

# PROPOSED MANUFACTURING FACILITY

FOR

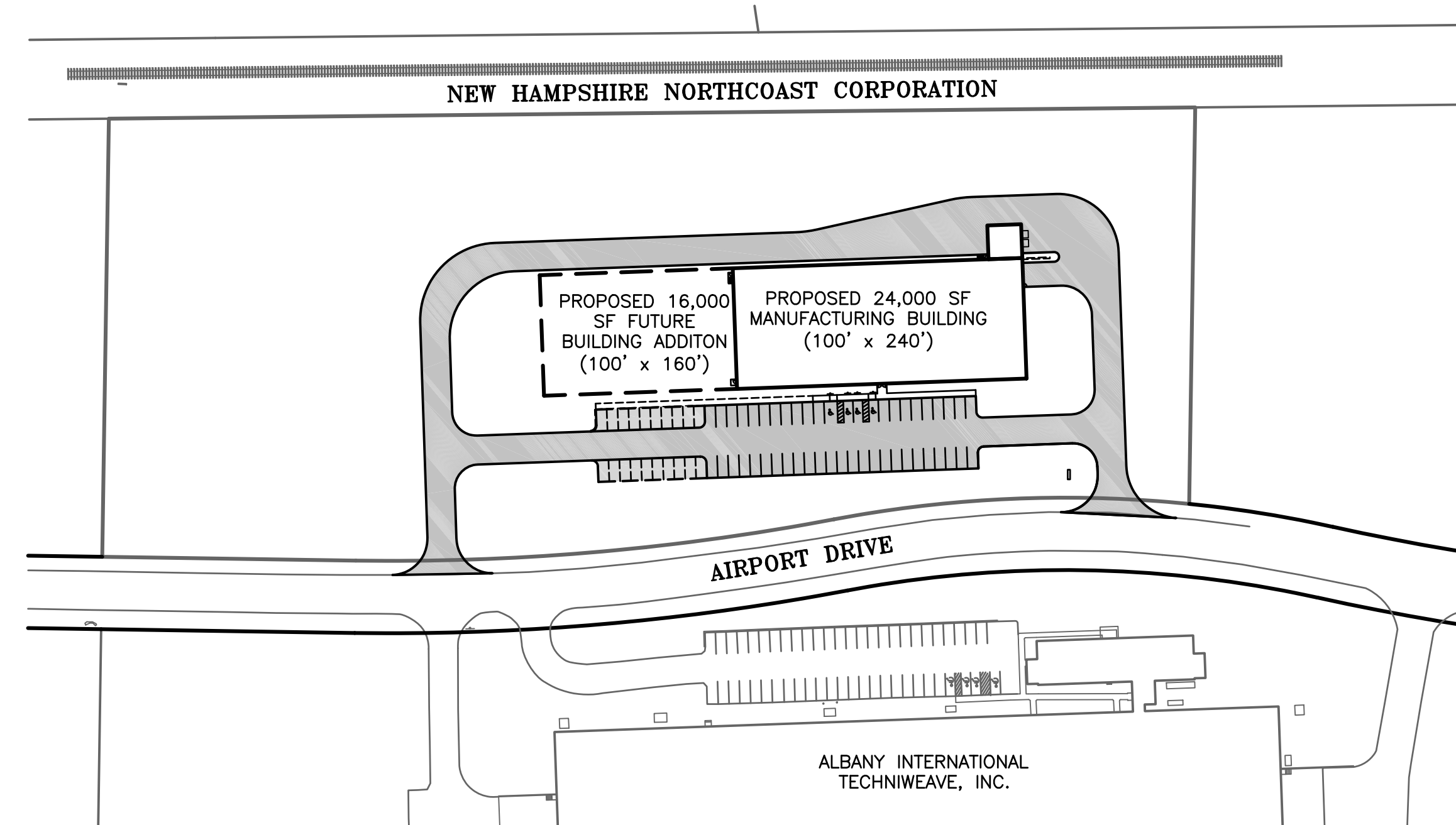
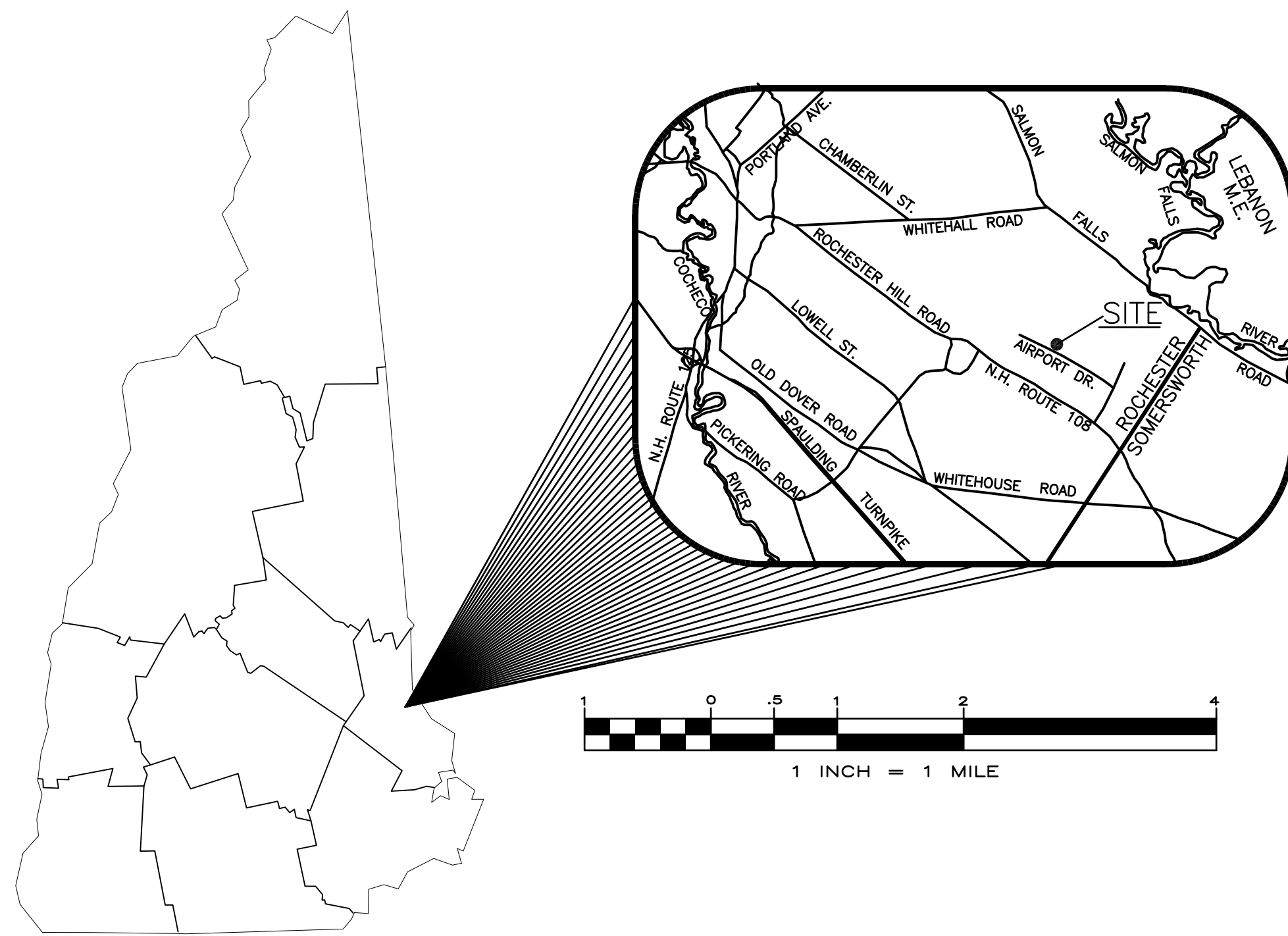
## CITY OF ROCHESTER

### 145 AIRPORT DRIVE

### ROCHESTER, N.H. 03867

### DECEMBER 2019

**Not For Construction**



**OVERALL SITE**  
1" = 100'

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.

**STATE AND FEDERAL PERMITS:**  
 STATE OF NEW HAMPSHIRE PERMIT NUMBERS:  
 NHDES ALTERATION OF TERRAIN: Aot-1001  
 NHDES WETLANDS PERMIT: NOT REQUIRED  
 NHDES DAM PERMIT: NOT REQUIRED  
 NHDES SUBDIVISION PERMIT: NOT REQUIRED  
 NHDES SUBSURFACE SYSTEMS PERMIT: NOT REQUIRED  
 NHDES WASTEWATER PERMIT: D2015-1002  
 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: **REQUIRED**  
 NPDES PERMITS CONSIST OF A NOTICE OF INTENT (NOI) FILED WITH THE ENVIRONMENTAL PROTECTION AGENCY AT LEAST 14 DAYS PRIOR TO CONSTRUCTION COMMENCING AND A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) BEING PREPARED, KEPT ON SITE AND FOLLOWED BY THE CONTRACTOR.  
 FOR STATUS OF THIS PERMIT, CONTACT THE PROJECT GENERAL CONTRACTOR.

**FINAL APPROVAL BY**  
**ROCHESTER PLANNING BOARD**

CERTIFIED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

SHEET INDEX		
	COVER	
SHEET E-1	EXISTING FEATURES PLAN	1" = 40'
SHEET C-1	OVERALL SITE PLAN	1" = 60'
SHEET C-2	SITE LAYOUT PLAN	1" = 40'
SHEET C-3	GRADING AND DRAINAGE PLAN	1" = 40'
SHEET C-4	UTILITY PLAN	1" = 40'
SHEET C-5	EROSION AND SEDIMENTATION CONTROL PLAN	1" = 40'
SHEET C-6	CONSTRUCTION DETAILS	AS SHOWN
SHEET C-7	DRAINAGE DETAILS	AS SHOWN
SHEET C-8	GRAVEL WETLANDS BASIN DETAILS	AS SHOWN
SHEET C-9	TEMPORARY EROSION AND SEDIMENTATION CONTROL DETAILS	AS SHOWN
SHEET C-10	PERMANENT EROSION AND SEDIMENTATION CONTROL DETAILS	AS SHOWN
SHEET C-11	UTILITY DETAILS	AS SHOWN
SHEET C-12	SEWER DETAILS	AS SHOWN
SHEET C-13	GUARDRAIL DETAILS	AS SHOWN
SHEET L-1	LANDSCAPING PLAN AND DETAILS	1" = 40'
SHEET L-2	LIGHTING PLAN AND DETAILS	1" = 40'



#### CIVIL ENGINEERS

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

#### LANDSCAPING ARCHITECTS

WOODBURN & COMPANY LANDSCAPE ARCHITECTURE, LLC  
 103 KENT PLACE  
 NEWMARKET, NEW HAMPSHIRE 03857  
 (603) 659-5949

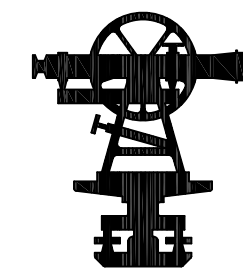
#### OWNER OF RECORD

CITY OF ROCHESTER  
 31 WAKEFIELD STREET  
 ROCHESTER, NEW HAMPSHIRE 03867  
 (603) 335-7500

#### APPLICANT

CITY OF ROCHESTER  
 31 WAKEFIELD STREET  
 ROCHESTER, NEW HAMPSHIRE 03867  
 (603) 335-7500

FILE NO. 104  
 PLAN NO. C-3013  
 DWG NO. 19275\SP-1  
 F.B. NO. SDR-TJR



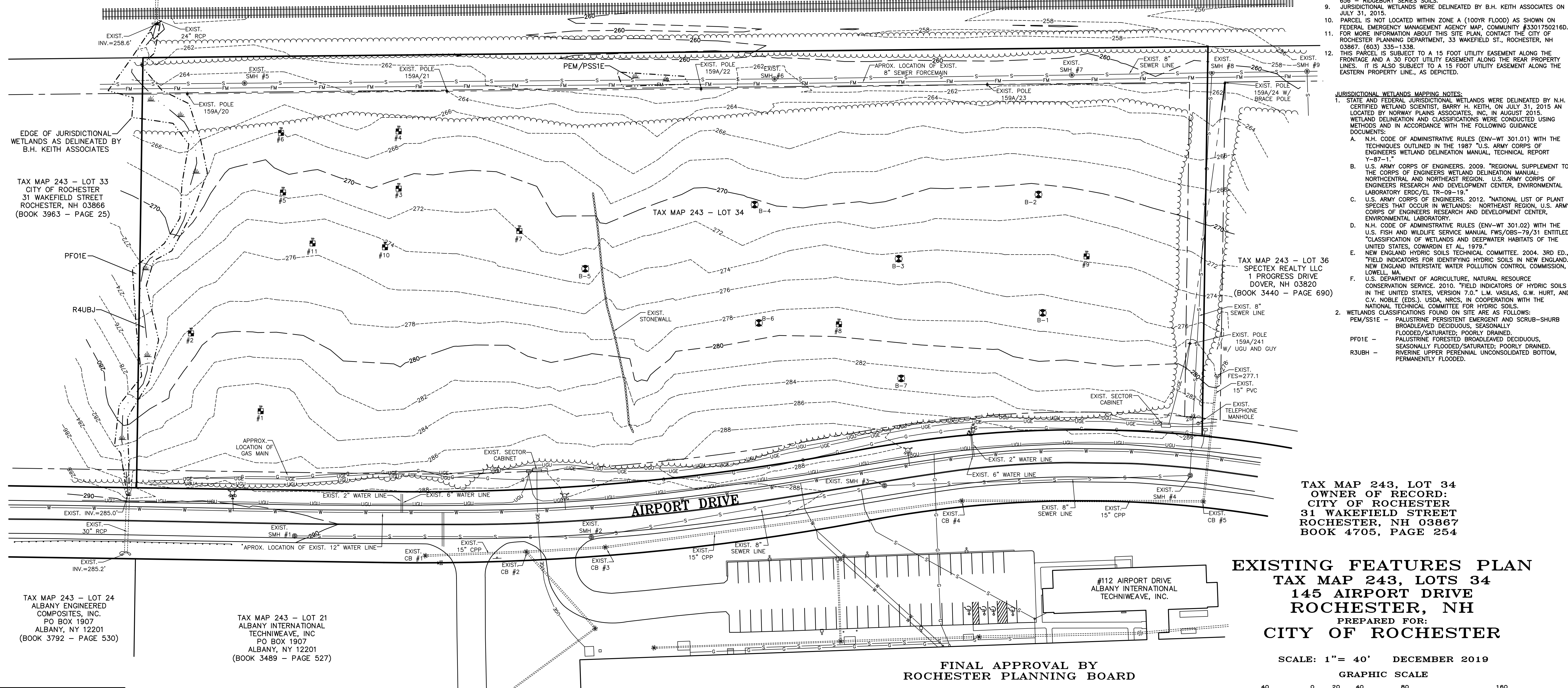
CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITHIN THE PLAN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

- LEGEND
PROPERTY LINE
LIMITS OF JURISDICTIONAL WETLANDS
EXISTING TREE LINE
EXISTING STONEWALLS
EXISTING RAILROAD TRACKS
EXISTING CONTOUR LINE
EXISTING DRAIN LINE
EXISTING OVERHEAD WIRES
EXISTING UNDERGROUND ELECTRIC WIRES
EXISTING UNDERGROUND UTILITY WIRES
EXISTING WATER LINE
EXISTING SEWER LINE
EXISTING SEWER FORCE MAIN
EXISTING GAS PIPE
EXISTING UTILITY POLE
EXISTING CATCH BASIN
EXISTING SEWER MANHOLE
EXISTING MONUMENT
EXISTING HYDRANT
EXISTING WATER GATE OR SHUT-OFF VALVE
EXISTING LIGHT POLE
EXISTING TEST PIT LOCATION & NUMBER
EXISTING BORING OR LEGGE TESTPIT LOCATION
EXISTING WETLANDS

- TEST PIT DATA
TP 1 8/26/15
TP 2 8/26/15
TP 3 8/26/15
TP 4 8/26/15
TP 5 8/26/15
TP 6 8/26/15
TP 7 8/26/15
TP 8 8/26/15
TP 9 8/26/15
TP 10 9/4/15
TP 11 9/4/15
DRAINAGE STRUCTURES
SEWER STRUCTURES
EXIST. SMH #8
EXIST. SMH #1
EXIST. SMH #2
EXIST. SMH #3
EXIST. SMH #4
EXIST. SMH #5
EXIST. SMH #6
EXIST. SMH #7

TAX MAP 239 - LOT 26
NH NORTHCOST CORP
PO BOX 429
OSSISPEE, NH 03864
(BOOK 1706 - PAGE 532)
TAX MAP 241 - LOT 21
LINDA SARGENT AND
MARTHA J. FOWLER
671 SALMON FALLS ROAD
ROCHESTER, NH 03867
(BOOK 2003 - PAGE 684)

NEW HAMPSHIRE NORTHCOST CORPORATION



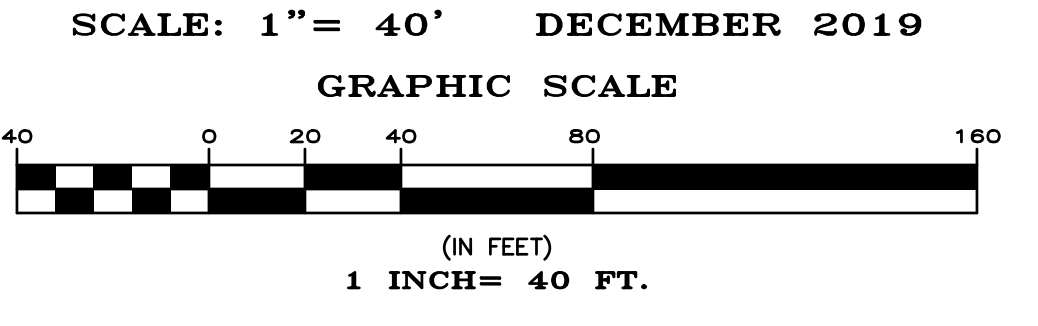
- GENERAL SITE PLAN NOTES
1. THIS PARCEL IS LOCATED IN THE GRANITE STATE BUSINESS PARK AND IN THE INDUSTRIAL (IND) ZONE.
2. TOTAL PARCEL AREA: MAP 243 AND LOT 34: 315,374 SQUARE FEET OR 7.24 ACRES.
3. THE PURPOSE OF THIS PLAN IS TO DEPICT THE EXISTING FEATURES ON THESE LOTS.
4. ALL EXISTING UTILITIES LOCATIONS ARE APPROXIMATE AS SHOWN. THE CONTRACTOR SHALL VERIFY THEIR EXACT LOCATION PRIOR TO ANY WORK BEING PERFORMED.
5. THESE PLANS SHOW ONLY THOSE FEATURES THAT WERE VISUALLY APPARENT ON THE DATE OF THE SURVEY (08-04-15 TO 08-06-15). THE ABSENCE OF SURFACE STRUCTURES, UTILITIES, ETC. FROM THESE PLANS, BUT IN EXISTENCE, IS NOT INTENDED OR IMPLIED.
6. DIMENSIONAL REGULATIONS PER ZONING ORDINANCE: GENERAL INDUSTRIAL (GI) ZONE: MINIMUM LOT SIZE (WITH WATER AND SEWER) = 20,000 SF MINIMUM YARD FRONTAGE = 100 FEET MINIMUM YARD SETBACKS: FRONT = 25' SIDE = 25' REAR = 25' MAXIMUM LOT COVERAGE = 75% MAXIMUM BUILDING HEIGHT = 85' ORIENTATION: HORIZONTAL AND VERTICAL DATUMS - CITY OF ROCHESTER GIS. SOIL TYPES ARE PER SITE SPECIFIC SOIL SURVEY REPORT BY ROUND POND SOIL SURVEY DATED AUGUST 26, 2015. 29 - WOODBRIDGE SERIES SOILS 656 - RIDGEBURY SERIES SOILS. JURISDICTIONAL WETLANDS WERE DELINEATED BY B.H. KEITH ASSOCIATES ON JULY 31, 2015. PARCEL IS NOT LOCATED WITHIN ZONE A (100YR FLOOD) AS SHOWN ON FEDERAL EMERGENCY MANAGEMENT AGENCY MAP, COMMUNITY #3301750216D. FOR MORE INFORMATION ABOUT THIS SITE PLAN, CONTACT THE CITY OF ROCHESTER PLANNING DEPARTMENT, 33 WAKEFIELD ST., ROCHESTER, NH 03867. (603) 335-1338. THIS PARCEL IS SUBJECT TO A 15 FOOT UTILITY EASEMENT ALONG THE FRONTAGE AND A 30 FOOT UTILITY EASEMENT ALONG THE REAR PROPERTY LINE. IT IS ALSO SUBJECT TO A 15 FOOT UTILITY EASEMENT ALONG THE EASTERN PROPERTY LINE, AS DEPICTED.

- JURISDICTIONAL WETLANDS MAPPING NOTES
1. STATE AND FEDERAL JURISDICTIONAL WETLANDS WERE DELINEATED BY N.H. CERTIFIED WETLAND SCIENTIST, BARRY H. KEITH, ON JULY 31, 2015 AND LOCATED BY NORWAY PLAINS ASSOCIATES, INC. IN AUGUST 2015. WETLAND DELINEATION AND CLASSIFICATIONS WERE CONDUCTED USING METHODS AND IN ACCORDANCE WITH THE FOLLOWING GUIDANCE DOCUMENTS:
A. N.H. CODE OF ADMINISTRATIVE RULES (ENV-WT 301.01) WITH THE TECHNIQUES OUTLINED IN THE 1987 U.S. ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL, TECHNICAL REPORT Y-87-1.
B. U.S. ARMY CORPS OF ENGINEERS, 2009. "REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL, NORTHEASTAL AND NORTHEAST REGION, U.S. ARMY CORPS OF ENGINEERS RESEARCH AND DEVELOPMENT CENTER, ENVIRONMENTAL LABORATORY ERDC/EL TR-09-19."
C. U.S. ARMY CORPS OF ENGINEERS, 2012. "NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST REGION, U.S. ARMY CORPS OF ENGINEERS RESEARCH AND DEVELOPMENT CENTER, ENVIRONMENTAL LABORATORY."
D. N.H. CODE OF ADMINISTRATIVE RULES (ENV-WT 301.02) WITH THE 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."
E. NEW ENGLAND HYDRIC SOILS TECHNICAL COMMITTEE, 2004. 3RD ED., "FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND," NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION, LOWELL, MA.
F. U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE, 2010. "FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 7.0." L.M. VASILAS, G.W. HURT, AND C.V. NOBLE (EDS.). USDA, NRCS, IN COOPERATION WITH THE NATIONAL TECHNICAL COMMITTEE FOR HYDRIC SOILS.
2. WETLANDS CLASSIFICATIONS FOUND ON SITE ARE AS FOLLOWS: PEM/SS1E - PALUSTRINE PERSISTENT EMERGENT AND SCRUB-SHURB BROADLEAVED DECIDUOUS, SEASONALLY FLOODED/SATURATED; POORLY DRAINED. PF01E - PALUSTRINE FORESTED BROADLEAVED DECIDUOUS, SEASONALLY FLOODED/SATURATED; POORLY DRAINED. R3UBH - RIVERINE UPPER PERENNIAL UNCONSOLIDATED BOTTOM, PERMANENTLY FLOODED.

TAX MAP 243, LOT 34
OWNER OF RECORD:
CITY OF ROCHESTER
31 WAKEFIELD STREET
ROCHESTER, NH 03867
BOOK 4705, PAGE 254

EXISTING FEATURES PLAN
TAX MAP 243, LOTS 34
145 AIRPORT DRIVE
ROCHESTER, NH
PREPARED FOR:
CITY OF ROCHESTER

FINAL APPROVAL BY
ROCHESTER PLANNING BOARD
CERTIFIED BY: \_\_\_\_\_ DATE: \_\_\_\_\_



FILE NO. 104
PLAN NO. C-3013
DWC NO. 19275\SP-1
F.B. NO. SDR-TJR

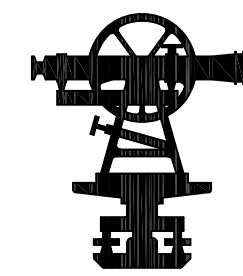
31 Mooney Street, Alton, N.H. 603-875-3948

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

LEGEND

- PROPERTY LINE
- JURISDICTIONAL WETLANDS
- ~ EXISTING TREE LINE
- ▬ PROPOSED BUILDING
- ▬ PROPOSED PAVEMENT

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.

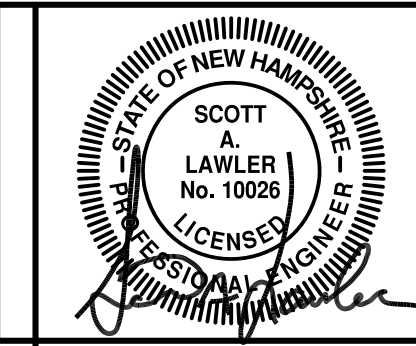


TAX MAP 241 - LOT 21  
LINDA SARGENT AND MARTHA J. FOWLER  
671 SALMON FALLS ROAD  
ROCHESTER, NH 03867  
(BOOK 2003 - PAGE 684)

TAX MAP 242 - LOT 5  
CITY OF ROCHESTER  
31 WAKEFIELD STREET  
ROCHESTER, NH 03866  
(BOOK 3963 - PAGE 25)

SITE REVIEW APPROVAL

WHETHER OR NOT OTHERWISE EXPRESSLY RECITED ON THIS SITE REVIEW PLAN, THE SITE REVIEW APPROVAL GRANTED IS CONDITIONED ON FAITHFUL AND DILIGENT ADHERENCE BY THE OWNER/DEVELOPER TO ALL WRITTEN AND VERBAL REPRESENTATIONS MADE REGARDING SUCH MATTERS AS USE, NUMBER OF EMPLOYEES, DRAINAGE, CONSTRUCTION, ETC. AS WELL AS ALL OTHER TERMS, CONDITIONS, PROVISIONS, REQUIREMENTS AND SPECIFICATIONS OF THE SITE PLAN REVIEW REGULATIONS OF THE CITY OF ROCHESTER, N.H., AS AMENDED, IN EFFECT ON THE DATE OF APPROVAL. ANY VARIATION FROM THE PROPOSAL AS APPROVED MAY ALSO REQUIRE THE SUBMISSION AND APPROVAL OF A NEW SITE REVIEW APPLICATION.



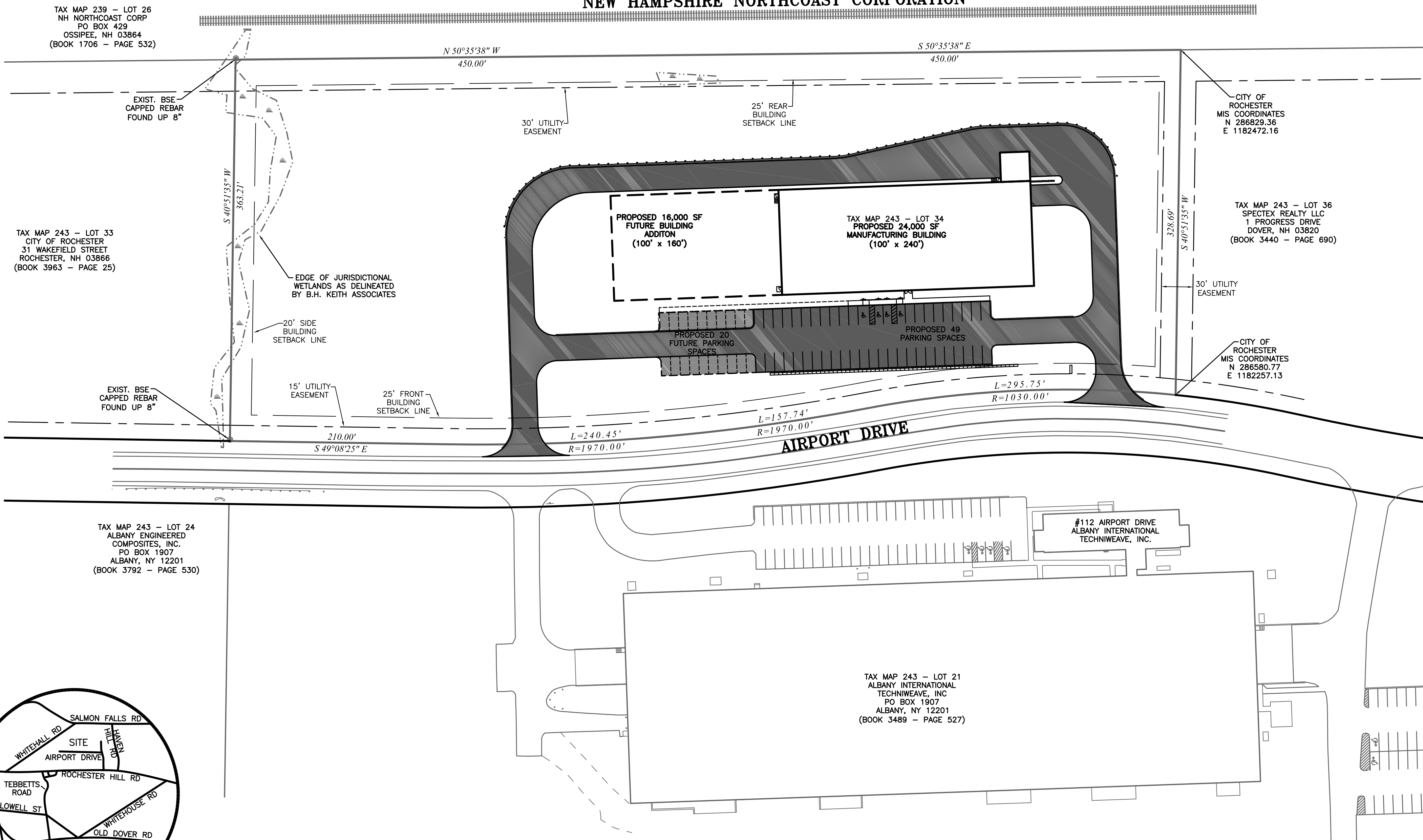
12/26/19 - REVISE GENERAL SITE PLAN NOTE #22.

GENERAL SITE PLAN NOTES

1. THIS PARCEL IS LOCATED IN THE GRANITE STATE BUSINESS PARK AND IN THE INDUSTRIAL (IND) ZONE.
2. TOTAL PARCEL AREA: MAP 243 - LOT 34: 315,374 SQUARE FEET OR 7.24 ACRES.
3. THE PURPOSE OF THIS PLAN IS TO DEPICT A PROPOSED 24,000 SQUARE FOOT MANUFACTURING BUILDING WITH FUTURE 16,000 FOOT ADDITION AND ASSOCIATED PARKING AND LOADING AREAS.
4. ALL EXISTING UTILITIES LOCATIONS ARE APPROXIMATE AS SHOWN. THE CONTRACTOR SHALL VERIFY THEIR EXACT LOCATION PRIOR TO ANY WORK BEING PERFORMED.
5. THESE PLANS SHOW ONLY THOSE FEATURES THAT WERE VISUALLY APPARENT ON THE DATE OF THE SURVEY (08-04-15 TO 08-06-15). THE ABSENCE OF SUBSURFACE STRUCTURES, UTILITIES, ETC. FROM THESE PLANS, BUT IN EXISTENCE, IS NOT INTENDED OR IMPLIED.
6. DIMENSIONAL REGULATIONS PER ZONING ORDINANCE:  
GENERAL INDUSTRIAL (G) ZONE:  
MINIMUM LOT SIZE (WITH WATER AND SEWER) = 20,000 SF  
MINIMUM LOT FRONTAGE = 100 FEET  
MINIMUM YARD SETBACKS:  
FRONT = 25'  
SIDE = 20'  
REAR = 25'  
MAXIMUM LOT COVERAGE = 75%  
MAXIMUM BUILDING HEIGHT = 55'
7. ORIENTATION: HORIZONTAL AND VERTICAL DATUMS - CITY OF ROCHESTER GIS.
8. SOIL TYPES ARE PER SITE SPECIFIC SOIL SURVEY REPORT BY ROUND POND SOIL SURVEY DATED AUGUST 26, 2015.
9. JURISDICTIONAL WETLANDS WERE DELINEATED BY B.H. KEITH ASSOCIATES ON JULY 31, 2015.
10. PARCEL IS NOT LOCATED WITHIN ZONE A (100YR FLOOD) AS SHOWN ON FEDERAL EMERGENCY MANAGEMENT AGENCY MAP, COMMUNITY #33017502160.
11. FOR MORE INFORMATION ABOUT THIS SITE PLAN, CONTACT THE CITY OF ROCHESTER PLANNING DEPARTMENT, 33 WAKEFIELD ST., ROCHESTER, NH 03867. (603) 335-1338.
12. THIS PARCEL IS SUBJECT TO A 15 FOOT UTILITY EASEMENT ALONG THE FRONTAGE AND A 30 FOOT UTILITY EASEMENT ALONG THE REAR PROPERTY LINE. IT IS ALSO SUBJECT TO A 15 FOOT UTILITY EASEMENT ALONG THE EASTERN PROPERTY LINE, AS DEPICTED.
13. PARKING REQUIREMENTS (SITE PLAN REGULATIONS SECTION 10 (A)):  
INDUSTRIAL USE:  
1 SPACE PER 1,000 GROSS SQUARE FEET PLUS  
3 SPACES PER 1,000 GROSS SQUARE FEET OF OFFICES OR RETAIL SALES:  
40,000 SF GFA X 1 SPACE / 1,000 SF GFA = 40 SPACES  
PLUS:  
4,610 SF OFFICE SPACE X 3 SPACES / 1,000 SF = 14 SPACES  
TOTAL REQUIRED SPACES = 54 SPACES  
TOTAL PROVIDED SPACES = 69 SPACES

14. THIS DEVELOPMENT MUST BE IN COMPLIANCE WITH ALL APPLICABLE LAW - INCLUDING ALL PERTINENT PROVISIONS OF THE CITY OF ROCHESTER SITE PLAN REGULATIONS - UNLESS OTHERWISE WAIVED.
15. THE APPLICANT SHALL OBTAIN A STORMWATER MANAGEMENT PERMIT FROM THE PUBLIC WORKS DEPARTMENT (UNLESS DETERMINED TO BE UNNECESSARY BY THE CITY ENGINEER) AND FOLLOW THE REQUIREMENTS OF THE CITY ORDINANCE CHAPTER 50. THE PERMITTEE SHALL PREPARE A WRITTEN PLAN FOR MANAGING STORMWATER THAT ENTERS THE CONSTRUCTION SITE AND SHALL PRESENT IT TO THE INSPECTION ENGINEER AT THE PRE-CONSTRUCTION MEETING. THE PERMITTEE SHALL FOLLOW BEST MANAGEMENT PRACTICES TO PREVENT EROSION IN AREAS WHERE SOIL HAS BEEN DISTURBED.
16. ACCESS INTO THE SITE FOR FIRE APPARATUS MUST BE MAINTAINED AT ALL TIMES DURING THE CONSTRUCTION PROCESS. THIS IS THE SOLE RESPONSIBILITY OF THE APPLICANT/DEVELOPER TO MAINTAIN THIS ACCESS. PLEASE CONTACT THE FIRE DEPARTMENT AT 330-7182 WITH ANY QUESTIONS ABOUT ACCESS REQUIREMENTS.
17. SNOW SHALL NOT BE PILED IN SUCH A MANNER AS TO BLOCK THE VISIBILITY OF THE VEHICLES ON AIRPORT DRIVE AND ALL EXCESS SNOW SHALL BE REMOVED FROM THE SITE.
18. ALL OUTSIDE CONSTRUCTION ACTIVITY RELATED TO THE DEVELOPMENT OF THIS SITE IS RESTRICTED TO THE HOURS OF 7:00 A.M. TO 6:00 P.M. MONDAY THROUGH FRIDAY AND 8:00 A.M. TO 6:00 P.M. SATURDAY.
19. ALL UTILITIES MUST BE UNDERGROUND, INCLUDING UTILITIES EXTENDED ONTO THE SITE FROM EXISTING POLES NEAR THE SITE. HOWEVER, IF THE ONLY POLE NEARBY IS ACROSS THE STREET, ONE ADDITIONAL POLE MAY BE PLACED ON/NEAR THE PROPERTY TO ALLOW FOR OVERHEAD EXTENSION OF WIRES ACROSS THE STREET. UTILITIES EXTENDING FROM ANY SUCH NEW POLE MUST BE UNDERGROUND. THE APPLICANT MAY WORK WITH THE CITY STAFF AS APPROPRIATE TO ADDRESS THIS REQUIREMENT.
20. THE CODE ENFORCEMENT OFFICER ADMINISTERS THE CITY OF ROCHESTER SIGN ORDINANCE. SIGNAGE SUBMITTED AS PART OF THIS SITE PLAN PACKAGE IS STILL SUBJECT TO HIS REVIEW TO ENSURE COMPLIANCE WITH THAT ORDINANCE AND OTHER APPLICABLE CODES, INDEPENDENT FROM THIS SITE PLAN REVIEW. IN ADDITION, IF ANY SIGNIFICANT CHANGE OR EXPANSION IS PROPOSED TO THE DESIGN OF THE APPROVED FREESTANDING SIGN OR TO THE OVERALL ADVERTISING SIGNAGE FOR THE SITE (NOT INCLUDING ACCESSORY SIGNAGE, SUCH AS HANDICAP PARKING SIGNS), THE PROPOSED SIGN DESIGNS MUST BE PRESENTED TO THE PLANNING BOARD FOR REVIEW PRIOR TO ISSUANCE OF THOSE SIGN PERMITS. A SIGN PERMIT MUST BE OBTAINED PRIOR TO INSTALLATION OF ANY SIGNS ON SITE.
21. ALL ELEMENTS SHOWN ON THE APPROVED SITE PLAN MUST BE PROPERLY COMPLETED PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY, UNLESS APPROPRIATE SURETY IS PLACED WITH THE PLANNING DEPARTMENT.
22. NOTE THAT THIS APPROVAL IS FOR THE SITE PLAN ONLY. LIFE SAFETY CODE AND BUILDING CODE REVIEW WILL BE REQUIRED AS PART OF THE BUILDING PERMIT PROCESS WHEN THE CONSTRUCTION PLANS ARE SUBMITTED. VARIOUS REQUIREMENTS REGARDING THE BUILDING DESIGN POSSIBLY INCLUDING A SPRINKLER SYSTEM - MAY BE SPECIFIED AT THAT TIME.
23. THE FOLLOWING PERMITS WILL BE REQUIRED BY THE DEPARTMENT OF PUBLIC WORKS PRIOR TO ISSUANCE OF A BUILDING PERMIT OR A CERTIFICATE OF OCCUPANCY. THE ASSOCIATED FEES SHALL BE WAIVED.  
A. STORMWATER PERMIT;  
B. WATER CONNECTION PERMIT;  
C. WASTEWATER CONNECTION PERMIT;  
D. CURB-CUT PERMIT;  
E. SEWER ASSESSMENT & QUESTIONNAIRE.
24. THIS PROJECT PROPOSED TO DISTURB OVER ONE ACRE OF EXISTING GROUND COVER AND MEETS OTHER SPECIFIC REQUIREMENTS RELATED TO PERMIT CRITERIA FOR EPA NPDES COMPLIANCE. THE CONTRACTOR IS RESPONSIBLE FOR DEVELOPMENT AND IMPLEMENTATION OF A STORM WATER POLLUTION PREVENTION PLAN (SWPPP), SUBMISSION OF A NOTICE OF INTENT (NOI) TO EPA, INSPECTIONS AND MAINTENANCE OF SEDIMENT CONTROL MEASURES, DOCUMENTATION OF MAINTENANCE ACTIVITIES, AND SUBMISSION OF A NOTICE OF TERMINATION (NOT) TO EPA. THE CONTRACTOR IS ALSO RESPONSIBLE TO COMPLY WITH ANY OR ALL OTHER ASPECTS OF THE CURRENT FEDERAL, STATE AND LOCAL STORM WATER OR NPDES REGULATIONS OR REQUIREMENTS. THE CONTRACTOR MUST SUBMIT A FAA FORM 7460-1 A MINIMUM OF 60-DAYS PRIOR TO THE START OF CONSTRUCTION TO ENSURE THAT IT WILL NOT NEGATIVELY IMPACT FLIGHTS IN AND AROUND SKYHAVEN AIRPORT. THE APPLICATION MUST INCLUDE ANY CRANES THAT MIGHT BE USED.

