

NORWAY PLAINS ASSOCIATES, INC.

LAND SURVEYORS • SEPTIC SYSTEM DESIGNERS • CIVIL ENGINEERS

P.O. Box 249
Continental Blvd. (03867)
Rochester, NH 03866-0249
Fax (603) Phone (603) 335-3948 / (800) 479-3948
slawler@norwayplains.com
rtetreault@norwayplains.com



P. O. Box 268
31 Mooney St.
Alton, NH 3809
Phone & Fax (603) 875-3948

April 7, 2020

Seth Creighton, Chief Planner
Department of Planning and Development
Second Floor, City Hall
31 Wakefield Street
Rochester, NH 03867-1917

Re: Proposed Commercial Subdivision –Innovation Drive – NH Route 108 - Tax Map 255, Lots 18, 19 & 21

Dear Mr. Creighton,

On behalf of the City of Rochester, Norway Plains Associates, Inc. is pleased to submit a Subdivision Application for a 3-lot re-subdivision of the above referenced land. The subject property has road frontage on both Innovation Drive and NH Route 108 – Rochester Hill Road. The three existing parcels have a combined total area of 47.29 acres and the site is located within the (GI) General Industrial Zoning District.

The proposed project is to, in essence, re-subdivide the existing three lots into a different configuration. *Sheet S-2* shows the “Lot Consolidation” which would need to take place prior to the proposed subdivision. This new configuration will have three new separate lots and a portion of the parcel will be annexed or added to the existing City land – Right -of Way for Innovation Drive. That portion will encompass a new City Road that will provide access to proposed lots 1&2 and the 5.27-acre parcel will also be used for potential utility connections, abutting property buffers etc. Proposed lot #3 will take its access from an existing entrance located on NH Route 108.

Lot #1 = 14.57 acres (634,746 sf); **Lot#2** = 21.51 acres (936,867 sf); **Lot#3** = 5.92 acres (257,897 sf)

Sheet S-1 depicts the existing site boundaries and all site features. Site topography, wetland and soils delineations are shown. *Sheet S-3* depicts the new subdivision lot configuration and will be the recordable plan. *Sheet S-4* depicts the new subdivision lots and all topographic / site features and other details as required.

All three lots will be serviced by municipal water and sewer and will not require NHDES Subdivision Approval. The limits of jurisdictional wetlands were delineated by B.H. Keith Associates (50' wetland setback is shown) and the soil information shown is per NRCS Mapping.

Access to lots #1 and #2 will be from a new city street that will be constructed off Innovation Drive. The proposed roadway will be approximately 450 feet and will terminate at a “T” turnaround near the entrance to Lot #2. The roadway will be 30 feet wide and will have vertical granite curbing on both sides and a concrete sidewalk on one side. The roadway will be aligned with Airport Drive, creating a 4-way intersection. Fifty (50') feet pavement radius will allow for large truck to maneuver without encroaching into the opposing travel lanes.

As noted above, the proposed lots will be serviced with City water and City Sewer. A sewage pump station will be necessary to connect to the municipal sewer system located on Innovation Drive. Natural Gas will be extended up the new roadway to service the proposed lots.

The stormwater generated from the new street a will be collected and treated in accordance with the State and City regulations. The runoff from the street will be directed towards either a treatment swale or detention basin. These stormwater management systems will attenuate the peak discharge and allow for the rate of stormwater runoff during the storm events to match the existing flow rates.

The project will also require State permit from NHDES Wastewater Engineering Bureau for a Sewer Discharge Permit to allow for the additional sewage to flow into the municipal sewer system.

Should the Board need additional information or have any questions, please feel free to contact our office. Otherwise we look forward to discussing this project with staff and the Planning Board. Thank you for your consideration

Sincerely,

NORWAY PLAINS ASSOCIATES, INC.



By: _____
Scott A. Lawler, PE, Project Engineer



By: _____
Randolph R. Tetreault, LLS, President



MINOR SUBDIVISION APPLICATION

(a total of three or fewer lots)

City of Rochester, New Hampshire

Date: 4-6-2020 Is a conditional needed? Yes: No: Unclear:
(If so, we encourage you to submit an application as soon as possible.)

Property information

Tax map #: 255; Lot #(s): 18, 19 & 21; Zoning district: General Industrial

Property address/location: 294 & 296 Rochester Hill Road

Name of project (if applicable): Commercial Subdivision

Size of site: 47.2 acres; overlay zoning district(s)? Conservation Overlay District

Property owner

Name (include name of individual): The City of Rochester

Mailing address: 31 Wakefield Street, Rochester, NH 03867

Telephone #: 603-335-7522 Email: michael.scala@rochesternh.net

Applicant/developer (if different from property owner)

Name (include name of individual): _____

Mailing address: _____

Telephone #: _____ Email: _____

Engineer/surveyor

Name (include name of individual): Norway Plains Associates, Inc, Randolph R. Tetreault, LLS

Mailing address: PO Box 249, Rochester, NH 03866

Telephone #: 603-335-3948 Fax #: _____

Email address: rtetreault@norwayplains.com Professional license #: 729

Proposed project

Number of proposed lots: 3; Are there any pertinent covenants? _____

Number of cubic yards of earth being removed from the site? N/A

City water? yes ☒ no ☐ : How far is City water from the site? less than 100 feet

City sewer? yes ☒ no ☐ : How far is City sewer from the site? less than 100 feet

Wetlands: Is any fill proposed? N/A; area to be filled: _____; buffer impact? _____.

Comments

Please feel free to add any comments, additional information, or requests for waivers here:

Submission of application

This application must be signed by the property owner, applicant/developer (if different from property owner), *and/or* the agent.

I (we) hereby submit this Subdivision application to the City of Rochester Planning Board pursuant to the City of Rochester Subdivision Regulations and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant/developer (if different from property owner)/as agent, I attest that I am duly authorized to act in this capacity.

Signature of property owner: _____

Date: _____

Signature of applicant/developer: _____

Date: _____

Signature of agent: _____

Date: _____

Authorization to enter subject property

I hereby authorize members of the Rochester Planning Board, Zoning Board of Adjustment, Conservation Commission, Planning Department, and other pertinent City departments, boards and agencies to enter my property for the purpose of evaluating this application including performing any appropriate inspections during the application phase, review phase, post-approval phase, construction phase, and occupancy phase. This authorization applies specifically to those particular individuals legitimately involved in evaluating, reviewing, or inspecting this specific application/project. It is understood that these individuals must use all reasonable care, courtesy, and diligence when entering the property.

Signature of property owner: _____

Date: _____

Minor Subdivision Checklist

(Minor subdivisions involve a total of 3 lots or fewer)

**To be filled out by applicant/agent (with notes to be inserted by staff)*

See regulations for other specific requirements

City of Rochester Planning & Development Department

Project Name: _____ Map: 255 Lot: 18, 19, 21 Date: 4-6-2020

Applicant/agent: Norway Plains Associates, Inc Signature: 

(Staff review by: _____ Date: _____)

General items

	Yes	No	N/A	Waiver Requested	Comments
<u>4</u> sets completed applications	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Total application fee	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<u>4</u> copies of narrative	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<u>3</u> sets of full-size plans	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<u>2</u> sets of 11 X 17 reductions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Completed abutters list	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Copy of existing covenants, easements, and deed restrictions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Plan Information

Basic information including:

• Name of project	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
• Date	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
• North arrow	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
• Scale	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
• Legend	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
• Revision block	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
• Vicinity sketch - not less than 1" = 1,000'	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Name and address of developer/applicant	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Name, stamp, and NH license # of land surveyor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

General items

	Yes	No	N/A	Waiver Requested	Comments
City tax map & lot #'s	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Subdivision approval statement (per regulations)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Notation on plans: "For more information about this subdivision contact..."	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Approval block (for signature by staff attesting to Planning Board approval)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
References to neighboring plans and subdivisions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Information on abutting properties:					
• owner name	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• owner address	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• tax map and lot #	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• approximate square footage of lots	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• approximate building footprints	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• use	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Zoning designations of subject tract and in vicinity of tract	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Zoning overlay districts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Platting

Surveyed property lines including:					
• existing and proposed bearings	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• existing and proposed distances	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• monuments	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• benchmarks	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Proposed square footage for each lot	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Subdivision # on each lot (1, 2, 3, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Error of closure statement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Existing Topographic Features

	Yes	No	N/A	Waiver Requested	Comments
Existing buildings/structures	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Existing driveways and access points	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Contour lines and spot elevations	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Soil types and boundaries	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Soil test pit locations, profiles, and depth to water table and ledge	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Percolation test locations and results	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Water features (ponds, streams)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetlands (including name of NH certified wetland scientist who delineated)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Statement whether located in flood area, and, if so, 100 year flood elevation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Delineation of treed and open areas	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Stone walls and archaeological features	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Location of rock outcroppings	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Trails and footpaths	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Utilities

Show existing and proposed for all subject lots and within right of way.

Water lines/well (with protective radius)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sewer lines/septic system and leach field	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Electric, telephone, cable TV (underground)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Gas lines	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Other Elements

Prospective access points (may be subject to change)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Drainage plan - structures, details, and analysis	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Grading plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Earth being removed from site(in cubic yards)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Erosion and sedimentation plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Proposed covenants, if any	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Road Acceptance Policy and Procedure: Is there a public road proposed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>If yes, Have you read and understand the Road acceptance procedure?</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Additional Comments:

ABUTTER LIST
City of Rochester, NH
Please Print or Type

Applicant: City of Rochester **Phone:** (603) 335-7500
Project Address: 294 & 296 Rochester Hill Road Rochester, NH

List the names and addresses of all parties below. For abutting lot owners, list each owner whose lot adjoins or is directly across the street or a body of water from the subject property. This form may not be completed more than five (5) days prior to the application deadline.

LEGAL OWNER OF SUBJECT LOT

Map	Lot	Owner Name	Mailing Address
255	18, 19 & 21	City of Rochester	31 Wakefield Street Rochester, NH 03867-1916

ABUTTING LOT OWNERS

Map	Lot	Owner Name	Owner Mailing Address (NOT property location)
239	26	NH Northcoast Corp	PO Box 429 Ossipee, NH 03864-0429
242	1	Sakuntala LLC	32 Innovation Drive Rochester, NH 03867-1749
242	3-1	Amarosa Perkins Development LLC	19 Cherry Lane Madbury, NH 03823-7525
242	6	Rochester Housing Authority c/o Business Finance of NH	2 Pillsbury Street, Suite 101 Concord, NH 03301
242	9	Andre & Edwinna Vanderzanden	1187 Salmon Falls Road Rochester, NH 03868
243	18	Pease Development Authority	55 International Drive Portsmouth, NH 03801
255	17		
254	18	Sofield Apartments LLC	35 Third Street Dover, NH 03820-3316
255	15	Patrick M. Murray	17 Hillcrest Drive Dover, NH 03820-2619
255	20	Presbytery of Northern New England	302 Rochester Hill Road Rochester, NH 03867
255	21	City of Rochester	31 Wakefield Street Rochester, NH 03867-1917
255	22	Greystone of Maine LTD	334 Route 108 Madbury, NH 03823-7626
255	24-3&4	MJS Development LLC	55 Homestead Lane Brentwood, NH 03833
255	24-10	Laperle Family Revocable Trust	28 Copperline Road Epsom, NH 03234

PROFESSIONALS AND EASEMENT HOLDERS. *Engineers, Surveyors, Soil Scientists, and Architects whose seal appears or will appear on the plans (other than any agent submitting this application); holders of conservation, preservation, or agricultural easements; and upstream dam owners/NHDES.*

Name of Professional or Easement Holder	Mailing Address
---	-----------------

Randolph R. Tetreault, LLS; Norway Plains Associates, Inc.	PO Box 249; Rochester, NH 03866-0249
Barry H. Keith, CWS; B.H. Keith Associates	PO Box 326; Freedom, NH 03836

I, the undersigned, acknowledge that it is the responsibility of the applicant or his/her agent to fill out this form and mail certified notices to abutters and other parties in a complete, accurate, and timely manner, in accordance with applicable law. I understand that any error or omission could affect the validity of any approval. The names and address listed on this form were obtained from the City of Rochester Assessing Office computer AxisGIS system on this date: 4/3/20, This is page 1 of 1 pages.

Applicant or Agent: Randolph R. Tetreault, LLS Staff Verification: _____

- LEGEND**
- PROPERTY LINE
 - LIMITS OF JURISDICTIONAL WETLANDS
 - EXISTING EDGE OF PAVEMENT
 - EXISTING TREE LINE
 - EXISTING STONEWALLS
 - EXISTING RAILROAD TRACKS
 - EXISTING CONTOUR LINE
 - EXISTING DRAIN LINE
 - EXISTING OVERHEAD WIRES
 - EXISTING WATER LINE
 - EXISTING SEWER LINE
 - EXISTING GUARD RAIL
 - EXISTING UTILITY POLE
 - EXISTING CATCH BASIN
 - EXISTING SEWER MANHOLE
 - EXISTING MONUMENT
 - EXISTING HYDRANT
 - EXISTING WATER GATE OR SHUT-OFF VALVE
 - EXISTING TEST PIT LOCATION & NUMBER
 - EXISTING WETLANDS
 - EXISTING WELL

EXISTING CATCH BASINS

CB1
RIM=292.73'
INV. IN=288.70' (15" CPP)
INV. OUT=285.73'
SUMP=285.73'

EX. CB2
RIM=290.45'
INV. IN=284.66' (15" CPP)
INV. OUT=284.66' (15" CPP)
SUMP=281.35'

CB3
RIM=283.48'
INV. IN=277.58' (15" CPP)
INV. OUT=277.48' (15" CPP)
SUMP=274.58'

CB4
RIM=279.23'
INV. IN=268.03' (15" CPP) FROM BRIDGE
INV. IN=272.41' (15" CPP) FROM CB1
INV. OUT=267.58' (15" CPP) SWALE

CB5
RIM=280.85'
INV. IN=274.63'
INV. OUT=270.55' (15" CPP) SWALE
SUMP=267.55'

TM 242-6
LOCATION: 85 INNOVATION DR.
HOUSING AUTHORITY OF ROCHESTER
% BUSINESS FINANCE AUTH OF NH
2 PILLSBURY ST. STE 101
CONCORD, NH 03301
SCRD 4029-908

TM 239-26
NH NORTHCOAST CORP
P O BOX 429
OSSIPPEE, NH 03864
SCRD 1706-532



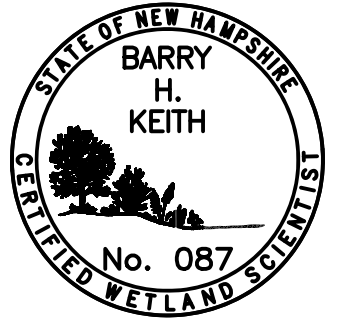
NOTES:

- THE PARCELS ARE IN THE GENERAL INDUSTRIAL DISTRICT ZONE (G) AND CONSERVATION OVERLAY DISTRICT.
- MINIMUM LOT REQUIREMENTS WITH WATER AND SEWER:
LOT AREA = 20,000 SQ.FT.
FRONTAGE = 100 FT.
- BUILDING SETBACKS: "NO INDUSTRIAL BUILDING OR OPERATION SHALL BE SITUATED CLOSER THAN 100 FEET TO THE BOUNDARY LINE OF ANY ADJACENT RESIDENTIAL PROPERTY. A PLANNING BOARD MAY REDUCE THIS SETBACK TO 50 FEET BY CONDITIONAL USE OR WHERE THE USE IS ACCESSORY TO A PRIMARY" SECTION 275-7.2.B.
FRONT = 25 FT.
SIDE = 20 FT.
REAR = 25 FT.
- MAXIMUM BUILDING HEIGHT = 55 FT.
- THE LOTS ARE CURRENTLY UNDEVELOPED
- A PORTION OF TM 255-21 IS LOCATED WITHIN THE 100 YEAR FLOOD ZONE A AS SHOWN ON THE FLOOD INSURANCE RATE MAP DATED MAY 17, 2005 COMMUNITY PANEL 330760218D PANEL 218 OF 405.
- THE LOTS MAY BE SUBJECT TO AN AVIATION AND FLIGHT CLEARANCE EASEMENT AS OUTLINED IN SCRD 1167-280, AS SHOWN.
- TM 255-18 IS SUBJECT TO AN AVIATION EASEMENT AND FLIGHT CLEARANCE EASEMENT IN FAVOR OF THE STATE OF NEW HAMPSHIRE, SEE SCRD 1166-633.
A 60' ROW IN FAVOR OF TM 255-19, SEE SCRD 860-462.
- TM 255-18 IS SUBJECT TO AN AVIATION EASEMENT AND FLIGHT CLEARANCE EASEMENT IN FAVOR OF THE STATE OF NEW HAMPSHIRE, SEE SCRD 1166-604.
- TM 255-21 IS SUBJECT TO ANY RIGHTS TO CROSS AT RAILROAD TRACKS AND/OR RIGHT-OF-WAY OF BOSTON AND MAINE RAILROAD LOCATED BETWEEN PARCELS B AND C. REFERENCE IS MADE TO RIGHTS RESERVED BY TIMOTHY HANSON (PREDECESSOR IN TITLE TO THE RESURRECTION LUTHERAN CHURCH) TO GREAT FALLS AND CONWAY RAILROAD (PREDECESSOR IN TITLE TO BOSTON AND MAINE RAILROAD) DATED JANUARY 10, 1850. SEE SCRD 206-16.
TOGETHER WITH AN EASEMENT TO PASS AND REPASS OVER ROADS CURRENTLY EXISTING OR TO BE CONSTRUCTED ON LAND OF GRANITE STATE BUSINESS PARK, INC., SEE SCRD 1466-340 & SCRD 1593-716.
- VERTICAL DATUM AND CONTOURS ARE DERIVED FROM LIDAR DATA ACQUIRED BY NOAA IN 2011 (NAVD88) (GEOID18)
- HORIZONTAL DATUM IS NH STATE PLANE NAD83 (2007)
- SOIL TYPES ARE PER NATURAL RESOURCES CONSERVATION SERVICE (NRCS) REPORT.

WETLAND NOTES

STATE AND FEDERAL JURISDICTIONAL WETLANDS WERE DELINEATED BY N.H. CERTIFIED WETLAND SCIENTIST, BARRY H. KEITH, IN SEPTEMBER OF 2019 AND MAPPED BY NORWAY PLAINS ASSOCIATES, INC. USING TOTAL STATION SURVEY METHODS AND IN ACCORDANCE WITH THE FOLLOWING GUIDANCE DOCUMENTS:

- 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."
- U.S. ARMY CORPS OF ENGINEERS, 2009, "REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTH CENTRAL AND NORTHEAST REGION, U.S. ARMY CORPS OF ENGINEERS RESEARCH AND DEVELOPMENT CENTER, ENVIRONMENTAL LABORATORY ERDC/EL TR-09-19."
- 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."
- 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 DEEP WATER HABITATS OF THE UNITED STATES, COWARDIN ET AL, 1979."
- 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.
- U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE, 2010, "FIELD INDICATORS OFHYDRIC 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.



TM 255-18
THE CITY OF ROCHESTER
31 WAKEFIELD STREET
ROCHESTER, NH 03867
SCRD 4448-224
(17.30 ACRES)

TM 255-19
THE CITY OF ROCHESTER
31 WAKEFIELD STREET
ROCHESTER, NH 03867
SCRD 4448-224
(2.88 ACRES)

TM 255-21
THE CITY OF ROCHESTER
31 WAKEFIELD STREET
ROCHESTER, NH 03867
SCRD 4424-664
(27.11 ACRES)

EXISTING FEATURES PLAN
NH ROUTE 108
ROCHESTER HILL RD
INNOVATION DRIVE
ROCHESTER, NH
PREPARED FOR:
CITY OF ROCHESTER

APRIL 2020

GRAPHIC SCALE



(IN FEET)
1 INCH = 100 FT.

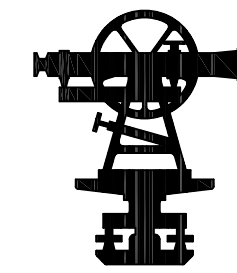
FILE NO. 104
PLAN NO. C-3012-EF
DWG. NO. 19289 SP-1
F.B. NO.

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

NORWAY PLAINS ASSOCIATES, INC.

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

LAND SURVEYORS



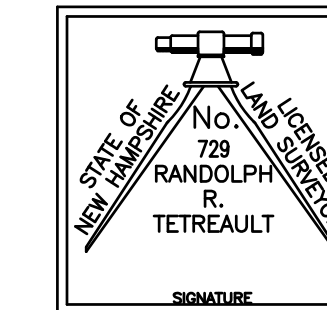
CIVIL ENGINEERS

FINAL APPROVAL BY ROCHESTER PLANNING BOARD

CERTIFIED BY: _____ DATE: _____

WHETHER OR NOT OTHERWISE EXPRESSLY RECITED ON THIS SUBDIVISION PLAN, THE SUBDIVISION APPROVAL GRANTED IS CONDITIONED ON FAITHFUL AND DILIGENT ADHERENCE BY THE OWNER/SUBDIVIDER/DEVELOPER OF ALL TERMS, CONDITIONS, PROVISIONS AND SPECIFICATIONS OF THE CITY OF ROCHESTER LAND SUBDIVISION REGULATIONS, AS AMENDED OR AS MAY LATER BE AMENDED, IN EFFECT ON THE DATE OF APPROVAL UNLESS OR EXCEPT INsofar AS EXPRESSLY WAIVED IN ANY PARTICULAR, BELOW. NON-ADHERENCE MAY RESULT IN A REVOCATION OF APPROVAL. ANY VARIATION FROM THE APPROVED PLAN WILL REQUIRE A RESUBMISSION FROM SUBDIVISION APPROVAL.

I HEREBY CERTIFY THAT THIS PLAN, PREPARED UNDER MY DIRECTION, IS THE RESULT OF A SURVEY MADE ON THE GROUND AS PER RECORD DESCRIPTIONS AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THE PLAN CLOSURE EXCEEDS 1:10,000.



RANDOLPH R. TETREAULT, LLS

DATE

NOTES:

- THE PURPOSE OF THIS PLAN TO CONSOLIDATE THE THREE PARCELS LAND DESCRIBED IN STRAFFORD COUNTY REGISTRY OF DEEDS, BOOK 4448, PAGE 224 AND BOOK 4424, PAGE 664 INTO A SINGLE LOT.
- THE PARCELS ARE IN THE GENERAL INDUSTRIAL DISTRICT ZONE (G) AND CONSERVATION OVERLAY DISTRICT. MINIMUM LOT REQUIREMENTS WITH WATER AND SEWER:
LOT AREA = 20,000 SQ.FT.
FRONTAGE = 100 FT.
FRONT = 25 FT.
SIDE = 20 FT.
REAR = 25 FT.
MAXIMUM BUILDING HEIGHT = 55 FT.
- THE LOTS ARE CURRENTLY UNDEVELOPED.
- A PORTION OF TAX MAP 255, LOT 21 IS LOCATED WITHIN THE 100 YEAR FLOOD ZONE A AS SHOWN ON THE FLOOD INSURANCE RATE MAP DATED SEPTEMBER 30, 2015, COMMUNITY PANEL 3307C0218E, PANEL 218 OF 405.
- THE SURVEYED LOTS ARE SUBJECT TO AN AVIATION AND FLIGHT CLEARANCE EASEMENT AS OUTLINED IN BOOK 1167, PAGE 280, AS SHOWN. SEE ALSO BOOK 1166, PAGE 633 AND BOOK 1166, PAGE 604.
TAX MAP 255, LOT 18 IS SUBJECT TO A 60' RIGHT OF WAY IN FAVOR OF TAX MAP 255, LOT 19. SEE BOOK 860, PAGE 462.
- TAX MAP 255, PAGE 21 IS SUBJECT TO ANY RIGHTS TO CROSS AT RAILROAD TRACKS AND/OR RIGHT-OF-WAY OF BOSTON AND MAINE RAILROAD LOCATED BETWEEN PARCELS B AND C. REFERENCE IS MADE TO RIGHTS RESERVED BY TIMOTHY HANSON (PREDECESSOR IN TITLE TO THE RESURRECTION LUTHERAN CHURCH) TO GREAT FALLS AND CONWAY RAILROAD (PREDECESSOR IN TITLE TO BOSTON AND MAINE RAILROAD) DATED JANUARY 10, 1850. SEE BOOK 206, PAGE 16, TOGETHER WITH AN EASEMENT TO PASS AND REPASS OVER ROADS CURRENTLY EXISTING OR TO BE CONSTRUCTED ON LAND OF GRANITE STATE BUSINESS PARK, INC., SEE BOOK 1466, PAGE 340 & BOOK 1593, PAGE 716.
- ELEVATIONS AND CONTOURS SHOWN ON THIS PLAN ARE BASED ON NAVD83 (GEOID18). SOME CONTOURS ARE DERIVED FROM LIDAR DATA ACQUIRED BY NOAA IN 2015.
- BEARINGS REFER TO GRID NORTH, NH STATE PLANE NAD83 (2007) BASED ON GPS NETWORK OBSERVATIONS. DISTANCES SHOWN ARE GROUND DISTANCES.
- UTILITIES SHOWN ON THIS PLAN WERE LOCATED FROM EXISTING ABOVEGROUND STRUCTURES & EXISTING PLANS. NPA MAKES NO GUARANTEE THAT SUCH UTILITIES OR THAT THEY ARE IN THE EXACT LOCATION SHOWN. NPA HAS NOT LOCATED THE UNDERGROUND UTILITIES.
- THE LOCATION OF THE ROADS SHOWN ON THIS PLAN ARE BASED ON EXISTING PLANS AND MONUMENTS FOUND.
- FOR MORE INFORMATION ON THIS LOT CONSOLIDATION PLAN, CONTACT THE CITY OF ROCHESTER PLANNING DEPARTMENT; 33 WAKEFIELD STREET, ROCHESTER, NH 03867, (603) 335-1338.

REFERENCE PLANS:

- "SUBDIVISION OF LAND, ROCHESTER, NH, FOR ROCHESTER INDUSTRIAL PARK, INC.," DATED: JUNE 22, 1987 BY NORWAY PLAINS SURVEY ASSOCIATES, INC. RECORDED: PLAN # SCD 37A-29
- "LOT LINE REVISION, AIRPORT DRIVE, TAX MAP 242, LOTS 5 & 6, ROCHESTER, NH, PREPARED FOR THE CITY OF ROCHESTER," DATED: MAR. 2012 BY NORWAY PLAINS ASSOCIATES, INC. RECORDED: PLAN # SCD 103-89
- "PLAN OF LANDS, NH ROUTE 108, ROCHESTER HILL ROAD, ROCHESTER, NH FOR THE CITY OF ROCHESTER," DATED: SEPTEMBER 2019 BY NORWAY PLAINS ASSOCIATES, INC. RECORDED: PLAN # SCD 12041.

SEE PLAN REF. 3 FOR ADDITIONAL REFERENCE PLANS.
TOTAL PARCEL AREA = 47.29 ACRES
TM 255-18
THE CITY OF ROCHESTER
31 WAKEFIELD STREET
ROCHESTER, NH 03867
SCRD 4448-224
(17.30 ACRES)

TM 255-19 **TM 255-21**
THE CITY OF ROCHESTER **THE CITY OF ROCHESTER**
31 WAKEFIELD STREET **31 WAKEFIELD STREET**
ROCHESTER, NH 03867 **ROCHESTER, NH 03867**
SCRD 4448-224 **SCRD 4424-664**
(2.88 ACRES) **(27.11 ACRES)**

LOT CONSOLIDATION PLAN
NH ROUTE 108
ROCHESTER HILL ROAD
INNOVATION DRIVE
ROCHESTER
STRAFFORD COUNTY, NH

FOR:
CITY OF ROCHESTER
1" = 100' APRIL 2020
GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 INCH = 100 FT.

S-2

- LEGEND**
- MONUMENT
 - NO MONUMENT FOUND OR SET
 - UTILITY POLE
 - PROPERTY LINE
 - STONEWALL
 - EDGE OF PAVEMENT
 - CULVERT
 - ZONING LIMIT (SEE NOTE 2)
 - EASEMENT
 - FLOOD ZONE
 - RBCS REBAR WITH ID CAP SET
 - IPF IRON PIPE FOUND
 - SSF STEEL STAKE FOUND
 - GLD GRANT L. DAVIS ASSOCIATES
 - DHF DRILL HOLE FOUND
 - TBS MONUMENT TO BE SET

- EXISTING UTILITY POLE
- EXISTING CATCH BASIN
- EXISTING SEWER MANHOLE
- EXISTING HYDRANT
- EXISTING WATER GATE OR SHUT-OFF VALVE
- EXISTING TEST PIT LOCATION & NUMBER
- EXISTING WELL

TM 242-3-1
AMAROSA PERKINS
DEVELOPMENT LLC
19 CHERRY LANE
MADURY, NH 03823-7525

TM 242-6
LOCATION: 85 INNOVATION DR.
HOUSING AUTHORITY OF ROCHESTER
% BUSINESS FINANCE AUTH OF NH
2 PILLSBURY ST. STE 101
CONCORD, NH 03301
SCRD 4029-908

TM 239-26
NH NORTHCOAST CORP
P O BOX 429
OSSIPPEE, NH 03864
SCRD 1706-532

TM 255-24-1
LOCATION: 52 HAVEN HILL RD
LAPERLE FAMILY REVOCABLE
TRUST % TRUSTEES
28 COPPERLINE RD.
EPSOM, NH 03234
SCRD 2201-342

TM 255-24-4
LOCATION: 52 HAVEN HILL RD
LAPERLE FAMILY REVOCABLE
TRUST % TRUSTEES
28 COPPERLINE RD.
EPSOM, NH 03234
SCRD 2201-342

TM 255-24-3
LOCATION: 52 HAVEN HILL RD
LAPERLE FAMILY REVOCABLE
TRUST % TRUSTEES
28 COPPERLINE RD.
EPSOM, NH 03234
SCRD 2201-342

TM 255-22
LOCATION: 314 ROCHESTER HILL RD
GREYSTONE OF MAINE LTD
334 RTE 108
MADURY, NH 03820
SCRD 1673-138

TM 255-20
LOCATION: 302 ROCHESTER HILL RD.
PRESBYTERY OF NORTHERN
NEW ENGLAND TRUSTEES
302 ROCHESTER HILL RD.
ROCHESTER, NH 03867
SCRD 3752-983

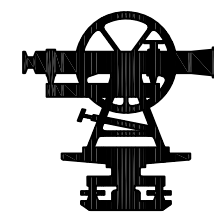
TM 243-18
PEASE DEVELOPMENT AUTHORITY
55 INTERNATIONAL DRIVE
PORTSMOUTH, NH 03801

FILE NO. 104
PLAN NO. C-3012-LC
DWG. NO. 19289 ES-1

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

NORWAY PLAINS ASSOCIATES, INC.

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



FINAL APPROVAL BY
ROCHESTER PLANNING BOARD

CERTIFIED BY: _____ DATE: _____

LEGEND

- ⊙ MONUMENT
- NO MONUMENT FOUND OR SET
- ⊙ UTILITY POLE
- PROPERTY LINE
- STONEWALL
- EP — EDGE OF PAVEMENT
- EXISTING CULVERT
- ZONING LIMIT (SEE NOTE X)
- EDGE OF WETLAND
- ↔ EASEMENT
- ↔ HOOK/MERGE LOT
- RBCS — REBAR WITH ID CAP SET
- IPF — IRON PIPE FOUND
- SSF — STEEL STAKE FOUND
- GLD — GRANT L. DAVIS ASSOCIATES
- DHF — DRILL HOLE FOUND
- TBS — MONUMENT TO BE SET

ADDITIONAL ABUTTERS:

MAP 255, LOT 15
PATRICK M. MURRAY
17 HILLCREST DRIVE, DOVER, NH 03820
SCRD 1728-756

MAP 254, LOT 18
MACARDI, LLC
254 DRAKE HILL ROAD, STRAFFORD, NH 03884
SCRD 4524-470

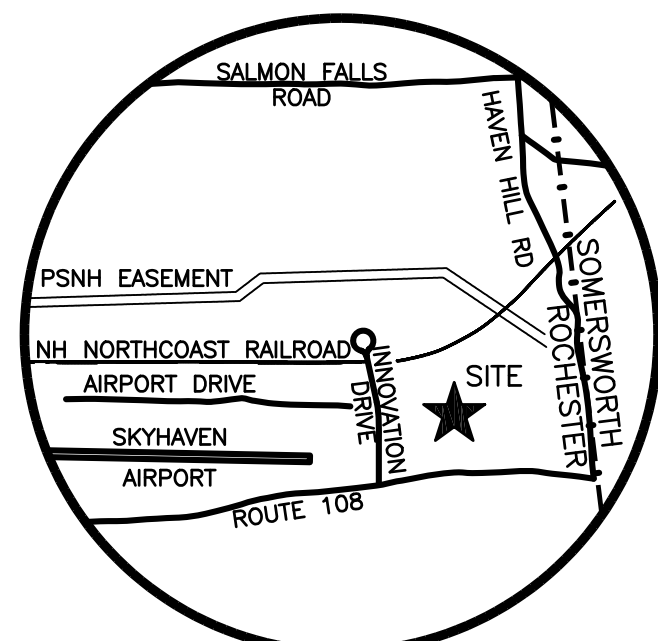
MAP 242, LOT 1
SAKUNTALA, LLC
32 INNOVATION DRIVE, ROCHESTER, NH 03867
SCRD 4099-767

MAP 242, LOT 3-1
AMAROSA PERKINS DEVELOPMENT, LLC
19 CHERRY LANE, MADBURY, NH 03823
SCRD 3673-398

MAP 255, LOT 24-3
MJS DEVELOPMENT LLC
55 HOMESTEAD LANE, BRENTWOOD, NH 03833
SCRD 4561-126

MAP 255, LOT 24-4
MJS DEVELOPMENT LLC
55 HOMESTEAD LANE, BRENTWOOD, NH 03833
SCRD 4561-126

SKYHAVEN
AIRPORT

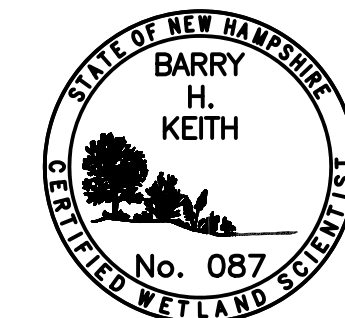


LOCUS
N.T.S.

FILE NO. 104
PLAN NO. C-3012-S
DWG. NO. 19289 S-1

31 MOONEY STREET, ALTON, NH 603-875-3948

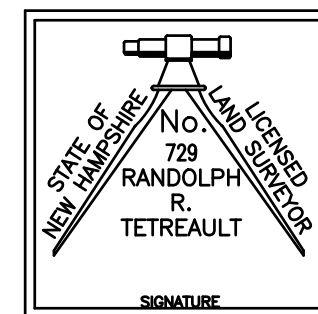
NORWAY PLAINS ASSOCIATES, INC.



RESERVED REGISTRY OF DEEDS

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RANDOLPH R. TETREAULT, LLS

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REFERENCE PLANS:

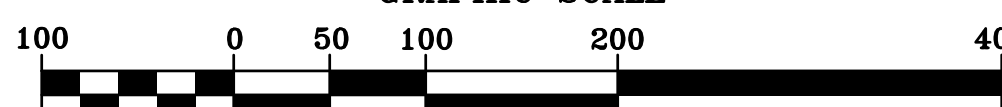
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SEE PLAN REF. 3 FOR ADDITIONAL REFERENCE PLANS.

TM 255-18, 19 & 21
THE CITY OF ROCHESTER
31 WAKEFIELD STREET
ROCHESTER, NH 03867
SCRD 4446-224
SCRD 4424-664

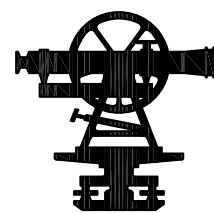
SUBDIVISION PLAN
ROUTE 108
ROCHESTER HILL ROAD
INNOVATION DRIVE
ROCHESTER
STRAFFORD COUNTY, NH
FOR:
CITY OF ROCHESTER

1" = 100' APRIL 2020
GRAPHIC SCALE



REVISIONS:

2 CONTINENTAL BLVD., ROCHESTER, NH 603-335-3948

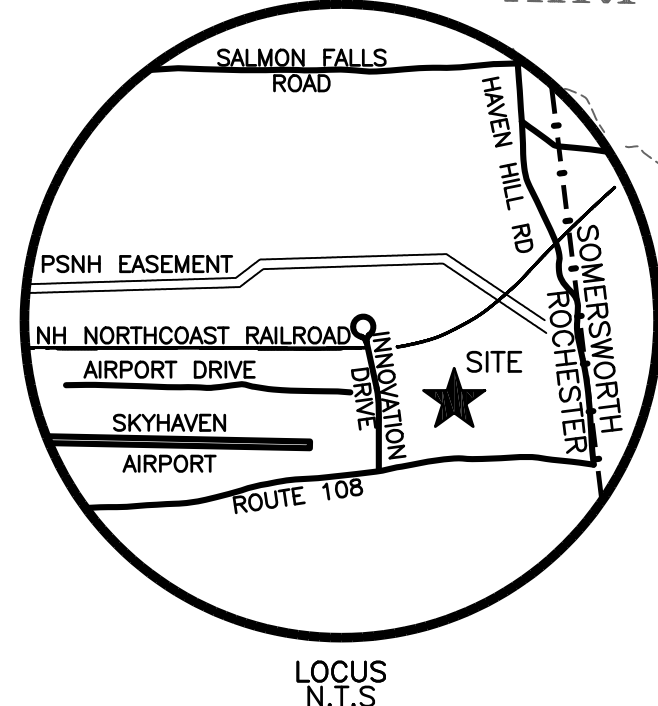


LEGEND

- MONUMENT
- NO MONUMENT FOUND OR SET
- UTILITY POLE
- PROPERTY LINE
- STONEWALL
- EDGE OF PAVEMENT
- gravel
- ZONING LIMIT (SEE NOTE X)
- EDGE OF WETLAND
- EASEMENT
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- IPF IRON PIPE FOUND
- SSF STEEL STAKE FOUND
- GLD GRANT L. DAVIS ASSOCIATES
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SCRD 4561-126
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55 HOMESTEAD LANE, BRENTWOOD, NH 03833
SCRD 4561-126



FILE NO. 104
PLAN NO. C-3012-T
DWG. NO. 19232 SF-1

31 MOONEY STREET, ALTON, NH 603-875-3948

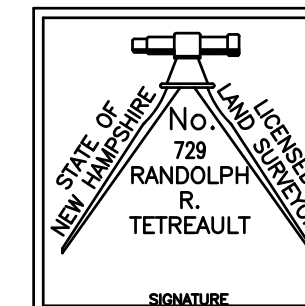
NORWAY PLAINS ASSOCIATES, INC.



