

TOWN OF WAREHAM, MASSACHUSETTS



EQUALIZATION BASIN NO.3 AND 4 WATER POLLUTION CONTROL FACILITY

JULY 2020

PROJECT NUMBER: 112-06142

CONTRACT NO. 2020-01

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DIRECTOR OF WATER POLLUTION CONTROL
GUY CAMPINHA SR.

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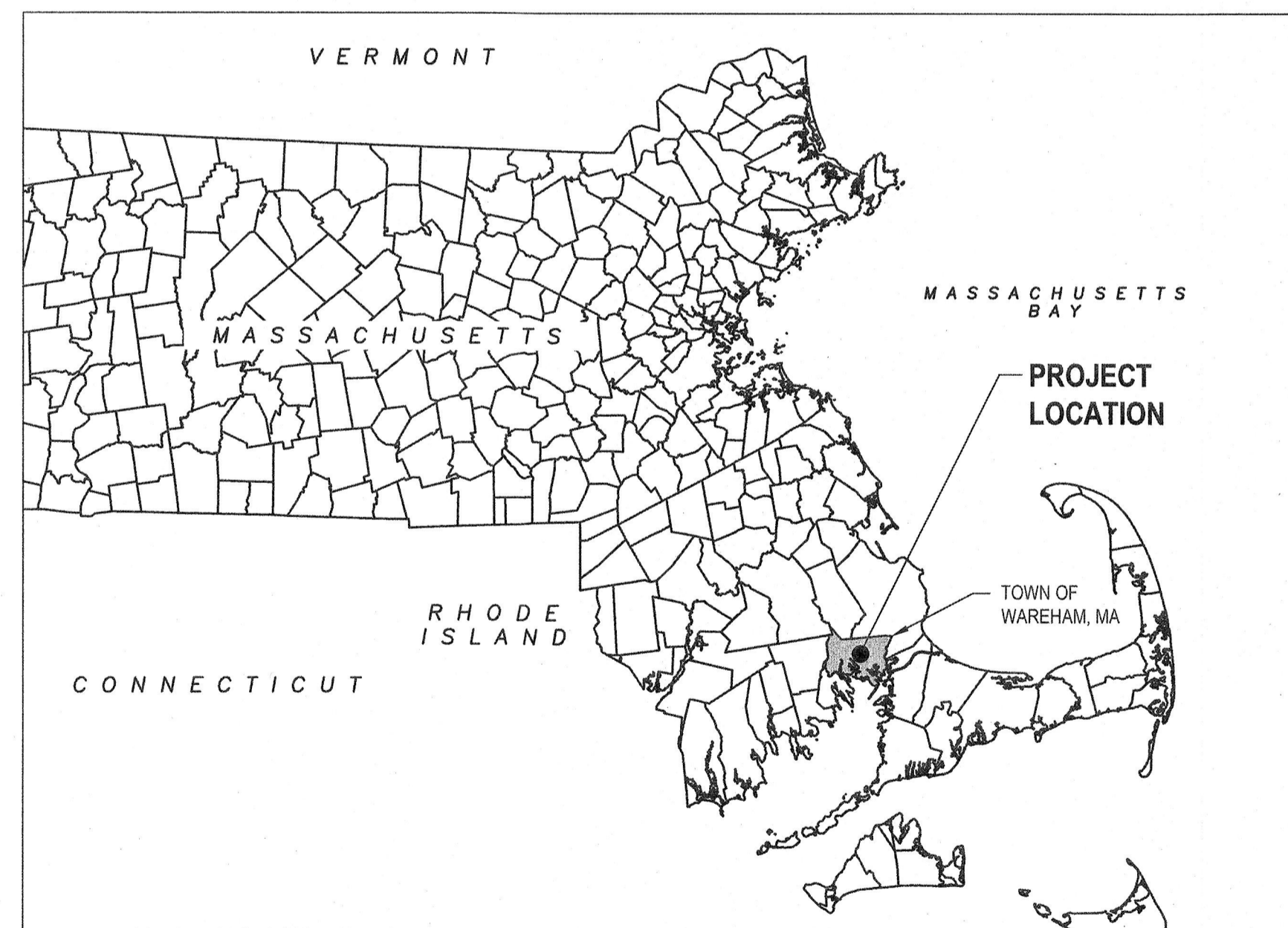
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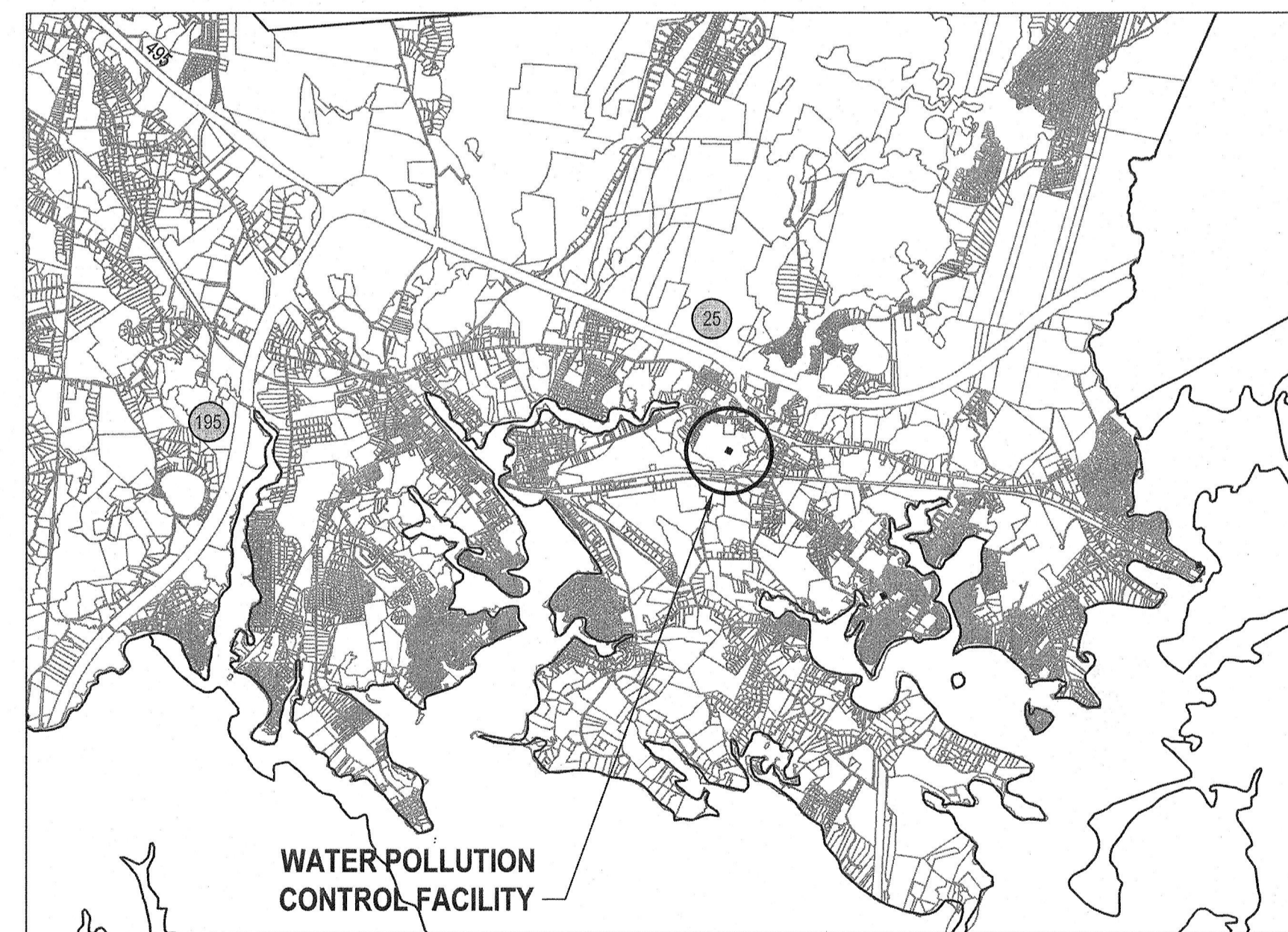
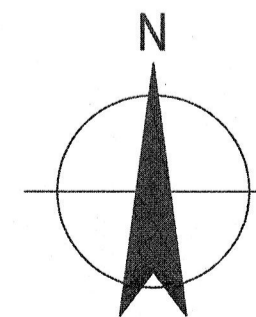
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SANDRA SLAVIN
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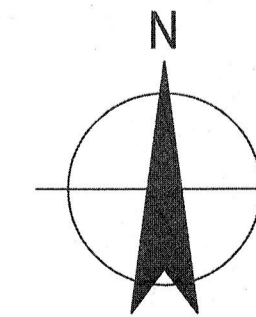
PATRICK TROPEANO
BOS LIAISON



