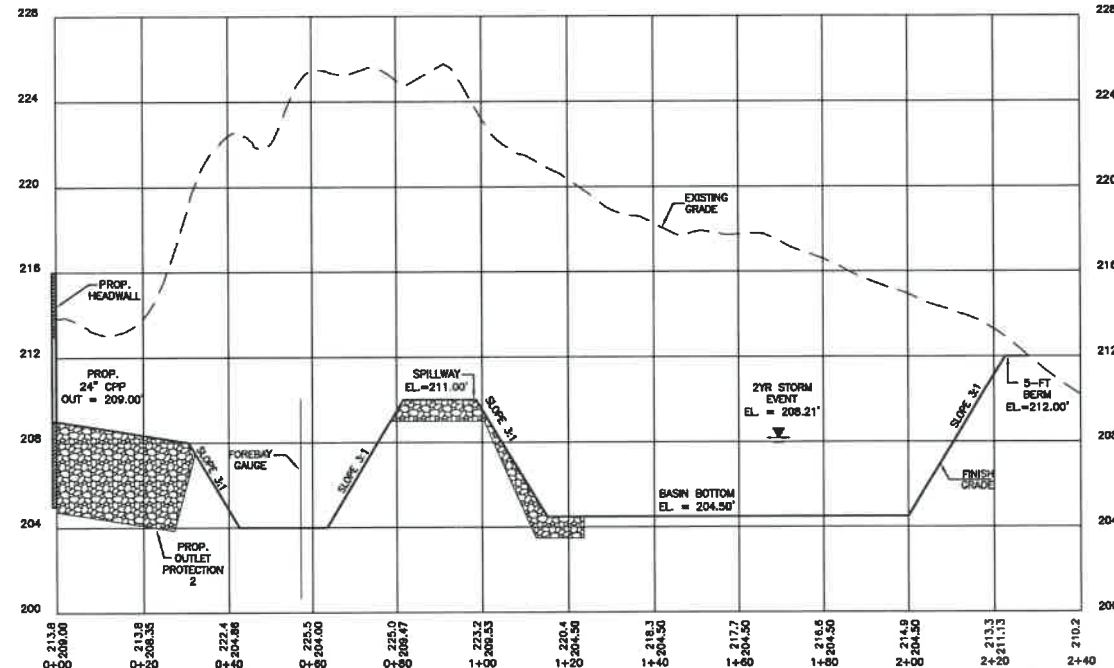
31 Mooney Street, Alton, N.H. 603-875-3948

NORWAY PLAINS ASSOCIATES, INC.

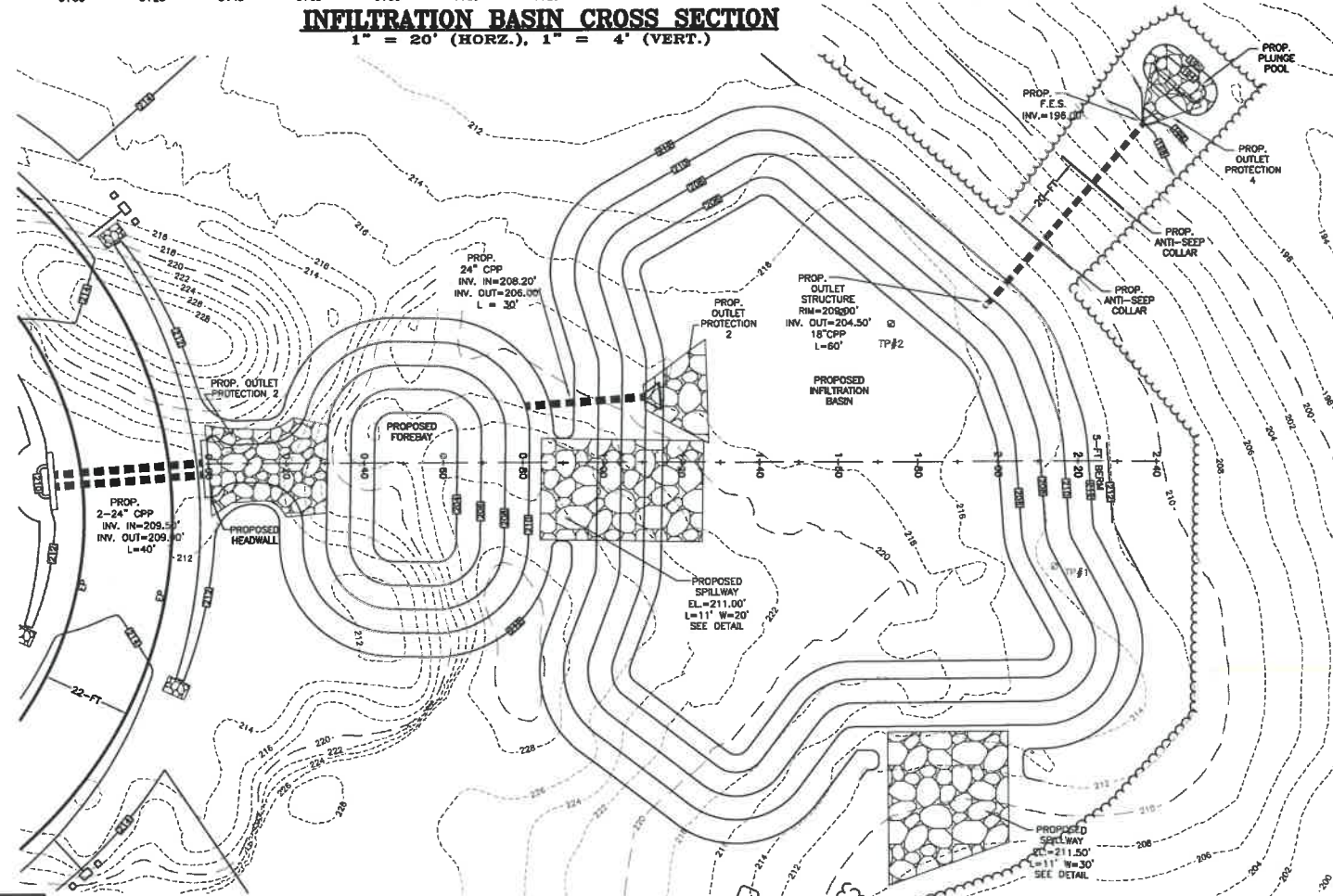
2 Continental Blvd., Rochester, N.H. 603-335-3948



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 WITHIN 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.



**INFILTRATION BASIN CROSS SECTION**  
1" = 20' (HORZ.), 1" = 4' (VERT.)



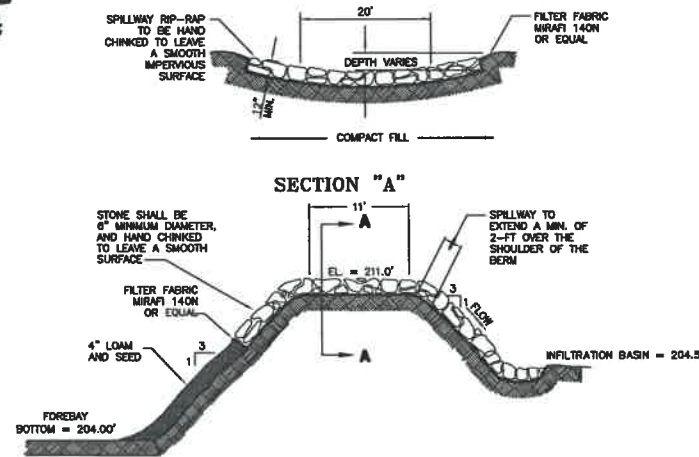
**INFILTRATION BASIN**  
1" = 20'

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



REVISION:  
8/3/2021 - OUTLET DETAIL ADDED  
12/9/2021 - INVERT OF OUTLET PIPE ADDED  
- REMOVE SUMP FROM OUTLET STRUCTURE



**FOREBAY SPILLWAY DETAIL**  
NOT TO SCALE

TEST PITS CONDUCTED: NOVEMBER 25, 2020  
BY: JOSEPH W. NOLAN, NEW HAMPSHIRE CERTIFIED SOIL SCIENTIST #017  
PURPOSE: SITE-SPECIFIC SOIL MAPPING & STORM WATER PLANNING

TEST PIT 1	DEPTH	SOIL DESCRIPTION
3-0 INCHES	0-8 INCHES	PARTIALLY DECOMPOSED ORGANIC MATTER
8-24 INCHES	8-24 INCHES	DARK BROWN (10YR 3/3) FINE SANDY LOAM, FRAGILE, GRANULAR
24-34 INCHES	24-34 INCHES	DARK YELLOWISH BROWN (10YR 4/8) LOAMY FINE SAND AND LOAMY VERY FINE SAND, FRAGILE, MASSIVE
34-144 INCHES	34-144 INCHES	DARK YELLOWISH BROWN (10YR 4/4) LOAMY FINE SAND, VERY FRAGILE, MASSIVE
		LIGHT YELLOWISH BROWN (10YR 6/4) SAND, LOOSE, SINGLE GRAIN
		GRAIN (SOME SLOPING STRATA/BEDDING PLAINS OF GRAVELLY SAND WITH HIGH CHROMA RELIC MOTTLING)

SEASONAL HIGH WATER TABLE NONE TO 144"  
OBSERVED WATER TABLE NONE TO 144"  
RESTRICTIVE HORIZON NONE TO 144"  
BEDROCK NONE TO 144"  
NOTE: EOLIAN CAP OVER ICE-CONTACT STRATIFIED DRIFT PARENT MATERIAL

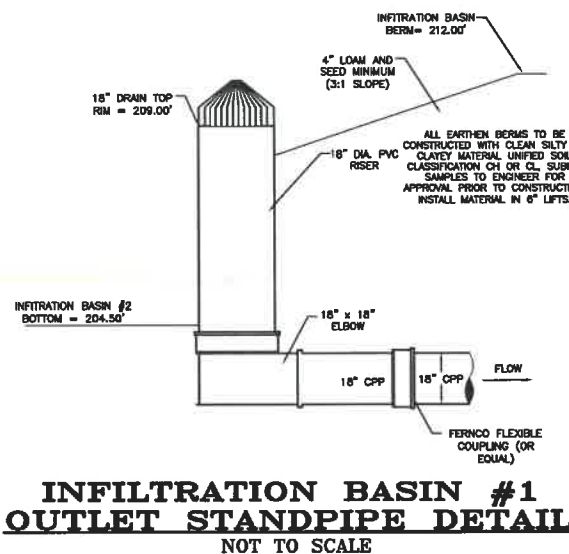
TEST PIT 2  
3-0 INCHES  
0-8 INCHES  
8-18 INCHES  
18-34 INCHES  
34-44 INCHES  
44-72 INCHES  
72-96 INCHES  
96-132 INCHES

SOIL DESCRIPTION:  
PARTIALLY DECOMPOSED ORGANIC MATTER  
DARK BROWN (10YR 3/3) FINE SANDY LOAM, FRAGILE, GRANULAR  
STRONG BROWN (7.5YR 4/6) FINE SANDY LOAM, FRAGILE, BLOCKY  
LIGHT OLIVE BROWN (2.5Y 5/4) LOAMY FINE SAND, FRAGILE, BLOCKY  
STRONG BROWN (7.5YR 4/6) VERY GRAVELLY SAND, LOOSE, SINGLE GRAIN  
LIGHT YELLOWISH BROWN (10YR 6/4) SAND, VERY FRAGILE, MASSIVE  
PALE BROWN (10YR 6/3) FINE SAND, FRAGILE, MASSIVE  
LIGHT YELLOWISH BROWN (2.5Y 6/4) SAND, VERY FRAGILE, MASSIVE

