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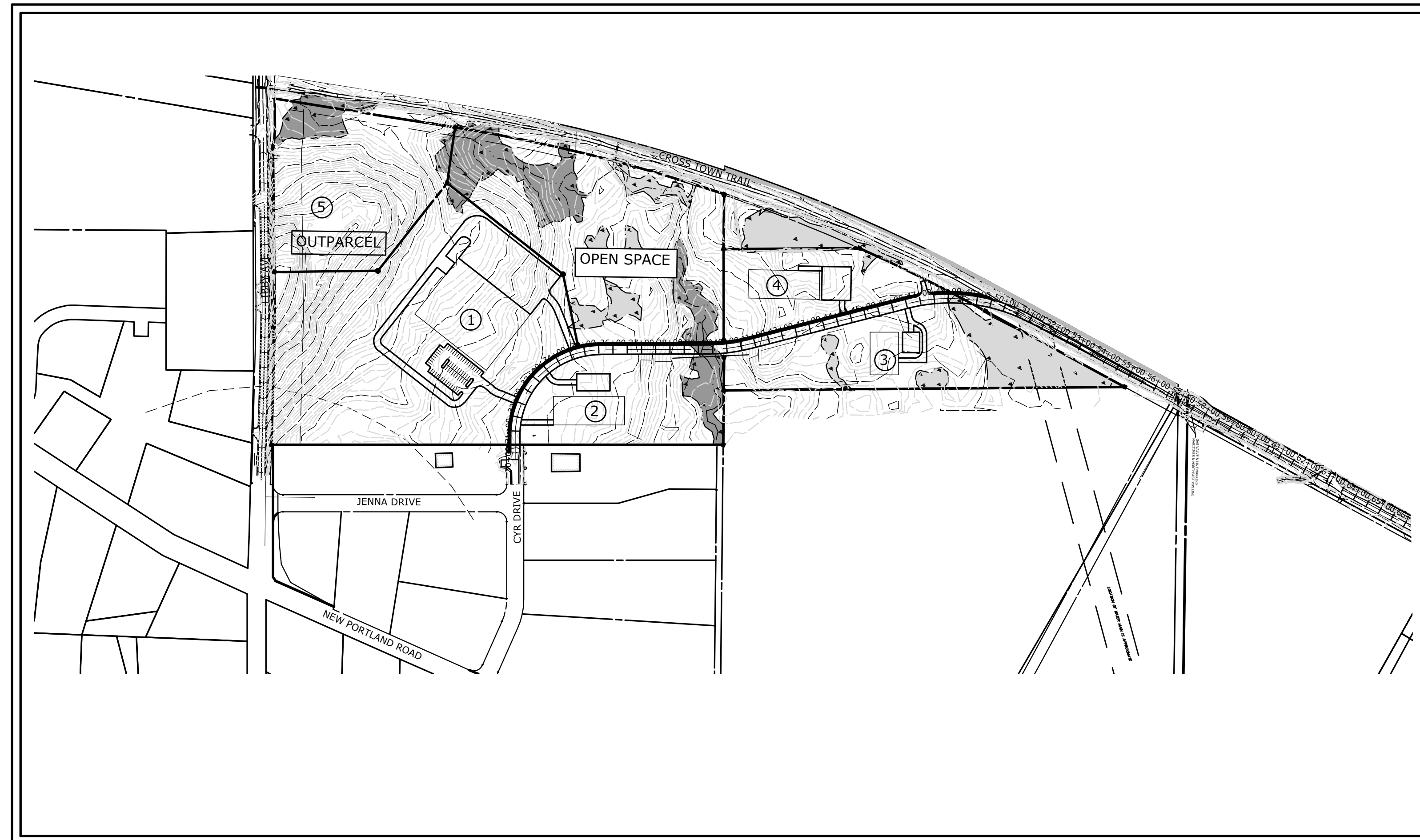
GENERAL NOTES:

- TOPOGRAPHIC INFORMATION IS TAKEN FROM MAP PREPARED BY: NORTHERN SURVEY ENGINEERING, LLC, ENTITLED: "BOUNDARY & EXISTING CONDITIONS SURVEY OF PROPOSED GORHAM INDUSTRIAL PARK EXPANSION", DRAWN AT A SCALE OF 1"=200' AND 1"=100', DATED MAY 29, 2020.
- NORTH ARROW, BEARINGS AND COORDINATES IN REFERENCE TO GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE (NAD 83).
- ELEVATIONS, CONTOURS, AND BENCHMARK ARE BASED UPON NAVD 88 DATUM.
- WETLAND BOUNDARIES WERE DELINEATED BY A CERTIFIED SOIL SCIENTIST WITH MAINELY SOILS, LLC IN APRIL AND MAY OF 2020. VERNAL POOLS WERE FLAGGED ON APRIL 19 AND APRIL 24, 2020.
- THE REQUIREMENT FOR A CLASS A SURVEY WAS WAIVED TO A CLASS B SURVEY BY THE PLANNING BOARD.
- INFORMATION SHOWN BEYOND THE LIMITS OF THIS PLAN ARE BASED UPON AVAILABLE MAPPING AND SHOULD BE CONSIDERED APPROXIMATE.
- INFORMATION REGARDING THE LOCATION OF EXISTING UTILITIES HAS BEEN BASED UPON AVAILABLE INFORMATION AND MAY BE INCOMPLETE, AND WHERE SHOWN SHOULD BE CONSIDERED APPROXIMATE. THE LOCATION OF ALL EXISTING UTILITIES SHOULD BE CONFIRMED PRIOR TO THE BEGINNING OF CONSTRUCTION BY CALLING DIGSAFE. ALL UTILITY LOCATIONS THAT DO NOT MATCH THE VERTICAL OR HORIZONTAL CONTROL SHOWN ON THE PLANS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION.
- SLR CONSULTING ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF MAPS AND DATA WHICH HAVE BEEN SUPPLIED BY OTHERS.
- ALL UTILITY SERVICES ARE TO BE UNDERGROUND. THE EXACT LOCATION, MEANS OF CONSTRUCTION, AND SIZE OF ELECTRIC, TELEPHONE, AND CABLE TELEVISION ARE TO BE DETERMINED BY THE RESPECTIVE UTILITY COMPANIES.
- ALL DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
- SEDIMENT AND EROSION CONTROL MEASURES AS DEPICTED ON THESE PLANS AND DESCRIBED WITHIN THE SEDIMENT AND EROSION CONTROL NARRATIVE SHALL BE IMPLEMENTED AND MAINTAINED UNTIL PERMANENT COVER AND STABILIZATION IS ESTABLISHED. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL CONFORM TO THE "MAINE GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL", BMP MANUAL, AND IN ALL CASES BEST MANAGEMENT PRACTICES SHALL PREVAIL.
- ALL DISTURBED AREAS SHALL RECEIVE A MINIMUM OF 4" TOPSOIL, AND BE SEEDED WITH GRASS OR SODDED, AS SHOWN ON THE PLANS.
- ALL FUEL, OIL, PAINT, OR OTHER HAZARDOUS MATERIALS USED DURING CONSTRUCTION SHOULD BE STORED IN A SECONDARY CONTAINER AND REMOVED TO A LOCKED INDOOR AREA WITH AN IMPERVIOUS FLOOR DURING NON-WORK HOURS.
- ALL STORM DRAINAGE SHALL BE HIGH DENSITY POLYETHYLENE PIPE (HDPE) UNLESS OTHERWISE INDICATED.
- ALL PROPOSED UNDERGROUND INFRASTRUCTURE MEETS TOWN OF GORHAM REQUIREMENTS.
- ALL PROPOSED LOTS ARE TO BE CONNECTED TO PUBLIC WATER AND SANITARY SEWER.
- ALL PROPOSED CONTOURS AND SPOT ELEVATIONS INDICATE FINISHED GRADE.
- THE PLANS REQUIRE A CONTRACTOR'S WORKING KNOWLEDGE OF LOCAL, MUNICIPAL, WATER AUTHORITY, AND STATE CODES FOR UTILITY SYSTEMS. ANY CONFLICTS BETWEEN MATERIALS AND LOCATIONS SHOWN, AND LOCAL REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO EXECUTION OF WORK. THE ENGINEER WILL NOT BE HELD LIABLE OR COSTS INCURRED TO IMPLEMENT OR CORRECT WORK WHICH DOES NOT CONFORM TO LOCAL CODE.
- THE CONTRACTOR MUST MAINTAIN (REPAIR/REPLACE WHEN NECESSARY) ALL SEDIMENT AND EROSION CONTROLS UNTIL ALL DEVELOPMENT ACTIVITY IS COMPLETED AND ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED.
- CONTRACTOR SHALL FOLLOW ALL APPROPRIATE OSHA STANDARDS FOR TRENCHING AND EXCAVATION, INCLUDING BUT NOT LIMITED TO SHORING, BENCHING, SHIELDING, AND EGRESS, AND SHALL HAVE A "COMPETENT PERSON" DESIGNATED AND IN RESPONSIBLE CHARGE OF ALL EXCAVATION WORK.
- THE SOUTHERN CORNER OF THE PROPERTY IS LOCATED WITHIN THE LIMITED WATER RESOURCE MANAGEMENT AREA OF THE BLACK BROOK AND BRACKETT ROAD SPECIAL PROTECTION DISTRICT AND IS SUBJECT TO ALL APPLICABLE REQUIREMENTS OF SECTION 1-17.E OF THE GORHAM ZONING REGULATIONS.

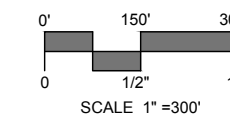
GORHAM INDUSTRIAL PARK WEST CAMPUS

CYR DRIVE GORHAM, MAINE

PLANNING BOARD SUBMISSION
NOVEMBER 4, 2022



PROJECT SITE VICINITY MAP:



LOCATION MAP:

ZONING DATA TABLE

ZONE: INDUSTRIAL DISTRICT			
CRITERIA	REQUIRED	EXISTING	PROPOSED
LOTS [#]	N/A	2	5
MIN. LOT AREA [AC.]	NONE	LOT 1: 42.90 AC.	3.45
MIN. STREET FRONTAGE [FT]	NONE	N/A	N/A
MIN. FRONT YARD [FT]	30*	NONE	30
MIN. SIDE YARD [FT]	20**	NONE	20
MIN. REAR YARD [FT]	20**	NONE	20
MAX. BUILDING HEIGHT [FT]	NONE	N/A	TBD
****MAX. BUILDING COVERAGE [%]	NONE ***	N/A	±16.64%
****LOT COVERAGE [%]	N/A	N/A	±18.48%
DIRECT WETLAND IMPACTS (SF)	N/A	N/A	14737 SF
WETLAND SETBACK IMPACTS (SF)	N/A	N/A	9,910 SF
DIRECT WATERCOURSE IMPACTS (LF)	N/A	N/A	100 LF

*EXCEPT WHERE THE FRONT YARD ABUTS A RESIDENTIAL USE OR DISTRICT, IN WHICH CASE A MIN. OF 50 FEET SHALL BE PROVIDED.
 **EXCEPT AS OTHERWISE REQUIRED BY THE BUFFER PROVISIONS OF THIS CODE AND EXCEPT WHERE THE SIDE AND/OR REAR YARDS ABUT A RESIDENTIAL USE OR DISTRICT IN WHICH CASE A MIN. OF 30 FT. OR 50% OF THE BUILDING OR OUTDOOR STORED MATERIAL HEIGHT, WHICHEVER IS GREATER, SHALL BE REQUIRED.
 ***EXCEPT THAT SPACE STANDARDS FOR RESIDENTIAL USES SHALL BE THE SAME AS FOR THE SUBURBAN RESIDENTIAL AND RURAL DISTRICTS.
 ****COVERAGE CALCULATIONS EXCLUDE WETLANDS, WATERCOURSES, AND VERNAL POOLS AND THEIR ASSOCIATED SETBACKS, ADJACENT RESIDENTIAL SETBACK, SLOPES GREATER THAN 15%, AND THE PORTLAND WATER DISTRICT EASEMENT.

Lot Number	Lot Area (acre)	Building Area (square feet)
1	15.57	80,000
2	4.55	25,000
3	6.08	15,000
4	3.45	25,000
OutParcel*	7.00	0
Total	36.65	145,000

* TO BE PERMITTED, AS NECESSARY, BY LOT OWNER

EXISTING	LEGEND	PROPOSED
	STREET LINE	
	PROPERTY LINE	
	EASEMENT	
	SETBACK LINE	
	MAJOR CONTOUR	
	MINOR CONTOUR	
	SPOT GRADE	
	WETLANDS	
	TREE LINE	
	TREE/SHRUB	
	STONEWALL	
	SITE LIGHT	
	HYDRANT	
	WATER METER	
	WATER VALVE	
	GAS VALVE	
	CATCH BASIN	
	MANHOLE/YARD DRAIN	
	SANITARY SEWER SERVICE/MAIN	
	STORM DRAIN W/CATCH BASIN	
	WATER MAIN	
	ELECTRICAL CONDUIT	
	UTILITY POLE	
	TRAFFIC SIGN	
	MONUMENT	
	EDGE OF PAVEMENT W/CURB	
	WETLANDS	
	WETLANDS OF SPECIAL SIGNIFICANCE	

LIST OF DRAWINGS

NAME	TITLE
--	TITLE SHEET
SHEET 1 OF 5, SHEET 4 of 5, SHEET 5 OF 5	BOUNDARY & EXISTING CONDITIONS SURVEY
PLN	OVERALL PLAN
IN	INDEX PLAN
PH	CONSTRUCTION SEQUENCING PLAN
EX-01 - EX-03	EXISTING CONDITIONS
LA-01 - LA-03	SITE PLAN - LAYOUT, LANDSCAPING & GRADING
SEC-01 - SEC-03	SEDIMENT AND EROSION CONTROL PLAN
PR	ROADWAY PLAN AND PROFILE - INDEX
PR-01 - PR-04	ROADWAY PLAN AND PROFILE
UT-01 - UT-03	UTILITY PLAN
W&S-01 - W&S-03	WATER & SEWER PLAN
SD-01 - SD-02	SEDIMENT AND EROSION CONTROL DETAILS AND SPECIFICATIONS
SD-03 - SD-13	SITE DETAILS
XSC-01 - XSC-14	ROADWAY CROSS SECTIONS
SW-01	STORMWATER PLAN - PRE-DEVELOPMENT
SW-02	STORMWATER PLAN - POST-DEVELOPMENT

SURVEYED BY:

 NORTHERN SURVEY ENGINEERING
 22 PARKERS WAY
 BRUNSWICK, MAINE 04011
 207.440.3487
 WWW.NORTHERNSURVEYENGINEERING.COM

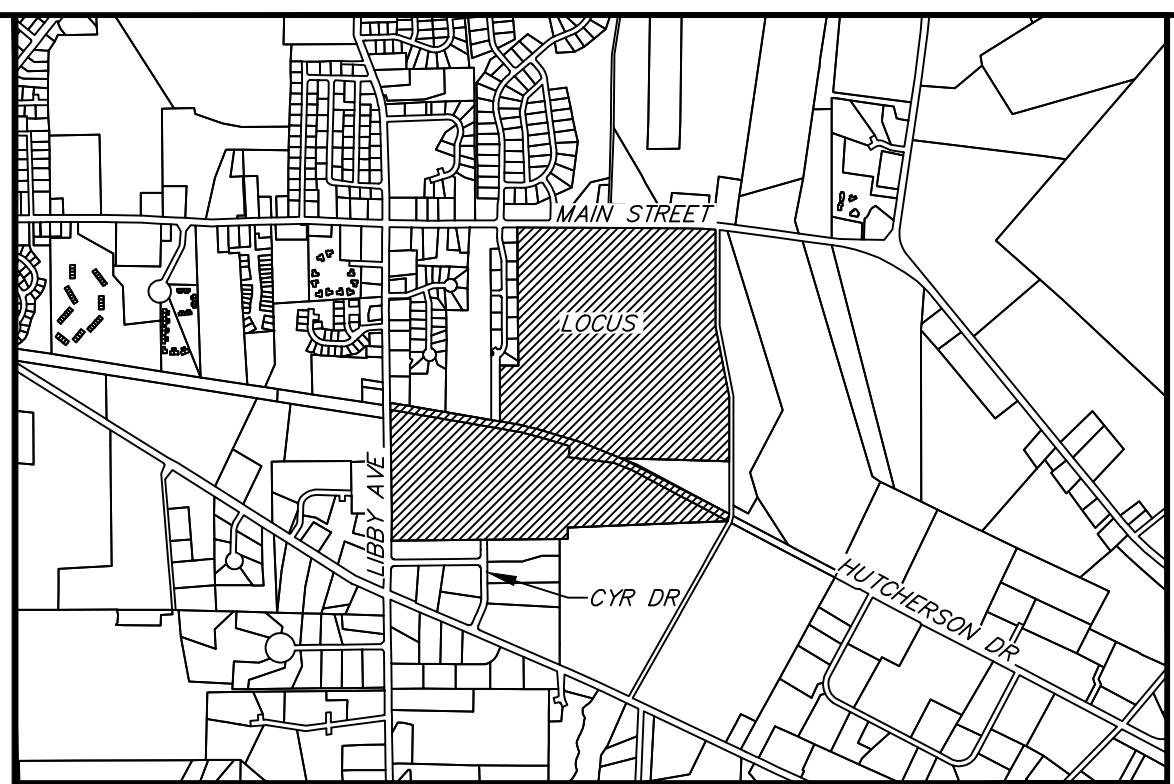
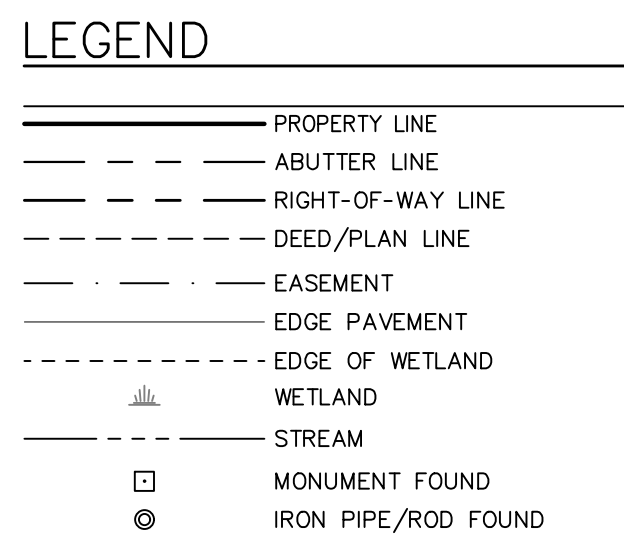
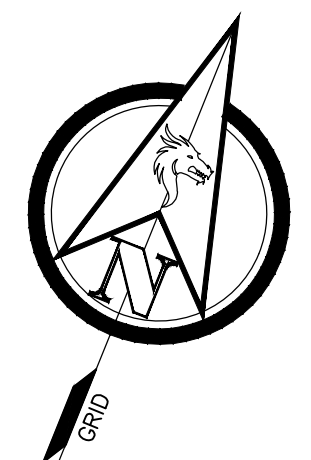
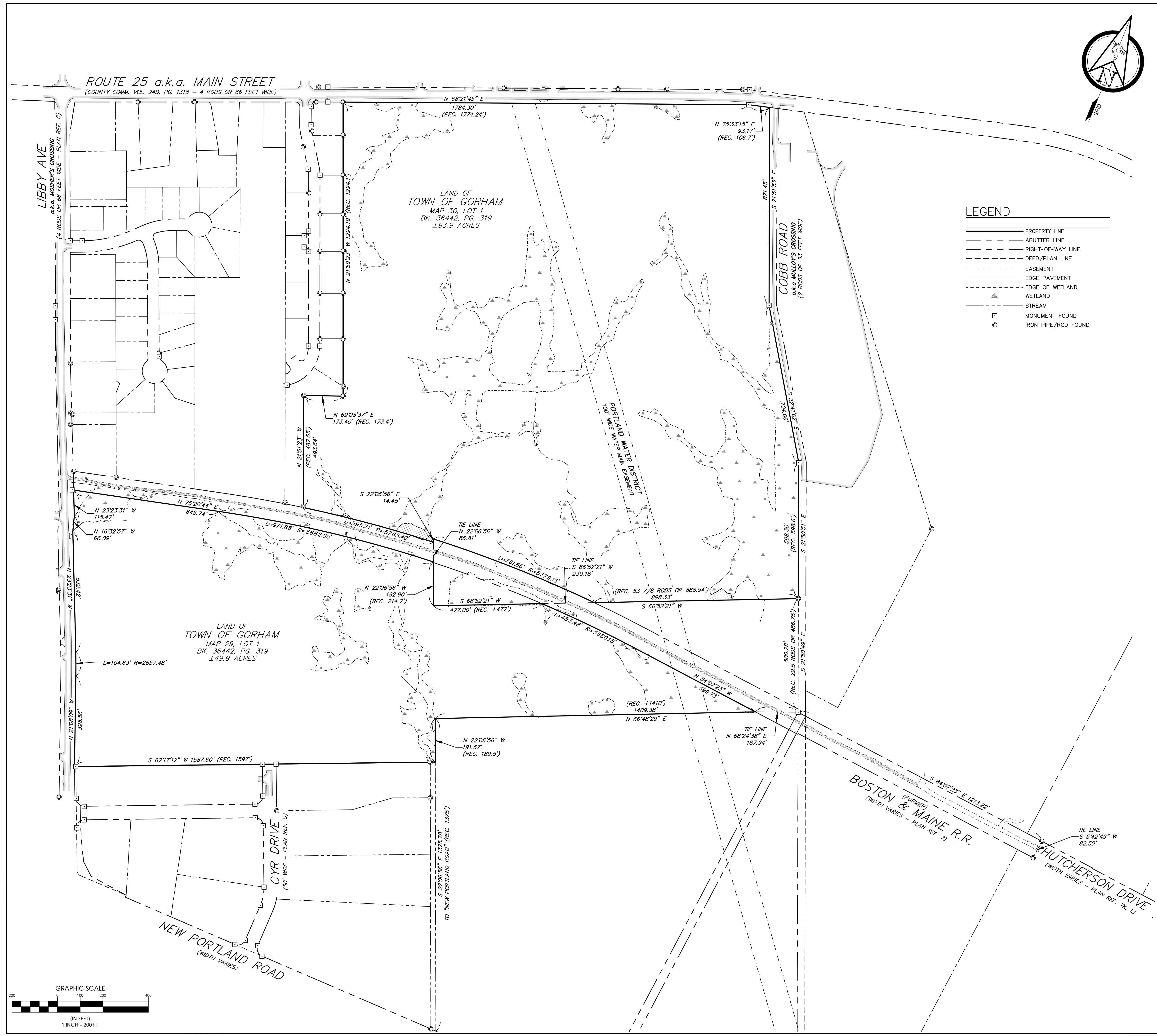
PREPARED BY:

 2 MARKET STREET, 5TH FLOOR
 PORTLAND, ME 04101
 207.541.9544
 SLRCONSULTING.COM



OWNER:
 TOWN OF GORHAM
 75 SOUTH STREET, SUITE 1
 GORHAM, MAINE 04038





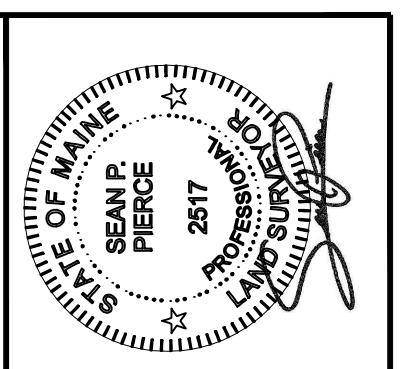
LOCATION MAP N.T.S.

GENERAL NOTES:

- THE RECORD OWNER OF THE SUBJECT PARCELS IS THE TOWN OF GORHAM BY DEED DATED FEBRUARY 20, 2020 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 36442, PAGE 319, AND IS SHOWN AS LOTS 29-1 & 30-1 IN THE TOWN OF GORHAM ASSESSOR'S MAPS.
- THE PROPERTY IS LOCATED IN THE INDUSTRIAL DISTRICT. LAND USE REGULATIONS ARE AS FOLLOWS:
 NET RESIDENTIAL DENSITY: N/A
 MINIMUM LOT SIZE: N/A
 MINIMUM STREET FRONTAGE: N/A
 MINIMUM FRONT YARD: 50 FT
 MINIMUM SIDE YARD: 30 FT
 MINIMUM REAR YARD: 30 FT
 MAXIMUM BUILDING HEIGHT: N/A
 MAXIMUM BUILDING COVERAGE: N/A
 * SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.
- TOTAL AREA OF PARCEL 29-1 IS APPROXIMATELY 49.90 ACRES. TOTAL AREA OF PARCEL 30-1 IS APPROXIMATELY 93.90 ACRES.
- BOUNDARY INFORMATION SHOWN HEREON IS BASED UPON AN ON-THE-GROUND FIELD SURVEY COMPLETED BY NORTHERN SURVEY ENGINEERING, LLC IN MARCH - MAY, 2020.
- BOOK AND PAGE REFERENCES SHOWN HEREON ARE IN REFERENCE TO THE CUMBERLAND COUNTY REGISTRY OF DEEDS (C.C.R.D.).
- BEARINGS SHOWN HEREON ARE IN REFERENCE TO GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83.
- THE LOCUS PROPERTY AS DEPICTED HEREON DOES NOT FALL WITHIN A SPECIAL FLOOD HAZARD AREA AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR GORHAM, MAINE, CUMBERLAND COUNTY, COMMUNITY-PANEL NUMBERS 230047 0025 B & 0030 B, HAVING AN EFFECTIVE DATE OF OCTOBER 15, 1981. THE LOCUS FALLS WITHIN AN AREA IDENTIFIED AS ZONE C, AREAS OF MINIMAL FLOODING.
- A WETLAND DELINEATION WAS PERFORMED ON THIS PROJECT SITE IN MAY, 2020 BY ALEX FINAMORE, CERTIFIED SOIL SCIENTIST OF MANELY SOILS, LLC, AND LOCATED BY DUAL-FREQUENCY RTK GPS. THIS DELINEATION CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN THE 1987 WETLANDS DELINEATION MANUAL AND NORTHEAST REGIONAL SUPPLEMENT AUTHORED AND PUBLISHED BY THE U.S. ARMY CORPS OF ENGINEERS.
- PLAN REFERENCES:
 A. STATE OF MAINE DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP, D.O.T. FILE NO. 3-432, DATED MAY, 1997, SHEET 3 OF 3.
 B. STATE OF MAINE DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP, STATE AID HIGHWAY NOS. 9 & 14, NEW PORTLAND RD./LIBBY AVE./BRACKETT RD., D.O.T. FILE NO. 3-561, DATED JUNE 2010.
 C. STATE OF MAINE DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP, STATE AID HIGHWAY NO. 14 (LIBBY AVENUE), D.O.T. FILE NO. 3-519, DATED JANUARY 2006.
 D. STATE OF MAINE DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP, STATE HIGHWAY 12, D.O.T. FILE NO. 3-353, DATED SEPTEMBER 1987, SHEETS 3-5 OF 11.
 E. RIGHT OF WAY AND TRACK MAP, BOSTON & MAINE R.R., VAL MAP V6ME-139 - 140, STATION 426+20 - 531+80, DATED JUNE 30, 1914.
 F. "STANDARD BOUNDARY SURVEY OF LAND IN GORHAM, MAINE FOR S-B ENTERPRISES" BY SEBAGO TECHNICS, INC. DATED NOVEMBER 30, 1989. UNRECORDED.
 G. "SUBDIVISION PLAN IN GORHAM, MAINE FOR FLORA B. PENNELL, BY BROWN & TAYLOR ASSOCIATES, DATED JUNE, 1985. PLAN BOOK 151, PAGE 60.
 H. "AMENDED SUBDIVISION PLAN" (PLAN REF. 7G) BY ADVANCED ENGINEERING, INC., DATED JANUARY 16, 1990. PLAN BOOK 184, PAGE 8.
 I. "LIBBY AVE. 3 LOT SUBDIVISION FOR FLORA B. PENNELL, GORHAM, MAINE" BY BROWN & TAYLOR ASSOCIATES, DATED SEPTEMBER 1983. PLAN BOOK 140, PAGE 26.
 J. "PLAN OF A PRIVATE WAY FOR DONALD J. & JEAN M. DOLLOFF" BY BH2M, DATED MARCH 1986. PLAN BOOK 154, PAGE 31.
 K. "GORHAM INDUSTRIAL PARK, GORHAM, MAINE" BY SAWYER, BROWN & MORTON, DATED NOVEMBER 7, 1973. PLAN BOOK 97, PAGE 30.
 L. "REVISED PLAN, GORHAM INDUSTRIAL PARK, GORHAM, MAINE" BY ALLIED ENGINEERING, INC. DATED DECEMBER 20, 1988. PLAN BOOK 182, PAGE 30.
 M. "WILLOWDALE" AMENDED FINAL SUBDIVISION, BY SURVEY, INC. DATED MARCH 1993. PLAN BOOK 193, PAGE 304.
 N. "AMENDED SUBDIVISION PLAN ON HUTCHERSON DRIVE, GORHAM, MAINE FOR REECE CORPORATION" BY OWEN HASKELL, INC. DATED FEBRUARY 24, 1988. PLAN BOOK 192, PAGE 340.
 O. "NEW PORTLAND PARKWAY, NEW PORTLAND ROAD, GORHAM, MAINE, SEVENTH AMENDED SUBDIVISION PLAN" BY WALSH ENGINEERING, ASSOCIATES, INC., DATED JANUARY 9, 2002 AND REVISED THROUGH SEPTEMBER 25, 2019. PLAN BOOK 219, PAGE 434.
 P. "FINAL PLAN, GORHAM MEADOWS" BY BH2M, DATED MARCH 2003. PLAN BOOK 204, PAGE 754.
 Q. "PORTLAND WATER DISTRICT, SEBAGO PIPELINE RIGHT OF WAY PLAN" DATED JULY, 1910

SURVEYORS CERTIFICATION:
 THIS SURVEY WAS PERFORMED UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT WAS DONE IN ACCORDANCE WITH CHAPTER 90, PART 1 (PROFESSIONAL STANDARDS OF PRACTICE) AND PART 2 (TECHNICAL STANDARDS OF PRACTICE) OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS.

SEAN P. PIERCE, MAINE PLS 2517
 DATE: 09/24/2021



REVISED BY:	DATE:	STATUS:



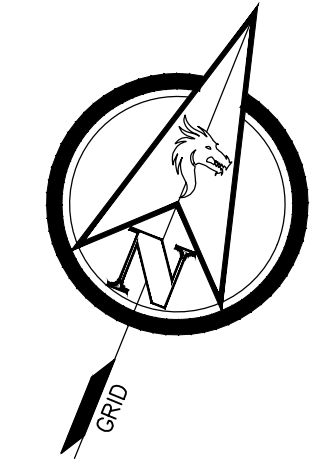
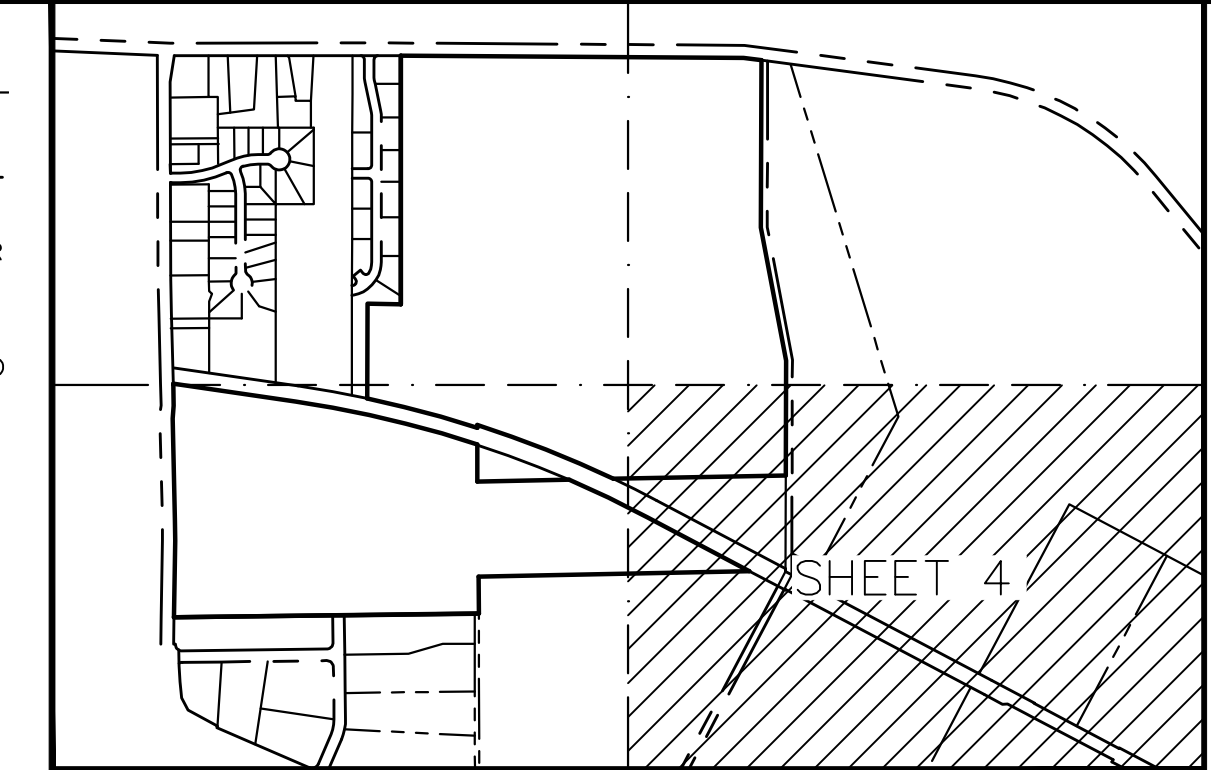
OVERALL BOUNDARY PLAN
 OF:
 LAND OF THE TOWN OF GORHAM
 LIBBY AVE & MAIN STREET
 GORHAM, MAINE
 FOR:
 TOWN OF GORHAM
 75 SOUTH STREET
 GORHAM, MAINE

DRAWN	CHECKED
DPO	SPP
PROJECT NO.	DATE
19216	09/24/21
SHEET SIZE	SCALE
24" X 36"	1" = 200'

MATCH LINE SHEET 3

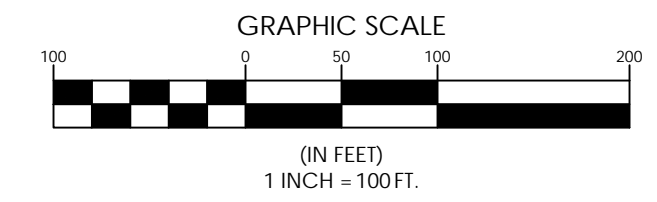
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LEGEND

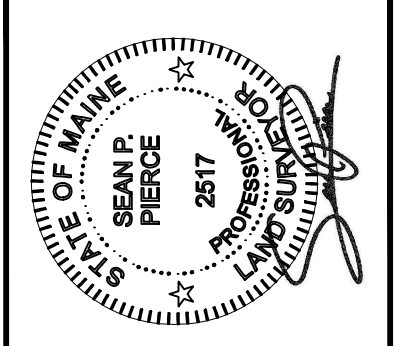
- PROPERTY LINE
- - - ABUTTER LINE
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- - - DEED/PLAN LINE
- - - EASEMENT
- MONUMENT FOUND
- IRON PIPE/ROD FOUND
- ▭ BUILDING
- ▭ EDGE PAVEMENT
- ▭ PAVEMENT PAINT
- ▭ EDGE GRAVEL
- ▭ CURB LINE
- ▭ EDGE OF WATER
- ▭ EDGE OF WETLAND
- ▭ WETLAND
- ▭ STREAM
- ▭ TREELINE
- - - 120 - - - 118 - - - CONTOURS
- x WIRE FENCE
- o BOLLARD
- G SIGN
- G GAS
- G GAS GATE VALVE
- W WATER
- W WATER GATE VALVE
- ◇ HYDRANT
- S SANITARY SEWER
- FM FORCE MAIN
- ⊙ SANITARY MANHOLE
- SD STORM DRAIN
- UD UNDER DRAIN
- ▭ CATCH BASIN
- OHU OVERHEAD UTILITY
- UTILITY POLE
- GUY WIRE



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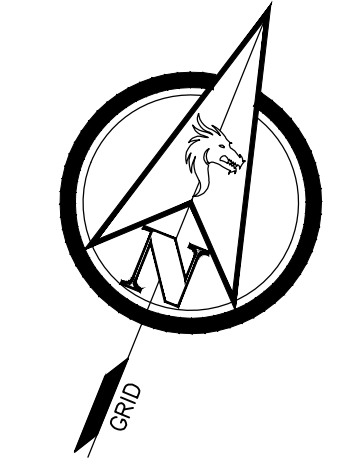
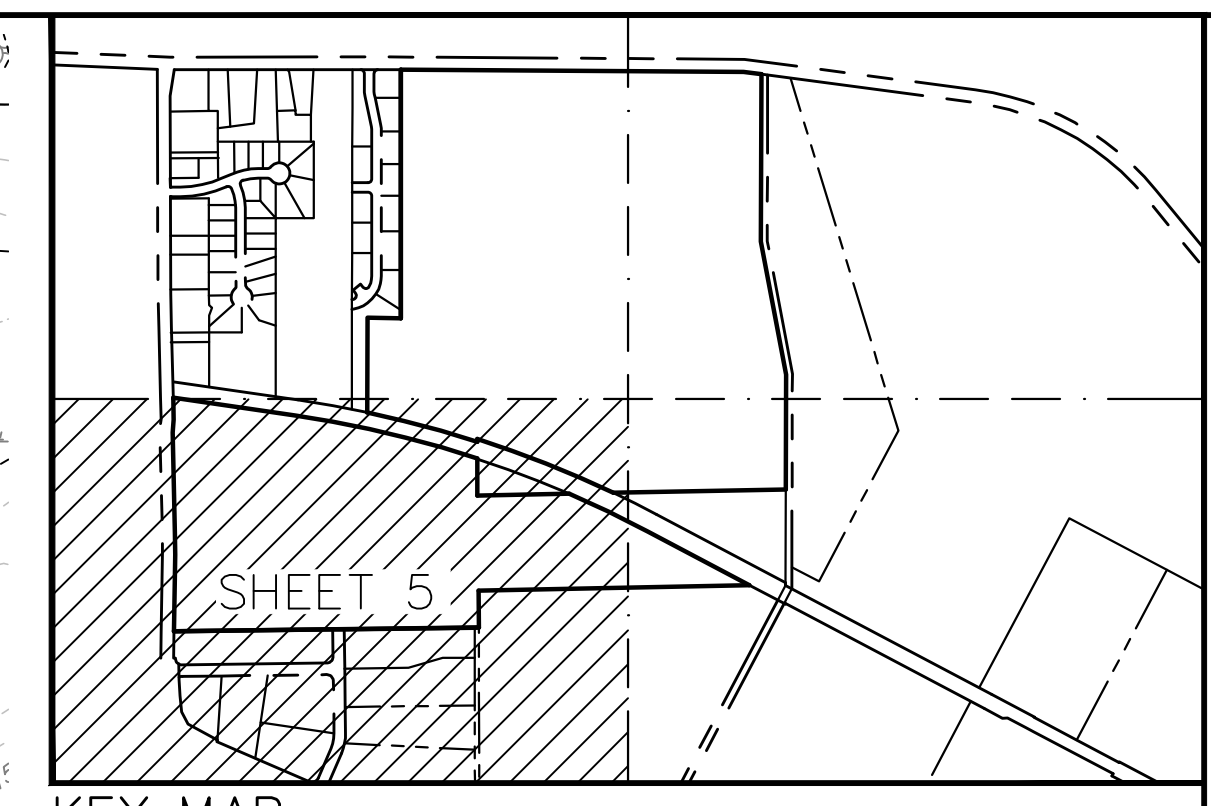
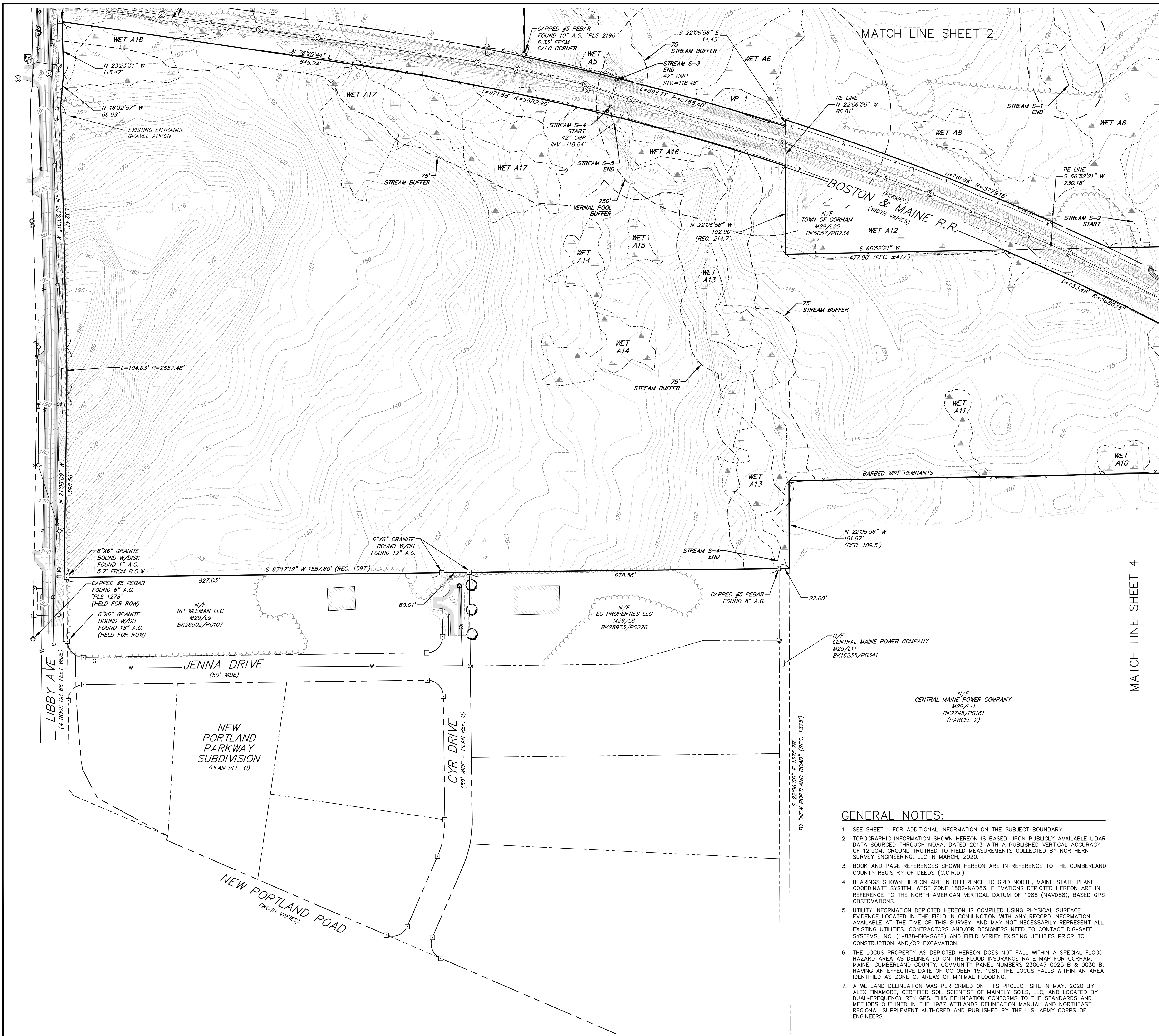


REV#	BY	DATE	STATUS
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK.			

NORSE
NORTHERN SURVEY ENGINEERING
207.440.5487
22 PARKERS WAY, BETHUNE, MAINE 04011
www.northernsurveyengineering.com

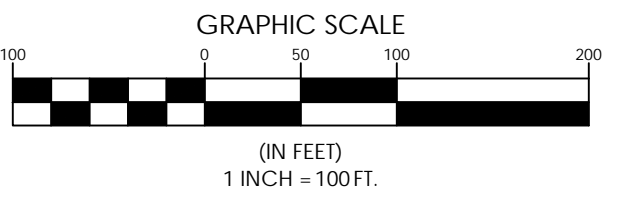
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LIBBY AVE & MAIN STREET
GORHAM, MAINE
FOR:
TOWN OF GORHAM
75 SOUTH STREET
GORHAM, MAINE

DRAWN	CHECKED
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PROJECT NO.	DATE
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LEGEND

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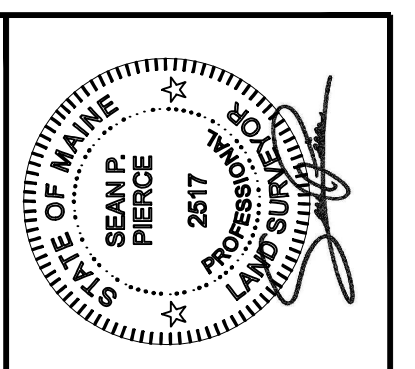
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5. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL SURFACE EVIDENCE LOCATED IN THE FIELD IN CONJUNCTION WITH ANY RECORD INFORMATION AVAILABLE AT THE TIME OF THIS SURVEY, AND MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND/OR EXCAVATION.
6. THE LOCUS PROPERTY AS DEPICTED HEREON DOES NOT FALL WITHIN A SPECIAL FLOOD HAZARD AREA AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR GORHAM, MAINE, CUMBERLAND COUNTY, COMMUNITY-PANEL NUMBERS 230047 0025 B & 0030 B, HAVING AN EFFECTIVE DATE OF OCTOBER 15, 1981. THE LOCUS FALLS WITHIN AN AREA IDENTIFIED AS ZONE C, AREAS OF MINIMAL FLOODING.
7. A WETLAND DELINEATION WAS PERFORMED ON THIS PROJECT SITE IN MAY, 2020 BY ALEX FINAMORE, CERTIFIED SOIL SCIENTIST OF MAINELY SOILS, LLC, AND LOCATED BY DUAL-FREQUENCY RTK GPS. THIS DELINEATION CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN THE 1987 WETLANDS DELINEATION MANUAL AND NORTHEAST REGIONAL SUPPLEMENT AUTHORED AND PUBLISHED BY THE U.S. ARMY CORPS OF ENGINEERS.

SURVEYORS CERTIFICATION:

THIS SURVEY WAS PERFORMED UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT WAS DONE IN ACCORDANCE WITH CHAPTER 90, PART 1 (PROFESSIONAL STANDARDS OF PRACTICE) AND PART 2 (TECHNICAL STANDARDS OF PRACTICE) OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS.

SP
SEAN P. PIERCE, MAINE PLS 2517

09/24/2021
DATE



REV#	BY	DATE	STATUS

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK.

NORSE
NORTHERN SURVEY ENGINEERING
207.440.5487
22 PARKERS WAY, BETHLEHEM, MAINE 04011
www.northernsurveyengineering.com

BOUNDARY & EXISTING CONDITIONS SURVEY
OF:
LAND OF THE TOWN OF GORHAM
LIBBY AVE & MAIN STREET
GORHAM, MAINE
FOR:
TOWN OF GORHAM
75 SOUTH STREET
GORHAM, MAINE

DRAWN	CHECKED
DPO	SPP
PROJECT NO.	DATE
19216	09/24/21
SHEET SIZE	SCALE
24" X 36"	1" = 100'

SHEET 5 OF 5

GENERAL NOTES:

1. THE RECORD OWNER OF THE PARCEL IS THE TOWN OF GORHAM BY DEED DATED FEBRUARY 20, 2020 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 36442, PAGE 319, AND IS SHOWN AS LOT 29-1 IN THE TOWN OF GORHAM ASSESSOR'S MAPS.
2. THE PROPERTY IS LOCATED IN THE INDUSTRIAL DISTRICT. LAND USE REGULATIONS ARE AS FOLLOWS:
 MINIMUM LOT AREA: N/A
 MINIMUM STREET FRONTAGE: N/A
 MINIMUM FRONT YARD: 30 FT
 MINIMUM SIDE YARD: 20 FT
 MINIMUM REAR YARD: 20 FT
 MINIMUM BUILDING HEIGHT: N/A
 MAXIMUM BUILDING COVERAGE: 11.23%
 LOT COVERAGE: 22.85%
3. TOTAL AREA OF PARCEL 29-1 IS APPROXIMATELY 42.90 ACRES.
4. BOUNDARY INFORMATION SHOWN HEREON IS BASED UPON AN ON-THE-GROUND FIELD SURVEY COMPLETED BY NORTHERN SURVEY ENGINEERING, LLC IN MARCH - MAY, 2020.
5. GRANITE OR CONCRETE MONUMENTS SHALL BE AT LEAST 5 INCHES SQUARE AND SHALL BE 4 FEET LONG MINIMUM, WITH A FLAT TOP, AND BE SET AT ALL STREET CORNERS AND AT ALL POINTS WHERE THE STREET LINE INTERSECTS THE EXTERIOR OF THE SUBDIVISIONS AND AT ANGLE POINTS AND POINTS OF CURVE IN EACH STREET. THE TOP OF THE MONUMENT WILL BE DRILLED WITH WASHER AND SPIKE SET SO THAT IT MAY BE LOCATED BY A METAL DETECTOR. MONUMENTS SHALL BE SET FLUSH WITH THE FINISHED GRADE ON LAWN AND BE RAISED 6 INCHES IN WOODED OR UNDEVELOPED AREAS.
6. ALL OTHER LOT CORNERS SHALL BE MARKED WITH CAPPED #5 REINFORCING RODS, 36 INCHES LONG, AND SET FLUSH WITH THE FINISHED GRADE.
7. THE OPEN SPACE LOT, IDENTIFIED AS LOT 5, SHALL NOT BE FURTHER DIVIDED OR USED FOR FUTURE INDUSTRIAL LOT DEVELOPMENT. NO INDUSTRIAL BUILDING SHALL BE PERMITTED WITHIN THIS AREA WITHOUT PRIOR APPROVAL OF THE GORHAM PLANNING BOARD. THE COMMON OPEN SPACE SHALL BE OWNED BY THE TOWN OF GORHAM. THE USE OF THE COMMON OPEN SPACE SHALL BE LIMITED TO ACTIVE AND PASSIVE RECREATIONAL ACTIVITIES AS ALLOWED BY THE TOWN OF GORHAM.
8. NO CUTTING OF TREES IS ALLOWED WITHIN THE NO CUT BUFFER EXCEPT FOR DEAD, DISEASED, OR DYING TREES WITH THE APPROVAL OF THE TOWN PLANNER.
9. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON PUBLICLY AVAILABLE LIDAR DATA SOURCED THROUGH NEMA, DATED 2013 WITH A PUBLISHED VERTICAL ACCURACY OF 12.5CM, GROUND-TRUTHED TO FIELD MEASUREMENTS COLLECTED BY NORTHERN SURVEY ENGINEERING, LLC IN MARCH 2020.
10. BOOK AND PAGE REFERENCES SHOWN HEREON ARE IN REFERENCE TO THE CUMBERLAND COUNTY REGISTRY OF DEEDS (C.C.R.D.).

MAX. LOT DEVELOPMENT TABLE

Lot Number	Lot Area (acre)	Building Area (square feet)	Driveway/Parking Impervious Area (square feet)	Total Impervious Area (square feet)
1	15.57	80,000	113,720	193,720
2	4.55	25,000	12,020	37,020
3	6.08	15,000	11,320	26,320
4	3.45	25,000	13,020	38,020
OutParcel	7.00	0	0	0
Total	36.65	145,000	150,080	295,080
			Total Impervious Area (acres)	6.77
			Lot Coverage (%)	18.48%

GENERAL NOTES:

11. PLAN REFERENCES:
 - A. STATE OF MAINE DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP, D.O.T. FILE NO. 3-561, DATED JUNE 2010.
 - B. STATE OF MAINE DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP, STATE AID HIGHWAY NOS. 9 & 14, NEW PORTLAND RD./LIBBY AVE./BRACKETT RD., D.O.T. FILE NO. 3-561, DATED JUNE 2010.
 - C. STATE OF MAINE DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP, STATE AID HIGHWAY NO. 14 (LIBBY AVENUE), D.O.T. FILE NO. 39519, DATED JANUARY 2006.
 - D. STATE OF MAINE DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP, STATE HIGHWAY 12, D.O.T. FILE NO. 3-353, DATED SEPTEMBER 1987, SHEETS 3-5 OF 11.
 - E. RIGHT OF WAY AND TRACK MAP, BOSTON & MAINE R.R., VAL MAP V6ME-139 - 140, STATION 426+2 - 531+80, DATED JUNE 30, 1914.
 - F. "STANDARD BOUNDARY SURVEY OF LAND IN GORHAM, MAINE FOR S-B ENTERPRISES" BY SEBAGO TECHNICS, INC. DATED NOVEMBER 30, 1989, UNRECORDED.
 - G. "SUBDIVISION PLAN IN GORHAM, MAINE FOR FLORA B. PENNELL, BY BROWN & TAYLOR ASSOCIATES, DATED JUNE, 1985, PLAN BOOK 151, PAGE 60.
 - H. "AMENDED SUBDIVISION PLAN" (PLAN REF. 7G) BY ADVANCED ENGINEERING, INC., DATED JANUARY 16, 1990, PLAN BOOK 184, PAGE 8.
 - I. LIBBY AVE. 3 LOT SUBDIVISION FOR FLORA B. PENNELL, GORHAM, MAINE* BY BROWN & TAYLOR ASSOCIATES, DATED SEPTEMBER 1983, PLAN BOOK 140, PAGE 26.
 - J. "PLAN OF A PRIVATE WAY FOR DONALD J. & JEAN M. DOLLOFF" BY BH2M, DATED MARCH 1986, PLAN BOOK 154, PAGE 31.
 - K. "GORHAM INDUSTRIAL PARK, GORHAM, MAINE" BY SAWYER, BROWN & MORTON, DATED NOVEMBER 9, 1973, PLAN BOOK 97, PAGE 30.
 - L. "REVISED PLAN, GORHAM INDUSTRIAL PARK, GORHAM, MAINE" BY ALLIED ENGINEERING, INC. DATED DECEMBER 20, 1989, PLAN BOOK 182, PAGE 30.
 - M. "WILLOWDALE" AMENDED FINAL SUBDIVISION, BY SURVEY, INC. DATED MARCH 1993, PLAN BOOK 193, PAGE 304.
 - N. "AMENDED SUBDIVISION PLAN ON HUTCHERSON DRIVE, GORHAM, MAINE FOR REECE CORPORATION" BY OWEN HASKELL, INC. DATED FEBRUARY 24, 1988, PLAN BOOK 192, PAGE 340.
 - O. NEW PORTLAND PARKWAY, NEW PORTLAND ROAD, GORHAM, MAINE, SEVENTH AMENDED SUBDIVISION PLAN" BY WALSH ENGINEERING, ASSOCIATES, INC., DATED JANUARY 9, 2002 AND REVISED THROUGH SEPTEMBER 25, 2019, PLAN BOOK 219, PAGE 434.
 - P. "FINAL PLAN, GORHAM MEADOWS" BY BH2M, DATED MARCH 2003, PLAN BOOK 204, PAGE 254.
 - "PORTLAND WATER DISTRICT, SEBAGO PIPELINE RIGHT OF WAY PLAN" DATED JULY, 1910.
12. BEARINGS SHOWN HEREON ARE IN REFERENCE TO GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83. ELEVATIONS SHOWN HEREON ARE IN REFERENCE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), BASED GPS OBSERVATIONS.
 13. DRIVEWAYS AND ALL SITE RELATED BUILDING AND PARKING, ARE SHOWN FOR CONCEPTUAL AND PLANNING PURPOSE ONLY AND ARE NOT INTENDED TO SHOW THE ACTUAL LOCATION OR EXACT DIMENSIONS AS MAY BE DEVELOPED IN THE FUTURE
 14. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL SURFACE EVIDENCE LOCATED IN THE FIELD IN CONJUNCTION WITH ANY RECORD INFORMATION AVAILABLE AT THE TIME OF THIS SURVEY, AND MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS AND/OR ENGINEERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND/OR EXCAVATION.
 15. THE LOCUS PROPERTY AS DEPICTED HEREON DOES NOT FALL WITHIN A SPECIAL FLOOD HAZARD AREA AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR GORHAM, MAINE, CUMBERLAND COUNTY, COMMUNITY-PANEL NUMBERS 230047-0025 & 0030 &, HAVING AN EFFECTIVE DATE OF OCTOBER 15, 1981. THE LOCUS FALLS WITHIN AN AREA IDENTIFIED AS ZONE C, AREAS OF MINIMAL FLOODING.
 16. A WETLAND DELINEATION WAS PERFORMED ON THIS PROJECT SITE IN APRIL & MAY, 2020 BY ALEX FINAMORE, CERTIFIED SOIL SCIENTIST OF MAINLY SOILS, LLC, AND LOCATED BY DUAL-FREQUENCY RTK GPS. THIS DELINEATION CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN THE 1987 WETLANDS DELINEATION MANUAL AND NORTHEAST REGIONAL SUPPLEMENT AUTHORED AND PUBLISHED BY THE U.S. ARMY CORPS OF ENGINEERS.
 17. THIS PROJECT REQUIRES A 50-FOOT WIDE PERIMETER SETBACK ALONG LIBBY AVENUE AND NEW PORTLAND ROAD, UNLESS IN THE OPINION OF THE PLANNING BOARD, A GREATER DIMENSION IS REQUIRED.
 18. EACH LOT WILL INDIVIDUALLY CONNECT TO SEWER, WATER SERVICE AND ELECTRICAL LINES EXTENDED FROM CYR DRIVE UNLESS OTHERWISE SPECIFIED BY THE DEPARTMENT OF GORHAM PLANNING BOARD.
 19. BLASTING IS PROHIBITED WITHIN THE BLACK BROOK & BRACKETT ROAD SPECIAL PROTECTION DISTRICT OVERLAY. SEE CHAPTER 1, SECTION XVII OF THE GORHAM LAND USE CODE FOR ADDITIONAL RESTRICTIONS.
 20. IF ANY HAZARDOUS MATERIALS ARE USED OR STORED ON SITE, A GROUNDWATER PROTECTION PLAN MAY BE REQUIRED BY THE TOWN AND THE MAINE DEP. DETERMINATION WILL BE MADE DURING THE SITE APPROVAL PROCESS OF EACH LOT.
 21. ANY LOT WHICH HAS A BUSINESS REQUIRING A PHASE 1 SITE ASSESSMENT, THE DEP MUST BE SENT A COPY FOR REVIEW. ANY LOT WHICH HAS A BUSINESS USING OR GENERATING POTENTIAL CONTAMINANTS GREATER THAN WHAT IS REQUIRED FOR CLEANING AND MAINTENANCE, THE DEP MUST REVIEW THE HAZARDOUS MATERIALS INVENTORY AND EMERGENCY RESPONSE PLAN.

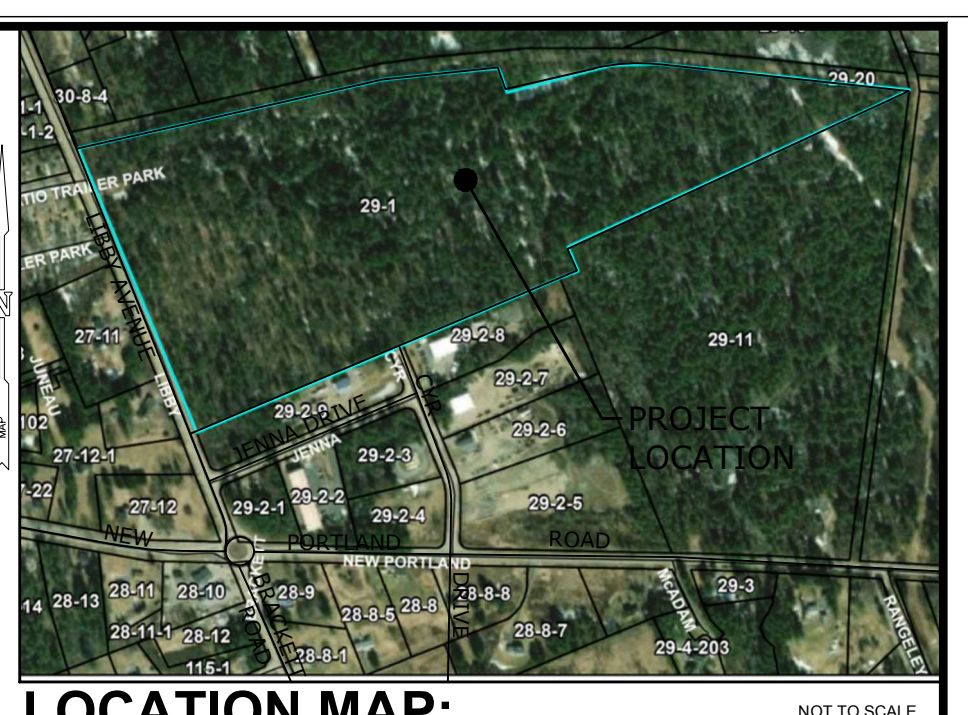
GENERAL NOTES:

21. ALL PROPOSED LOTS WILL BE ACCESSED VIA CYR DRIVE, UNLESS OTHERWISE APPROVED BY THE TOWN OF GORHAM PLANNING DEPARTMENT.
 22. THIS PROJECT AND THE DEVELOPMENT OF THE LOTS WITHIN THE SUBDIVISION ARE SUBJECT TO THE RULES AND REGULATIONS OF THE STATE OF MAINE DEP SITE LOCATION OF DEVELOPMENT PERMIT XX(TBD), NRPA TIER XX(TBD) WETLAND ALTERATION PERMIT.
 23. THE STREET SHALL BE PROPERLY NAMED AND SIGNED AS SOON AS THE ROAD IS CONSTRUCTED, WITH THE NAMES BEING APPROVED BY THE POLICE AND FIRE CHIEFS.
 24. ALL BUILDINGS SHALL BE PROPERLY NUMBERED, WITH THE NUMBERS BEING VISIBLE FROM THE ROAD.
 25. SITE DEVELOPMENT AND EARTHWORK CONSTRUCTION WILL CONFORM TO THE EROSION PREVENTION PROVISIONS OUTLINED IN THE "MAINE EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR CONSTRUCTION BEST MANAGEMENT PRACTICES" BY MDEP BUREAU OF LAND AND WATER QUALITY (DEPL0588) DATED MARCH 2003 OR LATEST REVISION.
 26. THE DEVELOPER SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL CONSTRUCTION STANDARDS SET FORTH IN CHAPTER 11, SECTIONS V AND IX OF THE LAND USE & DEVELOPMENT CODE, WHERE THIS IS IN CONFLICT BETWEEN THIS PLAN AND THOSE STANDARDS, THE STANDARDS SHALL GOVERN.
 27. ALL DRIVEWAYS SHALL HAVE PAVED APRONS WITH 4" OF BITUMINOUS CONCRETE COMMENCING AT THE EXISTING STREET EDGE OR THE STREET PAVEMENT WHERE IT INTERSECTS WITH THE DRIVEWAY FOR A LENGTH OF 20 FEET.
 28. NO LOAM OR TOPSOIL SHALL BE REMOVED FROM THE SUBDIVISION WITHOUT AN APPROVED PLAN UNDER THE TOWN OF GORHAM MINERAL EXPLORATION, EXCAVATION AND GRAVEL PIT ORDINANCE, EXCEPT FOR:
 - A. REMOVAL OF EXCESS MATERIAL NECESSARY FOR THE CONSTRUCTION OF THE ROADS, UTILITIES, AND STORM WATER MANAGEMENT INFRASTRUCTURE SHOWN ON THE APPROVED PLANS FOR THE SUBDIVISION, OR
 - B. REMOVAL OF EXCESS MATERIAL NECESSARY FOR THE CONSTRUCTION BUILDINGS OR BUILDING RELATED INFRASTRUCTURE ON A LOT WITHIN THE SUBDIVISION WHEN APPROVED BY THE CODE ENFORCEMENT OFFICER IN CONNECTION WITH THE ISSUANCE OF A BUILDING PERMIT.
 29. AN INDUSTRIAL PARK ASSOCIATION SHALL BE FORMED FOR MAINTENANCE OF THE STREETS AND STORMWATER MANAGEMENT IN THE SUBDIVISION AND ANY OTHER COMMON AREAS. ALL LOT OWNERS SHALL BE REQUIRED TO BE MEMBERS OF THE INDUSTRIAL PARK ASSOCIATION.
 30. THE PROPOSED ROAD HAS BEEN DESIGNED TO MEET OR EXCEED THE TOWN OF GORHAM'S INDUSTRIAL/COMMERCIAL STANDARDS.
 31. THE TOWN OF GORHAM RESERVES THE RIGHT TO REQUEST ADDITIONAL WORK BEYOND WHAT IS SHOWN ON THE PLANS AS FIELD CONDITIONS REQUIRE. ANY CHANGES MADE DURING CONSTRUCTION SHALL BE COORDINATED WITH AND APPROVED BY THE TOWN PLANNER AND TOWN ENGINEER.
 32. AN ENGINEER RETAINED BY THE APPLICANT SHALL VERIFY THAT THE STREETS AND WAYS HAVE BEEN CONSTRUCTED IN GENERAL CONFORMANCE WITH THE SPECIFICATIONS OF THE TOWN OF GORHAM'S LAND USE AND DEVELOPMENT CODE AND IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS APPROVED BY THE PLANNING BOARD. FURTHERMORE, THE APPLICANT'S ENGINEER WILL BE RESPONSIBLE FOR PROVIDING RECORD DRAWINGS ACCURATELY REFLECTING THESE IMPROVEMENTS AS REQUIRED BY THE CODE. RECORD DRAWINGS WILL INCLUDE A SET OF DIAGRAMS THAT ACCURATELY LOCATES THE POSITION OF ALL SANITARY AND DRAINAGE SERVICE DROPS AND STUBS.
 33. MAX. ALLOWABLE IMPERVIOUS AND DEVELOPMENT AREAS PER LOT ARE LISTED ON THE MAX. LOT DEVELOPMENT DATA TABLE ON THIS SHEET.
 34. INSPECTION AND MAINTENANCE RESPONSIBILITIES BEYOND THE RIGHT OF WAY REMAIN THE RESPONSIBILITY OF THE APPLICANT, UNTIL WHICH TIME THESE RESPONSIBILITIES ARE LEGALLY TRANSFERRED TO THE INDUSTRIAL PARK ASSOCIATION.
 35. THE SIZING AND TREATMENT EFFECTIVENESS OF THE STORMWATER MANAGEMENT FACILITIES ARE BASED ON THE IMPERVIOUS AREAS OF THE LAWN/LANDSCAPED AREAS ON EACH LOT AND ARE CONVEYED AS FOLLOWS: ANY VARIATION FROM THESE REQUIREMENTS WILL REQUIRE AN AMENDMENT TO THE SUBDIVISION PLAN AND SITE LAW PERMIT.
 - A. LOTS 1 AND 2 DRAIN TO STORMWATER BASIN 6A.
 - B. LOTS 3 DRAINS TO STORMWATER BASIN 5A.
 - C. AND 4 DRAINS TO STORMWATER BASIN 8C.
- MAX. ALLOWABLE IMPERVIOUS AND DEVELOPMENT AREAS PER LOT ARE LISTED ON THE MAX. LOT DEVELOPMENT TABLE ON THIS SHEET.

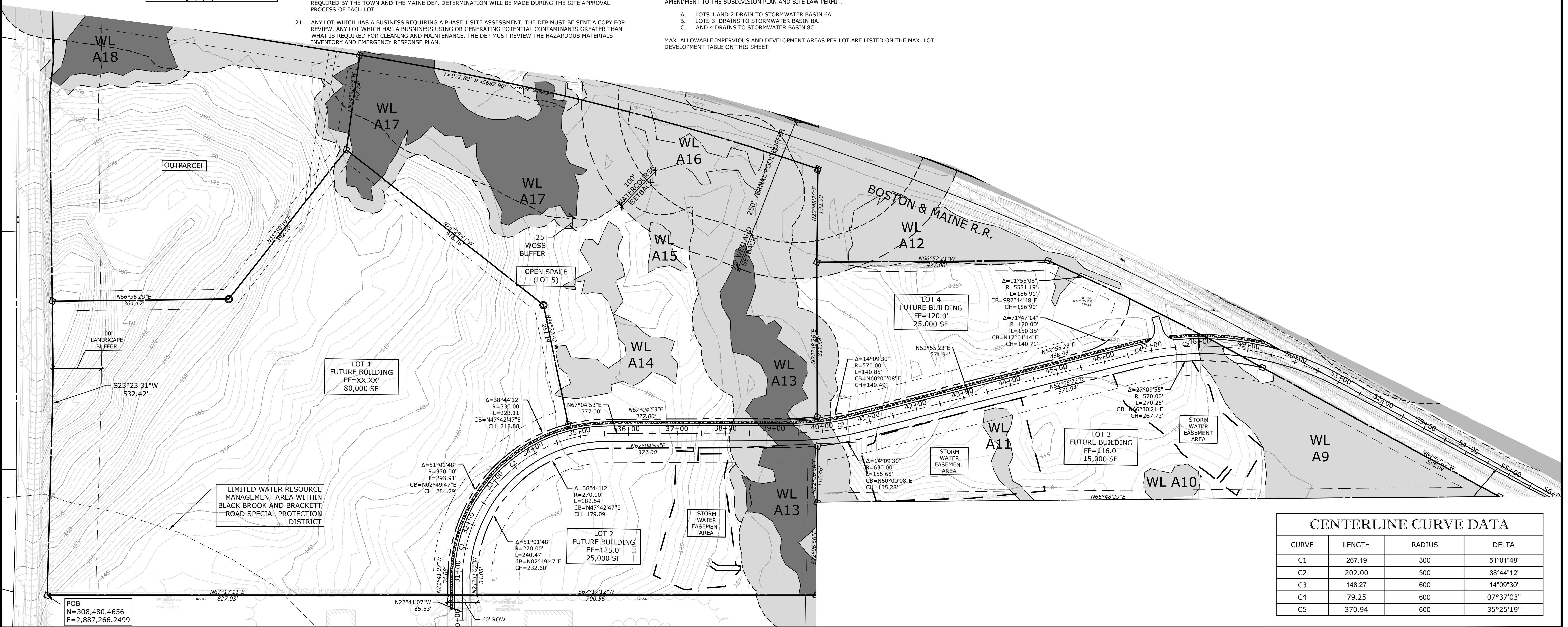
EXISTING	LEGEND	PROPOSED
——	STREET LINE	——
---	PROPERTY LINE	---
- - - -	EASEMENT	- - - -
----	SETBACK LINE	----
----	MAJOR CONTOUR	----
----	MINOR CONTOUR	----
----	WETLANDS	----
----	CURVE/LINE NO.	----
----	TREE LINE	----
○	MONUMENT	○
○	IRON PIN	○
---	EDGE OF PAVEMENT W/CURB	---
---	WETLANDS OF SPECIAL SIGNIFICANCE (WOSS)	---
---	WETLANDS	---

SUBDIVISION PLAN, APPROVED BY THE TOWN OF GORHAM PLANNING BOARD

NO.	DATE	DESCRIPTION	BY
1	12/19/2023	PLANNING BOARD REVISIONS	SWM
2	01/30/2023	REORGANIZED COMMENT 13	DIS



LOCATION MAP:



CURVE	LENGTH	RADIUS	DELTA
C1	267.19	300	51°01'48"
C2	202.00	300	38°44'12"
C3	148.27	600	14°09'30"
C4	79.25	600	07°37'03"
C5	370.94	600	35°25'19"

PROFESSIONAL ENGINEER

SLR

2 MARKET STREET, 5TH FLOOR
 GORHAM, ME 04743
 207.541.9344
 SLRCONSULTING.COM

DESIGNED	DATE	BY
MFZ	12/19/2023	SWM
SWM	01/30/2023	DIS

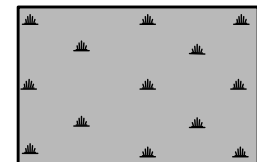
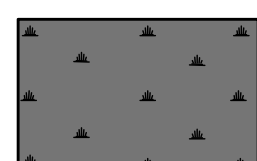
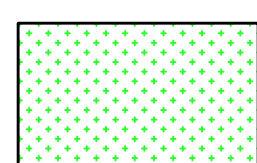





REORGANIZED COMMENT 13

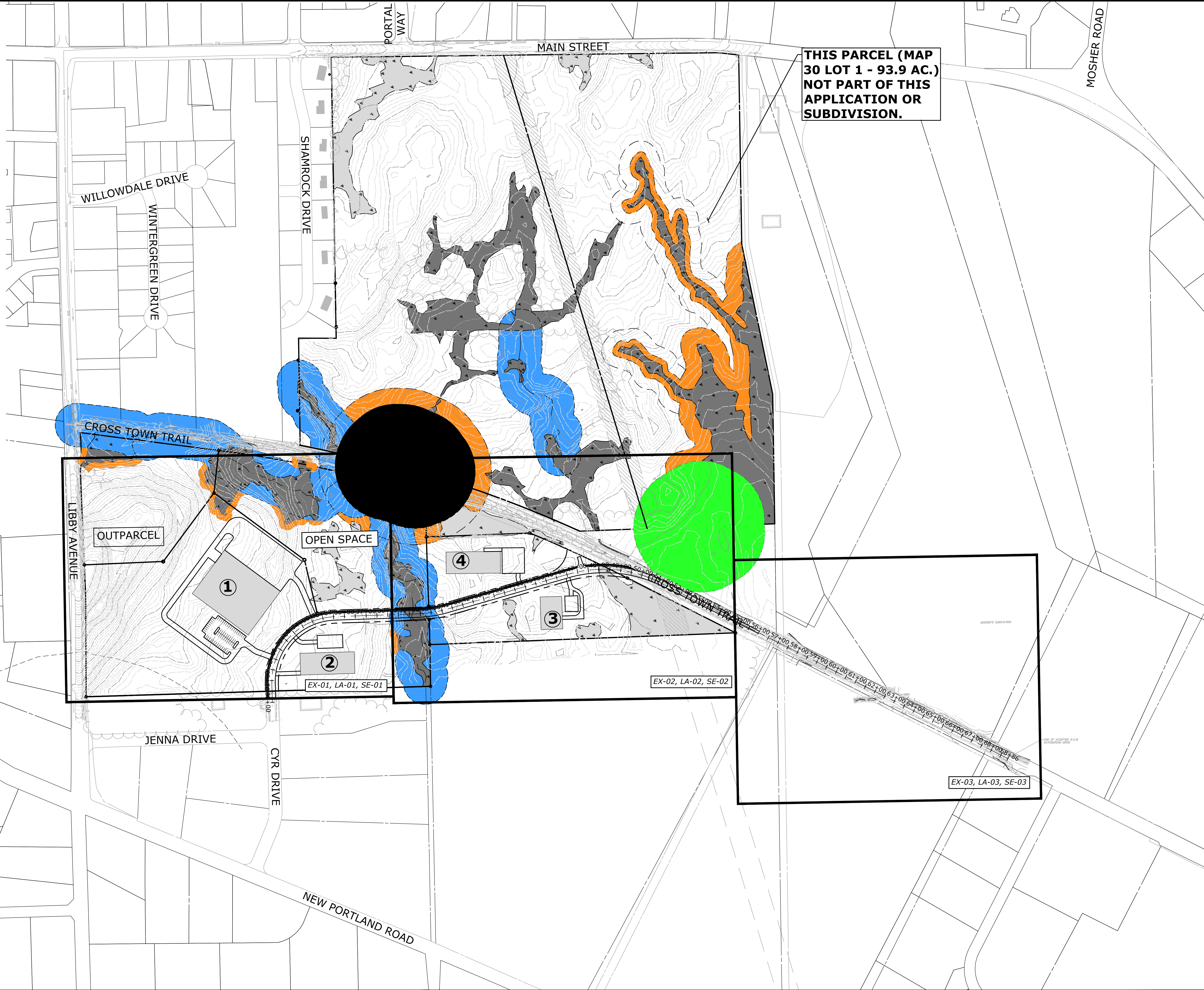
SCALE	DATE	PROJECT NO.
1"=100'	NOVEMBER 4, 2022	4807-13

PLN

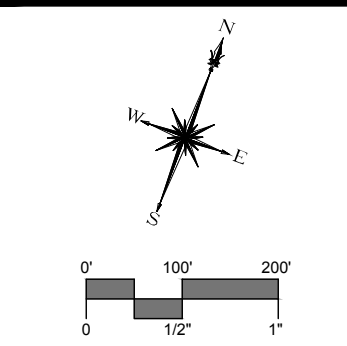

DATE: 11/04/2022 10:54 AM

LEGEND

-  FLAGGED WETLANDS
-  FLAGGED WETLANDS OF SPECIAL SIGNIFICANCE (WOSS)
-  VERNAL POOL
-  250' VERNAL POOL BUFFER
-  25'/75' WOSS SETBACK
-  50' RESIDENTIAL ADJACENT SETBACK
-  100' EXISTING WATERCOURSE SETBACK
-  PORTLAND WATER DISTRICT EASEMENT



THIS PARCEL (MAP 30 LOT 1 - 93.9 AC.) NOT PART OF THIS APPLICATION OR SUBDIVISION.

SLR
 2 MARKET STREET, 5TH FLOOR
 GORHAM, ME 04037
 207.541.9244
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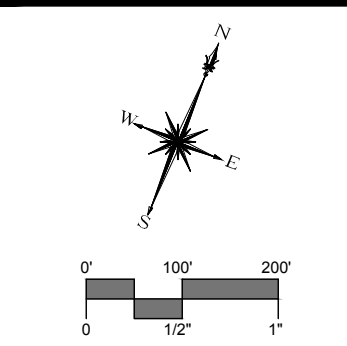
DESCRIPTION	DATE	BY

INDEX PLAN
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

SWM DESIGNED	SWM DRAWN	MFZ CHECKED

SCALE: 1"=200'
 DATE: NOVEMBER 4, 2022
 PROJECT NO: 4807-13

IN



SLR
 2 MARKET STREET, 5TH FLOOR
 GORHAM, ME 04101
 207.541.9244
 SLRCONSULTING.COM

DESCRIPTION	DATE	BY
PLANNING BOARD REVISIONS	12/19/2022	SWM

CONSTRUCTION SEQUENCING PLAN
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

MFZ	SWM	MFZ
DESIGNED	DRAWN	CHECKED

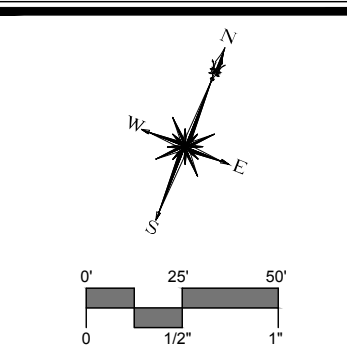
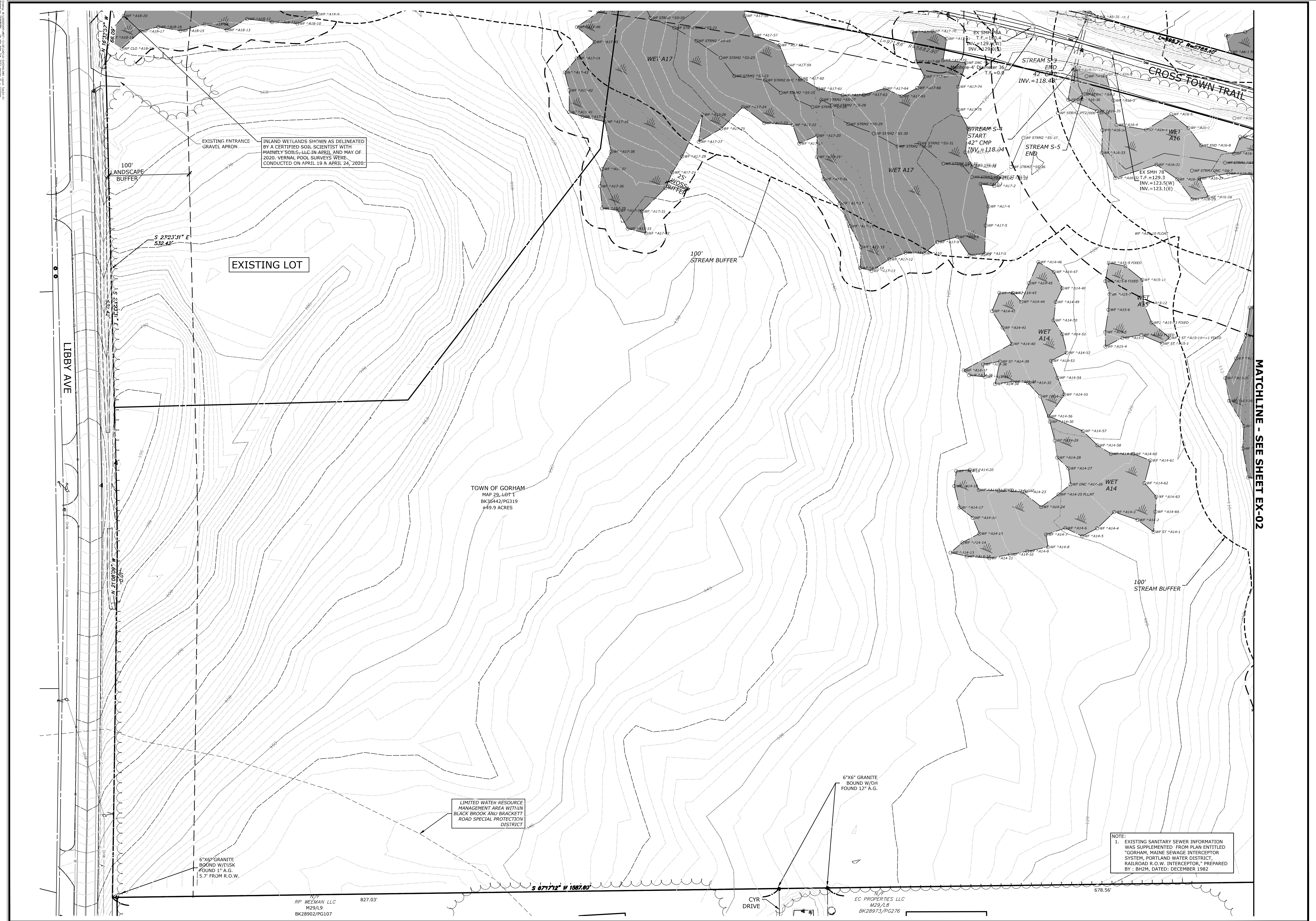
SCALE: 1"=200'
 DATE: **NOVEMBER 4, 2022**
 PROJECT NO.: 4807-13

PH

CONSTRUCTION SEQUENCING NOTES:

- 1. **PHASE 1A** INCLUDES THE CONSTRUCTION OF THE ROADWAY INFRASTRUCTURE CONTINUING FROM CYR DRIVE AND PROVIDING ACCESS TO LOTS 1 AND 2. PHASE 1A INCLUDES THE INSTALLATION OF SANITARY SEWER TO THE CONNECTION POINT AT CROSS TOWN TRAIL, SO THE STREAM CROSSING SHOULD ALSO BE BUILT AS PART OF THIS PHASE. THE ROADWAY SHOWN IN PHASE 1B WILL BE ROUGH GRADED TO ALLOW FOR SANITARY INSTALLATION DURING PHASE 1A AND THE REMAINDER OF THE UTILITIES WILL BE COMPLETED DURING PHASE 1B.
- 2. **PHASE 1B** INCLUDES THE COMPLETE CONSTRUCTION OF THE ROADWAY SERVING LOTS 3 AND 4 AND THE ASSOCIATED UTILITY INSTALLATIONS.