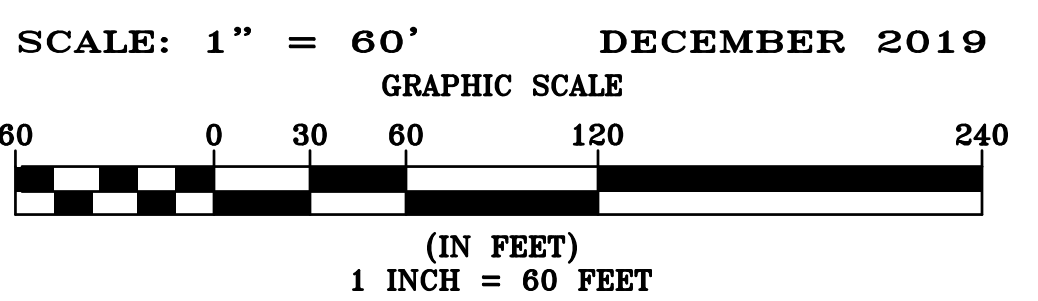
NEW HAMPSHIRE NORTHCOAST CORPORATION



Not For Construction

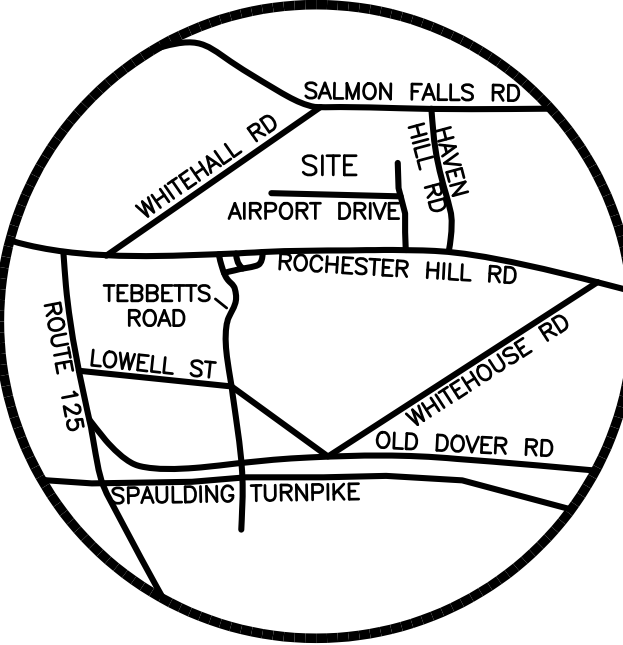
TAX MAP 243, LOT 34  
OWNER OF RECORD:  
CITY OF ROCHESTER  
31 WAKEFIELD STREET  
ROCHESTER, NH 03867  
BOOK 3963, PAGE 25

OVERALL SITE PLAN  
TAX MAP 243, LOT 34  
145 AIRPORT DRIVE  
ROCHESTER, NH  
PREPARED FOR:  
CITY OF ROCHESTER



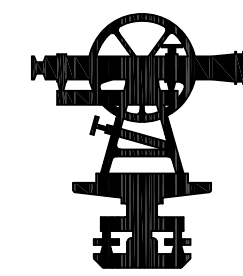
FINAL APPROVAL BY  
ROCHESTER PLANNING BOARD

CERTIFIED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

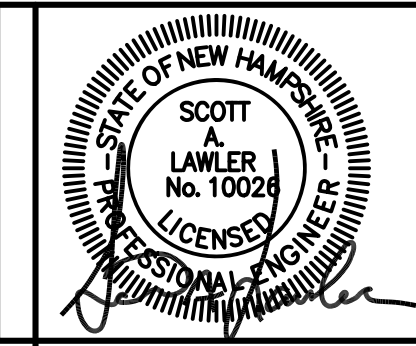


LOCATION MAP  
NOT TO SCALE

FILE NO. 104  
PLAN NO. C-3013  
DWG NO. 19275\SP-1  
F.B. NO. SDR-TJR



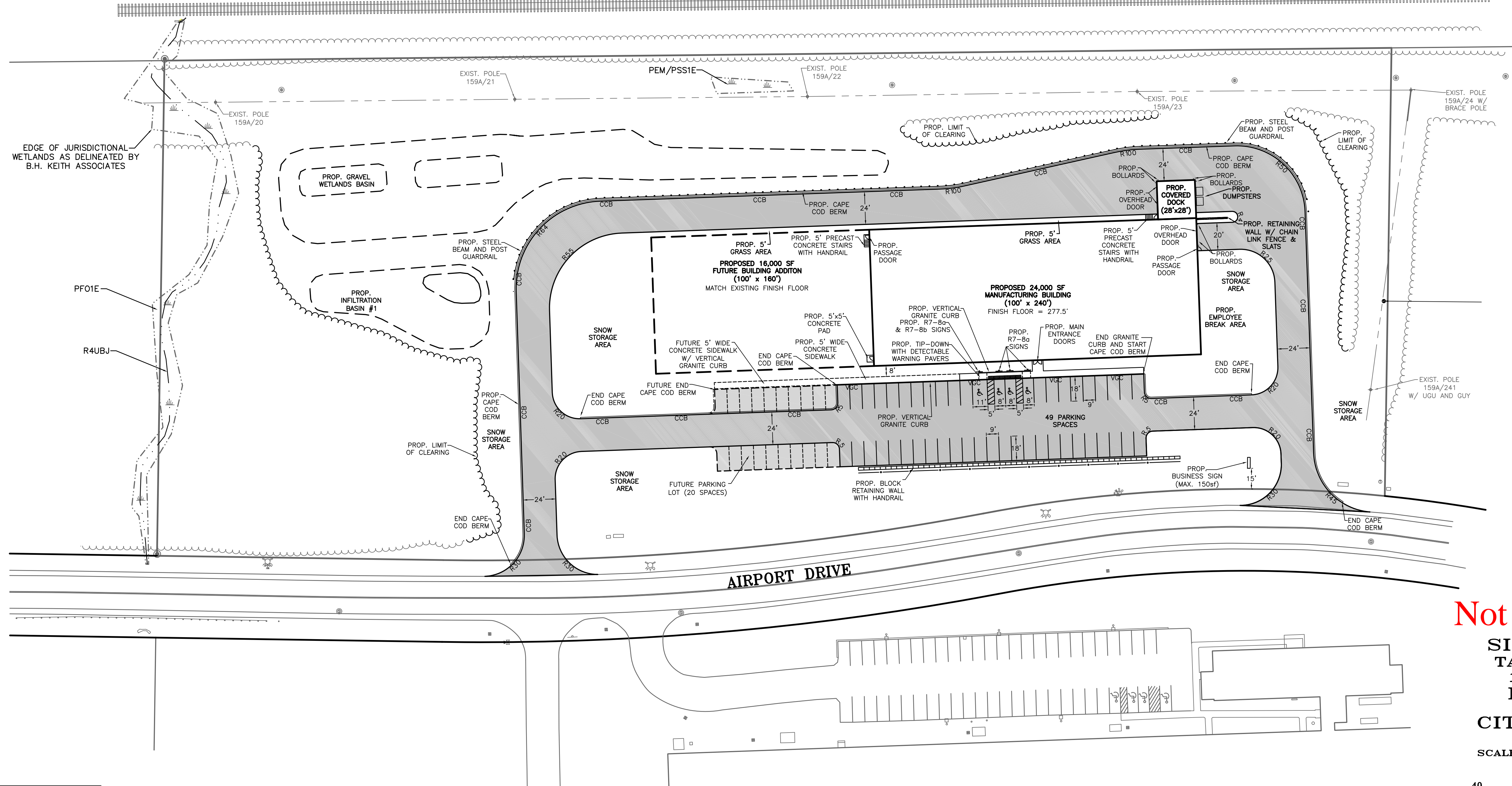
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**LEGEND**

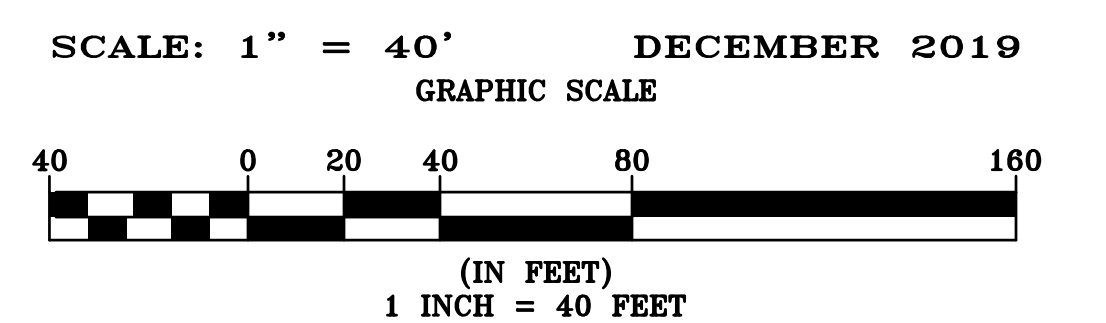
—	PROPERTY LINE	—	PROPOSED DETECTABLE WARNING PAVERS
---	JURISDICTIONAL WETLANDS	-	PROPOSED SIGNS
---	EXISTING TREE LINE	VGC	VERTICAL GRANITE CURB
---	EXISTING OVERHEAD WIRES	CCB	BITUMINOUS CAPE COD BERM CURB
---	EXISTING HYDRANT	R20'	PAVEMENT RADIUS (20')
---	EXISTING WATER GATE OR SHUT-OFF VALVE	---	PROPOSED STANDARD PARKING SPACES (9' x 18')
---	EXISTING UTILITY POLE	---	PROPOSED VAN ACCESSIBLE PARKING SPACES (11' x 18' WITH 5' x 18' ACCESS ISLE)
---	EXISTING SEWER MAN HOLE	---	PROPOSED ACCESSIBLE PARKING SPACES (8' x 18' WITH 5' x 18' ACCESS ISLE)
---	EXISTING CATCH BASIN	---	PROPOSED PAVEMENT
---	EXISTING LIGHT POLES	---	
---	PROPOSED BUILDING	---	
---	PROPOSED PAVEMENT	---	
---	PROPOSED PAVEMENT WITH CURBING	---	
---	PROPOSED TREE LINE	---	
---	PROPOSED CHAINLINK FENCE	---	
---	PROPOSED GUARDRAIL	---	
---	PROPOSED BLOCK RETAINING WALL	---	

**NEW HAMPSHIRE NORTHCOAST CORPORATION**



GENERAL CONSTRUCTION NOTES:  
 1. ALL DETECTABLE WARNING PAVERS SHALL BE CAST IN PLACE ARMOR-TILE TACTILE SYSTEM, YELLOW IN COLOR, OR APPROVED EQUAL.  
 2. ALL TIP-DOWNS SHALL HAVE VERTICAL GRANITE CURB (FLUSH) ACROSS THE TRANSITIONS

**Not For Construction**  
 SITE LAYOUT PLAN  
 TAX MAP 243, LOT 34  
 145 AIRPORT DRIVE  
 ROCHESTER, NH  
 PREPARED FOR:  
**CITY OF ROCHESTER**

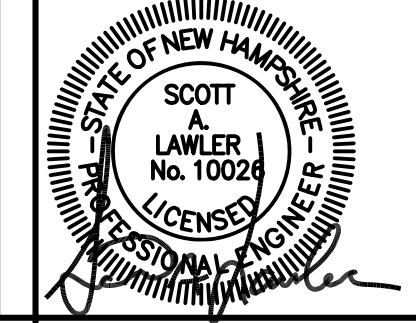
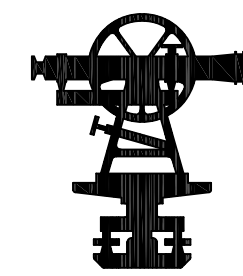


FILE NO. 104  
 PLAN NO. C-3013  
 DWG NO. 19275\SP-1  
 F.B. NO. SDR-TJR

LEGEND

- PROPERTY LINE
- - - JURISDICTIONAL WETLANDS
- - - EXISTING TREE LINE
- - - EXISTING DRAIN LINE
- 232- EXISTING CONTOUR LINE
- ⊕ EXISTING CATCH BASIN
- ⊕ EXISTING TEST PIT
- E234.1'- EXISTING SPOT GRADE
- P234.2S'- PROPOSED SPOT GRADE
- - - PROPOSED TREE LINE
- - - PROPOSED DRAIN LINE
- 232- PROPOSED CONTOUR LINE
- ⊕ PROPOSED CATCH BASIN
- ⊕ PROPOSED DRAIN MANHOLE
- ⊕ PROPOSED FLARED END SECTION (FES)
- CPP CORRUGATED POLYETHYLENE PIPE
- CB CATCH BASIN
- AD AREA DRAIN
- TOW TOP OF WALL
- TC TOP OF CURB
- BC BASE OF CURB
- ⊕ PROPOSED OUTLET PROTECTION

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.

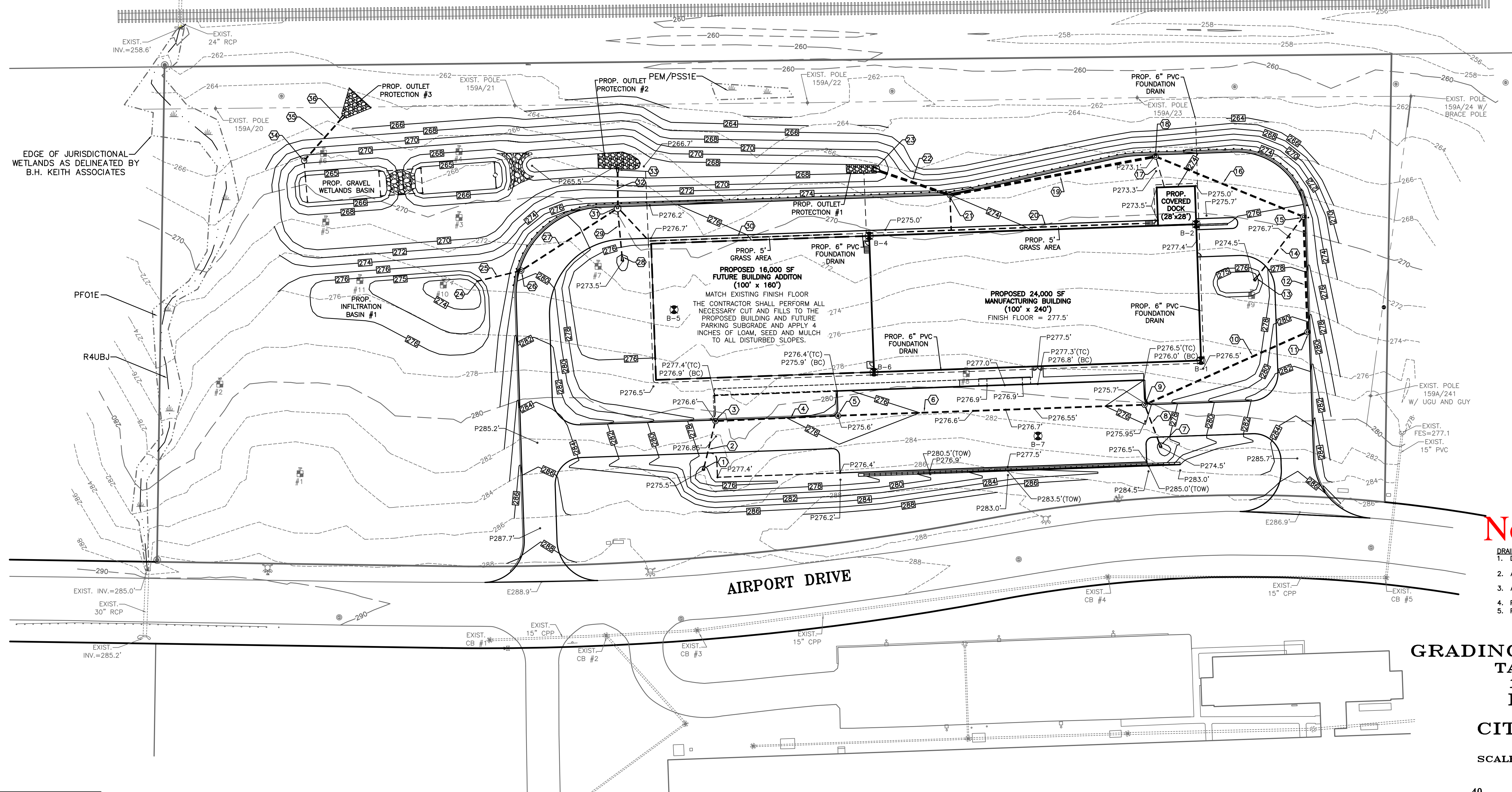


- DRAINAGE STRUCTURES**
- EXIST. CB #1  
RIM = 287.5'  
INV. OUT = 284.3'
  - EXIST. CB #2  
RIM = 286.9'  
INV. IN = 283.5'  
INV. OUT = 283.3'
  - EXIST. CB #3  
RIM = 286.7'  
INV. IN = 282.6'  
INV. OUT = 282.4'
  - EXIST. CB #4  
RIM = 284.9'  
INV. IN = 280.6'  
INV. OUT = 280.4'
  - EXIST. CB #5  
RIM = 286.6'  
INV. IN = 281.8'  
INV. OUT = 280.7'

PROPOSED DRAINAGE STRUCTURES

- 1- PROP. FES #1  
INV. = 275.5' (#1)
- 2- PROP. CB #7  
RIM = 274.0'  
INV. IN = 267.8' (#10)  
INV. OUT = 269.7' (#11) \*  
SUMP = 263.7'
- 3- PROP. CB #1  
RIM = 276.8'  
INV. IN = 273.1' (#1)  
INV. OUT = 273.0' (#2)  
SUMP = 270.0'
- 4- PROP. FES #4  
RIM = 275.6'  
INV. IN = 272.6' (#2)  
INV. OUT = 272.3' (#3)  
SUMP = 269.3'
- 5- PROP. CB #2  
RIM = 275.6'  
INV. IN = 271.2' (#3)  
INV. OUT = 270.9' (#5)  
SUMP = 267.9'
- 6- PROP. FES #2  
RIM = 274.5' (#4)
- 7- PROP. CB #3  
RIM = 275.7'  
INV. IN = 271.2' (#3)  
INV. IN = 271.5' (#4)  
INV. OUT = 270.9' (#5)  
SUMP = 267.9'
- 8- PROP. CB #4  
RIM = 280.4'  
INV. IN = 270.2' (#5)  
INV. OUT = 270.1' (#6)  
SUMP = 267.1'
- 9- PROP. FES #3  
RIM = 274.5' (#7)
- 10- PROP. CB #5  
RIM = 276.3'  
INV. IN = 269.7' (#6)  
INV. IN = 272.8' (#7)  
INV. OUT = 269.6' (#9)  
SUMP = 266.5'
- 11- PROP. CB #6  
RIM = 273.1'  
INV. IN = 269.0' (#8)  
INV. IN = 269.6' (#9)  
INV. OUT = 268.5' (#10)  
SUMP = 265.7'
- 12- PROP. CB #7  
RIM = 274.0'  
INV. IN = 267.8' (#10)  
INV. OUT = 269.7' (#11) \*  
SUMP = 263.7'
- 13- PROP. FES #4  
RIM = 275.6'  
INV. IN = 272.6' (#2)  
INV. OUT = 272.3' (#3)  
SUMP = 269.3'
- 14- PROP. CB #8  
RIM = 279.6'  
INV. IN = 272.7' (#13)  
INV. OUT = 272.5' (#14)  
SUMP = 269.5'
- 15- PROP. FES #5  
RIM = 273.5' (#15)
- 16- PROP. CB #9  
RIM = 276.3'  
INV. IN = 272.1' (#14)  
INV. IN = 272.4' (#15)  
INV. OUT = 271.8' (#17) \*  
SUMP = 267.8'
- 17- PROP. FES #6  
RIM = 274.5' (#7)
- 18- PROP. CB #10  
RIM = 276.5' (#17)
- 19- PROP. OUTLET #3  
RIM = 269.0'  
INV. IN = 262.3' (UNDERDRAIN)  
INV. OUT = 265.0' (18)  
SUMP = 261.3'
- 20- PROP. FES #7  
RIM = 264.7' (#18)

NEW HAMPSHIRE NORTHCOAST CORPORATION



\* INSTALL OIL & FLOATING DEBRIS TRAP (ELIMINATOR OR APPROVED EQUAL) ON OUTLET PIPE.

PROPOSED DRAINAGE PIPES

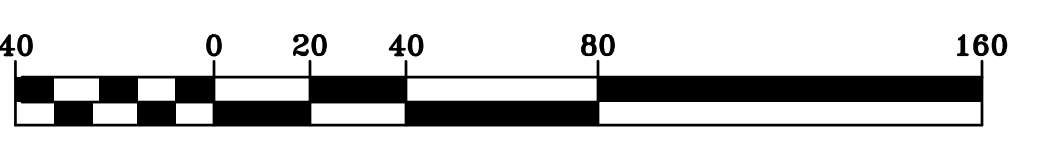
- 2- PROP. PIPE #1  
12" CPP  
L = 32'
- 4- PROP. PIPE #2  
12" CPP  
L = 87'
- 6- PROP. PIPE #3  
15" CPP  
L = 222'
- 8- PROP. PIPE #4  
12" CPP  
L = 28'
- 10- PROP. PIPE #5  
18" CPP  
L = 130'
- 12- PROP. PIPE #6  
18" CPP  
L = 85'
- 14- PROP. PIPE #7  
12" CPP  
L = 56'
- 16- PROP. PIPE #8  
18" CPP  
L = 117'
- 17- PROP. PIPE #9  
8" CPP  
L = 22'
- 19- PROP. PIPE #10  
24" CPP  
L = 150'
- 20- PROP. PIPE #11  
12" CPP  
L = 162'
- 22- PROP. PIPE #12  
24" CPP  
L = 50'
- 23- PROP. PIPE #13  
12" CPP  
L = 34'
- 27- PROP. PIPE #14  
15" CPP  
L = 80'
- 29- PROP. PIPE #15  
12" CPP  
L = 34'
- 30- PROP. PIPE #16  
12" CPP  
L = 170'
- 32- PROP. PIPE #17  
18" CPP  
L = 24'
- 35- PROP. PIPE #18  
18" CPP  
L = 70'

**Not For Construction**

- DRAINAGE NOTES:**
1. DRAINAGE STRUCTURES SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN ON SHEET C-8.
  2. ALL CORRUGATED PLASTIC PIPE (CPP) USED SHALL BE DUAL WALLED HIGH DENSITY POLYETHYLENE.
  3. ALL MATERIALS SHALL BE AS SPECIFIED. ANY CHANGES SHALL BE APPROVED BY THE DESIGN ENGINEER.
  4. PROPOSED ROOF DRAINS SHALL NOT BE TIED INTO PROPOSED FOUNDATION DRAIN.
  5. PROPOSED ROOF DRAINS SHALL HAVE 2" RIGID INSULATION PLACED ON TOP OF THE PIPE WHEN 4 FEET OF COVER CAN NOT BE MAINTAINED.

**GRADING AND DRAINAGE PLAN**  
 TAX MAP 243, LOT 34  
 145 AIRPORT DRIVE  
 ROCHESTER, NH  
 PREPARED FOR:  
**CITY OF ROCHESTER**

SCALE: 1" = 40' DECEMBER 2019  
 GRAPHIC SCALE



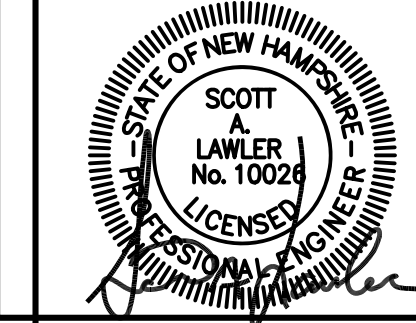
FILE NO. 104  
 PLAN NO. C-3013  
 DWG NO. 19275\SP-1  
 F.B. NO. SDR-TJR

LEGEND

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

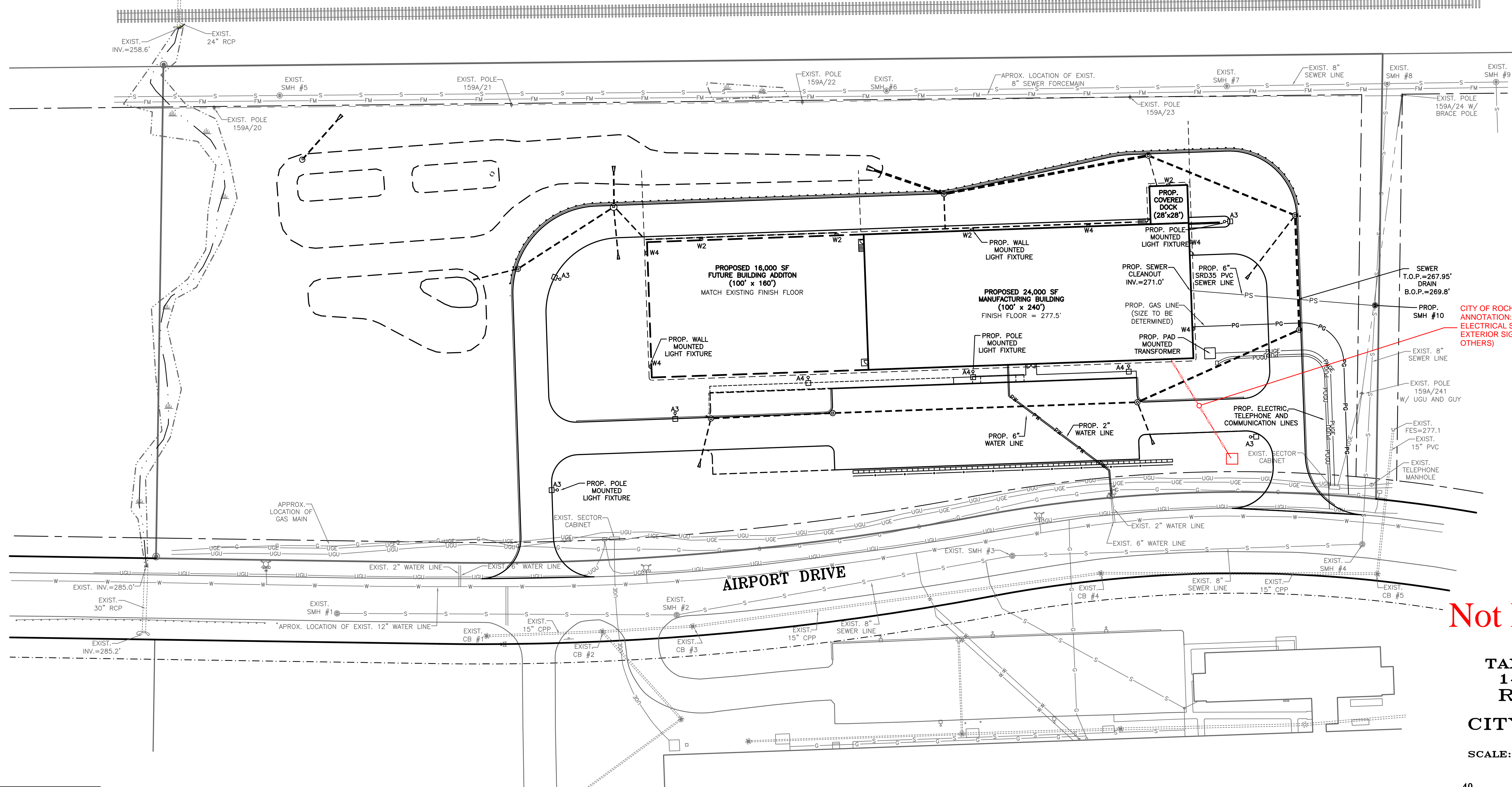
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps
□	A3	5	Lithonia Lighting	DSX0 LED 40C 1000 40K T3M MVOLT	DSX0 LED WITH (2) 20 LED LIGHT ENGINES, TYPE T3M OPTIC, 4000K, @ 1000mA, mounted at 25ft	LED	1
□	A4	3	Lithonia Lighting	DSX0 LED 40C 1000 40K T4M MVOLT	DSX0 LED WITH (2) 20 LED LIGHT ENGINES, TYPE T4M OPTIC, 4000K, @ 1000mA, mounted at 25ft	LED	1
□	W2	4	Lithonia Lighting	DSXW1 LED 20C 1000 40K T2S MVOLT	DSXW1 LED WITH (2) 10 LED LIGHT ENGINES, TYPE T2S OPTIC, 4000K, @ 1000mA, mounted at 18ft	LED	1
□	W4	5	Lithonia Lighting	DSXW1 LED 20C 1000 40K T4M MVOLT	DSXW1 LED WITH 2 LIGHT ENGINES, 20 LEDs, 1000mA DRIVER, 4000K LED, TYPE FORWARD THROW MEDIUM OPTIC, mounted at 18ft	LED	1

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09/15/15 - REVISE LOCATION OF PROPOSED SMH #10. ADD PROPOSED LIGHTING FIXTURES.

NEW HAMPSHIRE NORTHCOAST CORPORATION



EXISTING SEWER STRUCTURES	PROPOSED SEWER STRUCTURES
EXIST. SMH #1 RIM = 290.1'	PROP. SMH #10 RIM = 272.5'
EXIST. SMH #2 RIM = 288.8'	INV. IN = 264.8'(S) INV. IN = 264.8'(W) INV. OUT = 264.7'
EXIST. SMH #3 RIM = 287.7'	
EXIST. SMH #4 RIM = 287.4'	
EXIST. SMH #5 RIM = 285.8'	
EXIST. SMH #6 RIM = 282.9'	
EXIST. SMH #7 RIM = 261.7'	
EXIST. SMH #8 RIM = 261.6'	
EXIST. SMH #9 RIM = 259.6'	

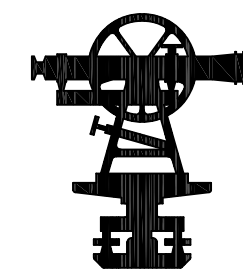
**Not For Construction**

UTILITY PLAN  
TAX MAP 243, LOT 34  
145 AIRPORT DRIVE  
ROCHESTER, NH  
PREPARED FOR:  
**CITY OF ROCHESTER**

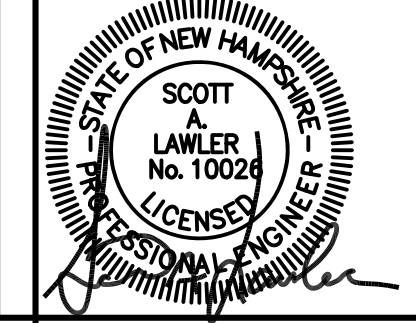
SCALE: 1" = 40' DECEMBER 2019  
GRAPHIC SCALE



FILE NO. 104  
PLAN NO. C-3013  
DWC NO. 19275/SP-1  
F.B. NO. SDR-TJR

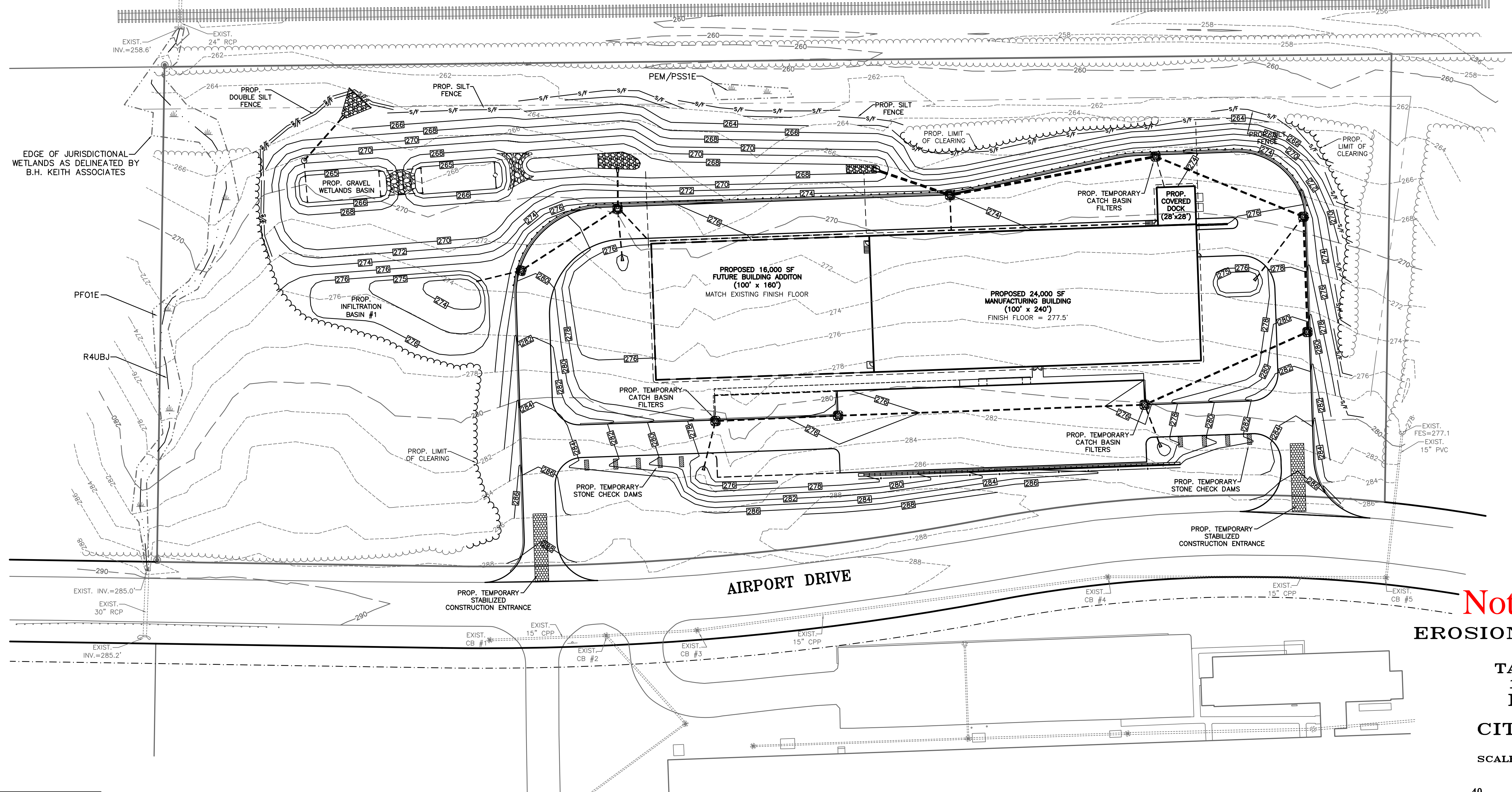


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- LEGEND**
- PROPERTY LINE
  - - - JURISDICTIONAL WETLANDS
  - - - EXISTING TREE LINE
  - - - EXISTING DRAIN LINE
  - - - EXISTING CONTOUR LINE
  - - - EXISTING CATCH BASIN
  - - - PROPOSED TREE LINE
  - - - PROPOSED DRAIN LINE
  - - - PROPOSED CONTOUR LINE
  - - - PROPOSED SILTATION FENCE
  - PROPOSED CATCH BASIN
  - PROPOSED DRAIN MANHOLE
  - ▽ PROPOSED FLARED END SECTION (FES)
  - PROPOSED TEMPORARY CATCH BASIN FILTERS
  - ▨ PROPOSED TEMPORARY STABILIZED CONSTRUCTION ENTRANCE
  - ▨ PROPOSED TEMPORARY STONE CHECK DAMS

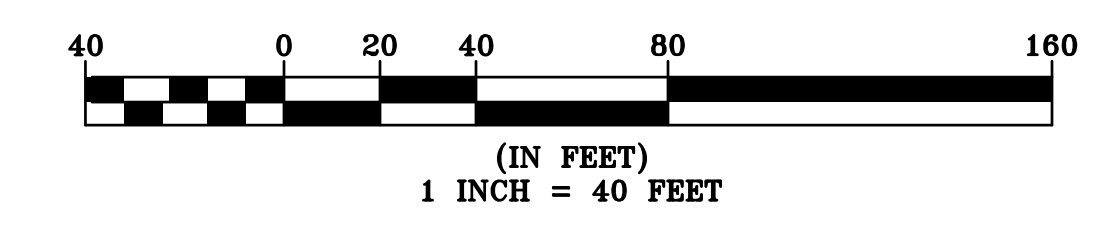
**NEW HAMPSHIRE NORTHCOAST CORPORATION**



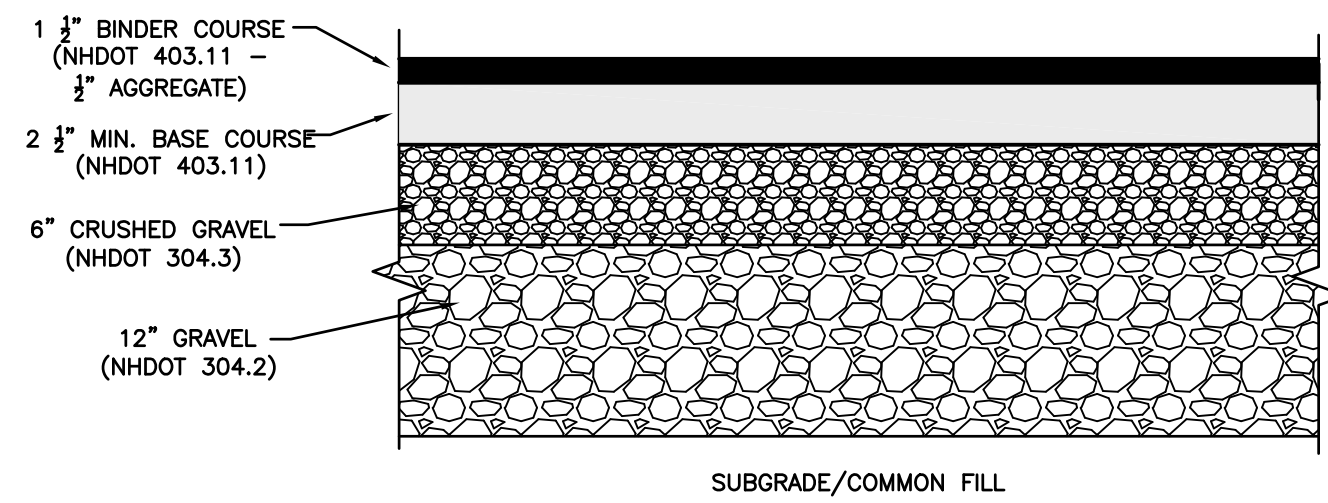
**Not For Construction**

**EROSION AND SEDIMENTATION CONTROL PLAN**  
 TAX MAP 243, LOT 34  
 145 AIRPORT DRIVE  
 ROCHESTER, NH  
 PREPARED FOR:  
**CITY OF ROCHESTER**

SCALE: 1" = 40' DECEMBER 2019  
 GRAPHIC SCALE



FILE NO. 104  
 PLAN NO. C-3013  
 DWG NO. 19275\SP-1  
 F.B. NO. SDR-TJR

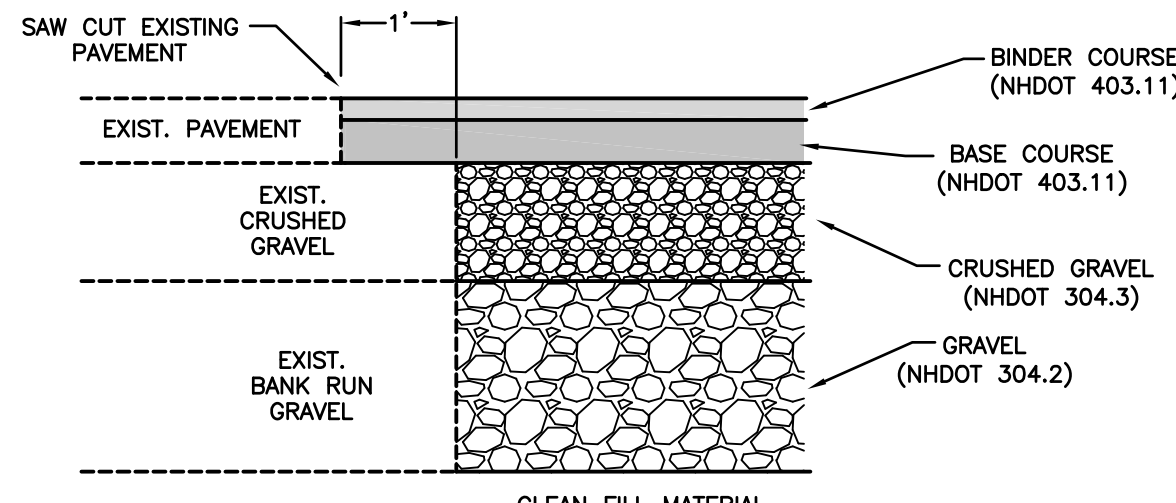


**PARKING LOT CROSS-SECTIONS**

NOT TO SCALE

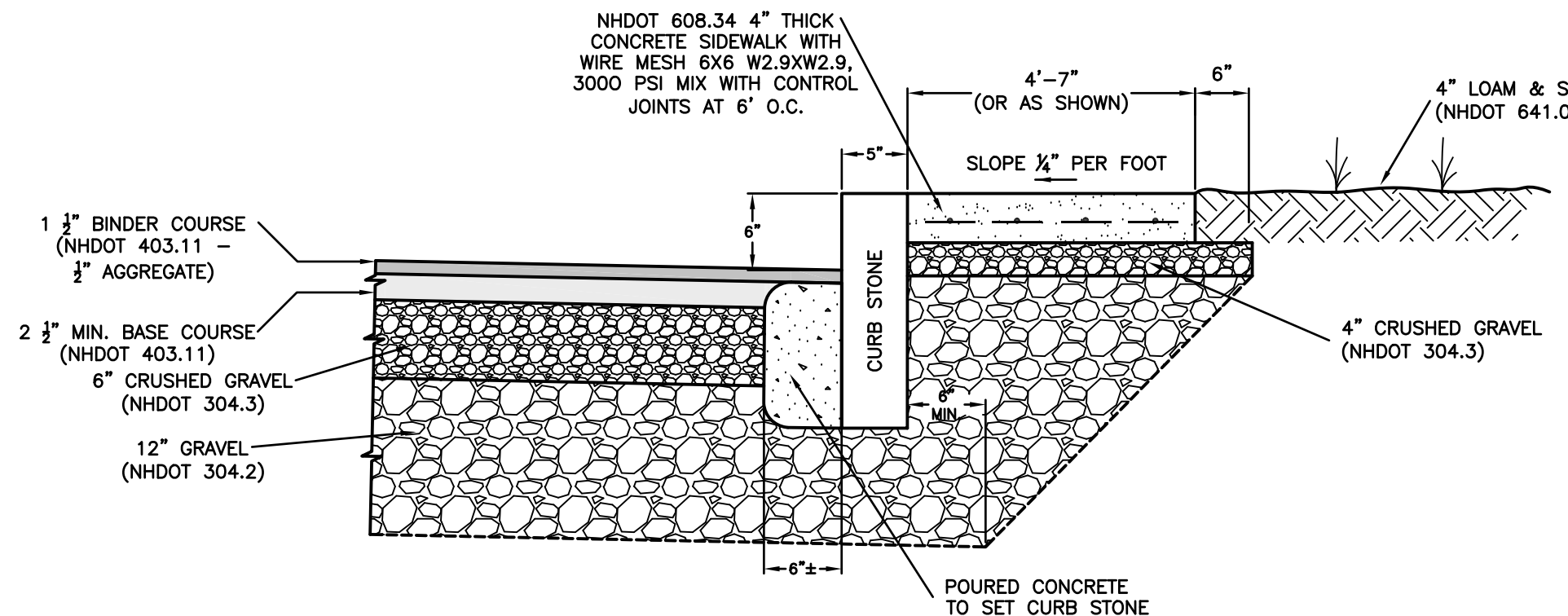
**PAVEMENT NOTES:**

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



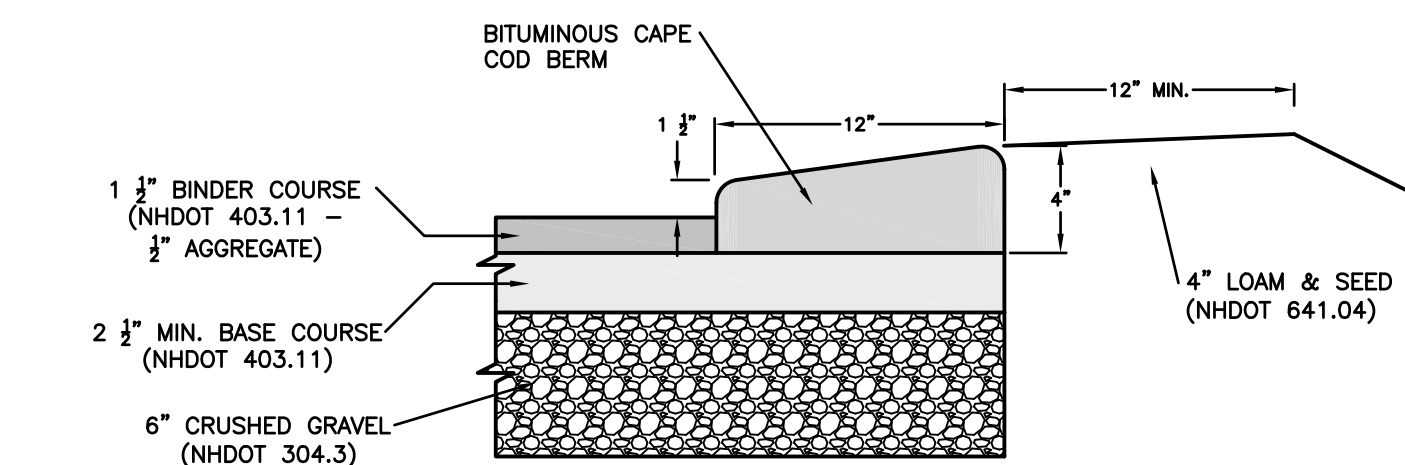
**TYPICAL PAVEMENT MATCHING DETAIL**

NOT TO SCALE



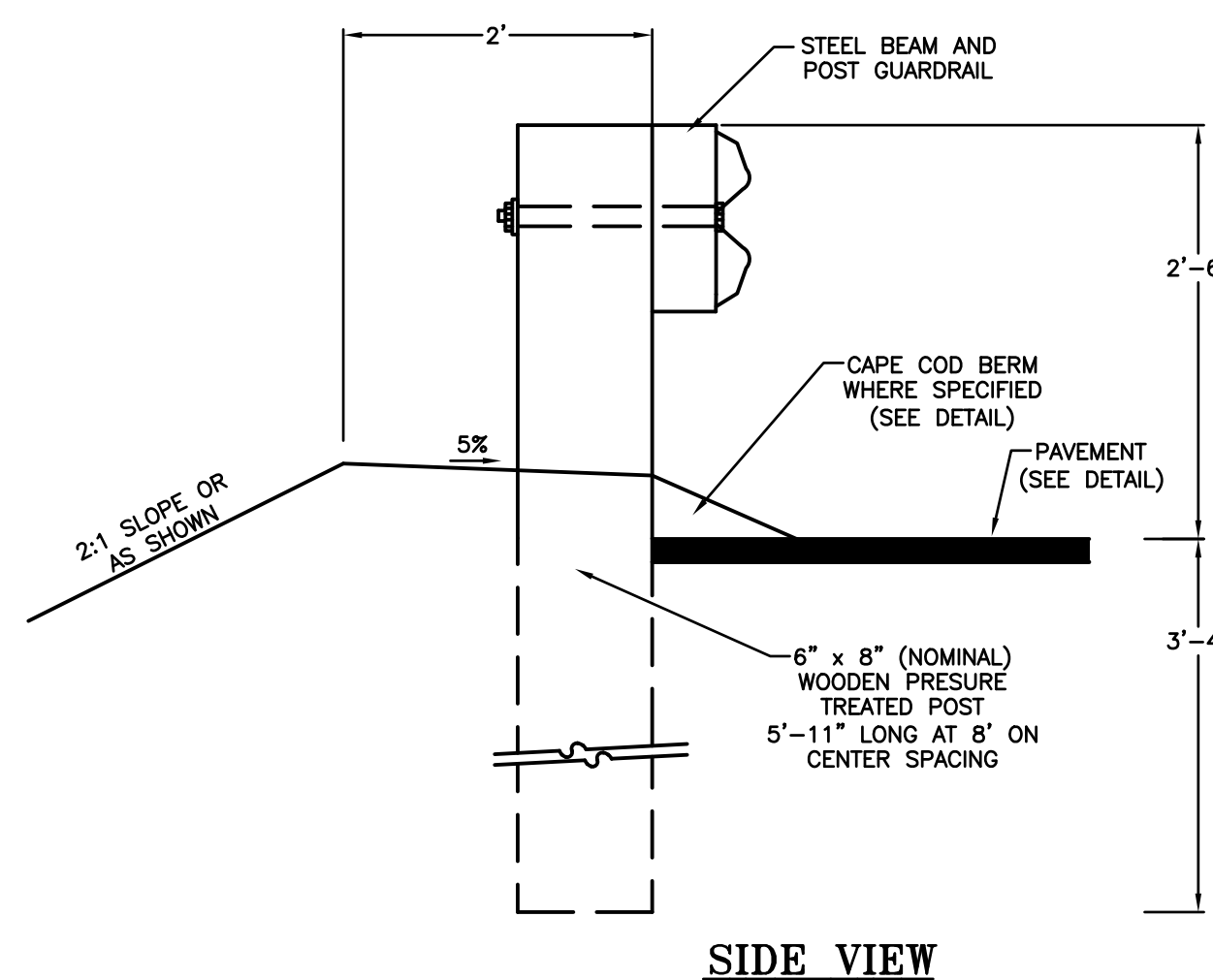
**CONCRETE SIDEWALK WITH GRANITE CURB DETAIL**

NOT TO SCALE



**BITUMINOUS CAPE COD BERM DETAIL**

NOT TO SCALE



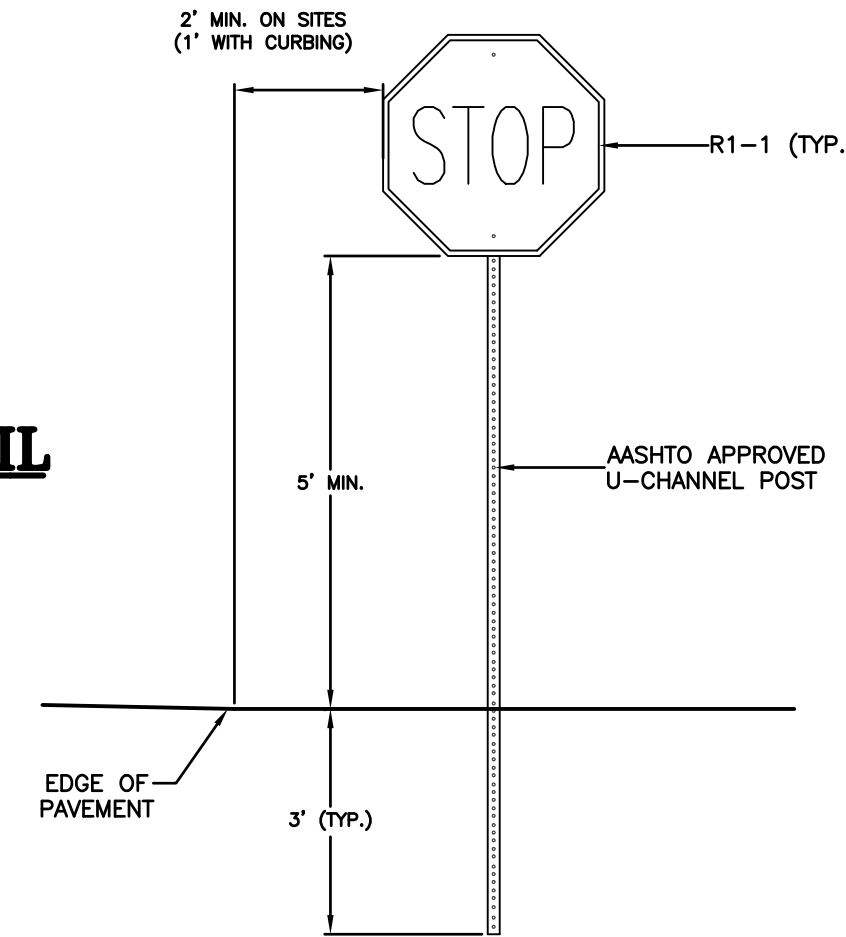
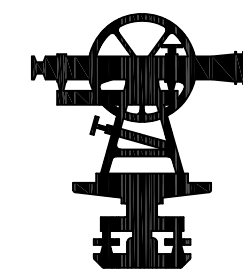
**CURBING AND GUARD RAIL DETAIL**