VICINITY MAP



LOCATION MAP



DRAWING LIST

SHEET NO. DRAWING TITLE

GENERAL

- G001 VICINITY AND LOCATION MAPS AND DRAWING LIST
- G002 ABBREVIATIONS, LEGENDS AND SYMBOLS
- G003 GENERAL AND STAGING NOTES AND SEDIMENTATION AND EROSION CONTROL NOTES AND DETAILS
- G004 HYDRAULIC PROFILES I AND II
- G005 HYDRAULIC PROFILE III
- CIVIL**
- C001 SITE PLAN - EXISTING
- C002 SITE PLAN - PROPOSED
- C003 LAYOUT PLAN
- C004 GRADING PLAN
- C005 YARD PIPING PLAN
- C006 SITE SECTIONS
- C007 DISTRIBUTION BOX 1 AND 2 AND EQUALIZATION BASIN SUMP PLANS AND SECTIONS
- DETAILS**
- D001 MISCELLANEOUS DETAILS-I
- D002 MISCELLANEOUS DETAILS-II
- D003 MISCELLANEOUS DETAILS-III
- D004 MISCELLANEOUS DETAILS-IV
- D005 MISCELLANEOUS DETAILS-V

				Bar is one inch on original size sheet 0 1"			<p>GHD Inc. 3075 Breckenridge Boulevard, Suite 470 Duluth GA 30096 USA T 1 678 280 2150 F 1 678 280 2120 W www.ghd.com</p>	Drawn JDF	Designer JDF	Client TOWN OF WAREHAM, MASSACHUSETTS
				Reuse of Documents This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of GHD and shall not be reused in whole or in part for any other project without GHD's written authorization. © 2020 GHD	Drafting Check RHC			Design Check RHC	Project EQUALIZATION BASIN NO.3 AND 4	
0 FOR BIDDING AND CONSTRUCTION		JDF	MW	JULY 2020				Project Manager RHC	Date 7/11/20	Title VICINITY AND LOCATION MAPS AND DRAWING LIST
No.	Issue	Drawn	Approved	Date				This document shall not be used for construction unless signed and sealed for construction.		Project No. 112-06142
								Scale AS SHOWN	Original Size ANSI D	Sheet No. 112-06142-G001

ABBREVIATIONS

AB ANCHOR BOLT	EA EACH	LLV (H) LONG LEG VERT. (HOR.)
AC ASBESTOS CEMENT	ECC ECCENTRIC	LWL LOW WATER LEVEL
ADDL ADDITIONAL	EFF EFFLUENT	LAM LAMINATE
AFF ABOVE FINISHED FLOOR	EL or ELEV ELEVATION	LAV LAVATORY
AST ASPHALT TILE	ELB ELBOW	LT WT LIGHTWEIGHT
ACTL ACOUSTIC TILE	ELEC ELECTRIC	LG LENGTH/LONG
ADJ ADJUSTABLE	ENAM ENAMEL	LP LT LOW POINT
AGGR AGGREGATE	ENG ENGINE	LT LIGHT
ALLOW ALLOWANCE	ENGR ENGINEER	LV LOUVER
ALT ALTERNATE	ENT ENTRANCE	M MOTOR
ALUM ALUMINUM	ENR ENHANCED NUTRIENT REMOVAL	MCC MOTOR CONTROL CENTER
ARCH ARCHITECT OR ARCHITECTURAL	EQUIP EQUIPMENT	MBAS MAGNETITE-BALLASTED ACTIVATED SLUDGE
ASB ASBESTOS	EX, EXIST EXISTING	MGD MILLION GALLONS PER DAY
ASPH ASPHALT	EXC EXCAVATE	MH MANHOLE
ASSY ASSEMBLY	EXH EXHAUST	MJ MECHANICAL JOINT
ACOUS ACOUSTICAL (SOUND DEADENING)	EXP EXPANSION	MO MASONRY OPENING
APPROX APPROXIMATE	EXT EXTERIOR	MAS MASONRY
ATAD AUTOTHERMAL AEROBIC DIGESTION	EXTEND EXTENDED OPERATOR	MATR MATERIAL
	EXTR EXTRUDE	MAX MAXIMUM
BASP BALLASTED ACTIVATED SLUDGE PROCESS		MECH MECHANICAL
BET BETWEEN	FC FOOT CANDLE/ FLUSHING CONNECTION	MEMB MEMBRANE
BF BLIND FLANGE	FCV FLOW CONTROL VALVE	MET METAL
BFV BUTTERFLY VALVE	FD FLOOR DRAIN/ FIRE DOOR	MEZZ MEZZANINE
BL or t BUILDING LINE	FE FIRE EXTINGUISHER	MFR MANUFACTURER
BM BENCH MARK/ BEAM	FF FAR FACE/ FINISHED FLOOR	MIN MINIMUM
BOF BOTTOM OF FOOTING	FG FIBERGLASS	MIR MIRROR
BU BUILT UP	FM FORCE MAIN	MISC MISCELLANEOUS
BV BALL VALVE	FAB FABRICATE	MLSS MIXED LIQUOR SUSPENDED SOLIDS
BO BOARD	FDN FOUNDATION	MTD MOUNTING
BIT BITUMINOUS	FIN FINISH	MULT MULTIPLE
BLDG BUILDING	FIN RAD FIN RADIATOR	N NORTH
BLK BLOCK	FTG FITTING	NF NEAR FACE
BP BASE PLATE	FIX FIXTURE	FL FLASHING/ FLANGE
BRG BEARING	FL FLEXIBLE CONTAINMENT TUBE	FLX CON FLOORING
BRK BRICK	FLR FLOOR	FLOR FLOORING
BRONZ BRONZE	FLOUR FLOURESCENT	FCC FACE OR COLUMN
BOT or B BOTTOM	FCC FACE OR COLUMN	FRPF FIREPROOF
	FPM FIBERGLASS REINFORCED PLASTIC	FRP FIBERGLASS REINFORCED PLASTIC
	FS FOOTING STEP	FST FINAL SETTLING TANK
	FT FEET	OC ON CENTER
	FTG FOOTING	OD OUTSIDE DIAMETER
	FURR FURRING/ FURRED	OF OUTSIDE FACE
	F&C FRAME AND COVER	OPNG OPENING
	F&G FRAME AND GRATING	OPP OPPOSITE
		ORIG ORIGINAL
		OPER OPERABLE
		P&ID PROCESS AND INSTRUMENTATION DIAGRAM
		PARB POST-AEROXIC & RE-AERATION BASINS
		PCF POUNDS PER CUBIC FOOT
		PRV PRESSURE RELIEF VALVE
		PSF POUNDS PER SQUARE FOOT
		PV PLUG VALVE
		PSI POUNDS PER SQUARE INCH
		PVC POLYVINYL CHLORIDE
		POLY PE POLYETHYLENE
		UNO UNLESS NOTED OTHERWISE
		UR URINAL
		UV ULTRAVIOLET
		V VINYL or VERTICAL
		VAT VINYL ASBESTOS TILE
		VT VITRIFIED TILE
		VERT VERTICAL
		W WATER
		WI WITH
		WI WROUGHT IRON
		WG WEIR GATE
		WL WATER LEVEL
		WO WINDOW OPENING
		WO WITHOUT
		WS WATER SURFACE
		WWF WELDED WIRE FABRIC
		WC WATER CLOSET
		WD WOOD
		W PT WORKING POINT
		WS WATERSTOP
		WT WEIGHT
		W ST WELDED STEEL PIPE
		WV WATER VALVE
		WH WALL HYDRANT
		WP WHITE PINE
		R RISER, REACTION, RADIUS
		RD ROOF DRAIN/ ROAD
		RO ROUGH OPENING
		ROB RUN OF BANK
		RAD RADIUS/ RADIATOR
		RE RIGHT END
		REC RECESS/ RECORD
		RECIR RECIRCULATION
		RED REDUCER
		REF REFERENCE/ REFRIGERATOR
		RCP REINFORCED CONCRETE PIPE
		REG REGISTER
		REINF REINFORCING
		REM REMOVE