DATE PLOTTED: 11/16/2022 10:54 AM



SLR
2 MARKET STREET, 5TH FLOOR
GORHAM, ME 04037
TEL: 603.883.8883
WWW.SLRCONSULTING.COM

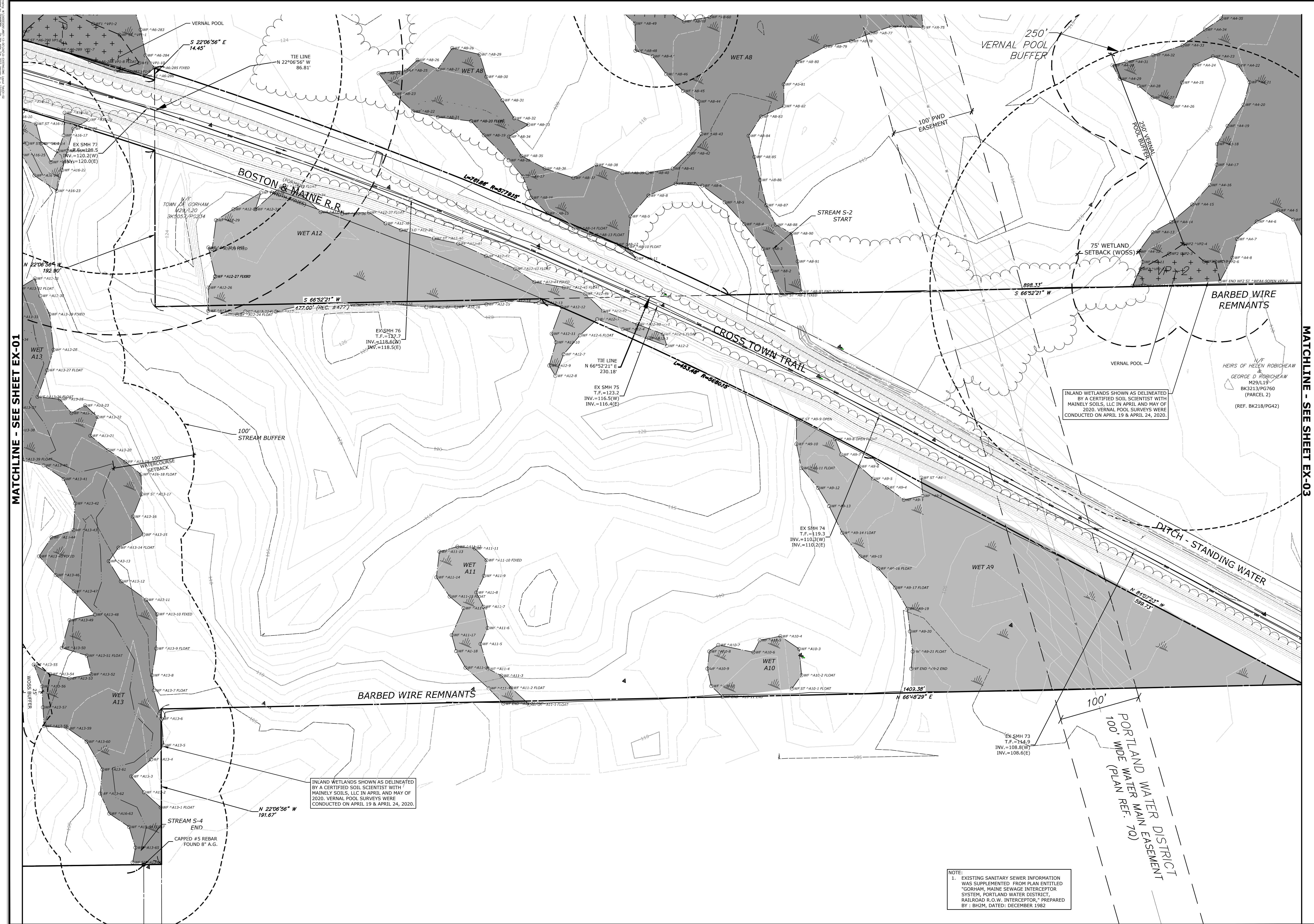
DESCRIPTION	DATE	BY

EXISTING CONDITIONS
GORHAM INDUSTRIAL PARK
WEST CAMPUS
CYR DRIVE
GORHAM, MAINE

HAR	SWM	MFZ
DESIGNED	DRAWN	CHECKED
SCALE		
1"=50'		
DATE		
NOVEMBER 4, 2022		
PROJECT NO.		
4807-13		

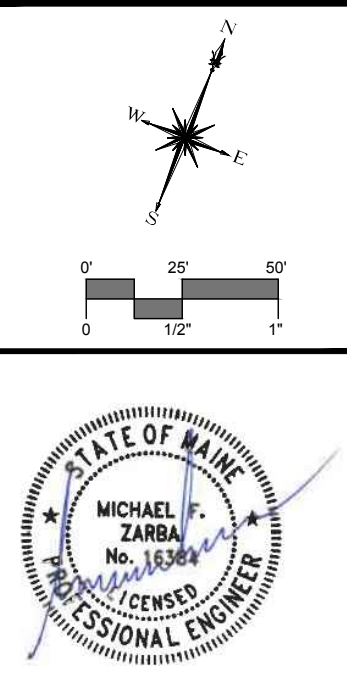
EX-01

M2022-11-15 CORRECTED PER M&M NO. 10 - MODIFICATIONS TO PLAN
 BY: [unreadable] [unreadable] [unreadable] [unreadable] [unreadable]



MATCHLINE - SEE SHEET EX-01

MATCHLINE - SEE SHEET EX-03



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 2 MARKET STREET, 5TH FLOOR
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DESCRIPTION	DATE	BY

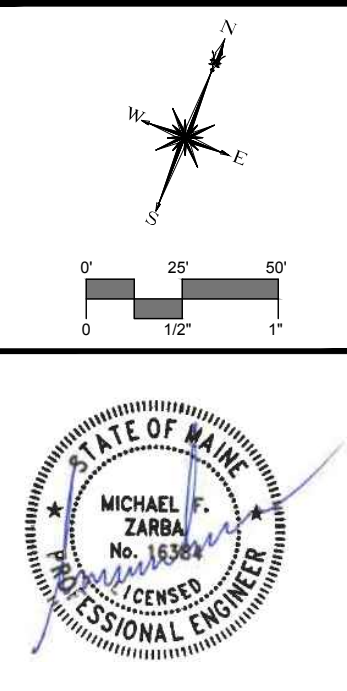
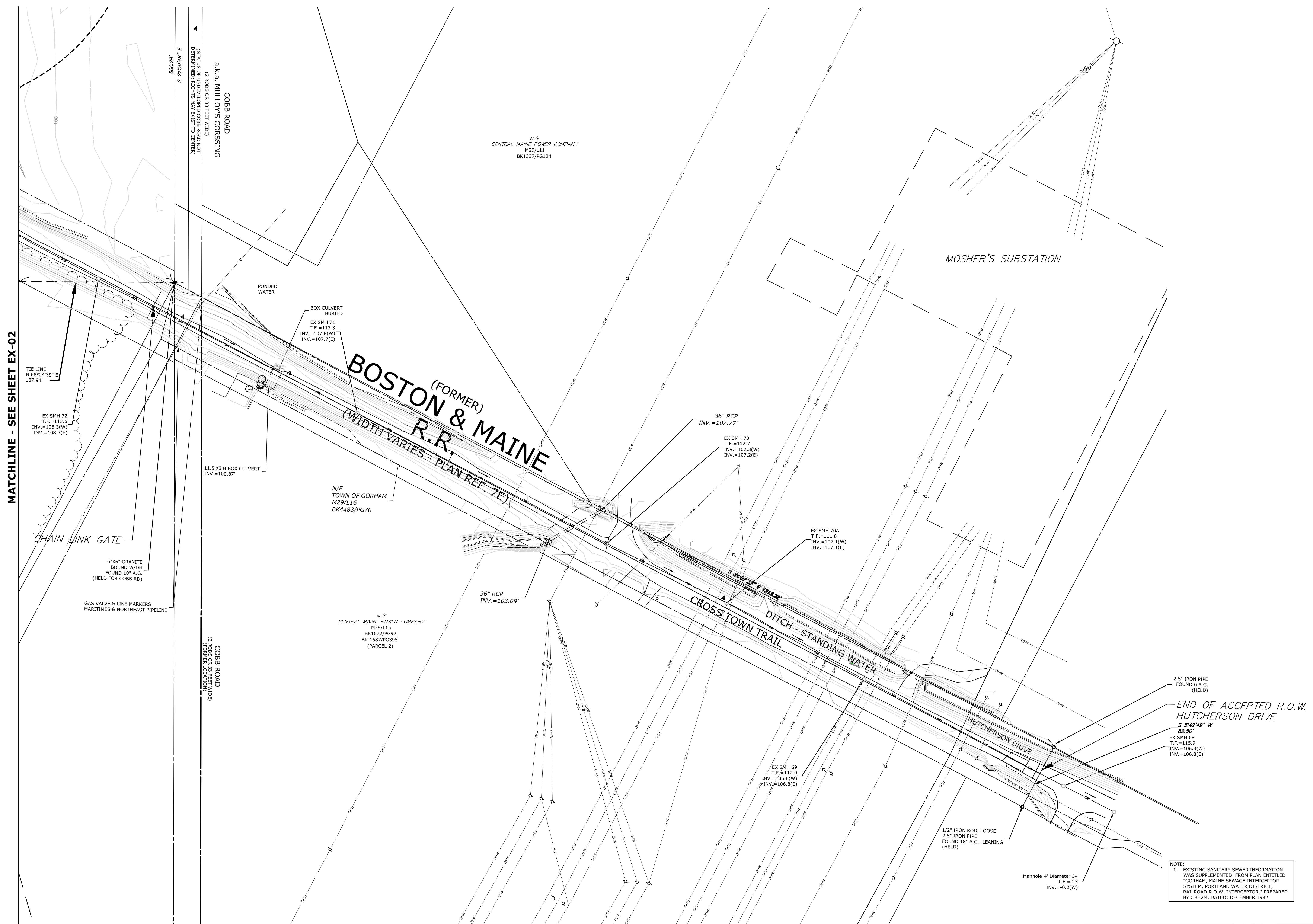
EXISTING CONDITIONS
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

HAR	SWM	MFZ
DESIGNED	DRAWN	CHECKED
1"=50'		
NOVEMBER 4, 2022		
DATE		
4807-13		
PROJECT NO.		

EX-02

4/25/22, 11:15 AM, 100% DESIGN, 100% PERMITTING, 100% CONSTRUCTION, 100% AS-BUILT
 10/25/22, 11:15 AM, 100% DESIGN, 100% PERMITTING, 100% CONSTRUCTION, 100% AS-BUILT

MATCHLINE - SEE SHEET EX-02



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 207.541.9444
 SLRCONSULTING.COM

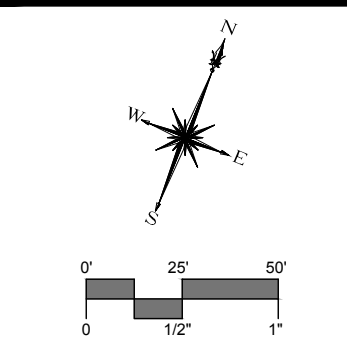
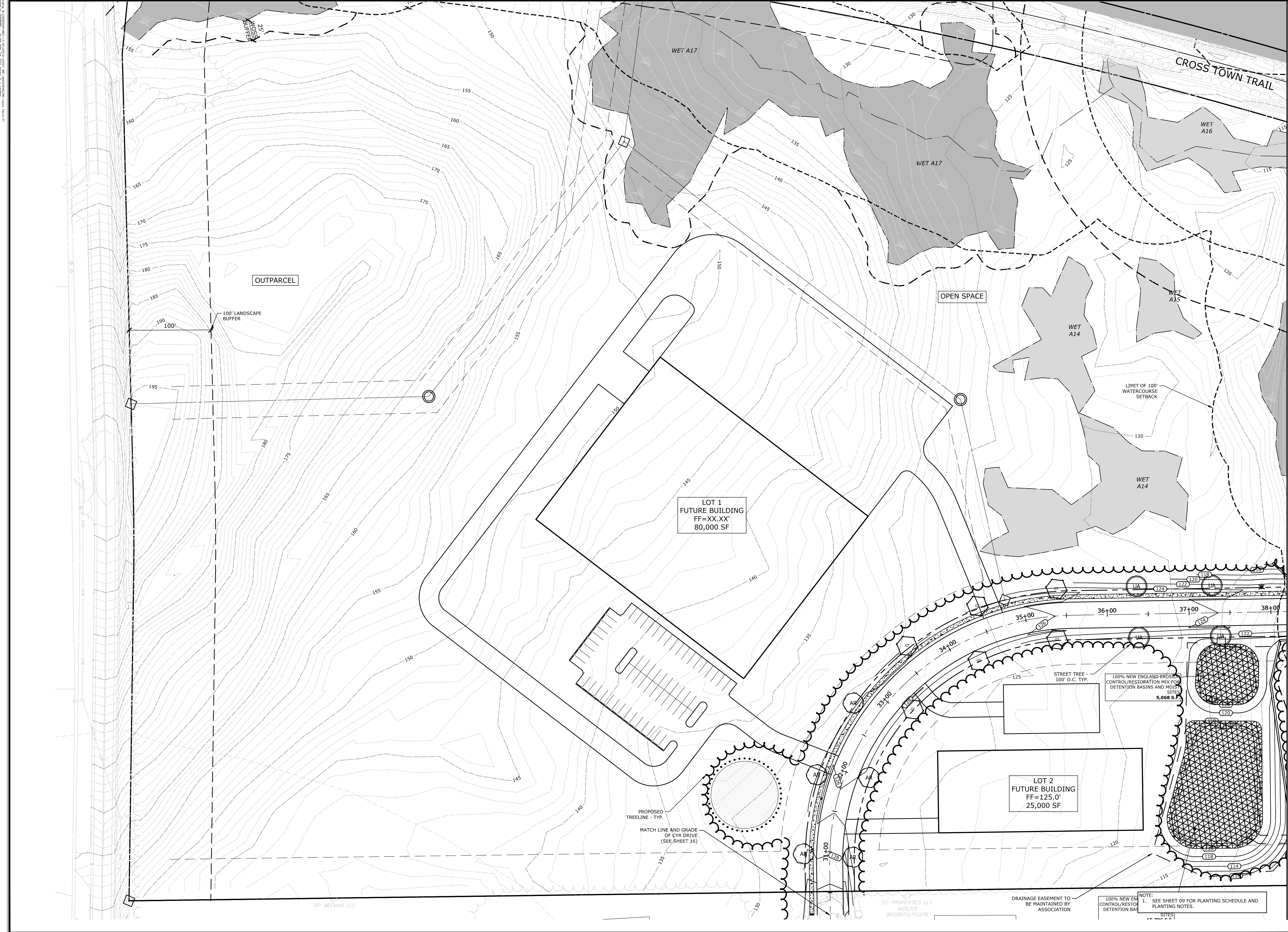
DESCRIPTION	DATE	BY

EXISTING CONDITIONS
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

HAR	SWM	MFZ
DESIGNED	DRAWN	CHECKED
SCALE		
1"=50'		
DATE		
NOVEMBER 4, 2022		
PROJECT NO.		
4807-13		

EX-03

NOTE:
 1. EXISTING SANITARY SEWER INFORMATION WAS SUPPLEMENTED FROM PLAN ENTITLED "GORHAM, MAINE SEWAGE INTERCEPTOR SYSTEM, PORTLAND WATER DISTRICT, RAILROAD R.O.W. INTERCEPTOR," PREPARED BY: BH2M, DATED: DECEMBER 1982



SLR
 2 MARKET STREET, 5TH FLOOR
 GORHAM, ME 04037
 TEL: 603.883.1944
 WWW.SLRCONSULTING.COM

DESCRIPTION	DATE	BY

SITE PLAN - LAYOUT LANDSCAPING & GRADING
GORHAM INDUSTRIAL PARK
WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

MFZ	SWM	MFZ
DESIGNED	DRAWN	CHECKED

SCALE: 1"=50'
 DATE: NOVEMBER 4, 2022
 PROJECT NO.: 4807-13

LA-01

MATCHLINE - SEE SHEET LA-02

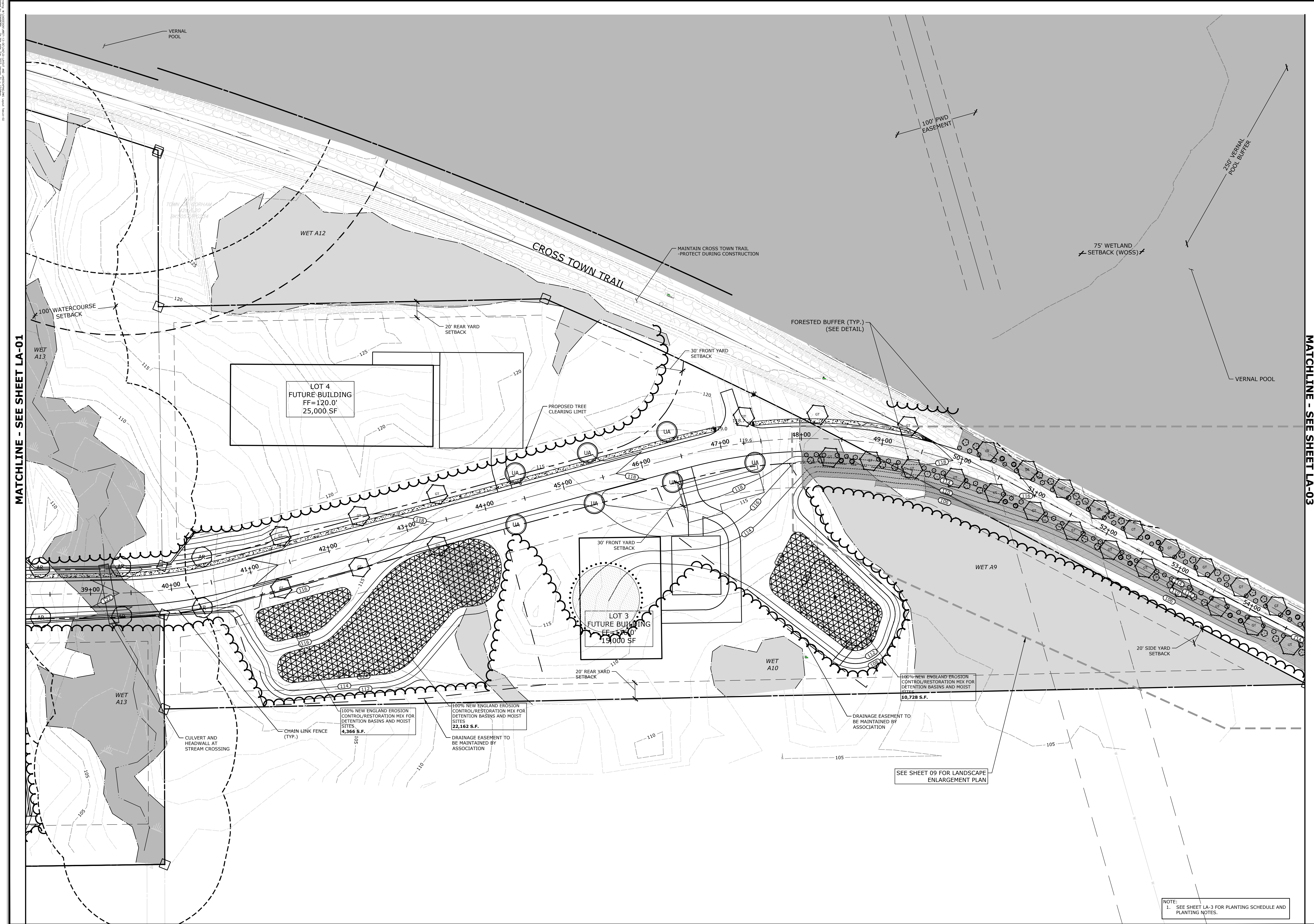
NOTE:
 1. SEE SHEET 09 FOR PLANTING SCHEDULE AND PLANTING NOTES.

DRAINAGE EASEMENT TO BE MAINTAINED BY ASSOCIATION

EC PROPERTIES LLC
 M29/L8
 BK28973/PG276

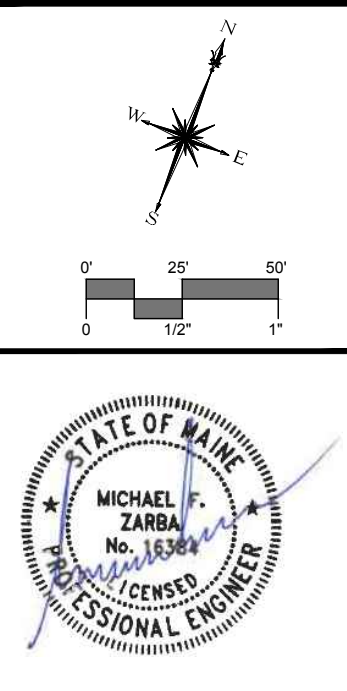
RP WEEMAN LLC

DATE PLOTTED: 11/04/2022 10:58 AM



MATCHLINE - SEE SHEET LA-01

MATCHLINE - SEE SHEET LA-03



DESCRIPTION	DATE	BY

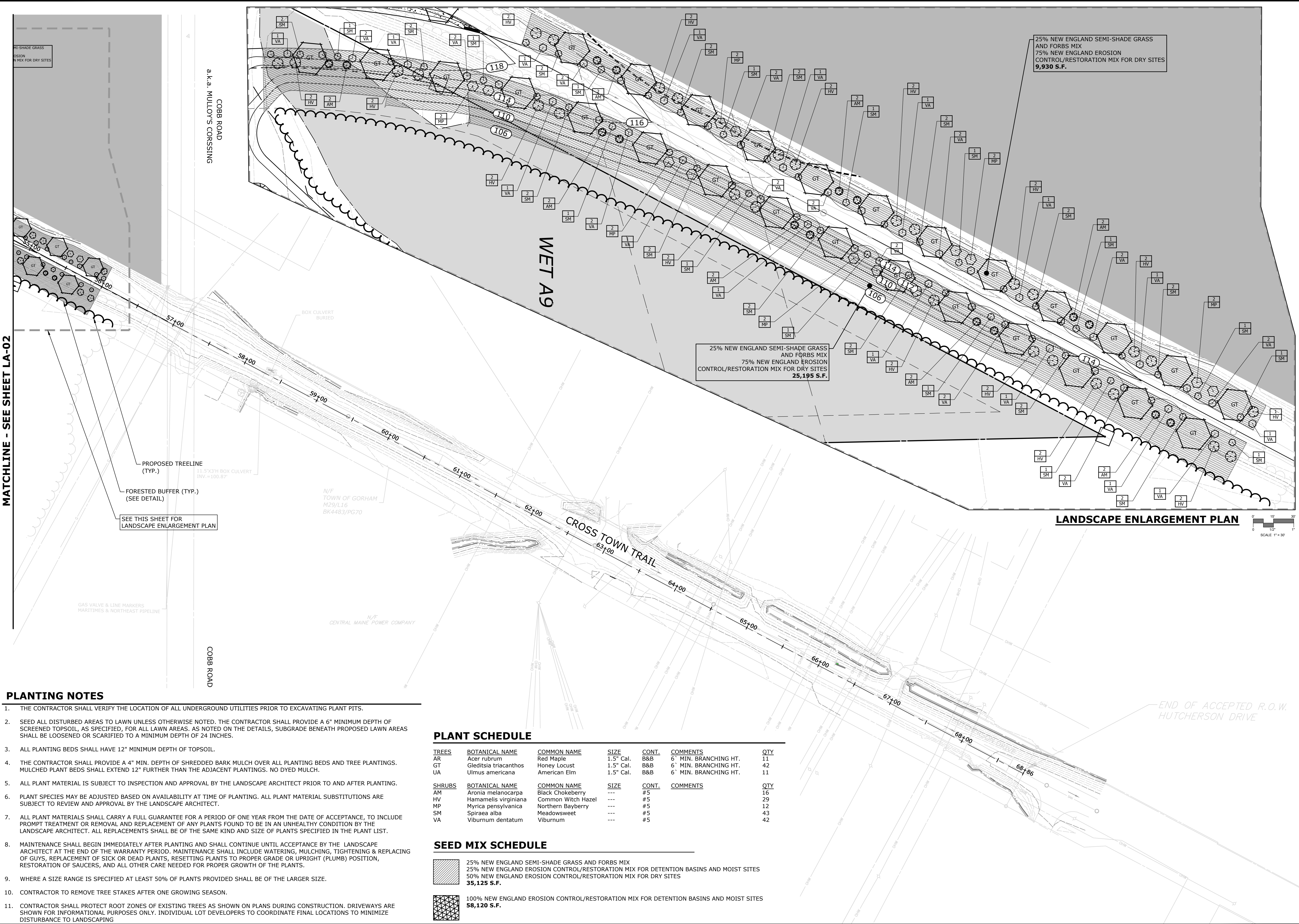
SITE PLAN - LAYOUT LANDSCAPING & GRADING
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

MFZ	SWM	MFZ
DESIGNED	DRAWN	CHECKED
SCALE 1"=50'		
DATE NOVEMBER 4, 2022		
PROJECT NO. 4807-13		

SHEET NAME
LA-02

NOTE:
1. SEE SHEET LA-3 FOR PLANTING SCHEDULE AND PLANTING NOTES.

DATE PLOTTED: 11/14/2023 10:56:10 AM
 PLOTTER: HP DesignJet T1200
 PLOT SCALE: 1"=30'
 PLOT SHEET: LA-03



PLANTING NOTES

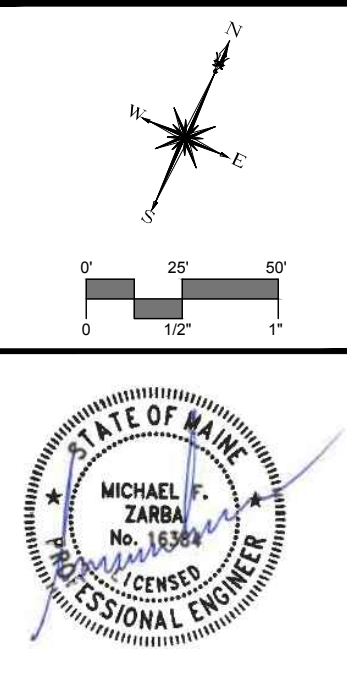
1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATING PLANT PITS.
2. SEED ALL DISTURBED AREAS TO LAWN UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL PROVIDE A 6" MINIMUM DEPTH OF SCREENED TOPSOIL, AS SPECIFIED, FOR ALL LAWN AREAS. AS NOTED ON THE DETAILS, SUBGRADE BENEATH PROPOSED LAWN AREAS SHALL BE LOOSENEED OR SCARIFIED TO A MINIMUM DEPTH OF 24 INCHES.
3. ALL PLANTING BEDS SHALL HAVE 12" MINIMUM DEPTH OF TOPSOIL.
4. THE CONTRACTOR SHALL PROVIDE A 4" MIN. DEPTH OF SHREDDED BARK MULCH OVER ALL PLANTING BEDS AND TREE PLANTINGS. MULCHED PLANT BEDS SHALL EXTEND 12" FURTHER THAN THE ADJACENT PLANTINGS. NO DYED MULCH.
5. ALL PLANT MATERIAL IS SUBJECT TO INSPECTION AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO AND AFTER PLANTING.
6. PLANT SPECIES MAY BE ADJUSTED BASED ON AVAILABILITY AT TIME OF PLANTING. ALL PLANT MATERIAL SUBSTITUTIONS ARE SUBJECT TO REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT.
7. ALL PLANT MATERIALS SHALL CARRY A FULL GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE, TO INCLUDE PROMPT TREATMENT OR REMOVAL AND REPLACEMENT OF ANY PLANTS FOUND TO BE IN AN UNHEALTHY CONDITION BY THE LANDSCAPE ARCHITECT. ALL REPLACEMENTS SHALL BE OF THE SAME KIND AND SIZE OF PLANTS SPECIFIED IN THE PLANT LIST.
8. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER PLANTING AND SHALL CONTINUE UNTIL ACCEPTANCE BY THE LANDSCAPE ARCHITECT AT THE END OF THE WARRANTY PERIOD. MAINTENANCE SHALL INCLUDE WATERING, MULCHING, TIGHTENING & REPLACING OF GUYS, REPLACEMENT OF SICK OR DEAD PLANTS, RESETTling PLANTS TO PROPER GRADE OR UPRIGHT (PLUMB) POSITION, RESTORATION OF SAUCERS, AND ALL OTHER CARE NEEDED FOR PROPER GROWTH OF THE PLANTS.
9. WHERE A SIZE RANGE IS SPECIFIED AT LEAST 50% OF PLANTS PROVIDED SHALL BE OF THE LARGER SIZE.
10. CONTRACTOR TO REMOVE TREE STAKES AFTER ONE GROWING SEASON.
11. CONTRACTOR SHALL PROTECT ROOT ZONES OF EXISTING TREES AS SHOWN ON PLANS DURING CONSTRUCTION. DRIVEWAYS ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY. INDIVIDUAL LOT DEVELOPERS TO COORDINATE FINAL LOCATIONS TO MINIMIZE DISTURBANCE TO LANDSCAPING

PLANT SCHEDULE

TREES	BOTANICAL NAME	COMMON NAME	SIZE	CONT.	COMMENTS	QTY
AR	Acer rubrum	Red Maple	1.5" Cal.	B&B	6' MIN. BRANCHING HT.	11
GT	Gleditsia triacanthos	Honey Locust	1.5" Cal.	B&B	6' MIN. BRANCHING HT.	42
UA	Ulmus americana	American Elm	1.5" Cal.	B&B	6' MIN. BRANCHING HT.	11
SHRUBS	BOTANICAL NAME	COMMON NAME	SIZE	CONT.	COMMENTS	QTY
AM	Aronia melanocarpa	Black Chokeberry	---	#5		16
HV	Hamamelis virginiana	Common Witch Hazel	---	#5		29
MP	Myrica pensylvanica	Northern Bayberry	---	#5		12
SM	Spiraea alba	Meadowsweet	---	#5		43
VA	Viburnum dentatum	Viburnum	---	#5		42

SEED MIX SCHEDULE

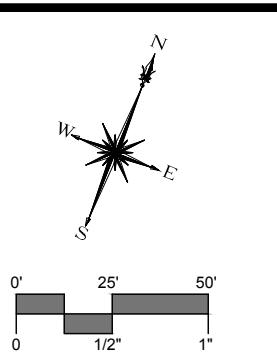
	25% NEW ENGLAND SEMI-SHADE GRASS AND FORBS MIX 25% NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES 50% NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES 35,125 S.F.
	100% NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES 58,120 S.F.



DESCRIPTION	DATE	BY

SITE PLAN - LAYOUT LANDSCAPING & GRADING
GORHAM INDUSTRIAL PARK
WEST CAMPUS
 C/YR DRIVE
 GORHAM, MAINE

MFZ	SWM	MFZ
DESIGNED	DRAWN	CHECKED
SCALE: 1"=50'		
DATE: NOVEMBER 4, 2022		
PROJECT NO.: 4807-13		
SHEET NAME: LA-03		



DESCRIPTION	DATE	BY
ROADWAY REALIGNMENT	09/07/2023	SWM
GRADING REVISIONS	09/20/2023	SWM
STORMSANITARY REVISIONS	09/21/2023	SWM
REVISED PROPOSED PRELINE	1/30/2023	AM

SEDIMENT AND EROSION CONTROL PLAN
GORHAM INDUSTRIAL PARK
WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

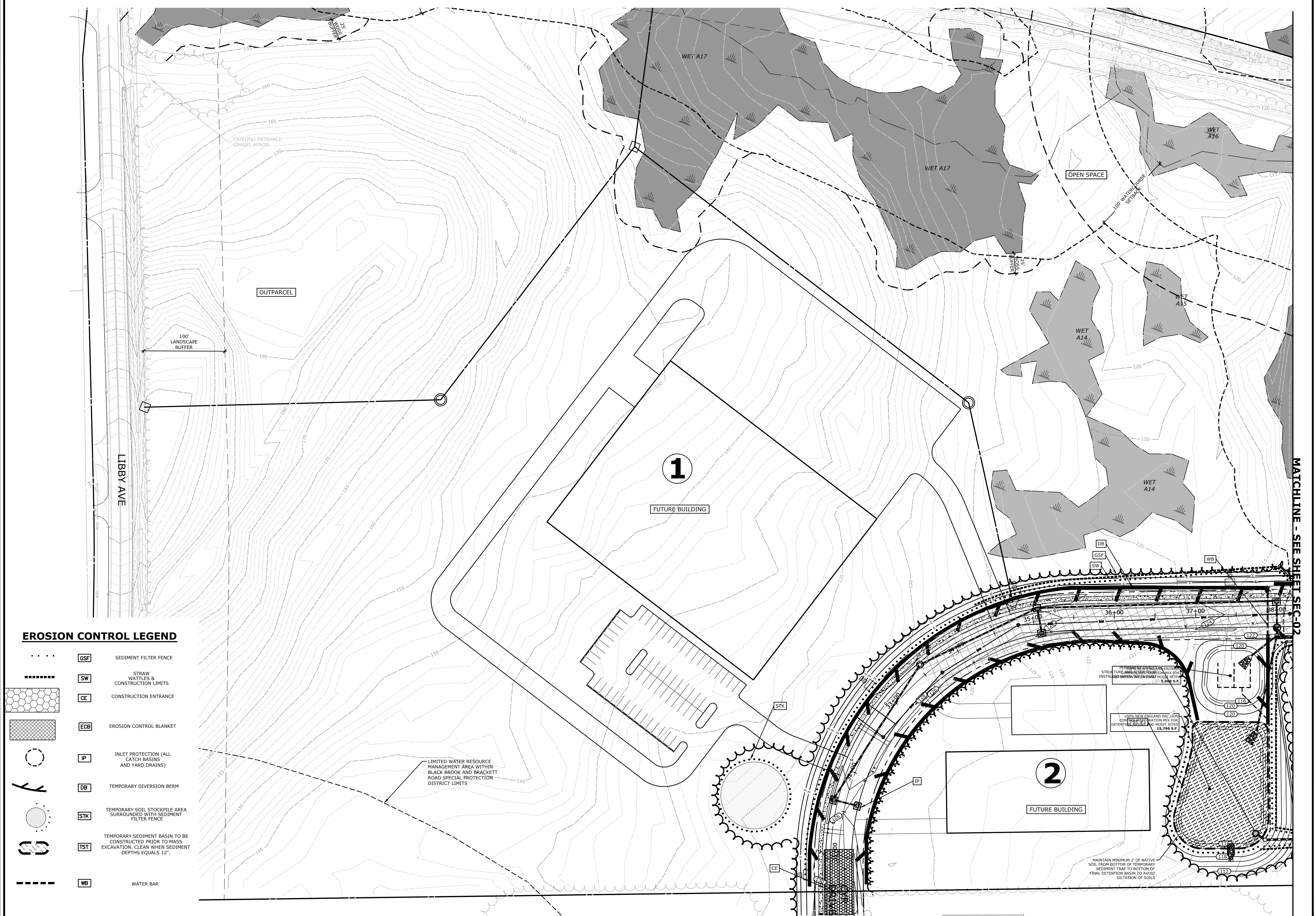
HAR	SWM	MFZ
DESIGNED	DRAWN	CHECKED

SCALE: 1"=50'

DATE: NOVEMBER 4, 2022

PROJECT NO: 4807-13

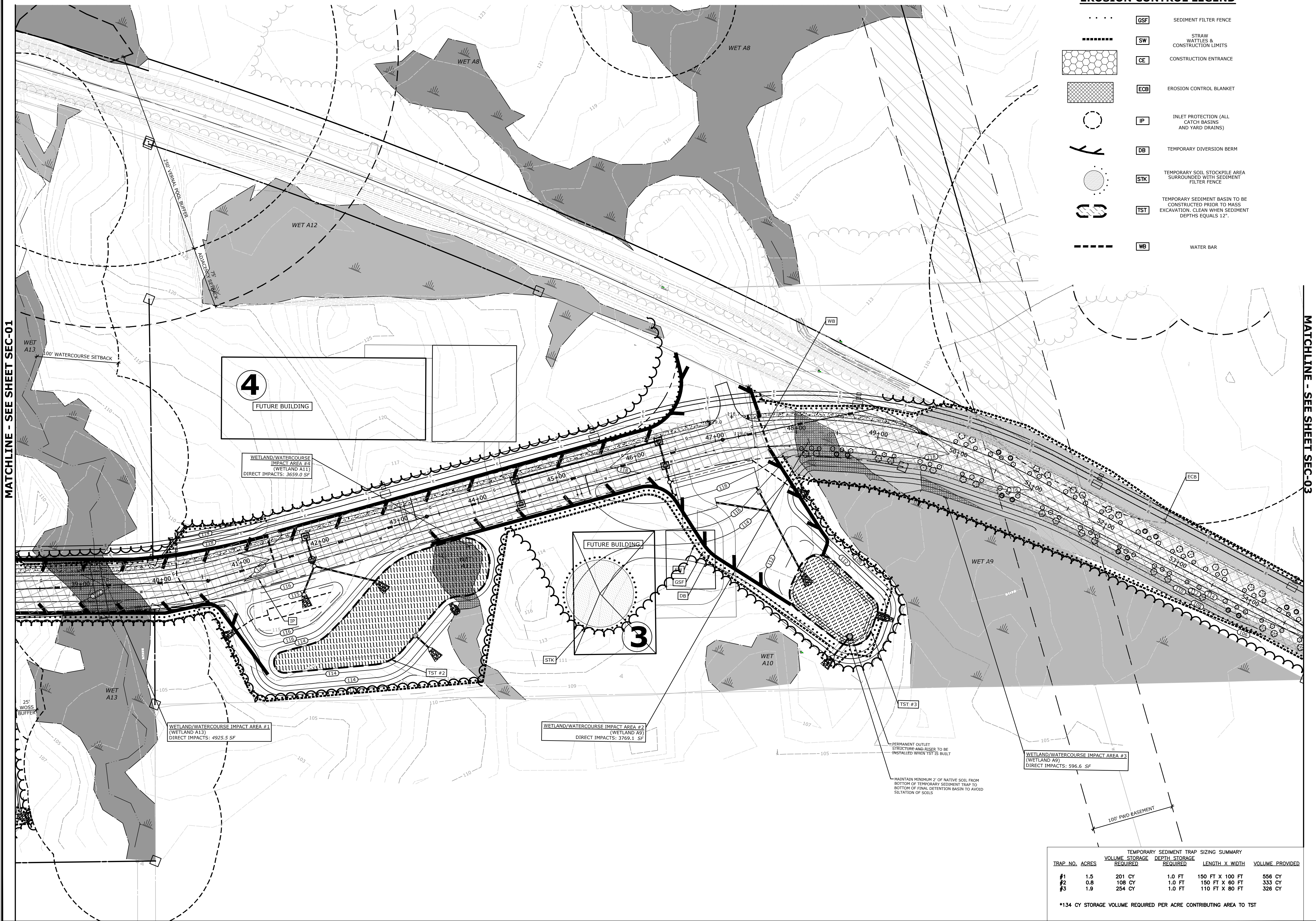
SEC-01



EROSION CONTROL LEGEND

- GSF SEDIMENT FILTER FENCE
- SW STRAW WATTLES & CONSTRUCTION LIMITS
- CE CONSTRUCTION ENTRANCE
- ECB EROSION CONTROL BLANKET
- IP INLET PROTECTION (ALL CATCH BASINS AND YARD DRAINS)
- DB TEMPORARY DIVERSION BERM
- STK TEMPORARY SOIL STOCKPILE AREA SURROUNDED WITH SEDIMENT FILTER FENCE
- TST TEMPORARY SEDIMENT BASIN TO BE CONSTRUCTED PRIOR TO MASS EXCAVATION. CLEAN WHEN SEDIMENT DEPTHS EQUALS 12"
- WB WATER BAR










PROJECT: 4807-13 GORHAM INDUSTRIAL PARK, WEST CAMPUS, MAINE
DATE: 11/14/2023
DRAWN BY: HAR
CHECKED BY: SWM

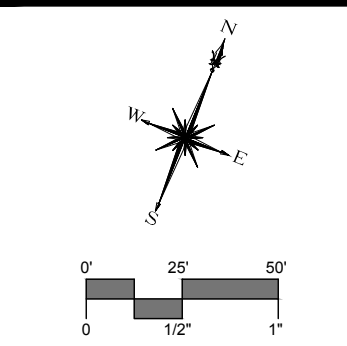


MATCHLINE - SEE SHEET SEC-01

MATCHLINE - SEE SHEET SEC-03

EROSION CONTROL LEGEND

-  GSF SEDIMENT FILTER FENCE
-  SW STRAW WATTLES & CONSTRUCTION LIMITS
-  CE CONSTRUCTION ENTRANCE
-  ECB EROSION CONTROL BLANKET
-  IP INLET PROTECTION (ALL CATCH BASINS AND YARD DRAINS)
-  DB TEMPORARY DIVERSION BERM
-  STK TEMPORARY SOIL STOCKPILE AREA SURROUNDED WITH SEDIMENT FILTER FENCE
-  TST TEMPORARY SEDIMENT BASIN TO BE CONSTRUCTED PRIOR TO MASS EXCAVATION. CLEAN WHEN SEDIMENT DEPTHS EQUALS 12".
-  WB WATER BAR



DESCRIPTION	DATE	BY
VERNAL POOL BUFFER EXTENSION	4/22/2022	SWM
REVISED WETLAND IMPACT AREAS	8/07/2022	SWM
REVISED WETLAND IMPACT AREAS	09/14/2022	SWM
ROADWAY REALIGNMENT	09/07/2022	SWM
GRADING REVISIONS	09/29/2022	SWM
STORMWATER REVISIONS	09/27/2022	SWM
REVISED PROPOSED TIELINE	10/07/2023	AM

SEDIMENT AND EROSION CONTROL PLAN
GORHAM INDUSTRIAL PARK
WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

HAR	SWM	MFZ
DESIGNED	DRAWN	CHECKED

SCALE: 1"=50'
 DATE: NOVEMBER 4, 2022

PROJECT NO. 4807-13

SEC-02

TRAP NO.	ACRES	TEMPORARY SEDIMENT TRAP SIZING SUMMARY		
		VOLUME STORAGE REQUIRED	DEPTH STORAGE REQUIRED	LENGTH X WIDTH
#1	1.5	201 CY	1.0 FT	150 FT X 100 FT
#2	0.8	108 CY	1.0 FT	150 FT X 80 FT
#3	1.9	254 CY	1.0 FT	110 FT X 80 FT
		VOLUME PROVIDED		
		556 CY		
		333 CY		
		326 CY		



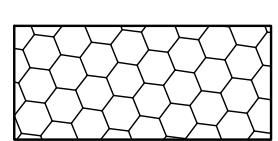
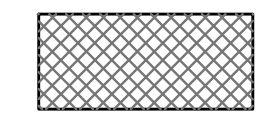


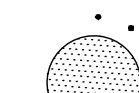


*134 CY STORAGE VOLUME REQUIRED PER ACRE CONTRIBUTING AREA TO TST

DATE: 11/14/2022 11:54 AM

MATCHLINE - SEE SHEET SEC-02

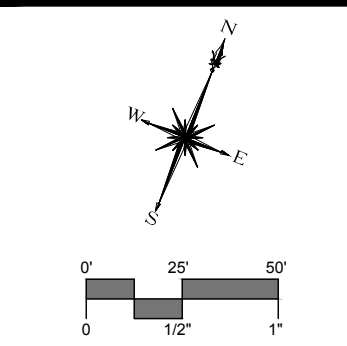


EROSION CONTROL LEGEND

-  **GSF** SEDIMENT FILTER FENCE
-  **SW** STRAW WATTLES & CONSTRUCTION LIMITS
-  **CE** CONSTRUCTION ENTRANCE
-  **ECB** EROSION CONTROL BLANKET
-  **IP** INLET PROTECTION (ALL CATCH BASINS AND YARD DRAINS)
-  **DB** TEMPORARY DIVERSION BERM
-  **STK** TEMPORARY SOIL STOCKPILE AREA SURROUNDED WITH SEDIMENT FILTER FENCE
-  **TST** TEMPORARY SEDIMENT BASIN TO BE CONSTRUCTED PRIOR TO MASS EXCAVATION. CLEAN WHEN SEDIMENT DEPTHS EQUALS 12".
-  **WB** WATER BAR

TRAP NO.	ACRES	TEMPORARY SEDIMENT TRAP SIZING SUMMARY		LENGTH X WIDTH	VOLUME PROVIDED
		VOLUME STORAGE REQUIRED	DEPTH STORAGE REQUIRED		
#1	1.5	201 CY	1.0 FT	150 FT X 100 FT	556 CY
#2	0.8	108 CY	1.0 FT	150 FT X 120 FT	668 CY
#3	1.9	254 CY	1.0 FT	110 FT X 80 FT	326 CY

*134 CY STORAGE VOLUME REQUIRED PER ACRE CONTRIBUTING AREA TO TST



DESCRIPTION	DATE	BY
ROADWAY REALIGNMENT	08/07/2022	SWM
GRADING REVISIONS	09/29/2022	SWM
STORMSANITARY REVISIONS	09/21/2022	SWM

SEDIMENT AND EROSION CONTROL PLAN

GORHAM INDUSTRIAL PARK
WEST CAMPUS
CYR DRIVE
GORHAM, MAINE

DESIGNED	DRAWN	MFZ
SWM	SWM	SWM

SCALE: 1"=50'

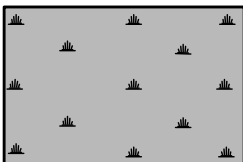
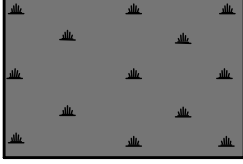
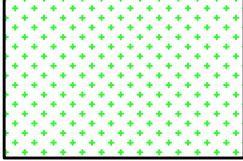




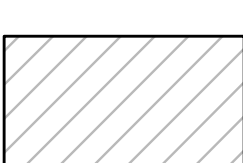
DATE: NOVEMBER 4, 2022

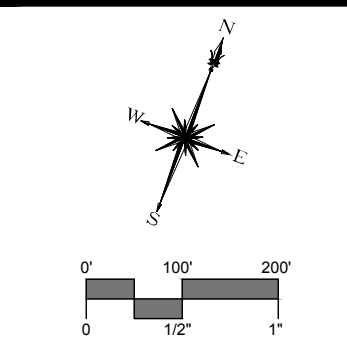
PROJECT NO.: 4807-13

SHEET NAME: SEC-03

MAPS, INC. 100 WASHINGTON ST., SUITE 100
 PORTLAND, ME 04101
 TEL: 603.761.1111 FAX: 603.761.1112
 WWW.MAPSINC.COM

LEGEND

-  FLAGGED WETLANDS
-  FLAGGED WETLANDS OF SPECIAL SIGNIFICANCE (WOSS)
-  VERNAL POOL
-  250' VERNAL POOL BUFFER
-  25'/75' WOSS SETBACK
-  50' RESIDENTIAL ADJACENT SETBACK
-  100' EXISTING WATERCOURSE SETBACK
-  PORTLAND WATER DISTRICT EASEMENT



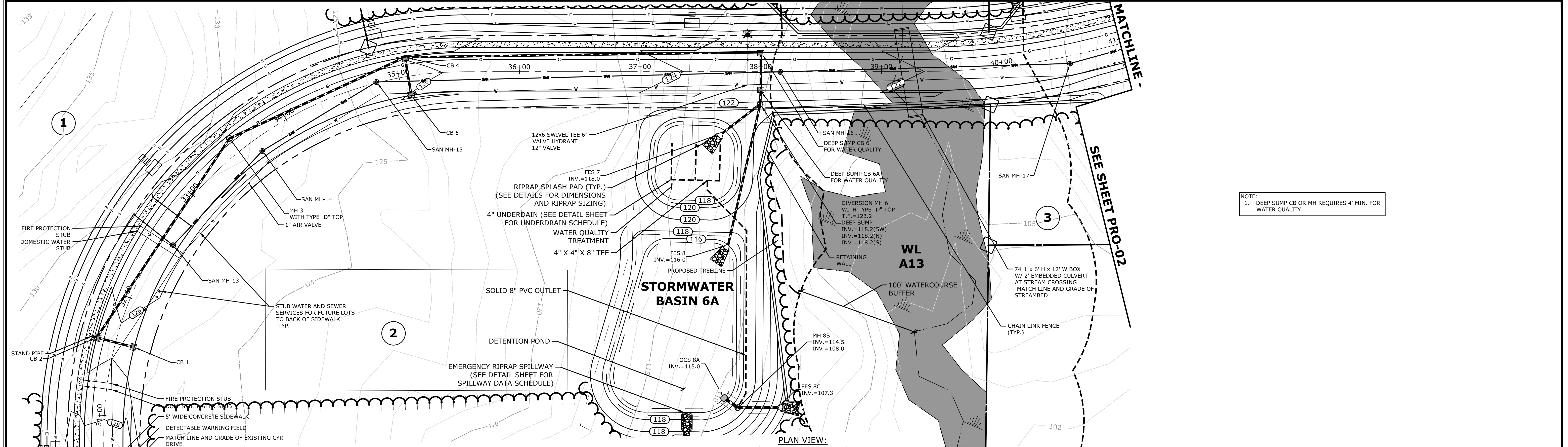
DESCRIPTION	DATE	BY

ROADWAY PLAN AND PROFILE - INDEX
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

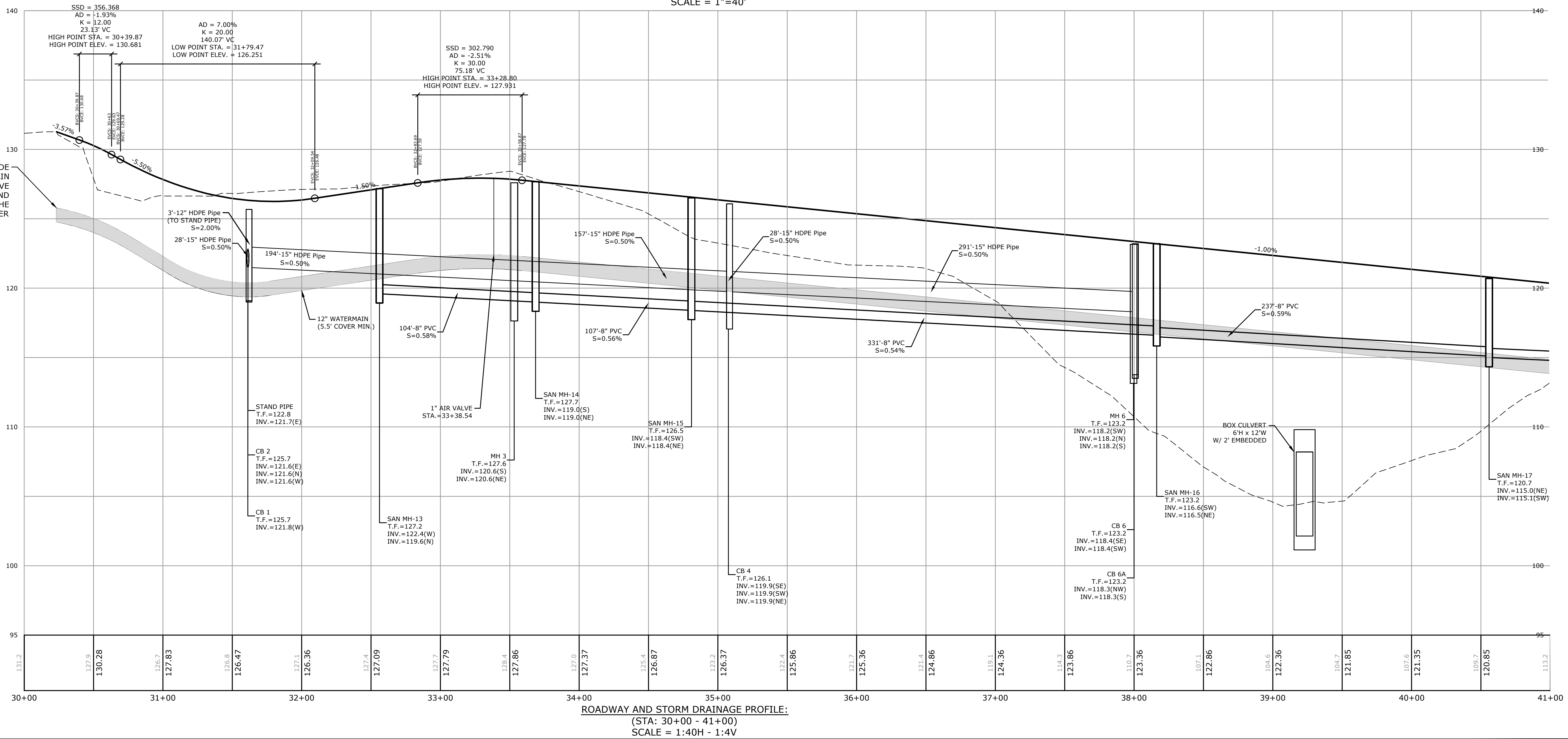
SWM DESIGNED	SWM DRAWN	MFZ CHECKED

SCALE: 1"=200'
 DATE: NOVEMBER 4, 2022
 PROJECT NO.: 4807-13

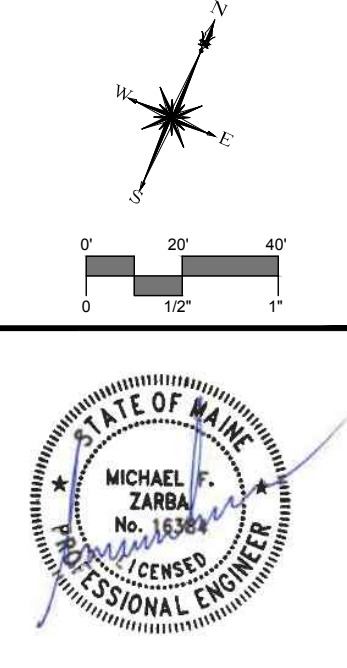
PR



NOTE:
1. DEEP SUMP CB OR MH REQUIRES 4' MIN. FOR WATER QUALITY.



ROADWAY AND STORM DRAINAGE PROFILE:
(STA: 30+00 - 41+00)
SCALE = 1"=40' - 1"=4V

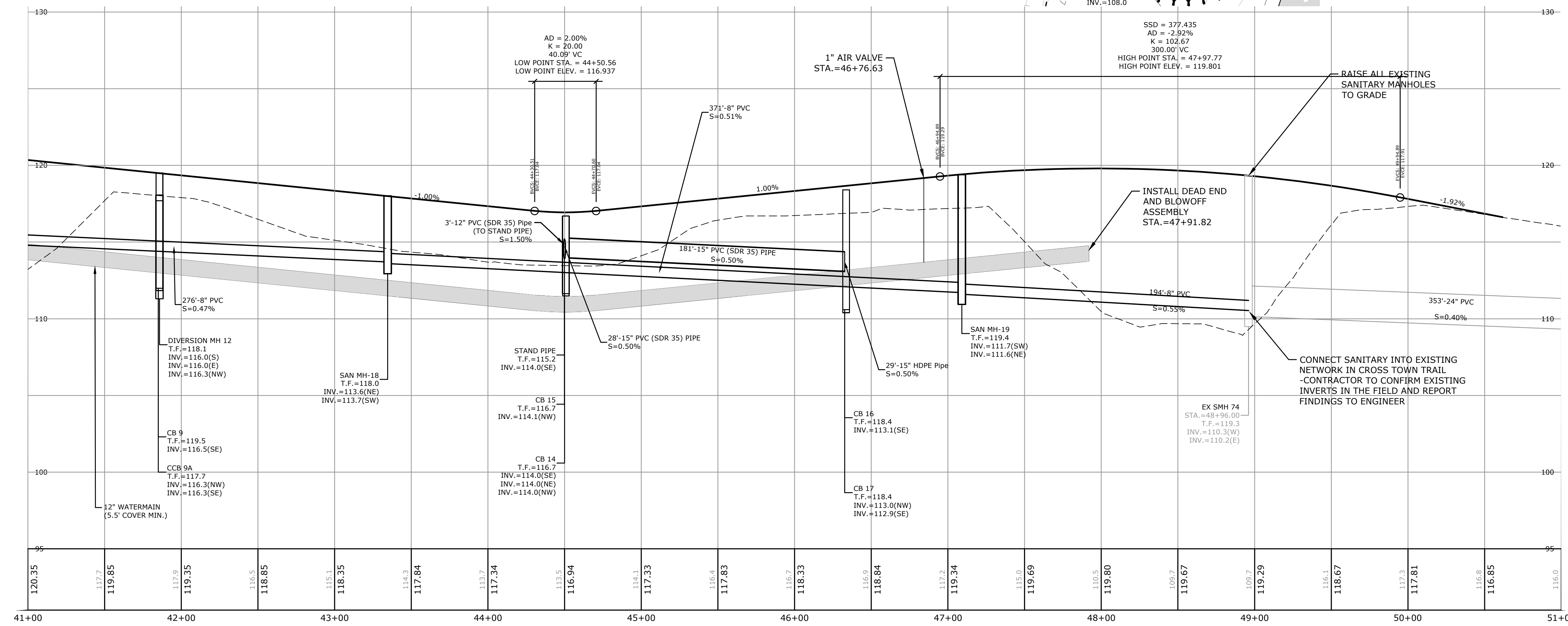
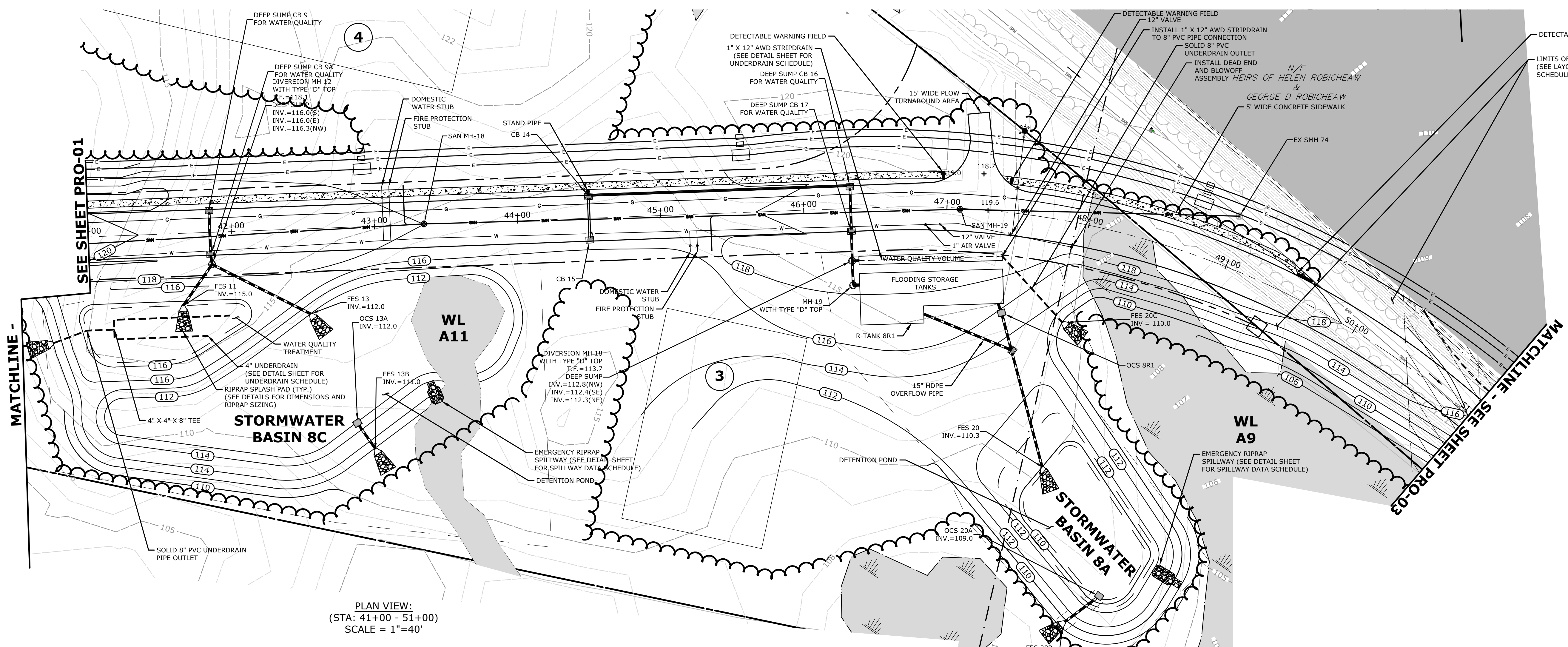


DESCRIPTION	DATE	BY
REVISED CULVERT DIMENSIONS	05/11/2022	SWM
STORM NETWORK REVISIONS	06/15/2022	SWM
STORM NETWORK REVISIONS	06/23/2022	SWM
RELOCATED UTILITIES	06/23/2022	SWM
ROADWAY REALIGNMENT	08/07/2022	SWM
GRADING REVISIONS	08/29/2022	SWM
STORMSANITARY REVISIONS	08/27/2022	SWM
PLANNING BOARD REVISIONS	12/19/2022	SWM

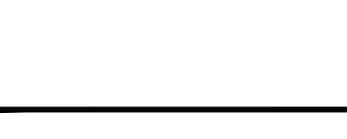
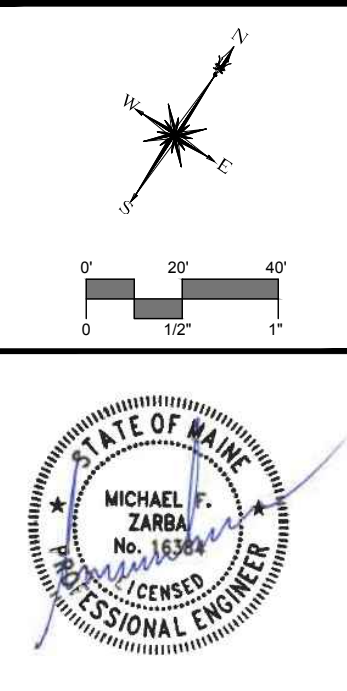
ROADWAY PLAN AND PROFILE
GORHAM INDUSTRIAL PARK
WEST CAMPUS
CYR DRIVE
GORHAM, MAINE

DESIGNED	DRAWN	CHECKED
SWM	SWM	MFZ
SCALE		
1"=40'		
DATE		
NOVEMBER 4, 2022		
PROJECT NO.		
4807-13		
SHEET NAME		
PRO-01		

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NOTE:
 1. EXISTING SANITARY SEWER INFORMATION WAS SUPPLEMENTED FROM PLAN ENTITLED "GORHAM, MAINE SEWAGE INTERCEPTOR SYSTEM, PORTLAND WATER DISTRICT RAILROAD R.O.W. INTERCEPTOR," PREPARED BY: BHM, DATED: DECEMBER 1982.
 2. DEEP SUMP CB OR MH REQUIRES 4" MIN. FOR WATER QUALITY.



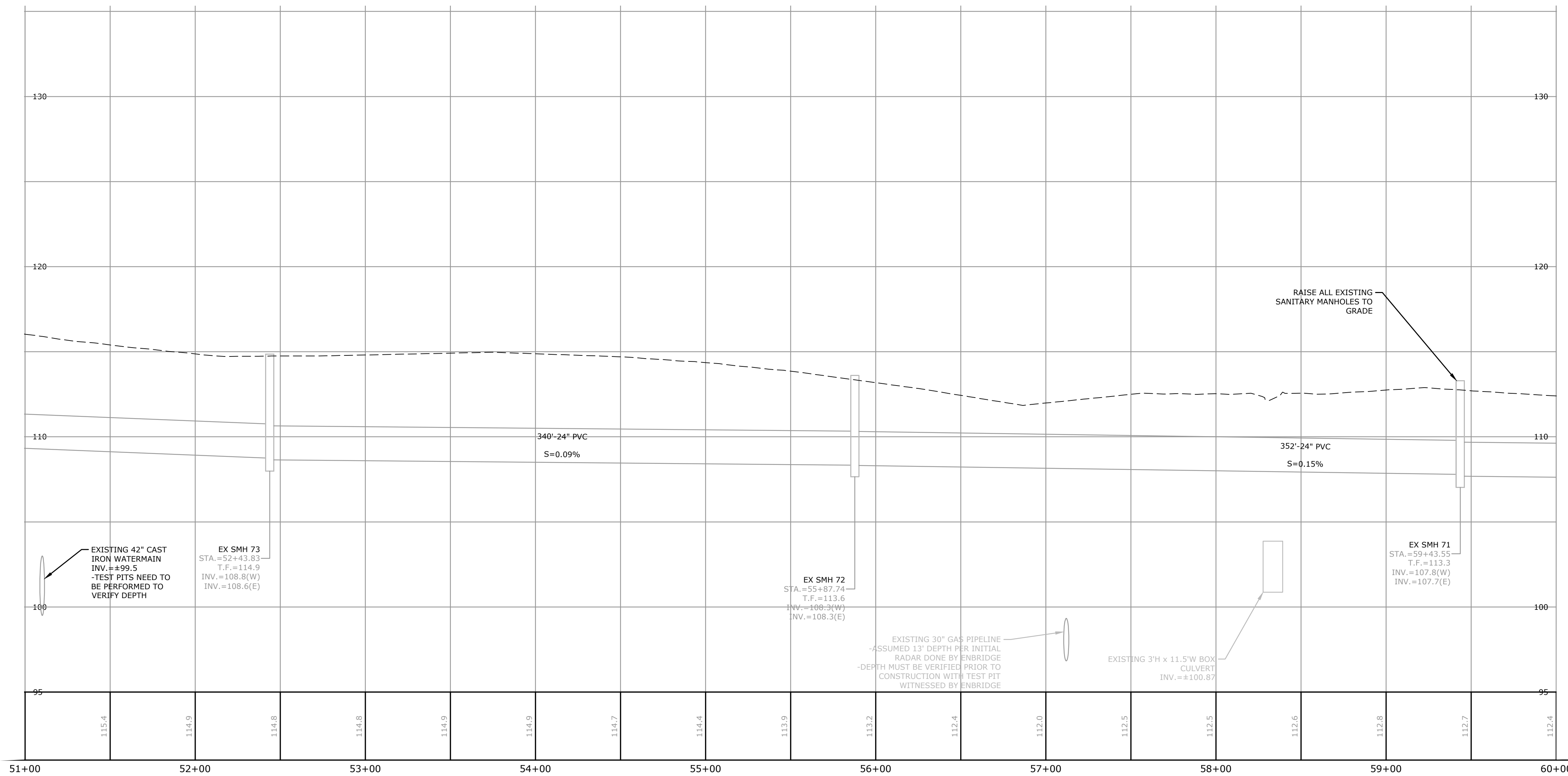
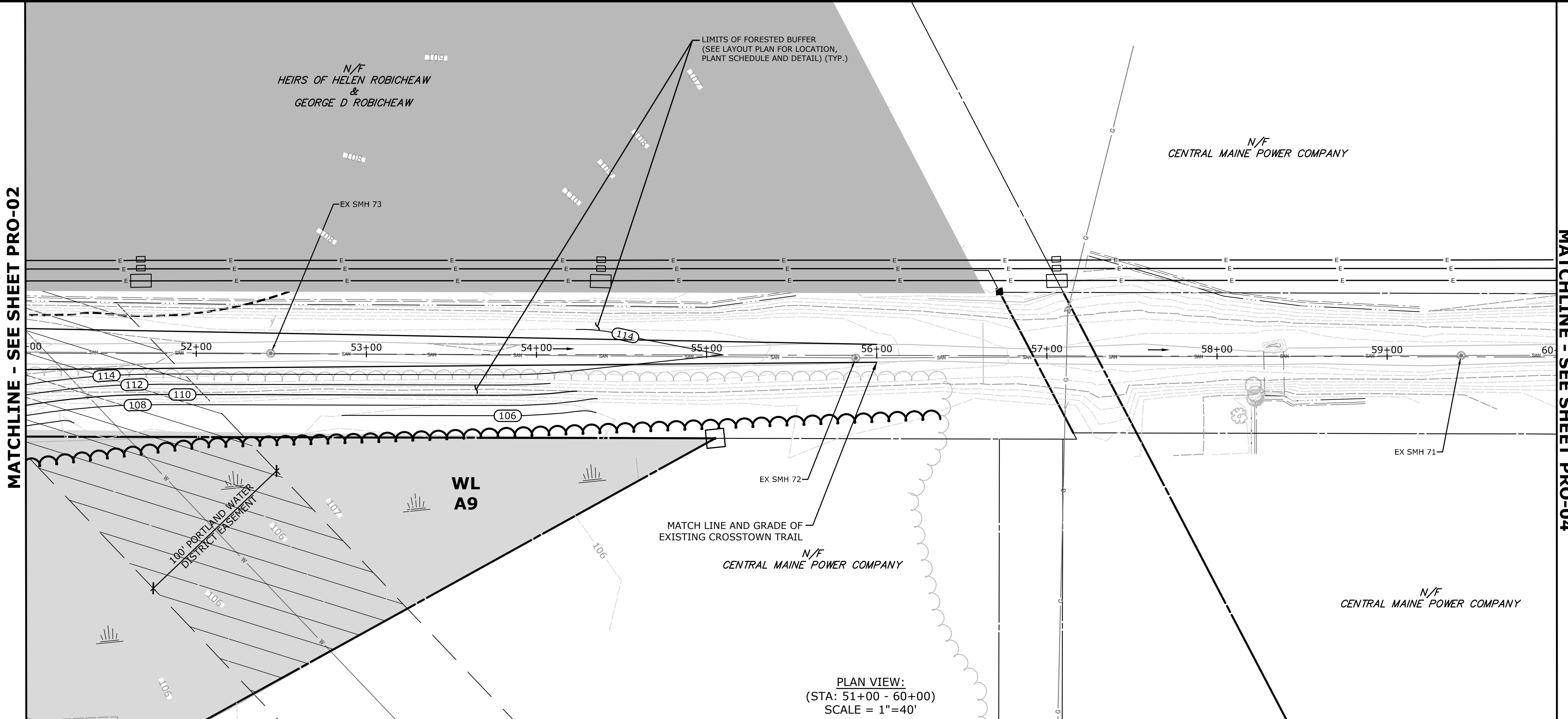
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STORM NETWORK REVISIONS	06/15/2022	SWM
STORM NETWORK REVISIONS	08/23/2022	SWM
RELOCATED UTILITIES	08/23/2022	SWM
ROADWAY REALIGNMENT	09/07/2022	SWM
GRADING REVISIONS	09/26/2022	SWM
STORM/SANITARY REVISIONS	10/21/2022	SWM
PLANNING BOARD REVISIONS	12/15/2022	SWM

ROADWAY PLAN AND PROFILE
GORHAM INDUSTRIAL PARK
WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

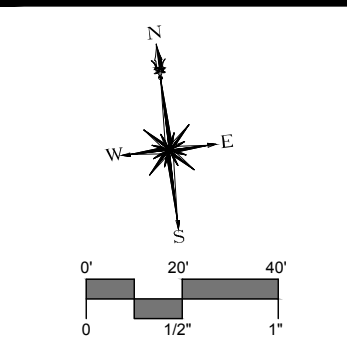
DESIGNED	DRAWN	MFZ
SWM	SWM	SWM

SCALE: 1"=40'
 DATE: NOVEMBER 4, 2022
 PROJECT NO.: 4807-13

PRO-02



NOTE:
1. EXISTING SANITARY SEWER INFORMATION WAS SUPPLEMENTED FROM PLAN ENTITLED "GORHAM, MAINE SEWAGE INTERCEPTOR SYSTEM, PORTLAND WATER DISTRICT RAILROAD R.O.W. INTERCEPTOR," PREPARED BY: BH2M, DATED: DECEMBER 1982



DESCRIPTION	DATE	BY
REVISED CULVERT DIMENSIONS	05/11/2022	SWM
STORM NETWORK REVISIONS	06/15/2022	SWM
STORM NETWORK REVISIONS	06/23/2022	SWM
RELOCATED UTILITIES	09/23/2022	SWM
ROADWAY REALIGNMENT	09/07/2022	SWM
GRADING REVISIONS	09/26/2022	SWM

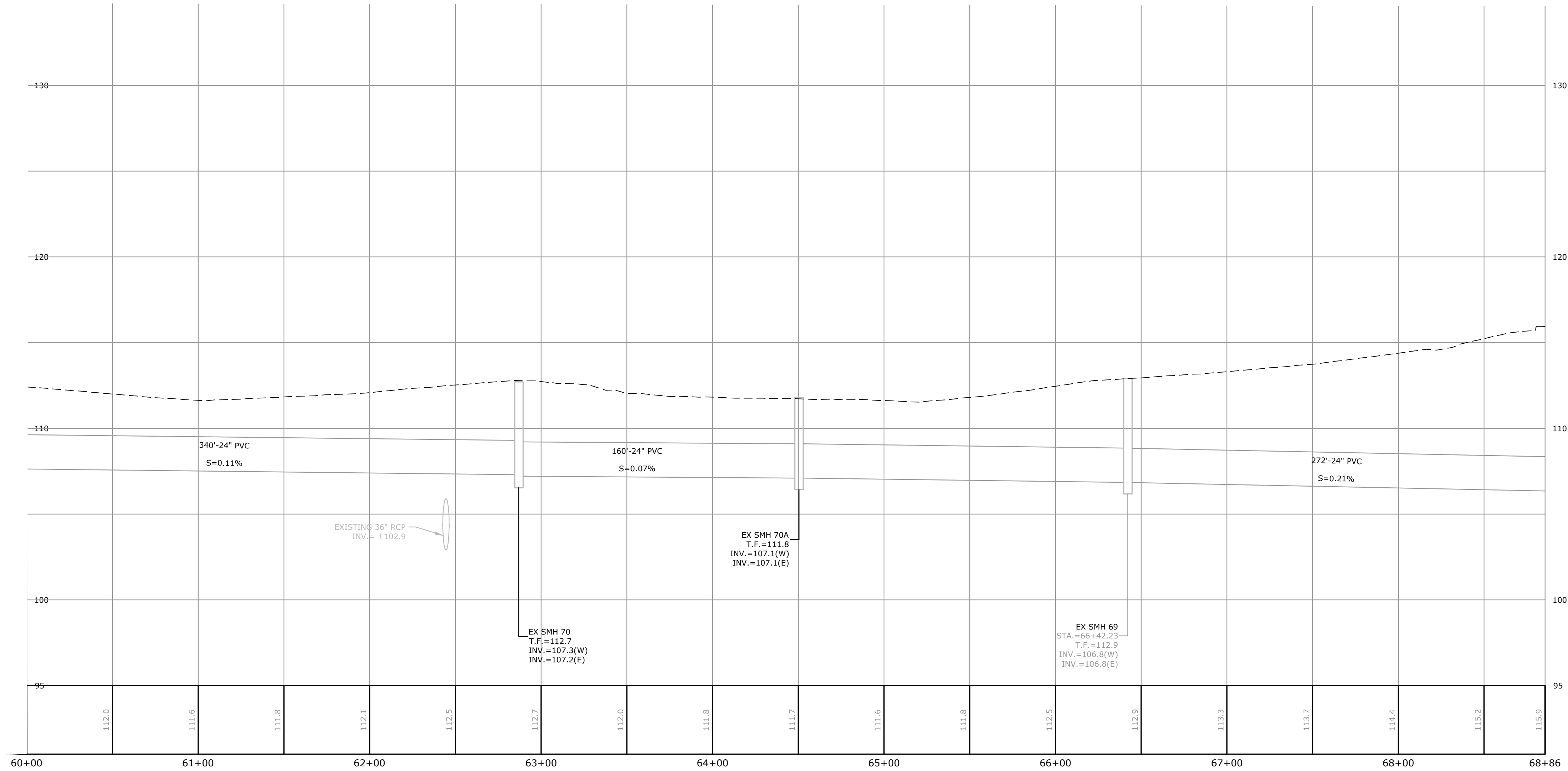
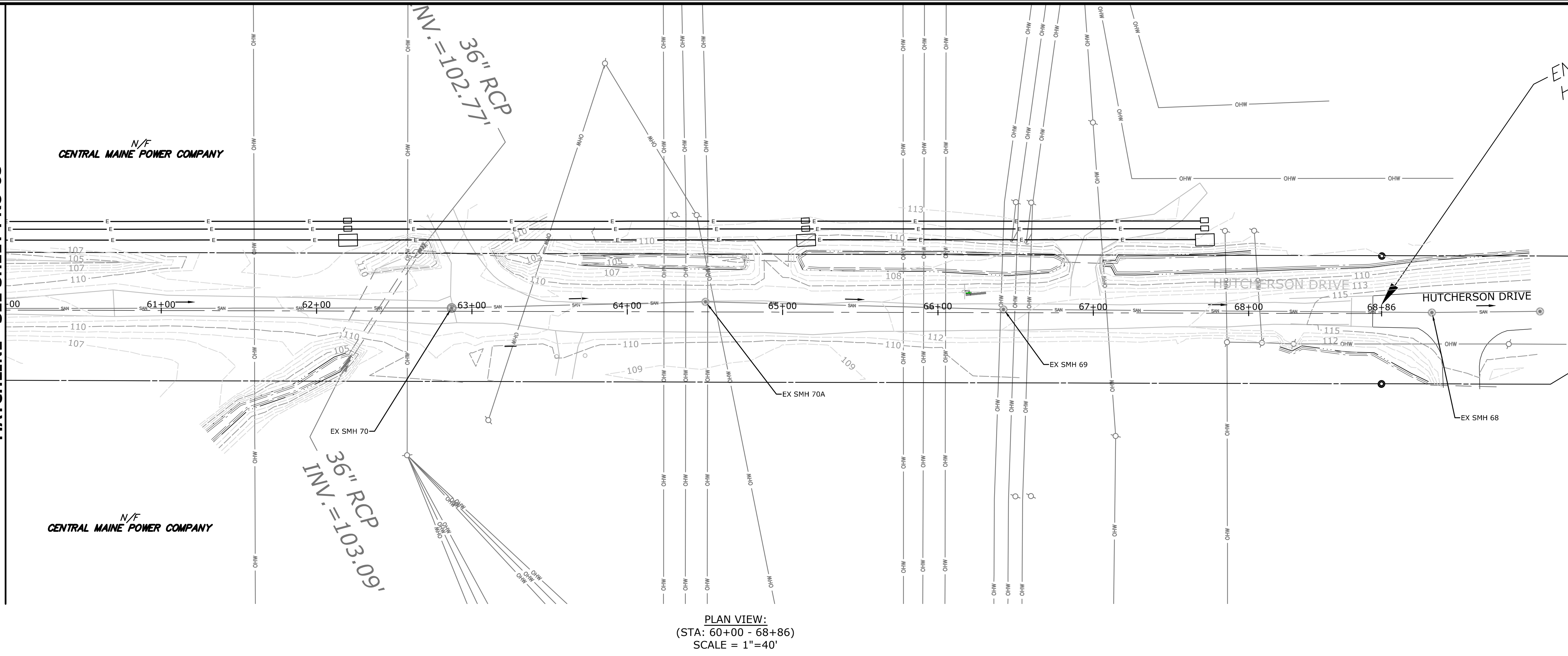
ROADWAY PLAN AND PROFILE
GORHAM INDUSTRIAL PARK
WEST CAMPUS
CYR DRIVE
GORHAM, MAINE

SWM	SWM	MFZ
DESIGNED	DRAWN	CHECKED

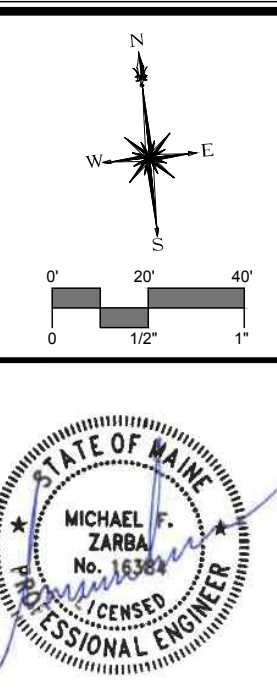
SCALE
1"=40'
DATE
NOVEMBER 4, 2022
PROJECT NO.
4807-13

PRO-03
SHEET NAME

MATCHLINE - SEE SHEET PRO-03



NOTE:
1. EXISTING SANITARY SEWER INFORMATION WAS SUPPLEMENTED FROM PLAN ENTITLED "GORHAM, MAINE SEWAGE INTERCEPTOR SYSTEM, PORTLAND WATER DISTRICT, RAILROAD R.O.W. INTERCEPTOR," PREPARED BY : BH2M, DATED: DECEMBER 1982



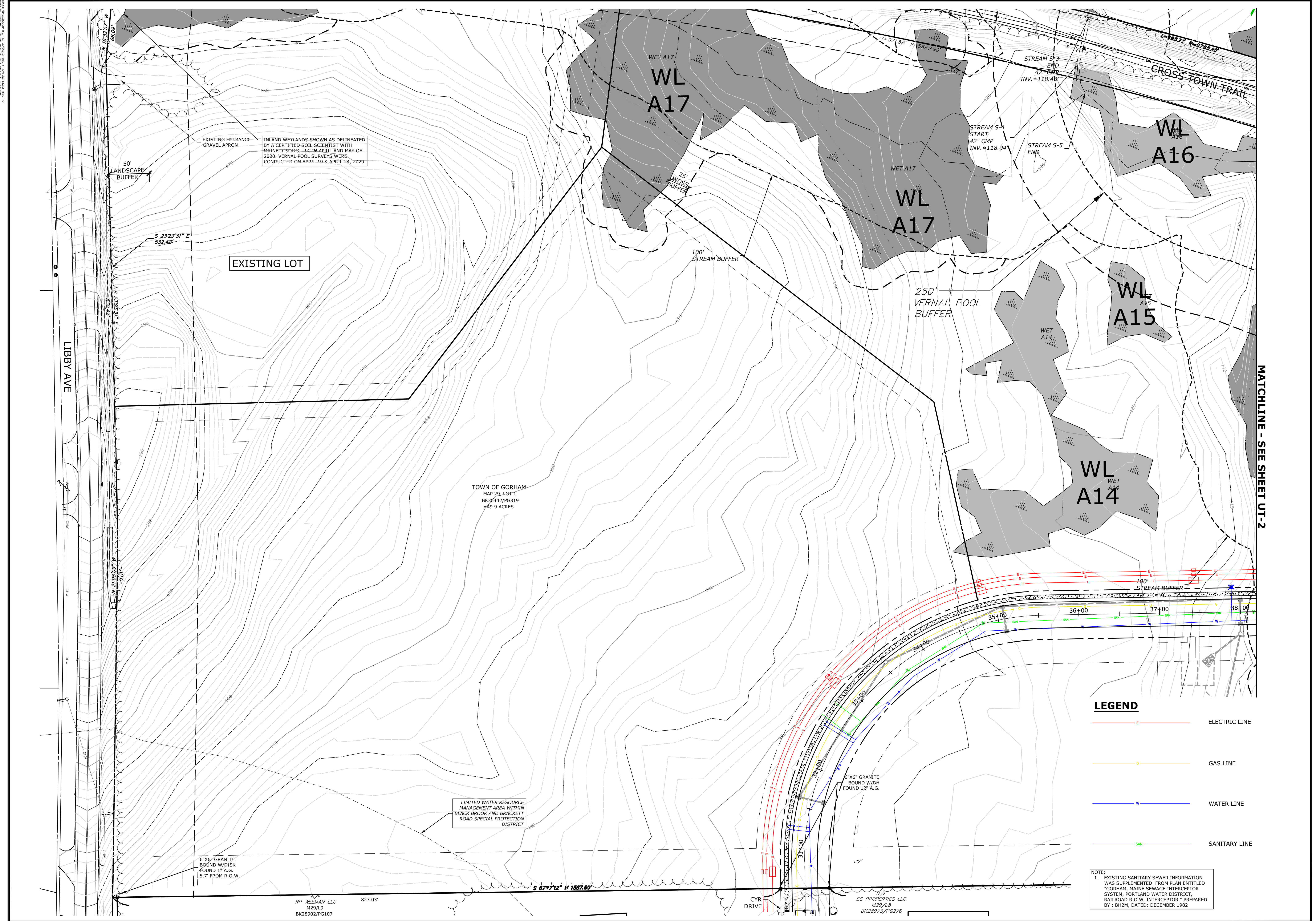
DESCRIPTION	DATE	BY
REVISED CULVERT DIMENSIONS	06/11/2022	SWM
STORM NETWORK REVISIONS	06/15/2022	SWM
STORM NETWORK REVISIONS	06/22/2022	SWM
RELOCATED UTILITIES	06/23/2022	SWM
ROADWAY REALIGNMENT	09/07/2022	SWM

ROADWAY PLAN AND PROFILE
GORHAM INDUSTRIAL PARK
WEST CAMPUS
CYR DRIVE
GORHAM, MAINE

SWM	SWM	MFZ
DESIGNED	DRAWN	CHECKED
SCALE		
1"=40'		
DATE		
NOVEMBER 4, 2022		
PROJECT NO.		
4807-13		

SHEET NAME

PRO-04



INLAND WETLANDS SHOWN AS DELINEATED BY A CERTIFIED SOIL SCIENTIST WITH HAINLEY SOILS, LLC IN APRIL AND MAY OF 2020. VERNAL POOL SURVEYS WERE CONDUCTED ON APRIL 19 & APRIL 24, 2020.

EXISTING LOT

TOWN OF GORHAM
MAP 29, LOT 1
BK36442/PG319
#49.9 ACRES

LIMITED WATER RESOURCE MANAGEMENT AREA WITHIN BLACK BROOK AND BRACKETT ROAD SPECIAL PROTECTION DISTRICT

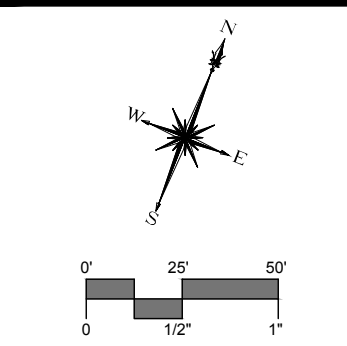
6"X6" GRANITE BOUND W/DISK FOUND 17' A.G. 5.7' FROM R.O.W.

6"X6" GRANITE BOUND W/DISK FOUND 12' A.G.

LEGEND

- ELECTRIC LINE
- GAS LINE
- WATER LINE
- SANITARY LINE

NOTE:
1. EXISTING SANITARY SEWER INFORMATION WAS SUPPLEMENTED FROM PLAN ENTITLED "GORHAM, MAINE SEWAGE INTERCEPTOR SYSTEM, PORTLAND WATER DISTRICT, RAILROAD R.O.W. INTERCEPTOR," PREPARED BY: BH2M, DATED: DECEMBER 1982.



SLR
2 MARKET STREET, 5TH FLOOR
GORHAM, ME 04041
207.541.9544
SLRCONSULTING.COM

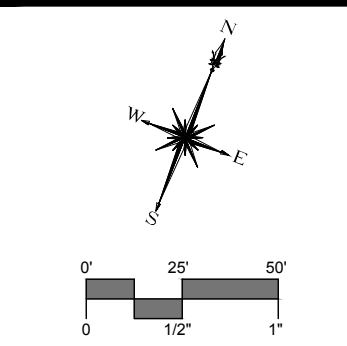
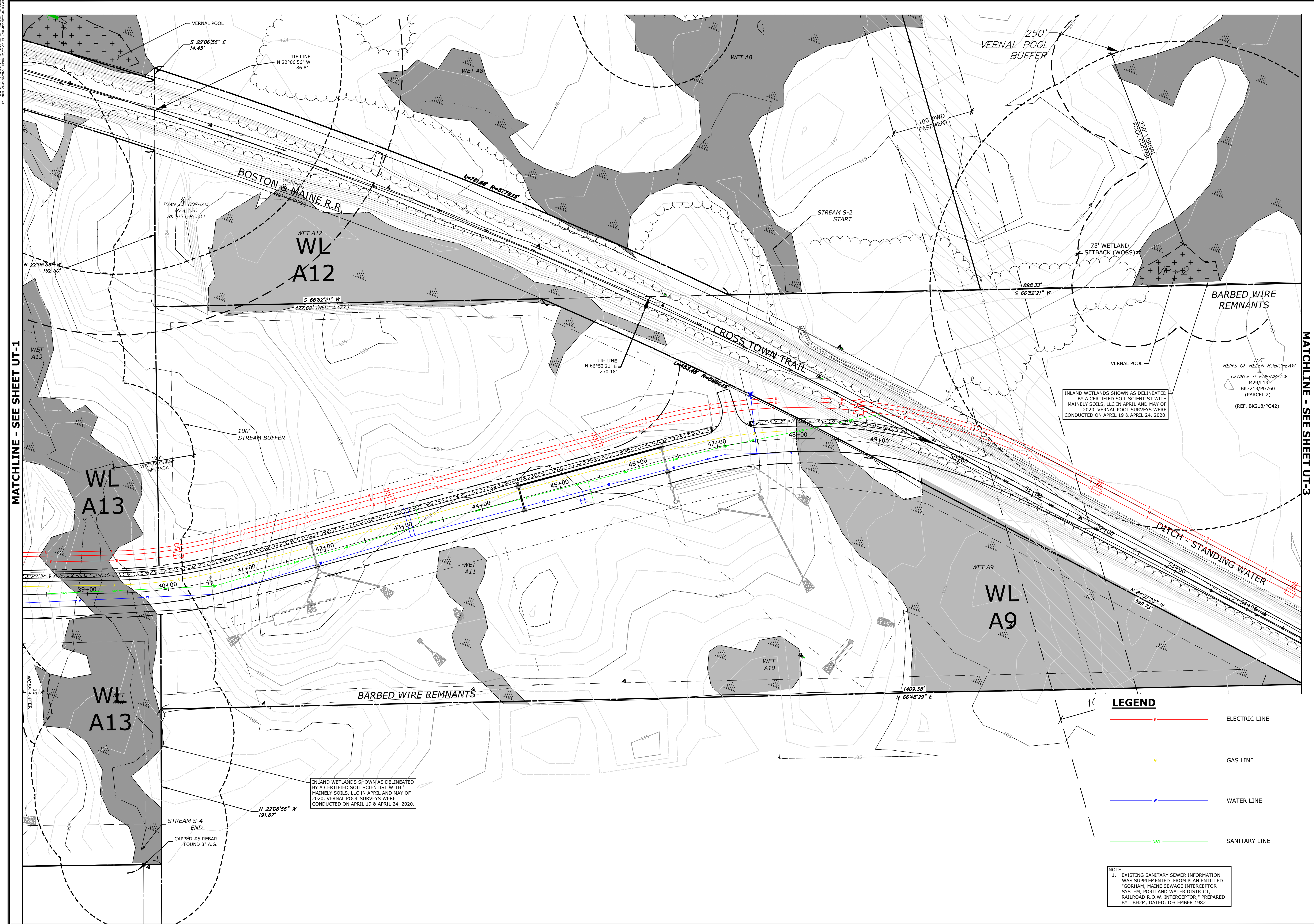
DESCRIPTION	DATE	BY

UTILITY PLAN
GORHAM INDUSTRIAL PARK
WEST CAMPUS
CYR DRIVE
GORHAM, MAINE

DESIGNED	DRAWN	MFZ CHECKED

SCALE: 1"=50'
DATE: NOVEMBER 4, 2022
PROJECT NO.: 4807-13

UT-01



SLR
 2 MARKET STREET, 5TH FLOOR
 GORHAM, ME 04101
 207.541.9344
 SLRCONSULTING.COM

DESCRIPTION	DATE	BY

UTILITY PLAN
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

HAR	SWM	MFZ
DESIGNED	DRAWN	CHECKED
SCALE		
1"=50'		
DATE		
NOVEMBER 4, 2022		
PROJECT NO.		
4807-13		

UT-02

INLAND WETLANDS SHOWN AS DELINEATED BY A CERTIFIED SOIL SCIENTIST WITH MAINELY SOILS, LLC IN APRIL AND MAY OF 2020. VERNAL POOL SURVEYS WERE CONDUCTED ON APRIL 19 & APRIL 24, 2020.