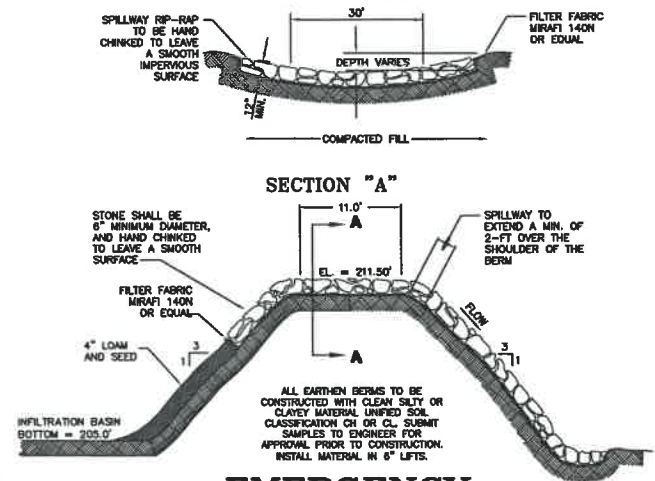
SEASONAL HIGH WATER TABLE NONE TO 132"  
OBSERVED WATER TABLE NONE TO 132"  
RESTRICTIVE HORIZON NONE TO 132"  
BEDROCK NONE TO 132"  
NOTE: EOLIAN CAP OVER ICE-CONTACT STRATIFIED DRIFT PARENT MATERIAL

TEST PITS CONDUCTED: JULY 28, 2020  
BY: ASHLEY ROW  
PURPOSE: CONFIRM SEASONAL HIGH WATER

TEST PIT 3  
SEASONAL HIGH WATER TABLE NONE TO 228"  
OBSERVED WATER TABLE NONE TO 228"  
RESTRICTIVE HORIZON NONE TO 228"  
BEDROCK NONE TO 228"



**INFILTRATION BASIN #1 OUTLET STANDPIPE DETAIL**  
NOT TO SCALE



**EMERGENCY SPILLWAY DETAIL**  
NOT TO SCALE

**INFILTRATION BASIN**

- SPECIFICATIONS:**
- DO NOT DISCHARGE SEDIMENT-LOADED WATER FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE INFILTRATION BASIN.
  - DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION BASIN.
  - AFTER THE BASIN IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHALL BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
  - VEGETATION SHALL BE ESTABLISHED IMMEDIATELY AFTER FINAL GRADING IS COMPLETED.
  - CONSTRUCT THE INFILTRATION BASIN TO THE GRADES DEPICTED ON THE PLAN AND CROSS-SECTION.
  - LOAM AND SEED ONLY THE SLOPES OF THE INFILTRATION BASIN AS PRESCRIBED IN THE "PERMANENT VEGETATION" NOTES FOUND ON SHEET C-005. SEED MIXTURE = A.
  - DO NOT PLACE INFILTRATION SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

- MAINTENANCE REQUIREMENTS:**
- INSPECT PRETREATMENT MEASURES (I.E. SEDIMENT FOREBAY(S), HOODED CATCH BASINS, ETC.) AT LEAST TWICE A YEAR AND AFTER EVERY STORM GREATER THAN 2.5 INCHES OF RAIN OVER A 24-HOUR PERIOD.
  - INSPECT INFILTRATION SURFACE BI-ANNUALLY. ONCE IN THE SPRING PRIOR TO MAY 15 AND ONCE IN THE FALL PRIOR TO OCTOBER 15.
  - INSPECT INFILTRATION SURFACE AFTER ANY RAINFALL EVENT OF 2.5-INCHES OR GREATER IN A 24-HOUR PERIOD.
  - REMOVE AND DISPOSE OF ACCUMULATED SEDIMENT BASED ON INSPECTION. REPAIR AREA OF REMOVAL AS NECESSARY TO RESTORE INFILTRATION CAPACITY.
  - PERFORM MAINTENANCE AND REHABILITATION BASED ON INSPECTIONS.
  - REMOVE DEBRIS (IF ANY) FROM INFILTRATION BASIN INLET BASED ON INSPECTION. CONDUCT PRELIMINARY MOWING OF THE INFILTRATION BASIN SLOPES AND EMBANKMENTS (MINIMUM TWICE A YEAR) TO ELIMINATE WOODY GROWTH FROM THE EMBANKMENTS AND BOTTOM. MOWING THE INFILTRATION BASIN EMBANKMENTS WHEN MOWING THE REST OF THE SITE IS RECOMMENDED.
  - IF THE INFILTRATION SYSTEM DOES NOT DRAIN WITHIN 72-HOURS FOLLOWING A RAINFALL EVENT, THEN A QUALIFIED PROFESSIONAL (I.E. PROFESSIONAL ENGINEER, CERTIFIED SOILS SCIENTIST, ETC.) SHALL ASSESS THE CONDITION OF THE FACILITY TO DETERMINE MEASURES REQUIRED TO RESTORE INFILTRATION FUNCTION, INCLUDING BUT NOT LIMITED TO REMOVAL OF ACCUMULATED SEDIMENTS OR RECONSTRUCTION OF THE INFILTRATION SURFACE.

**SEDIMENT FOREBAY GAUGE DETAIL**  
NOT TO SCALE

**INFILTRATION BASIN DETAILS**  
TAX MAP 224, LOT 309  
DIAMONDBACK DRIVE  
ROCHESTER, NH  
PREPARED FOR:  
TARA ESTATES COMMUNITY

DECEMBER 2021

C-7

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

Drawing Location: W:\2017\17149\DWG\17149 SP-2.dwg  
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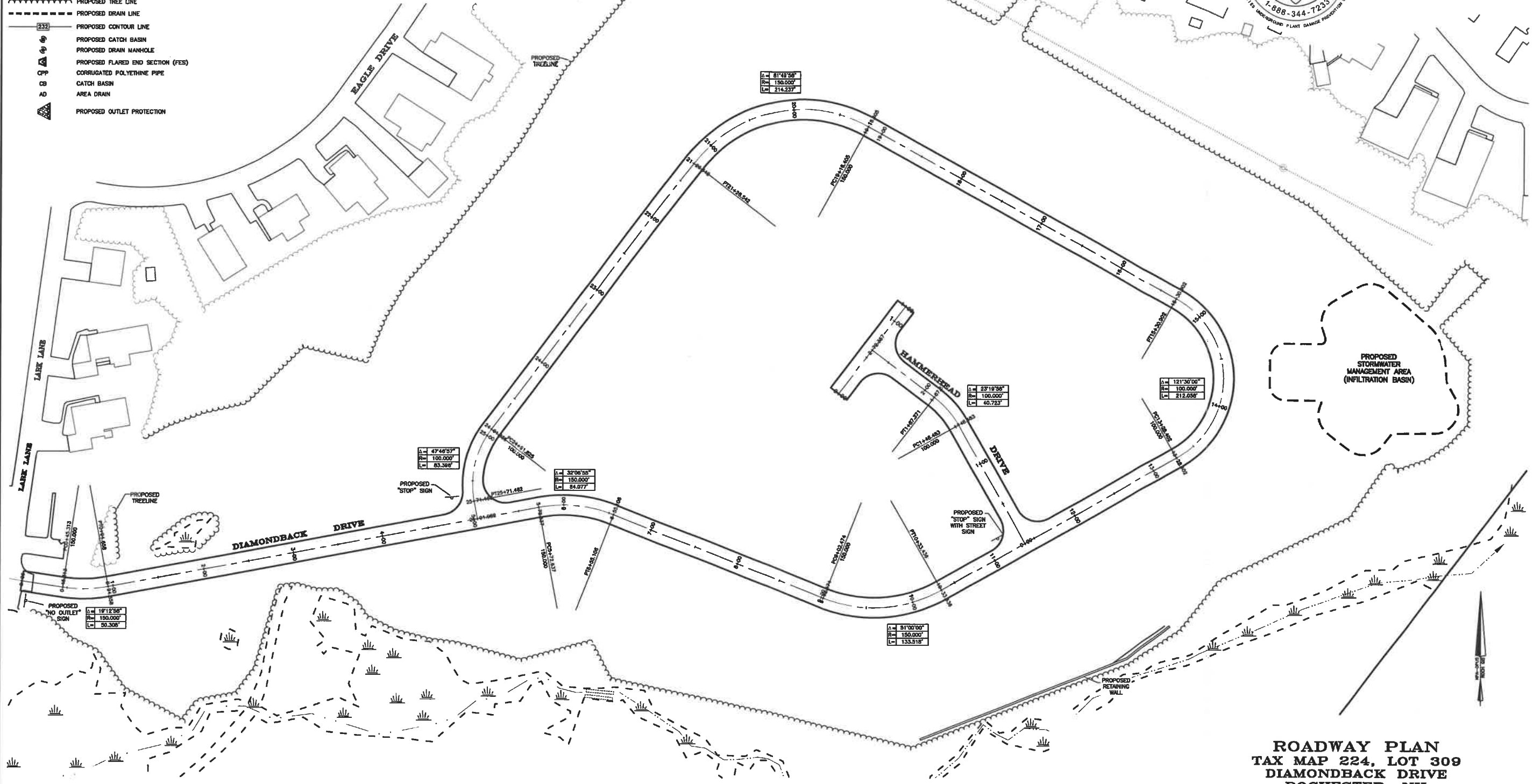
## LAND SURVEYORS

## CIVIL ENGINEERS

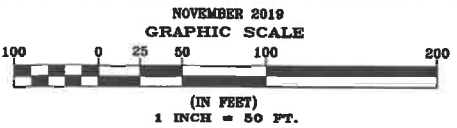
### LEGEND

- PROPERTY LINE
- JURISDICTIONAL WETLANDS
- EXISTING TREE LINE
- EXISTING DRAIN LINE
- EXISTING CONTOUR LINE
- EXISTING TEST PIT
- PROPOSED SPOT GRADE
- PROPOSED TREE LINE
- PROPOSED DRAIN LINE
- PROPOSED CONTOUR LINE
- PROPOSED CATCH BASIN
- PROPOSED DRAIN MANHOLE
- PROPOSED FLARED END SECTION (FES)
- CORRUGATED POLYETHYLENE PIPE
- CATCH BASIN
- AREA DRAIN
- PROPOSED OUTLET PROTECTION

ALL OBSERVATIONS OF NORTHERN BLACK RACER SNAKES ENCOUNTERED FROM THE END OF SEPTEMBER THROUGH THE MONTH OF APRIL MUST BE IMMEDIATELY REPORTED TO THE NEW HAMPSHIRE FISH AND GAME DEPARTMENT (BRENDAN CLIFFORD 603-271-0463 OR MELISSA DOPERALESKI 603-271-1738). PLEASE ATTEMPT TO PHOTOGRAPH THE SPECIES IF POSSIBLE.



**ROADWAY PLAN**  
**TAX MAP 224, LOT 309**  
**DIAMONDBACK DRIVE**  
**ROCHESTER, NH**  
PREPARED FOR:  
**TARA ESTATES COMMUNITY**



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 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.