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RANDOLPH R. TETREAULT, LLS

DATE

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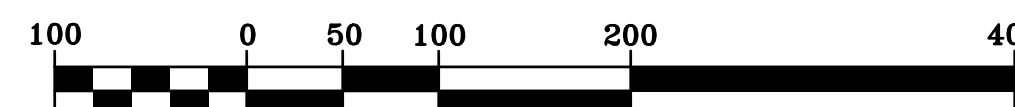
SEE PLAN REF. 3 FOR ADDITIONAL REFERENCE PLANS.

TM 255-18, 19 & 21
THE CITY OF ROCHESTER
31 WAKEFIELD STREET
ROCHESTER, NH 03867
SCRD 4448-224
SCRD 4424-664

TOPOGRAPHIC
SUBDIVISION PLAN
NH ROUTE 108
ROCHESTER HILL ROAD
INNOVATION DRIVE
ROCHESTER
STRAFFORD COUNTY, NH
FOR:
CITY OF ROCHESTER

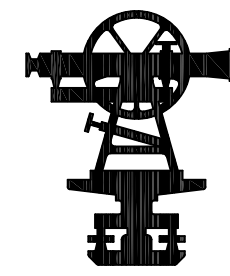
1" = 100' APRIL 2020

GRAPHIC SCALE



REVISIONS:

2 CONTINENTAL BLVD., ROCHESTER, NH 603-335-3948



LEGEND

- PROPERTY LINE
- JURISDICTIONAL WETLANDS
- EXISTING TREE LINE
- EXISTING STONEWALL
- PROPOSED TREE LINE
- PROPOSED CATCH BASIN
- PROPOSED DRAIN MANHOLE
- PROPOSED AREA DRAIN
- ▲ PROPOSED FLARED END SECTION (FES)
- CORRUGATED POLYETHYLENE PIPE
- CB CATCH BASIN

OVERALL CONSTRUCTION AND GENERAL NOTES:

1. ALL 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. ON SATURDAY.
2. ALL LOT CORNERS AND DRAINAGE EASEMENTS SHALL BE MARKED WITH CAPPED IRON MARKERS OR APPROPRIATE MONUMENTATION AFTER THE CONSTRUCTION OF THE ROAD IS COMPLETE.
3. ALL UTILITIES MUST BE UNDERGROUND, INCLUDING UTILITIES EXTENDED ONTO THE SITE FROM EXISTING POLES NEAR THE STREET. 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 ACCESS THE STREET. UTILITIES EXTENDED FROM ANY SUCH NEW POLE MUST BE UNDERGROUND. THE APPLICANT MAY WORK WITH THE CITY STAFF AS APPROPRIATE TO ADDRESS THIS REQUIREMENT.
4. THE SIGHT DISTANCE AT THE ENTRANCE TO THE SUBDIVISION WILL BE ADEQUATE. NO IMPEDIMENT IS CREATED BY THE ALIGNMENT OR GRADE OF NEW ROAD OR THE GRADE PROPOSED ENTRANCE.
5. THE TREATMENT SWALE AND DETENTION BASINS SHALL BE INSPECTED PRIOR TO ROADWAY ACCEPTANCE. ANY EROSION SHALL BE FIXED AND ANY SEDIMENT SHALL BE REMOVED AND VEGETATION REESTABLISHED ON THE INFILTRATION BASIN BOTTOM. THE DETENTION BASIN BOTTOM SHALL BE AT DESIGN ELEVATION AS SPECIFIED IN THE DETAILS ON SHEET C-12 OF THIS PLAN SET.
6. LOAM STOCKPILES SHALL BE SEEDED IN ACCORDANCE WITH THE SEEDING NOTES ON SHEET C-13. IF STORED MORE THAN 30 DAYS, SILT FENCE AND SILT SOCK SHALL BE INSTALLED AT THE DOWN GRADIENT SIDE OF THE LOAM STOCKPILE AS SHOWN IN THE PLAN VIEW AROUND AT LEAST ONE HALF THE CIRCUMFERENCE OF THE PILE.
7. DURING CONSTRUCTION DUST SHALL BE PREVENTED FROM BECOMING A SAFETY OR HEALTH HAZARD BY THE IMPLEMENTATION OF ACCEPTED CONTROL METHODS SUCH AS WATERING.
8. THE CITY RESERVES THE RIGHT TO REQUIRE ADDITIONAL EROSION CONTROL MEASURES IF ANY OFF SITE IMPACTS ARE FOUND DURING CONSTRUCTION.
9. PRIOR TO ISSUANCE OF ANY BUILDING PERMIT FOR THIS SUBDIVISION, THE DEVELOPER SHALL POST:
 - A.) CONSTRUCTION ZONE SIGNS PER THE MANUAL OF UNIFORMED TRAFFIC CONTROL DEVICES STANDARDS.
 - B.) A STREET ACCEPTANCE SIGN AT THE ENTRANCE WHICH READS "POSTED, THIS SUBDIVISION IS UNDER CONSTRUCTION. THESE STREETS HAVE NOT YET BEEN ACCEPTED BY THE CITY OF ROCHESTER AND ARE NOT ELIGIBLE FOR CITY SERVICES. TRAVEL AT YOUR OWN RISK (PER THE ORDER OF PLANNING BOARD)". THE LOCATION AND DESIGN OF THIS SIGN SHALL BE AS STIPULATED BY THE PUBLIC WORKS DEPARTMENT, BUT IN NO CASE SHALL IT BE LESS THAN 2'X4' AND IT SHALL BE ERECTED PRIOR TO ISSUANCE OF ANY BUILDING PERMIT.
10. FOR MORE INFORMATION ABOUT THIS SUBDIVISION, CONTACT THE CITY OF ROCHESTER PLANNING DEPARTMENT; 31 WAKEFIELD STREET, ROCHESTER, 03807, (603) 335-1338.
11. 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 (603) 330-7182 WITH ANY QUESTIONS ABOUT ACCESS REQUIREMENTS.
12. THIS DEVELOPMENT MUST BE IN COMPLIANCE WITH ALL APPLICABLE LAW - INCLUDING ALL PERTINENT PROVISIONS OF THE CITY OF ROCHESTER SUBDIVISION REGULATIONS - UNLESS OTHERWISE WAIVED.
13. ALL ROADWAY SIGNS SHALL BE INSTALLED AT THE DEVELOPER'S EXPENSE.

AIRPORT DRIVE

INNOVATION DRIVE

EX. VERTICAL CURB

EXISTING SIDEWALK

PROPOSED RAMP 1:12

PROPOSED LANDING

PROPOSED DETECTABLE DEVICE

PROPOSED VERTICAL CURB

PROPOSED PAINTED CROSSWALK

SAWCUT

PROPOSED DETECTABLE DEVICE

PROPOSED RAMP 1:12

PROPOSED 5-FT BITUMINOUS SIDEWALK

PROPOSED 5-FT BITUMINOUS SIDEWALK

EXISTING VERTICAL GRANITE CURB

EXISTING BITUMINOUS SIDEWALK

PROPOSED RAMP 1:12

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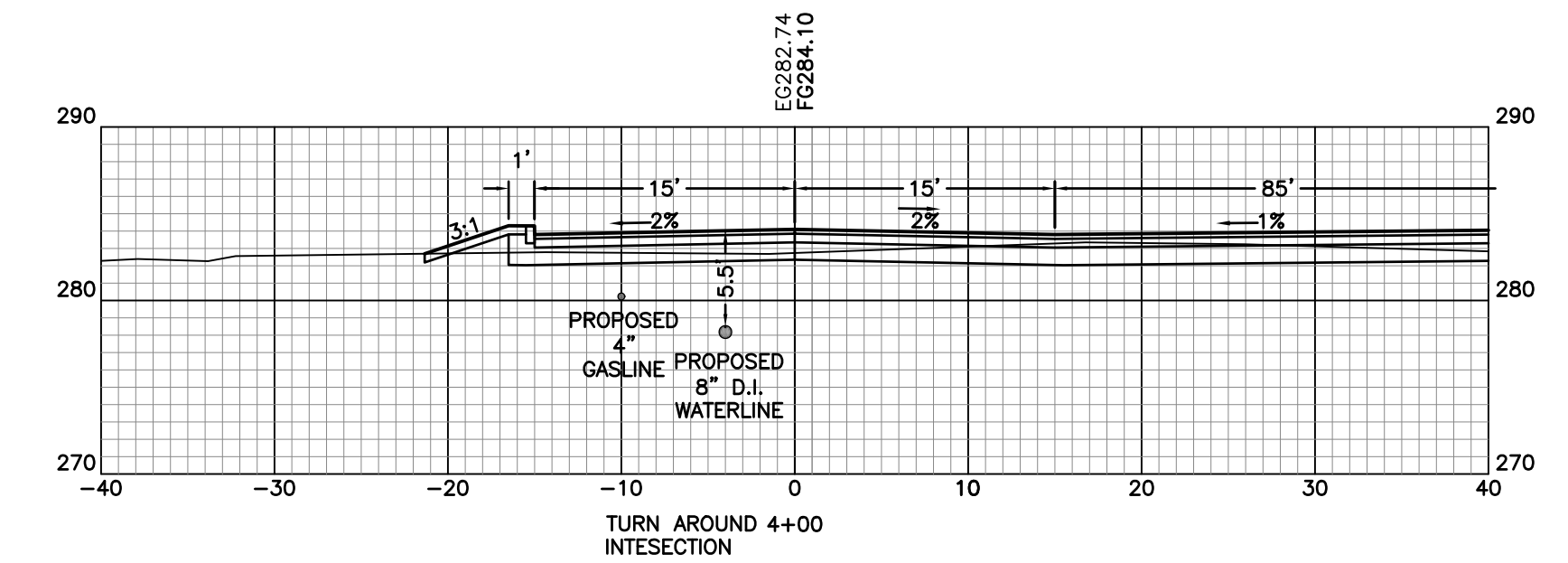
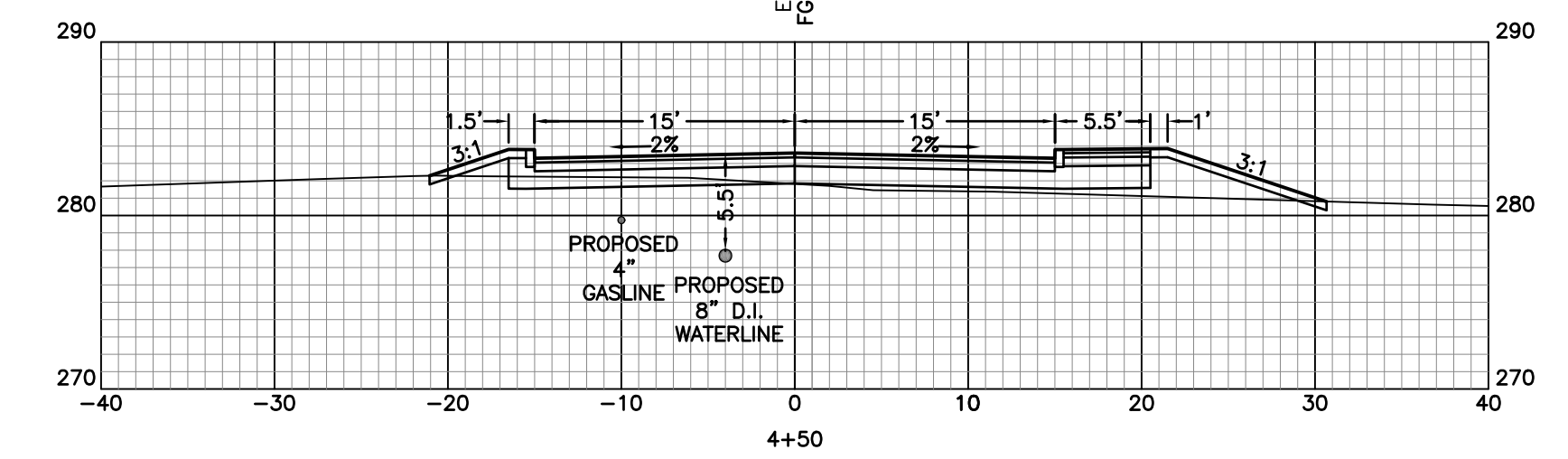
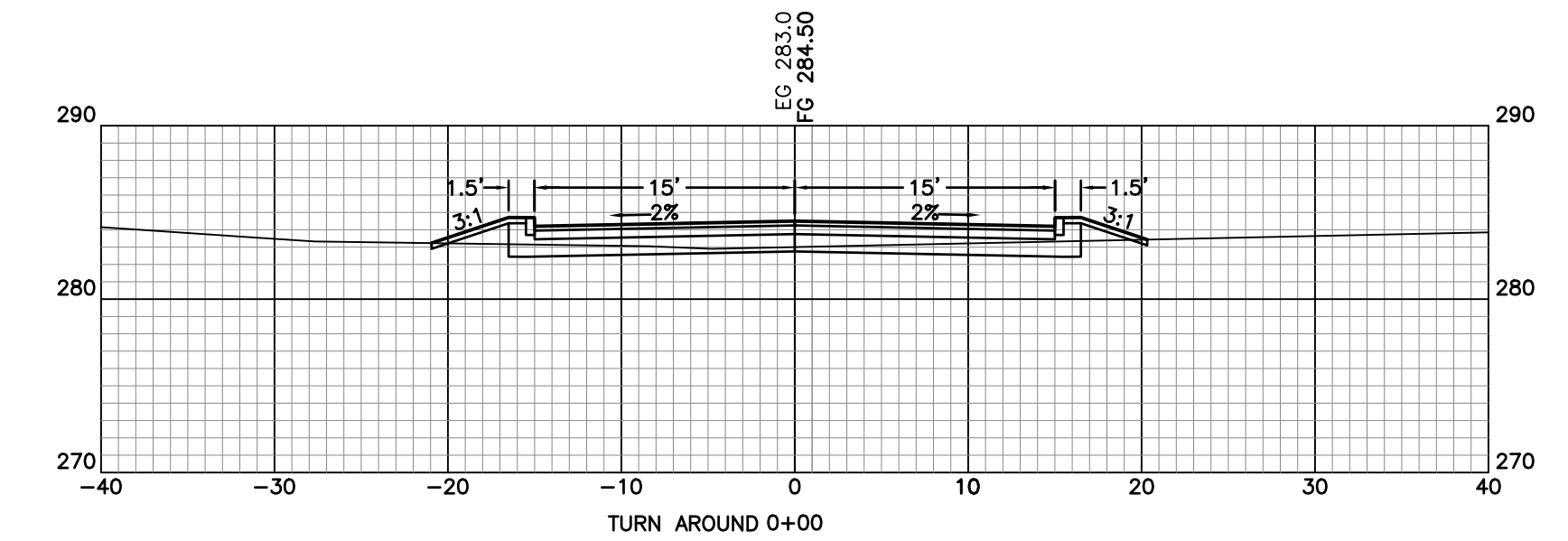
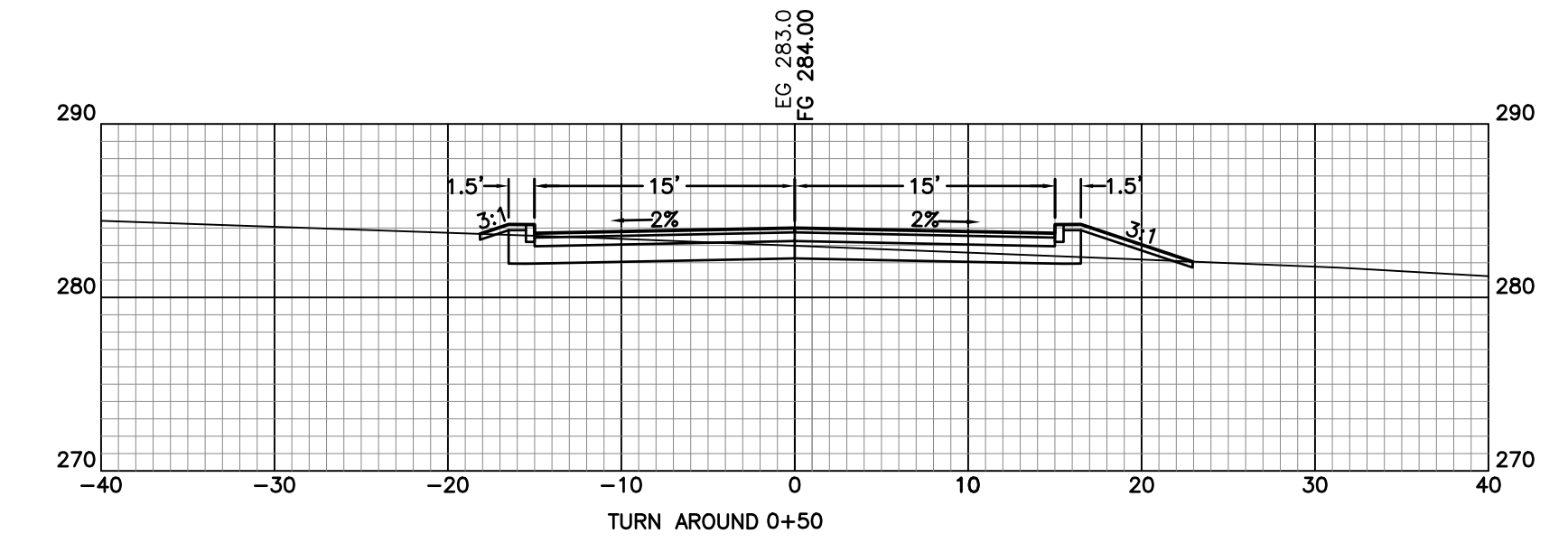
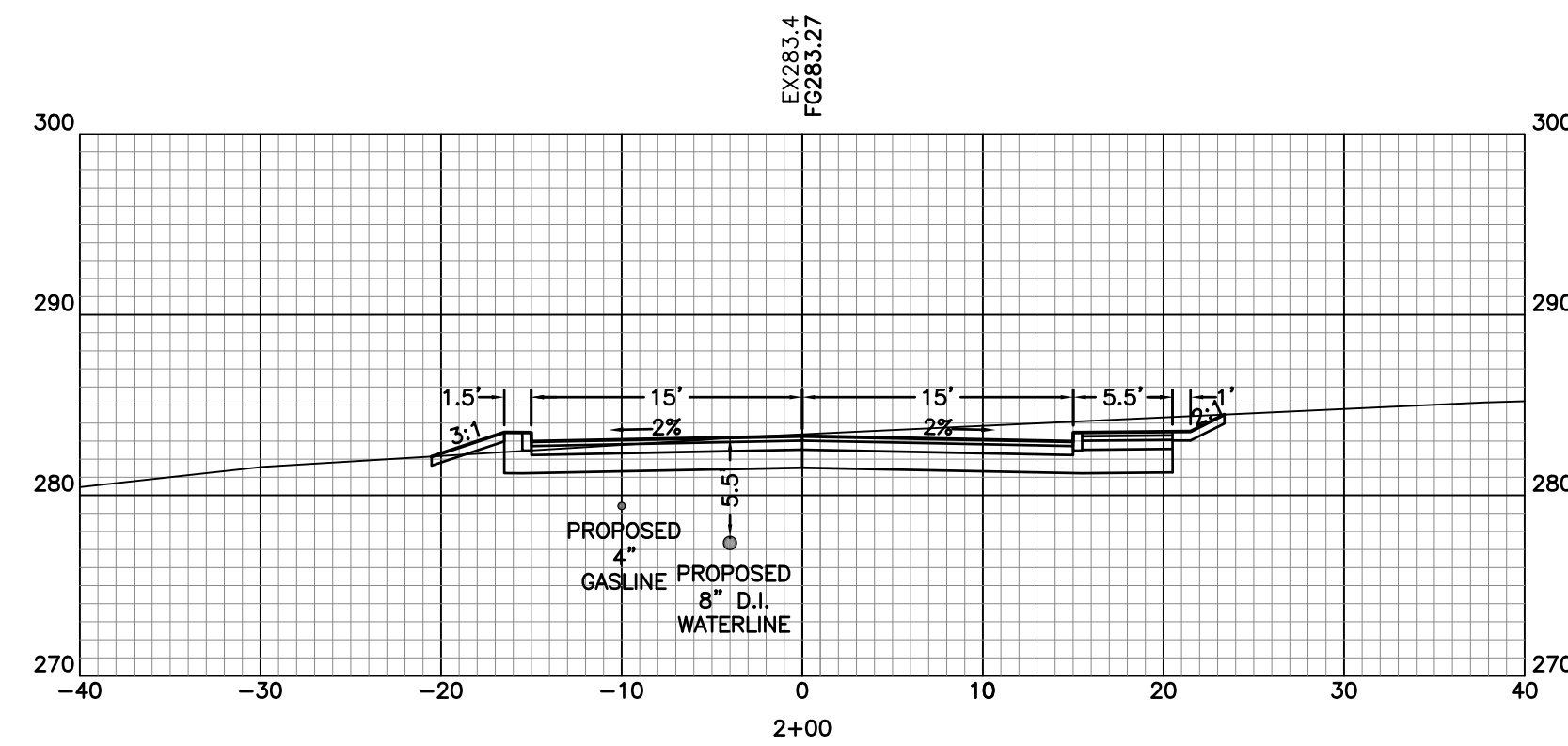
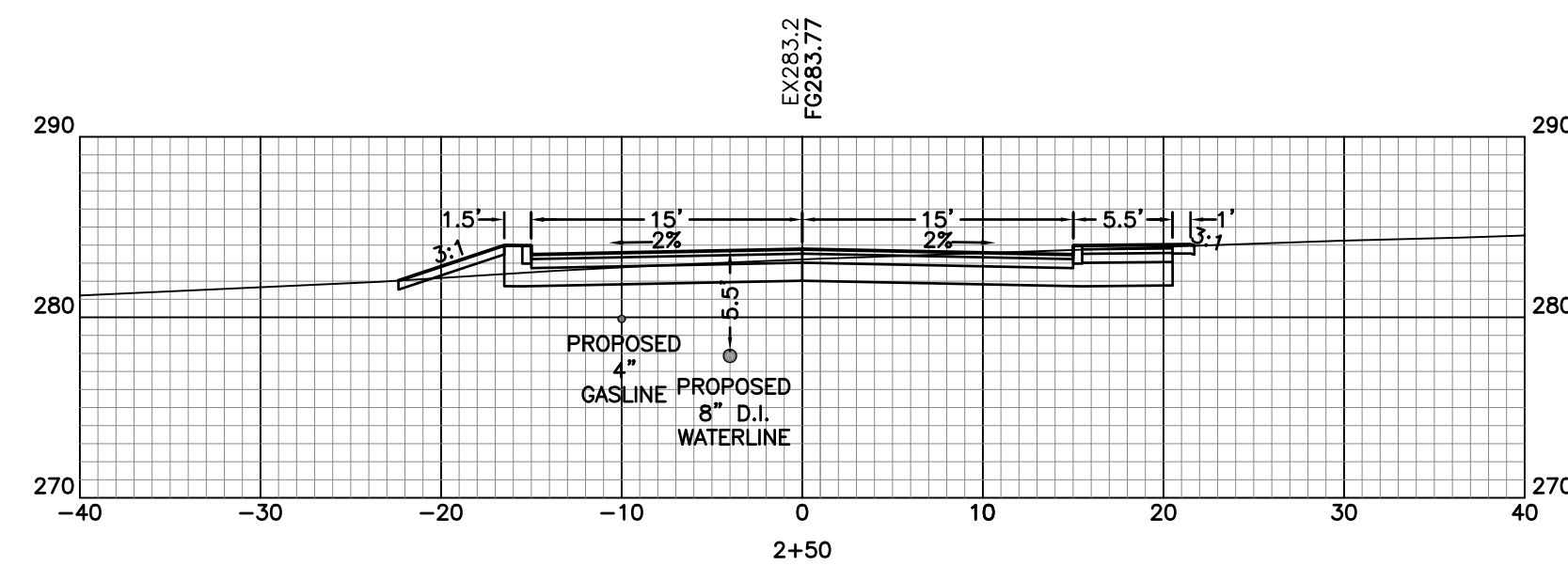
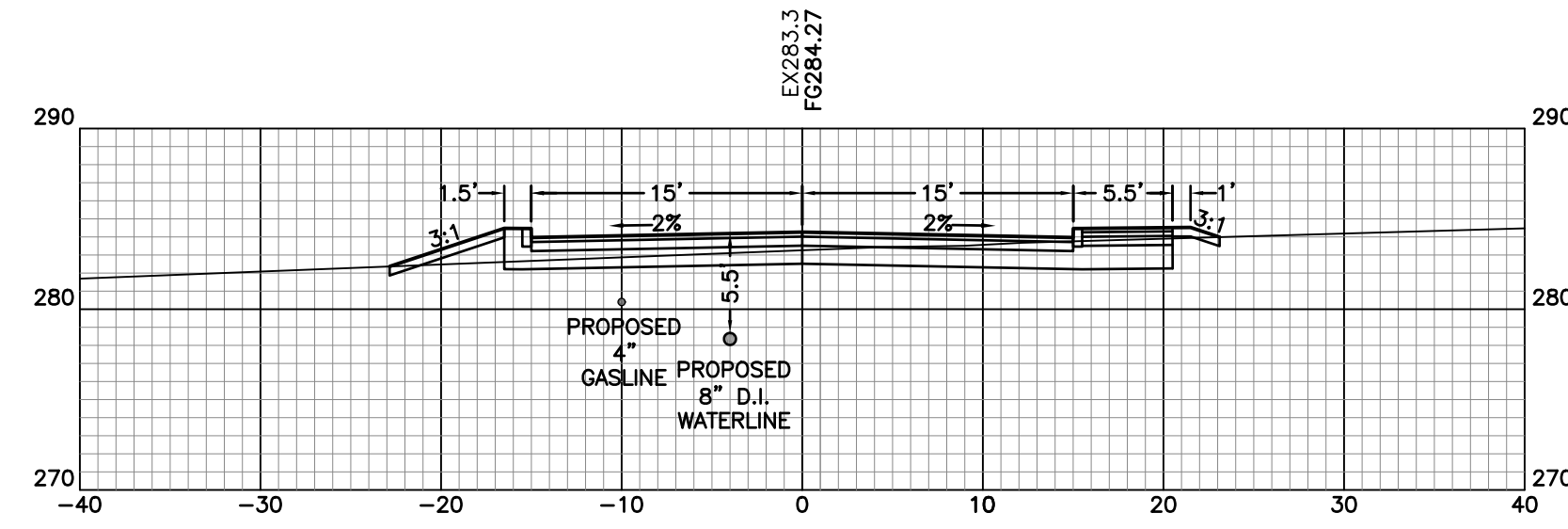
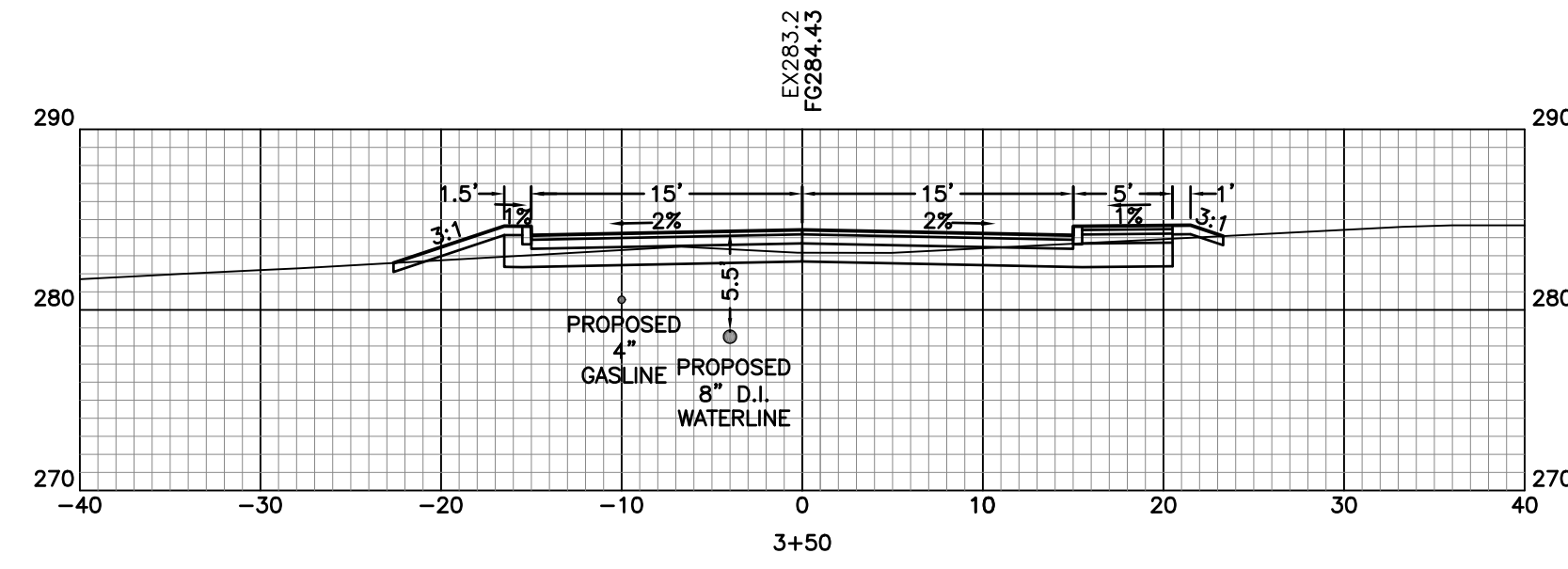
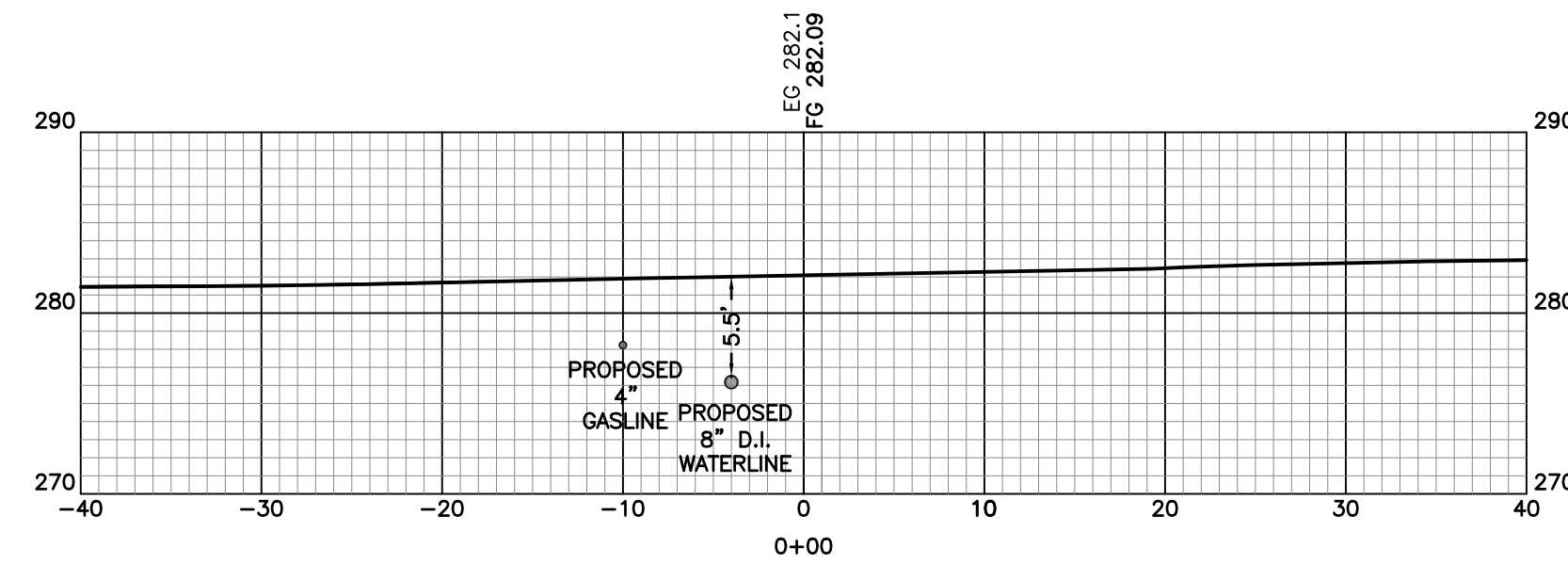
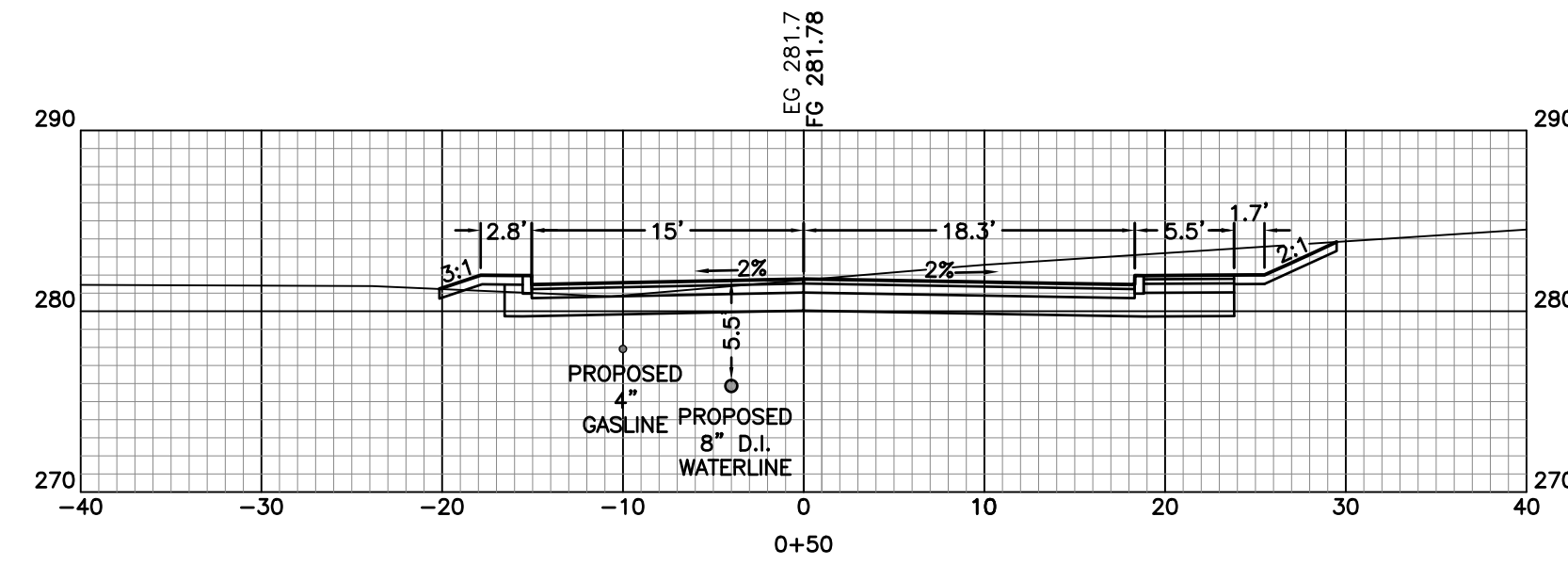
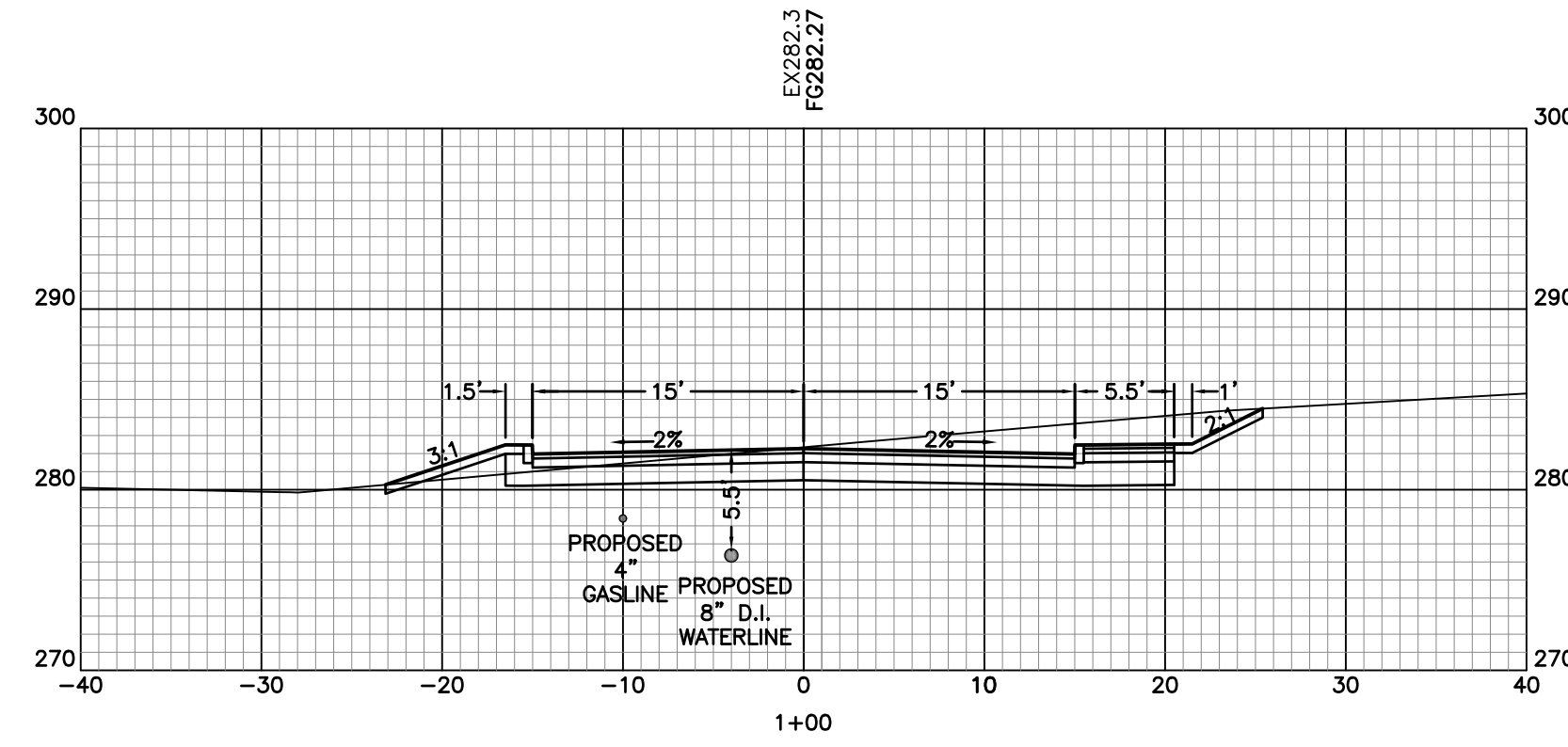
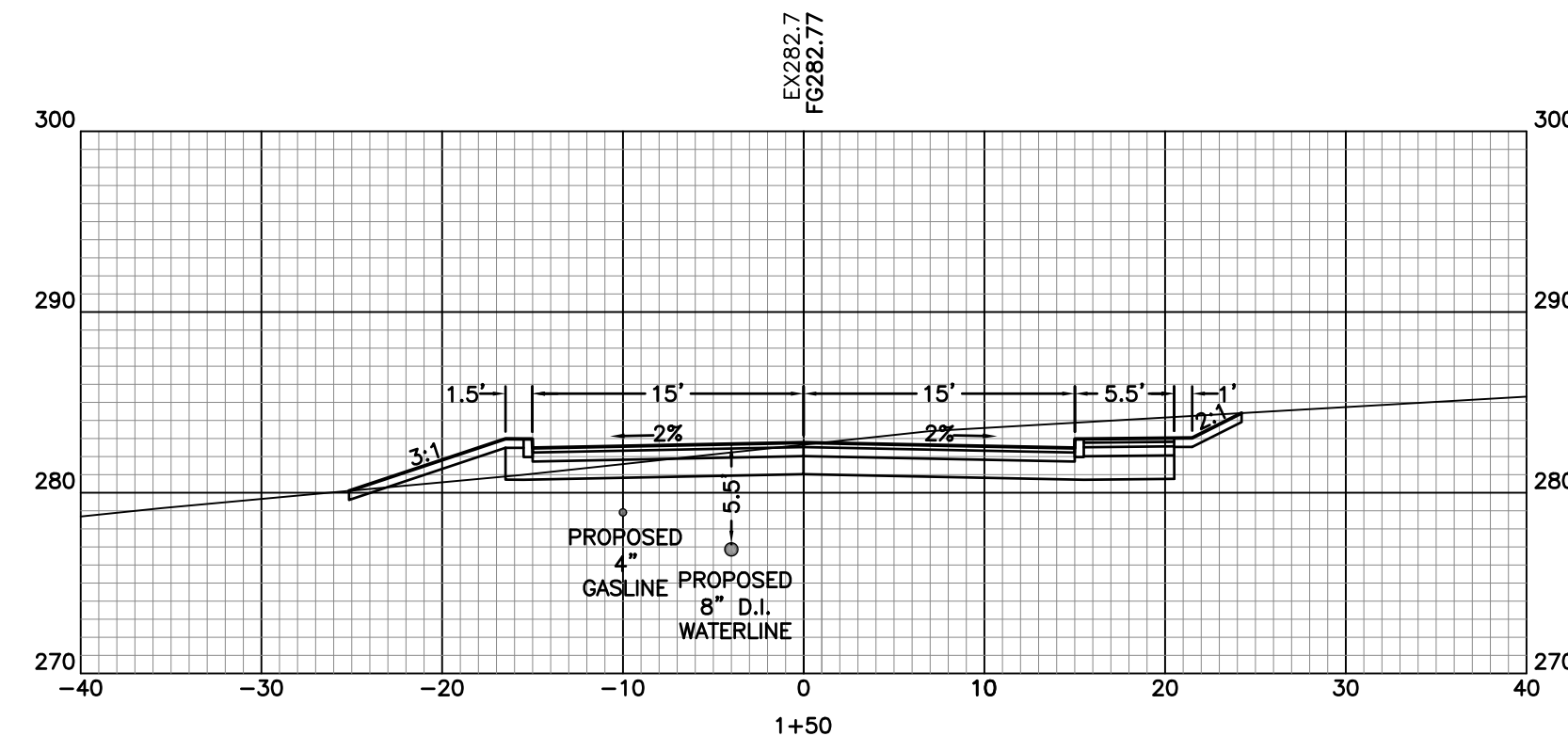
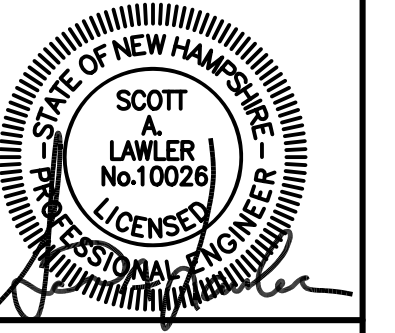
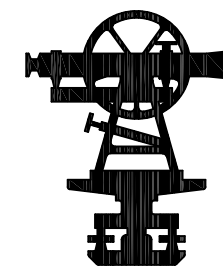
PROPOSED 5-FT BITUMINOUS SIDEWALK