HEIRS OF HELEN ROBICHEAW & GEORGE D. ROBICHEAW
 M29/L19
 BK3213/PG760
 (PARCEL 2)
 (REF. BK218/PG42)

INLAND WETLANDS SHOWN AS DELINEATED BY A CERTIFIED SOIL SCIENTIST WITH MAINELY SOILS, LLC IN APRIL AND MAY OF 2020. VERNAL POOL SURVEYS WERE CONDUCTED ON APRIL 19 & APRIL 24, 2020.

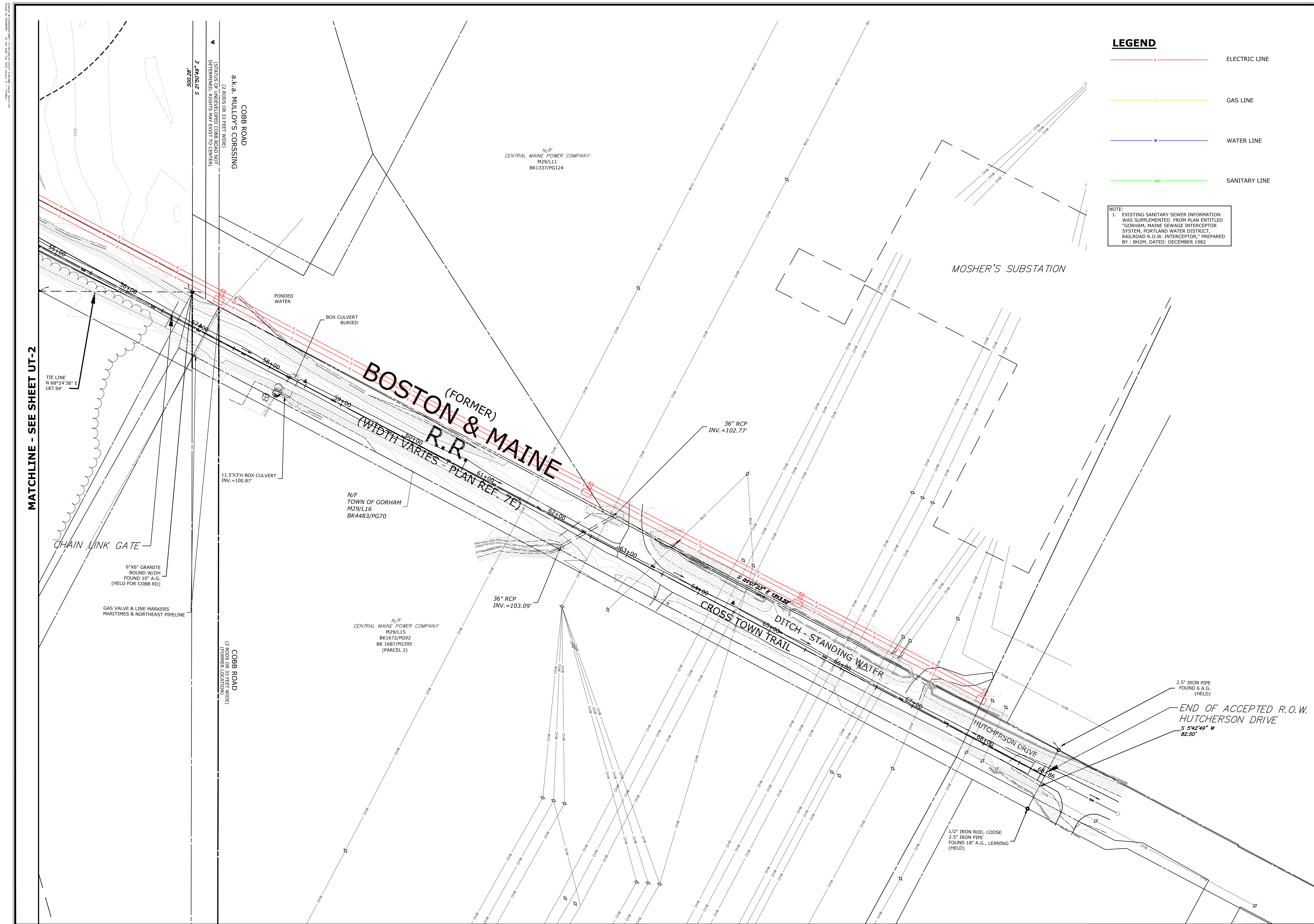
LEGEND

	ELECTRIC LINE
	GAS LINE
	WATER LINE
	SANITARY LINE

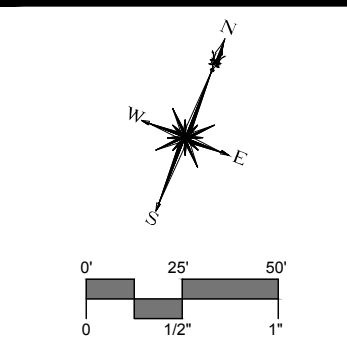
NOTE:
 1. EXISTING SANITARY SEWER INFORMATION WAS SUPPLEMENTED FROM PLAN ENTITLED "GORHAM, MAINE SEWAGE INTERCEPTOR SYSTEM, PORTLAND WATER DISTRICT, RAILROAD R.O.W. INTERCEPTOR," PREPARED BY: BH2M, DATED: DECEMBER 1982.

MATCHLINE - SEE SHEET UT-1

MATCHLINE - SEE SHEET UT-3



MATCHLINE - SEE SHEET UT-2



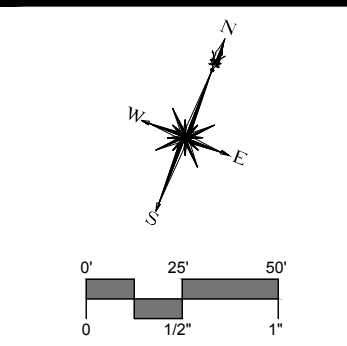
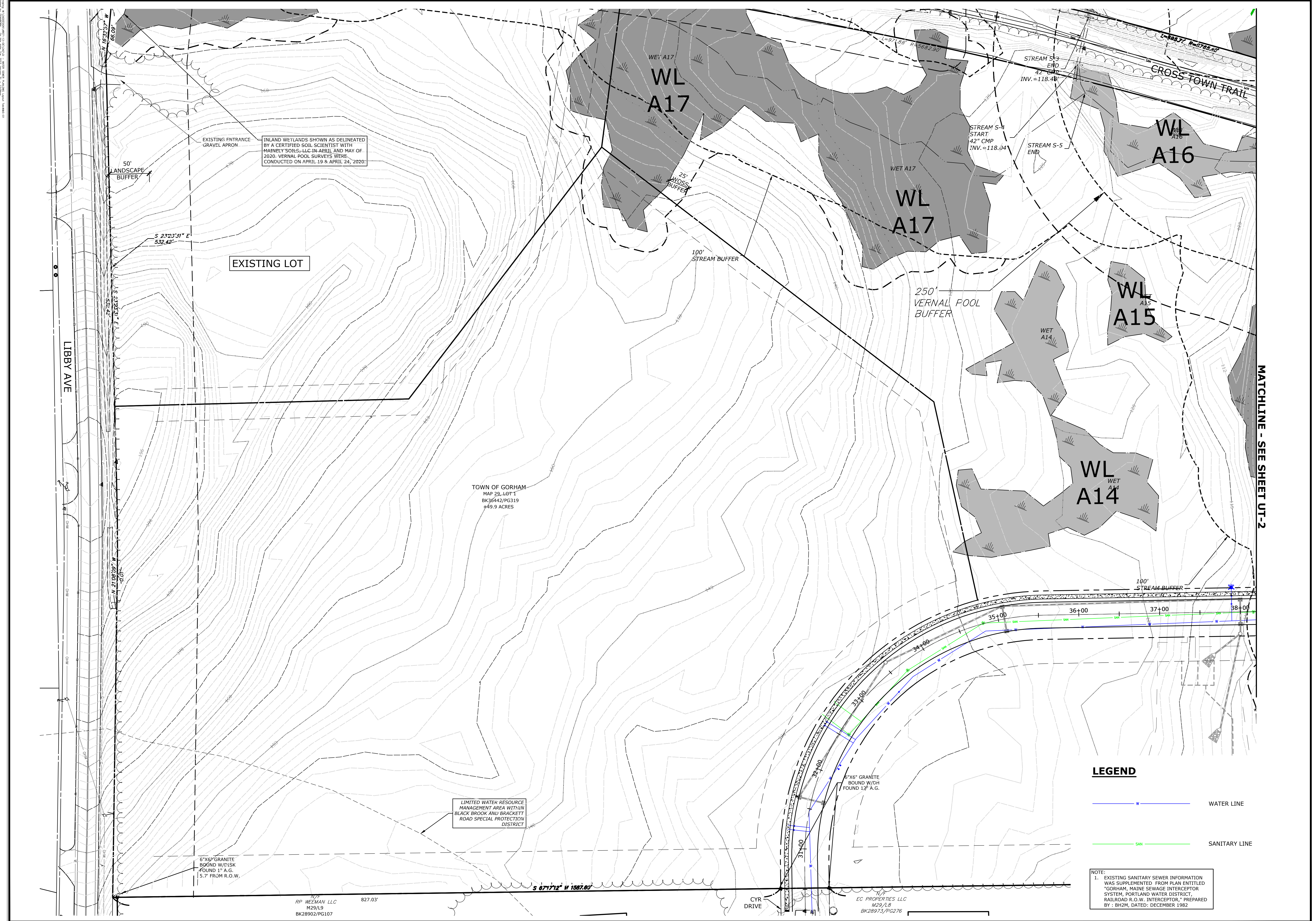
DESCRIPTION	DATE	BY

UTILITY PLAN
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

HAR	SWM	MFZ
DESIGNED	DRAWN	CHECKED

SCALE: 1"=50'
 DATE: NOVEMBER 4, 2022
 PROJECT NO.: 4807-13

UT-03



SLR
 2 MARKET STREET, 5TH FLOOR
 GORHAM, ME 04101
 207.541.9244
 SLRCONSULTING.COM

DESCRIPTION	DATE	BY

WATER & SEWER PLAN
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

SWM DESIGNED	SWM DRAWN	MFZ CHECKED

SCALE: 1"=50'

DATE: NOVEMBER 4, 2022

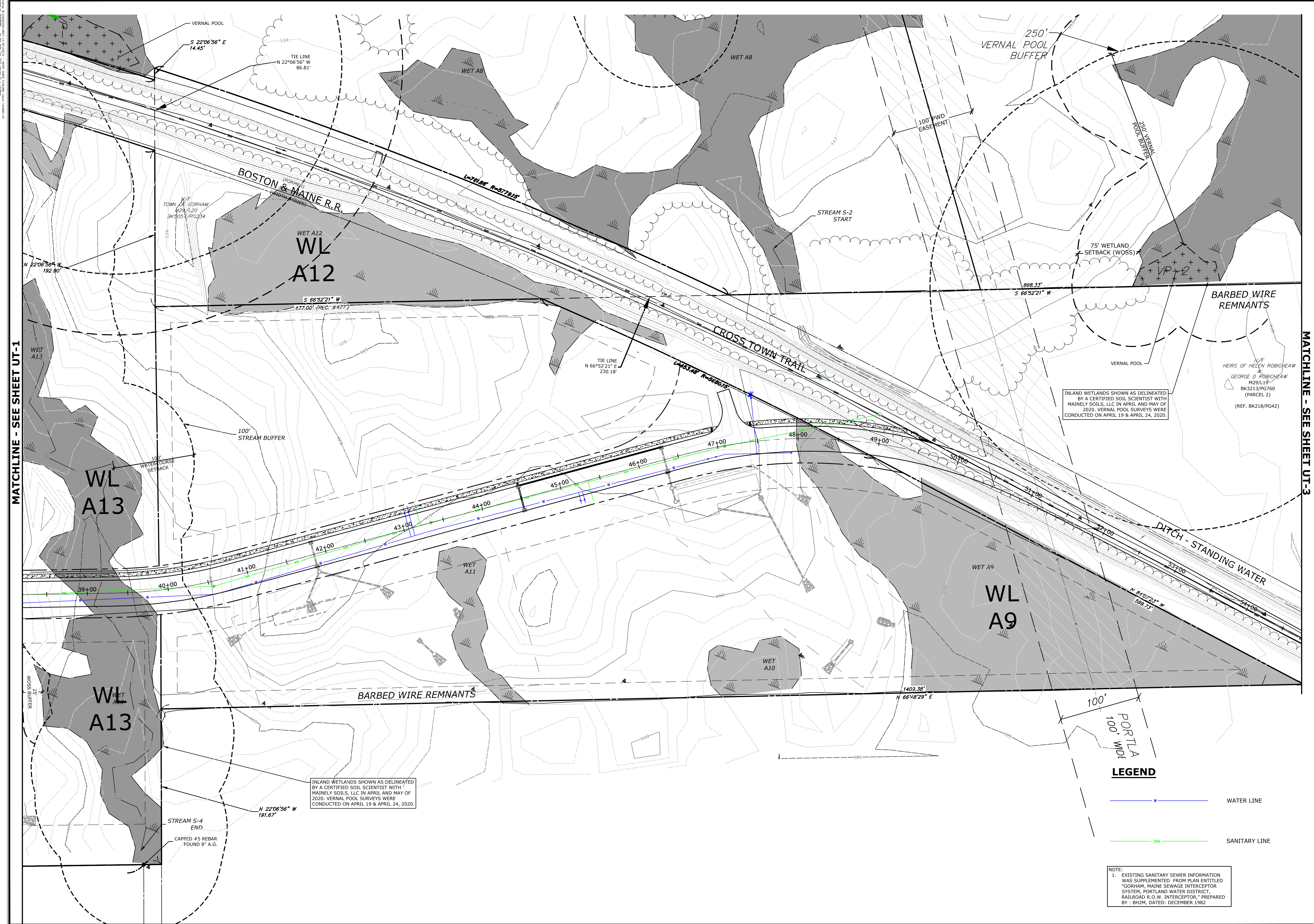
PROJECT NO.: 4807-13

W&S-01

LEGEND

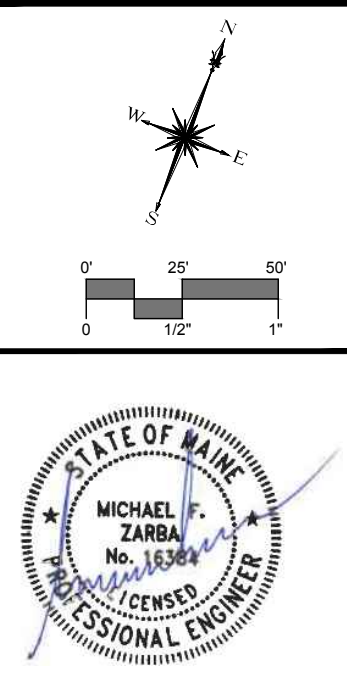
- WATER LINE
- SANITARY LINE

NOTE:
 1. EXISTING SANITARY SEWER INFORMATION WAS SUPPLEMENTED FROM PLAN ENTITLED "GORHAM, MAINE SEWAGE INTERCEPTOR SYSTEM, PORTLAND WATER DISTRICT, RAILROAD R.O.W. INTERCEPTOR," PREPARED BY: BH2M, DATED: DECEMBER 1982.



MATCHLINE - SEE SHEET UT-1

MATCHLINE - SEE SHEET UT-3



SLR	2 MARKET STREET, 5TH FLOOR GORHAM, ME 04037 207.541.9244 SLRCONSULTING.COM
DESCRIPTION	
DATE	
BY	

WATER & SEWER PLAN
GORHAM INDUSTRIAL PARK
WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

HAR	SWM	MFZ
DESIGNED	DRAWN	CHECKED

SCALE: 1"=50'
 DATE: NOVEMBER 4, 2022
 PROJECT NO.: 4807-13

W&S-02

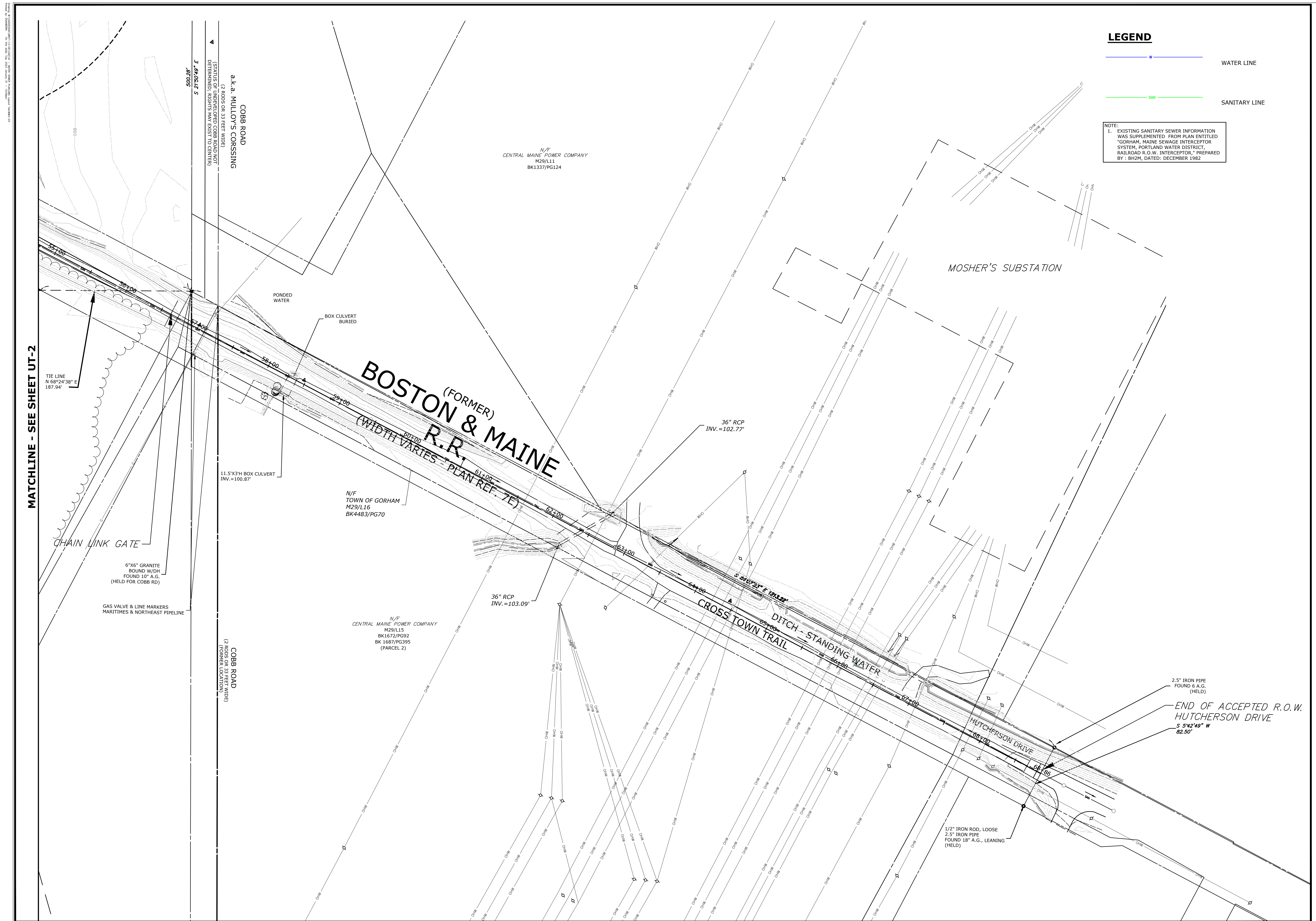
INLAND WETLANDS SHOWN AS DELINEATED BY A CERTIFIED SOIL SCIENTIST WITH MAINELY SOILS, LLC IN APRIL AND MAY OF 2020. VERNAL POOL SURVEYS WERE CONDUCTED ON APRIL 19 & APRIL 24, 2020.

INLAND WETLANDS SHOWN AS DELINEATED BY A CERTIFIED SOIL SCIENTIST WITH MAINELY SOILS, LLC IN APRIL AND MAY OF 2020. VERNAL POOL SURVEYS WERE CONDUCTED ON APRIL 19 & APRIL 24, 2020.

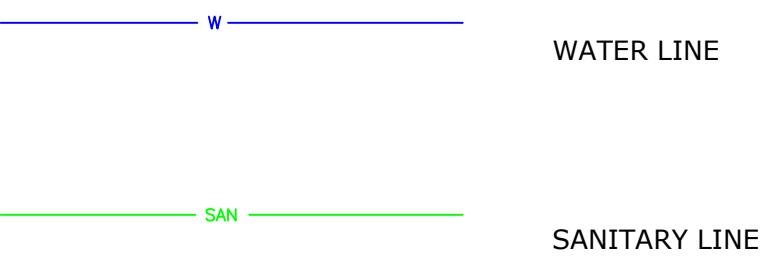
LEGEND

- W — WATER LINE
- SAN — SANITARY LINE

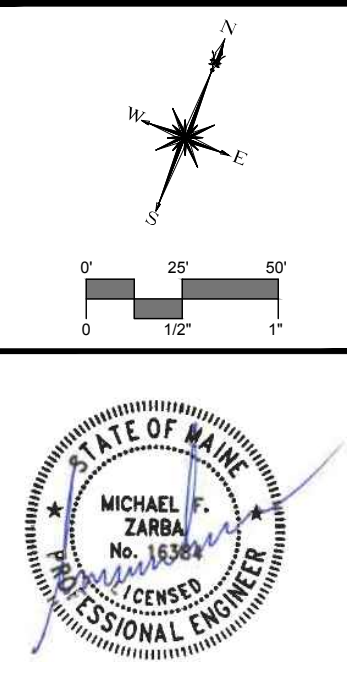
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LEGEND



NOTE:
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MATCHLINE - SEE SHEET UT-2

DESCRIPTION	DATE	BY

WATER & SEWER PLAN
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

HAR DESIGNED	SWM DRAWN	MFZ CHECKED
SCALE 1"=50'		
DATE NOVEMBER 4, 2022		
PROJECT NO. 4807-13		

W&S-03

SEDIMENT & EROSION CONTROL SPECIFICATIONS

GENERAL:

THESE GUIDELINES SHALL APPLY TO ALL WORK CONSISTING OF ANY AND ALL TEMPORARY AND/OR PERMANENT MEASURES TO CONTROL WATER POLLUTION AND SOIL EROSION, AS MAY BE REQUIRED, DURING THE CONSTRUCTION OF THE PROJECT.

IN GENERAL, ALL CONSTRUCTION ACTIVITIES SHALL PROCEED IN SUCH A MANNER SO AS NOT TO POLLUTE ANY WETLANDS, WATERCOURSE, WATER BODY, AND CONDUIT CARRYING WATER, ETC. THE CONTRACTOR SHALL LIMIT, INsofar AS POSSIBLE, THE SURFACE AREA OF EARTH MATERIALS EXPOSED BY CONSTRUCTION METHODS AND IMMEDIATELY PROVIDE PERMANENT AND TEMPORARY POLLUTION CONTROL MEASURES TO PREVENT CONTAMINATION OF ADJACENT WETLANDS, WATERCOURSES, AND WATER BODIES, AND TO PREVENT, INsofar AS POSSIBLE, EROSION ON THE SITE.

LAND GRADING:

THE RESHAPING OF THE GROUND SURFACE BY EXCAVATION AND FILLING OR A COMBINATION OF BOTH, TO OBTAIN PLANNED GRADES, SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING CRITERIA:

- THE CUT FACE OF EARTH EXCAVATION SHALL NOT BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1).
- THE PERMANENT EXPOSED FACES OF FILLS SHALL NOT BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1).
- THE CUT FACE OF ROCK EXCAVATION SHALL NOT BE STEEPER THAN ONE HORIZONTAL TO TWO VERTICAL (1:2).
- PROVISIONS SHOULD BE INCLUDED TO CONVEY SURFACE WATER SAFELY TO STORM DRAINS TO PREVENT SURFACE RUNOFF FROM DAMAGING CUT FACES AND FILL SLOPES.
- NO FILL SHOULD BE PLACED WHERE IT WILL SLIDE OR WASH UPON THE INTO ADJACENT WETLANDS, WATERCOURSES, OR WATER BODIES.
- PRIOR TO ANY RE-GRADING, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PLACED AT THE ENTRANCE TO THE WORK AREA IN ORDER TO REDUCE MUD AND OTHER SEDIMENTS FROM LEAVING THE SITE.

TOPSOILING:

TOPSOIL SHALL BE SPREAD OVER ALL EXPOSED AREAS IN ORDER TO PROVIDE A SOIL MEDIUM HAVING FAVORABLE CHARACTERISTICS FOR THE ESTABLISHMENT, GROWTH, AND MAINTENANCE OF VEGETATION.

UPON ATTAINING FINAL SUBGRADES, SCARIFY SURFACE TO PROVIDE A GOOD BOND WITH TOPSOIL.

REMOVE ALL LARGE STONES, TREE LIMBS, ROOTS AND CONSTRUCTION DEBRIS.

APPLY LIME ACCORDING TO SOIL TEST OR AT THE RATE OF TWO (2) TONS PER ACRE.

MATERIAL:

- TOPSOIL SHOULD HAVE PHYSICAL, CHEMICAL, AND BIOLOGICAL CHARACTERISTICS FAVORABLE TO THE GROWTH OF PLANTS.
- TOPSOIL SHOULD HAVE A SANDY OR LOAMY TEXTURE.
- TOPSOIL SHOULD BE RELATIVELY FREE OF SUBSOIL MATERIAL AND MUST BE FREE OF STONES (OVER 1" IN DIAMETER), LUMPS OF SOIL, ROOTS, TREE LIMBS, TRASH, OR CONSTRUCTION DEBRIS. IT SHOULD BE FREE OF ROOTS OR RHIZOMES SUCH AS THISTLE, NUTGRASS, AND QUACKGRASS.
- AN ORGANIC MATTER CONTENT OF SIX PERCENT (6%) IS REQUIRED. AVOID LIGHT COLORED SUBSOIL MATERIAL.
- SOLUBLE SALT CONTENT OF OVER 500 PARTS PER MILLION (PPM) IS LESS SUITABLE. AVOID TIDAL MARSH SOILS BECAUSE OF HIGH SALT CONTENT AND SULFUR ACIDITY.
- THE PH SHOULD BE MORE THAN 6.0. IF LESS, ADD LIME TO INCREASE PH TO AN ACCEPTABLE LEVEL.

APPLICATION:

- AVOID SPREADING WHEN TOPSOIL IS WET OR FROZEN.
- SPREAD TOPSOIL UNIFORMLY TO A DEPTH OF AT LEAST SIX INCHES (6"), OR TO THE DEPTH SHOWN ON THE PLANS.

TEMPORARY VEGETATIVE COVER:

TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED ON ALL UNPROTECTED AREAS THAT PRODUCE SEDIMENT, AREAS WHERE FINAL GRADING HAS BEEN COMPLETED, AND AREAS WHERE THE ESTIMATED PERIOD OF BARE SOIL EXPOSURE IS LESS THAN 12 MONTHS. TEMPORARY VEGETATIVE COVER SHALL BE APPLIED IF AREAS WILL NOT BE PERMANENTLY SEEDING BY SEPTEMBER 1.

SITE PREPARATION:

- INSTALL REQUIRED SURFACE WATER CONTROL MEASURES.
- REMOVE LOOSE ROCK, STONE, AND CONSTRUCTION DEBRIS FROM AREA.
- APPLY LIME ACCORDING TO SOIL TEST OR AT A RATE OF ONE (1) TON OF GROUND DOLOMITIC LIMESTONE PER ACRE (5 LBS. PER 100 SQ. FT.).
- APPLY FERTILIZER ACCORDING TO SOIL TEST OR AT THE RATE OF 300 LBS. OF 10-10-10 PER ACRE (7 LBS. PER 1,000 SQ. FT.) AND SECOND APPLICATION OF 200 LBS. OF 10-10-10 (5 LBS. PER 1,000 SQ. FT.) WHEN GRASS IS FOUR INCHES (4") TO SIX INCHES (6") HIGH. APPLY ONLY WHEN GRASS IS DRY.
- UNLESS HYDROSEEDING, WORK IN LIME AND FERTILIZER TO A DEPTH OF FOUR (4") INCHES USING A DISK OR ANY SUITABLE EQUIPMENT.
- TILLAGE SHOULD ACHIEVE A REASONABLY UNIFORM LOOSE SEEDBED. WORK ON CONTOUR IF SITE IS SLOPING.

ESTABLISHMENT:

- APPLY SEED UNIFORMLY ACCORDING TO THE RATE INDICATED BY BROADCASTING, DRILLING, OR HYDRAULIC APPLICATION.
- UNLESS HYDROSEEDING, COVER RYEGRASS SEEDS WITH NOT MORE THAN 1/4" INCH OF SOIL USING SUITABLE EQUIPMENT.
- MULCH IMMEDIATELY AFTER SEEDING IF REQUIRED. (REFER TO TEMPORARY OR PERMANENT VEGETATIVE COVER REQUIREMENTS.) APPLY STRAW MULCH AND ANCHOR TO SLOPES GREATER THAN 3% OR WHERE CONCENTRATED FLOW WILL OCCUR.

PERMANENT VEGETATIVE COVER:

PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED AS VARIOUS SECTIONS OF THE PROJECT ARE COMPLETED IN ORDER TO STABILIZE THE SOIL, REDUCE DOWNSTREAM DAMAGE FROM SEDIMENT AND RUNOFF, AND TO ENHANCE THE AESTHETIC NATURE OF THE SITE. IT WILL BE APPLIED TO ALL CONSTRUCTION AREAS SUBJECT TO EROSION WHERE FINAL GRADING HAS BEEN COMPLETED AND A PERMANENT COVER IS NEEDED.

SITE PREPARATION:

- INSTALL REQUIRED SURFACE WATER CONTROL MEASURES.
- REMOVE LOOSE ROCK, STONE, AND CONSTRUCTION DEBRIS FROM AREA.
- PERFORM ALL PLANTING OPERATIONS PARALLEL TO THE CONTOURS OF THE SLOPE.
- APPLY TOPSOIL AS INDICATED ELSEWHERE HEREIN.
- APPLY FERTILIZER ACCORDING TO SOIL TEST OR:
 - SPRING SEEDING: WORK DEEPLY IN SOIL, BEFORE SEEDING, 300 LBS. OF 10-10-10 FERTILIZER PER ACRE (7 LBS. PER 1,000 SQ. FT.); THEN SIX (6) TO EIGHT (8) WEEKS LATER, APPLY ON THE SURFACE AN ADDITIONAL 300LBS. OF 10-10-10 FERTILIZER PER ACRE. AFTER SEPTEMBER 1, TEMPORARY VEGETATIVE COVER SHALL BE APPLIED.
 - FALL SEEDING: WORK DEEPLY IN SOIL, BEFORE SEEDING, 600 LBS. OF 10-10-10 FERTILIZER PER ACRE (14 LBS. PER 1,000 SQ. FT.).

EROSION CHECKS:

GENERAL:

TEMPORARY PERVIOUS BARRIERS USING BALES OF STRAW, HELD IN PLACE WITH STAKES DRIVEN THROUGH THE BALES AND INTO THE GROUND OR GEOTEXTILE FABRIC FASTENED TO A FENCE POST AND BURIED INTO THE GROUND, SHALL BE INSTALLED AND MAINTAINED AS REQUIRED TO CHECK EROSION AND REDUCE SEDIMENTATION.

CONSTRUCTION:

- BALES SHOULD BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
- EACH BALE SHALL BE EMBEDDED INTO THE SOIL A MINIMUM OF FOUR (4") INCHES.
- BALES SHALL BE SECURELY ANCHORED IN PLACE BY WOOD STAKES OR REINFORCEMENT BARS DRIVEN THROUGH THE BALES AND INTO THE GROUND. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD THE PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
- GEOTEXTILE FABRIC SHALL BE SECURELY ANCHORED AT THE TOP OF A THREE FOOT (3') HIGH FENCE AND BURIED A MINIMUM OF FOUR INCHES (4") TO THE SOIL. SEAMS BETWEEN SECTIONS OF FILTER FABRIC SHALL OVERLAP MINIMUM OF TWO FEET (2').

INSTALLATION AND MAINTENANCE:

- BALED STRAW EROSION BARRIERS SHALL BE INSTALLED AT ALL STORM SEWER INLETS.
- BALED STRAW EROSION BARRIERS AND GEOTEXTILE FENCE SHALL BE INSTALLED AT THE LOCATION INDICATED ON THE PLAN AND IN ADDITIONAL AREAS AS MAY BE DEEMED APPROPRIATE DURING CONSTRUCTION.
- ALL EROSION CHECKS SHALL BE MAINTAINED UNTIL ADJACENT AREAS ARE STABILIZED.
- INSPECTION SHALL BE FREQUENT (AT MINIMUM BI-MONTHLY AND AFTER RAINFALL EVENTS GREATER THAN ONE HALF INCH) AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
- EROSION CHECKS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM WATER FLOW OR DRAINAGE.

TEMPORARY STABILIZATION FOR WINTER CONDITIONS:

ANY SIGNIFICANT AREAS OF EXPOSED SOIL WHICH HAVE BEEN DISTURBED AFTER OCTOBER 15TH SHALL BE TEMPORARILY STABILIZED BY ONE OF THE FOLLOWING METHODS UNTIL SUCH TIME THAT PERMANENT STABILIZATION MEASURES AND SEEDING CAN BE APPLIED, TYPICALLY AFTER MAY 15TH.

- INSTALLATION OF AN ANCHORED EROSION CONTROL BLANKET. EROSION CONTROL BLANKETS SHOULD NOT BE INSTALLED ON SNOW OF GREATER THAN ONE INCH IN DEPTH OR ON FROZEN GROUND.
- APPLICATION OF STRAW MULCH AT A RATE OF FOUR (4) TONS PER ACRE.
- APPLICATION OF WOOD CHIP MULCH AT A MINIMUM DEPTH OF THREE INCHES (3"). WOOD CHIP MULCH SHOULD NOT BE USED ON SLOPES GREATER THAN 2:1 (H:V). ALL WOOD CHIP MULCH SHALL BE REMOVED PRIOR TO RESUMING SITE GRADING.

VEGETATIVE COVER SELECTION & MULCHING:

TEMPORARY VEGETATIVE COVER:

PERENNIAL RYEGRASS 3 LBS./1,000 SQ. FT. (LOLIUM PERENNE)

PERMANENT VEGETATIVE COVER:

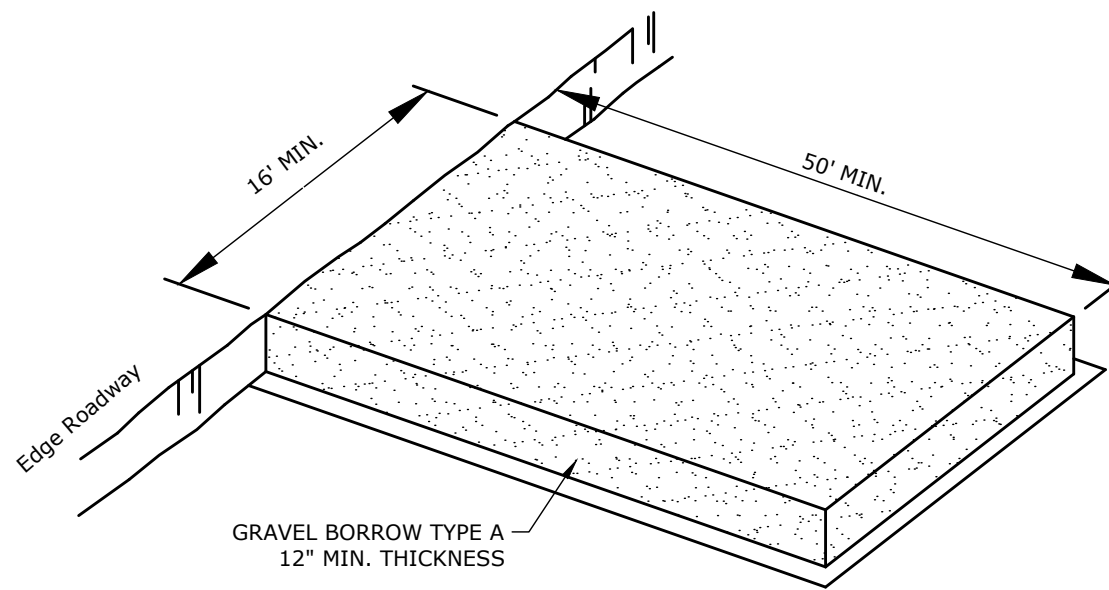
- TURFGRASS MIX OR EQUAL:
 - RECOMMENDED APPLICATION RATE: 1 POUND PER 1,750 SF SEED MIX SPECIES: CREEPING RED FESCUE (*Festuca rubra* var. *rubra* (endophyte enhanced)) - 15%, PERENNIAL RYEGRASS (*Lolium multiflorum*) - 15%, KENTUCKY BLUEGRASS (*Poa pratensis* 'KenBlue') - 35%, CHEWINGS FESCUE (*Festuca rubra* var. *construata* (Tiffany)) - 15%.
 - TEMPORARY MULCHING: STRAW AT 70-90 LBS./1,000 SQ. FT. (TEMPORARY VEGETATIVE AREAS) WOOD FIBER IN HYDROMULCH SLURRY 25-50 LBS./1,000 SQ. FT.

ESTABLISHMENT:

- SMOOTH AND FIRM SEEDBED WITH CULTIPACKER OR OTHER SIMILAR EQUIPMENT PRIOR TO SEEDING (EXCEPT WHEN HYDROSEEDING).
- SELECT ADAPTED SEED MIXTURE FOR THE SPECIFIC SITUATION. NOTE RATES AND THE SEEDING DATES (REFER TO TEMPORARY OR PERMANENT VEGETATIVE COVER REQUIREMENTS).
- APPLY SEED UNIFORMLY ACCORDING TO RATE INDICATED, BY BROADCASTING, DRILLING, OR HYDRAULIC APPLICATION.
- COVER GRASS AND LEGUME SEED WITH NOT MORE THAN 1/4 INCH OF SOIL WITH SUITABLE EQUIPMENT (EXCEPT WHEN HYDROSEEDING).
- MULCH IMMEDIATELY AFTER SEEDING, IF REQUIRED, ACCORDING TO TEMPORARY MULCHING SPECIFICATIONS. (REFER TO TEMPORARY OR PERMANENT VEGETATIVE COVER REQUIREMENTS).
- USE PROPER INOCULANT ON ALL LEGUME SEEDINGS, USE FOUR (4) TIMES NORMAL RATES WHEN HYDROSEEDING.
- THE USE OF SOD IS AN ACCEPTABLE ALTERNATIVE WHERE THERE IS A HEAVY CONCENTRATION OF WATER AND IN CRITICAL AREAS WHERE IT IS IMPORTANT TO GET A QUICK VEGETATIVE COVER TO PREVENT EROSION.

MAINTENANCE:

- TEST FOR SOIL ACIDITY EVERY THREE (3) YEARS AND LIME AS REQUIRED.
- ON SITES WHERE GRASSES PREDOMINATE, BROADCAST ANNUALLY 500 POUNDS OF 10-10-10 FERTILIZER PER ACRE (12 LBS. PER 1,000 SQ. FT.) OR AS NEEDED ACCORDING TO ANNUAL SOIL TESTS.
- ON SITES WHERE LEGUMES PREDOMINATE, BROADCAST EVERY THREE (3) YEARS OR AS INDICATED BY SOIL TEST 300 POUNDS OF 0-20-20 OR EQUIVALENT PER ACRE (8 LBS PER 1,000 SQ. FT.).

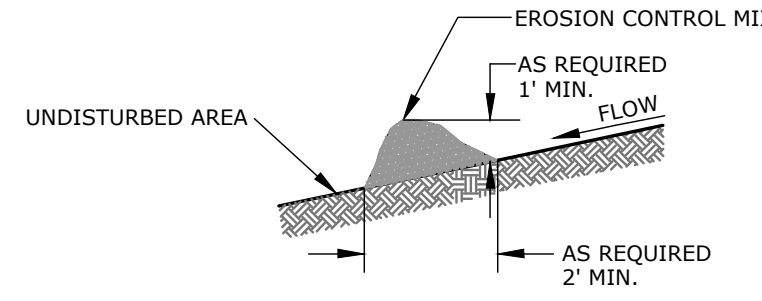


NOTE: STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSTALLED AND MAINTAINED DURING OPERATIONS WHICH PROMOTE VEHICULAR TRACKING OF MUD

CONSTRUCTION ENTRANCE PAD (CE)

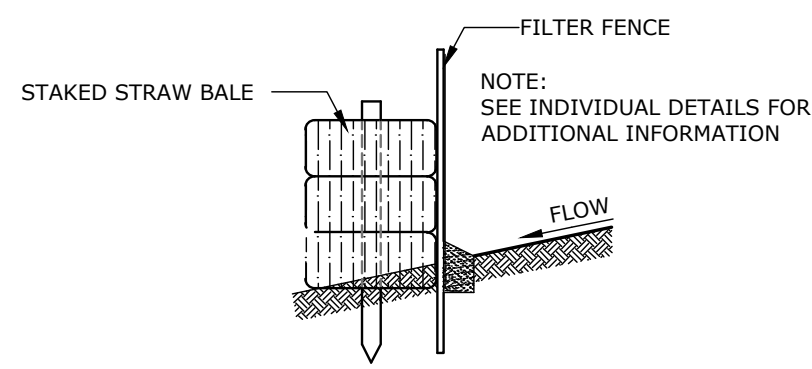
NOT TO SCALE

TWO STAKES PER BALE



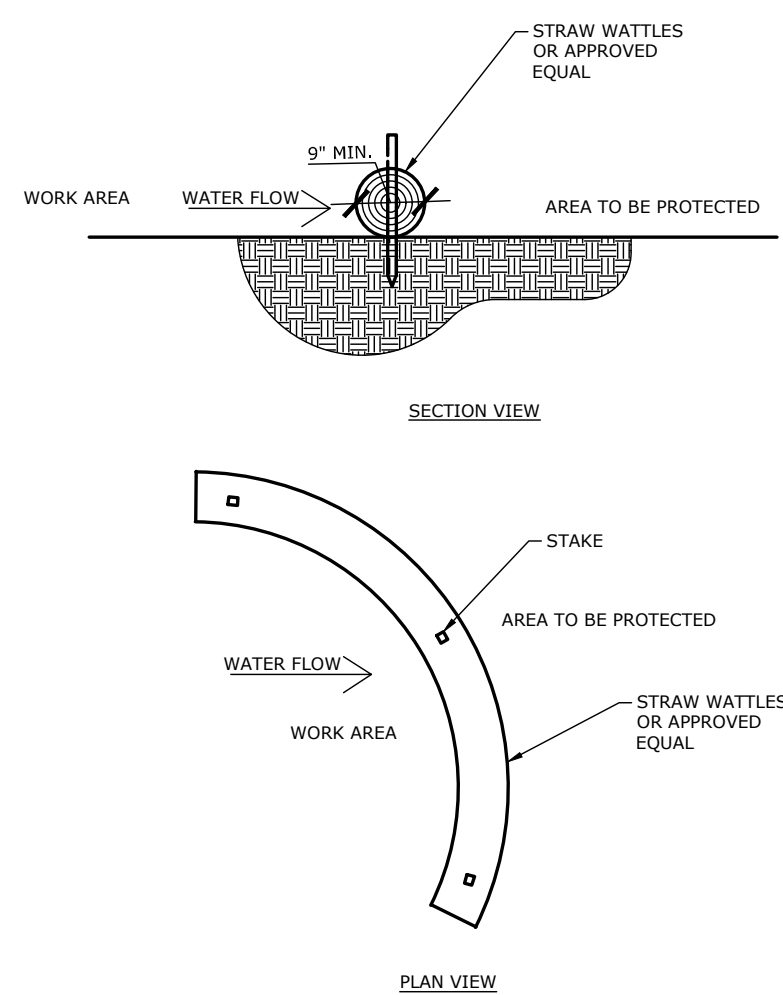
EROSION CONTROL MIX BERM

NOT TO SCALE



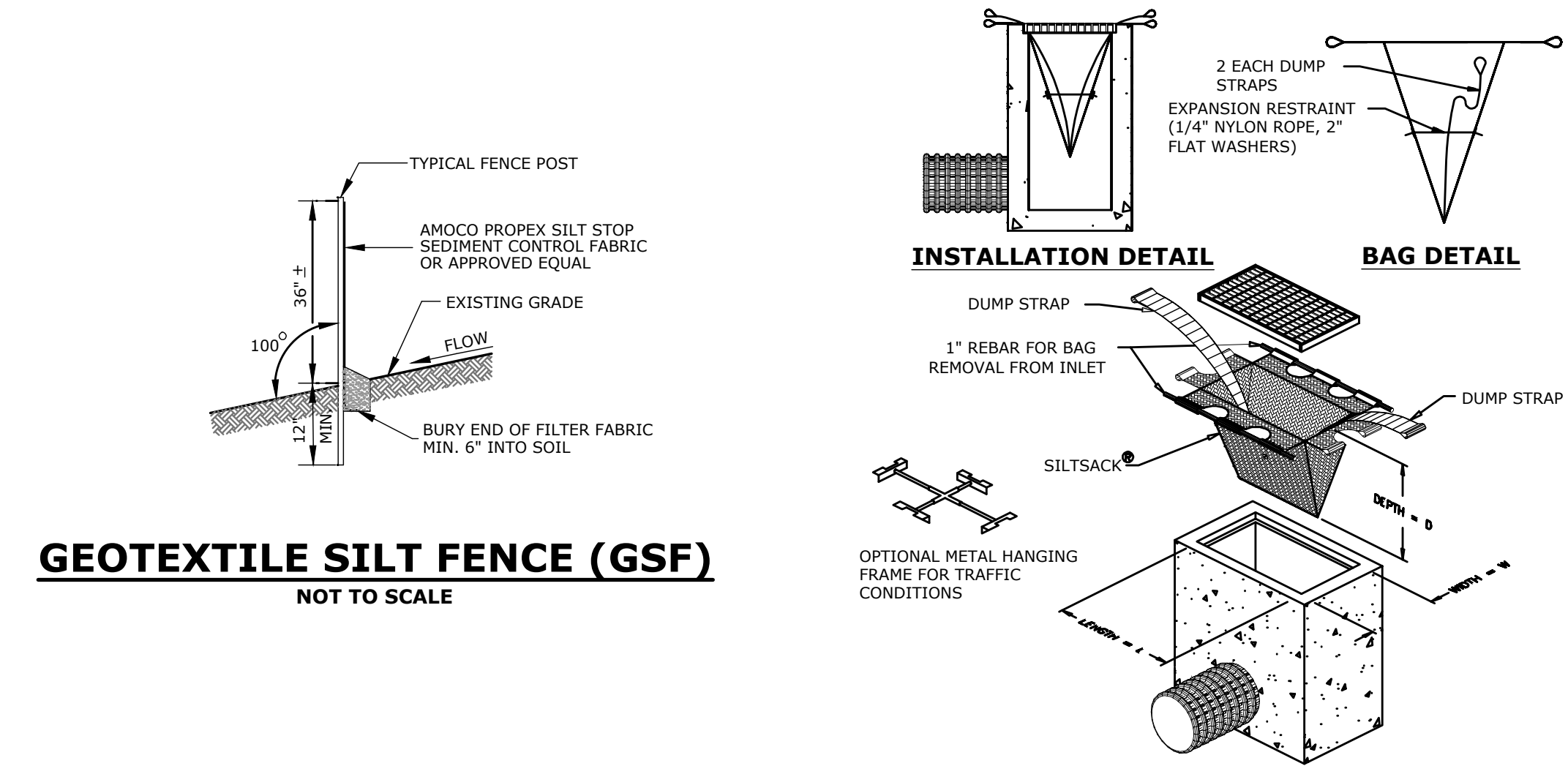
SEDIMENT FILTER FENCE WITH STRAW BALES (GSF)

NOT TO SCALE



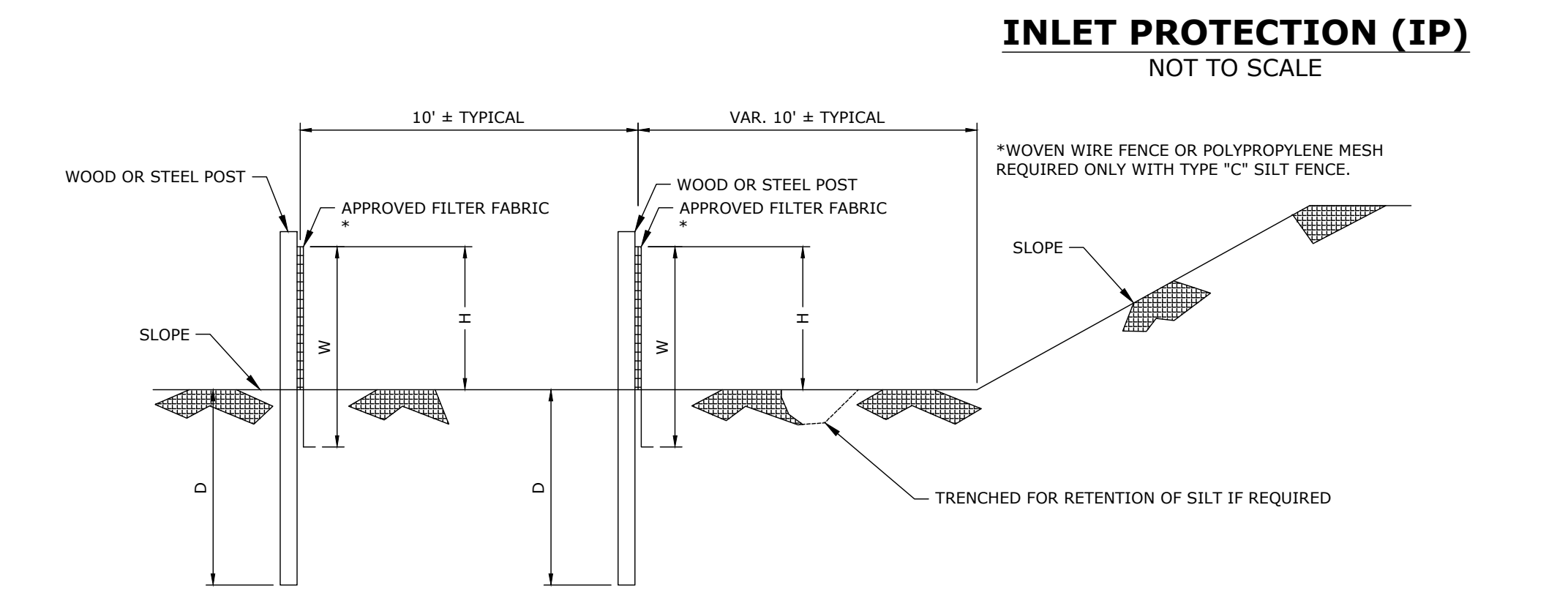
STRAW WATTLES (SW)

NOT TO SCALE



GEOTEXTILE SILT FENCE (GSF)

NOT TO SCALE



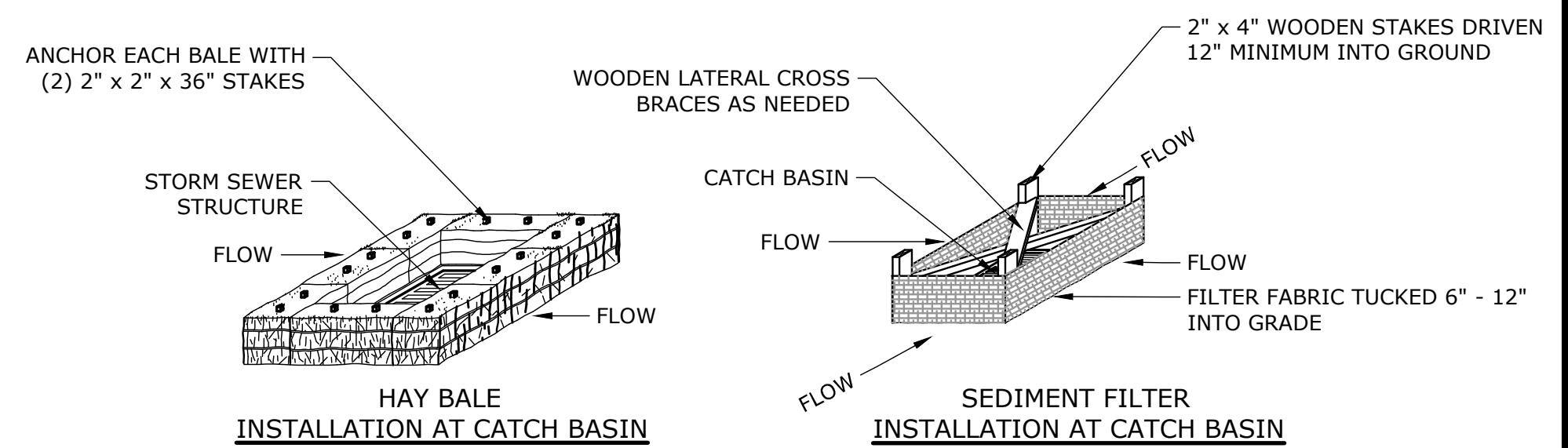
INLET PROTECTION (IP)

NOT TO SCALE

FENCE TYPE	POST LENGTH	H	D	W	TYPICAL USES
TYPE "A"	4 FT.	2'-4"	1'-6"	3'-0"	AT BRIDGE END ROLLS, DOUBLE ROW ALONG STREAMS, WETLANDS AND ENRIRONNMENTALLY SENSITIVE AREAS
TYPE "C"	4 FT.	2'-4"	1'-6"	3'-0"	

DOUBLE ROW SILT FENCE

NOT TO SCALE



SEDIMENTATION CONTROL SYSTEM FOR CATCH BASINS

NOT TO SCALE

NOTES:

- EROSION CONTROL MIX CAN BE MANUFACTURED ON OR OFF THE PROJECT SITE. IT MUST CONSIST PRIMARILY OF ORGANIC MATERIAL, SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR ACCEPTABLE MANUFACTURED PRODUCTS. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS WILL NOT BE ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.
- EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE MIX COMPOSITION SHALL MEET THE FOLLOWING STANDARDS:
 - THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 80 AND 100%, DRY WEIGHT BASIS
 - PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN AND A MIN. OF 70%, MAX. OF 85% PASSING A 0.75" SCREEN
 - THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED.
 - LARGE PORTIONS OF SILTS, CLAY, OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX.
 - SOLUBLE SALTS CONTENT SHALL BE < 4.0 MMHOS/CM.
 - THE PH SHOULD FALL BETWEEN 5.0 AND 8.0
- THE BARRIER MUST BE PLACED ALONG A RELATIVELY LEVEL CONTOUR. IT MAY BE NECESSARY TO CUT TALL GRASSES OR WOODY VEGETATION TO AVOID CREATING VOIDS AND BRIDGES THAT WOULD ENABLE FINES TO WASH UNDER THE BARRIER THROUGH THE GRASS BLADES OR PLANT STEMS.
- ON SLOPES LESS THAN 5% OR AT THE BOTTOM OF STEEPER SLOPES (<2:1) UP TO 20 FEET LONG, THE BARRIER MUST BE A MIN. OF 12" HIGH, AS MEASURED ON THE UPHILL SIDE OF THE BARRIER, AND A MIN. OF 2 FEET WIDE. ON THE LONGER OR STEEPER SLOPES, THE BARRIER SHOULD BE WIDER TO ACCOMMODATE THE ADDITIONAL RUNOFF.
- OTHER BMPs SHOULD BE USED AT LOW POINTS OF CONCENTRATED RUNOFF, BELOW CULVERT OUTLET APRONS, AROUND BATCH BASINS AND CLOSED STORM SYSTEMS, AND AT THE BOTTOM OF STEEP PERIMETER SLOPES THAT ARE MORE THAN 50 FEET FROM TOP TO BOTTOM (I.E., A LARGE UP GRADIENT CONTRIBUTING WATERSHED).
- BERMS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. THEY 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 EDGES OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM.
- SEDIMENT DEPOSITS MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
- FILTER BERMS SHOULD BE RESHAPE AS NEEDED.
- ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE BERM IS NO LONGER REQUIRED SHOULD BE GRADED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

EROSION CONTROL MAINTENANCE INTERVALS

EROSION CONTROL MEASURE	CONTROL OBJECTIVE	INSPECTION/MAINTENANCE	FAILURE INDICATORS	REMOVAL
SILT FENCE (FP, SP)	- INTERCEPT AND REDIRECT/DRAIN SMALL AMOUNTS OF SEDIMENT FROM SMALL DISTURBED AREAS. - DECREASE VELOCITY OF SHEET FLOW. - PROTECT SENSITIVE SLOPES OR SOILS FROM EXCESSIVE WATER FLOW.	INSPECT AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL OF 0.5 INCHES OR MORE. ACCUMULATED SEDIMENT MUST BE REMOVED ONCE ITS DEPTH IS EQUAL TO 1/2 THE TRENCH HEIGHT. INSPECT FREQUENTLY DURING PUMPING OPERATIONS IF USED FOR DEWATERING.	- PHYSICAL DAMAGE OR DECOMPOSITION - EVIDENCE OF OVERTOPPED OR UNDERCUT FENCE - EVIDENCE OF SIGNIFICANT FLOWS EVADING CAPTURE - REPEATING FAILURE	SILT FENCE MAY BE REMOVED AFTER UPHILL AND SENSITIVE AREAS HAVE BEEN PERMANENTLY STABILIZED.
HAY BALES (HB)	- INTERCEPT AND REDIRECT/DRAIN SMALL AMOUNTS OF SEDIMENT FROM SMALL DISTURBED AREAS. - DECREASE VELOCITY OF SHEET FLOW. - PROTECT SENSITIVE SLOPES OR SOILS FROM EXCESSIVE WATER FLOW.	INSPECT AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL OF 0.5 INCHES OR MORE. ACCUMULATED SEDIMENT MUST BE REMOVED ONCE THE DEPTH OF SEDIMENT IS EQUAL TO 1/2 THE HEIGHT OF THE BARRIER. INSPECT FREQUENTLY DURING PUMPING OPERATIONS IF USED FOR DEWATERING OPERATIONS.	- PHYSICAL DAMAGE OR DECOMPOSITION - EVIDENCE OF OVERTOPPED OR UNDERCUT FENCE - EVIDENCE OF SIGNIFICANT FLOWS EVADING CAPTURE - REPEATING FAILURE	HAY BALES MAY BE REMOVED AFTER UPHILL AREAS HAVE BEEN PERMANENTLY STABILIZED.
CONSTRUCTION ENTRANCE (CE)	- REDUCE THE TRACKING OF SEDIMENT OFF-SITE ONTO PAVED SURFACES.	INSPECT AT THE END OF EACH WORK DAY AND IMMEDIATELY REPAIR DAMAGES. PERIODIC ADDITION OF STONE, OR LENGTHENING OF ENTRANCE MAY BE REQUIRED AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, UNPAVED, WASHED, OR TRACKED ONTO PAVED SURFACES AS A RESULT OF INEFFICIENCY OF CONSTRUCTION ENTRANCE SHALL BE IMMEDIATELY REMOVED.	- SEDIMENT IN ROADWAY ADJACENT TO SITE	CONSTRUCTION ENTRANCE MAY BE REMOVED ONCE THE SITE HAS BEEN PERMANENTLY STABILIZED, AND ALL OTHER SECTIONS OF ROADWAY HAVE BEEN PERMANENTLY PAVED.
CATCH BASIN INLET PROTECTION (IP)	- PREVENT SILT IN CONSTRUCTION-RELATED RUNOFF FROM ENTERING STORM DRAINAGE SYSTEM.	INSPECT AFTER ANY RAIN EVENT. IF FILTER BAG INSIDE CATCH BASIN CONTAINS MORE THAN 4\"/>		



DESCRIPTION	DATE	BY	
	ADDED DOUBLE SILT FENCE DETAIL	05/13/2022	SWM
	PLANNING BOARD REVISIONS	12/19/2022	SWM

SEDIMENT AND EROSION CONTROL DETAILS AND SPECIFICATIONS

GORHAM INDUSTRIAL PARK
WEST CAMPUS
CYR DRIVE
GORHAM, MAINE

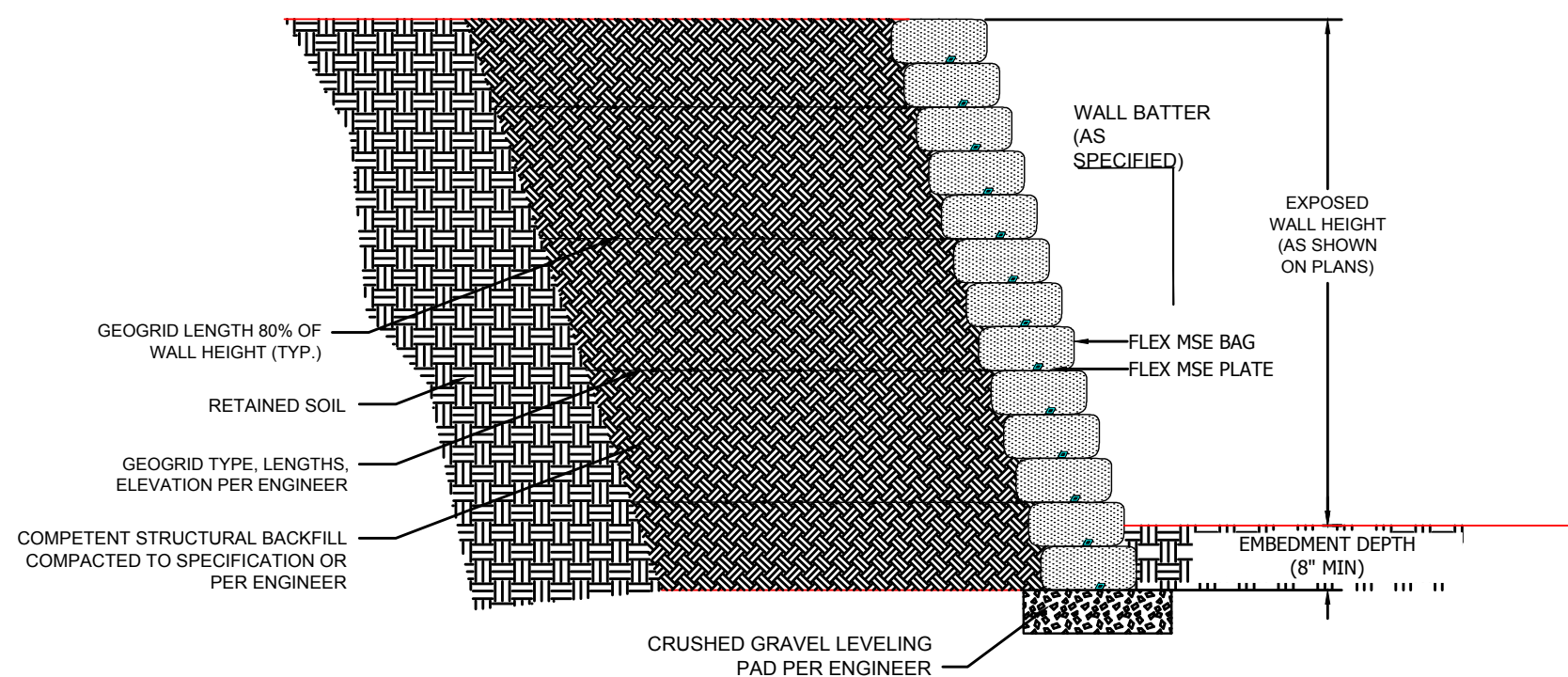
AS NOTED

NOVEMBER 4, 2022

PROJECT NO. 4807-13

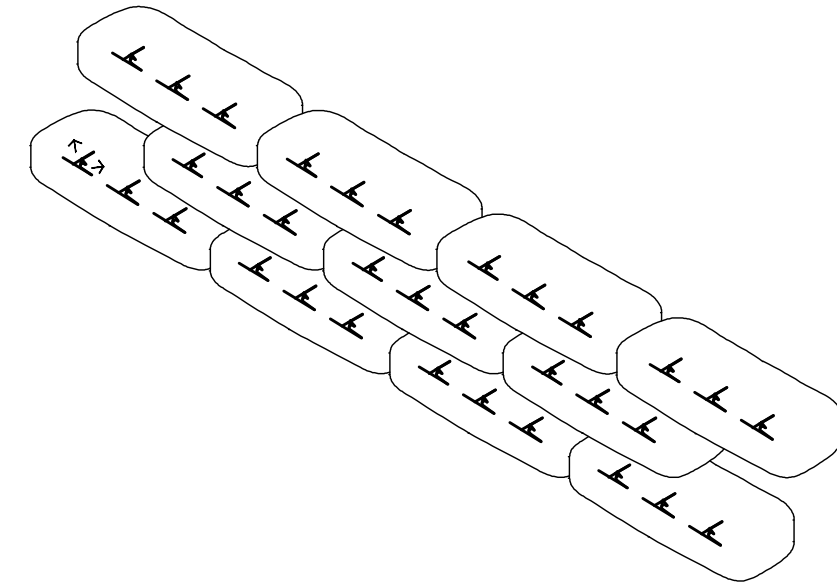
SD-01

6250251 - 11.06.2022 10:10 AM 11/11/2022 10:10 AM 11/11/2022 10:10 AM 11/11/2022 10:10 AM 11/11/2022 10:10 AM 11/11/2022 10:10 AM

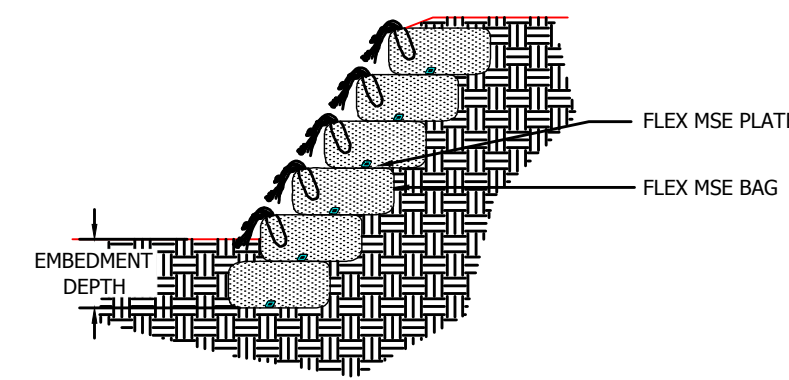


GEOGRID REINFORCED FLEX MSE WALL
NOT TO SCALE

- MAXIMUM OF 3 100MM / 4" PLANTS PER BAG
- HOLES MUST ONLY BE ON THE TOP HALF, BAG SHOULDER OR SET BACK
- EACH INVERTED "T" CUT TO BE A MAXIMUM OF 3.5" X 3.5" (90MM X 90MM)
- SPACE PLANTS EVENLY AND OFFSET FOR COMPLETE COVERAGE

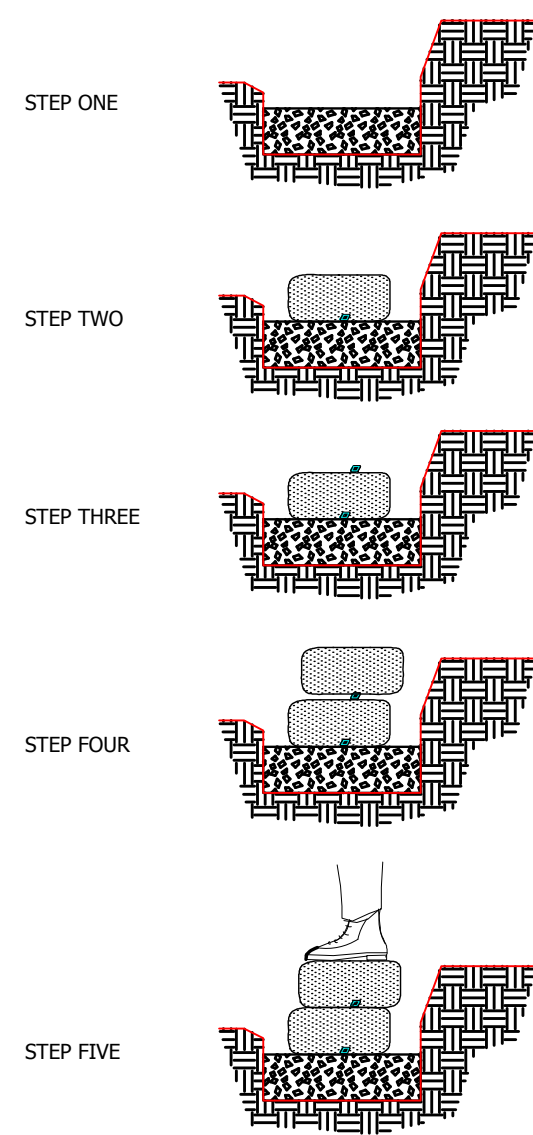


ISOMETRIC



SECTION

VEGETATION - LIVE PLANTING
NOT TO SCALE



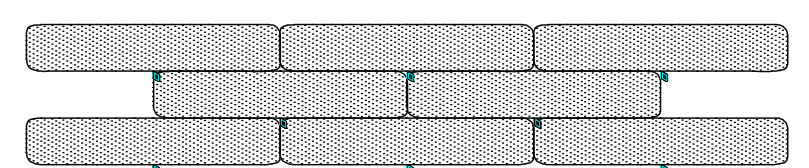
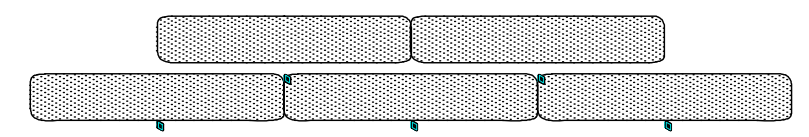
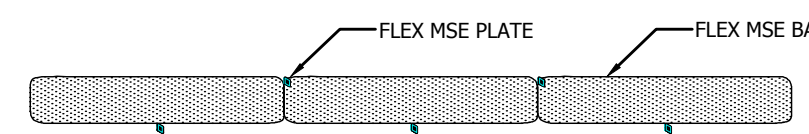
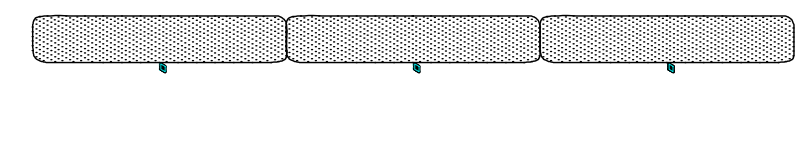
STEP ONE
PREPARE A SHALLOW TRENCH, MINIMUM 12/300mm, ADD 6"/150mm GRAVEL FOR LEVELLING OR PER ENGINEER SPECIFICATION

STEP TWO
PLACE INTERLOCKING PLATE ON GROUND, PLACE 1ST ROW OF FLEX MSE GTX BAGS TIGHTLY TOGETHER. DO NOT OVERLAP BAGS, BAG LENGTH SEAMS ORIENTED TO THE BACK

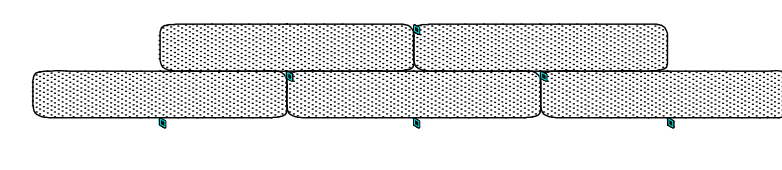
STEP THREE
PLACE FLEX MSE INTERLOCKING PLATE. EACH INTERLOCKING PLATE, ACCORDING TO DIRECTIONS AND REQUIRED SLOPE ANGLE, STRADDLES TWO FLEX MSE GTX BAGS - PRESS TO INTERCONNECT WITH GTX BAG

STEP FOUR
PLACE NEXT ROW OF FLEX MSE GTX BAGS IN "RUNNING BOND", ACCORDING TO REQUIRED FACING ANGLE - BACK FILL AND COMPACT AS REQUIRED

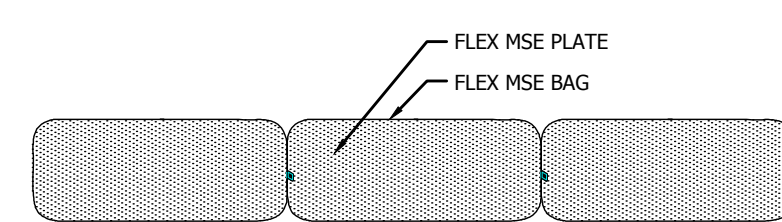
STEP FIVE
APPLY PRESSURE TO TOP OF BAG TO LIGHTLY COMPACT AND ENGAGE INTERLOCK



FLEX MSE INSTALLATION PROCESS
NOT TO SCALE

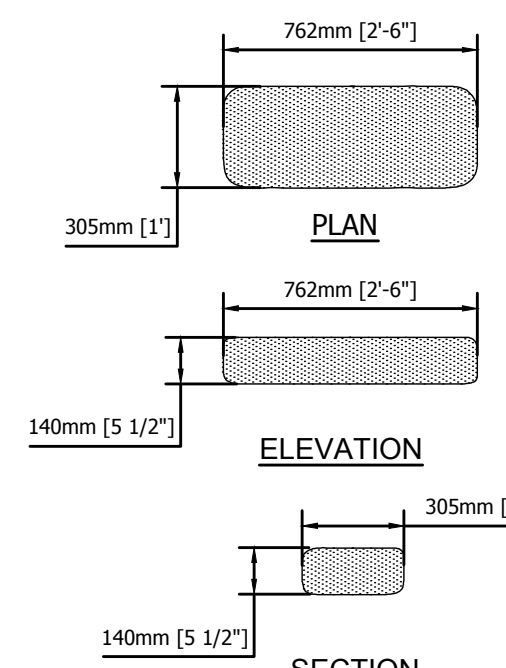


ELEVATION



PLAN

FLEX MSE UNIT
SCALE = N.T.S

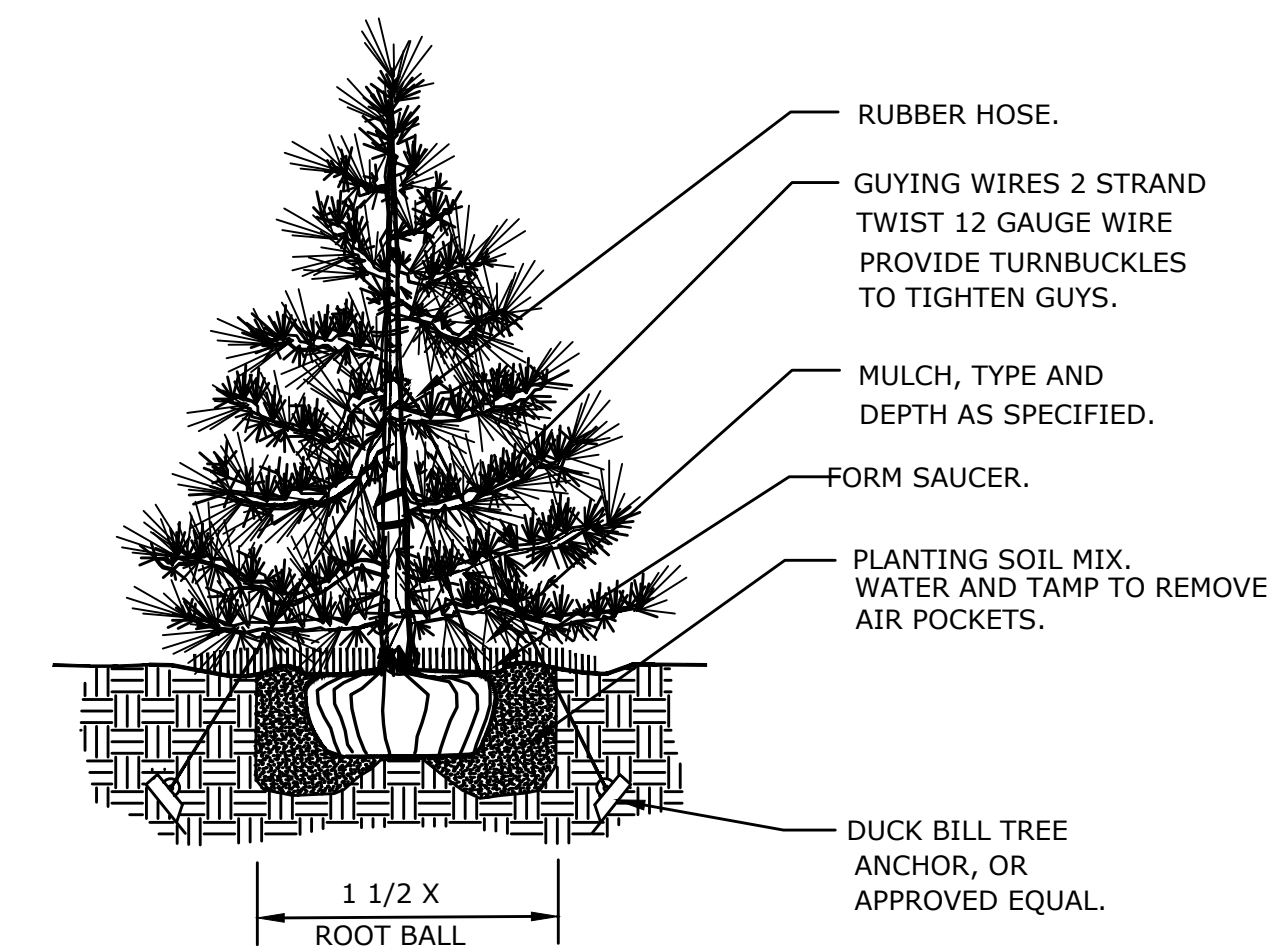


FLEX MSE BAG
SCALE = N.T.S

FLEX MSE PLATE
SCALE = N.T.S

- FILLED BAG DIMENSIONS AND WEIGHT CAN CHANGE BASED ON FILL DENSITY AND FILLING/CLOSING METHODS
- BAG CLOSURES TO BE MIN. 50LB BLACK CABLE TIE, GALVANIZED LOOP TIE, OR SEWN PER MANUFACTURER'S SPECIFICATION
- BAGS AND PLATES TO BE INSTALLED AT 1:1 RATIO
- TYPICAL VEGETATIVE BAG WEIGHT: 70LBS/32KG MIN.

FLEX MSE UNIT DETAILS
NOT TO SCALE

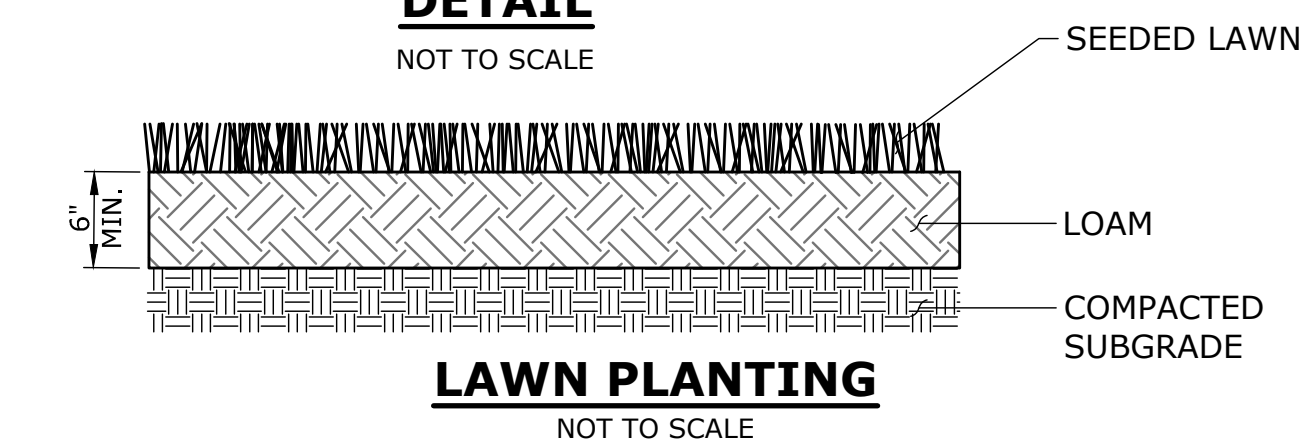


NOTES:

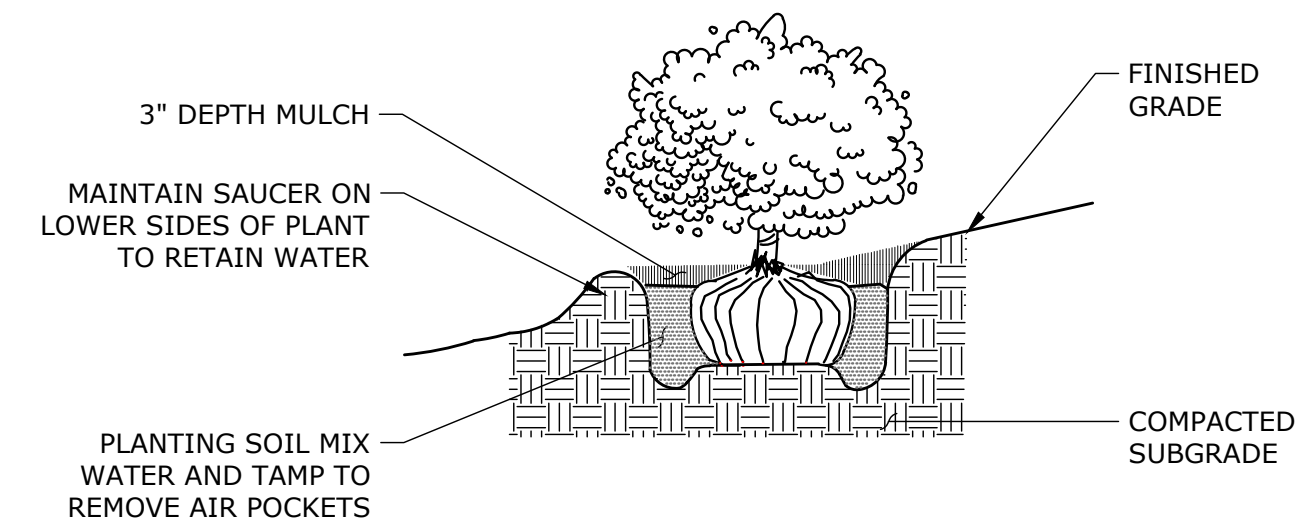
1. PROVIDE STAKING AS REQUIRED.
2. PLANT SO THAT TOP OF ROOT BALL IS EVEN WITH THE FINISHED GRADE.
3. PAINT ALL CUTS OVER 25.4mm DIA.
4. REMOVE ALL CONTAINERS AND BASKETS FROM ROOT BALL.
5. REMOVE BURLAP FROM TOP 8.5mm OF ROOT BALL.

NOTE: REMOVE ALL BOULDERS & LEDGE 18" BELOW SUBGRADE

EVERGREEN TREE DETAIL
NOT TO SCALE



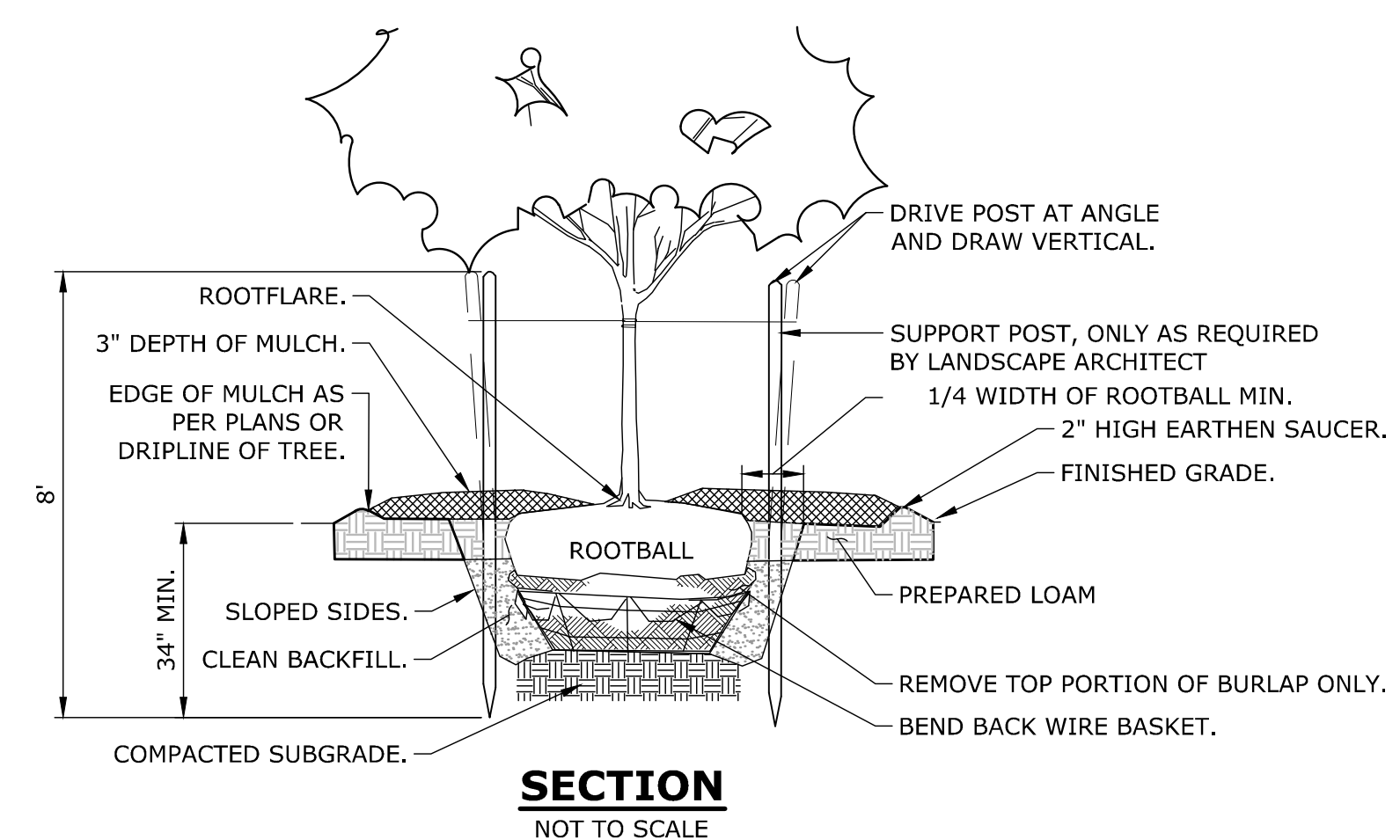
LAWN PLANTING
NOT TO SCALE



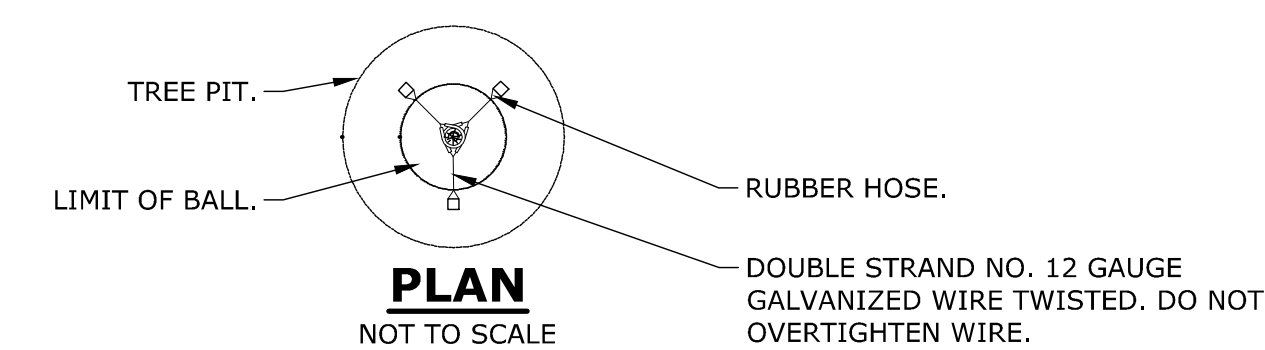
NOTES:

1. UNLESS OTHERWISE DIRECTED SHREDDED MULCH SHALL BE PLACED TO A LIMIT OF ONE FOOT BEYOND THE CENTER OF THE OUTERMOST SHRUBS IN SHRUB BED.