NOT TO SCALE

**NOTES:**

1. CONTRACTOR SHALL MAKE SURE POST DO NOT PENETRATE DRAINAGE PIPES OR OTHER UNDERGROUND UTILITY LINES.

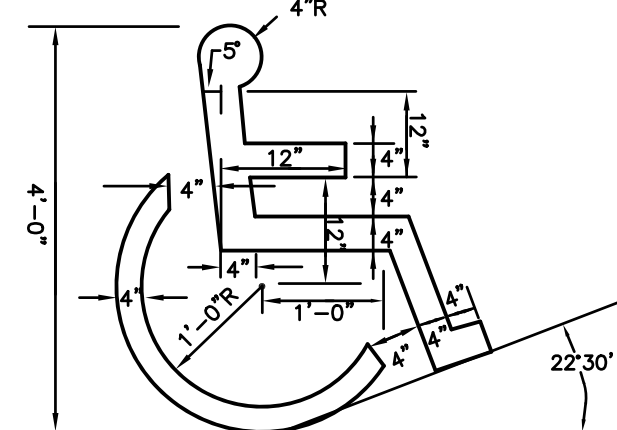
FILE NO. 104  
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 F.B. NO. SDR-TJR



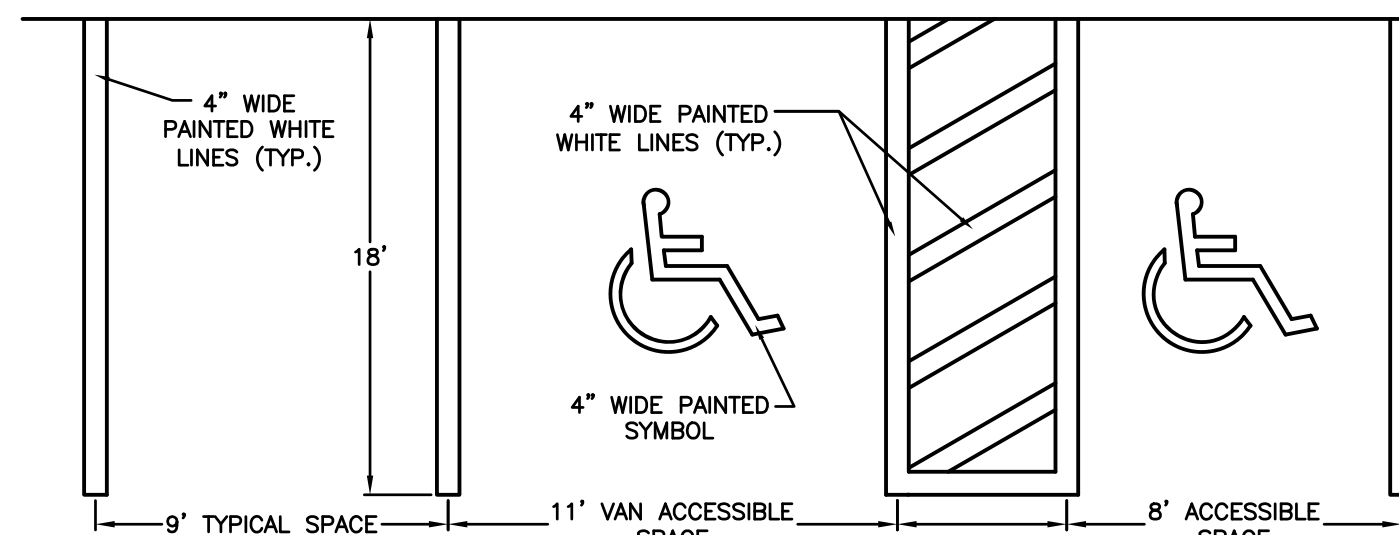
- NOTES:**
1. SIGN POST SHALL BE ASHTO APPROVED U-CHANNEL OR OTHER PER ASHTO "SPECIFICATIONS FOR STRUCTURAL SUPPORT OF HIGHWAY SIGNS, LUMINARIES AND SIGNALS", LATEST EDITION.
  2. SIGNS SHALL BE MOUNTED 5 FT FROM GROUND TO BOTTOM EDGE WHERE PARKING AND PARKING LOT MOVEMENTS TAKE PLACE.
  3. SIGNS SHALL BE PLACED SO THAT NEAREST EDGE IS 2 FT. FROM EDGE OF PAVEMENT UNLESS CURBED.

**TYPICAL TRAFFIC SIGN**

NOT TO SCALE

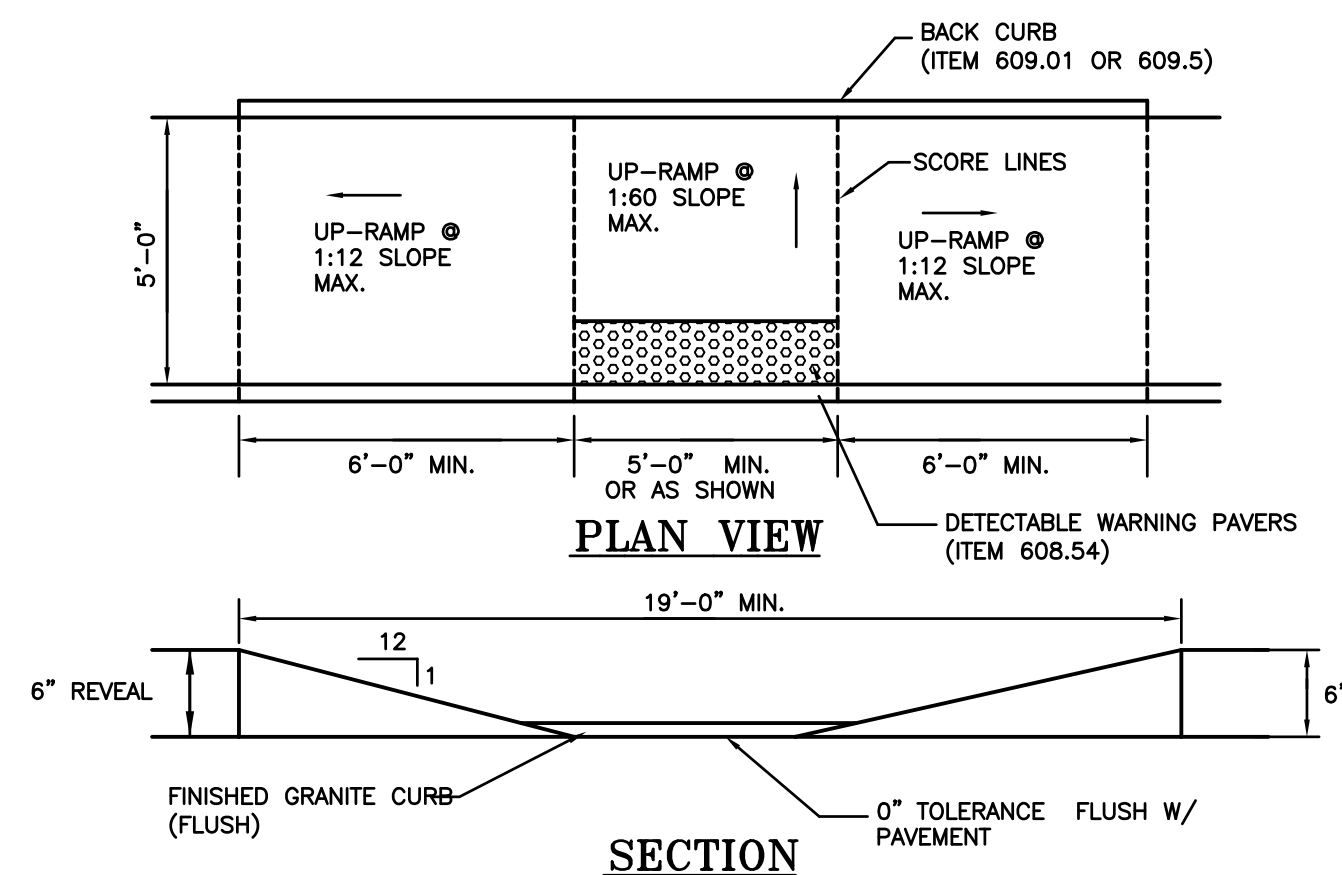


**ACCESSIBLE SYMBOL**



**STALL STRIPING DETAIL**

NOT TO SCALE



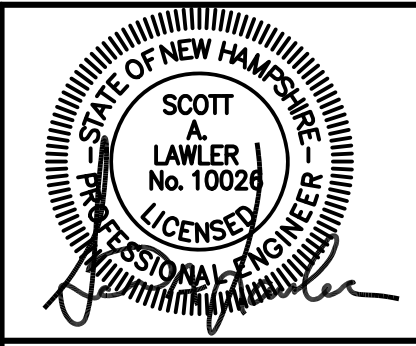
**HANDICAP RAMP DETAIL "A"**

NOT TO SCALE

**GENERAL SIDEWALK NOTES:**

1. THE MAXIMUM RUNNING SLOPE OF ANY SIDEWALK CURB IS 12:1. THE MAXIMUM CROSS SLOPE IS 2%.
2. TRANSITIONS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.
3. DETECTABLE WARNING PAVERS (ITEM 608.54) SHALL BE USED ON CONCRETE RAMPS AS SHOWN. EACH TACTICAL WARNING STRIP PANEL SHALL A TRUNCATED DOMED SURFACE AT LEAST 2'-0" IN WIDTH, MEASURED FROM THE BACK OF THE CURB TIP DOWN, AND 5'-0" IN LENGTH MEASURED PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAVEL.

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.

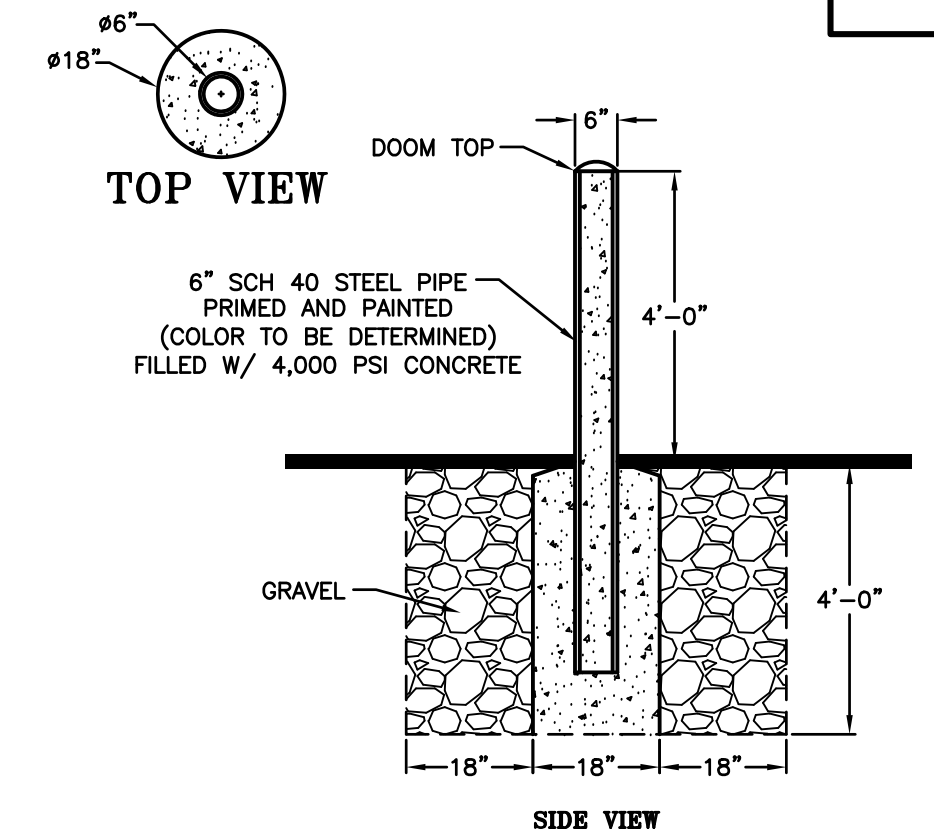


ITEM NO.	SIGN SIZE		TEXT	NO. SIGNS REQ'D
	HEIGHT	WIDTH		
R1-1	30"	30"	STOP	1
R7-8a	18"	12"	RESERVED PARKING	4
R7-8b	6"	12"	VAN ACCESSIBLE	1

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

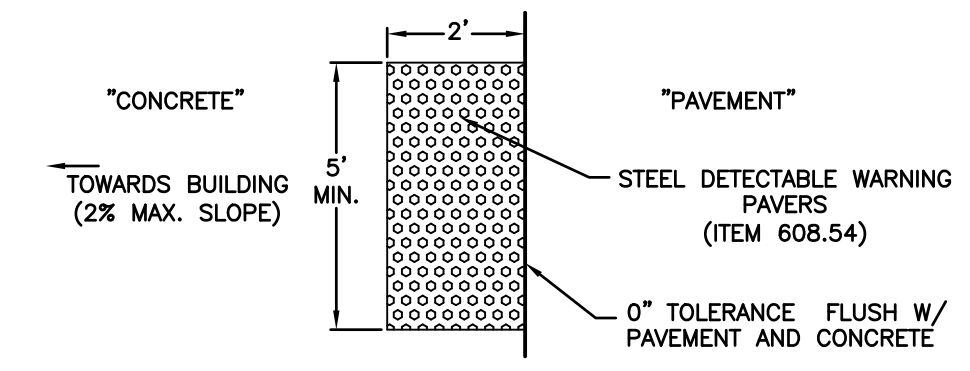
**SIGN SCHEDULE**

NOT TO SCALE



**STEEL BOLLARD DETAIL**

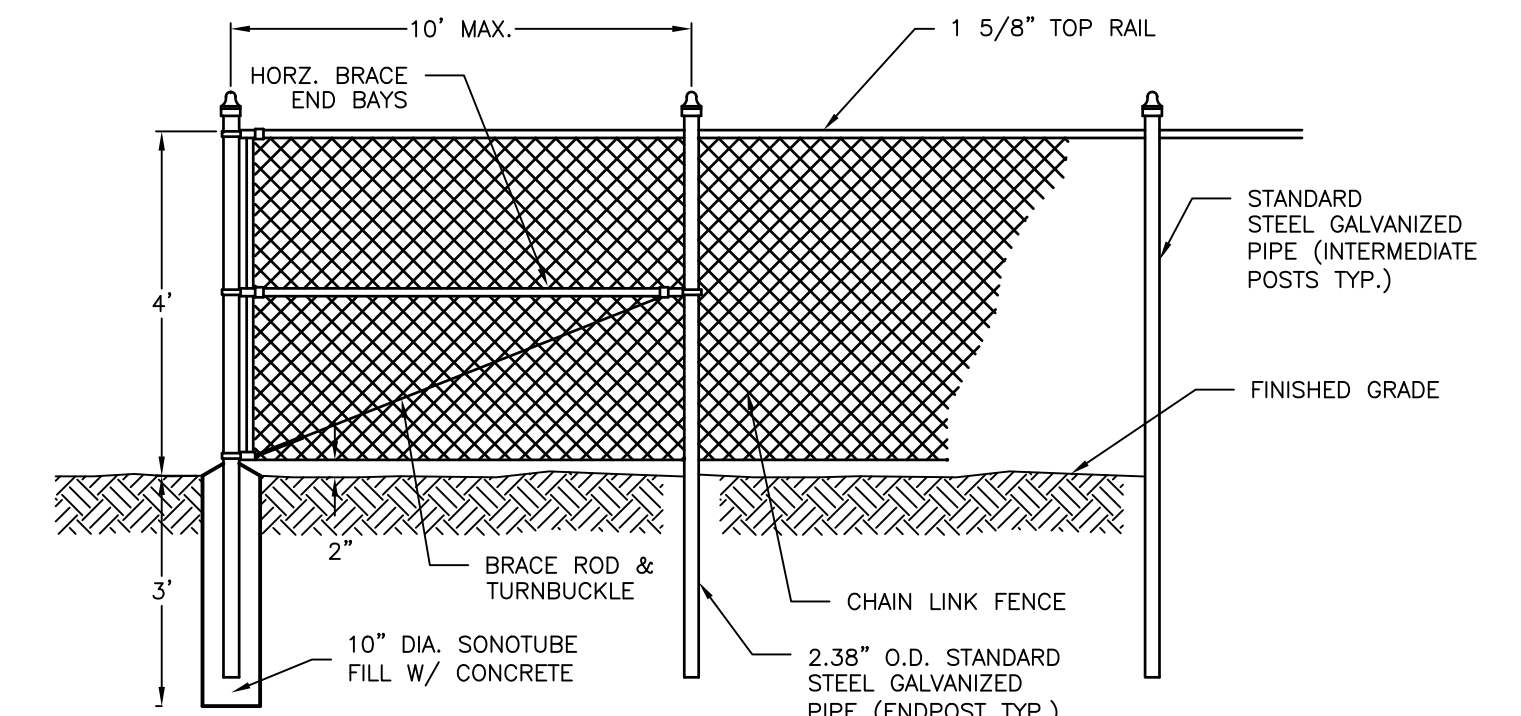
NOT TO SCALE



**DETECTABLE WARNING PAVER DETAIL**

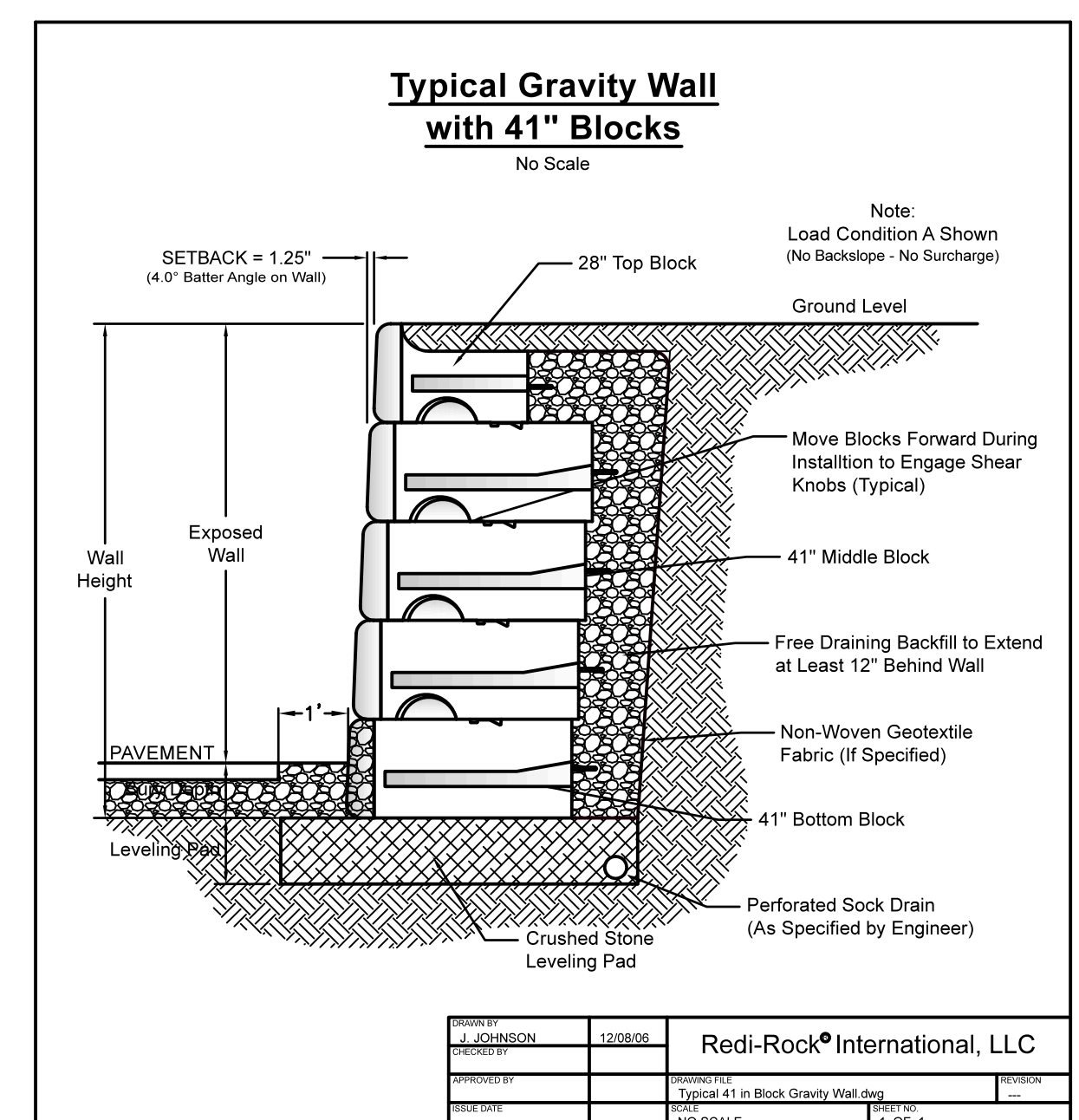
NOT TO SCALE

- DETECTABLE WARNING PAVER NOTES:**
1. THE MAXIMUM CROSS OF CONCRETE WALKWAY SLOPE IS 2%. THE SLOPE OF THE LANDING SHALL NOT EXCEED 2% IN ANY DIRECTION.
  2. TRANSITIONS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.
  3. DETECTABLE WARNING PAVERS (ITEM 608.54) SHALL BE USED ON CONCRETE RAMPS AS SHOWN. EACH TACTICAL WARNING STRIP PANEL SHALL A TRUNCATED DOMED SURFACE AT LEAST 2'-0" IN WIDTH, MEASURED FROM THE BACK OF THE CURB TIP DOWN, AND 5'-0" IN LENGTH MEASURED PERPENDICULAR T THE DIRECTION OF PEDESTRIAN TRAVEL.
  4. ALL DETECTABLE WARNING PAVERS SHALL BE CAST IN PLACE ARMOR-TILE TACTILE SYSTEM, YELLOW IN COLOR, OR APPROVED EQUAL.



**TYPICAL CHAINLINK FENCE**

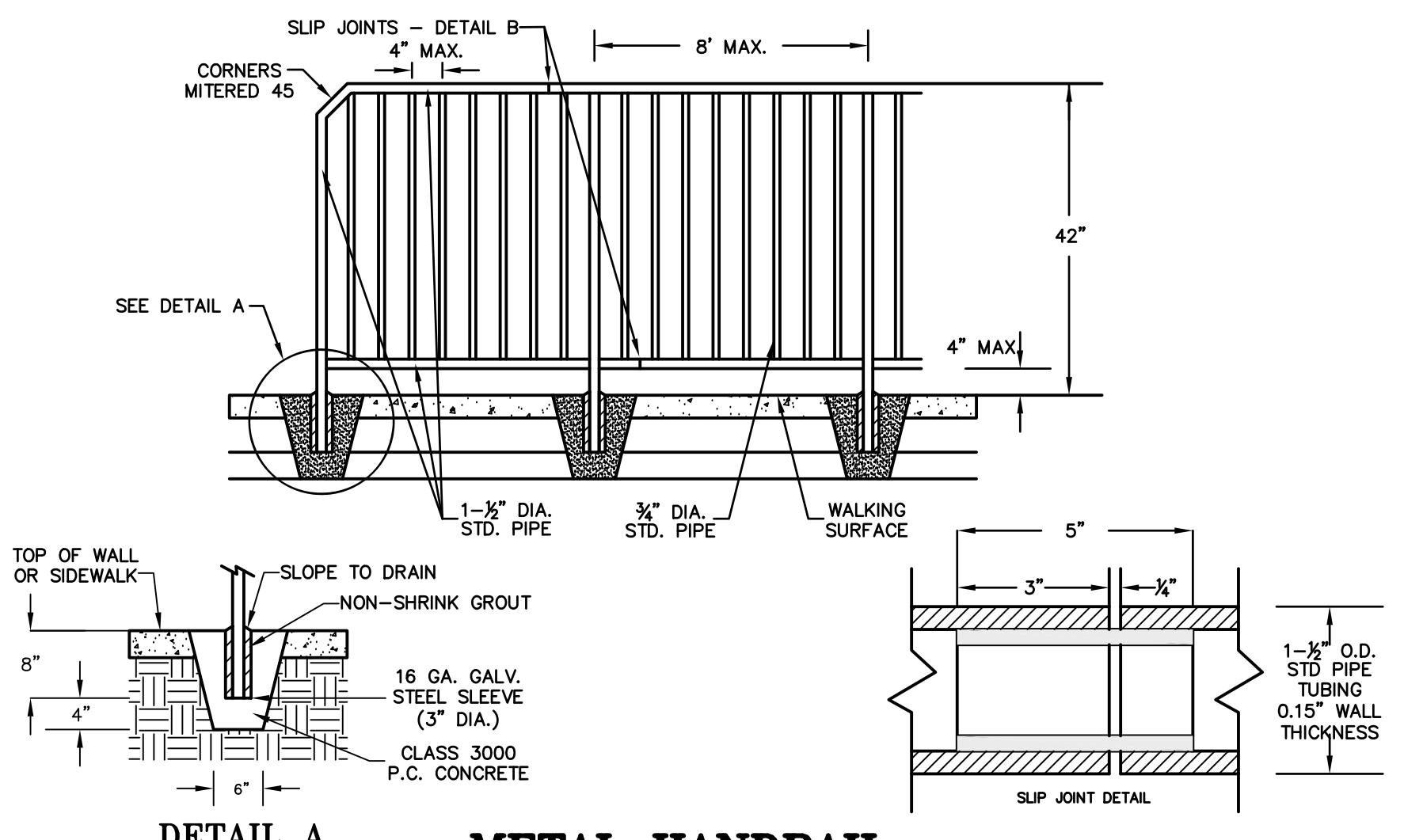
NOT TO SCALE



**TYPICAL BLOCK RETAINING WALL DETAIL**

NOT TO SCALE

- NOTES:**
1. DESIGN OF RETAINING WALLS TO BE PROVIDED BY MANUFACTURE AND INSTALLED PER THE MANUFACTURERS REQUIREMENTS.
  2. SHOP DRAWINGS SHALL BE SUBMITTED PRIOR TO ORDERING AND APPROVED BY NORWAY PLAINS ASSOCIATES, INC.
  3. CHAINLINK FENCE SHALL BE INSTALLED ON TOP OF WALL WHERE THE VERTICAL DROP IS GREATER THAN 2 FEET OR AS REQUIRED BY CODES.



**METAL HANDRAIL**

NOT TO SCALE

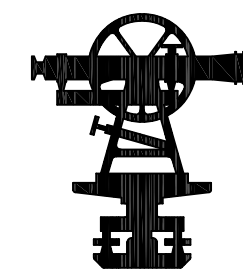
- NOTES:**
1. MATERIAL FOR HANDRAIL SHALL BE ALUMINUM OR GALVANIZED STEEL.
  2. PROVIDE SLIP JOINTS AT EXPANSION JOINTS AND AT EVERY 24 FEET ON CENTER MAXIMUM.
  3. 3/4 INCH SCH 40 (STD PIPE) BALUSTERS SHALL BE INSERTED IN HOLE OF 1-1/2 INCH STD PIPE AND TACK WELDED OPPOSITE TRAFFIC.

**Not For Construction**  
 CONSTRUCTION DETAILS  
 TAX MAP 243, LOT 34  
 145 AIRPORT DRIVE  
 ROCHESTER, NH

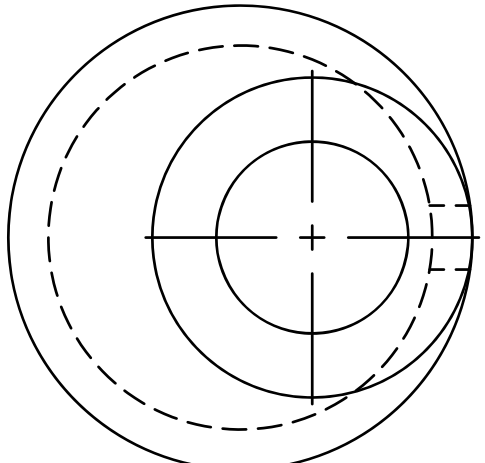
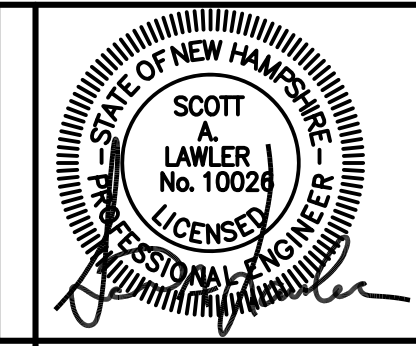
PREPARED FOR:  
**CITY OF ROCHESTER**

SCALE: AS SHOWN      DECEMBER 2019





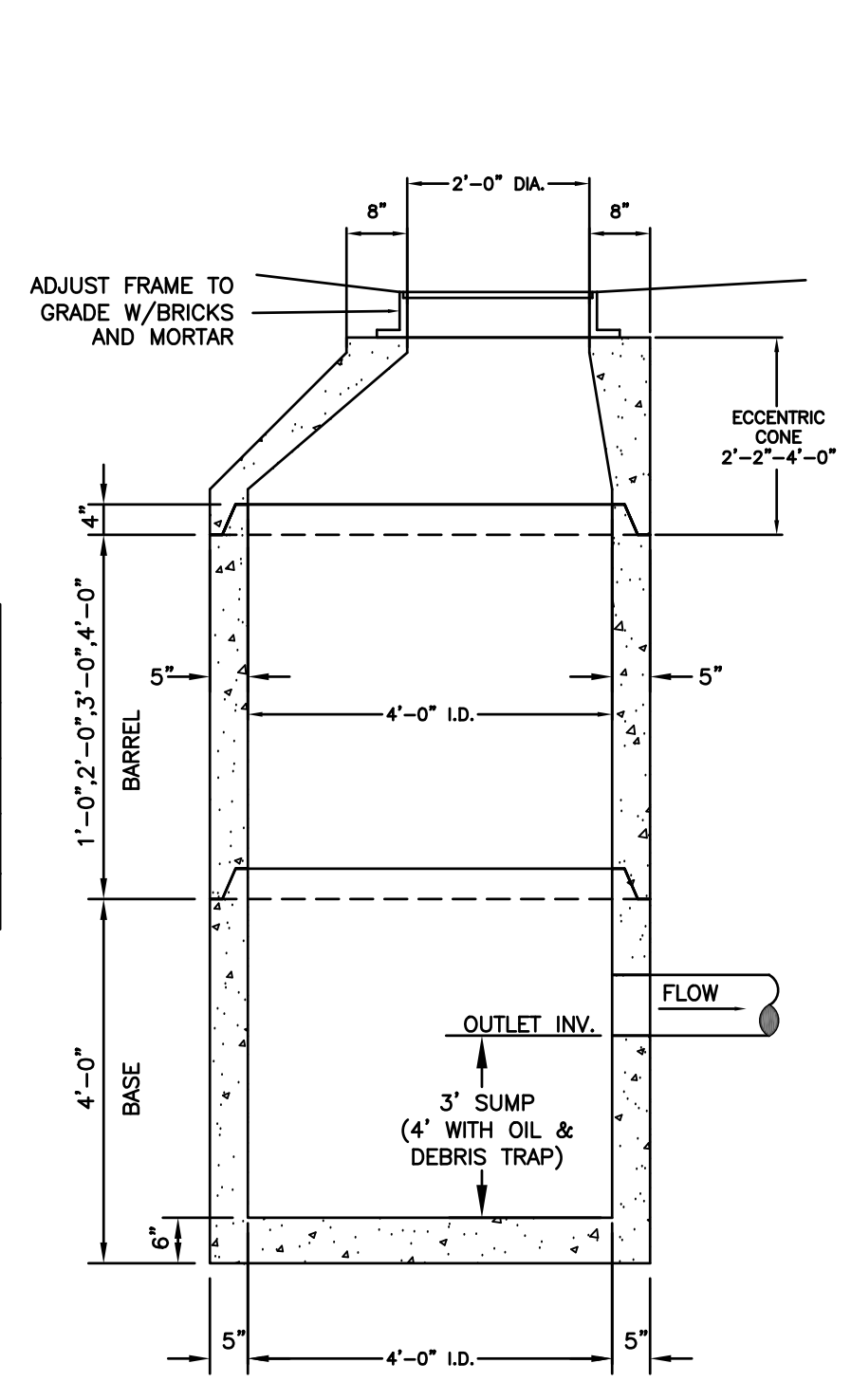
CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITHIN THE PLAN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



PLAN VIEW

DRAIN LINE DIAMETER	SUM OF DRAIN LINE DIAMETER	CATCH BASIN DIAMETER
15" TO 18"	LESS THAN 54"	4'
21" TO 27"	LESS THAN 72"	5'
30" TO 33"	LESS THAN 90"	6'
36" & LARGER	GREATER THAN 90"	REFER TO THE STANDARD

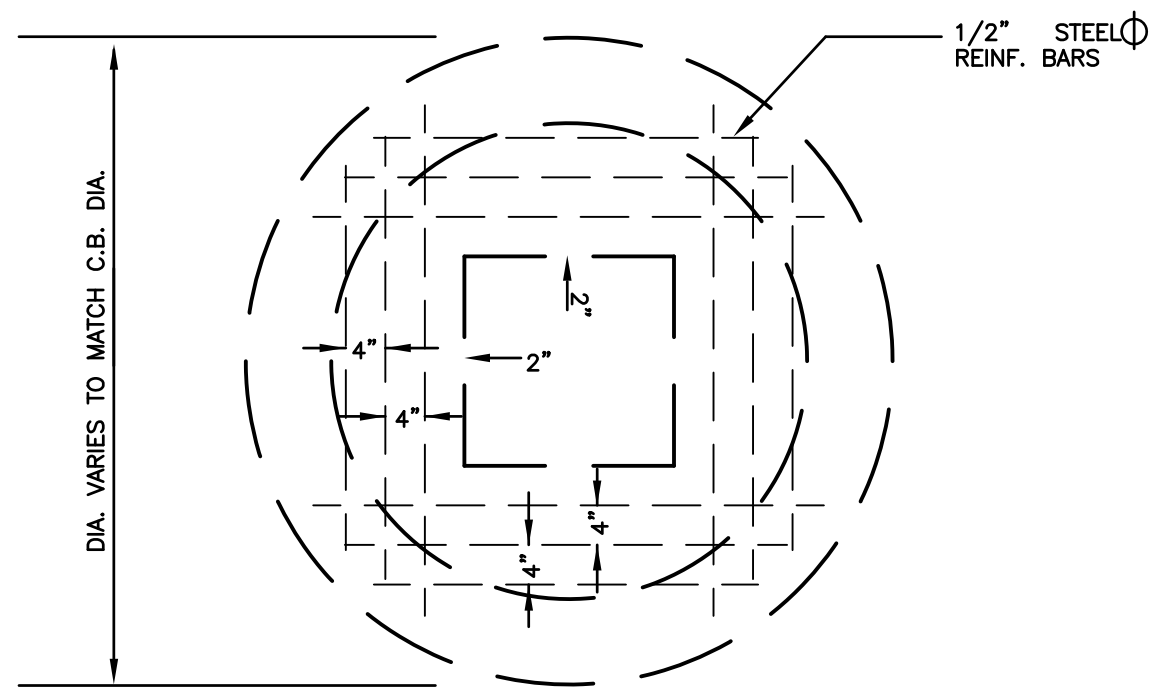
- NOTES:
1. CONCRETE: 4,000 PSI AFTER 28 DAYS.
  2. REINFORCING: SHALL BE PROVIDED FOR H-20 LOADING.
  3. SHIPLAP JOINTS SEALED WITH 1 STRIP OF BUTYL RUBBER SEALANT.
  4. PIPE OPENINGS CAST IN AS REQUIRED.
  5. RISER HEIGHT VARIES 1', 2', 3' OR 4' TO REACH DESIRED DEPTH.
  6. PIPE CONNECTIONS SHALL BE MORTARED.
  7. PRECAST SECTIONS SHALL CONFORM TO ASTM C-478.
  8. SEE SLAB TOP DETAIL FOR STRUCTURES REQUIRING SLAB TOPS, I.E. DOUBLE GRATE AND FRAME STRUCTURES.



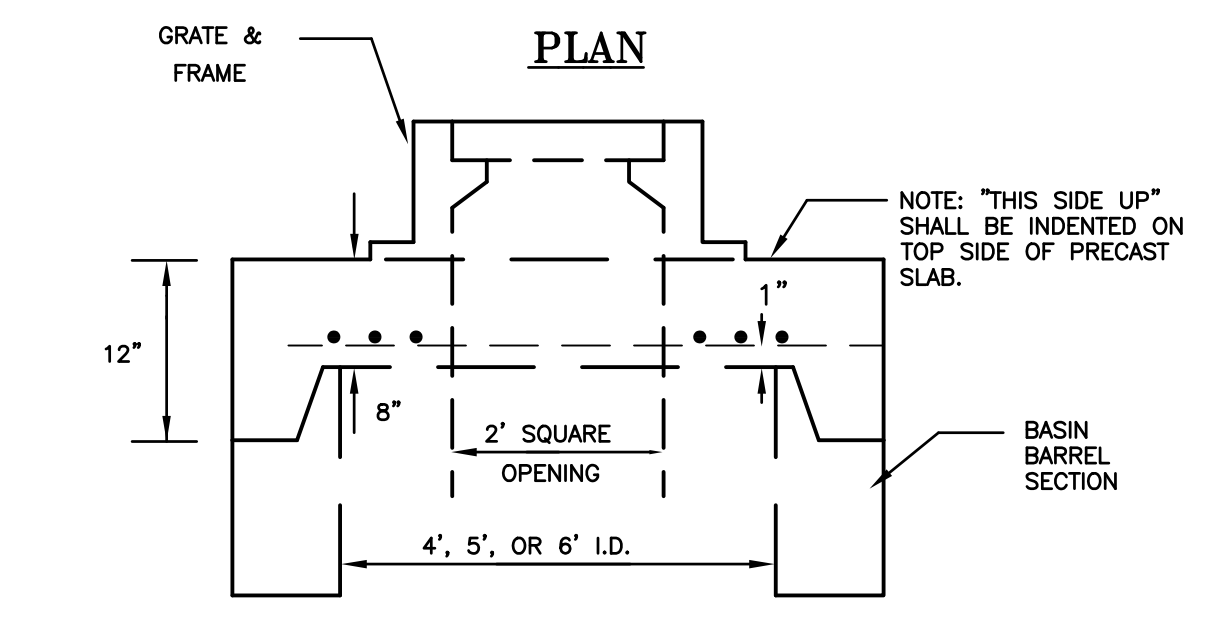
SECTION VIEW

**PRE-CAST REINFORCED CATCH BASIN**

NOT TO SCALE



PLAN

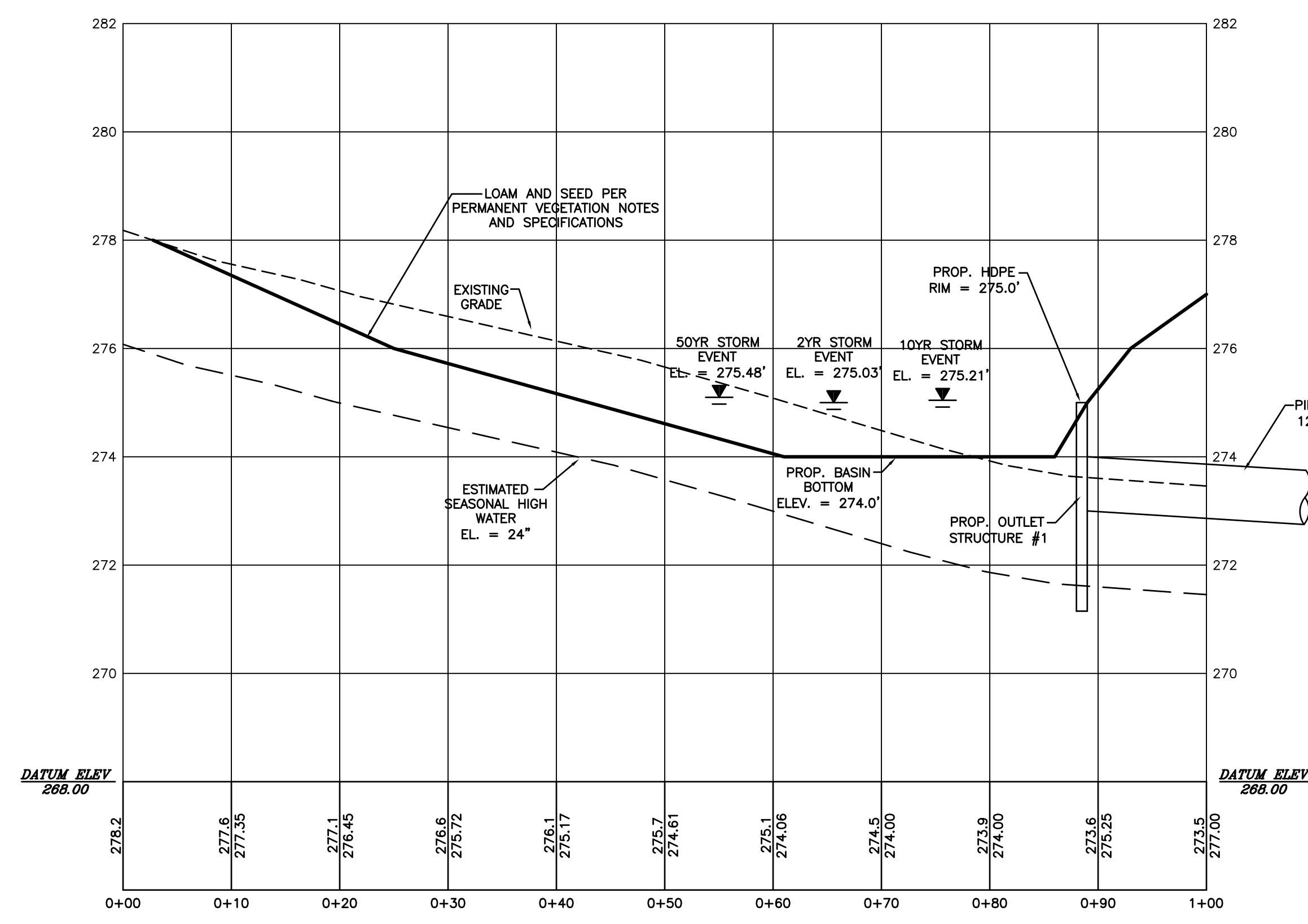


ELEVATION

- NOTE:
1. SLAB TO BE PLACED IN LIEU OF TAPERED SECTION WHERE PIPE WOULD OTHERWISE ENTER INTO TAPERED SECTION OF THE STRUCTURE AND WHERE PERMITTED.
  2. SLAB TOP MAY BE CAST WITH MINIMUM OR NO INTERLOCKING CHANNEL. HOWEVER, THE CONTRACTOR MUST ENSURE THE SLAB TOP IS FIRMLY ATTACHED TO THE STRUCTURE.