MISCELLANEOUS SYMBOLS

Diagram showing various pipe and joint symbols including: Flanged Joint, Welded Joint, Screwed Joint, Mechanical Joint, Stanchion Saddle Pipe Support, Split Pipe Clamp Pipe Support, Strap W/S.S. Bolts and Inserts Pipe Support, In Trench Pipe Support, Concrete Base Fitting Pipe Support, Concrete Pipe Support, Welded Bracket Pipe Support, Pipe Channel Support Pipe Support, Dual Bracket Vertical Pipe Support (Shown in Plan View), Wall Sleeve, Heat Traced and Insulated Piping (For Insulation Limits and Requirements Refer to Individual Drawings), Pipe Coupling, Thermal Expansion Joint, Expansion Coupling, Flange Adapter, and Flushing Connection.

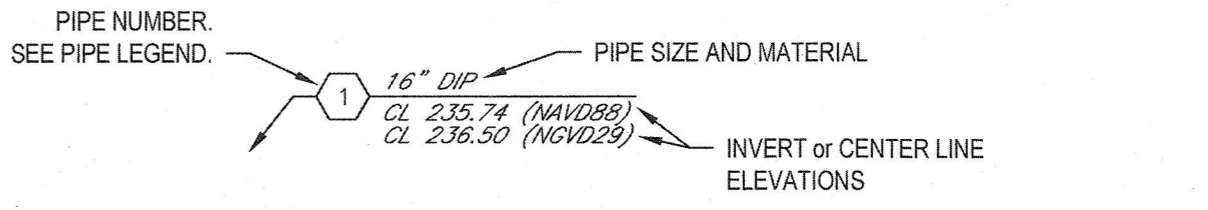
LEGEND

Legend showing symbols for various utilities and features: Sewer Line, Telephone Line, Drain Line, Gas Line, Water Line, Overhead Utilities, Underground Utilities, Approx. Property Line, Traverser Point, Double Yellow Lane Line, Solid White Edge Line, Broken White Lane Line, Solid White Lane Line, Double Yellow Center Line, Rip Rap, Tree or Hedge Line, Record, Not Found, Utility Pole, Stone Wall, Sign, Wetland Flag, Wood Fence, Chain Link or Wire Fence, Required Test Pit, Now or Formerly, Elevation, Drain Manhole, Sewer Manhole, Manhole, Catch Basin, Traffic Signal, Water Service, Gas Service, Sewer Service, Water Valve, Gas Valve, Sewer Valve, Reinforced Concrete Pipe, Corrugated Metal Pipe, High Density Polyethylene Pipe, Ductile Iron, Cast Iron, Flared End, Landscaped Area, Top Curbs Bituminous, Top Curbs Granite, Top Cape Cod Berm, Guy Wire Anchor, Edge Pavement, Bit Conc.

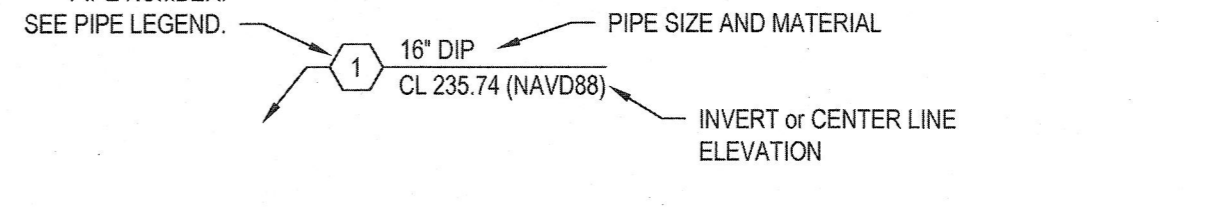
VALVE SYMBOLS

Diagram showing schematic and 3-line symbols for various valves: Plug Valve, 3-Way Plug Valve, Pinch Valve, Gate Valve, Check Valve, Ball Valve, Globe Valve, Butterfly Valve, Knife Gate Valve, Pressure Reducing Valve, Diaphragm Valve, Motor-Operated Butterfly Valve, Motor-Operated Ball Valve, and Solenoid Valve.

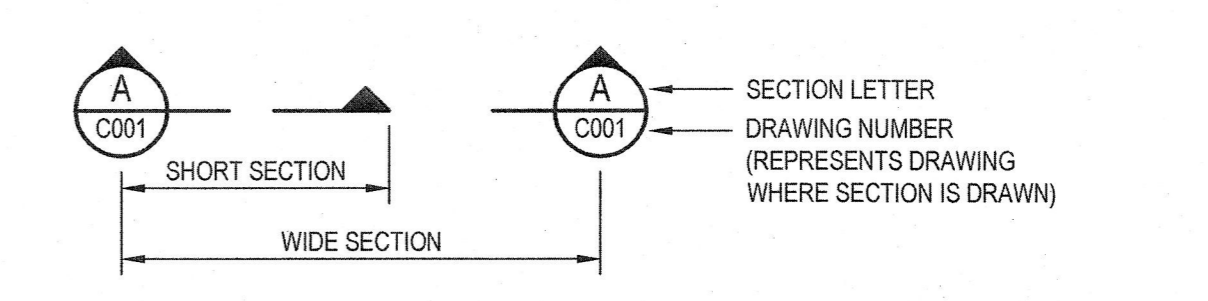
EXISTING PIPE CALLOUT



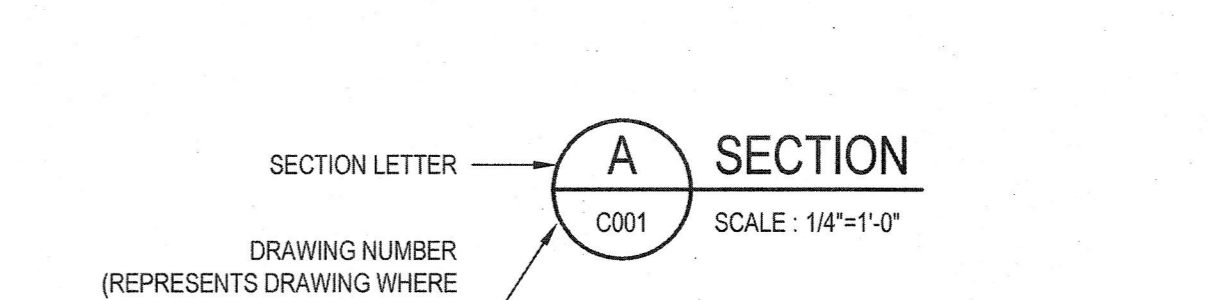
NEW PIPE CALLOUT



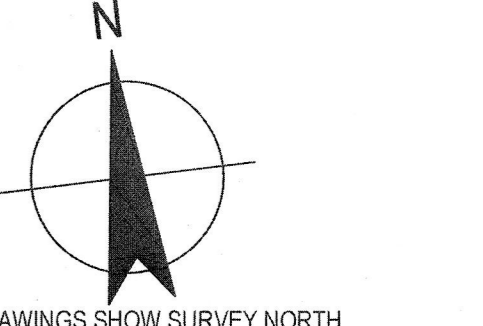
TYPICAL SECTION MARKS (FOR PLANS)