SHRUB PLANTING
NOT TO SCALE



SECTION
NOT TO SCALE



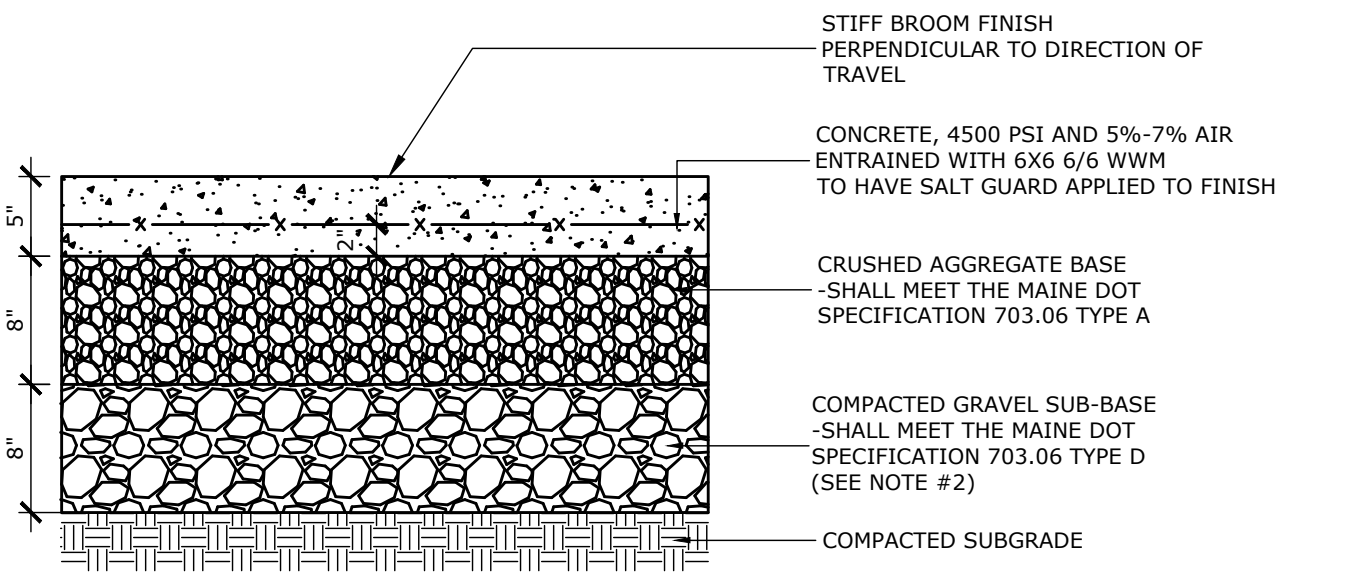
PLAN
NOT TO SCALE

NOTES:

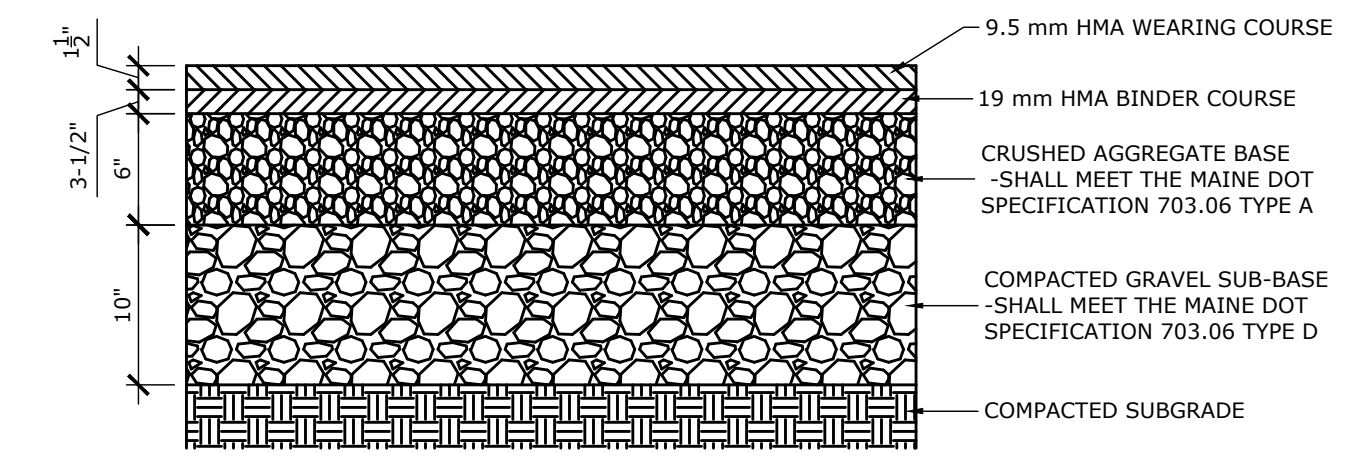
1. SUPPORT STAKES SHALL BE REMOVED BY THE CONTRACTOR ONE YEAR AFTER INSTALLATION.

TREE PLANTING
NOT TO SCALE

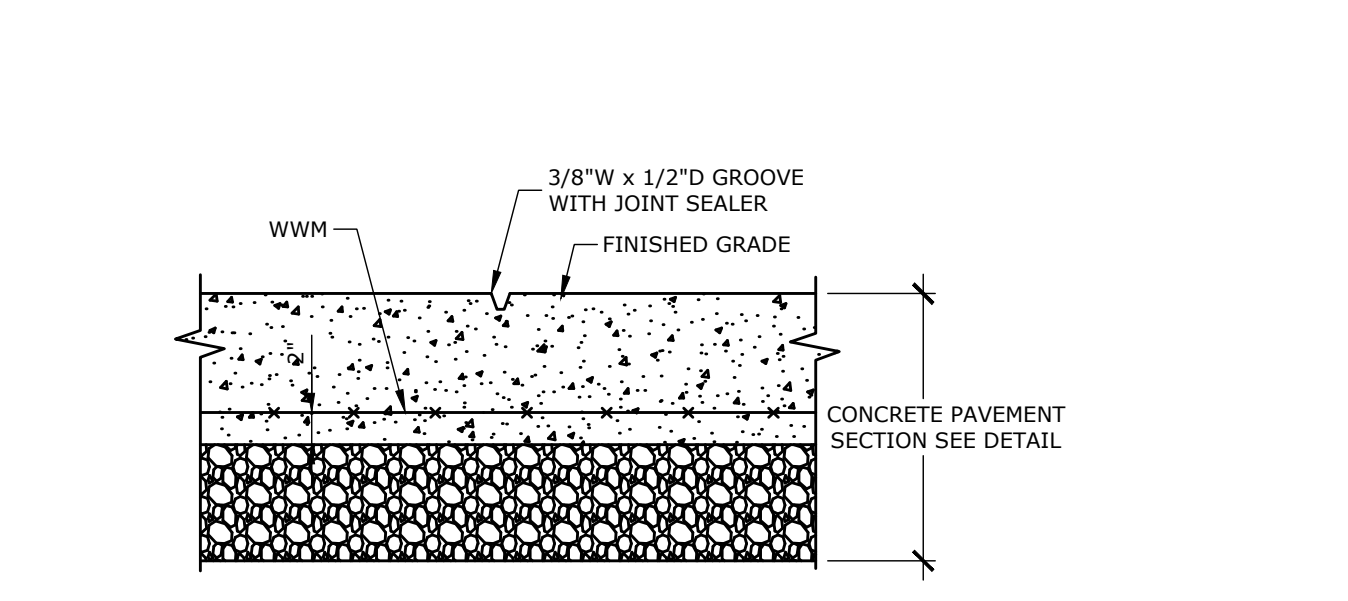
	2 MARKET STREET, 5TH FLOOR PORTLAND, ME 04101 207.541.9544 SLRCONSULTING.COM																																											
SITE DETAILS GORHAM INDUSTRIAL PARK WEST CAMPUS CYR DRIVE GORHAM, MAINE	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">DATE</td> <td style="width: 33%;">BY</td> <td style="width: 33%;">SWAT</td> </tr> <tr> <td>12/19/2022</td> <td>SWAT</td> <td></td> </tr> <tr> <td>DESCRIPTION</td> <td colspan="2">PLANNING BOARD REVISIONS</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>	DATE	BY	SWAT	12/19/2022	SWAT		DESCRIPTION	PLANNING BOARD REVISIONS					<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">DESIGNED</td> <td style="width: 33%;">DRAWN</td> <td style="width: 33%;">CHECKED</td> </tr> <tr> <td>SWM</td> <td>SWM</td> <td>HAR</td> </tr> <tr> <td colspan="3" style="text-align: center;">SCALE</td> </tr> <tr> <td colspan="3" style="text-align: center;">AS NOTED</td> </tr> <tr> <td colspan="3" style="text-align: center;">DATE</td> </tr> <tr> <td colspan="3" style="text-align: center;">NOVEMBER 4, 2022</td> </tr> <tr> <td colspan="3" style="text-align: center;">PROJECT NO.</td> </tr> <tr> <td colspan="3" style="text-align: center;">4807-13</td> </tr> <tr> <td colspan="3" style="text-align: center;">SHEET NAME</td> </tr> <tr> <td colspan="3" style="text-align: center;">SD-03</td> </tr> </table>	DESIGNED	DRAWN	CHECKED	SWM	SWM	HAR	SCALE			AS NOTED			DATE			NOVEMBER 4, 2022			PROJECT NO.			4807-13			SHEET NAME			SD-03		
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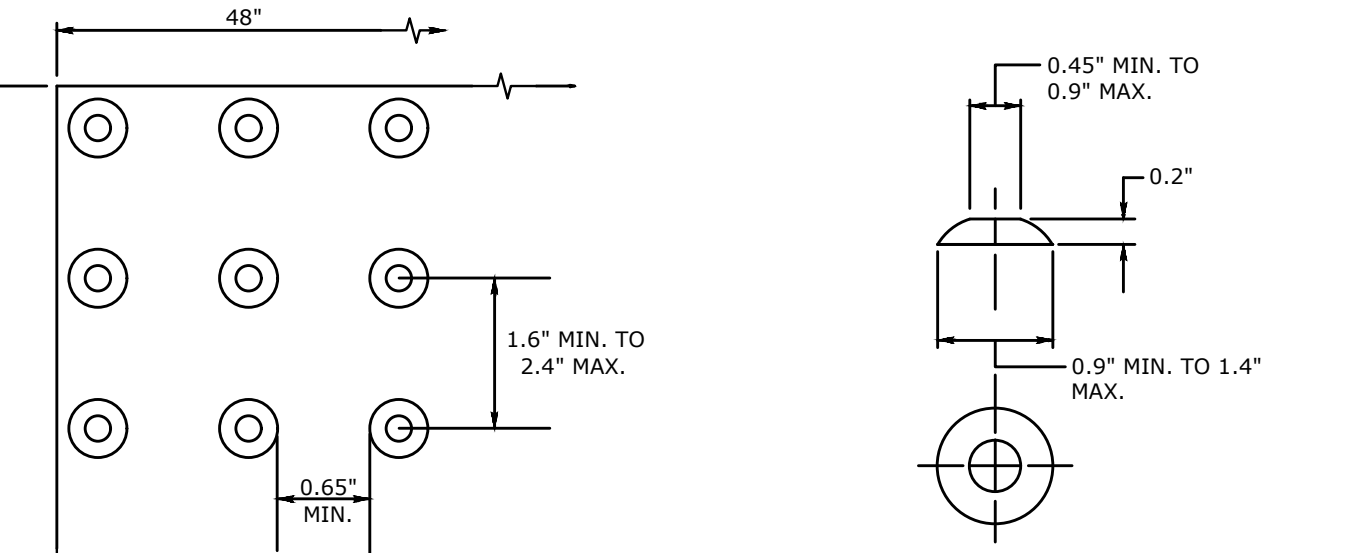
CONCRETE SIDEWALK
N.T.S.



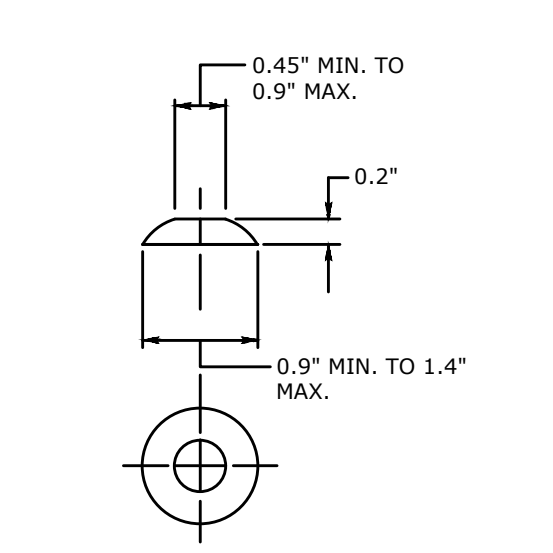
BITUMINOUS CONCRETE PAVEMENT
N.T.S.



CONTROL JOINT
N.T.S.

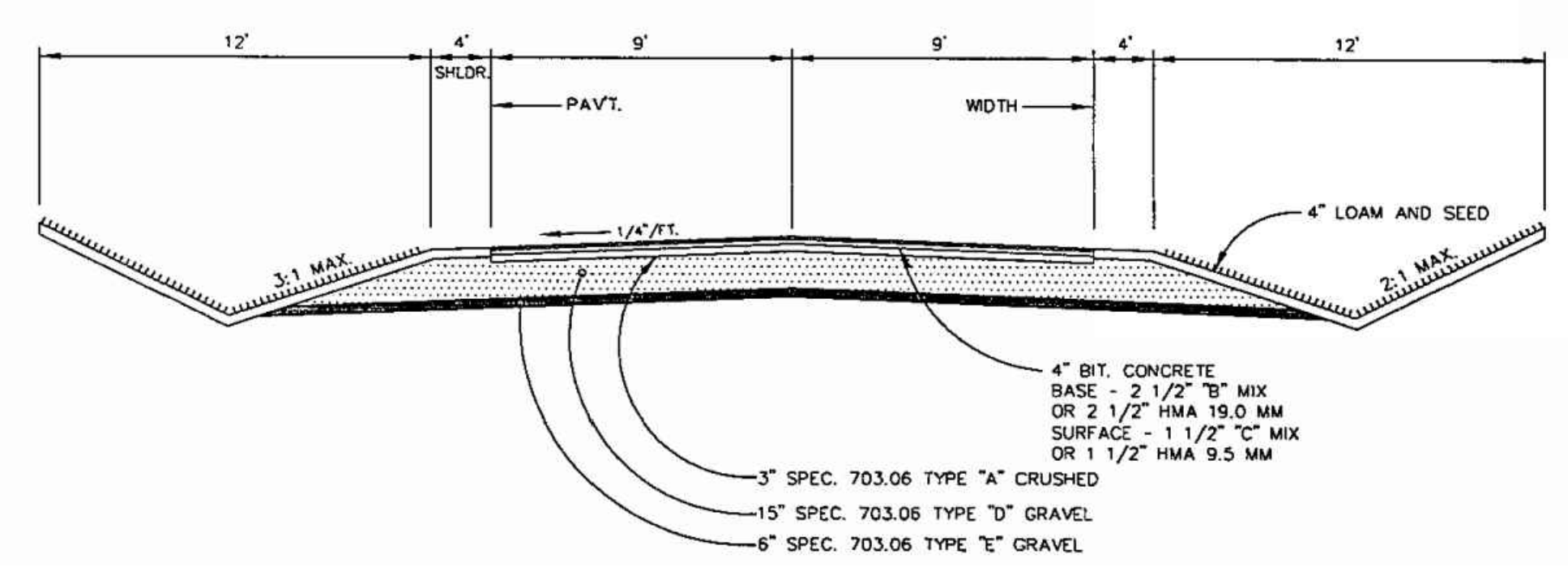


DOME SPACING
N.T.S.

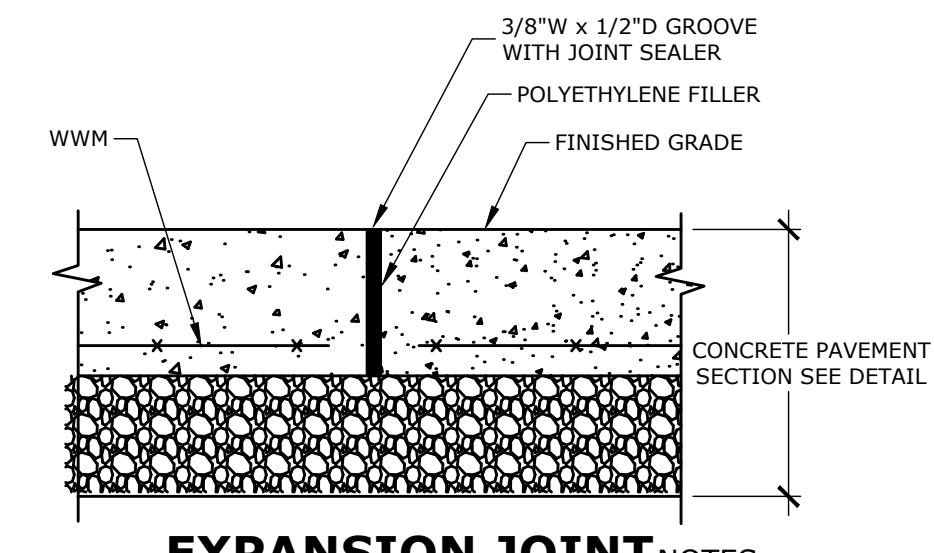


DOME SECTION
N.T.S.

- ACCESSIBLE DROP RAMP NOTES:**
- MAXIMUM SLOPES OF ADJOINING GUTTERS AND ROAD SURFACES IMMEDIATELY ADJACENT TO THE SIDEWALK RAMP OR ACCESSIBLE ROUTE SHOULD NOT EXCEED 1:20.
 - CARE SHALL BE TAKEN TO ASSURE UNIFORM GRADE ON THE RAMP, FREE OF SAGS AND ABRUPT GRADE CHANGES.
 - ALL RAMP SHALL BE CONSTRUCTED OF CLASS "C" PSI CONCRETE IN ACCORDANCE WITH CONNECTICUT STANDARD SPECIFICATIONS ARTICLE M.03.01.
 - SIDEWALK RAMP SHALL HAVE A COARSE BROOM FINISH TRANSVERSE TO THE SLOPE OF THE RAMP. THE SURFACE ALONG ACCESSIBLE ROUTES SHALL BE STABLE, FIRM AND SLIP RESISTANT IN COMPLIANCE WITH ADA ACCESSIBILITY GUIDELINES SECTION 4.5.
 - DIAGONAL SIDEWALK RAMP SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARED SIDES.
 - REMOVAL OF EXISTING SIDEWALK FOR NEW RAMP INSTALLATIONS SHALL BE TO THE NEAREST EXPANSION/CONTRACTION JOINT OR DUMMY JOINT. 1:12 MAY NOT BE ACHIEVABLE DUE TO SIDEWALK GRADE. IN RECOGNITION OF THIS, A MINIMUM LIMIT OF 15' FOR A PARALLEL RAMP SHALL BE USED. REMOVAL SHALL NOT BE FURTHER THAN 2" FROM THE PROPOSED RAMP UNLESS DIRECTED BY THE ENGINEER. SAW CUT REQUIRED FOR DUMMY JOINTS SHALL BE INCLUDED IN THE COST OF "CONCRETE SIDEWALK".
 - EXPANSION JOINTS & TOOLED EDGES IN CONCRETE SHALL MATCH THOSE IN ADJACENT SIDEWALKS BUT IN NO CASE SHALL THE SPACING BETWEEN EXPANSION JOINTS EXCEED 12' UNLESS OTHERWISE NOTED.
 - RAISED ISLANDS IN MARKED CROSSINGS SHALL HAVE SIDEWALK RAMP AT BOTH SIDES AND A LEVEL AREA AT LEAST 4' LONG BETWEEN THE RAMP. IF THIS CAN NOT BE ACHIEVED, THE RAISED ISLAND SHALL BE CUT THROUGH LEVEL WITH THE ROADWAY AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
 - CURBING WITHIN THE LIMITS OF THE NEW SIDEWALK RAMP SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE REQUIREMENTS OF FORM 816.
 - HANDICAP RAMP CONFORMING WITH CONNECTICUT GENERAL STATUTES, SEC. 7-118a, SHALL BE INCORPORATED IN ALL PROPOSED SIDEWALKS AT ALL STREET INTERSECTIONS, AND AT ALL OTHER LOCATIONS WHERE THE GRADE OF A DRIVEWAY OR OTHER FACILITY TAKES PRECEDENCE OVER THE GRADE OF THE PROPOSED SIDEWALK.
 - TRANSITION TO FULL HEIGHT CURB. MATCH THE ADJACENT CURBING MATERIAL UNLESS OTHERWISE NOTED ON PLANS. INSTALL THE EDGE OF THE DETECTABLE WARNING 6" FROM THE EDGE OF ROAD.
 - TO PERMIT WHEELCHAIR WHEELS TO ROLL BETWEEN DOMES, ALIGN DOMES ON A SQUARE GRID. IN THE DIRECTION OF PEDESTRIAN TRAVEL.

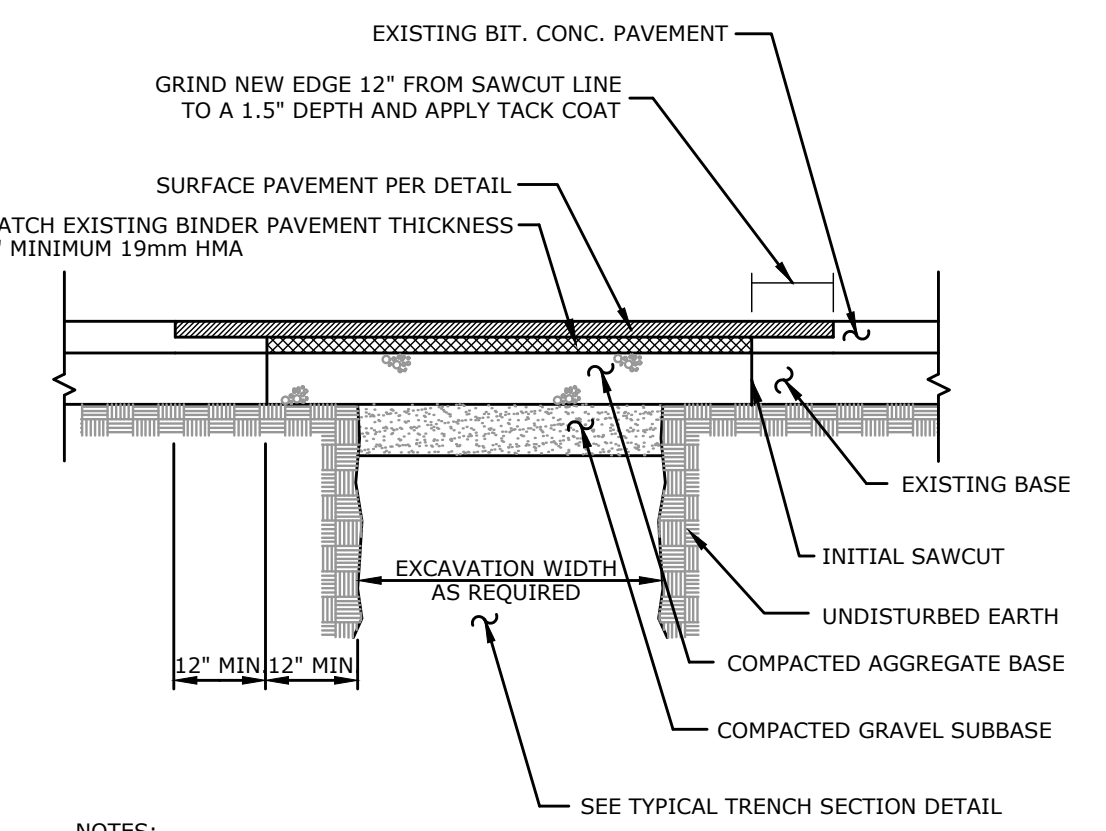


TYPICAL DRIVEWAY/SERVICE ROAD SECTION

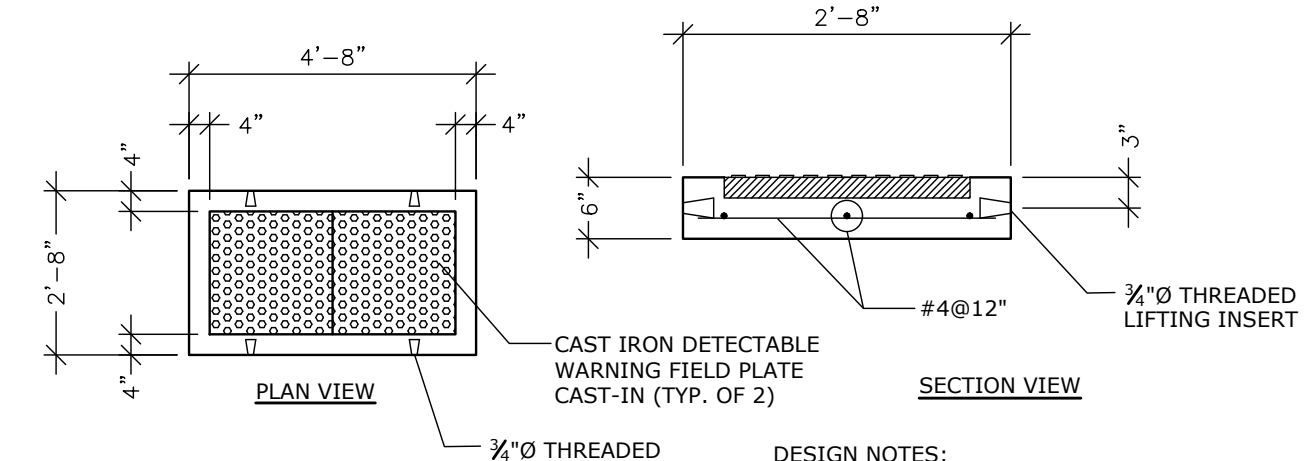


EXPANSION JOINT
N.T.S.

- DESIGN NOTES:**
- PROVIDE EXPANSION JOINT AT ALL CONSTRUCTION JOINT, SAWCUT, AND OTHER LOCATIONS WHERE CONCRETE ABUTTS EXISTING CONCRETE.

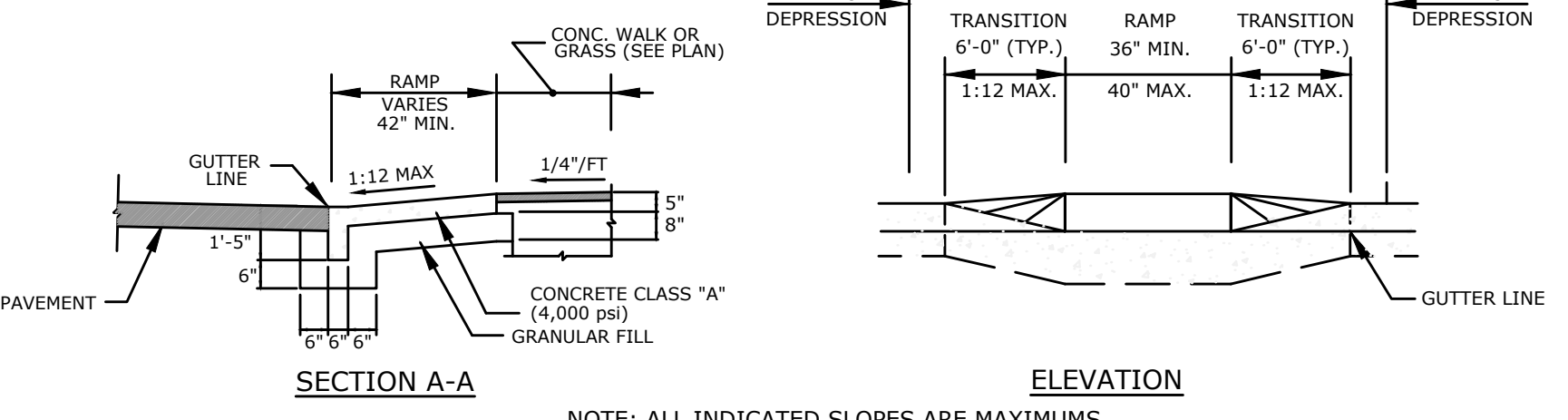


PAVEMENT REPAIR DETAIL
NOT TO SCALE

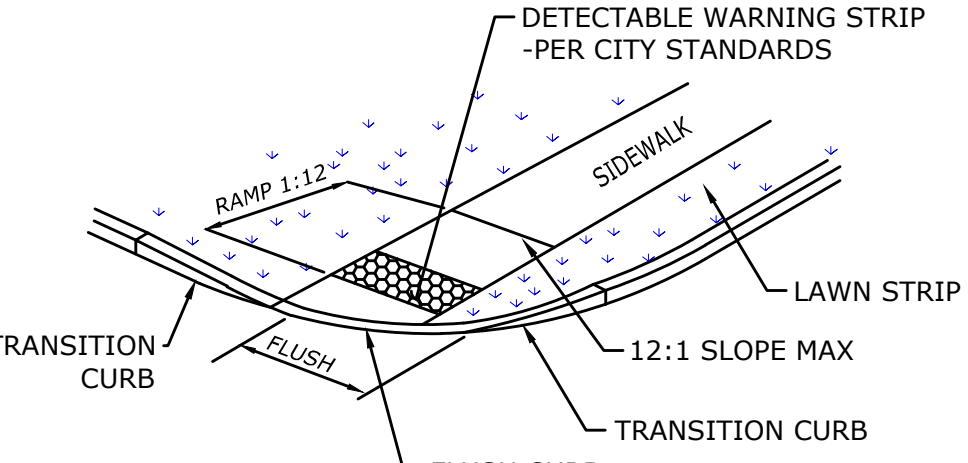


DETECTABLE WARNING FIELD DETAIL
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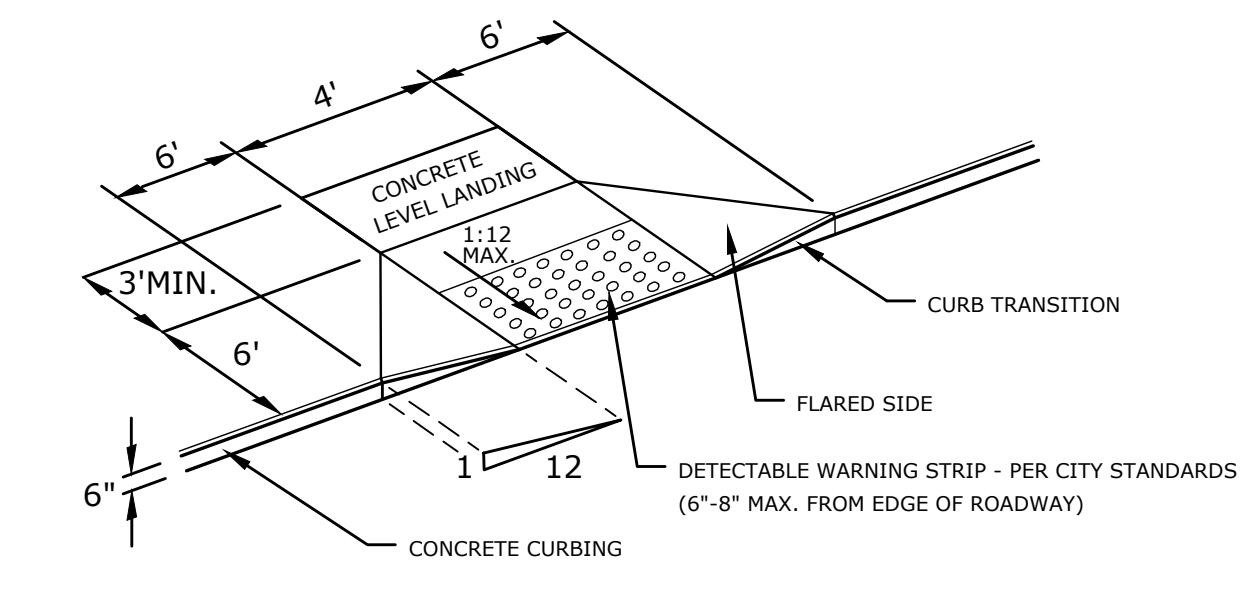
- DESIGN NOTES:**
- CONCRETE TO BE 5,075 PSI @ 56 DAYS.
 - AIR CONTENT TO BE 6% - 8.5%.
 - MAX. WATER/CEMENT RATIO = .40
 - REINFORCING TO BE GRADE 60, BLACK.



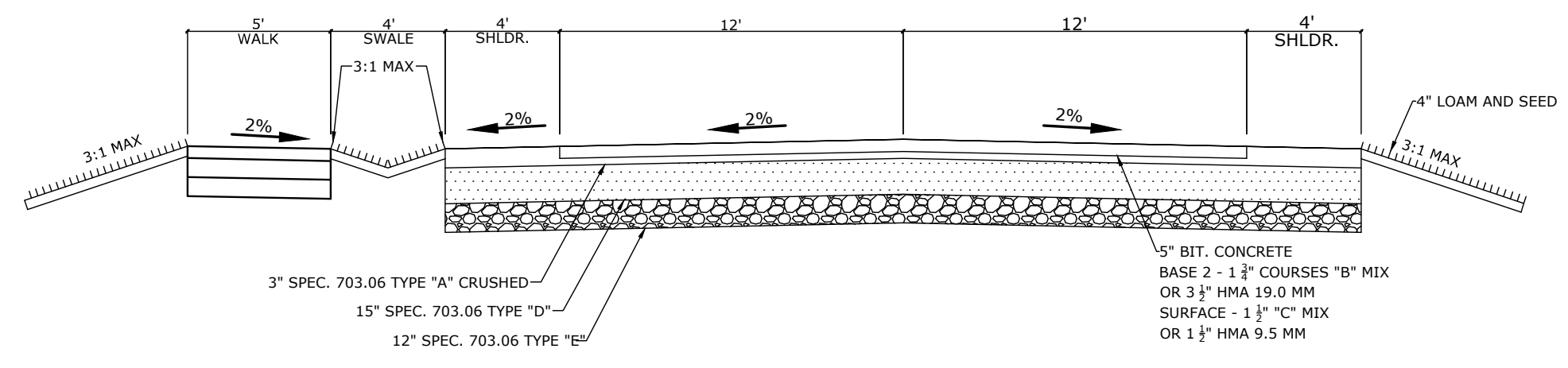
ACCESSIBLE DROP RAMP - TYPE A
N.T.S.



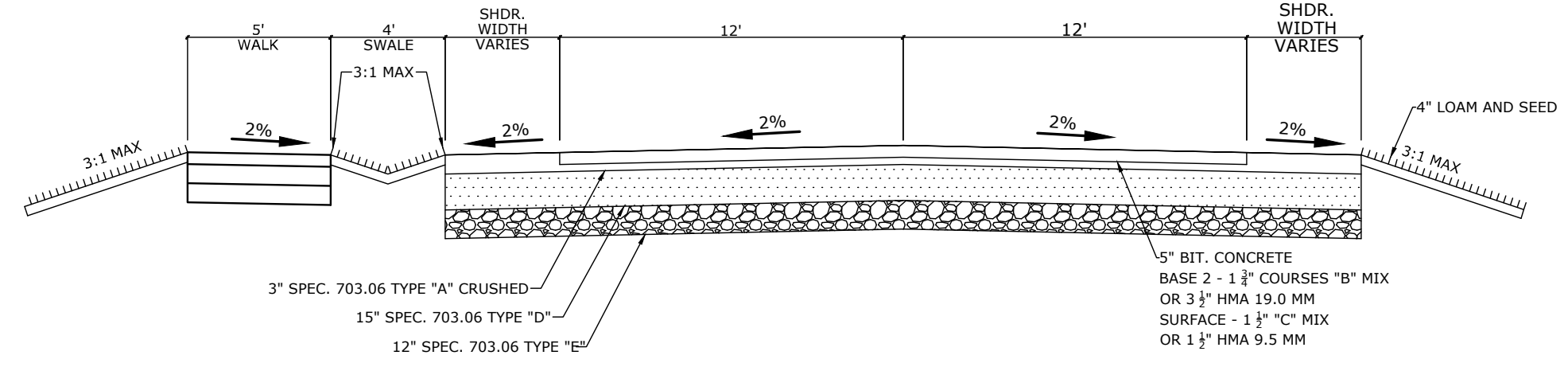
ACCESSIBLE DROP RAMP - TYPE D
N.T.S.



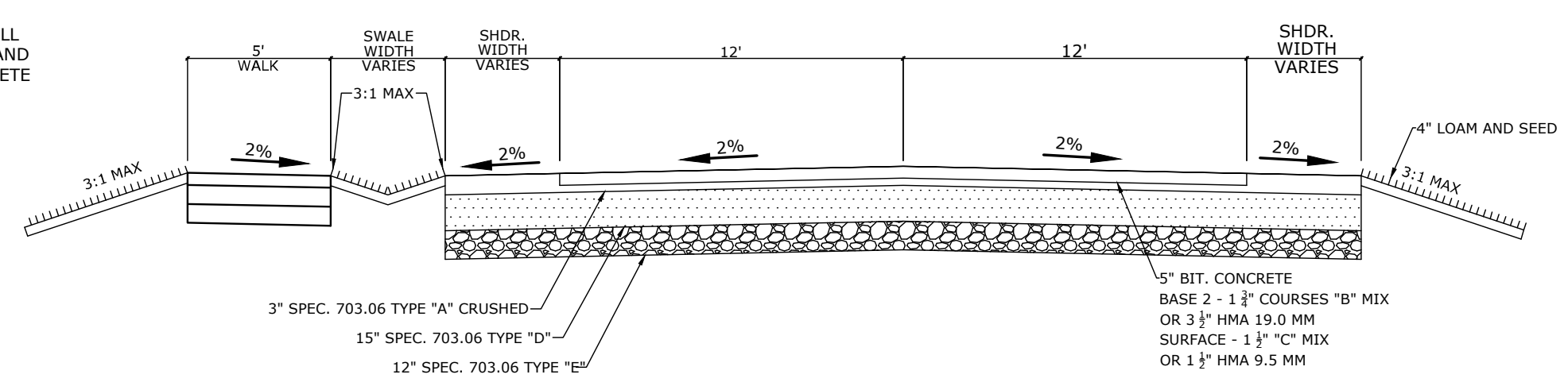
ACCESSIBLE DROP RAMP - TYPE C
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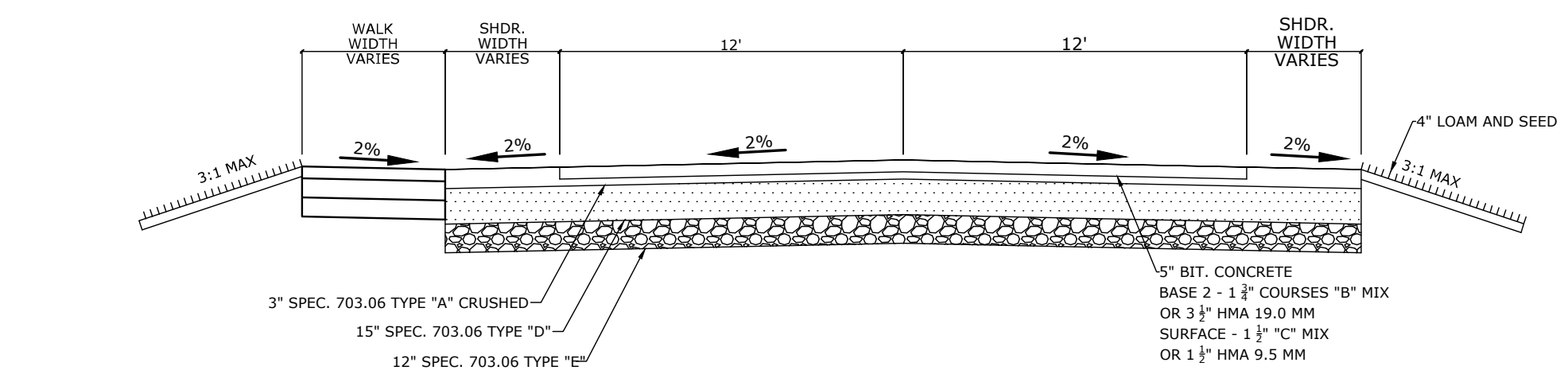
TYPICAL ROADWAY SECTION INDUSTRIAL/COMMERCIAL
STA. 30+20 - 46+81.3
NOT TO SCALE



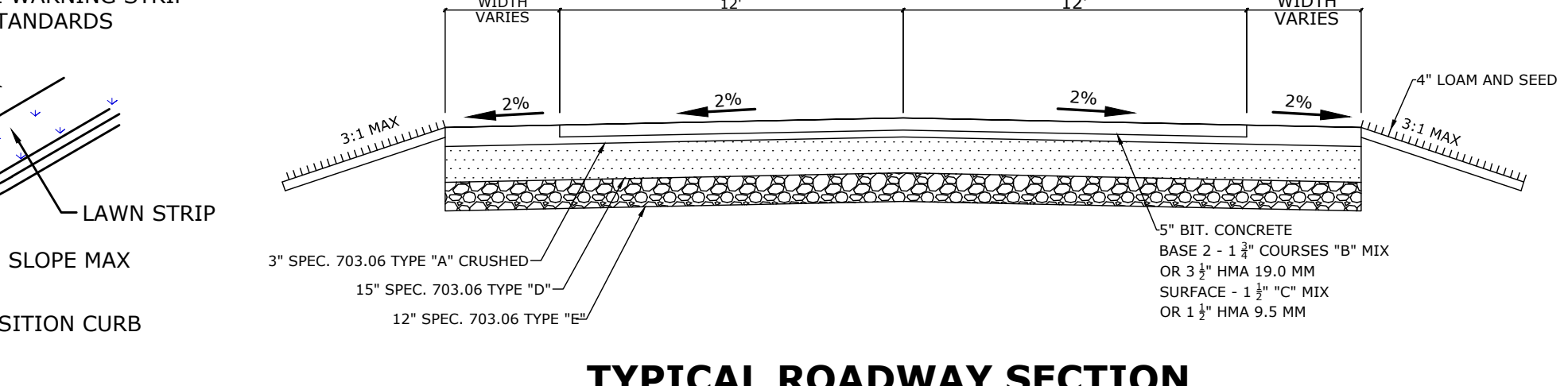
TYPICAL ROADWAY SECTION INDUSTRIAL/COMMERCIAL
STA. 46+81.3 - 49+26.1
NOT TO SCALE



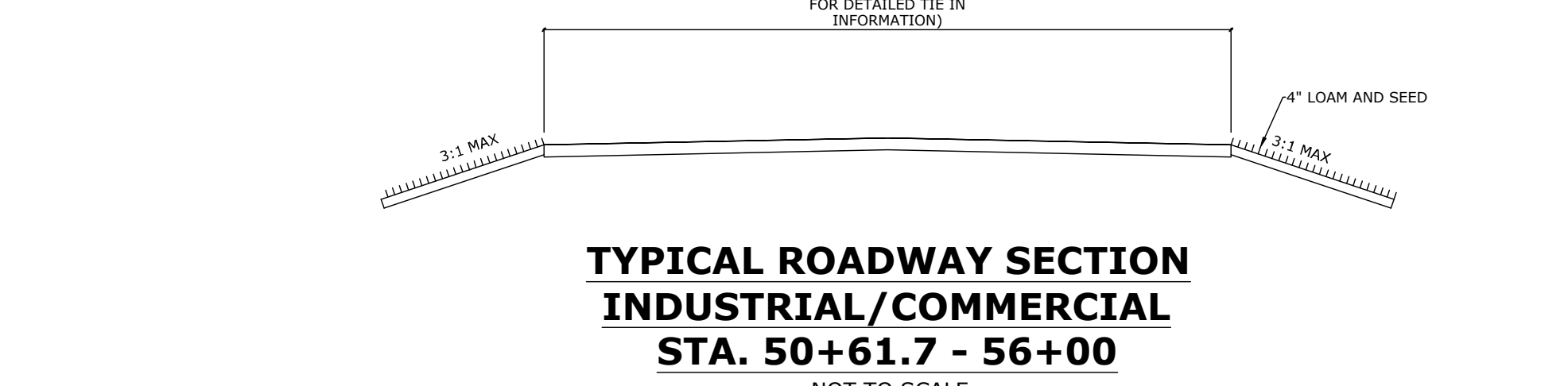
TYPICAL ROADWAY SECTION INDUSTRIAL/COMMERCIAL
STA. 49+26.1 - 49+46.8
NOT TO SCALE



TYPICAL ROADWAY SECTION INDUSTRIAL/COMMERCIAL
STA. 49+46.8 - 49+65.4
NOT TO SCALE



TYPICAL ROADWAY SECTION INDUSTRIAL/COMMERCIAL
STA. 49+65.4 - 50+61.7
NOT TO SCALE



TYPICAL ROADWAY SECTION INDUSTRIAL/COMMERCIAL
STA. 50+61.7 - 56+00
NOT TO SCALE



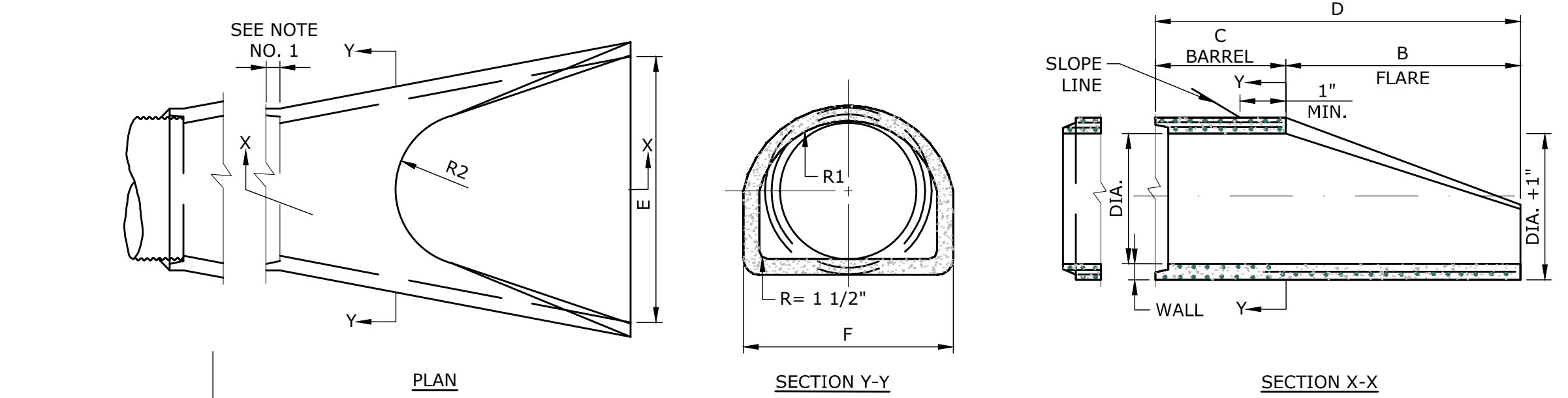
DESCRIPTION	DATE	BY
PLANNING BOARD REVISIONS	12/19/2022	SWM

SITE DETAILS
GORHAM INDUSTRIAL PARK
WEST CAMPUS
CYR DRIVE
GORHAM, MAINE

DESIGNED	DRAWN	HAR
SWM	SWM	HAR

AS NOTED
NOVEMBER 4, 2022
4807-13
SD-04

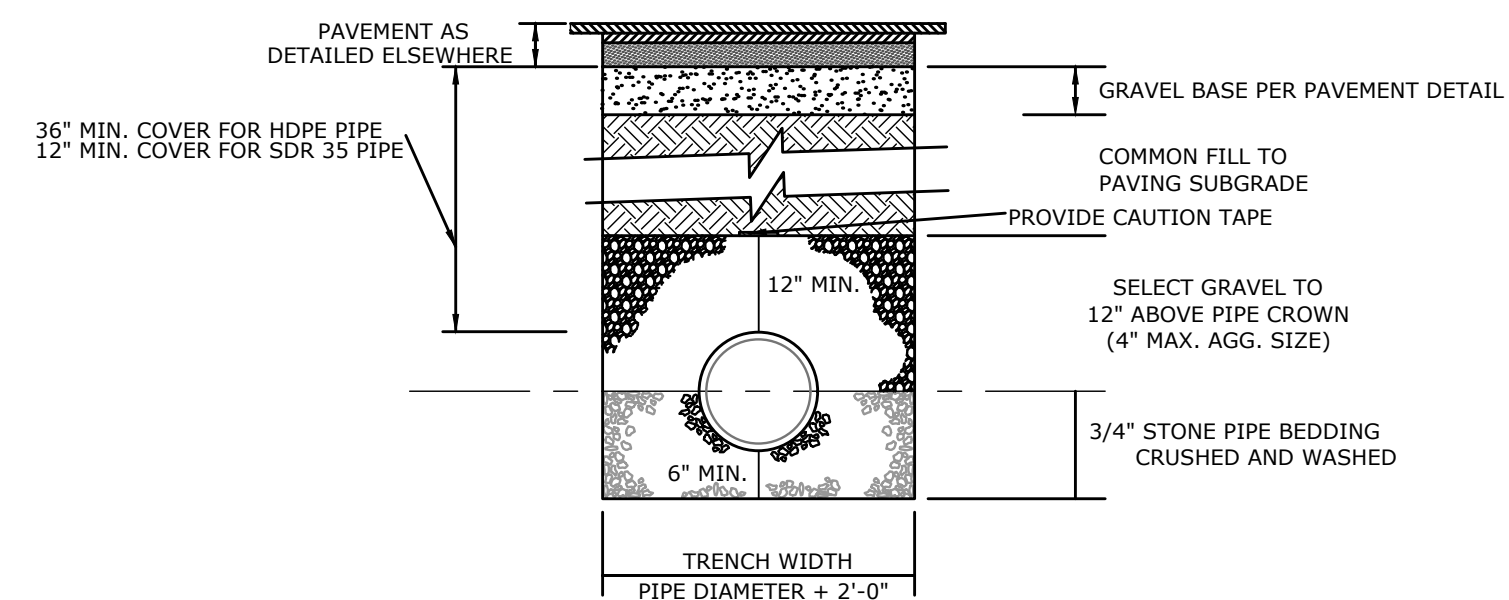
12/15/22 10:15 AM
 12/15/22 10:15 AM
 12/15/22 10:15 AM



DIMENSIONS FOR REINFORCED CONCRETE CULVERT END								FLARE REINFORCEMENT ONE LAYER ONLY IN CENTER OF WALL		
DIA.	A	B	C	D	E	F	R1	R2	MIN. AREA OF LONGITUDINAL SQ. IN. PER FT.	MIN. AREA OF TRANSVERSE STEEL SQ. IN. PER FT.
15"	6"	2'-3"	3'-10"	6'-1"	2'-6"	2'-0 5/16"	1'-0 1/2"	1'-1"	0.054	0.054
18"	9"	2'-3"	3'-10"	6'-1"	3'-0"	2'-5"	1'-3 1/2"	1'-0"	0.060	0.060
24"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	2'-9 3/16"	1'-4 13/16"	1'-2"	0.072	0.072

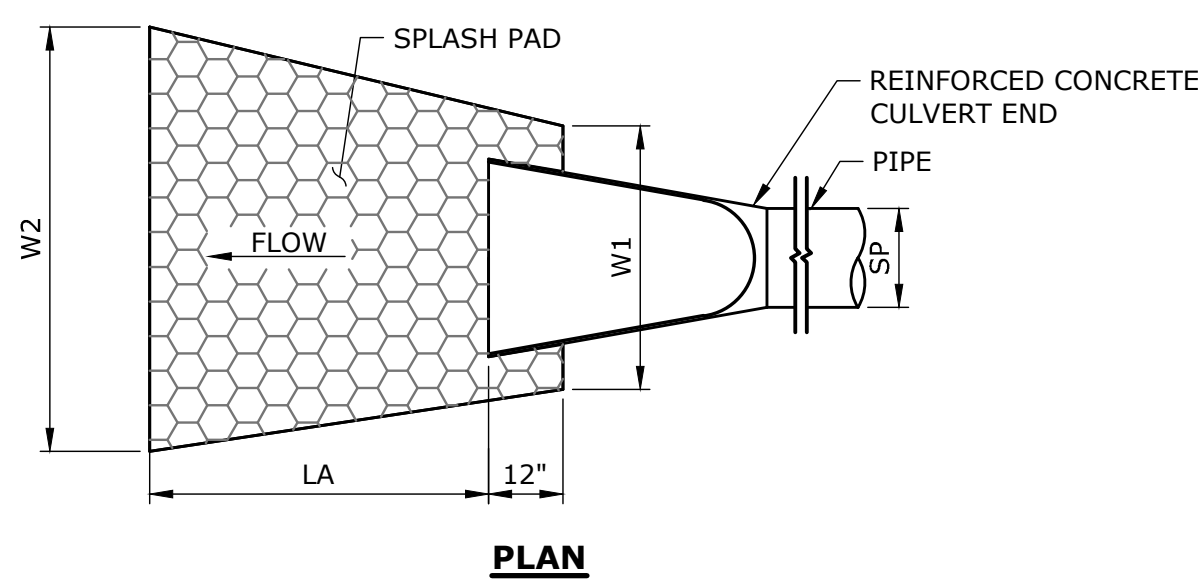
- NOTES:**
- JOINTS SHALL BE TONGUE AND GROOVE OR BELL AND SPIGOT AS REQUIRED TO CONFORM TO PIPE INSTALLED.
 - WALL THICKNESS SHALL CONFORM TO PIPE THICKNESS.

REINFORCED CONCRETE CULVERT END
 NOT TO SCALE



- NOTES:**
- INSTALL 3 FOOT LONG IMPERVIOUS MATERIAL DAMS IN BEDDING/INITIAL BACKFILL MATERIAL EVERY 100 FEET TO PREVENT TRENCH GROUNDWATER FROM BEING CHANNLED ALONG BEDDING/INITIAL BACKFILL

TYPICAL TRENCH SECTION
 NOT TO SCALE

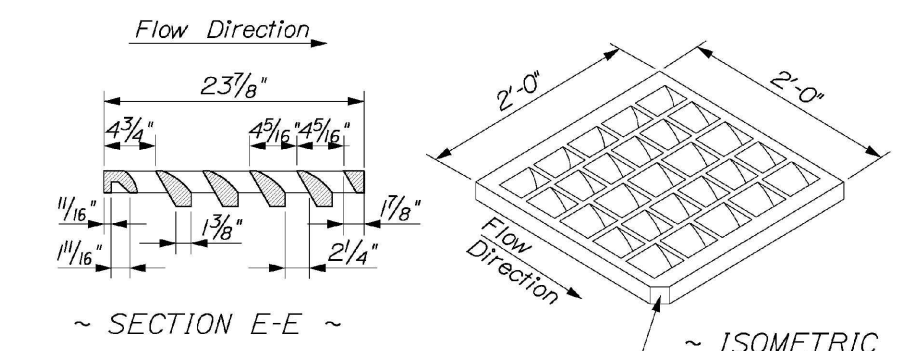
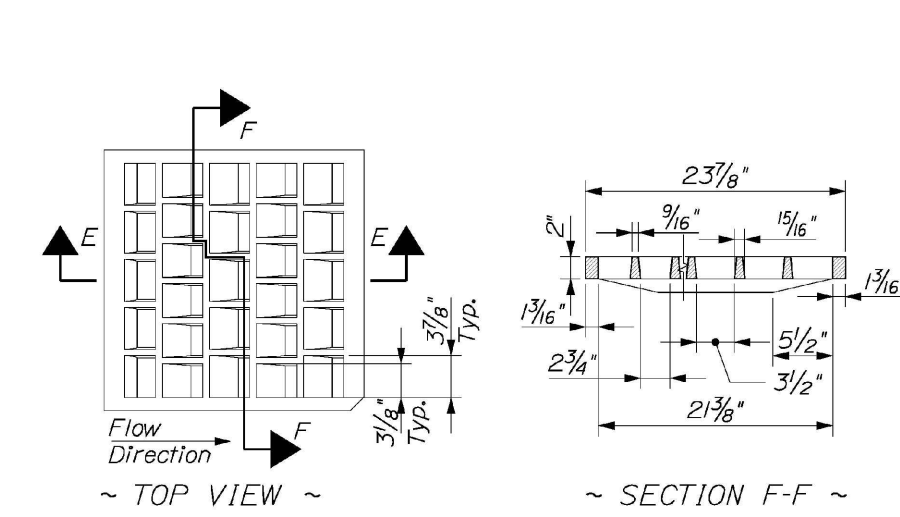


RIPRAP SIZING (D50) FOR RIPRAP CHANNEL				
	1-2%	2-5%	5-10%	10-20%
MAXIMUM DEPTH OF FLOW (feet)	<0.5	3"	4"	4-6"
	1.0	3"	6"	6-12"
	2.0	4-6"	6-12"	12-18"
	>3.0	6-12"	6-18"	18-24"

FLARED END WITH RIPRAP SPLASH PAD
 NOT TO SCALE

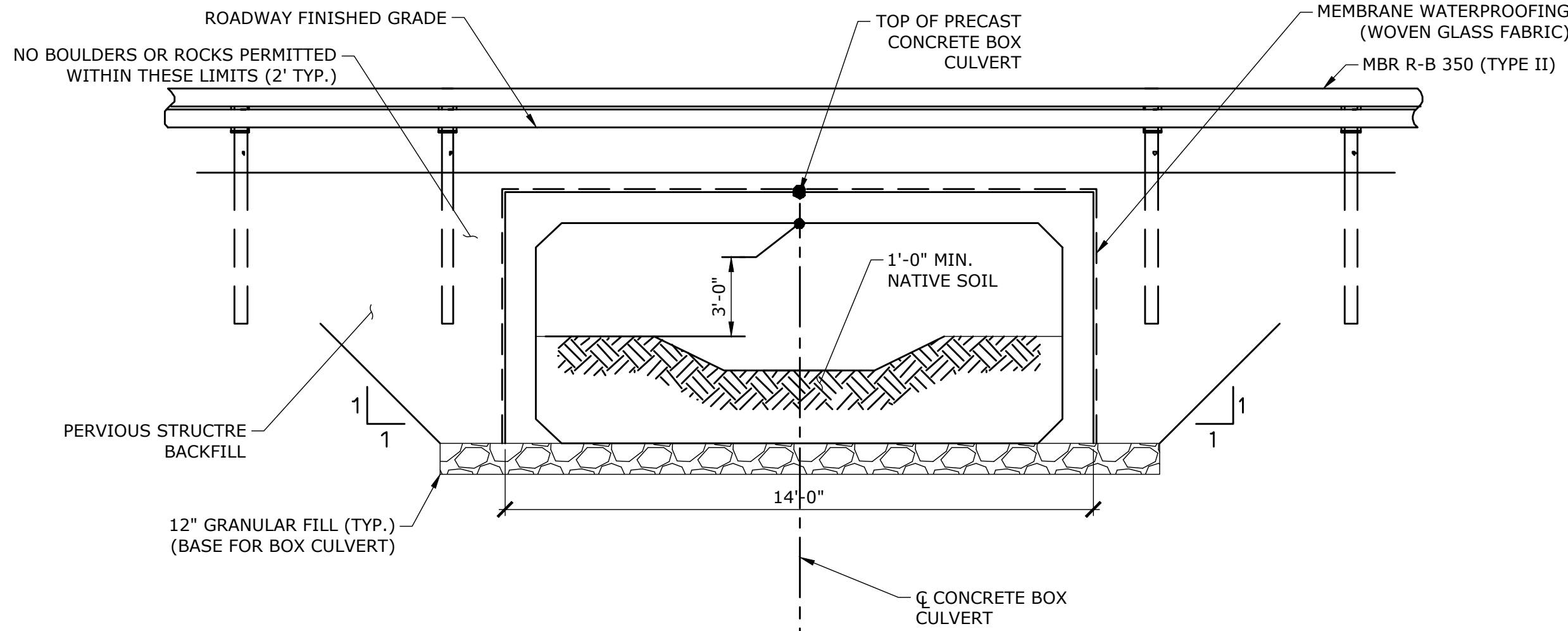
- NOTES:**
- Manhole frames and covers are to be machined to a smooth shall be of gray cast iron or ductile iron conforming to Aash fit and ASHTO M306.
 - Diamond top surface is optional.

MANHOLE TOP "D"
 NOT TO SCALE

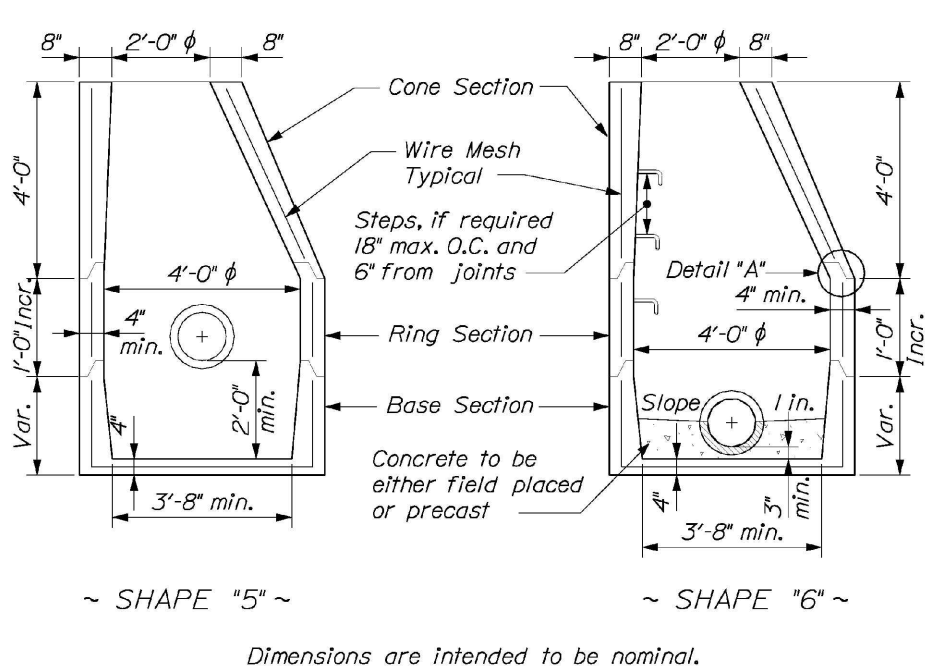
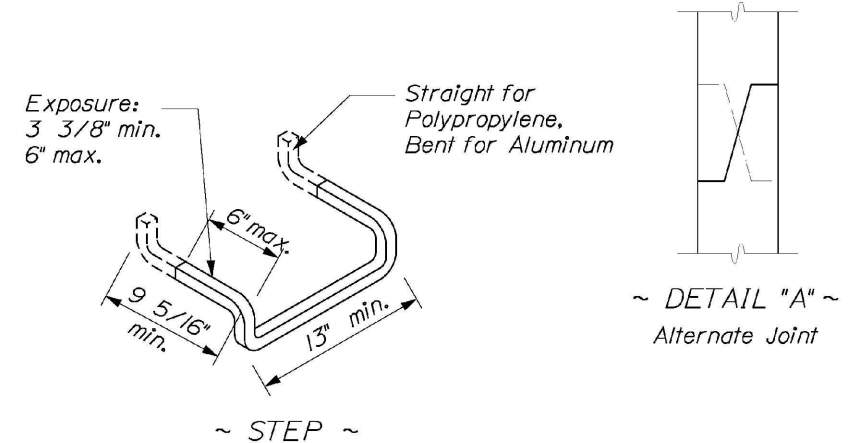
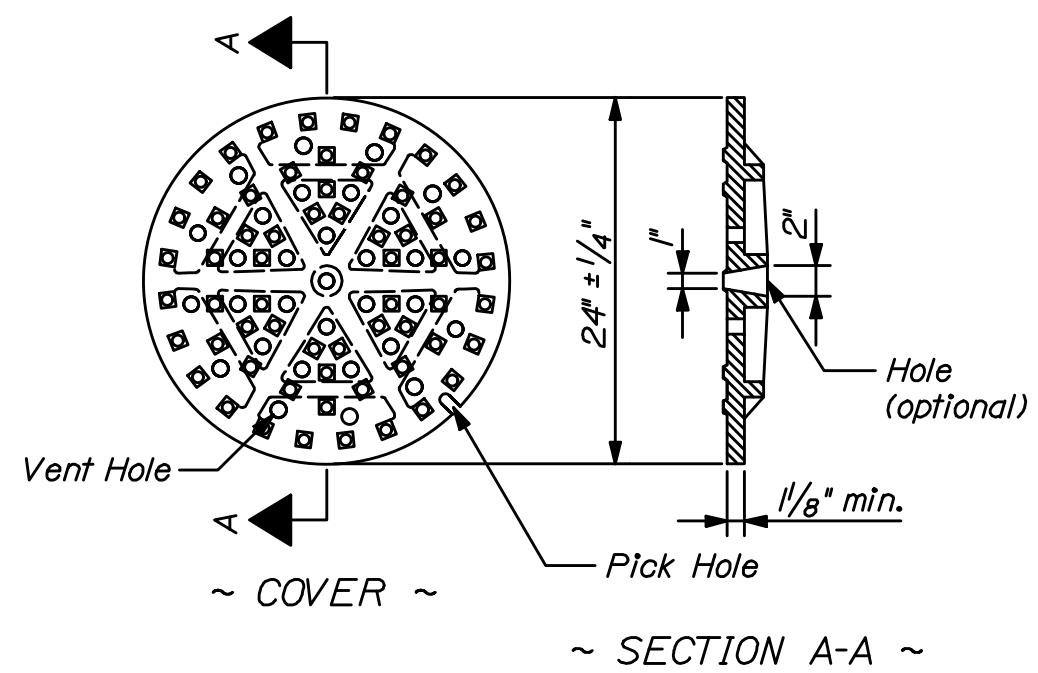


- NOTES:**
- To be used where parallel bar grates would present a hazard to bicycle traffic.
 - For use on catch basin types: A1-C, A2-C, A5-C, B1-C, B2-C, B5-C, F3-C, F4-C, F5-C, F6-C.

STANDARD CASCADE TYPE GRATES
 NOT TO SCALE



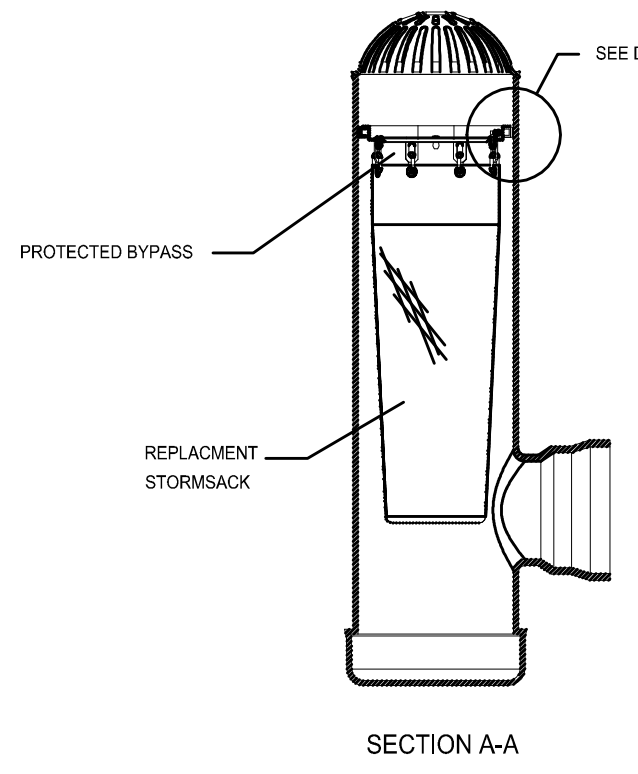
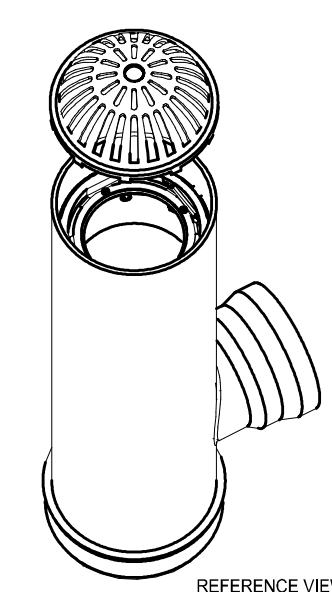
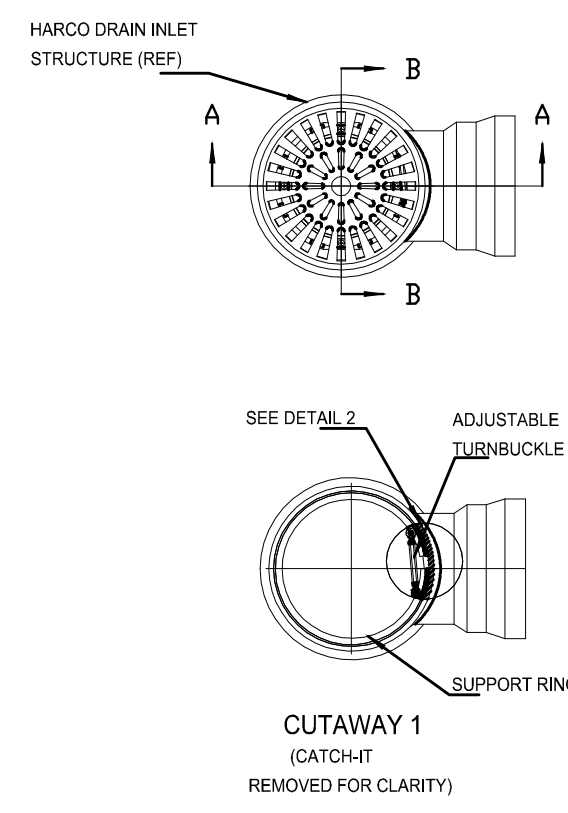
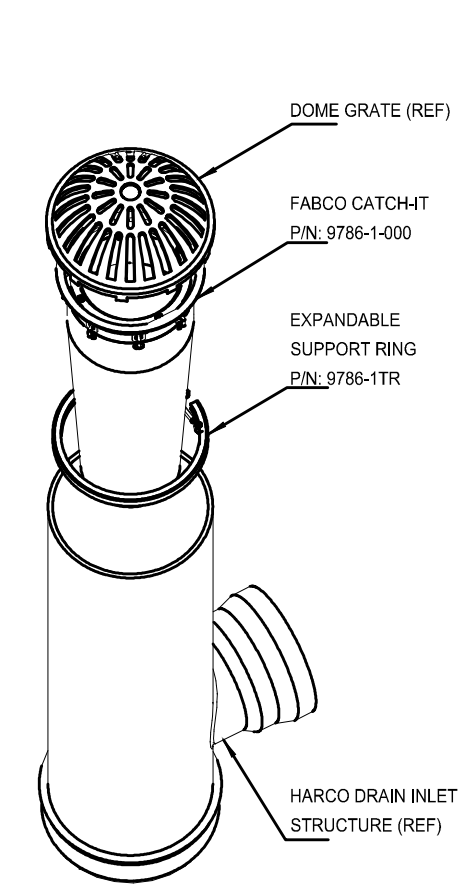
TYPICAL PRECAST CONCRETE BOX CULVERT
 NOT TO SCALE



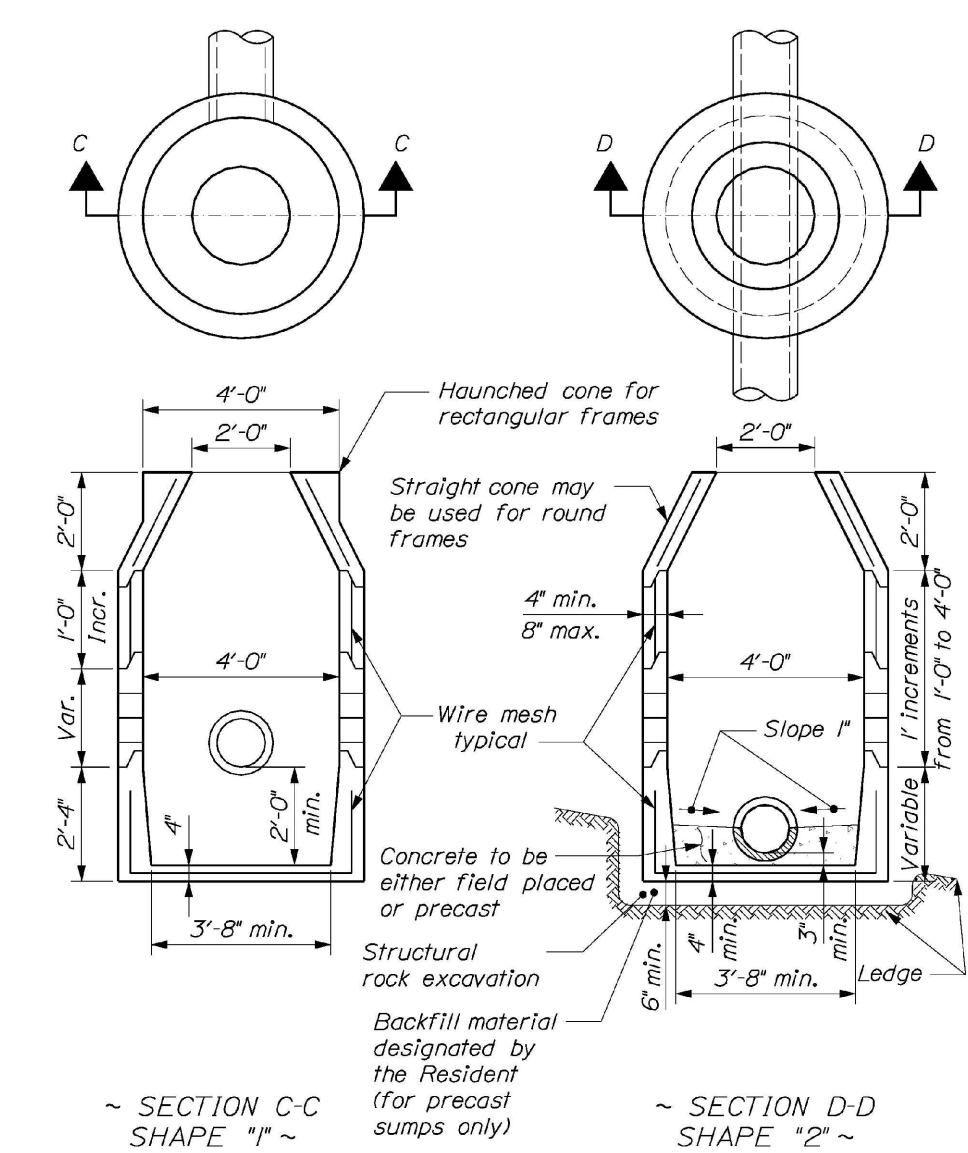
STANDARD CATCH BASIN OR MANHOLE
 NOT TO SCALE

- NOTES:**
- STORMSACK WEIGHT (EMPTY): 12 LB MAX
 - MATERIAL:
 - SHROUD: HIGH DENSITY POLYETHYLENE (TYPICAL WALL THICKNESS: 125")
 - SUPPORT HUB: CRS. POWDER COATED
 - STORMSACK: WOVEN POLYPROPYLENE GEOTEXTILE (GEOTEX 119F)
 - HARDWARE: ALUMINUM RDP-826TETS
 - RECOMMENDED MINIMUM VAULT DEPTH: 24" BELOW CARTIDGE
 - TYPICAL INSTALLATION: RAISE STORM GRATE, PUSH CATCHT SHROUD DOWN ON FRAME SUPPORT LEDGE UNTIL LOCKING CLIPS CLICK IN PLACE, LOWER STORM GRATE.
 - USE ONLY WITH FABRIC REPLACEABLE STORMSACK.

STRUCTURE DIAMETER (INCHES)	DEBRIS CAPACITY (CF)	FILTERED FLOWRATE (CFS)	BYPASS FLOWRATE (CFS)	TOTAL SYSTEM FLOWRATE (CFS)
12	0.77	2.2	1.2	3.4
18	1.05	2.5	1.0	3.5
24	3.60	4.9	2.4	7.3
30	6.20	4.9	2.4	7.3



STANDPIPE STRUCTURE DETAIL



STANDARD CATCH BASIN OR MANHOLE
 NOT TO SCALE



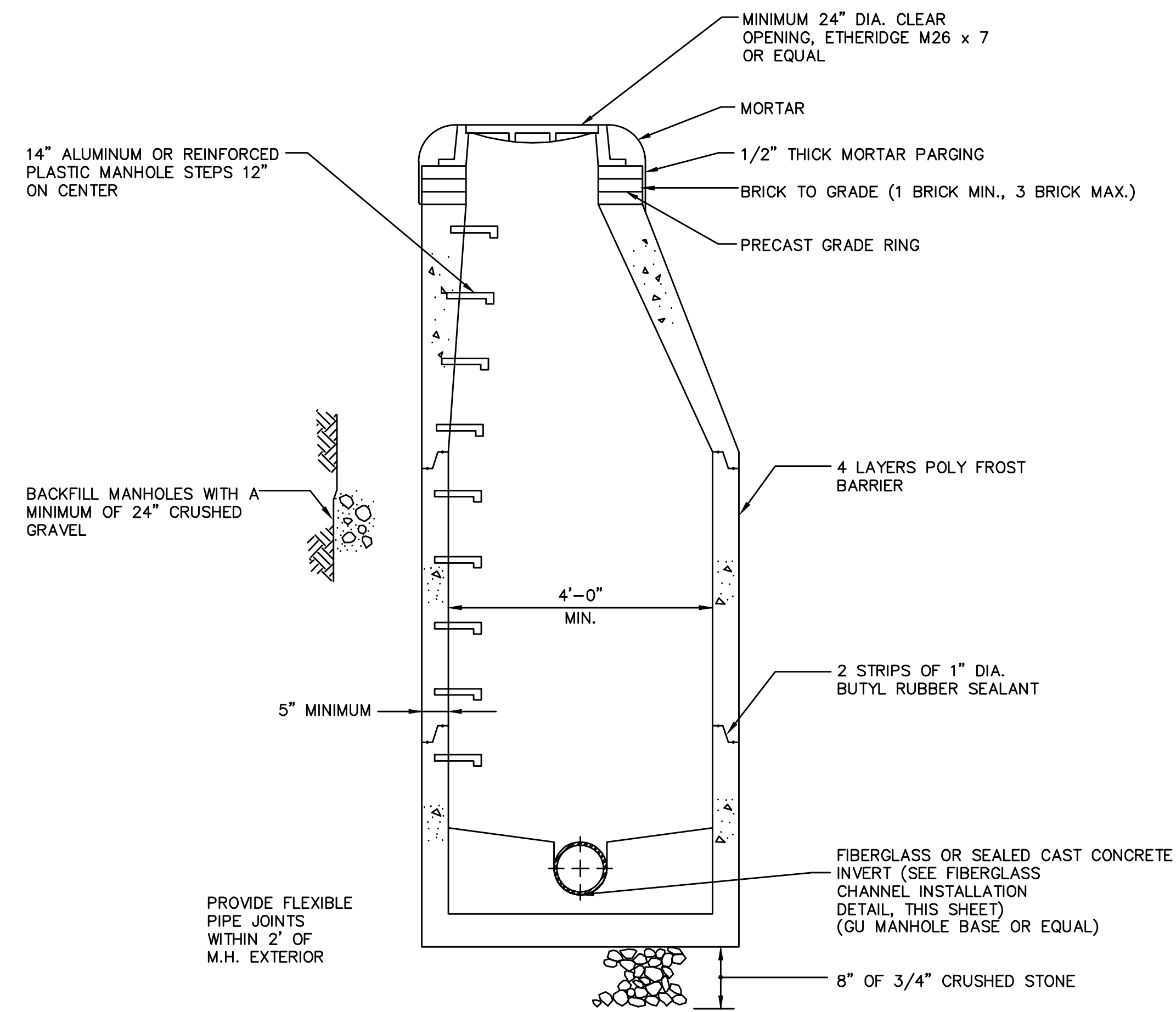
DESCRIPTION	DATE	BY
PLANNING BOARD REVISIONS	12/15/2022	SJM
DETAIL REVISIONS	07/15/2023	DJS

SITE DETAILS
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

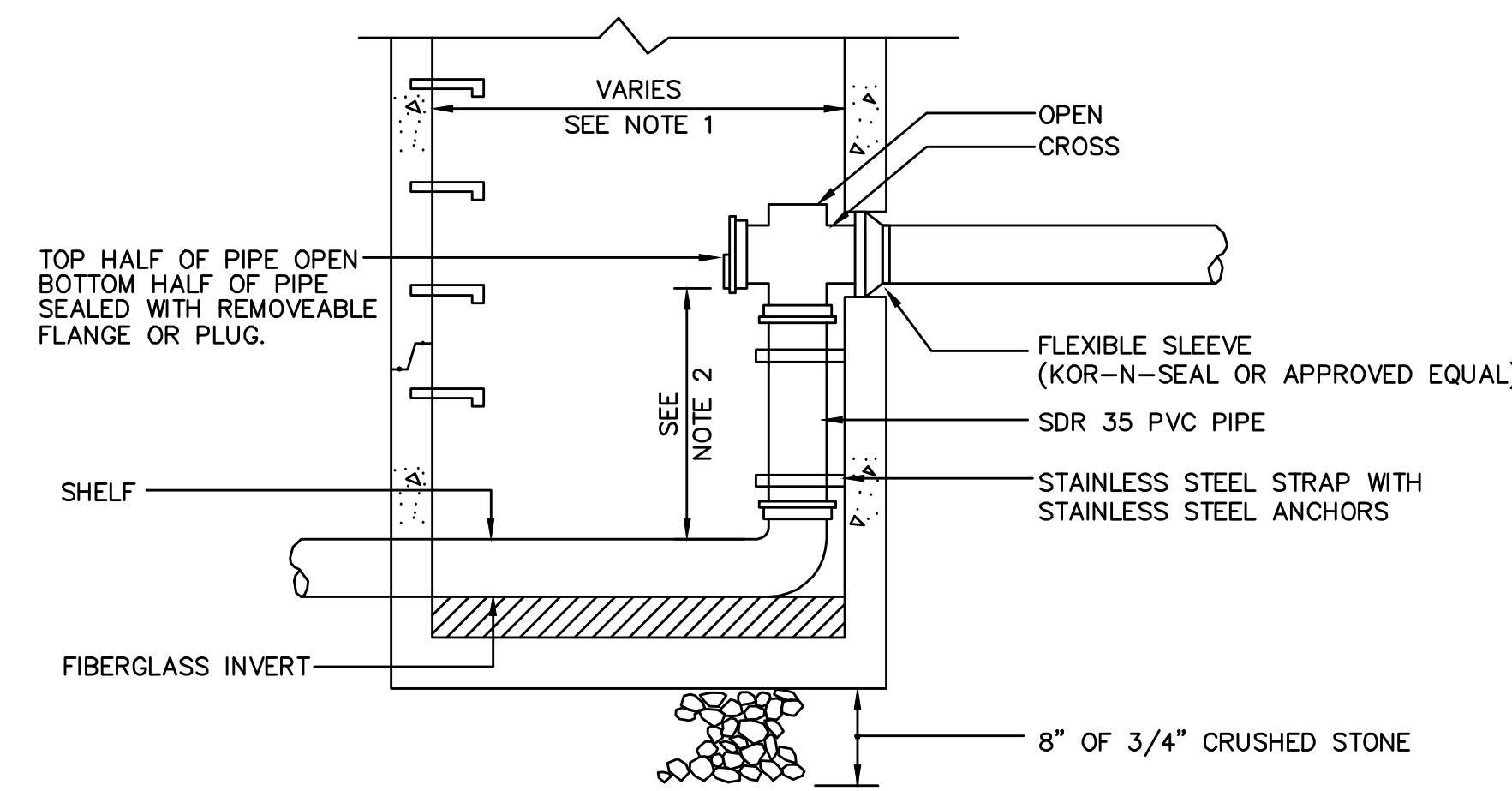
DESIGNED	DRAWN	HAR
SWM	SWM	HAR

AS NOTED
 NOVEMBER 4, 2022
 DATE
 4807-13
 PROJECT NO.

