



# TARA ESTATES DIAMONDBACK DRIVE PREPARED FOR TARA ESTATES COMMUNITY DECEMBER 2021

## Northern Black Racer (New Hampshire state threatened species)



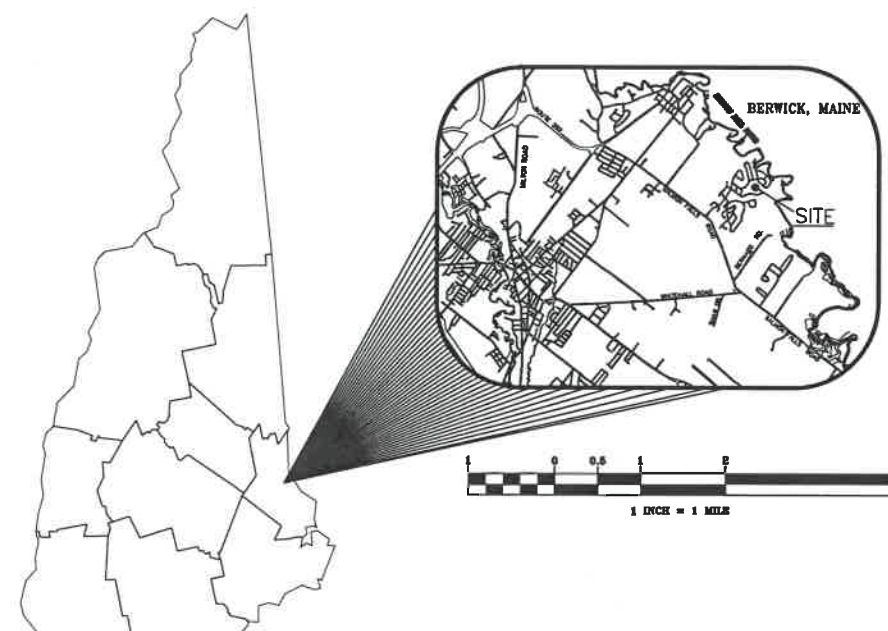
Immediately report sightings to NH Fish and Game  
Melissa Deserubki (603-430-1129) or  
Brendan Clifford (603-644-0815)  
Please report sightings, include specific location and date  
Photographs strongly encouraged

### 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 A FLYER THAT HELPS TO IDENTIFY THIS SPECIES ALONG WITH NHFG CONTACT INFORMATION. SEE PLAN COVER SHEET AND C-3.
- NO SUMPS 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 ENV-WQ 1506.04, UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN WELDED PLASTIC, PLASTIC, OR MULTI-FILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH. SEE PLAN SHEET C-4 FOR SPECS.
- 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 [NHGREVIEW@WILDLIFE.NH.GOV](mailto:NHGREVIEW@WILDLIFE.NH.GOV). EMAIL SUBJECT LINE: NH220-3571, TARA ESTATES DIAMONDBACK EXPANSION, 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.



OVERALL SITE  
1" = 500'



### OWNER OF RECORD

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

### APPLICANT

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

### STATE AND FEDERAL PERMITS:

STATE OF NEW HAMPSHIRE PERMIT NUMBERS:	AoT 2061
NHDES ALTERATION OF TERRAIN:	NOT REQUIRED
NHDES WETLANDS PERMIT:	NOT REQUIRED
NHDES DAM PERMIT:	NOT REQUIRED
NHDES SUBDIVISION PERMIT:	NOT REQUIRED
NHDES SUBSURFACE SYSTEMS PERMIT:	NOT REQUIRED
NHDES WASTEWATER PERMIT:	D2022-0417
NHDOT DRIVEWAY/ENTRANCE PERMIT:	NOT REQUIRED

### 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: NHR1001CW

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

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

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.

### FINAL APPROVAL BY ROCHESTER PLANNING BOARD

CERTIFIED BY: *Ryan O'Connor*

DATE: 5/13/22

Planning Board Approval 4/4/22

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

04/01/2021 17:17:48 (PMT) 17:48 SP-2-000

## LAND SURVEYORS



## CIVIL ENGINEERS



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:

1. N.H. CODE OF ADMINISTRATIVE RULES (ENH-WT 406.01(A)) WITH THE TECHNIQUES OUTLINED IN THE 1987 U.S. ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL, TECHNICAL REPORT Y-57-1.
2. U.S. ARMY CORPS OF ENGINEERS, 2012, REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL, NORTH-CENTRAL AND NORTH-EAST REGION, U.S. ARMY CORPS OF ENGINEERS RESEARCH AND DEVELOPMENT CENTER, ENVIRONMENTAL LABORATORY BROC/EL TR-08-10.
3. U.S. ARMY CORPS OF ENGINEERS, 2016, NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS, NORTH-EAST REGION, U.S. ARMY CORPS OF ENGINEERS RESEARCH AND DEVELOPMENT CENTER, ENVIRONMENTAL LABORATORY.
4. U.S. FISH AND WILDLIFE SERVICE MANUAL FWS/OBS-79/31 ENTITLED "CLASSIFICATION OF WETLANDS AND DEEPWATER HABITATS OF THE UNITED STATES, COWARDIN ET AL. 1979."
5. NEW ENGLAND HYDRO SOILS TECHNICAL COMMITTEE, 2017, 4RD ED., "FIELD INDICATORS FOR IDENTIFYING HYDRO SOILS IN NEW ENGLAND," NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION, LOWELL, MA.
6. U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE, 2010, "FIELD INDICATORS OF HYDROIC 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 HYDROIC 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  
3-6 INCHES PARTIALLY DECOMPOSED ORGANIC MATTER  
6-8 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 FINE SAND, VERY FRAGILE, MASSIVE  
30-98 INCHES LIGHT BROWNISH GRAY (10YR 5/2) 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: UDDORTENTS, 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  
12-64 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: UDDORTENTS, 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 THIS 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



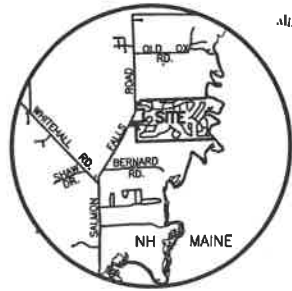
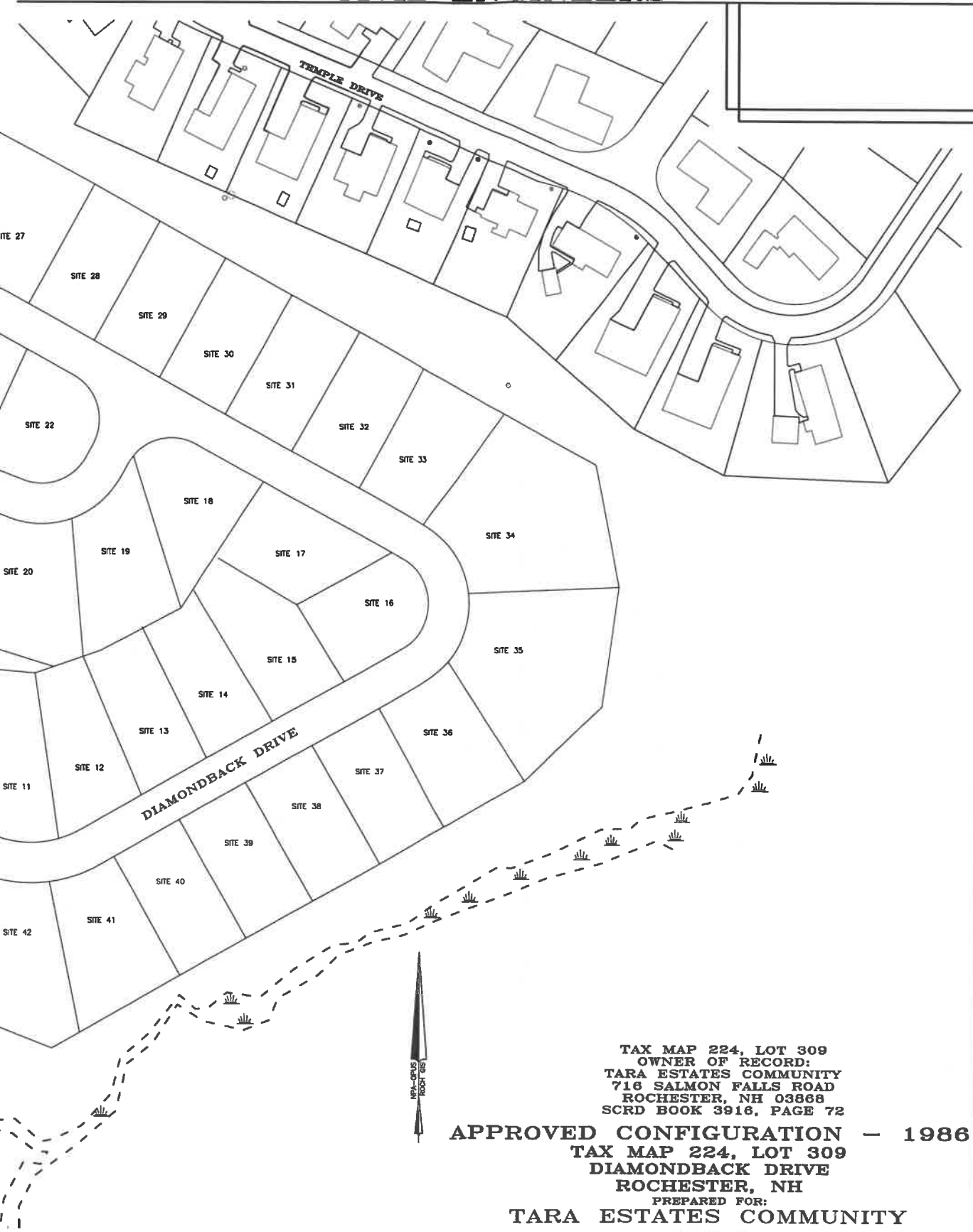
# LAND SURVEYORS

# 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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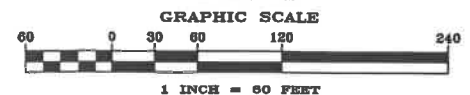
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N.T.S.

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**



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





LEGEND

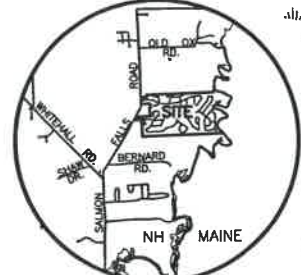
- PROPERTY LINE
- - - JURISDICTIONAL WETLANDS
- EXISTING TREE LINE
- EXISTING HYDRANT
- EXISTING CATCH BASIN
- PROPOSED BUILDING
- PROPOSED PAVEMENT
- PROPOSED AREA OF DISTURBANCE
- PROPOSED TREE LINE

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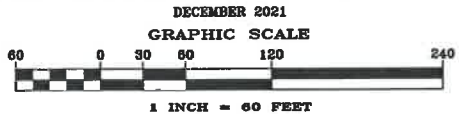
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MIS COORDINATES  
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E: 1183798.33

CITY OF ROCHESTER  
MIS COORDINATES  
N: 298335.61  
E: 1182223.33



LOCUS  
N.T.S.

TAX MAP 224, LOT 309  
OWNER OF RECORD:  
TARA ESTATES COMMUNITY  
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**



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PLAN NO. C-2993/SP-2  
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2 Continental Blvd., Rochester, N.H. 603-335-3948



Drawing Location: J:\A\2017\17149\DWG\17149-SP-2.dwg  
Thu, 17 Feb 2023 - 12:11 pm

## LAND SURVEYORS

## CIVIL ENGINEERS

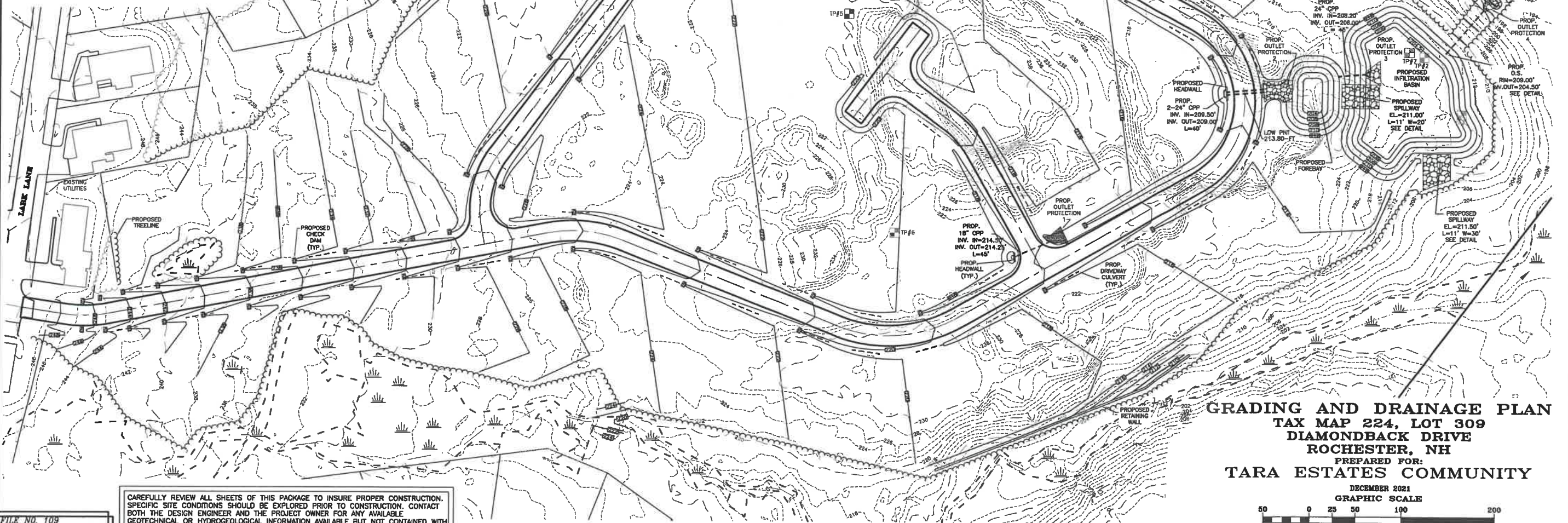


REVISION:  
8/3/2021 - INFILTRATION BASIN BOTTOM CHANGE  
ELEVATION FROM 208.0' TO 204.5'  
FOREBAY OUTLET CULVERT INVERT FROM  
208.2' TO 205.2'  
12/14/2021 - ADD NOTES

- 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 603-271-2481.  
PLEASE ATTEMPT TO PHOTOGRAPH THE SPECIES IF POSSIBLE.

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



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ASSOCIATES, INC. (603)-335-3948.

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

# NORWAY PLAINS ASSOCIATES, INC.

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

DECEMBER 2021  
GRAPHIC SCALE  
50 0 25 50 100 200  
(IN FEET)  
1 INCH = 50 FT.