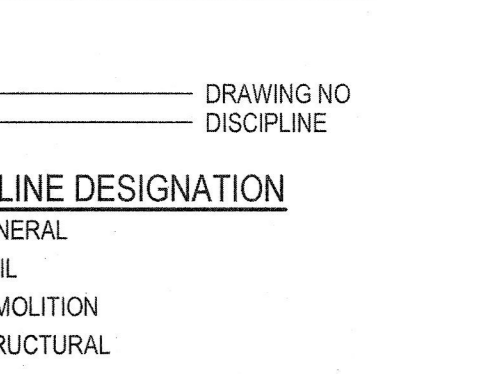
TYPICAL SECTION SUB-TITLE



NORTH ARROW



DESIGNATION INDEX (EXAMPLE)



GENERAL LEGEND

NEW GRAPHICS, EQUIPMENT, CONDITIONS, STRUCTURES, ETC. ARE SHOWN AS BOLD LINEWORK AND IN THIS TEXT FORMAT. EXISTING GRAPHICS, EQUIPMENT, CONDITIONS, STRUCTURES, ETC. ARE SHOWN AS LIGHT LINEWORK AND IN THIS TEXT FORMAT.

0 FOR BIDDING AND CONSTRUCTION			JDF	JDF	JULY 2020
No.	Issue	Drawn	Approved	Date	

Scale: 1/4" = 1'-0"

Bar is one inch on original size sheet

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MARC DRANNVILLE ENVIRONMENTAL No. 43294 REGISTERED PROFESSIONAL ENGINEER 7/16

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Drafting Check: RHC	Design Check: RHC	Project: EQUALIZATION BASIN NO.3 AND 4
Project Manager: RHC	Date: 7/14/20	Title: ABBREVIATIONS, LEGENDS AND SYMBOLS
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Scale: AS SHOWN	Original Size	ANSI D Sheet No: 112-06142-G002

Sheet 2 of 17

GENERAL NOTES:

(THESE NOTES APPLY TO ALL DRAWINGS UNLESS OTHERWISE SPECIFIED)

- SEE DATUM AND REFERENCE NOTES ON THIS SHEET FOR HORIZONTAL AND VERTICAL CONTROL INFORMATION.
- ALL UTILITIES SHOWN ON PLAN ARE APPROXIMATE ONLY. UTILITIES ARE BASED ON DIG SAFE MARKINGS AND AVAILABLE PLANS ON RECORD.
- CONTRACTOR SHALL PERFORM TEST PITS TO LOCATE EXISTING BURIED UTILITIES AT LOCATIONS CALLED OUT ON SITE PLANS OR AS NEEDED IN THE FIELD OR AS DIRECTED BY THE ENGINEER TWO WEEKS PRIOR TO COMMENCING ANY EXCAVATION.
- ALL BURIED MECHANICAL FITTINGS AND JOINTS ARE TO BE RESTRAINED WITH MEG-A-LUG RETAINER GLANDS. ALL PUSH-ON JOINTS TO BE RESTRAINED WITH FIELD LOCK GASKETS OR EQUAL AS NOTED.
- CONDITIONS IN THE FIELD MAY VARY FROM THOSE SHOWN HEREIN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING FIELD CONDITIONS THAT MAY AFFECT HIS WORK.
- EXISTING FACILITIES AND PIPING SHOWN LIGHT. NEW FACILITIES AND PIPING SHOWN HEAVY.
- THE CONTRACTOR SHALL CALL-BEFORE-YOU-DIG AT 1-888-DIG-SAFE FOR LOCATING AND STAKEOUT OF ANY UTILITY PRIOR TO EXCAVATION. THE CONTRACTOR SHALL ALSO PERFORM EXPLORATORY EXCAVATIONS TO LOCATE EXISTING UTILITIES. APPROXIMATE LOCATIONS OF UTILITIES ARE SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY EXISTING UTILITIES DAMAGED DUE TO HIS / HER OPERATIONS.
- ALL EXISTING ELEVATIONS SHOWN ARE APPROXIMATE. FIELD VERIFY PRIOR TO CONSTRUCTION.
- REFER TO SPECIFICATION SECTION 01010 FOR REQUIREMENTS FOR MAINTAINING WATER POLLUTION CONTROL. FACILITY OPERATIONS AND FOR OBTAINING NECESSARY LOCAL AND STATE PERMITS.
- CONTRACTOR SHALL FIELD VERIFY AND COORDINATE ALL EXISTING PIPING ELEVATIONS, LOCATIONS, SIZE AND TYPE OF MATERIAL WITH NEW PIPING PRIOR TO CONSTRUCTION. CONTRACTOR SHALL FIELD VERIFY AND COORDINATE ALL NEW AND EXISTING EQUIPMENT, STRUCTURES, PIPE AND BASIN DIMENSIONS AND ELEVATIONS PRIOR TO ORDERING NEW EQUIPMENT. REPORT DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
- CONTRACTOR SHALL SUPPLY ALL BENDS REQUIRED TO MAINTAIN SMOOTH FLOW LINES, CHANGES IN ELEVATION AND TO MEET ALL TRANSITIONS.
- CONTRACTOR SHALL REPLACE ALL EXISTING PAVEMENT WITHIN THE LIMIT OF WORK AND ELSEWHERE AS SHOWN ON THE DRAWINGS.
- WHERE NEW UNDERGROUND PIPING IS CONNECTED TO EXISTING UNDERGROUND PIPING, CONTRACTOR IS REQUIRED TO PERFORM EXPLORATORY EXCAVATIONS IN THESE AREAS, AS REQUIRED, TO CONFIRM EXISTING PIPING LOCATIONS AND ELEVATIONS. REFER TO SPECIFICATION SECTION 01010.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORT OF ALL EXCAVATIONS, AS REQUIRED, INCLUDING SHEETING AND BRACING. CONTRACTOR SHALL ALSO STRUCTURALLY SUPPORT AND / OR PROTECT WATER MAIN, GAS MAIN, STORM SEWER, SANITARY SEWER OR ANY OTHER UTILITY AND APPURTENANCES WHERE NECESSARY WHEN EXCAVATING ADJACENT TO OR CROSSING SAID UTILITY.
- CONTRACTOR SHALL SUBMIT BYPASS PUMPING PLAN TO THE ENGINEER AND OWNER FOR APPROVAL PRIOR TO CONSTRUCTION COMMENCING.
- CONTRACTOR IS RESPONSIBLE FOR DETERMINING DEPTH OF GROUNDWATER AND FOR ALL COSTS ASSOCIATED WITH THE DEWATERING NECESSARY TO INSTALL PIPING AND APPURTENANCES. REFER TO BORING LOGS IN CONTRACT SPECIFICATIONS FOR GROUNDWATER ELEVATIONS.
- ALL PIPES ENTERING OR LEAVING A STRUCTURE SHALL HAVE TWO (2) JOINTS WITHIN FOUR (4) FEET FROM THE WALL OF THE STRUCTURE AND SHALL INCORPORATE TWO (2) PIPE JOINTS WITHIN FOUR (4) FEET OF THE STRUCTURE. AS AN OPTION, THE CONTRACTOR MAY PLACE RESTRAINED COUPLING WITHIN FOUR (4) FEET OF THE STRUCTURE.
- REMOVE TREES ONLY TO THE EXTENT SHOWN ON THE DRAWINGS.
- AIR RELEASE VALVES SHALL BE PROVIDED AT THE HIGH POINTS OF ALL WATER PIPING SYSTEMS. DRAINS SHALL BE PROVIDED AT THE LOW POINTS OF ALL PIPING SYSTEMS.