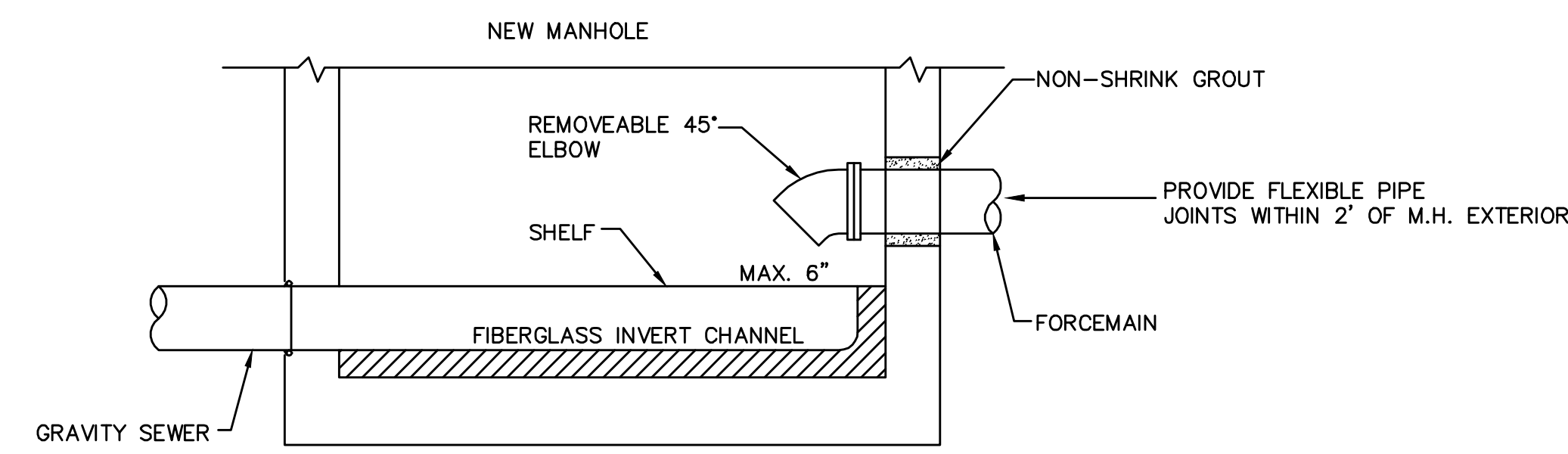
SD-05



PRECAST MANHOLE



PRECAST DROP MANHOLE

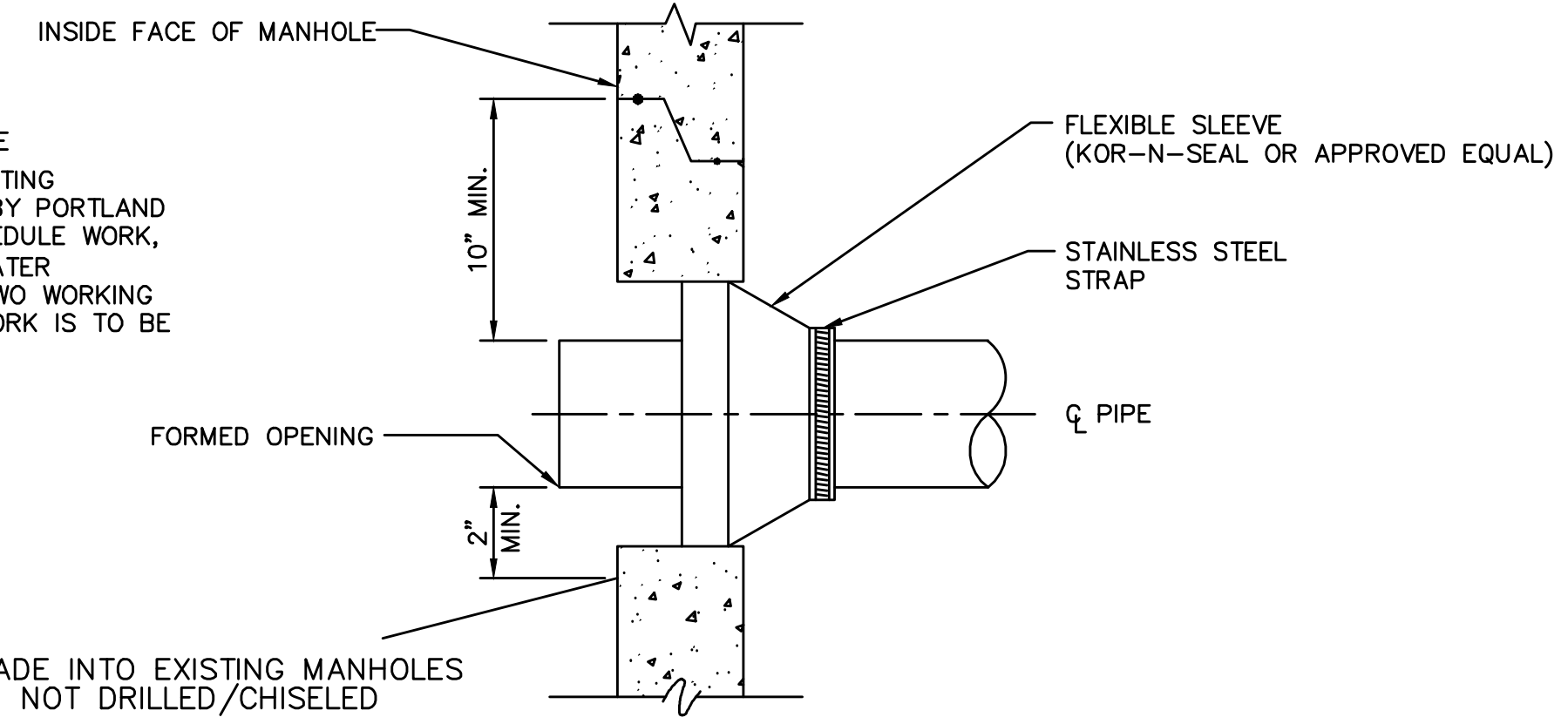


FORCEMAIN TERMINUS

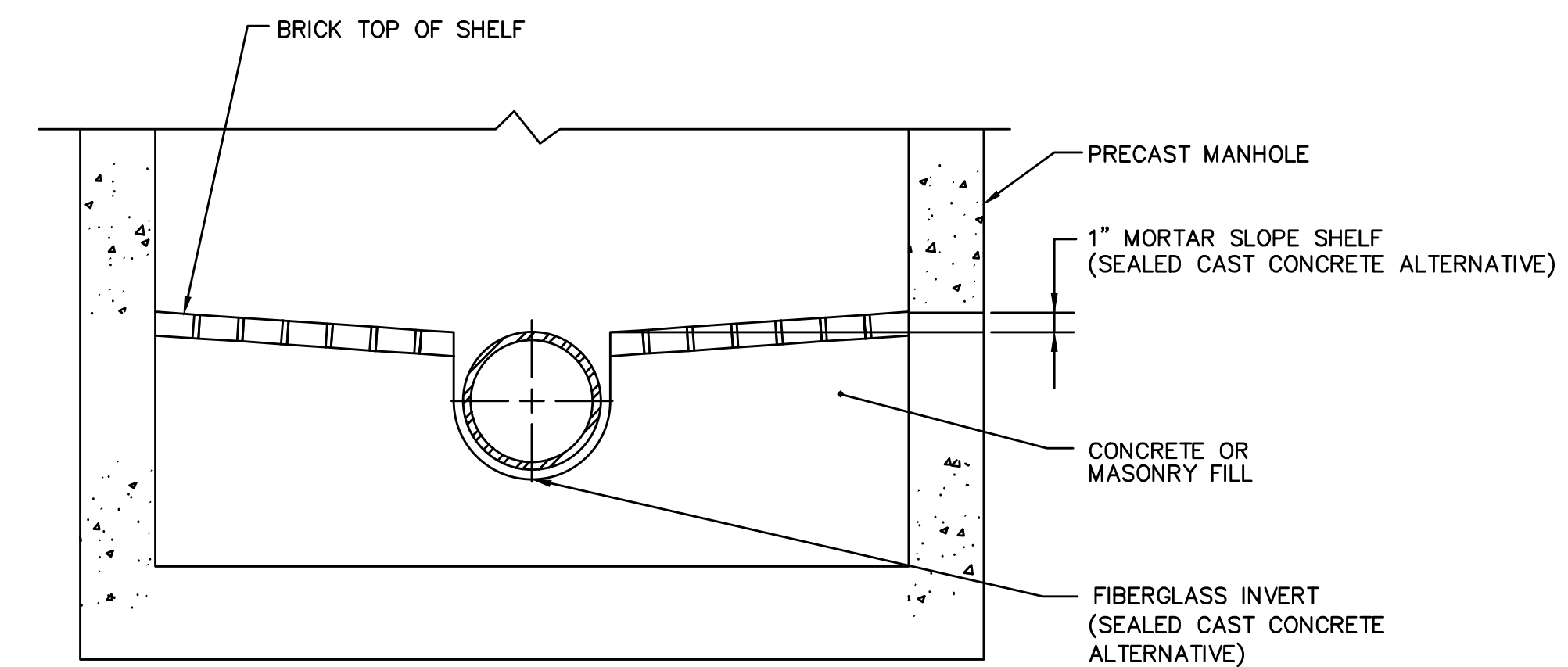
NOTE:

1. CONNECTION TO EXISTING MANHOLE
ALL NEW PENETRATIONS INTO EXISTING MANHOLES SHALL BE INSPECTED BY PORTLAND WATER DISTRICT CREWS. TO SCHEDULE WORK, CONTACT THE DISTRICT'S WASTEWATER OPERATIONS DIVISION AT LEAST TWO WORKING DAYS PRIOR TO THE DATE THE WORK IS TO BE PERFORMED.

NOTE: CONNECTIONS MADE INTO EXISTING MANHOLES ARE TO BE CORED AND NOT DRILLED/CHISELED



NEW PIPE TO EXISTING MANHOLE
CONNECTION DETAIL - 4" TO 24"



FIBERGLASS CHANNEL INSTALLATION

NOTES:

1. USE 4' I.D. M.H. WITH 8" OR SMALLER PIPE
USED 5' I.D. M.H. WITH 10" OR LARGER PIPE
2. MINIMUM HEIGHT OF DROP IS 2'-0"
3. SEE PRECAST MANHOLE SECTION FOR TYPICAL
4. MANHOLE INFORMATION, INCLUDING NOTES.
5. PROVIDE DROP PIPE FOR ALL INVERT DIFFERENTIALS GREATER THAN TWO (2) FEET.
6. CUT OFF TOP 1/3 OF PIPE PLUG.
7. INSTALL PVC TEE AND PLUG FACING UP AT INSIDE DROP INSTALLATION AT EXISTING MANHOLE LOCATED ON WEST STREET.

SEWER MANHOLE DETAILS

NOT TO SCALE

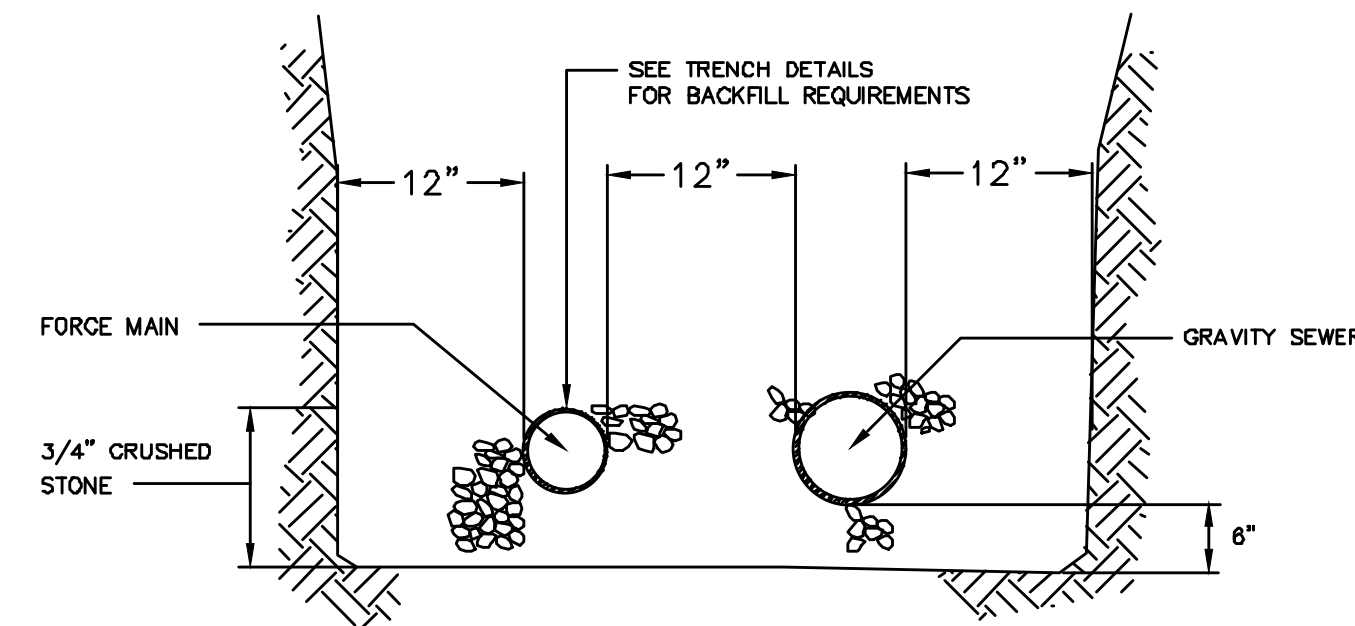
DESCRIPTION	DATE	BY
PLANNING BOARD REVISIONS	12/19/2022	SWM

SITE DETAILS
GORHAM INDUSTRIAL PARK
WEST CAMPUS
CYR DRIVE
GORHAM, MAINE

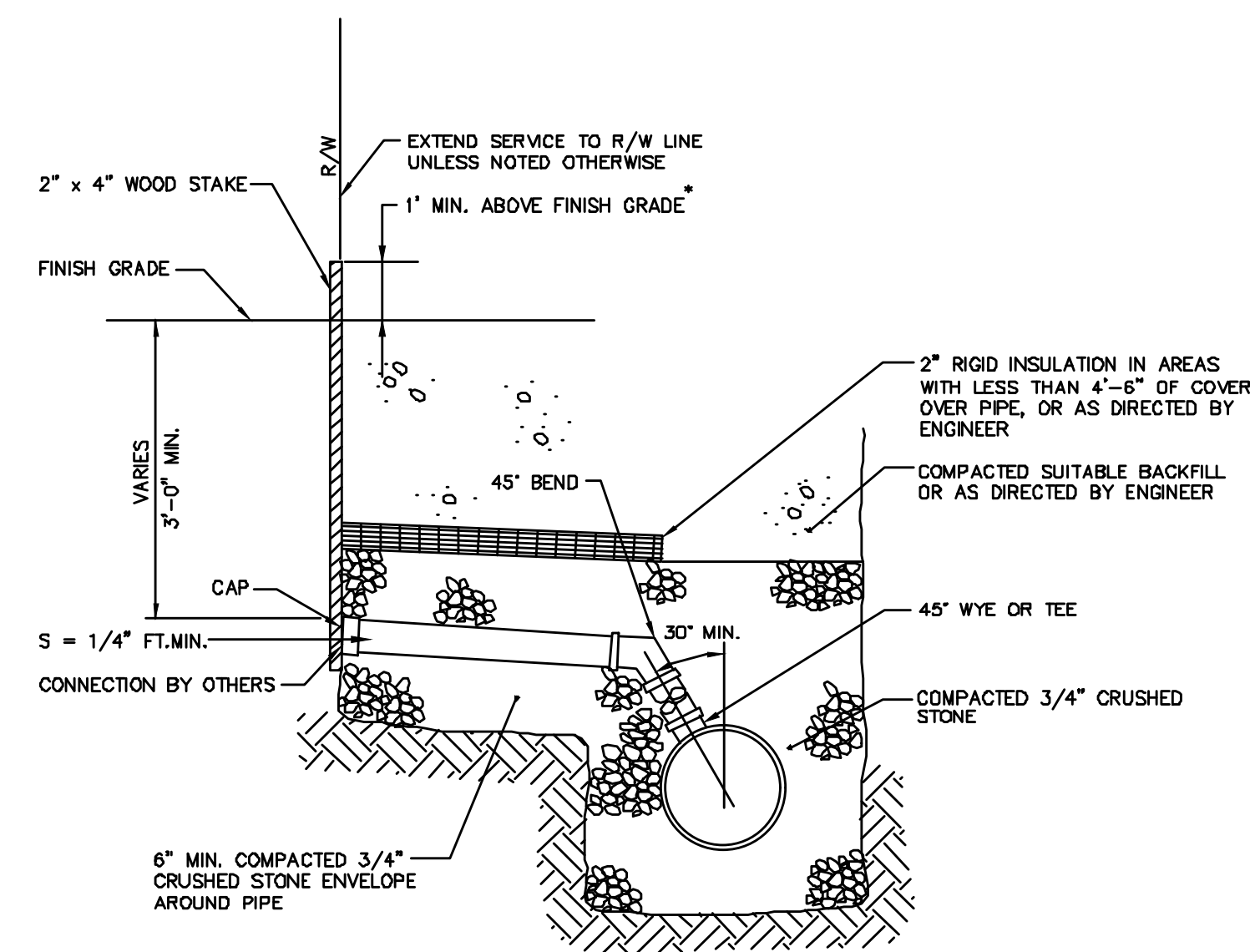
SWM	SWM	MFZ
DESIGNED	DRAWN	CHECKED

AS NOTED
NOVEMBER 4, 2022
DATE
PROJECT NO. 4807-13

SD-06

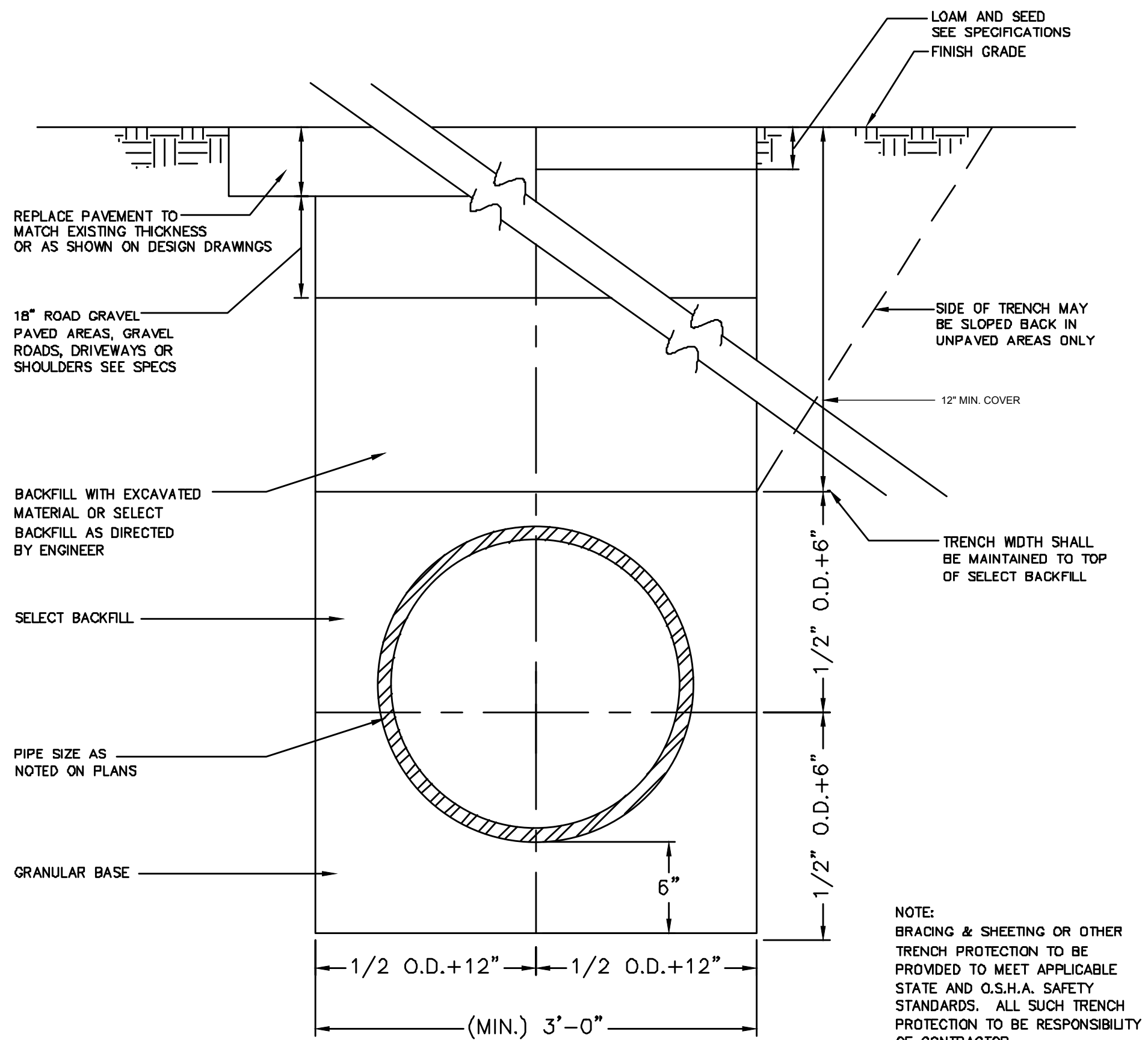


TWO PIPE TRENCH DETAIL

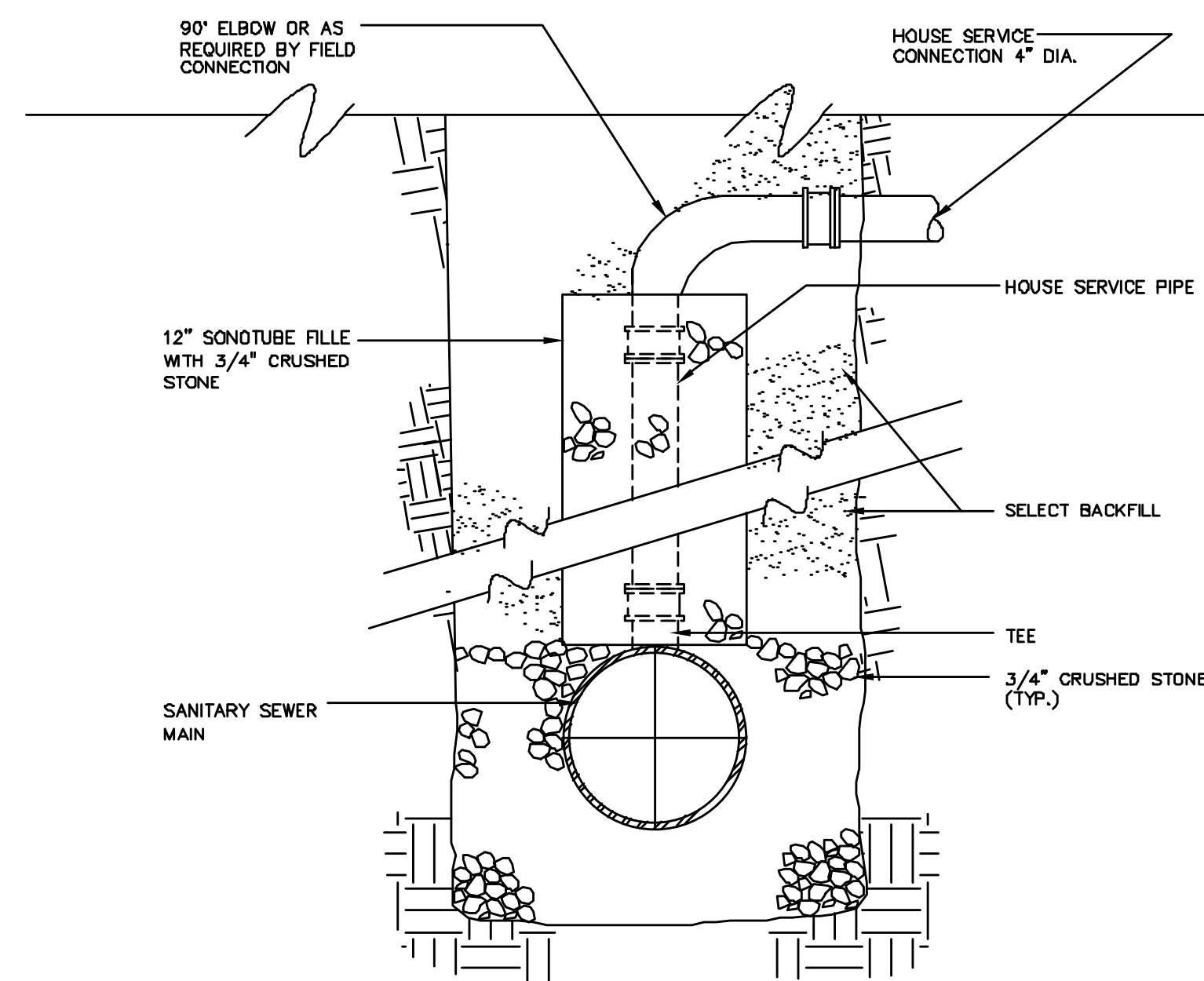


- NOTES:**
- PIPE DIAMETERS MAY VARY. SEE TYPICAL PIPE TRENCH DETAIL, THIS SHEET.
 - WHERE 30° MINIMUM ANGLE BETWEEN SEWER CONNECTION AT THE SEWER MAIN AND THE VERTICAL CANNOT BE MAINTAINED, PROVIDE A PRECAST SEWER CHIMNEY.
 - IF STAKE IS CUT OFF FLUSH OR SLIGHTLY BELOW GRADE, PROVIDE MIN. OF TWO 16G. GALV. SPIKES DRIVEN INTO TOP OF 2" x 4" TO PROVIDE METAL DETECTABILITY.

HORIZONTAL SEWER CONNECTION
N.T.S.

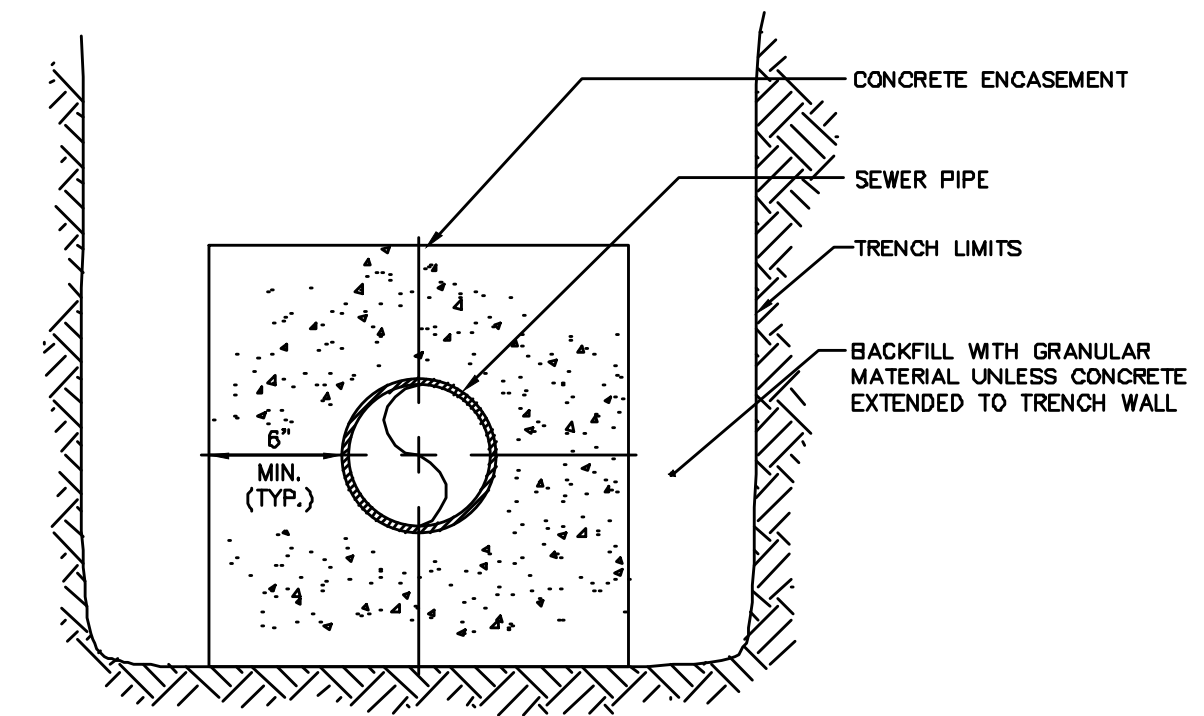


TRENCH SECTION
N.T.S.

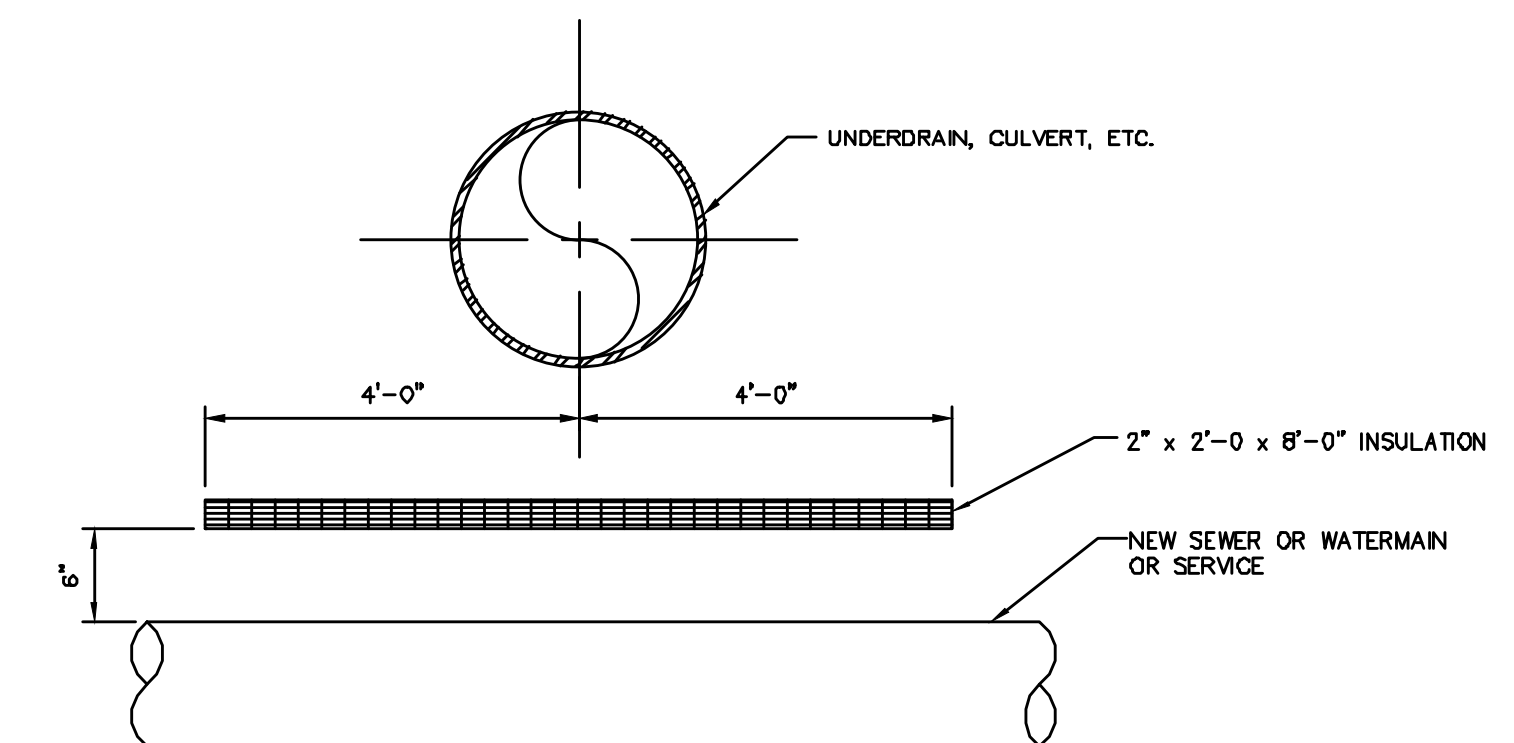


CHIMNEY DETAIL
N.T.S.

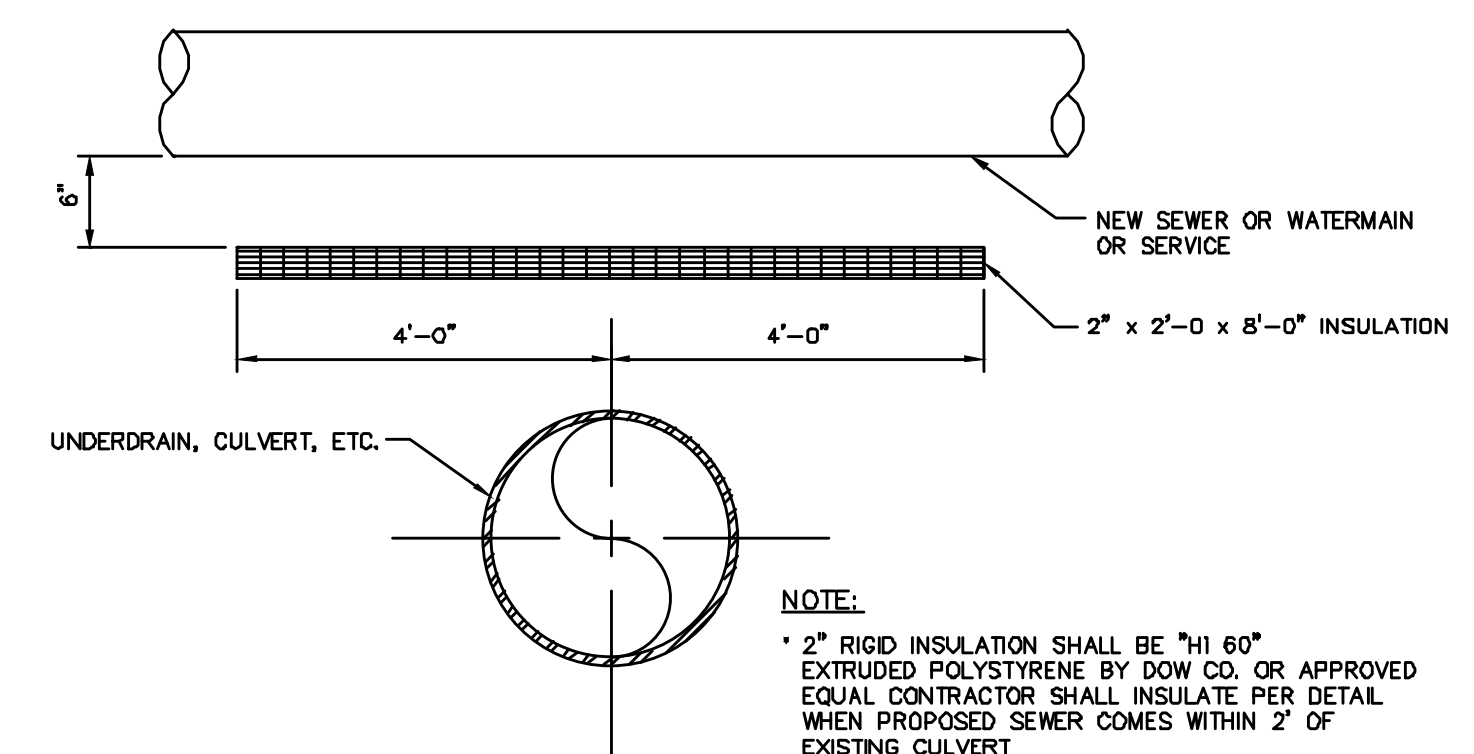
SEWER TRENCH DETAILS
NOT TO SCALE



CONCRETE ENCASUREMENT FOR SEWER MAINS
N.T.S.



INSULATION DETAIL "A"
N.T.S.



INSULATION DETAIL "B"
N.T.S.



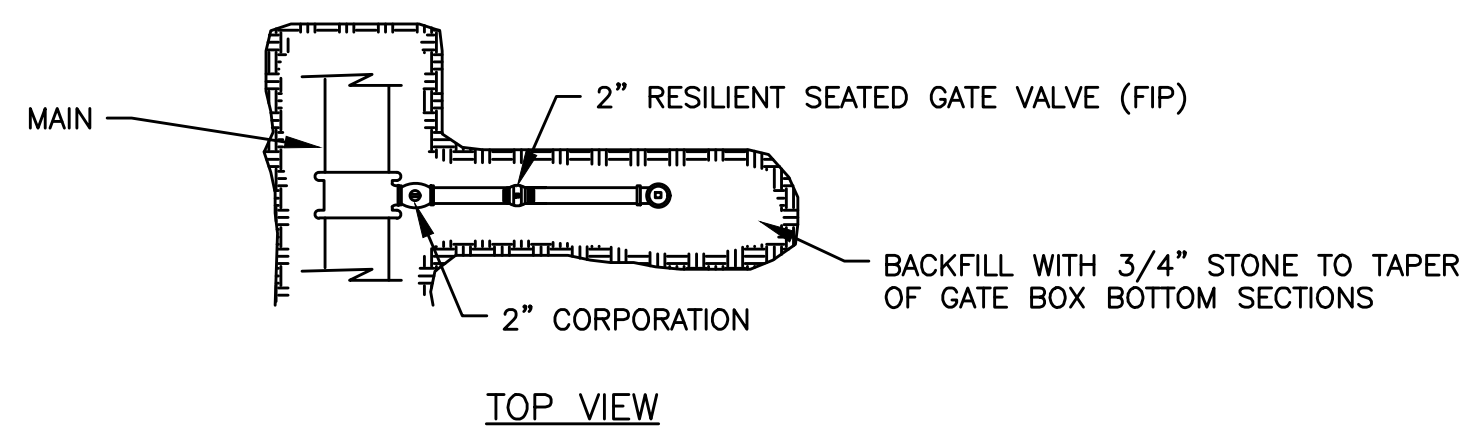
DESCRIPTION	DATE	BY
PLANNING BOARD REVISIONS	12/19/2022	SWM

SITE DETAILS
GORHAM INDUSTRIAL PARK
WEST CAMPUS
CYR DRIVE
GORHAM, MAINE

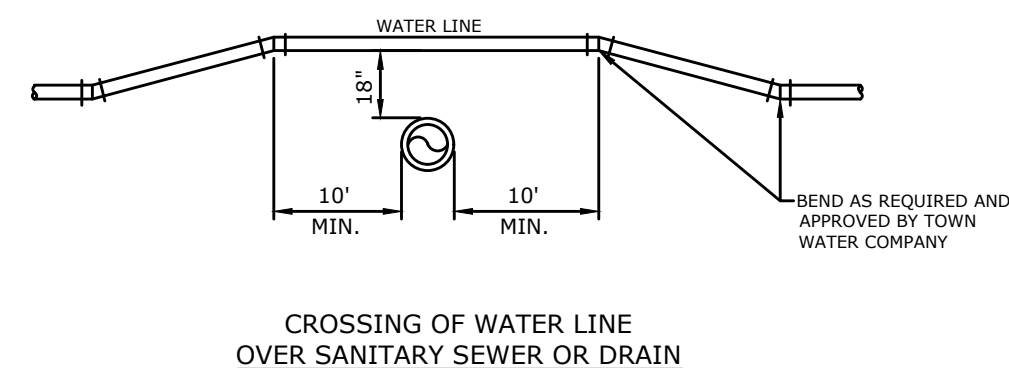
DESIGNED	DRAWN	CHECKED
SWM	SWM	MFZ
SCALE AS NOTED		
DATE NOVEMBER 4, 2022		
PROJECT NO. 4807-13		

SD-07

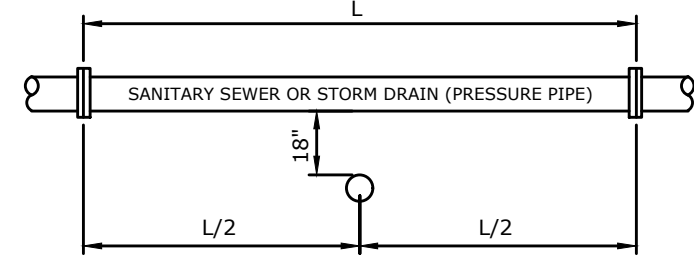
PROJECT: 11-16-2022 10:00 AM 10-16-2022 10:00 AM
DRAWING: 11-16-2022 10:00 AM 10-16-2022 10:00 AM



TOP VIEW

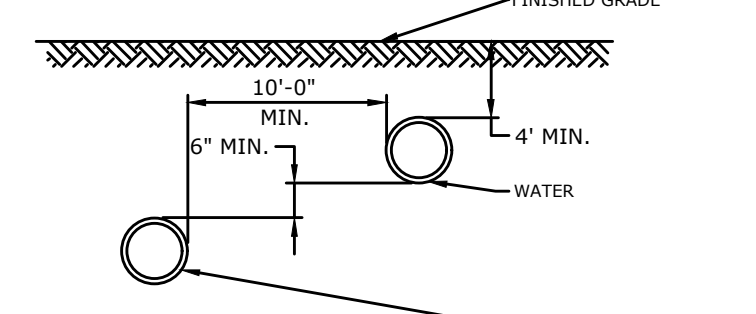


CROSSING OF WATER LINE OVER SANITARY SEWER OR DRAIN



NOTES:
1. WHERE WATER LINE PASSES UNDER SEWER LINE OR STORM DRAIN, THE JOINTS OF THE PIPE SHALL BE A MIN. OF 10' FROM THE POINT OF CROSSING AND THE SANITARY SEWER SHALL BE CLASS 50 PRESSURE PIPE AND THE STORM DRAIN SHALL BE LOCK-JOINT PRESSURE PIPE.

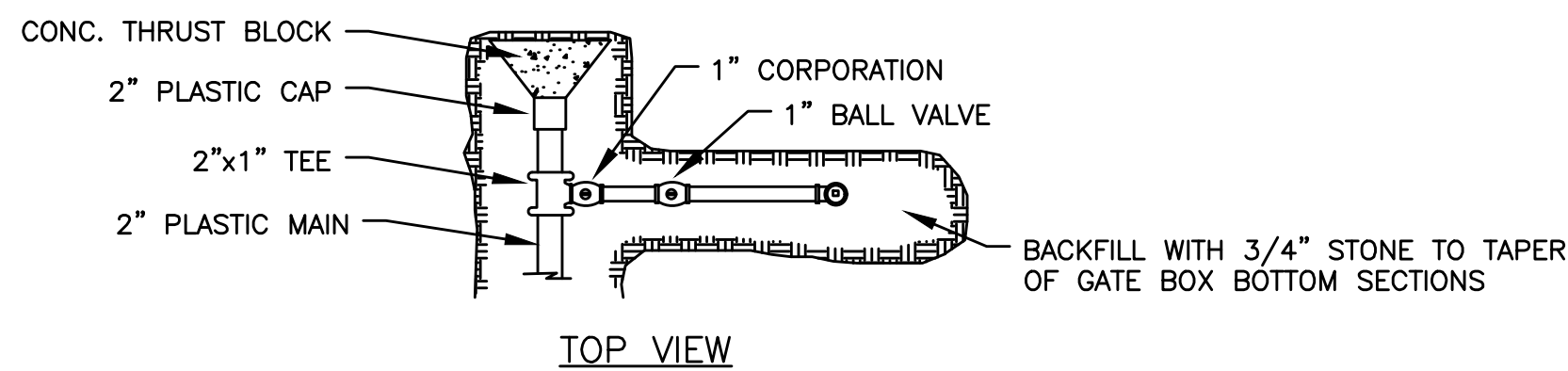
CROSSING OF WATER LINE UNDER SANITARY SEWER OR STORM DRAIN



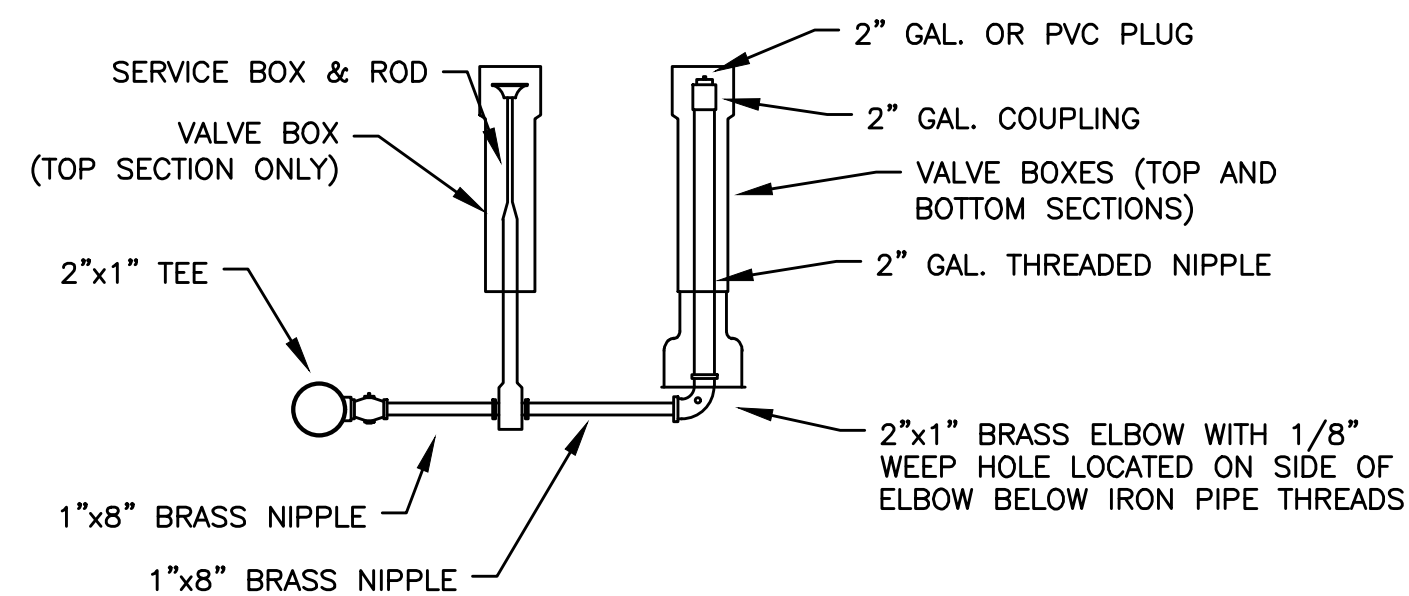
NOTES:
1. IF MINIMUM SEPARATION DISTANCE CAN NOT BE MAINTAINED, APPROVAL MUST BE OBTAINED FROM HEALTH DEPARTMENT.

PARALLEL SEPARATION OF WATER MAINS AND SEWERS

SEPARATION WATER MAINS AND SEWERS
NOT TO SCALE

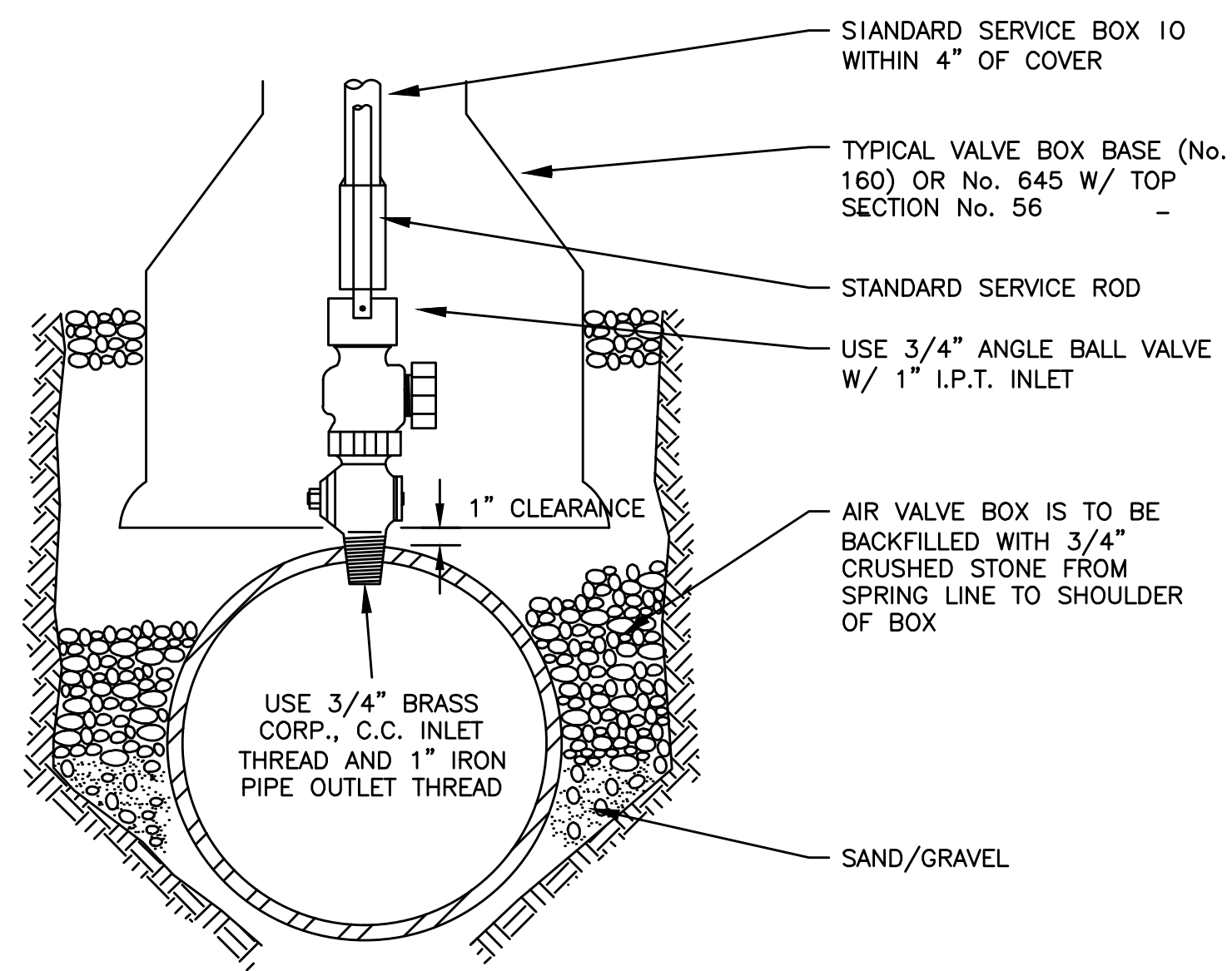


TOP VIEW



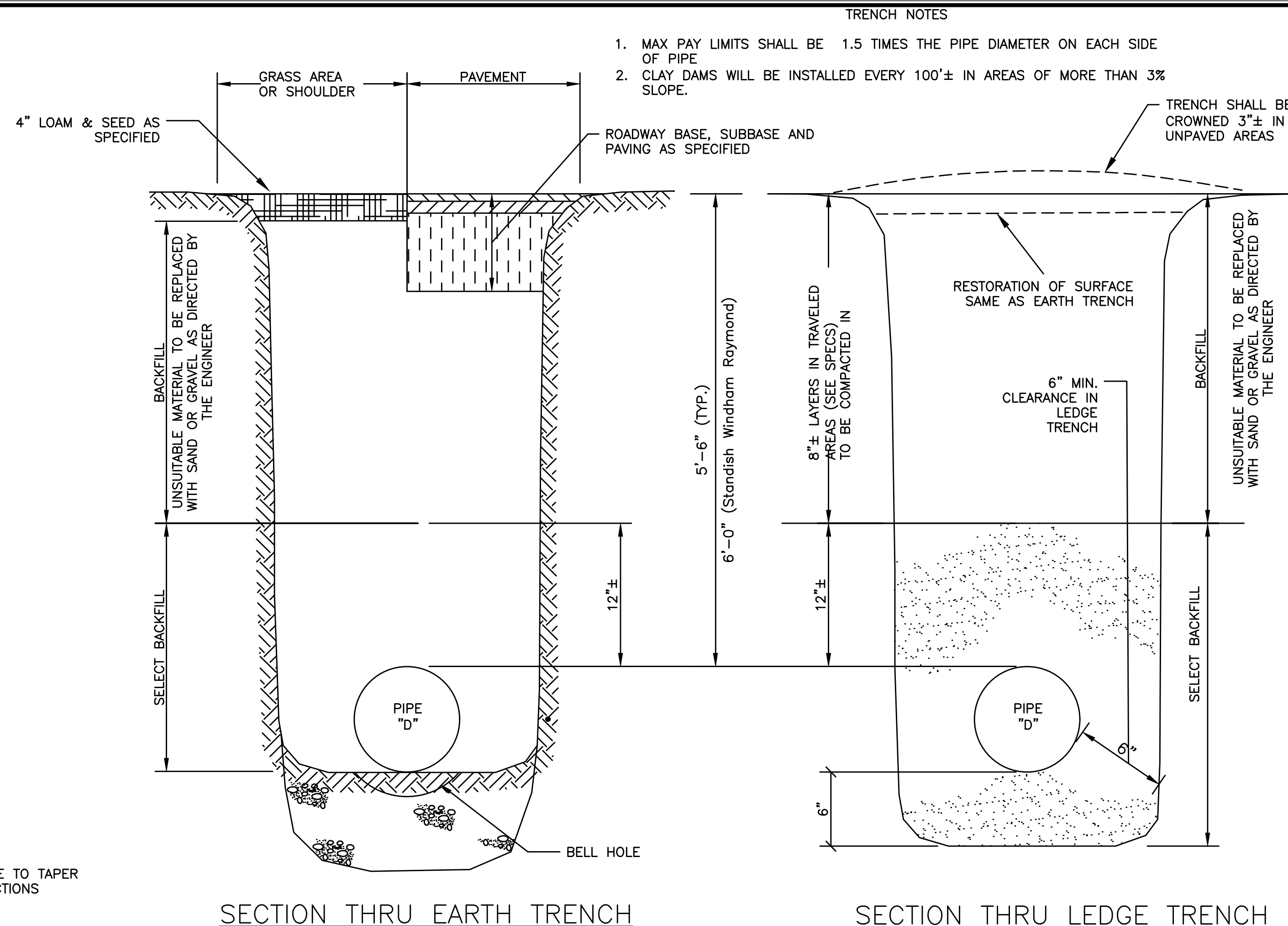
SIDE VIEW

SIDE-ARM BLOW-OFF (2" MAIN)



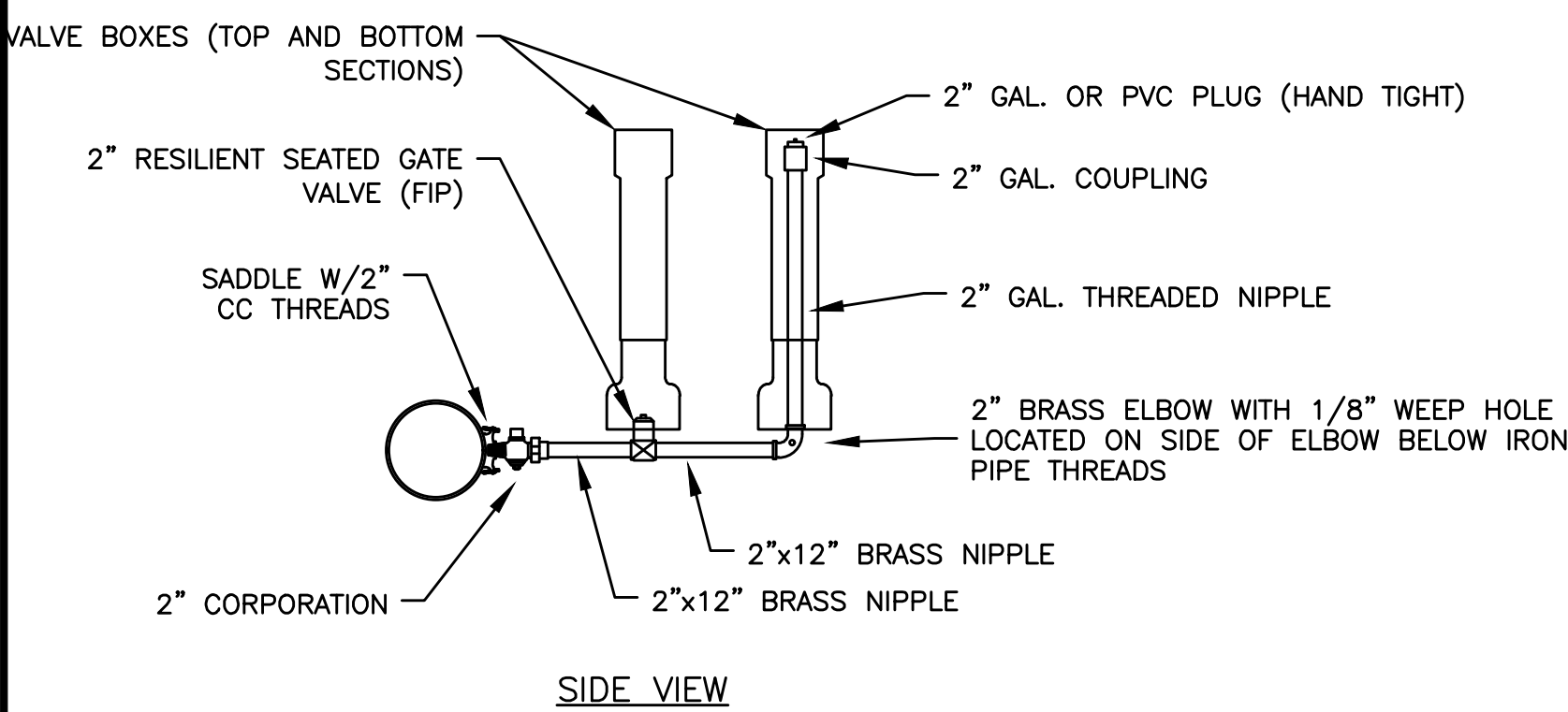
TYPICAL AIR VALVE (1")

STANDARD WATER DETAILS
NOT TO SCALE



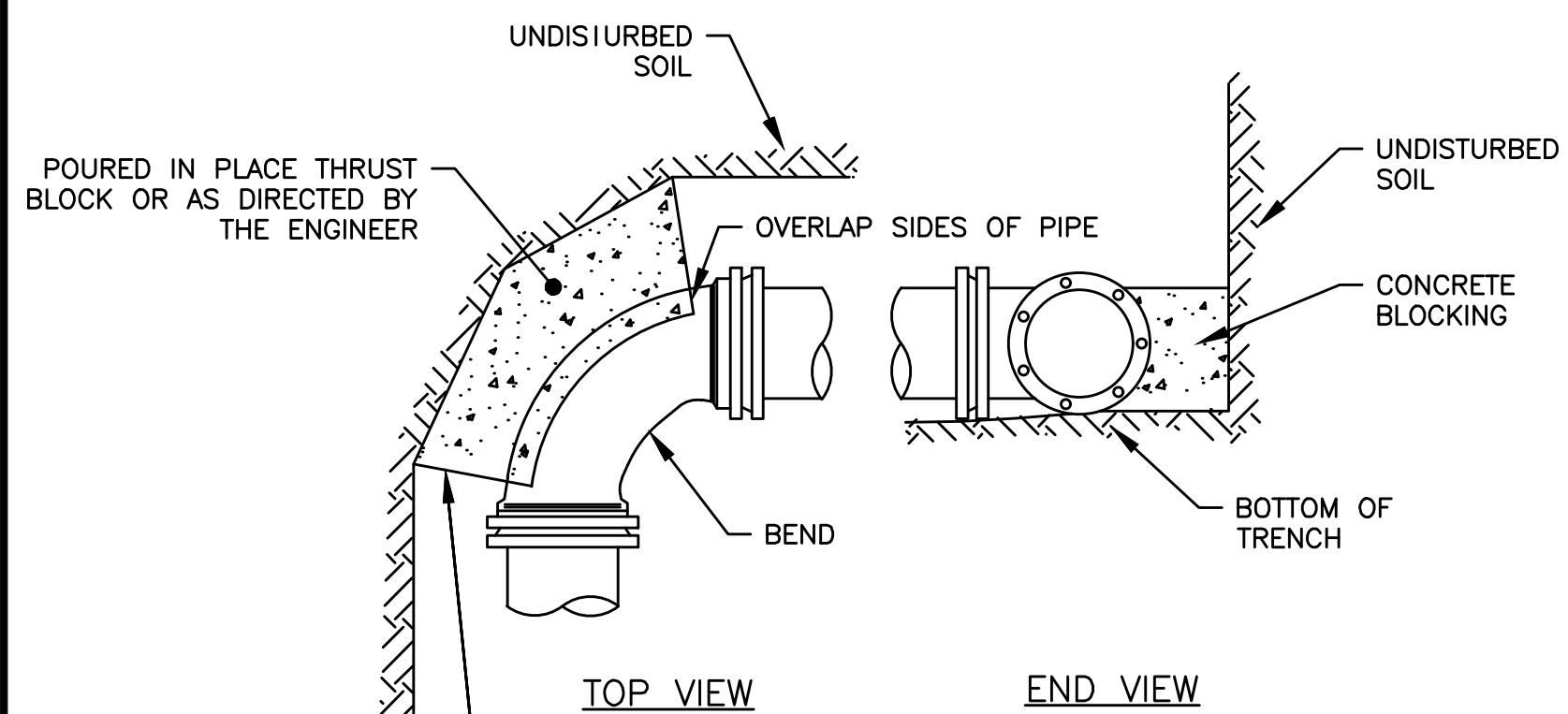
SECTION THRU EARTH TRENCH

SECTION THRU LEDGE TRENCH



SIDE VIEW

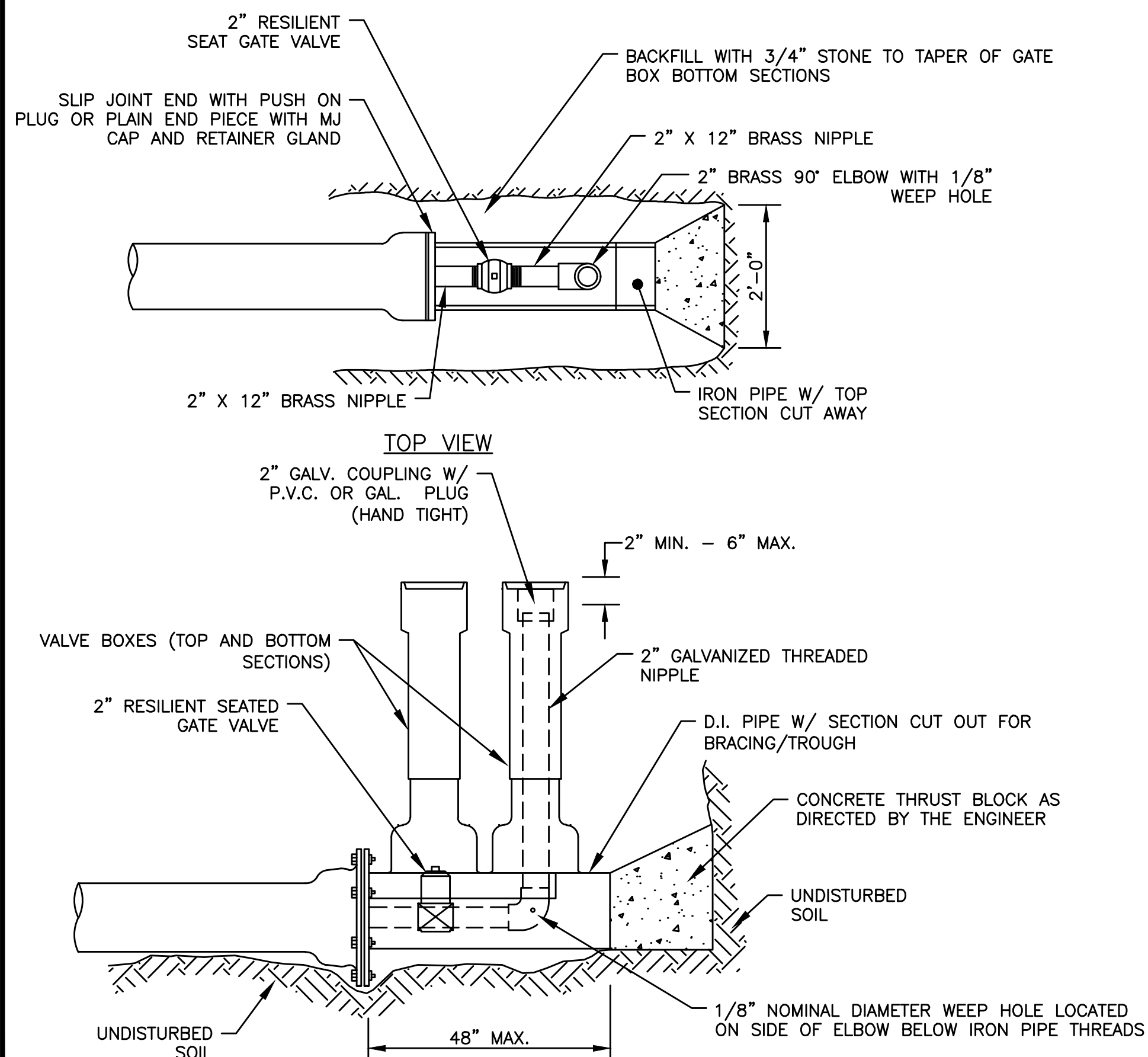
SIDE-ARM BLOW-OFF (4" & LARGER MAINS)



TOP VIEW

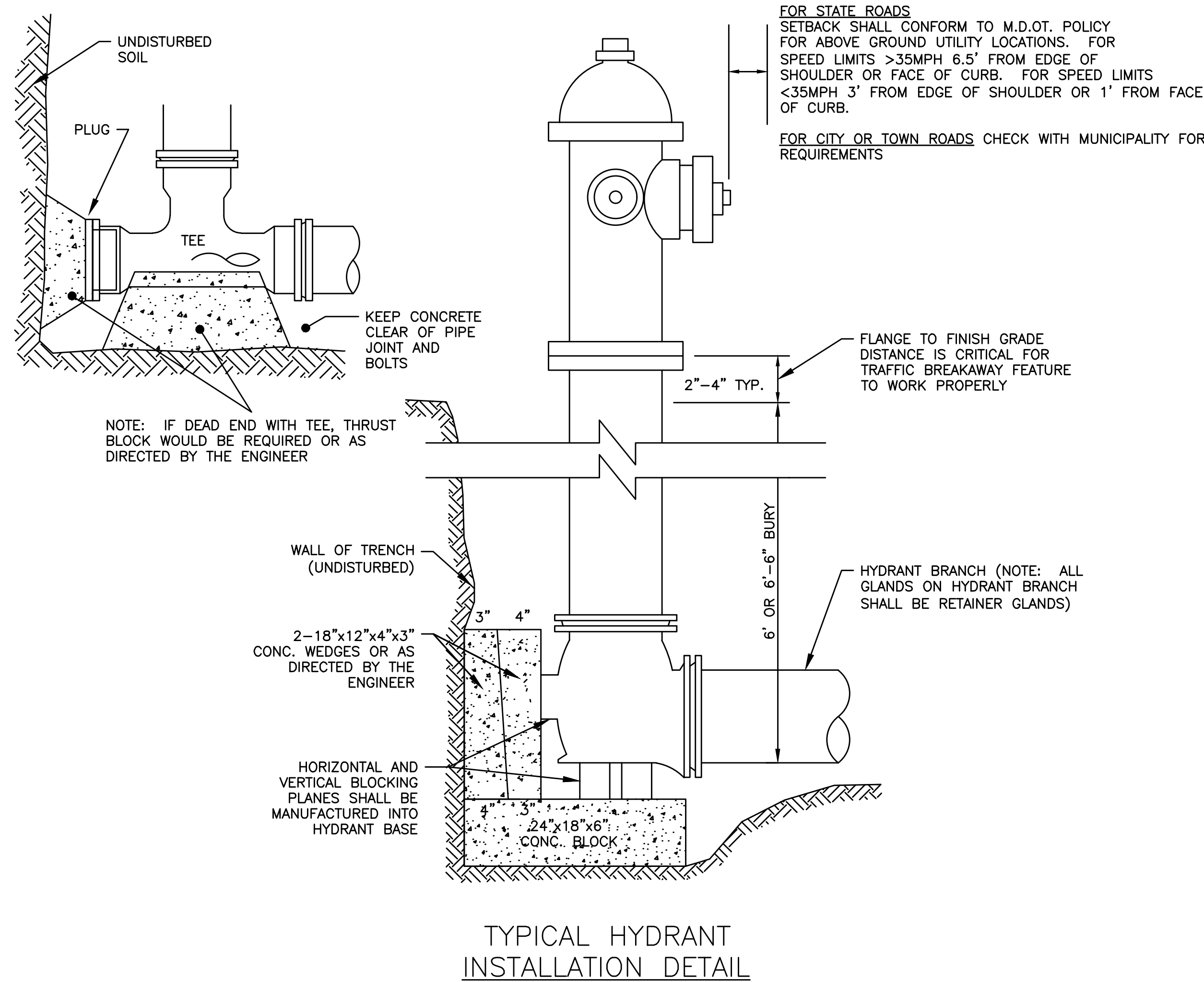
END VIEW

STANDARD BEND BLOCKING



TOP VIEW

STANDARD 2" BLOW OFF



TYPICAL HYDRANT INSTALLATION DETAIL

SLR CONSULTING, INC. 2 MARKET STREET, 5TH FLOOR GORHAM, ME 04037 207.541.9344

DESCRIPTION	DATE	BY
PLANNING BOARD REVISIONS	12/19/2022	SYML

SITE DETAILS

GORHAM INDUSTRIAL PARK
WEST CAMPUS
CYR DRIVE
GORHAM, MAINE

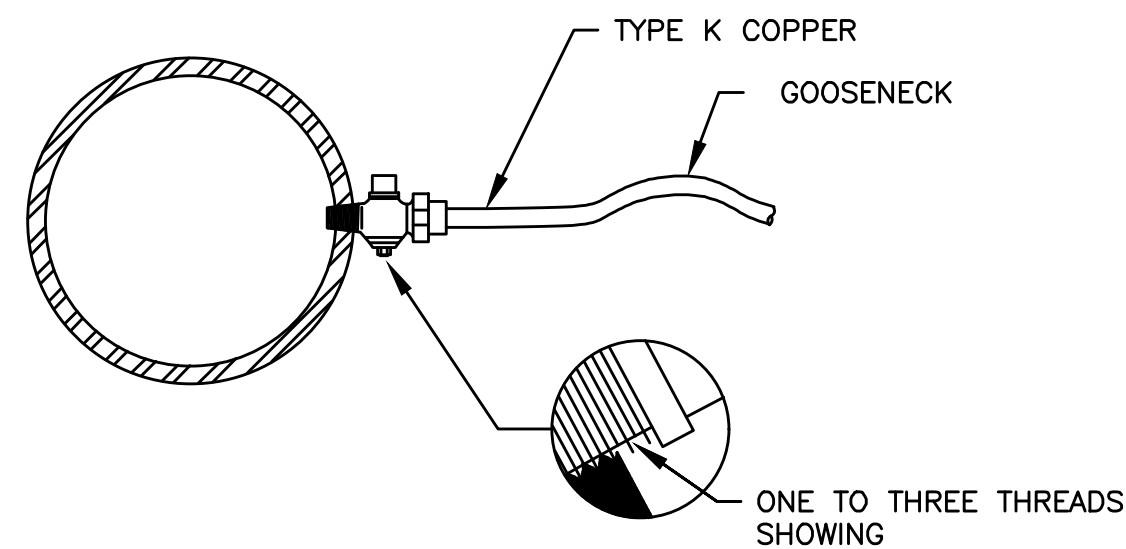
DESIGNED	DRAWN	MFZ	CHECKED
SWM	SWM	MFZ	

AS NOTED

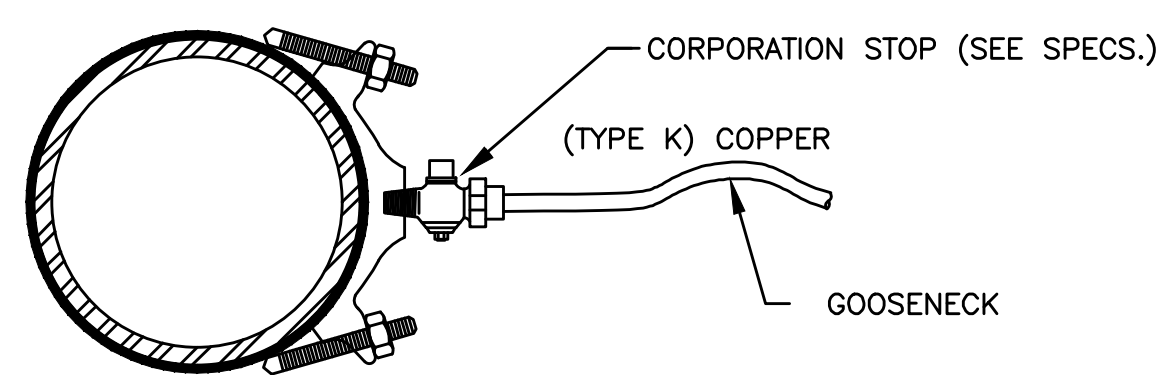
NOVEMBER 4, 2022

PROJECT NO. 4807-13

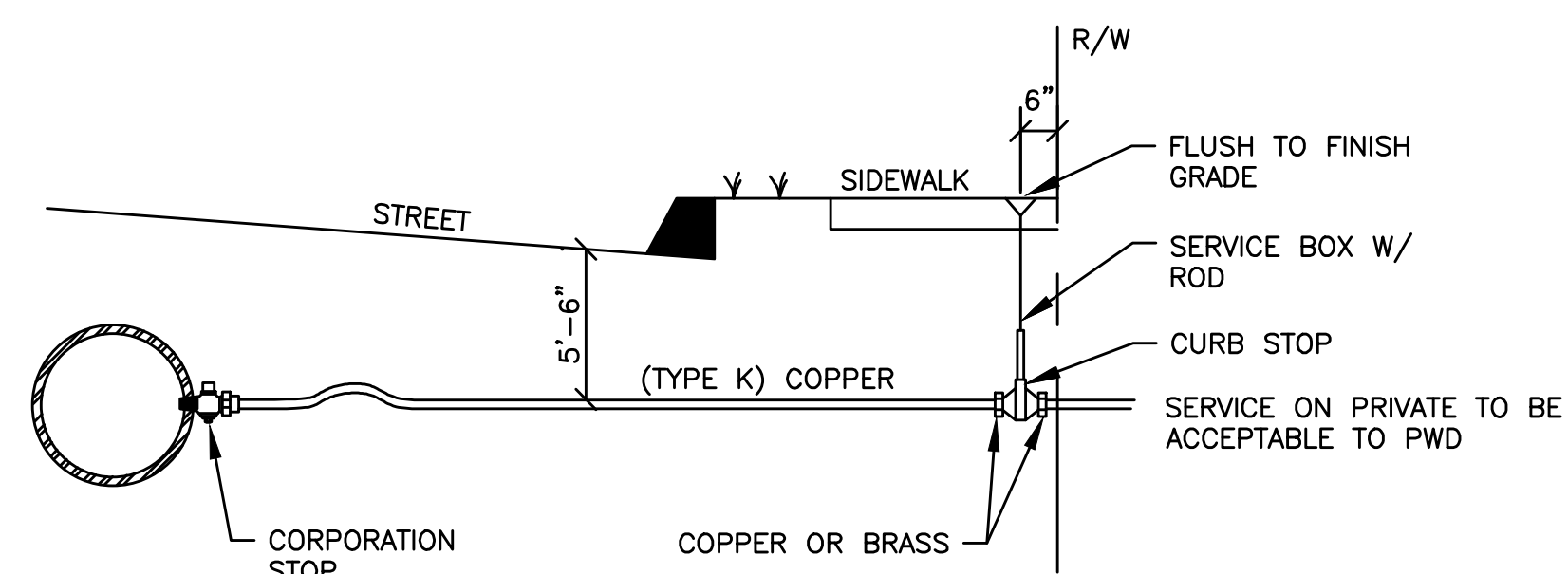
SD-08



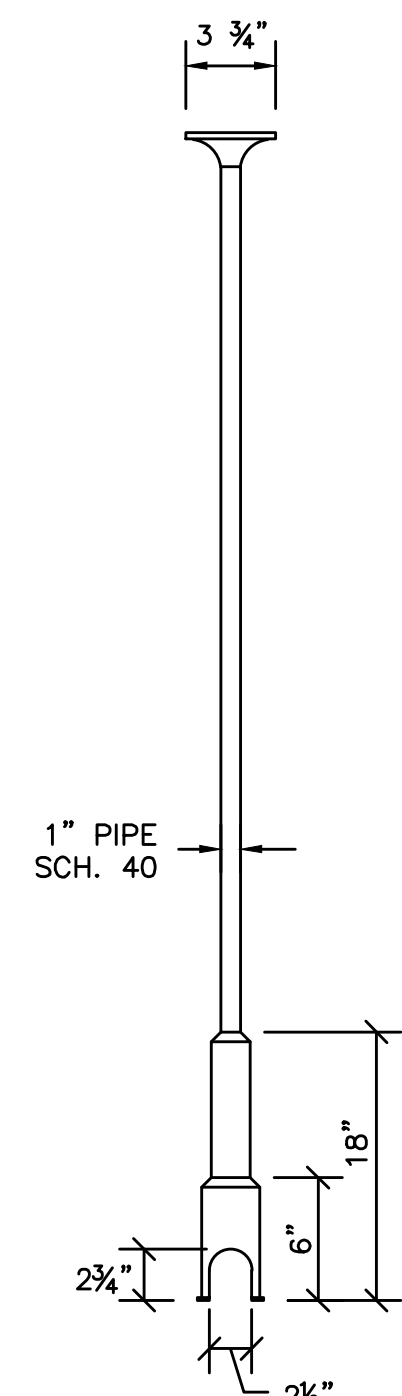
SERVICE TAP
(3/4" AND 1" C.C. THREAD)



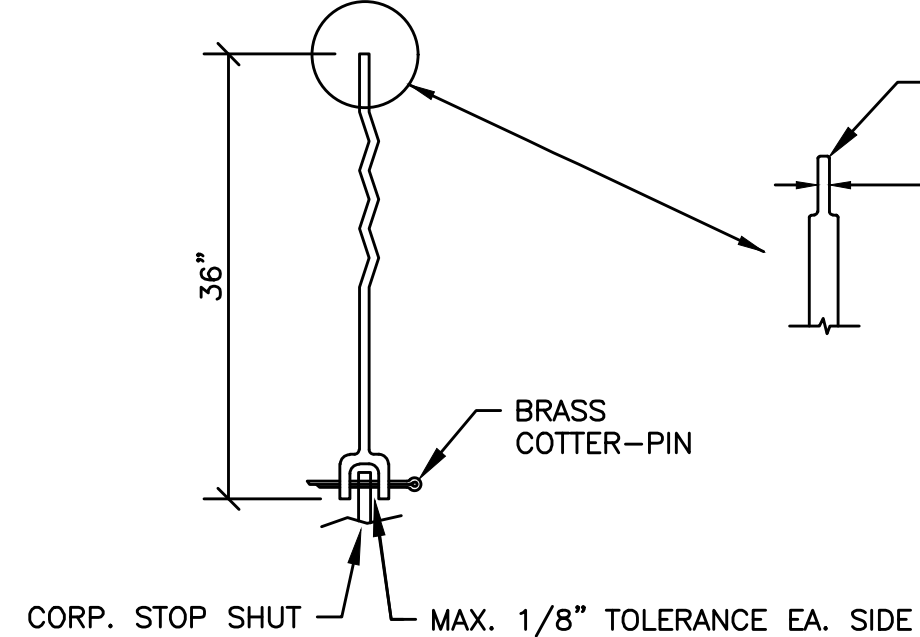
SERVICE SADDLE
(1-1/2" AND 2" C.C. THREAD)



TYPICAL SERVICE CONNECTION



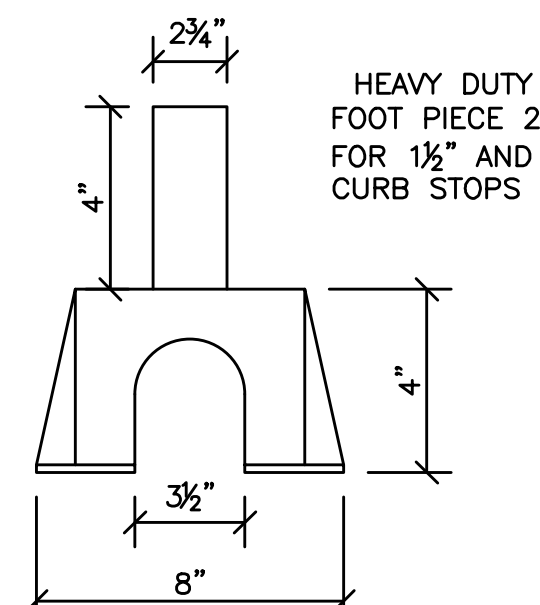
SERVICE BOX



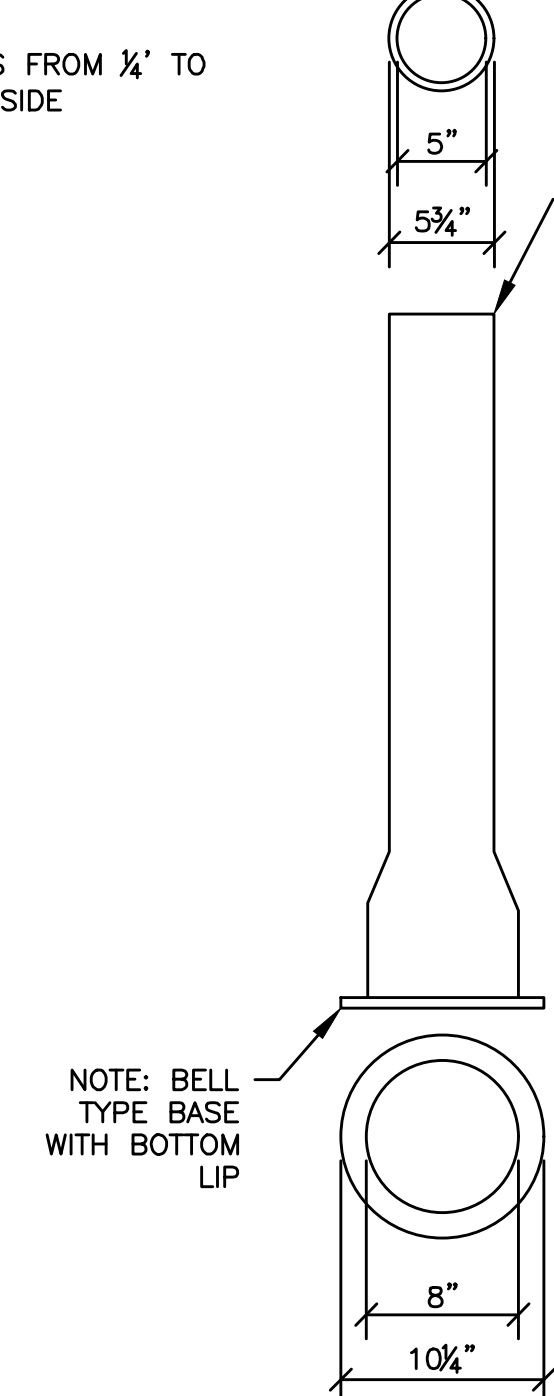
SERVICE ROD



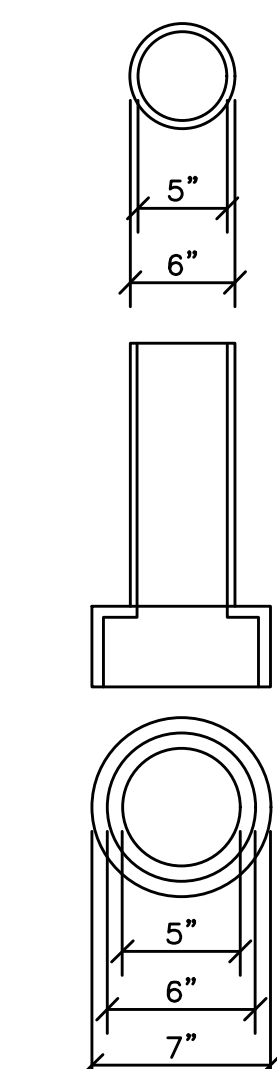
COVER



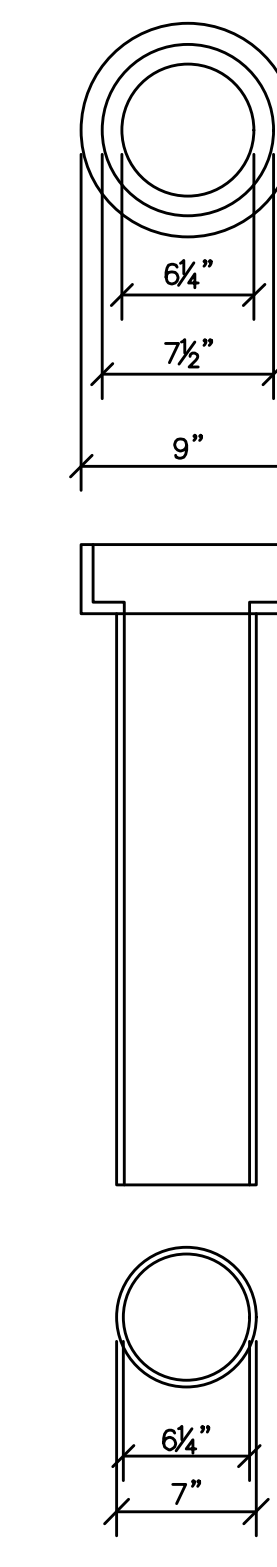
FOOT PIECE



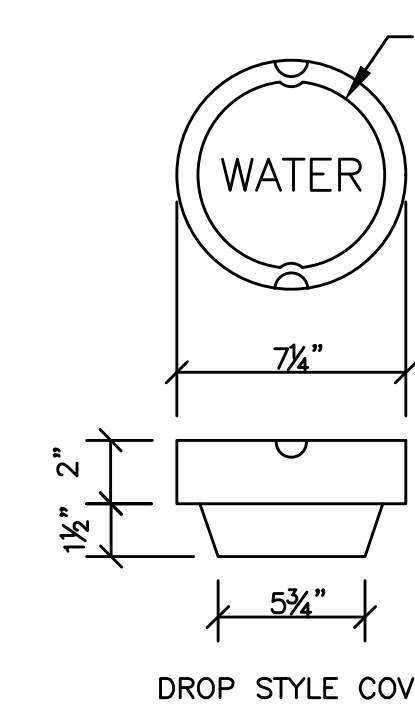
BASE SECTION NO. 645



INTERMEDIATE SECTION NO.58



TOP SECTION NO.56

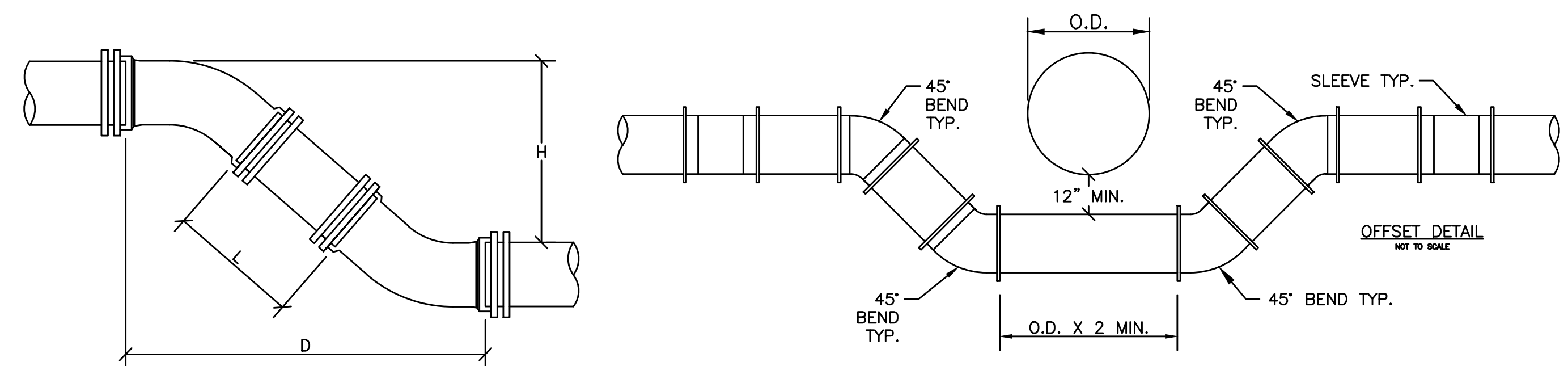


DROP STYLE COVER

(NUMBERS ARE FOR 5 1/4" BUFFALO VALVE BOXES)
(BASE SECTION MAY BE USED AS INTERMEDIATE SECTION)

- NOTE: ANY EXTENSION OF SERVICE BOX REQUIRES:
1. 1" FEMALE IRON PIPE COUPLING
2. 1" THREADED PIPE (THIS IS TO BE A NON-WELDED, TWO PIECE ARRANGEMENT. SLIP ON ADAPTERS ARE NOT PERMISSIBLE.)