PROPOSED 5-FT BITUMINOUS SIDEWALK

PROPOSED RAMP 1:12

PROPOSED LANDING

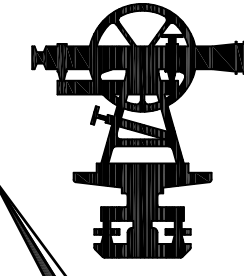
PROPOSED DETECTABLE DEVICE



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.

ROAD CROSS SECTION
NH ROUTE 108
ROCHESTER HILL RD
INNOVATION DRIVE
ROCHESTER, NH
PREPARED FOR:
CITY OF ROCHESTER
APRIL 2020

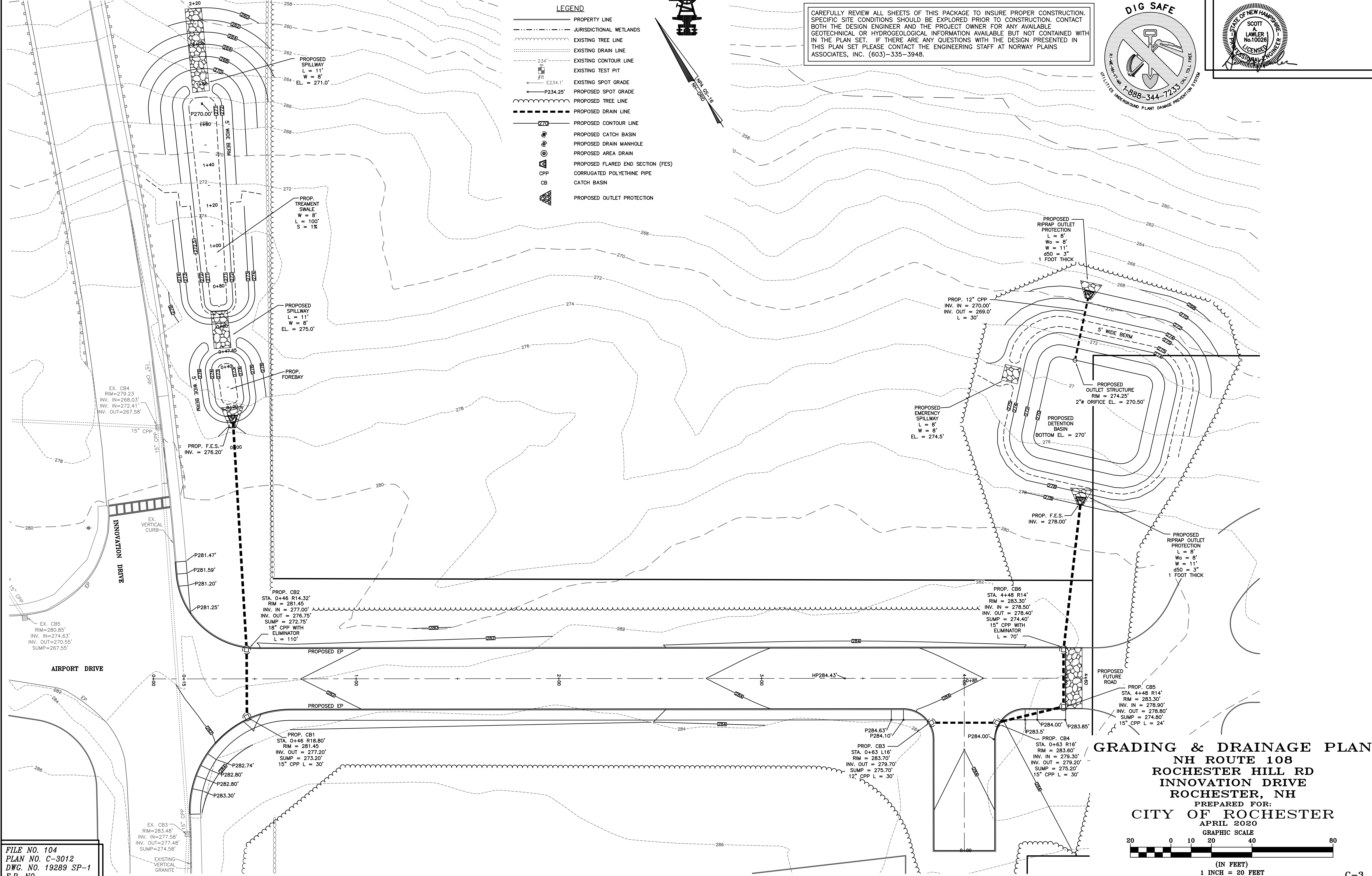
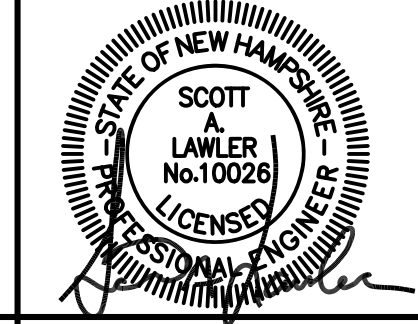
SCALE 1" = 10' (HORIZ.)
1" = 10' (VERT.)



LEGEND

- PROPERTY LINE
- - - JURISDICTIONAL WETLANDS
- ~ ~ ~ EXISTING TREE LINE
- EXISTING DRAIN LINE
- EXISTING CONTOUR LINE
- EXISTING TEST PIT
- EXISTING SPOT GRADE
- PROPOSED SPOT GRADE
- PROPOSED TREE LINE
- PROPOSED DRAIN LINE
- PROPOSED CONTOUR LINE
- PROPOSED CATCH BASIN
- PROPOSED DRAIN MANHOLE
- PROPOSED AREA DRAIN
- △ PROPOSED FLARED END SECTION (FES)
- CPP CORRUGATED POLYETHYLENE PIPE
- CB CATCH BASIN
- △ 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.



GRADING & DRAINAGE PLAN
NH ROUTE 108
ROCHESTER HILL RD
INNOVATION DRIVE
ROCHESTER, NH

PREPARED FOR:
CITY OF ROCHESTER
APRIL 2020
GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 INCH = 20 FEET

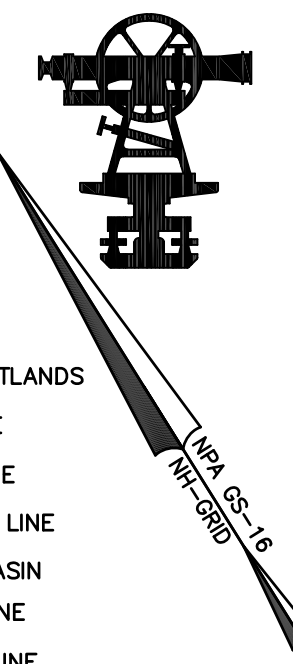
FILE NO. 104
PLAN NO. C-3012
DWG. NO. 19289 SP-1
F.B. NO.

LAND SURVEYORS

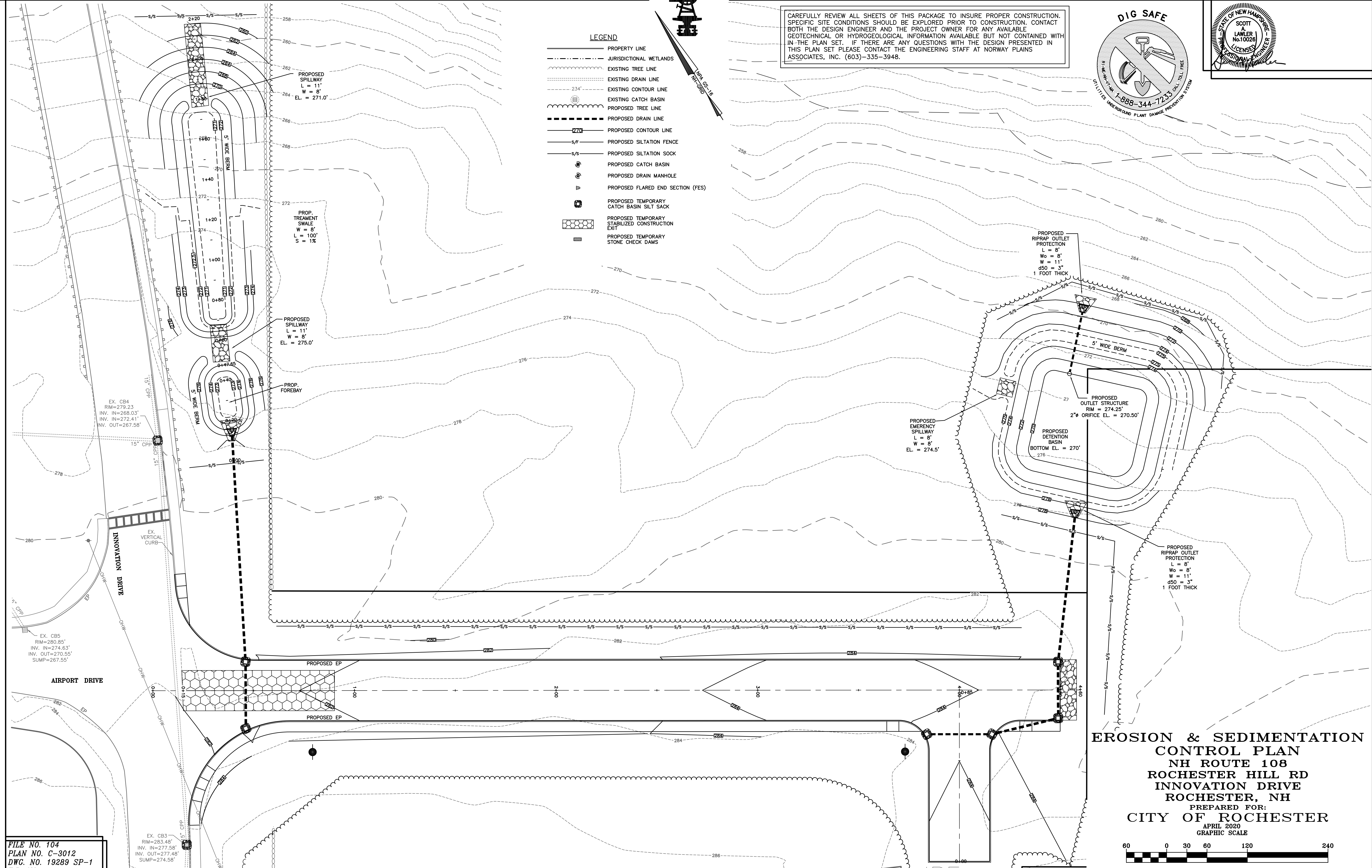
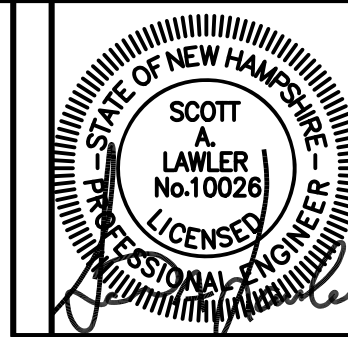
CIVIL ENGINEERS

LEGEND

- PROPERTY LINE
- - - JURISDICTIONAL WETLANDS
- - - EXISTING TREE LINE
- - - EXISTING DRAIN LINE
- - - EXISTING CONTOUR LINE
- - - EXISTING CATCH BASIN
- - - PROPOSED TREE LINE
- - - PROPOSED DRAIN LINE
- - - PROPOSED CONTOUR LINE
- - - PROPOSED SILTATION FENCE
- - - PROPOSED SILTATION SOCK
- PROPOSED CATCH BASIN
- PROPOSED DRAIN MANHOLE
- ▽ PROPOSED FLARED END SECTION (FES)
- PROPOSED TEMPORARY CATCH BASIN SILT SACK
- PROPOSED TEMPORARY STABILIZED CONSTRUCTION EXIT
- PROPOSED TEMPORARY STONE CHECK DAMS



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.



**EROSION & SEDIMENTATION
CONTROL PLAN**
NH ROUTE 108
ROCHESTER HILL RD
INNOVATION DRIVE
ROCHESTER, NH
PREPARED FOR:
CITY OF ROCHESTER
APRIL 2020
GRAPHIC SCALE

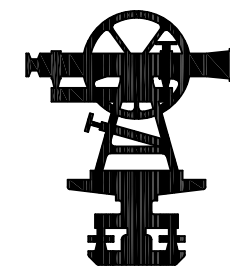


FILE NO. 104
PLAN NO. C-3012
DWC. NO. 19289 SP-1
F.B. NO.

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

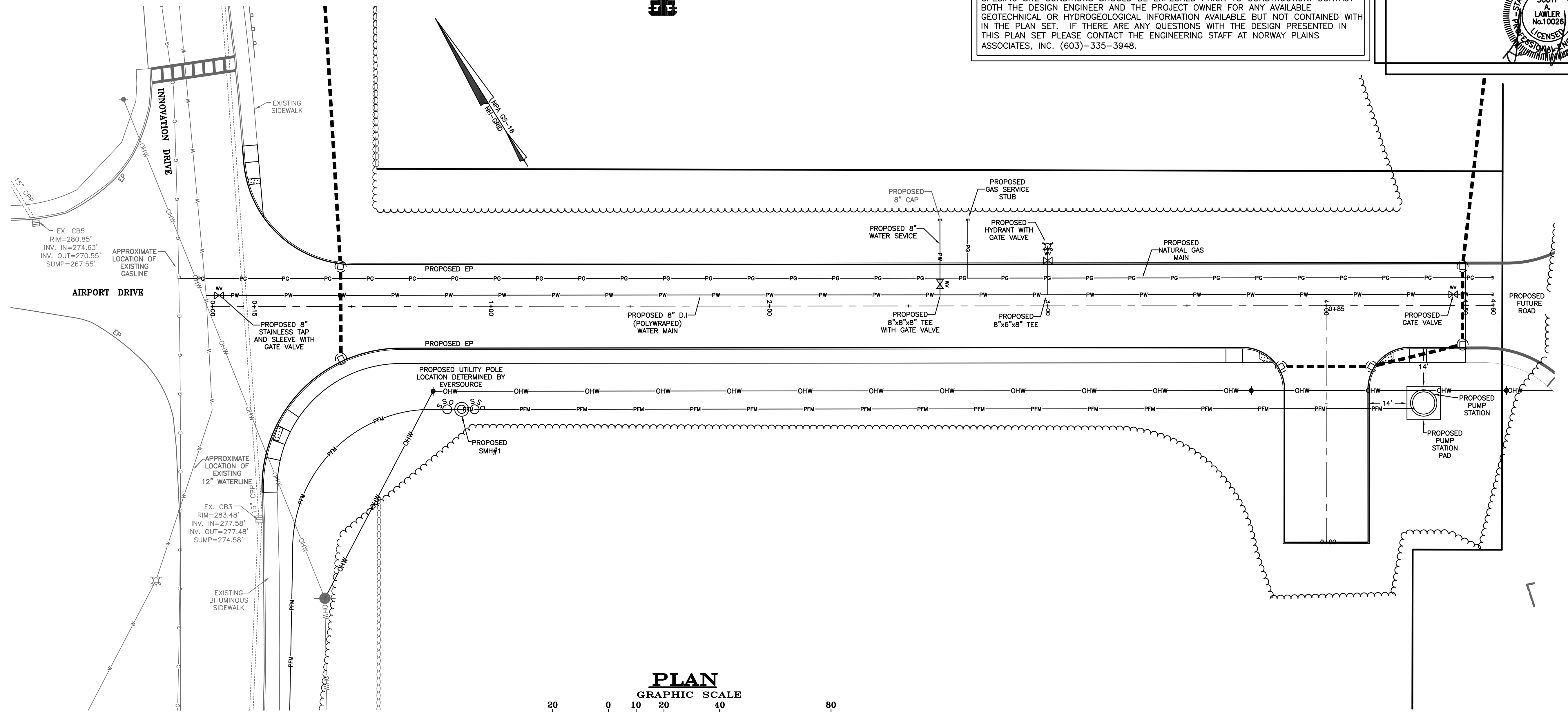
NORWAY PLAINS ASSOCIATES, INC.

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

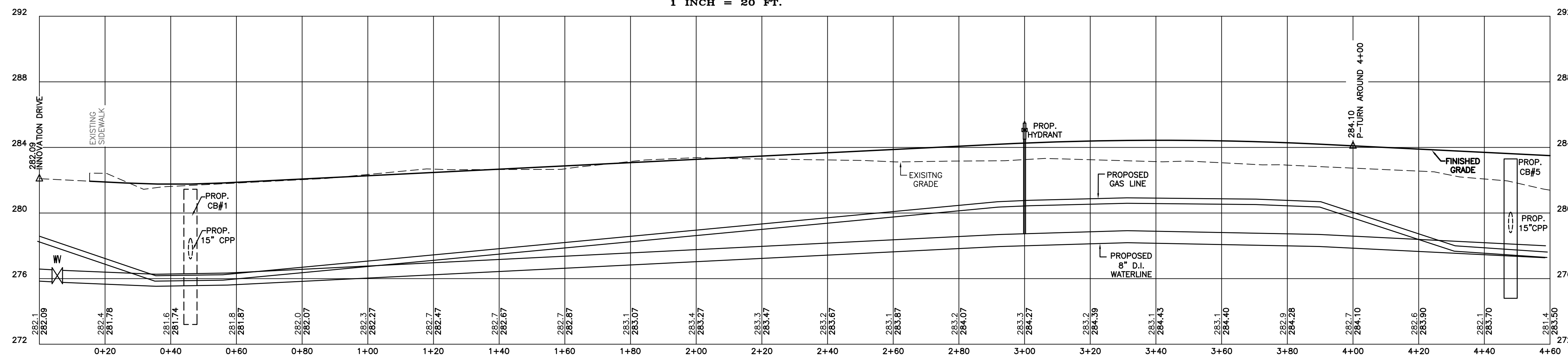


LEGEND

- PROPERTY LINE
- - - JURISDICTIONAL WETLANDS
- ~ ~ ~ EXISTING TREE LINE
- ~ ~ ~ EXISTING STONEWALL
- ~ ~ ~ PROPOSED TREE LINE
- - - PROPOSED DRAIN LINE
- PW — PROPOSED WATER SERVICE
- PS — PROPOSED SEWER LINE
- PFM — PROPOSED SEWER FORCE MAIN PIPE HDPE SDR 11
- PG — PROPOSED PROPANE GAS LINE
- UGU — PROPOSED UNDERGROUND UTILITY WIRES
- PROPOSED UNDERGROUND ELECTRIC WIRES
- PROPOSED HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER SHUT-OFF VALVE
- PROPOSED SEWER SHUT-OFF VALVE
- PROPOSED UTILITY POLE
- PROPOSED SEWER MANHOLE
- PROPOSED DRAIN MANHOLE
- PROPOSED CATCH BASIN
- ☆ ○ □ PROPOSED LIGHT POLES
- ◀ PROPOSED BUILDING LIGHT FIXTURES
- T.O.P. TOP OF PIPE
- B.O.P. BOTTOM OF PIPE



- NOTES:
- CONSTRUCTION WILL CONFORM TO THE FOLLOWING UTILITIES STANDARDS AND SPECIFICATION:
 - A) SANITARY SEWER DISPOSAL - NHDES
 - B) ELECTRIC DISTRIBUTION - EVERSOURCE
 - C) TELEPHONE - FAIRPOINT
 - D) CABLE - ATLANTIC BROADBAND
 - E) WATER - CITY OF ROCHESTER, STANDARDS
 - ALL PROPOSED ON-SITE UTILITIES SHALL BE INSTALLED UNDERGROUND.
 - ALL WATER SHUT-OFF VALVES SHALL BE PAINTED BLUE AND STAMPED "WATER".
 - ALL SEWER SHUT-OFF VALVE SHALL BE PAINTED GREEN AND STAMPED "SEWER".



SCALE 1" = 20' (HORIZ.)
1" = 4' (VERT.)

UTILITY PLAN & PROFILE
NH ROUTE 108
ROCHESTER HILL RD
INNOVATION DRIVE
ROCHESTER, NH
PREPARED FOR:
CITY OF ROCHESTER
APRIL 2020

FILE NO. 104
PLAN NO. C-3012
DWG. NO. 19289 SP-1
F.B. NO.

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

NORWAY PLAINS ASSOCIATES, INC.

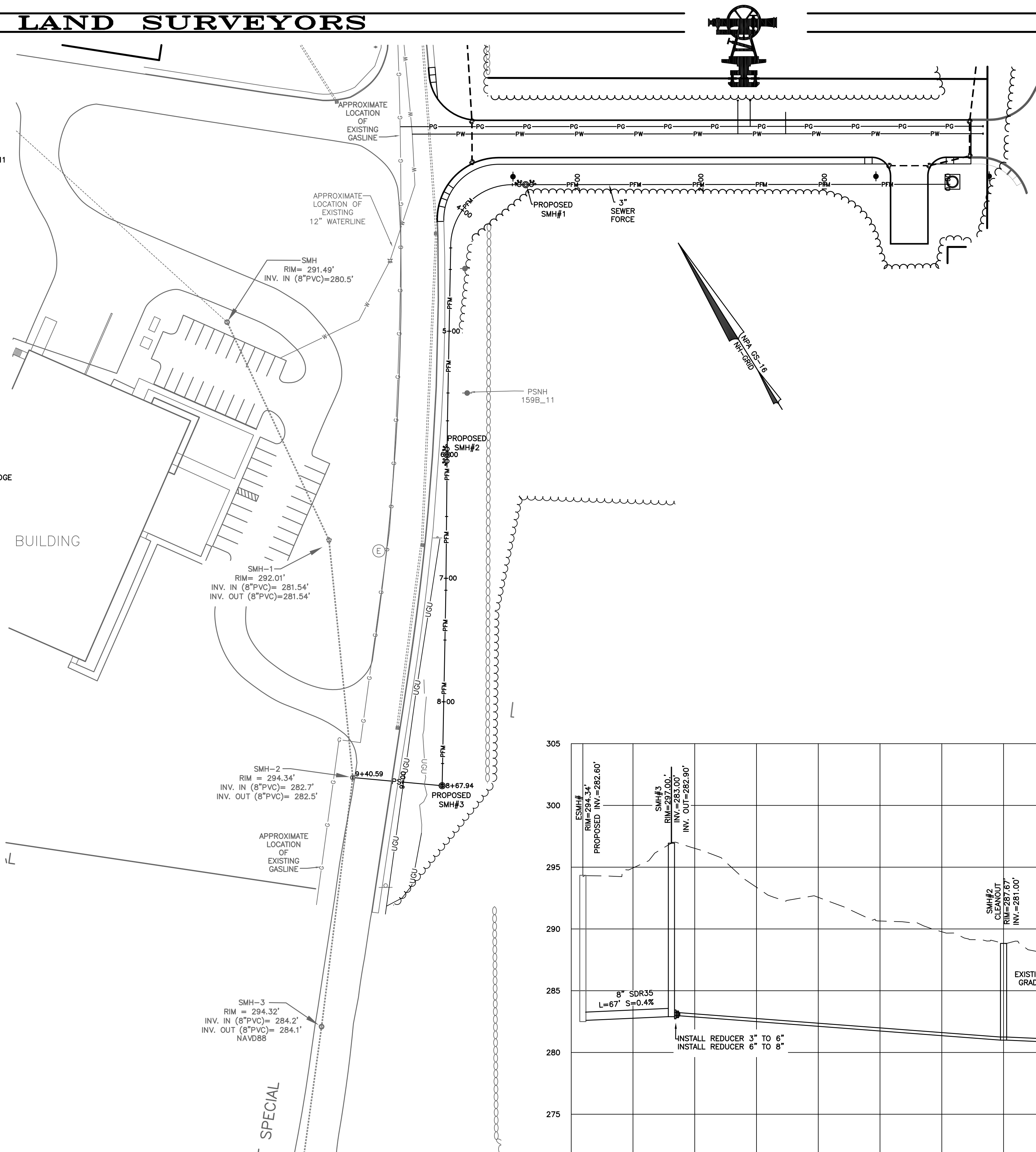
2 Continental Blvd., Rochester, N.H. 603-335-3948

LEGEND

- PROPERTY LINE
- JURISDICTIONAL WETLANDS
- EXISTING TREE LINE
- EXISTING STONEWALL
- PROPOSED TREE LINE
- PROPOSED DRAIN LINE
- PW --- PROPOSED WATER SERVICE
- PS --- PROPOSED SEWER LINE
- PFM --- PROPOSED SEWER FORCE MAIN PIPE HDPE SDR 11
- PG --- PROPOSED PROPANE GAS LINE
- UGU --- PROPOSED UNDERGROUND UTILITY WIRES
- PROPOSED UNDERGROUND ELECTRIC WIRES
- PROPOSED HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER SHUT-OFF VALVE
- PROPOSED SEWER SHUT-OFF VALVE
- PROPOSED UTILITY POLE
- PROPOSED SEWER MANHOLE
- PROPOSED DRAIN MANHOLE
- PROPOSED CATCH BASIN

EXISTING CATCH BASINS

- CB1
RIM=292.73'
INV. OUT=288.70' (15" CPP)
SUMP=285.73'
- EX. CB2
RIM=290.45'
INV. IN = 284.66' (15" CPP)
INV. OUT=284.66' (15" CPP)
SUMP=281.35'
- CB3
RIM = 283.48'
INV. IN = 277.58' (15" CPP)
INV. OUT = 277.48' (15" CPP)
SUMP = 274.58'
- CB4
RIM = 279.23'
INV. IN = 268.03' (15" CPP) FROM BRIDGE
INV. IN = 272.41' (15" CPP) FROM CB1
INV. OUT = 267.58' (15" CPP) SWALE
- CB5
RIM = 280.85'
INV. IN = 274.63'
INV. OUT = 270.55' (15" CPP) SWALE
SUMP = 267.55'

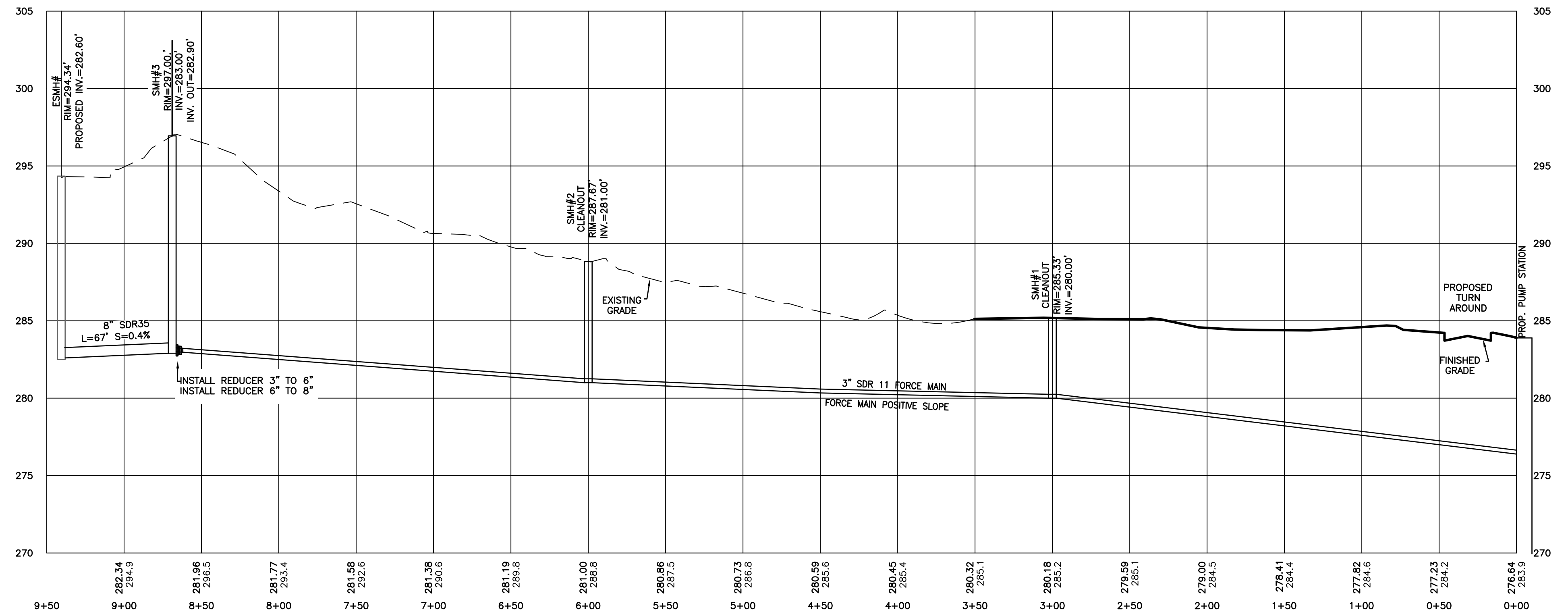


PLAN

GRAPHIC SCALE



1 INCH = 50 FEET.



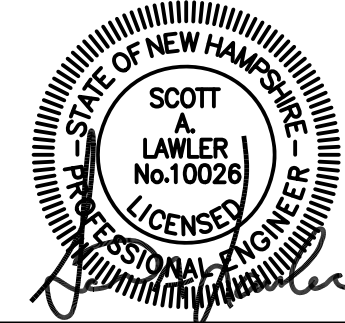
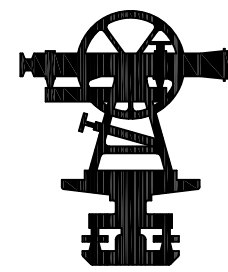
SEWER PROFILE

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

SEWER FOR MAIN PLAN
NH ROUTE 108
ROCHESTER HILL RD
INNOVATION DRIVE
ROCHESTER, NH
PREPARED FOR:
CITY OF ROCHESTER
APRIL 2020

FILE NO. 104
PLAN NO. C-3012
DWG. NO. 19289 SP-1
F.B. NO.