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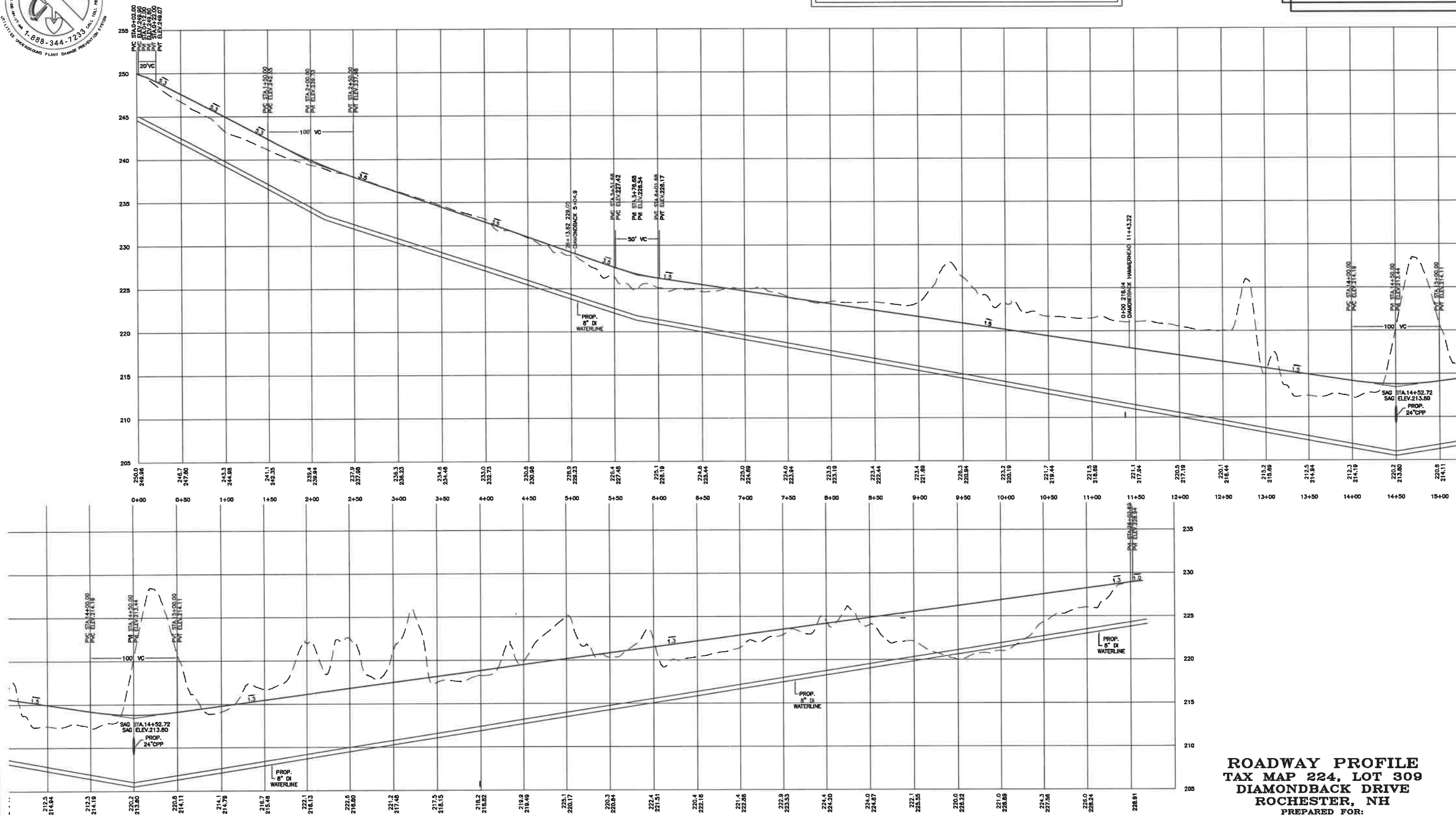




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**ROADWAY PROFILE**  
TAX MAP 224, LOT 309  
DIAMONDBACK DRIVE  
ROCHESTER, NH  
PREPARED FOR:  
TARA ESTATES COMMUNITY  
JANUARY 2021  
SCALE 1" = 50' (HORIZ.)  
1" = 5' (VERT.)

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# LAND SURVEYORS

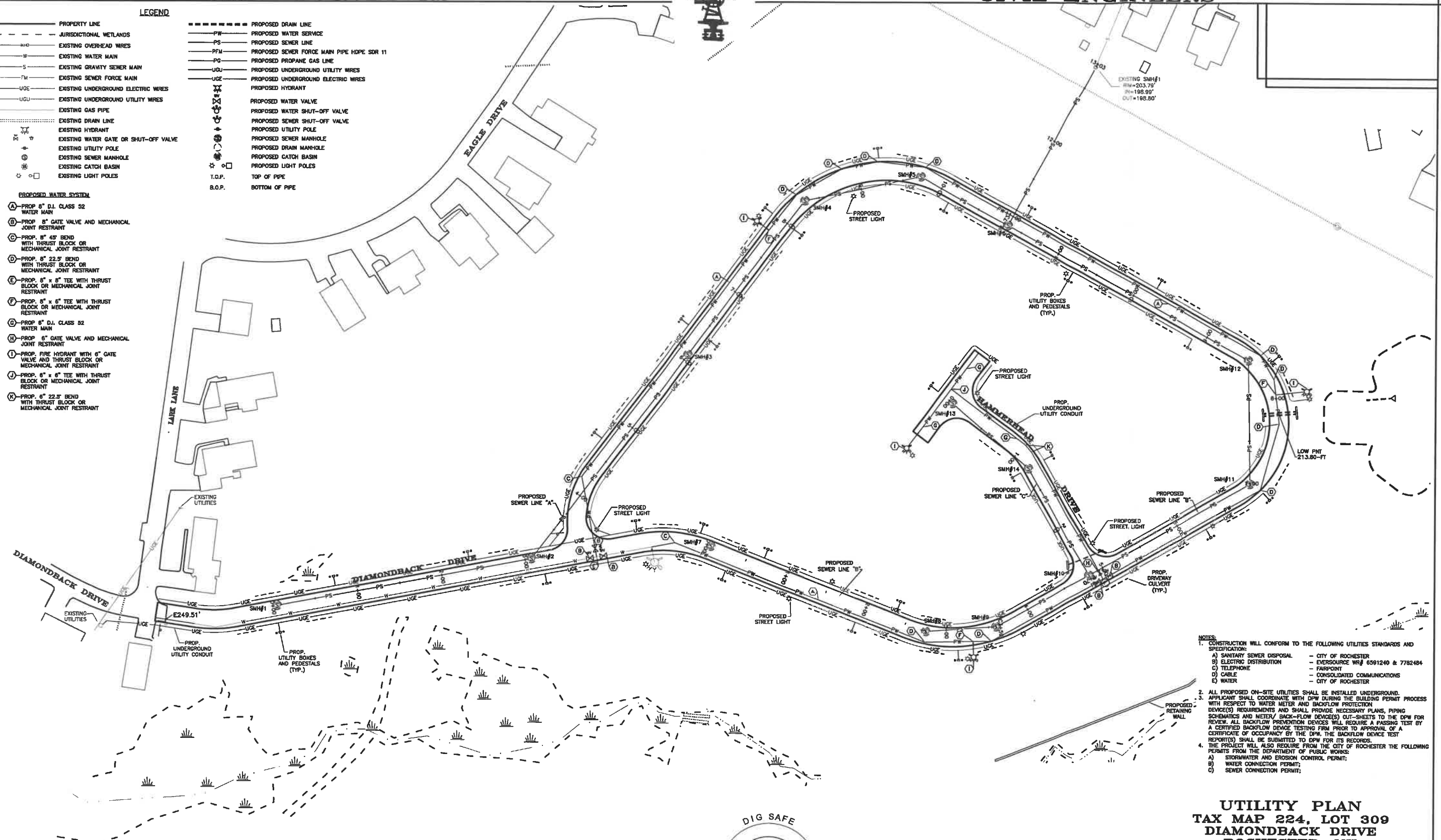
# CIVIL ENGINEERS

## LEGEND

—	PROPERTY LINE	-----	PROPOSED DRAIN LINE
---	JURISDICTIONAL WETLANDS	—PW—	PROPOSED WATER SERVICE
---	EXISTING OVERHEAD WIRES	—PS—	PROPOSED SEWER LINE
—W—	EXISTING WATER MAIN	—PFM—	PROPOSED SEWER FORCE MAIN PIPE HDPE SDR 11
—S—	EXISTING GRAVITY SEWER MAIN	—PG—	PROPOSED PROPANE GAS LINE
—FM—	EXISTING SEWER FORCE MAIN	—UGU—	PROPOSED UNDERGROUND UTILITY WIRES
—UGE—	EXISTING UNDERGROUND ELECTRIC WIRES	—UGE—	PROPOSED UNDERGROUND ELECTRIC WIRES
—UGU—	EXISTING UNDERGROUND UTILITY WIRES	—	PROPOSED HYDRANT
---	EXISTING GAS PIPE	—	PROPOSED WATER VALVE
---	EXISTING DRAIN LINE	—	PROPOSED WATER SHUT-OFF VALVE
---	EXISTING HYDRANT	—	PROPOSED SEWER SHUT-OFF VALVE
---	EXISTING WATER GATE OR SHUT-OFF VALVE	—	PROPOSED UTILITY POLE
---	EXISTING UTILITY POLE	—	PROPOSED SEWER MANHOLE
---	EXISTING SEWER MANHOLE	—	PROPOSED DRAIN MANHOLE
---	EXISTING CATCH BASIN	—	PROPOSED CATCH BASIN
---	EXISTING LIGHT POLES	—	PROPOSED LIGHT POLES
		—	T.O.P. TOP OF PIPE
		—	B.O.P. BOTTOM OF PIPE

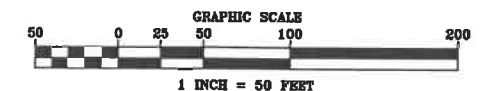
## PROPOSED WATER SYSTEM

- (A) - PROP 8" D.I. CLASS 52 WATER MAIN
- (B) - PROP 8" GATE VALVE AND MECHANICAL JOINT RESTRAINT
- (C) - PROP 8" 45° BEND WITH THRUST BLOCK OR MECHANICAL JOINT RESTRAINT
- (D) - PROP 8" 22.5° BEND WITH THRUST BLOCK OR MECHANICAL JOINT RESTRAINT
- (E) - PROP 8" x 8" TEE WITH THRUST BLOCK OR MECHANICAL JOINT RESTRAINT
- (F) - PROP 8" x 8" TEE WITH THRUST BLOCK OR MECHANICAL JOINT RESTRAINT
- (G) - PROP 8" D.I. CLASS 52 WATER MAIN
- (H) - PROP 8" GATE VALVE AND MECHANICAL JOINT RESTRAINT
- (I) - PROP. FIRE HYDRANT WITH 8" GATE VALVE AND THRUST BLOCK OR MECHANICAL JOINT RESTRAINT
- (J) - PROP. 8" x 8" TEE WITH THRUST BLOCK OR MECHANICAL JOINT RESTRAINT
- (K) - PROP. 8" 22.5° BEND WITH THRUST BLOCK OR MECHANICAL JOINT RESTRAINT



- NOTES:
- CONSTRUCTION WILL CONFORM TO THE FOLLOWING UTILITIES STANDARDS AND SPECIFICATION:
    - A) SANITARY SEWER DISPOSAL - CITY OF ROCHESTER
    - B) ELECTRIC DISTRIBUTION - EVERSOURCE WR# 6501240 & 7782484
    - C) TELEPHONE - FAIRPOINT
    - D) CABLE - CONSOLIDATED COMMUNICATIONS
    - E) WATER - CITY OF ROCHESTER
  - ALL PROPOSED ON-SITE UTILITIES SHALL BE INSTALLED UNDERGROUND.
  - APPLICANT SHALL COORDINATE WITH DPW DURING THE BUILDING PERMIT PROCESS WITH RESPECT TO WATER METER AND BACKFLOW PROTECTION DEVICE(S) REQUIREMENTS AND SHALL PROVIDE NECESSARY PLANS, PIPING SCHEMATICS AND METER/ BACK-FLOW DEVICE(S) OUT-SHEETS TO THE DPW FOR REVIEW. ALL BACKFLOW PREVENTION DEVICES WILL REQUIRE A PASSING TEST BY A CERTIFIED BACKFLOW DEVICE TESTING FIRM PRIOR TO APPROVAL OF A CERTIFICATE OF OCCUPANCY BY THE DPW. THE BACKFLOW DEVICE TEST REPORT(S) SHALL BE SUBMITTED TO DPW FOR ITS RECORDS.
  - THE PROJECT WILL ALSO REQUIRE FROM THE CITY OF ROCHESTER THE FOLLOWING PERMITS FROM THE DEPARTMENT OF PUBLIC WORKS:
    - A) STORMWATER AND EROSION CONTROL PERMIT;
    - B) WATER CONNECTION PERMIT;
    - C) SEWER CONNECTION PERMIT;