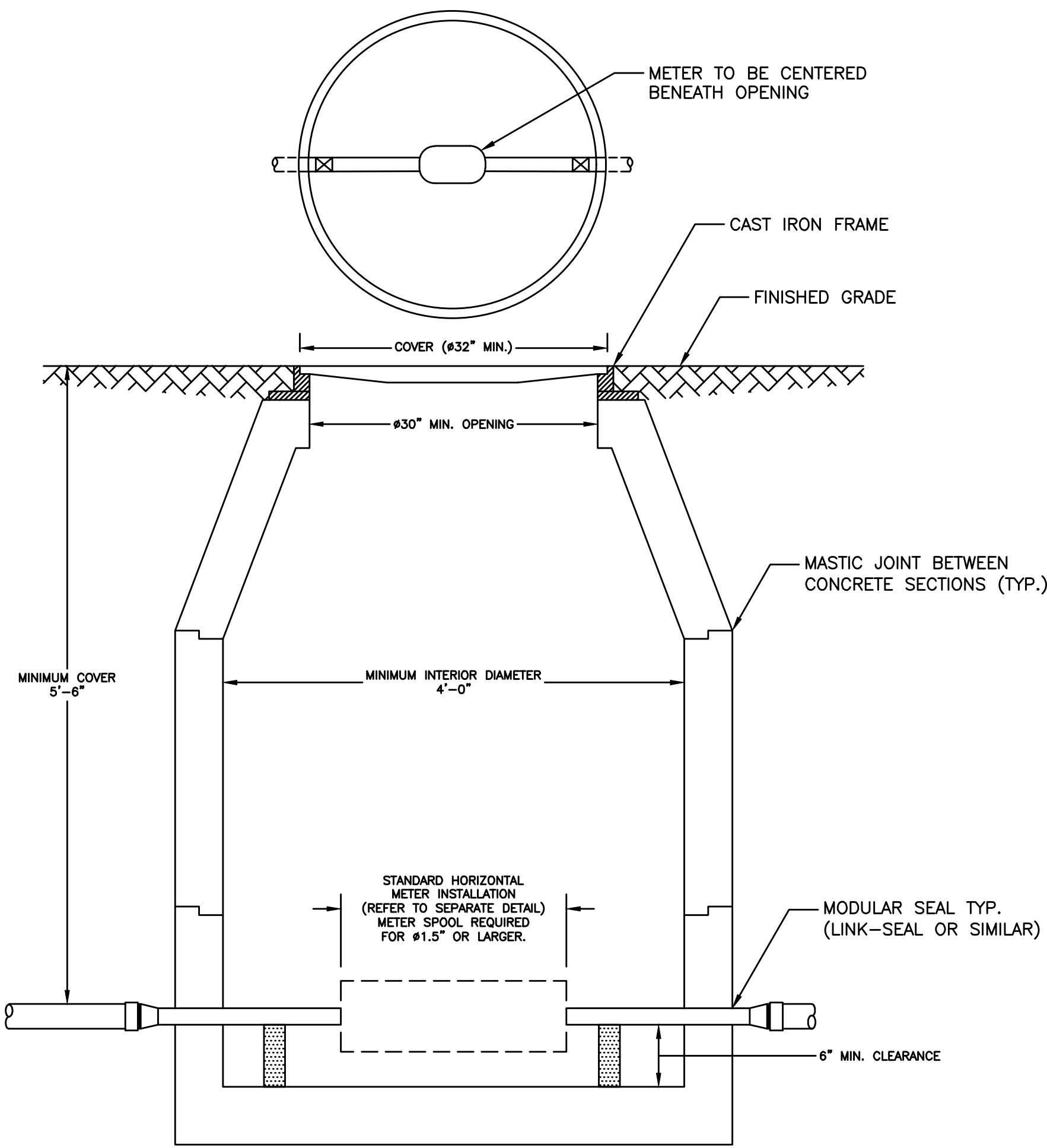
VALVE BOX & COVER



NOTE: DIMENSIONS APPLICABLE FOR SIGMA COMPACT BENDS. FOR TYLER COMPACT BENDS, ADD 1/2" TO "D" DIMENSION AND SUBTRACT 1/2" FROM "L" DIMENSION. FOR OTHER FITTINGS REFER TO MANUFACTURER'S RECOMMENDATIONS.

H	6" PIPE		8" PIPE		12" PIPE	
	D	L	D	L	D	L
12"	1' 6-1/2"	0' 10-1/2"	1' 7-1/2"	0' 9-1/2"	1' 11-1/2"	0' 5-1/2"
13"	1' 7-1/2"	0' 11-7/8"	1' 8-1/2"	0' 10-7/8"	2' 0-1/2"	0' 6-7/8"
14"	1' 8-1/2"	1' 1-5/16"	1' 9-1/2"	1' 0-5/16"	2' 1-1/2"	0' 8-5/16"
15"	1' 9-1/2"	1' 2-11/16"	1' 10-1/2"	1' 1-11/16"	2' 2-1/2"	0' 9-11/16"
16"	1' 10-1/2"	1' 4-1/8"	1' 11-1/2"	1' 3-1/8"	2' 3-1/2"	0' 11-1/8"
17"	1' 11-1/2"	1' 5-9/16"	2' 0-1/2"	1' 4-9/16"	2' 4-1/2"	1' 0-9/16"
18"	2' 0-1/2"	1' 6-15/16"	2' 1-1/2"	1' 5-15/16"	2' 5-1/2"	1' 1-15/16"
19"	2' 1-1/2"	1' 8-3/8"	2' 2-1/2"	1' 7-3/8"	2' 6-1/2"	1' 3-3/8"
20"	2' 2-1/2"	1' 9-13/16"	2' 3-1/2"	1' 8-13/16"	2' 7-1/2"	1' 4-13/16"
21"	2' 3-1/2"	1' 11-3/16"	2' 4-1/2"	1' 10-3/16"	2' 8-1/2"	1' 6-3/16"
22"	2' 4-1/2"	2' 0-5/8"	2' 5-1/2"	1' 11-5/8"	2' 9-1/2"	1' 7-5/8"
23"	2' 5-1/2"	2' 2"	2' 6-1/2"	2' 1"	2' 10-1/2"	1' 9"
24"	2' 6-1/2"	2' 3-7/16"	2' 7-1/2"	2' 2-7/16"	2' 11-1/2"	1' 10-7/16"
25"	2' 7-1/2"	2' 4-7/8"	2' 8-1/2"	2' 3-7/8"	3' 0-1/2"	1' 11-7/8"
26"	2' 8-1/2"	2' 6-1/4"	2' 9-1/2"	2' 5-1/4"	3' 1-1/2"	2' 1-1/4"
27"	2' 9-1/2"	2' 7-11/16"	2' 10-1/2"	2' 6-11/16"	3' 2-1/2"	2' 2-11/16"
28"	2' 10-1/2"	2' 9-1/8"	2' 11-1/2"	2' 8-1/8"	3' 3-1/2"	2' 4-1/8"
29"	2' 11-1/2"	2' 10-1/2"	3' 0-1/2"	2' 9-1/2"	3' 4-1/2"	2' 5-1/2"
30"	3' 0-1/2"	2' 11-15/16"	3' 1-1/2"	2' 10-15/16"	3' 5-1/2"	2' 6-15/16"
31"	3' 1-1/2"	3' 1-5/16"	3' 2-1/2"	3' 0-5/16"	3' 6-1/2"	2' 8-5/16"
32"	3' 2-1/2"	3' 2-3/4"	3' 3-1/2"	3' 1-3/4"	3' 7-1/2"	2' 9-3/4"
33"	3' 3-1/2"	3' 4-3/16"	3' 4-1/2"	3' 3-3/16"	3' 8-1/2"	2' 11-3/16"
34"	3' 4-1/2"	3' 5-9/16"	3' 5-1/2"	3' 4-9/16"	3' 9-1/2"	3' 0-9/16"
35"	3' 5-1/2"	3' 7"	3' 6-1/2"	3' 5-1/2"	3' 10-1/2"	3' 2"
36"	3' 6-1/2"	3' 8-7/16"	3' 7-1/2"	3' 7-7/16"	3' 11-1/2"	3' 3-7/16"
37"	3' 7-1/2"	3' 9-13/16"	3' 8-1/2"	3' 8-13/16"	4' 0-1/2"	3' 4-13/16"
38"	3' 8-1/2"	3' 11-1/4"	3' 9-1/2"	3' 10-1/4"	4' 1-1/2"	3' 5-1/4"
39"	3' 9-1/2"	4' 0-11/16"	3' 10-1/2"	3' 11-11/16"	4' 2-1/2"	3' 7-11/16"
40"	3' 10-1/2"	4' 2-1/16"	3' 11-1/2"	4' 1-1/16"	4' 3-1/2"	3' 9-1/16"
41"	3' 11-1/2"	4' 3-1/2"	4' 2-1/2"	4' 2-1/2"	4' 4-1/2"	3' 10-1/2"
42"	4' 0-1/2"	4' 4-7/8"	4' 3-1/2"	4' 3-7/8"	4' 5-1/2"	3' 11-7/8"
43"	4' 1-1/2"	4' 6-5/16"	4' 4-1/2"	4' 5-5/16"	4' 6-1/2"	4' 1-5/16"
44"	4' 2-1/2"	4' 7-3/4"	4' 5-1/2"	4' 6-3/4"	4' 7-1/2"	4' 2-3/4"
45"	4' 3-1/2"	4' 9-1/8"	4' 6-1/2"	4' 8-1/8"	4' 8-1/2"	4' 4-1/8"
46"	4' 4-1/2"	4' 10-9/16"	4' 7-1/2"	4' 9-9/16"	4' 9-1/2"	4' 5-9/16"
47"	4' 5-1/2"	4' 11-15/16"	4' 8-1/2"	4' 10-15/16"	4' 10-1/2"	4' 6-15/16"
48"	4' 6-1/2"	5' 1-3/8"	4' 9-1/2"	5' 0-3/8"	4' 11-1/2"	4' 8-3/8"
49"	4' 7-1/2"	5' 2-13/16"	4' 10-1/2"	5' 1-13/16"	5' 0-1/2"	4' 9-13/16"
50"	4' 8-1/2"	5' 4-3/16"	4' 11-1/2"	5' 3-3/16"	5' 1-1/2"	4' 11-3/16"
51"	4' 9-1/2"	5' 5-9/8"	4' 12-1/2"	5' 4-9/8"	5' 2-1/2"	5' 0-9/8"
52"	4' 10-1/2"	5' 7-1/16"	4' 11-1/2"	5' 6-1/16"	5' 3-1/2"	5' 2-1/16"
53"	4' 11-1/2"	5' 8-7/16"	5' 0-1/2"	5' 7-7/16"	5' 4-1/2"	5' 3-7/16"
54"	5' 0-1/2"	5' 9-7/8"	5' 1-1/2"	5' 8-7/8"	5' 5-1/2"	5' 4-7/8"
55"	5' 1-1/2"	5' 11-5/16"	5' 2-1/2"	5' 10-5/16"	5' 6-1/2"	5' 6-5/16"

TYPICAL MAIN OFFSET



TYPICAL METER PIT - 5/8" TO 2" METER

- METER PIT AND COVER**
- SPECIAL APPROVAL BY PWD IS REQUIRED, PRIOR TO CONSTRUCTION, FOR ALL PROPOSED METER PIT INSTALLATIONS.
 - TESTABLE BACKFLOW PREVENTION DEVICES MAY NOT BE INSTALLED WITHIN SMALL METER PITS.
 - METER PIT SHALL BE LOCATED ON PRIVATE PROPERTY BETWEEN 10' AND 20' FROM THE PROPERTY LINE UNLESS OTHERWISE APPROVED BY PWD.
 - THE METER PIT SHALL BE MADE OF PRECAST CONCRETE OF SUFFICIENT SIZE TO PROVIDE 5.5' MINIMUM GROUND COVER FROM FINISHED GRADE TO THE TOP OF THE SERVICE PIPE.
 - ALL SEAMS BETWEEN CONCRETE SECTIONS SHALL BE SEALED WITH MASTIC JOINT. ALL OPENINGS IN THE CONCRETE FOR SERVICE PIPING SHALL BE SEALED WITH A MODULAR SEAL (LINK-SEAL OR SIMILAR).
 - METER PIT INTERIOR MUST BE AT LEAST 48" IN DIAMETER. THE OPENING MUST BE AT LEAST 30" IN DIAMETER, WITH A CAST IRON FRAME. THE COVER SHALL BE CAST IRON OR STEEL, 32" MINIMUM IN DIAMETER, AND BE EITHER PERMANENTLY LABELED "WATER" OR HAVE NO LABEL. STEEL PLATE MATERIAL SHALL BE COATED WITH A RUST INHIBITOR PAINT.
 - WALL-MOUNTED LADDER RUNGS ARE NOT TO BE INSTALLED WITHIN METER PIT.
 - ALL PIPING INSIDE AND EXTENDING THROUGH THE METER PIT WILL BE MADE OF COPPER, WITH A MINIMUM OF 6" CLEARANCE FROM THE METER PIT FLOOR. USE BLOCKING AS NEEDED TO SUPPORT THE PIPE.
 - CUSTOMER SHALL ENSURE THE METER PIT AND COVER ARE PROPERLY RATED FOR TRAFFIC LOAD, IF APPLICABLE.
- METER INSTALLATION**
- ONLY PWD PERSONNEL ARE AUTHORIZED TO INSTALL WATER METERS. PWD PERSONNEL ARE ADDITIONALLY AUTHORIZED TO OPERATE METER VALVES AS NEEDED FOR INSTALLATION AND MAINTENANCE.
 - PWD WILL SUPPLY THE WATER METER. ALL OTHER FITTINGS, INCLUDING A METER RESETTER FOR 1" OR SMALLER METERS, SHALL BE SUPPLIED AND INSTALLED BY CUSTOMER.
 - FOR 1.5" AND 2" METERS, CUSTOMER WILL INSTALL A FLANGED METER SPOOL PIECE, SUPPLIED BY PWD AT NO ADDITIONAL CHARGE. PRIOR TO METER SET, THE METER SPOOL SHALL BE MADE AVAILABLE FOR CUSTOMER PICKUP AT PWD CUSTOMER SERVICE, 225 DOUGLASS STREET, PORTLAND DURING NORMAL BUSINESS HOURS.
 - CUSTOMER WILL INSTALL TWO BALL VALVES AT LEAST 24" APART FOR METER INSTALLATION, ALLOWING FOR THE WATER METER TO BE CENTERED UNDER THE METER PIT OPENING. THE BALL VALVES SHALL BE SOLDERED IN PLACE.

STANDARD WATER DETAILS
NOT TO SCALE

SLR
2 MARKET STREET, 5TH FLOOR
PORTLAND, ME 04101
207.541.9344
SLRCONSULTING.COM

DESCRIPTION	DATE	BY
PLANNING BOARD REVISIONS	12/19/2022	SWM

SITE DETAILS

GORHAM INDUSTRIAL PARK
WEST CAMPUS
CVR DRIVE
GORHAM, MAINE

DESIGNED	SWM	MFZ
CHECKED		

AS NOTED

NOVEMBER 4, 2022

PROJECT NO. **4807-13**

SD-09

FORMATION OF DETENTION BASIN EMBANKMENTS NOTES

1. MATERIALS

ALL FILL MATERIALS SHALL BE OBTAINED FROM REQUIRED EXCAVATIONS OR DESIGNATED BORROW AREAS. FILL MATERIAL SHALL CONTAIN NO FROZEN MATERIAL, SOD, BRUSH, ROOTS, OR OTHER ORGANIC MATERIAL. EARTH EMBANKMENTS SHALL CONTAIN NO STONES OR ROCK PARTICLES OVER THREE INCHES IN DIAMETER.

THE MATERIAL USED IN THE CENTER PORTION OF THE EMBANKMENT SHALL BE THE MOST IMPERVIOUS MATERIAL OBTAINED FROM THE BORROW AREAS IF REQUIRED. THE MORE PERVIOUS MATERIALS SHALL BE USED IN THE OUTER PORTION OF THE EMBANKMENT AS SHOWN ON THE PLANS.

A. IMPERVIOUS FILL MATERIALS

IMPERVIOUS FILL SHALL BE A GLACIAL TILL, AND TO BE PROVIDED FROM AN OFFSITE SOURCE IN THE QUANTITIES REQUIRED FOR COMPLETION. FILL TO BE APPROVED BY THE ENGINEER. GLACIAL TILL SHALL CONSIST OF HARD AND DURABLE PARTICLES OR FRAGMENTS AND SHALL BE FREE FROM ORGANIC MATTER AND OTHER OBJECTIONABLE MATERIALS. GLACIAL TILL SHALL GENERALLY CONFORM TO THE FOLLOWING GRADATION LIMITS:

U.S. STANDARD SIEVE SIZE	PERCENTAGE PASSING BY WEIGHT
3 INCH	100
NO. 4	60-95
NO. 10	50-95
NO. 40	30-75
NO. 100	20-65
NO. 200	10-40

2. EMBANKMENT FOUNDATION PREPARATION

AREAS WHERE EMBANKMENTS ARE TO BE FORMED SHALL BE CLEARED AND GRUBBED OF ALL TOPSOIL AND OTHER ORGANIC MATERIALS TO A DEPTH OF AT LEAST 24 INCHES. UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS, FOUNDATION AREAS SHALL BE SCARIFIED TO A DEPTH OF THREE INCHES PRIOR TO PLACEMENT OF FILL MATERIAL.

3. PLACEMENT

NO FILL SHALL BE PLACED UNTIL THE FOUNDATION PREPARATION AND EXCAVATIONS IN THE FOUNDATION HAVE BEEN COMPLETED. NO FILL SHALL BE PLACED ON A FROZEN SURFACE NOR SHALL FROZEN MATERIAL BE INCORPORATED.

A. EMBANKMENT

MATERIAL SHALL BE PLACED IN HORIZONTAL LAYERS. THE THICKNESS OF LAYERS SHALL BE SIX INCHES. DURING CONSTRUCTION, THE SURFACE OF THE FILL SHALL HAVE A CROWN OR CROSS-SLOPE OF NOT LESS THAN TWO PERCENT. EACH LAYER OR LIFT SHALL EXTEND OVER THE ENTIRE AREA OF THE FILL.

THE FILL SHALL BE FREE FROM LENSES, POCKETS, STREAKS, OR LAYERS OF MATERIAL DIFFERING SUBSTANTIALLY IN TEXTURE OR GRADATION FROM THE SURROUNDING MATERIAL. THE MORE PERVIOUS MATERIAL SHALL BE PLACED IN THE OUTSIDE PORTION OF THE EMBANKMENT OR AS INDICATED ON THE DRAWINGS. THE FINISHED FILL SHALL BE SHAPED AND GRADED TO THE LINES AND GRADE SHOWN ON THE DRAWINGS.

B. BACKFILL AT THE PIPE OUTLET

BACKFILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED THREE INCHES IN THICKNESS AND SHALL BE BROUGHT UP UNIFORMLY AROUND THE OUTLET PIPE AND FLARED END SECTION

4. MOISTURE CONTROL

THE MOISTURE CONTENT OF MATERIALS IN THE EMBANKMENT SHALL BE CONTROLLED TO MEET THE REQUIREMENTS OF SECTION 5, "COMPACTION OF EMBANKMENT." WHEN NECESSARY, MOISTURE SHALL BE ADDED BY USE OF APPROVED SPRINKLING EQUIPMENT. WATER SHALL BE ADDED UNIFORMLY AND EACH LAYER SHALL BE THOROUGHLY DISKED OR HARROWED TO PROVIDE ROPEL MIXING. ANY LAYER FOUND TOO WET FOR PROPER COMPACTION SHALL BE ALLOWED TO DRY BEFORE ROLLING. PLACING OR ROLLING OF MATERIAL ON EARTH FILLS WILL NOT BE PERMITTED DURING OR IMMEDIATELY AFTER RAINFALLS WHICH INCREASE THE MOISTURE CONTENT BEYOND THE LIMIT OF SATISFACTORY COMPACTION. THE EARTH FILL SHALL BE BROUGHT UP UNIFORMLY AND ITS TOP SHALL BE KEPT GRADED AND SLOPED SO THAT A MINIMUM OF RAINWATER WILL BE RETAINED THEREON. COMPACTED EARTH FILL DAMAGED BY WASHING SHALL BE ACCEPTABLY REPLACED BY THE CONTRACTOR.

5. COMPACTION

A. EMBANKMENT

EMBANKMENT MATERIAL SHALL BE COMPACTED TO 95% OF THE STANDARD PROCTOR DENSITY AT NEAR OPTIMUM MOISTURE CONTENT AND BY THE COMPACTION EQUIPMENT SPECIFIED HEREIN. THE COMPACTION EQUIPMENT SHALL TRAVERSE THE ENTIRE SURFACE OF EACH LAYER OF FILL MATERIAL.

APPROVED TAMPING ROLLERS SHALL BE USED FOR COMPACTING ALL PARTS OF THE EMBANKMENTS WHICH THEY CAN EFFECTIVELY REACH. THE CONTRACTOR SHALL DEMONSTRATE THE EFFECTIVENESS OF THE ROLLER BY ACTUAL SOIL COMPACTION RESULTS OF THE SOIL TO BE USED IN THE EMBANKMENT WITH LABORATORY WORK PERFORMED BY AN APPROVED SOIL TESTING LABORATORY.

B. BACKFILL AT OUTLET CONDUIT

BACKFILL SHALL BE COMPACTED BY HAND TAMPING WITH MECHANICAL TAMPERS. HEAVY EQUIPMENT SHALL NOT BE OPERATED WITHIN TWO FEET OF ANY STRUCTURE. EQUIPMENT SHALL NOT BE ALLOWED TO OPERATE OVER THE OUTLET CONDUITS UNTIL THERE IS 24 INCHES OF FILL OVER THE PIPE CONDUITS.

6. FINISHING EMBANKMENTS

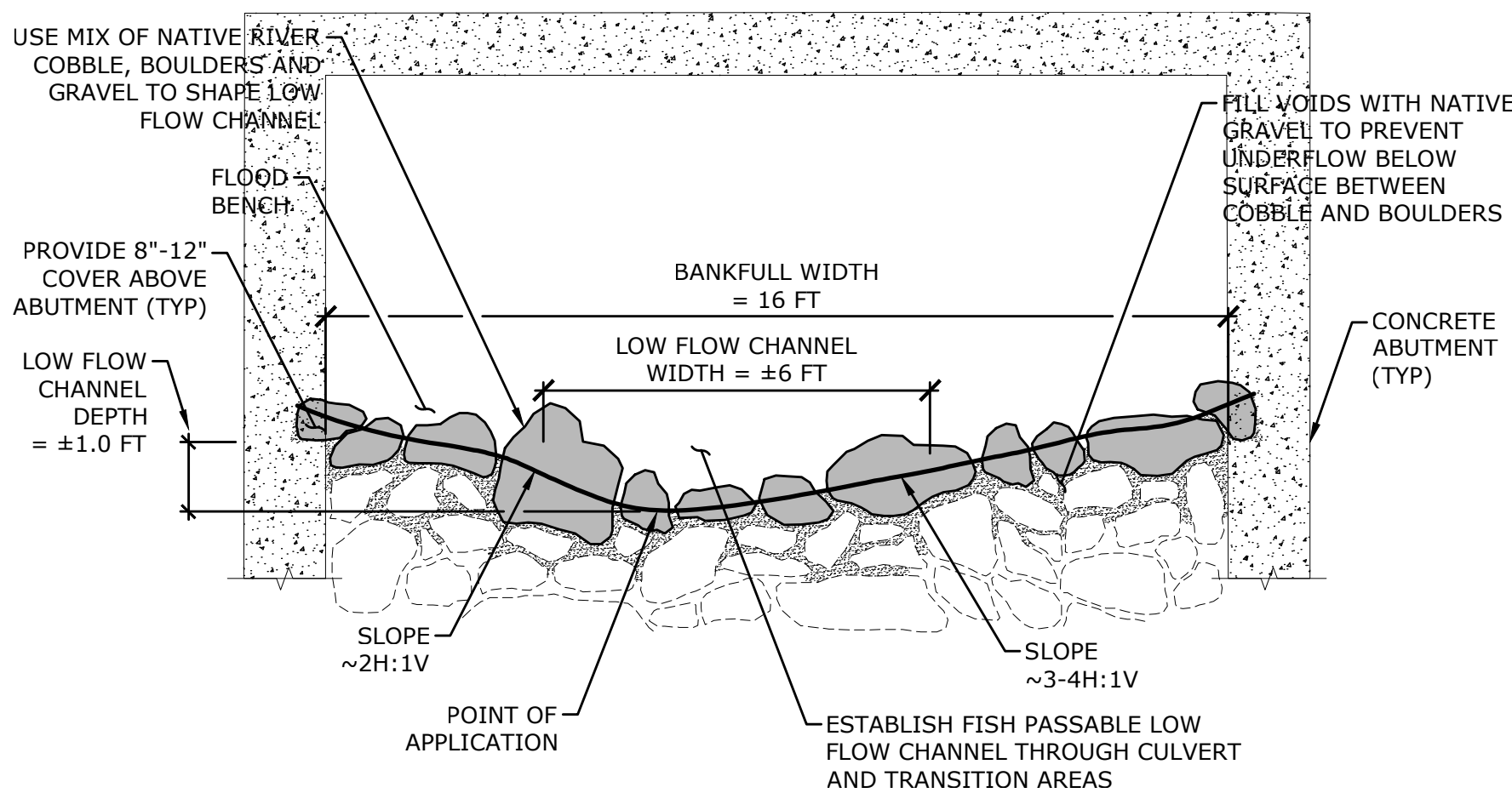
THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE ELEVATIONS, LINES, GRADES AND CROSS-SECTIONS AS SHOWN ON THE DRAWINGS. THE EMBANKMENTS SHALL BE MAINTAINED IN A MANNER SATISFACTORY TO THE ENGINEER AND SURFACES SHALL BE COMPACT AND ACCURATELY GRADED BEFORE TOPSOIL IS PLACED ON THEM. THE CONTRACTOR SHALL CHECK THE EMBANKMENT SLOPES WITH STRING LINES TO INSURE THAT THEY CONFORM TO THE SLOPES GIVEN ON THE PLANS AND ARE UNIFORM FOR THE ENTIRE LENGTH OF THE SLOPE.

7. CONTROL OF WATER

THE PROJECT SITE IS SUBJECT TO HIGH WATER TABLE. THE CONTRACTOR SHALL USE TEMPORARY PIPES OR PUMPS TO ASSURE PLACEMENT OF SELECT FILL IN DRY CONDITIONS.

NOTES:

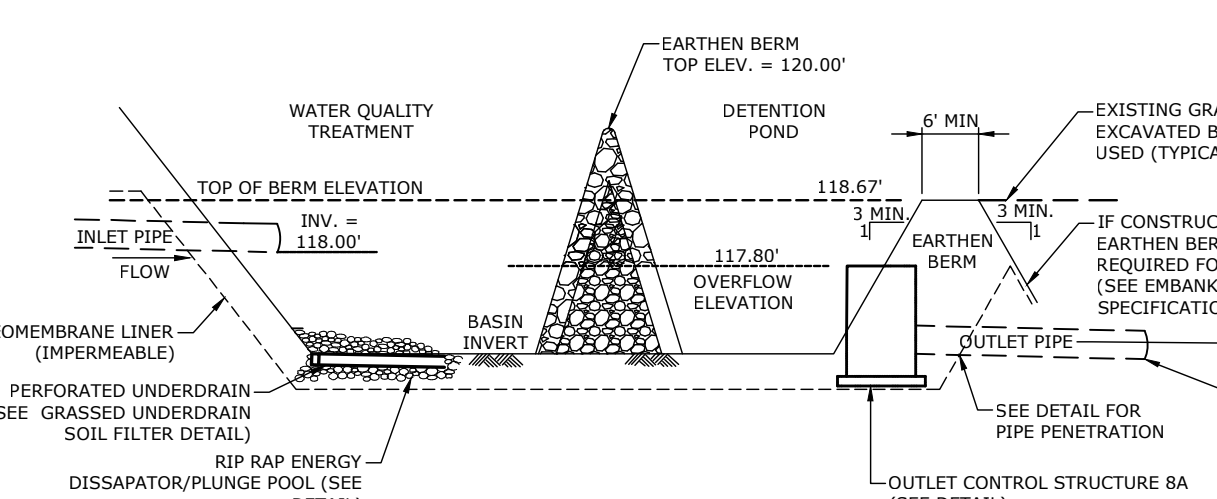
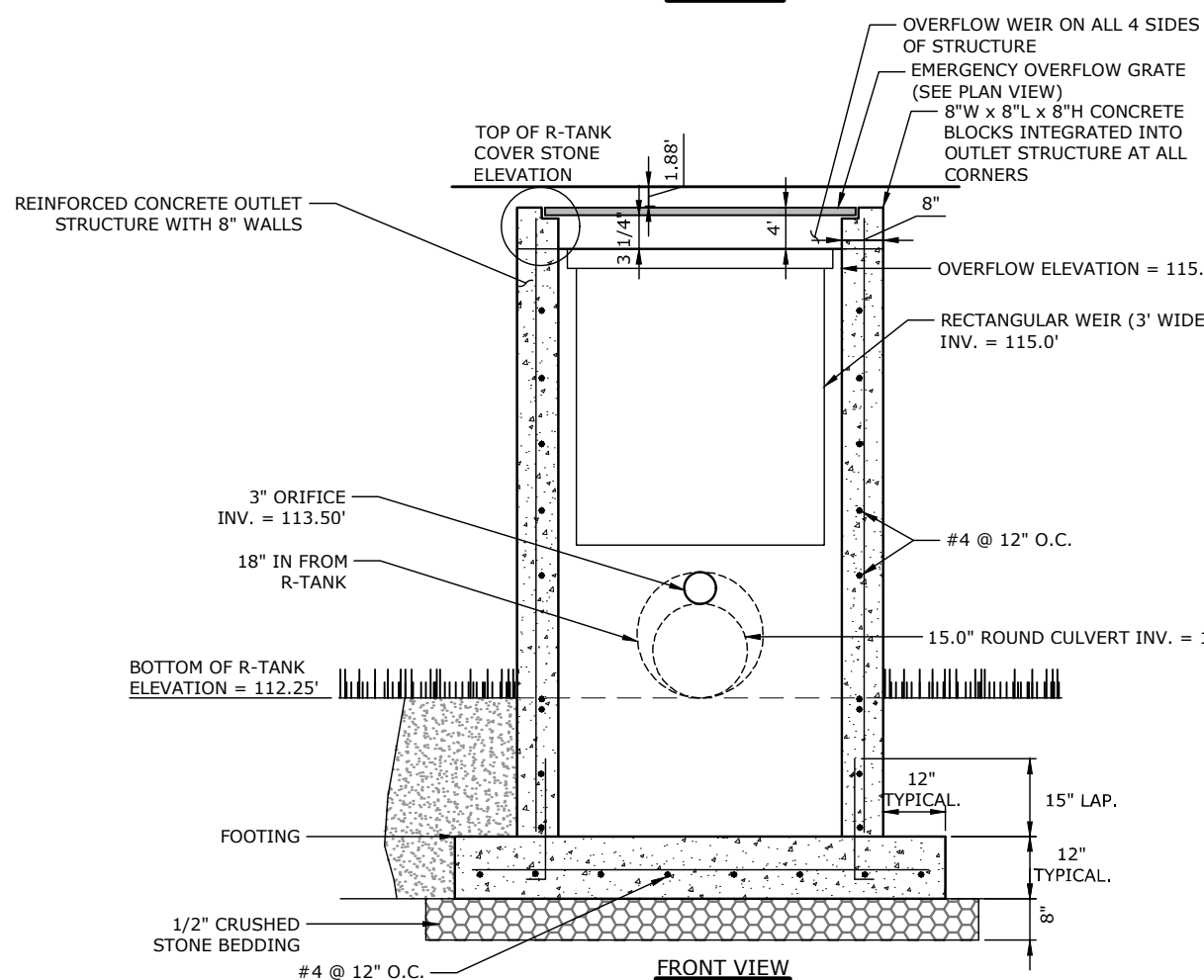
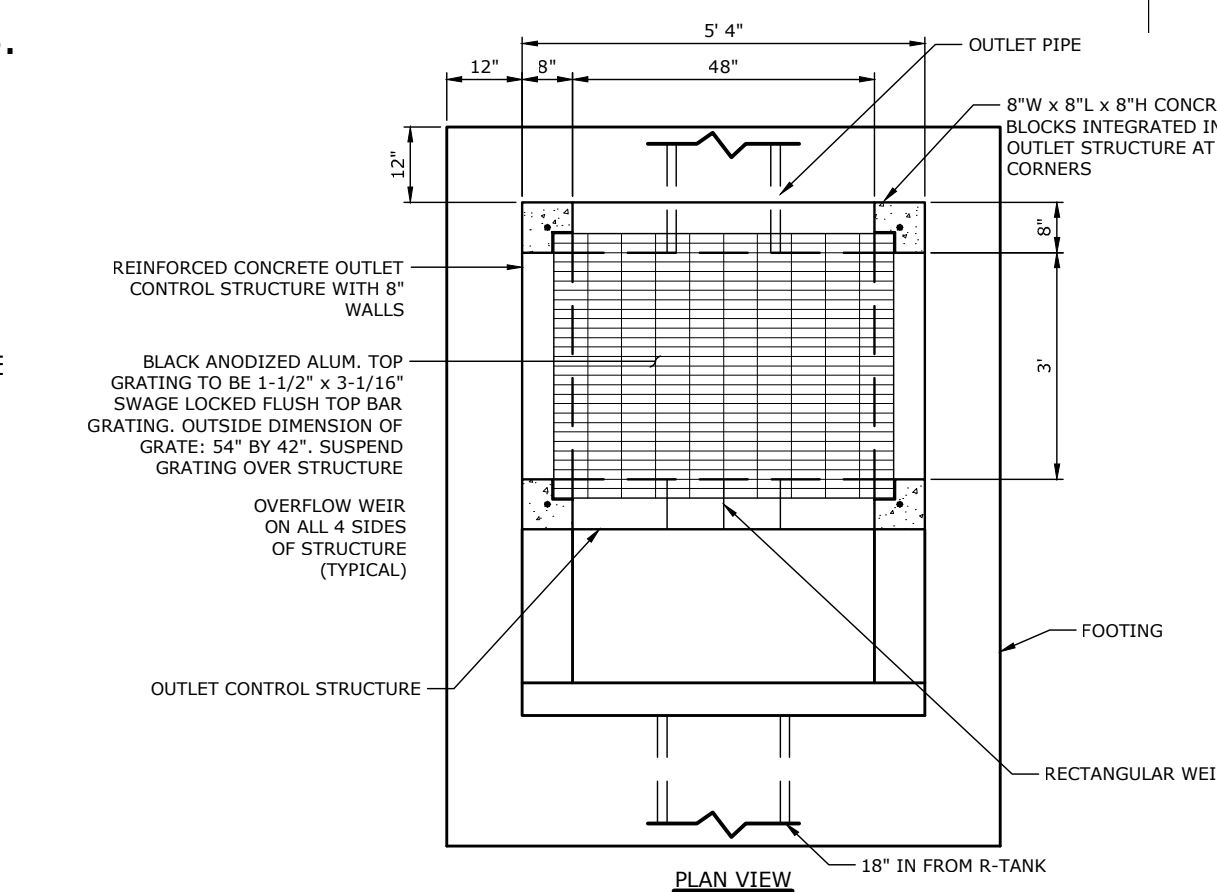
- STORMWATER DETENTION BASINS AND THE UNDER DRAINED SAND FILTER SYSTEM SHALL BE LINED WITH A MINIMUM 30 MIL PVC IMPERMEABLE GEOMEMBRANE LINER (OR EQUIVALENT).
- THE LINER SHALL, IF POSSIBLE, BE PRE-FABRICATED PANELS FIT TO FULL SIZE TO ELIMINATE, OR AT LEAST MINIMIZE, FIELD WELDING OF SEAMS.
- WHERE PANELS CANNOT BE PRE-FABRICATED TO FULL SIZE, OR WHERE TEARS AND/OR PIPE PENETRATIONS OCCUR, FIELD WELDING OF SEAMS OR PATCHES SHALL BE DONE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS VIA AN APPROVED CHEMICAL, ADHESIVE OR THERMAL WELD PROCESS.
- REFER TO DETAILS FOR ADDITIONAL INFORMATION ON PIPE PENETRATIONS.



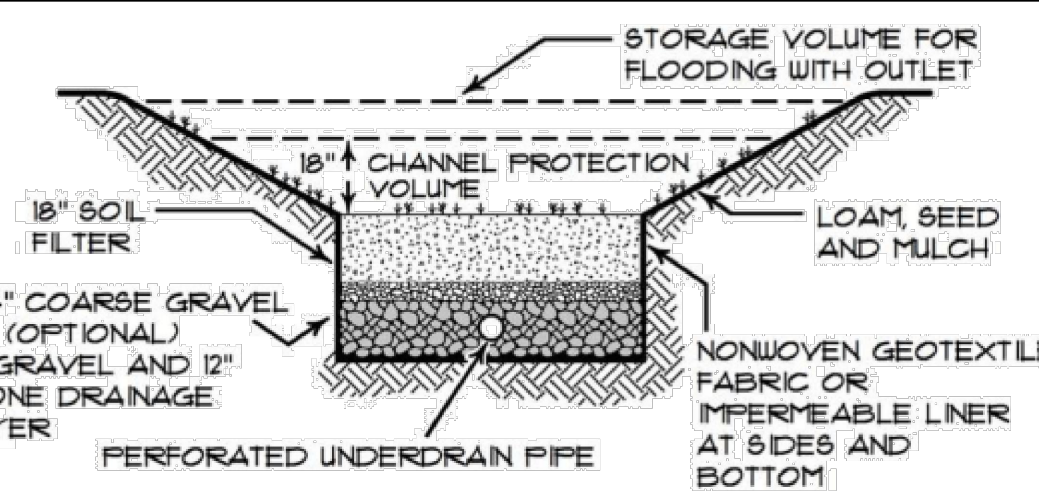
NOTES:

- THE OBJECTIVE OF THE LOW FLOW CHANNEL IS TO MIMIC A NEARBY REFERENCE REACH IN TERMS OF CHANNEL BED PARTICLE SIZING AND HABITAT FEATURES SO THAT THE RECONSTRUCTED CHANNEL IS STABLE, HAS A CONCENTRATED LOW FLOW PATH, AND IS FISH PASSABLE UPON PROJECT COMPLETION.
- THE LOW FLOW CHANNEL SHALL BE APPLIED THROUGH THE OPEN-BOTTOMED CULVERT AND WITHIN TRANSITION AREAS UP AND DOWNSTREAM TO TIE INTO THE EXISTING CHANNEL.
- SET LOW FLOW CHANNEL WIDTH TO APPROXIMATELY 1/3 THE BANKFULL CHANNEL WIDTH (~6 FEET) AND LOW FLOW CHANNEL DEPTH TO APPROXIMATELY 1/2 THE BANKFULL CHANNEL DEPTH (~1 FOOT).
- PARTICLE SIZING WITHIN THE LOW FLOW CHANNEL SHALL MIMIC NEARBY DISTRIBUTIONS APPROXIMATELY EQUAL TO 25% BOULDER, 65% COBBLE, AND 10% GRAVEL.
- SOME 0.5 TO 1.0 FEET TALL DROPS (I.E., STEPS) DO EXIST WITHIN THE NEARBY LOW FLOW CHANNEL. DROPS INCORPORATED INTO THE RECONSTRUCTED CHANNEL MUST BE FISH PASSABLE AND ARE SUBJECT TO APPROVAL BY THE PROJECT ENGINEER AND FISH BIOLOGIST.
- BASED ON NATURAL SPACING IN THE EXISTING CHANNEL (~30 TO 40 FEET), ONE (1) DROP MAY BE USED WITHIN THE PROJECT AREA. THE MAXIMUM ALLOWABLE DROP SHALL BE 0.5 FEET.
- UNLESS FIELD CONDITIONS INDICATE OTHERWISE (I.E., SHALLOW BEDROCK OR LARGE BOULDERS), THE USE OF A DROP OR STEP THROUGH THE CULVERT IS NOT ANTICIPATED.
- DROPS ARE TO BE MADE OF BOULDERS EMBEDDED BY 50% OR MORE. THE RECONSTRUCTED CHANNEL SHALL NOT INCLUDE ANY DROPS WITHIN ONE (1) BANKFULL WIDTH OF THE INLET.
- ALIGNMENT OF THE LOW FLOW CHANNEL THROUGH THE PROJECT REACH TO BE LOCATED IN THE FIELD DURING CONSTRUCTION BY THE PROJECT ENGINEER AND FISH BIOLOGIST.
- LOW FLOW CHANNEL TO BE CONSTRUCTED AND APPROVED BY PROJECT ENGINEER AND FISH BIOLOGIST FOLLOWING ABUTMENT INSTALLATION AND PRIOR TO CULVERT INSTALLATION.
- PROPOSED CHANNEL TO BE CONSTRUCTED USING NATIVE CHANNEL BED MATERIAL EXCAVATED AND STOCKPILED DURING FOOTING & ABUTMENT CONSTRUCTION.
- PLACE NATIVE RIVER BOULDERS WITH GUIDANCE FROM PROJECT ENGINEER AND FISH BIOLOGIST. BOULDERS MAY BE PLACED ALONG BANK LINES OR EMBEDDED INTO THE CHANNEL TO PROVIDE HABITAT AND RECONSTRUCT STABILITY WHILE NOT REDUCING CAPACITY.

CHANNEL RECONSTRUCTION - SECTION VIEW
NOT TO SCALE

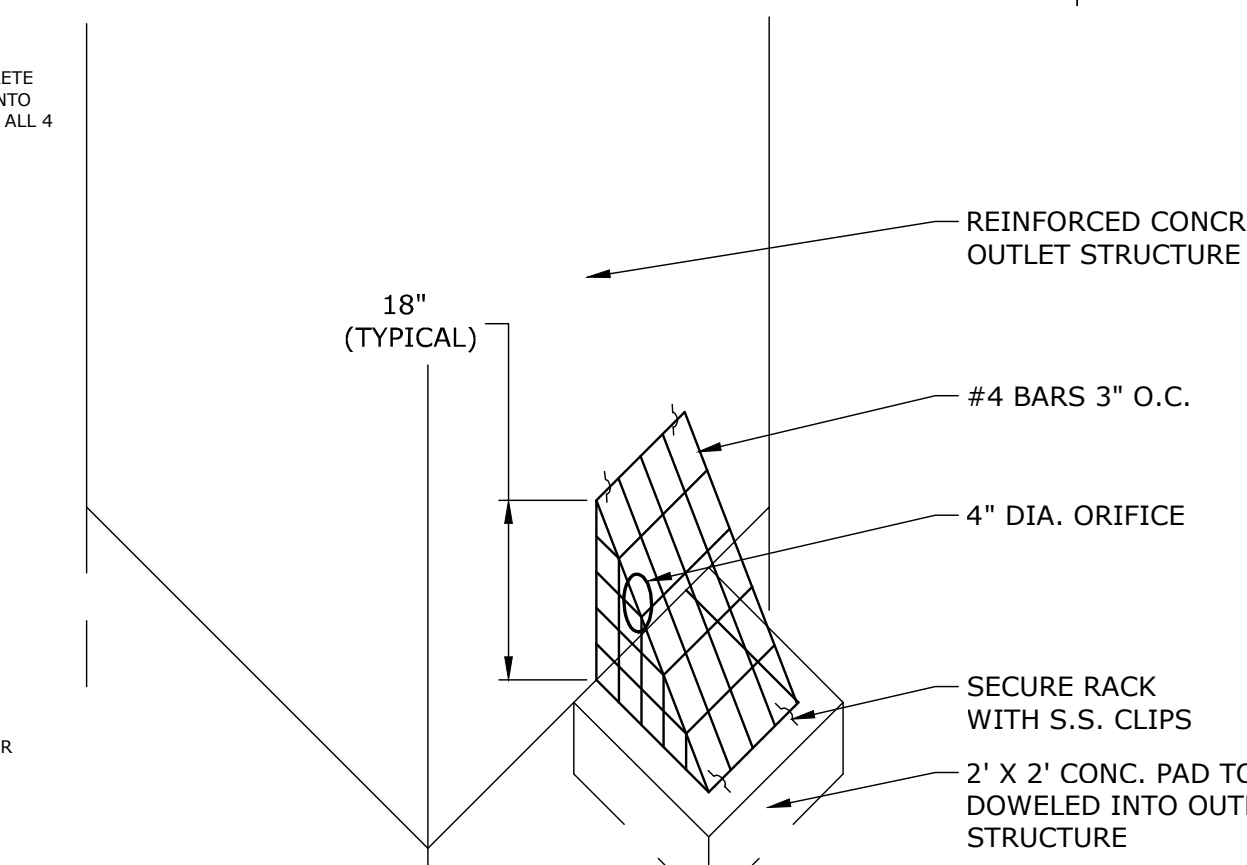


DETENTION BASIN 6A - OCS 8A
NOT TO SCALE

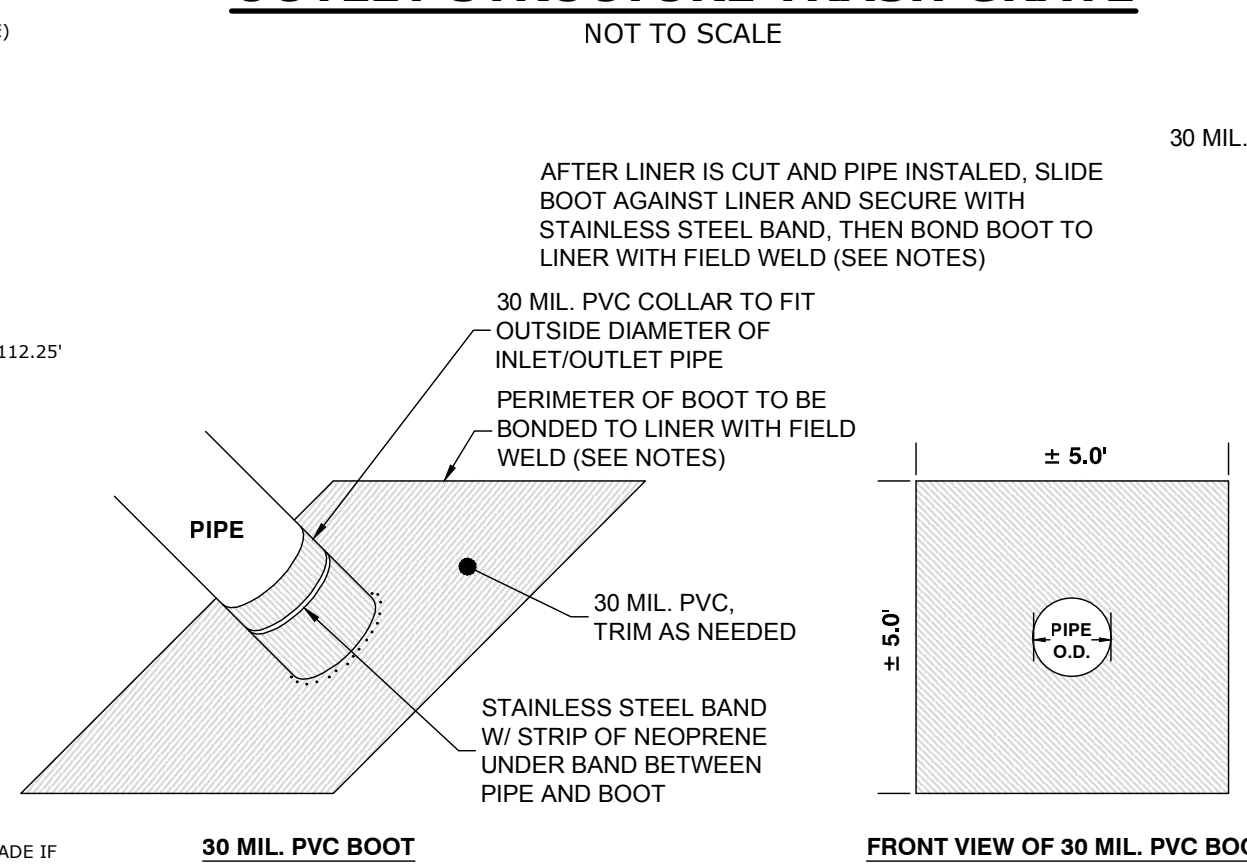


GRASSED UNDERDRAIN SOIL FILTER
NOT TO SCALE

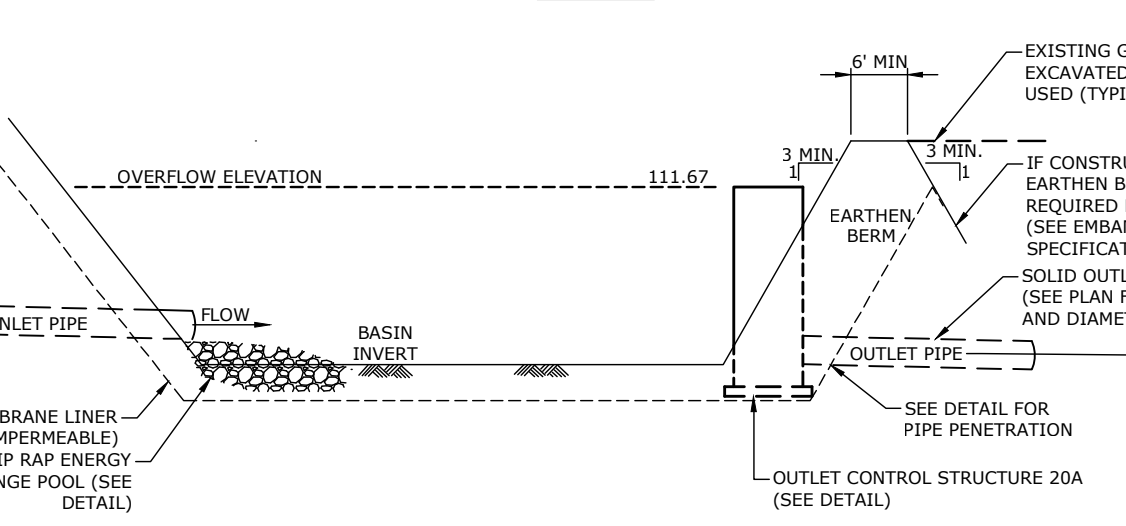
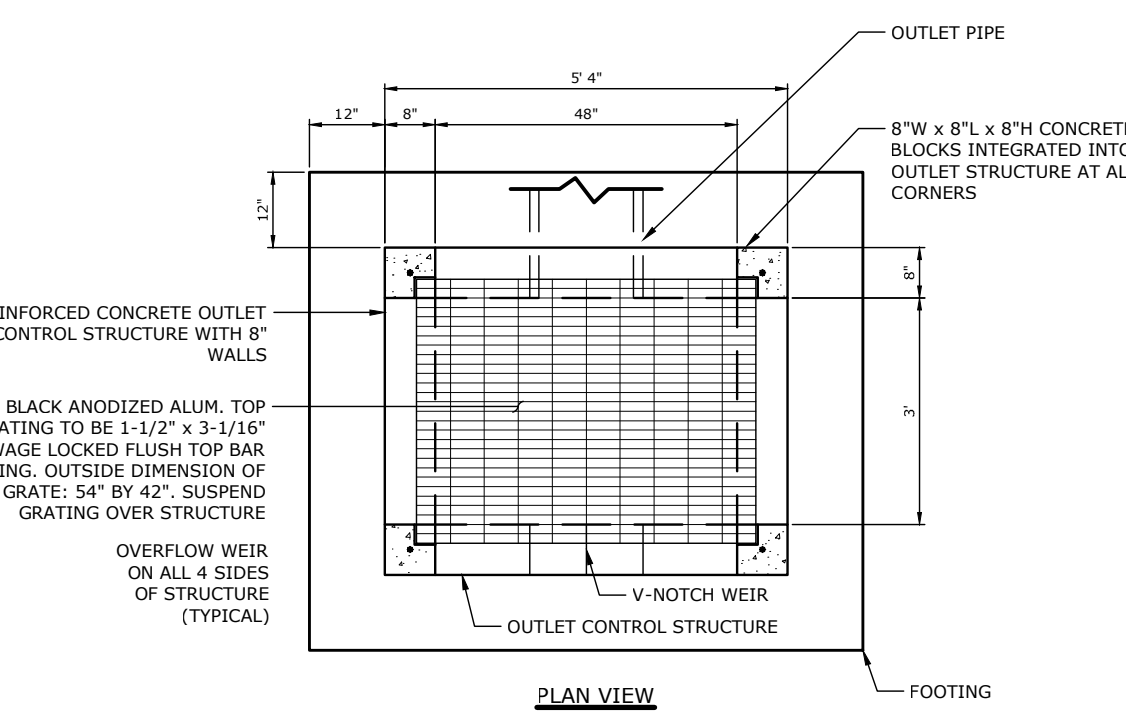
UNDERDRAIN SCHEDULE		
BASIN NUMBER	INV. (FT)	SIZE
6A	112.33	4"
8C	109.33	4"
8A	N/A	N/A
R-TANK SAND FILTER	112.25	1" X 12" AWD STRIPDRAIN



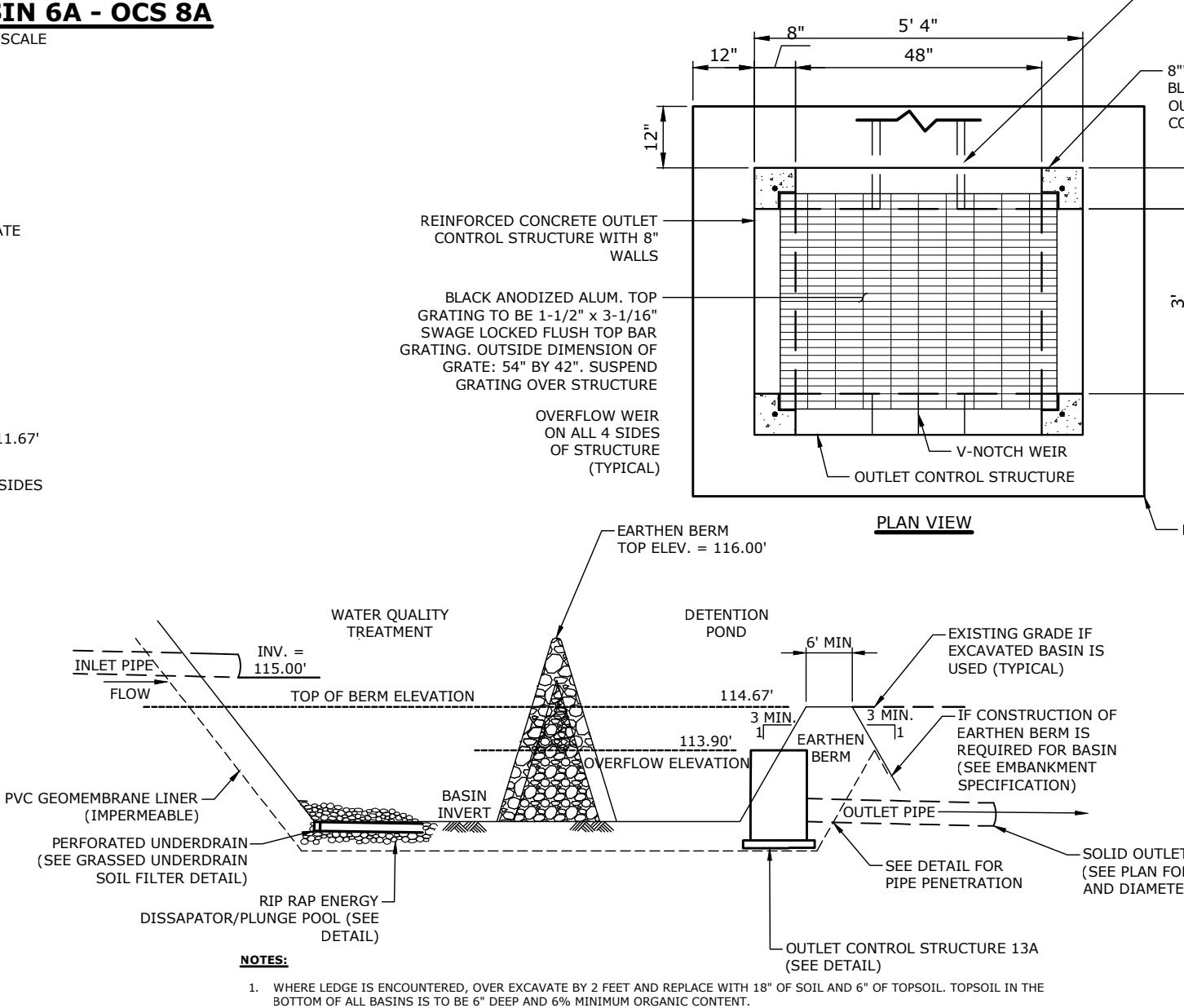
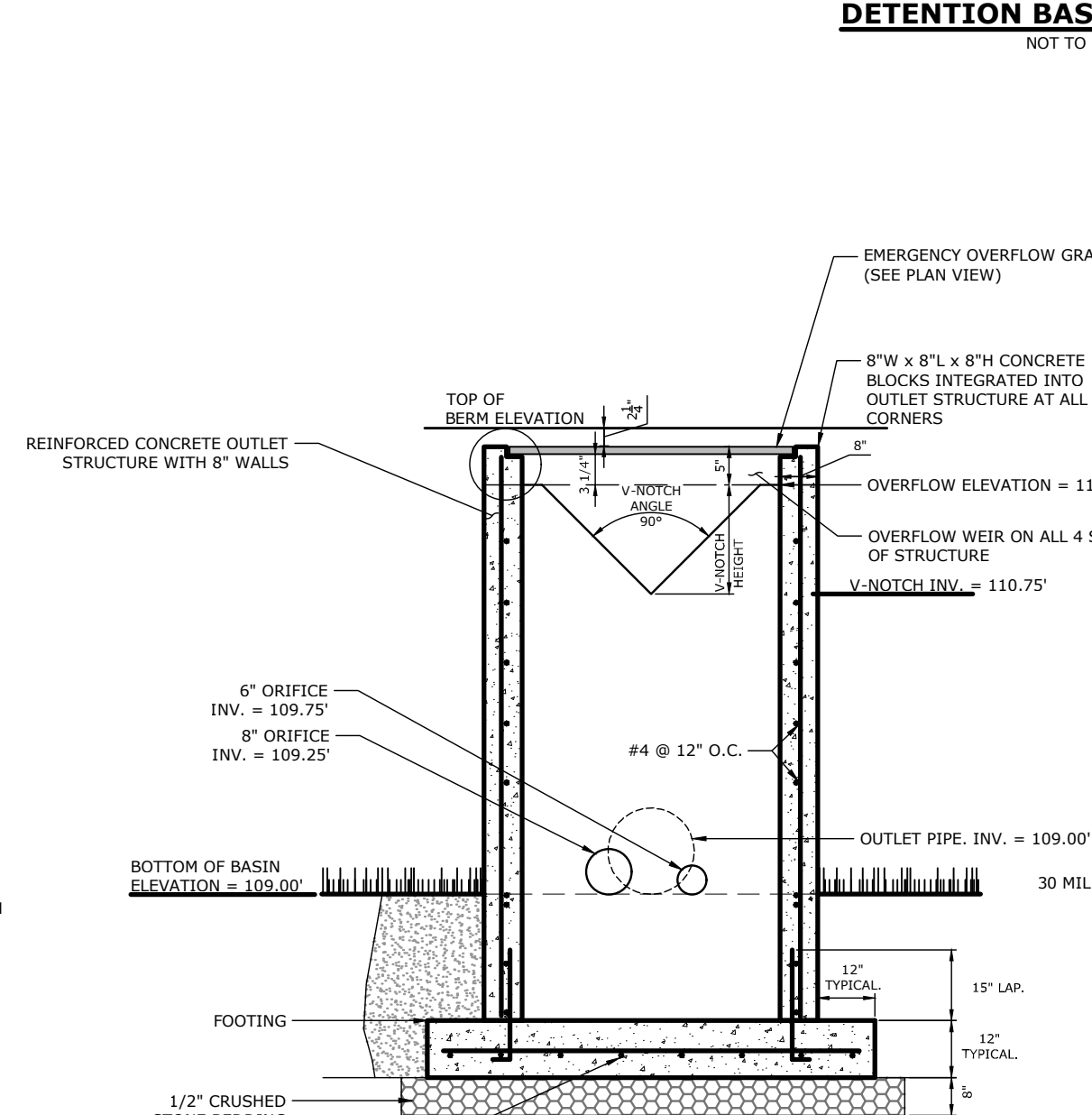
OUTLET STRUCTURE TRASH GRATE
NOT TO SCALE



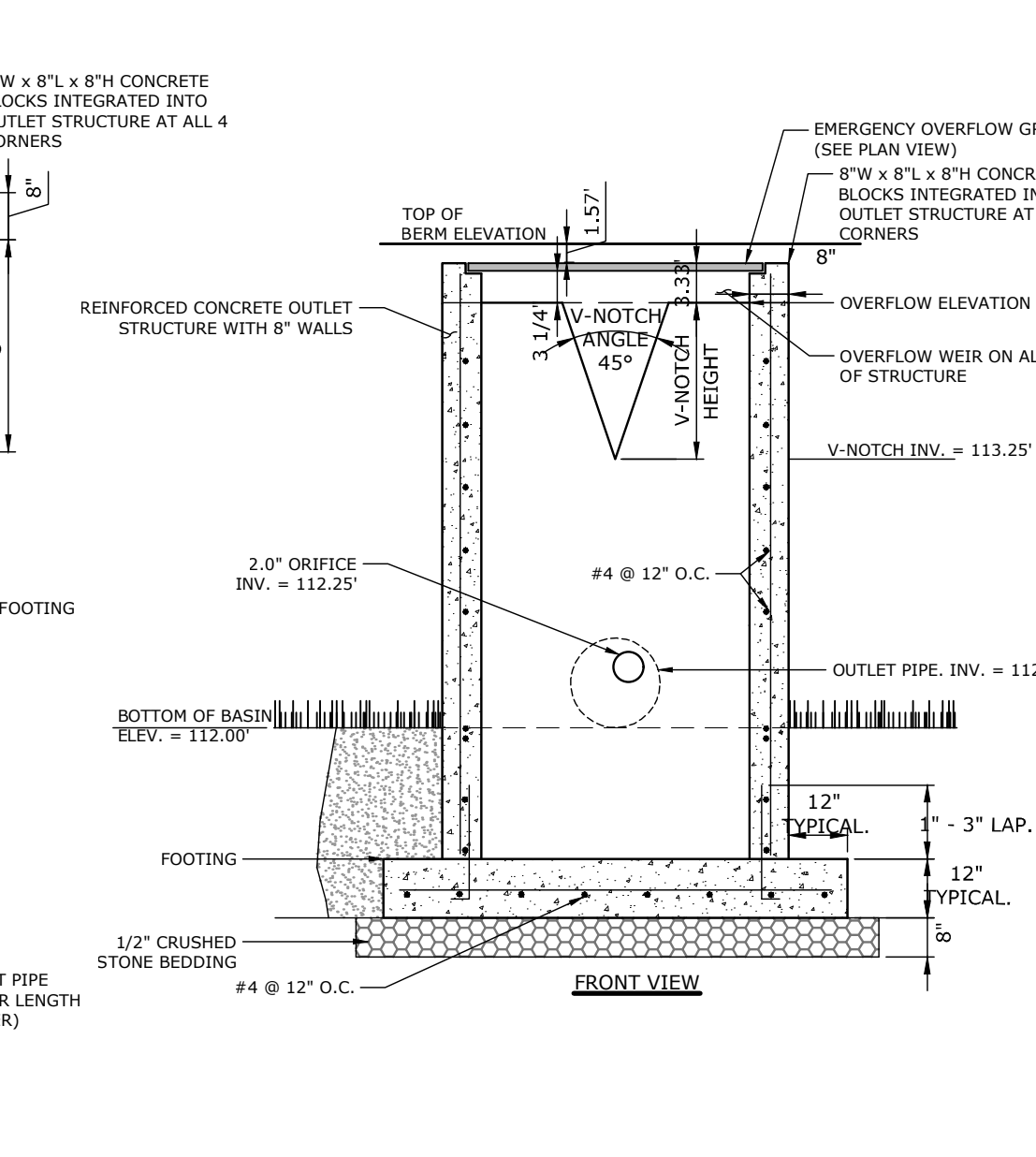
PENETRATION OF LINER
NOT TO SCALE



DETENTION BASIN 8A - OCS 20A
NOT TO SCALE



DETENTION BASIN 8C - OCS 13A
NOT TO SCALE



SLR
2 MARKET STREET, 15TH FLOOR
NEW YORK, NY 10036
202.541.9544
SLRCONSULTING.COM

DATE	BY	DESCRIPTION
12/19/2023	SWM	PLANNING BOARD REVISIONS
01/19/2023	DWS	ADDED DETAILS

SITE DETAILS

GORHAM INDUSTRIAL PARK WEST CAMPUS
CYR DRIVE
GORHAM, MAINE

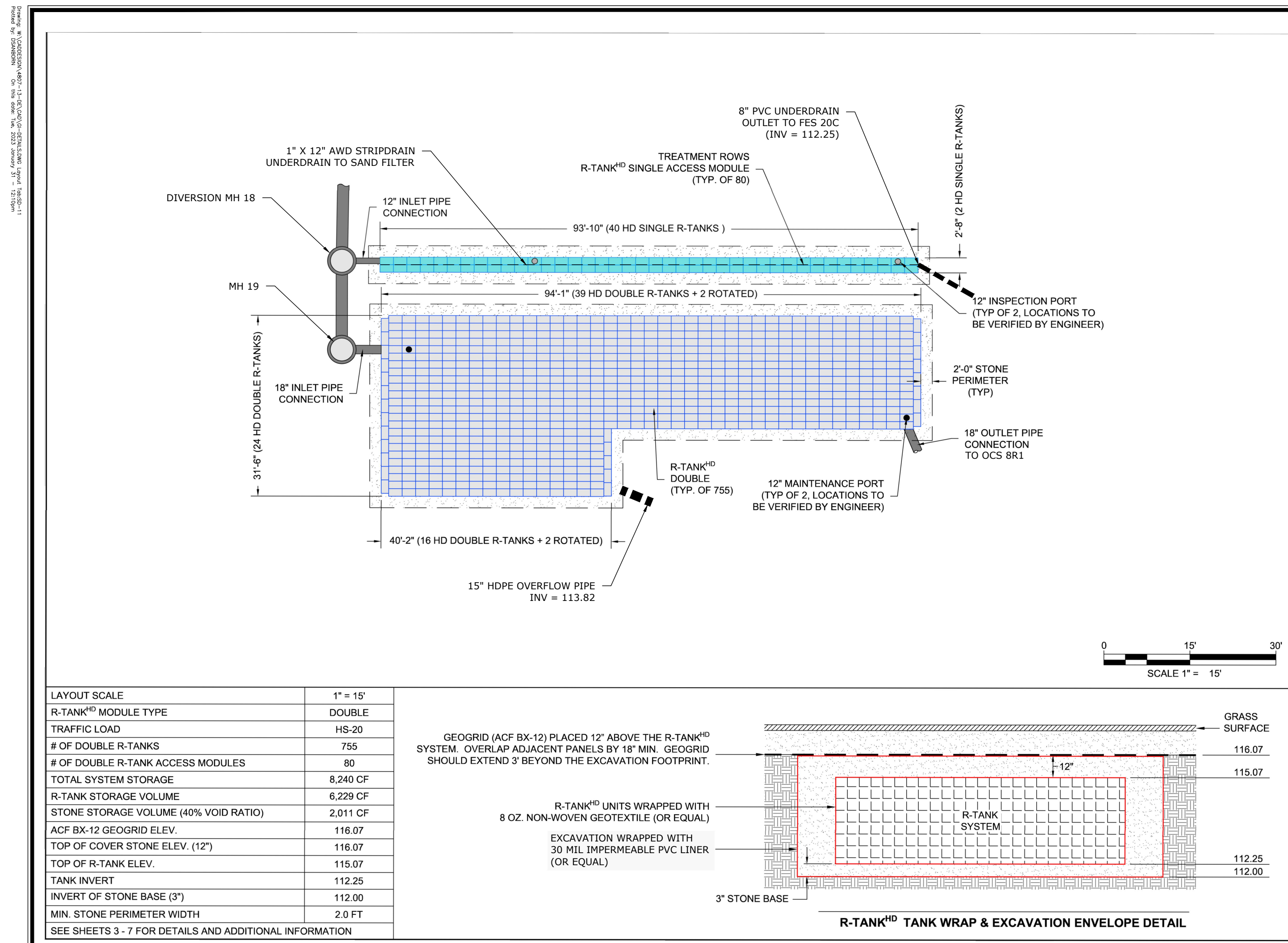
SWM	SWM	MFZ
DESIGNED	DRAWN	CHECKED

NOT TO SCALE

NOVEMBER 4, 2022

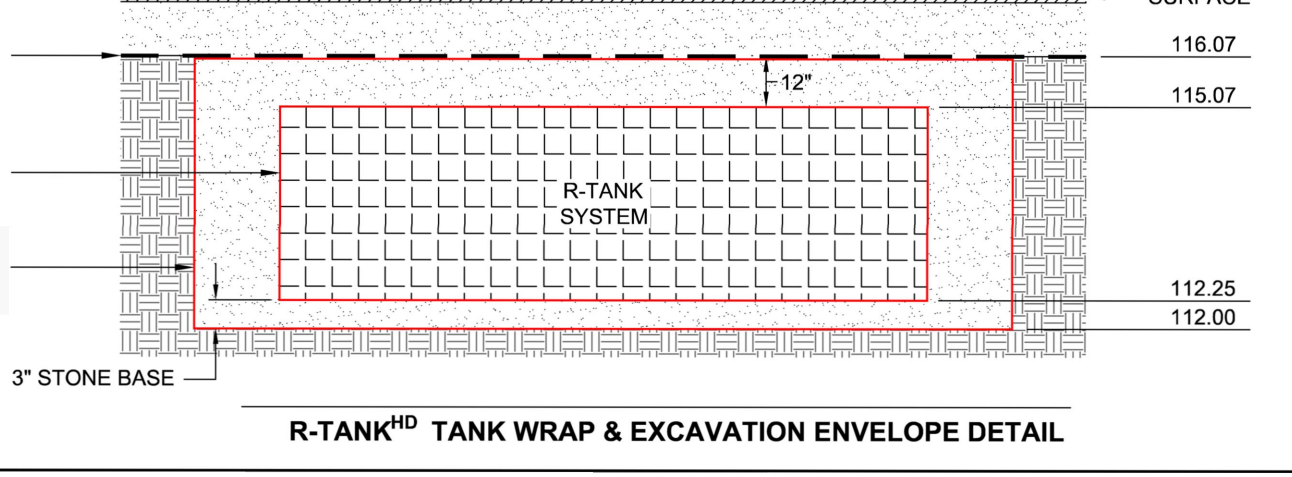
4807-13

SD-10

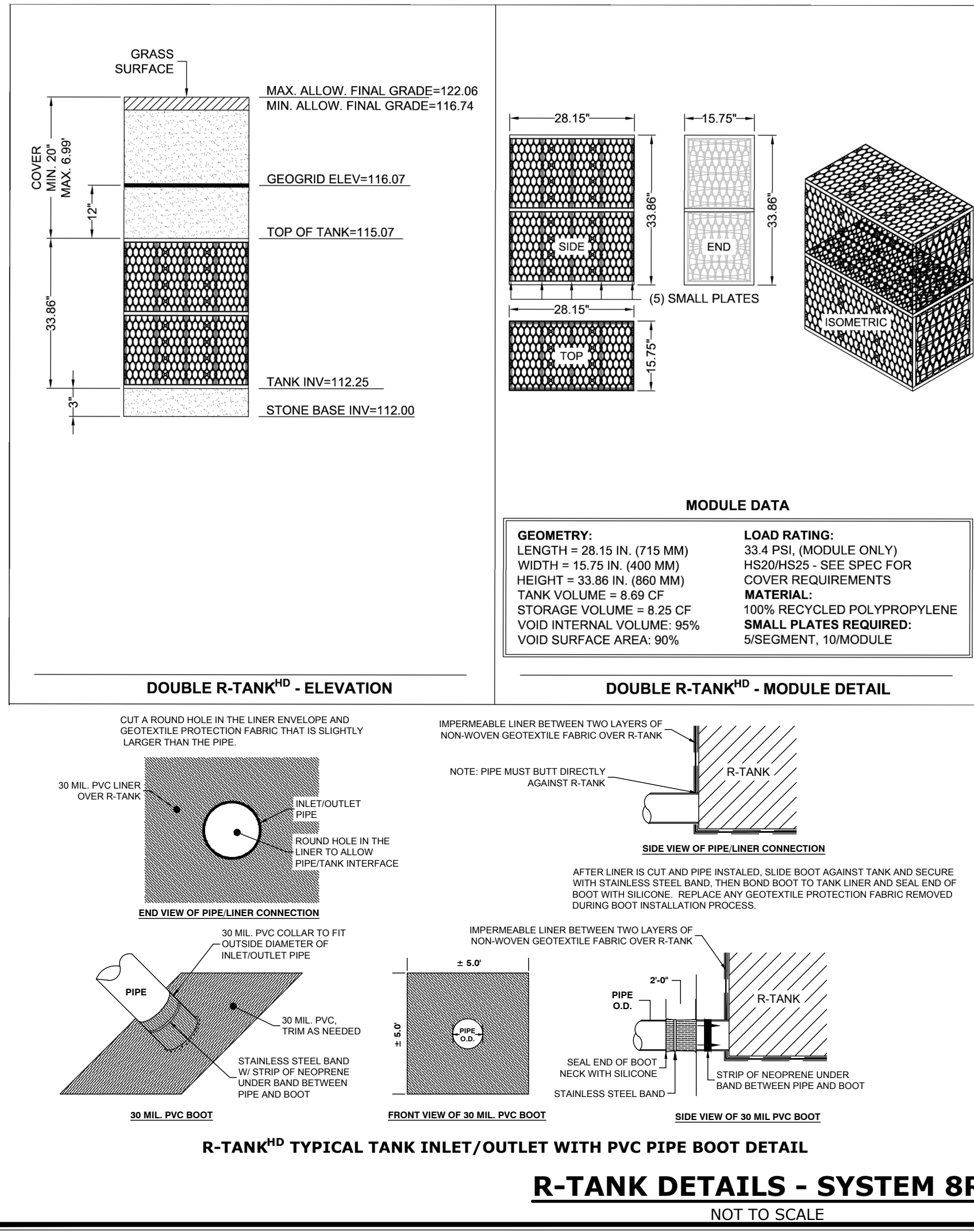


LAYOUT SCALE	1" = 15'
R-TANK ^{HD} MODULE TYPE	DOUBLE
TRAFFIC LOAD	HS-20
# OF DOUBLE R-TANKS	755
# OF DOUBLE R-TANK ACCESS MODULES	80
TOTAL SYSTEM STORAGE	8,240 CF
R-TANK STORAGE VOLUME	6,229 CF
STONE STORAGE VOLUME (40% VOID RATIO)	2,011 CF
ACF BX-12 GEOGRID ELEV.	116.07
TOP OF COVER STONE ELEV. (12")	116.07
TOP OF R-TANK ELEV.	115.07
TANK INVERT	112.25
INVERT OF STONE BASE (3")	112.00
MIN. STONE PERIMETER WIDTH	2.0 FT

GEOGRID (ACF BX-12) PLACED 12" ABOVE THE R-TANK^{HD} SYSTEM. OVERLAP ADJACENT PANELS BY 18" MIN. GEOGRID SHOULD EXTEND 3' BEYOND THE EXCAVATION FOOTPRINT.

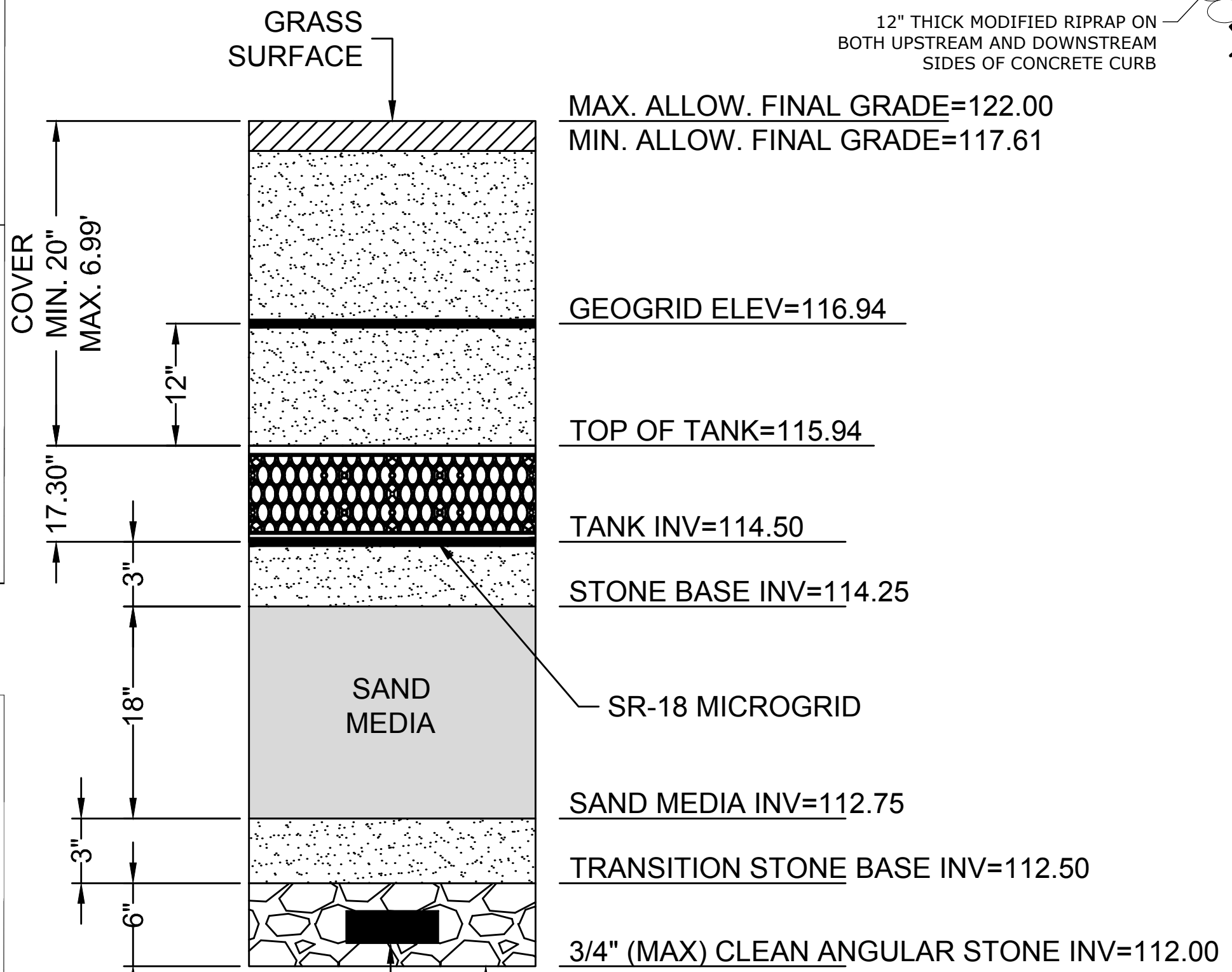


R-TANK LAYOUT - SYSTEM 8R1
NOT TO SCALE

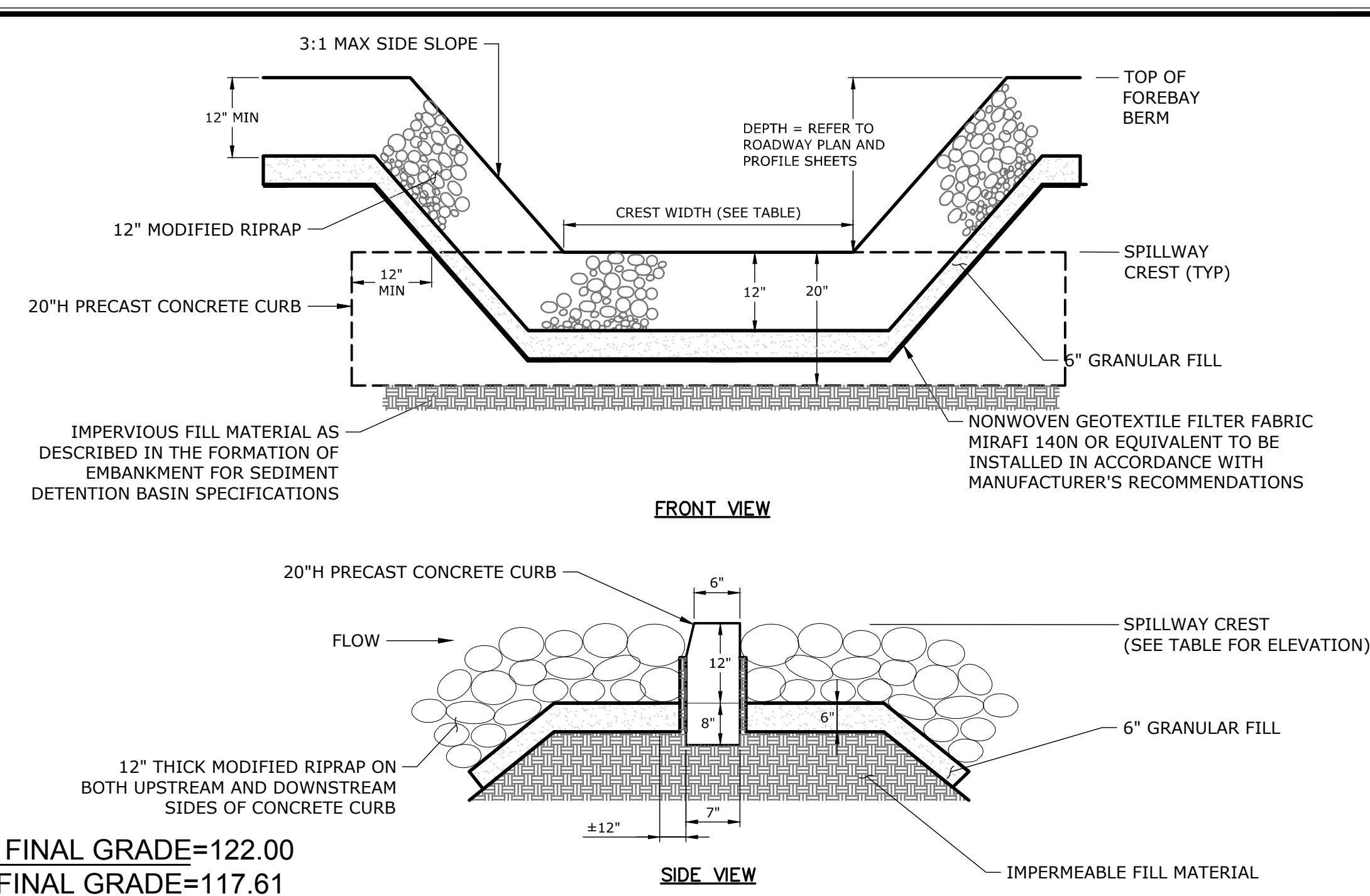


R-TANK ^{HD} QUANTITIES	
R-TANK ^{HD} MODULE TYPE	DOUBLE
# OF DOUBLE R-TANKS	755
# OF DOUBLE R-TANK ACCESS MODULES	80
TOTAL SYSTEM STORAGE	8,240 CF
R-TANK STORAGE VOLUME	6,229 CF
STONE STORAGE VOLUME (40% VOID RATIO)	2,011 CF
STONE BED FOOTPRINT	2,846 SF
STONE QUANTITY	186 CY
8 OZ. NON-WOVEN GEOTEXTILE TANK WRAP	6,162 SF (685 SY)
8 OZ. NON-WOVEN GEOTEXTILE LINER PROTECTION	12,324 SF (1,369 SY)
30 MIL. PVC LINER EXCAVATION WRAP	4,523 SF (503 SY)
8 OZ. NON-WOVEN GEOTEXTILE LINER PROTECTION	9,046 SF (1,005 SY)
8 OZ. NON-WOVEN GEOTEXTILE TREAT. ROW WRAP	1,000 SF (111 SY)
S300 WOVEN GEOTEXTILE TREAT. ROW BASE FABRIC	1,000 SF (111 SY)
ACF BX-12 GEOGRID	4,235 SF (471 SY)
12" MAINTENANCE PORTS	2
12" INSPECTION PORTS	2
X" PIPE BOOT	2

NOTE: STONE QUANTITY INCLUDES 12" OF COVER AND 3" OF BASE.
NOTE: GEOTEXTILE/LINER QUANTITIES INCLUDE A 15% WASTE FACTOR.