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



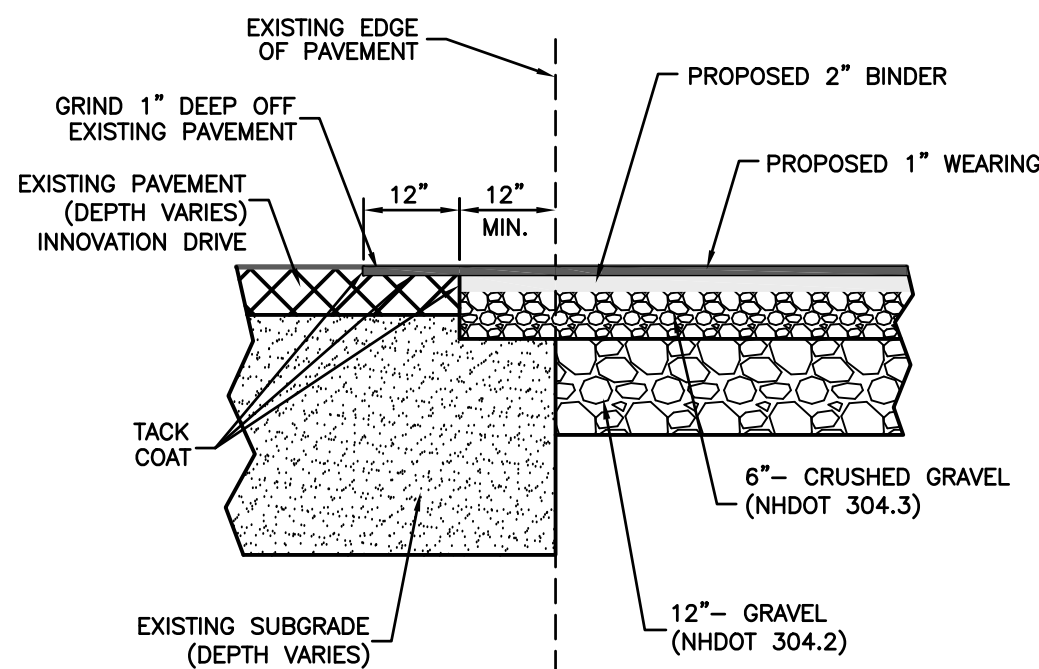
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ITEM NO.	SIGN SIZE		TEXT	NO. SIGNS REQ'D
	HEIGHT	WIDTH		
R1-1	30"	30"	STOP	1
R4-7b	30"	24"	KEEP RIGHT	1
W14-1	30"	30"	DEAD END	1
ROCHESTER STREET SIGN	9" HIGH (GREEN) W/ 6" WHITE LETTERS		NEW ROAD	1
R7-8 R7-8a	18"	12"	RESERVED PARKING	5
R7-8P	6"	18"	VAN ACCESSIBLE	2
R7-1	18"	12"	NO PARKING ANY TIME	2
NHE-9455	7"	10"	FDC	1
W11A-2	30"	30"	PED WALKING	8
W16-7pL	12"	24"	LEFT TURN	8
W2-1	30"	30"	ROAD CROSSING	8

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

SIGN SCHEDULE

NOT TO SCALE

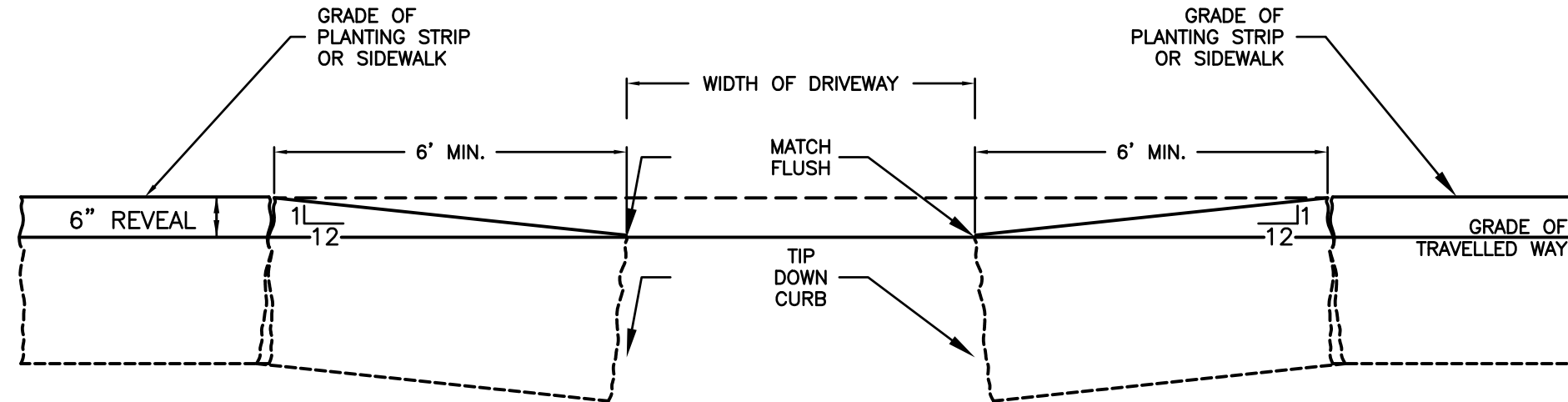


PAVEMENT SAWCUT NOTES:

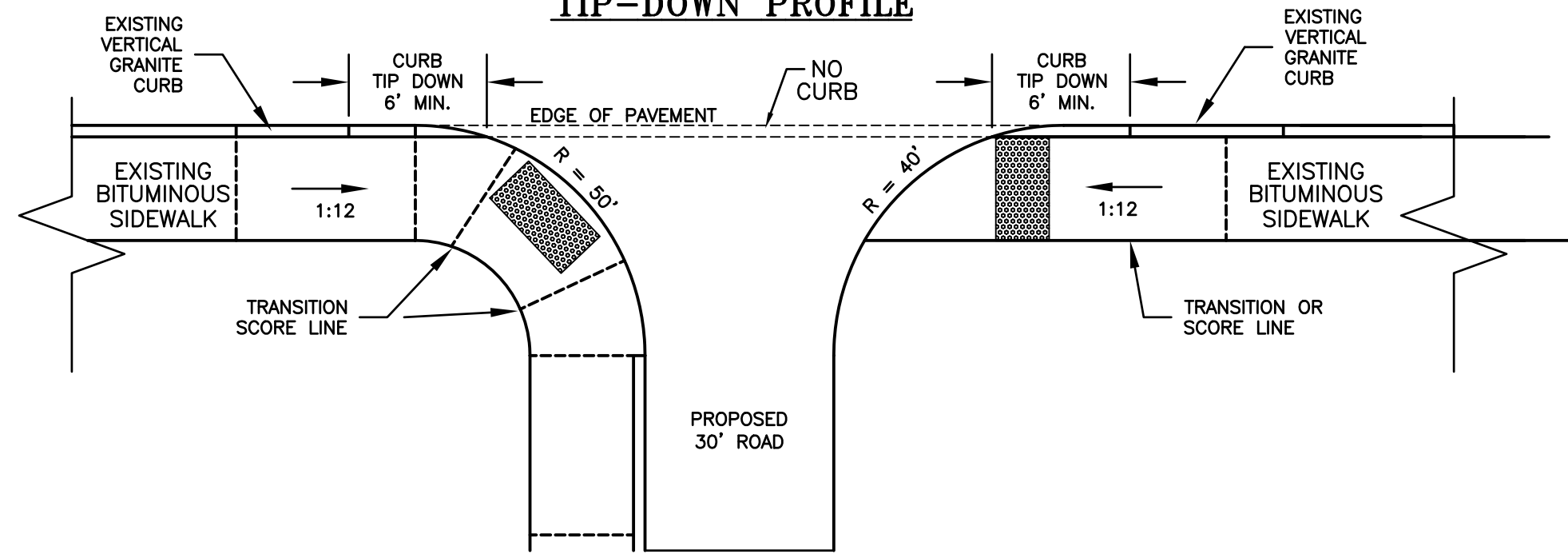
1. SAWCUT THROUGH DEPTH OF PAVEMENT AT LEAST 1 FT. FROM EDGE OR GREATER IF REQUIRED.
2. INSTALL AND COMPACT CRUSHED GRAVEL TO GRADE.
3. PLACE BINDER COURSE.
4. GRIND OR SAWCUT EXISTING PAVEMENT 1 FT. WIDE TO A DEPTH NECESSARY TO PROPERLY MATCH NEW WEARING COURSE PAVEMENT.
5. TACK COAT ALL EXISTING PAVEMENT SURFACES WITH EMULSIFIED ASPHALT (MS-1) PRIOR TO PLACING NEW PAVEMENT.

TYPICAL PAVEMENT SAWCUT DETAIL

FILE NO. 166
PLAN NO. C-3043
DWG. NO. 19138/S-1
F.B. NO. "33" "CEK"



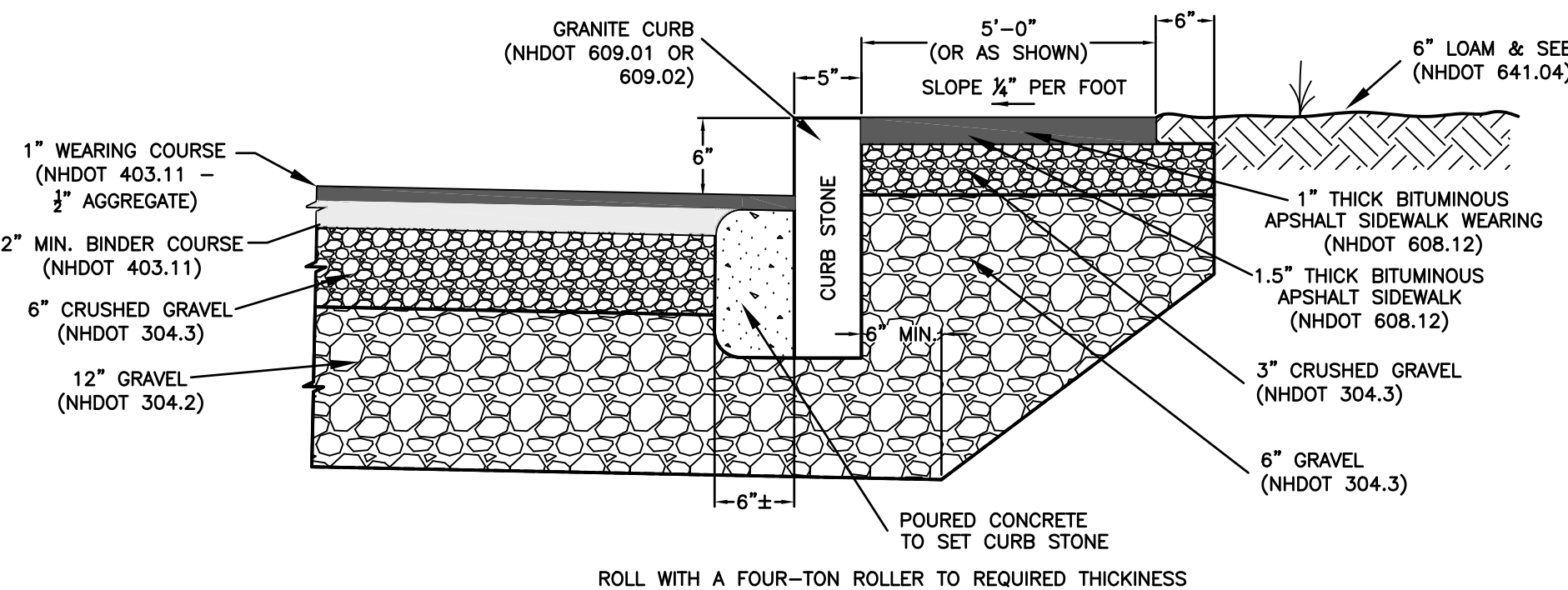
TIP-DOWN PROFILE



PLAN VIEW

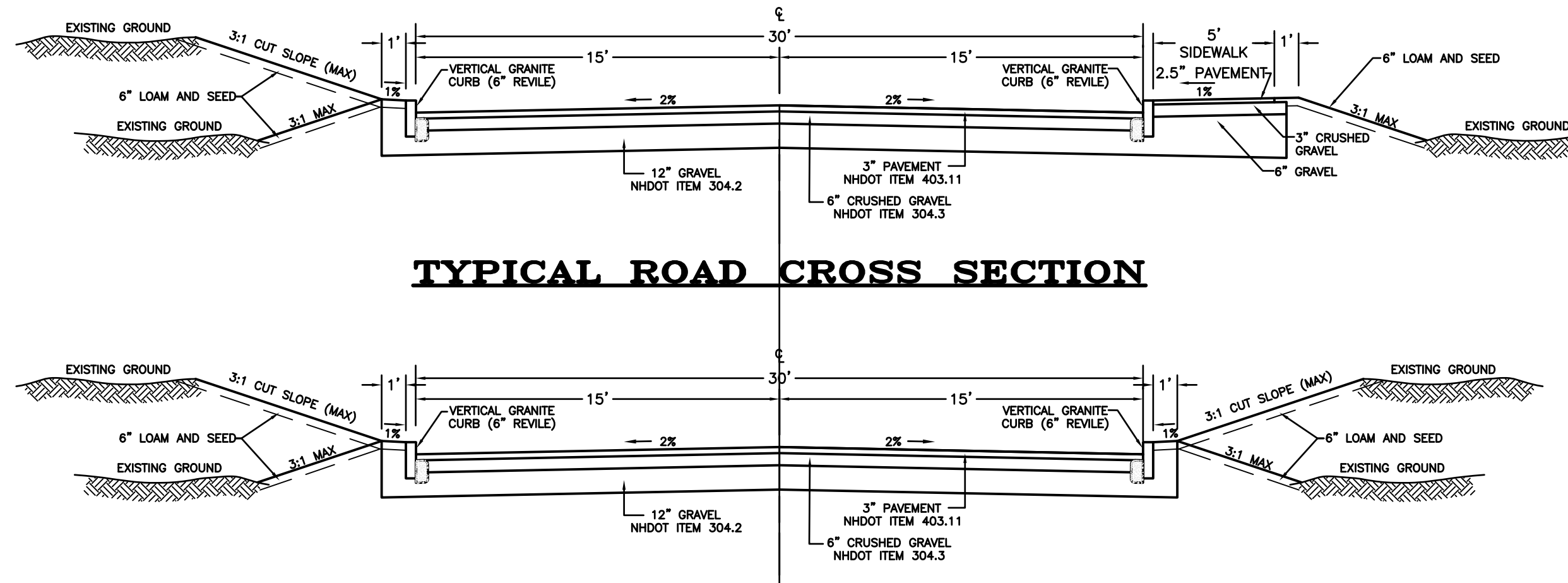
CURB TIP-DOWN PLAN & PROFILE DETAIL AT INTERSECTION OF INNOVATION DRIVE AND NEW ROAD

NOT TO SCALE



PAVED SIDEWALK WITH GRANITE CURB DETAIL

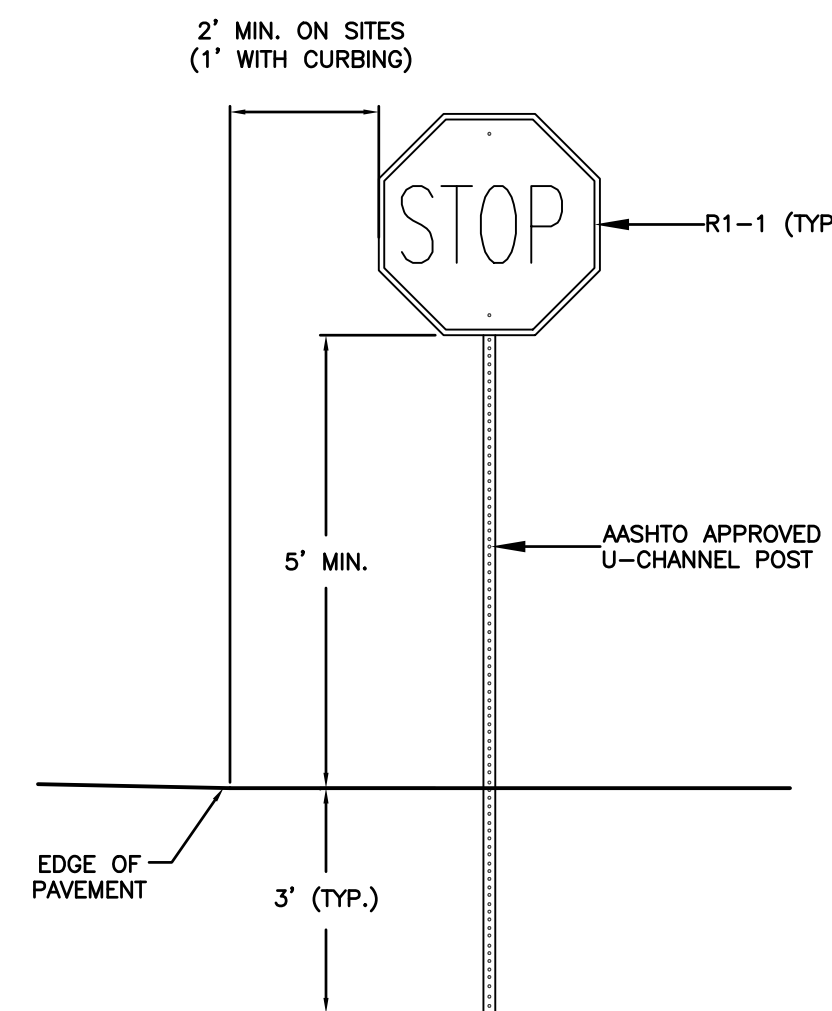
NOT TO SCALE



TYPICAL ROAD CROSS SECTION

- 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 TURN AROUND CROSS SECTION



- 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

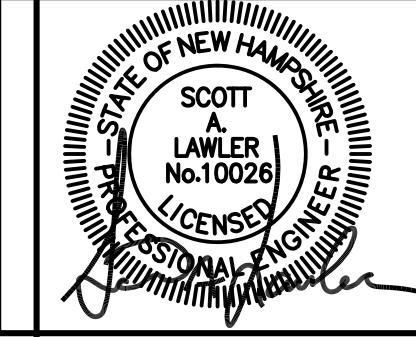
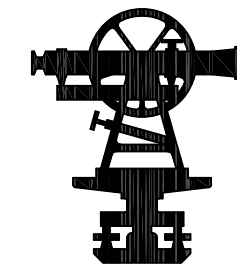
NOT TO SCALE

DETECTABLE WARNING PAVER DETAIL

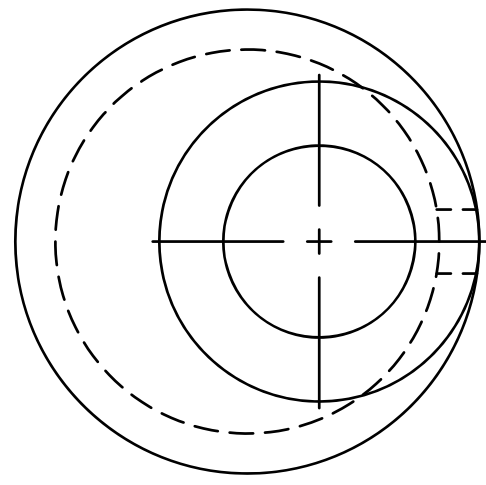
NOT TO SCALE

- 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 MEASURE 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.

ROAD DETAILS
NH ROUTE 108
ROCHESTER HILL RD
INNOVATION DRIVE
ROCHESTER, NH
PREPARED FOR:
CITY OF ROCHESTER
APRIL 2020



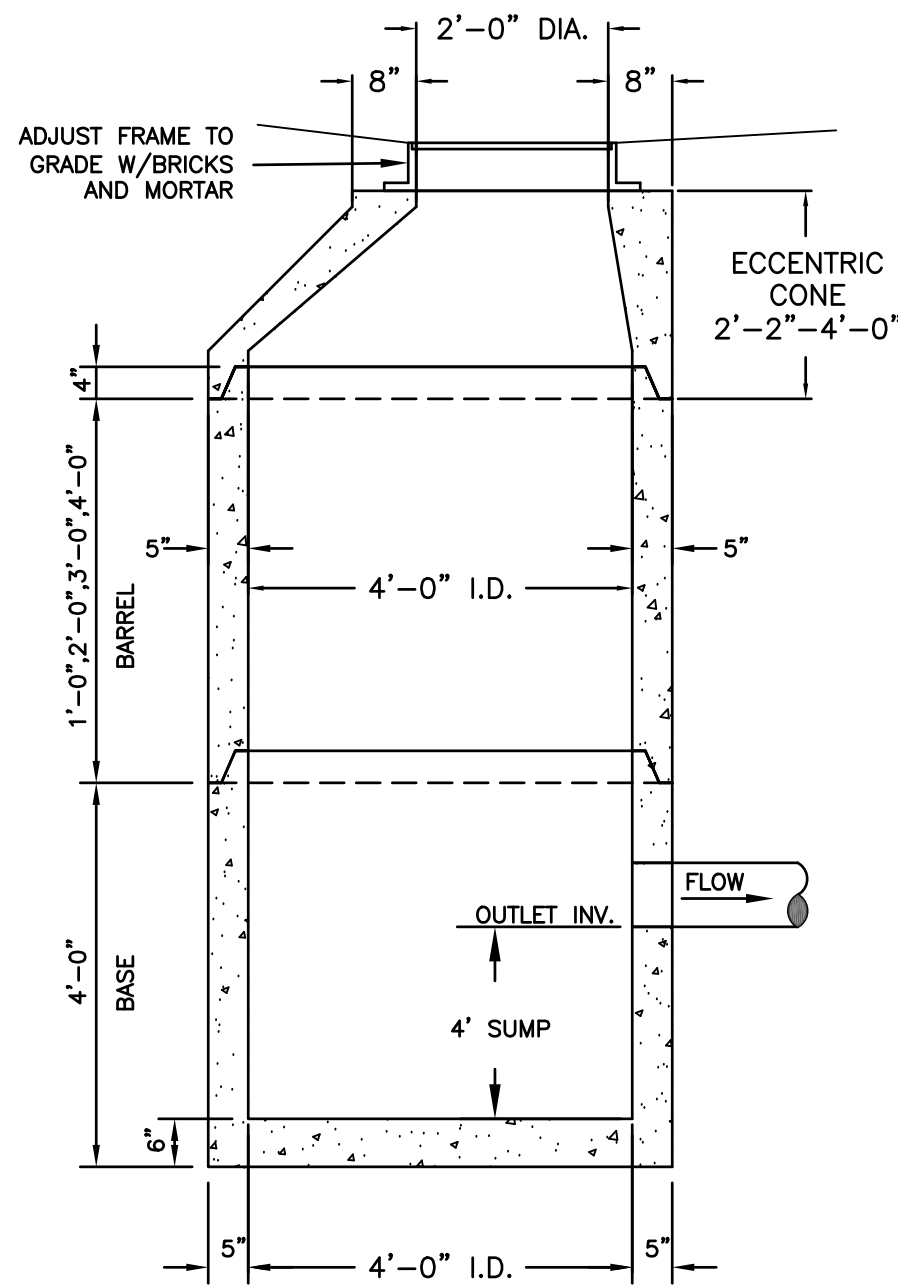
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PLAN VIEW

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

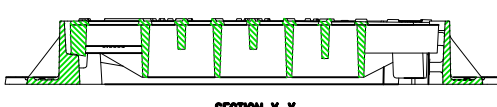
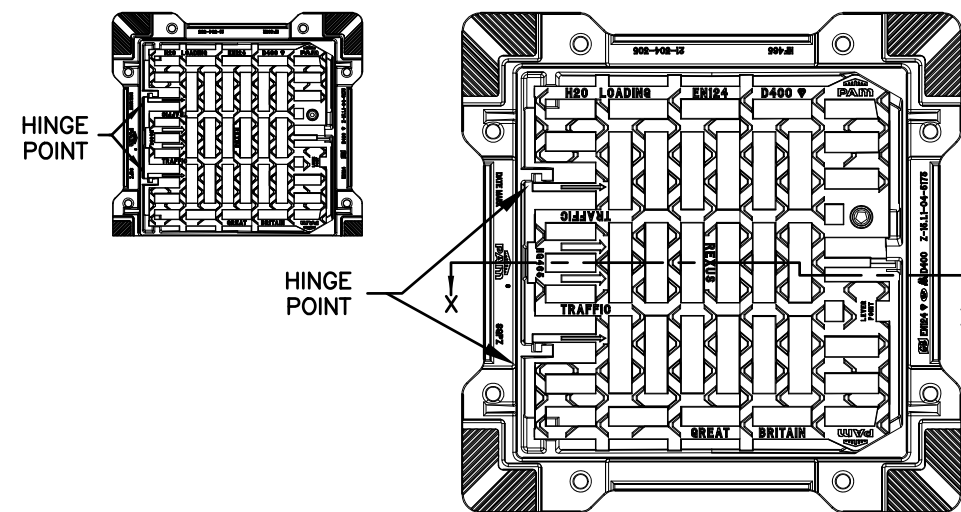
- NOTES:
1. CONCRETE: 4,000 PSI AFTER 28 DAYS.
 2. REINFORCING: SHALL BE PROVIDED FOR H-20 LOADING.
 3. SHIPLAP JOINTS SEALED WITH 1 STRIP OF BUTYL RUBBER SEALANT.
 4. PIPE OPENINGS CAST IN AS REQUIRED.
 5. RISER HEIGHT VARIES 1', 2', 3' OR 4' TO REACH DESIRED DEPTH.
 6. PIPE CONNECTIONS SHALL BE MORTARED.
 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

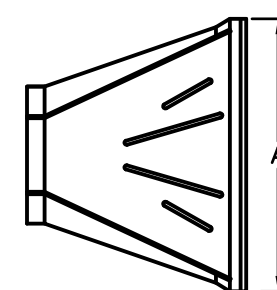
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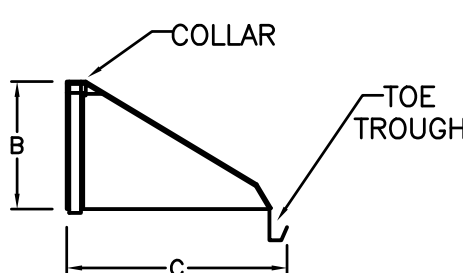
SECTION X-X

24" REXUS DI CB F & GRATE 62114 CB3R

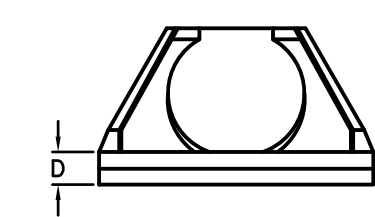
NOT TO SCALE



TOP VIEW



SIDE VIEW



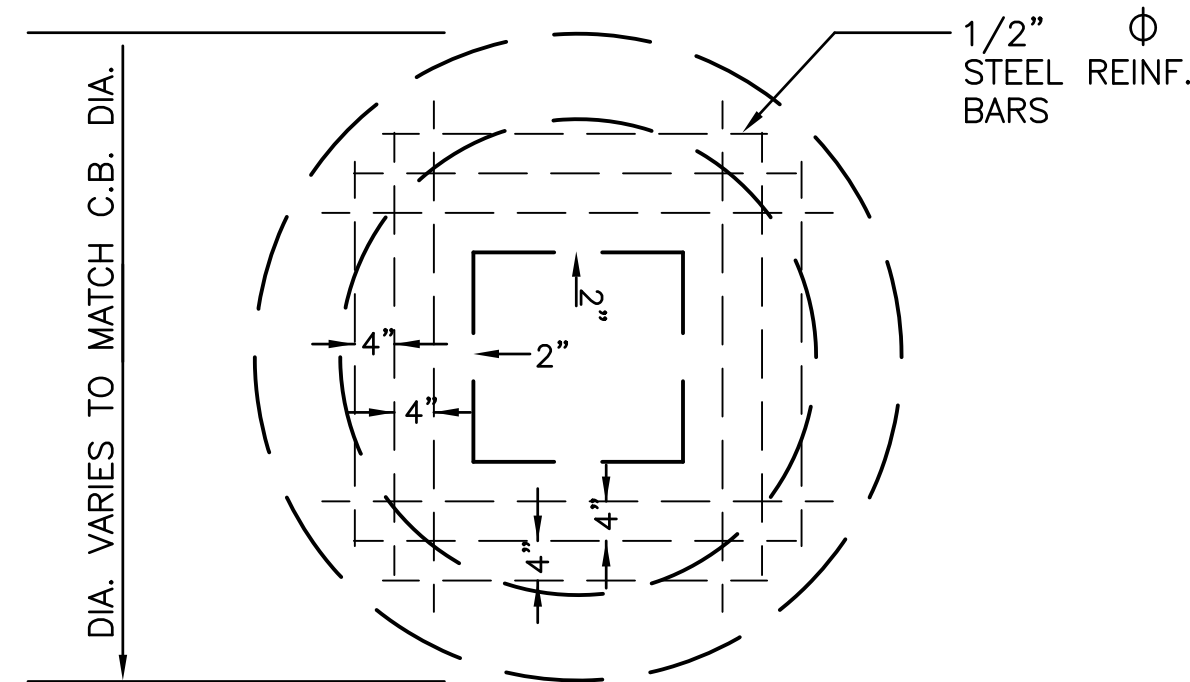
FRONT VIEW

FLARED END SECTION DETAIL

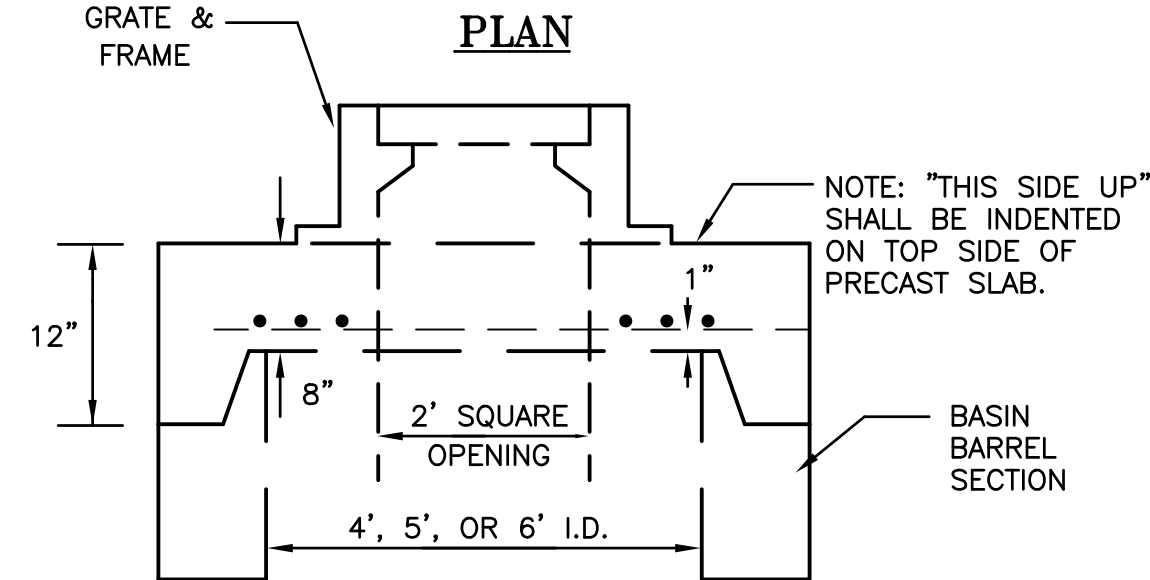
NOT TO SCALE

FILE NO. 104
PLAN NO. C-3012
DWG. NO. 19289 SP-1
F.B. NO.

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



PLAN

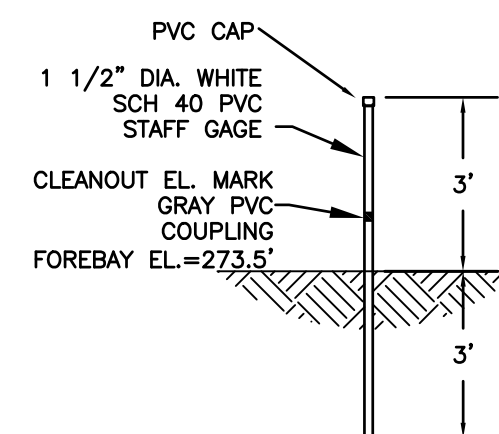


ELEVATION

- 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 CASTED 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



SEDIMENT FOREBAY GAUGE DETAIL

NOT TO SCALE

- NOTES:
1. STAFF GAGE TO BE SCHEDULE 40 WHITE PVC DRIVEN OR PLACED IN GROUND A MINIMUM 3'-FT.
 2. CLEANOUT MARK ON STAFF TO BE GRAY PVC COUPLING SET 6-INCHES FROM BOTTOM OF BASIN.

INSTALLATION NOTES:

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

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

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

McRIP MANUFACTURING
16 MESERVE ROAD
DURHAM, NH 03824
PHONE: (603) 868-5176
FAX: (603) 868-2074
E-MAIL: info@trenchdam.com

SCHIEB DRAINAGE PRODUCTS
203 SOUTH MONROE STREET
OREGON, MO 64473
PHONE: (660)-446-2343

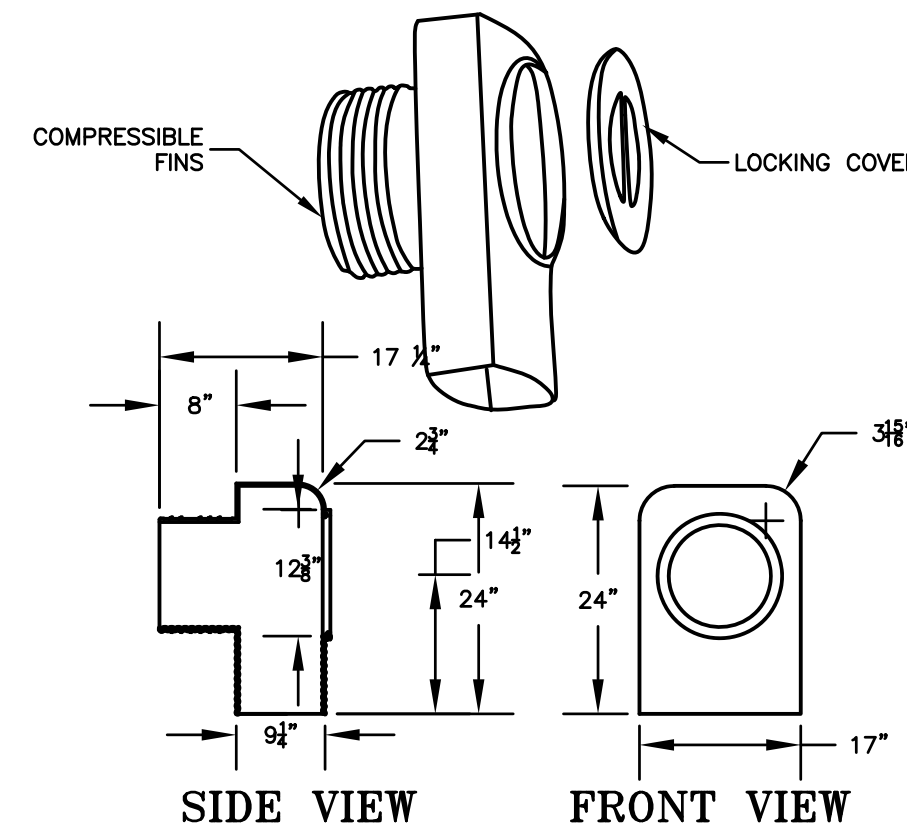
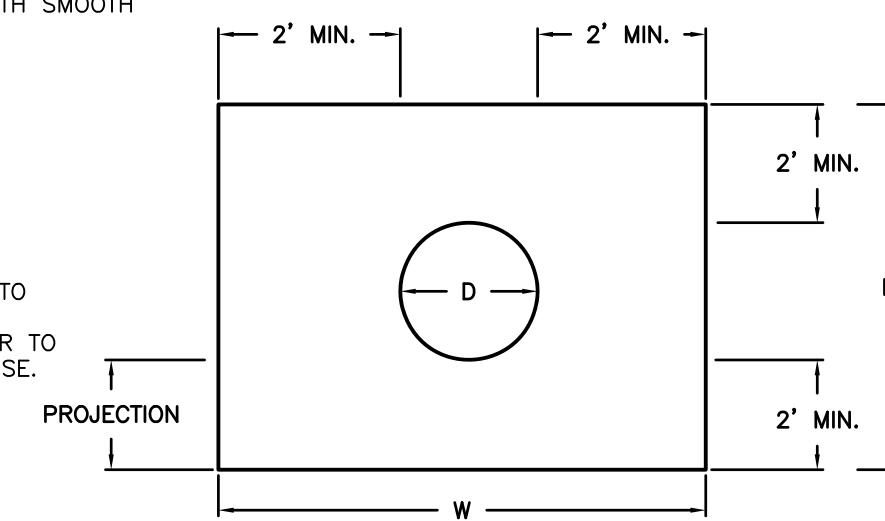
2. IT IS ALSO SUGGESTED THAT LOCAL SUPPLIERS BE CONTACTED TO ENQUIRE ABOUT SUITABLE ANTI-SEEP COLLAR PRODUCTS. IF A POSSIBLE ALTERNATIVE IS FOUND CONTACT THE DESIGN ENGINEER TO ENSURE ITS APPROPRIATENESS AND TO GET APPROVAL FOR ITS USE.