**UTILITY PLAN**  
**TAX MAP 224, LOT 309**  
**DIAMONDBACK DRIVE**  
**ROCHESTER, NH**  
 PREPARED FOR:  
**TARA ESTATES COMMUNITY**  
 JANUARY 2021



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

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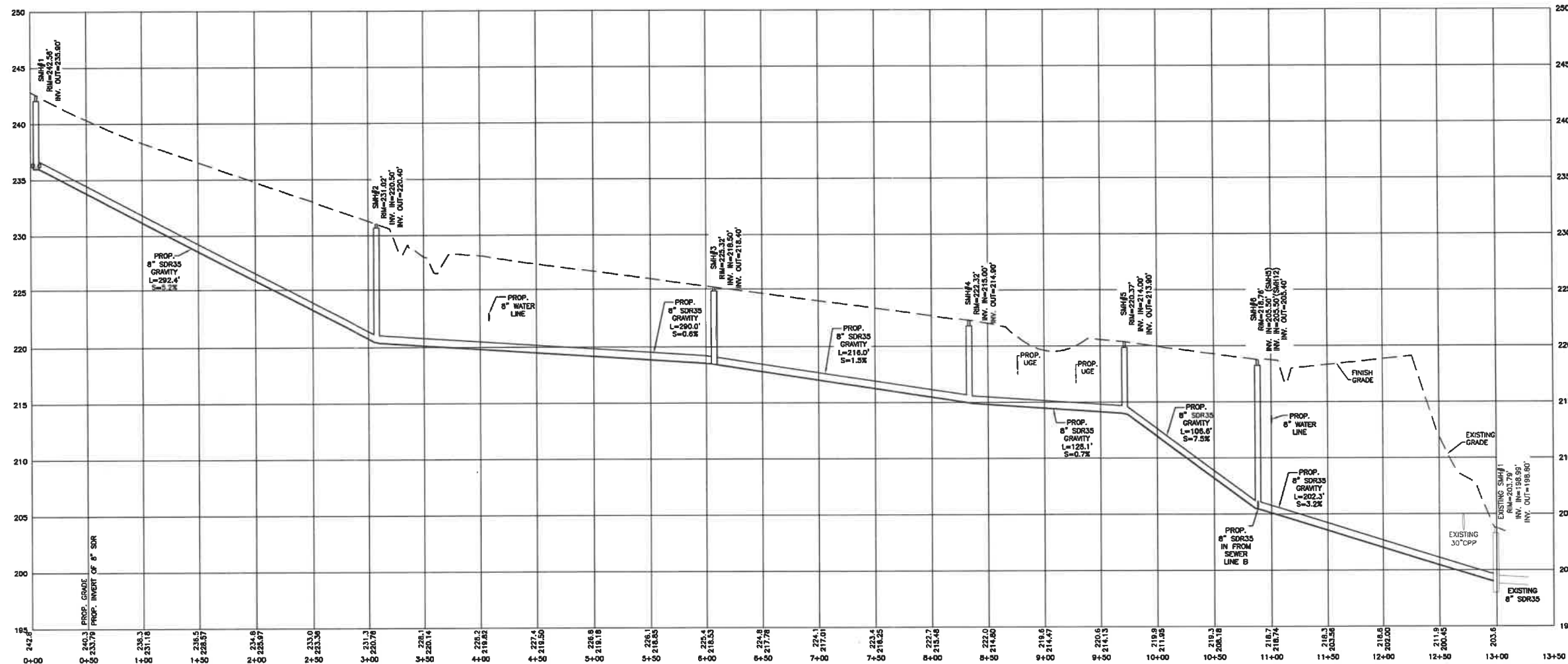
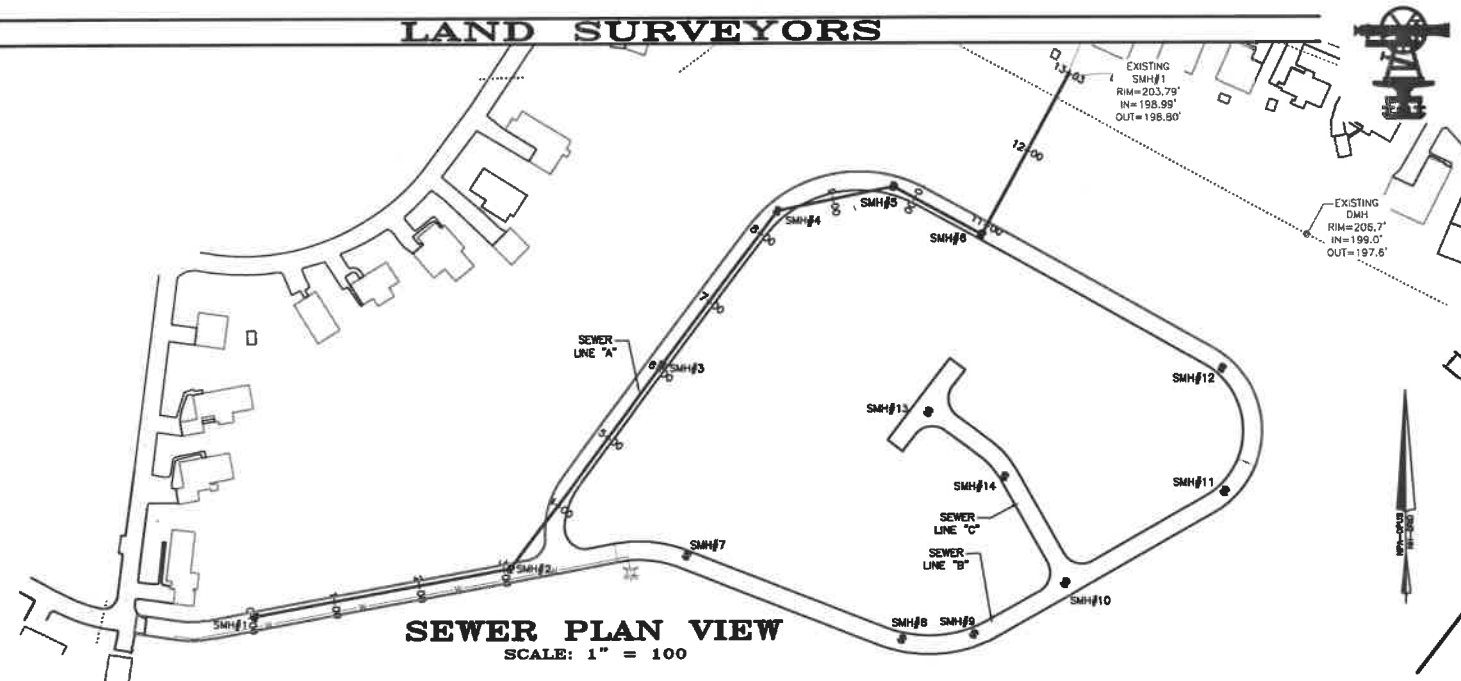
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C-10





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

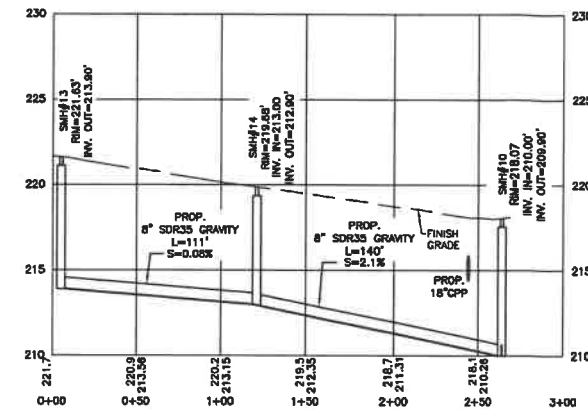
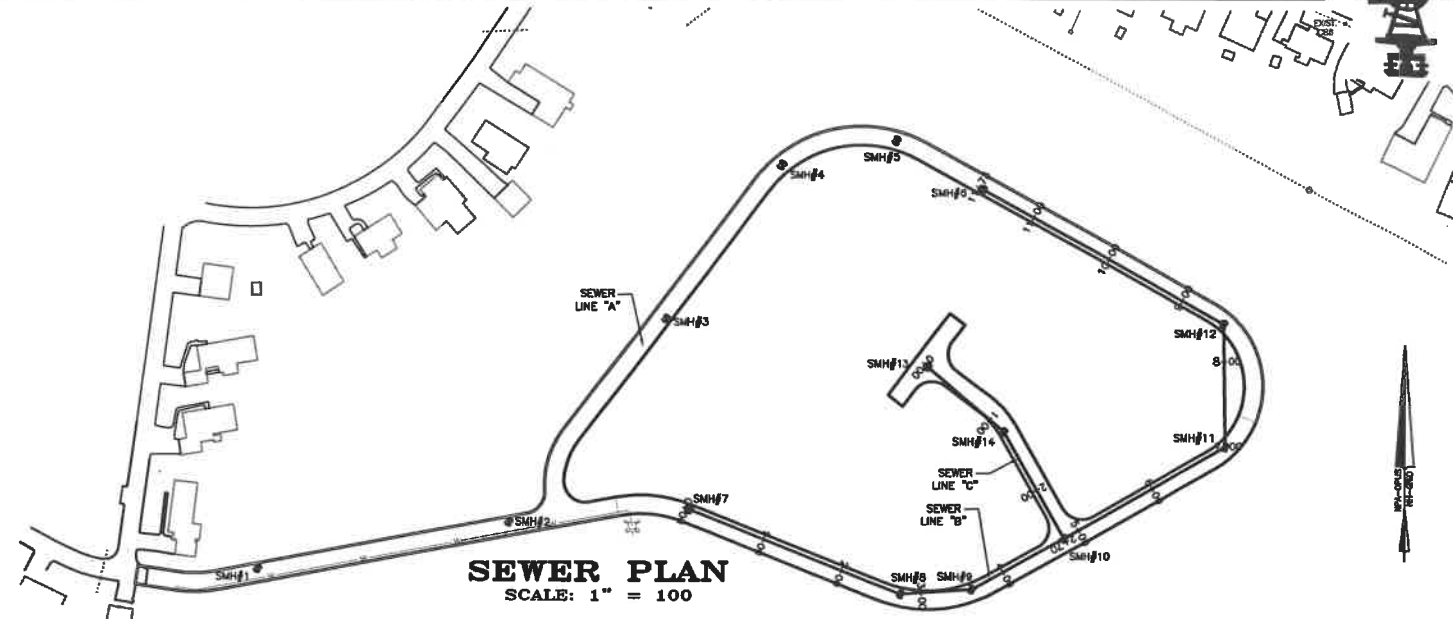
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F.B. NO.