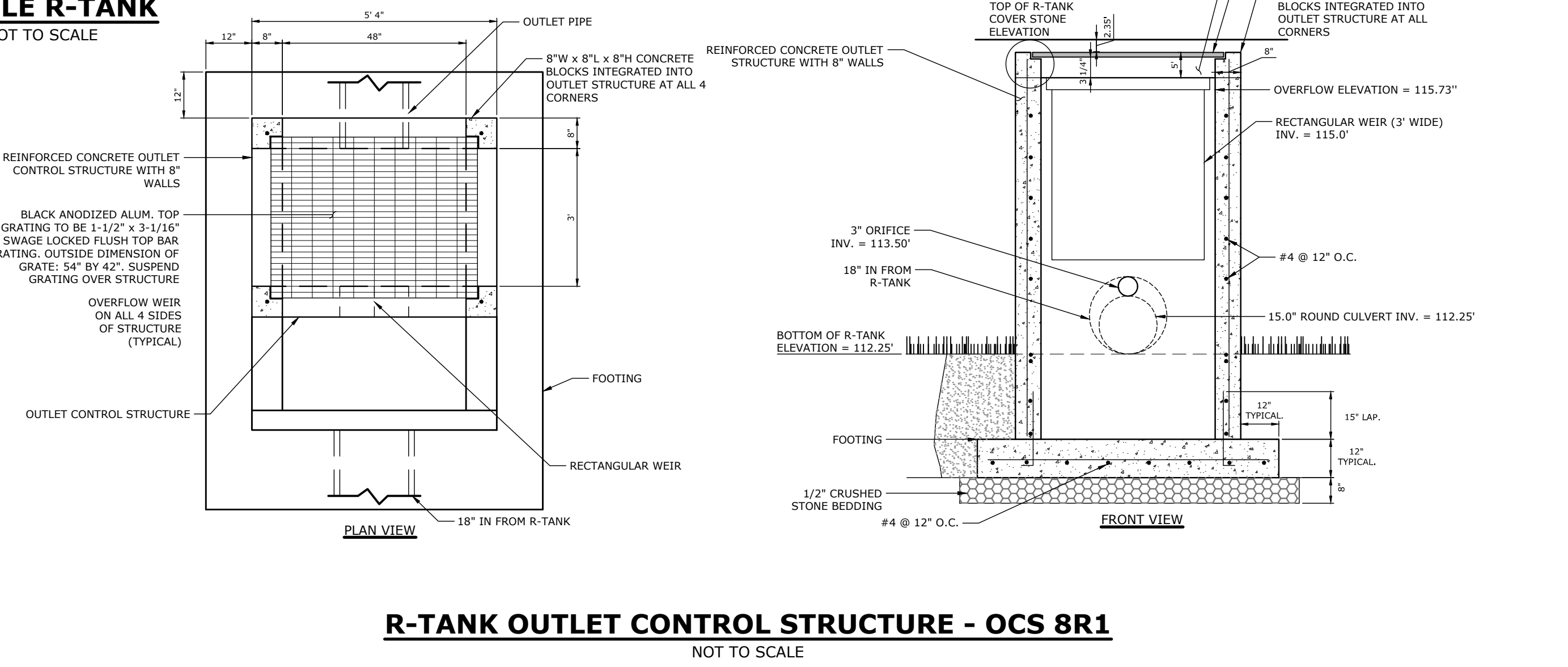


SAND FILTER SYSTEM ELEVATION SINGLE R-TANK
NOT TO SCALE



EMERGENCY RIPRAP SPILLWAY DATA SCHEDULE

BASIN NUMBER	CREST WIDTH (FT)	CREST ELEVATION (FT)
6A	15	117.80
8C	7	113.90
8A	10	111.70



R-TANK OUTLET CONTROL STRUCTURE - OCS 8R1
NOT TO SCALE



DESCRIPTION	DATE	BY
PLANNING BOARD REVISIONS	12/19/2023	SWM
ADDED EMERGENCY RIPRAP	01/19/2023	DPS

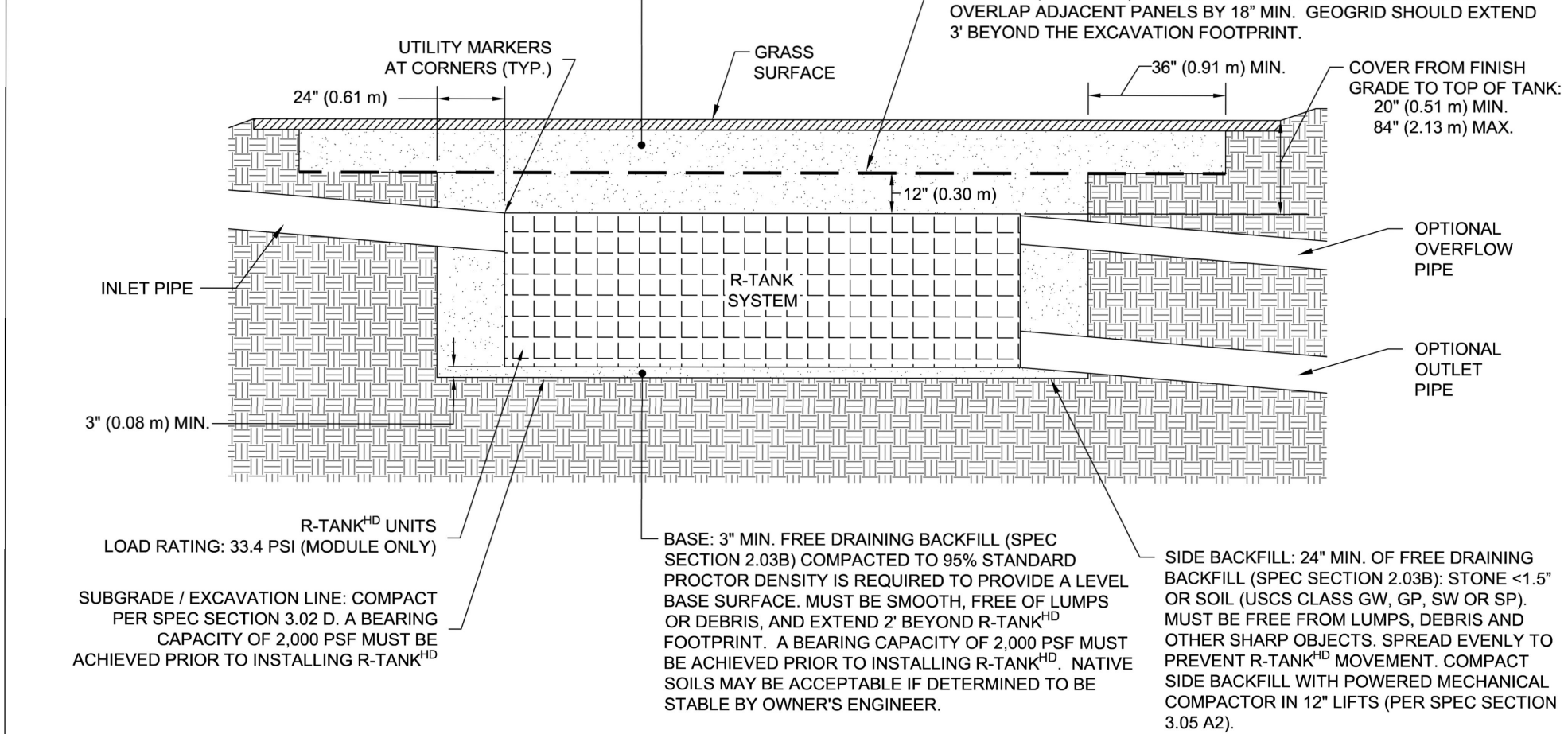
SITE DETAILS
GORHAM INDUSTRIAL PARK
WEST CAMPUS
C/YR DRIVE
GORHAM, MAINE

DESIGNED	DRAWN	CHECKED
SWM	SWM	MFZ

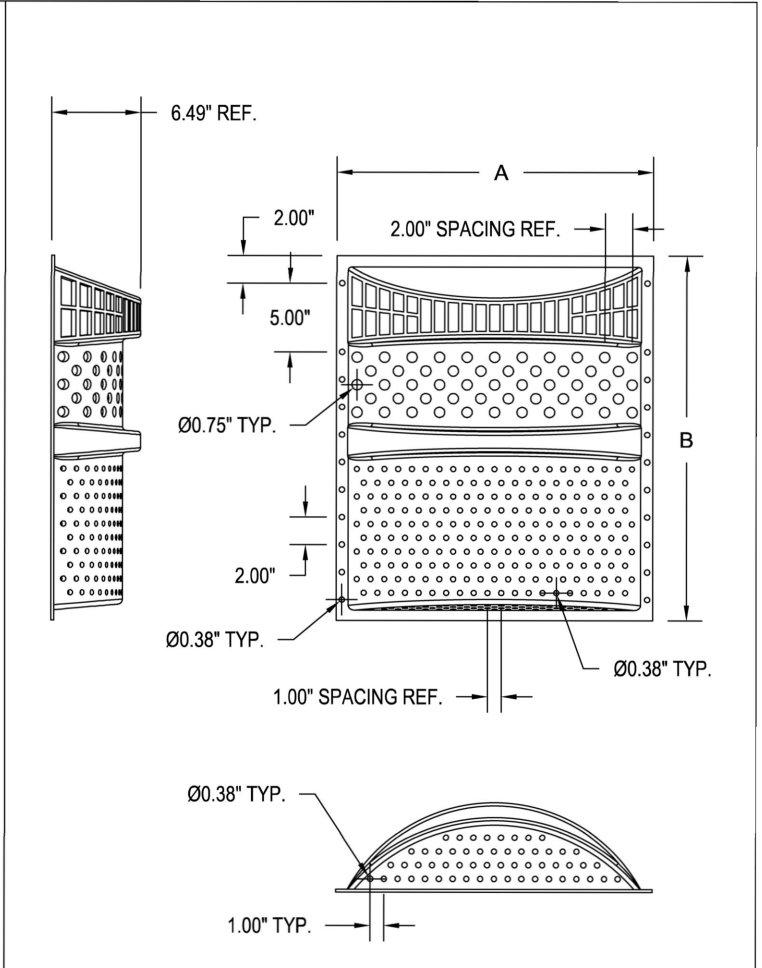
NOT TO SCALE
DATE: NOVEMBER 4, 2022
PROJECT NO.: 4807-13
SHEET NO.: SD-11

TOTAL COVER: 20" MINIMUM AND 34" MAXIMUM. FIRST 12" MUST BE FREE DRAINING BACKFILL (SPEC SECTION 2.03B) STONE <1.5" OR SOIL (USCS CLASS GW, GP, SW OR SP). ADDITIONAL FILL MAY BE STRUCTURAL FILL (SPEC SECTION 2.03C) STONE OR SOIL (USCS CLASS SM, SP, SW, GM, GP OR GW) WITH MAX CLAY CONTENT <10%, MAX 25% PASSING NO. 200 SIEVE, AND MAX PLASTICITY INDEX OF 4. A MIN. 12" COVER MUST BE MAINTAINED BETWEEN BACKFILL EQUIPMENT AND THE TOP OF THE R-TANK™ SYSTEM AT ALL TIMES. TOTAL HEIGHT OF TOP BACKFILL SHOULD NOT EXCEED 7'. CONTACT FERGUSON WATERWORKS IF MORE THAN 7' OR LESS THAN 20" OF TOP BACKFILL IS REQUIRED (FROM TOP OF TANK TO TOP OF PAVEMENT).

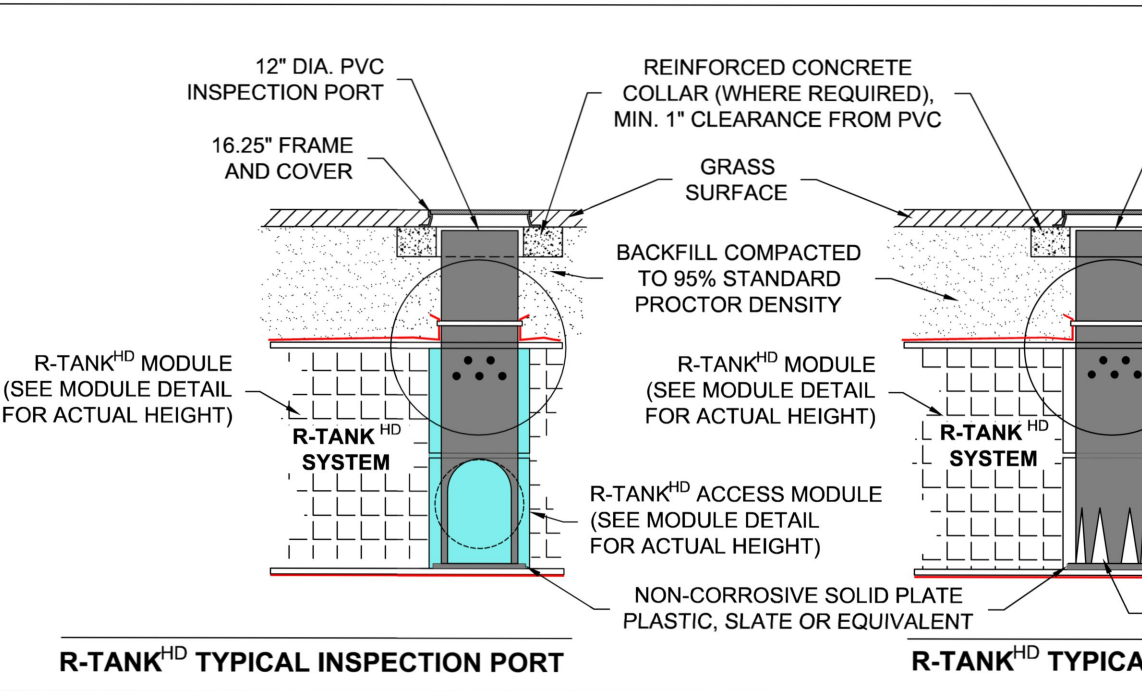
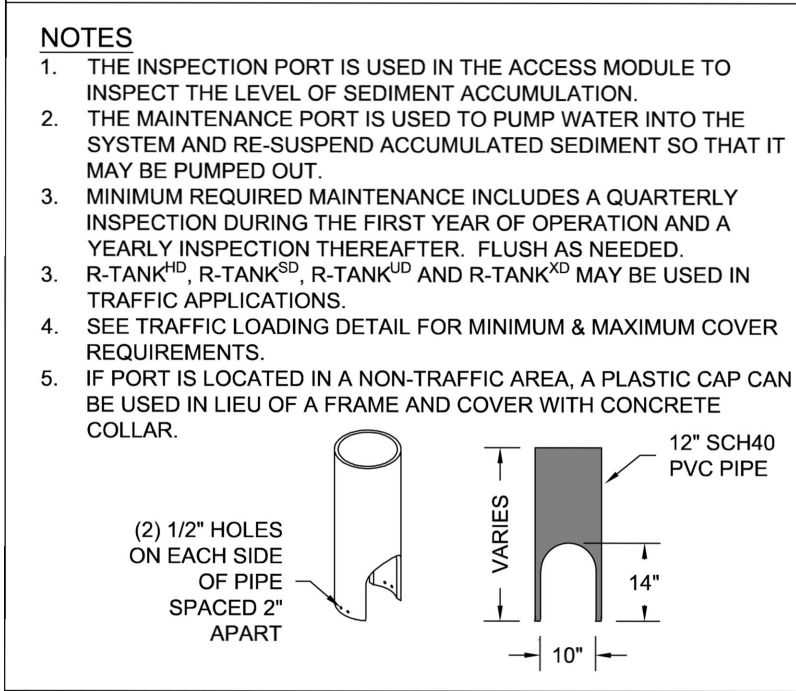
NOTES:
 1. FOR COMPLETE MODULE DATA, SEE APPROPRIATE R-TANK™ MODULE SHEET.
 2. INSTALLATIONS PER THIS DETAIL, MEET GUIDELINES OF HL-93 LOADING PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CUSTOMARY U.S. UNITS, 7TH EDITION, 2014 WITH 2015 AND 2016 INTERIM REVISIONS.
 3. PRE-TREATMENT STRUCTURES NOT SHOWN.
 4. FOR INFILTRATION APPLICATIONS, GEOTEXTILE ENVELOPING R-TANK™ SYSTEM OVERLAP ADJACENT PANELS BY 18" MIN. GEGRID SHOULD EXTEND 3' BEYOND THE EXCAVATION FOOTPRINT.



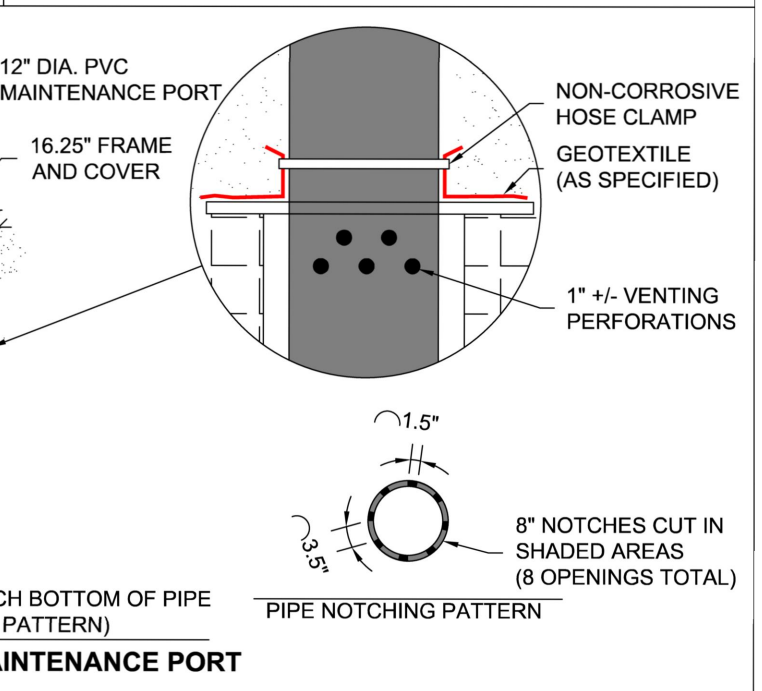
R-TANK™ & HS-20 LOADS - SECTION VIEW



TRASHGUARD PLUS PRETREATMENT DETAIL



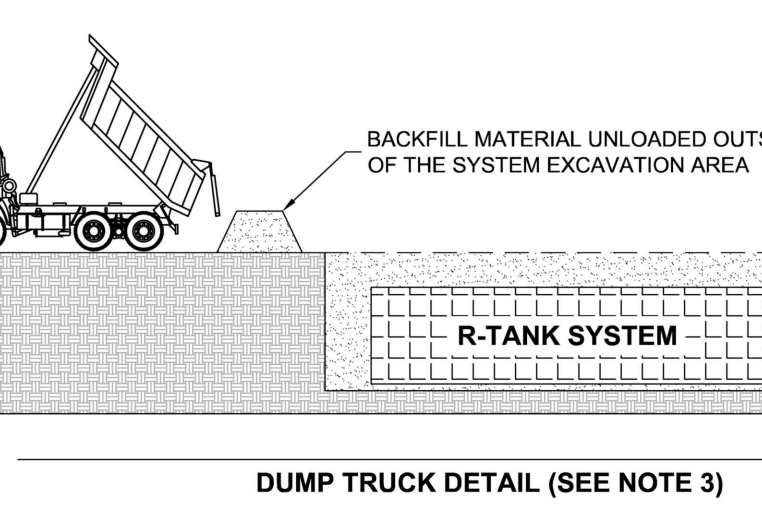
R-TANK™ TYPICAL MAINTENANCE PORT



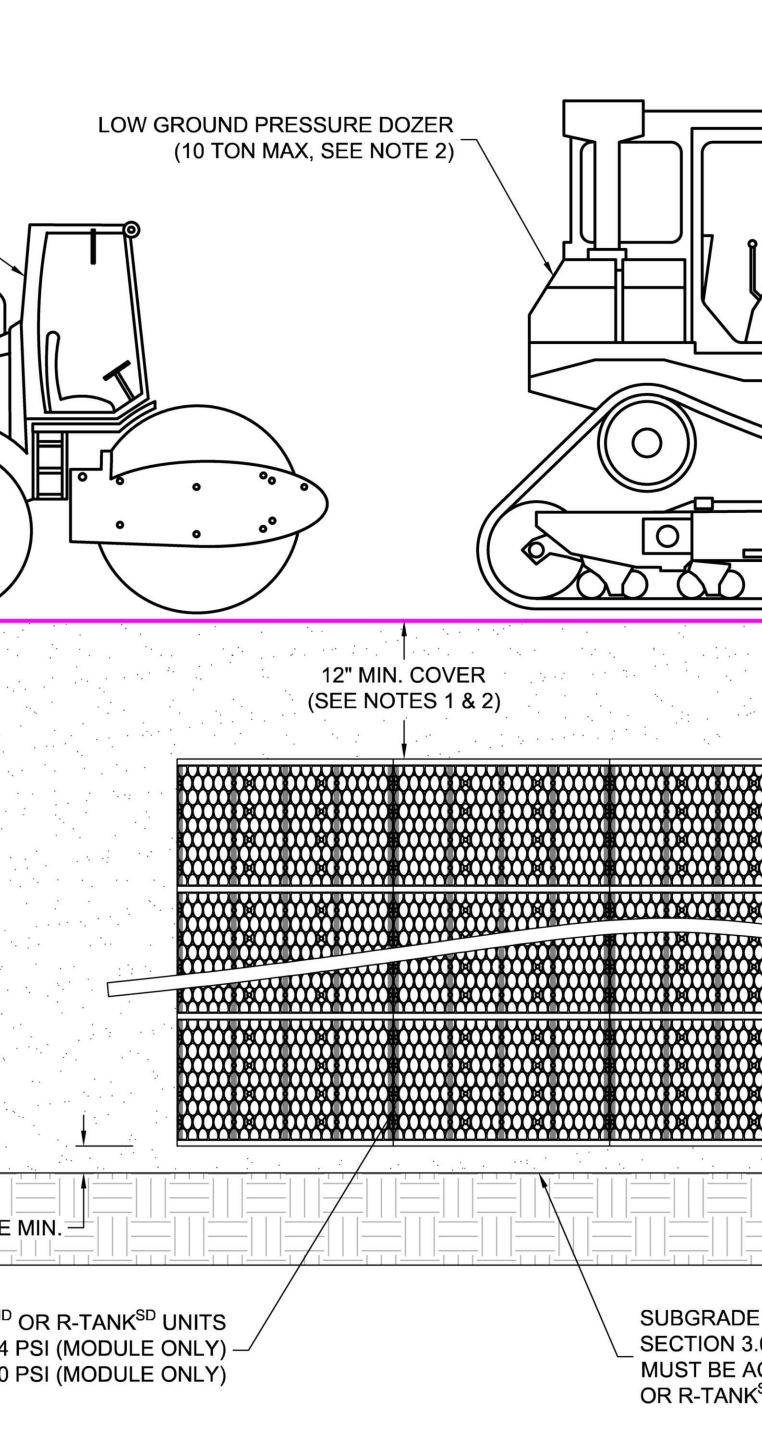
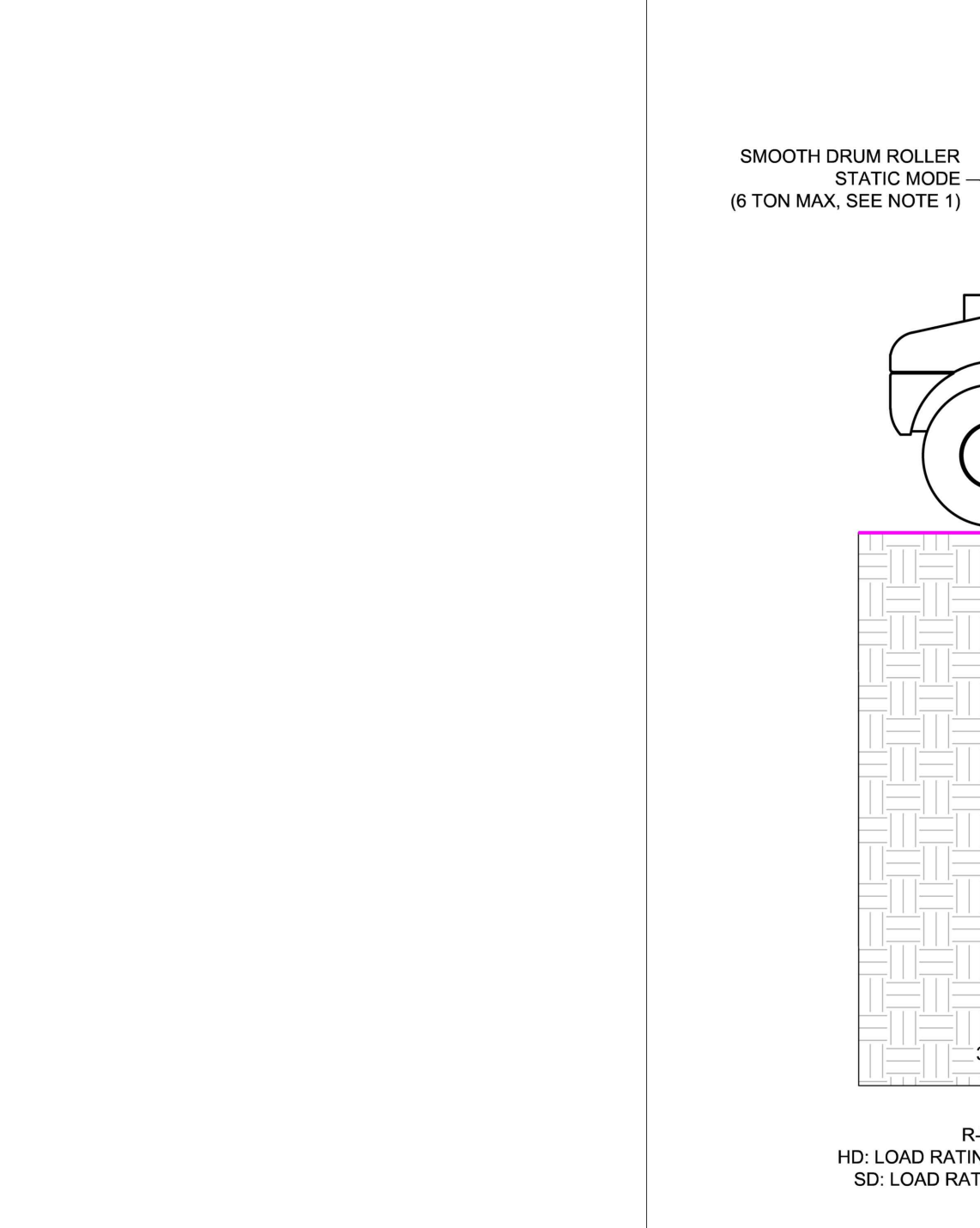
PIPE NOTCHING PATTERN

NOTES:
 1. THE INSPECTION PORT IS USED IN THE ACCESS MODULE TO INSPECT THE LEVEL OF SEDIMENT ACCUMULATION.
 2. THE MAINTENANCE PORT IS USED TO PUMP WATER INTO THE SYSTEM AND RE-SUSPEND ACCUMULATED SEDIMENT SO THAT IT MAY BE PUMPED OUT.
 3. MINIMUM REQUIRED MAINTENANCE INCLUDES A QUARTERLY INSPECTION DURING THE FIRST YEAR OF OPERATION AND A YEARLY INSPECTION THEREAFTER. FLUSH AS NEEDED.
 4. SEE TRAFFIC LOADING DETAIL FOR MINIMUM & MAXIMUM COVER REQUIREMENTS.
 5. IF PORT IS LOCATED IN A NON-TRAFFIC AREA, A PLASTIC CAP CAN BE USED IN LIEU OF A FRAME AND COVER WITH CONCRETE COLLAR.

NOTES:
 1. FOLLOWING PLACEMENT OF SIDE BACKFILL, A UNIFORM 12" LIFT OF THE FREELY DRAINING MATERIAL (SPEC SECTION 2.03 B) SHALL BE PLACED OVER THE R-TANK AND LIGHTLY COMPACTED USING A WALK-BEHIND TRENCH ROLLER. ALTERNATELY, A ROLLER (MAXIMUM GROSS VEHICLE WEIGHT OF 8 TONS) MAY BE USED. ROLLER MUST REMAIN IN STATIC MODE UNTIL A MINIMUM OF 24" OF COVER HAS BEEN PLACED OVER THE MODULES. SHEEP FOOT ROLLERS SHOULD NOT BE USED. SPEC SECTION 3.05 A
 2. ONLY LOW PRESSURE TIRE OR TRACK VEHICLES (LESS THAN 7 PSI AND OPERATING WEIGHT OF LESS THAN 20,000 LBS) SHALL BE OPERATED OVER THE R-TANK SYSTEM DURING CONSTRUCTION. SPEC SECTION 3.05 B
 3. DUMP TRUCKS AND PANS SHALL NOT BE OPERATED WITHIN THE R-TANK SYSTEM AT ANY TIME. WHERE NECESSARY, THE HEAVY EQUIPMENT SHOULD UNLOAD IN AN AREA ADJACENT TO THE R-TANK SYSTEM AND THE MATERIAL SHOULD BE MOVED OVER THE SYSTEM WITH TRACKED EQUIPMENT. SPEC SECTION 3.05 B
 4. ENSURE THAT ALL UNRELATED CONSTRUCTION TRAFFIC IS KEPT AWAY FROM THE LIMITS OF EXCAVATION UNTIL THE PROJECT IS COMPLETE AND FINAL SURFACE MATERIALS ARE IN PLACE. NO NON-INSTALLATION RELATED LOADING SHOULD BE ALLOWED OVER THE R-TANK SYSTEM UNTIL THE FINAL DESIGN SECTION HAS BEEN CONSTRUCTED (INCLUDING PAVEMENT). SPEC SECTION 3.05 C
 5. SEE R-TANK INSTALLATION GUIDE OR CONTACT YOUR LOCAL ACF REPRESENTATIVE FOR ADDITIONAL INFORMATION.

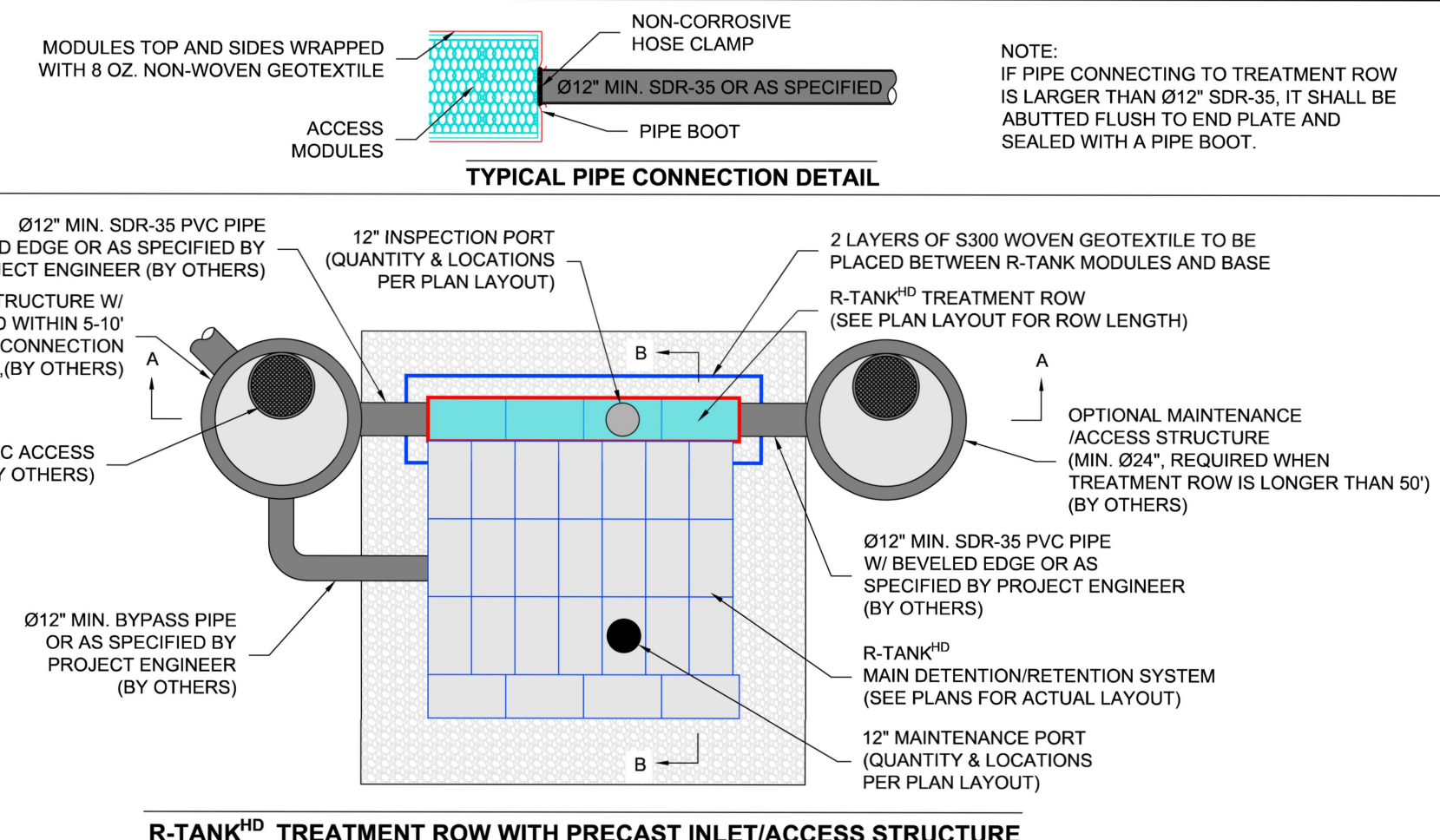


DUMP TRUCK DETAIL (SEE NOTE 3)

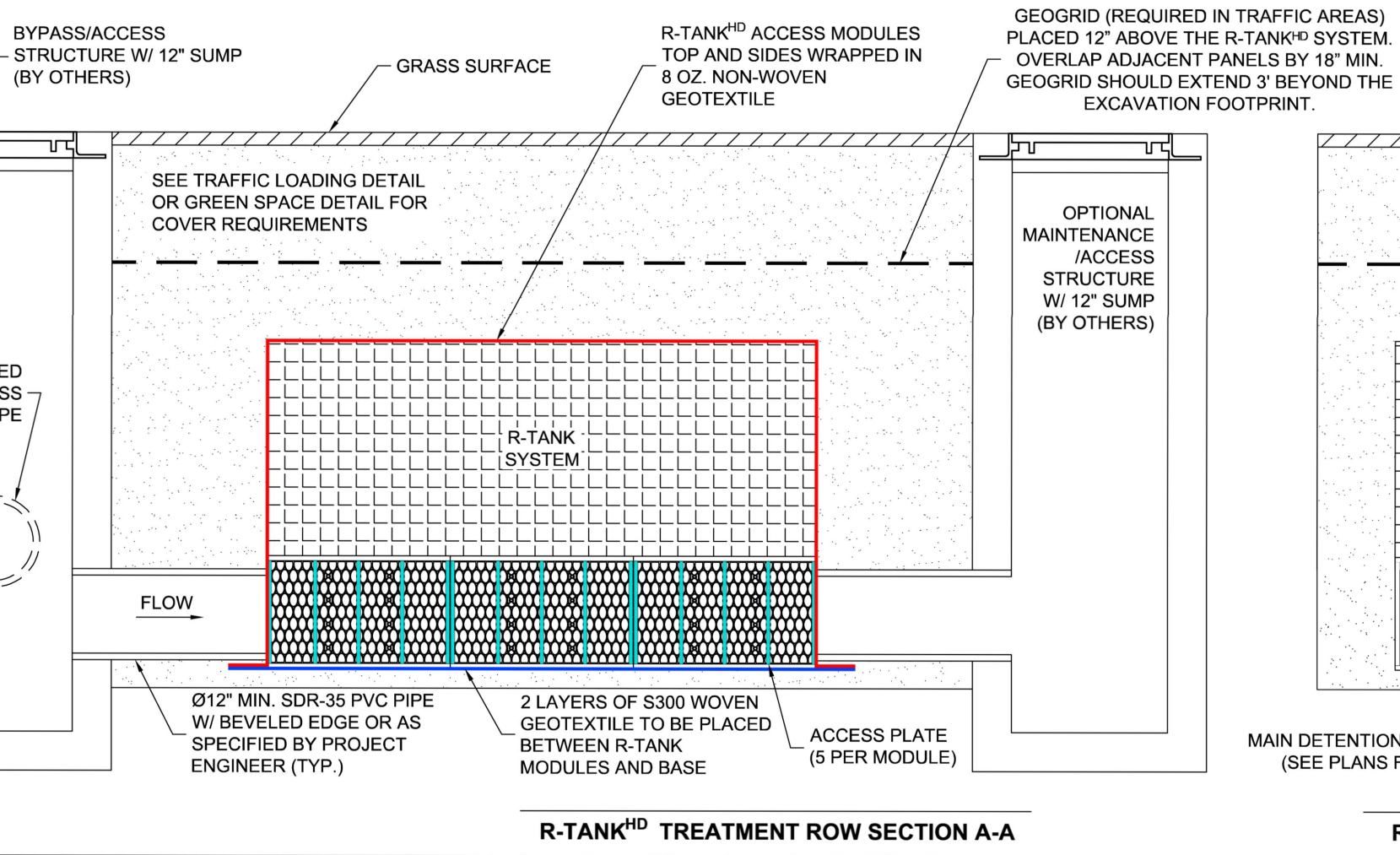


CONSTRUCTION EQUIPMENT COVER DETAIL - VEHICULAR TRAFFIC

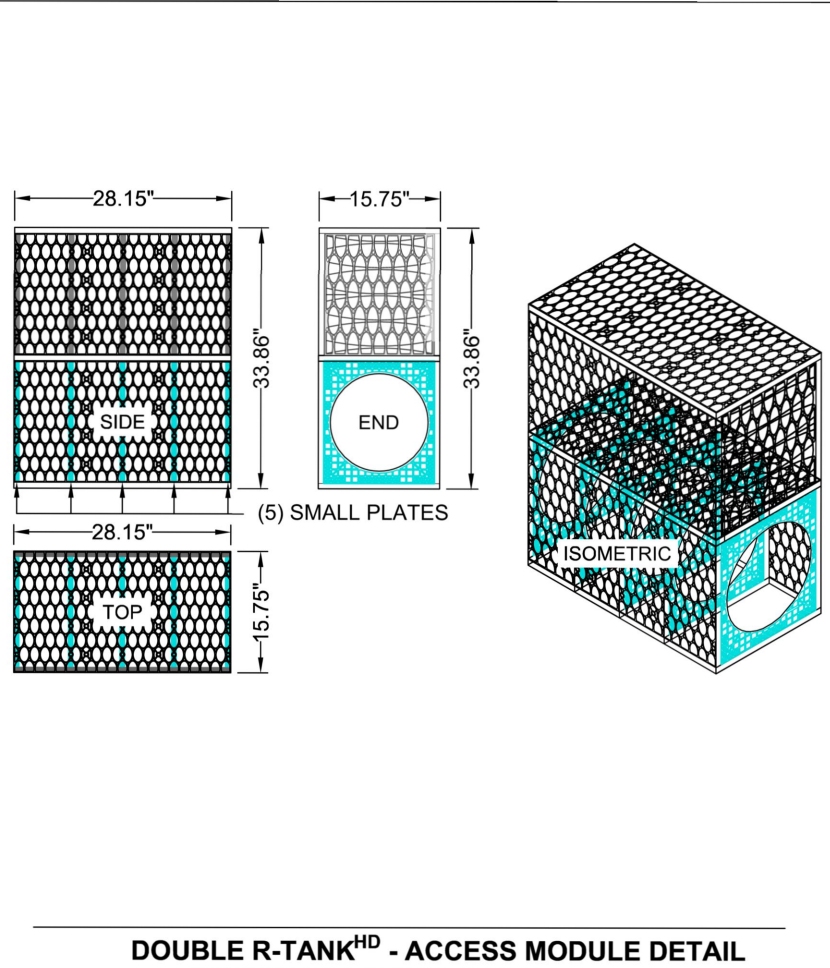
R-TANK DETAILS - GENERAL
 NOT TO SCALE



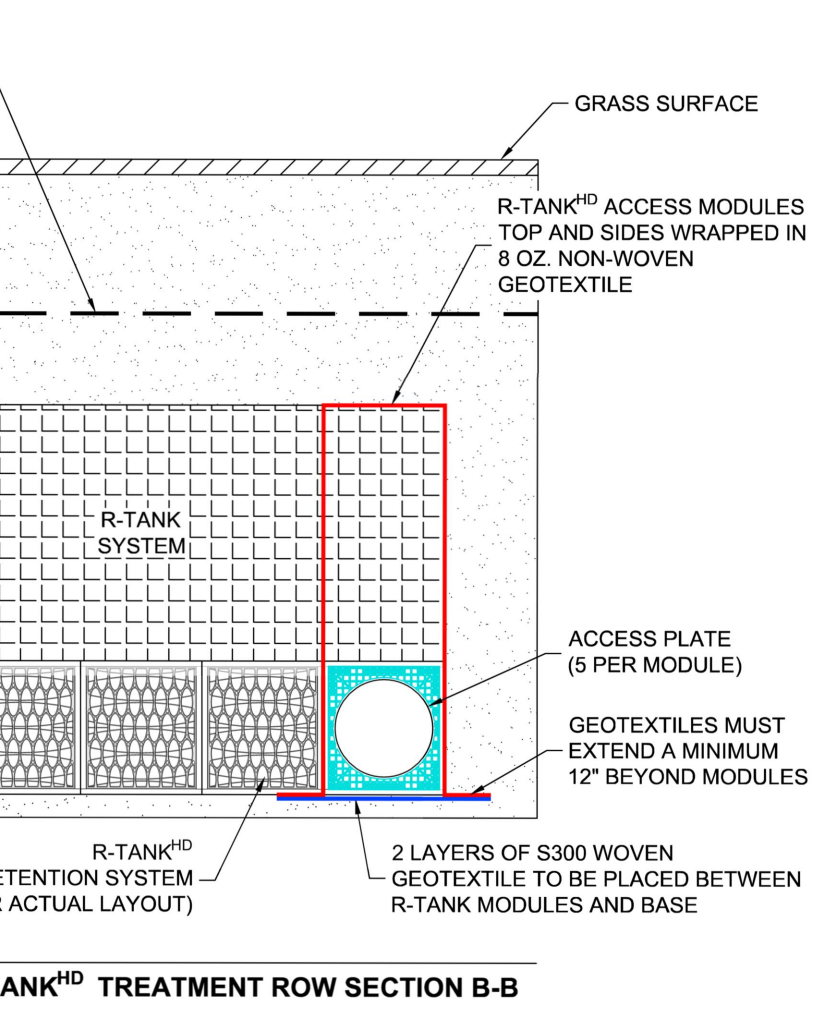
TYPICAL PIPE CONNECTION DETAIL



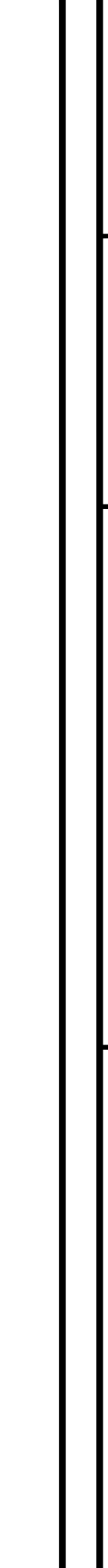
R-TANK™ TREATMENT ROW WITH PRECAST INLET/ACCESS STRUCTURE



DOUBLE R-TANK™ ACCESS MODULE DETAIL (FOR MODULE DATA, SEE STANDARD MODULE DETAIL)



R-TANK™ TREATMENT ROW SECTION A-A



R-TANK™ TREATMENT ROW SECTION B-B

STATE OF MAINE
 MICHAEL ZARBA
 No. 16384
 PROFESSIONAL ENGINEER

SLR
 2 MARKET STREET, 5TH FLOOR
 PORTLAND, ME 04101
 SLRCONSULTING.COM

DESCRIPTION	DATE	BY
PLANNING BOARD REVISIONS	12/19/2022	SWM

SITE DETAILS
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

DESIGNED	DRAWN	MFZ
SWM	SWM	MFZ

NOT TO SCALE
 DATE: NOVEMBER 4, 2022
 PROJECT NO.: 4807-13
 SHEET NO.: SD-12

R-TANK SPECIFICATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings, technical specification and general provisions of the Contract as modified herein apply to this section.

1.02 DESCRIPTION OF WORK INCLUDED

- A. Provide excavation and base preparation per geotechnical engineer's recommendations and/or as shown on the design drawings, to provide adequate support for project design loads and safety from excavation sidewall collapse. Excavations shall be in accordance with the owner's and OSHA requirements.
- B. Provide and install R-TankLD, R-TankHD, R-TankSD, or R-TankUD/ system (hereafter called R-Tank) and all related products including fill materials, geotextiles, geogrids, inlet and outlet pipe with connections per the manufacturer's installation guidelines provided in this section.
- C. Provide and construct the cover of the R-Tank system including; stone backfill, structural fill cover, and pavement section as specified.
- D. Protect R-Tank system from construction traffic after installation until completion of all construction activity in the installation area.

1.03 QUALITY CONTROL

- A. All materials shall be manufactured in ISO certified facilities.
- B. Installation Contractor shall demonstrate the following experience:
1. A minimum of three R-Tank or equivalent projects completed within 2 years; and,
 2. A minimum of 25,000 cubic feet of storage volume completed within 2 years.
 3. Contractor experience requirement may be waived if the manufacturer's representative provides on-site training and review during construction.
- C. Installation Personnel: Performed only by skilled workers with satisfactory record of performance on bulk earthworks, pipe, chamber, or pond/landfill construction projects of comparable size and quality.
- D. Contractor must have manufacturer's representative available for site review if requested by Owner.

1.04 SUBMITTALS

- A. Submit proposed R-Tank layout drawings. Drawings shall include typical section details as well as the required base elevation of stone and tanks, minimum cover requirements and tank configuration.
- B. Submit manufacturer's product data, including compressive strength and unit weight.
- C. Submit manufacturer's installation instructions.
- D. Submit R-Tank sample for review. Reviewed and accepted samples will be returned to the Contractor.
- E. Submit material certificates for geotextile, geogrid, base course and backfill materials.
- F. Submit required experience and personnel requirements as specified in Section 1.03.
- G. Any proposed equal alternative product substitution to this specification must be submitted for review and approved prior to bid opening. Review package should include third party reviewed performance data that meets or exceeds criteria in Table 2.01 B.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect R-Tank and other materials from damage during delivery, and store UV sensitive materials under tarp to protect from sunlight when time from delivery to installation exceeds two weeks. Storage of materials should be on smooth surfaces, free from dirt, mud and debris.
- B. Handling is to be performed with equipment appropriate to the materials and site conditions, and may include hand, handcart, forklifts, extension lifts, etc.
- C. Cold weather:
1. Care must be taken when handling plastics when air temperature is 40 degrees or below as plastic becomes brittle.
 2. Do not use frozen materials or materials mixed or coated with ice or frost.
 3. Do not build on frozen ground or wet, saturated or muddy subgrade.

1.06 PREINSTALLATION CONFERENCE.

- A. Prior to the start of the installation, a preinstallation conference shall occur with the representatives from the design team, the general contractor, the excavation contractor, the R-Tank installation contractor, and the manufacturer's representative.

1.07 PROJECT CONDITIONS

- A. Coordinate installation for the R-Tank system with other on-site activities to eliminate all non-installation related construction traffic over the completed R-Tank system. No loads heavier than the design loads shall be allowed over the system, and in no case shall loads higher than a standard AASHTO HS20 (or HS25, depending on design criteria) load be allowed on the system at any time.
- B. Protect adjacent work from damage during R-Tank system installation.
- C. All pre-treatment systems to remove debris and heavy sediments must be in place and functional prior to operation of the R-Tank system. Additional pretreatment measures may be needed if unit is operational during construction due to increased sediment loads.
- D. Contractor is responsible for any damage to the system during construction.

PART 2 - PRODUCTS

2.01 R-TANK UNITS

- A. R-Tank - Injection molded plastic tank plates assembled to form a 95% void modular structure of predesigned height (custom for each project).
- B. R-Tank units shall meet the following Physical & Chemical Characteristics:

PROPERTY	DESCRIPTION	R-Tank ^{LD} VALUE	R-Tank ^{HD} VALUE	R-Tank ^{SD} VALUE	R-Tank ^{UD} VALUE
Void Area	Volume available for water storage	95%	95%	95%	95%
Surface Void Area	Percentage of exterior available for infiltration	90%	90%	90%	90%
Vertical Compressive Strength	ASTM D 2412 / ASTM F 2418	30.0 psi	33.4 psi	42.9 psi	134.2 psi
Lateral Compressive Strength	ASTM D 2412 / ASTM F 2418	20.0 psi	22.4 psi	28.9 psi	N/A
HS-20 Minimum Cover	Cover required to support HS-20 loads	N/A	20"	18"	12" (STONE BACKFILL)
HS-25 Minimum Cover	Cover required to support HS-25 loads	N/A	24"	19"	15" (STONE BACKFILL)
Maximum Cover	Maximum allowable cover depth	3 feet	< 7 feet	< 10 feet	5 feet
Unit Weight	Weight of plastic per cubic foot of tank	3.29 lbs / cf	3.62 lbs/cf	3.96 lbs / cf	4.33 lbs / cf
Rib Thickness	Thickness of load-bearing members	0.18 inches	0.18 inches	0.18 inches	N/A
Service Temperature	Safe temperature range for use	-14 - 167° F	-14 - 167° F	-14 - 167° F	-14 - 167° F

- C. Supplier: Ferguson Waterworks 2831 Cardwell Road Richmond, VA 23234 (T): 800-448-3636; (F): 804-743-7779 www.ferguson.com

2.02 GEOSYNTHETICS

- A. Geotextile. A geotextile envelope is required to prevent backfill material from entering the R-Tank modules.
1. Standard Application: The standard geotextile shall be an 8 oz per square yard nonwoven geotextile (ACF N080 or equivalent).
 2. Infiltration Applications: When water must infiltrate/exfiltrate through the geotextile as a function of the system design, a woven monofilament (ACF M200 or equivalent) shall be used.
- B. Geogrid. For installations subject to traffic loads and/or when required by project plans, install geogrid (ACF BX12 or equivalent) to reinforce backfill above the R-Tank system. Geogrid is not always required for R-TankUD/ installations, and is often not required for non-traffic load applications.

2.03 BACKFILL & COVER MATERIALS

- A. Bedding Materials: Stone (angular and smaller than 1.5" in diameter) or soil (GW, GP, SW, or SP as classified by the Unified Soil Classification System) shall be used below the R-Tank system (3" minimum). Material must be free from lumps, debris, and any sharp objects that could cut the geotextile. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation. For infiltration applications bedding material shall be free draining.
- B. Side and Top Backfill: Material must be free from lumps, debris and any sharp objects that could cut the geotextile. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation.
1. Traffic Applications - Free draining material shall be used adjacent to (24" minimum) and above (for the first 12") the R-Tank system.
 - a. For HD, and SD modules, backfill materials shall be free draining stone (angular and smaller than 1.5" in diameter) or soil (GW, GP, SW, or SP as classified by the Unified Soil Classification System).
 - b. For UD modules with less than 14" of top cover, backfill materials shall be free draining stone (angular and smaller than 1.5" in diameter). The use of soil backfill on the sides and top of the UD module is not permitted unless the modules are installed outside of traffic areas or with cover depths of 14" or more. Top backfill material (from top of module to bottom of pavement base or 12" maximum) must be consistent with side backfill.
 2. Non-Traffic / Green Space Applications - For all R-Tank modules installed in green spaces and not subjected to vehicular loads, backfill materials may either follow the guidelines for Traffic Applications above, or the top backfill layer (12" minimum) may consist of AASHTO #57 stone blended with 30-40% (by volume) topsoil to aid in establishing vegetation.
- C. Additional Cover Materials: Structural Fill shall consist of granular materials meeting the gradational requirements of SM, SP, SW, GM, GP or GW as classified by the Unified Soil Classification System. Structural fill shall have a maximum of 25 percent passing the No. 200 sieve, shall have a maximum liquid content of 10 percent and a maximum Plasticity Index of 4. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation.

2.04 OTHER MATERIALS

- A. Utility Marker: Install metallic tape at corners of R-Tank system to mark the area for future utility detection.

PART 3 - EXECUTION

3.01 ASSEMBLY OF R-TANK UNITS

- A. Assembly of modules shall be performed in accordance with the R-Tank Installation Manual, Section 2.

3.02 LAYOUT AND EXCAVATION

- A. Installer shall stake out, excavate, and prepare the subgrade area to the required plan grades and dimensions, ensuring that the excavation is at least 2 feet greater than R-Tank dimensions in each direction allowing for installation of geotextile filter fabric, R-Tank modules, and free draining backfill materials.
- B. All excavations must be prepared with OSHA approved excavated sides and sufficient working space.
- C. Protect partially completed installation against damage from other construction traffic by establishing a perimeter with high visibility construction tape, fencing, barricades, or other means until construction is complete.
- D. Base of the excavation shall be uniform, level, and free of lumps or debris and soft or yielding subgrade areas. A minimum 2,000 pounds per square foot bearing capacity is required.
1. Standard Applications: Compact subgrade to a minimum of 95% of Standard Proctor (ASTM D698) density or as required by the Owner's engineer.
 2. Infiltration Applications: Subgrade shall be prepared in accordance with the contract documents. Compaction of subgrade should not be performed in infiltration applications.
- E. Unsuitable Soils or Conditions: All questions about the base of the excavation shall be directed to the owner's engineer, who will approve the subgrade conditions prior to placement of stone. The owner's engineer shall determine the required bearing capacity of the R-Tank subgrade; however in no case shall a bearing capacity of less than 2,000 pounds per square foot be provided.
1. If unsuitable soils are encountered at the subgrade, or if the subgrade is pumping or appears excessively soft, repair the area in accordance with contract documents and/or as directed by the owner's engineer.
 2. If indications of the water table are observed during excavation, the engineer shall be contacted to provide recommendations.
 3. Do not start installation of the R-Tank system until unsatisfactory subgrade conditions are corrected and the subgrade conditions are accepted by the owner's engineer.

3.03 PREPARATION OF BASE

- A. Place a thin layer (3" unless otherwise specified) of bedding material (Section 2.03 A), over the subgrade to establish a level working platform for the R-Tank modules. Level to within 1/2" (+/- 1/4") or as shown on the plans. Native subgrade soils or other materials may be used if determined to meet the requirements of 2.03 A and are accepted by the owner's engineer.
1. Standard Applications: Static roll or otherwise compact bedding materials until they are firm and unyielding.
 2. Infiltration Applications: Bedding materials shall be prepared in accordance with the contract documents.
- B. Outline the footprint of the R-Tank system on the excavation floor using spray paint or chalk line to ensure a 2' perimeter is available around the R-Tank system for proper installation and compaction of backfill.

3.04 INSTALLATION OF THE R-TANKS

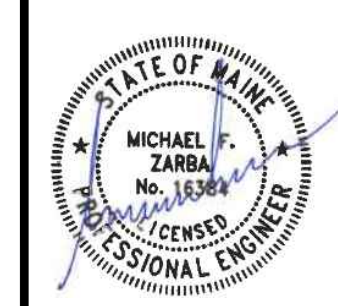
- A. Where a geotextile wrap is specified on the stone base, cut strips to length and install in excavation, removing wrinkles so material lays flat. Overlap geotextile a minimum 12" or as recommended by manufacturer. Use tape, special adhesives, sandbags or other ballast to secure overlaps. As geotextiles can be damaged by extreme heat, smoking is not permissible on/near the geotextile, and tools using a flame to tack the overlaps, such as propane torches, are prohibited.
- B. Where an impervious liner (for containment) is specified, install the liner per manufacturer's recommendations and the contract documents. The R-Tank units shall be separated from impervious liner by a non-woven geotextile fabric installed accordance with Section 3.04A.
- C. Install R-Tank modules by placing side by side, in accordance with the design drawings. No lateral connections are required. It is advisable to use a string line to form square corners and straight edges along the perimeter of the R-Tank system. The modules are to be oriented as per the design drawing with required depth as shown on plans.
1. For LD, HD, and SD installations, the large side plate of the tank should be placed on the perimeter of the system. This will typically require that the two ends of the tank area will have a row of tanks placed perpendicular to all other tanks. If this is not shown in the construction drawings, it is a simple field adjustment that will have minimal effect on the overall system footprint. Refer to R-Tank Installation Guide for more details.
 2. For UD installations, there is no perpendicular end row required.
- D. Wrap the R-Tank top and sides in specified geotextile. Cut strips of geotextile so that it will cover the sides and top, encapsulating the entire system to prevent backfill entry into the system. Overlap geotextile 12" or as recommended by manufacturer. Take great care to avoid damage to geotextile (and, if specified, impervious liner) during placement.
- E. Identify locations of inlet, outlet and any other penetrations of the geotextile (and optional liner). These connections should be installed flush (butted up to the R-Tank) and the geotextile fabric shall be cut to enable hydraulic continuity between the connections and the R-Tank units. These connections shall be secured using pipe boots with stainless steel pipe clamps. Support pipe in trenches during backfill operations to prevent pipe from settling and damaging the geotextile, impervious liner (if specified) or pipe. Connecting pipes at 90 degree angles facilitates construction, unless otherwise specified. Ensure end of pipe is installed snug against R-Tank system.
- F. Install Inspection and Maintenance Ports in locations noted on plans. At a minimum one maintenance port shall be installed within 10' of each inlet & outlet connection, and with a maximum spacing of one maintenance port for every 2,500 square feet. Install all ports as noted in the R-Tank Installation Guide.
- G. If required, install ventilation pipes and vents as specified on drawings to provide ventilation for proper hydraulic performance. The number of pipes and vents will depend on the size of the system. Vents are often installed using a 90 degree elbow with PVC pipe into a landscaped area with 'U' bend or venting bollard to inhibit the ingress of debris. A ground level concrete or steel cover can be used.

3.05 BACKFILLING OF THE R-TANK UNITS

- A. Backfill and fill with recommended materials as follows:
1. Place freely draining backfill materials (Section 2.03 B) around the perimeter in lifts with a maximum thickness of 12". Each lift shall be placed around the entire perimeter such that each lift is no more than 24" higher than the side backfill along any other location on the perimeter of the R-Tank system. No fill shall be placed over top of tanks until the side backfill has been completed.
 2. Each lift shall be compacted at the specified moisture content to a minimum of 95% of the Standard Proctor Density until no further densification is observed (for self-compacting stone materials). The side lifts must be compacted with walk behind compaction equipment. Even when "self-compacting" backfill materials are selected, a walk behind vibratory compactor must be used.
 3. Take care to ensure that the compaction process does not allow the machinery to come into contact with the modules due to the potential for damage to the geotextile and R-Tank units.
 4. No compaction equipment is permissible to operate directly on the R-Tank modules.
 5. Top Backfill: Only low pressure track vehicles shall be operated over the R-Tank system during construction. Dump Trucks and Pans shall not be operated within the R-Tank system footprint at any time. Heavy equipment should unload in an area adjacent to the R-Tank system and the material should be moved over the system using tracked equipment with an operating weight of less than 10 tons.
 - a. Typical Applications: Install a 12" (or as shown on plans) lift of freely draining material (Section 2.03 B) over the R-Tank Units, maintaining 12" between equipment tracks and R-Tank System. Lightly compacted using a walk-behind trench roller. Alternately, a roller (maximum gross vehicle weight of 6 tons) may be used. Roller must remain in static mode until a minimum of 24" of cover has been placed over the modules. Sheep foot rollers should not be used.
 - b. Shallow Applications (< 18" total cover): Install top backfill in accordance with plans.
 6. If required, install a geogrid as shown on plans. Geogrid shall extend a minimum of 3 feet beyond the limits of the excavation wall.
 7. Following placement and compaction of the initial cover, subsequent lifts of structural fill (Section 2.03 C) shall be placed at the specified moisture content and compacted to a minimum of 95% of the Standard Proctor Density and shall cover the entire footprint of the R-Tank system. During placement of fill above the system, unless otherwise specified, a uniform elevation of fill shall be maintained to within 12" across the footprint of the R-Tank system. Do not exceed maximum cover depths listed in Table 2.01 B.
 8. Place additional layers of geotextile and/or geogrid at elevations as specified in the design details. Each layer of geosynthetic reinforcement placed above the R-Tank system shall extend a minimum of 3 feet beyond the limits of the excavation wall.
- B. Ensure that all unrelated construction traffic is kept away from the limits of excavation until the project is complete and final surface materials are in place. No non-installation related loading should be allowed over the R-Tank system until the final design section has been constructed (including pavement).
- C. Place surfacing materials, such as groundcovers (no large trees), or paving materials over the structure with care to avoid displacement of cover fill and damage to surrounding areas.
- D. Backfill depth over R-Tank system must be within the limitations shown in the table in Section 2.01 B. If the total backfill depth does not comply with this table, contact engineer or manufacturer's representative for assistance.

3.06 MAINTENANCE REQUIREMENTS

- A. A routine maintenance effort is required to ensure proper performance of the R-Tank system. The Maintenance program should be focused on pretreatment systems. Ensuring these structures are clean and functioning properly will reduce the risk of contamination of the R-Tank system and stormwater released from the site. Pre-treatment systems shall be inspected yearly, or as directed by the regulatory agency and by the manufacturer (for proprietary systems). Maintain as needed using acceptable practices or following manufacturer's guidelines (for proprietary systems).
- B. All inlet pipes and inspection and/or Maintenance Ports in the R-Tank system will need to be inspected for accumulation of sediments at least quarterly through the first year of operation and at least yearly thereafter.
- C. If sediment has accumulated to the level noted in the R-Tank Maintenance Guide or beyond a level acceptable to the Owner's engineer, the R-Tank system should be flushed.
- D. All inspection and maintenance activities should be performed in accordance with the R-Tank Operation, Inspection & Maintenance Manual.

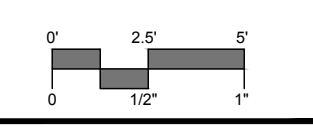
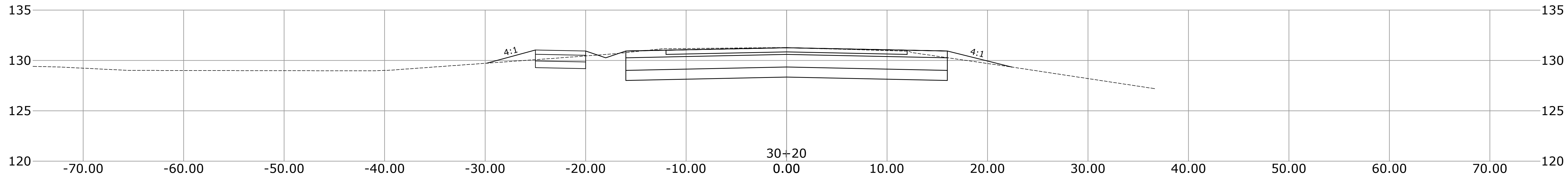
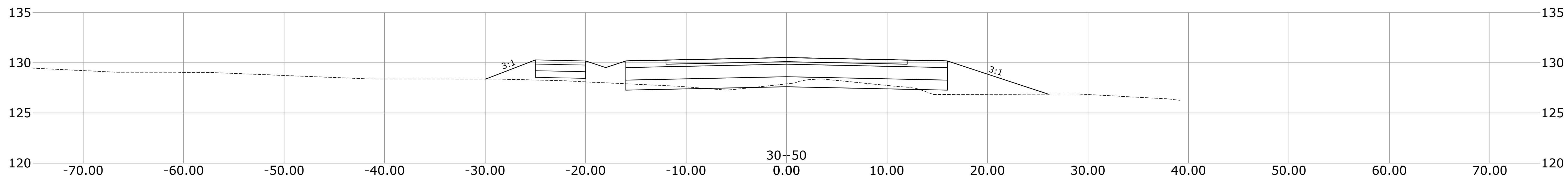
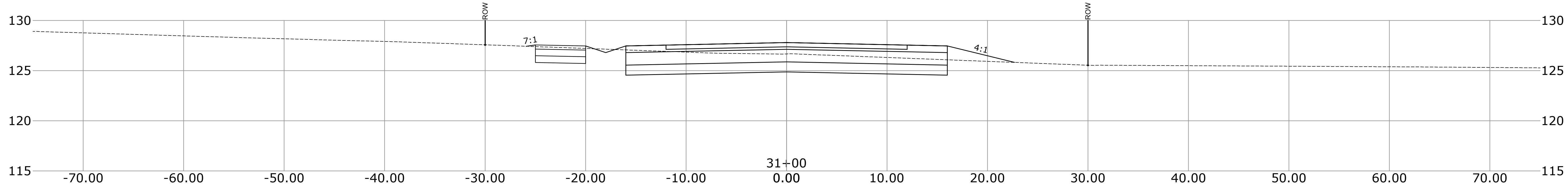
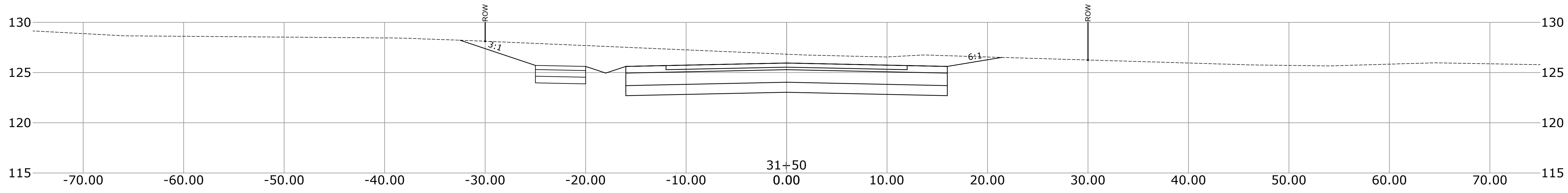


DESCRIPTION	DATE	BY
PLANNING BOARD REVISIONS	12/19/2022	SWM

SITE DETAILS
GORHAM INDUSTRIAL PARK
WEST CAMPUS
CYR DRIVE
GORHAM, MAINE

SWM	SWM	MFZ
DESIGNED	DRAWN	CHECKED
NOT TO SCALE		
NOVEMBER 4, 2022		
DATE		
PROJECT NO. 4807-13		
SHEET NO.		
SD-13		
SHEET NAME		

SHEET 01 OF 01
 DATE: 11/04/2022
 PROJECT: 4807-13
 DRAWN BY: J. WILSON
 CHECKED BY: J. WILSON
 SCALE: 1"=5'
 SHEET NAME: XSC-01



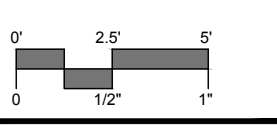
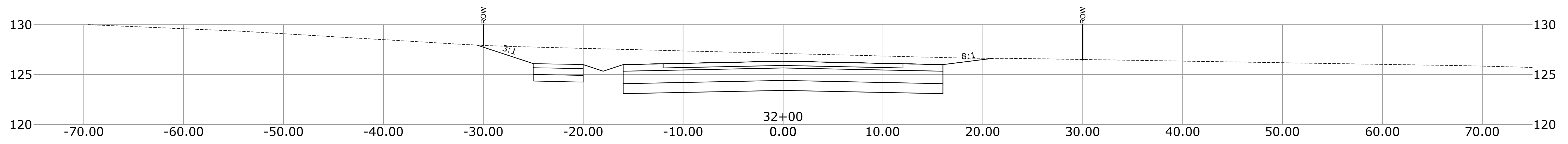
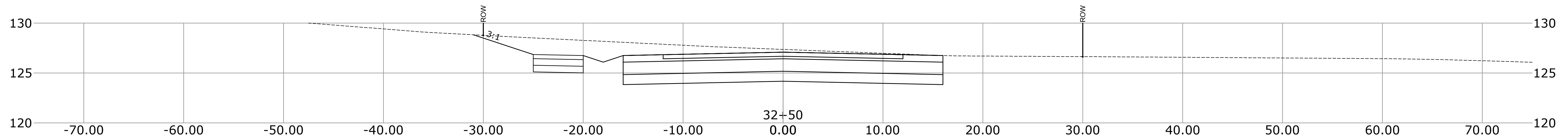
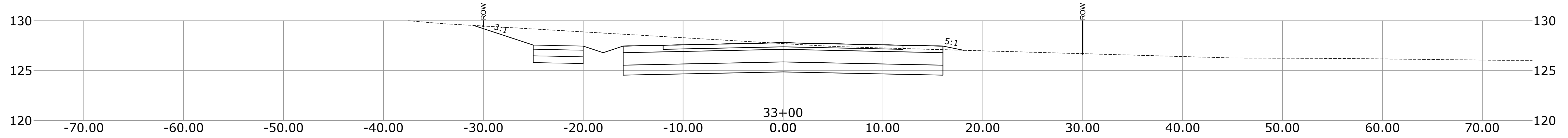
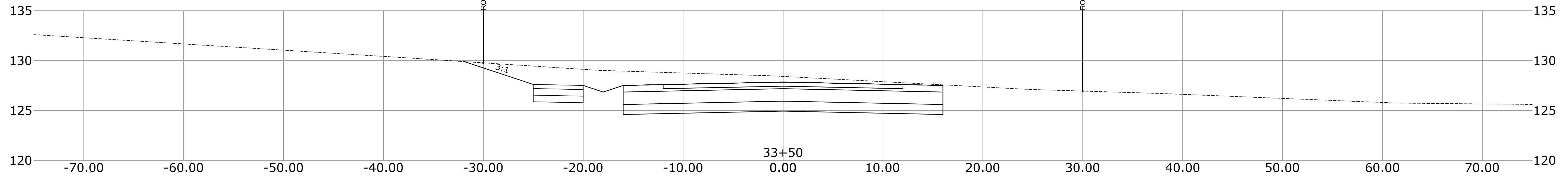
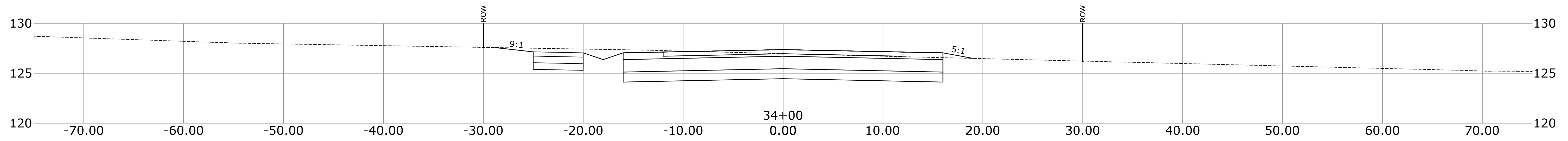
DESCRIPTION	DATE	BY

CROSS SECTIONS
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

SWM DESIGNED	SWM DRAWN	MFZ CHECKED
1"=5'		
NOVEMBER 4, 2022		
PROJECT NO. 4807-13		

XSC-01

DATE PLOTTED: 11/04/2022 10:58:10 AM
DRAWN BY: J. WILSON
CHECKED BY: J. WILSON
PROJECT NO.: 4807-13



DESCRIPTION	DATE	BY

CROSS SECTIONS
GORHAM INDUSTRIAL PARK
WEST CAMPUS
CVR DRIVE
GORHAM, MAINE

SWM DESIGNED	SWM DRAWN	MFZ CHECKED

SCALE: 1"=5'

DATE: NOVEMBER 4, 2022

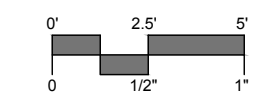
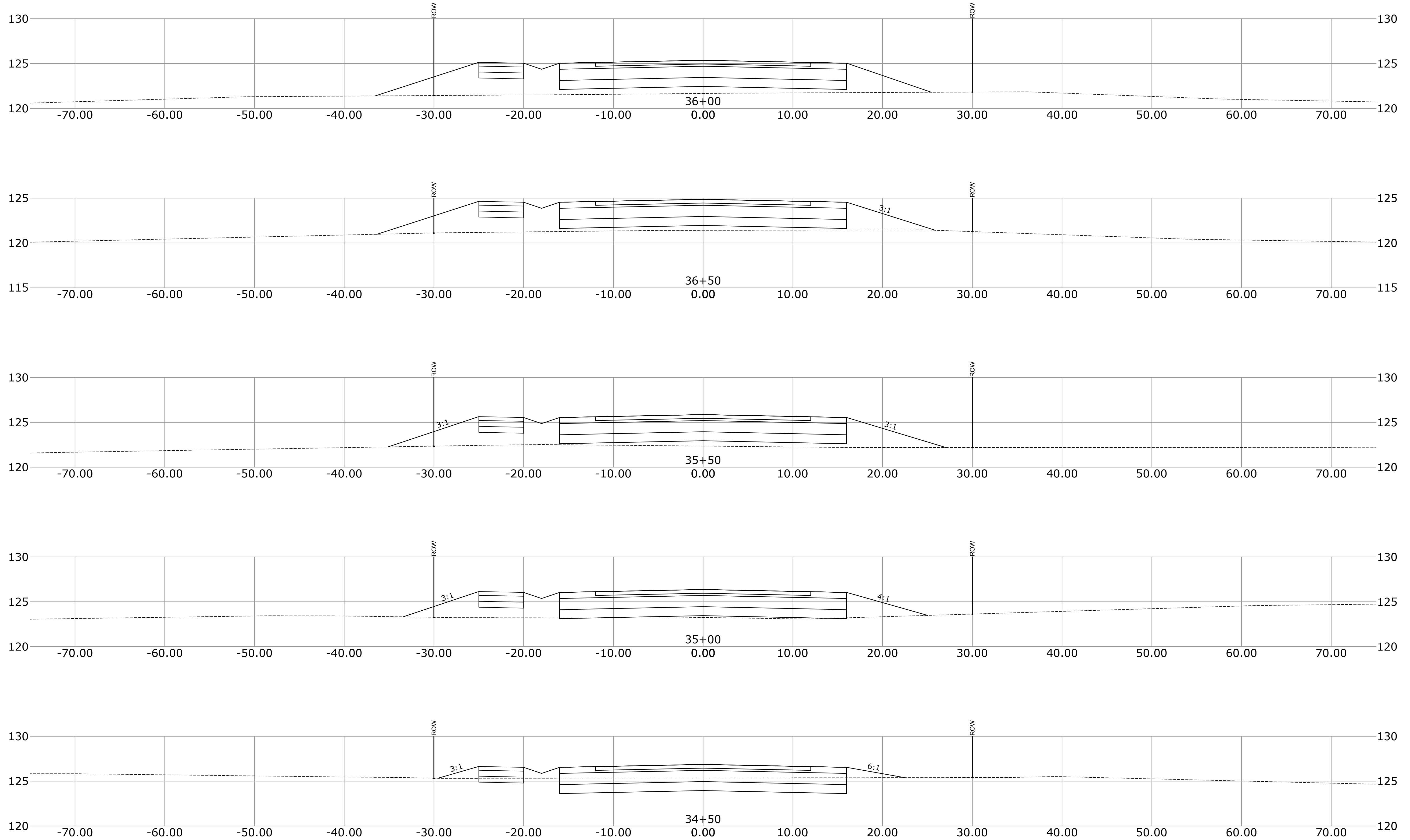
PROJECT NO.: 4807-13

XSC-02

SHEET NAME

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DATE PLOTTED: 11/04/2022 10:54 AM
PROJECT: 4807-13
SHEET: XSC-03



DESCRIPTION	DATE	BY

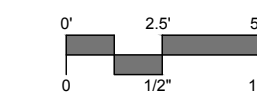
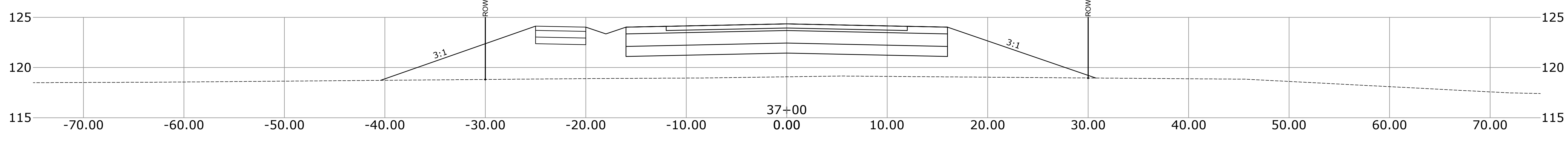
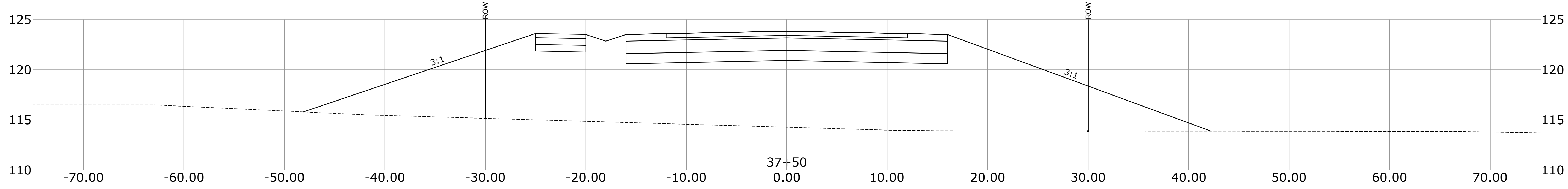
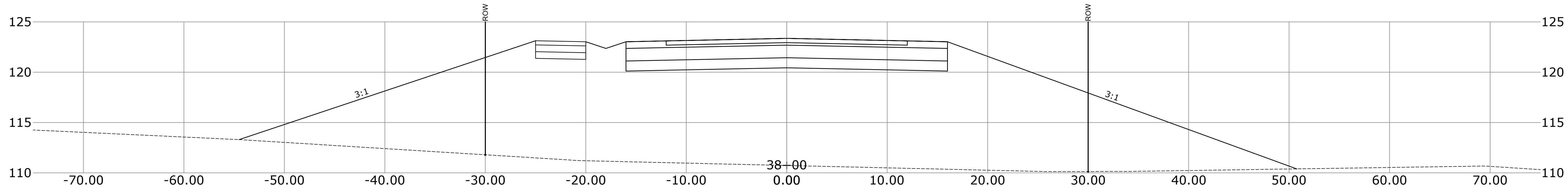
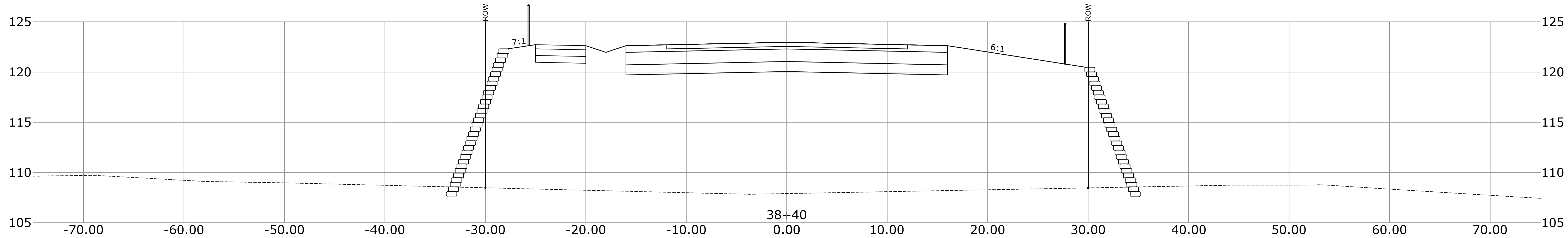
CROSS SECTIONS
GORHAM INDUSTRIAL PARK
WEST CAMPUS
CYR DRIVE
GORHAM, MAINE

DESIGNED	SWM	SWM	MFZ

SCALE: 1"=5'
DATE: NOVEMBER 4, 2022
PROJECT NO.: 4807-13

XSC-03

SHEET: 04 OF 04
 DATE: 05/11/2022
 PROJECT: 4807-13
 DRAWN BY: SWM
 CHECKED BY: MFZ



2 MARKET STREET, 5TH FLOOR
 BOSTON, MA 02101
 202.541.9244
 SLRCONSULTING.COM

DESCRIPTION	DATE	BY
ADDED RISE WALL	05/11/2022	SWM
REVISED CULVERT DIMENSIONS	05/11/2022	SWM

CROSS SECTIONS
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

DESIGNED	SWM	MFZ

SCALE: 1"=5'

DATE: NOVEMBER 4, 2022

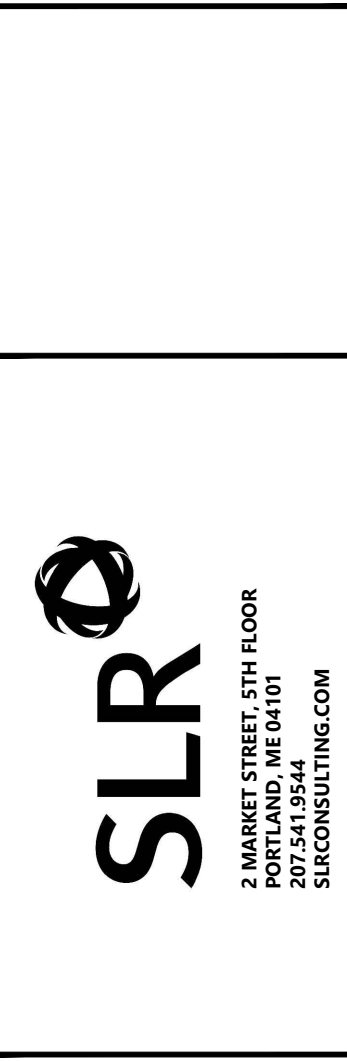
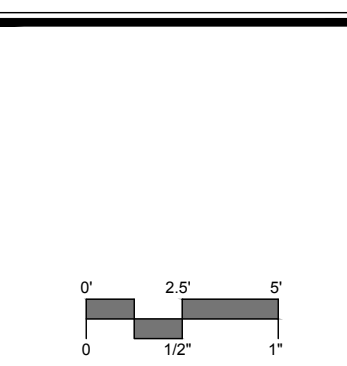
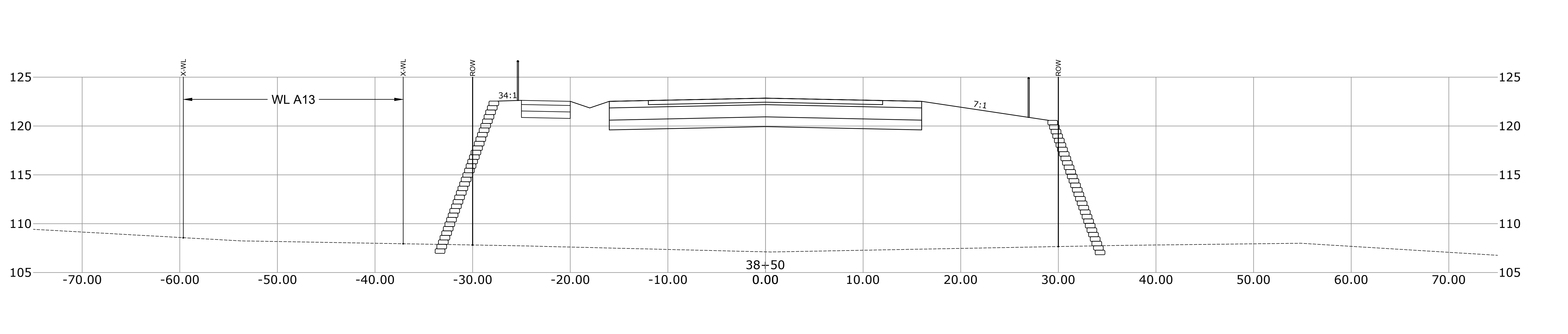
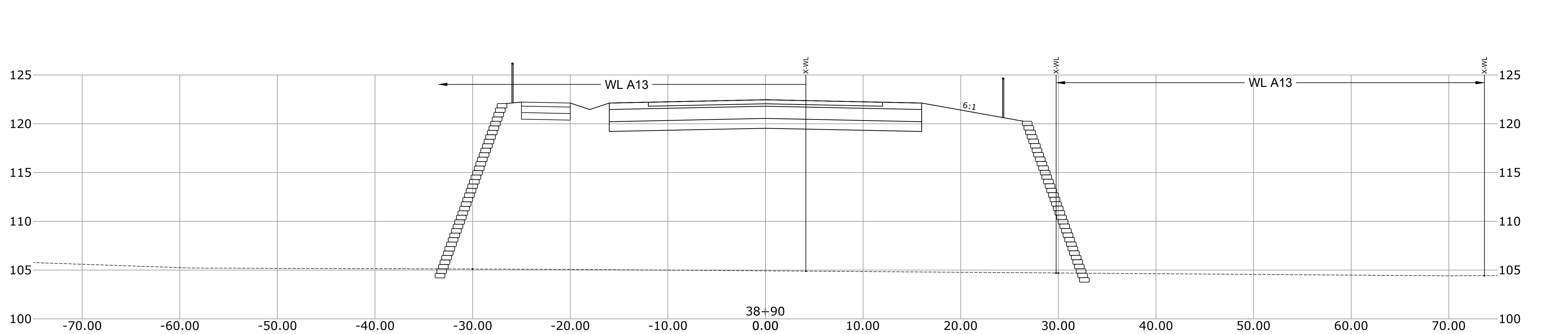
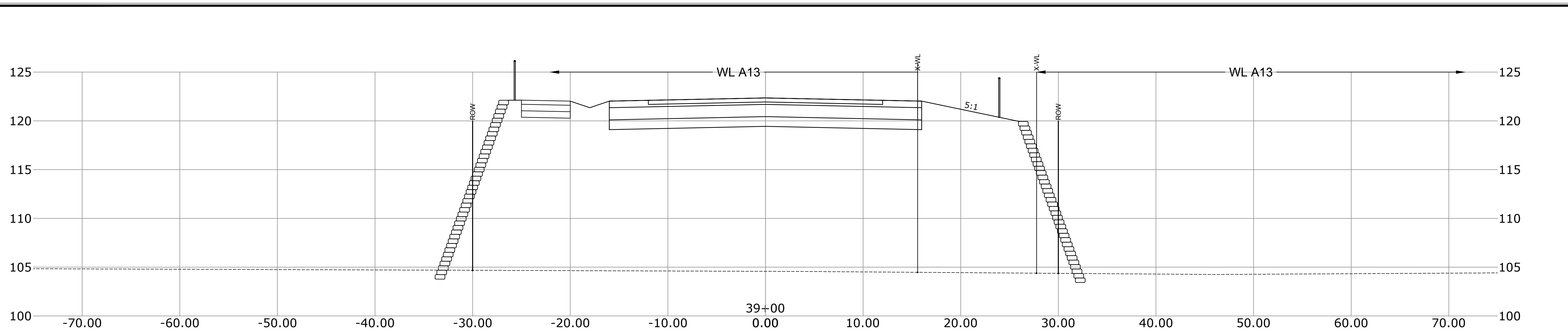
PROJECT NO.: 4807-13

XSC-04

SHEET NAME

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SHEET: 4807-13 CROSS SECTION SWM, MW, AND 10" MANHOLE IN PLAN
 4807-13 SWM, MW, AND 10" MANHOLE IN PLAN