COLLAR DIMENSION TABLE

D	W	H
12	10'	6'
18	10.25'	6'
24	12'	7.5'
30	12'	7.5'

ANTI-SEEP COLLAR DETAIL

NOT TO SCALE



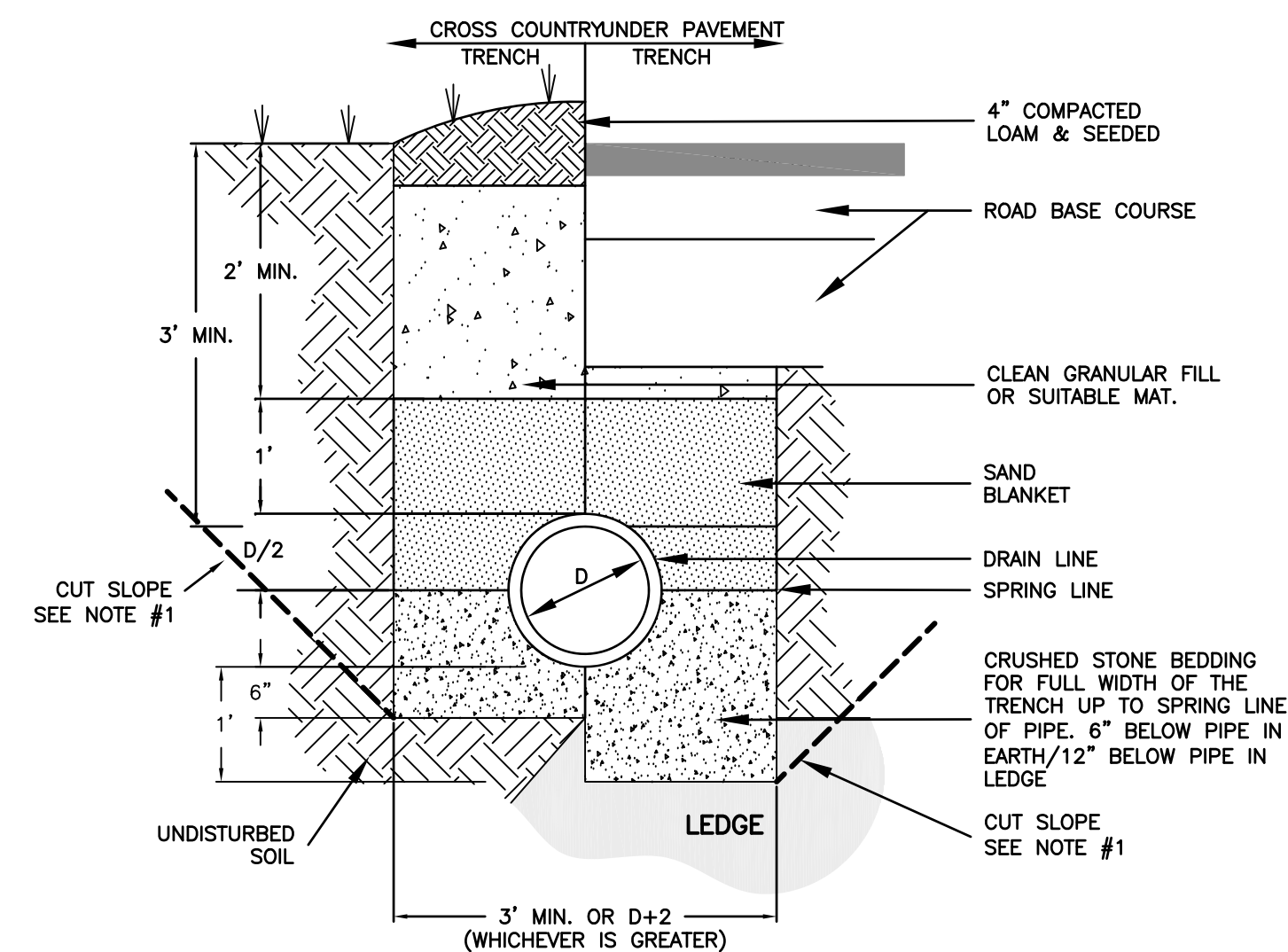
SIDE VIEW

FRONT VIEW

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

ELIMINATOR CATCH BASIN OIL AND DEBRIS TRAP DETAIL

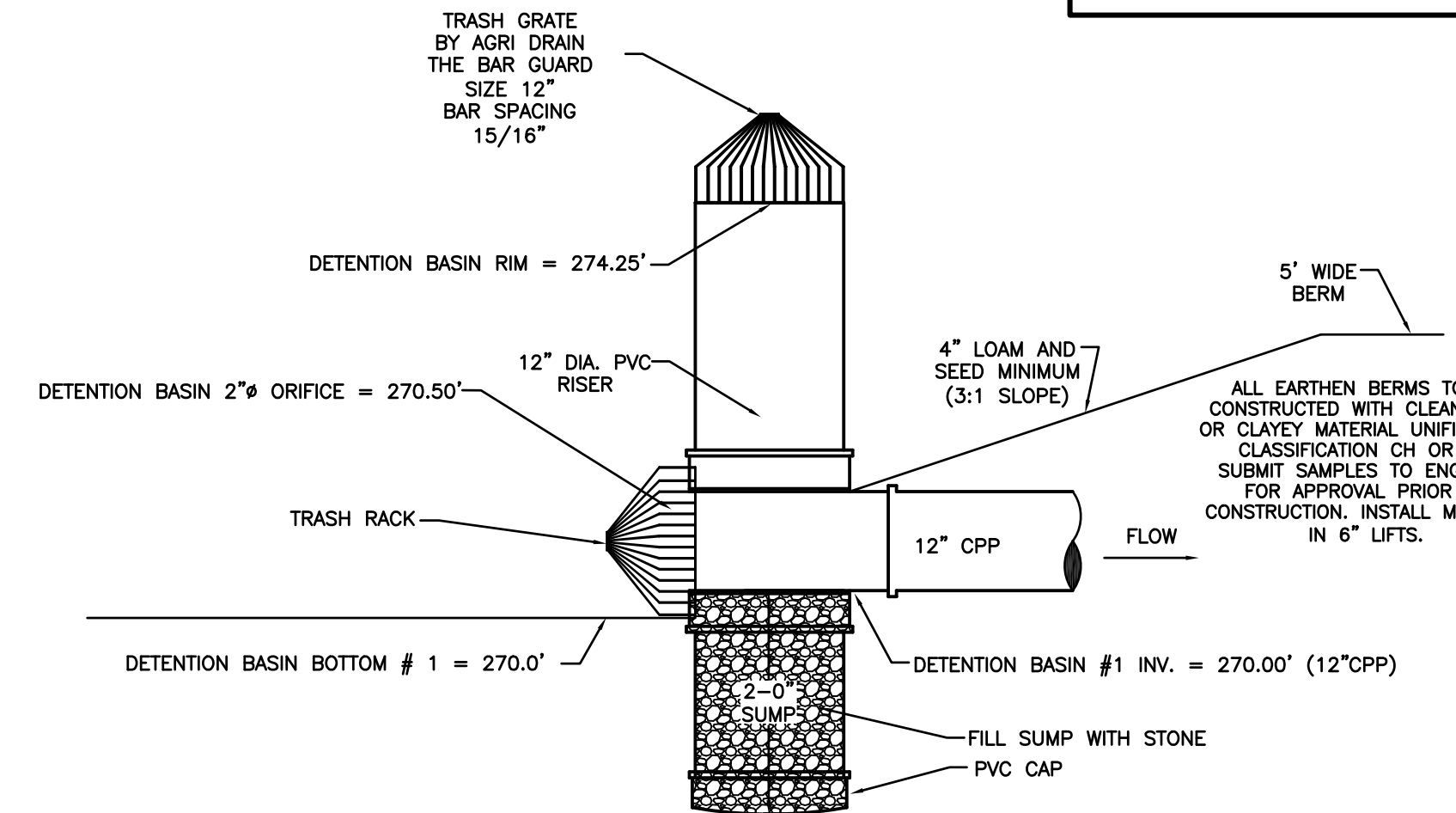
NOT TO SCALE



- 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.

DRAINAGE PIPE TRENCH INSTALLATION DETAIL

NOT TO SCALE



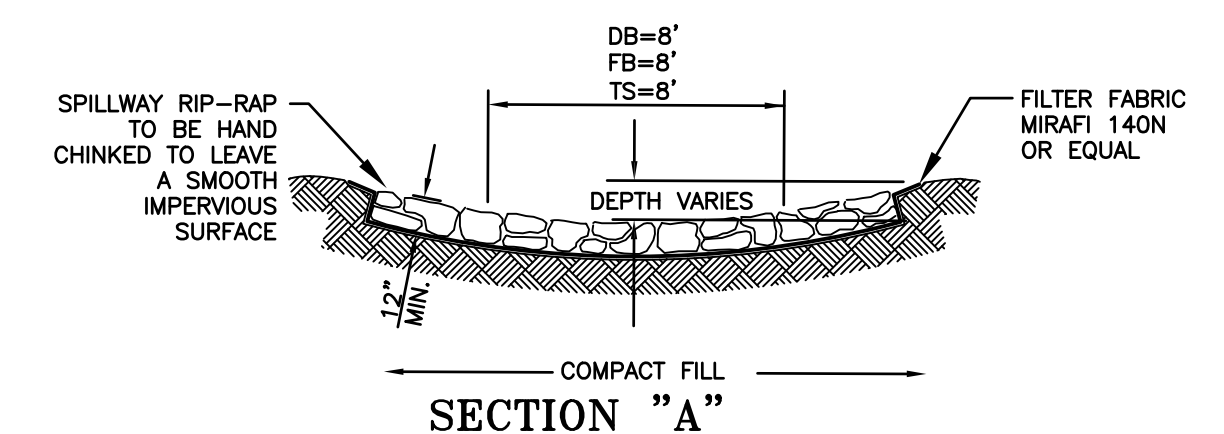
DETENTION BASIN OUTLET STRUCTURE DETAIL

NOT TO SCALE

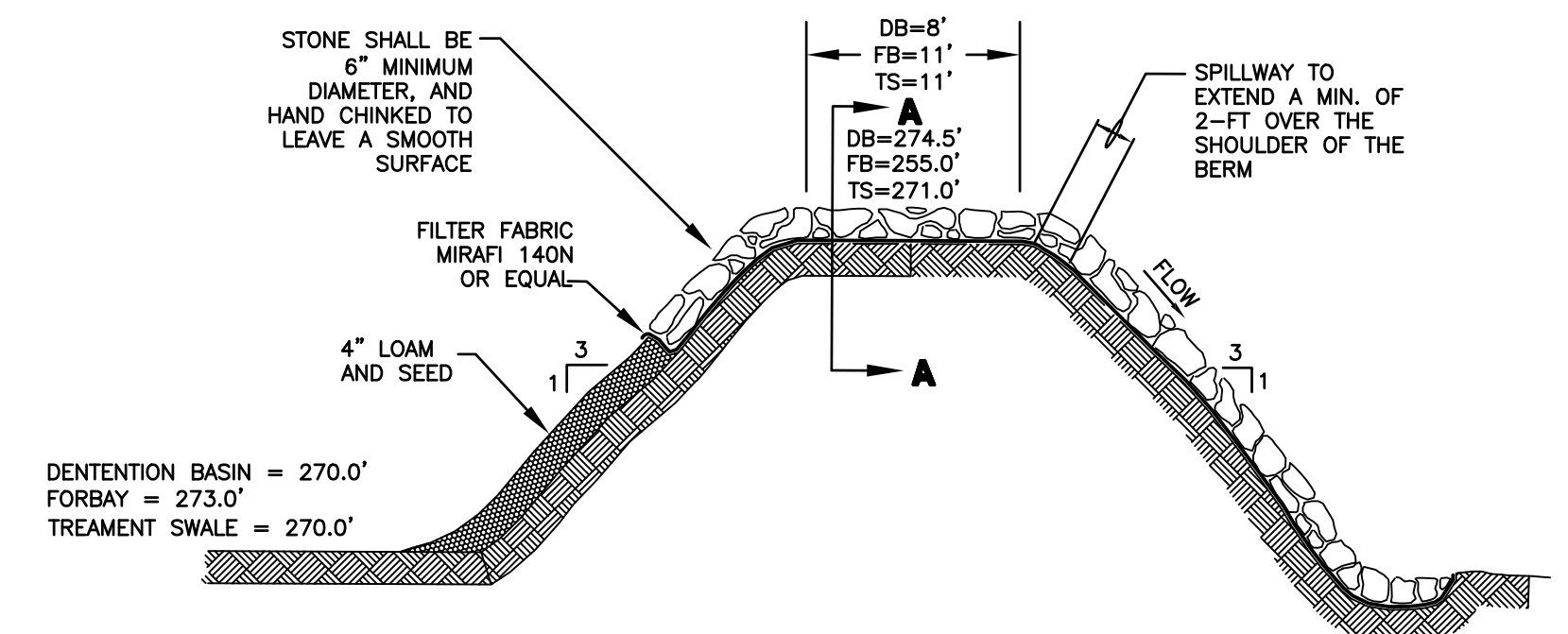
- SPECIFICATIONS:
1. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE DETENTION BASIN.
 2. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE DETENTION BASIN.
 3. CONSTRUCT THE DETENTION BASIN TO THE GRADES DEPICTED ON THE PLAN AND CROSS-SECTION.
 4. LOAM AND SEED THE SLOPES AND BOTTOM OF THE DETENTION BASIN WITH NEW ENGLAND WETLAND MIX 2.75LB
 5. DO NOT PLACE DETENTION SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

MAINTENANCE REQUIREMENTS:

1. INSPECT DETENTION SURFACE BI-ANNUALLY. ONCE IN THE SPRING PRIOR TO MAY 15 AND ONCE IN THE FALL PRIOR TO OCTOBER 15.
2. INSPECT DETENTION SURFACE AFTER ANY RAINFALL EVENT OF 2.5-INCHES IN A 24-HOUR PERIOD OR GREATER.
3. REMOVE AND DISPOSE OF ACCUMULATED SEDIMENT BASED ON INSPECTION. REPAIR AREA OF REMOVAL AS NECESSARY TO RESTORE DETENTION CAPACITY.
4. PERFORM MAINTENANCE AND REHABILITATION BASED ON INSPECTIONS.
5. REMOVE DEBRIS (IF ANY) FROM DETENTION BASIN INLET BASED ON INSPECTION.
6. CONDUCT PERIODIC MOWING OF THE DETENTION BASIN SLOPES AND EMBANKMENTS (MINIMUM TWICE A YEAR) TO ELIMINATE WOODY GROWTH FROM THE EMBANKMENTS AND BOTTOM. MOWING THE DETENTION BASIN EMBANKMENTS WHEN MOWING THE REST OF THE SITE IS RECOMMENDED.
7. IF THE DETENTION SYSTEM DOES NOT DRAIN WITHIN 72-HOURS FOLLOWING A RAINFALL EVENT, THEN A QUALIFIED PROFESSIONAL (I.E. PROFESSIONAL ENGINEER, CERTIFIED SOILS SCIENTIST, ETC.) SHOULD ASSESS THE CONDITION OF THE FACILITY TO DETERMINE MEASURES REQUIRED TO RESTORE DETENTION FUNCTION, INCLUDING BUT NOT LIMITED TO REMOVAL OF ACCUMULATED SEDIMENTS OR RECONSTRUCTION OF THE DETENTION SURFACE.



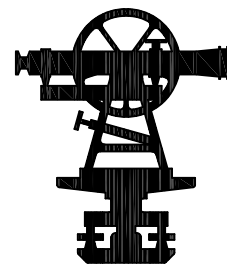
SECTION "A"



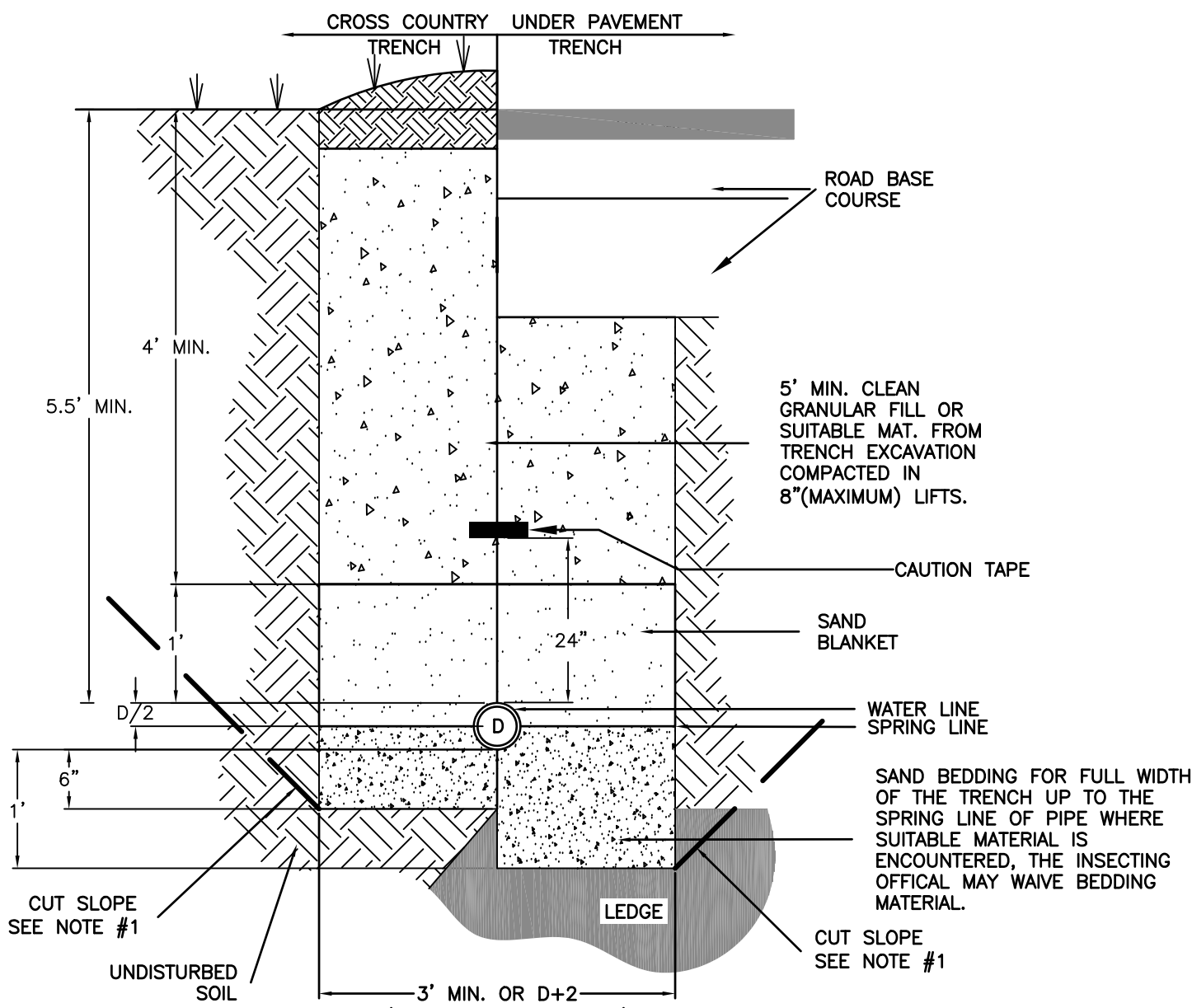
SPILLWAY DETAIL

NOT TO SCALE

DRAINAGE DETIALS
NH ROUTE 108
ROCHESTER HILL RD
INNOVATION DRIVE
ROCHESTER, NH
PREPARED FOR:
CITY OF ROCHESTER
APRIL 2020



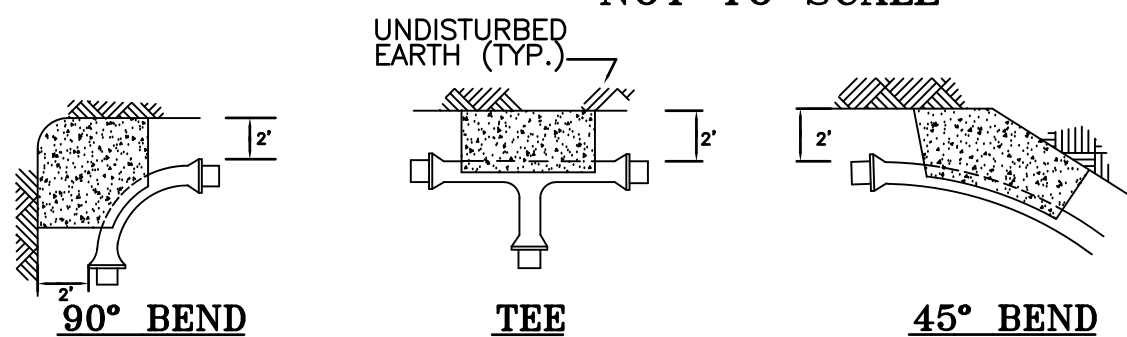
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 2. PIPE MATERIALS SHALL BE AS SPECIFIED ON THE DESIGN PLAN.
 3. SAND BLANKET MAY BE OMITTED FOR REINFORCED CONCRETE PIPE.

WATER PIPE TRENCH INSTALLATION DETAIL

NOT TO SCALE



MINIMUM THRUST BLOCK BEARING AREA REQ'D AGAINST UNDISTURBED MATERIAL (SQ. FT.)		90° BEND		TEE		PLUG		45° BEND		22 1/2" & SMALLER	
PIPE SIZE		90° BEND		TEE		PLUG		45° BEND		22 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

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

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

MECHANICAL RESTRAINED LENGTH SCHEDULE

NOT TO SCALE

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

FILE NO. 104
PLAN NO. C-3012
DWG. NO. 19289 SP-1
F.B. NO.

HYDRANTS ARE TO BE KENNEDY GUARDIAN MODEL #K81A W/6" MECHANICAL JOINT SHOE

W/BREAK FLANGE TO BE PROVIDED W/DRAIN-OPENING CLOCKWISE (RIGHT). HYDRANTS SHALL MEET OR EXCEED ALL REQ. OF A.W.W.A. STANDARD SPEC. C502

HYDRANTS TO BE OSHA RED W/WHITE FLOURESCENT BONNET & NOZZLE CAPS E/W 1-41/2" PUMPER & 2 21/2" NOZZLES

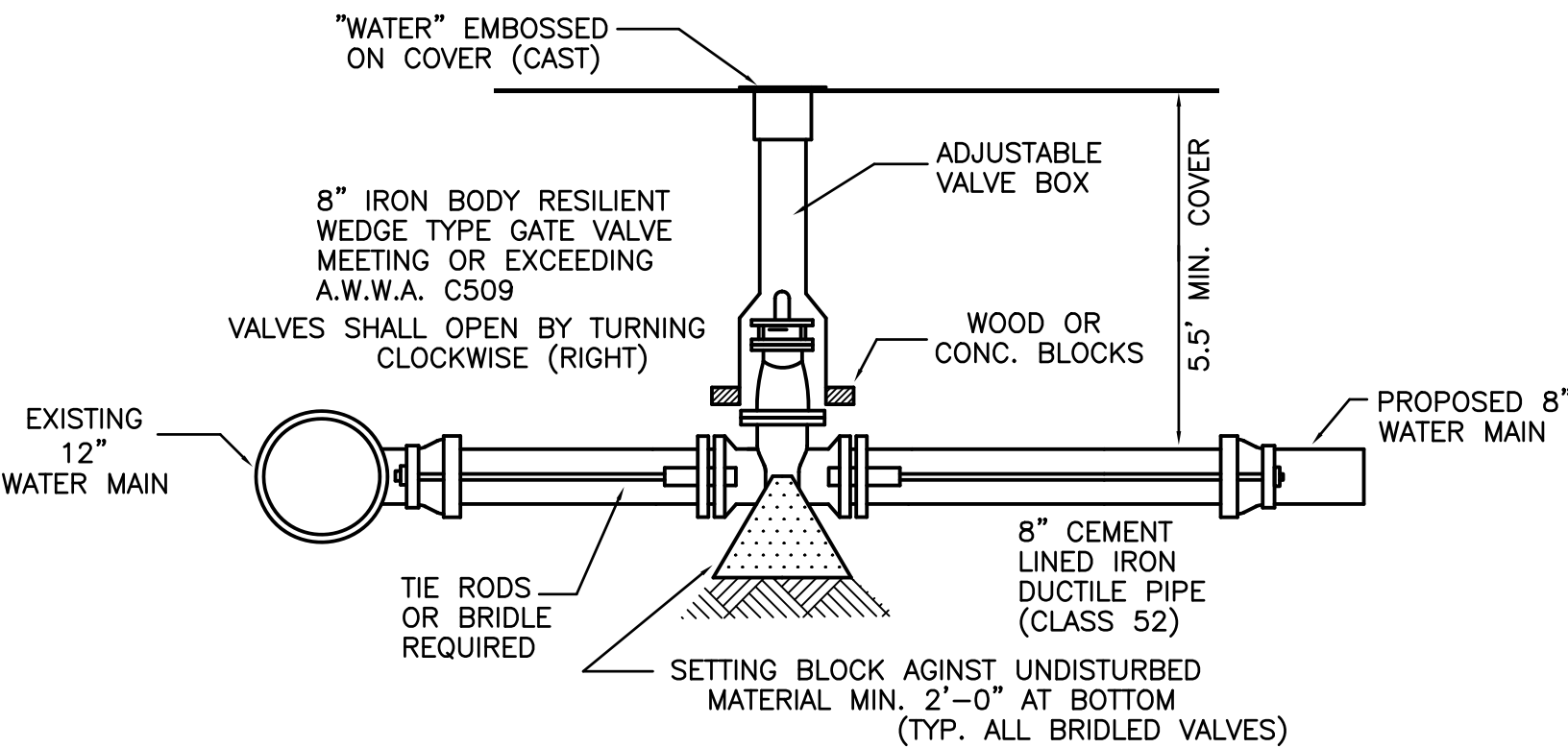
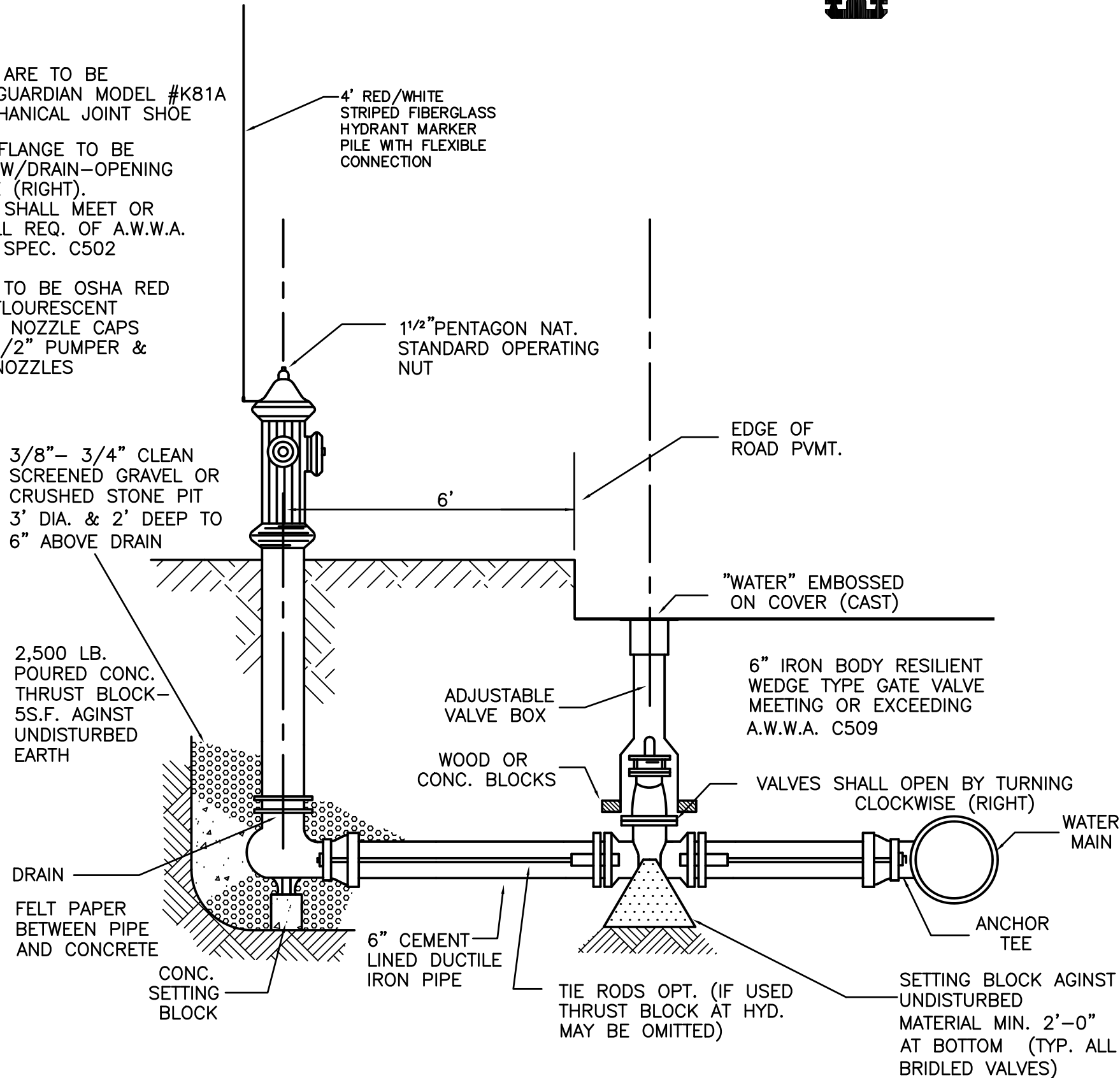
3/8"- 3/4" CLEAN SCREENED GRAVEL OR CRUSHED STONE PIT 3' DIA. & 2' DEEP TO 6" ABOVE DRAIN

2,500 LB. POURED CONC. THRUST BLOCK- 55.F. AGAINST UNDISTURBED EARTH

DRAIN
FELT PAPER BETWEEN PIPE AND CONCRETE
CONC. SETTING BLOCK

TYPICAL HYDRANT SECTION

NOT TO SCALE



WATER MAIN CONNECTION

NOT TO SCALE

GENERAL UTILITY NOTES

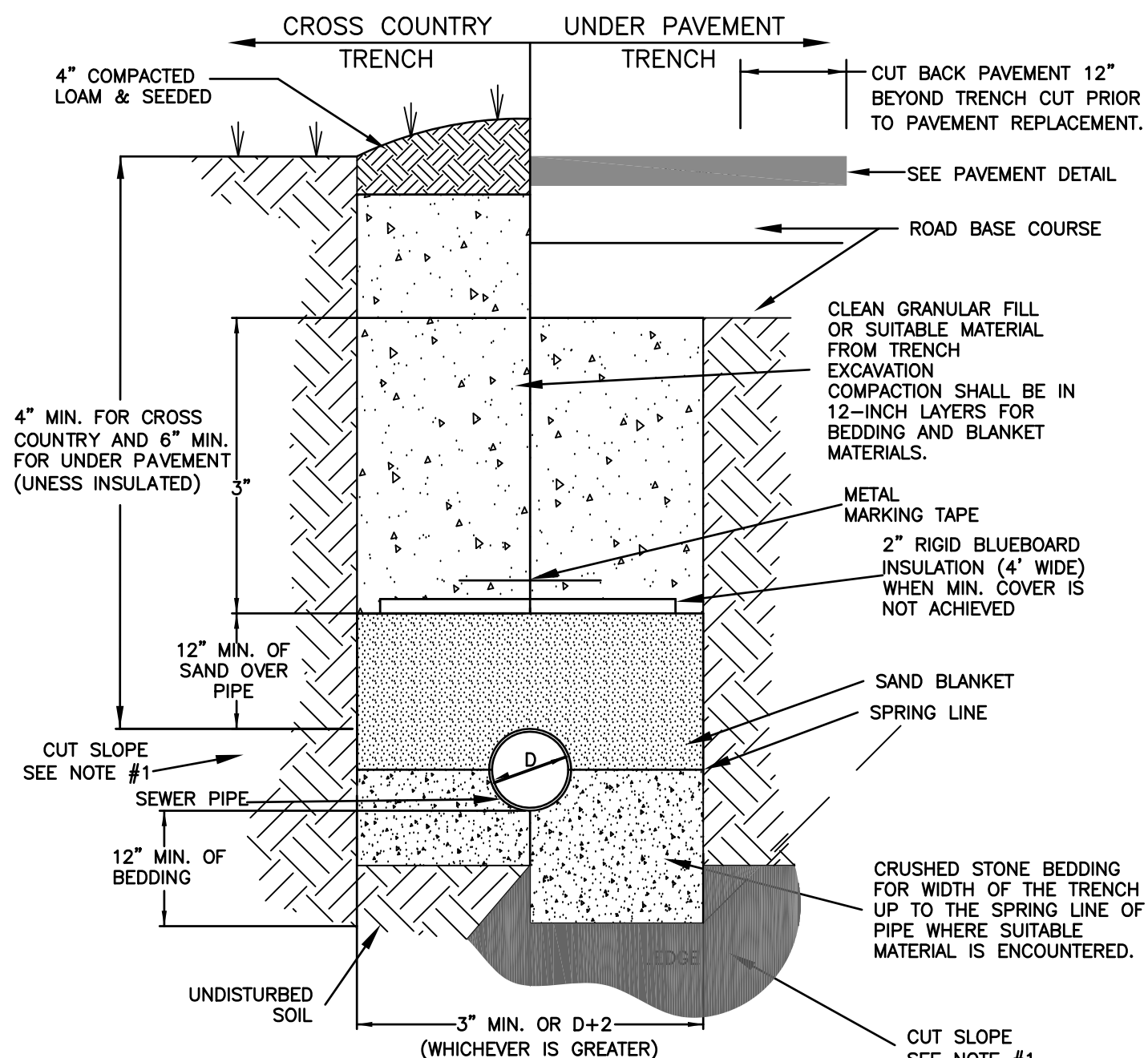
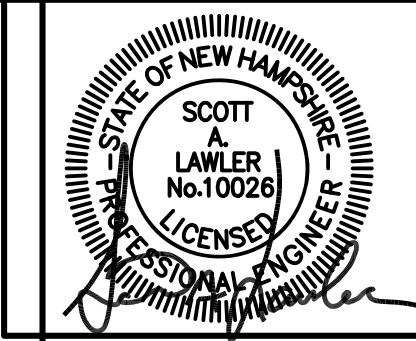
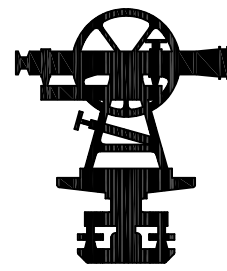
- 1.) CONTRACTOR SHALL NOTIFY DIG-SAFE (1-888 344-7233) 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
- 2.) ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE AS SHOWN. THE CONTRACTOR SHALL VERIFY THEIR LOCATIONS AND ELEVATIONS.
- 3.) THESE PLAN SHOWS ONLY THOSE FEATURES THAT WERE VISUALLY APPARENT ON THE DATE OF THE SURVEY. THE ABSENCE OF SUBSURFACE STRUCTURES, UTILITIES, ETC. FROM THIS PLAN, BUT IN EXISTENCE IS NOT INTENDED OR IMPLIED.
- 4.) ANY UTILITY POLES THAT NEED TO BE RELOCATED SHALL BE COORDINATED WITH EVERSOURCE OR VERIZON, WHOM EVER HAS CONTROL OVER THEM.
- 5.) PROPOSED UTILITIES ARE TO BE UNDERGROUND. COORDINATE LOCATION OF UNDERGROUND UTILITIES AND TRANSFORMER PADS WITH PSNH AND OTHER PERTINENT UTILITY COMPANIES.
- 6.) WATER AND SEWER LINES SHALL BE INSTALLED A MINIMUM OF 10'-FT APART HORIZONTALLY.
- 7.) 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.
- 8.) 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.
- 9.) **WATERLINE CONSTRUCTION:**
 - A.) 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.
 - B.) PROPOSED WATER GATE VALVES SHALL BE MANUFACTURED BY KENNEDY OF AMERICAN FLOW CONTROL, RESILIENT SEAT TYPE.
 - C.) ALL WATER LINES SHALL BE BURIED A MINIMUM OF 5.5'.
 - D.) IF 5' OF COVER IS NOT AVAILABLE WATER LINE SHALL BE INSULATED AS SHOWN IN THE "SHALLOW COVER TRENCH DETAIL FOR INSULATED WATER PIPE".
 - E.) ALL WATER FITTINGS SHALL BE CLASS 52.
 - F.) PROPOSED WATER GATE VALVE SHALL OPEN CLOCKWISE (RIGHT).
- 10.) WORK TO CONNECT INTO THE WATER OR SEWER MAINS REQUIRES A PERMIT FROM THE ROCHESTER PUBLIC WORKS DEPARTMENT. CONTRACTORS ARE TO BE PRE-QUALIFIED.