**REINFORCED CONCRETE SLAB COVER**

NOT TO SCALE

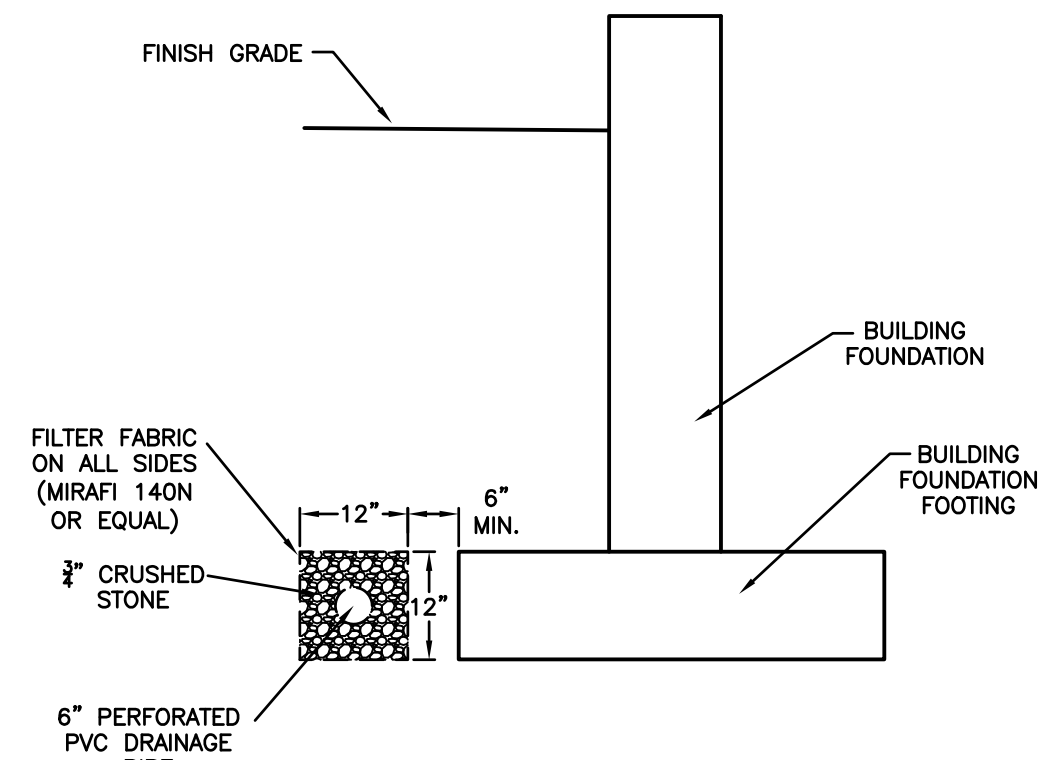


**INFILTRATION BASIN #1 CROSS SECTION**

1" = 10' (HORZ.) & 1" = 2' (VERT.)

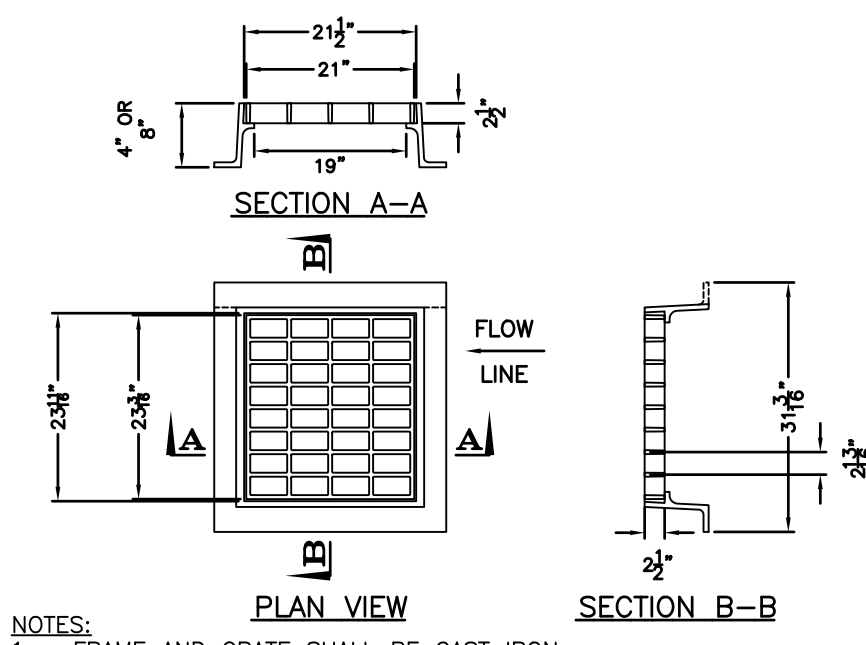
**INFILTRATION BASIN:**

- SPECIFICATIONS:
1. DO NOT DISCHARGE SEDIMENT-LADEN 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.
  2. 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.
  3. VEGETATION SHALL BE ESTABLISHED IMMEDIATELY AFTER FINAL GRADING IS COMPLETED.
  4. CONSTRUCT THE INFILTRATION BASIN TO THE GRADES DEPICTED ON THE PLAN AND CROSS-SECTION.
  5. 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
  6. DO NOT PLACE INFILTRATION SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
- MAINTENANCE REQUIREMENTS:
1. INSPECT PRETREATMENT MEASURES (I.E. SEDIMENT FOREBAY(S), HOODED CHASINS, ETC.) AT LEAST TWICE A YEAR AND AFTER EVERY STORM GREATER THAN 2.5 INCHES OF RAIN OVER A 24-HOUR PERIOD.
  2. INSPECT INFILTRATION SURFACE BI-ANNUALLY. ONCE IN THE SPRING PRIOR TO MAY 15 AND ONCE IN THE FALL PRIOR TO OCTOBER 15.
  3. INSPECT INFILTRATION SURFACE AFTER ANY RAINFALL EVENT OF 2.5-INCHES OR GREATER IN A 24-HOUR PERIOD.
  4. REMOVE AND DISPOSE OF ACCUMULATED SEDIMENT BASED ON INSPECTION. REPAIR AREA OF REMOVAL AS NECESSARY TO RESTORE INFILTRATION CAPACITY.
  5. PERFORM MAINTENANCE AND REHABILITATION BASED ON INSPECTIONS.
  6. REMOVE DEBRIS (IF ANY) FROM INFILTRATION BASIN INLET BASED ON INSPECTION.
  7. 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.



**FOUNDATION DRAIN DETAIL**

NOT TO SCALE

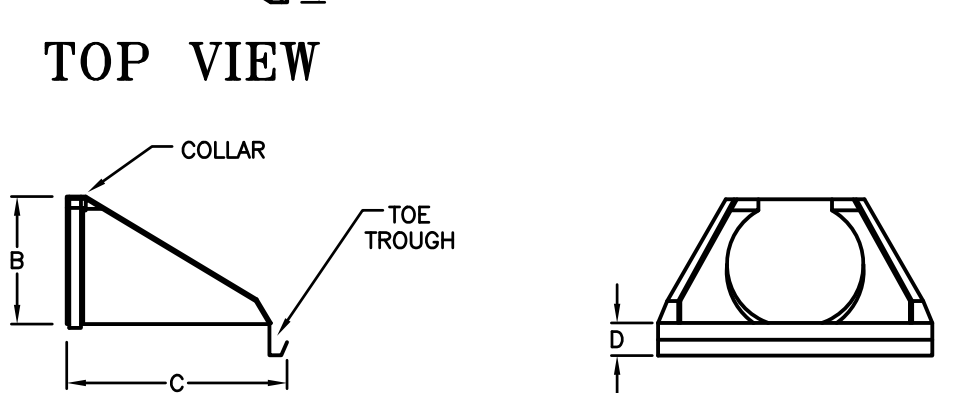


**CATCH BASIN TYPE 'B' GRATE DETAIL**

NOT TO SCALE

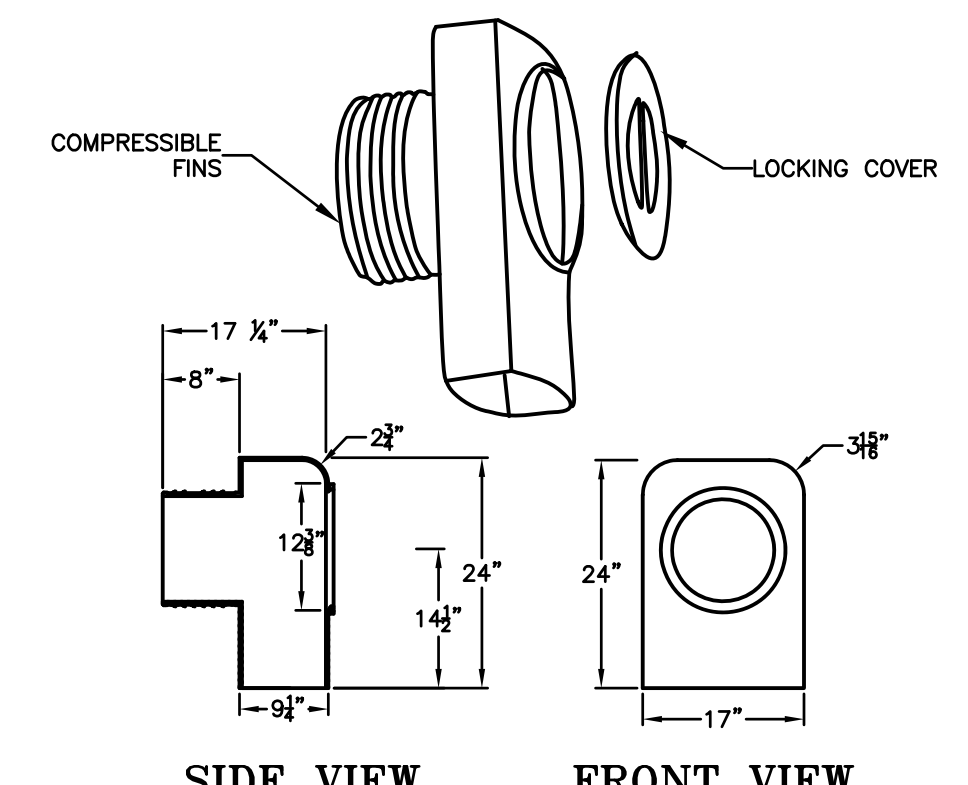
- NOTES:
1. FRAME AND GRATE SHALL BE CAST IRON.
  2. FRAME AVAILABLE IN 4" OR 8" HEIGHTS.
  3. USE 3 FLANGE FRAME IF INSTALLED ADJACENT TO GRANITE CURB.
  4. ALL DIMENSIONS ARE NOMINAL.

PIPE DIAMETERS	DIMENSIONS (INCHES)			
	A	B	C	D
10" / 12"	42	14.5	33	6
15"	41	19	34	6
18"	49	22	43	6
24"	59.5	28	48	6
30"	88	36	63.5	6
36"	88	43	66.5	6



**FLAIED END SECTION DETAIL**

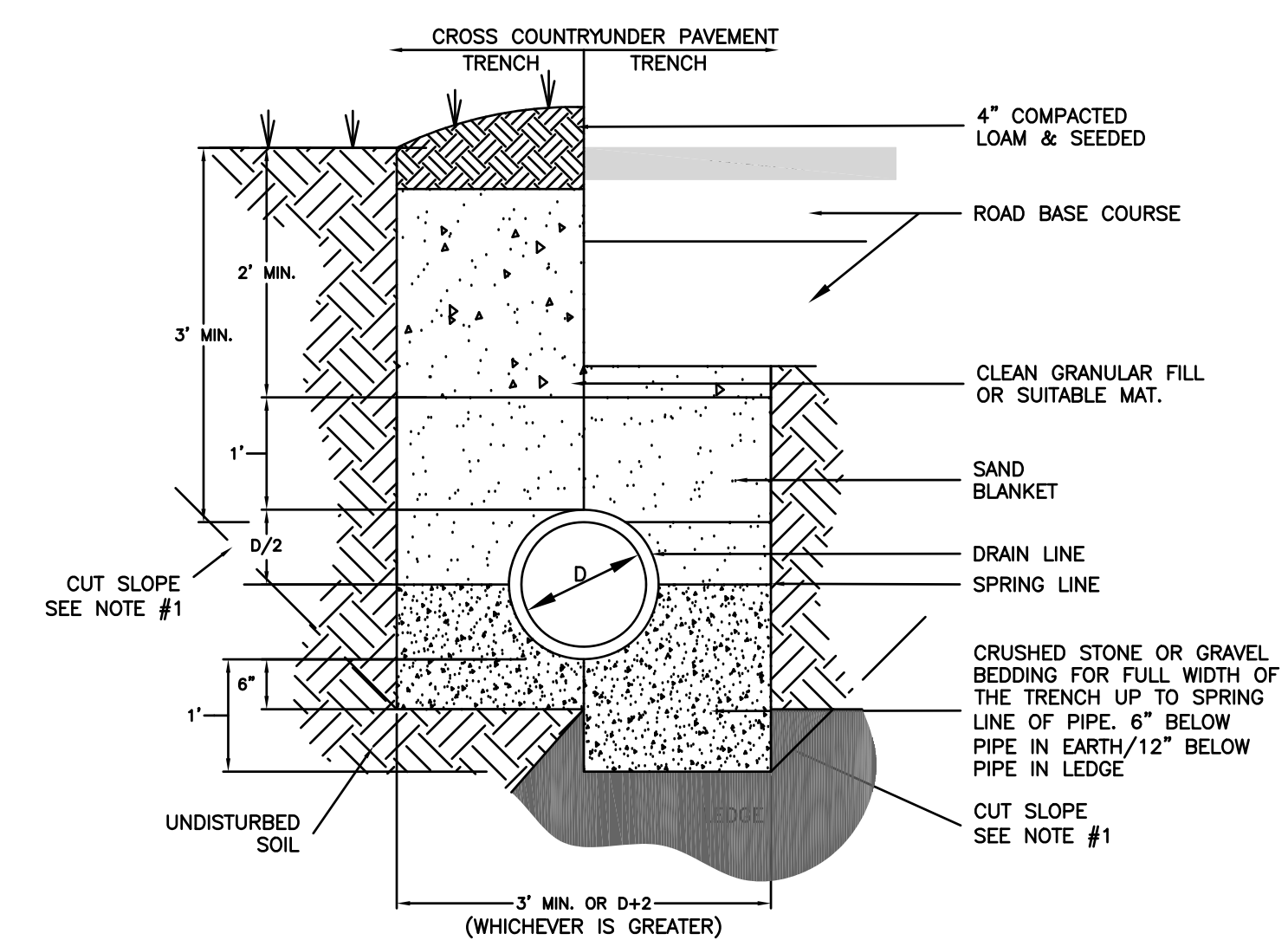
NOT TO SCALE



**ELIMINATOR CATCH BASIN OIL AND DEBRIS TRAP DETAIL**

NOT TO SCALE

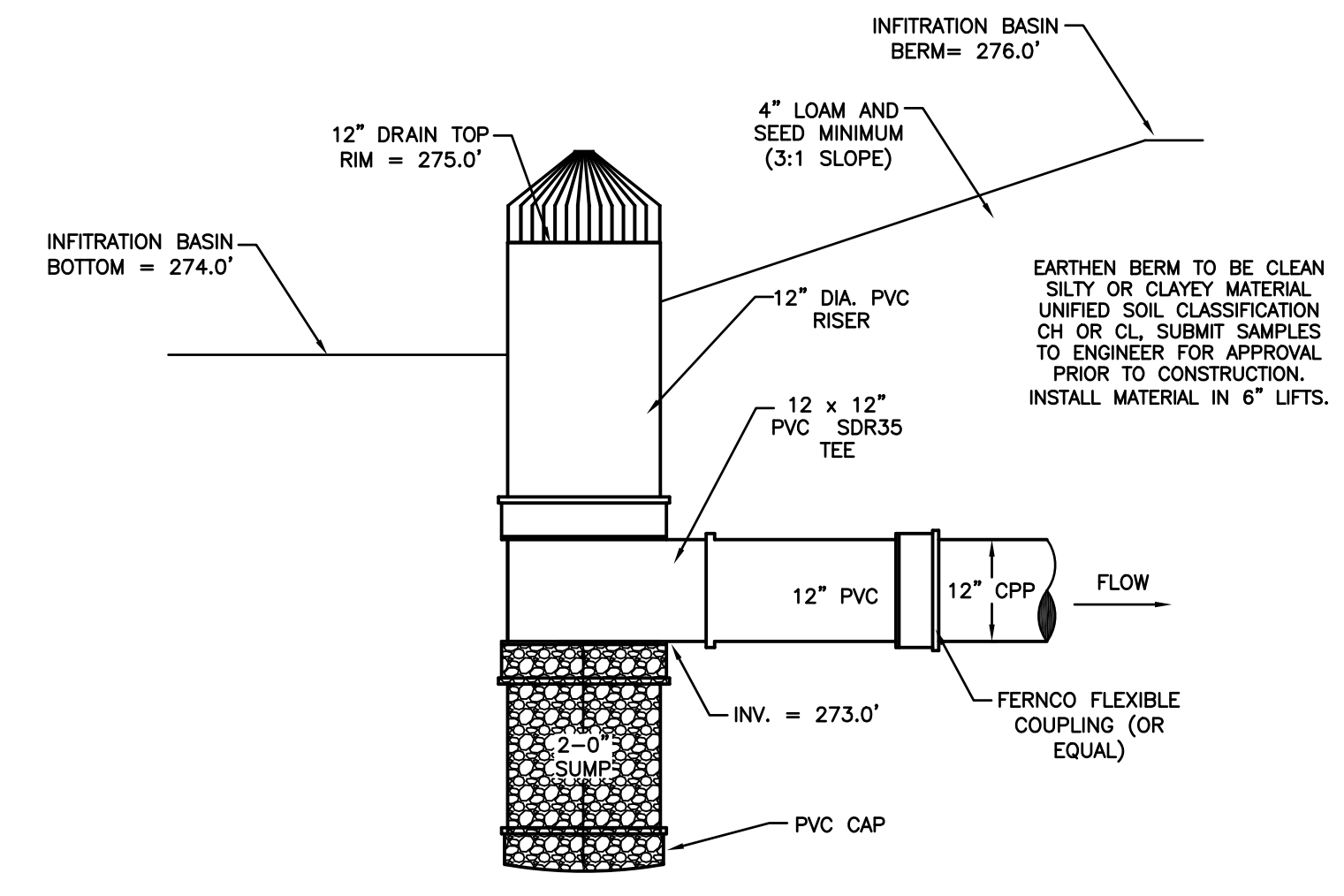
- NOTES:
1. HOOD SHALL BE "THE ELIMINATOR" OIL & FLOATING DEBRIS TRAP AS MANUFACTURED BY GROUND WATER RESOLVE, INC., QUINCY, MA., TEL. 617-773-1128 ON THE WEB @ WWW.KLEANSTREAM.COM
  2. DIMENSIONS ARE FOR 12" DIAMETERS.
  3. UNITS ARE AVAILABLE IN 8", 10", 12", 15" AND 18" DIAMETERS.



**DRAINAGE PIPE TRENCH INSTALLATION DETAIL**

NOT TO SCALE

- 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.



**INFILTRATION BASIN #1 OUTLET STANDPIPE DETAIL**

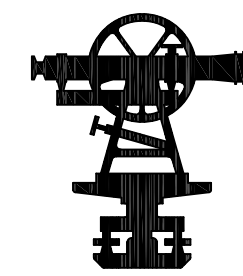
NOT TO SCALE

**Not For Construction**

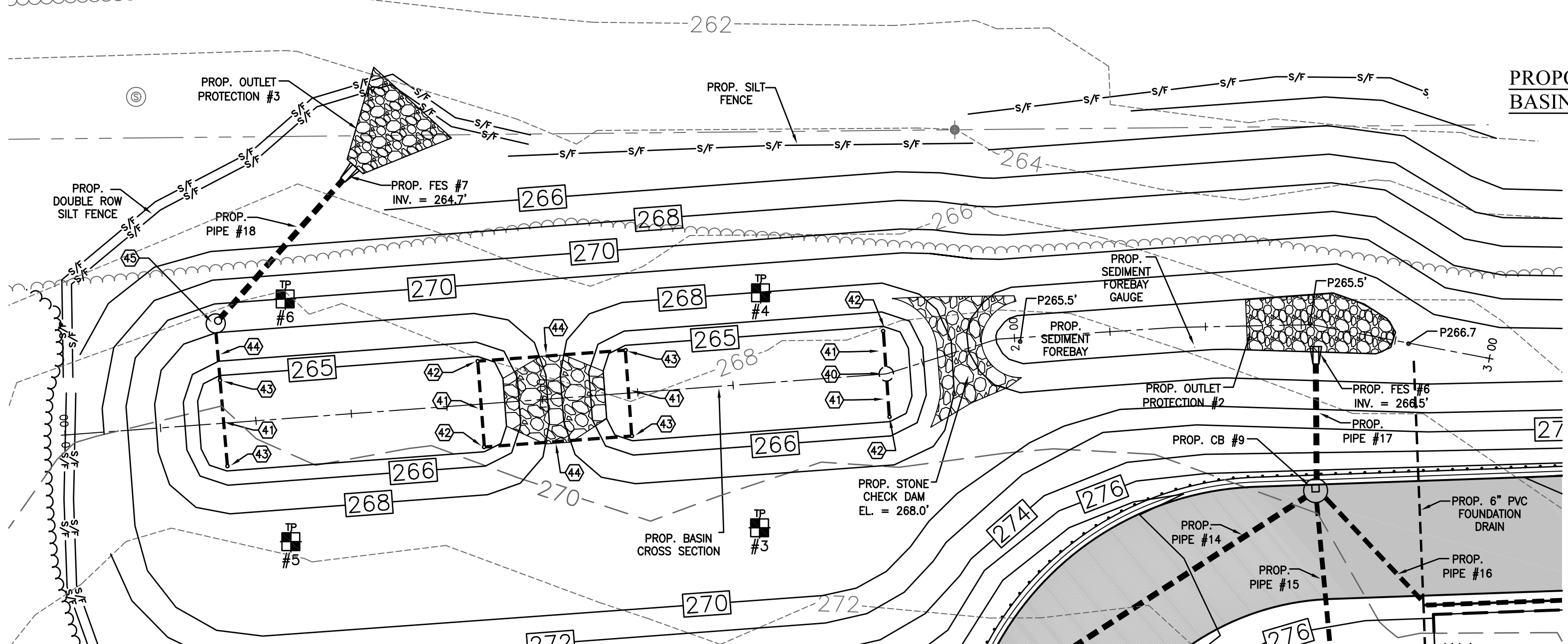
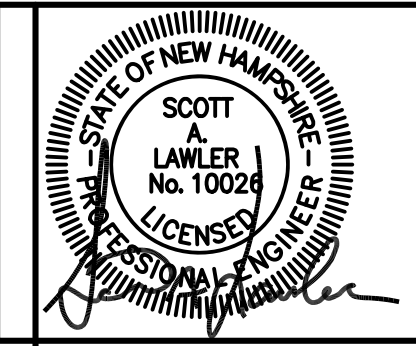
DRAINAGE DETAILS  
TAX MAP 243, LOT 34  
127 & 145 AIRPORT DRIVE  
ROCHESTER, NH  
PREPARED FOR:  
CITY OF ROCHESTER

SCALE: AS SHOWN DECEMBER 2019

FILE NO. 104  
PLAN NO. C-3013  
DWG NO. 19275\SP-1  
F.B. NO. SDR-TJR



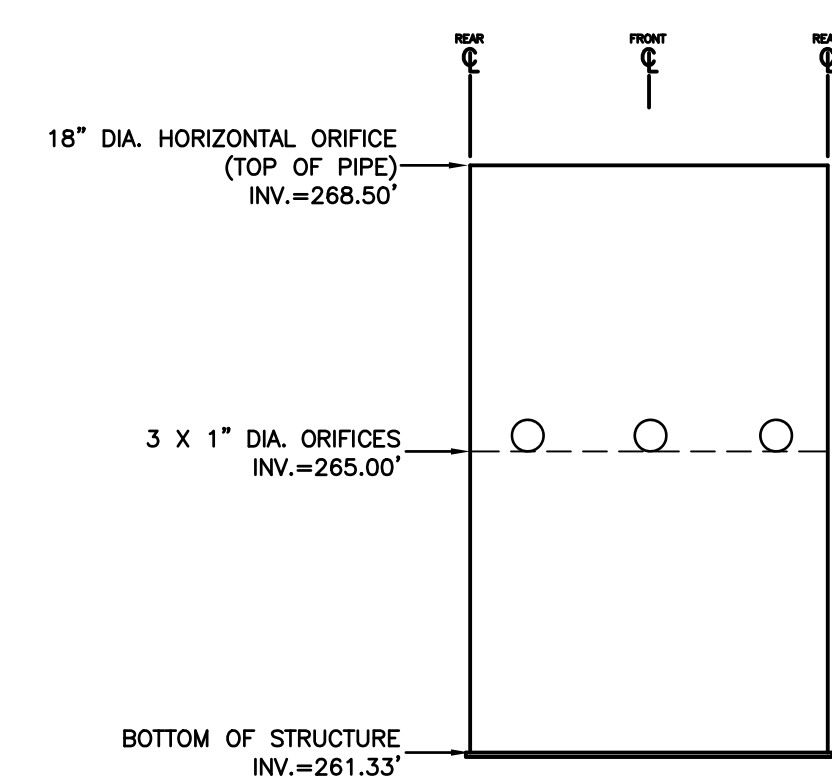
CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITHIN THE PLAN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



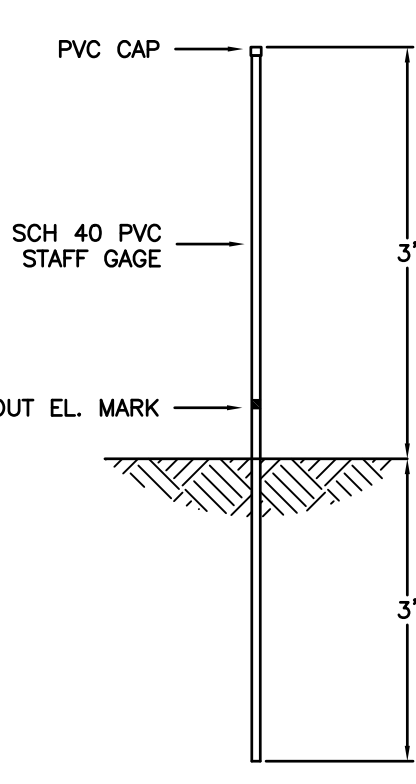
**GRAVEL WETLANDS BASIN PLAN**  
1" = 20'

**PROPOSED GRAVEL WETLAND BASIN DRAINAGE STRUCTURES**

- 40. PROP. 3" PRECAST CONCRETE PERFORATED DRY WELL
- 41. PROP. 8" PERF. PVC UNDER DRAIN INV. = 262.33' (LAID LEVEL)
- 42. PROP. 8" PERF. PVC RISER GRADE = 266.75'
- 43. PROP. 8" PERF. PVC TO ELEV. 264.33' & SOLID PVC ABOVE CAP = 267.0'
- 44. PROP. 8" PVC INV. = 262.33' (LAID LEVEL)
- 45. PROP. 4" CONCRETE OUTLET STRUCTURE TOP EL. = 269.0'



**GRAVEL WETLAND ORIFICE SCHEMATIC**  
SCALE: NOT TO SCALE



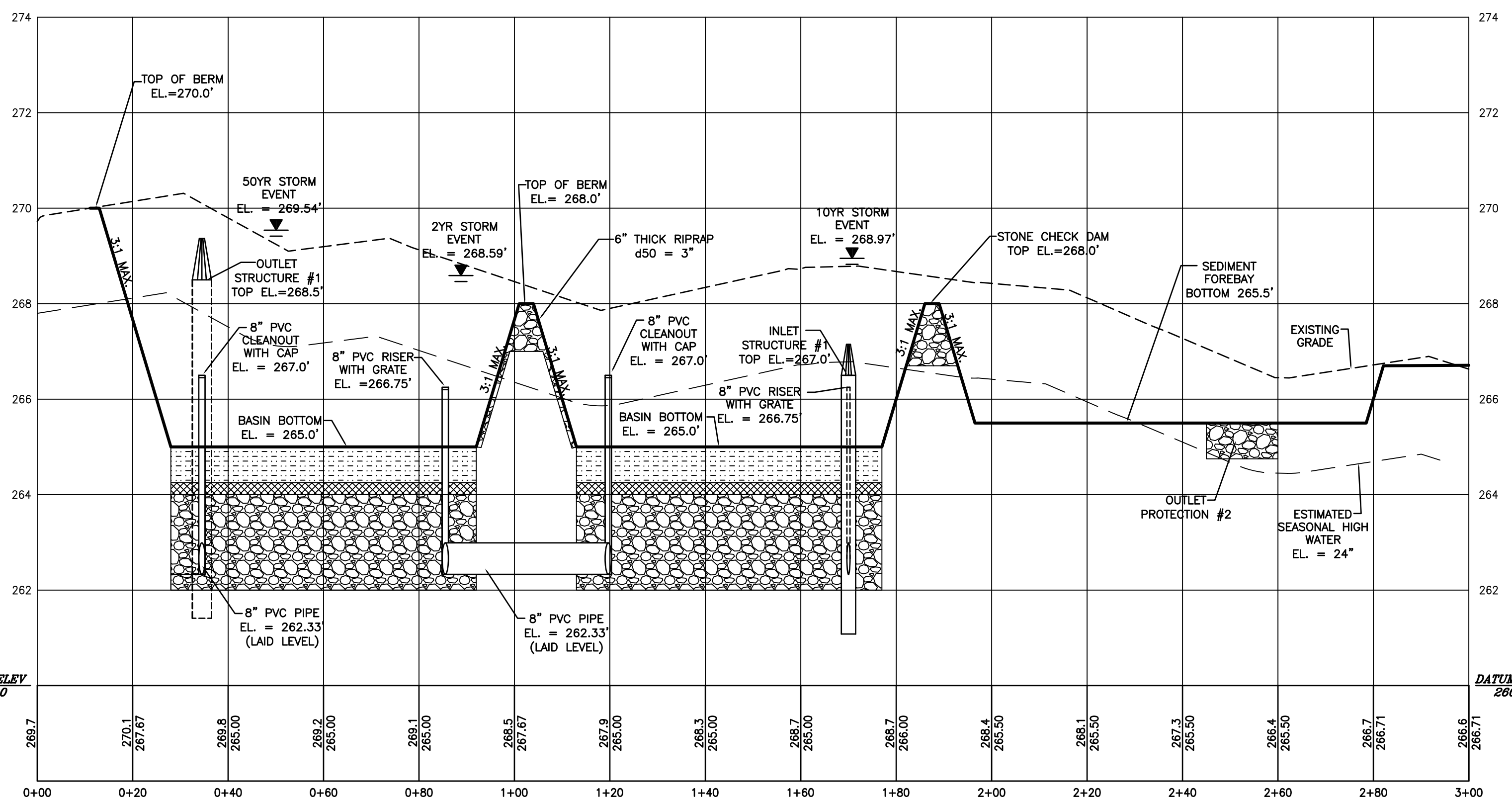
**SEDIMENT FOREBAY GAUGE DETAIL**  
NOT TO SCALE

**SEDIMENT FOREBAY:**

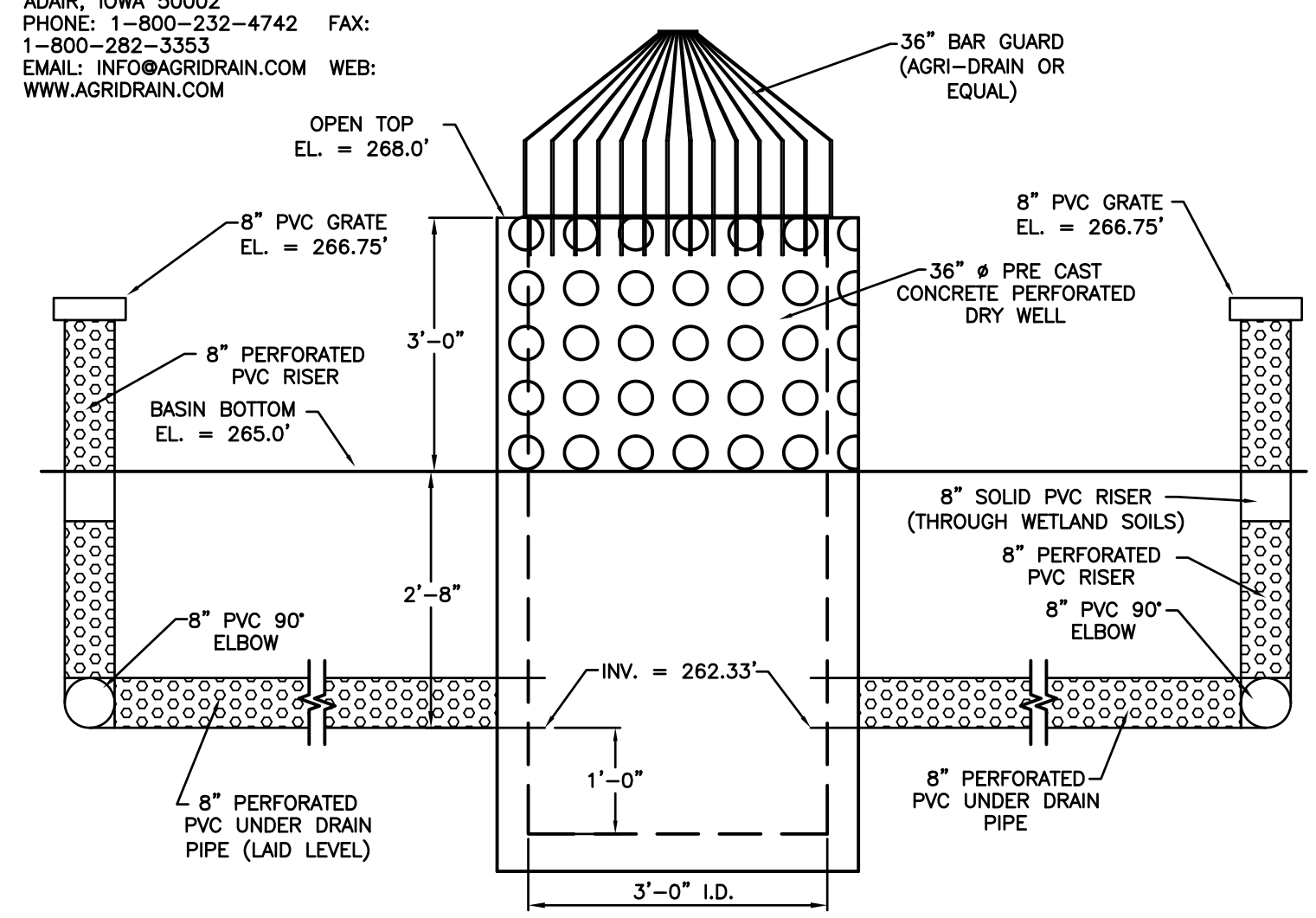
- SPECIFICATIONS:**
- CONSTRUCT THE SEDIMENT FOREBAY TO THE GRADES DEPICTED ON THE PLAN AND CROSS-SECTION.
  - LOAM AND SEED THE SLOPES AND BOTTOM OF THE SEDIMENT FOREBAY AS PRESCRIBED IN THE "PERMANENT VEGETATION" NOTES FOUND ON SHEET C-10.
- SEED MIXTURE = A**
- MAINTENANCE REQUIREMENTS:**
- INSPECT SEDIMENT FOREBAY BI-ANNUALLY, ONCE IN THE SPRING PRIOR TO MAY 15 AND ONCE IN THE FALL PRIOR TO OCTOBER 15.
  - CONDUCT PERIODIC MOWING OF THE SEDIMENT FOREBAY SLOPES AND EMBANKMENTS (MINIMUM TWICE A YEAR) TO ELIMINATE WOODY GROWTH FROM THE EMBANKMENTS AND BOTTOM. MOWING THE SEDIMENT FOREBAY EMBANKMENTS WHEN MOWING THE REST OF THE SITE IS RECOMMENDED. REMOVE DEBRIS FROM THE OUTLET STRUCTURE OF THE SEDIMENT FOREBAY (I.E. STONE CHECK DAM) AT LEAST ONCE ANNUALLY.
  - REMOVE AND DISPOSE OF ACCUMULATED SEDIMENT BASED ON INSPECTION. WHEN SEDIMENT HAS REACHED THE RED MARK ON THE SEDIMENT STAFF GAUGE INSTALLED IN THE FOREBAY, REMOVE SEDIMENT AND DISPOSE OF IT OFF-SITE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS. ELEVATION OF RED CLEANOUT MARK ON STAFF GAUGE = 268.00

**CONTACT INFORMATION FOR AGRI-DRAIN CORPORATION:**

- THE BAR GUARD SCREEN ON TOP OF THE INLET CONTROL STRUCTURE IS AGRI-DRAIN CORPORATION PRODUCTS (OR EQUAL). AGRI-DRAIN CORPORATION CAN BE CONTACTED AT THE FOLLOWING ADDRESS, TELEPHONE NUMBER, FAX NUMBER AND EMAIL ACCOUNT: AGRI-DRAIN CORPORATION P.O. BOX 458 1462 340TH STREET ADAIR, IOWA 50002 PHONE: 1-800-232-4742 FAX: 1-800-282-3353 EMAIL: INFO@AGRIDRAIN.COM WEB: WWW.AGRIDRAIN.COM
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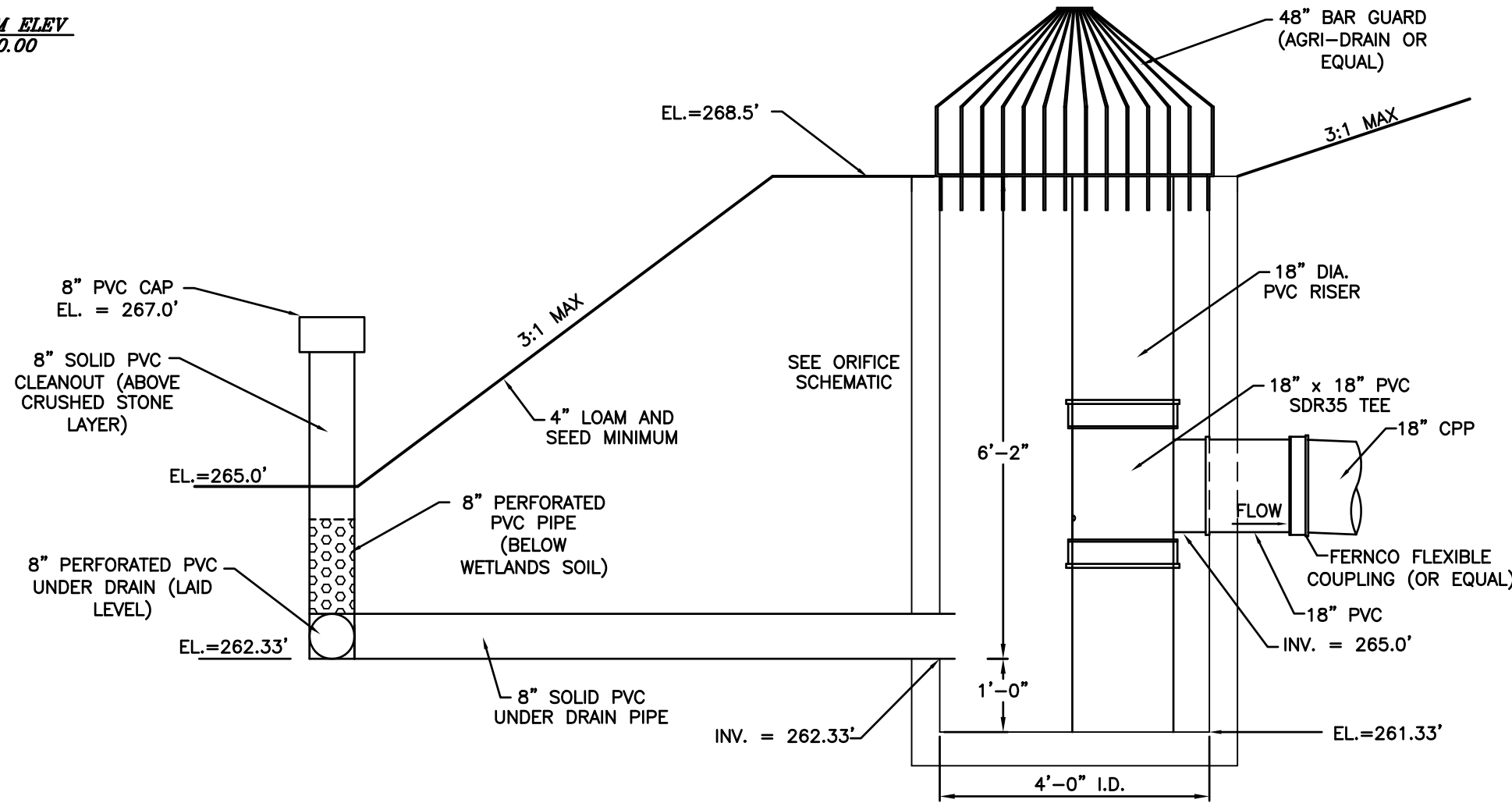


**GRAVEL WETLANDS BASIN CROSS SECTION**  
1" = 20' (HORZ.) & 1" = 2' (VERT.)

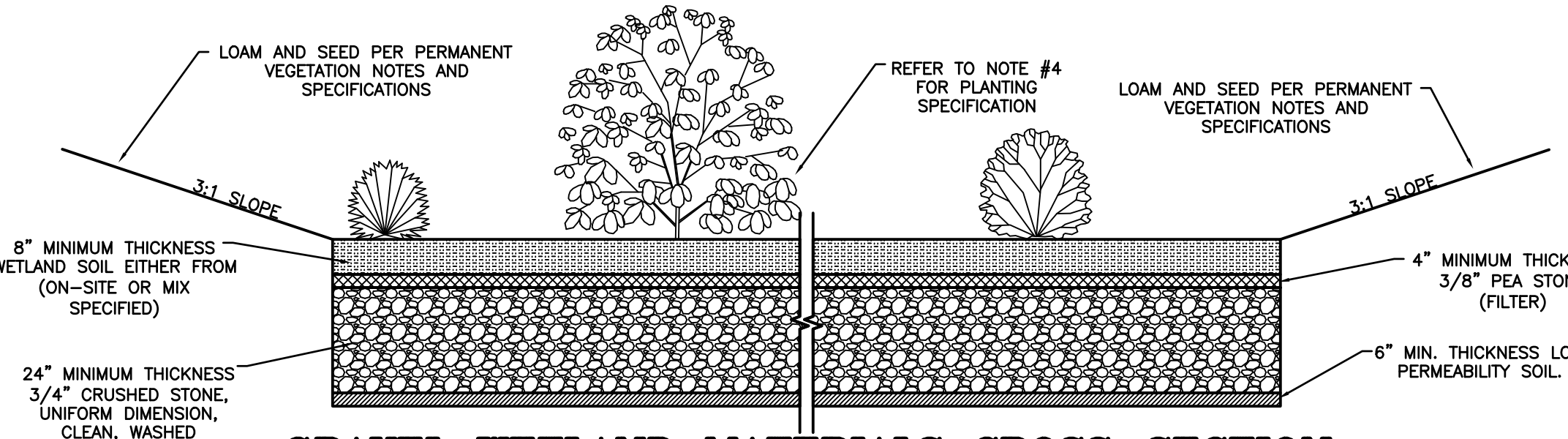


**GRAVEL WETLANDS INLET STRUCTURE DETAIL**  
SCALE: NOT TO SCALE

- NOTES:**
- 8" PERFORATED PIPE SHALL BE SUPPLIED WITH 4 ROWS OF 1" TO 2" DIAMETER HOLES EVERY 3 INCHES.
  - PERFORATED PIPES SHALL BE PERFORATED IN ACCORDANCE TO ASTM F-758.