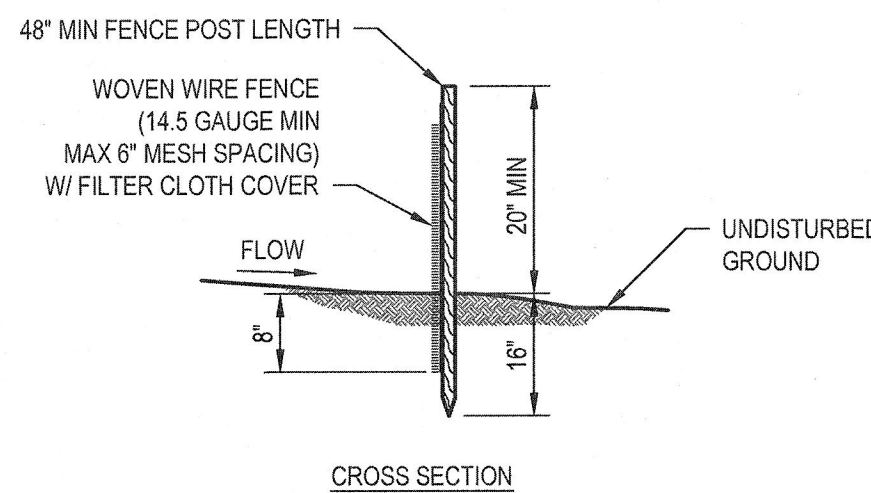
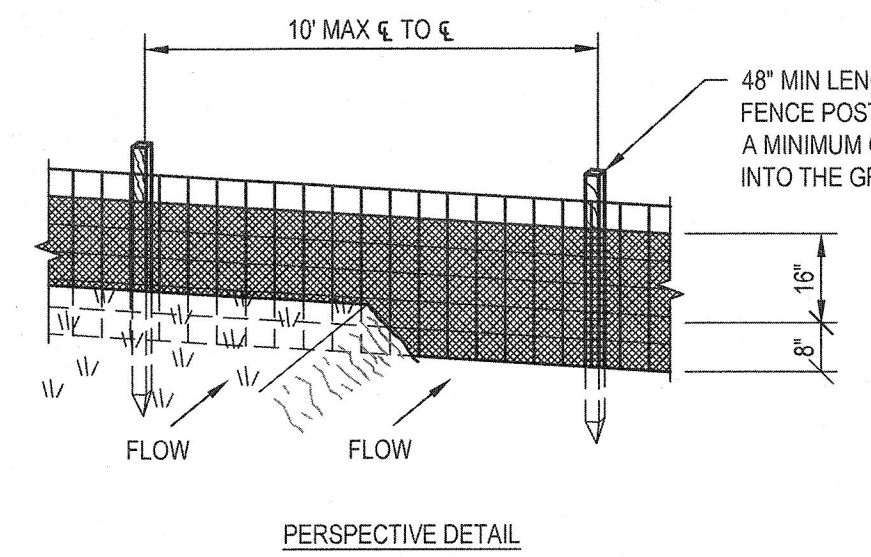
GENERAL DEMOLITION NOTES

(THESE NOTES APPLY TO ALL DRAWINGS)

- FOR CLARITY PURPOSES THE DRAWINGS DO NOT SHOW THE ENTIRE EXTENT AND SCOPE OF DEMOLITION WORK TO BE PERFORMED. THE CONTRACTOR SHALL DEMOLISH AND REMOVE ALL ITEMS SHOWN ON THE DRAWINGS, AND AS REQUIRED IN THE SPECIFICATIONS, OR AS NECESSARY TO ACCOMPLISH THE WORK.
- DEMOLITION LOCATIONS WERE DEVELOPED FROM AVAILABLE RECORD DRAWINGS OBTAINED FROM THE OWNER AND IS INTENDED ONLY TO SHOW BASIC SYSTEM CONFIGURATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ACTUAL SITE CONDITIONS. PRIOR TO THE DEMOLITION, THE CONTRACTOR SHALL CONFIRM EXACT EXTENT OF DEMOLITION.
- REMOVE AND PROPERLY DISPOSE OF CONSTRUCTION DEBRIS.
- SHADED OR CROSS HATCHED AREAS ARE TO BE DEMOLISHED. EQUIPMENT, PIPING, AND STRUCTURES TO BE REPLACED OR RELOCATED ARE NOTED AS SUCH.
- CONTRACTOR SHALL FILL IN VOIDS CREATED BY REMOVING PIPE, BOLTS, REBAR, CONDUIT AND OTHER SIMILAR ITEMS WITH GROUT AND MAKE FLUSH WITH SURROUNDING SURFACE. ALL ITEMS REMAINING ARE TO BE CUT AND GROUND FLUSH WITH SURROUNDING SURFACE. REMAINING EMBEDDED METALS EXPOSED TO CORROSIVE ENVIRONMENTS SHALL BE COATED AFTER GRINDING FLUSH WITH SURROUNDING SURFACE.

STAGING AREA NOTES:

- FINAL STAGING AREA LOCATION TO BE DETERMINED WITH OWNER PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR SECURITY OF MATERIALS AND EQUIPMENT LEFT ON SITE.
- ANY AREA WITHIN THE STAGING AREA DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EQUAL OR BETTER CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.