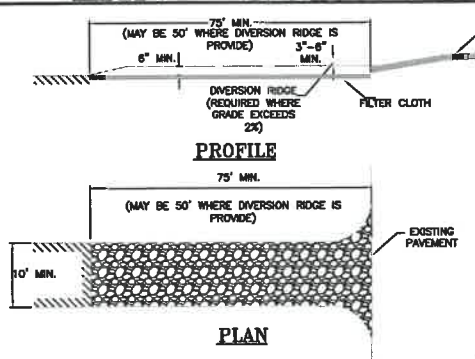
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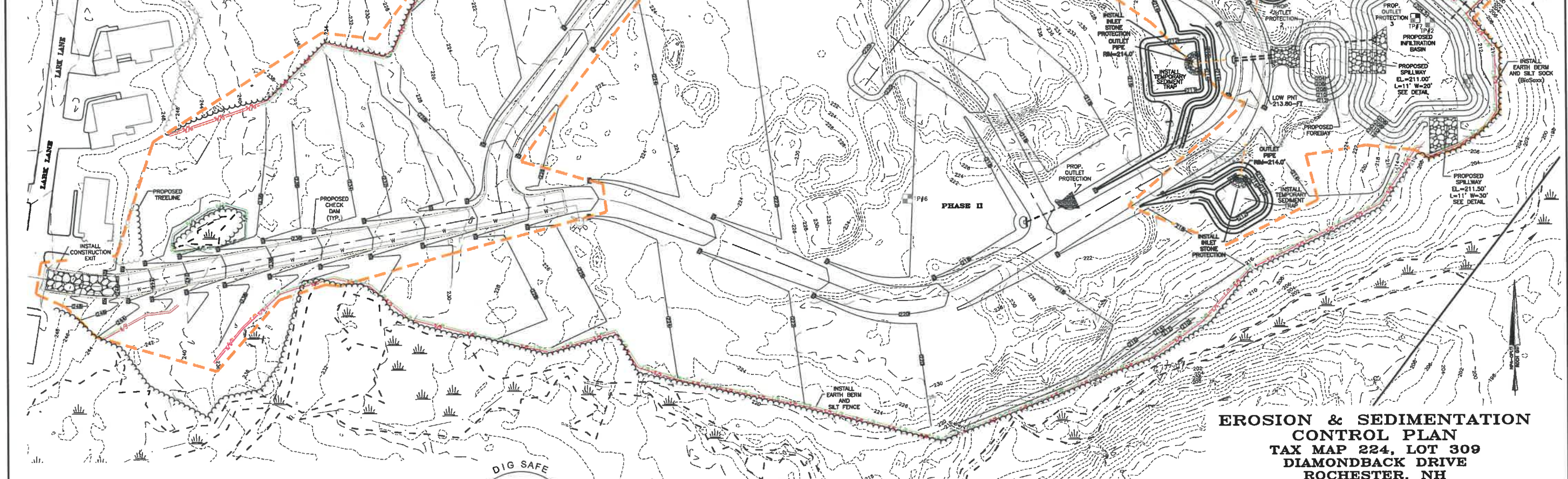
REVISION: 6/3/2021 - ADD SEDIMENT TRAP LOCATIONS  
12/14/2021 - ADD CONSTRUCTION EXIT DETAIL  
ADD NOTES

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

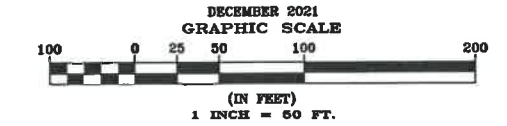


**TEMPORARY CONSTRUCTION EXIT**  
NOT TO SCALE

- MAINTENANCE REQUIREMENTS:**
1. WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHALL BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL, REGRADED ON SITE, AND STABILIZED. THE ENTRANCE SHALL 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 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**  
**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.



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





## 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. SHALL, (AUGUST 1992)

## TEMPORARY VEGETATION: SPECIFICATIONS

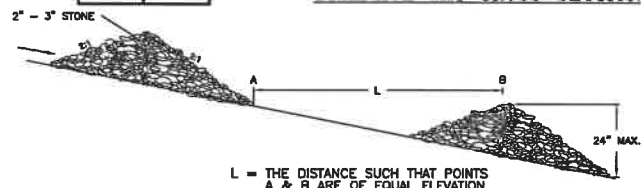
- SITE PREPARATION:**
- INSTALL NEEDED EROSION AND SEDIMENT CONTROL MEASURES SUCH AS SILTATION BARRIERS, DIVERSIONS, AND SEDIMENT TRAPS.
  - GRADE AS NEEDED FOR THE ACCESS OF EQUIPMENT FOR SEEDING PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING.
  - RUNOFF SHALL BE DIVERTED FROM THE SEEDING AREA.
  - 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:**
- STONES AND TRASH SHALL BE REMOVED SO AS NOT TO INTERFERE WITH THE SEEDING AREA.
  - WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
  - IF APPLICABLE FERTILIZER AND ORGANIC SOIL AMENDMENTS SHALL BE APPLIED DURING THE GROWING SEASON.
  - APPLY LIME 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 LIME MAY BE APPLIED AT THE FOLLOWING RATES:
- LIME 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:**
- APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL CULTIPACKER 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.
  - TEMPORARY SEED SHALL TYPICALLY OCCUR PRIOR TO SEPTEMBER 15.
  - 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.
  - VEGETATED GROWTH COVER OF AT LEAST 65% 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:**
- TEMPORARY SEEDING SHALL BE INSPECTED WEEKLY AFTER ANY RAINFALL EXCEEDING 1/2 INCH IN 24 HOURS ON ACTIVE CONSTRUCTION SITES. TEMPORARY SEEDING SHALL BE INSPECTED JUST PRIOR TO SEPTEMBER 15, TO ASCERTAIN WHETHER ADDITIONAL SEEDING OR STABILIZATION IS REQUIRED TO PROTECT THE WINTER PERIOD.
  - BASED ON INSPECTION, AREAS SHALL BE RESEEDED 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.
  - IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND AREAS SHALL BE RESEEDED, 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	19
0.100	15
0.120	15
0.150	10

DRAINAGE WAY CROSS-SECTION



## SPACING BETWEEN STONE CHECK DAMS

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

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

## STONE CHECK DAM INSTALLATION DETAIL

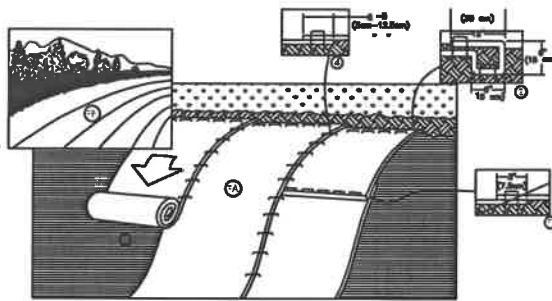
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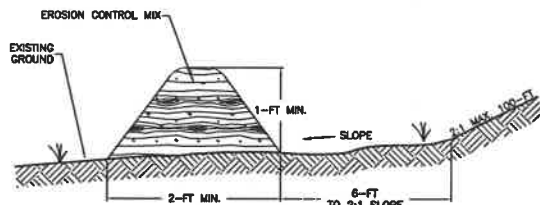


SLOPE INSTALLATION

- GENERAL NOTES:**
- 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.
- MAINTENANCE REQUIREMENTS:**
- 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.
  - 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 RESEEDED, AND THE AFFECTED AREA OF MAT SHALL BE RE-INSTALLED.
- CONSTRUCTION SPECIFICATIONS:**
- MANUFACTURER'S INSTALLATION INSTRUCTIONS:
    - PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP'S), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-0-SEED DO NOT SEED PREPARED AREA. CELL-0-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN. 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" (30 CM) OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES 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/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP'S.
    - 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/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHALL BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
    - THE EDGES OF PARALLEL RECP'S MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) OVERLAP DEPENDING ON RECP'S TYPE.
    - 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. NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP'S.
  - SITE PREPARATION:
    - PROPER SITE PREPARATION IS ESSENTIAL TO ENSURE COMPLETE CONTACT OF THE PROTECTION MATTING WITH THE SOIL.
    - GRADE AND SHAPE AREA PRIOR TO INSTALLATION.
    - REMOVE ALL ROCKS, CLODS, TRASH, VEGETATIVE OR OTHER OBSTRUCTIONS SO THAT THE INSTALLED BLANKETS WILL HAVE DIRECT CONTACT WITH SOIL.
    - PREPARE SEEDING BY LOOSENING 2-3 INCHES OF TOPSOIL ABOVE FINAL GRADE.
    - INCORPORATE AMENDMENTS, SUCH AS LIME AND FERTILIZER, INTO SOIL ACCORDING TO SOIL TEST AND THE SEEDING PLAN.
  - 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 RESEEDED.
  - 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

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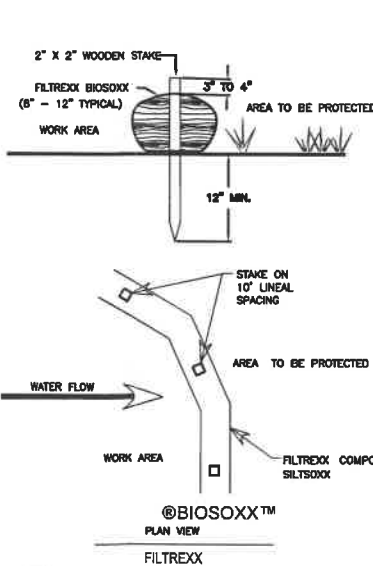


## EROSION CONTROL MIX EARTH BERM CROSS-SECTION

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

- CONSTRUCTION SPECIFICATIONS:**
- EROSION CONTROL MIX CAN BE MANUFACTURED ON OR OFF OF THE PROJECT SITE.
  - EROSION CONTROL MIX MUST BE COMPOSED OF ORGANIC MATERIAL, SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE SHREDDED BARK, STUMP DRINKING, COMPOSTED BARK, OR ACCEPTABLE MANUFACTURED PRODUCTS. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS WILL NOT BE ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.
  - COMPOSITION OF THE EROSION CONTROL MIX SHOULD BE AS FOLLOWS:
    - 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.
    - ORGANIC MATTER = 25-65% DRY WEIGHT BASIS
    - PARTICLES PASSING BY WEIGHT:
 

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



PLAN VIEW

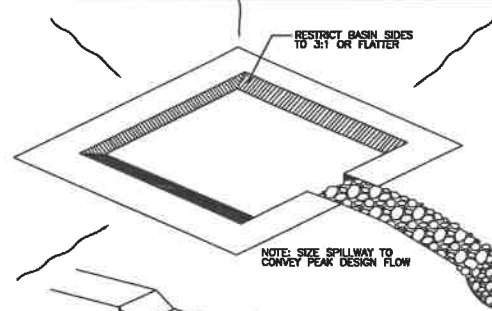
- NOTES:**
- ALL MATERIAL TO MEET SPECIFICATIONS. BIODEGRADABLE WOVEN MATERIAL.
  - COMPOST MATERIAL TO BE DISPERSED ON SITE UP SLOPE FROM PROTECTED AREA.

## BIOSOXX DETAIL

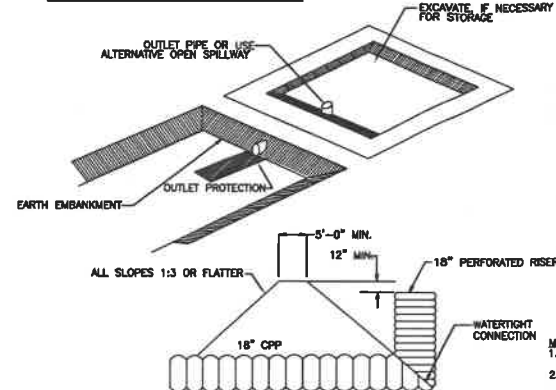
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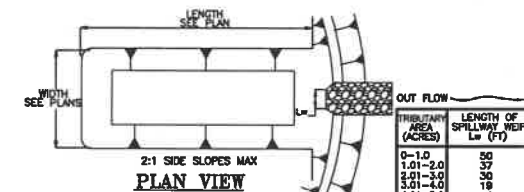
REVISION: 12/14/2021 -- ADD BIOSOXX DETAIL



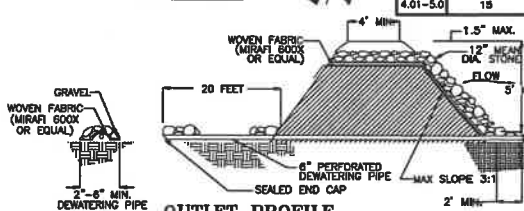
TYPICAL OPEN SPILLWAY



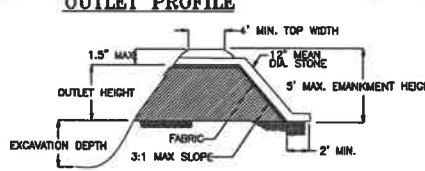
EMBANKMENT SECTION THRU RISER



PLAN VIEW

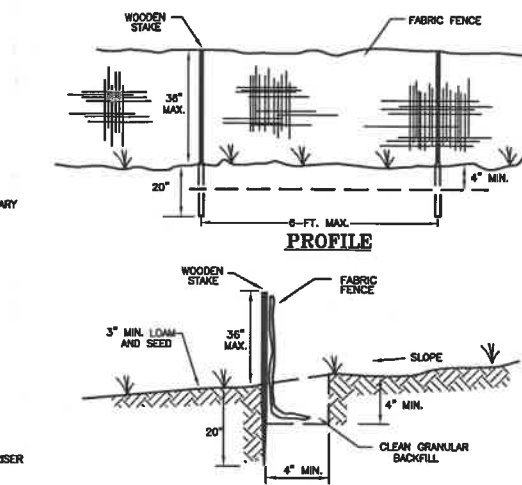


OUTLET PROFILE



ALTERNATE OUTLET PROFILE

## SEDIMENT TRAP



CROSS-SECTION

- MAINTENANCE REQUIREMENTS:**
- FENCES SHALL BE INSPECTED AND MAINTAINED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALLS.
  - 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.
  - 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.
  - SHALL THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
  - 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 SEEDING.
  - IF THERE IS EVIDENCE OF END FLOW OR PROPERLY INSTALLED BARRIERS, EXTEND BARRIERS UPHILL, OR CONSIDER REPLACING THEM WITH OTHER MEASURES, SUCH AS TEMPORARY DIVERSIONS AND SEDIMENT TRAPS.
  - SILT FENCES HAVE A USEFUL LIFE OF ONE SEASON ON LONGER CONSTRUCTION PROJECTS, SILT FENCE SHALL BE REPAIRED PERIODICALLY AS REQUIRED TO MAINTAIN EFFECTIVENESS.