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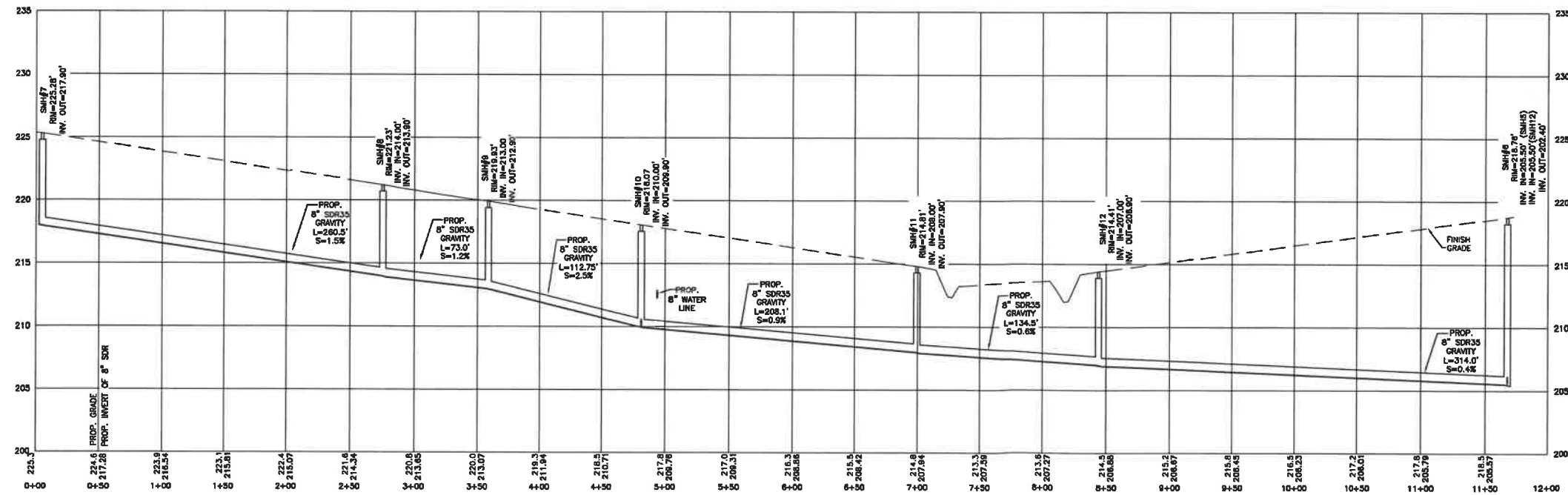
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C-11



**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

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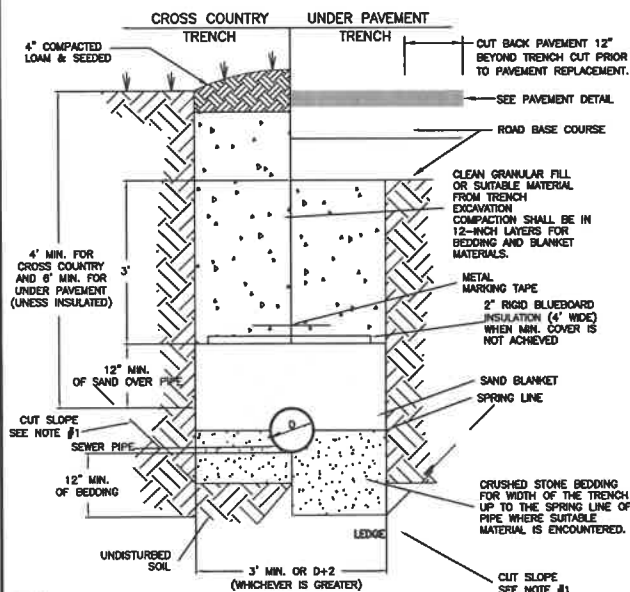
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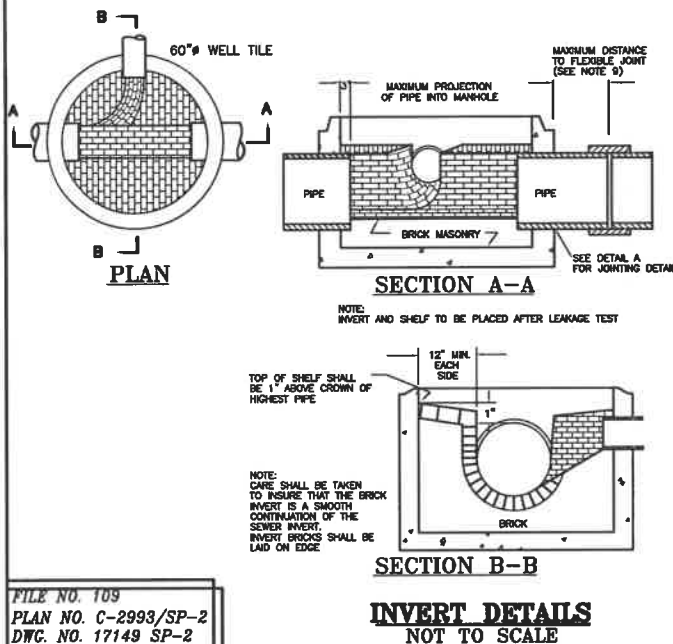




- NOTES:
1. PIPES MAY BE INSTALLED BY EXCAVATING AN OPEN TRENCH WITH SIDE SLOPES OF 1:1 MAXIMUM TO A DEPTH OF 4'-7'. INSTALLATIONS DEEPER THAN 4'-7' REQUIRE THE USE OF A TRENCH BOX.
  2. PIPE MATERIALS SHALL BE AS SPECIFIED ON THE DESIGN PLAN.
  3. SAND BLANKET MAY BE OMITTED FOR REINFORCED CONCRETE PIPE.
  4. WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, THE SHEETING SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN ONE FOOT ABOVE THE TOP OF THE PIPE AND AT LEAST 3 FEET BELOW FINISHED GRADE.
  5. THE PIPE SAND BLANKET MATERIAL SHALL BE GRADED SAND FREE FROM ORGANIC MATERIALS, GRADED SUCH THAT 100 PERCENT PASSES A 1/4-INCH SIEVE AND A MAXIMUM OF 15 PERCENT PASSES A #200 SIEVE.
  6. TRENCH BACKFILL MATERIAL IN ROADWAY LOCATIONS SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION, EXCLUDING:
- (1) DEBRIS;
  - (2) PIECES OF PAVEMENT;
  - (3) ORGANIC MATTER;
  - (4) TOP SOIL;
  - (5) WET OR SOFT MUCK;
  - (6) PEAT OR CLAY;
  - (7) EXCAVATED LEDGE MATERIAL;
  - (8) ROCKS OVER 6 INCHES IN THE LARGEST DIMENSION; AND
  - (9) ANY MATERIAL NOT APPROVED BY THE ENGINEER.

## SEWER PIPE TRENCH INSTALLATION DETAIL

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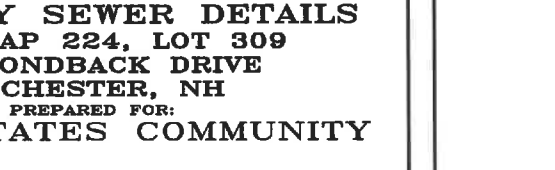
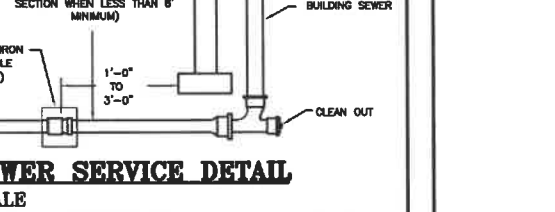
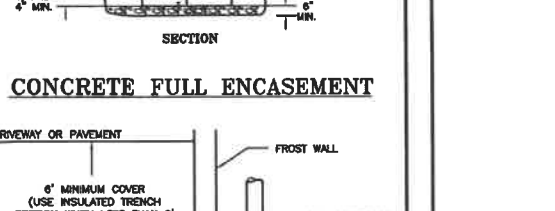
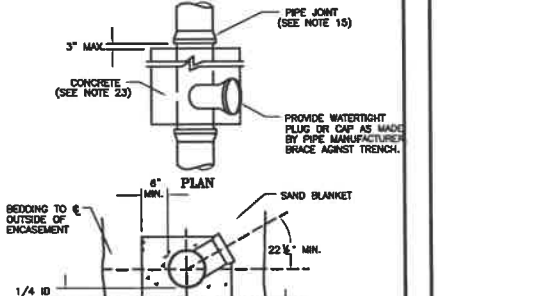
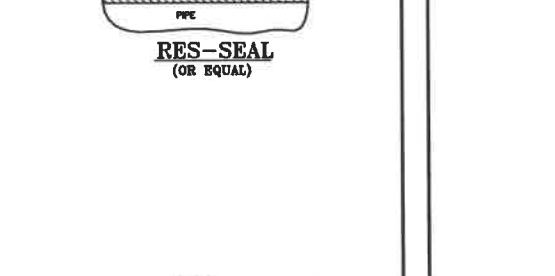
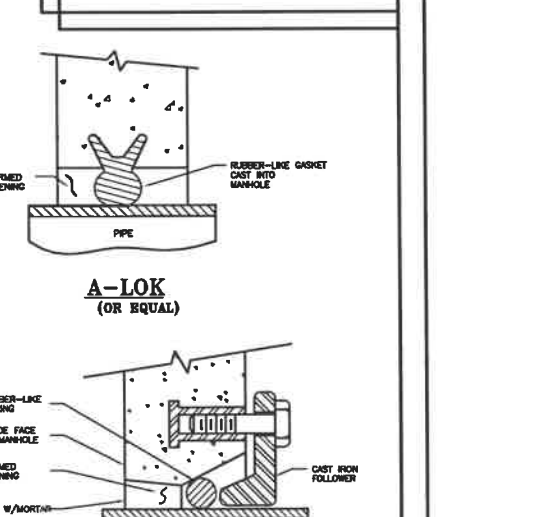
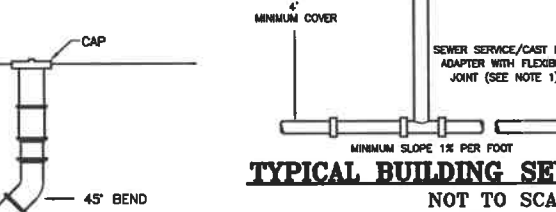
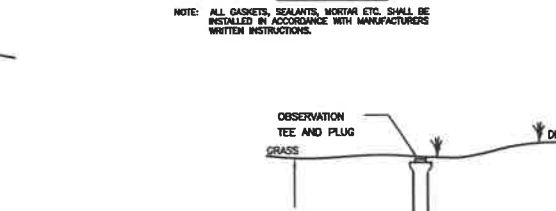
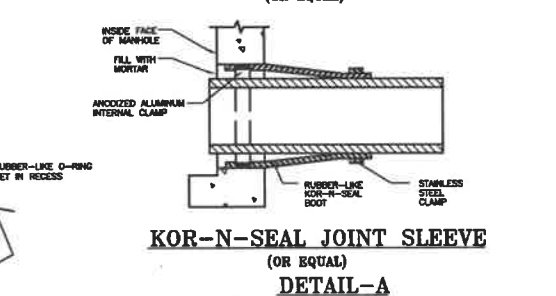
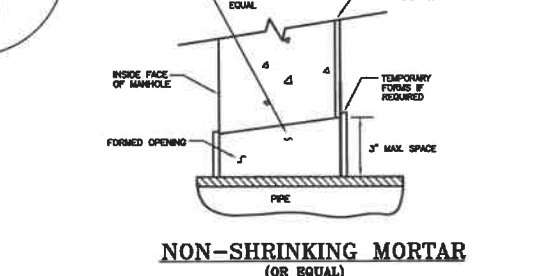
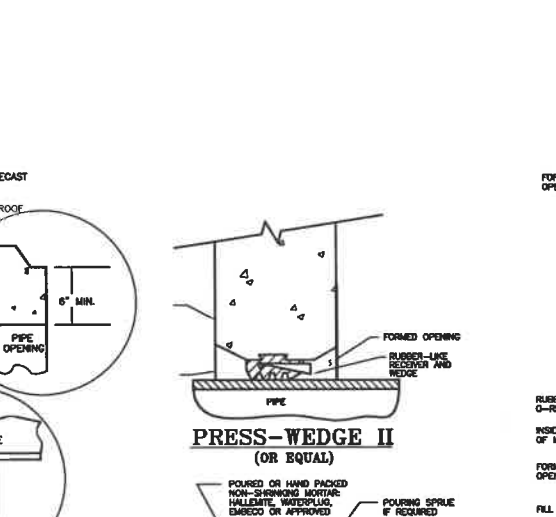
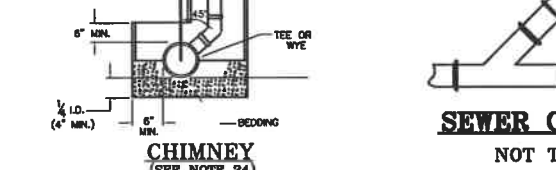
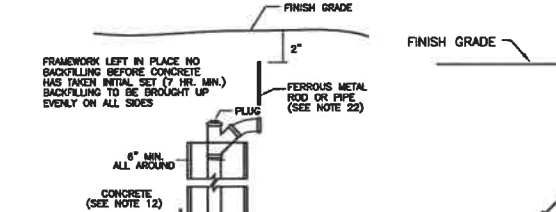
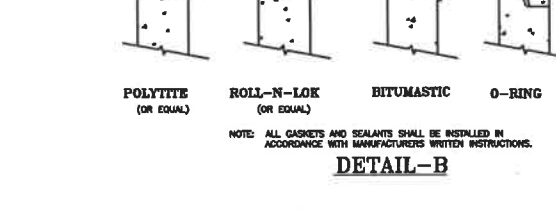
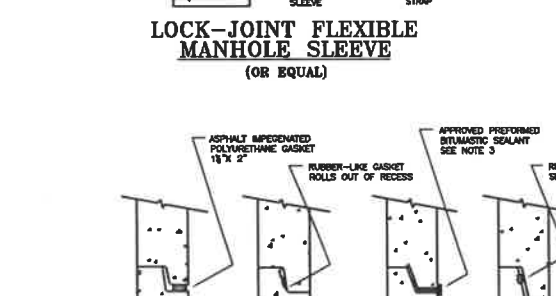
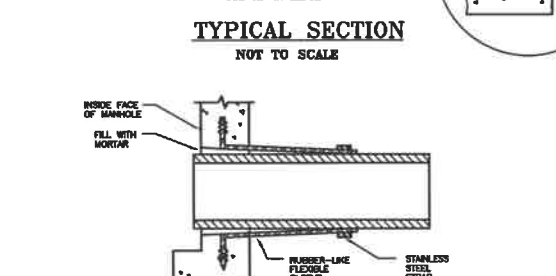
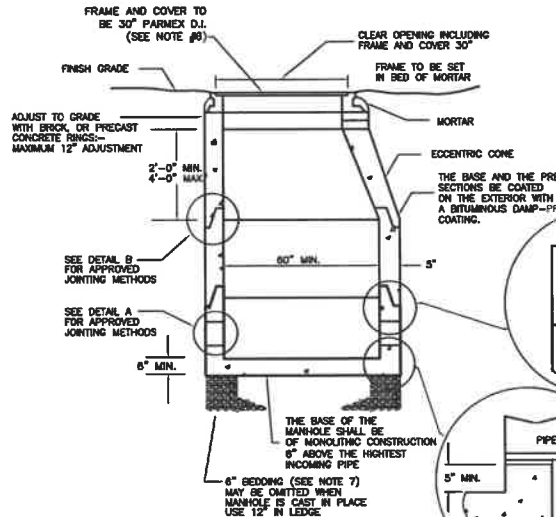