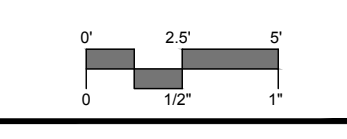
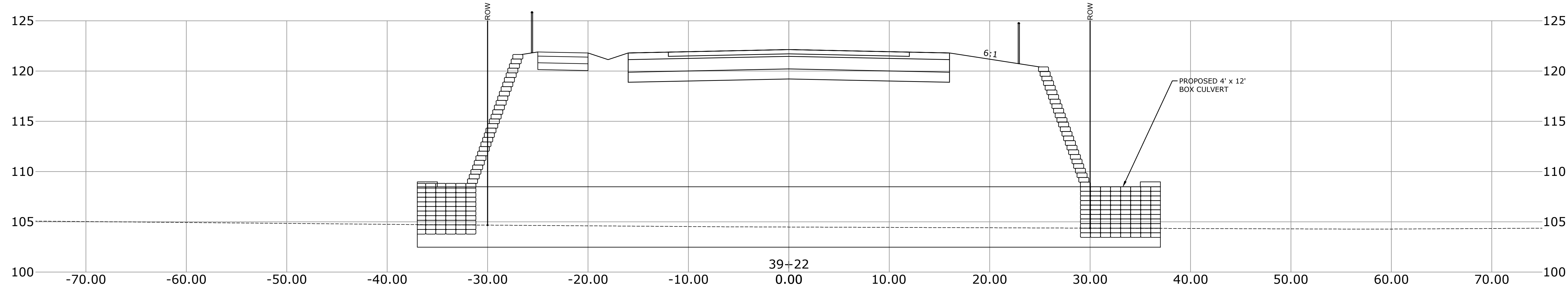
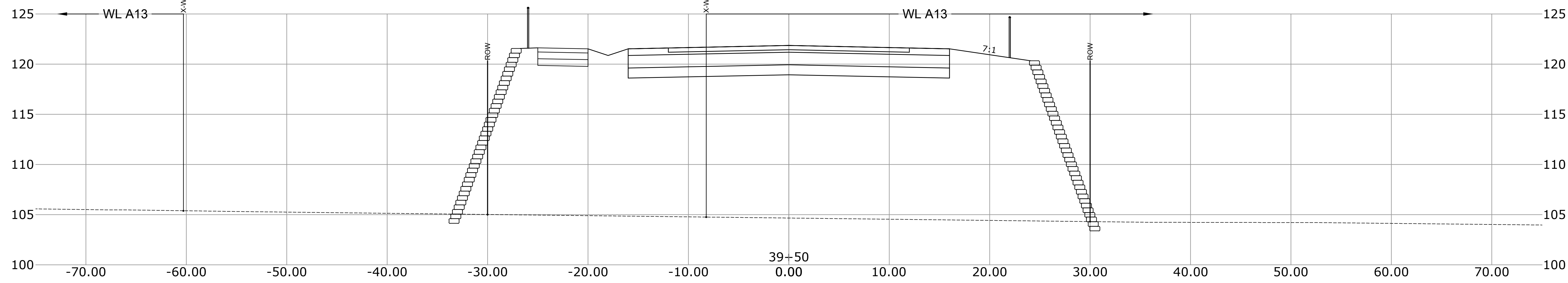
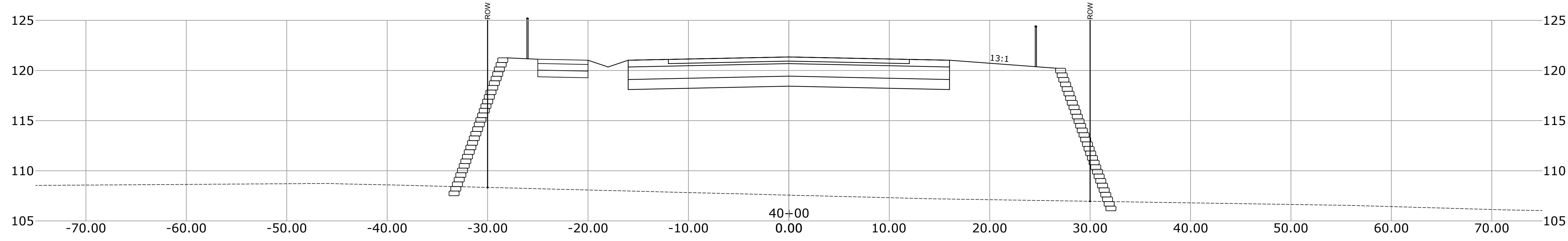
DESCRIPTION	DATE	BY
ADDED MSE WALL	08/11/2022	SWM
REVISED CULVERT DIMENSIONS	08/11/2022	SWM

CROSS SECTIONS
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

DESIGNED	SWM	MFZ
DRAWN	CHECKED	

SCALE: 1"=5'
 DATE: NOVEMBER 4, 2022
 PROJECT NO.: 4807-13
SHEET NAME: XSC-05

SHEET: 06 OF 06
 DATE: 05/11/2022
 PROJECT: 4807-13
 DRAWN BY: JMM
 CHECKED BY: JMM
 PROJECT NO.: 4807-13



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 BOSTON, MA 02101
 617.551.9144
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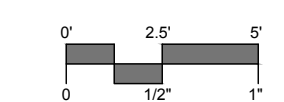
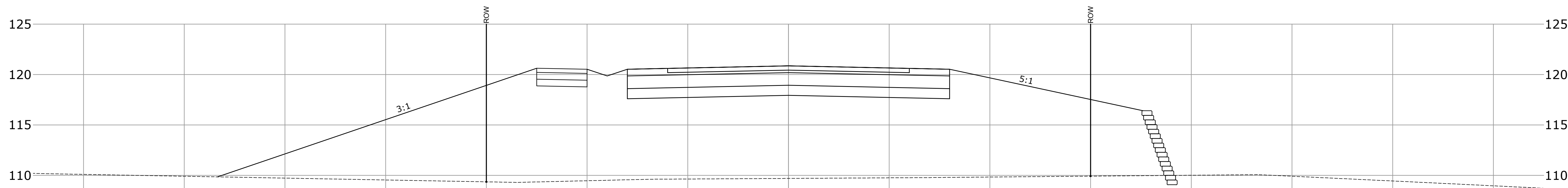
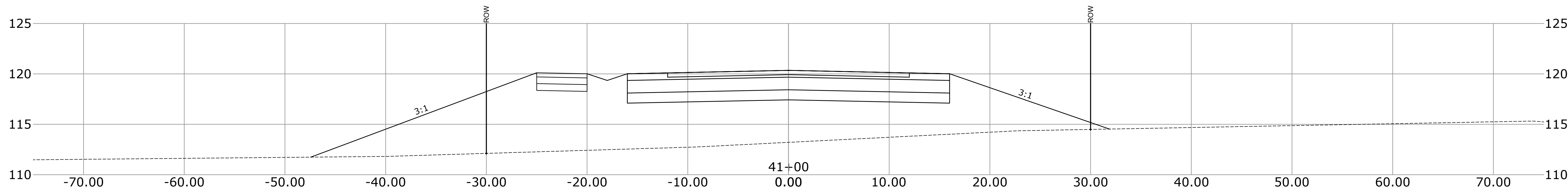
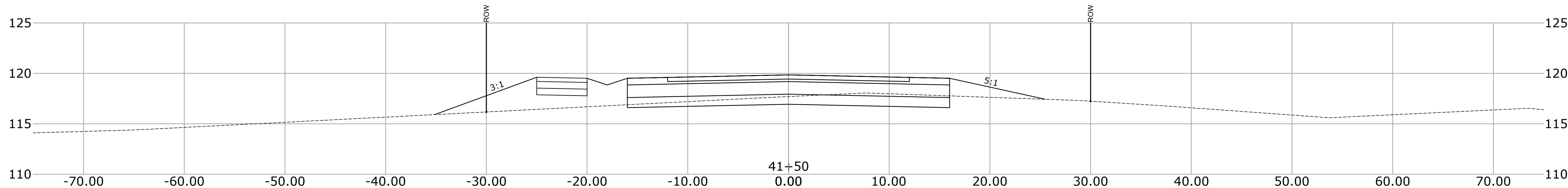
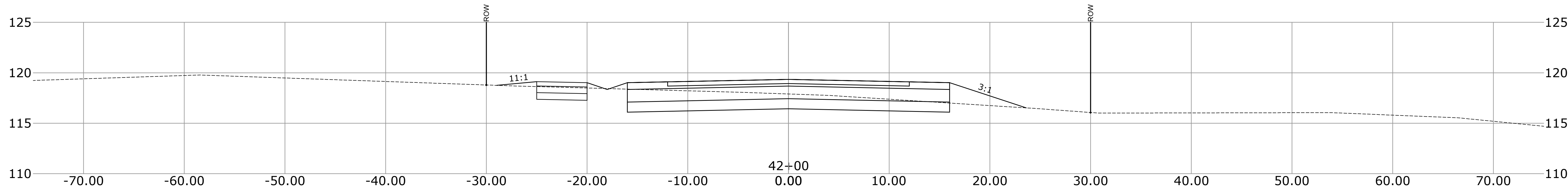
DESCRIPTION	DATE	BY
ADDED RISE WALL	05/11/2022	SWM
REVISED CULVERT DIMENSIONS	05/11/2022	SWM

CROSS SECTIONS
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

SWM DESIGNED	SWM DRAWN	MFZ CHECKED
SCALE: 1"=5'		
DATE: NOVEMBER 4, 2022		
PROJECT NO.: 4807-13		

XSC-06

SHEET: 4 OF 10
 DATE: 05/11/2022
 PROJECT: 4807-13
 DRAWN: SWM
 CHECKED: SWM
 PROJECT NO.: 4807-13



DESCRIPTION	DATE	BY
ADDED MSE WALL	05/11/2022	SWM
REVISED CULVERT DIMENSIONS	05/11/2022	SWM

CROSS SECTIONS
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

DESIGNED	SWM	MFZ

SCALE: 1"=5'

DATE: NOVEMBER 4, 2022

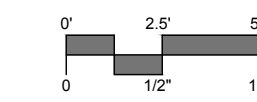
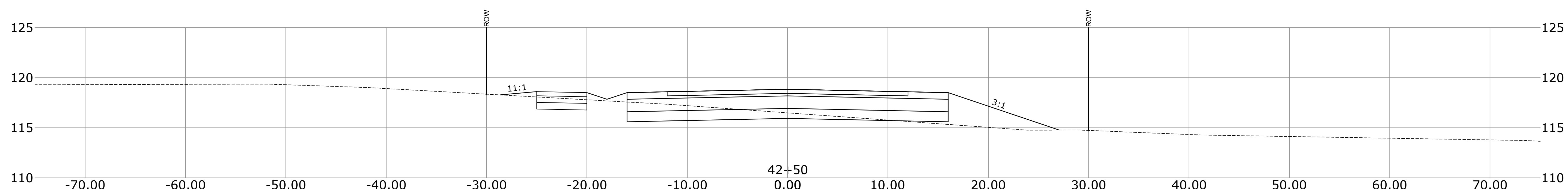
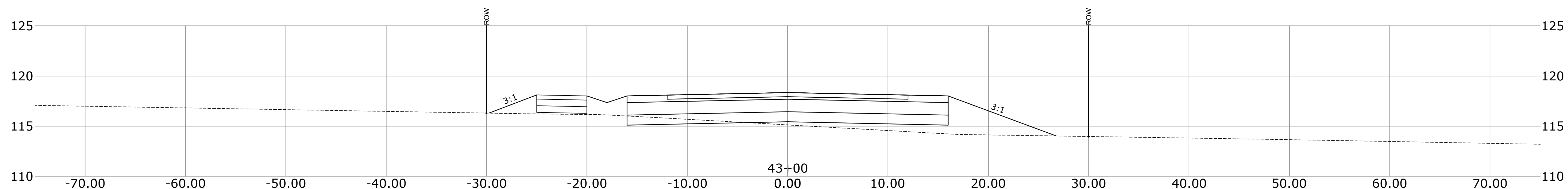
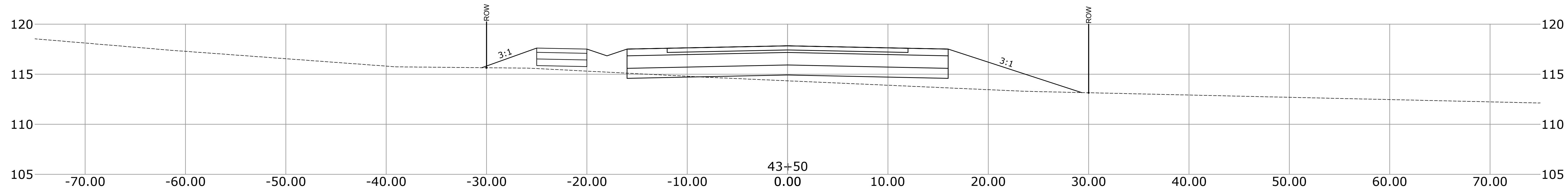
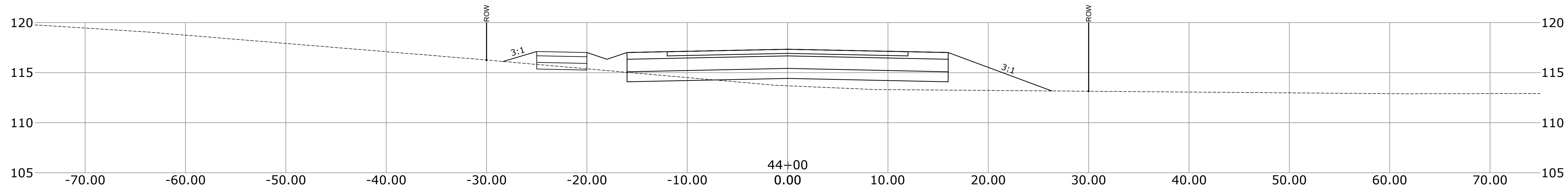
PROJECT NO.: 4807-13

XSC-07

SHEET NAME

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SHEET: 01 OF 04
 DATE: 11/04/2022
 PROJECT: 4807-13
 DRAWN BY: J. BROWN
 CHECKED BY: J. BROWN
 SCALE: 1"=5'
 PROJECT NO.: 4807-13
 SHEET NAME: XSC-08



DESCRIPTION	DATE	BY

CROSS SECTIONS
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

SWM DESIGNED	SWM DRAWN	MFZ CHECKED

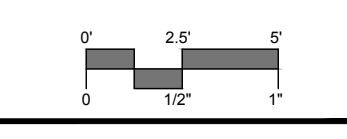
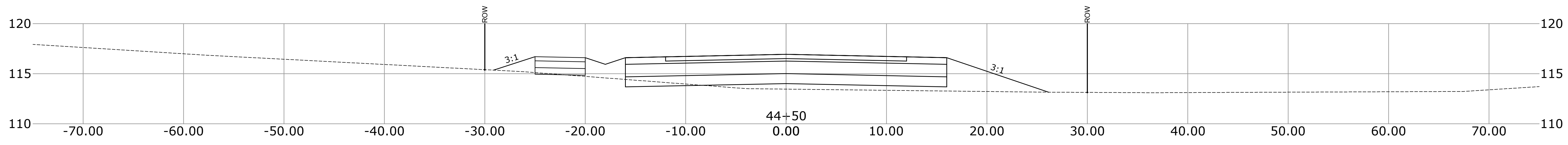
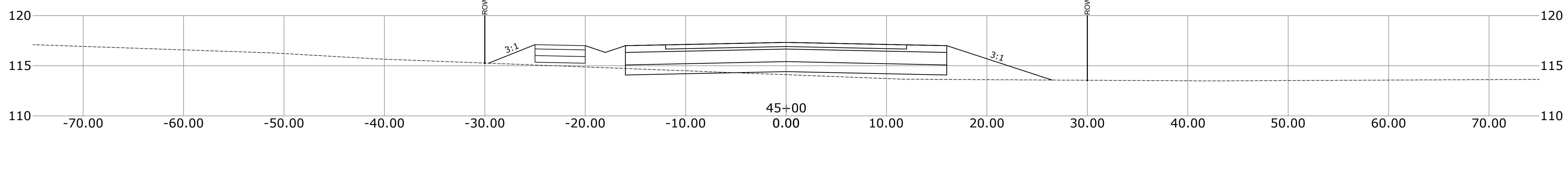
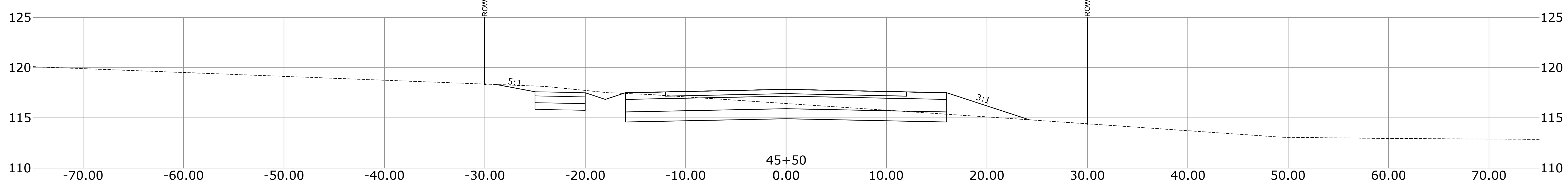
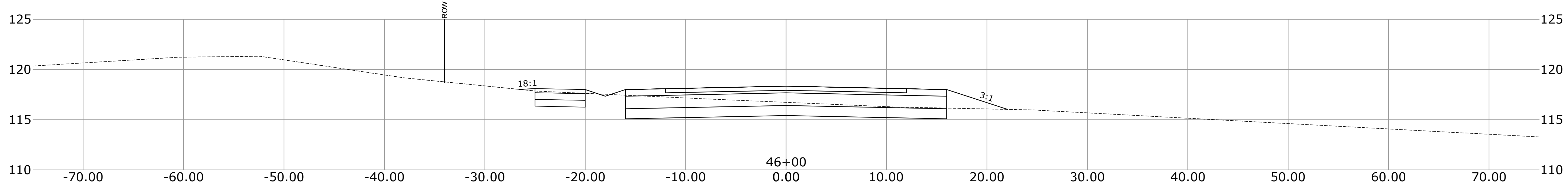
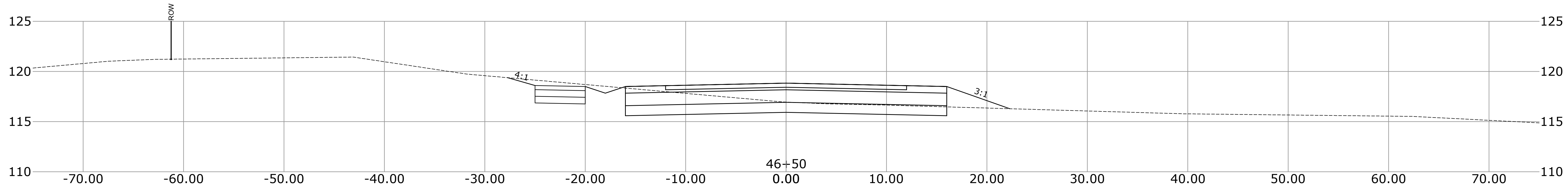
SCALE: 1"=5'

DATE: NOVEMBER 4, 2022

PROJECT NO.: 4807-13

XSC-08

SHEET 1 OF 10
 11/04/2022
 10:00 AM
 10/27/2022
 10:00 AM
 10/27/2022
 10:00 AM



SLR
 2 MARKET STREET, 5TH FLOOR
 BOSTON, MA 02101
 202.541.9244
 SLRCONSULTING.COM

DESCRIPTION	DATE	BY

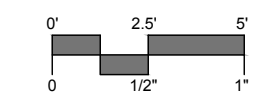
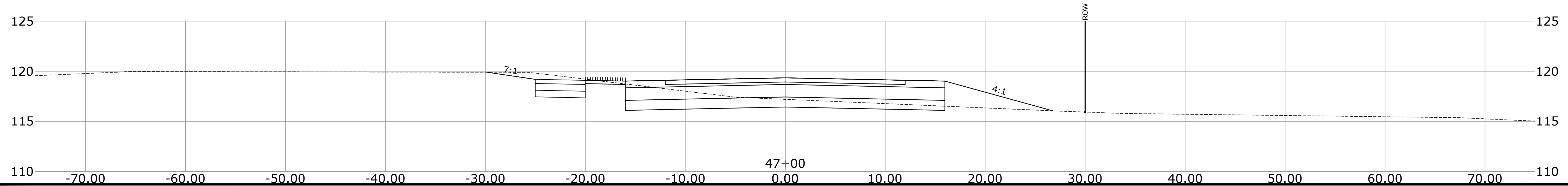
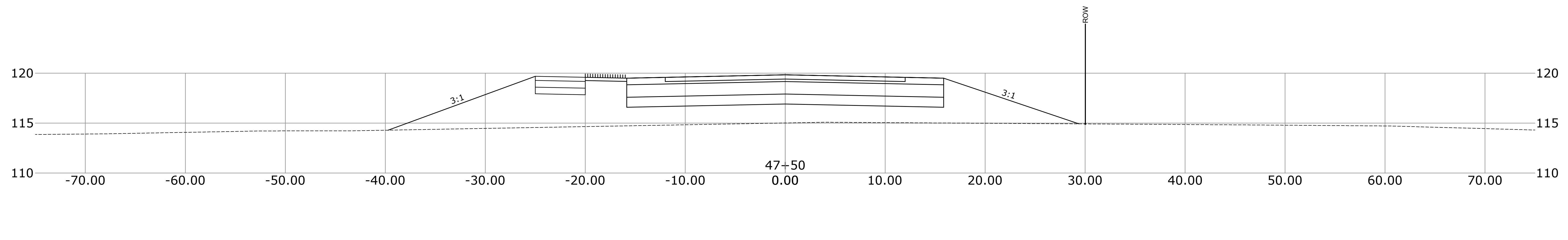
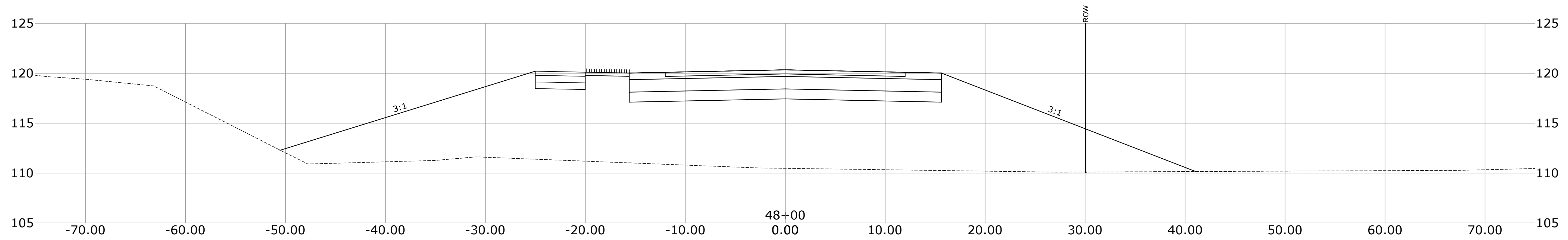
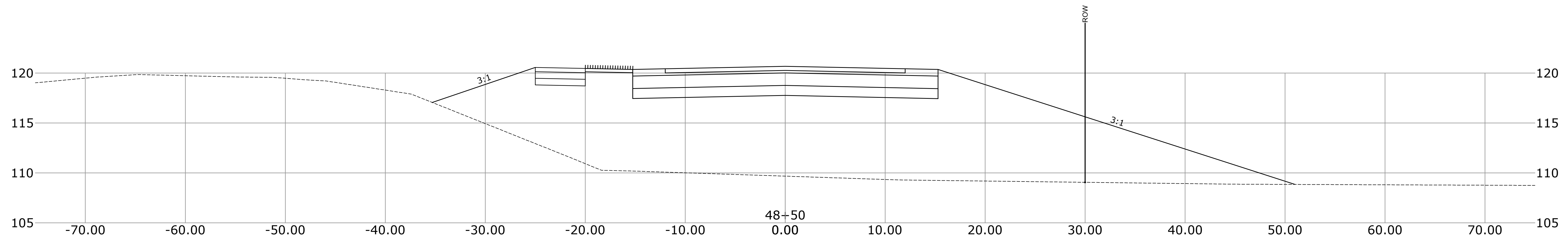
CROSS SECTIONS
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

SWM DESIGNED	SWM DRAWN	MFZ CHECKED

SCALE: 1"=5'
 DATE: NOVEMBER 4, 2022
 PROJECT NO.: 4807-13

XSC-09

SLR INTERNATIONAL CORPORATION
2 MARKET STREET, 5TH FLOOR
NEWTON, MA 02459
TEL: 617.552.8200
WWW.SLRCONSULTING.COM



DESCRIPTION	DATE	BY

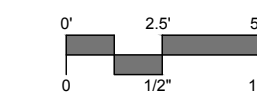
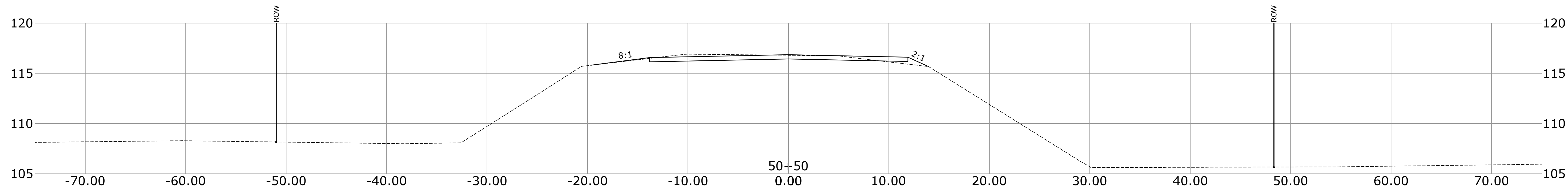
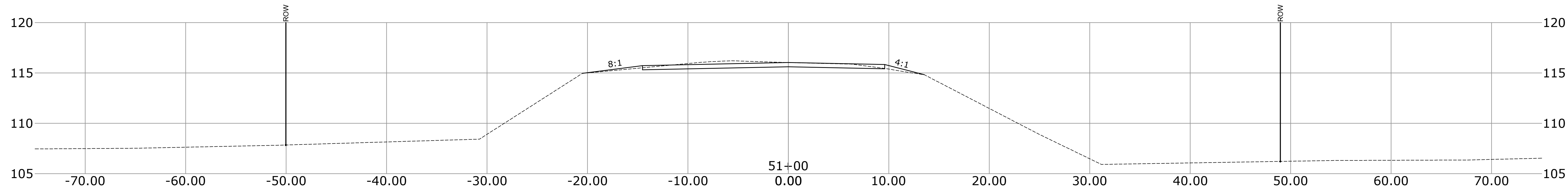
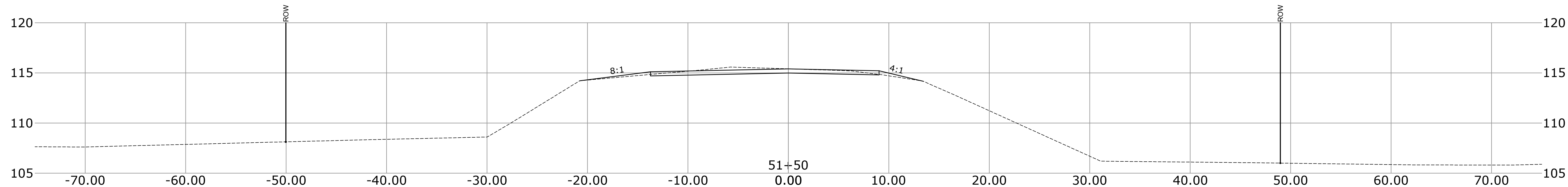
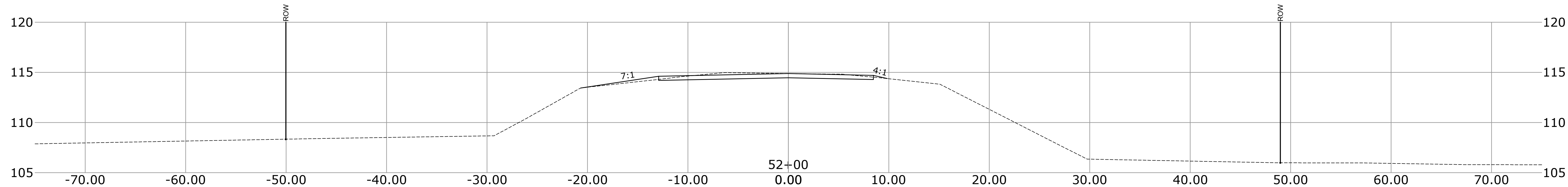
CROSS SECTIONS
GORHAM INDUSTRIAL PARK
WEST CAMPUS
CYR DRIVE
GORHAM, MAINE

SWM	SWM	MFZ
DESIGNED	DRAWN	CHECKED

SCALE: 1"=5'
DATE: NOVEMBER 4, 2022

SHEET NAME: XSC-10

11/17/22 10:00 AM
 2025.11.17.22
 2025.11.17.22



SLR
 2 MARKET STREET, 5TH FLOOR
 BOSTON, MA 02102
 617.552.3600
 SLRCONSULTING.COM

DESCRIPTION	DATE	BY

CROSS SECTIONS
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

DESIGNED	DRAWN	MFZ

SCALE 1"=5'

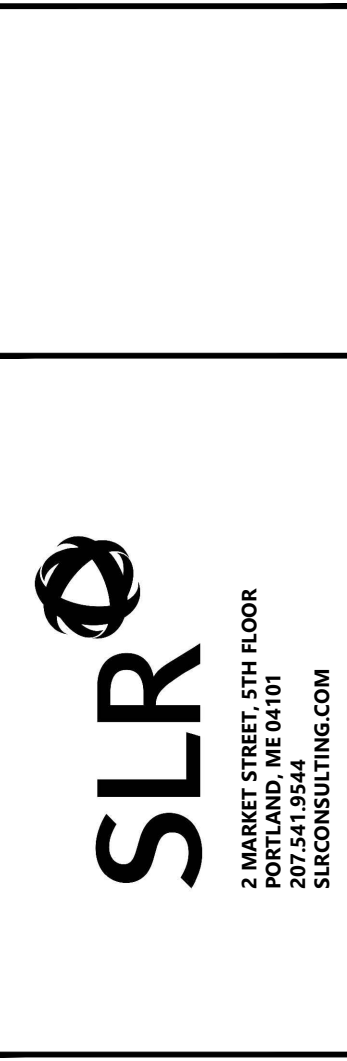
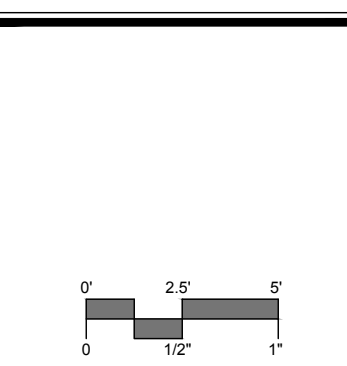
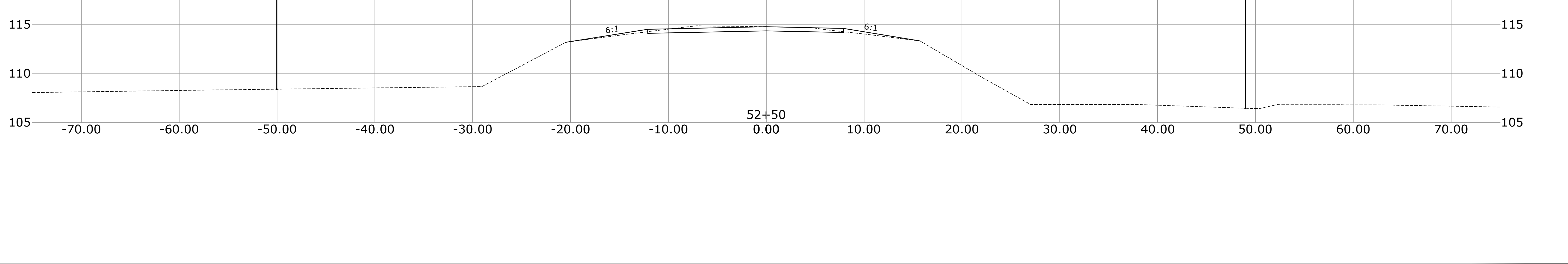
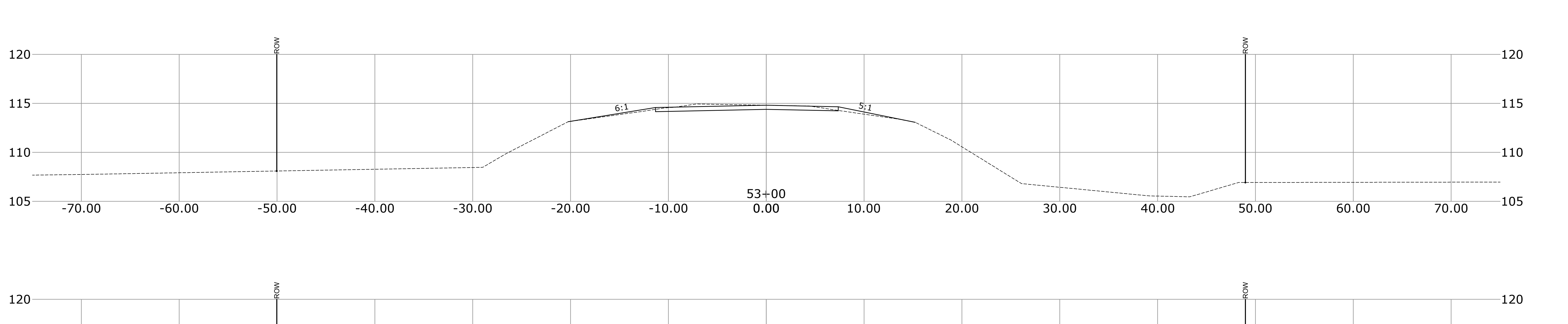
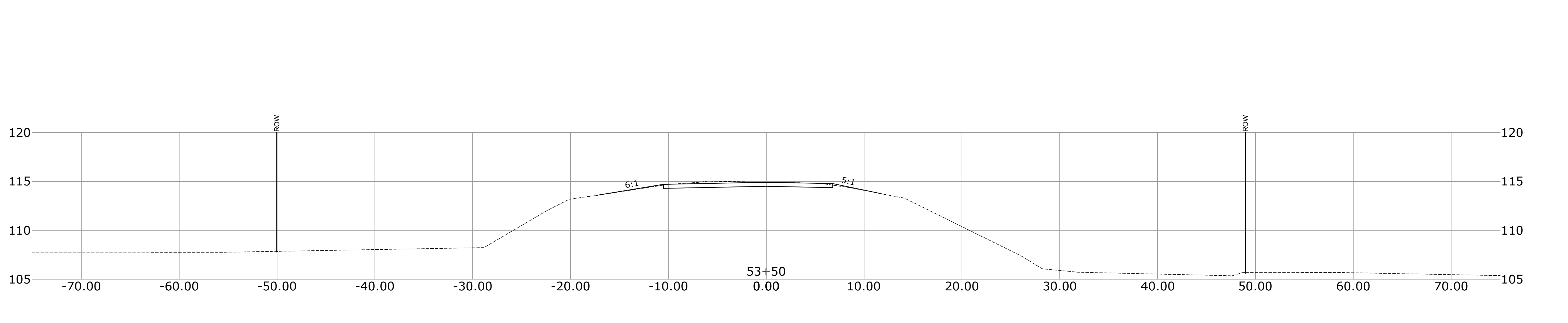
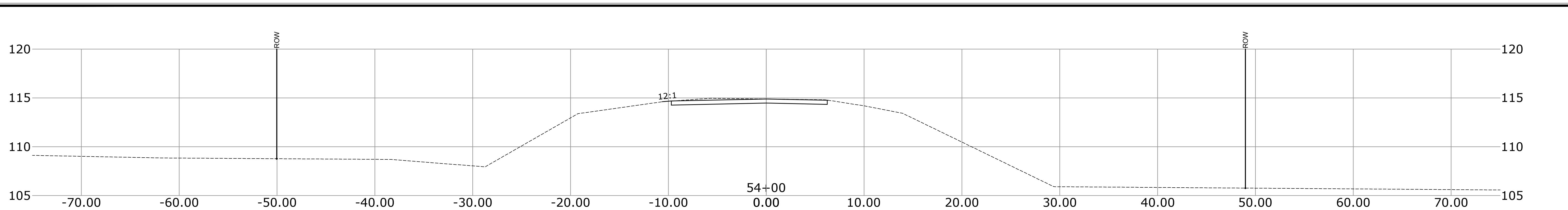
DATE NOVEMBER 4, 2022

PROJECT NO. 4807-13

SHEET NAME **XSC-12**

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148727 - 11/16/2022 10:00 AM - 10:00 AM
 11/16/2022 10:00 AM - 10:00 AM

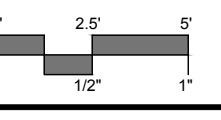
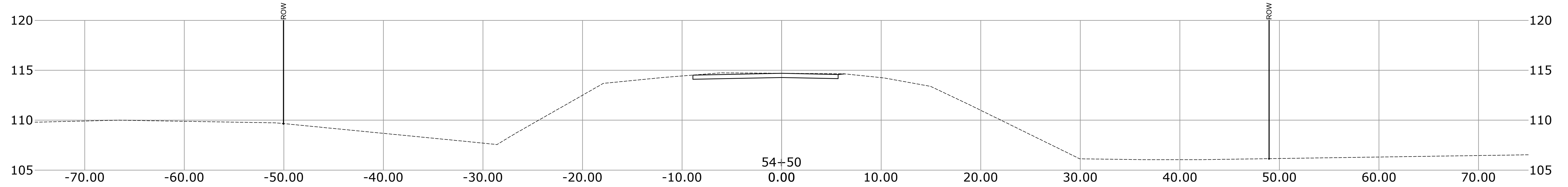
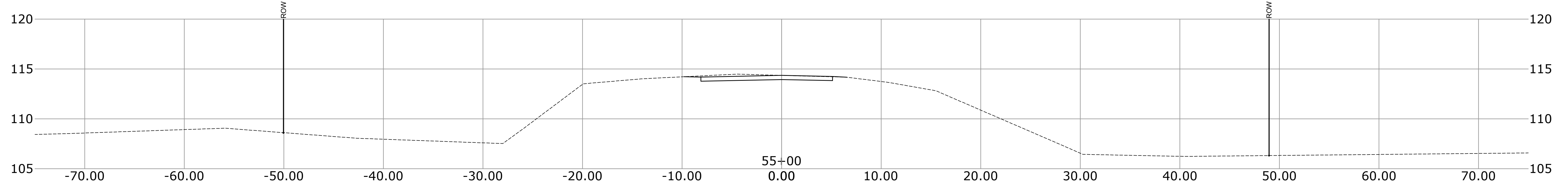
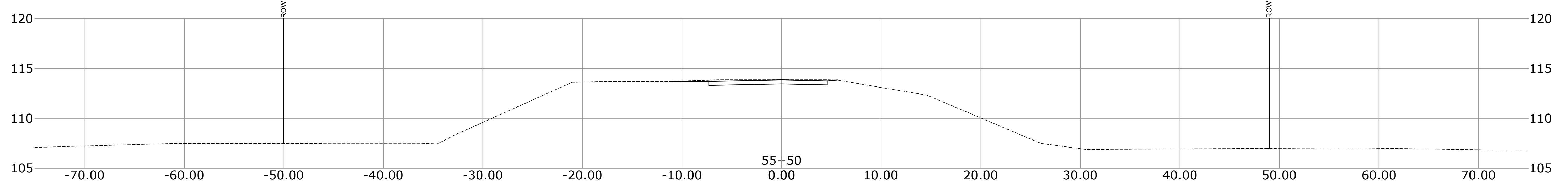
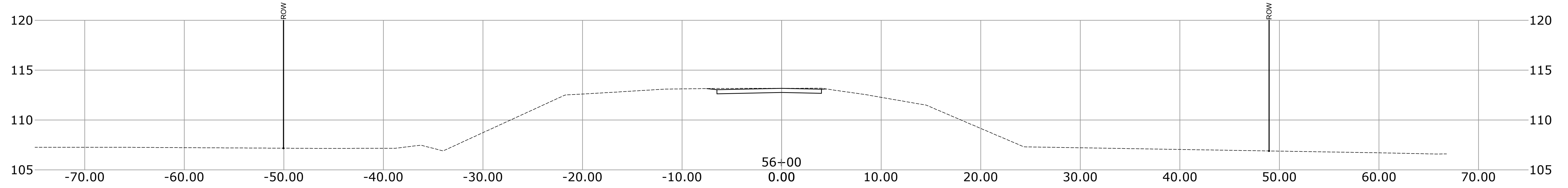


DESCRIPTION	DATE	BY

CROSS SECTIONS
 GORHAM INDUSTRIAL PARK
 WEST CAMPUS
 CYR DRIVE
 GORHAM, MAINE

DESIGNED	SWM	MFZ
DRAWN		CHECKED
SCALE: 1"=5'		
DATE: NOVEMBER 4, 2022		
PROJECT NO.: 4807-13		
XSC-13		

DATE: 11/04/2022 10:54:10 AM
PROJECT: 4807-13
SHEET: XSC-14



DESCRIPTION	DATE	BY

CROSS SECTIONS
GORHAM INDUSTRIAL PARK
WEST CAMPUS
CYR DRIVE
GORHAM, MAINE

SWM	SWM	MFZ
DESIGNED	DRAWN	CHECKED

SCALE: 1"=5'

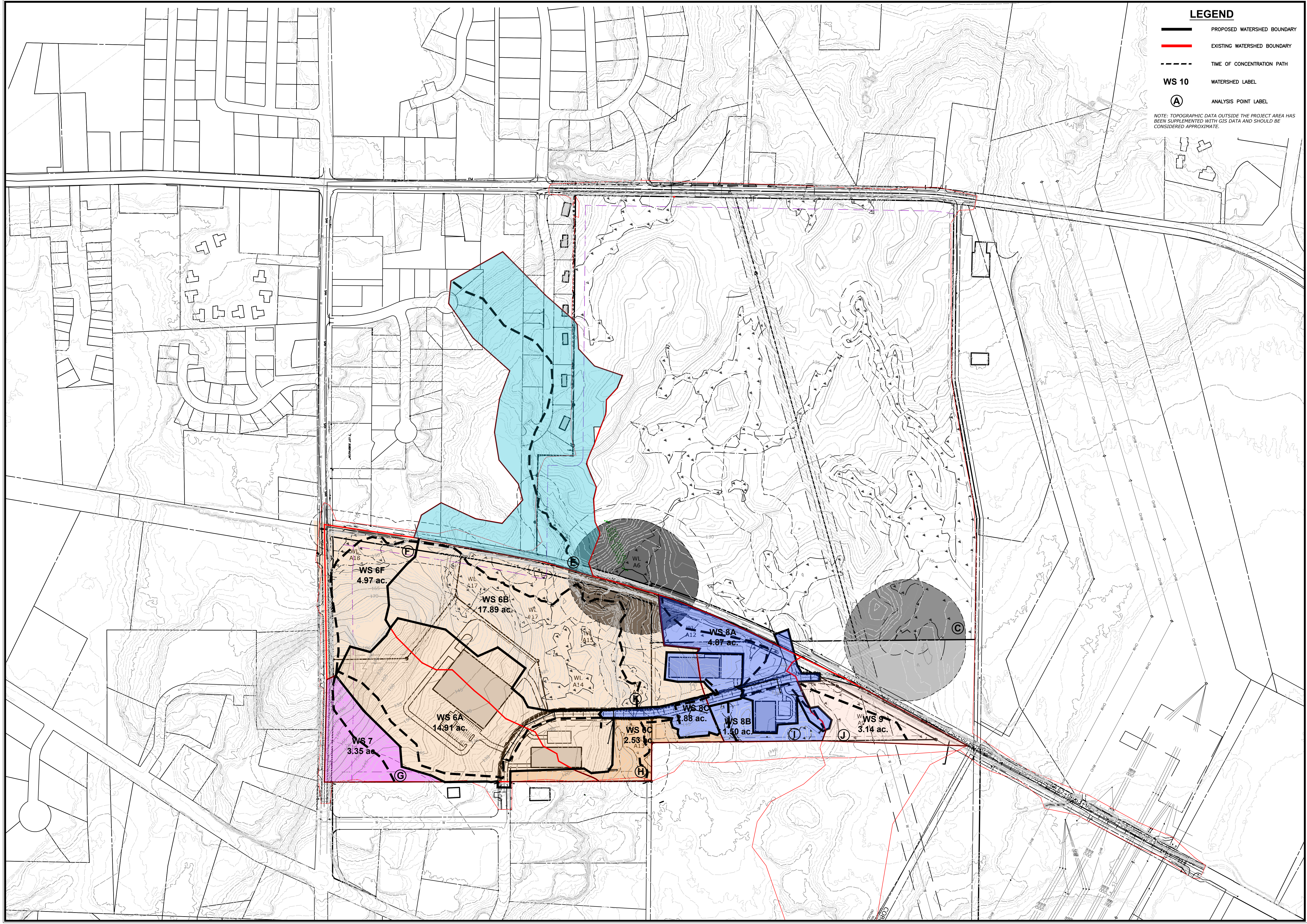
DATE: NOVEMBER 4, 2022

PROJECT NO.: 4807-13

XSC-14

SHEET NAME

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- LEGEND**
- PROPOSED WATERSHED BOUNDARY
 - EXISTING WATERSHED BOUNDARY
 - - - TIME OF CONCENTRATION PATH
 - WS 10** WATERSHED LABEL
 - (A)** ANALYSIS POINT LABEL

NOTE: TOPOGRAPHIC DATA OUTSIDE THE PROJECT AREA HAS BEEN SUPPLEMENTED WITH GIS DATA AND SHOULD BE CONSIDERED APPROXIMATE.

STATE OF MAINE
MICHAEL F. ZARBA
No. 18384
LICENSED PROFESSIONAL ENGINEER

SLR
2 MARKET STREET, 5TH FLOOR
PORTLAND, ME 04101
207.541.5944
slrconsulting.com

DESCRIPTION	DATE	BY

PROPOSED WATERSHEDS
GORHAM INDUSTRIAL PARK
WEST CAMPUS
CYR DRIVE
GORHAM, MAINE

HAR	SWM	MFZ
DESIGNED	DRAWN	CHECKED
SCALE: 1"=200'		
DATE: NOVEMBER 4, 2022		
PROJECT NO: 4807-13		

SW-02
SHEET NAME

January 9, 2022

Ms. Carol Eyerman, AICP, Town Planner, Town of Gorham

Dear Ms. Eyerman:

Barton & Loguidice, LLC has received the following information:

- Response to Comment Letter
- Plan set for Gorham Industrial Park West Campus, dated November 4, 2022, prepared by SLR
- Application for a Natural Resources Protection Act Permit, dated April 9, 2022, prepared by SLR
- Natural Resources Protection Act, dated April 2022, prepared by SLR
- Appendix A: Stormwater Computations and Modeling
- Gorham Subdivision Application, dated November 7, 2022, prepared by SLR
- Declaration of Gorham industrial park-west owners association with covenants, restrictions and conditions
- BYLAWS of GORHAM INDUSTRIAL PARK-WEST OWNERS ASSOCIATION
- DEP Site Location of Development Permit Application dated April 9, 2022, prepared by SLR
- Submission Checklist
- Post Development Hydrocad modeling reports (2)
- Hydrographs Peak Flowrate Summary, dated June 30, 2022, prepared by SLR
- USPS proof of mailing receipt
- Letter of Transmittal, dated April 11, 2022, prepared by SLR
- Section 5 Noise
- Section 18 Solid Waste, revised October 19, 2022
- Department of the Army Maine General Permits Authorization Letter and Screening Summary, dated October 17, 2022
- DEP Permit by Rule Notification Form, dated April 19, 2022, prepared by SLR
- Stormwater Quality Calculations, dated February 2022, prepared by SLR
- Site Location of Development, dated April 2022, prepared by SLR

Based on a review of the submitted information, we offer the following **responses/comments** below:

Key: Original B&L Comments Dated December 1, 2021

SLR Responses, Dated December 1, 2022

Current B&L Responses/Comments

SLR Responses 1-30-23

Landscaping & Lighting:

1. Please note that comprehensive landscape plans and planting schedules will be required at the time of application for each building lot. These plans will need to document compliance with the Town of Gorham's landscaping requirements for the industrial district. These requirements include providing an adequate visual and auditory buffer along the perimeter setbacks of the properties to shield abutting residential properties and public ways from the future development. **Individual lot developers/owners will be responsible for submitting lot development plans compliant with the Town of Gorham standards. The subdivision plans show landscaping for the public roadway and common easement areas – see Sheets LA-01 to LA-03.**

Response: No further comments.

2. On sheet LA-1, please call out material stockpile area on southern portion of Lot 1 such that it is clear why the tree line is shown in such a fashion. **The stockpile areas are shown on the SEC plan sheets.**

Response: SLR response does not address B&L comment, however this is not a necessary requirement for permitting purposes, therefore no further comment.

3. Please add street lighting to all plan sheets and lighting schedules as appropriate to verify conformance with the regulations and verify there are no conflicts. Be prepared to provide a full lighting plan for review at the time of application for each building lot in order to ensure all lighting levels comply with the Town of Gorham's standards. **Individual lot developers/owners will be responsible for submitting lot development plans compliant with the Town of Gorham standards.**

Response: SLR response does not address B&L comment. Individual developers may be responsible for their own lots, however the roadway is the responsibility of SLR on these plan sheets. There is no lighting plan provided. According to the legend on the cover sheet, the proposed site lighting should look like icon in the blue box shown in Photo 1 below. There are no icons that look like this anywhere on the plans that B&L could find.

There are objects on the utility plan that are possibly supposed to be lights, however they are not called out as anything and they are not on any legends found (see Photo 2 below). Please revise plans to indicate what these objects are.

As stated in Section 4.9 of Gorham's Zoning Regulations, Lighting shall be provided, at a minimum, in the following areas:

- a. Entrances to facilities and recreation areas;***
- b. Street intersections;***
- c. Pedestrian crossings; and***
- d. Entrance roads.***

Please ensure lighting is shown at all appropriate locations noted above at a minimum. Street lighting is also recommended as part of the Gorham Comprehensive Plan Amendments, South Gorham Future Land Use prepared by North Star Planning dated March 11, 2021.

Response by SLR: Tom P to address this issue more fully. Effectively there are no Street Intersections, Pedestrian Crossings or Entrance Roads. The lights for Entrances to Facilities would be shown and installed by the individual lot developers at the time of Site Plan approval.

EXISTING	LEGEND	PROPOSED
	STREET LINE	
	PROPERTY LINE	
	EASEMENT	
	SETBACK LINE	
	MAJOR CONTOUR	
	MINOR CONTOUR	
	SPOT GRADE	+70.5
	WETLANDS	
	TREE LINE	
	TREE/SHRUB	
	STONEWALL	
	SITE LIGHT	

Photo 1

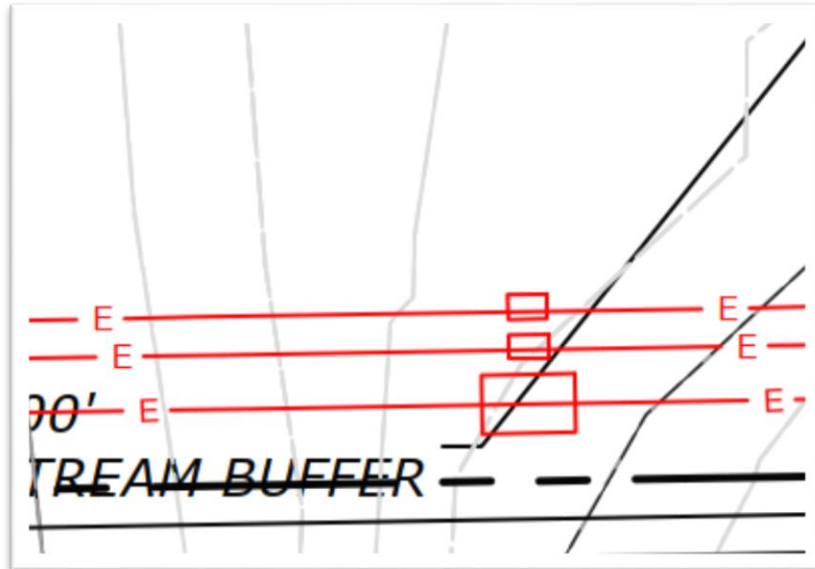


Photo 2

4. Please provide a note that all disturbed areas shall to be seeded with a perennial grass seed mix and provide the seeding schedule. Permanent seeding mix/schedule is shown on Sheet LA-03 and all temporary seeding requirements/measures are detailed on Sheet SD-01.

Response: No further comments.

5. Please clearly denote limits of Phase 1 activities in areas such as access drives into future lots in order to show limits of disturbances and site restoration areas. **Phasing limits are detailed on Sheet PH.**

Response: No further comments.

6. Please adjust street tree locations to eliminate conflicts with proposed access drive locations. If these access drives are only shown for conceptual purposes, please add a note indicating street trees will be protected and/or replaced during individual lot construction. **Updated landscaping plans are provided and appropriate notes are on Sheet LA-03.**

Response: Most conceptual driveways are still closer to proposed trees than what would be ideal. The most notable example can be found on sheet LA-01 (see Photo 3 below). There are no notes indicating that the driveway locations are shown for conceptual purposes only on the landscaping sheets. A note on sheet LA-03 states "TAKE NOTE TO PROTECT ROOT ZONES OF EXISTING TREES ROOT ZONES DURING CONSTRUCTION AS SHOWN ON PLANS." I believe this is the note that is supposed to satisfy this comment, however this wording is confusing, as I believe it is referring to the proposed trees shown on this plan as existing trees for construction of future developments? This comment is not clear. A clear note should be added to protect or replace any trees disturbed during individual lot construction in order to uphold this landscaping plan presented to the best of their ability.

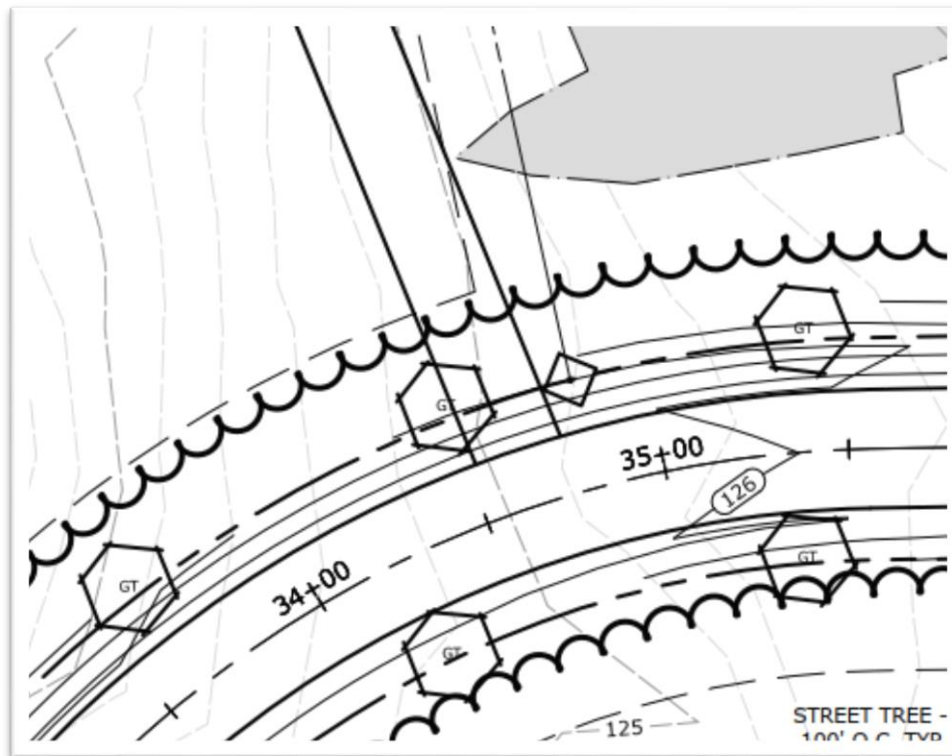


Photo 3

Response by SLR: Note 11 has been updated to be clearer as well as notes added to Overall Plan Indicating driveway locations are conceptual for planning purposes and not final.

7. On sheet SE-2, the material stockpile shown on future building 3 is within the tree line. Please confirm whether the clearing limits need to be modified to allow for construction access to this stockpile location. **Building locations are only shown for stormwater runoff/estimating purposes. Individual lot developers/owners will be responsible for determining building and parking locations and submitting lot development plans compliant with the Town of Gorham standards.**

Response: This does not answer B&L's comment. If this material stockpile is for the proposed building 3 development, and these plans are not showing any development related items for these lots, then the material stockpile should not be shown on these plans. If this material stockpile is for the proposed work as shown on these plans, then it needs to be within the tree clearing limits. On sheet SEC-01, tree clearing is shown for the material stockpile (see Photo 4 below). If this is the intent, then the material stockpile on sheet SEC-02 should also be within the clearing limit (see Photo 5 below with proposed clearing limit in blue).

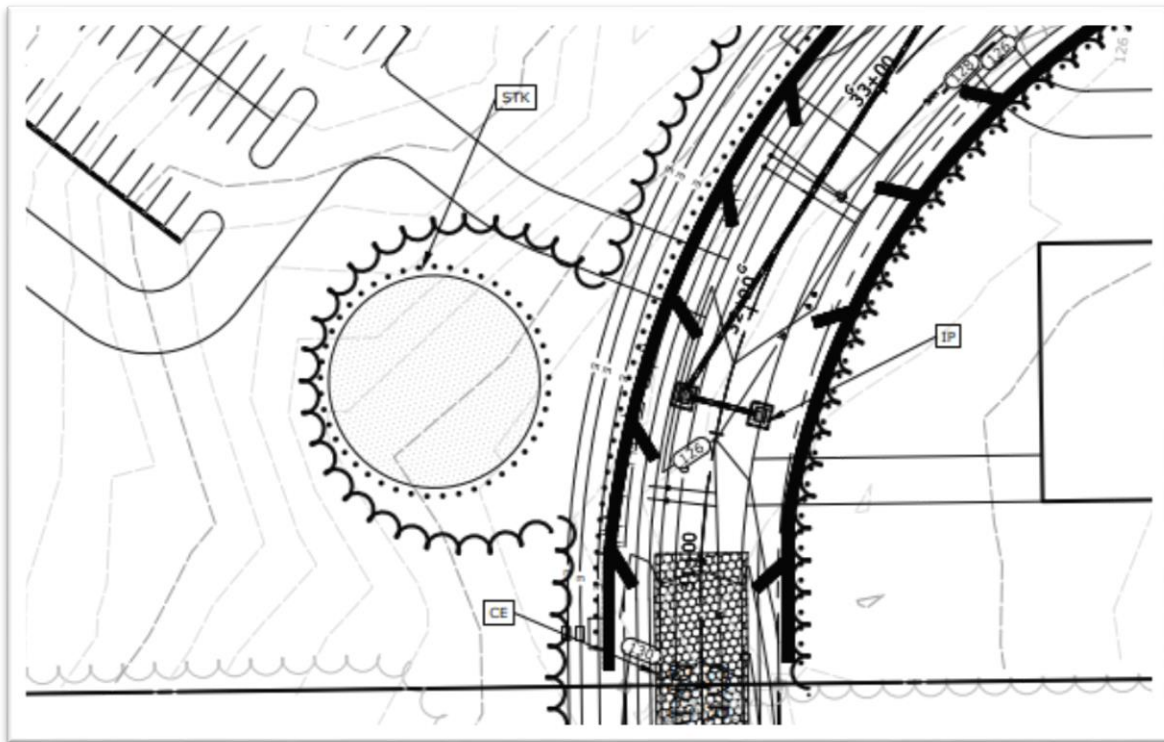


Photo 4

Response by SLR: Stockpile areas were primarily shown for DEP permitting, however they may be used by contractors constructing either the road/stormwater infrastructure or site development, therefore we have shown both stockpile areas within the clearing limits and on both LA sheets as well as SEC sheets.

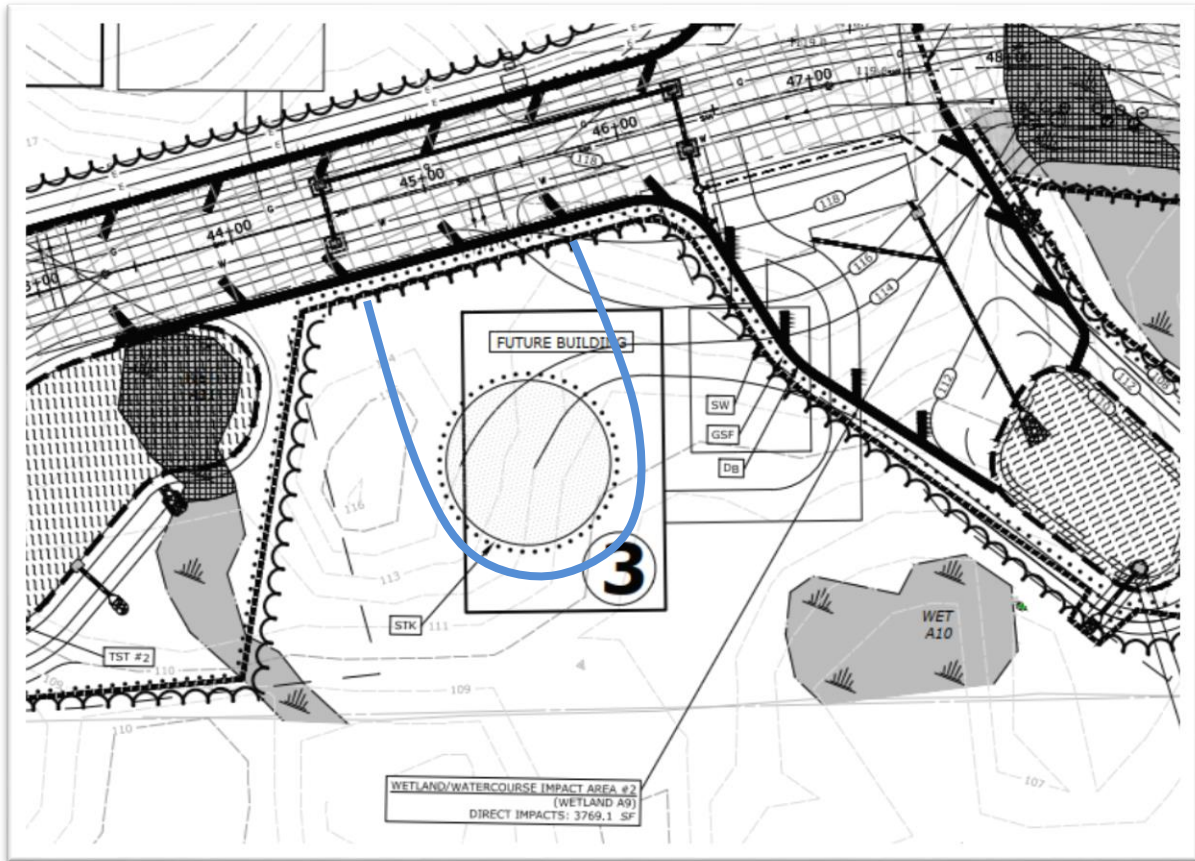


Photo 5

8. Please call out all stormwater basins on the landscaping plans and specify the seeding mixture and seeding schedule to be used within these basins. Stormwater basins are shown on the Landscaping plans, however as these features are integral to stormwater management both during and post construction and are subject to MEDEP review and approval the details for these BMP's are shown on the Sedimentation and Erosion Control plans (SEC-01 to SEC-03) and specific seeding specifications are on sheet SD-01

Response: B&L does not see any specific seeding specifications for the stormwater detention basins on SD-01. Are the basins just receiving the permanent vegetative cover (Turfgrass Mix or Equal)? If so it is recommended that a specific wet basin mix be used.

Response by SLR: Although the basins aren't wet ponds we agree the mix should be more tolerant of these conditions and we have updated the landscaping sheets to show the basins be seeded with an appropriate mix.

9. Please specify plantings within and/or adjacent to all wetland impact areas and add planting schedule to applicable plans. Updated landscaping plans are provided with this information and the planting schedule is on Sheet LA-03.

Response: It is recommended that wetlands be constructed at a minimum of a 1:1 ratio for all wetland impact areas to offset negative effects of losing valuable wetlands.

Response by SLR: The NRPA permit process will dictate any required compensatory mitigation.

10. General – Show upland review area buffers for all wetlands on the project. Buffer areas for all wetlands and Natural Resources are shown on the plans and more specifically defined on the Overall Plan (PLN), Index Plan (IN), and/or Existing Conditions (EX-01 to EX-03) sheets.

Response: No further comments.

11. Proposed grading is shown within treeline (see Photo 6 below from sheet LA-02). Please revise tree clearing limit.

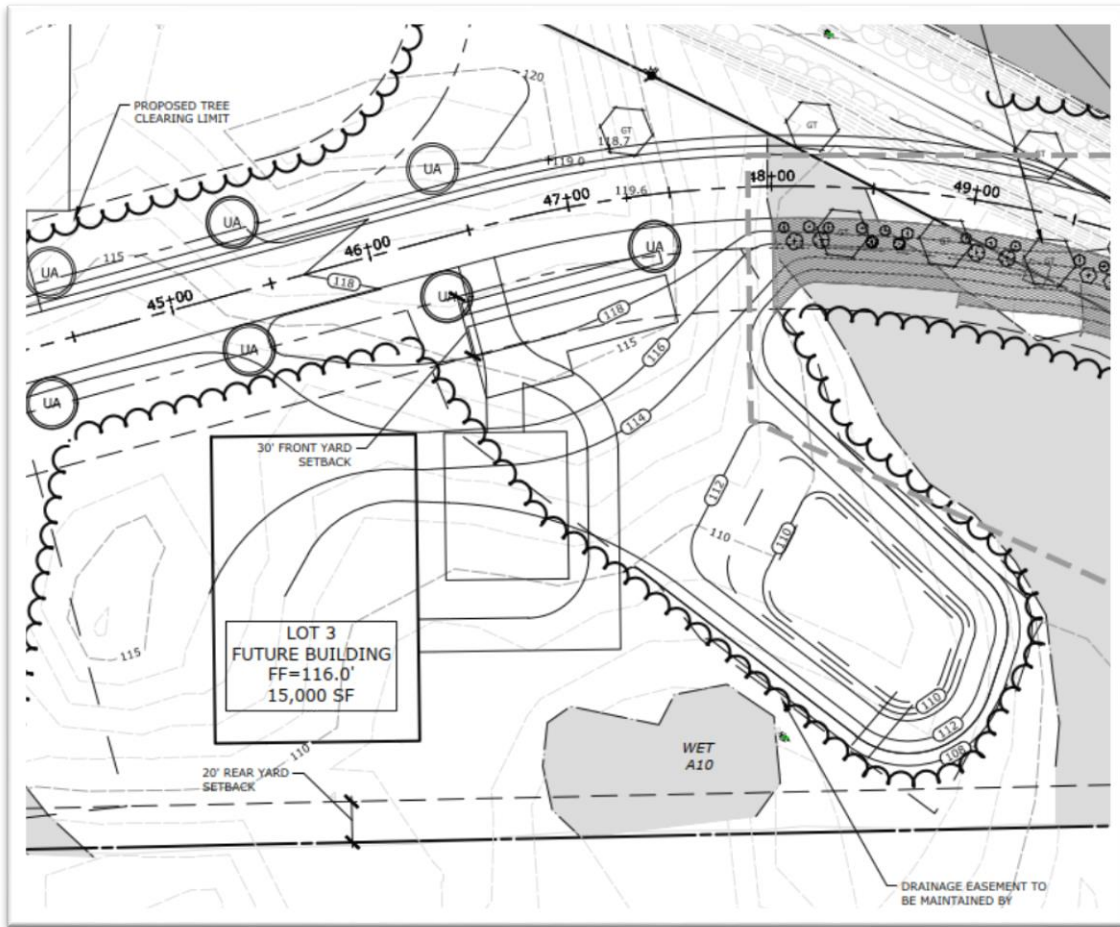


Photo 6

Response by SLR: Clearing limits on the LA sheets as well as SEC sheets have been updated to show both stockpile areas and/or grading areas related to the roadway/stormwater construction.

Kevin R. Grindle, ASLA, PLA
Senior Managing Landscape Architect



Traffic:

12. The 2026 weekday morning peak hour traffic forecasts presented for the Cyr Drive/New Portland Road intersection shows approximately 48 vehicle trips will enter the Cyr Drive approach from the west approach of New Portland Road. It is suggested that a left-turn lane warrant assessment be prepared for the noted left-turn movement. The analysis should follow the NCHRP 457 process in conducting the assessment. **The results of the left-turn warrant are attached in the two charts. It's just about warranted in the AM peak based on the plotted information. We used a CTDOT chart (more accurate because it's interpolated for 45 mph roadways) and NCHRP 457 chart (for 40mph). The NCHRP document is protected, can't print, so I screenshot it and put dots on the chart. See attached.**

SLR is requested to update their trip generation projections and trip assignment for the proposed Gorham Industrial Park West Campus development applying trip rate data presented in the 11th edition of the Institute of Transportation Engineers TRIP GENERATION publication. The Maine Department of Transportation current standards requires all site trip estimates based upon the latest edition of the ITE publication. The left-turn lane warrant analysis should be updated accordingly following the NCHRP 457 process. (The analysis should be conducted using the NCHRP 457 tool versus the two charts that were previously provided). The NCHRP 457 Excel Spreadsheet was previously sent to SLR.

Response by SLR: Trip generation estimates were updated according to the latest edition of ITE's trip generation manual, as shown in the table below. Trip assignment, was calculated accordingly, resulted in 39 and 10 site trips making a left-turn into Cyr Drive during the AM and PM peak hour, respectively. Note that Lots 1-4 are access by Cyr Drive on New Portland Road, while the Outparcel is accessed via Libby Avenue.

Lot	Use	ITE Land Use Code	Size	Units	AM Peak-Hour Trips			PM Peak-Hour Trips		
					In	Out	Total	In	Out	Total
1 - 4	Industrial Park	130	145,000	SF	40	9	49	11	38	49
5	Industrial Park	130	20,000	SF	6	1	7	1	6	7
Total					46	10	56	12	44	56

Response by SLR: The left-turn lane warrant analysis was updated accordingly using NCHRP 457 for a 2-lane roadway with 45 mph speed, showing a left-turn lane warranted during the AM peak hour. The results shown below include the traffic volumes after adding site trips to background volumes. As we are only using estimated building sizes and uses, it would be our recommendation that this analysis be performed at such time when exact size and use for each lot is established.

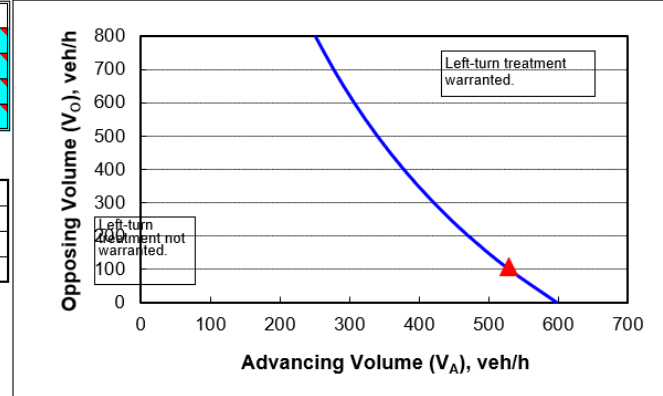
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	8%
Advancing volume (V_A), veh/h:	529
Opposing volume (V_O), veh/h:	108

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	524
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



13. Vehicle sight distance measurements should be provided for both the Jenna Drive and Cyr Drive approaches at Libby Avenue and Cyr Drive, respectively. Field observations suggest sight distance at both Industrial Drive entry street connections are partially impaired by existing low-level vegetation. SLR staff field verified sight distances on 12/14/2021 (vegetation was not a problem at that time) and sight distance were measured as follows:

- Jenna @ Libby 650'+ looking north and 250' (to roundabout) looking south
- Jenna @ Cyr 275' looking south
- Cyr @ New Portland 775' (to roundabout) looking west and 1000'+ looking east

Sight distance measurements recorded at each noted intersection based upon the information provided by SLR meet and exceed acceptable sight distance standards.

Response by SLR: Noted.

14. Sight distance to proposed lot #5 should be field verified to ensure acceptable sight distance is attainable onto Libby Avenue. Sight distance from the existing driveway location provides the best possible sight distance and was field measured to be over 475' looking south and over 500' looking north (minimum needs to be at least 305'). However, individual lot developers/owners will be responsible for determining the actual driveway location and ensuring its location is compliant with the Town of Gorham standards.

Existing vegetation located in the northeast sight triangle (“looking” right) from the proposed site driveway access should be removed as necessary to maintain acceptable sight distance.

Response by SLR: Noted

15. A determination should be rendered on whether the proposed West Campus Phase 1 project trip generation combined with trip generation of the existing adjacent Industrial Park exceed MaineDOT’s Traffic Movement Permit threshold value of 100 peak hour trips. MaineDOT’s requires any project that meets their definition of common scheme of development and constructed within the last ten years that exceeds the 100-trip threshold must file for a Traffic Movement Permit.

Based on google earth, three buildings were added within the last 10 years in the existing Industrial Park (off of Cyr Dr). The GIP –West Campus (165,000 SF) in addition to the existing 3 buildings would generate trips less than 100 peak hour trips (62), therefore, the TMP threshold is not met. Below is the summary table of trips generated.

We generally agree with the SLR trip calculation but please note going forward any trip generation calculations should be based upon the 11th edition of the ITE Trip Gen Manual and has been required by Maine DOT since 2022.

Response by SLR: Noted

16. It is encouraged, if feasible and practicable that proposed driveway access to Lot's 1 and 2 be aligned directly opposite each other. Similarly, proposed access to Lot's 3 and 4 should be aligned opposite each other as well. Driveway locations are only shown for stormwater runoff/estimating purposes. Individual lot developers/owners will be responsible for determining actual driveway and parking locations and submitting lot development plans compliant with the Town of Gorham standards.

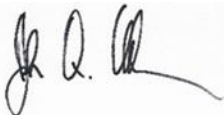
B&L continues to recommend driveway access to both Lots #1 & 2 be aligned directly opposite proposed building lots # 3 and 4, consistent with desirable access management guidelines. Response by SLR: Notes indicating that "Driveways, and all site related building and parking, are shown for conceptual and planning purpose only and are not intended to show the actual location or exact dimensions as may be developed in the future." have been added to the Overall Plan. The Town could enforce this recommendation at the time of Site Plan approval for each lot.



William J. Bray, P.E.
Senior Traffic Engineer

If you have any questions regarding the above comments, please contact me at (207) 331-6694.

Sincerely,



John Q. Adams, P.E., PTOE
Associate

proprietary R-Tank System is to be conducted under a contract with a qualified professional covering the proprietary system, this should be indicated in the plan.

6. WP Original Comment 4: Applicant to clarify if all catch basin manholes are to be Type F, including the proposed sump depth for structures. A standard catch basin manhole detail is not provided.

Applicant Response: Type F detail removed as we are not using.

WP Response: Details for both Type F and Standard Catch Basins are still provided. It is still unclear their locations on the plans. The plans label the proposed basins as either “CCB” or “Deep Sump CB”.

7. WP Original Comment 5: Applicant to clarify the use of Manhole Top “D”, as detailed on Sheet SD-5.

Applicant Response: Manhole Top “D” is to be used for the proposed storm system for manholes MH-3, Diversion MH-6, Diversion MH-12, Diversion MH-18 and MH-19.

WP Follow Up Response: Locations of these Type D tops are not noted on the plans.

8. WP Original Comment 6: A level spreader detail has been provided but they are not identified on the plans.

Applicant Response: Detail removed as we are not using.

WP Follow Up Response: Level spreaders are still shown in plan view – for example, at the outlet of Stormwater Basin 8C.

9. WP New Comment 1: All storm drain slopes should be reviewed to make sure they are 0.5% or greater as the slope between CCB 14 and Deep Sump CB 17 is shown as 0.39%.

Utility Layout and Design

1. WP Original Comment 1: Need written approval from the Portland Water District of use of the public water supply for connection to public water and sewer. Please provide evidence of approval.

Applicant Response: PWD has provided an Ability to Serve letter.

WP Follow Up Response: Town to confirm this has been provided since it has not been submitted for our review.

2. WP Original Comment 2: Minimum cover depths in the form of notes and/or details should be included on the plans for each proposed utility (sewer, storm, water, etc.).

Applicant Response: Details have been added to plans.

WP Follow Up Response: Minimum cover for the proposed water main is noted on the profiles. Minimum cover over sewer or storm drain could not be found in the submitted plan set.

Construction-Related Sedimentation and Erosion Controls

1. WP Original Comment 1: We recommend that straw bales be used in place of hay to avoid the introduction of invasive species to the wetlands on site

Applicant Response: Details have been updated accordingly.

WP Follow Up Response: Haybales are still noted on Sheet SD-01.

December 30, 2022

Wright-Pierce first reviewed the Site Plan Application for the proposed Gorham Industrial Park West Campus on July 23, 2021. The project was scheduled for review by the Planning Board on August 2, 2021. The Applicant, the Town of Gorham, was originally submitting for approval of subdividing two industrial zoned lots into 16 lots with a minimum lot size of 2.29 acres per lot, in four phases.

Approximately 420,000 of building square footage on these lots were proposed. A second Site Plan Application package was submitted and provided to Wright-Pierce on October 13, 2021. The application was revised by this second submission to only consist of Phase 1 (four lots with a proposed building area of 145,000 SF), and it is our understanding that the rest of the phases of development will be submitted for separate review in the future. Although a Site Plan Application has been submitted, the Town instructed Wright-Pierce to conduct a Subdivision Review. A Subdivision Application package was then submitted on November 16, 2022 and a follow-up response letter was submitted on November 18, 2022. A resubmission of the Subdivision Application package was submitted on December 22, 2022. Site Plan Applications will be required at the time sites are ready to be developed.

The focus of the review submittal is related to general conformance, subdivision regulations, stormwater drainage, utility layout and design, and sedimentation and erosion controls.

Documents Reviewed by Wright-Pierce

- Gorham Industrial Park West Campus Plan Set - prepared by SLR International Corporation (Select plan sheets have been revised with a revision date of December 19, 2022; but overall, the plans are still dated November 4, 2022)
- Response to Wright-Pierce Comments from December 2, 2022 review memo - prepared by SLR International Corporation (SLR response not dated)

Review Comments

Wright-Pierce's original comments are in standard text, followed by the applicant's response in italics, and our follow up responses in bold. Comments from the original review letter that did not require a response or clarification are not listed. Applicant should provide written responses to the review comments recommending clarification or further information to be provided by the Applicant.

General

1. **WP Original Comment 12c:** According to the performance standards of the Gorham Land Use and Development Code, a 100-foot perimeter setback must be maintained where the industrial zoned land abuts non-industrial zoned land. A 50-foot setback from non-industrial zoned land is provided, as shown on Sheet IN in purple. Please revise or clarify the intent of the 50-foot setback.
Applicant Response: This is a pre-existing lot to November 30, 1998 and therefore not subject to the 100' buffer requirement. Further, buffers and landscaping of such were discussed at length with the Planning Board at its April 12, 2021 meeting and determined a 50' buffer will be shown for subdivision, while buffers and landscaping for screening will be required at time of site plan application for individual lots.
WP Follow Up Response: Town to confirm this is accurate.
Applicant Response 2: No response provided.
WP Follow Up Response 2: It is assumed that the Town has confirmed this is accurate.
2. **WP Original Comment 12d:** A landscaped buffer prepared by a landscaped architect is required in the 100-foot perimeter setback. Applicant to clarify if this requirement has been met.
Applicant Response: See 12 c. above.
WP Follow Up Response: Town to confirm the Applicant's response to 12 c. is accurate.
Applicant Response 2: No response provided.
WP Follow Up Response 2: It is assumed that the Town has confirmed this is accurate.

A 100' Buffer is now shown adjacent to Libby Ave as discussed at the January 9th meeting.

-
3. New Comment 1 from 12/2/2022 Memo: The project requires a Site Law of Development (Site Law) Permit, which includes stormwater management. The application has been submitted to Maine DEP for review; however, the status of the permit was not indicated. If not already received, it is recommended the Maine DEP Site Law approval be a Condition of Approval. Assuming the project receives Maine DEP Site Law approval, the proposed stormwater management should be adequate. Therefore, most previous comments in this review memorandum regarding stormwater management that will be reviewed by Maine DEP have been removed. A few stormwater management comments of particular concern remain.

Applicant Response: Agreed that Site Law approval should be a condition of approval. Status is pending.

WP Follow Up Response: It is assumed that the Town will confirm the necessary approvals are obtained. No further comment necessary.

4. New Comment 3 from 12/2/2022 Memo: Applicant to submit the Natural Resources Protection Act (NRPA) permit when approved.

Applicant Response: Agreed, this will be provided when available.

WP Follow Up Response: It is assumed that the Town will confirm the necessary approvals are obtained. No further comment necessary.

General Standards of Performance

1. WP Original Comment 6: The typical roadway section on SD-4 only shows curbing on one side of the road. Applicant to clarify if curb is intended to be constructed on both sides of the road to adequately convey stormwater to catch basins.

Applicant Response: All curbing has been removed from this project. See Typical Sections on sheet SD-04.

WP Follow Up Response: Please clarify how runoff will be effectively conveyed to the catch basins if curbing is not proposed. Additionally, the sidewalk and road appear to slope towards each other (Typical Roadway Section Industrial/Commercial STA. 49+26.1 – 49+46.8), which without a curb will allow runoff to spread into the sidewalk and is a pedestrian safety concern. All typical roadway sections should also show road and shoulder cross slopes and widths compliant with the Town Code for industrial/commercial roads. One of the sections notes the sidewalk width varies, however it is not clear why. Clarify why sidewalk widths vary and verify that all sidewalks are at least 5 feet wide.

Applicant Response 2: Properly established vegetation along the roadside will establish gutter line flow of stormwater to the basins, in addition the roadside swale on the north side of road will collect runoff and there are two standpipes in the swale to collect/convey water to the piping system. The variable walk width occurs where the sidewalk tapers into the edge of the roadway at approximately STA. 49+46.8. The taper causes the width of the sidewalk to vary, but never less than 5 feet, as it approaches the eventual location of tie-in. This is shown in plan view on sheet PRO-02.

WP Follow Up Response 2: Cross slopes are not shown on the roadway sections. A standpipe detail should be provided. Cross slopes added to Typical. Standpipe detail is shown on Sheet SD-05.

Subdivision Requirements

No further comment.

Stormwater Management and Design

1. WP Original Comment 2b: Approval of the Post-Construction Stormwater Management Plan is required. At a minimum, we recommend the Applicant add the following information to the Stormwater Management Plan or develop a stand-alone Post-Construction Stormwater Plan:

- i. Project contact information (project name, location, watershed, owner/developer, design engineer, responsible party for inspection and maintenance of stormwater BMPs/facilities, etc.)
- ii. Description of project
- iii. Stormwater management, including summary of required permits and summary of compliance with applicable stormwater standards (Chapter 500, Municipal, etc.)
- iv. Description of stormwater facilities, including a listing of each stormwater facility and where it discharges (i.e., wetland, stream, MS4, buffer)
- v. Site specific inspection and maintenance for BMPs and stormwater facilities, including recommended maintenance procedures, schedule for maintenance, responsible party, etc.
- vi. Reference to compliance (the requirement for annual inspection and certification of the stormwater management facilities as well as any corrective action to address deficiencies, Section 6 of Post-Construction Stormwater Management Ordinance).

Applicant Response: All information has been addressed in submitted DEP permits.

WP Follow Up Response: An Operation, Inspection, Maintenance & Housekeeping Plan was submitted to Maine DEP as part of SLR Responses to Comments associated with the Site Location of Development application (dated 7/7/2022). The Operation, Inspection, Maintenance & Housekeeping Plan should be updated to include reference to Chapter 2 Post-Construction Stormwater Management of the Town’s Stormwater Ordinance. The Plan should address both Town requirements from the Town’s Post-Construction Stormwater Management ordinance and DEP Chapter 500 inspection and maintenance requirements. Although, the Plan does include inspection and maintenance tasks for stormwater management measures, it should be updated to include project contact information, a description of the project and how stormwater is being managed, including a listing of each stormwater management measure, where it is located, and where it discharges (i.e., wetland, stream, buffer), and specifically who is responsible for conducting inspections and maintenance. The Plan should also include a reference to compliance (the need for annual versus five-year inspection and certification) and associated certification forms. The 7/7/2022 Plan includes “Filtration and Infiltration Basins” as a stormwater management measure under “After Construction”; however, none are proposed on the plans. The Plan should be updated to only include site-specific stormwater management measures. In addition, if inspection and maintenance of the proprietary R-Tank System is to be conducted under a contract with a qualified professional covering the proprietary system, this should be indicated in the plan.

Applicant Response 2: Please refer to the updated Project Details and Description and Stormwater Management Plan, Sections 2 & 8 respectively, for the information requested regarding reference to the Stormwater Management Plan, responsibilities during and post-construction, and the requirement for engaging qualified professionals. Also please note that water quality basin 6A and 8C are filtration systems (i.e. grassed underdrained soil filters) so the maintenance notes for “Filtration and Infiltration” apply to those two BMP’s.

WP Follow Up Response 2: Some of this information was found in the Project Details and Description (Attachment 2), Stormwater Management Plan (Attachment 8), including the Operation, Inspection, Maintenance & Housekeeping Plan and Declaration of Gorham Industrial Park-West Owners Association with Covenants, Restrictions, and Conditions. Ideally the Post-Construction Stormwater Management Plan should be a comprehensive, stand-alone document for the Owners to refer to and the Owners Association document should reference the Plan. The alternative is to have the individual documents collectively make up the Post-Construction Stormwater Management Plan; however,

these documents should reference each other and be kept together for future reference. Refer to the Stormwater Ordinance and previous comments to ensure the Plan includes all of the recommended information, in particular:

- **A description of how stormwater is specifically being managed , including a listing of each stormwater management measure, where it is located, and where it discharges (i.e., wetland, stream, buffer, etc.). This will help distinguish between the water quality basins (i.e., grassed underdrain soil filters) and detention basins that comprise Stormwater Basins 6A and 8C.**
 - **The Post-Construction Stormwater Management Plan or, at a minimum, the Operation, Maintenance & Housekeeping Plan should reference who is responsible for inspection and maintenance, including whether or not the R-Tank System is to be conducted under a contract with a qualified professional covering the proprietary system. This information appeared to be loosely referenced, but was buried in other documents.**
- There are 4 separate documents included in Attachment 8 - although they were combined into one PDF for ease of PB submission. We are happy to work with Town staff further to label and coordinate text and documents as required.*

2. **WP New Comment: It appears that the “Grassed Underdrain Soil Filter Detail” that is referenced in the Detention Basin details (6A and 8C) is missing.** *This detail is shown on Sheet SD-05 (we missed transferring it over from the DEP submission set)*

Utility Layout and Design

1. **WP Original Comment 1:** Need written approval from the Portland Water District of use of the public water supply for connection to public water and sewer. Please provide evidence of approval.
Applicant Response: PWD has provided an Ability to Serve letter.
WP Follow Up Response: Town to confirm this has been provided since it has not been submitted for our review.
Applicant Response 2: No response provided.
WP Follow Up Response 2: It is assumed that the Town will confirm the necessary approvals are obtained. No comment necessary.

Construction-Related Sedimentation and Erosion Controls No further comment.

Portland Water District: 10/01/2021

October 1, 2021

This project has not received an Ability to Serve determination letter from the District yet. PWD is waiting for updated plans from the engineer for review and approval.

Conservation Commission: 10/29/2021; 12/02/2022

October 29, 2021

Thank you for giving the Conservation Commission the opportunity to review and comment on the industrial park plans. On behalf of the commission, I have summarized our feedback below.

Cross Town Trail / Pedestrian Access