- CONSTRUCTION SPECIFICATIONS:**
- 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.
  - THE MAXIMUM CONTRIBUTING DRAINAGE AREA ABOVE THE FENCE SHALL BE LESS THAN 1 ACRE PER 100 LINEAR FEET OF FENCE.
  - THE MAXIMUM LENGTH OF SLOPE ABOVE THE FENCE SHALL BE 100 FEET.
  - THE MAXIMUM SLOPE ABOVE THE FENCE SHALL BE 2:1.
  - FENCES SHALL BE INSTALLED FOLLOWING THE CONTOUR OF THE LAND AS CLOSELY AS POSSIBLE, AND A. THE ENDS OF THE FENCE SHALL BE FLARED UPSLOPE. B. THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 4 INCHES IN DEPTH AND 12 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 OR 1/4-INCH STONE.
  - THE SOIL SHALL BE COMPACTED OVER THE EMBEDDED FABRIC.
  - SUPPORT POSTS SHALL BE SIZED AND ANCHORED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS WITH MAXIMUM POST SPACING OF 8 FEET.
  - ADJOINING SECTIONS OF THE FENCE SHALL BE OVERLAPPED BY A MINIMUM OF 8 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 CASUALTY TIES.
  - SILT FENCING SHALL NOT BE STAPLED OR NAILED TO TREES.
  - THE FILTER FABRIC SHALL BE A PERMANENT SHEET OF PROPPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER.
  - THE FILTER FABRIC SHALL CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 DEGREES FAHRENHEIT TO 120 DEGREES FAHRENHEIT.
  - POSTS FOR SILT FENCES SHALL BE EITHER 4-INCH DIAMETER WOOD OR 1.33 POUNDS PER LINEAR FOOT STEEL. WITH A MINIMUM LENGTH OF 5 FEET. STEEL POSTS SHALL HAVE PROJECTIONS FOR FASTENING WIRE TO THEM. POSTS SHALL BE PLACED ON THE DOWN SLOPE SIDE OF THE FABRIC.
  - THE HEIGHT OF A SILT FENCE SHALL NOT EXCEED 36 INCHES AS HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.
  - 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 SPLICED TOGETHER ONLY AT SUPPORT POSTS WITH A MINIMUM 6-INCH OVERLAP, AND SECURELY SEALED.
  - A MANUFACTURED SILT FENCE SYSTEM WITH INTEGRAL POSTS MAY BE USED.
  - POST SPACING SHALL NOT EXCEED 8 FEET.
  - THE STANDARD STRENGTH OF FILTER FABRIC SHALL BE STAPLED OR WIRE TO THE POST, AND 8 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
  - THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.
  - 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 DISTURBS THE SOIL UPWARD AND SLIGHTLY DISPLACES THE SOIL, MAINTAINING THE SOIL'S PROFILE AND CREATING AN OPTIMAL CONDITION FOR SUBSEQUENT MECHANICAL COMPACTION.
  - SILT FENCES SHALL BE INSTALLED WITH "SMILES" OR "J-HOOKS" TO REDUCE THE DRAINAGE AREA THAT ANY SEDIMENT WILL IMPOUND.
  - THE ENDS OF THE FENCE SHALL BE TURNED UPHILL.
  - SILT FENCES SHALL BE SET AT LEAST 8 FEET FROM THE TOE OF A SLOPE TO ALLOW SPACE FOR SHALLOW PONDS AND TO ALLOW FOR MAINTENANCE ACCESS WITHOUT DISTURBING THE SLOPE.
  - 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

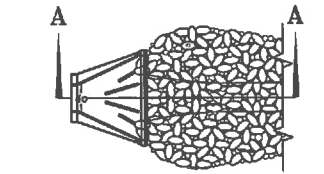
TEMPORARY EROSION & SEDIMENTATION CONTROL  
 TAX MAP 224, LOT 309  
 DIAMONDBACK DRIVE  
 ROCHESTER, NH

PREPARED FOR:  
 TARA ESTATES COMMUNITY  
 DECEMBER 2021

C-4



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.

**RIP-RAP GRADATION**

d50 = 3"		
% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE (INCHES)	
100	5	8
85	4	5
50	3	2
15	1	2

d50 = 9"		
% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE (INCHES)	
100	13.5	18
85	11.7	16.4
50	9	13.5
15	2.7	4.5

d50 = 12"		
% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE (INCHES)	
100	16	24
85	13.6	21.6
50	12	18
15	3.6	6

**APRON DIMENSION TABLE**

OUTLET PROT. #	PIPE OUTLET	W <sub>1</sub>	W <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	#59
1	18" CPP	5'	20'	16"	8"	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:**

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

**CONSTRUCTION SPECIFICATIONS:**

- PREPARE THE SUB-GRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIP-RAP TO THE GRADES SHOWN ON THE PLANS.
- MINIMUM 6" SAND/GRAVEL BEDDING OR GEOTEXTILE FABRIC REQUIRED UNDER ALL ROCK RIP-RAP.
- THE ROCK OR GRAVEL USED FOR FILTER OR RIP-RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
- 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 JOINTS TWO (2) PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
- 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.
- 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:**

- 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.
- THE CHANNEL IMMEDIATELY DOWNSTREAM FROM THE OUTLET SHOULD BE CHECKED TO SEE THAT NO EROSION IS OCCURRING.
- THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE OUTLET PROTECTION APRON.

**PIPE OUTLET PROTECTION DETAIL****DUST CONTROL PRACTICES:**

- APPLY DUST CONTROL MEASURES AS NECESSARY TO MAINTAIN CONTROL OF DUST ON SITE.
- WATER APPLICATION:
  - MOISTEN EXPOSED SOIL SURFACES PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST.
  - AVOID EXCESSIVE APPLICATION OF WATER THAT WOULD RESULT IN MOBILIZING SEDIMENT AND SUBSEQUENT DEPOSITION IN NATURAL WATERBODIES.
- STONE APPLICATION:
  - COVER SURFACE WITH CRUSHED OR COARSE GRAVEL.
  - IN AREAS NEAR WATERWAYS USE ONLY CHEMICALLY STABILIZED OR WASHED AGGREGATE.
- 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 TACKERS OR CHEMICAL TREATMENTS SUCH AS CALCIUM CHLORIDE, ETC.)

**STOCKPILE PRACTICES:**

- LOCATE STOCKPILES A MINIMUM OF 50-FT. AWAY FROM CONCENTRATED FLOWS OF STORMWATER, DRAINAGE COURSES OR INLETS.
- PROTECT ALL STOCKPILES FROM STORMWATER RUN-ON USING TEMPORARY PERIMETER MEASURES SUCH AS DIVERSIONS, BERM, SANDBAGS OR OTHER APPROVED PRACTICES.
- STOCKPILES SHALL BE SURROUNDED BY SEDIMENT BARRIERS AS DESCRIBED ON THE PLANS AND IN NHSM VOL. 3. TO PREVENT MIGRATION OF MATERIAL BEYOND THE IMMEDIATE CONFINES OF THE STOCKPILE.
- IMPLEMENT WIND EROSION CONTROL PRACTICES AS APPROPRIATE ON ALL STOCKPILED MATERIAL.
- PLACE BAGGED MATERIALS ON PALLETS OR UNDERCOVER.

**PROTECTION OF INACTIVE STOCKPILES:**

- 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.
- 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.

**PROTECTION OF ACTIVE STOCKPILES:**

- 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.
- WHEN A STORM IS PREDICTED, STOCKPILES SHALL BE PROTECTED WITH AN ANCHORED PROTECTIVE COVERING.

**WINTER STABILIZATION & CONSTRUCTION PRACTICES:****MAINTENANCE REQUIREMENTS:**

- MAINTENANCE MEASURES SHALL BE PERFORMED THROUGHOUT CONSTRUCTION, INCLUDING OVER THE WINTER PERIOD. AFTER EACH RAINFALL, SNOWFALL, 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.
- 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. WITHIN 24 HOURS OF STOCKPILING SOIL MATERIALS SHALL BE PROTECTED AGAINST EROSION BY THE METHODS DISCUSSED IN NHSM, VOL. 3 AND ELSEWHERE IN THIS PLAN SET, PRIOR TO ANY THAW OR SPRING MELT EVENT.
- 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.
  - 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 NHSM, VOL. 3 FOR SPECIFICATIONS).
  - 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.
  - ALL STONE COVERED SLOPES MUST BE CONSTRUCTED AND STABILIZED BY OCTOBER 15.
  - INSTALLATION OF ANCHORED HAY MULCH OR EROSION CONTROL MIX SHALL NOT OCCUR OVER SNOW OF GREATER THAN 1 INCH IN DEPTH.
  - ALL MULCH APPLIED DURING WINTER SHALL BE ANCHORED (I.E. BY NETTING, TRACKING, WOOD CELLULOSE FIBER).
  - 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 BODY.
  - 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 DIFFICULT TO TRANSPORT DUE TO HIGH SOIL MOISTURE CONTENT.
  - INSTALLATION OF EROSION CONTROL BLANKETS SHALL NOT OCCUR OVER SNOW OF GREATER THAN 1 INCH IN DEPTH OR ON FROZEN GROUND.
  - ALL GRASS-LINED DITCHES AND CHANNELS SHALL BE CONSTRUCTED BY SEPTEMBER 1. ALL DITCHES AND CHANNELS WHICH DO NOT EXHIBIT BARE 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. IF STONE LINING IS NECESSARY, THE CONTRACTOR MAY NEED TO RE-GRADE THE DITCH AS REQUIRED TO PROVIDE ADEQUATE CROSS-SECTION ALLOWING FOR PROPER FLOW.
  - ALL STONE LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY OCTOBER 15.
  - AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING AREAS WHERE ACTIVE CONSTRUCTION HAS STOPPED FOR THE WINTER 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.
  - SEDIMENT BARRIERS THAT ARE INSTALLED DURING FROZEN CONDITIONS SHALL NOT BE INSTALLED WHEN FROZEN CONDITIONS PREVENT PROPER EMBEDMENT OF THESE BARRIERS.

**GENERAL CONSTRUCTION PHASING:**

- 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:
    - AIN AREAS THAT WILL NOT BE PAVED;
    - A MINIMUM OF 85% VEGETATIVE COVER HAS BEEN ESTABLISHED;
    - A MINIMUM OF 3-INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR A CERTIFIED COMPOST BLANKET HAS BEEN INSTALLED; OR
    - EROSION CONTROL BLANKETS HAVE BEEN INSTALLED.
  - BASE COURSE GRAVELS HAVE BEEN INSTALLED.
- 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 DATE OF EXPOSURE. IF A SHORTER TIME PERIOD IS SPECIFIED BY LOCAL AUTHORITIES, THE CONSTRUCTION SEQUENCE APPROVED AS PART OF THE ISSUED PERMIT OR AN INDEPENDENT MONITOR.
- 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.
  - THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, NO MORE THAN 5 ACRES SHALL BE DISTURBED (NOT STABILIZED) AT ANY TIME.
  - ONLY DISTURBS, CLEAR, OR GRADE AREAS NECESSARY FOR CONSTRUCTION.
    - FLAG OR OTHERWISE DELINEATE AREAS NOT TO BE DISTURBED.
    - EXCLUDE VEHICLES AND CONSTRUCTION EQUIPMENT FROM THESE AREAS TO PRESERVE NATURAL VEGETATION.
  - STOCKPILES, BORROW AREAS AND SPOILS SHALL BE STABILIZED AS DESCRIBED UNDER "SOIL STOCKPILE PRACTICES".
  - 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.
  - AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND/OR OTHER OBJECTIONABLE MATERIALS.
  - AREAS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3-INCHES PRIOR TO PLACEMENT OF TOPSOIL. TOPSOIL SHALL BE PLACED WITHOUT SIGNIFICANT COMPACTION TO PROVIDE A LOOSE BEDDING FOR PLACEMENT OF SEED.
  - 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.
  - 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.
  - 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.
  - 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.
  - THE OUTER FACE OF THE FILL SLOPE SHALL BE ALLOWED TO STAY LOOSE, NOT ROLLED OR COMPACTED, OR BLADE SMOOTHED. A BULLDOZER MAY RUN UP AND DOWN THE FILL SLOPE SO THE DOZER TREADS (CLEAT TRACKS) CREATE GROOVES PERPENDICULAR TO THE SLOPE. IF THE SOIL IS NOT TOO MOIST, EXCESSIVE COMPACTION WILL NOT OCCUR. SEE "SURFACE ROUGHENING" IN THE NHSM, VOL. 3.
  - ROUGHEN THE SURFACE OF ALL SLOPES DURING THE CONSTRUCTION OPERATION TO RETAIN WATER, INCREASE INFILTRATION AND FACILITATE VEGETATION ESTABLISHMENT.
  - USE SLOPE BREAKERS 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.
  - 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.
  - 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.
  - ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.
  - THE PROJECT SHALL BE CONSTRUCTED TO MEET ALL REQUIREMENTS AND INTENT OF RSA 430:33 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" (NHSM, VOL. 3)

**PERMANENT VEGETATION:****SPECIFICATIONS:****SITE PREPARATION:**

- INSTALL NEEDED EROSION AND SEDIMENT CONTROL MEASURES SUCH AS SILTATION BARRIERS, DIVERSIONS, AND SEDIMENT TRAPS.
- GRADE AS NEEDED FOR THE ACCESS OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING.
- RUNOFF SHALL BE DIVERTED FROM THE SEEDBED AREA.
- 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:**

- WORK LIME 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.
- REMOVE FROM THE SURFACE ALL STONES, SNAGS OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, CONCRETE CLOUDS, LUMPS, TRASH OR OTHER UNSUITABLE MATERIAL.
- INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE TILLED AND FIRMED AS ABOVE.
- WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
- IF APPLICABLE, FERTILIZER AND ORGANIC SOIL AMENDMENTS SHALL BE APPLIED DURING THE GROWING SEASON.
- APPLY LIME AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. FERTILIZER SHALL BE RESTRICTED TO LIME, WOOD ASH OR LOW PHOSPHATE AND SLOW RELEASE NITROGEN VARITIES, UNLESS A SOIL TEST WARRANTS OTHERWISE. IF SOIL TESTING IS NOT FEASIBLE OR WHEN, OR WHERE TIMING IS CRITICAL FERTILIZER AND LIME/STONE MAY BE APPLIED AT THE FOLLOWING RATES:
 

LIMESTONE APPLICATION RATE = 3 TONS/ACRE (138 LB./1,000-SF)  
EQUVALENT TO SOX CALCIUM PLUS MAGNESIUM OXIDE

FERTILIZER APPLICATION RATE = 670 LB./ACRE (20 LB./1,000-SF)  
LOW PHOSPHATE FERTILIZER (6-0-4) OR EQUIVALENT

**SEEDING:**

- INOCULATE ALL LEGUME SEED WITH THE CORRECT TYPE OF INOCULANT.
- APPLY SEED UNIFORMLY BY HAND, CYCLOM SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (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.
- WHERE FEASIBLE OTHER TYPE OTHER CULTIPACKER TYPE SEEDER OR HYDROSEEDER IS USED, THE SEEDBED SHALL BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG.
- SPRING SEEDING USUALLY GIVES THE BEST RESULTS FOR ALL SEED MIXES OR WITH LEGUMES. PERMANENT SEEDING SHALL BE COMPLETED 45 DAYS PRIOR TO FIRST KILLING FROST. WHEN CROWN VETCH IS SEEDING IN LATE SUMMER AT LEAST 35% OF THE SEED SHALL BE HARD SEED (UNSCARIFIED). IF SEEDING CANNOT BE DONE WITHIN THE SPECIFIED SEEDING DATES, MULCH ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE DESCRIBED IN THE NHSM, VOL. 3, AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.
- 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 NHSM, VOL. 3.
- 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:**

- 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 2 INCHES IN DIAMETER.
- SLOPES MUST BE NO STEEPER THAN 2:1 (2 FEET HORIZONTALLY BY 1 FOOT VERTICALLY).
- 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.
- SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.