- NOTES:
1. IT IS INTENTION OF THE CITY OF ROCHESTER PUBLIC WORKS DEPARTMENT THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAK PROOF QUALITIES CONSIDERED NECESSARY BY THE PUBLIC WORKS DEPARTMENT FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS SHALL BE AS SHOWN ON THE DRAWING. MANHOLES MAY BE AN ASSEMBLY OF PRECAST SECTIONS, WITH OR WITHOUT STEEL REINFORCEMENT, WITH ADEQUATE JOINTING, OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH OR WITHOUT REINFORCEMENT. IN ANY APPROXIMATION, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (4-20 LOADS) WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.
  2. PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C478. ALL PRECAST SECTIONS AND BASES SHALL HAVE THE DATE OF MANUFACTURE AND THE NAME OR TRADEMARK OF THE MANUFACTURER IMPRESSED OR INDICALLY MARKED ON THE INSIDE WALL.
  3. VACUUM LEAKAGE TESTING (ASTM C1244) SHALL BE PERFORMED FOR ALL MANHOLES, LOW-PRESSURE AIR TESTING (ASTM F1417) AND DEFLECTION TESTING USING A 100/60 AND 60" MANHOLE FOR ALL SANITARY SEWERS, IN ACCORDANCE WITH THE INVOICES SEWER REGULATIONS AND THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS REQUIREMENTS.
  4. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOOR AT CHANGES IN DIRECTION. THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY. BRICK MASONRY CONFORM WITH ASTM C22. INVERTS AND SHELVES SHALL NOT BE INSTALLED UNTIL AFTER SUCCESSFUL TESTING IS COMPLETED.
  5. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. A 3-INCH (MINIMUM HEIGHT) LETTER "SEWER" FOR SEWERS OR "DRAIN" FOR DRAINS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
  6. SEWER MANHOLE FRAME AND COVER: PARDEX 32" D.I. MANHOLE FRAME AND COVER SEWER - ELLIPSE/SCOTT PRODUCT/ 22113-32-S. IMMEDIATELY FOLLOWING COMPLETION OF THE LEAKAGE TEST, THE FRAME AND COVER SHALL BE PLACED ON THE TOP OF THE MANHOLE OR SOME OTHER MEANS USED TO PREVENT ACCIDENTAL ENTRY BY UNAUTHORIZED PERSONS, CHILDREN, OR ANIMALS, UNTIL THE CONTRACTOR IS READY TO MAKE FINAL ADJUSTMENT TO GRADE.
  7. BEDDING: MIN. 6" OF 3/4" CRUSHED STONE (12" IN LEDGE) FOR DRAINS SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES:
    - 100% PASSING 1/2" SIEVE
    - 90-100% PASSING 3/4" SIEVE
    - 20-50% PASSING 3/8" SIEVE
    - 0-10% PASSING #4 SIEVE
    - 0-3% PASSING #8 SIEVE
  8. WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, CRUSHED STONE MIN. 3/4" SHALL BE USED. CONCRETE FOR DROP SUPPORT SHALL CONFORM TO THE REQUIREMENT FOR CLASS A (3000 PSI) CONCRETE OF THE NEW HAMPSHIRE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS STANDARD SPECIFICATIONS AS FOLLOWS:
    - CEMENT: 6.0 BAGS PER CUBIC YARD
    - WATER: 5.75 GALLONS PER BAG CEMENT
    - MAXIMUM SIZE OF AGGREGATE: 1 INCH
  9. FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES:
    - RCP & CI PIPE - ALL SIZES - 48"
    - AC & VC PIPE - UP THROUGH 12" DIA. - 18" SEE NOTE 9.A.
    - AC & VC PIPE - LARGER THAN 12" DIA. - 36"
    - DI PIPE - NONE REQUIRED
    - PVC (ASTM 3034) - UP THROUGH 18" DIA. - NONE REQUIRED
    - PVC (ASTM F 706) - LARGER THAN 18" DIA. - 48" TO 60"
    - PVC (ASTM F 706) - ALL SIZES - 48" TO 60"
  - 9.A. UNDER SEVERE CONDITIONS WHEN DIFFERENTIAL SETTING CANNOT BE CONTROLLED WITHIN NORMAL LIMITS, VARIATIONS IN THE SUB LENGTH MAY BE USED. OTHER PLASTIC OR OTHER PLASTIC SHALL BE REINFORCED ON A CASE BY CASE BASIS.
  10. SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING 11-20 LOADS.
  11. OMISSION.
  12. MINIMUM SIZE PIPE FOR HOUSE SERVICE SHALL BE 4 INCHES.
  13. PIPE AND JOINT MATERIALS P.V.C. (POLY VINYL CHLORIDE) P.V.C. SEWER PIPE AND FITTINGS SHALL CONFORM TO THE MOST RECENT REQUIREMENTS OF ASTM SPECIFICATIONS FOR TYPE PSN POLY VINYL CHLORIDE (P.V.C.) SEWER PIPE AND FITTINGS. DESIGNATION D-3034 AND ASTM SPECIFICATIONS FOR SEWER PIPE, JOINTS USING ELASTOMERIC SEALS, DESIGNATION D-3212. MANUFACTURER'S CERTIFICATE OF COMPLIANCE SHALL BE FURNISHED TO THE ENGINEER. PRIOR TO INSTALLATION METHODS OF MANUFACTURE SHALL BE OBSERVED AND THE PIPE SHALL BE INSURED AS TO THE QUALITY OF THE PIPE.
  14. DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
  15. JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MANHOLED WITH THE MATERIAL USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.
  16. TEES OR WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING INSTRUCTIONS USING A BOLTED, CLAMPED, OR EPoxy-CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR CRUDE PRACTICES OR IMPROVISED METHODS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE EXCAVED AS SHOWN IN THE DETAIL UP TO AND INCLUDING 15" DIAMETER. DOES (NOT APPLY TO INSTALLATIONS WHERE TEES & WYES ARE USED).
  17. PIPE INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED, AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR A DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH THE APPROPRIATE MECHANICAL DEVICES. THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE HOUSE FOUNDATION AT A GRADE OF NOT LESS THAN 1/8 INCH PER FOOT PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DETERMINE THE TRENCH.
  18. TESTING: THE COMPLETED HOUSE SEWER SHALL BE SUBJECTED TO A LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS (PRIOR TO BACKFILLING):
    - A. AN OBSERVATION TEE SHALL BE INSTALLED AS SHOWN AND, WHEN READY FOR TESTING, AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE TEE AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.
    - B. THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER, TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS OR, IF THE TRENCH IS WET, THE GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST DOWNSTREAM MANHOLE. LEAKAGE OBSERVED IN ANY OF THE ABOVE ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG-UP IF NECESSARY AND RE-LAID SO AS TO ASSURE WATER-TIGHTNESS.
    - C. DRY FLUORESCENCE DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER, OR IF THE TRENCH IS WET, GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST DOWNSTREAM MANHOLE. LEAKAGE OBSERVED IN ANY OF THE ABOVE ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG-UP IF NECESSARY AND RE-LAID SO AS TO ASSURE WATER-TIGHTNESS.
  19. LEAKAGE CONNECTION: NOTHING BUT SANITARY WASTE FLOW FROM THE HOUSE TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS OR SUMP PUMPS OR ANY OTHER SIMILAR CONNECTION CARRYING RAIN WATER, DRAINAGE, OR GROUND WATER, SHALL NOT BE PERMITTED.
  20. HOUSE AND WATER SERVICE SHOULD NOT BE LAID IN THE SAME TRENCH AS SEWER SERVICE, BUT WHEN NECESSARY, SHALL BE PLACED ABOVE AND TO THE SIDE OF THE HOUSE SEWER AS SHOWN.
  21. BEDDING: MIN. 3/4" CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33.6
    - 100% PASSING 1 INCH SIEVE
    - 90-100% PASSING 3/4 INCH SIEVE
    - 20-50% PASSING 3/8 INCH SIEVE
    - 0-10% PASSING #4 SIEVE
    - 0-3% PASSING #8 SIEVE
  22. WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, MIN. 3/4" CRUSHED STONE SHALL BE USED. LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERRUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DI. NEEDLE OR PIPEPRODER.
  23. CONCRETE: CONCRETE SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000 PSI) CONCRETE OF THE NEW HAMPSHIRE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS STANDARD SPECIFICATIONS AS FOLLOWS:
    - CEMENT: 6.0 BAGS/CY.
    - WATER: 5.75 GALLONS/BAG OF CEMENT
    - AGGREGATE: 1 1/2" MAX.
  24. CHIMNEYS: IF VERTICAL DROP INTO SEWER IS GREATER THAN 4', A CHIMNEY SHALL BE CONSTRUCTED FOR THE HOUSE CONNECTION. 25- ALL DRAINAGE AND SEWER STRUCTURES INCLUDING FRAMES SHALL BE TO LOCAL SEWER CONSTRUCTION SHALL BE CONSTRUCTED TO INHIBIT AND THE CITY OF ROCHESTER STANDARDS & SPECIFICATIONS.
  27. HORIZONTAL JOINTS: BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF A TYPE APPROVED BY THE COMMISSION, WHICH TYPE SHALL, IN GENERAL, DEPEND ON WATER TIGHTNESS UPON AN ELASTOMERIC OR WATER-LIKE GASKET. PIPE TO MANHOLE JOINTS: SHALL BE ONLY AS APPROVED BY THE COMMISSION AND IN GENERAL, WILL DEPEND FOR WATER TIGHTNESS UPON EITHER AN APPROVED NON-SHRINKING MORTAR OR ELASTOMERIC SEALANT.
  28. FOR ELASTOMERIC TYPE JOINTS, THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY APPROVED BITUMASTIC SEALANTS: RAM-NEX KENT SEAL NO.2 E2.
  30. THE CONTRACTOR SHALL NOTIFY DG-SAFE 1-888-344-7233 PRIOR TO CONSTRUCTION.