UTILITY DETAILS

NH ROUTE 108
ROCHESTER HILL RD
INNOVATION DRIVE
ROCHESTER, NH

PREPARED FOR:
CITY OF ROCHESTER

AS SHOWN AORIL 2020

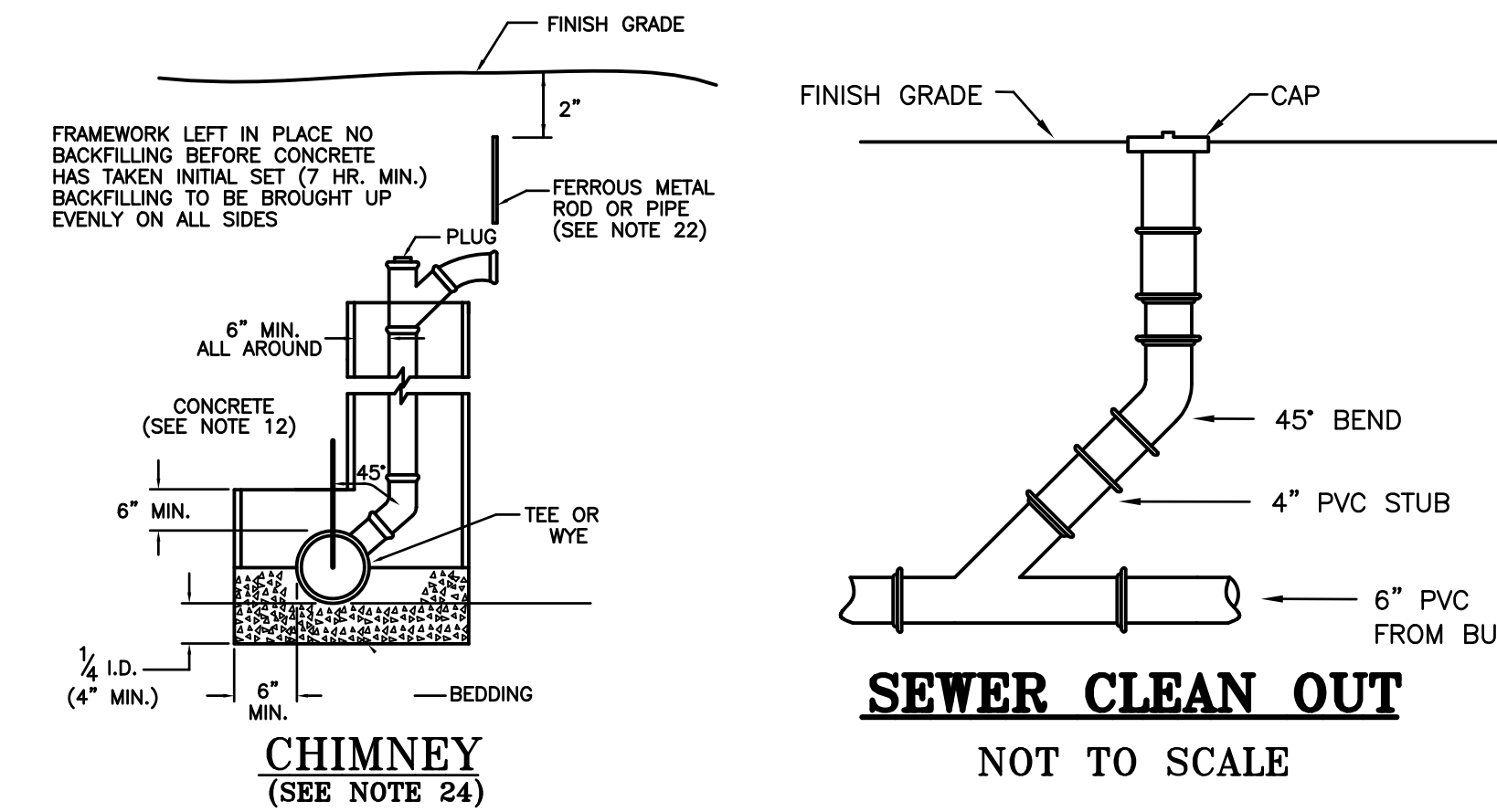


- NOTES:
1. PIPES MAY BE INSTALLED BY EXCAVATING AN OPEN TRENCH WITH SIDE SLOPES OF 1:1 MAXIMUM TO A DEPTH OF 4-FT. INSTALLATIONS DEEPER THAN 4-FT REQUIRE THE USE OF A TRENCH BOX.
 2. PIPE MATERIALS SHALL BE AS SPECIFIED ON THE DESIGN PLAN.
 3. SAND BLANKET MAY BE OMITTED FOR REINFORCED CONCRETE PIPE.
 4. WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, THE SHEETING SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN ONE FOOT ABOVE THE TOP OF THE PIPE AND AT LEAST 3 FEET BELOW FINISHED GRADE.
 5. THE PIPE SAND BLANKET MATERIAL SHALL BE GRADED SAND FREE FROM ORGANIC MATERIALS, GRADED SUCH THAT 100 PERCENT PASSES A 1/4-INCH SIEVE AND A MAXIMUM OF 15 PERCENT PASSES A #200 SIEVE.
 6. TRENCH BACKFILL MATERIAL IN ROADWAY LOCATIONS SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION, EXCLUDING:

- (1) DEBRIS;
- (2) PIECES OF PAVEMENT;
- (3) ORGANIC MATTER;
- (4) TOP SOIL;
- (5) WET OR SOFT MUCK;
- (6) PEAT OR CLAY;
- (7) EXCAVATED LEDGE MATERIAL;
- (8) ROCKS OVER 6 INCHES IN THE LARGEST DIMENSION; AND
- (9) ANY MATERIAL NOT APPROVED BY THE ENGINEER.

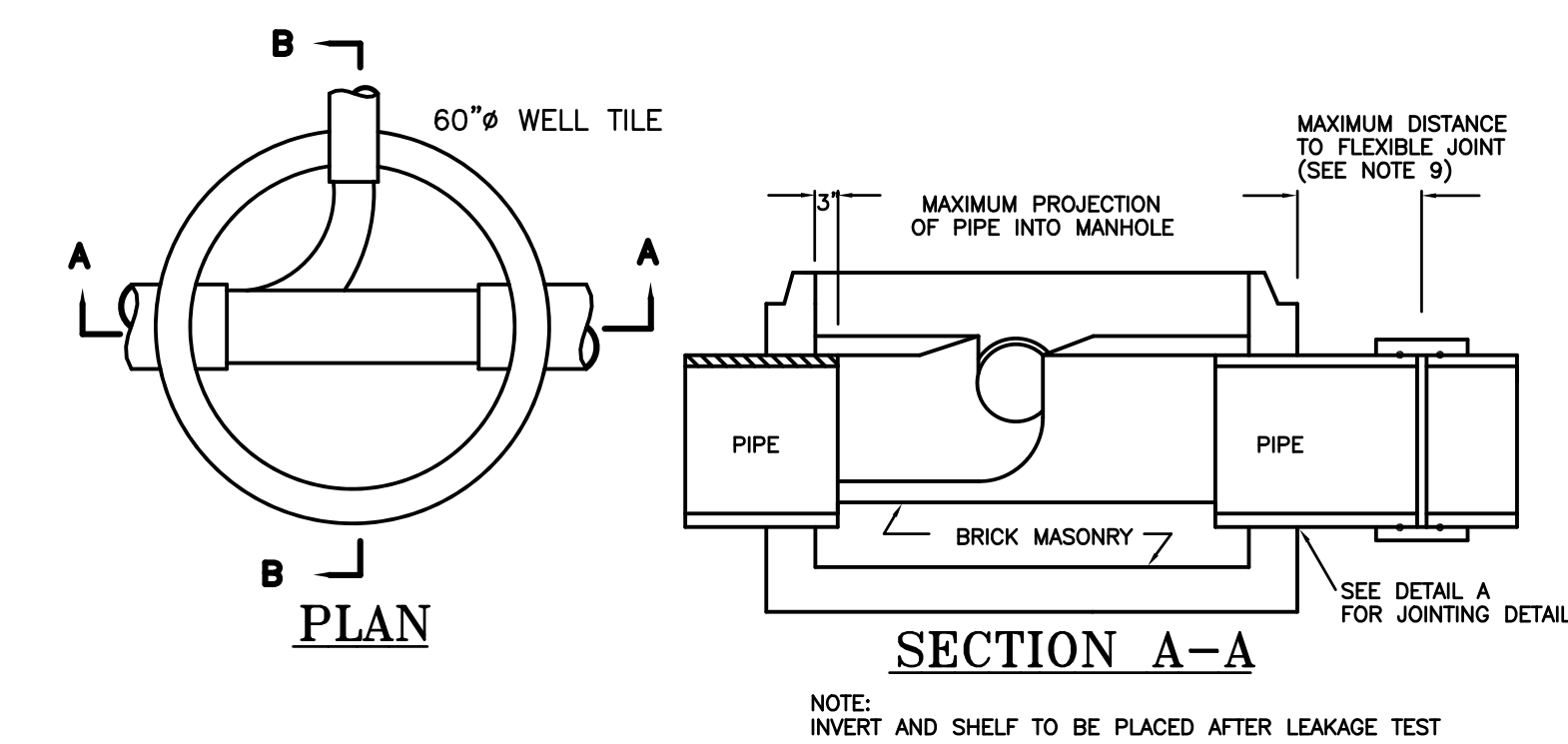
SEWER PIPE TRENCH INSTALLATION DETAIL

NOT TO SCALE



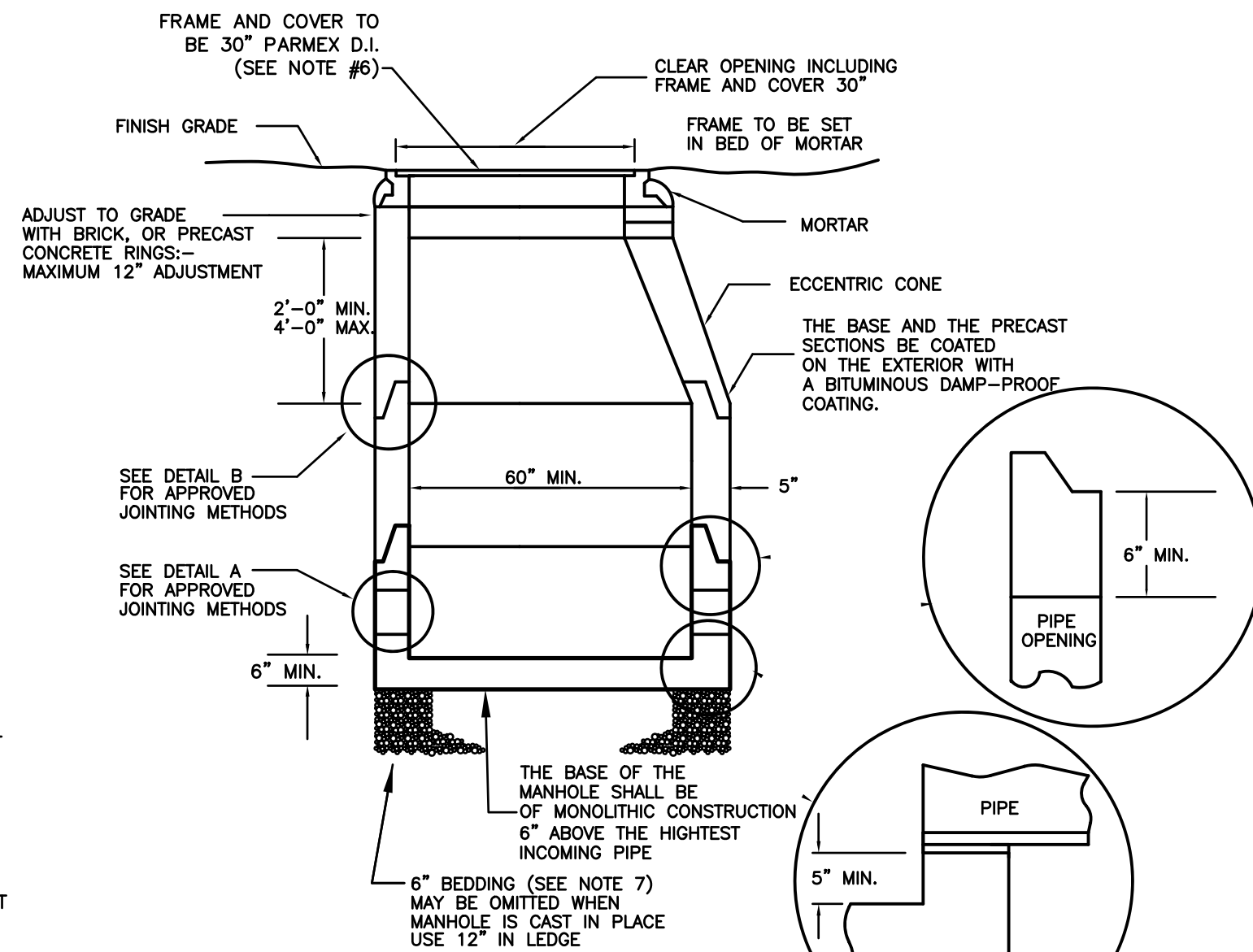
SEWER CLEAN OUT

NOT TO SCALE



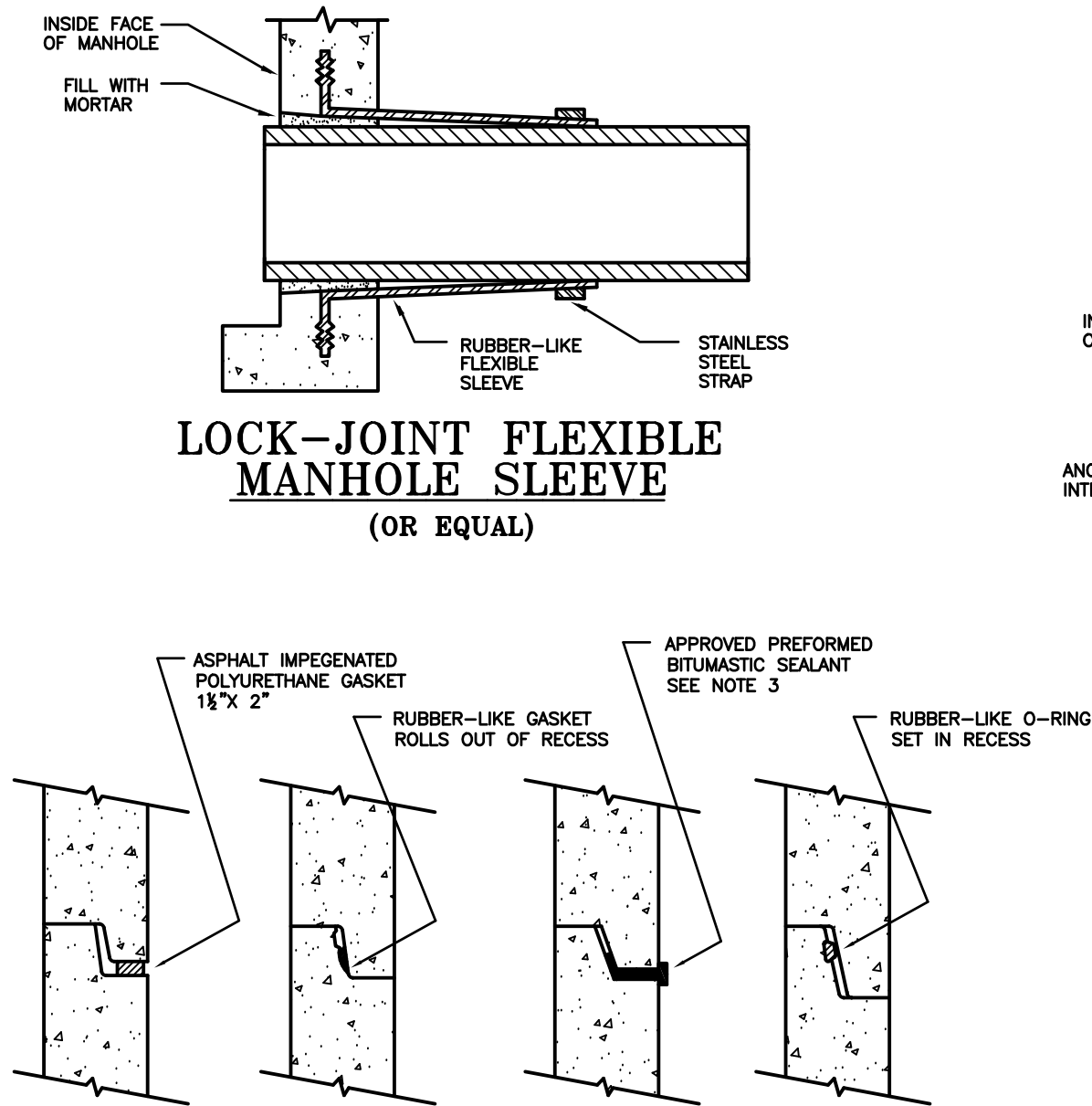
CHIMNEY

(SEE NOTE 24)



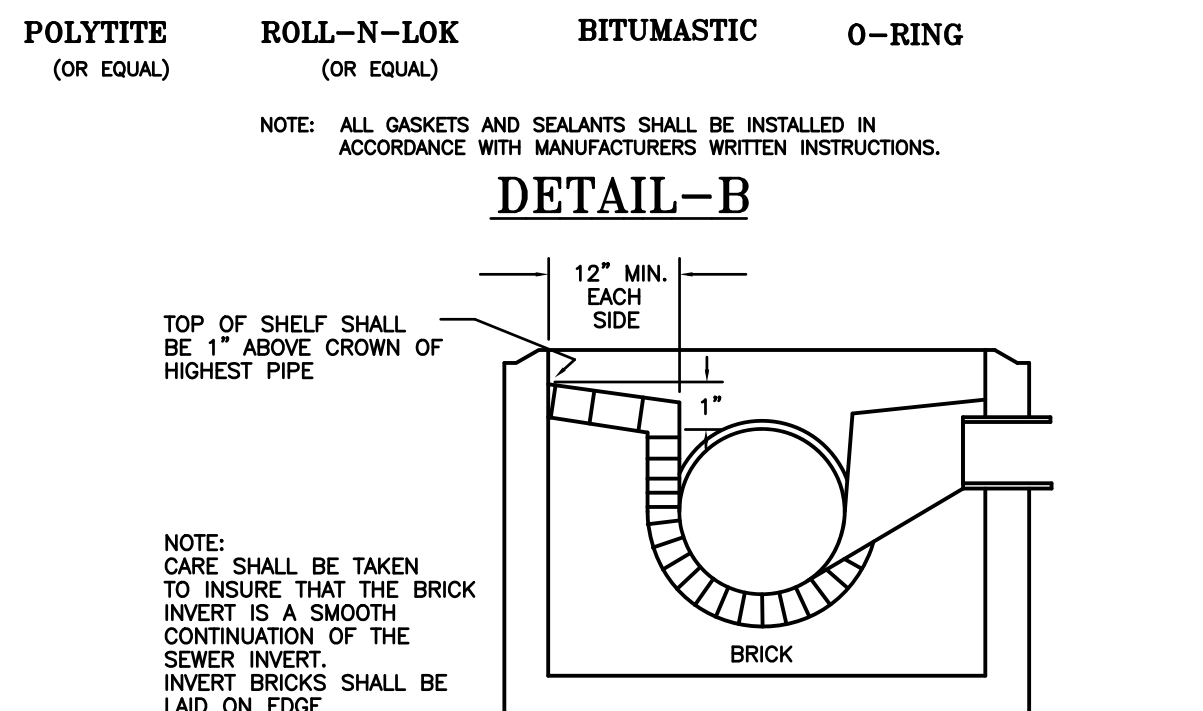
TYPICAL SECTION

NOT TO SCALE



LOCK-JOINT FLEXIBLE MANHOLE SLEEVE

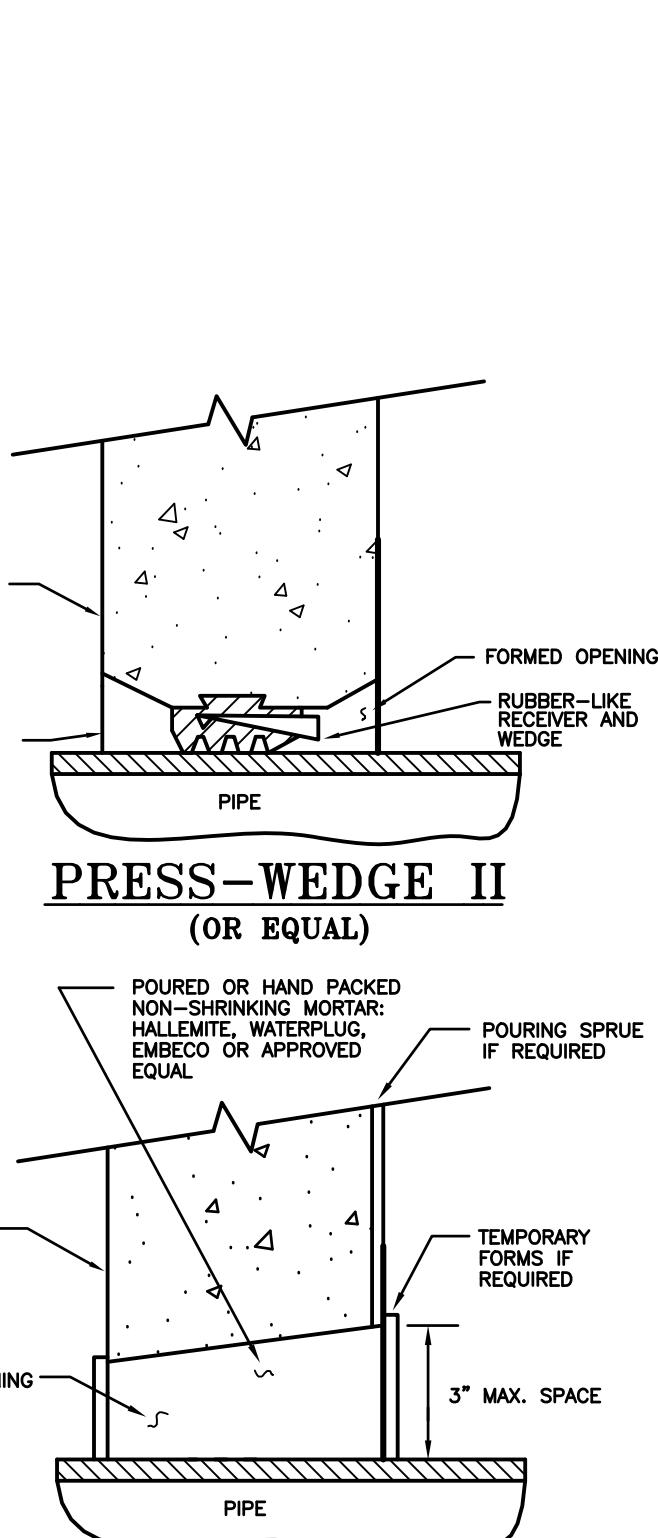
(OR EQUAL)



SECTION B-B

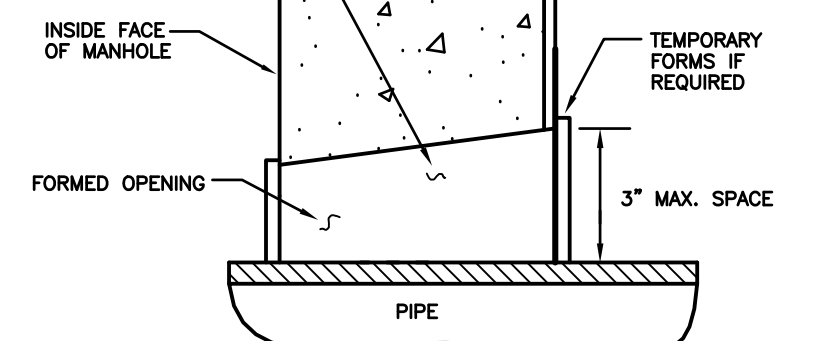
INVERT DETAILS

NOT TO SCALE



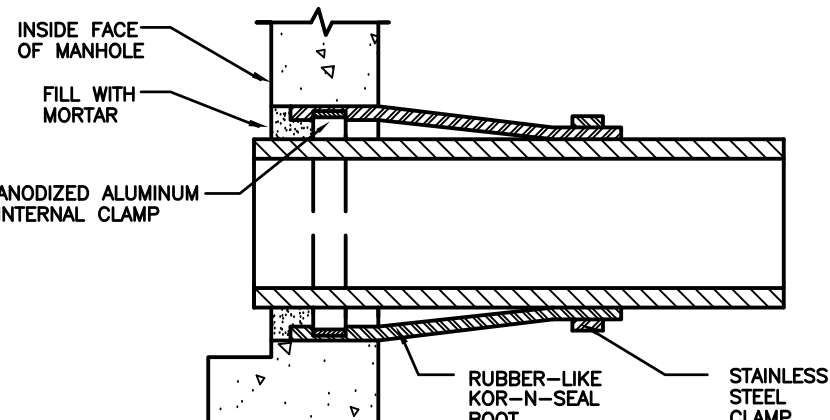
PRESS-WEDGE II

(OR EQUAL)



NON-SHRINKING MORTAR

(OR EQUAL)

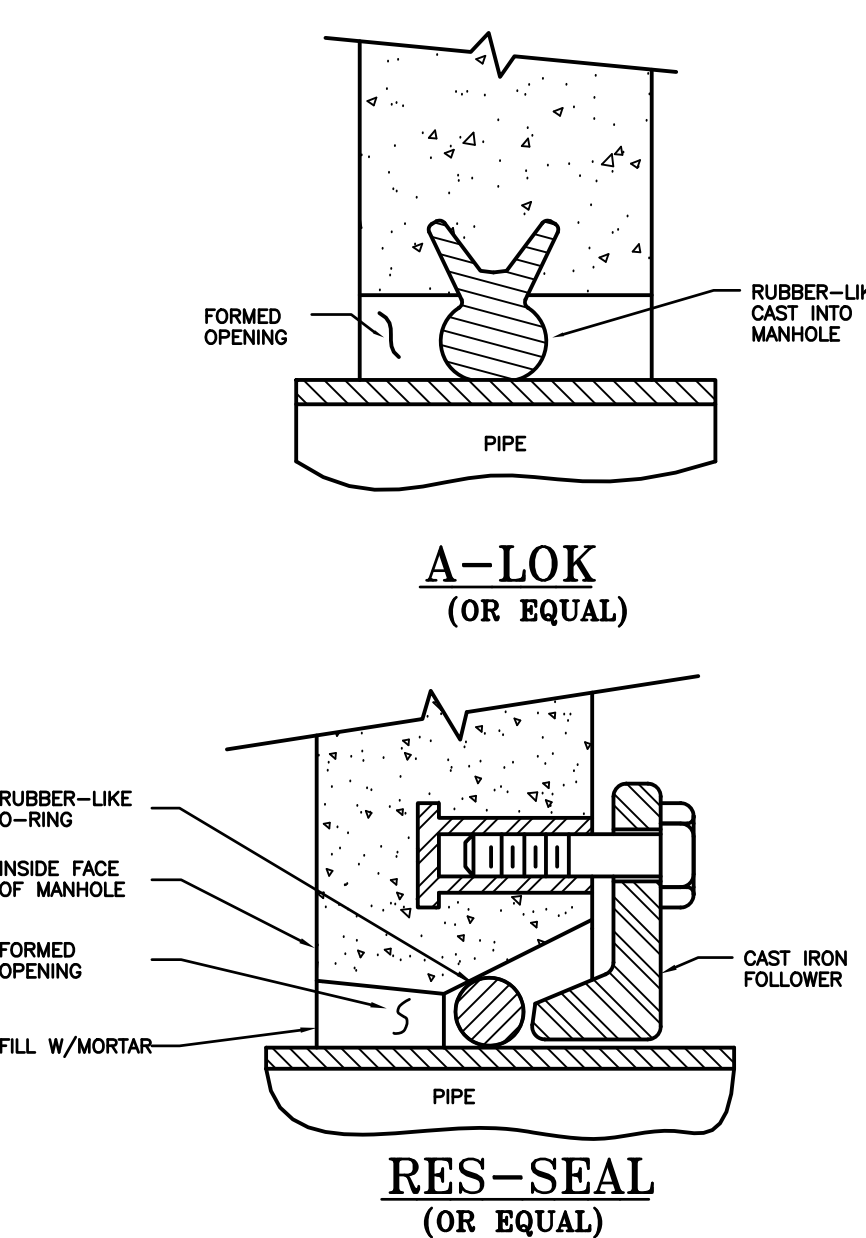


KOR-N-SEAL JOINT SLEEVE

(OR EQUAL)

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

DETAIL-A

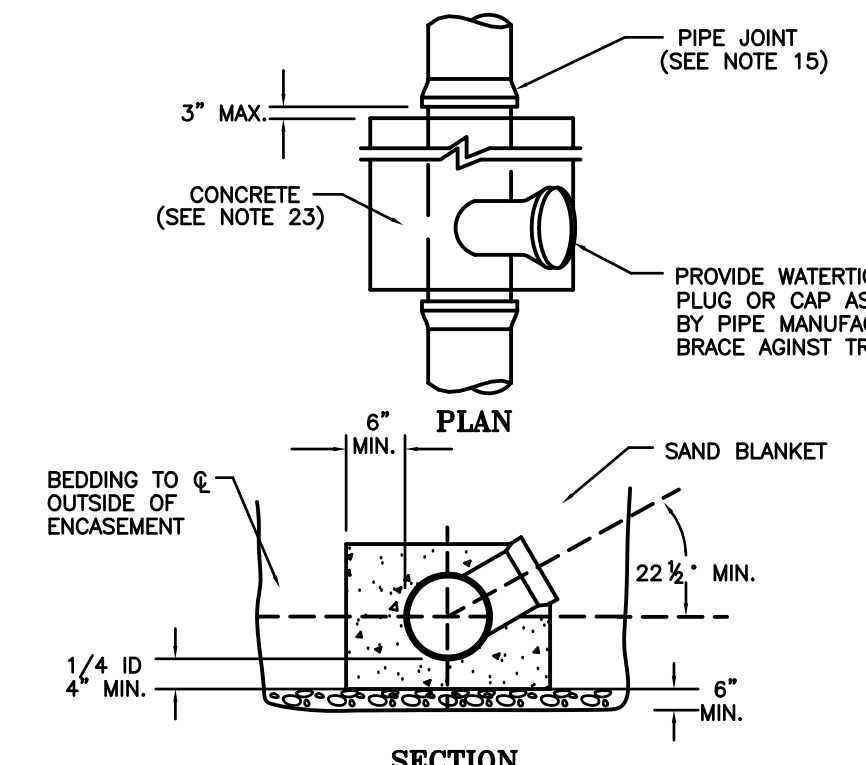


A-LOK

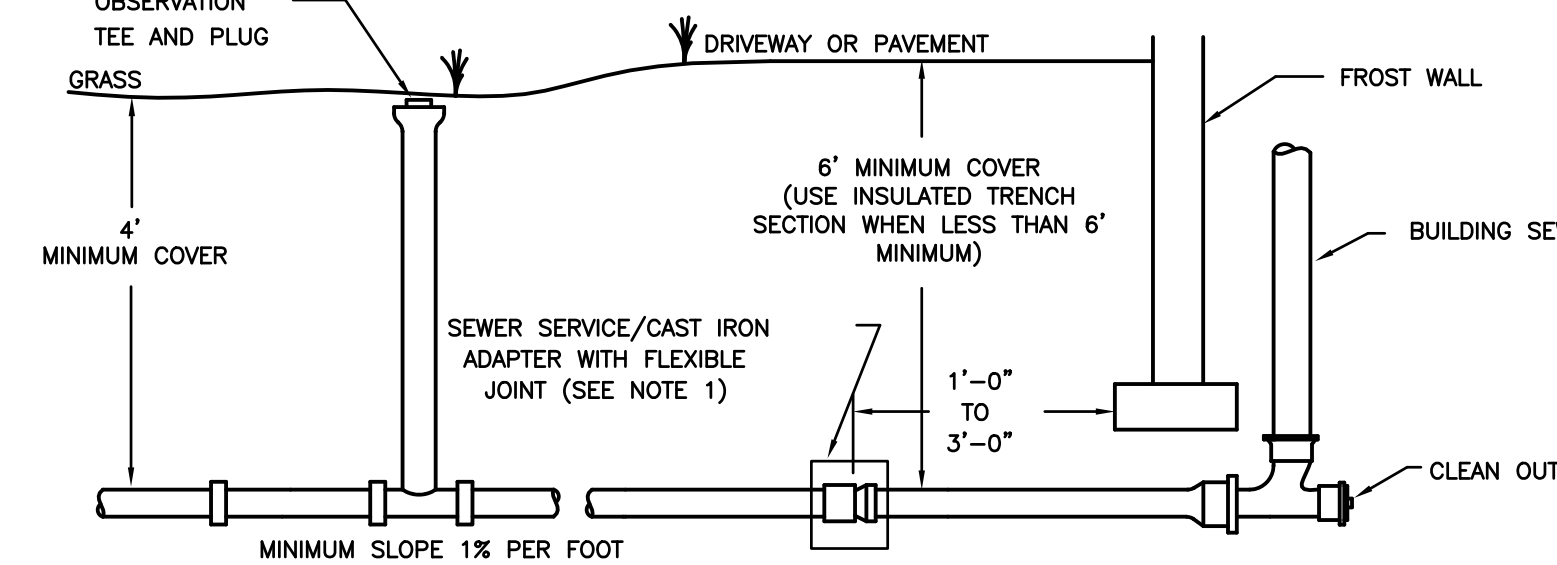
(OR EQUAL)

RES-SEAL

(OR EQUAL)



CONCRETE FULL ENCASEMENT



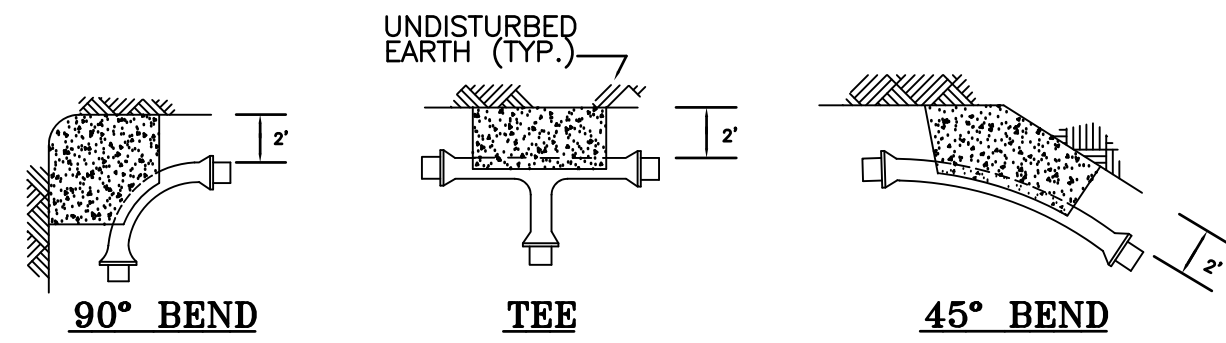
TYPICAL BUILDING SEWER SERVICE DETAIL

NOT TO SCALE

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

- NOTES:
1. IT IS INTENTION OF THE CITY OF ROCHESTER PUBLIC WORKS DEPARTMENT THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAK PROPERTIES 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 AN APPROVED MANHOLE. THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H-20 LOADING) WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.
 2. PRECAST CONCRETE BARRELS AND SECTIONS SHALL BE PRECAST REINFORCED CONCRETE, OR POURED IN PLACE REINFORCED CONCRETE. PRECAST CONCRETE BARRELS, 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.
 3. 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' MANDEL FOR ALL SANITARY SEWERS, IN ACCORDANCE WITH THE NHDES SEWER REGULATIONS AND THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS REQUIREMENTS.
 4. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW, AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY. BRICK MASONRY CONFORM WITH ASTM C32. INVERTS AND SHELVES SHALL NOT BE INSTALLED UNTIL AFTER SUCCESSFUL TESTING IS COMPLETED.
 5. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. A 3-INCH (MINIMUM HEIGHT) LETTER 'SEWER' FOR SEWERS OR 'DRAIN' FOR DRAINS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
 6. SEWER MANHOLE FRAME AND COVER: PAMREX 32" D.I. MANHOLE FRAME AND COVER SEWER - E.J. PRESCOTT PRODUCT# 82113-32-S. IMMEDIATELY FOLLOWING COMPLETION OF THE LEAKAGE TEST, THE FRAME AND COVER SHALL BE PLACED ON THE TOP OF THE MANHOLE OR SOME OTHER MEANS USED TO PREVENT ACCIDENTAL ENTRY BY UNAUTHORIZED PERSONS, CHILDREN, OR ANIMALS, UNTIL THE CONTRACTOR IS READY TO MAKE FINAL ADJUSTMENT TO GRADE.
 7. BEDDING: MIN. 6" OF 3/4" CRUSHED STONE (12" IN LEDGE) FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33: 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 BASE, MIN. 3/4" CRUSHED STONE SHALL BE USED.
 8. 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.
 9. FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES: RCP & CI PIPE - ALL SIZES - 48" AC & VC PIPE - UP THROUGH 12" DIA. - 18" SEE NOTE 9.A. AC & VC PIPE - LARGER THAN 12" DIA. - 36" DI PIPE - NONE REQUIRED PVC (ASTM 3034) - UP THROUGH 15" DIA. - NONE REQUIRED PVC (ASTM F 679) - LARGER THAN 15" DIA. - 48" TO 60" PVC (ASTM F 788) - ALL SIZES 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.
 10. SHALLOW MANHOLE: IN LIEU OF A CONE-SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H-20 LOADS.
 11. MANHOLE STEPS SHALL NOT BE PROVIDED WITHIN THE MANHOLES AS DIRECTED BY THE CITY OF ROCHESTER.
 12. MINIMUM SIZE OF PIPE: MANHOLES SHALL BE 4 INCHES. MINIMUM SIZE OF PIPE SHALL BE 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.
 13. 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 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 SDR-35 (4 MEASURE 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 DIMENSIONAL RATIO (SDR) NO HIGHER THAN 21.
 14. DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
 15. JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER TIGHTNESS. ALL JOINTS SHALL BE PROPERLY 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.
 16. TEES OR WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING THE INSTRUCTIONS OF THE MANUFACTURER. OR EPOXY-CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR CRUDE PRACTICES OR CONNECTIONS NOT BE PERMITTED. 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).
 17. PIPE INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED, AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER IT SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR A DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH THE APPROPRIATE MECHANICAL DEVICES. THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER TO THE HOUSE. THE GRADE SHALL BE NOT LESS THAN 1/8 INCH PER FOOT PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO Dewater THE TRENCH.
 18. TESTING: THE COMPLETED HOUSE SEWER SHALL BE SUBJECTED TO A LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS (PRIOR TO BACKFILLING) A. AN OBSERVATION TEE SHALL BE INSTALLED AS SHOWN AND, WHEN READY FOR TESTING, AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE TEE AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG. B. THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER, TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS OR, IF THE TRENCH IS WET, THE GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE INSPECTIONS FOR LEAKS SHALL BE MADE THROUGH THE CLEANOUT WITH A FLASHLIGHT. C. DRY FLUORESCENCE DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER, OR IF THE TRENCH IS WET, GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST DOWNSTREAM MANHOLE. LEAKAGE OBSERVED IN ANY OF THE ABOVE ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG-UP IF NECESSARY AND RE-LAID SO AS TO ASSURE WATER-TIGHTNESS.
 19. 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.
 20. HOUSE AND WATER SERVICE SHOULD NOT BE LAID IN THE SAME TRENCH AS SEWER SERVICE, BUT WHEN NECESSARY, SHALL BE PLACED ABOVE AND TO THE SIDE OF THE HOUSE SEWER AS SHOWN.
 21. BEDDING: MIN. 3/4" CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33.6 100% PASSING 1 INCH 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.
 22. 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.
 23. CONCRETE: CONCRETE SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000 PSI) CONCRETE OF THE NEW HAMPSHIRE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS STANDARD SPECIFICATIONS AS FOLLOWS: CEMENT: 6.0 BAGS/C.Y. WATER: 5.75 GALLONS/BAG OF CEMENT AGGREGATE: 1 1/2" MAX.
 24. CHIMNEYS: IF VERTICAL DROP INTO SEWER IS GREATER THAN 4', A CHIMNEY SHALL BE CONSTRUCTED FOR THE HOUSE CONNECTION. 25- ALL DRAINAGE AND SEWER STRUCTURES INCLUDING FRAMES AND GRATES SHALL BE H-20 LOADING. 26- ALL SEWER CONSTRUCTION SHALL BE CONSTRUCTED TO NHDES AND THE CITY OF ROCHESTER STANDARDS & SPECIFICATIONS.
 27. HORIZONTAL JOINTS: BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF A TYPE APPROVED BY THE COMMISSION, WHICH TYPE SHALL, IN GENERAL, DEPEND FOR WATER TIGHTNESS UPON AN ELASTOMERIC OR MASTIC-LIKE GASKET.
 28. 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.
 29. 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 KENT SEAL NO.2 E2
 30. THE CONTRACTOR SHALL NOTIFY DIG-SAFE 1-888-344-7233 PRIOR TO CONSTRUCTION.