**MAINTENANCE REQUIREMENTS:**

- 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 OPERATION OF THE SITE.
- SEEDING AREAS SHALL BE MOWED AS REQUIRED TO MAINTAIN A HEALTHY STAND OF VEGETATION. MOWING HEIGHT AND FREQUENCY DEPENDS OF TYPE OF PLANT COVER.
- BASED ON INSPECTION, AREAS SHALL BE RESEED TO ACHIEVE FULL STABILIZATION OF EXPOSED SOILS.
- AT A MINIMUM 85% OF THE SOIL SURFACE SHALL BE COVERED BY VEGETATION.
- 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	lbs./acre	lbs./1,000-SF
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	TALL FESCUE	20	0.45
		CREeping RED FESCUE	20	0.45
		REDTOP	2	0.05
		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	2	0.05
		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	2	0.05
		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
		TOTAL	100	2.30

**SOURCES:**

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

**PROJECT SPECIFIC CONSTRUCTION PHASING:**

- 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.
- 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-3 PRIOR TO EARTH MOVING OPERATIONS.
- INSTALL ORANGE SNOW FENCE AROUND THE PERIMETER OF THE INFILTRATION BASIN AND THE FENCE SHALL REMAIN IN PLACE UNTIL CONSTRUCTION OF THE BASIN HAS STARTED.
- 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.
- 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.
- STOCKPILE STRIPPED TOPSOIL AND CUT MATERIAL TO BE REUSED ON SITE IN AN APPROPRIATE LOCATION IN ACCORDANCE WITH THE "SOIL STOCKPILE PRACTICES".
- INSTALL TEMPORARY SEDIMENT TRAPS AS SHOWN ON SHEET C-3. SEE SHEET C-4 FOR SEDIMENT TRAP DETAILS.
- ALL POND AND SWALES MUST BE INSTALLED BEFORE ROUGH GRADING OF THE SITE.
- 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.
- RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMPs ARE STABILIZED.
- ALL DITCHES/SWALES AND BASINS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- AS SUBGRADE IS ACHIEVED INSTALL REMAINING SEDIMENT CONTROL BARRIERS WITHIN THE SITE (I.E. ADDITIONAL SILT FENCE, CHECK DAMS AND SEDIMENT CONTROLS, ETC.).
- INSTALL ALL CLOSED DRAINAGE SYSTEM COMPONENTS (I.E. PIPE CULVERTS AND CATCH BASINS) PER THE CORRESPONDING DETAILS AND AS SHOWN ON SHEET C-2 AND C-3.
- ALL CUT AND FILL SLOPES AND LAWN AREAS NOT TO BE PAVED SHALL BE LOADED AND SEEDING FOR PERMANENT VEGETATION AND STABILIZATION AS DESCRIBED UNDER THE "PERMANENT VEGETATION PRACTICES" WITHIN 3 DAYS OF ACHIEVING FINAL GRADE.
- INSTALL ALL GRAVEL BASE AND CRUSHED GRAVEL MATERIALS FOR THE ROADWAY AS SPECIFIED IN THE CORRESPONDING DETAILS.
- THE PAVED AREAS SHALL BE STABILIZED (CONSTRUCTED TO GRAVEL BASE COURSE) WITHIN 3 DAYS OF ACHIEVING FINISHED SUBGRADE ELEVATIONS.
- INSTALL 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.
- 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 NHSM, VOL. 3 SHOULD BE EMPLOYED.

**MAINTENANCE AND INSPECTION:**

- 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.
- EXCESS SEDIMENT MUST BE REMOVED FROM TEMPORARY SEDIMENT, EROSION CONTROL AND STORMWATER MANAGEMENT PRACTICES WHEN IT REACHES PRESCRIBED THRESHOLDS DISCUSSED IN THE DETAILS FOR EACH PRACTICE.
- ALL DAMAGED TEMPORARY AND PERMANENT SEDIMENT, EROSION CONTROL AND STORMWATER MANAGEMENT PRACTICES SHOULD BE REPAIRED OR REPLACED IMMEDIATELY UPON NOTICE.
- SEDIMENT SHALL BE DISPOSED OF PROPERLY EITHER ON SITE OR OFF SITE. PROJECT COMPLETION AND STABILIZATION.
  - UPON PRELIMINARY 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.
  - ACCUMULATED SEDIMENT SHALL BE REMOVED FROM ALL SWALE, CHECK DAMS AND THE SEDIMENT FOREBAY TO THE INFILTRATION BASIN.

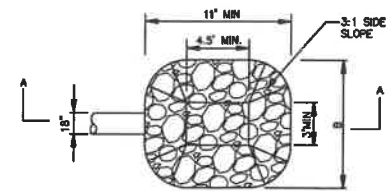
**ENVIRONMENTAL MONITOR**

THE PERMITTEE SHALL EMPLOY

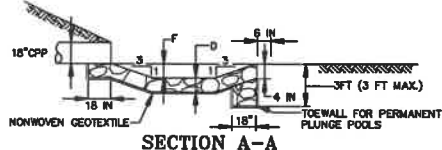




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PLAN VIEW



SECTION A-A

CONSTRUCTION SPECIFICATIONS

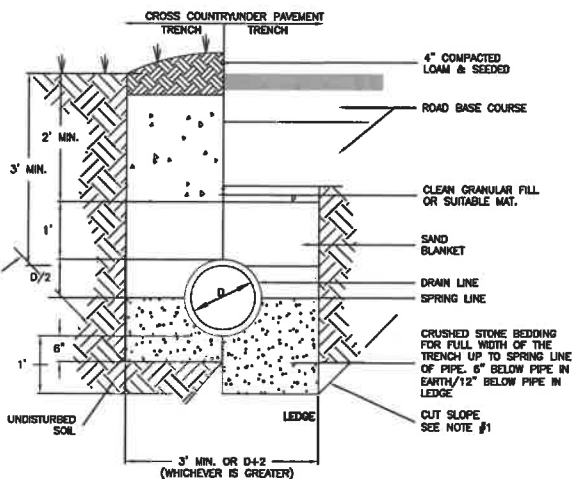
- USE SPECIFIED CLASS OF RIPRAP.
- USE NONWOVEN GEOTEXTILE AND PROTECT FROM PUNCHING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP 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 8 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 DISLOOGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

FLAIED END SECTION DETAIL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

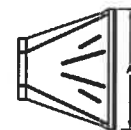
- USE SPECIFIED CLASS OF RIPRAP.
- USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCHING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. 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 DISLOOGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.



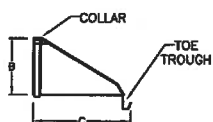
NOTES:  
1. PIPES MAY BE INSTALLED BY EXCAVATING AN OPEN TRENCH WITH SIDE SLOPES OF 1:1 MAXIMUM TO A DEPTH OF 4-FT. INSTALLATIONS DEEPER THAN 4-FT. REQUIRE THE USE OF A TRENCH BOX.  
2. PIPE MATERIALS SHALL BE AS SPECIFIED ON THE DESIGN PLAN.  
3. SAND BLANKET MAY BE OMITTED FOR REINFORCED CONCRETE PIPE.

DRAINAGE PIPE TRENCH INSTALLATION DETAIL

NOT TO SCALE



TOP VIEW



SIDE VIEW

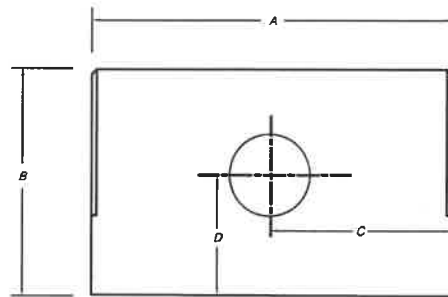


FRONT VIEW

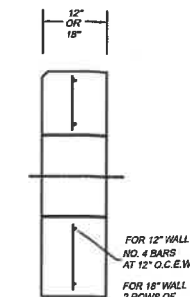
FLAIED END SECTION DETAIL

NOT TO SCALE

DIMENSIONS (INCHES)				
PIPE DIAMETERS	A	B	C	D
10" / 12"	42	14.5	33	8
16"	41	19	34	8
18"	49	22	43	8
24"	58.5	28	48	8
30"	68	36	63.5	8
36"	88	43	66.5	8



ELEVATION VIEW



CROSS-SECTION

PRE-CAST HEADWALL DETAIL

NOT TO SCALE

DIMENSION SCHEDULE					
PIPE DIA.	A	B	C	D	APPROX. WEIGHT
12"	48"	60"	24"	36"	3,000 LBS.
16"	60"	72"	42"	37.5"	6,300 LBS.
18"	84"	72"	42"	35"	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"	182"	96"	96"	48"	18,200 LBS.
42"	182"	96"	96"	51"	18,200 LBS.
48"	192"	96"	96"	54"	18,200 LBS.

\* 1" CHAMFER ON EXPOSED EDGES  
\* CONCRETE TO TEST 4000 PSI  
@ 28 DAYS

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 MANUFACTURER'S OF PLASTIC ANTI-SEEP COLLARS. COLLARS FROM THESE MANUFACTURER'S MAY BE USED WITH BOTH SMOOTH WALLED AND CORRUGATED OUTSIDE WALLED PIPE.

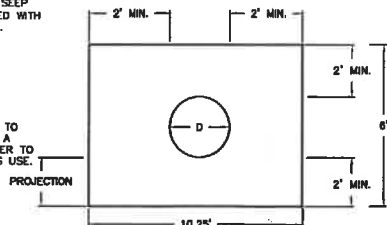
McRIP MANUFACTURING  
18 WESERVE ROAD  
DURHAM, NH 03824  
PHONE: (603) 868-5176  
FAX: (603) 868-2074  
E-MAIL: info@trenchdem.com

SCHUB DRAINAGE PRODUCTS  
203 SOUTH MONROE STREET  
OREGON, MO 64473  
PHONE: (560)-446-2343

- IT IS ALSO SUGGESTED THAT LOCAL SUPPLIERS BE CONTACTED TO ENQUIRE 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

D	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.

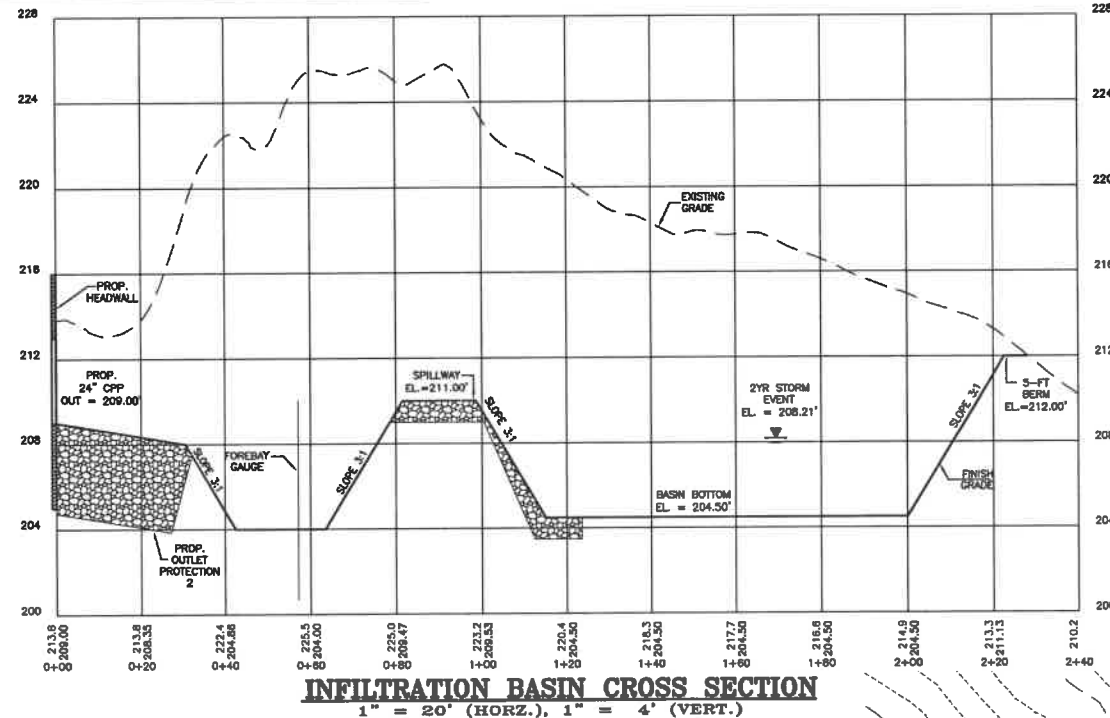
31 Mooney Street, Alton, N.H. 603-875-3948

NORWAY PLAINS ASSOCIATES, INC.

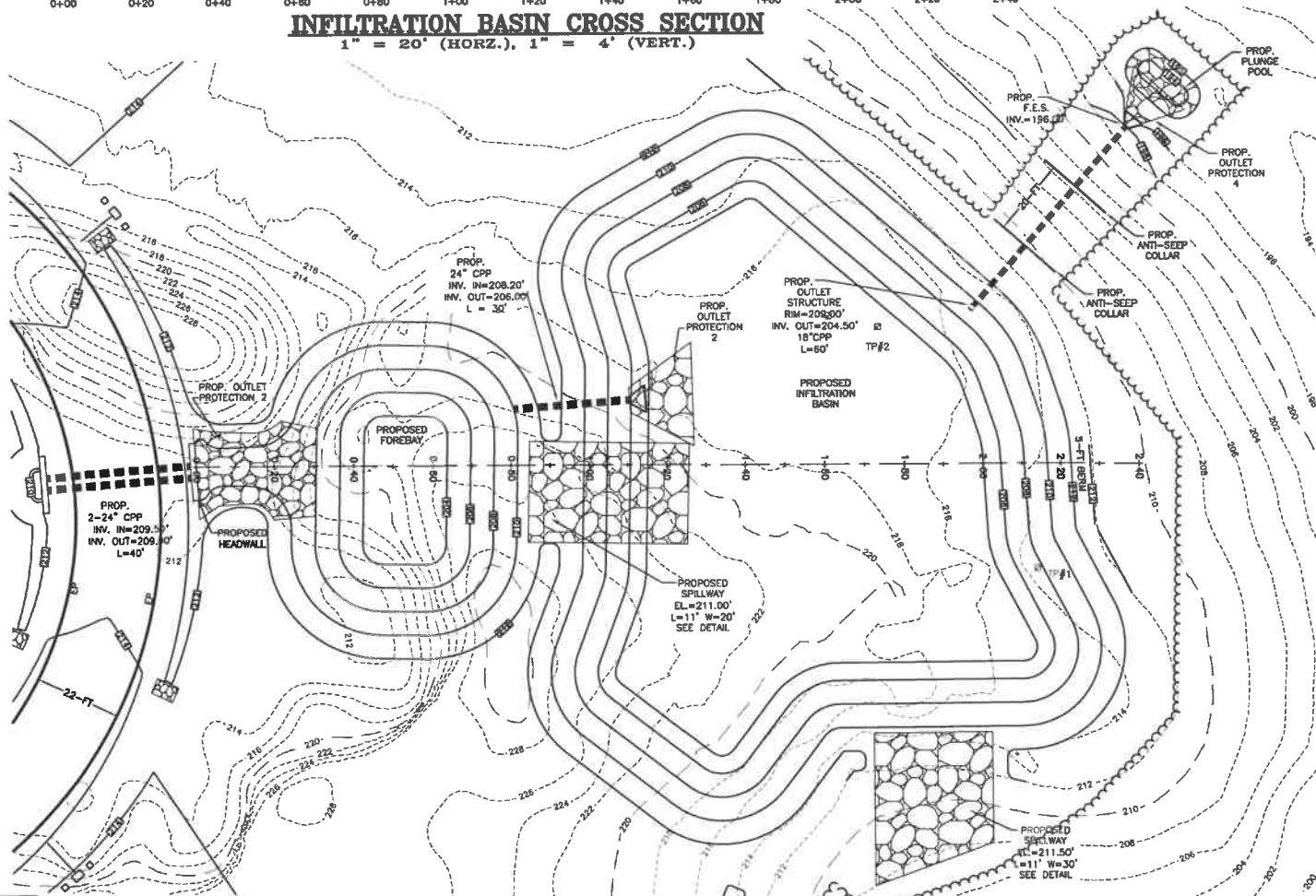
2 Continental Blvd., Rochester, N.H. 603-335-3948



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



**INFILTRATION BASIN**  
1" = 20'

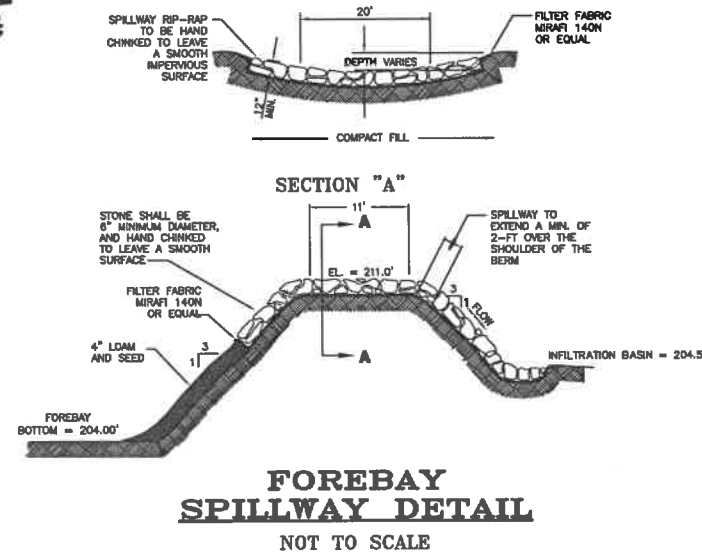
FILE NO. 109  
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F.B. NO.