**GRAVEL WETLANDS OUTLET STRUCTURE DETAIL**  
SCALE: NOT TO SCALE



**GRAVEL WETLAND MATERIALS CROSS-SECTION**  
NOT TO SCALE

**LOW PERMEABILITY MATERIAL GRADATION:**

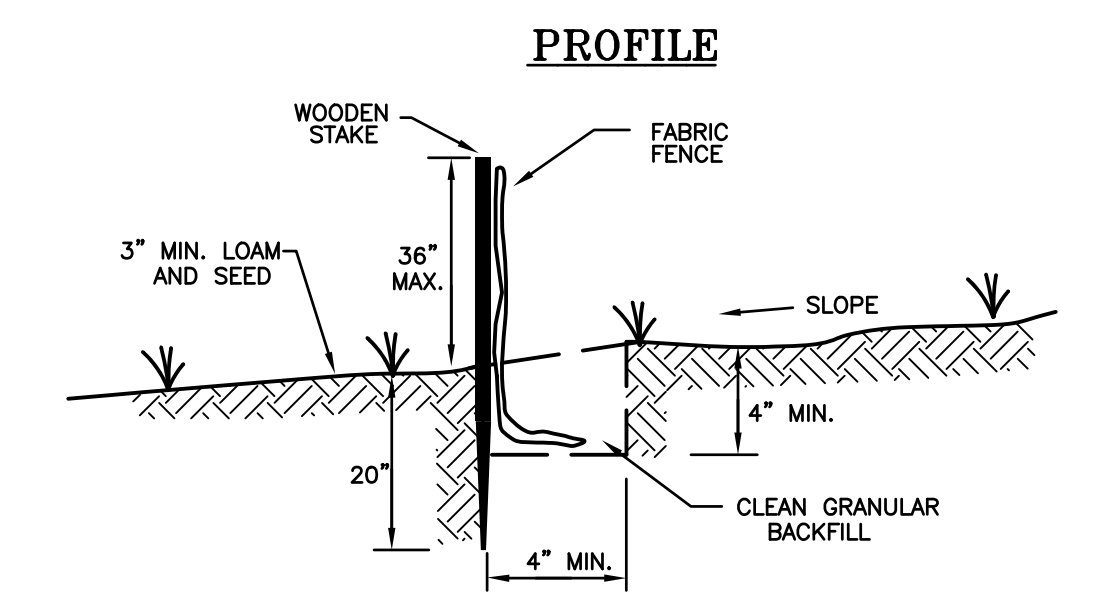
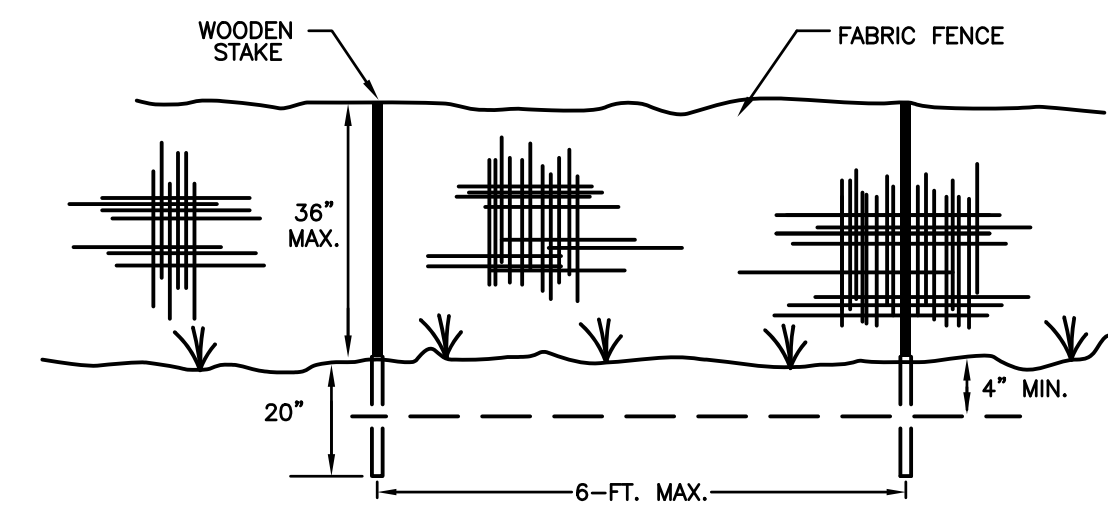
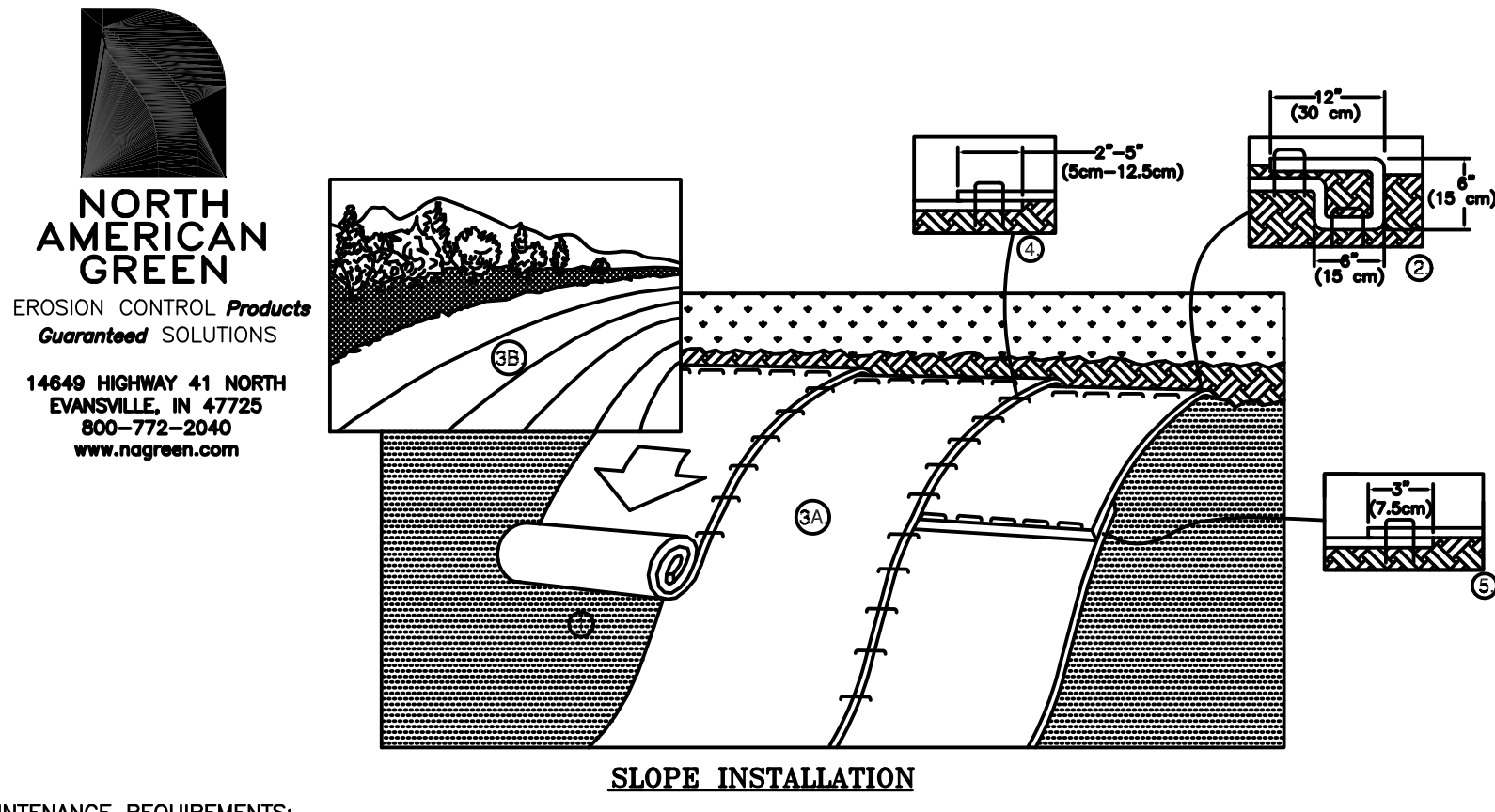
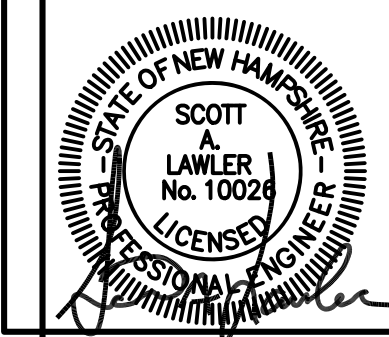
SIEVE SIZE:	PASSING:
#4	95-100
#40	60-90
#100	40-60
#200	25-45

**Not For Construction**

**GRAVEL WETLAND BASIN DETAILS**  
TAX MAP 243, LOT 34  
145 AIRPORT DRIVE  
ROCHESTER, NH  
PREPARED FOR:  
CITY OF ROCHESTER

SCALE: AS SHOWN DECEMBER 2019

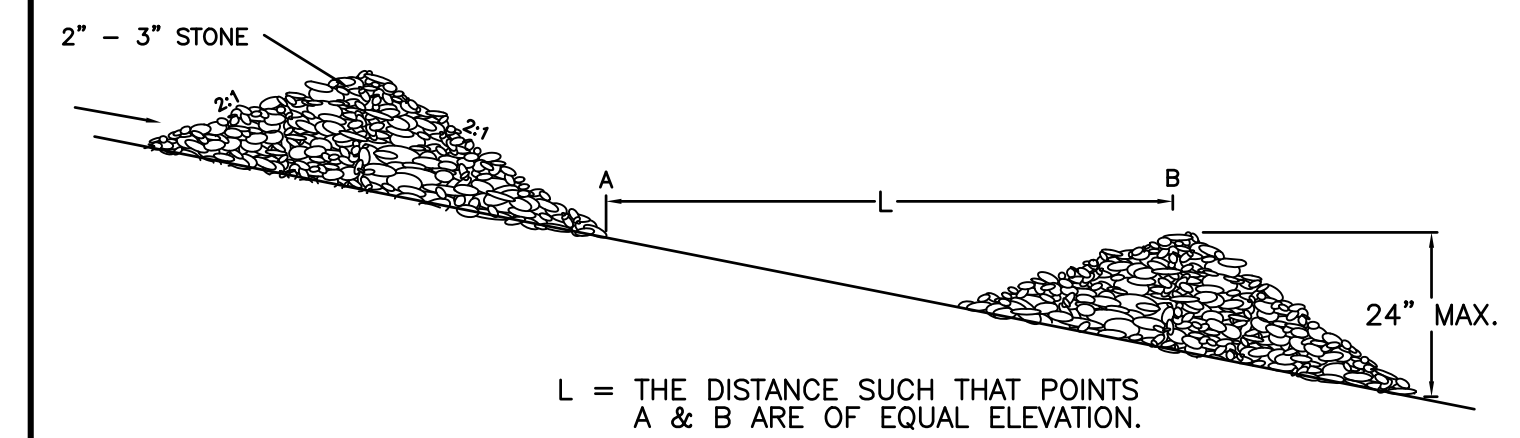
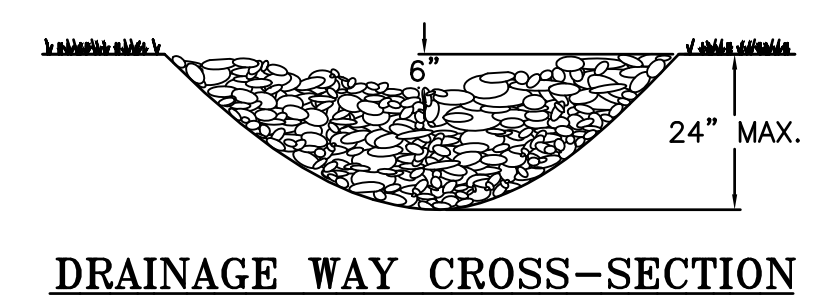
FILE NO. 104  
PLAN NO. C-3013  
DWC NO. 19275\SP-1  
F.B. NO. SDR-TJR



- 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 RESEDED, AND THE AFFECTED AREA OF MAT SHALL BE RE-INSTALLED.
- CONSTRUCTION SPECIFICATIONS:**
- MANUFACTURER'S INSTALLATION INSTRUCTIONS:
    - PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECPS), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
    - BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECPS IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF RECPS EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECPS 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 RECPS BACK OVER SEED AND COMPACTED SOIL. SECURE RECPS OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECPS.
    - ROLL THE RECPS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. RECPS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPS 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 RECPS MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) OVERLAP DEPENDING ON RECPS TYPE.
    - CONSECUTIVE RECPS SPLICED 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 RECPS 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 RECPS.
  - SITE PREPARATION:
    - PROPER SITE PREPARATION IS ESSENTIAL TO ENSURE COMPLETE CONTACT OF THE PROTECTION MATTING WITH THE SOIL.
    - GRADE AND SHAPE AREA IF INSTALLATION.
    - REMOVE ALL ROCKS, CLODS, TRASH, VEGETATIVE OR OTHER OBSTRUCTIONS SO THAT THE INSTALLED BLANKETS WILL HAVE DIRECT CONTACT WITH THE SOIL.
    - PREPARE SEEDBED 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.
  - SEEDING:
    - SEED AREA BEFORE BLANKET INSTALLATION FOR EROSION CONTROL AND REVEGETATION. SEEDING AFTER MAT INSTALLATION IS OFTEN SPECIFIED FOR TEMPORARY VEGETATION LOCATIONS. WHEN SEEDING PRIOR TO BLANKET INSTALLATION, ALL CHECK SLOTS AND OTHER AREAS DISTURBED DURING INSTALLATION MUST BE RESEDED.
    - WHEN SEEDING AFTER BLANKET INSTALLATION, SEEDING SHALL BE PERFORMED AFTER BLANKET INSTALLATION AND PRIOR TO EROSION CONTROL BLANKET DETAIL.

- 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.
  - SILT FENCES SHALL BE REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM.
  - 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 SEED.
  - IF THERE IS EVIDENCE OF END FLOW ON PROPERLY INSTALLED BARRIERS, EXTEND BARRIERS UPHILL OR CONSIDER REPLACING THEM WITH OTHER MEASURES, SUCH AS TEMPORARY DIVERSIONS AND SEDIMENT TRAPS.
  - 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
    - THE ENDS OF THE FENCE SHALL BE FLARED UPSLOPE.
    - THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 4 INCHES IN DEPTH AND INCHES IN WIDTH IN A TRENCH EXCAVATED INTO THE GROUND, OR IF SITE CONDITIONS INCLUDE FROZEN GROUND, LEDGE, OR THE PRESENCE OF HEAVY ROOTS, THE BASE OF THE FABRIC SHALL BE EMBEDDED WITH A MINIMUM THICKNESS OF 8 INCHES OF 3/4-INCH STONE.
    - 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 6 FEET.
    - ADJOINING SECTIONS OF THE FENCE SHALL BE OVERLAPPED BY A MINIMUM OF 6 INCHES (24 INCHES IS PREFERRED), FOLDED AND STAPLED TO A SUPPORT POST. IF METAL POSTS ARE USED, FABRIC SHALL BE WIRE-TIED DIRECTLY TO THE POSTS WITH THREE DIAGONAL TIES.
  - SILT FENCING SHALL NOT BE STAPLED OR NAILED TO TREES.
  - THE FILTER FABRIC SHALL BE A PERVIOUS SHEET OF PROPYLENE, 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 OUT 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 POST, 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 6 FEET.
  - A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES WIDE AND 4 INCHES DEEP ALONG THE LINE OF POSTS AND UP GRADIENT FROM THE BARRIER.
  - THE STANDARD STRENGTH OF FILTER FABRIC SHALL BE STAPLED OR WIRED 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 "PLOW" OR SLICE THE SILT FENCE MATERIAL INTO THE SOIL. THE SLICING METHOD MINIMALLY DISRUPTS 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 SEGMENT WILL IMPOUND.
  - THE ENDS OF THE FENCE SHALL BE TURNED UPHILL.
  - SILT FENCES PLACED AT THE TOE OF A SLOPE SHALL BE SET AT LEAST 6 FEET FROM THE TOE TO ALLOW SPACE FOR SHALLOW PONDING AND TO ALLOW FOR MAINTENANCE ACCESS WITHOUT DISTURBING THE SLOPE.
  - SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED.

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



- 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**

FILE NO. 104  
PLAN NO. C-3013  
DWC NO. 19275-SP-1  
F.B. NO. SDR-TJR

NOT TO SCALE

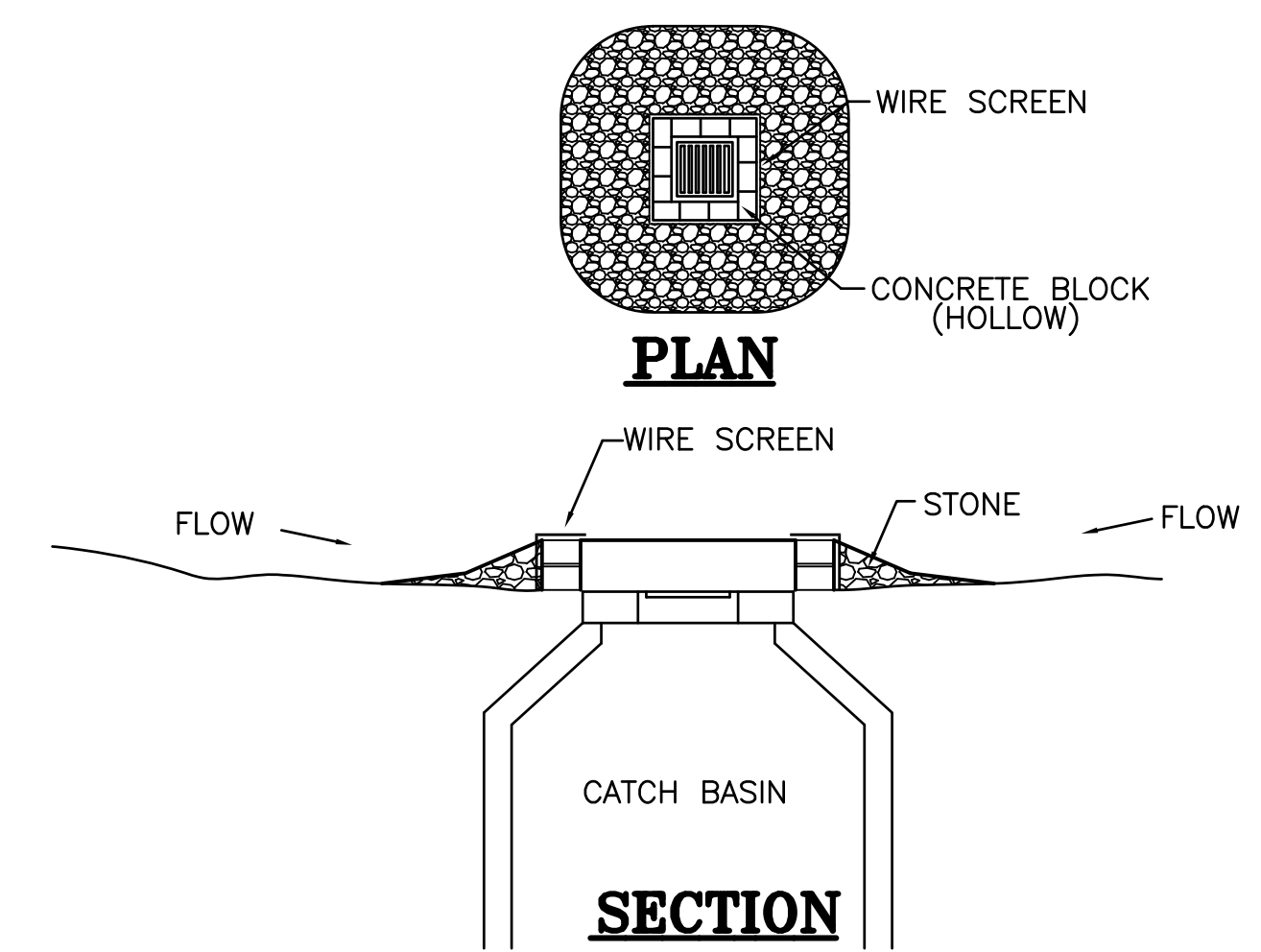
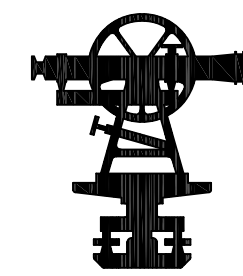
**SILTATION CONTROL FENCE DETAIL**

NOT TO SCALE

**TEMPORARY VEGETATION SEEDING RECOMMENDATIONS**

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

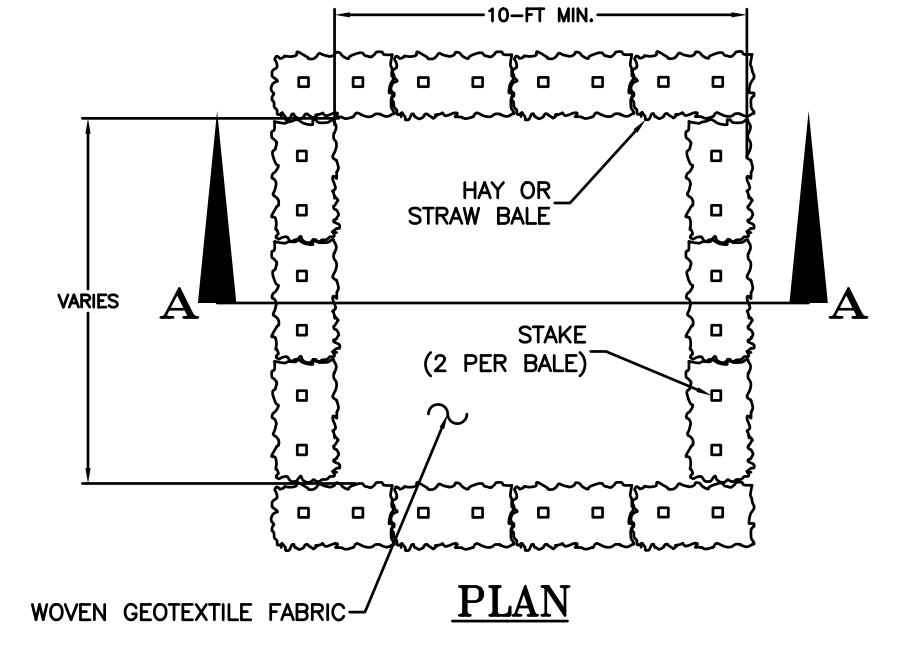
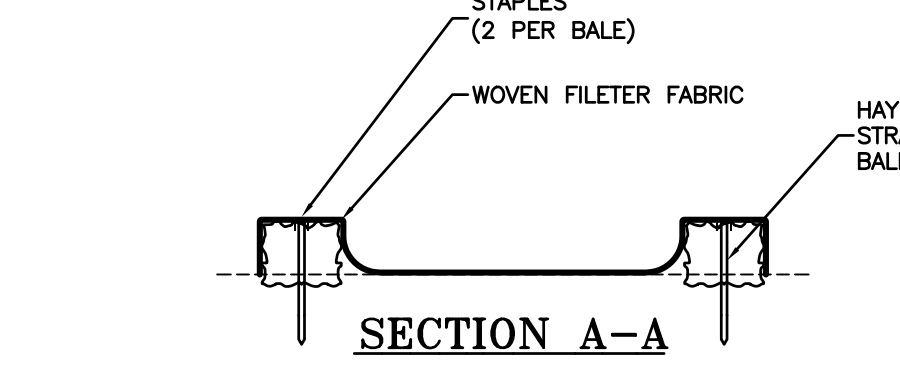
SOURCES:  
1. NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3, TABLE 4-1  
2. MINNICK, E.L. AND H.T. MARSHALL, (AUGUST 1992)



**BLOCK AND GRAVEL DROP INLET SEDIMENT FILTER**

NOT TO SCALE

- CONSTRUCTION SPECIFICATIONS:**
- PLACE CONCRETE BLOCKS LENGTHWISE ON THEIR SIDE IN A SINGLE ROW AROUND THE PERIMETER OF THE INLET, WITH THE ENDS OF ADJACENT BLOCKS ABUTTING. THE HEIGHT OF THE BARRIER CAN BE VARIED, DEPENDING ON DESIGN NEEDS, BY STACKING COMBINATIONS OF 4-INCH, 8-INCH AND 12-INCH WIDE BLOCKS. THE BARRIER OF BLOCKS SHALL BE AT LEAST 12 INCHES HIGH AND NO GREATER THAN 24 INCHES HIGH.
  - WIRE MESH SHALL BE PLACED OVER THE OUTSIDE VERTICAL FACE (WEBBING) OF THE CONCRETE BLOCKS TO PREVENT STONE FROM BEING WASHED THROUGH THE HOLES IN THE BLOCKS. HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2-INCH OPENINGS SHALL BE USED.
  - STONE SHALL BE FILED AGAINST THE WIRE TO THE TOP OF THE BLOCK BARRIER, AS SHOWN IN FIGURE 16.7. STONE GRADATION SHALL BE WELL GRADED WITH THE MAXIMUM STONE SIZE OF 6 INCHES AND MINIMUM STONE SIZE OF 1 INCH.
  - IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONE MUST BE PULLED AWAY FROM THE BLOCKS, CLEANED AND REPLACED.
- MAINTENANCE:**
- THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
  - SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
  - STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.



- CONSTRUCTION SPECIFICATIONS:**
- THE DE-WATERING AREA WILL BE CONSTRUCTED BEFORE ANY PUMPING OCCURS AT THE SITE.
  - TEMPORARY DE-WATERING AREA TYPE, ABOVE GRADE, WILL BE CONSTRUCTED AS SHOWN ABOVE, WITH A RECOMMENDED MINIMUM LENGTH AND MINIMUM WIDTH OF 20'-0".
  - THE DE-WATERING AREA WILL BE LOCATED AS SHOWN OR AS DIRECTED BY THE ENVIRONMENTAL CONSULTANT.
  - GEOTEXTILE LINING WILL BE FREE OF TEARS, OR OTHER DEFECTS THAT COMPROMISE THE DURABILITY OF THE MATERIAL.
- MAINTENANCE NOTES:**
- THE DE-WATERING AREA(S) WILL BE INSPECTED DAILY TO ENSURE THAT ALL SEDIMENT IS BEING DISCHARGED INTO THE HAYBALE DAM AREA, NO TEARS ARE PRESENT AND TO IDENTIFY WHEN SEDIMENT NEED OT BE REMOVED.
  - THE DE-WATERING AREA(S) WILL BE CLEANED OUT ONCE THE AREA IS FILLED TO 75 PERCENT OF ITS HOLDING CAPACITY.
  - ONCE THE HOLDING CAPACITY HAS BEEN REACHED THE SEDIMENT SHALL BE REMOVED AND DISPOSED OF OFF-SITE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
  - THE GEOTEXTILE LINING WILL BE REPLACED IF TEARS OCCUR DURING REMOVAL OF SEDIMENT FROM THE DE-WATERING AREA.

**DE-WATERING AREA DETAIL**

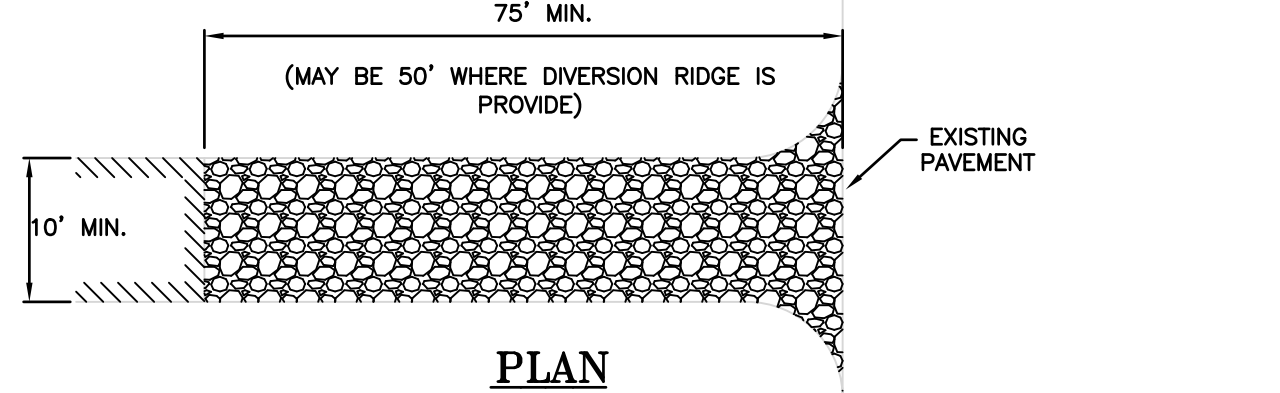
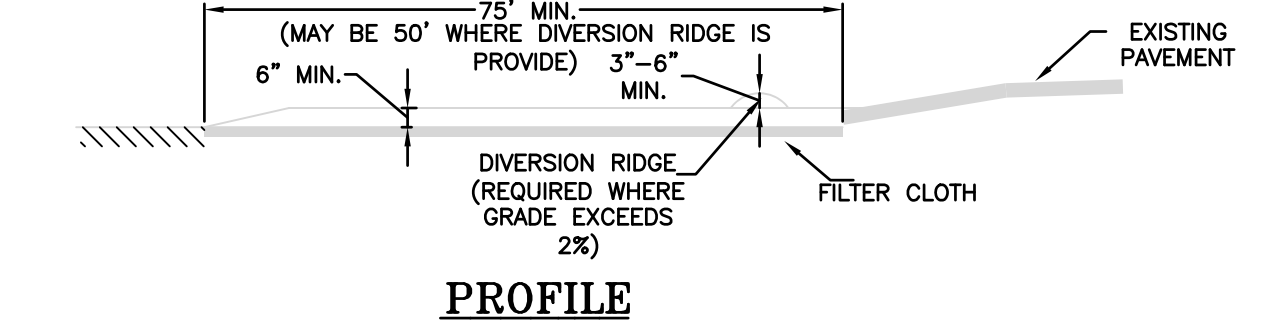
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**TEMPORARY VEGETATION:**

- 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 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.
- 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 LIMESTONE MAY BE APPLIED AT THE FOLLOWING RATES:
- LIMESTONE APPLICATION RATE = 3 TONS/ACRE (138 LB./1,000-SF)\*  
\*EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE
- FERTILIZER APPLICATION RATE = 870 LB./ACRE (20 LB./1,000-SF)\*  
\*LOW PHOSPHATE FERTILIZER (6-0-4) 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 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 SEDED 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 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.

- 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 IS REQUIRED TO PROVIDE STABILIZATION OVER THE WINTER PERIOD.
  - BASED ON INSPECTION, AREAS SHALL BE RESEDED 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 RESEDED, WITH OTHER TEMPORARY MEASURES (I.E. MULCH, ETC.) USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.



**TEMPORARY CONSTRUCTION EXIT**

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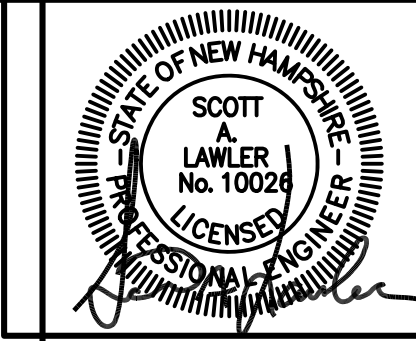
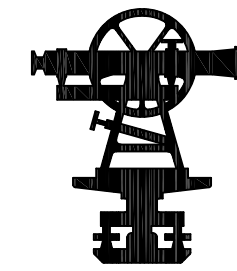
- MAINTENANCE REQUIREMENTS:**
- WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHALL BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL, REGRADED ON SITE, AND STABILIZED. THE ENTRANCE SHALL THEN BE RECONSTRUCTED.
  - THE CONTRACTOR SHALL SWEEP THE PAVEMENT AT EXITS WHENEVER SOIL MATERIALS ARE TRACKED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

- CONSTRUCTION SPECIFICATIONS:**
- THE MINIMUM STONE USED SHALL BE 3-INCH CRUSHED STONE.
  - 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.
  - THE PAD SHALL BE THE FULL WIDTH OF CONSTRUCTION ACCESS ROAD OR 10 FEET, WHICHEVER IS GREATER.
  - THE PAD SHALL SLOPE AWAY FROM THE EXISTING ROADWAY.
  - THE PAD SHALL BE AT LEAST 6 INCHES THICK.
  - THE GEOTEXTILE FILTER FABRIC SHALL BE PLACED BETWEEN THE STONE PAD AND THE EARTH SURFACE BELOW THE PAD.
  - THE PAD SHALL BE MAINTAINED OR REPLACED WHEN MUD AND SOIL PARTICLES CLOG THE VOIDS IN THE STONE AND SOIL PARTICLES ARE TRACKED OFF-SITE.
  - NATURAL DRAINAGE THAT CROSSES THE LOCATION OF THE STONE PAD SHALL BE INTERCEPTED AND PIPED BENEATH THE PAD, AS NECESSARY, WITH SUITABLE OUTLET PROTECTION.

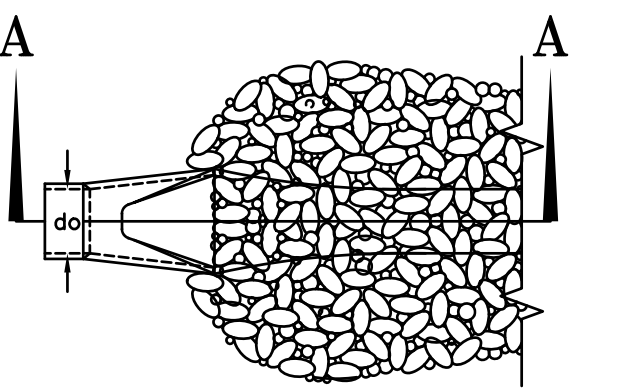
**Not For Construction**  
**TEMPORARY EROSION AND SEDIMENTATION CONTROL DETAILS**

TAX MAP 243, LOT 34  
145 AIRPORT DRIVE  
ROCHESTER, NH  
PREPARED FOR:  
CITY OF ROCHESTER

SCALE: AS SHOWN DECEMBER 2019



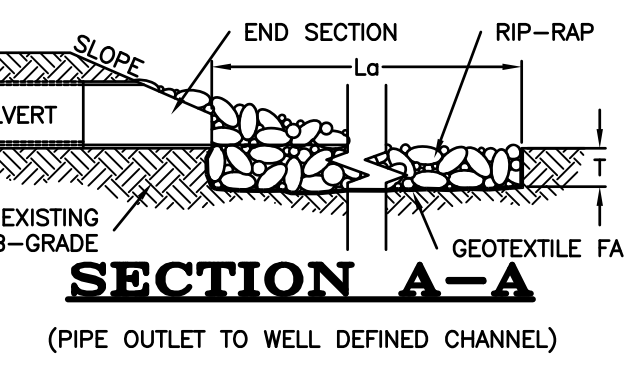
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**RIP-RAP GRADATION**

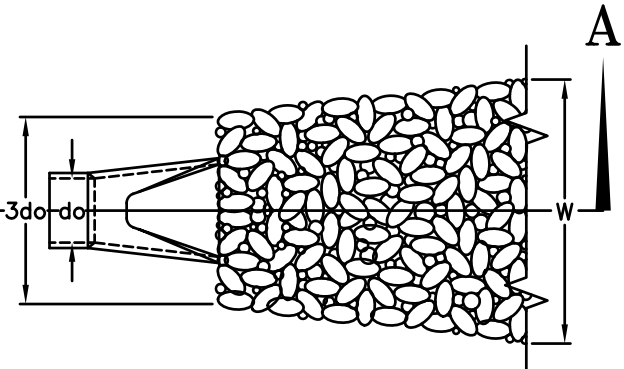
*d*50 = 3"

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



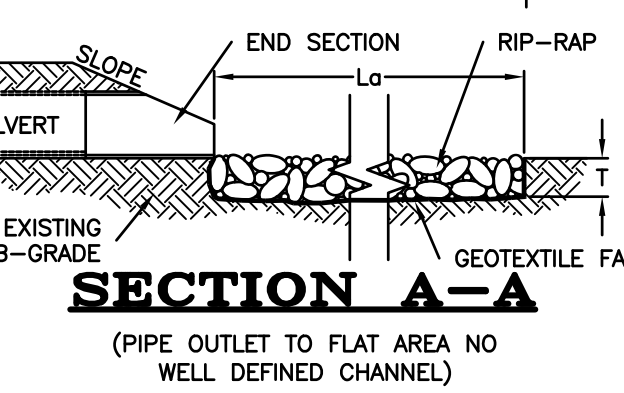
*d*50 = 4"

% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE (INCHES)
100	6 TO 8
85	5 TO 7
50	4 TO 6
15	1 TO 2



**APRON DIMENSION TABLE**

OUTLET PROT. #	PIPE OUTLET	W <sub>o</sub>	W	L <sub>o</sub>	T	d50
#1	24" CPP INLET INTO SWALE	8'	8.5'	22'	12"	4"
#2	18" CPP INLET INTO FOREBAY	6'	6'	14'	9"	3"
#3	12" CPP OUTLET INTO BASIN 2	4.5'	22'	18'	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 JOINING 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. RETAIN WALLS, BERMS, SANDBAGS OR OTHER APPROVED PRACTICES.
  - 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 TACKIFIERS 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, BERMS, SANDBAGS OR OTHER APPROVED PRACTICES.
- STOCKPILES SHALL BE SURROUNDED BY SEDIMENT BARRIERS AS DESCRIBED ON THE PLANS AND IN NHSSM 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 PRACTICE) 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.

**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 3/8 INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, CONCRETE CLODS, 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 LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. FERTILIZER SHALL BE RESTRICTED TO LIME, WOOD ASH OR LOW PHOSPHATE AND SLOW RELEASE NITROGEN VARIETIES, UNLESS A SOIL TEST WARRANTS OTHERWISE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL FERTILIZER AND LIMESTONE MAY BE APPLIED AT THE FOLLOWING RATES:

LIMESTONE APPLICATION RATE = 3 TONS/ACRE (138 LB./1,000-SF)  
 \*EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE  
 FERTILIZER APPLICATION RATE = 870 LB./ACRE (20 LB./1,000-SF)  
 \*LOW PHOSPHATE FERTILIZER (6-0-4) OR EQUIVALENT

- SEEDING:**
- INOCULATE ALL LEGUME SEED WITH THE CORRECT TYPE OF INOCULANT.
  - APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL CULTPACKER 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 EXCEPT WHERE EITHER CULTPACKER 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 NHSSM, 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 NHSSM, 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 FAKING 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 PERMANENT OPERATION OF THE SITE.
  - SEEDING AREAS SHALL BE MOVED AS REQUIRED TO MAINTAIN A HEALTHY STAND OF VEGETATION. HEIGHT AND FREQUENCY DEPEND ON TYPE OF GRASS COVER.
  - BASED ON INSPECTION, AREAS SHALL BE RESEEDING 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 AREAS 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, ODD 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

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

**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:
  - 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.
  - AREAS TO BE PAVED:
    - 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 TIME OF INITIAL DISTURBANCE, UNLESS A SHORTER TIME IS SPECIFIED BY LOCAL AUTHORITIES, THE CONSTRUCTION SEQUENCE APPROVED AS PART OF THE ISSUED PERMIT OR AN INDEPENDENT MONITOR.
- 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.
  - MAXIMUM AREA OF DISTURBANCE: THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREA ARE STABILIZED.
  - ONLY DISTURB, 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.
  - ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHALL BE PROTECTED DURING CLEARING AND CONSTRUCTION IN ACCORDANCE WITH THE APPROVED GRADING AND DRAINAGE PLAN DEPICTED ON SHEET C-3.
  - ALL EROSION AND SEDIMENT CONTROL PRACTICES AND MEASURES SHALL BE CONSTRUCTED, APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN DEPICTED ON SHEET C-5.
  - TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN THE AMOUNT NECESSARY TO COMPLETE FINISHED GRADING AND BE PROTECTED FROM EROSION.
  - 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 DAMAGES.
  - 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 DAMAGES. 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 NHSSM, VOL. 3.
  - ROUGHEN THE SURFACE OF ALL SLOPES DURING THE CONSTRUCTION OPERATION TO RETAIN WATER, INCREASE INFILTRATION AND FACILITATE VEGETATION ESTABLISHMENT.
  - USE SLOPE BREAKS, SUCH AS DIVERSIONS, BENCHES, OR CONTOUR FURROWS AS APPROPRIATE TO REDUCE THE LENGTH OF CUT-FILL SLOPES TO LIMIT SHEET AND RILL EROSION AND PREVENT GULLY EROSION. ALL BENCHES SHALL BE KEPT FREE OF SEDIMENT DURING ALL PHASES OF CONSTRUCTION.
  - 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 430:53 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" (NHSSM, VOL. 3)

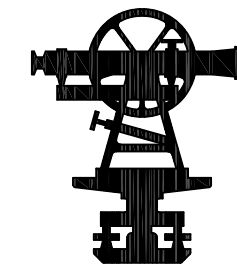
**PROJECT SPECIFIC CONSTRUCTION PHASING:**

- 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-8 PRIOR TO EARTH MOVING OPERATIONS.
- INSTALL ORANGE SNOW FENCE AROUND THE PERIMETER OF THE INFILTRATION BASINS 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 PERMANENT CONNECTION TO AIRPORT DRIVE. 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 STOCKPILES PRACTICES". MAINTAIN THE STOCKPILES AS DIRECTED IN THE "SOIL STOCKPILE PRACTICES".
- PERFORM THE NECESSARY CUTS AND FILLS TO CONSTRUCT THE GRAVEL WETLANDS BASIN AS DEPICTED ON SHEET C-3, AND IN ACCORDANCE WITH THE GRAVEL WETLAND BASIN DETAILS SHOWN ON SHEET C-2.
- PERFORM THE NECESSARY CUTS AND FILLS TO CONSTRUCT THE INFILTRATION BASIN AS DEPICTED ON SHEET C-3 AND IN ACCORDANCE WITH THE INFILTRATION BASIN DETAILS SHOWN ON SHEET C-2.
- CONSTRUCT THE GRAVEL WETLANDS BASIN, SEDIMENT FOREBAY AND OUTLET PROTECTION. LOAM SEED AND MULCH THE SIDE SLOPES OF THE BASIN AS DIRECTED IN THE INFILTRATION BASIN DETAILS.
- ALL DITCHES/SWALES/BASINS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- PERFORM THE NECESSARY CUTS AND FILLS TO SUBGRADE IN THE BUILDING AND PARKING LOT AREAS.
  - INSTALL REQUIRED FILLS IN MAXIMUM 8-INCH LIFTS AND COMPACT EACH LIFT TO 95% MAXIMUM PROCTOR DENSITY.
  - AS SUBGRADE IS ACHIEVED INSTALL REMAINING SEDIMENT CONTROL BARRIERS WITHIN THE SITE (I.E. ADDITIONAL SILT FENCE, CHECK DAMS AND SEDIMENT CONTROL AND CATCH BASINS, ETC.)
- INSTALL ALL UTILITIES AND CLOSED DRAINAGE SYSTEM COMPONENTS (I.E. PIPE CULVERTS, CATCH BASINS AND REMAINING WATER MAIN) PER THE CORRESPONDING DETAILS AND AS SHOWN ON SHEET C-3 AND C-4. AS EACH STRUCTURE IS COMPLETED INSTALL THE CORRESPONDING INFILTRATION BASIN DETAILS AND OUTLET PROTECTION. LOAM SEED AND MULCH THE SIDE SLOPES OF THE BASIN AS DIRECTED IN THE INFILTRATION BASIN DETAILS AND TEMPORARY SEDIMENT CONTROL BARRIER DEPICTED ON SHEET C-2.
- ALL CUT AND FILL SLOPES AND LAWN AREAS NOT TO BE PAVED SHALL BE LOAMED AND SEEDED 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 PARKING AREA AS SPECIFIED IN THE CORRESPONDING DETAILS.
- THE PARKING 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 NHSSM, 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 SHOULD 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 PROJECT COMPLETION, ONCE THE SITE IS DEEMED STABILIZED (VEGETATION IS GERMINATED), THE TEMPORARY SEDIMENT CONTROL BARRIERS AND EROSION CONTROL PRACTICES SHALL BE REMOVED. ANY DISTURBANCE CREATED DURING REMOVAL SHALL BE REPAIRED IN AN APPROPRIATE MANNER.
  - ACCUMULATED SEDIMENT SHALL BE REMOVED FROM ALL ON SITE CATCH BASINS AND THE SEDIMENT FOREBAYS TO THE GRAVEL WETLANDS BASIN.