SANITARY SEWER DETAIL
NH ROUTE 108
ROCHESTER HILL RD
INNOVATION DRIVE
ROCHESTER, NH
 PREPARED FOR:
CITY OF ROCHESTER
 APRIL 2020



MINIMUM THRUST BLOCK BEARING AREA REQ'D AGAINST UNDISTURBED MATERIAL (SQ. FT.)					
PIPE SIZE	90 BEND	TEE	PLUG	45 BEND	22 1/2" & SMALLER
3"	5	4	3	2	2

SEWER MAIN
THRUST BLOCK DETAILS
NOT TO SCALE

- FORCE MAIN SEWER PIPE
TRENCH INSTALLATION DETAIL**
NOT TO SCALE



NOT TO SCALE

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

PLAN VIEW

- NOTES:**
1. THE FLUSHING MANHOLE CONSTRUCTION SHALL MEET ALL DESIGN REQUIREMENTS OF A SANITARY MANHOLES. SEE NOTES THIS SHEET.
 2. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARREL SHALL BE OF AN OVERLAPPING TYPE, SEALED FOR WATER-TIGHTNESS USING A DOUBLE ROW OF ELASTOMERIC OR MASTIC-LIKE SEALANT.
 3. PIPE TO MANHOLE JOINTS SHALL BE AS FOLLOWS:
 - (1) ELASTOMERIC, RUBBER SLEEVE WITH WATERTIGHT JOINTS AT THE MANHOLE OPENING AND PIPE SURFACES
 - (2) CAST INTO THE WALL OR SECURED WITH STAINLESS STEEL CLAMPS;
 - (3) ELASTOMERIC SEALING RING CAST IN THE MANHOLE OPENING WITH SEAL FORMED ON THE SURFACE OF THE PIPE BY COMPRESSION OF THE RING; AND
 - (4) NON-SHRINK GROUTED JOINTS WHERE WATERTIGHT BONDING TO THE MANHOLE AND PIPE CAN BE OBTAINED.
 4. PRECAST SECTIONS AND BASES SHALL BE COATED ON THE EXTERIOR WITH A BITUMINOUS DAMP-PROOFING COATING.
 5. PRECAST BASES SHALL BE PLACED ON A 6-INCH LAYER OF COMPACTED BEDDING MATERIAL THAT CONFORMS TO THE ASTM C33/C33M NO. 67 STONE STANDARD IN EFFECT WHEN THE STONE IS PROCESSED BY THE MANUFACTURER, AVAILABLE AS NOTED IN APPENDIX D. THE EXCAVATION SHALL BE DEWATERED WHILE PLACING BEDDING MATERIAL AND SETTING THE BASE OR POURING CONCRETE.
 6. PRECAST CONCRETE MANHOLE AND CONCRETE GRADE RINGS SHALL CONFORM TO THE REQUIREMENT FOR CLASS AA CONCRETE IN THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATIONS' STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
 7. REINFORCING FOR CONCRETE MANHOLES AND CONCRETE GRADE RINGS SHALL BE STEEL OR STRUCTURAL FIBERS THAT CONFORM TO THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATIONS' STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
 8. PRECAST CONCRETE BARREL SECTIONS SHALL BE CERTIFIED BY THEIR MANUFACTURER(S) AS CONFORMING TO THE ASTM C478 STANDARD IN EFFECT AT THE TIME THE BARREL SECTIONS, CONES, AND BASES ARE MANUFACTURED.
 9. FOR THE POWER SOURCE FOR THE ALARM SYSTEM SHALL BE THE MAIN LINE POWER WITH A BACK UP BATTERY SYSTEM, WHICH SHALL BE CONNECTED TO AUTOMATICALLY SHUT OFF MAIN POWER FAILURE.
 10. A CONNECTION FOR A PORTABLE GENERATOR HOOK-UP SHALL BE PROVIDED FOR EACH HOUSE LOT.

NOT TO SCALE

IT IS THE INTENTION OF THE CITY OF ROCHESTER PUBLIC WORKS DEPARTMENT THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, BE MANUFACTURED IN ACCORDANCE WITH THE PRECAST CONCRETE STANDARD SPECIFICATIONS AND REQUIREMENTS 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. MANHOLES OR SOME OTHER MATERIALS USED TO PROVIDE REMOVAL OF THE MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8-TONS (+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 FIVE YEARS SHOULD BE UNDERSTOOD IN BOTH DIRECTIONS.

2. BARRICADED CONCRETE PRECAST SECTIONS SHALL BE PLACED TO SUPPORT CONCRETE, OR ROURED IN PLACE REINFORCED CONCRETE. PRECAST CONCRETE BARREL SECTIONS, CEMENT 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 INDUBLY MARKED ON THE INSIDE SURFACE.

3. VACUUM LEAKAGE TESTING (ASTM C1244) SHALL BE PERFORMED FOR ALL MANHOLES, LOW-PRESSURE AIR TESTING (ASTM F1417) AND DEFLECTION TRETING USING A "GO/NO GO" BARREL FOR ALL SANITARY SEWERS, IN ACCORDANCE WITH THE NHDES SOWER REGULATION AND THE CITY OF ROCHESTER PUBLIC WORKS DEPARTMENT OF PUBLIC WORKS REQUIREMENTS.

4. INVERTS AND SHELVES: MANHOLES SHALL HAVE A HORIZONTAL FRAME AND COVER SOWER - 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 MATERIALS USED TO PREVENT AVOIDED ADJUDICATION. UNAUTHORIZED PERSONS, CHILDREN, OR ANIMALS, UNTIL THE CONTRACTOR IS READY TO MAKE FINAL ADJUSTMENT TO GRADE.

5. BEDDING: MIN. 6" OF 3/4" CRUSHED STONE (12" IN LEDGE) FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33.1: 100% PASSING # 14 INCH SCREEN
0-100% PASSING 3/8 INCH SCREEN
0-55% PASSING 3/8 INCH SCREEN
0-10% PASSING #4 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 PER CUBIC YARD
WATER: 5.75 GALLONS PER BAG CEMENT
MAXIMUM SIZE OF AGGREGATE: 1 INCH.

6. FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES:
R/C & CI PIPE - ALL SIZES - 48"
AD & VC PIPE - UP THROUGH 12" DIA. - 18" SEE NOTE 9.A.
DI & VC PIPE LARGER THAN 12" DIA. - 36"
CI PIPE - NONE REQUIRED
PVC (ASTM 3739) - UP THROUGH 15" DIA. - NONE REQUIRED
PVC (ASTM 6674) - LARGER THAN 15" DIA. - 48" TO 60"

7. SHAFT (ASTM 1998) - ALL SIZES
9. UNDER SEVERE CONDITIONS WHEN DIFFERENTIAL SETTING CAN NOT BE CONTROLLED WITHIN NORMAL LIMITS, VARIATIONS IN THE SUB LENGTH MAY BE NECESSARY. OTHER PLASTIC PIPES SHALL BE REVIEWED ON A CASE BY CASE BASIS.

10. SHALL MANHOLE JOINTS BE COVERED BY A CONE OF CRUSHED STONE WITH A RADIUS OF 4 FEET. A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H=20 LOADS.

11. MANHOLE STEPS SHALL NOT BE PROVIDED WITHIN THE MANHOLES AS DIRECTED BY THE CITY OF ROCHESTER.

12. PIPE AND JOINT MATERIALS P.V.C. (POLY VINYL CHLORIDE) TYPE: 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 SEAL, DESIGNATION D-3212.

MANHOLE DRINKS WATER TIGHTNESS 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 1/2" DEFLECTION SHALL BE 45 PSI FOR SIZE WHEN TESTED IN ACCORDANCE WITH THE PROVISIONS OF TEST D-2412, "EXTERNAL LOADING PROPERTIES OF PLASTIC PIPE BY PARALLEL PLATE LOADING." ALL P.V.C. PIPE SHALL BE TYPE SDR-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. 35.

13. DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE

14. JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MAINTAINED BY THE TRENCH OWNERS USING A BOLTED, FLANGED, OR EPoxy-CEMENTED SADDLE TAPPED INTO AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

15. TEES OR WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE BY DOWNLOWING THE TRENCH DEEPER INTO THE EXISTING USING A BOLTED, FLANGED, OR EPoxy-CEMENTED SADDLE TAPPED INTO SMOOTHLY DRILLED OR SAWN OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR PRACTICES ARE PROHIBITED. THE CONNECTION SHALL BE CONCRETE ENCASED AS SHOWN IN THE DETAIL UP TO AND INCLUDING 1 1/2" DIAMETER. DOES (NOT APPLY TO INSTALLATIONS WHERE TEES & WYES ARE USED).

16. PIPE INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED, AND JOINED 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 AND COMPACTED OR WITHIN 12 INCHES OF THE TOP OF THE PIPE SHALL BE PLACED IN A SHALLOW TRENCH. IN ADDITION, A TRENCH OVER THE STREET SEWER CONNECTION TO THE HOUSE FOUNDATION AT A GRADE OF NOT LESS THAN 1/8 INCH PER FOOT PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.

17. THE COMPLETED HOUSE SEWER SHALL BE SUBJECT TO A LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS (PRIOR TO BACKFILLING)
A. AN OBSERVATION TEE SHALL BE INSTALLED AS SHOWN AND, WHEN READY FOR TESTING, AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED INTO THE STREAMLINE OF THE TRENCH. AFTER THE TEE AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.
B. THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER, TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH AROUND THE JOINT. CONDITIONS SHALL BE SUCH AS TO CAUSE A SHARP RISE IN THE TRENCH OVER THE PIPE.
C. PIPE INSPECTIONS FOR LEAKS SHALL BE MADE THROUGH THE CLEANOUT WITH A FLASHLIGHT.
D. FLOUORESCENCE DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE, IF THE TRENCH IS DRY, THE PIPE SHALL BE FULLY IRRADIATED WITH ULTRAVIOLET LIGHT SO AS TO REVEAL ANY LEAKS. IF THERE IS A RISE IN THE TRENCH OVER 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 THE TRENCH WATER, WHEN THE TRENCH IS DRY, IS NOT PERMITTED.

18. 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 SEWAGE INTO THE SEWER SHALL BE PROHIBITED.

19. 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.

20. 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
20-100% PASSING 3/8 INCH SCREEN
0-10% PASSING #4 SIEVE
0-5X PASSING #8 SIEVE

WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, CRUSHED STONE, MIN. 3/4" CRUSHED STONE SHALL BE USED.

21. THE LONG END OF THE TEE OR WYE SHALL BE PLACED IN THE TRENCH. THE SHORT END OF THE TEE OR WYE SHALL BE PLACED IN THE TRENCH. 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.

22. CONCRETE CONCRETE SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000 PS.) 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.

23. CHIMNEYS: IF VERTICAL DROP INTO SEWER IS GREATER THAN 4", A CHIMNEY SHALL BE CONSTRUCTED FOR THE HOUSE CONNECTION. 25'-ALL DRAINAGE AND SEWER STRUCTURES INCLUDING FRAMES AND GRATES SHALL BE H=20 LOADING. 26'-ALL SEWER CONSTRUCTION SHALL BE CONSTRUCTED TO NHDES AND THE CITY OF ROCHESTER STANDARDS & SPECIFICATIONS.

24. THE JOINT BETWEEN THE SEWER SECTION AND THE HOUSE SECTION SHALL BE APPROVED BY THE COMMISSION, WHICH TYPE SHALL, IN GENERAL, DEPEND FOR WATER TIGHTNESS UPON AN ELASTOMERIC OR MASTIC-LIKE GASKET.

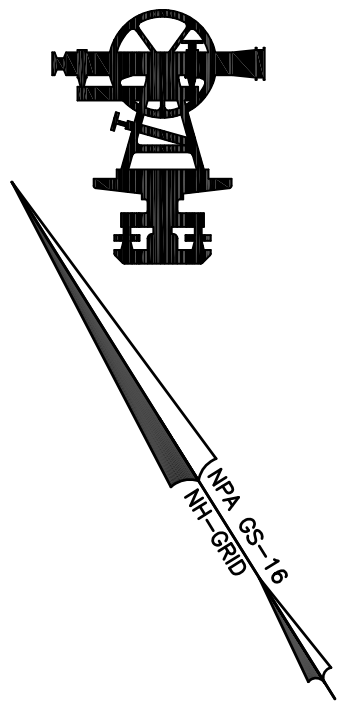
25. PIPE TO MANHOLE JOINTS: PIPE SHALL BE ONLY AS APPROVED BY THE COMMISSION AND IN GENERAL, WILL DEPEND FOR WATER TIGHTNESS UPON AN ELASTOMERIC OR MASTIC-LIKE GASKET.

26. FOR BITUMASTIC JOINT SEALS: THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY APPROVED BITUMASTIC SEALANTS: RAM-NEX-KENT SEAL N.O.2.

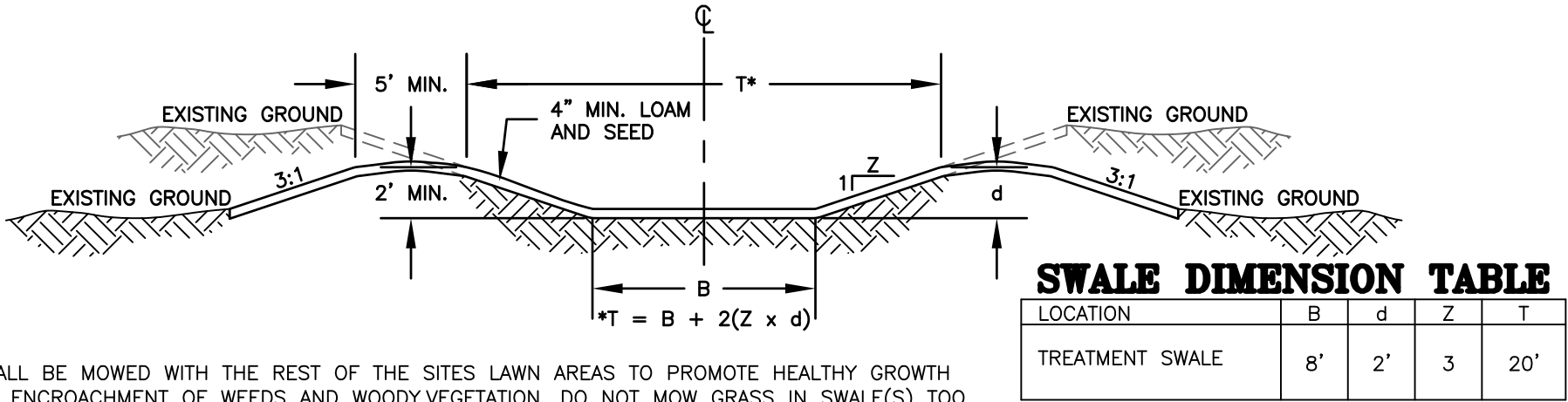
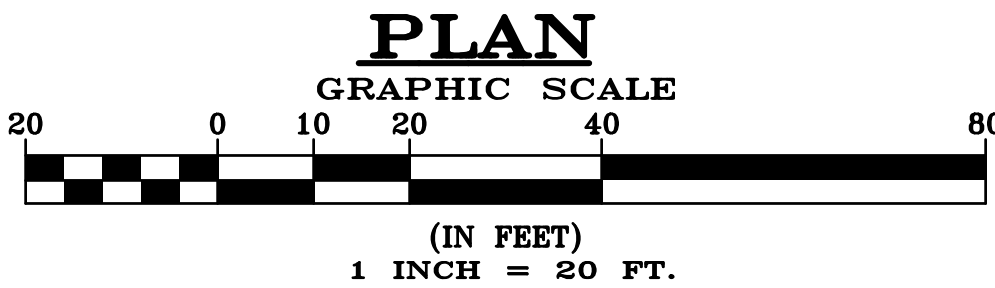
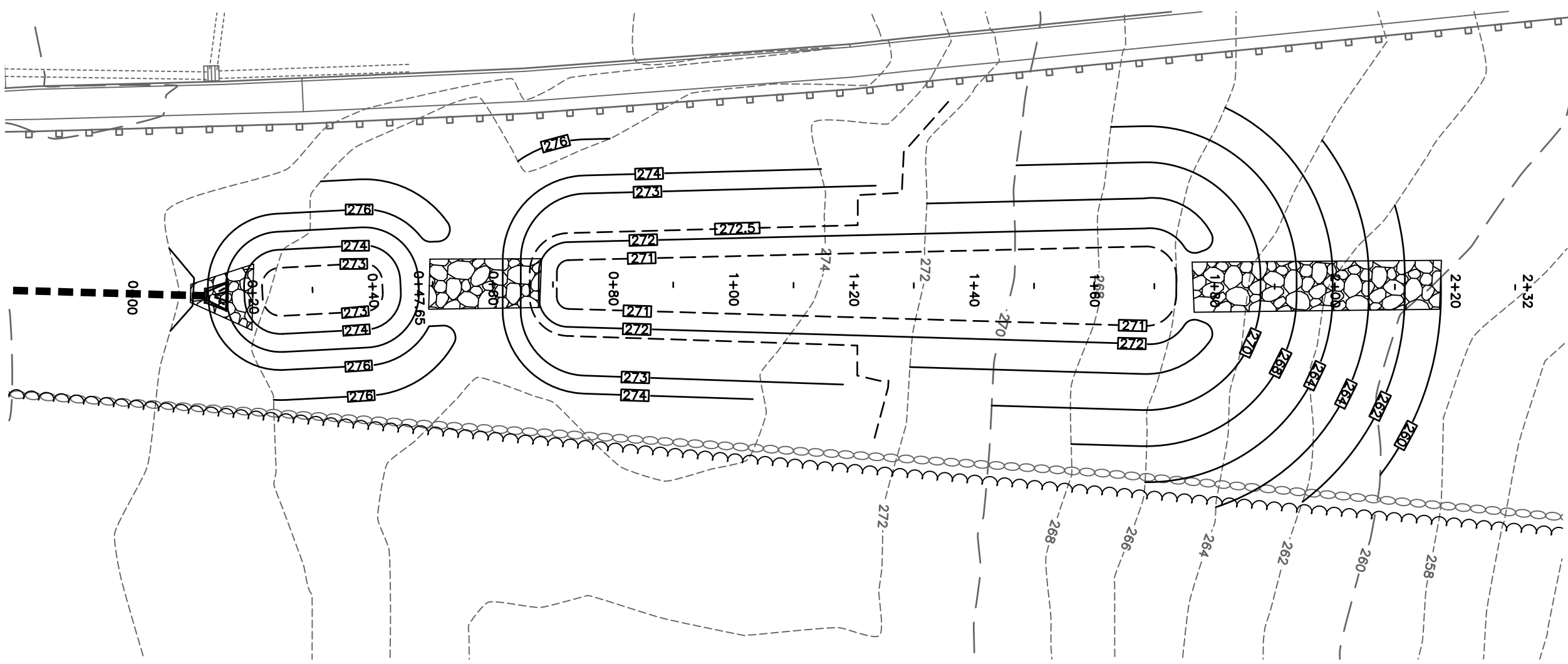
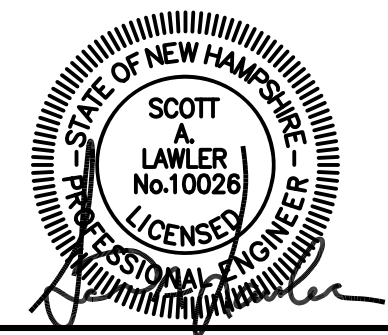
27. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION

PREPARED FOR:

CITY OF ROCHESTER
APRIL 2020

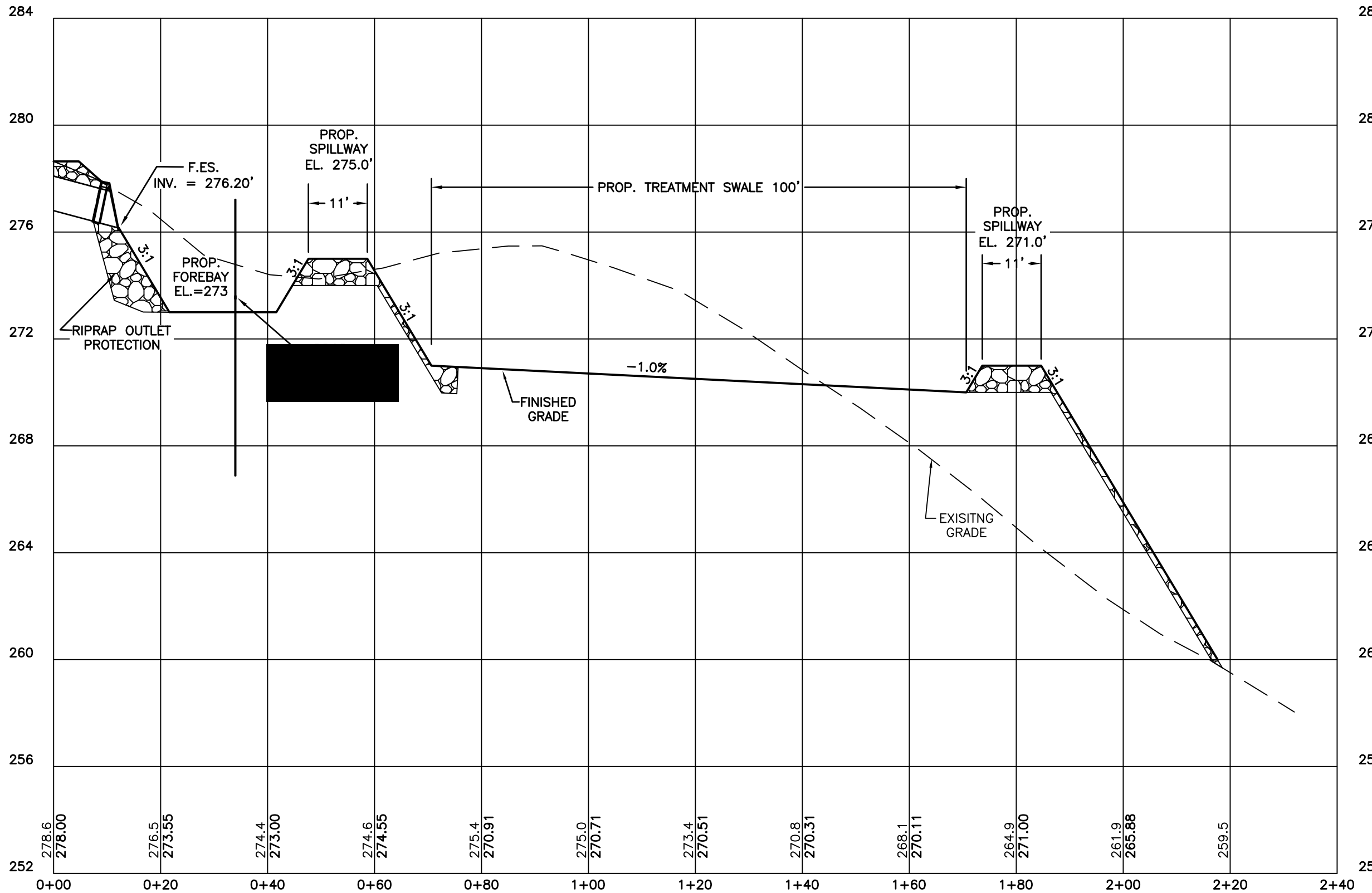


CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED WITH IN THE PLAN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



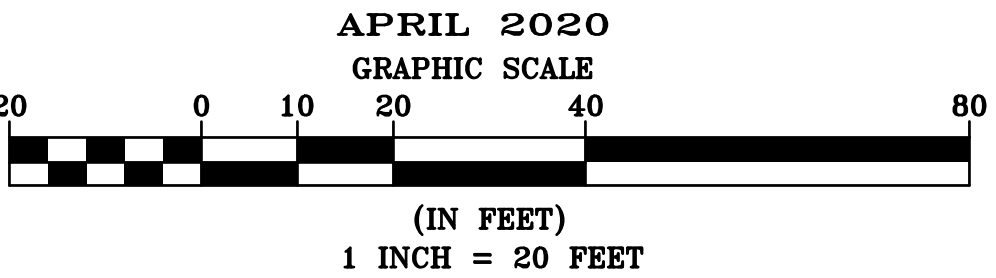
- MAINTENANCE NOTES:**
1. THE SWALE(S) SHALL BE MOWED WITH THE REST OF THE SITES LAWN AREAS TO PROMOTE HEALTHY GROWTH AND PREVENT THE ENCROACHMENT OF WEEDS AND WOODY VEGETATION. DO NOT MOW GRASS IN SWALE(S) TOO SHORT. THIS WILL REDUCE THE SWALES FILTERING ABILITY.
 2. THE SWALE(S) SHOULD BE FERTILIZED ON AN AS NECESSARY BASIS, TO KEEP THE GRASS HEALTHY. OVER FERTILIZATION COULD RESULT IN THE SWALE(S) BECOMING A SOURCE OF POLLUTION TO THE SURROUNDING WETLAND AREAS.
 3. THE SWALE(S) SHOULD BE INSPECTED PERIODICALLY AND AFTER EVERY MAJOR STORM. RILLS AND DAMAGED AREAS SHOULD BE PROMPTLY REPAIRED AND RE-VEGETATED AS NECESSARY TO PREVENT FURTHER DETERIORATION.

VEGETATED TREATMENT SWALE DETAIL
NOT TO SCALE

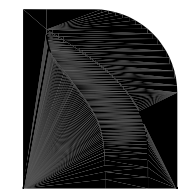
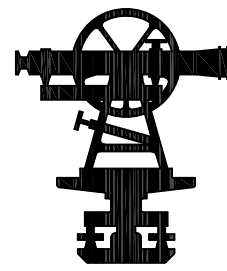


PROFILE
SCALE 1" = 20' (HORIZ.)
1" = 4' (VERT.)

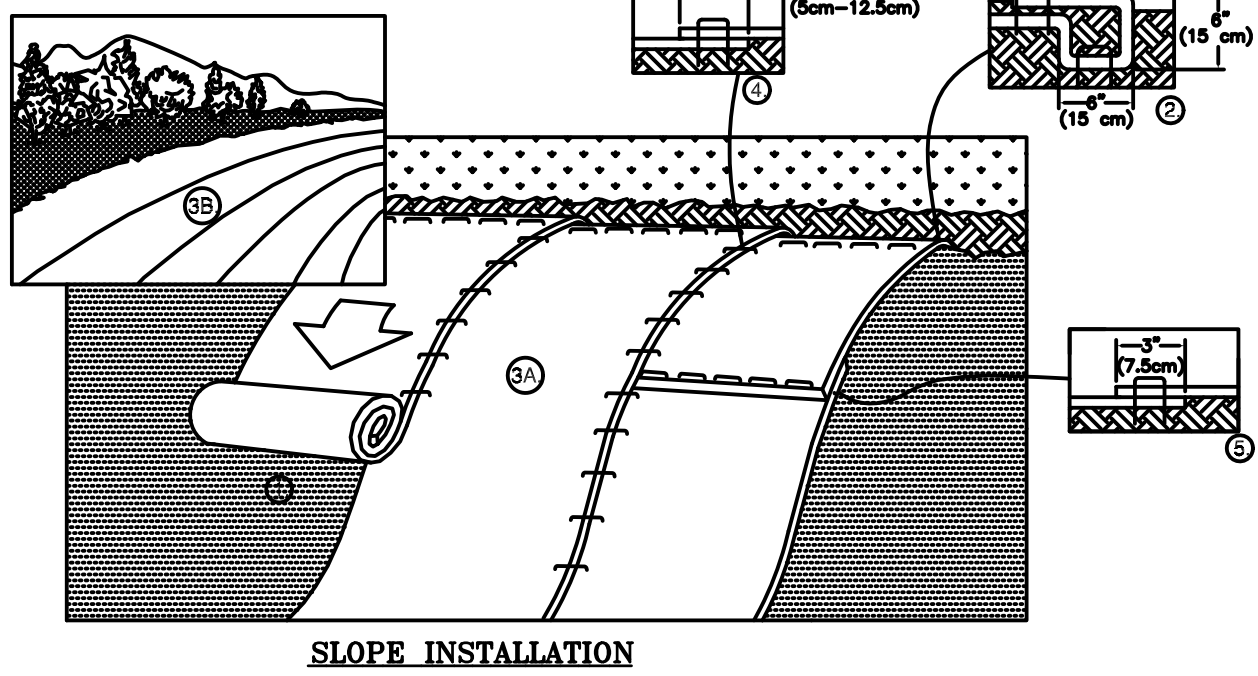
**TREATMENT SWALE
PLAN & PROFILE
NH ROUTE 108
ROCHESTER HILL RD
INNOVATION DRIVE
ROCHESTER, NH
PREPARED FOR:
CITY OF ROCHESTER**



FILE NO. 104
PLAN NO. C-3012
DWG. NO. 19289 SP-1
F.B. NO.



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SLOPE INSTALLATION

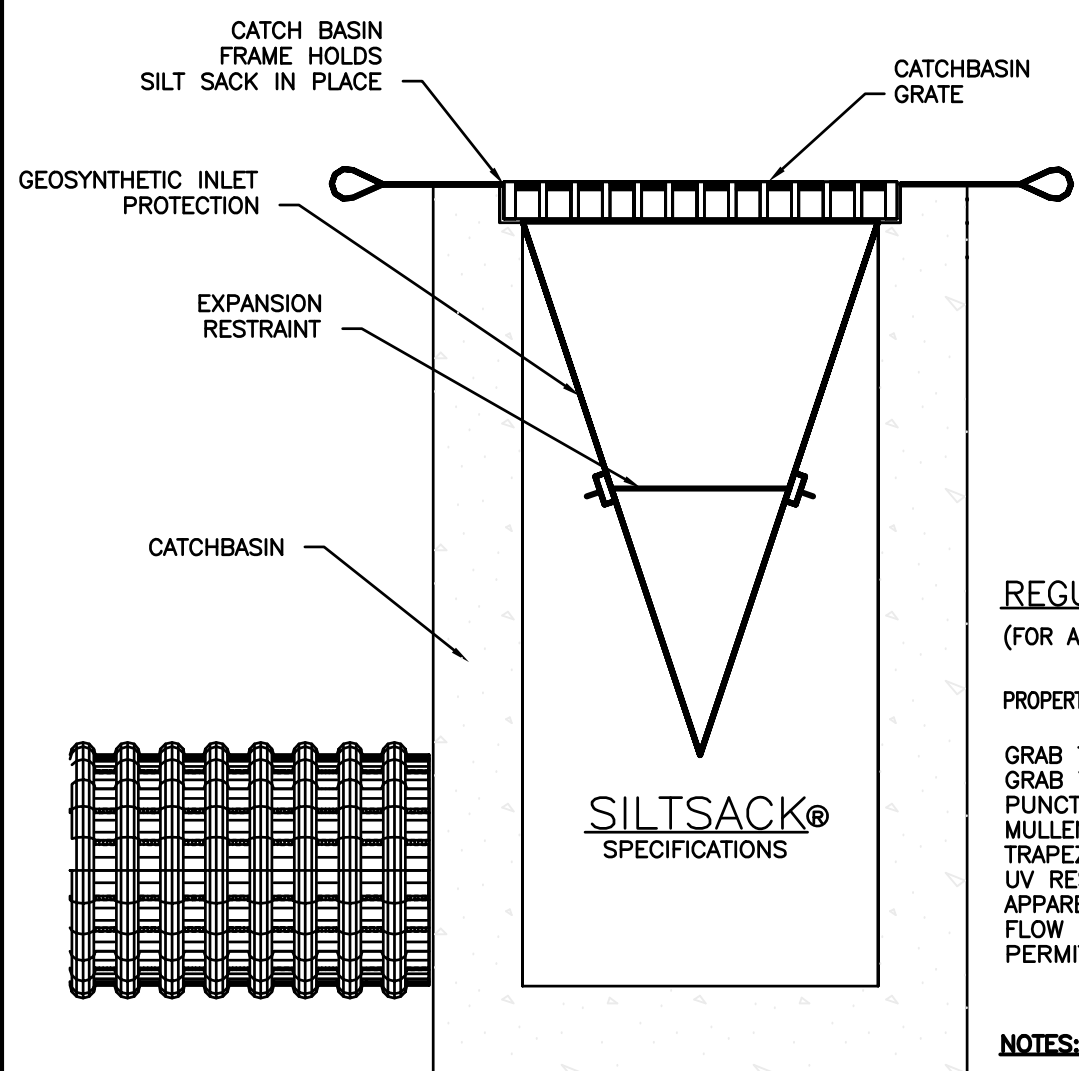
MAINTENANCE REQUIREMENTS:

- 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 RESEED, AND THE AFFECTED AREA OF MAT SHALL BE RE-INSTALLED.

CONSTRUCTION SPECIFICATIONS:

- MANUFACTURER'S INSTALLATION INSTRUCTIONS:
 - PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
NOTE: WHEN USING CELL-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 RECP'S IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP'S.
 - ROLL THE RECP'S (A), DOWN OR (B), HORIZONTALLY ACROSS THE SLOPE. RECP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHALL BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
 - THE EDGES OF PARALLEL RECP'S MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) OVERLAP DEPENDING ON RECP'S TYPE.
 - CONSECUTIVE RECP'S 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 RECP'S WIDTH.
NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP'S.
- SITE PREPARATION:
 - PROPER SITE PREPARATION IS ESSENTIAL TO ENSURE COMPLETE CONTACT OF THE PROTECTION MATTING WITH THE SOIL.
 - GRADE AND SHAPE AREA 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 TURF REINFORCEMENT APPLICATIONS. WHEN SEEDING PRIOR TO BLANKET INSTALLATION, ALL CHECK SLOTS AND OTHER AREAS DISTURBED DURING INSTALLATION MUST BE RESEED.
 - WHEN SOIL FILLING IS SPECIFIED, SEED THE MATTING AND THE ENTIRE DISTURBED AREA AFTER INSTALLATION AND PRIOR TO FILLING THE MAT WITH SOIL.

TEMPORARY EROSION CONTROL BLANKET DETAIL NOT TO SCALE



REGULAR FLOW SILTSACK®

(FOR AREAS OF LOW TO MODERATE PRECIPITATION AND RUN-OFF)

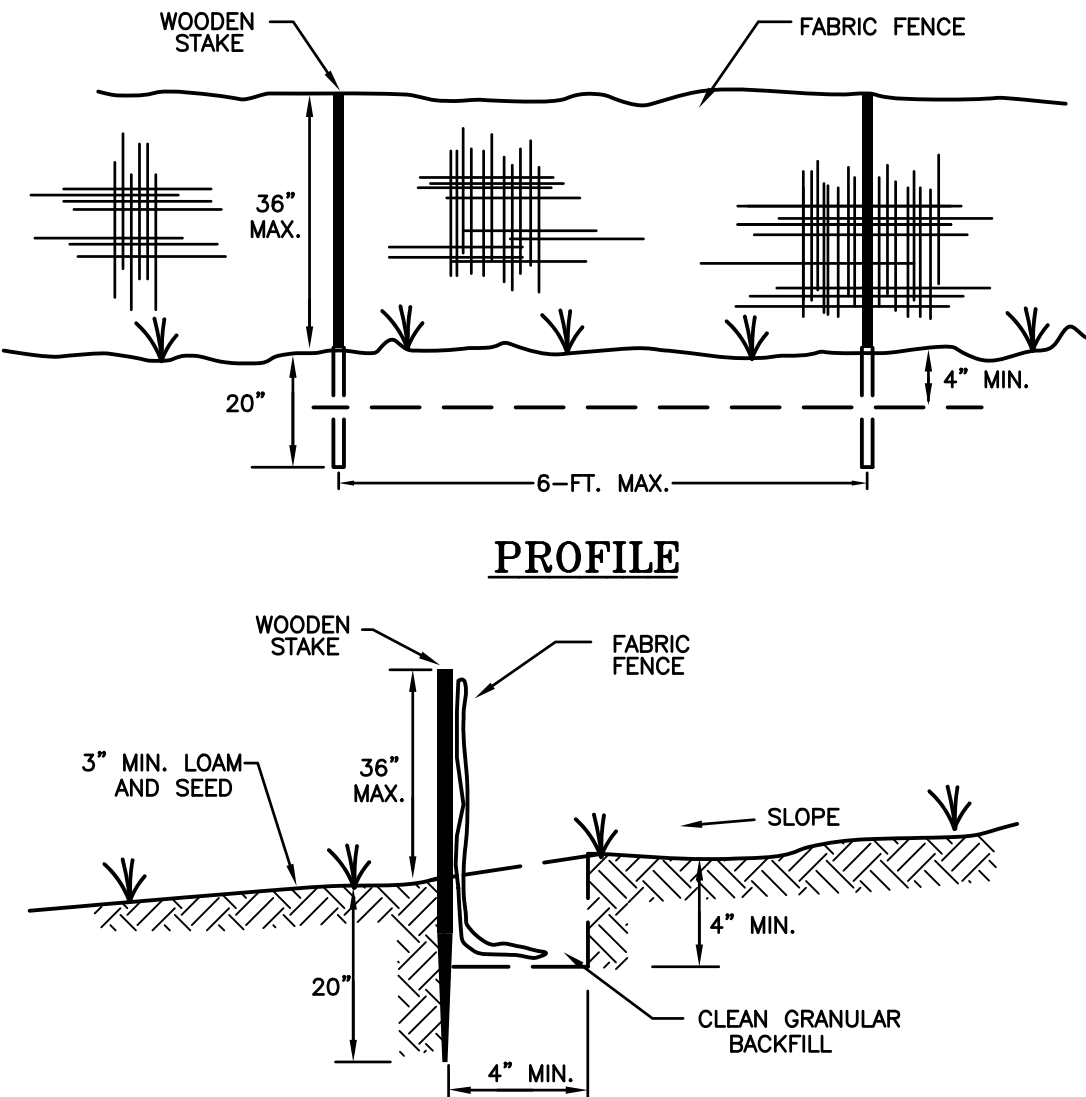
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4633	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 HRS
APPROXIMATE OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	
PERMITTIVITY	ASTM D-4491	0.55 SEC -1

NOTES:

- GEOSYNTHETIC SEDIMENT FILTER TRAP SHALL BE "REGULAR FLOW SILTSACK®" OR APPROVED EQUAL. SPECIFICATIONS FOR SILTSACK® ARE DETAIL.
- FILTER TRAPS SHALL BE INSPECTED AFTER EVERY RAIN EVENT OF 0.25" OR GREATER AND SEDIMENTS SHALL BE REMOVED FROM TRAP WHEN SEDIMENT HAS REACHED TWO THIRDS OF THE DEPTH OF THE TRAP, OR IF PONDING OF WATER AT SURFACE BEGINS TO OCCUR. DO NOT PUNCTURE FILTER TRAP TO MITIGATE PONDING.
- INSTALL SILT SACKS IN CATCH BASIN UPON INSTALLATION OF STRUCTURE.