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

NORWAY PLAINS ASSOCIATES, INC.



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



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	DEPTH	SOIL DESCRIPTION
TEST PIT 1	3-0 INCHES	PARTIALLY DECOMPOSED ORGANIC MATTER
	0-8 INCHES	DARK BROWN (10YR 3/3) FINE SANDY LOAM, FRAGILE, GRANULAR
	9-24 INCHES	DARK YELLOWISH BROWN (10YR 4/6) FINE SANDY LOAM, FRAGILE, BLOODY
	24-34 INCHES	STRONG BROWN (7.5YR 4/6) 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

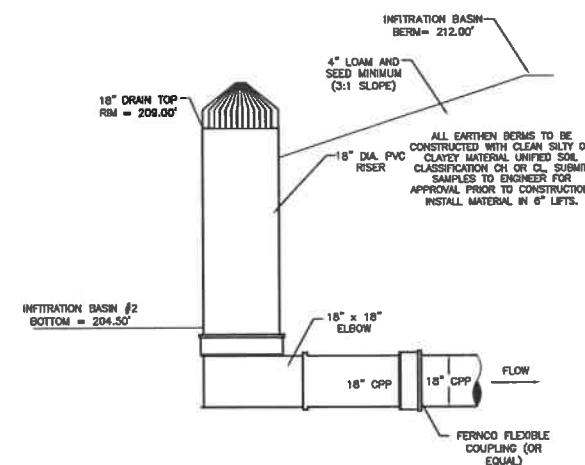
SEASONAL HIGH WATER TABLE NONE TO 144"  
OBSERVED WATER TABLE NONE TO 144"  
RESTRICTIVE HORIZON NONE TO 144"  
BEDROCK NONE TO 144"  
NOTE: EOLIAN CAP OVER ICE-CONTACT STRATIFIED DRIFT PARENT MATERIAL

TEST PIT 2  
3-0 INCHES 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

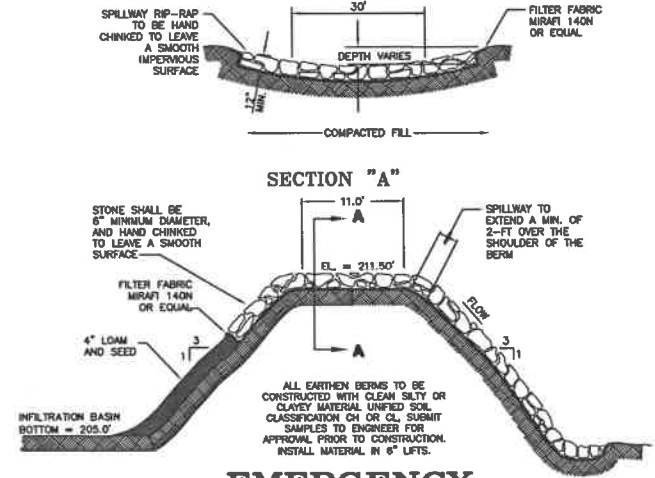
SEASONAL HIGH WATER TABLE NONE TO 132"  
OBSERVED WATER TABLE NONE TO 132"  
RESTRICTIVE HORIZON NONE TO 132"  
BEDROCK NONE TO 132"  
NOTE: EOLIAN CAP OVER ICE-CONTACT STRATIFIED DRIFT PARENT MATERIAL

TEST 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 WATERS 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-10. 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 PERIODIC 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: A:\2017\17149\DWG\17149 SP-2.dwg  
Wet, 04 May 2022 - 10:04am

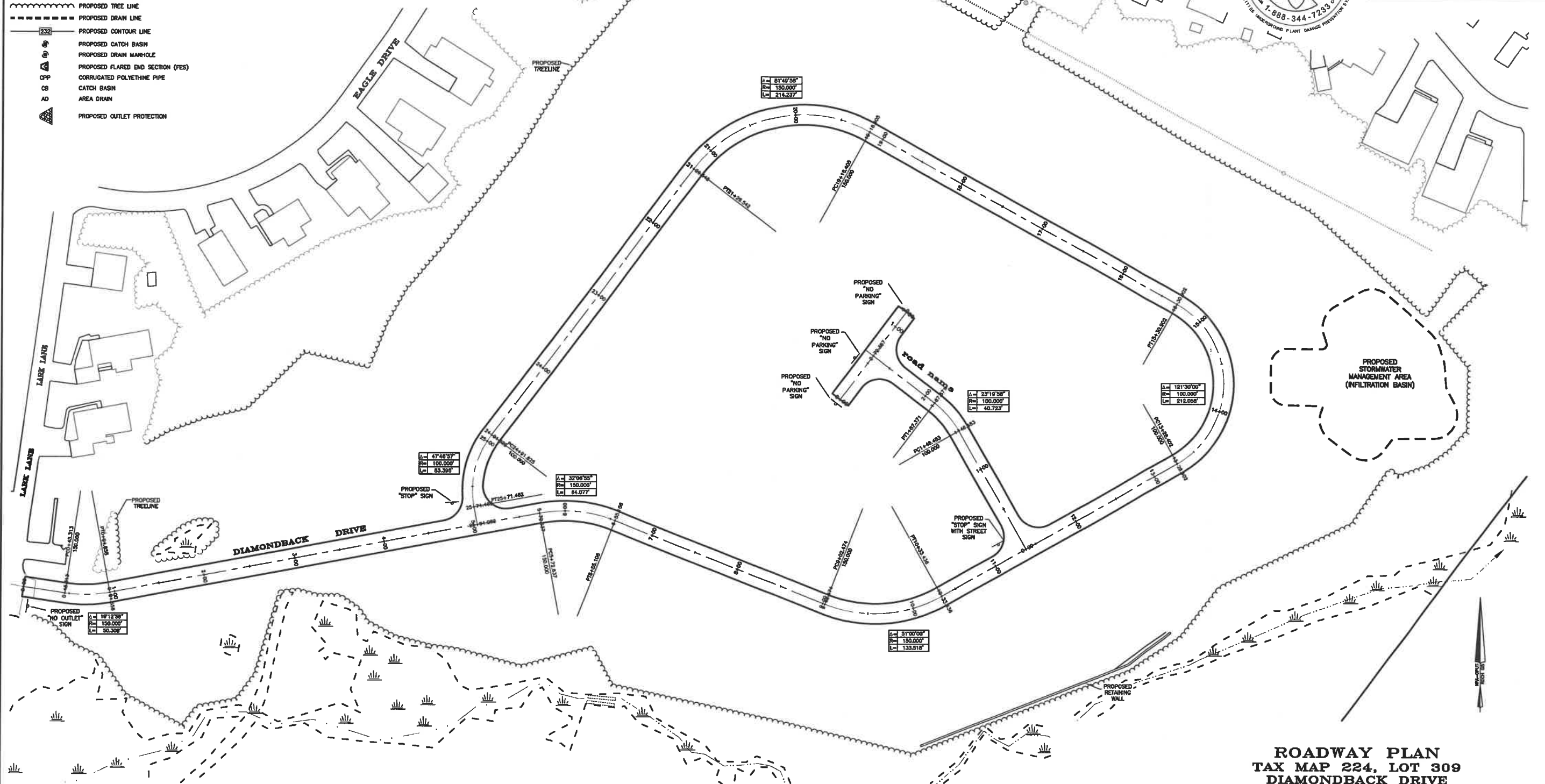
# LAND SURVEYORS

# CIVIL ENGINEERS

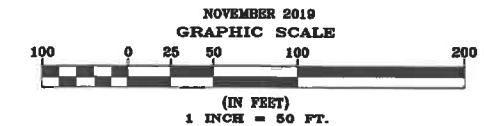
## LEGEND

- 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

NOTE:  
1. 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 603-271-0443 OR MELISSA DOPERSLICK 603-271-1736). PLEASE ATTEMPT TO PHOTOGRAPH THE SPECIES IF POSSIBLE.  
2. ALL ROADWAYS, UTILITIES AND STORMWATER STRUCTURES ARE PRIVATELY OWNED.



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



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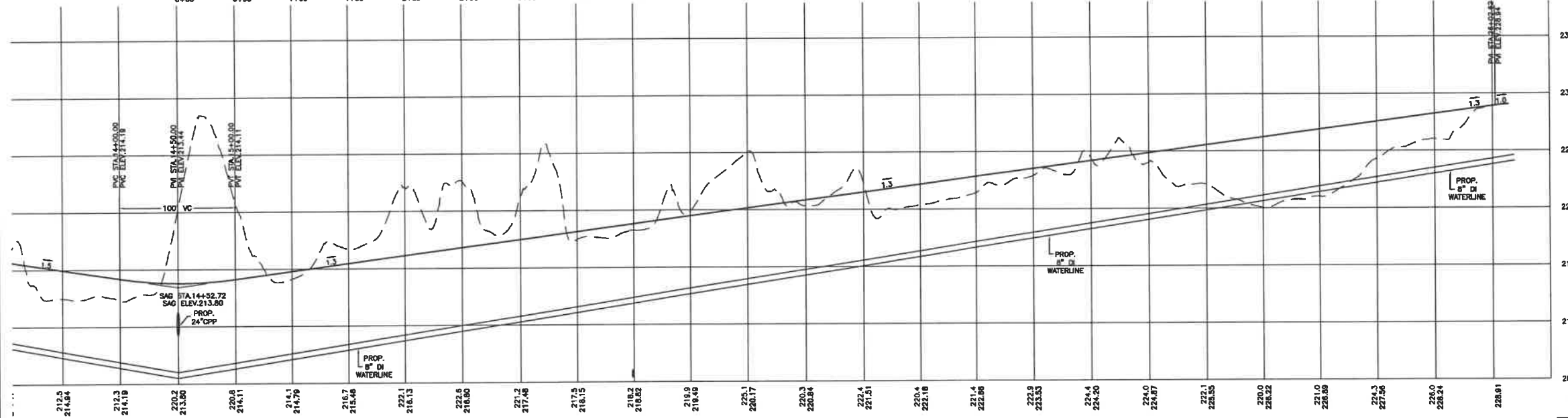
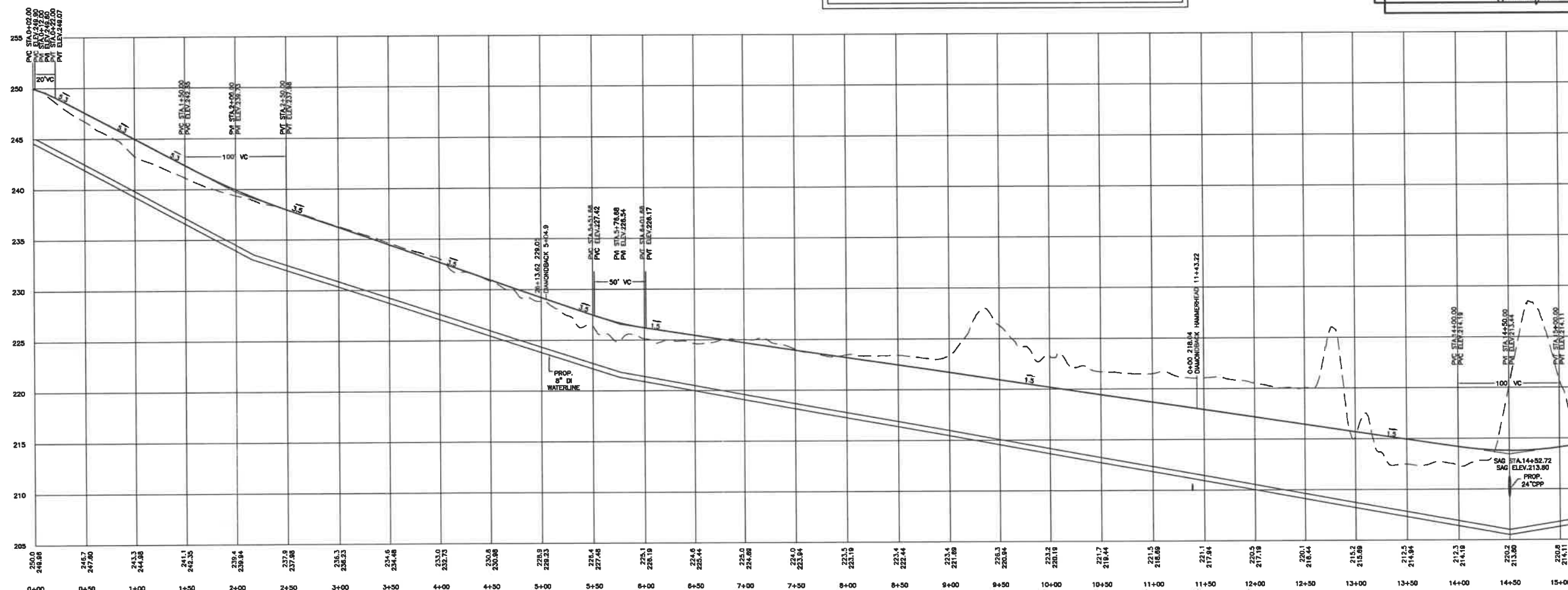




CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITHIN THE PLAN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



Drawing Location: \\A:\2017\17149.DWG\$17149 SP-2.dwg  
Wed, 04 May 2022 - 10:05am