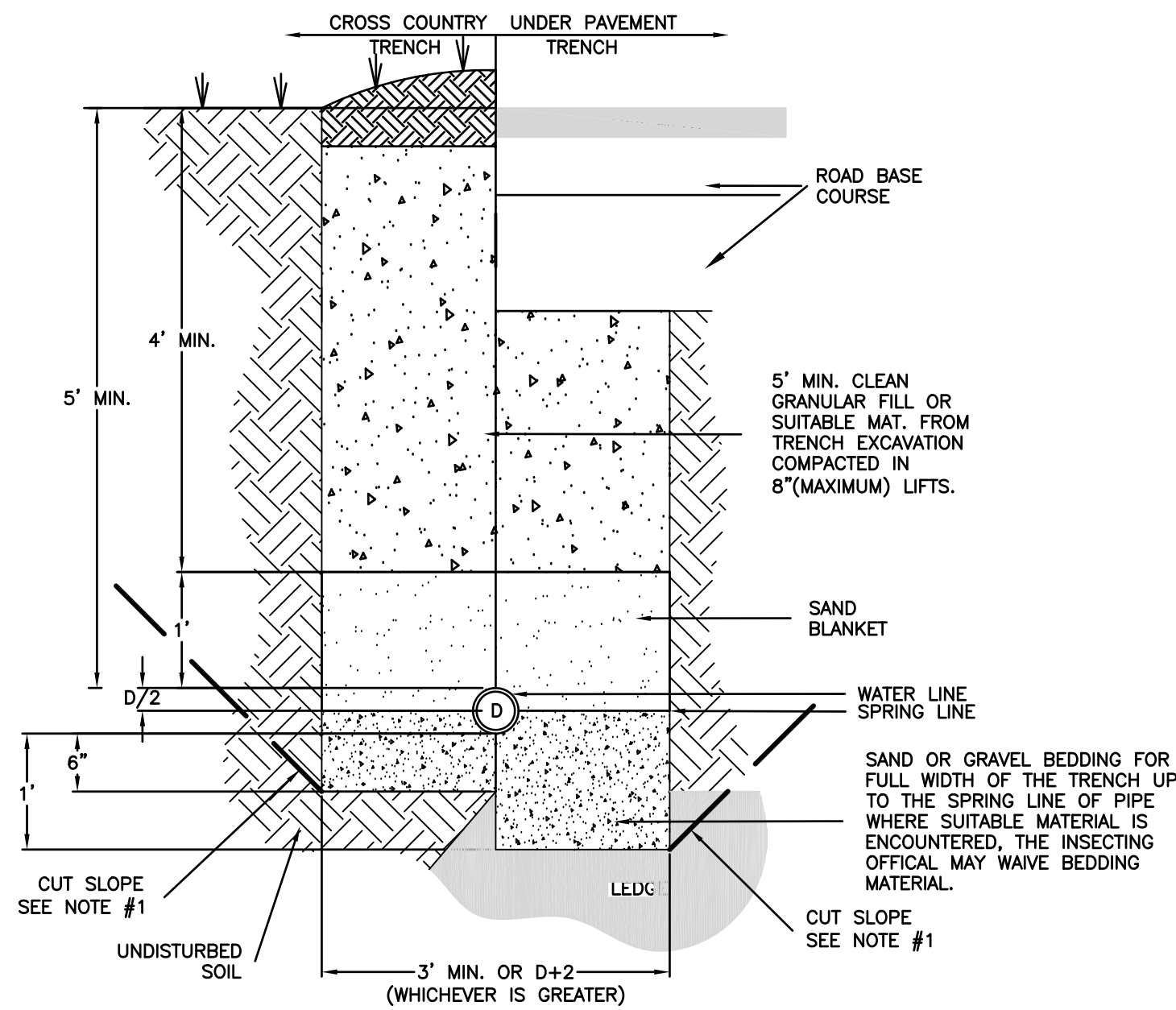
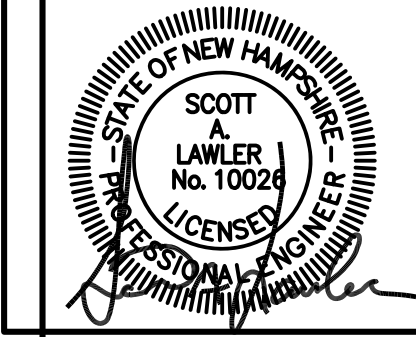
**Not For Construction**  
**PERMANENT EROSION AND SEDIMENTATION CONTROL DETAILS**  
 TAX MAP 243, LOT 34  
 145 AIRPORT DRIVE  
 ROCHESTER, NH  
 PREPARED FOR:  
**CITY OF ROCHESTER**

SCALE: AS SHOWN DECEMBER 2019

FILE NO. 104  
 PLAN NO. C-3013  
 DWG NO. 19275/SP-1  
 F.B. NO. SDR-TJR

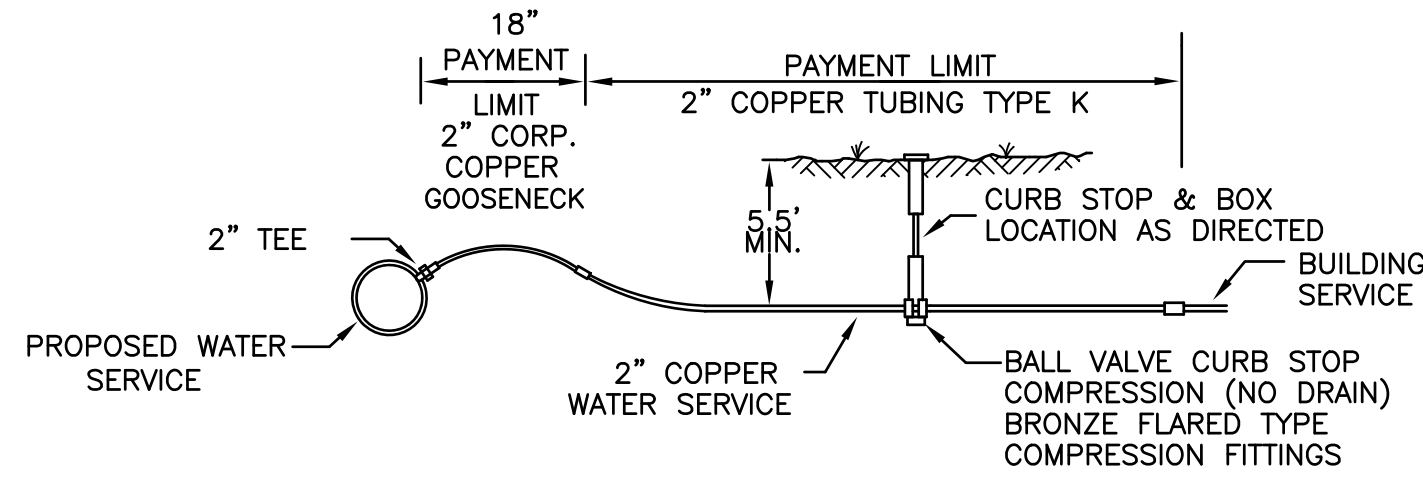


CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITHIN THE PLAN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



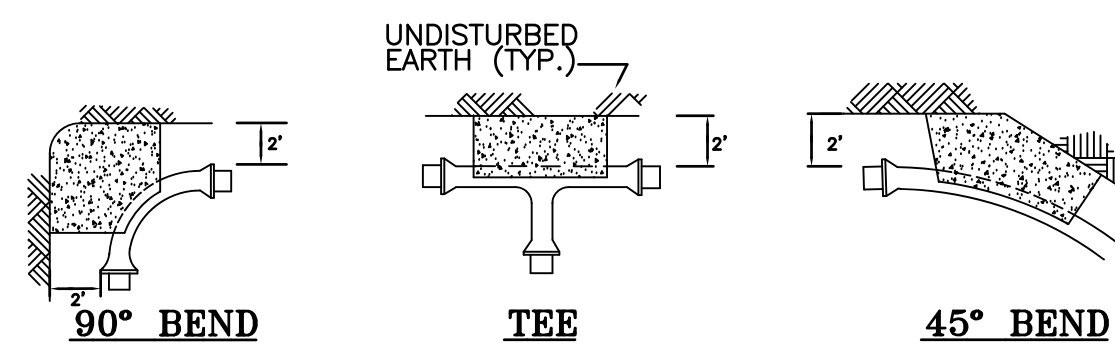
**WATER PIPE TRENCH INSTALLATION DETAIL**

NOT TO SCALE



**TYPICAL DOMESTIC SERVICE CONNECTION**

NOT TO SCALE

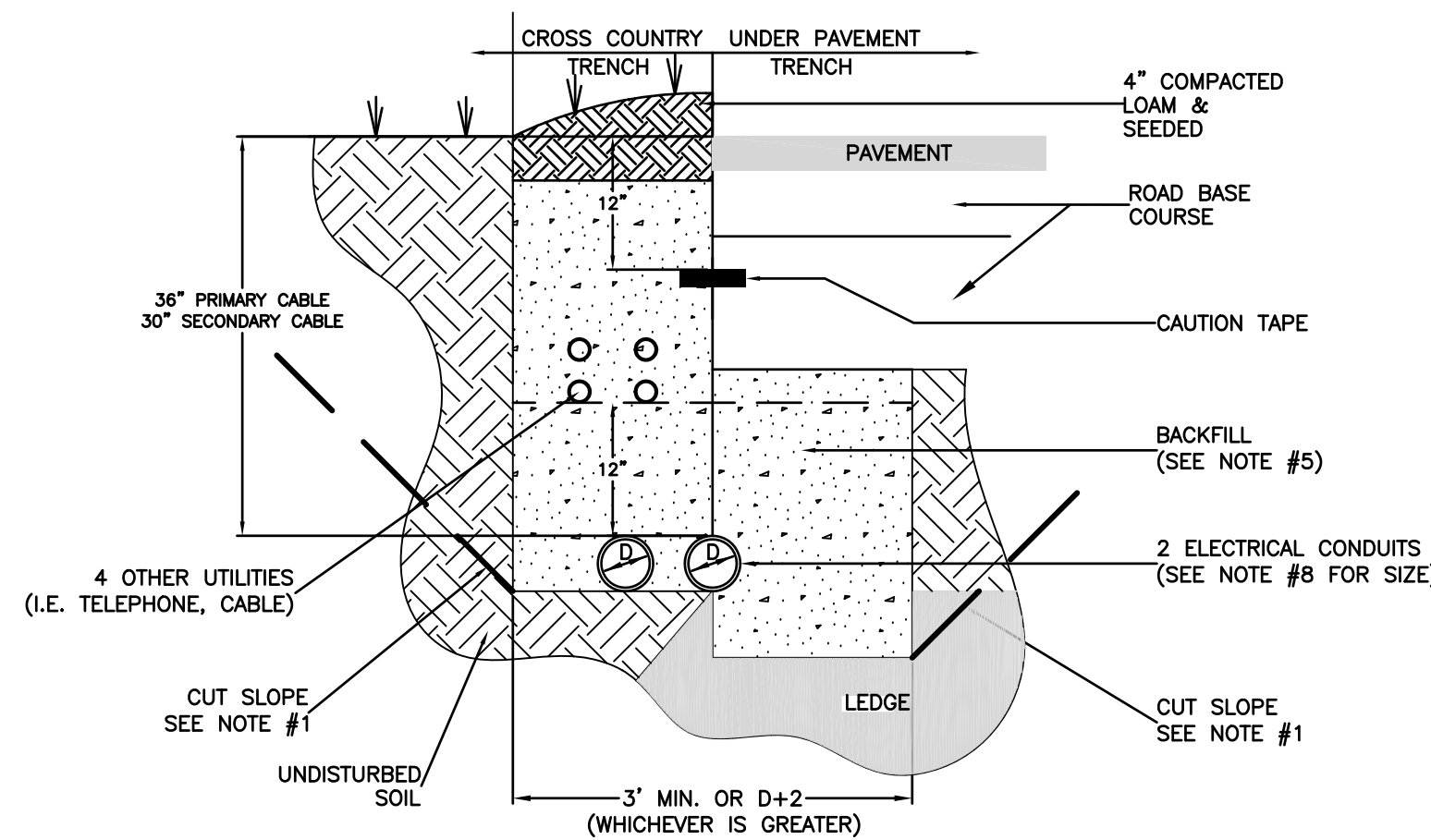


PIPE SIZE	90 BEND	TEE	PLUG	45 BEND	2 1/2" & SMALLER
6"	5	4	3	2	2
8"	10	8	6	6	3
12"	24	18	8	12	8

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

**WATER MAIN THRUST BLOCK DETAILS**

NOT TO SCALE



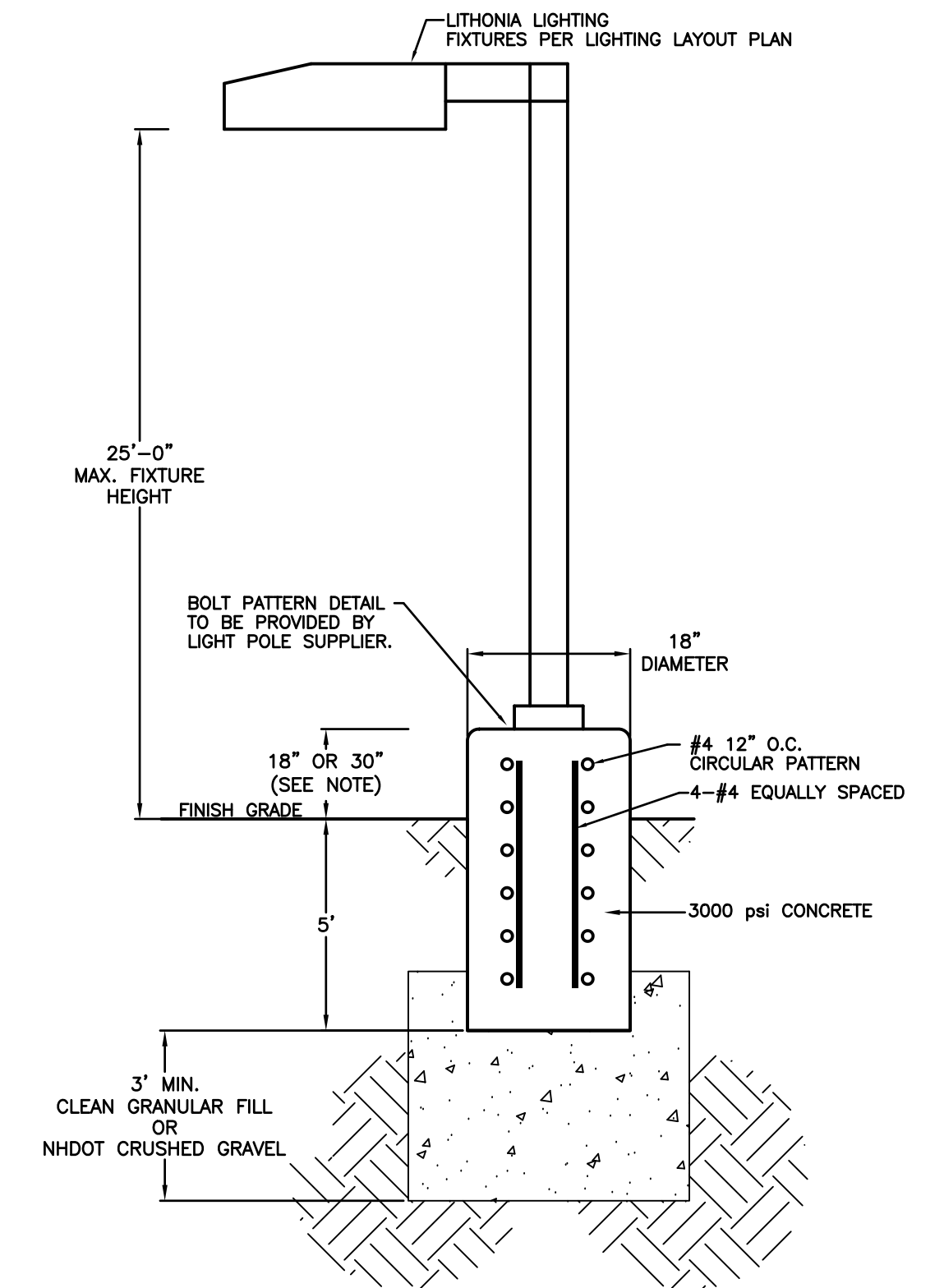
- NOTES:
- ALL NON-METALLIC CONDUIT AND FITTINGS SHALL BE ELECTRICAL GRADE, SCHEDULE 40 PVC, AND SHALL CONFORM TO THE APPLICABLE SECTIONS OF NEMA TC2-1990 AND BE UL LISTED. ONLY GRAY-COLORED CONDUIT WILL BE ACCEPTED. ANY PVC CONDUIT NOT HAVING THE PROPER NEMA AND UL MARKINGS WILL NOT BE ACCEPTED. ALL 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 18" OF THE SURFACE SHALL BE PROPERLY GROUND.
  - A 10-FOOT HORIZONTAL SECTION OF RIGID GALVANIZED STEEL CONDUIT WILL BE REQUIRED AT EACH SWEEP, UNLESS IN THE OPINION OF THE PSNH 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 PSNH. 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 PSNH IS NOTIFIED TO INSTALL CABLE. THE STRING SHOULD BE BLOWN INTO THE CONDUIT AFTER THE RUN IS ASSEMBLED TO AVOID BONDING THE STRING TO THE CONDUIT.
  - ROUTING OF THE CONDUIT AND INSPECTION PRIOR TO BACKFILL WILL BE PROVIDED BY PSNH. INSTALLATION OF THE CONDUIT WILL BE DONE BY THE CONTRACTOR. THE PSNH 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 PSNH 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

**GENERAL UTILITY NOTES**

- CONTRACTOR SHALL NOTIFY DIG-SAFE (1-888 344-7233) 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE AS SHOWN. THE CONTRACTOR SHALL VERIFY THEIR LOCATIONS AND ELEVATIONS.
- THESE PLAN SHOWS ONLY THOSE FEATURES THAT WERE VISUALLY APPARENT ON THE DATE OF THE SURVEY. THE ABSENCE OF SUBSURFACE STRUCTURES, UTILITIES, ETC. FROM THIS PLAN, BUT IN EXISTENCE IS NOT INTENDED OR IMPLIED.
- ANY UTILITY POLES THAT NEED TO BE RELOCATED SHALL BE COORDINATED WITH PSNH OR VERIZON, WHOM EVER HAS CONTROL OVER THEM.
- PROPOSED UTILITIES ARE TO BE UNDERGROUND. COORDINATE LOCATION OF UNDERGROUND UTILITIES AND TRANSFORMER PADS WITH PSNH AND OTHER PERTINENT UTILITY COMPANIES.
- WATER AND SEWER LINES SHALL BE INSTALLED A MINIMUM OF 10'-FT APART HORIZONTALLY.
- WHERE SEWER AND WATER LINES MUST CROSS, SEWER PIPE JOINTS SHALL BE LOCATED A MINIMUM 9'-FT HORIZONTALLY FROM THE WATER LINE AND A VERTICAL SEPARATION OF 18-INCHES SHALL BE MAINTAINED. SEWER PIPE JOINTS SHALL BE TESTED WITH ZERO LEAKAGE AT 25 POUNDS PER SQUARE INCH FOR GRAVITY SEWER AND AT 1-1/2 TIMES WORKING PRESSURE FOR ALL FORCE MAINS.
- WATERLINE CONSTRUCTION:
  - ALL PROPOSED WATER LINE MATERIAL USED SHALL MEET ROCHESTER WATER DEPARTMENT AND ROCHESTER ENGINEERING DEPARTMENT SPECIFICATIONS. WATER LINES SHALL BE A.W.W.A C 151, CLASS 52, CEMENT LINED, DUCTILE IRON PIPE.
  - PROPOSED WATER GATE VALVES SHALL BE MANUFACTURED BY KENNEDY OF AMERICAN FLOW CONTROL, RESILIENT SEAT TYPE.
  - ALL WATER LINES SHALL BE BURIED A MINIMUM OF 5'.
  - IF 5' OF COVER IS NOT AVAILABLE WATER LINE SHALL BE INSULATED AS SHOWN IN THE "SHALLOW COVER TRENCH DETAIL FOR INSULATED WATER PIPE".
  - ALL WATER FITTINGS SHALL BE CLASS 350.
  - PROPOSED WATER GATE VALVE SHALL OPEN CLOCKWISE (RIGHT).
- WORK TO CONNECT INTO THE WATER OR SEWER MAINS REQUIRES A PERMIT FROM THE ROCHESTER PUBLIC WORKS DEPARTMENT. CONTRACTORS ARE TO BE PRE-QUALIFIED.



**POLE MOUNTED LIGHT DETAIL**

NOT TO SCALE

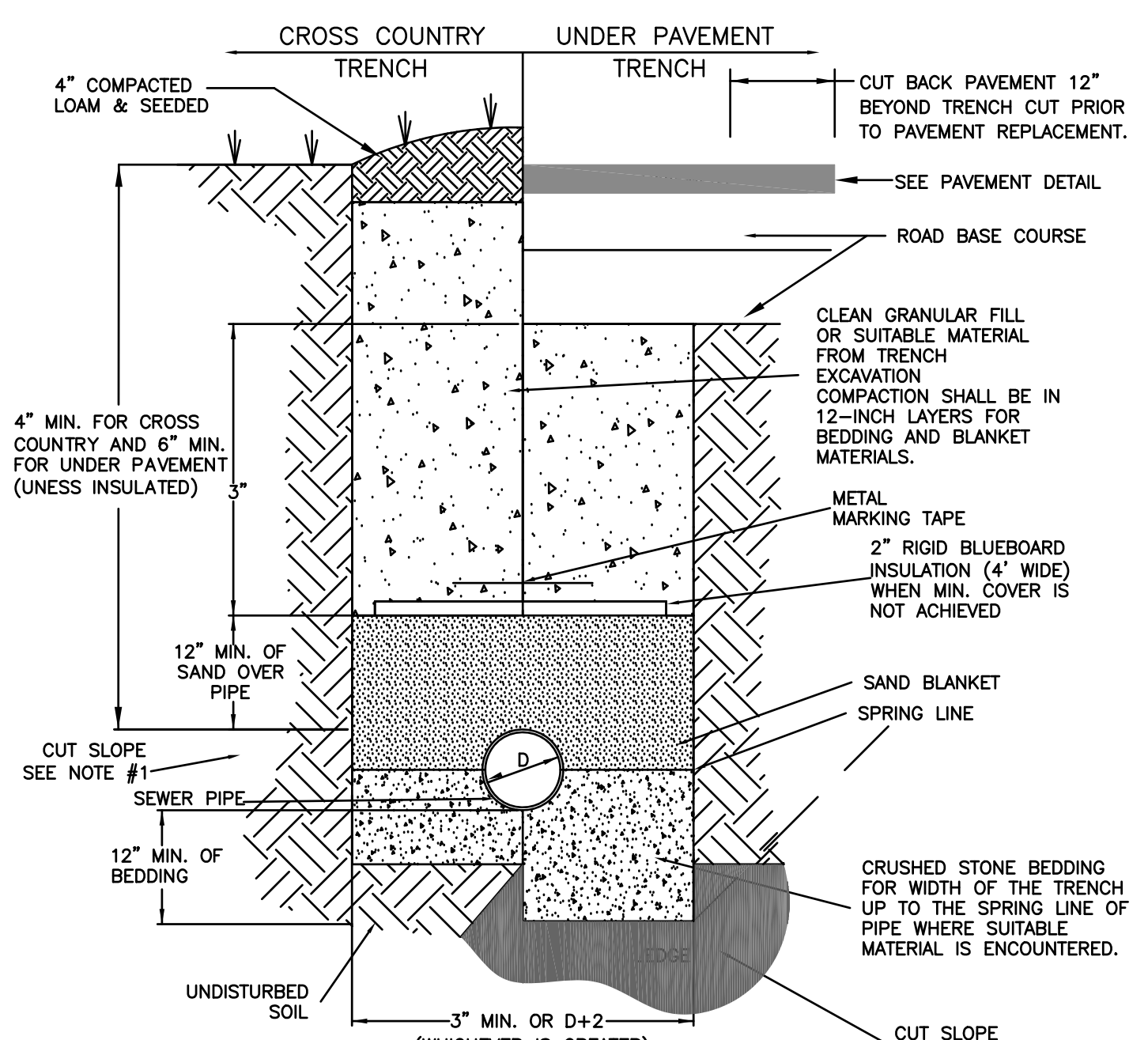
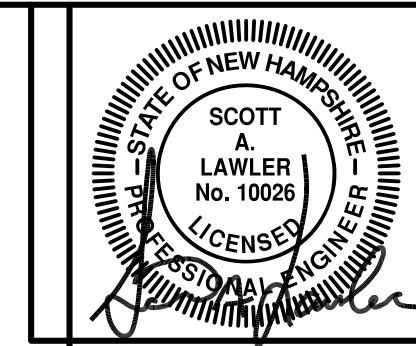
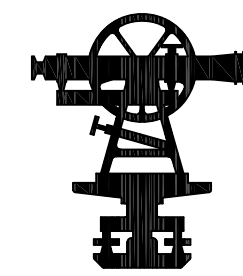
- LIGHT POLE BASE SHALL BE 18" ABOVE FINISH GRADE FOR NON VEHICLE IMPACT AREAS AND 30" FOR VEHICLE IMPACT AREAS.
- THE LIGHT POLE BASES CAN BE PRECAST, WITH COORDINATION WITH THE LIGHTING FIXTURE MANUFACTURE FOR BOLT PATTERN.

**UTILITY DETAILS**  
 TAX MAP 243, LOTS 34  
 145 AIRPORT DRIVE  
 ROCHESTER, NH  
 PREPARED FOR:  
**CITY OF ROCHESTER**

SCALE: AS SHOWN DECEMBER 2019

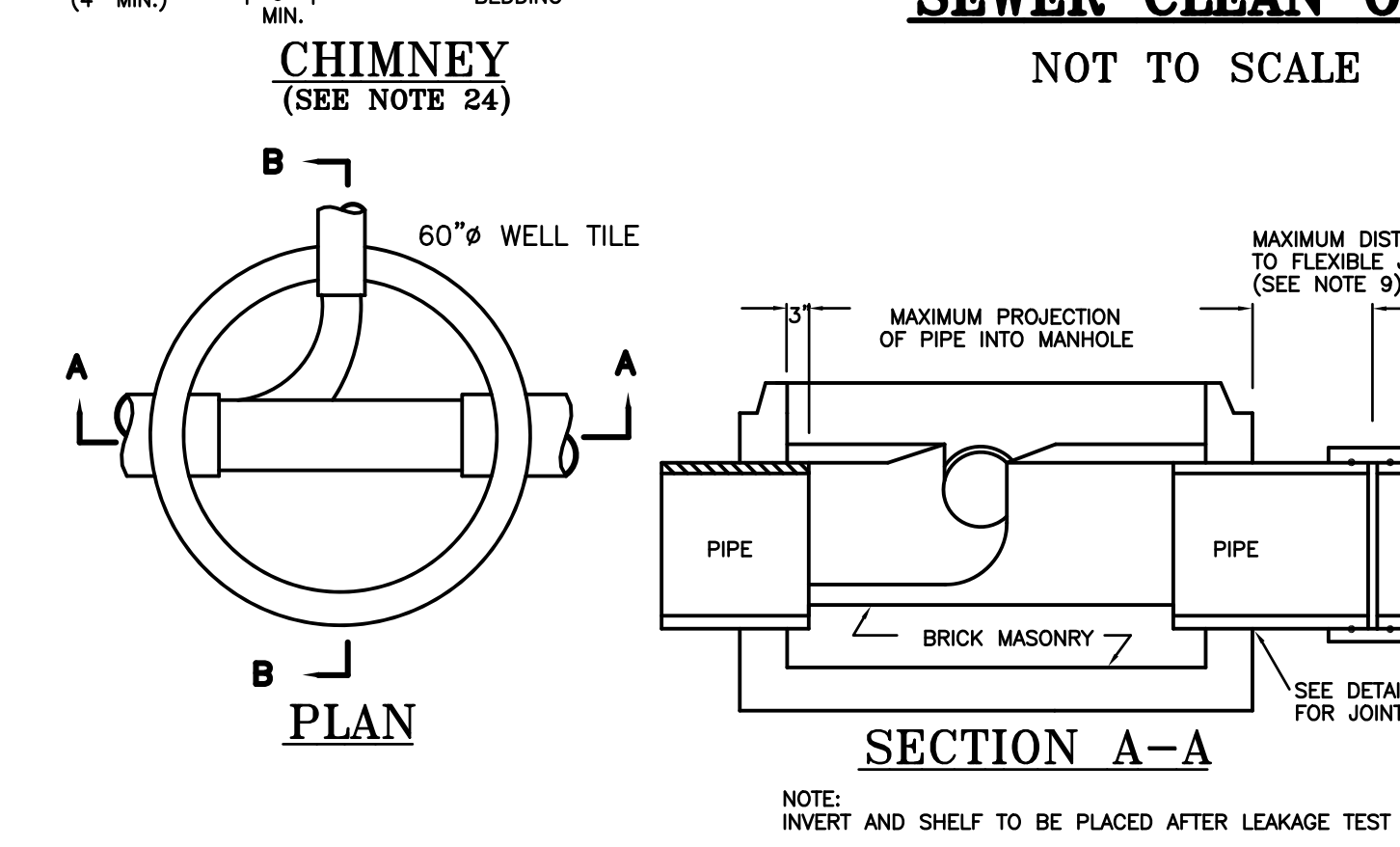
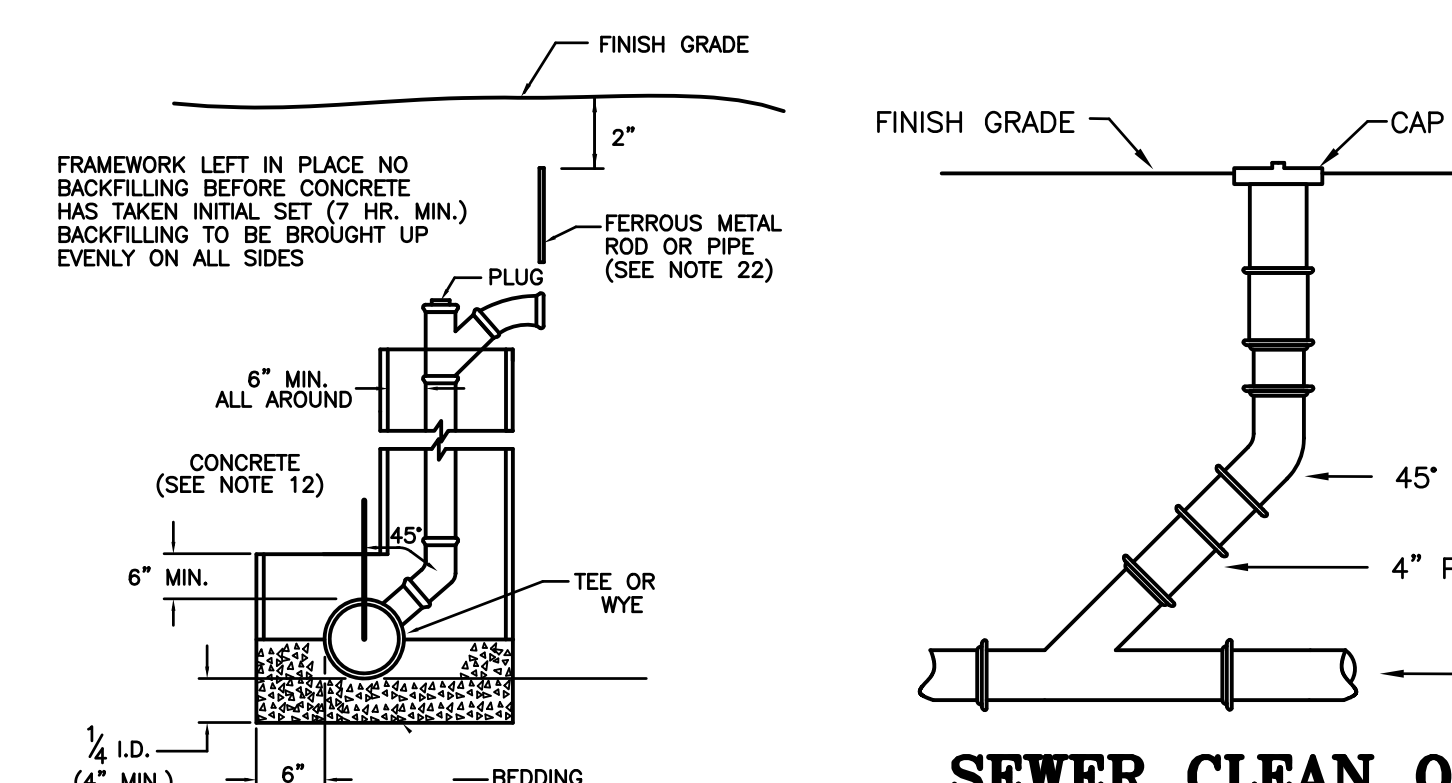
Not For Construction

FILE NO. 104  
 PLAN NO. C-3013  
 DWG NO. 19275\SP-1  
 F.B. NO. SDR-TJR

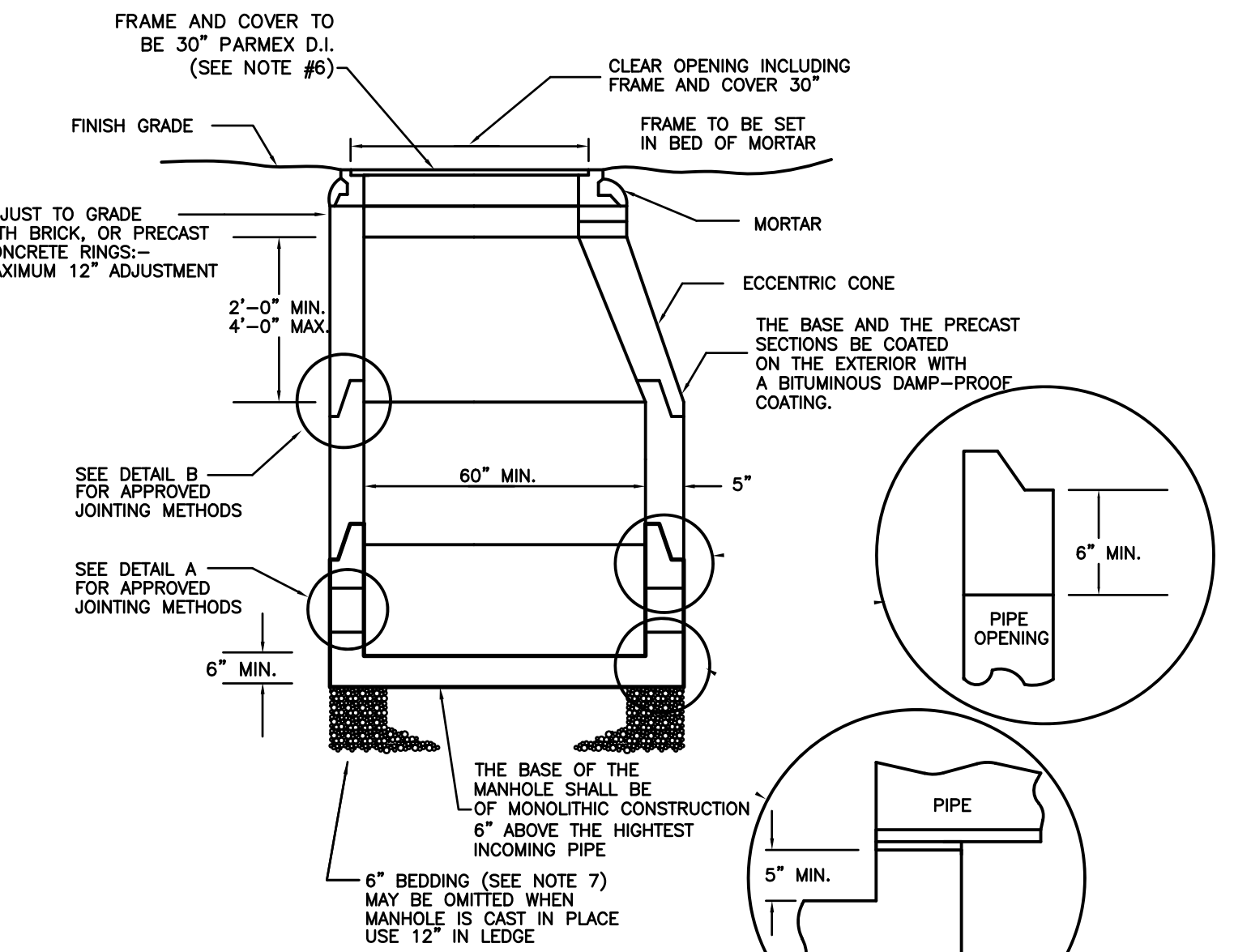


- NOTES:**
- PIPES MAY BE INSTALLED BY EXCAVATING AN OPEN TRENCH WITH SIDE SLOPES OF 1:1 MAXIMUM TO A DEPTH OF 4-FT. INSTALLATIONS DEEPER THAN 4-FT REQUIRE THE USE OF A TRENCH BOX.
  - PIPE MATERIALS SHALL BE AS SPECIFIED ON THE DESIGN PLAN.
  - SAND BLANKET MAY BE OMITTED FOR REINFORCED CONCRETE PIPE.
  - 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.
  - THE PIPE SAND BLANKET MATERIAL SHALL BE GRADED SAND FREE FROM ORGANIC MATERIALS, GRADED SUCH THAT 100 PERCENT PASSES A 3/4-INCH SIEVE AND A MAXIMUM OF 15 PERCENT PASSES A #200 SIEVE.
  - TRENCH BACKFILL MATERIAL IN ROADWAY LOCATIONS SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION, EXCLUDING:
    - DEBRIS;
    - PIECES OF PAVEMENT;
    - ORGANIC MATTER;
    - TOP SOIL;
    - WET OR SOFT MUCK;
    - PEAT OR CLAY;
    - EXCAVATED LEDGE MATERIAL;
    - ROCKS OVER 6 INCHES IN THE LARGEST DIMENSION; AND
    - ANY MATERIAL NOT APPROVED BY THE ENGINEER.