CATCH BASIN GEOSYNTHETIC SEDIMENT TRAP NOT TO SCALE

FILE NO. 104
PLAN NO. C-3012
DWG. NO. 19289 SP-1
F.B. NO.



PROFILE

CROSS-SECTION

MAINTENANCE REQUIREMENTS:

- FENCES SHALL BE INSPECTED AND MAINTAINED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALLS.
- SEDIMENT DEPOSITION SHALL BE REMOVED, AT A MINIMUM, WHEN DEPOSITION ACCUMULATES TO ONE-HALF THE HEIGHT OF THE FENCE, AND MOVED TO AN APPROPRIATE LOCATION SO THE SEDIMENT IS NOT READILY TRANSPORTED BACK TOWARD THE SILT FENCE.
- 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 REMOVED IMMEDIATELY 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:

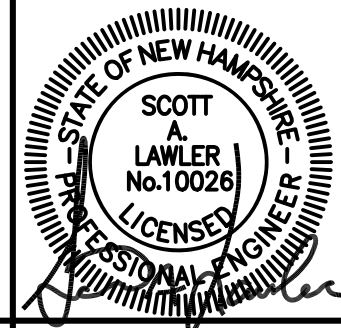
- FENCES SHALL BE USED IN AREAS WHERE EROSION WILL OCCUR ONLY IN THE FORM OF SHEET EROSION AND THERE IS NO CONCENTRATION OF WATER IN A CHANNEL OR DRAINAGE WAY ABOVE THE FENCE. SEDIMENT BARRIERS SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM.
- THE MAXIMUM 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 5/4-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 CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT SUPPORT 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 IMPLIMENT 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 WHICH 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.

SILTATION CONTROL FENCE DETAIL NOT TO SCALE

TEMPORARY VEGETATION SEEDING RECOMMENDATIONS

SPECIES	PER ACRE BUSHELS (BU) POUNDS (LBS.)	PER 1,000-SF	REMARKS
WINTER RYE	2.5 BU OR 112 LBS.	2.5 LBS.	BEST FOR FALL SEEDING. SEED FROM AUGUST 15 TO SEPTEMBER 15 FOR BEST COVER. SEED TO A DEPTH OF 1 INCH.
OATS	2.5 BU OR 80 LBS.	2.0 LBS.	BEST FOR SPRING SEEDING. SEED NO LATER THAN MAY 15 FOR SUMMER PROTECTION. SEED TO A DEPTH OF 1 INCH.
ANNUAL RYE GRASS	40 LBS.	1.0 LB.	GROWS QUICKLY, BUT IS OF SHORT DURATION. USE WHERE APPEARANCES ARE IMPORTANT. SEED EARLY SPRING AND/OR BETWEEN AUGUST 15 AND SEPTEMBER 15. COVER THE SEED WITH NO MORE THAN 0.25 INCH OF SOIL.
PERENNIAL RYE GRASS	30 LBS.	0.7 LBS.	BEST FOR FALL SEEDING. SEED FROM AUGUST 15 TO SEPTEMBER 15 FOR BEST COVER. SEED TO A DEPTH OF 1 INCH.
SOURCES: 1. NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3, TABLE 4-1 2. MINNICK, E.L. AND H.T. MARSHALL, (AUGUST 1992)			

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



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.

SEEDBED 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

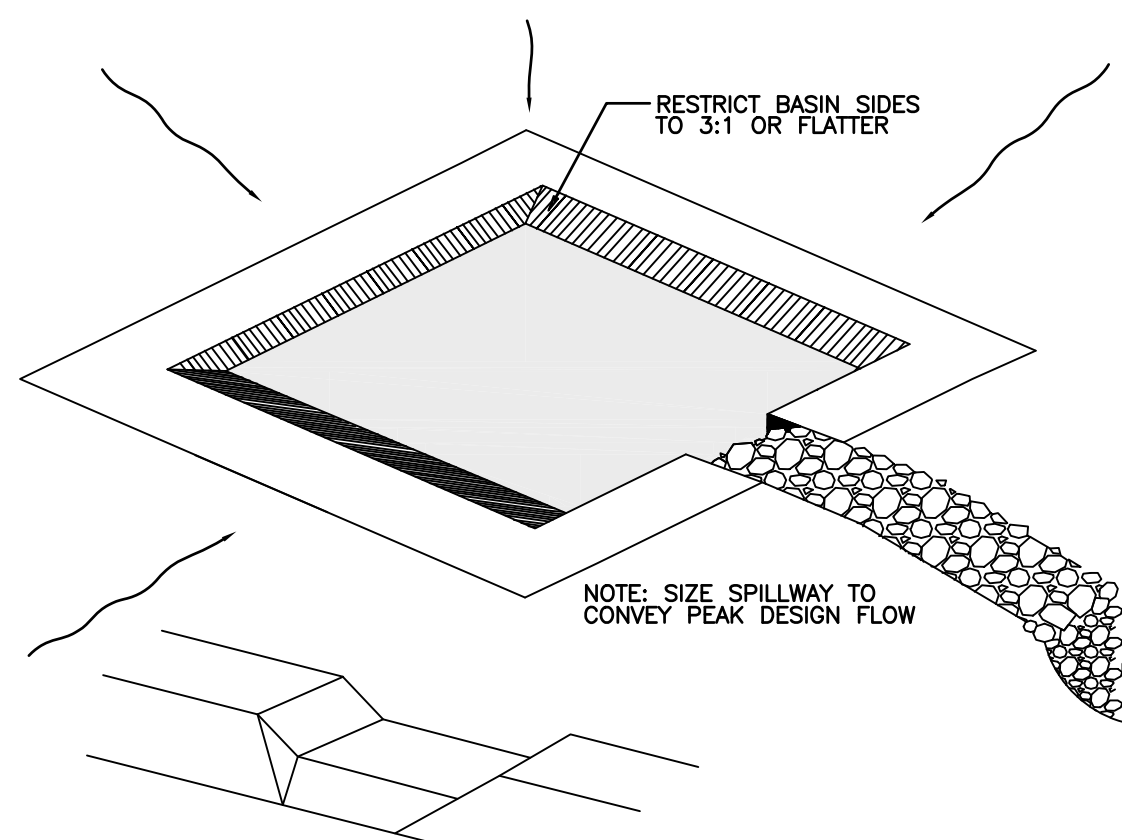
FERTILIZER APPLICATION RATE = 870 LB./ACRE (20 LB./1,000-SF)*
*LOW PHOSPHATE FERTILIZER (6-0-4) OR EQUIVALENT

SEEDING:

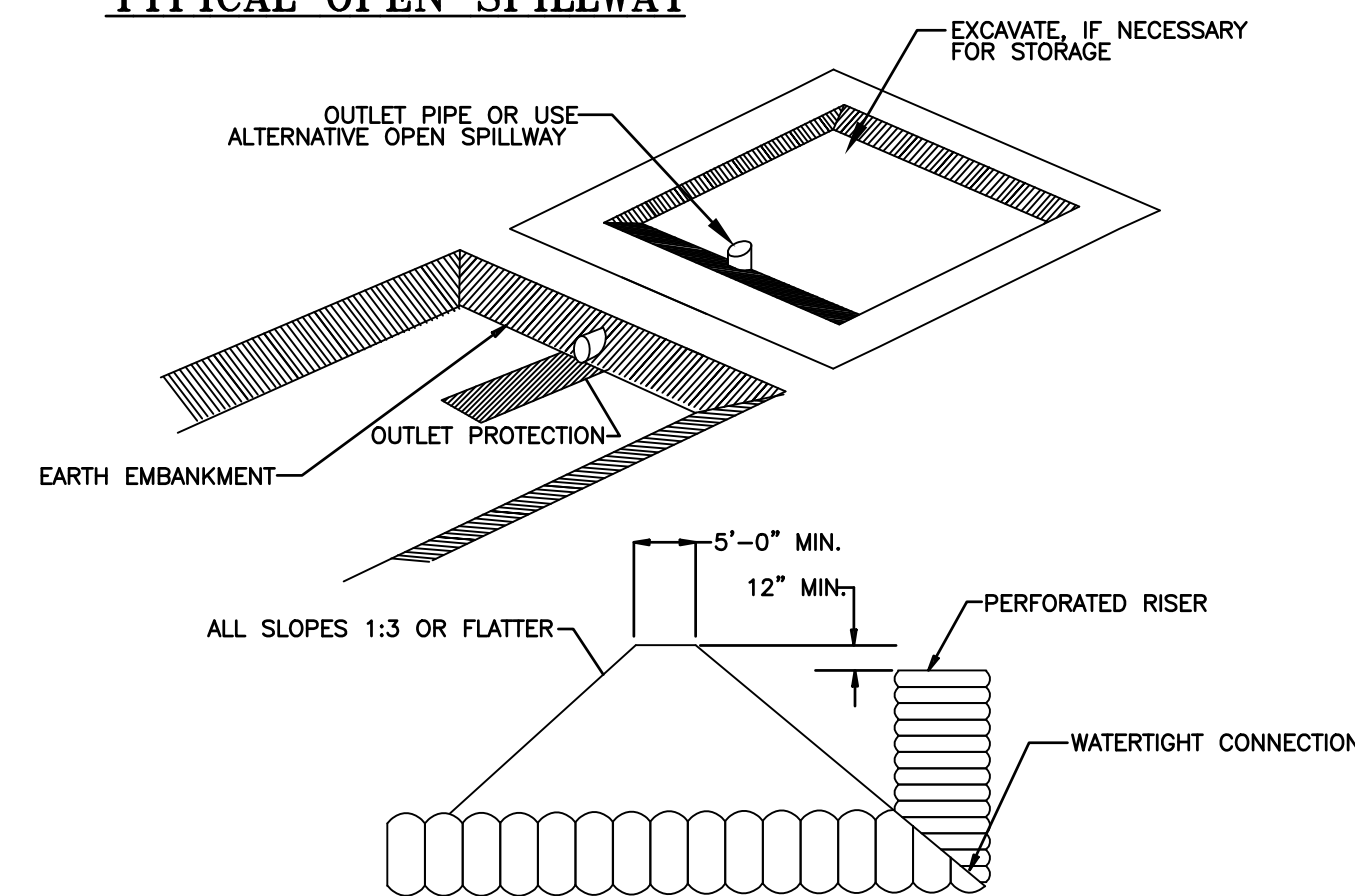
- APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL CULTIPACKER TYPE SEEDER OR HYDRO SEEDER (SLURRY INCLUDING SEED AND FERTILIZER). NORMAL SEEDING DEPTH IS FROM 1/4 TO 1/2 INCH. HYDROSEEDING THAT INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
- TEMPORARY SEED SHALL TYPICALLY OCCUR PRIOR TO SEPTEMBER 15.
- AREAS SEEDS BETWEEN AUGUST 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:

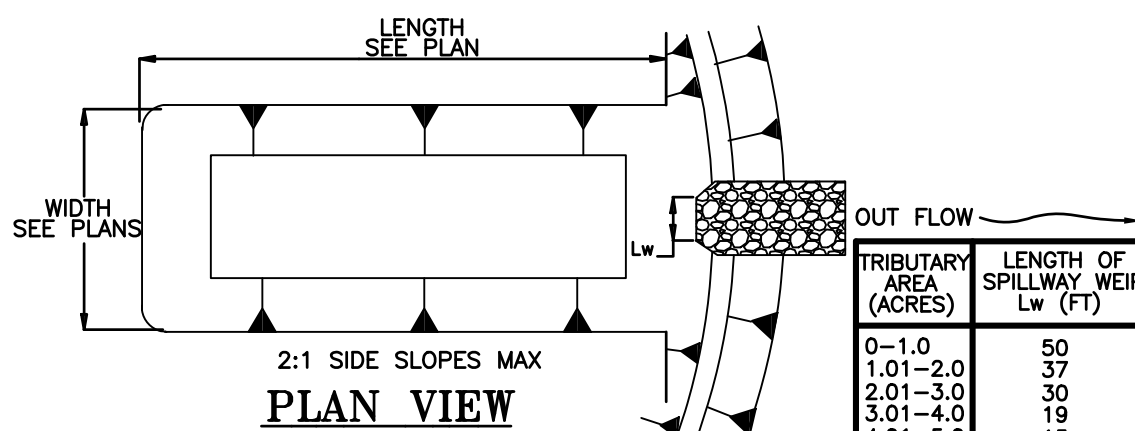
- TEMPORARY SEEDING SHALL BE INSPECTED WEEKLY AFTER ANY RAINFALL EXCEEDING 1/2 INCH IN 24 HOURS ON ACTIVE CONSTRUCTION SITES. TEMPORARY SEEDING SHALL BE INSPECTED JUST PRIOR TO SEPTEMBER 15, TO ASCERTAIN WHETHER ADDITIONAL SEEDING IS REQUIRED TO PROVIDE STABILIZATION OVER THE WINTER PERIOD.
- BASED ON INSPECTION, AREAS SHALL BE RESEED 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 RESEED, WITH OTHER TEMPORARY MEASURES (I.E. MULCH, ETC.) USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.



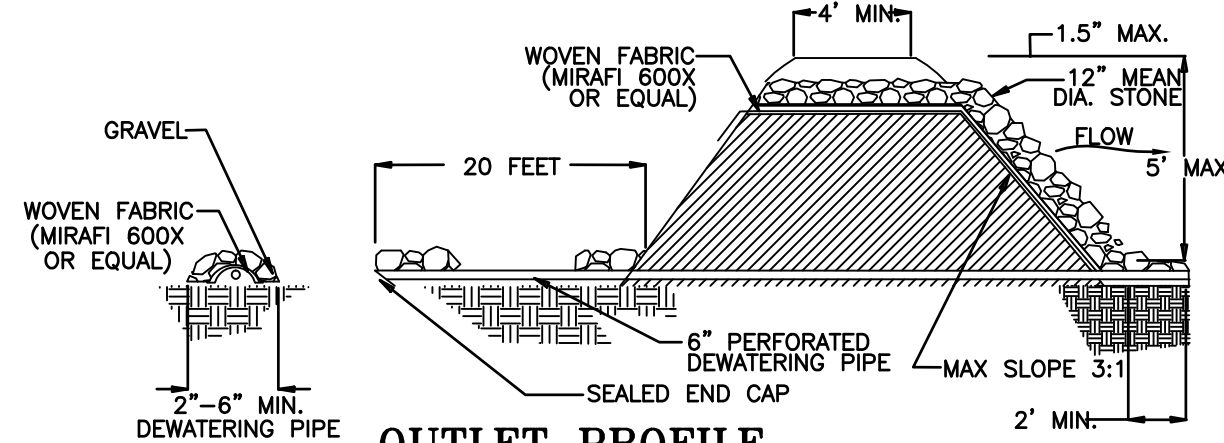
TYPICAL OPEN SPILLWAY



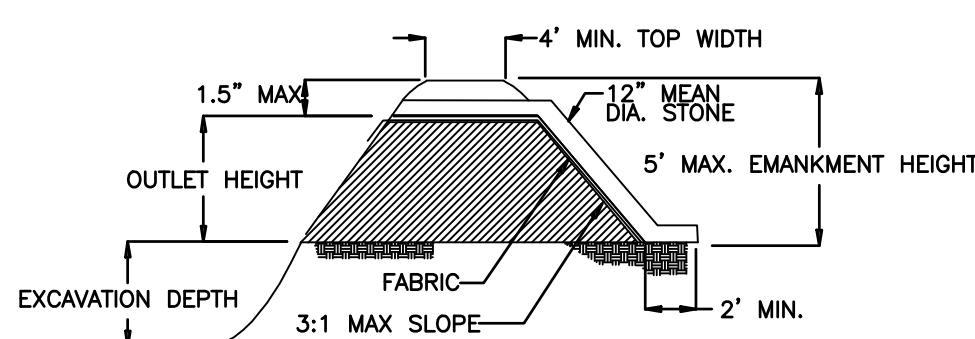
EMBANKMENT SECTION THRU RISER



PLAN VIEW

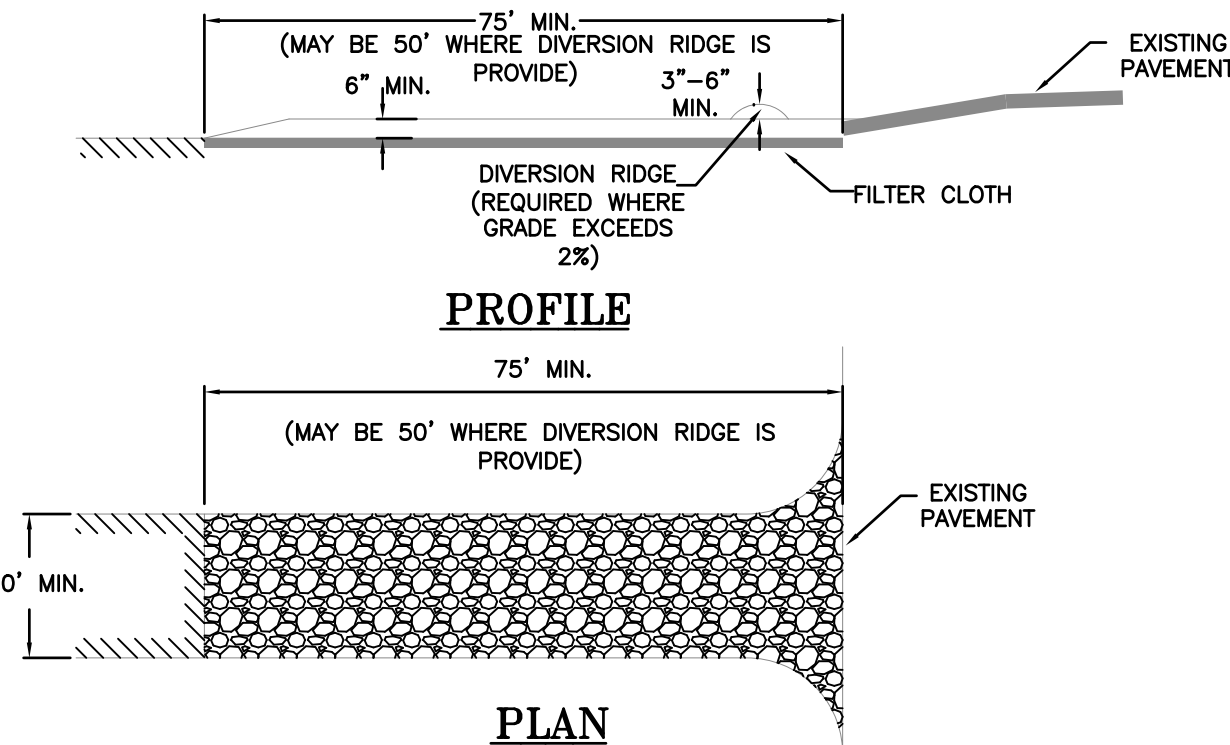


OUTLET PROFILE



ALTERNATE OUTLET PROFILE

SEDIMENT TRAP



PROFILE

PLAN

TEMPORARY CONSTRUCTION EXIT NOT TO SCALE

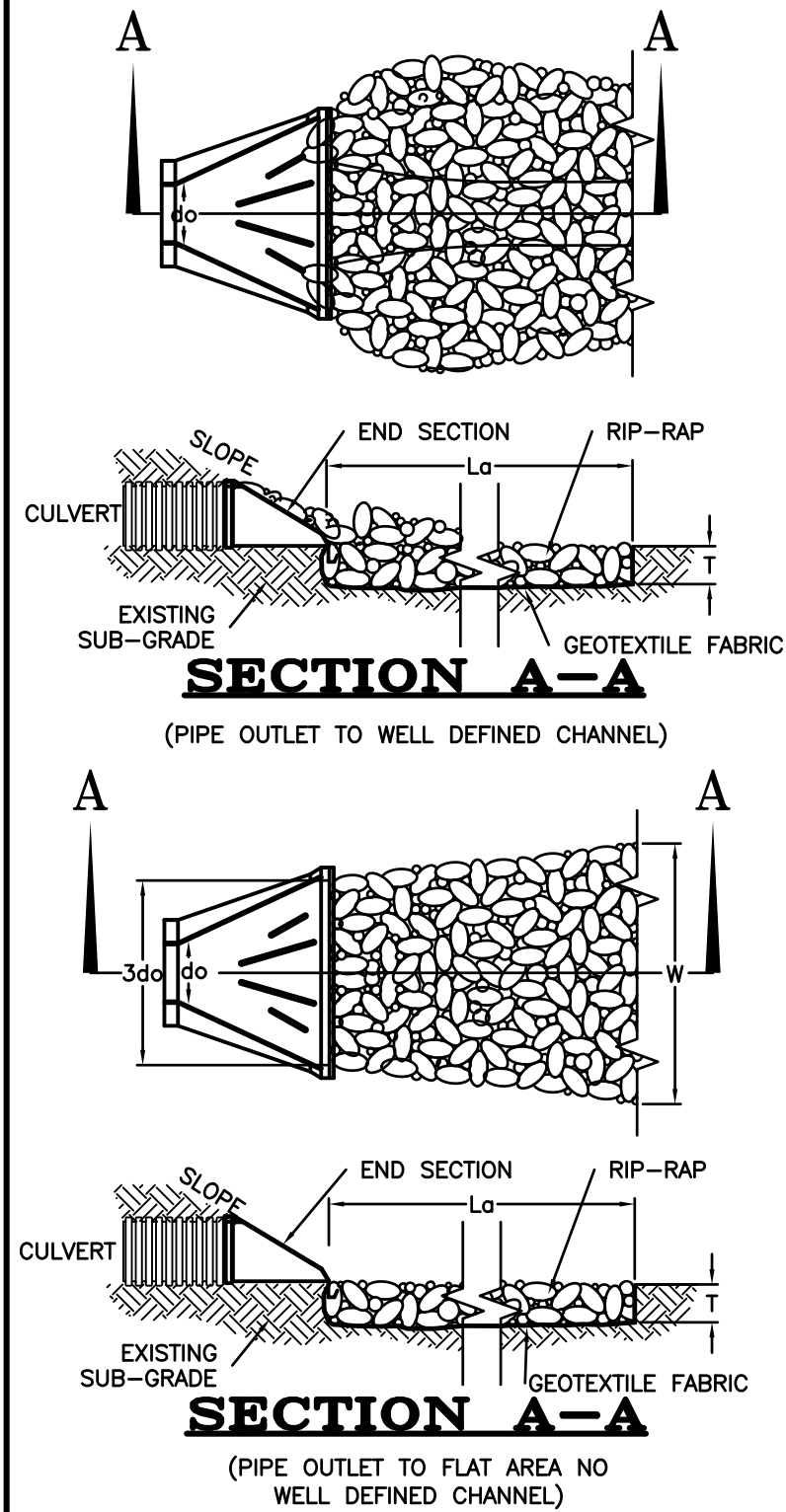
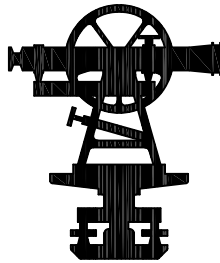
MAINTENANCE REQUIREMENTS:

- WHEN EROSION 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.

TEMPORARY EROSION & SEDIMENTATION CONTROL DETAIL NH ROUTE 108 ROCHESTER HILL RD INNOVATION DRIVE ROCHESTER, NH PREPARED FOR: CITY OF ROCHESTER APRIL 2020



RIP-RAP GRADATION

d50 = 3"		
% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE (INCHES)	
100	5	6
85	4	5
50	3	5
15	1	2

d50 = 4"		
% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE (INCHES)	
100	6	8
85	5	7
50	4	6
15	1	2

d50 = 6"		
% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE (INCHES)	
100	9	12
85	7.8	10.8
50	6	9
15	1.8	3

d50 = 9"		
% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE (INCHES)	
100	13.5	18
85	11.7	16.2
50	9	13.5
15	2.7	4.5

NOTES:

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

CONSTRUCTION SPECIFICATIONS:

1. PREPARE THE SUB-GRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIP-RAP TO THE GRADES SHOWN ON THE PLANS.
2. MINIMUM 6" SAND/GRAVEL BEDDING OR GEOTEXTILE FABRIC REQUIRED UNDER ALL ROCK RIP-RAP.
3. THE ROCK OR GRAVEL USED FOR FILTER OR RIP-RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
4. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF ROCK RIP-RAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO (2) PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
5. STONE FOR THE RIP-RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
6. RIP-RAP SIZE CHOSEN FOR THE WORST CASE OF ALL OUTLETS. ALL RIP-RAP USED FOR PIPE OUTLET PROTECTION WILL HAVE THE SAME GRADATION AND THICKNESS.

MAINTENANCE NOTES:

1. OUTLETS SHALL BE INSPECTED AND CLEANED ANNUALLY AND AFTER ANY MAJOR STORM EVENT. ANY EROSION OR DAMAGE TO THE RIP-RAP SHALL BE REPAIRED IMMEDIATELY.
2. THE CHANNEL IMMEDIATELY DOWNSTREAM FROM THE OUTLET SHOULD BE CHECKED TO SEE THAT NO EROSION IS OCCURRING.
3. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE OUTLET PROTECTION APRON.

PIPE OUTLET PROTECTION DETAIL

PERMANENT VEGETATION:

SPECIFICATIONS:

SITE PREPARATION:

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

SEEDBED PREPARATION:

1. WORK 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.
2. REMOVE FROM THE SURFACE ALL STONES ZINCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, CONCRETE CLODS, LUMPS, TRASH OR OTHER UNSUITABLE MATERIAL.
3. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED; THE AREA MUST BE TILLED AND FIRMED AS ABOVE.
4. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
5. IF APPLICABLE, FERTILIZER AND ORGANIC SOIL AMENDMENTS SHALL BE APPLIED DURING THE GROWING SEASON.
6. APPLY 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:

1. INOCULATE ALL LEGUME SEED WITH THE CORRECT TYPE OF INOCULANT.
2. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL CULTIPLAKER 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.
3. WHERE FEASIBLE EXCEPT WHERE EITHER CULTIPLAKER TYPE SEEDER OR HYDROSEEDER IS USED, THE SEEDBED SHALL BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG.
4. SPRING SEEDING USUALLY GIVES THE BEST RESULTS FOR ALL SEED MIXES OR WITH LEGUMES. PERMANENT SEEDING SHALL BE COMPLETED 45 DAYS PRIOR TO FIRST KILLING FROST. WHEN CROWN VETCH IS SEEDING IN LATE SUMMER AT LEAST 35% OF THE SEED SHALL BE HARD SEED (UNSCARIFIED). IF SEEDING CANNOT BE DONE WITHIN THE SPECIFIED SEEDING DATES, MULCH ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE DESCRIBED IN THE NHSM, VOL. 3, AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.
5. AREAS SEEDD BETWEEN MAY 15 AND AUGUST 15 SHALL BE COVERED WITH HAY OR STRAW MULCH, ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE DESCRIBED IN THE NHSM, VOL. 3.
6. VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED AREA SHALL BE ACHIEVED PRIOR TO OCTOBER 15. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT OTHER TEMPORARY STABILIZATION MEASURES FOR OVER WINTER PROTECTION.

HYDROSEEDING:

1. WHEN HYDROSEEDING (HYDRAULIC APPLICATION), PREPARE THE SEEDBED AS SPECIFIED ABOVE OR BY HAND TAKING TO LOOSEN AND SMOOTH THE SOIL AND REMOVE SURFACE STONES LARGER THAN 2 INCHES IN DIAMETER.
2. 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.
4. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.

MAINTENANCE REQUIREMENTS:

1. PERMANENT SEEDED AREAS SHALL BE INSPECTED AT LEAST MONTHLY DURING THE COURSE OF CONSTRUCTION. INSPECTION, MAINTENANCE AND CORRECTIVE ACTIONS SHALL CONTINUE UNTIL THE OWNER ASSUMES PERMANENT OPERATION OF THE SITE.
2. SEEDD AREAS SHALL BE MOVED AS REQUIRED TO MAINTAIN A HEALTHY STAND OF VEGETATION. INSPECTION, MAINTENANCE AND CORRECTIVE ACTIONS SHALL CONTINUE UNTIL THE OWNER ASSUMES PERMANENT OPERATION OF THE SITE.
3. BASED ON INSPECTION, AREAS SHALL BE RESEEDD TO ACHIEVE FULL STABILIZATION OF EXPOSED SOILS.
4. 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 RESEEDD, WITH OTHER TEMPORARY MEASURES (I.E. MULCH, ETC.) USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.

PERMANENT VEGETATION SEEDING RECOMMENDATIONS

USE	MIXTURE	SPECIES	LBS./ACRE	LBS./1,000-SF
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	TALL FESCUE	20	0.45
		CREeping RED FESCUE	20	0.45
		REDTOP	2	0.05
		TOTAL	42	0.95
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER	A	TALL FESCUE	20	0.45
		CREeping RED FESCUE	20	0.45
		REDTOP	2	0.05
		TOTAL	42	0.95
LIGHTLY USED PARKING LOTS, 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:

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

GENERAL CONSTRUCTION PHASING:

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

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.

PROJECT SPECIFIC CONSTRUCTION PHASING:

1. REFER TO THE "GENERAL CONSTRUCTION PHASING" NOTES PRIOR TO COMMENCING CONSTRUCTION IN ACCORDANCE WITH THE FOLLOWING PHASING. THE "GENERAL CONSTRUCTION PHASING" NOTES APPLY TO THE OVERALL CONSTRUCTION AND SHALL BE ADHERED TO.
 2. INSTALL ALL TEMPORARY SEDIMENT CONTROL BARRIERS (I.E. SILT FENCE, EROSION CONTROL MIX BERM, STONE CHECK DAMS, ETC.) AROUND THE OUTER PERIMETER OF THE CONSTRUCTION SITE AS DEPICTED ON SHEET C-4 PRIOR TO EARTH MOVING OPERATIONS.
 3. INSTALL ORANGE SNOW FENCE AROUND THE PERIMETER OF THE INFILTRATION BASINS AND THE FENCE SHALL REMAIN IN PLACE UNTIL CONSTRUCTION OF THE BASINS HAS STARTED.
 4. CLEAR, GRUB AND STRIP THE SITE, STUMPS, BRUSH AND OTHER ORGANIC WASTE SHALL BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS.
 5. INSTALL A TEMPORARY CONSTRUCTION EXIT AT THE LOCATION OF THE PROPOSED ROADWAY CONNECTION TO INNOVATION DRIVE. MAINTAIN AS DIRECTED BY THE TEMPORARY CONSTRUCTION EXIT DETAIL.
 6. STOCKPILE STRIPPED TOPSOIL AND CUT MATERIAL TO BE REUSED ON SITE IN AN APPROPRIATE LOCATION IN ACCORDANCE WITH THE "SOIL STOCKPILES PRACTICES". MAINTAIN THE STOCKPILES AS DIRECTED IN THE "SOIL STOCKPILE PRACTICES".
 7. PERFORM THE NECESSARY CUTS AND FILLS TO CONSTRUCT THE DETENTION BASIN AND TREATMENT SWALE SYSTEM AS DEPICTED ON SHEET C-3 AND IN ACCORDANCE WITH THE DETENTION BASIN AND TREATMENT SWALE DETAILS SHOWN ON SHEET C-12.
 8. CONSTRUCT THE DETENTION BASIN, SEDIMENT FOREBAY, TREATMENT SWALE AND OUTLET PROTECTION. LOAM SEED AND MULCH THE SIDE SLOPES OF THE BASIN AS DIRECTED IN THE BASIN DETAILS.
 9. ALL DITCHES/SWALES/AND BASINS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
 10. PERFORM THE NECESSARY CUTS AND FILLS TO SUBGRADE IN ROADWAY.
A) INSTALL REQUIRED FILLS IN MAXIMUM 8-INCH LIFTS AND COMPACT EACH LIFT TO 95% MAXIMUM PROCTOR DENSITY.
 11. AS SUBGRADE IS ACHIEVED INSTALL REMAINING SEDIMENT CONTROL BARRIERS WITHIN THE SITE (I.E. ADDITIONAL SILT FENCE, CHECK DAMS AND SEDIMENT CONTROLS AND CATCH BASINS, ETC.)
 12. 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, C-5, & C-8. AS EACH STRUCTURE IS COMPLETED INSTALL THE CORRESPONDING SEDIMENT CONTROL MEASURE.
 13. CONSTRUCT THE DETENTION BASINS AND OUTLET PROTECTION. LOAM SEED AND MULCH THE SIDE SLOPES OF THE BASIN AS DIRECTED IN THE DETENTION BASIN DETAILS AND TEMPORARY SEDIMENT CONTROL BARRIER DEPICTED ON SHEET C-12.
 14. ALL CUT AND FILL SLOPES AND LAWN AREAS NOT TO BE PAVED SHALL BE LOAMED AND SEEDD FOR PERMANENT VEGETATION AND STABILIZATION AS DESCRIBED UNDER THE "PERMANENT VEGETATION PRACTICES" WITHIN 3 DAYS OF ACHIEVING FINAL GRADE.
 15. INSTALL ALL GRAVEL BASE AND CRUSHED GRAVEL MATERIALS FOR THE ROADWAY AS SPECIFIED IN THE CORRESPONDING DETAILS.
 16. THE ROADWAY SHALL BE STABILIZED (CONSTRUCTED TO GRAVEL BASE COURSE) WITHIN 3 DAYS OF ACHIEVING FINISHED SUBGRADE ELEVATIONS.
 17. 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 THROUGH OUT THE WINTER MONTHS.
 18. ALL DISTURBED AREAS SHALL BE STABILIZED AS SOON AS POSSIBLE. IN NO CASE SHALL ANY DISTURBED AREA BE LEFT UN-STABILIZED FOR LONGER THAN 21 DAYS. IF NECESSARY TEMPORARY STABILIZATION MEASURES AS DISCUSSED IN THE "GENERAL CONSTRUCTION PHASING NOTES" AND NHSM, VOL. 3 SHOULD BE EMPLOYED.
- MAINTENANCE AND INSPECTION:**
1. DURING CONSTRUCTION ALL TEMPORARY AND PERMANENT SEDIMENT, EROSION CONTROL AND STORMWATER MANAGEMENT PRACTICES SHOULD BE INSPECTED WEEKLY, AFTER EVERY 1/2 INCH OF RAINFALL, AND ANNUALLY. EXCESS SEDIMENT SHOULD BE REMOVED FROM TEMPORARY SEDIMENT, EROSION CONTROL AND STORMWATER MANAGEMENT PRACTICES WHEN IT REACHES PRESCRIBED THRESHOLDS DISCUSSED IN THE DETAILS FOR EACH PRACTICE.
 3. ALL DAMAGED TEMPORARY AND PERMANENT SEDIMENT, EROSION CONTROL AND STORMWATER MANAGEMENT PRACTICES SHOULD BE REPAIRED OR REPLACED IMMEDIATELY UPON NOTICE.
 4. SEDIMENT SHALL BE DISPOSED OF PROPERLY EITHER ON SITE OR OFF SITE.
- PROJECT COMPLETION AND STABILIZATION:**
1. UPON PROJECT COMPLETION, ONCE THE SITE IS DEEMED STABILIZED (VEGETATION IS GERMINATED), THE TEMPORARY SEDIMENT CONTROL BARRIERS AND EROSION CONTROL PRACTICES SHALL BE REMOVED. ANY DISTURBANCE CREATED DURING REMOVAL SHALL BE REPAIRED IN AN APPROPRIATE MANNER.
 2. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM ALL ON SITE CATCH BASINS AND THE SEDIMENT FOREBAYS TO THE TREATMENT SWALE.

PERMANENT EROSION & SEDIMENTATION CONTROL DETAIL

NH ROUTE 108
ROCHESTER HILL RD
INNOVATION DRIVE
ROCHESTER, NH
PREPARED FOR:
CITY OF ROCHESTER
APRIL 2020

FILE NO. 104
PLAN NO. C-3012
DWG. NO. 19289 SP-1
F.B. NO.