**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.)

C-9

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

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

**NORWAY PLAINS ASSOCIATES, INC.**

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



# LAND SURVEYORS

# CIVIL ENGINEERS

## LEGEND

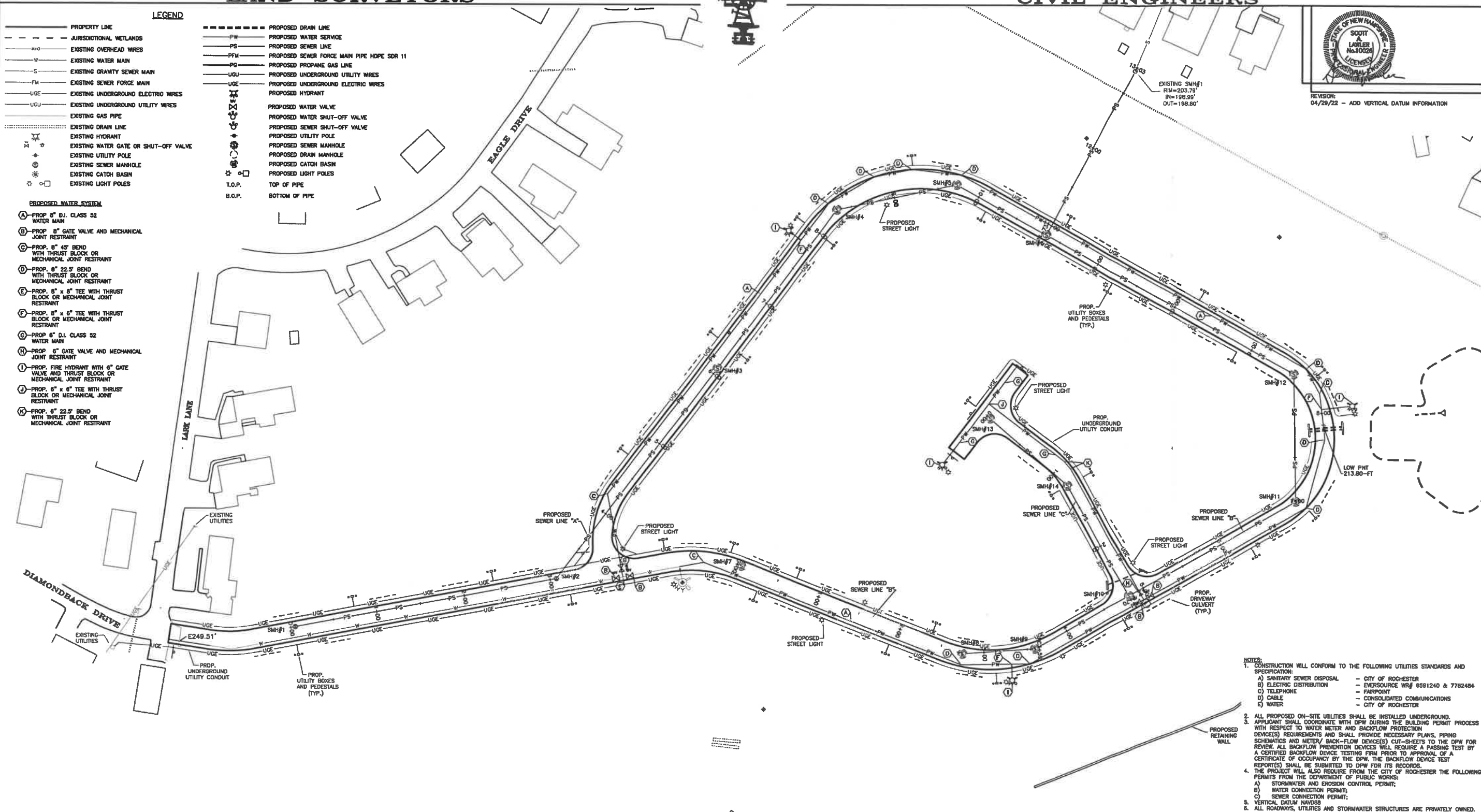
---	PROPERTY LINE	---	PROPOSED DRAIN LINE
---	JURISDICTIONAL WETLANDS	---	PROPOSED WATER SERVICE
---	EXISTING OVERHEAD WIRES	---	PROPOSED SEWER LINE
---	EXISTING WATER MAIN	---	PROPOSED SEWER FORCE MAIN PIPE HOPE SDR 11
---	EXISTING GRAVITY SEWER MAIN	---	PROPOSED PROPANE GAS LINE
---	EXISTING SEWER FORCE MAIN	---	PROPOSED UNDERGROUND UTILITY WIRES
---	EXISTING UNDERGROUND ELECTRIC WIRES	---	PROPOSED UNDERGROUND ELECTRIC WIRES
---	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.
---		---	B.O.P.
---		---	TOP OF PIPE
---		---	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 6" TEE WITH THRUST BLOCK OR MECHANICAL JOINT RESTRAINT
- (F) - PROP. 8" x 6" TEE WITH THRUST BLOCK OR MECHANICAL JOINT RESTRAINT
- (G) - PROP. 6" D.I. CLASS 52 WATER MAIN
- (H) - PROP. 6" GATE VALVE AND MECHANICAL JOINT RESTRAINT
- (I) - PROP. FIRE HYDRANT WITH 6" GATE VALVE AND THRUST BLOCK OR MECHANICAL JOINT RESTRAINT
- (J) - PROP. 6" x 6" TEE WITH THRUST BLOCK OR MECHANICAL JOINT RESTRAINT
- (K) - PROP. 6" 22.5° BEND WITH THRUST BLOCK OR MECHANICAL JOINT RESTRAINT

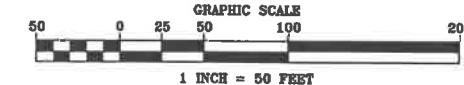


REVISION:  
04/29/22 - ADD VERTICAL DATUM INFORMATION



- NOTES:
- CONSTRUCTION WILL CONFORM TO THE FOLLOWING UTILITIES STANDARDS AND SPECIFICATION:
    - A) SANITARY SEWER DISPOSAL - CITY OF ROCHESTER
    - B) ELECTRIC DISTRIBUTION - EVERSOURCE W/F 6581240 & 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 DEVICES. REQUIREMENTS AND SHALL PROVIDE NECESSARY PLANS, PIPING SCHEMATICS AND METER/ BACK-FLOW DEVICES. CUT-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;
  - VERTICAL DATUM NAVD83
  - ALL ROADWAYS, UTILITIES AND STORMWATER STRUCTURES ARE PRIVATELY OWNED.

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



C-10

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

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

**NORWAY PLAINS ASSOCIATES, INC.**

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





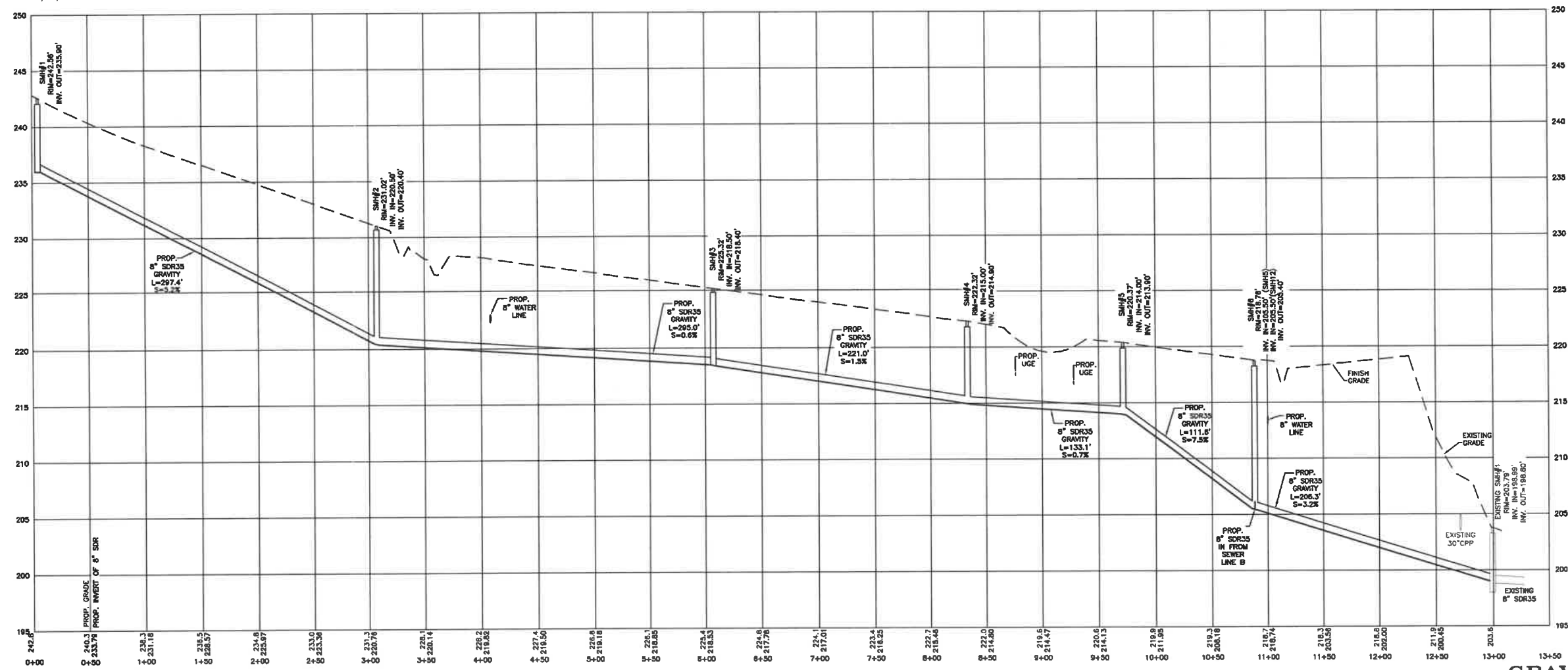
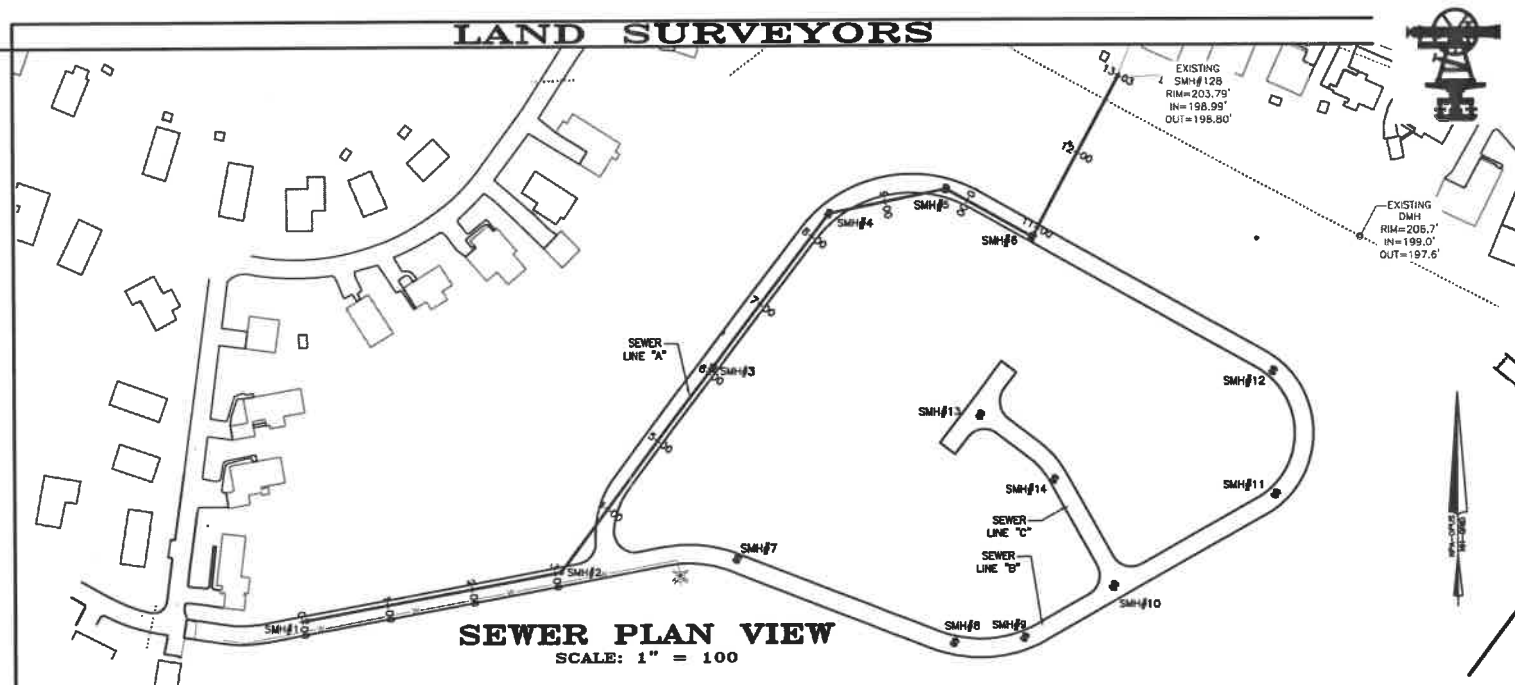
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Plt: 28 Apr 2022 - 10:02am

LAND SURVEYORS

CIVIL ENGINEERS



REVISION:  
04/29/22 - ADD VERTICAL DATUM INFORMATION



**GRAVITY SEWER PROFILE**  
SCALE: 1" = 50' (HORIZ.)  
1" = 5' (VERT.)  
VERTICAL DATUM NAVD88

**GRAVITY SEWER LINE A  
PROFILE**  
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.**

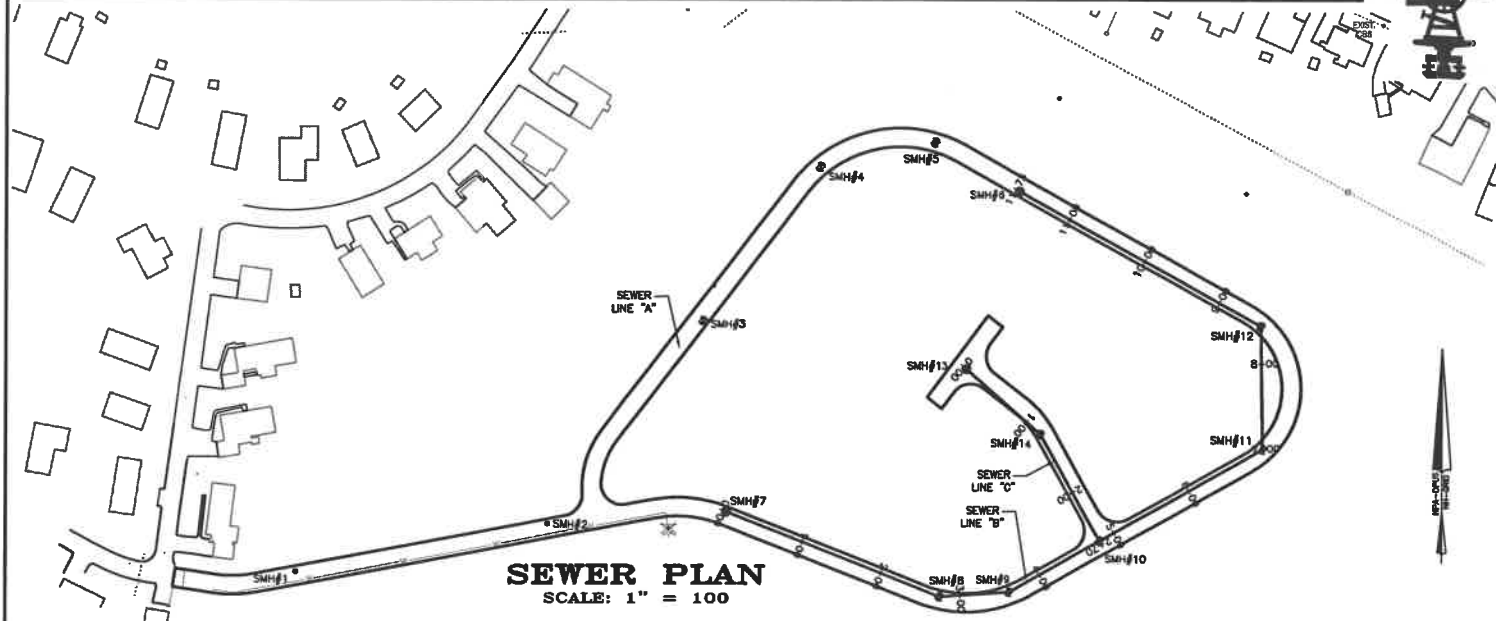
2 Continental Blvd., Rochester, N.H. 603-335-3948