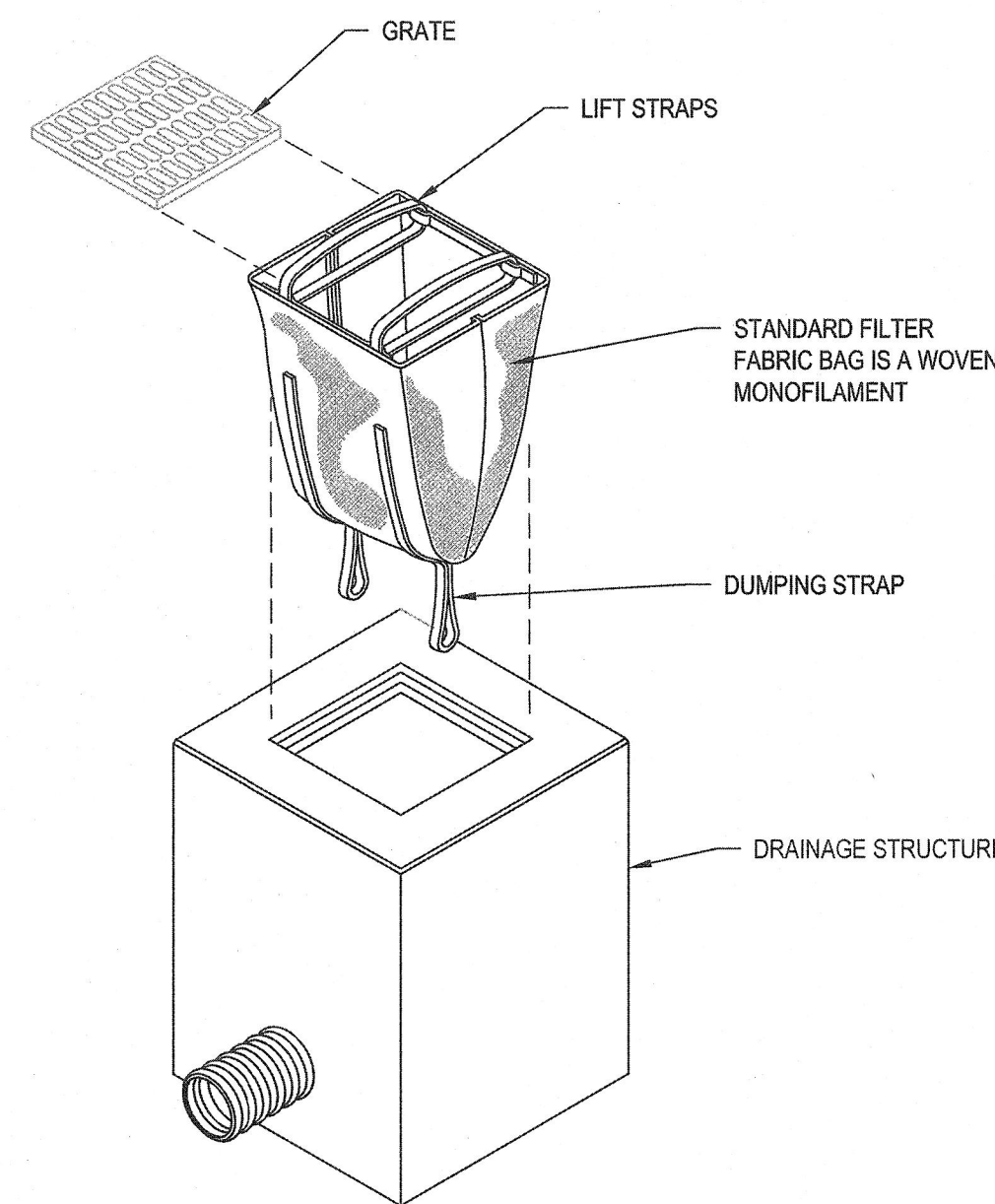
1 SILT FENCE
NOT TO SCALE

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

- WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
- FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
- POSTS, EITHER STEEL TYPE T OR U OR 2" SQUARE HARDWOOD.
- FENCE, WOVEN WIRE, 14 GAUGE WITH A 6" MAXIMUM MESH OPENING.
- FILTER CLOTH, MIRAFI 100X OR APPROVED EQUAL.
- PREFABRICATED UNIT, GEOFAB. ENVIROFENCE, OR APPROVED EQUAL.

DESIGN CRITERIA

SLOPE STEEPNESS	SLOPE LENGTH	FENCE LENGTH
FLATTER THAN 50:1	UNLIMITED	UNLIMITED
50:1 TO 10:1	125 FEET	1,000 FEET
10:1 TO 5:1	100 FEET	750 FEET
5:1 TO 3:1	60 FEET	500 FEET
3:1 TO 2:1	40 FEET	250 FEET
2:1 AND STEEPER	20 FEET	125 FEET



NOTE:
CONTRACTOR CLEAN OUT ALL CATCH BASINS PRIOR TO INSERTING EROSION CONTROL

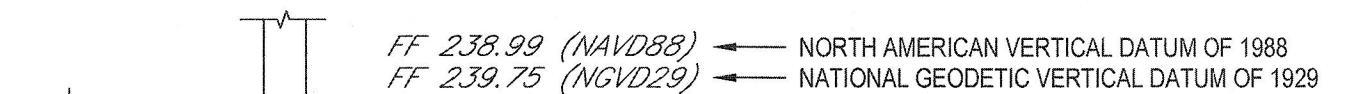
2 SEDIMENTATION CONTROL AT CATCH BASIN
NOT TO SCALE

EROSION & SEDIMENTATION CONTROL NOTES

- ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED BY THE CONTRACTOR DAILY AND IMMEDIATELY AFTER PERIODS OF RAINFALL. REPAIR AND/OR MAINTENANCE OF SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE MADE AS SOON AS NEEDED. THE CONTRACTOR IS RESPONSIBLE FOR THE IMPLEMENTATION AND MAINTENANCE OF ALL CONTROL MEASURES ON THIS SITE.
- FINAL LOCATION OF ALL SEDIMENTATION CONTROL MEASURES SHALL BE COORDINATED WITH THE TOWN CONSERVATION OFFICE PRIOR TO CONSTRUCTION.
- LAND DISTURBANCE SHALL BE KEPT TO A MINIMUM. RESTABILIZATION WILL BE SCHEDULED IMMEDIATELY AFTER ANY DISTURBANCE.
- EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ALL CONSTRUCTION ACTIVITIES.
- ANCHOR ALL TOPSOIL STOCK PILES WITH STRAW MULCH AND RING WITH SILT FENCE, OR HAYBALE BARRIER.
- SEDIMENT REMOVAL FROM CONTROL STRUCTURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SEDIMENT SHALL BE DISPOSED OF IN A MANNER WHICH DOES NOT RESULT IN ADDITIONAL EROSION AND WHICH IS CONSISTENT WITH THE CONTRACT DOCUMENTS AND REGULATORY REQUIREMENTS.
- THE EROSION AND SEDIMENTATION CONTROL MEASURES DESCRIBED HEREIN ARE INTENDED AS A GENERAL GUIDE FOR THE CONTRACTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ANY AND ALL WORK NECESSARY TO PREVENT EROSION OF SOIL FROM THE CONSTRUCTION SITE. TO PREVENT EROSION, THE CONTRACTOR SHALL PROVIDE SILT FENCES OR OTHER CONTROL MEASURES AS THE NEED ARISES DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
- PAVED ROADWAYS SHALL BE KEPT CLEAN AT ALL TIMES.
- REFER TO SPECIFICATION SECTION 01564 FOR MORE DETAILS.

DATUM AND REFERENCE NOTES:

- HORIZONTAL DATUM IS BASED ON MASSACHUSETTS STATE COORDINATE SYSTEM, NAD83. VERTICAL DATUM IS BASED ON NAVD88.
- CONDITIONS IN THE FIELD MAY VARY FROM THOSE SHOWN HEREIN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING FIELD CONDITIONS THAT MAY AFFECT HIS WORK.
- EXISTING PLANT DATUM IS BASED ON NGVD29.
- EXISTING PIPE ELEVATIONS ARE CALLED OUT WITH BOTH ELEVATIONS, NAVD88 AND NGVD29. NEW PIPE ELEVATIONS ARE CALLED OUT WITH NAVD88 ELEVATIONS.
- EXISTING STRUCTURE ELEVATIONS ARE CALLED OUT WITH BOTH ELEVATIONS, NAVD88 AND NGVD29, AS INDICATED BELOW. NEW STRUCTURE ELEVATIONS ARE CALLED OUT WITH NAVD88 ELEVATIONS.
- NEW FACILITIES AND PIPING SHOWN USING VERTICAL DATUM BASED ON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88) EXISTING RECORD DRAWINGS WERE SHOWN USING VERTICAL DATUM BASED ON NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29). TO CONVERT FROM NGVD 29 TO NAVD 88 A SUBTRACTION OF 0.84' WAS ASSUMED. CONTRACTOR TO CONFIRM ELEVATIONS AND DATUMS PRIOR TO CONSTRUCTION. DATUMS ARE CALLED OUT WHEN NGVD IS USED IN CONTRACT DRAWINGS.
- THE FOLLOWING REFERENCES TO EXISTING PLANS WERE USED FOR DEPICTING EXISTING CONDITIONS ON THE PROJECT. (CONTRACTOR SHOULD NOTE THAT DATUMS MAY VARY FROM THAT USED FOR THE CURRENT CONTRACT WORK)
 - EXISTING STRUCTURE DRAWINGS ARE BASED ON RECORD DRAWINGS BY CAMP DRESSER AND MCKEE INC AND DATED OCTOBER 2001.