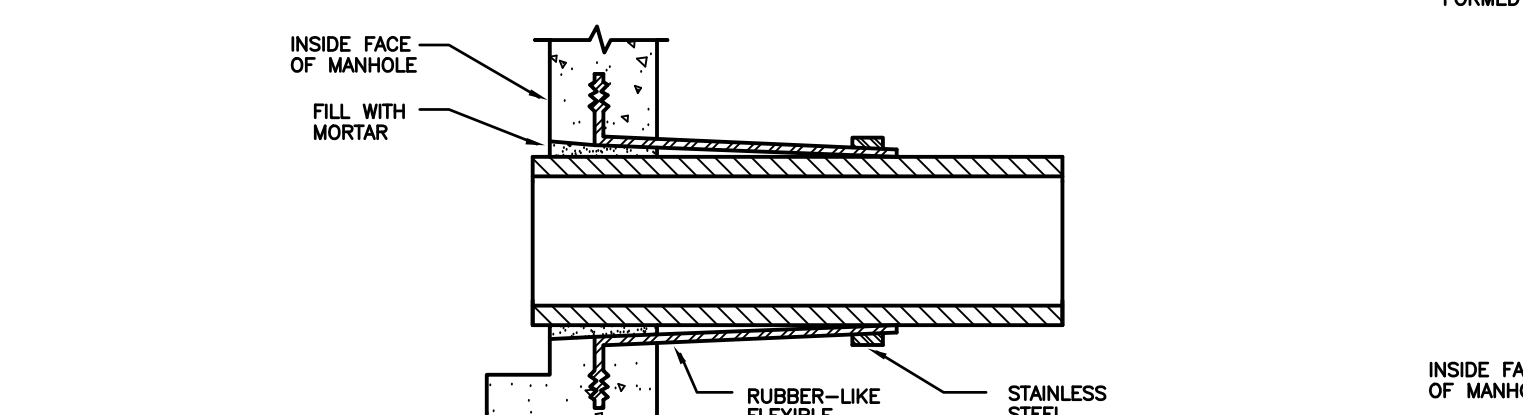
**SEWER PIPE TRENCH INSTALLATION DETAIL**  
NOT TO SCALE



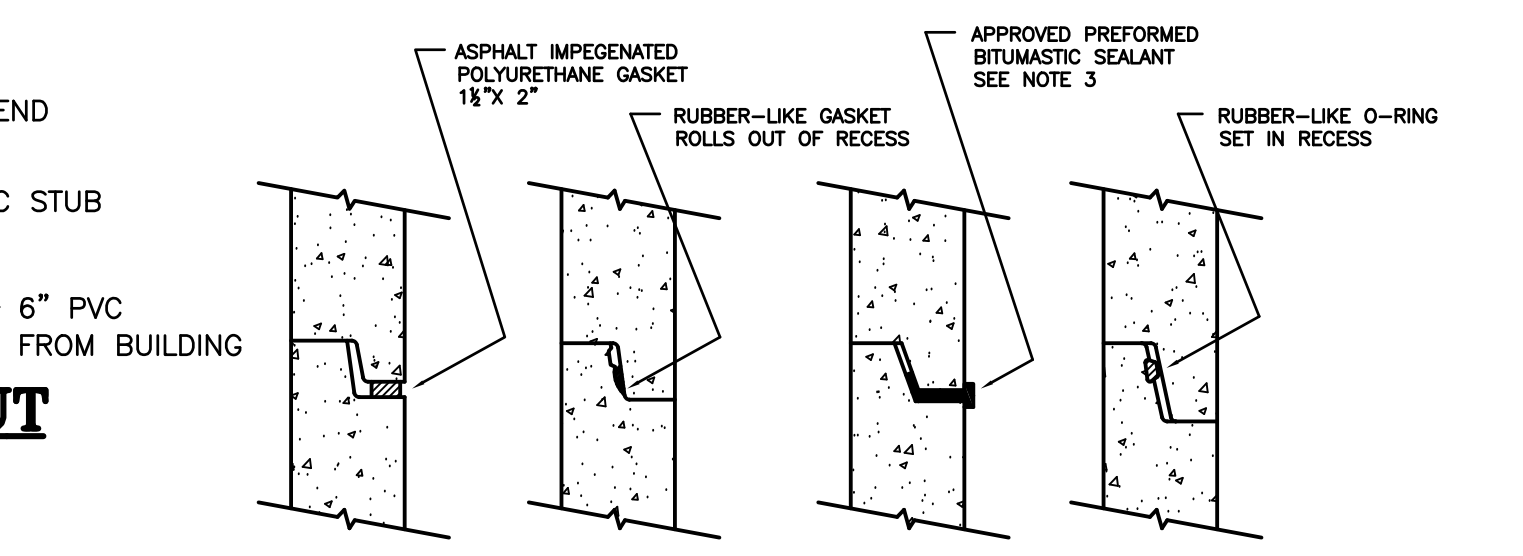
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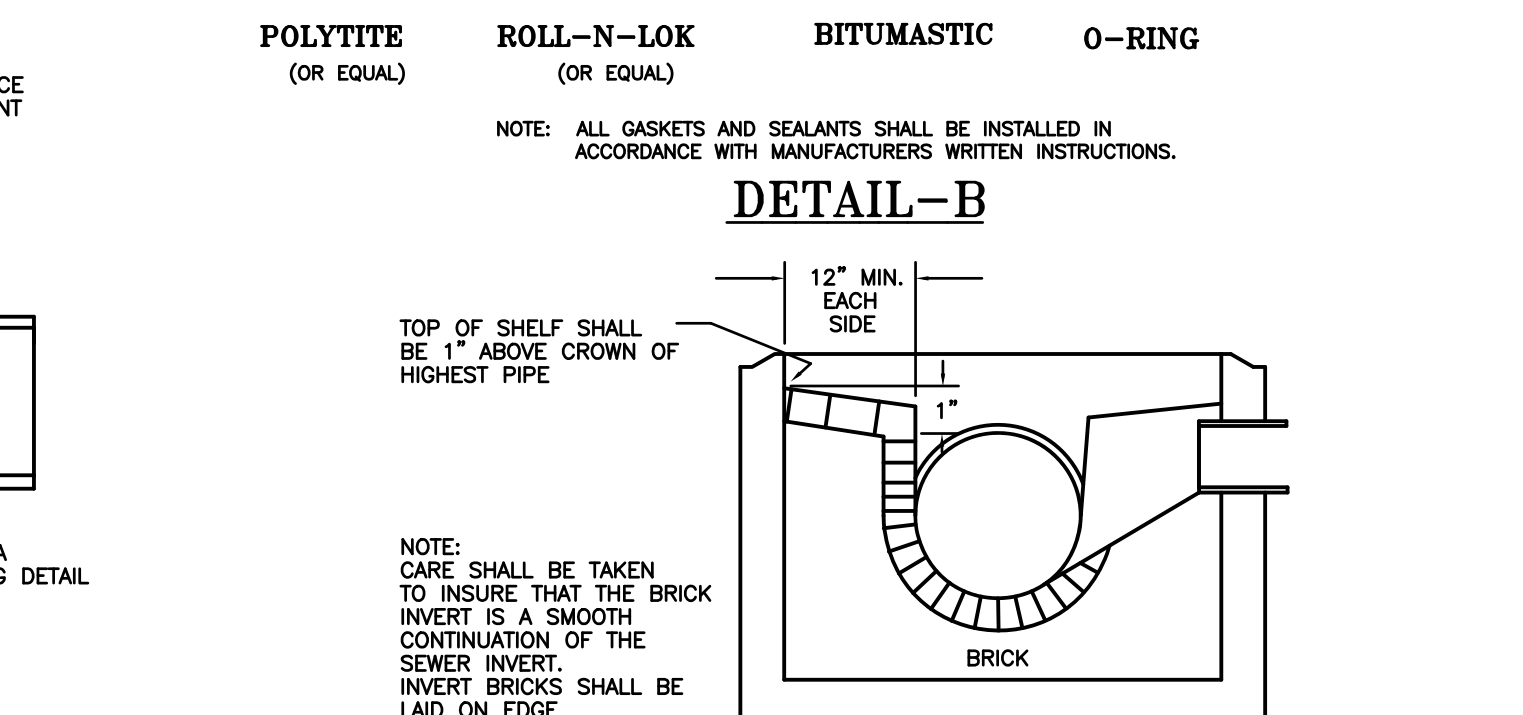
**TYPICAL SECTION**  
NOT TO SCALE



**LOCK-JOINT FLEXIBLE MANHOLE SLEEVE**  
(OR EQUAL)



**KOR-N-SEAL JOINT SLEEVE**  
(OR EQUAL)  
DETAIL-A



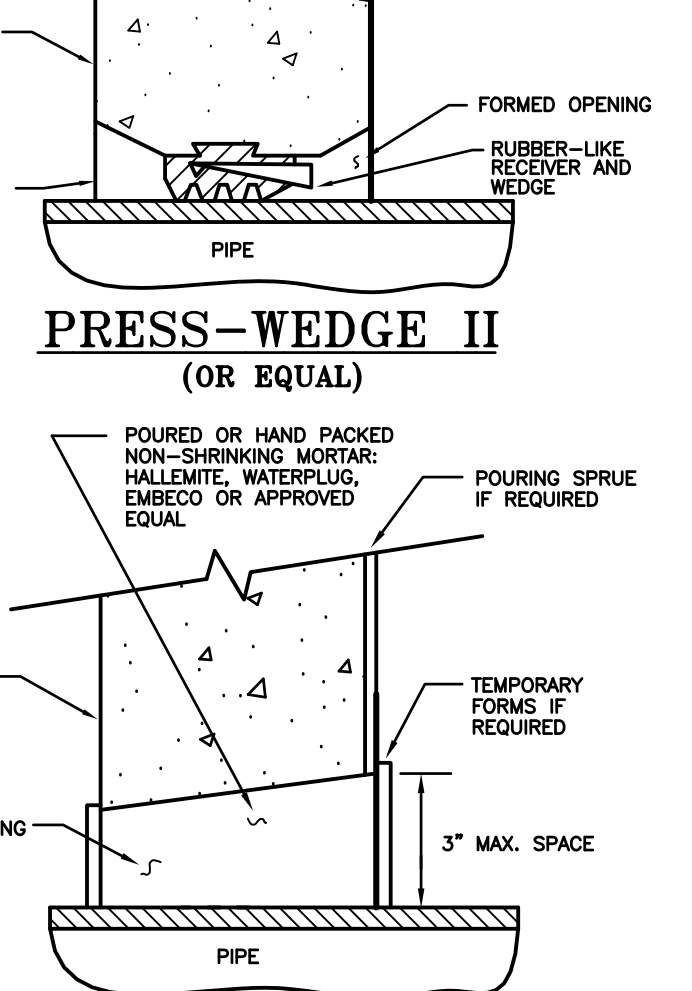
MORTAR USED IN MANHOLE CONSTRUCTION SHALL COMPLY WITH THE FOLLOWING:  
MORTAR SHALL BE COMPOSED OF TYPE II PORTLAND CEMENT AND SAND WITH OR WITHOUT HYDRATED LIME ADDITION.  
PROPORTIONS IN MORTAR OF PARTS BY VOLUMES SHALL BE AS SHOWN BELOW:

NONE	4.5 PARTS	1.5 PARTS
0.5 PARTS	4.5 PARTS	1 PART

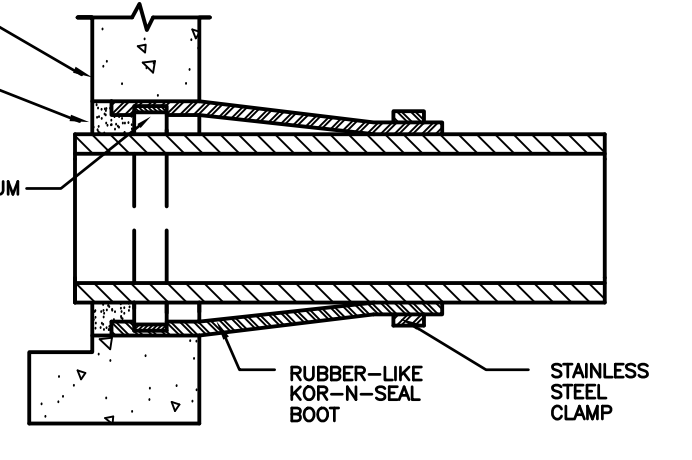
CEMENT SHALL BE TYPE II PORTLAND CEMENT THAT IS CERTIFIED BY ITS MANUFACTURER AS CONFORMING TO THE ASTM C150/C150M STANDARD IN EFFECT AT THE TIME THE CEMENT WAS MANUFACTURED.  
HYDRATED LIME SHALL BE TYPE S THAT IS CERTIFIED BY ITS MANUFACTURER AS CONFORMING TO THE ASTM C207 STANDARD IN EFFECT AT THE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



**PRESS-WEDGE II**  
(OR EQUAL)

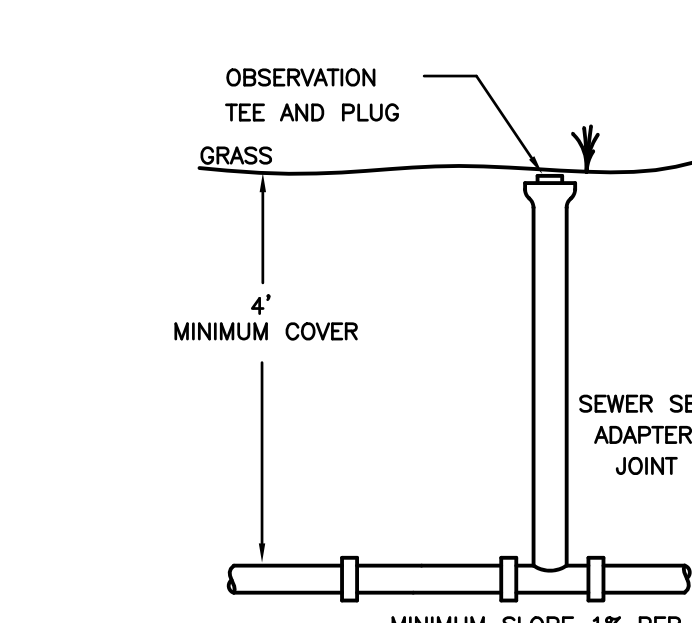


**NON-SHRINKING MORTAR**  
(OR EQUAL)



**KOR-N-SEAL JOINT SLEEVE**  
(OR EQUAL)  
DETAIL-A

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



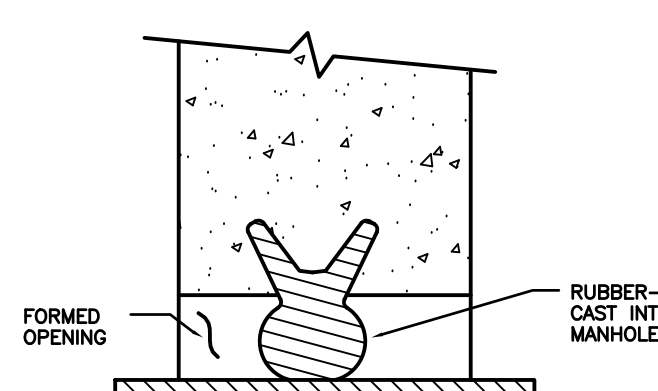
**CONCRETE FULL ENCASEMENT**

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.

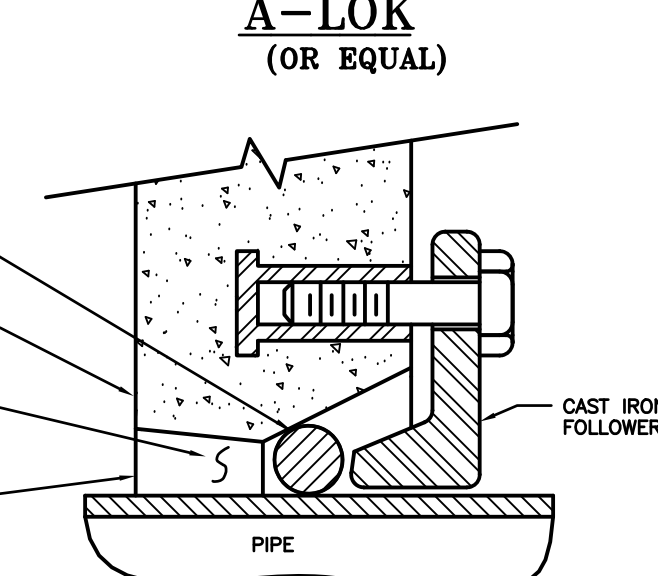
MORTAR USED IN MANHOLE CONSTRUCTION SHALL COMPLY WITH THE FOLLOWING:  
MORTAR SHALL BE COMPOSED OF TYPE II PORTLAND CEMENT AND SAND WITH OR WITHOUT HYDRATED LIME ADDITION.  
PROPORTIONS IN MORTAR OF PARTS BY VOLUMES SHALL BE AS SHOWN BELOW:

NONE	4.5 PARTS	1.5 PARTS
0.5 PARTS	4.5 PARTS	1 PART

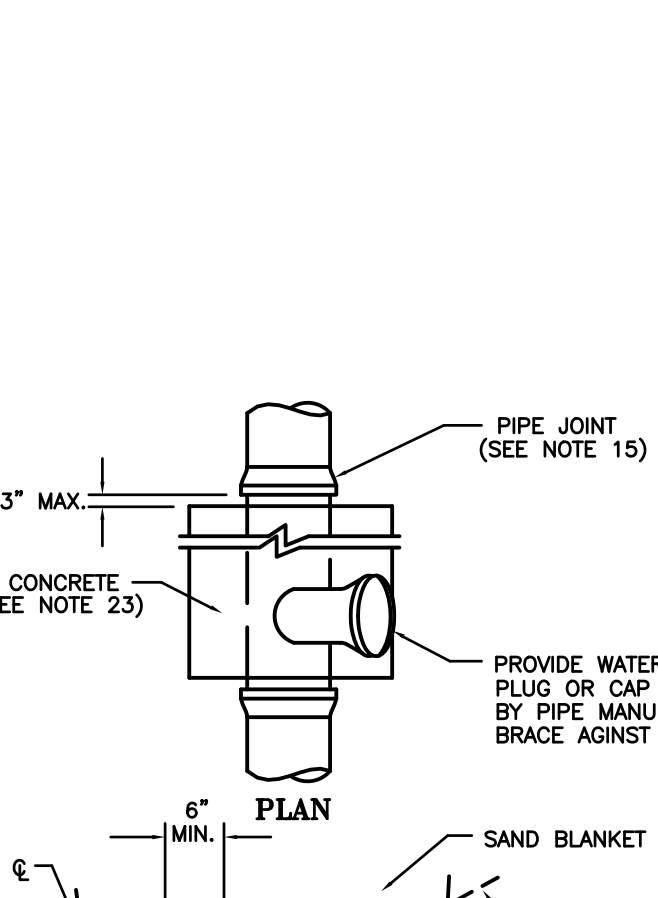
CEMENT SHALL BE TYPE II PORTLAND CEMENT THAT IS CERTIFIED BY ITS MANUFACTURER AS CONFORMING TO THE ASTM C150/C150M STANDARD IN EFFECT AT THE TIME THE CEMENT WAS MANUFACTURED.  
HYDRATED LIME SHALL BE TYPE S THAT IS CERTIFIED BY ITS MANUFACTURER AS CONFORMING TO THE ASTM C207 STANDARD IN EFFECT AT THE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



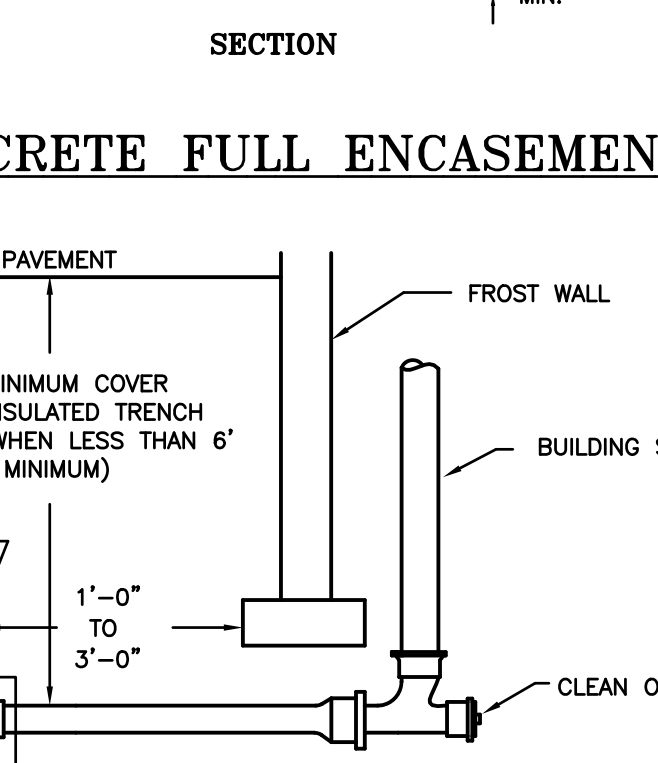
**A-LOK**  
(OR EQUAL)



**RES-SEAL**  
(OR EQUAL)



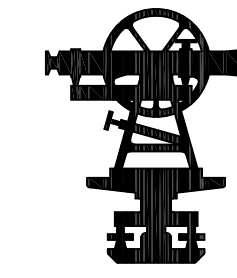
**CONCRETE FULL ENCASEMENT**



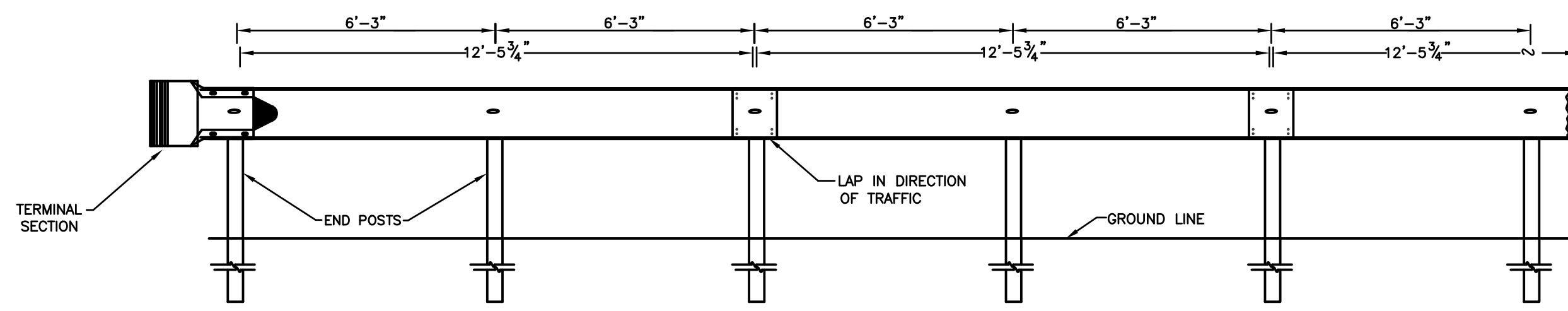
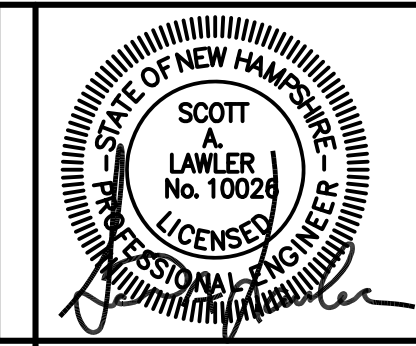
**TYPICAL BUILDING SEWER SERVICE DETAIL**  
NOT TO SCALE

- NOTES:**
- 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. 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.
  - BARRELS AND CONE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE OR POURED 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 INDELIBLY MARKED ON THE INSIDE WALL.
  - VACUUM LEAKAGE TESTING (ASTM C1244) SHALL BE PERFORMED FOR ALL MANHOLES, LOW-PRESSURE AIR TESTING (ASTM F1417) AND DEFLECTION TESTING USING A 'GO/NO GO' MANDREL FOR ALL SANITARY SEWERS, IN ACCORDANCE WITH THE NHDES SEWER REGULATIONS AND THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS REQUIREMENTS.
  - INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE ACCORDANT TO THE CENTER LINE OF THE SEWER. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY. BRICK MASONRY CONFORM WITH ASTM C32. INVERTS AND SHELVES SHALL NOT BE INSTALLED UNTIL AFTER SUCCESSFUL TESTING IS COMPLETED.
  - FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. A 3-INCH (MINIMUM HEIGHT) LETTER 'SEWER' FOR SEWERS OR 'DRAIN' FOR DRAINS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
  - SEWER MANHOLE FRAME AND COVER: PAMREX 32" D.I. MANHOLE FRAME AND COVER SEWER - E.J. PRESCOTT PRODUCT# 62113-32-S. IMMEDIATELY FOLLOWING COMPLETION OF THE LEAKAGE TEST, THE FRAME AND COVER SHALL BE PLACED ON THE TOP OF THE MANHOLE OR SOME OTHER MEANS TO PREVENT ACCIDENTAL ENTRY BY UNAUTHORIZED PERSONS, CHILDREN, OR ANIMALS. UNTIL THE CONTRACTOR IS READY TO MAKE FINAL ADJUSTMENT TO GRADE.
  - BEDDING: MIN. 6" OF 3/4" CRUSHED STONE (12" IN LEDGE) FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33:
    - 100% PASSING 1" INCH SCREEN
    - 0-5% PASSING #4 SIEVE
    - 20-55% PASSING 3/8" INCH SCREEN
    - 0-10% PASSING #8 SIEVE
    - 0-5% PASSING #10 SIEVE
 WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, CRUSHED STONE MIN. 3/4" SHALL BE USED. CONCRETE FOR DROP SUPPORT SHALL CONFORM TO THE REQUIREMENT FOR CLASS A (3000#) CONCRETE OF THE NEW HAMPSHIRE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS STANDARD SPECIFICATIONS AS FOLLOWS:
    - CEMENT: 6.0 BAGS/C.Y.
    - WATER: 5.75 GALLONS PER BAG CEMENT
    - MAXIMUM SIZE OF AGGREGATE: 1 INCH.
  - FLEXIBLE JOINTS: A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES:
    - RCP & CI PIPE - ALL SIZES - 48"
    - AC & VC PIPE - UP THROUGH 12" DIA. - 18" SEE NOTE 9.A.
    - AC & VC PIPE - LARGER THAN 12" DIA. - 36"
    - PI PIPE - NONE REQUIRED
    - PVC (ASTM 3034) - UP THROUGH 15" DIA. - NONE REQUIRED
    - PVC (ASTM F 789) - ALL SIZES - 48" TO 60"
    - PVC (ASTM F 679) - LARGER THAN 15" DIA. - 48" TO 60"
    - 9.A. UNDER SEVERE CONDITIONS WHEN DIFFERENTIAL SETTING CANNOT BE CONTROLLED WITHIN NORMAL LIMITS, VARIATIONS IN THE STUB LENGTH MAY BE NECESSARY. OTHER PLASTIC PIPES SHALL BE REVIEWED ON A CASE BY CASE BASIS.
  - SHALLOW MANHOLE FORMS IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H=20 LOADS.
  - MANHOLE STEPS SHALL NOT BE PROVIDED WITHIN THE MANHOLES AS DIRECTED BY THE CITY OF ROCHESTER.
  - MINIMUM SIZE OF PIPE SHALL BE 4 INCHES.
  - PIPE AND JOINT MATERIALS P.V.C. (POLY VINYL CHLORIDE) PIPE: ALL P.V.C. PIPE AND FITTINGS SHALL CONFORM TO THE MOST RECENT REQUIREMENTS OF ASTM SPECIFICATIONS FOR TYPE PSM POLY VINYL CHLORIDE (P.V.C.) SEWER PIPE AND FITTINGS, DESIGNATION D-3034 AND ASTM SPECIFICATIONS FOR SEWER PIPE JOINTS USING ELASTOMERIC SEALS, DESIGNATION D-3212. MANUFACTURER'S COMPLIANCE SHALL BE FURNISHED TO THE ENGINEER, PRIOR TO INSTALLATION METHODS OF SHIPPING AND STORAGE ON SITE SHALL BE SUCH AS TO AVOID INJURY TO THE PIPE. DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB. MINIMUM 'PIPE STIFFNESS' (F/Y) AT 7 1/2' DEFLECTION SHALL BE 45 PSI FOR SIZE WHEN TESTED IN ACCORDANCE WITH ASTM METHODS OF TEST D-2412, 'EXTERNAL LOADING' PROPERTIES OF PLASTIC PIPE BY PARALLEL - PLATE LOADING. ALL P.V.C. PIPE SHALL BE TYPE SUR-35 (A MEASURE OF THICKNESS AND RIGIDITY) AND SHALL HAVE ELASTOMERIC GASKET JOINTS. SOLVENT CEMENT JOINTS SHALL NOT BE ALLOWED. P.V.C. USED FOR FORCE MAINS SHALL CONFORM TO ASTM D-2241 AND D-1784 (CLASS 1254-B). A SAFETY FACTOR OF 2.5 SHALL BE USED FOR PRESSURE RATING DETERMINATION WITH A STANDARD DIMENSION RATIO (SDR) NO HIGHER THAN 21.
  - DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
  - JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL. APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.
  - TEES OR WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING MANUFACTURER'S INSTRUCTIONS USING A SOLID, CLAMPED, OR EPOXY-CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWS OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL, AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR CRUDE PRACTICES SHALL BE PROHIBITED. THE CONNECTION SHALL BE CONCRETE ENCASED AS SHOWN IN THE DETAIL UP TO AND INCLUDING 15" DIAMETER. DOES NOT APPLY TO INSTALLATIONS WHERE TEES & WYES ARE USED.)
  - PIPE INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED, AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER IT SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR A DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH THE APPROPRIATE MECHANICAL DEVICES. THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE HOUSE FOUNDATION. THE PIPE SHALL NOT BE LESS THAN 1/8 INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.
  - TESTING: THE COMPLETED HOUSE SEWER SHALL BE SUBJECTED TO A LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS (PRIOR TO BACKFILLING)
    - AN OBSERVATION TEE SHALL BE INSTALLED AS SHOWN AND, WHEN READY FOR TESTING, AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM OF THE TEE. AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.
    - THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS OR, IF THE TRENCH IS WET, THE GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. INSPECTIONS FOR LEAKS SHALL BE MADE THROUGH THE CLEANOUT WITH A FLASHLIGHT.
    - DRY FLUORESCENCE DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER, OR IF THE TRENCH IS WET, GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST DOWNSTREAM MANHOLE. LEAKAGE OBSERVED IN ANY OF THE ABOVE ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG-UP IF NECESSARY AND RE-LAID TO ASSURE WATER-TIGHTNESS.
  - ILLEGAL CONNECTION: NOTHING BUT SANITARY WASTE FLOW FROM THE HOUSE TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS OR SUMP PUMPS OR ANY OTHER SIMILAR CONNECTION CARRYING RAIN WATER, DRAINAGE, OR GROUND WATER SHALL NOT BE PERMITTED.
  - HOUSE AND WATER SERVICE SHOULD NOT BE LAID IN THE SAME TRENCH AS SEWER SERVICE, BUT WHEN NECESSARY, SHALL BE PLACED ABOVE AND TO THE SIDE OF THE HOUSE SEWER AS SHOWN.
  - BEDDING: MIN. 3/4" CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33.6
    - 100% PASSING 1" INCH SCREEN
    - 90-100% PASSING 3/4" INCH SCREEN
    - 20-55% PASSING 3/8" INCH SCREEN
    - 0-10% PASSING #4 SIEVE
    - 0-5% PASSING #8 SIEVE
 WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, MIN. 3/4" CRUSHED STONE SHALL BE USED.
  - LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL 'CHIMNEY'. DETAIL TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.
  - CONCRETE: CONCRETE SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000 PSI) CONCRETE OF THE NEW HAMPSHIRE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS STANDARD SPECIFICATIONS AS FOLLOWS:
    - CEMENT: 6.0 BAGS/C.Y.
    - WATER: 5.75 GALLONS/BAG OF CEMENT
    - AGGREGATE: 1 1/2" MAX.
  - CHIMNEYS: IF VERTICAL TO SEWER IS GREATER THAN 4', A CHIMNEY SHALL BE CONSTRUCTED FOR THE HOUSE CONNECTION.
  - ALL DRAINAGE AND SEWER STRUCTURES INCLUDING FRAMES AND GRATES SHALL BE H=20 LOADING. 26" ALL SEWER CONSTRUCTION SHALL BE CONSTRUCTED TO NHDES AND THE CITY OF ROCHESTER STANDARDS & SPECIFICATIONS.
  - HORIZONTAL JOINTS: BETWEEN SECTIONS OF CONCRETE BARRELS SHALL BE OF A TYPE APPROVED BY THE COMMISSION, WHICH TYPE SHALL, IN GENERAL, DEPEND FOR WATER TIGHTNESS UPON AN ELASTOMERIC OR MASTIC-LIKE GASKET.
  - PIPE TO MANHOLE JOINTS: SHALL BE ONLY AS APPROVED BY THE COMMISSION AND IN GENERAL, WILL DEPEND FOR WATER TIGHTNESS UPON EITHER AN APPROVED NON-SHRINKING MORTAR OR ELASTOMERIC SEALANT.
  - FOR BITUMASTIC TYPE JOINTS: THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY APPROVED BITUMASTIC SEALANTS: RAM-NEK SEAL NO.2 E2
  - THE CONTRACTOR SHALL NOTIFY DIG-SAFE 1-888-344-7233 PRIOR TO CONSTRUCTION.

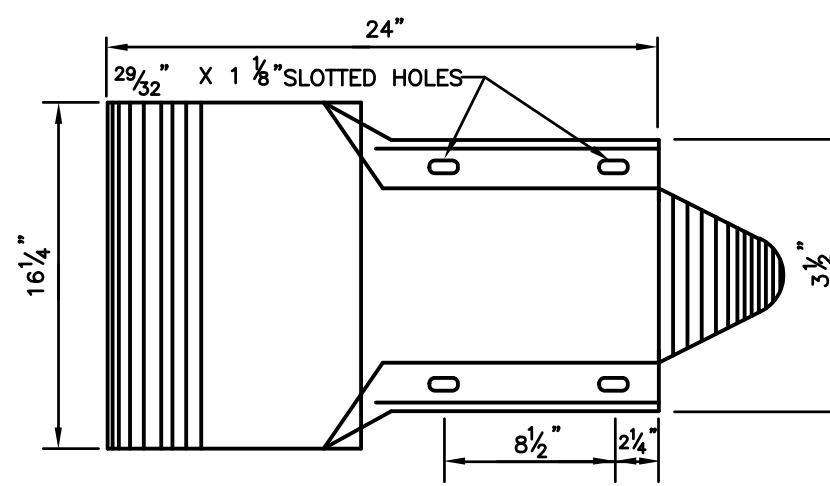
**SANITARY SEWER DETAILS**  
TAX MAP 243, LOT 34  
145 AIRPORT DRIVE  
ROCHESTER, NH  
PREPARED FOR:  
**CITY OF ROCHESTER**  
SCALE: AS SHOWN      DECEMBER 2019



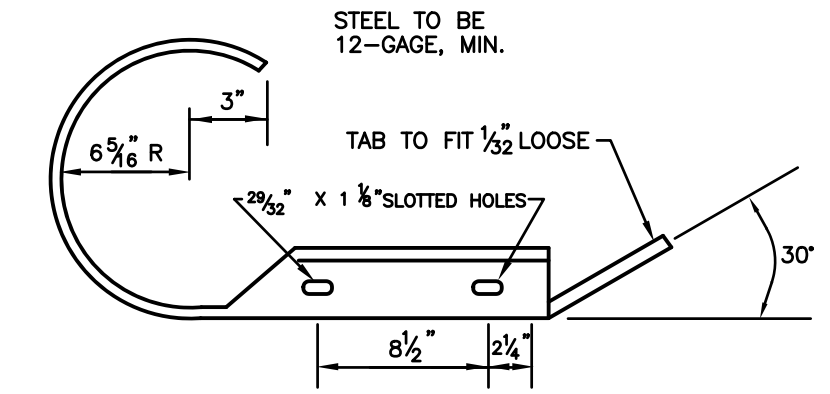
CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITHIN THE PLAN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



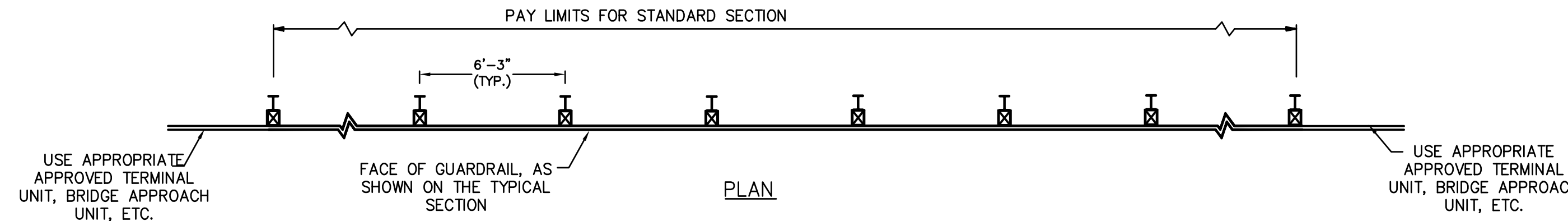
SAMPLE GUARDRAIL INSTALLATION LAYOUT



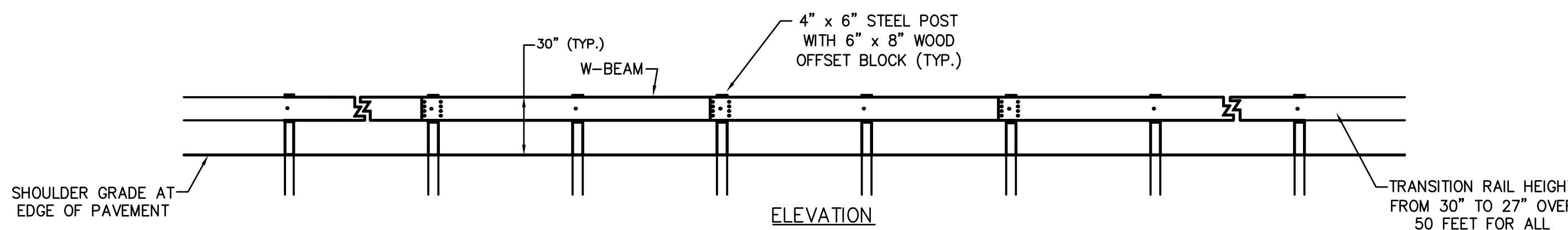
FRONT ELEVATION



PLAN VIEW

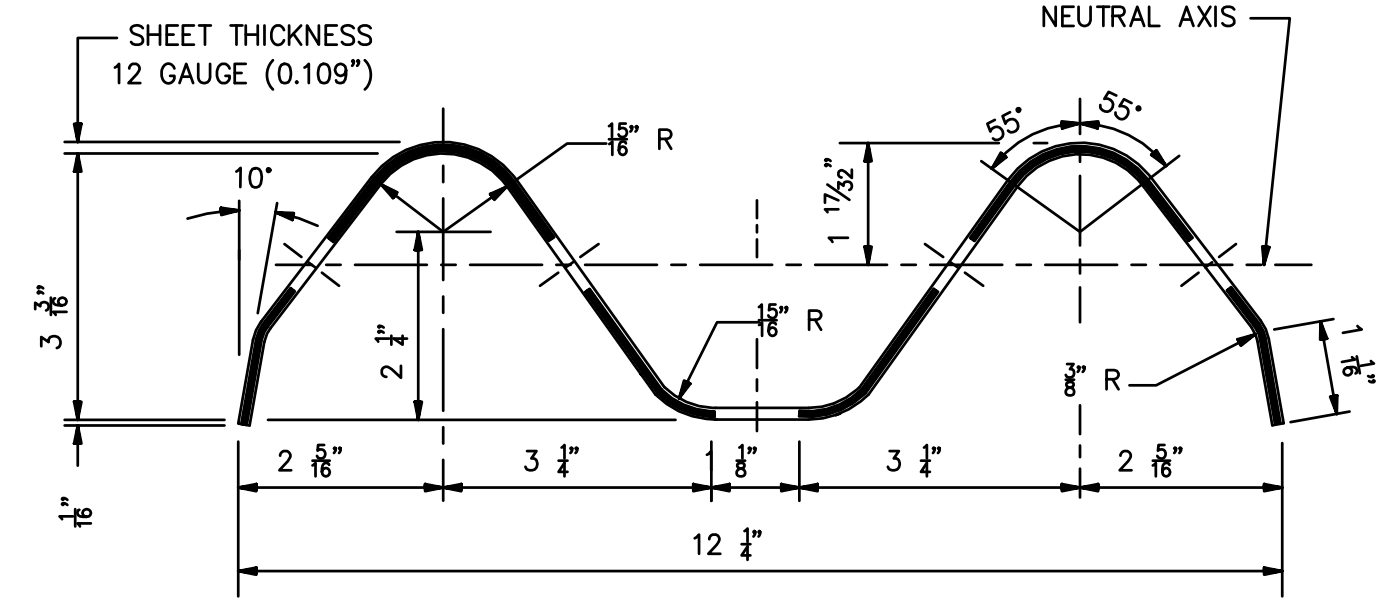


PLAN

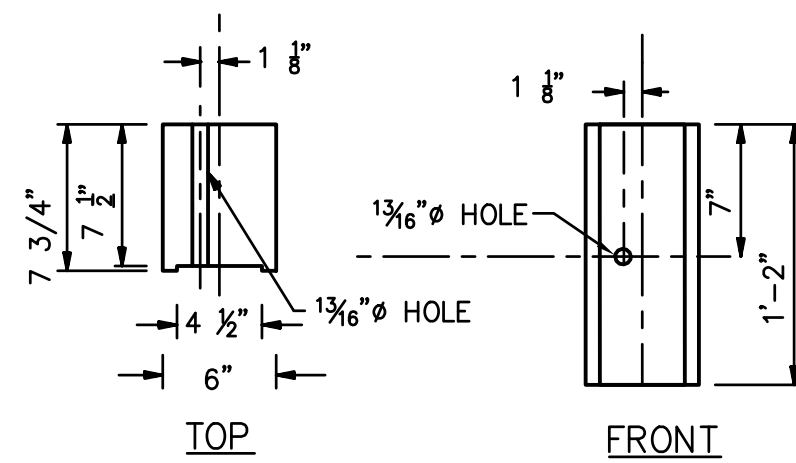


ELEVATION

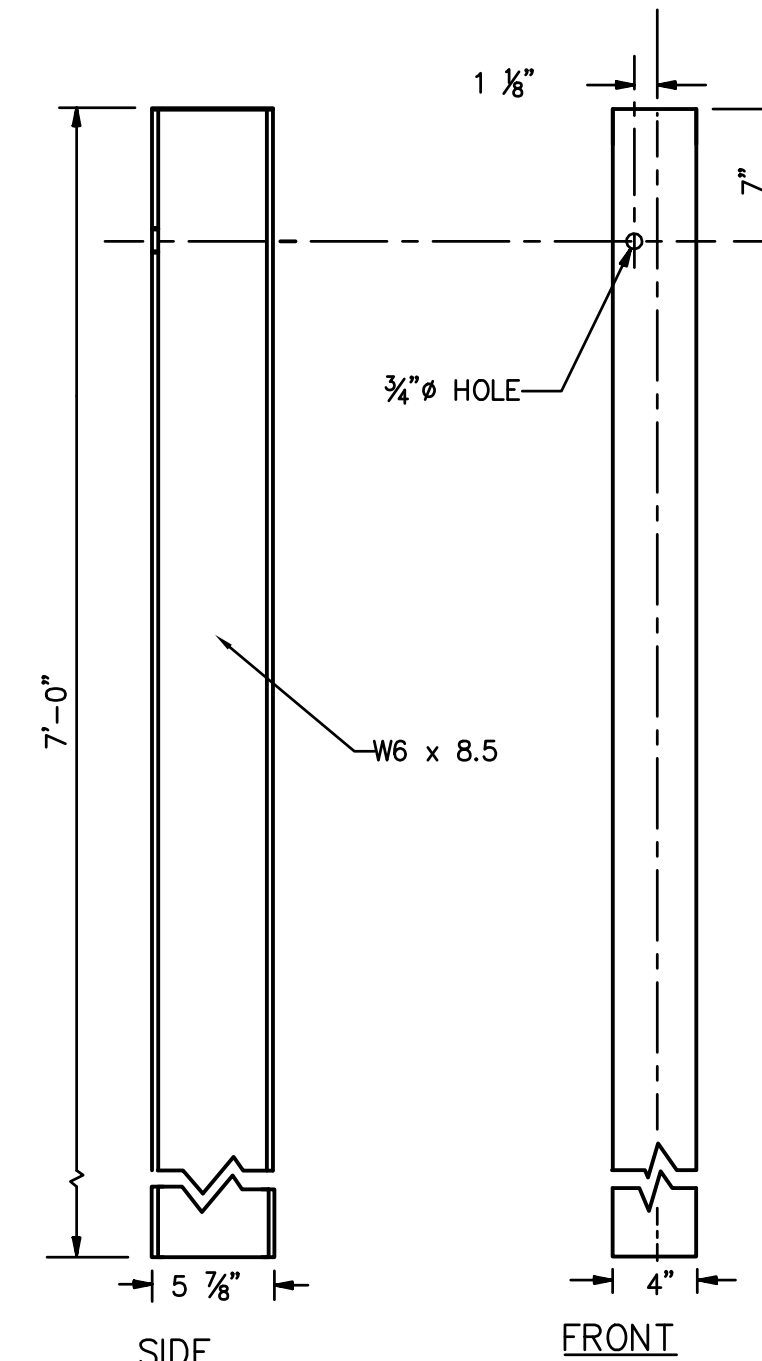
ITEM 606.120 - BEAM GUARDRAIL (STANDARD SECTION-STEEL POSTS)  
 PAID: LINEAR FOOT  
 USE: WHEREVER GUARDRAIL IS REQUIRED (NOTE: STEEL POSTS FOR PERMANENT INSTALLATIONS MAY ONLY BE USED IF SPECIFICALLY APPROVED BY THE CHIEF ENGINEER.)