MORTAR USED IN MANHOLE CONSTRUCTION SHALL COMPLY WITH THE FOLLOWING: MORTAR SHALL BE COMPOSED OF TYPE II PORTLAND CEMENT AND SAND WITH OR WITHOUT HYDRATED LIME ADDITION. PROPORTIONS IN MORTAR OF PARTS BY VOLUMES SHALL BE AS SHOWN BELOW:

HYDRATED LIME	SAND	TYPE II PORTLAND CEMENT
NONE	4.5 PARTS	1.5 PARTS
0.5 PARTS	4.5 PARTS	1 PART

CEMENT SHALL BE TYPE II PORTLAND CEMENT THAT IS CERTIFIED BY ITS MANUFACTURER AS CONFORMING TO THE ASTM C150/C150M STANDARD IN EFFECT AT THE TIME THE CEMENT WAS MANUFACTURED. HYDRATED LIME SHALL BE TYPE S THAT IS CERTIFIED BY ITS MANUFACTURER AS CONFORMING TO THE ASTM C207 STANDARD IN EFFECT AT THE TIME THE HYDRATED LIME WAS PROCESSED. SAND SHALL CONSIST OF INERT NATURAL SAND THAT IS CERTIFIED BY ITS SUPPLIER AS CONFORMING TO THE ASTM C33 STANDARD IN EFFECT AT THE TIME THE SAND IS PROCESSED BY STANDARD SPECIFICATIONS FOR CONCRETE, THE AGGREGATES.



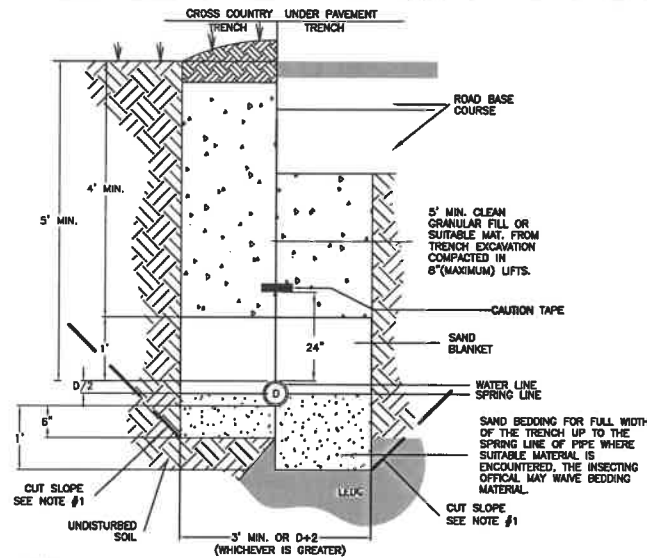
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## LAND SURVEYORS



## CIVIL ENGINEERS

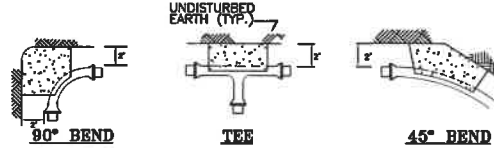
CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITHIN THE PLAN 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.



- NOTES:
- PIPES MAY BE INSTALLED BY EXCAVATING AN OPEN TRENCH WITH SIDE SLOPES OF 1:1 MAXIMUM TO A DEPTH OF 4-FT. INSTALLATIONS DEEPER THAN 4-FT REQUIRE THE USE OF A TRENCH BOX.
  - PIPE MATERIALS SHALL BE AS SPECIFIED ON THE DESIGN PLAN.
  - SAND BLANKET MAY BE OMITTED FOR REINFORCED CONCRETE PIPE.

### WATER PIPE TRENCH INSTALLATION DETAIL

NOT TO SCALE



PIPE SIZE	90° BEND	TEE	PLUG	45° BEND	22 1/2\"/>
6"	5	4	3	2	2
8"	10	8	6	6	3
12"	24	18	8	12	8

NOTE: SIZE OF THRUST BLOCKS MAY BE INCREASED BY THE ENGINEER TO MEET SOIL CONDITIONS FOUND DURING CONSTRUCTION.

### WATER MAIN THRUST BLOCK DETAILS

NOT TO SCALE

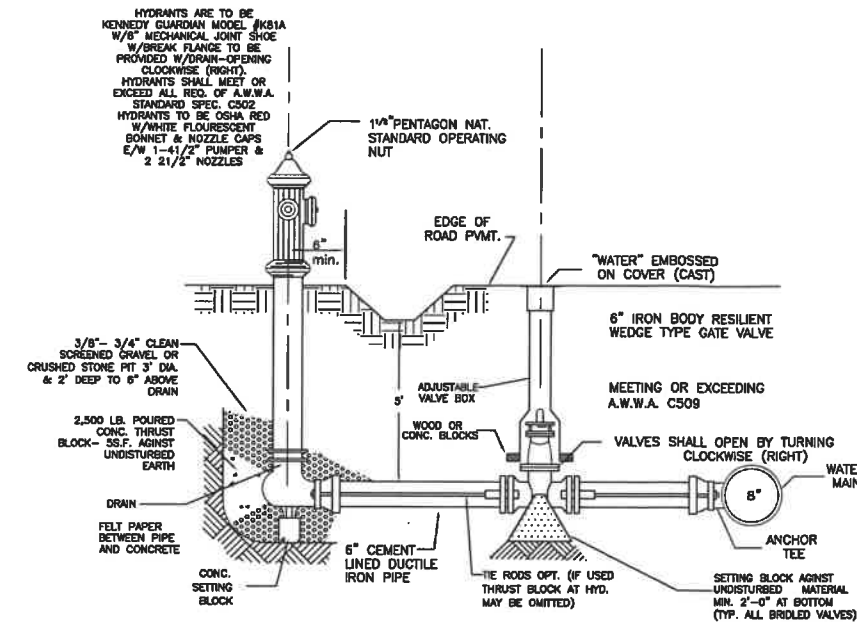
DUCTILE IRON MECHANICAL RETRAINED LENGTH (FEET)																								
PIPE DIAMETER (INCHES)	BENDS																				DEAD END			
	11 1/4"				22 1/2"				45°				90°											
	50 psi	100 psi	150 psi	200 psi	50 psi	100 psi	150 psi	200 psi	50 psi	100 psi	150 psi	200 psi	50 psi	100 psi	150 psi	200 psi	50 psi	100 psi	150 psi	200 psi	50 psi	100 psi	150 psi	200 psi
2"	0	0	1	1	0	1	1	1	1	1	2	3	2	4	5	7	4	8	12	17				
6"	0	0	1	1	1	1	2	2	1	2	3	4	3	5	8	10	6	12	18	23				
8"	0	1	1	1	1	1	2	3	1	3	4	6	3	7	10	13	8	15	23	31				
10"	0	1	1	2	1	2	2	3	2	3	5	7	4	8	12	16	9	19	28	37				
12"	0	1	1	2	1	2	3	4	2	4	6	8	5	9	14	19	11	22	33	44				
	TEE*								REDUCER															
	SAME SIZE				ONE SIZE SMALLER				ONE SIZE SMALLER				TWO SIZE SMALLER											
	50 psi	100 psi	150 psi	200 psi	50 psi	100 psi	150 psi	200 psi	50 psi	100 psi	150 psi	200 psi	50 psi	100 psi	150 psi	200 psi	50 psi	100 psi	150 psi	200 psi				
2"	1	1	1	1	1	1	1	1	1	3	4	5	—	—	—	—								
6"	1	1	1	4	1	1	1	1	3	6	9	12	4	8	12	16								
8"	1	1	3	11	1	1	1	1	3	6	10	13	6	11	17	22								
10"	1	1	8	17	1	1	1	6	3	6	10	13	6	11	17	23								
12"	1	2	13	24	1	1	4	13	5	11	16	22	6	12	18	23								

\* BASED ON A MINIMUM ATTACHED PIPE ALONG RUN (Lr) = 5 FEET

### MECHANICAL RESTRAINED LENGTH SCHEDULE

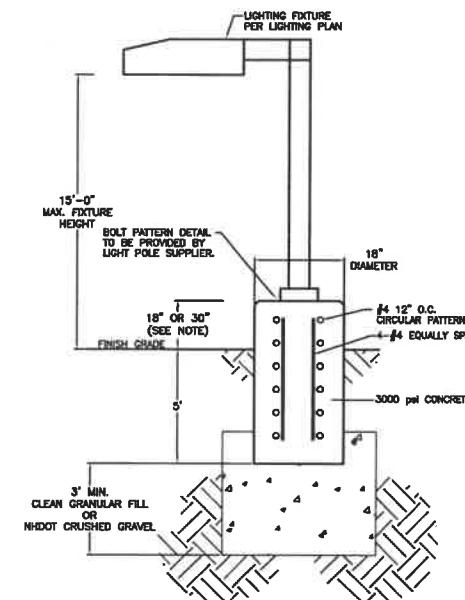
NOT TO SCALE

- NOTES:
- PIPE IS BURIED TO A DEPTH OF 6 FEET WITH A MINIMUM OF 4 INCHES OF COMPACTED GRANULAR MATERIAL UNDER THE PIPE TO THE SPRING LINE OF THE PIPE.
  - THE EXISTING SOIL IS POORLY GRADED GRAVEL AND GRAVEL SAND MIXTURE WITH LITTLE TO NO FINES.
  - ALL CALCULATIONS ARE BASED ON A FACTOR OF SAFETY OF 1.5 TO 1.
  - ALL CALCULATIONS ARE BASED ON THE "RESTRAINED LENGTH CALCULATION PROGRAM" BY EBMA IRON, INC., RELEASE 3.1.