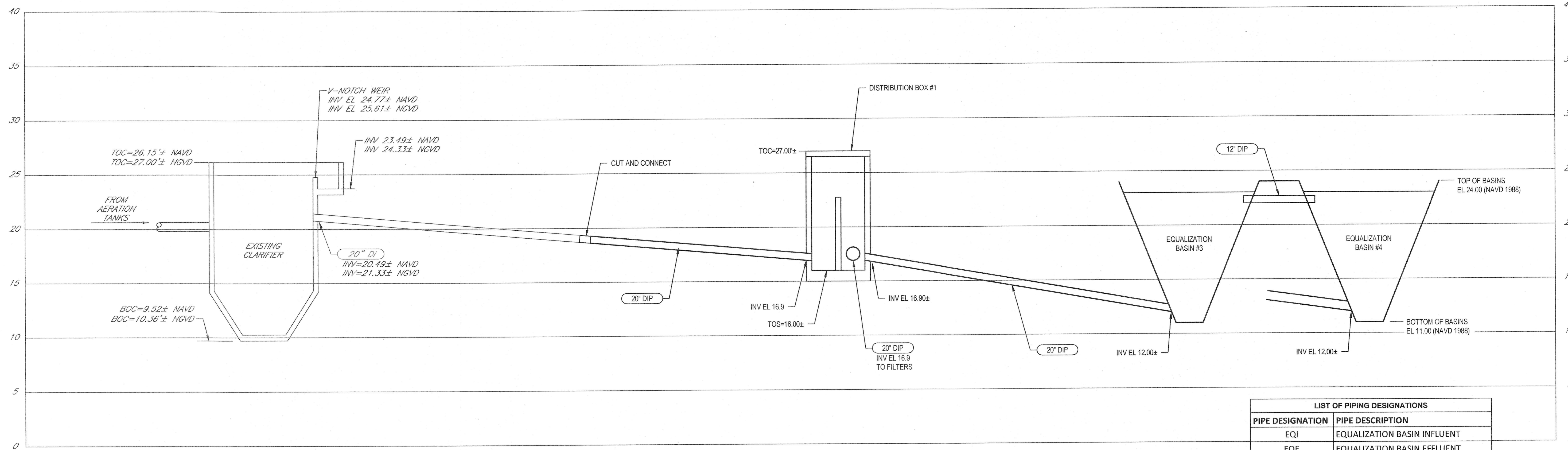


- BACKGROUND INFORMATION (FOR C001) TAKEN FROM EXISTING CONDITIONS SURVEY AT THE WATER POLLUTION CONTROL FACILITY, WAREHAM, MA PREPARED FOR GHD INC. BY GREEN SEAL ENGINEERING, INC. 114 STATE ROAD, BUILDING B, SAGAMORE BEACH MA 02562 AND DATED NOVEMBER 26, 2019 AND UPDATED MAY 27, 2020

LIST OF PIPING DESIGNATIONS

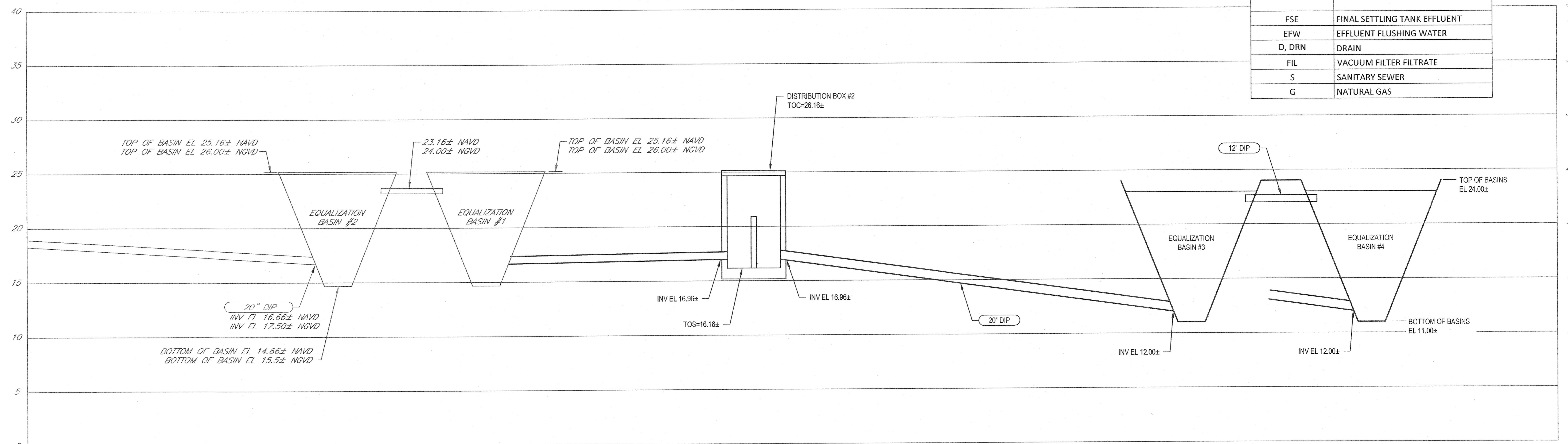
PIPE DESIGNATION	PIPE DESCRIPTION
EQI	EQUALIZATION BASIN INFLUENT
EQE	EQUALIZATION BASIN EFFLUENT
SCE	SECONDARY CLARIFIER EFFLUENT
DFI	DENITRIFICATION FILTER INFLUENT

<p>Bar is one inch on original size sheet 0 1"</p>								<p>Drawn JDF Designer JDF</p>		<p>Client TOWN OF WAREHAM, MASSACHUSETTS</p>	
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<p>0 FOR BIDDING AND CONSTRUCTION</p>				<p>JDF <i>mjd</i> JULY 2020</p>		<p>Project Manager <i>Bnk</i> Date <i>7/14/20</i></p>		<p>Title GENERAL AND STAGING NOTES AND SEDIMENTATION AND EROSION CONTROL NOTES AND DETAILS</p>		<p>Original Size ANSI D Sheet No. 112-06142-G003</p>	
No.	Issue	Drawn	Approved	Date	<p>Scale AS SHOWN</p>		<p>Sheet 3 of 17</p>				



HYDRAULIC PROFILE - I
(SECONDARY CLARIFIER TO EQUALIZATION BASINS 3 AND 4)
 NOT TO SCALE

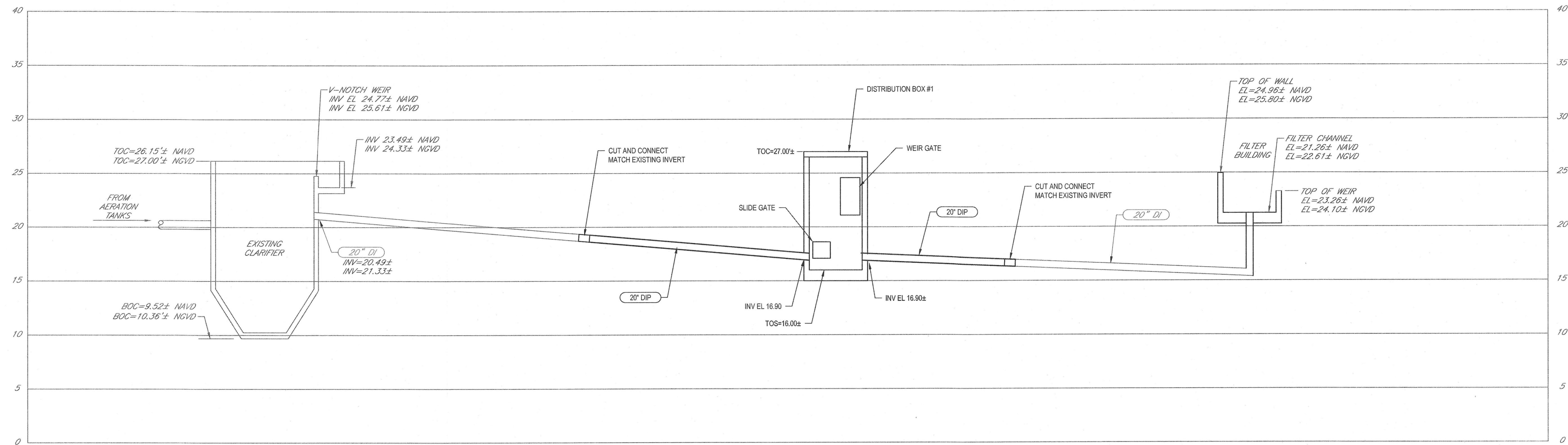
LIST OF PIPING DESIGNATIONS	
PIPE DESIGNATION	PIPE DESCRIPTION
EQI	EQUALIZATION BASIN INFLUENT
EQE	EQUALIZATION BASIN EFFLUENT
SCE	SECONDARY CLARIFIER EFFLUENT
DFI	DENITRIFICATION FILTER INFLUENT
EFW	EQUALIZATION WATER
FSE	FINAL SETTLING TANK EFFLUENT
EFW	EFFLUENT FLUSHING WATER
D, DRN	DRAIN
FIL	VACUUM FILTER FILTRATE
S	SANITARY SEWER
G	NATURAL GAS