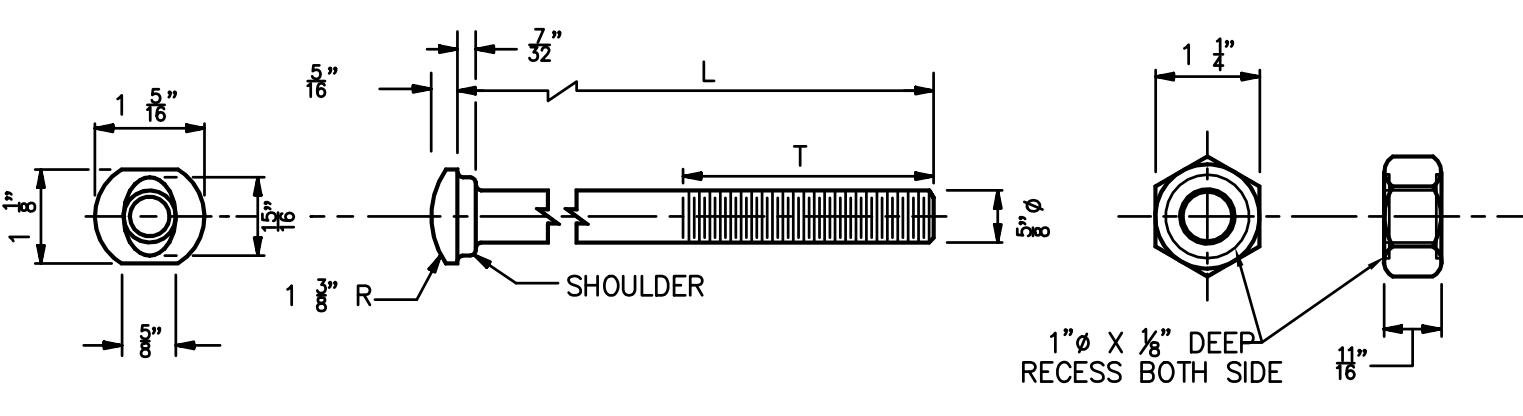
SECTION THRU RAIL ELEMENT [RWM02a (12'-6") OR RWM22a (25'-0")]



SYNTHETIC OFFSET BLOCK

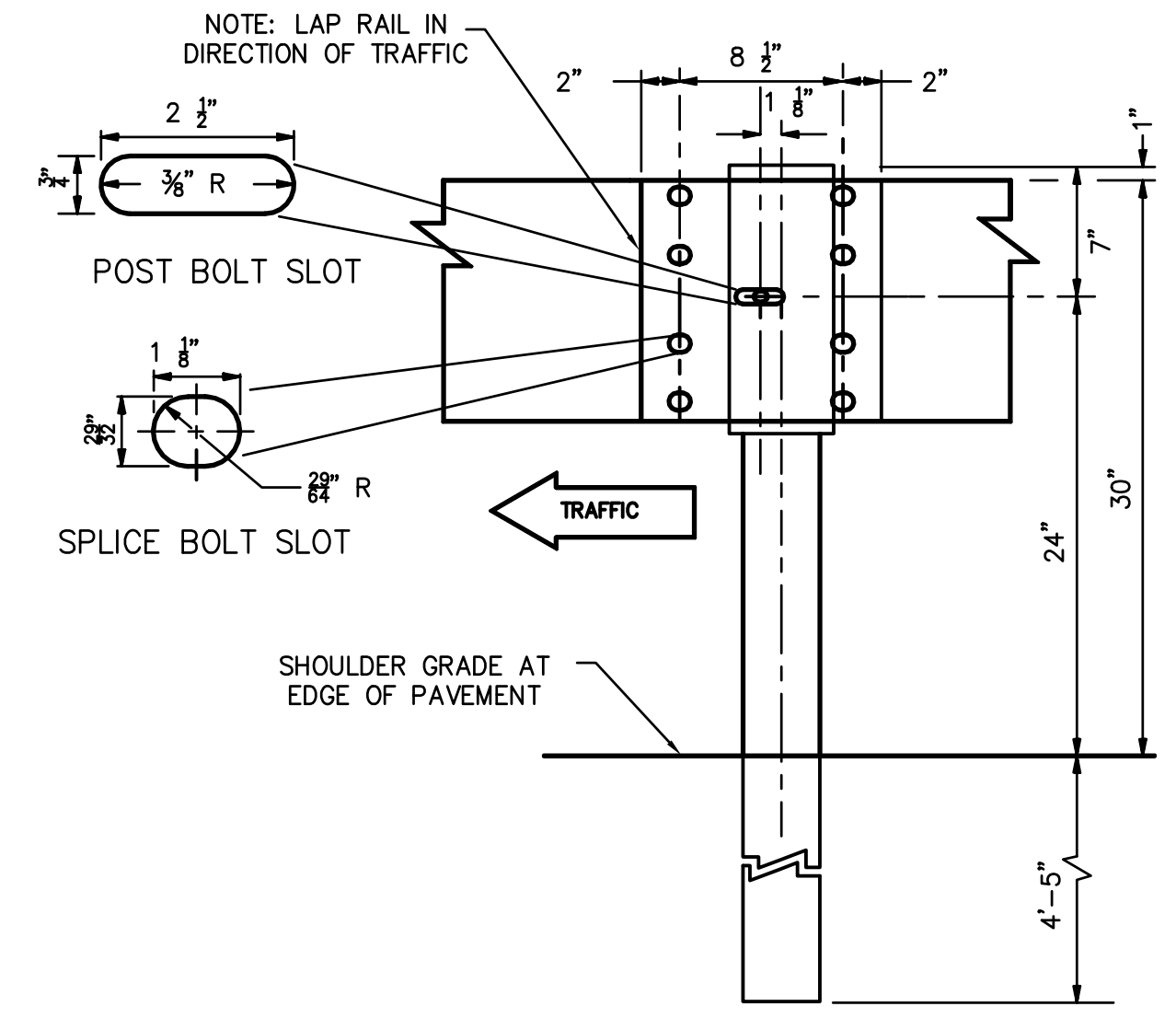


STRUCTURAL SHAPE STEEL POST

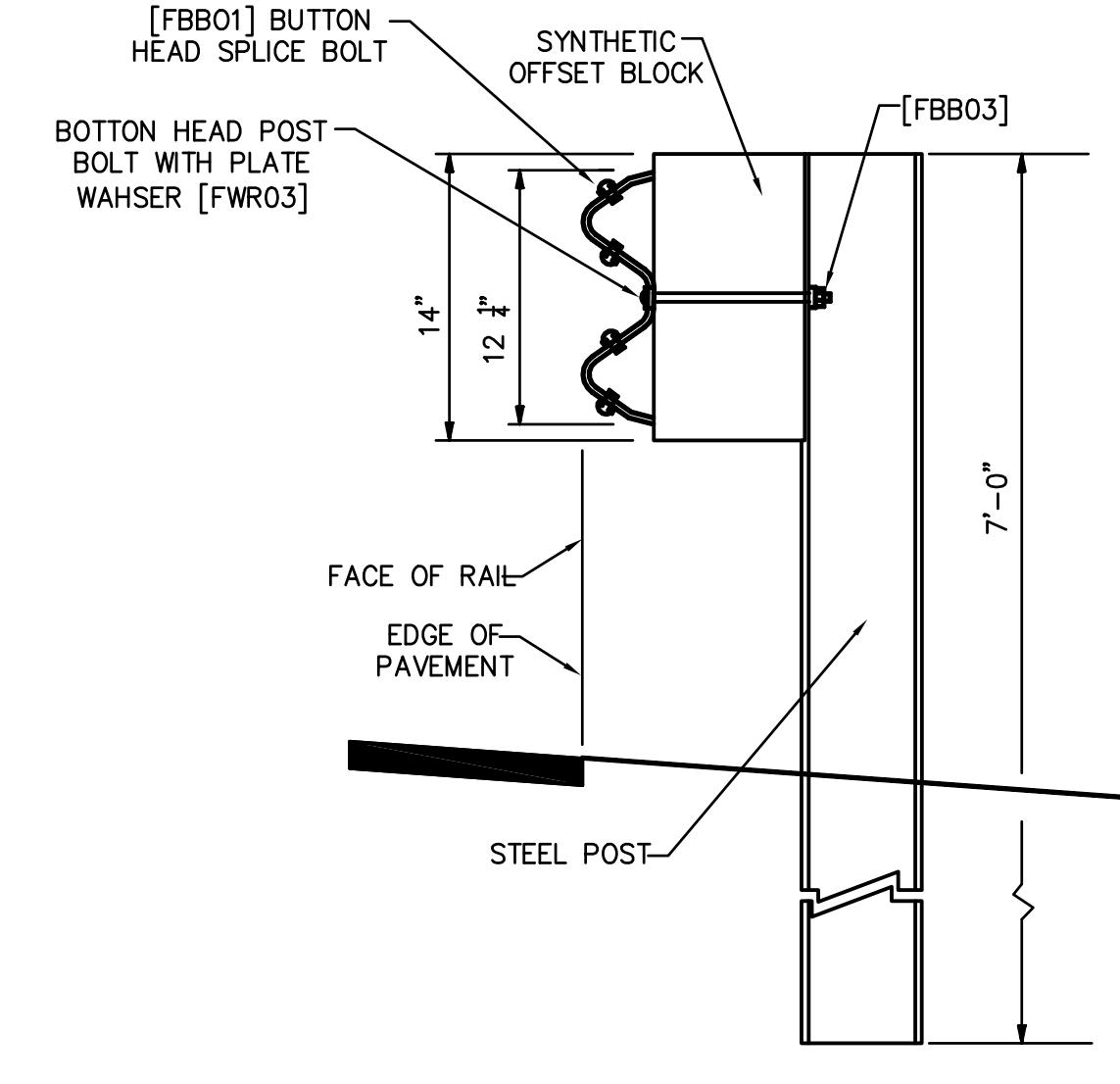


5/8" BUTTON HEAD BOLT AND RECESSED NUT

DESIGNATOR	L	T	INTENDED USE
FBB01	1 1/2"	FULL LENGTH THREAD	RAIL SPLICE BOLTS
FBB02	2"	1 3/4" MIN. THREAD LENGTH	POST BOLT (STEEL POSTS)
FBB03	10"	4" MIN. THREAD LENGTH	POST BOLT



LINE POST ELEVATION VIEW AT BEAM SPLICE



TYPICAL SIDE VIEW (SHOWN WITH FASTENERS)

GENERAL NOTES

- LENGTH OF NEED IS THE TOTAL LENGTH OF A LONGITUDINAL BARRIER NEEDED TO SHIELD AN AREA OF CONCERN. TO DETERMINE THE LENGTH OF NEED, REFER TO THE "ROADSIDE - LATEST ADOPTED VERSION, DESIGN GUIDE"
- DESIGNATIONS PROVIDED IN BRACKETS [ ] REFERENCE "A GUIDE TO STANDARDIZED STANDARD ELEMENTS DETAILED IN LATEST ADOPTED VERSION, HIGHWAY BARRIER HARDWARE" AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
- THE RECTANGULAR PLATE WASHER [FWR03] IS USED ONLY FOR 37'-6" OF STANDARD SECTION UPSTREAM OF A TERMINAL UNIT TYPE G-2 (SEE STANDARD NO. GR-10).
- USE 12'-6" LENGTH RAIL ELEMENT IN CURVES OF LESS THAN 300' RAIL RADIUS.
- WHEN GUARDRAIL IS INSTALLED BEHIND CURB, EITHER 6'-0" BEHIND SLOPE CURB OR ON A CURBED RAMP OR AT THE BACK OF SIDEWALK WITH BARRIER CURB, THE RAIL HEIGHT SHALL BE SET FROM THE GRADE AT THE FACE OF RAIL.
- POSTS SHORTER THAN THE 7'-0" INDICATED ON THE DETAIL, BUT NOT LESS THAN 6'-0", MAY ONLY BE USED WHEN:
  - THE SLOPE BEHIND THE GUARDRAIL IS NO STEEPER THAN 4:1
  - WHERE THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK OF THE SLOPE IS A MINIMUM OF 2'-0"
  - AND THEN ONLY AS APPROVED OR SPECIFICALLY SHOWN ON THE PLANS.
- TO INSTALL THE 7'-0" POSTS IN ROCK FILL AREAS AND IN AREAS OF OTHER DIFFICULT SITE CONDITIONS, METHODS SUCH AS AUGURING, EXCAVATING, AND OTHER MORE UNUSUAL METHODS MAY BE REQUIRED FOR INSTALLING POSTS. THOSE CONDITIONS AND THE REQUIREMENT FOR UNUSUAL METHODS OF POST INSTALLATION ARE NOT CONSIDERED JUSTIFICATION FOR REDUCING THE EMBEDMENT DEPTH OF THE POSTS AND WILL NOT BE APPROVED AS SUCH.
- THE FHWA ADMINISTRATION HAS APPROVED THE USE OF OFFSET BLOCKS WITH DIMENSIONS THAT VARY MORE THAN WOULD BE CONSIDERED WITHIN THE NORMAL CONTEXT OF NOMINAL DIMENSIONS. IN ORDER TO PROPOSE THE USE OF ANY OFFSET BLOCKS THAT HAVE OTHER THAN THE NOMINAL DIMENSIONS SHOWN ON THE DETAILS, THE FOLLOWING CRITERION APPLIES:
  - THE OFFSET BLOCKS BE SHOWN TO BE APPROVED BY THE FHWA ADMINISTRATION AS MEETING THE TL-3 CRITERIA AS DESCRIBED IN THE NCHRP 350 TESTING.
  - THE FACE OF RAIL MUST REMAIN AT THE EDGE OF PAVEMENT OR AT THE INDICATED OFFSET, PER THE DESIGN PLANS, AND
  - THERE MUST NOT BE A DECREASE IN THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK IN THE SLOPE AS SHOWN ON THE DESIGN PLANS. AN INCREASE IN THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK IN THE SLOPE IS ACCEPTABLE.
  - ALL OTHER REQUIREMENTS OF THE PERTINENT SPECIFICATIONS AND DETAILS REMAIN IN FORCE.

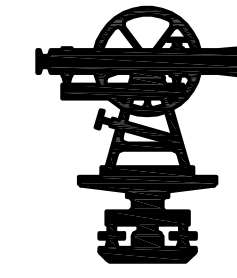
REFERENCE NOTE

- DETAILS FOR GUARDRAIL SHOWN ON THIS PAGE EXCEPTED FROM AND SPECIFIED TO MATCH NHDOT STANDARD PLANS, STANDARD NO. GR-2 AND GR-10; BEAM GUARDRAIL STANDARD SECTION - STEEL POST & HARDWARE DETAILS.

**Not For Construction**  
 GUARDRAIL DETAILS  
 TAX MAP 243, LOT 34  
 145 AIRPORT DRIVE  
 ROCHESTER, NH  
 PREPARED FOR:  
 CITY OF ROCHESTER

SCALE: AS SHOWN DECEMBER 2019

FILE NO. 104  
 PLAN NO. C-3013  
 DWC NO. 19275\SP-1  
 F.B. NO. SDR-TJR



**Seed Mixes:**

Seed Mix A 50% New England Wetland Plants - New England Wetland Mix  
 50% New England Wetland Plants - New England Erosion Control/Restoration Mix for Detention Basins and Moist Sites

**Application Rates:**

Seed Mix A 50% @ 22lbs/acre New England Wetland Mix  
 50% @ 50lbs/acre New England Erosion Control/Restoration Mix for Detention Basins and Moist Sites

**Plant List**

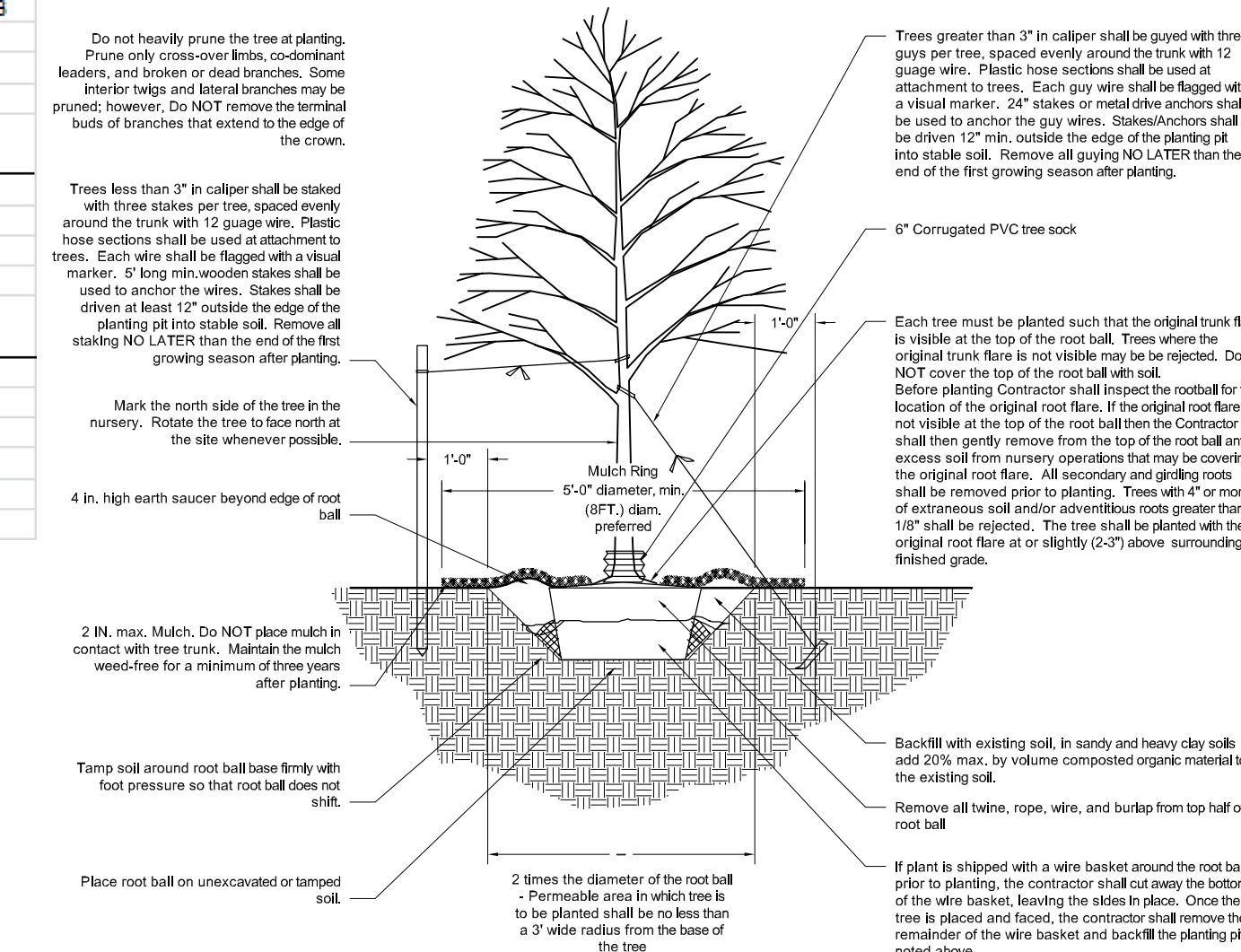
Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Ab	<i>Abies fraseri</i>	Fraser Fir	6	8-10' Ht	8-10' Ht
Am	<i>Amelanchier x grandiflora</i>	Robin Hill Serviceberry	4	8-10' Ht	Multi-Stem B&B
Ar	<i>Acer rubrum</i>	October Glory Red Maple	4	2.5-3' Cal	B&B
Bn	<i>Betula nigra</i>	Heritage River Birch	4	10-12' Ht	Multi-Stem B&B
Ham	<i>Hamamelis x intermedia</i>	Arnold Promise Witchhazel	3	8-10' Ht	Multi-Stem B&B
Qr	<i>Quercus rubra</i>	Kindred Spirit Red Oak	14	2-2.5' Cal	B&B

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Ig	<i>Ilex glabra</i>	Shamrock	64	5 gal	Full to ground
Sp	<i>Spiraea x bumalda</i>	Anthony Waterer Spirea	49	5 gal	

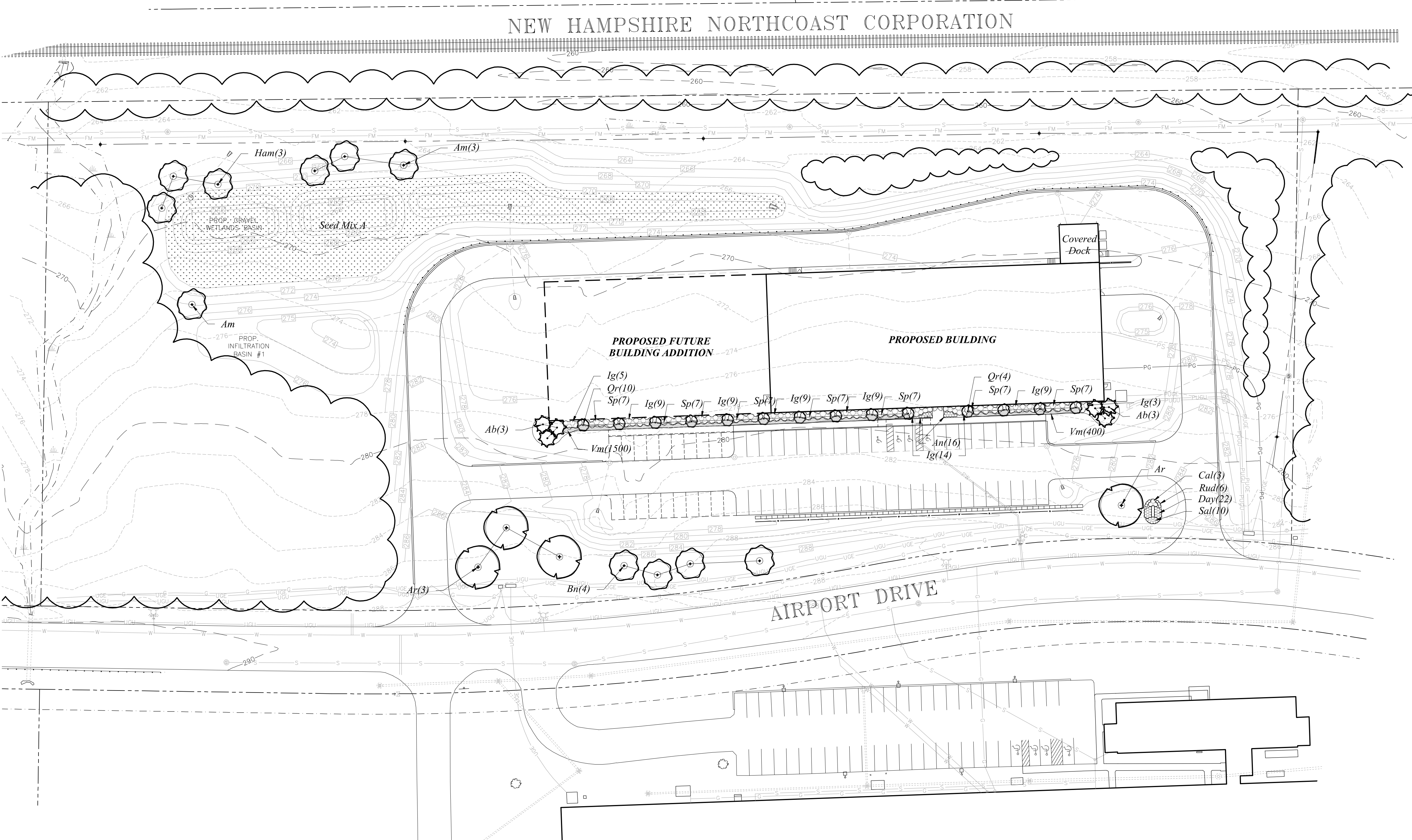
Symbol	Botanical Name	Common Name	Quantity	Size	Comments
An	<i>Anemone hepatica</i>	Japanese Anemone	16	1 gal	
Cal	<i>Calamagrostis acutifolia</i>	Feather Reed Grass	3	1 gal	
Day	<i>Hemerocallis</i>	Big Time Happy Day Lily	22	1 gal	
Rud	<i>Rudbeckia fulgida</i>	Black-Eyed Susan	6	1 gal	
Sal	<i>Salvia nemorosa</i>	Dark Blue Salvia	10	1 gal	
Vm	<i>Vinca minor</i>	Periwinkle	38	50/flat	



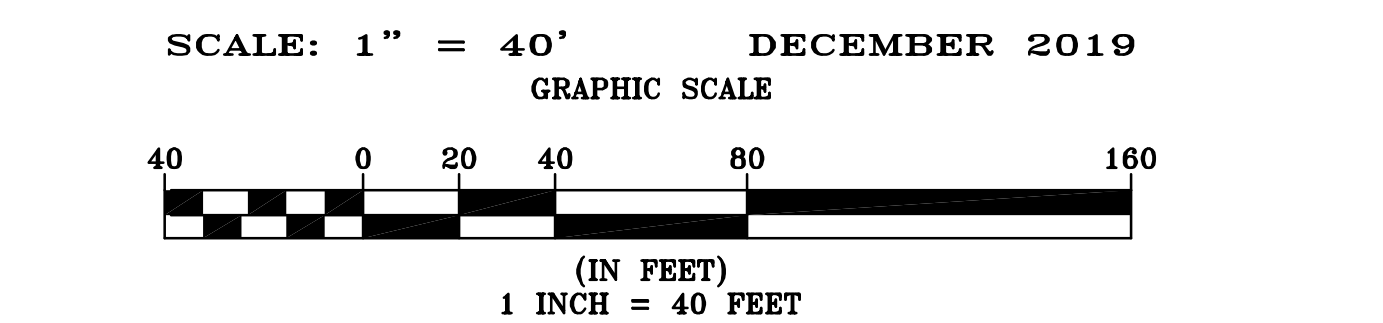
**Tree Planting Detail**

**Landscape Notes**

- Design is based on drawings by Norway Plains dated December 2019 and may require adjustment due to actual field conditions.
- The contractor shall follow best management practices during construction and shall take all means necessary to stabilize and protect the site from erosion.
- Erosion Control shall be in place prior to construction.
- Erosion Control to consist of Hay Bales and Erosion Control Fabric shall be staked in place between the work and Water bodies, Wetlands and/or drainage ways prior to any construction.
- The Contractor shall verify layout and grades and inform the Landscape Architect or Client's Representative of any discrepancies or changes in layout and/or grade relationships prior to construction.
- It is the contractor's responsibility to verify drawings provided are to the correct scale prior to any bid, estimate or installation. A graphic scale bar has been provided on each sheet for this purpose. If it is determined that the scale of the drawing is incorrect, the landscape architect will provide a set of drawings at the correct scale, at the request of the contractor.
- Trees to Remain within the construction zone shall be protected from damage for the duration of the project by snow fence or other suitable means of protection to be approved by Landscape Architect or Client's Representative. Snow fence shall be located at the drip line at a minimum and shall include any and all surface roots. Do not fill or mulch on the trunk flare. Do not disturb roots. In order to protect the integrity of the roots, branches, trunk and bark of the trees) no vehicles or construction equipment shall drive or park in or on the area within the drip line(s) of the tree(s). Do not store any refuse or construction materials or portalets within the tree protection area.
- Location, support, protection, and restoration of all existing utilities and appurtenances shall be the responsibility of the Contractor.
- The Contractor shall verify exact location and elevation of all utilities with the respective utility owners prior to construction. Call DIGSAFE at 1-866-344-7233.
- The Contractor shall procure any required permits prior to construction.
- Prior to any landscape construction activities Contractor shall test all existing loam and loam from off-site intended to be used for lawns and plant beds using a thorough sampling throughout the supply. Soil testing shall indicate levels of pH, nitrates, macro and micro nutrients, texture, soluble salts, and organic matter. Contractor shall provide Landscape Architect with test results and recommendations from the testing facility along with soil amendment plans as necessary for the proposed plantings to thrive. All loam to be used on site shall be amended as approved by the Landscape Architect prior to placement.
- Contractor shall notify landscape architect or owner's representative immediately if at any point during demolition or construction a site condition is discovered which may negatively impact the project. This includes, but is not limited to, unforeseen drainage problems, unknown subsurface conditions, and discrepancies between the plan and the site. If a contractor is aware of a potential issue, and does not bring it to the attention of the landscape architect or owner's representative immediately, they may be responsible for the labor and materials associated with correcting the problem.
- The Contractor shall furnish and plant all trees shown on the drawings and listed thereon. All plants shall be nursery-grown under climatic conditions similar to those in the locality of the project. Plants shall conform to the botanical names and standards of size, culture, and quality for the highest grades and standards as adopted by the American Association of Nurserymen, Inc. in the responsibility for the highest grades and standards as adopted by the American Association of Nurserymen, Inc. in the locality of the project. Plants shall conform to the botanical names and standards of size, culture, and quality for the highest grades and standards as adopted by the American Association of Nurserymen, Inc. in the locality of the project. Plants shall conform to the botanical names and standards of size, culture, and quality for the highest grades and standards as adopted by the American Association of Nurserymen, Inc. in the locality of the project.
- A complete list of plants, including a schedule of sizes, quantities, and other requirements is shown on the drawings. In the event that quantity discrepancies or material omissions occur in the plant materials list, the planting plans shall govern.
- All plants shall be legibly tagged with proper botanical name.
- The Contractor shall guarantee all plants for not less than one year from time of acceptance.
- Owner or Owner's Representative will inspect plants upon delivery for conformity to Specification requirements. Such approval shall not affect the right of inspection and rejection during or after the progress of the work. The Owner reserves the right to inspect and/or select all trees at the place of growth and reserves the right to approve a representative sample of each type of shrub, herbaceous perennial, annual, and ground cover at the place of growth. Such sample will serve as a minimum standard for all plants of the same species used in this work.
- No substitutions of plants may be made without prior approval of the Owner or the Owner's Representative for any reason.
- All landscaping shall be provided with either of the following:
  - An underground sprinkling system
  - An outside hose attachment within 150 feet
- If an automatic irrigation system is installed, all irrigation valve boxes shall be located within planting bed areas.
- All disturbed areas will be dressed with 6\"/>



**LANDSCAPE PLAN**  
**TAX MAP 243, LOT 34**  
**145 AIRPORT DRIVE**  
**ROCHESTER, NH**  
 PREPARED FOR:  
**CITY OF ROCHESTER**



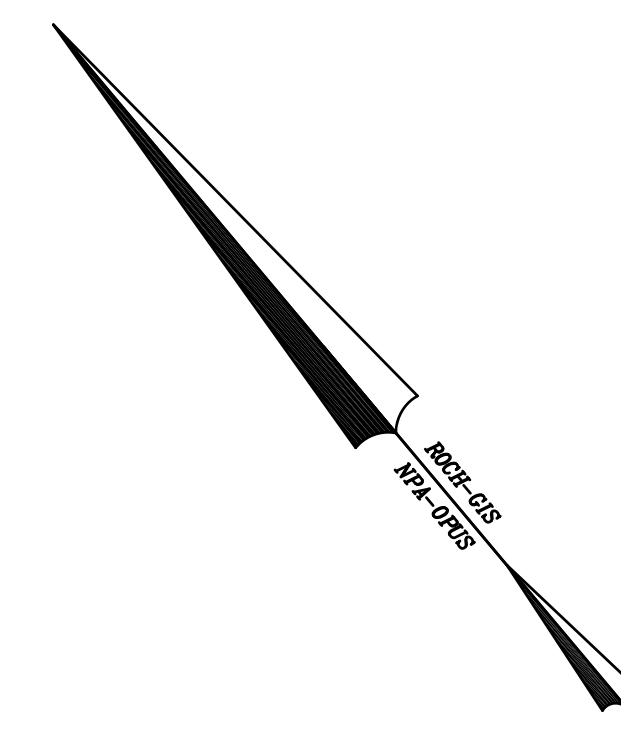
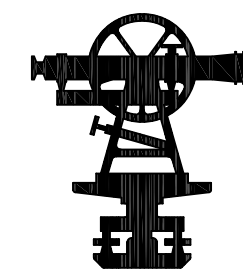


LEGEND

- PROPERTY LINE
- - - JURISDICTIONAL WETLANDS
- - - EXISTING OVERHEAD WIRES
- ☆ ○ □ EXISTING LIGHT POLES
- ▭ PROPOSED BUILDING
- ▭ PROPOSED PAVEMENT
- ▭ VCC PROPOSED PAVEMENT WITH CURBING
- W2 ○ A3 PROPOSED POST LIGHT
- 4.2 PROPOSED LIGHT FOOTCANDLE
- PROPOSED LIGHT ISOILLUMINATION LINES

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps
○	A3	5	Lithonia Lighting	DSX0 LED WITH (2) 20 LED LIGHT ENGINES, TYPE T3M OPTIC, 4000K, @ 1000mA, mounted at 25ft	LED	1	
○	A4	3	Lithonia Lighting	DSX0 LED WITH (2) 20 LED LIGHT ENGINES, TYPE TFM OPTIC, 4000K, @ 1000mA, mounted at 25ft	LED	1	
○	W2	4	Lithonia Lighting	DSXW1 LED WITH (2) 10 LED LIGHT ENGINES, TYPE T2S OPTIC, 4000K, @ 1000mA, mounted at 18ft	LED	1	
○	W4	5	Lithonia Lighting	DSXW1 LED WITH 2 LIGHT ENGINES, 20 LEDs, 1000mA DRIVER, 4000K LED, TYPE FORWARD THROW MEDIUM OPTIC, mounted at 18ft	LED	1	

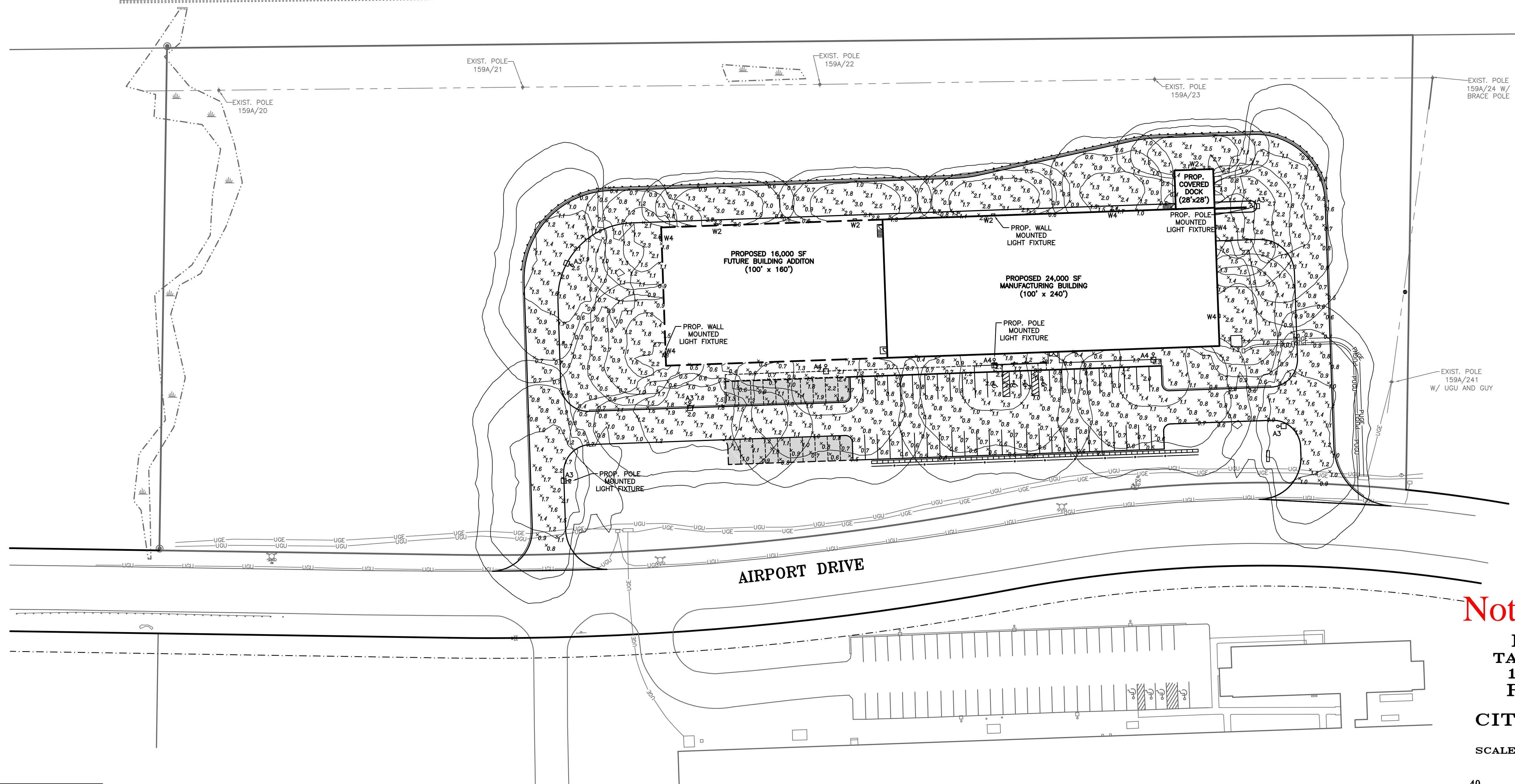
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Area around Building	+	1.2 fc	3.2 fc	0.2 fc	16.0:1	6.0:1
Parking Lot	+	1.2 fc	3.2 fc	0.4 fc	8.0:1	3.0:1



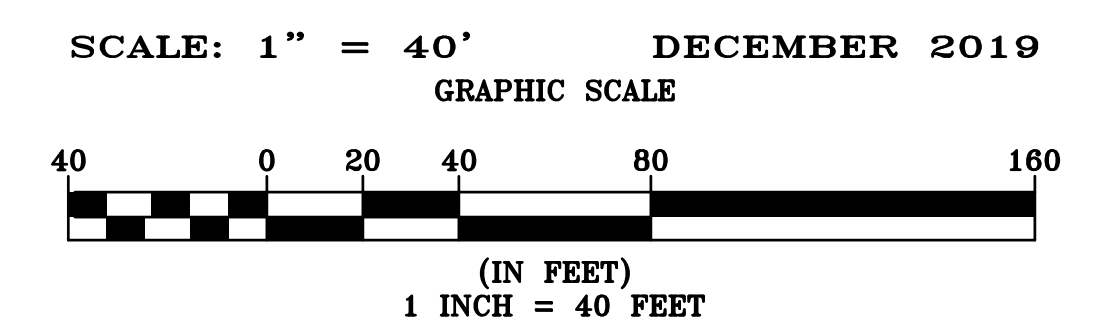
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LIGHTING DESIGN BY:  
**VISIBLE LIGHT, INC.**  
 LIGHTING FOR COMMERCIAL AND INDUSTRIAL SITES, AND ROADWAYS  
 6 Merrill Industrial Drive Phone: (603) 928-6049  
 Hampton, NH 03842E-mail: pinforma@visiblelightinc.com (603) 928-6708

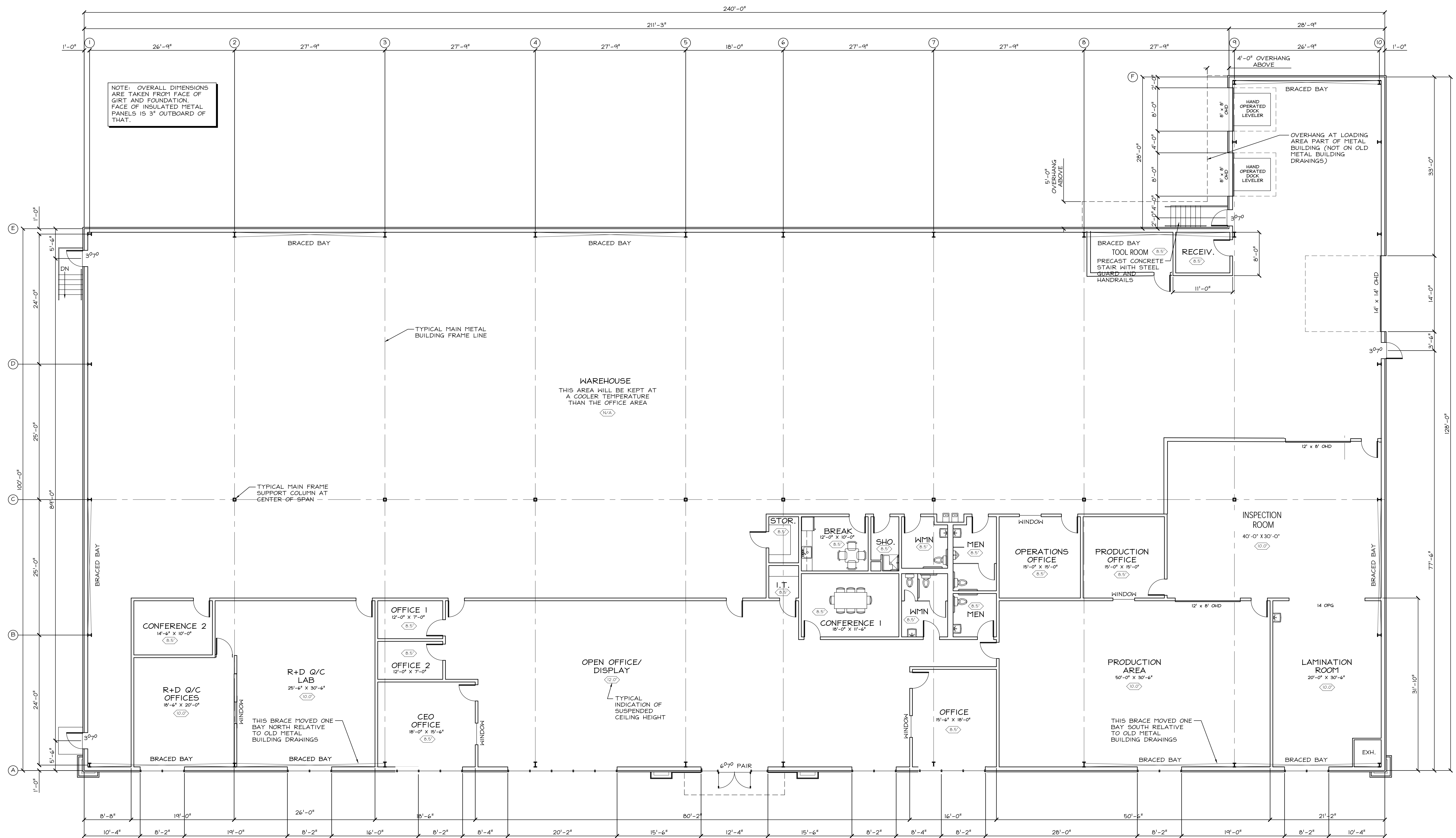
NEW HAMPSHIRE NORTHCOAST CORPORATION



**Not For Construction**  
**LIGHTING PLAN**  
 TAX MAP 243, LOT 34  
 145 AIRPORT DRIVE  
 ROCHESTER, NH  
 PREPARED FOR:  
**CITY OF ROCHESTER**



FILE NO. 104  
 PLAN NO. C-3013  
 DWG NO. 19275\SP-1  
 F.B. NO. SDR-TJR



NOTE: OVERALL DIMENSIONS ARE TAKEN FROM FACE OF GIRT AND FOUNDATION. FACE OF INSULATED METAL PANELS IS 3" OUTBOARD OF THAT.

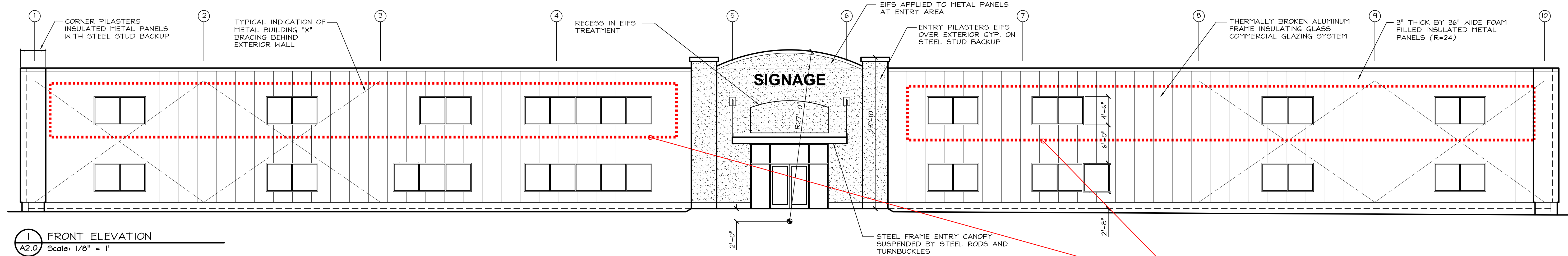
WAREHOUSE  
THIS AREA WILL BE KEPT AT A COOLER TEMPERATURE THAN THE OFFICE AREA

OPEN OFFICE/  
DISPLAY  
TYPICAL INDICATION OF SUSPENDED CEILING HEIGHT

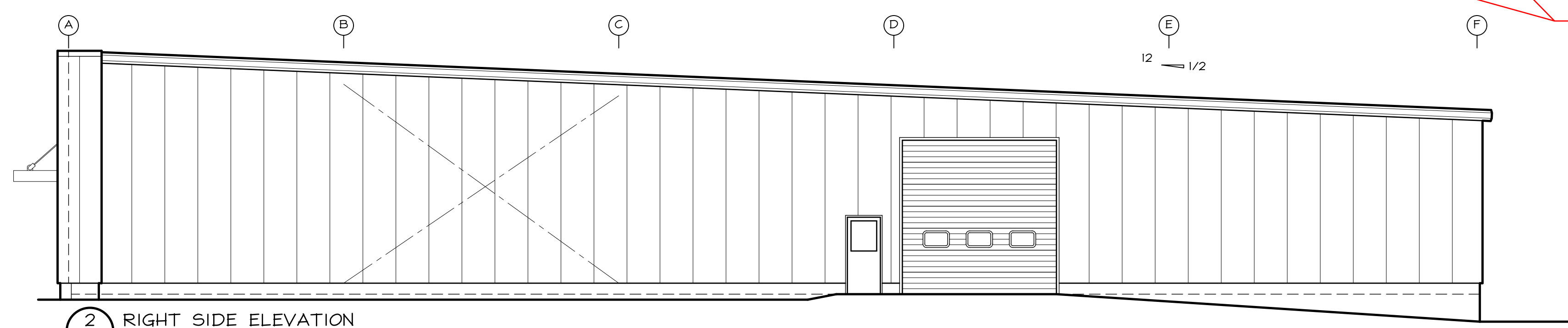
THIS BRACE MOVED ONE BAY NORTH RELATIVE TO OLD METAL BUILDING DRAWINGS

THIS BRACE MOVED ONE BAY SOUTH RELATIVE TO OLD METAL BUILDING DRAWINGS

1 FIRST FLOOR PLAN  
A1.0 Scale: 1/8" = 1'

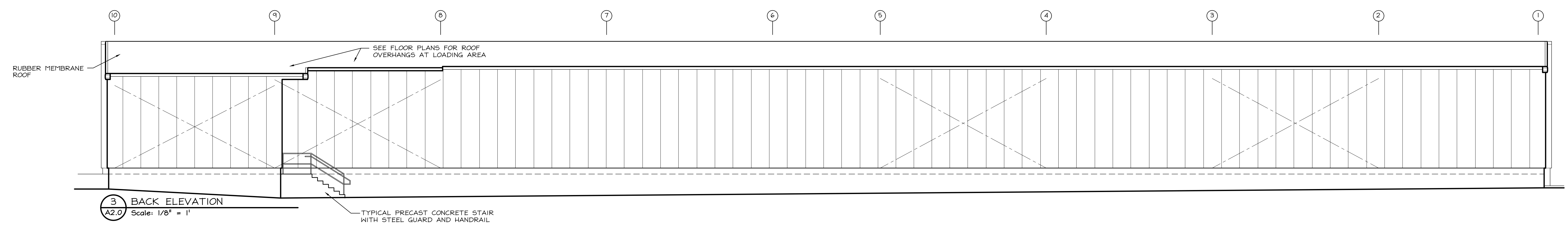


1 FRONT ELEVATION  
A2.0 Scale: 1/8" = 1'

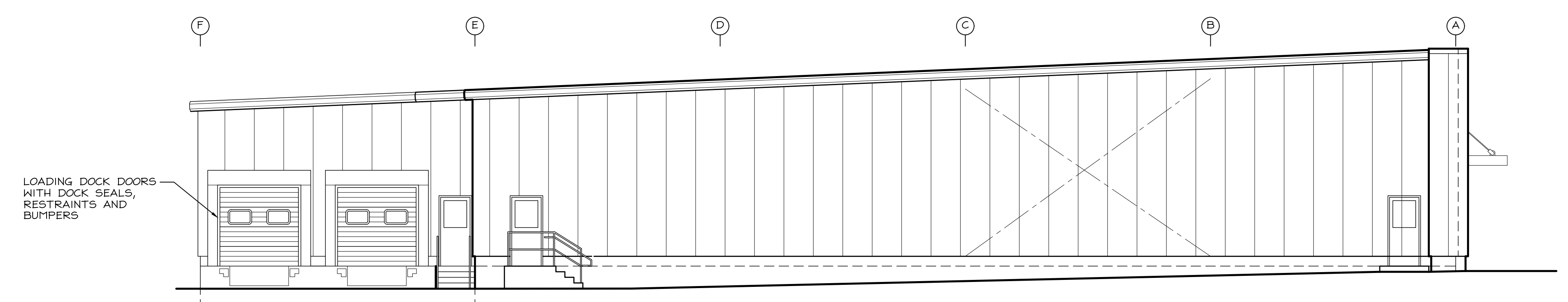


2 RIGHT SIDE ELEVATION  
A2.0 Scale: 1/8" = 1'

CITY OF ROCHESTER  
ANNOTATION:  
PROVIDE DEDUCT  
PRICE TO ELIMINATE  
2ND FLOOR WINDOWS



3 BACK ELEVATION  
A2.0 Scale: 1/8" = 1'



4 LEFT SIDE ELEVATION  
A2.0 Scale: 1/8" = 1'