C-11



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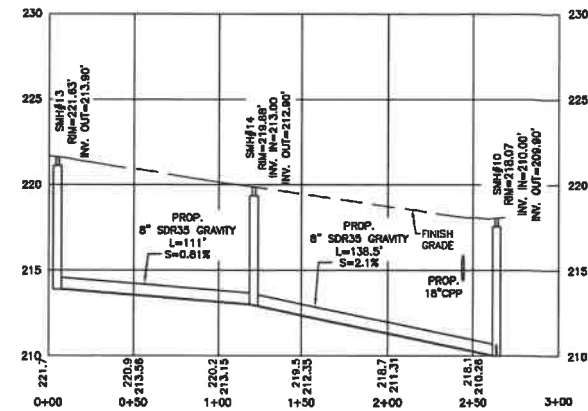
LAND SURVEYORS



CIVIL ENGINEERS



REVISION:  
03/03/22 - SEWER PIPE SLOPE  
04/29/22 - ADD VERTICAL DATUM INFORMATION

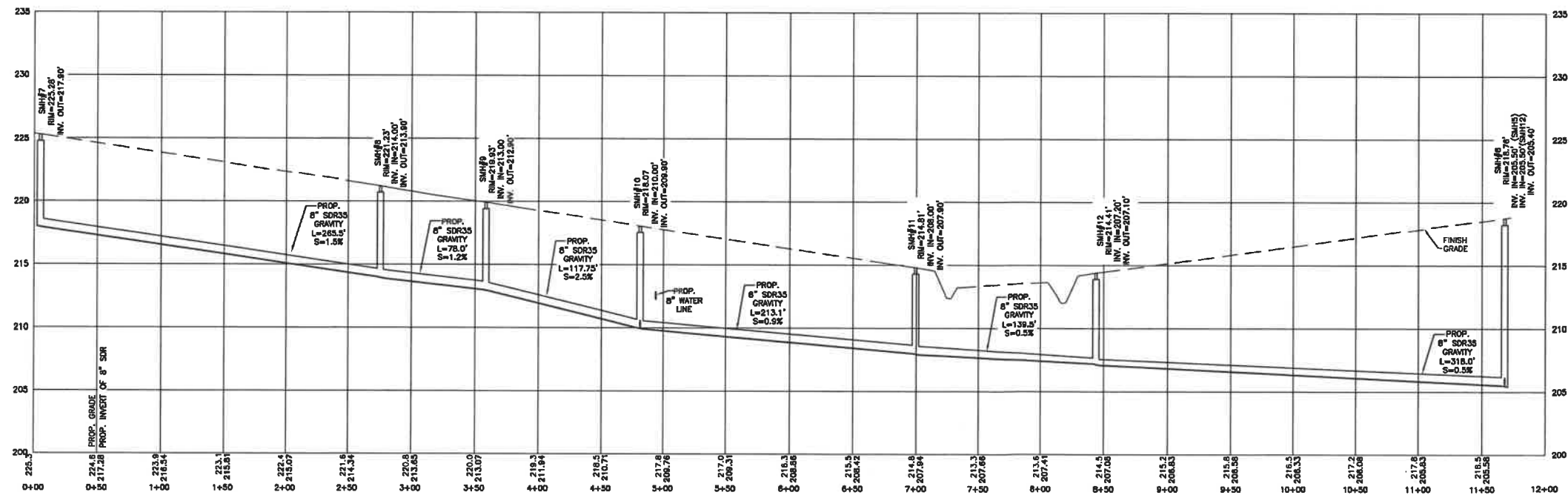


### GRAVITY SEWER C PROFILE

SCALE: 1" = 50' (HORZ.)

1" = 5' (VERT.)

VERTICAL DATUM NAVD88



### GRAVITY SEWER B PROFILE

SCALE: 1" = 50' (HORZ.)

1" = 5' (VERT.)

VERTICAL DATUM NAVD88

### GRAVITY SEWER LINE B & C PROFILE

TAX MAP 224, LOT 309  
DIAMONDBACK DRIVE  
ROCHESTER, NH

PREPARED FOR:  
TARA ESTATES COMMUNITY  
JANUARY 2022

C-12

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

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

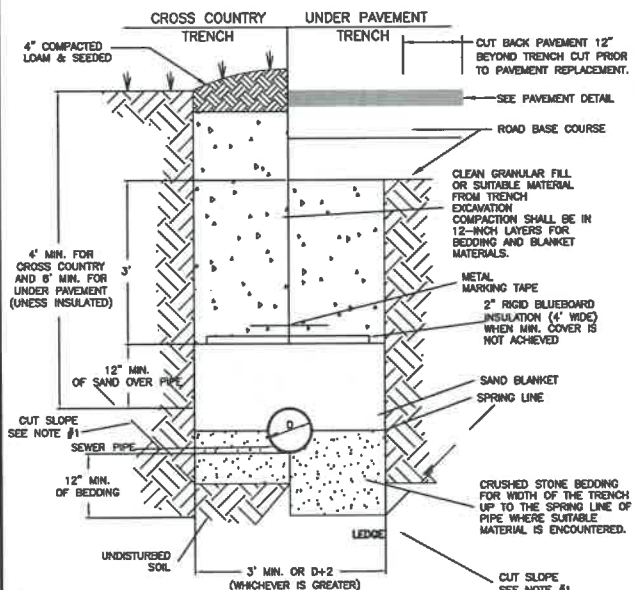
NORWAY PLAINS ASSOCIATES, INC.

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



Drawing Location: A:\2017\17149\DWG\17149 SP-2.dwg  
F:\17149 SP-2.dwg  
F:\17149 SP-2.dwg

# LAND SURVEYORS

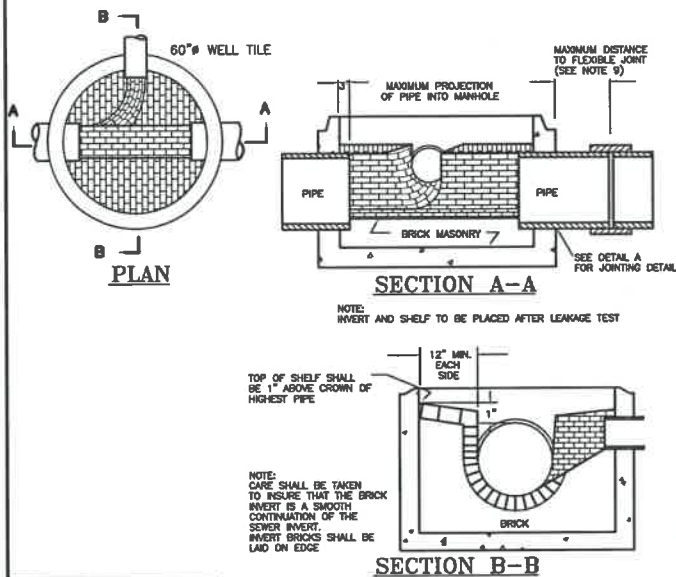


- NOTES:
1. PIPES MAY BE INSTALLED BY EXCAVATING AN OPEN TRENCH WITH SIDE SLOPES OF 1:1 MAXIMUM TO A DEPTH OF 4'-7'. INSTALLATIONS DEEPER THAN 4'-7' REQUIRE THE USE OF A TRENCH BOX.
  2. PIPE MATERIALS SHALL BE AS SPECIFIED ON THE DESIGN PLAN.
  3. SAND BLANKET SHALL BE OMITTED FOR REINFORCED CONCRETE 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 1/8-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 8 INCHES IN THE LARGEST DIMENSION; AND
    - (9) ANY MATERIAL NOT APPROVED BY THE ENGINEER.

## SEWER PIPE TRENCH INSTALLATION DETAIL

NOT TO SCALE

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

## INVERT DETAILS

NOT TO SCALE

- 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 APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H-20 LOADING) 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. BARRELS AND CONE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE OR POWDERED IN PLACE REINFORCED CONCRETE. 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 MODILY 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/NO 60\"/>

MORTAR USED IN MANHOLE CONSTRUCTION SHALL COMPLY WITH THE FOLLOWING:

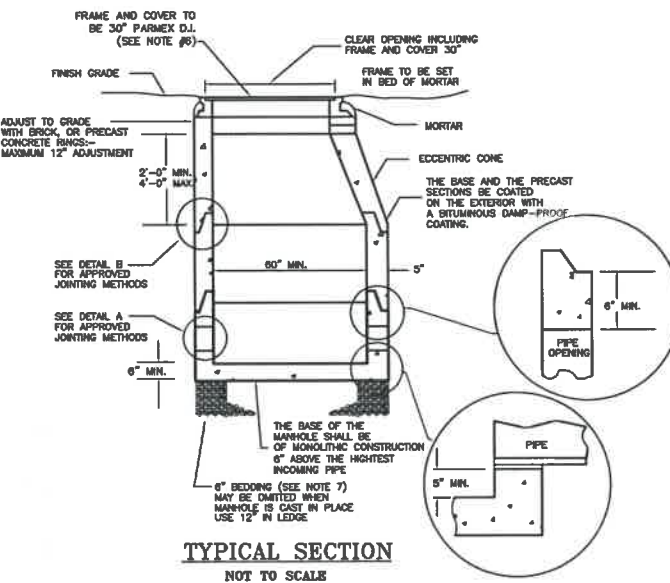
MORTAR SHALL BE COMPOSED OF TYPE II PORTLAND CEMENT AND SAND WITH OR WITHOUT HYDRATED LIME ADDITION. PROPORTIONS IN MORTAR OF PARTS BY VOLUMES SHALL BE AS SHOWN BELOW:

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.

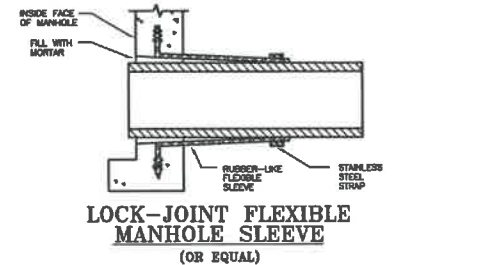
HYDRATED LIME SHALL BE TYPE S THAT IS CERTIFIED BY ITS MANUFACTURER AS CONFORMING TO THE ASTM C207 STANDARD IN EFFECT AT THE TIME THE HYDRATED LIME WAS PROCESSED.

SAND SHALL CONSIST OF MEDIUM 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 TIME AGGREGATES.



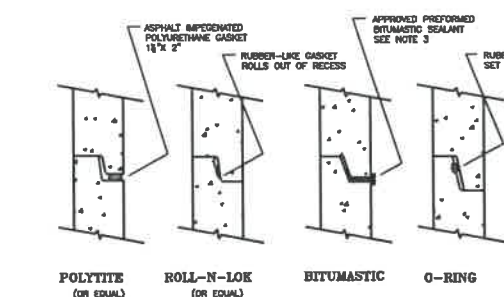
## TYPICAL SECTION

NOT TO SCALE

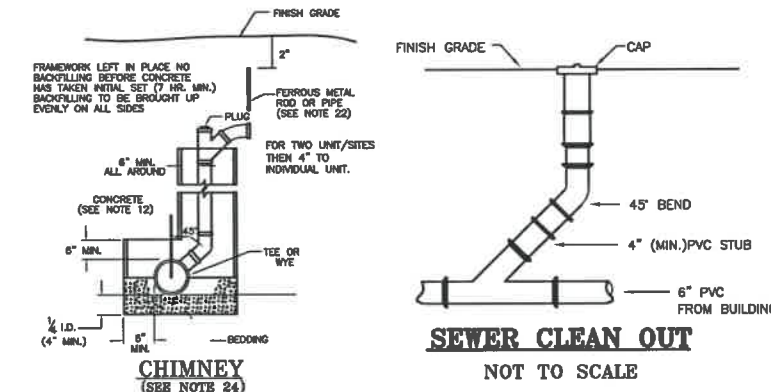


## LOCK-JOINT FLEXIBLE MANHOLE SLEEVE

(OR EQUAL)

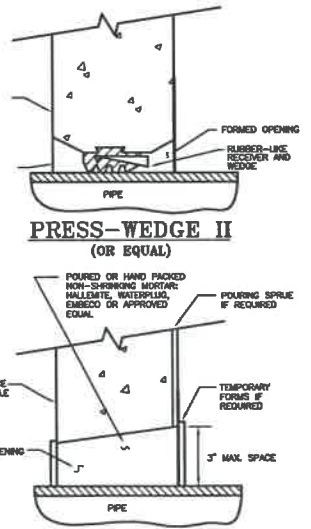


## DETAIL-B



## SEWER CLEAN OUT

NOT TO SCALE

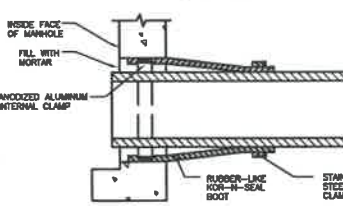


## PRESS-WEDGE II

(OR EQUAL)

## NON-SHRINKING MORTAR

(OR EQUAL)



## KOR-N-SEAL JOINT SLEEVE

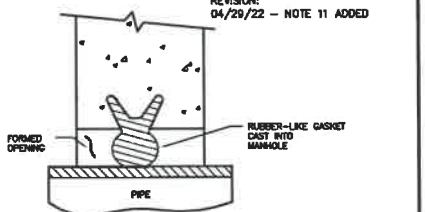
(OR EQUAL)

## DETAIL-A

NOTE: ALL GASKETS, SEALANTS, MORTAR ETC. SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.

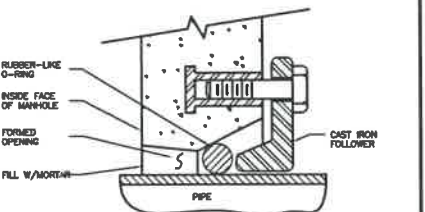


REVISION:  
04/29/22 - NOTE 11 ADDED



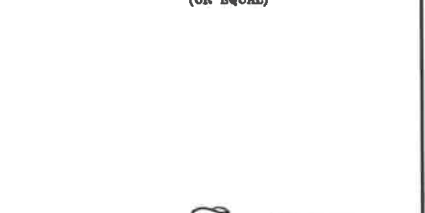
## A-LOK

(OR EQUAL)

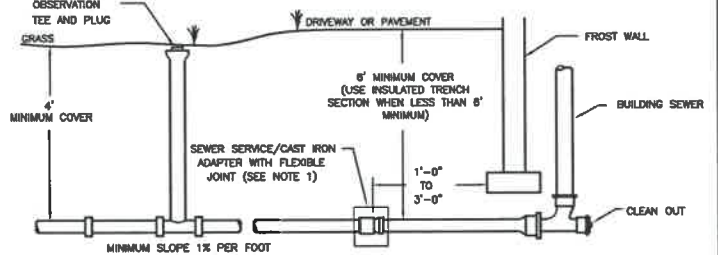


## RES-SEAL

(OR EQUAL)



## CONCRETE FULL ENCASEMENT



## TYPICAL BUILDING SEWER SERVICE DETAIL

NOT TO SCALE

SANITARY SEWER DETAILS  
TAX MAP 224, LOT 309  
DIAMONDBACK DRIVE  
ROCHESTER, NH  
PREPARED FOR:  
TARA ESTATES COMMUNITY

JANUARY 2022

C-13

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

NORWAY PLAINS ASSOCIATES, INC.