### TYPICAL HYDRANT SECTION

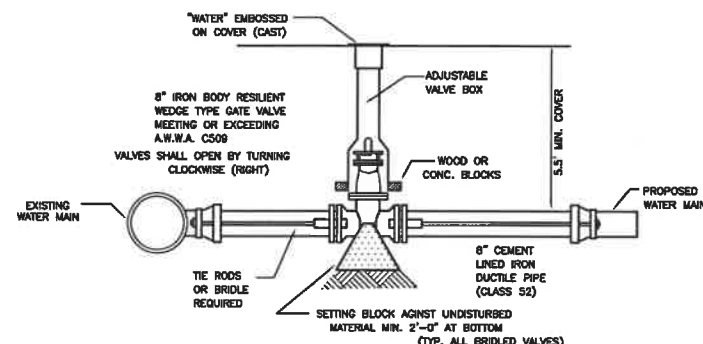
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### POLE MOUNTED LIGHT DETAIL

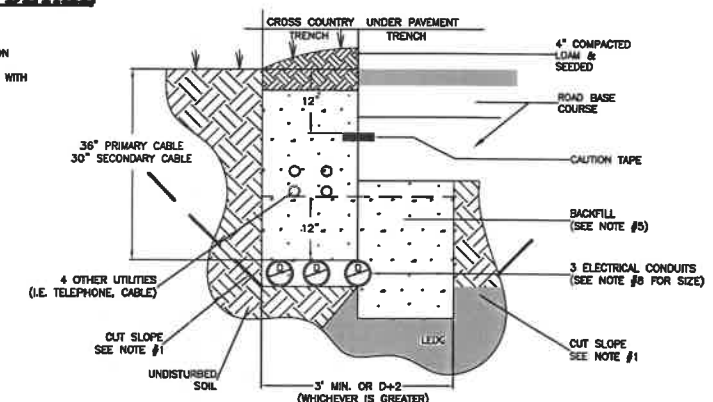
NOT TO SCALE

- NOTE:
- LIGHT POLE BASE SHALL BE 18" ABOVE FINISH GRADE FOR NON VEHICLE IMPACT AREAS AND 30" FOR VEHICLE IMPACT AREAS.
  - THE LIGHT POLE BASES CAN BE PRECAST, WITH COORDINATION WITH THE LIGHTING FIXTURE MANUFACTURE FOR BOLT PATTERN.



### WATER MAIN CONNECTION

NOT TO SCALE



- NOTES:
- ALL NON-METALLIC CONDUIT AND FITTINGS SHALL BE ELECTRICAL GRADE, SCHEDULE 40 PVC, AND SHALL CONFORM TO THE APPLICABLE SECTIONS OF NFPA 70-1990 AND BE UL LISTED. ONLY GRAY-COLORED CONDUIT WILL BE ACCEPTED. ANY PVC CONDUIT NOT MARKING THE PROPER NFPA AND UL MARKINGS WILL NOT BE ACCEPTED. ALL STEEL CONDUITS SHALL CONFORM TO ASTM A500 AND BE ROOD GALVANIZED STEEL. ALL PVC JOINTS MUST BE COATED. STEEL FITTINGS SHALL BE SEALED WITH COMPOUND.
  - ALL 90 DEGREE SWEEPS WILL BE MADE USING ROOD GALVANIZED STEEL WITH A MINIMUM RADIUS OF 36 INCHES FOR PRIMARY CABLES AND 24 INCHES FOR SECONDARY CABLES. ALL STEEL SWEEPS WITHIN 18" OF THE SURFACE SHALL BE PROPERLY GROUNDING.
  - A 10-FOOT HORIZONTAL SECTION OF ROOD GALVANIZED STEEL CONDUIT WILL BE REQUIRED AT EACH SWEAP, UNLESS IN THE OPINION OF THE EVERSOURCE DESIGNER, THE SWEAP-PVC JOINT IS NOT SUBJECT TO FAILURE DURING CABLE PULLING.
  - THE CONDUIT SHALL CROSS UNDER EXISTING UTILITIES AT APPROXIMATELY 90 DEGREES.
  - BACKFILL MAY BE MADE WITH EXCAVATED MATERIAL OR COMPARABLE, UNLESS MATERIAL IS DEEMED UNSUITABLE BY EVERSOURCE. BACKFILL SHALL BE FREE OF FROZEN LUMPS, ROCKS, DEBRIS, AND RUBBISH. ORGANIC MATERIAL SHALL NOT BE USED AS BACKFILL. BACKFILL SHALL BE THOROUGHLY COMPACTED IN 6-INCH LAYERS.
  - A SUITABLE PULL STRING, CAPABLE OF 200 POUNDS OF PULL, MUST BE INSTALLED IN THE CONDUIT BEFORE EVERSOURCE IS NOTIFIED TO INSTALL CABLE. THE STRING SHOULD BE BLOWN INTO THE CONDUIT AFTER THE RUN IS ASSEMBLED TO AVOID BLOWING THE STRING TO THE CONDUIT. ROUTING OF THE CONDUIT AND INSPECTION PRIOR TO BACKFILL WILL BE PROVIDED BY EVERSOURCE. INSTALLATION OF THE CONDUIT WILL BE DONE BY THE CONTRACTOR. THE EVERSOURCE SUPERVISOR MUST BE NOTIFIED 2 BUSINESS DAYS PRIOR TO BACKFILLING THE TRENCH. IN THE EVENT THAT A CABLE CANNOT BE SUCCESSFULLY PULLED THROUGH THE COMPLETED CONDUIT SYSTEM DUE TO A CONSTRUCTION ERROR, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND REPAIR THE INVOLVED CONDUIT. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL RESULTING EXPENSES.
  - NORMAL CONDUIT SIZES FOR EVERSOURCE ARE 3-INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4-INCH FOR THREE PHASE SECONDARY, AND 5-INCH FOR THREE PHASE PRIMARY.
  - ALL CONDUIT INSTALLATIONS MUST CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC SAFETY CODE, STATE AND LOCAL CODES AND ORDINANCES, AND WHERE APPLICABLE THE NATIONAL ELECTRIC CODE.
  - CONDUIT MAY BE INSTALLED BY EXCAVATING AN OPEN TRENCH WITH SIDE SLOPES OF 1:1 MAXIMUM TO A DEPTH OF 4-FT. INSTALLATIONS DEEPER THAN 4-FT REQUIRE THE USE OF A TRENCH BOX.

### ELECTRICAL & UNDERGROUND UTILITY TRENCH INSTALLATION DETAIL

NOT TO SCALE

UTILITY DETAILS  
TAX MAP 224, LOT 309  
DIAMONDBACK DRIVE  
ROCHESTER, NH

PREPARED FOR:  
TARA ESTATES COMMUNITY

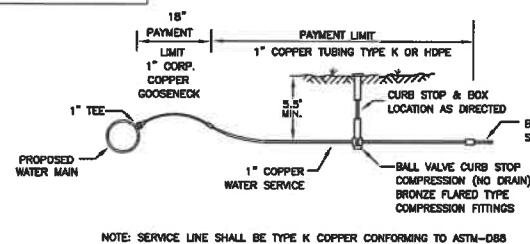
JANUARY 2022

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

### TYPICAL DOMESTIC SERVICE CONNECTION

NOT TO SCALE



NOTE: SERVICE LINE SHALL BE TYPE K COPPER CONFORMING TO ASTM-D88

NORWAY PLAINS ASSOCIATES, INC.

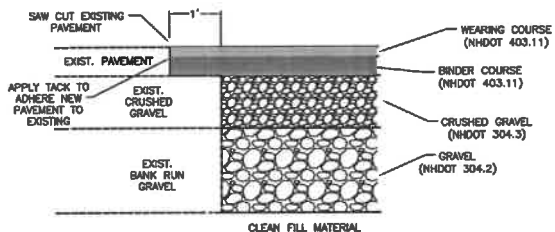
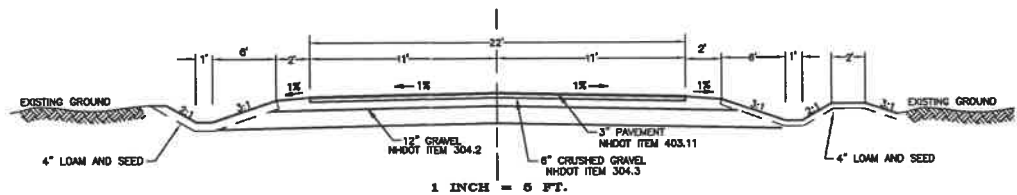
2 Continental Blvd., Rochester, N.H. 603-335-3948

C-14

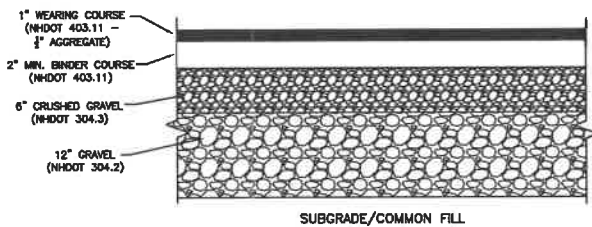




CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITHIN THE PLAN 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.

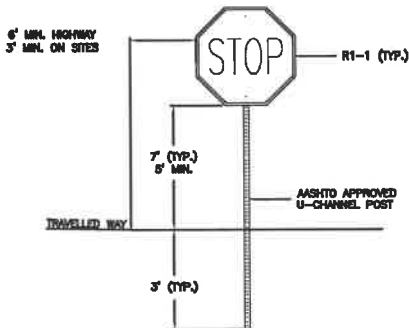


**TYPICAL PAVEMENT MATCHING DETAIL**  
NOT TO SCALE



**PAVEMENT CROSS-SECTION**  
NOT TO SCALE

- PAVEMENT NOTES:
1. PLACE COMMON FILL IN 12 INCH LIFTS. COMPACT COMMON FILL TO 95% MAXIMUM PROCTOR DENSITY.
  2. PLACE GRAVEL IN MAXIMUM 8 INCH LIFTS. COMPACT TO 95% MAXIMUM PROCTOR DENSITY.
  3. PLACE CRUSHED GRAVEL IN MAXIMUM 8 INCH LIFTS. COMPACT TO 95% MAXIMUM PROCTOR DENSITY.
  4. PAVEMENT MUST BE INSTALLED IN TWO COURSES, A BINDER COURSE AND A WEARING COURSE.



- NOTES:
1. SIGN POST SHALL BE AASHTO APPROVED U-CHANNEL OR OTHER PER AASHTO "SPECIFICATIONS FOR STRUCTURAL SUPPORT OF HIGHWAY SIGNS, LUMINAIRES AND SIGNALS", LATEST EDITION.
  2. SIGNS SHALL BE MOUNTED 7 FT FROM GROUND TO BOTTOM EDGE WHERE PARKING AND PARKING LOT MOVEMENTS TAKE PLACE.
  3. SIGNS SHALL BE PLACED SO THAT NEAREST EDGE IS 6 FT. FROM TRAVELED WAY.

**TYPICAL TRAFFIC SIGN**  
NOT TO SCALE

ITEM NO.	SIGN SIZE		TEXT	NO. SIGNS REQ'D
	HEIGHT	WIDTH		
R1-1	30"	30"	STOP	2
W14-2	30"	30"	NO OUTLET	1
ROCHESTER STREET SIGN	9" HIGH (GREEN) W/ 6" WHITE LETTERS		STREET NAME	1

- NOTES:
1. ALL SIGNS SHALL BE PER "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST EDITION.

**SIGN SCHEDULE**  
NOT TO SCALE

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

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.

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