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



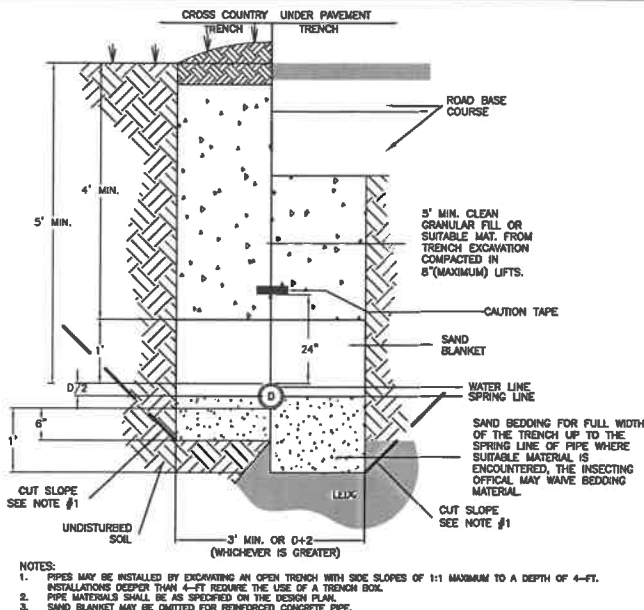
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Rev: 04 May 2022 - 10:57am

## LAND SURVEYORS

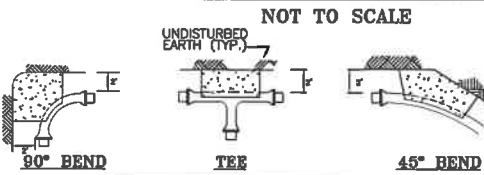


## CIVIL ENGINEERS

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**WATER PIPE TRENCH INSTALLATION DETAIL**  
NOT TO SCALE



MINIMUM THRUST BLOCK BEARING AREA REQ'D AGAINST UNDISTURBED MATERIAL (SQ. FT.)												
PIPE SIZE	90° BEND	TEE	PLUG	45° BEND	22 1/2\"/>	22 1/2\"/>	22 1/2\"/>	22 1/2\"/>	22 1/2\"/>	22 1/2\"/>	22 1/2\"/>	22 1/2\"/>
6"	5	4	3	2	2	2	2	2	2	2	2	2
8"	8	6	4	3	3	3	3	3	3	3	3	3
10"	10	8	5	4	4	4	4	4	4	4	4	4
12"	12	10	6	5	5	5	5	5	5	5	5	5

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

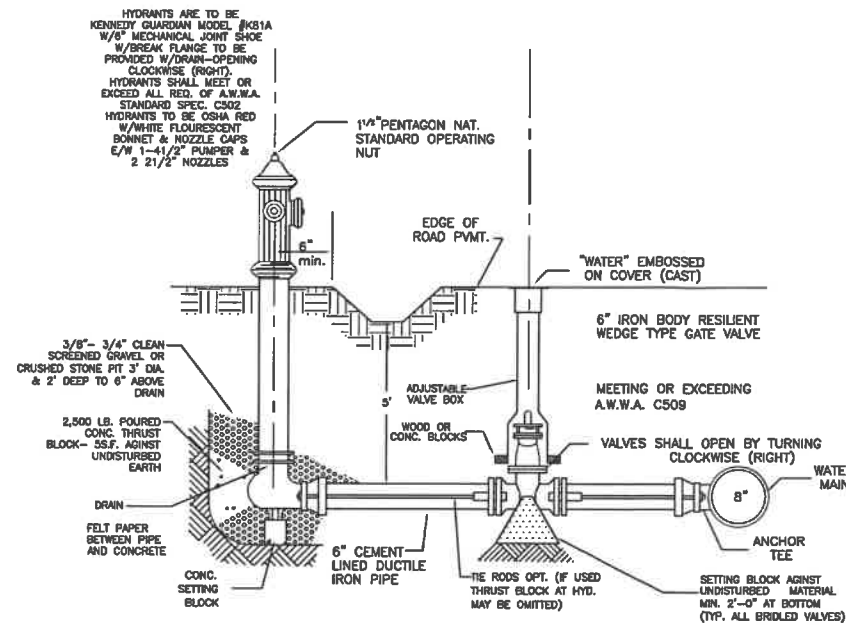
**WATER MAIN THRUST BLOCK DETAILS**  
NOT TO SCALE

DUCTILE IRON MECHANICAL RESTRAINED 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			
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							

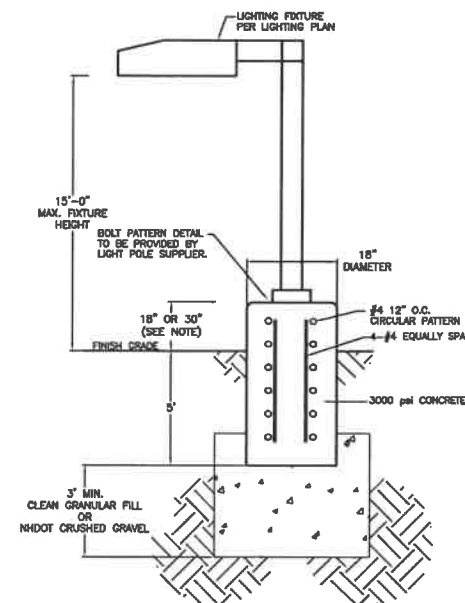
\* BASED ON A MINIMUM ATTACHED PIPE ALONG RUN (L<sub>r</sub>) = 5 FEET

**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 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 EBWA IRON, INC., RELEASE 3.1.

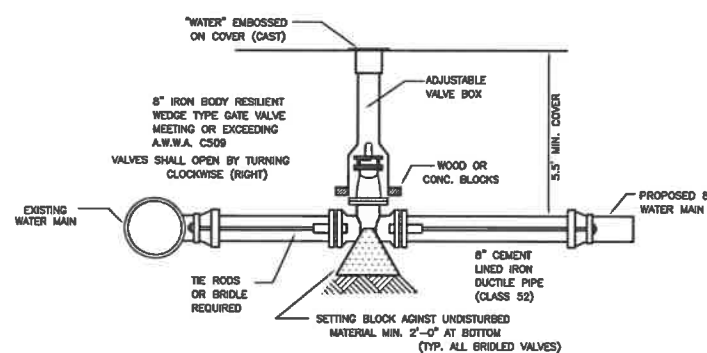


**TYPICAL HYDRANT SECTION**  
NOT TO SCALE

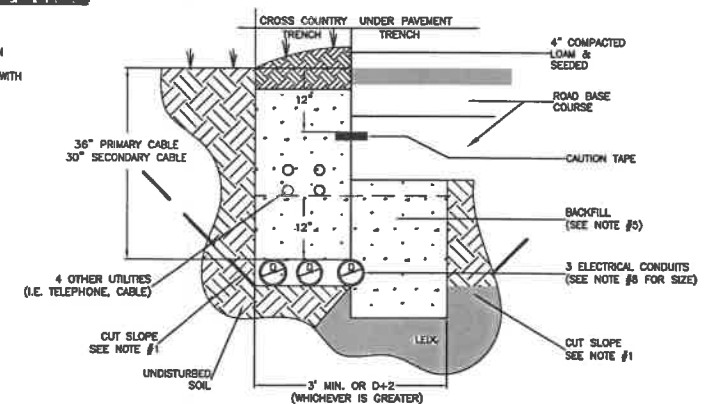


**POLE MOUNTED LIGHT DETAIL**  
NOT TO SCALE

- 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 70-2020 AND BE UL LISTED. ONLY GRAY-COLORED CONDUIT WILL BE ACCEPTED. ANY PVC CONDUIT NOT HAVING THE PROPER NFPA AND UL MARKINGS WILL NOT BE ACCEPTED. ALL STEEL CONDUITS SHALL CONFORM TO ASTM A120 AND BE RIGID GALVANIZED STEEL. ALL PVC JOINTS MUST BE CEMENTED. STEEL FITTINGS SHALL BE SEALED WITH COMPOUND.
  - ALL 90 DEGREE SWEEPS WILL BE MADE USING RIGID GALVANIZED STEEL WITH A MINIMUM RADIUS OF 36 INCHES FOR PRIMARY CABLES AND 24 INCHES FOR SECONDARY CABLES. ALL STEEL SWEEPS WITHIN 10' OF THE SURFACE SHALL BE PROPERLY GROUNDING.
  - A 10-FOOT HORIZONTAL SECTION OF RIGID GALVANIZED STEEL CONDUIT WILL BE REQUIRED AT EACH SWEEP, UNLESS IN THE OPINION OF THE EVERSOURCE DESIGNER, THE SWEEP-PVC JOINT IS NOT SUBJECT TO FAILURE DURING CABLE PULLING.
  - THE CONDUIT SHALL CROSS PAVED AREAS 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 BENDING 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

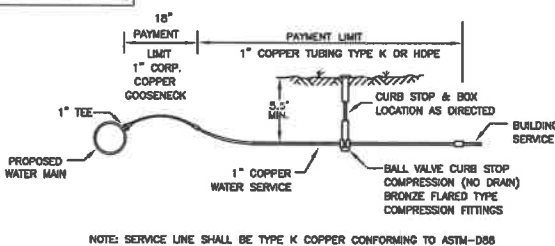
**UTILITY DETAILS**  
TAX MAP 224, LOT 309  
DIAMONDBACK DRIVE  
ROCHESTER, NH

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

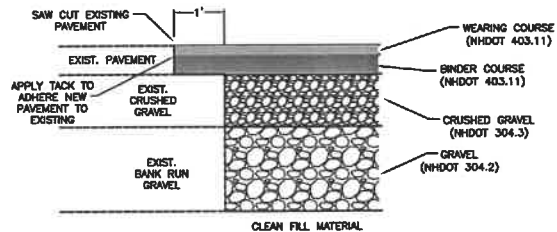
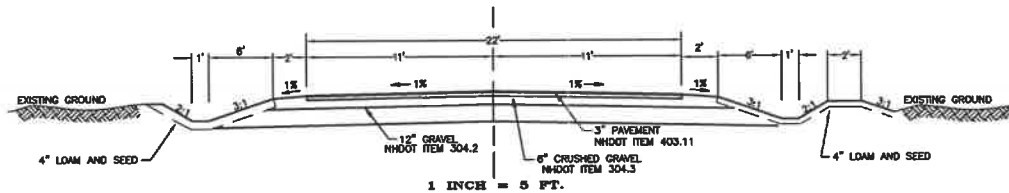
**NORWAY PLAINS ASSOCIATES, INC.**

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

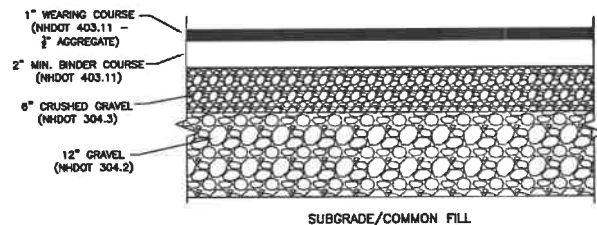


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Wed, 04 May 2022 - 10:08am

## LAND SURVEYORS

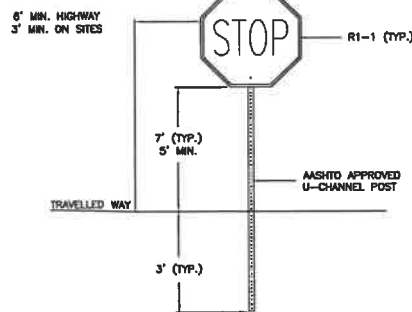


**TYPICAL PAVEMENT MATCHING DETAIL**  
NOT TO SCALE



**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 6 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 ASHTO APPROVED U-CHANNEL OR OTHER PER ASHTO "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
R7-1	18"	12"	NO PARKING ANY TIME	3

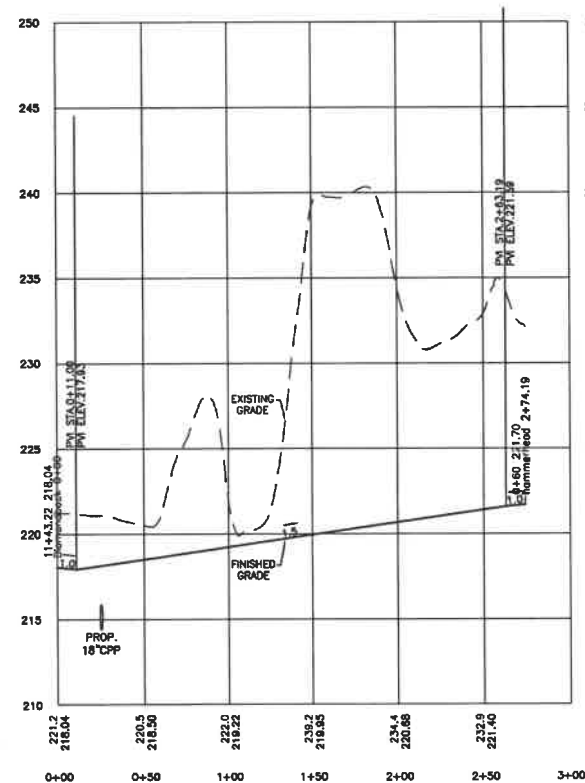
- NOTES:**
1. ALL SIGNS SHALL BE PER "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST EDITION.

**SIGN SCHEDULE**  
NOT TO SCALE

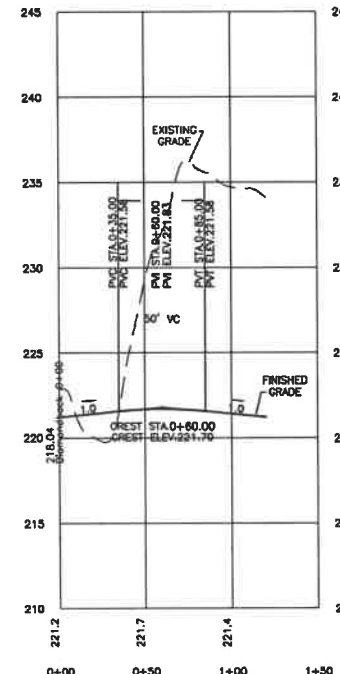


## CIVIL ENGINEERS

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 HYDROLOGICAL 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.



**HAMMERHEAD DRIVE**  
SCALE 1" = 50' (HORIZ.)  
1" = 5' (VERT.)



**TURN AROUND DRIVE**  
SCALE 1" = 50' (HORIZ.)  
1" = 5' (VERT.)

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

C-15

FILE NO. 109  
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