HYDRAULIC PROFILE - II
(EXISTING EQUALIZATION BASINS 1 AND 2 TO PROPOSED EQUALIZATION BASINS 3 AND 4)
 NOT TO SCALE

NOTES:
 1. ALL ELEVATIONS ARE APPROXIMATE FIELD VERIFY BEFORE CONSTRUCTION.
 2. THE DATUM SHIFT BETWEEN NAVD 1988 AND NGVD 1989 IS - 834 FT.

0 FOR BIDDING AND CONSTRUCTION No. Issue Drawn Approved Date				JDF <i>MWD</i> JULY 2020		Bar is one inch on original size sheet 0 1"						Drawn JDF Drafting Check RHK Project Manager RHK		Designer JDF Design Check RHK Date 7/14/20		Client TOWN OF WAREHAM, MASSACHUSETTS Project EQUALIZATION BASIN NO.3 AND 4 Title HYDRAULIC PROFILES I AND II		Project No. 112-06142 Original Size ANSI D Sheet No. 112-06142-G004		Sheet 4 of 17	
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**HYDRAULIC PROFILE - III
(SECONDARY CLARIFIER TO FILTER BUILDING)**
NOT TO SCALE

VALVE DESIGNATION TABLE

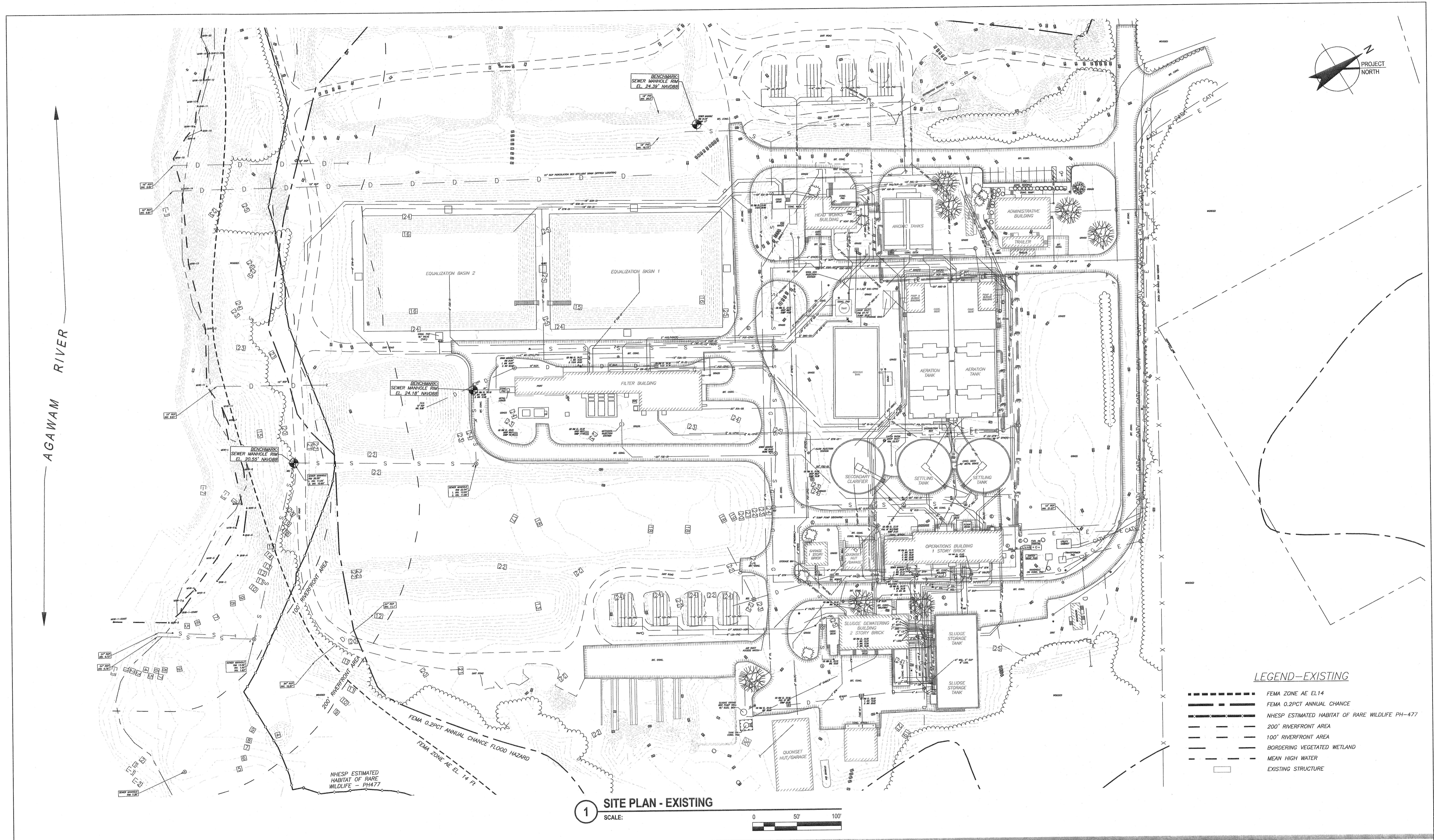
GATE NO.	LOCATION	SIZE OF OPENING (w x h) (in)	SLIDE HEIGHT (in)	SLIDE WIDTH (in)	MOUNTING TYPE	SELF-CONTAINED	GATE MATERIAL	OPERATOR	BOTTOM OF GATE ELEVATION ¹		NOTES
									FULLY RAISED	FULLY LOWERED	
DB1-SG-01	Distribution Box 1	20 DIA	24	24	B	No	Aluminum	Manual, hand crank	18.8	16.8	1, 2, 4, 5
DB1-SG-02	Distribution Box 1	36 x 36	36	36	B	No	Aluminum	Manual, hand crank	19.5	16.5	1, 2, 4, 5
DB1-SG-03	Distribution Box 1	20 DIA	24	24	B	No	Aluminum	Manual, hand crank	18.8	16.8	1, 2, 4, 5
DB1-SG-04	Distribution Box 1	20 DIA	24	24	B	No	Aluminum	Manual, hand crank	18.8	16.8	1, 2, 4, 5
DB1-SG-04	Distribution Box 1	20 DIA	24	24	B	No	Aluminum	Manual, hand crank	18.8	16.8	1, 2, 4, 5
DB1-WG-01	Distribution Box 1	72 x 72	72	72	D	Yes	Aluminum	Manual, hand crank	21	16	1, 2, 3, 4
DB2-SG-01	Distribution Box 2	20 DIA	24	24	B	No	Aluminum	Manual, hand crank	17.5	19.5	1, 2, 4, 5
DB2-SG-02	Distribution Box 2	20 DIA	24	24	B	No	Aluminum	Manual, hand crank	17.5	19.5	1, 2, 4, 5
DB2-SG-03	Distribution Box 2	12 DIA	12	12	B	No	Aluminum	Manual, hand crank	17.5	19.5	1, 2, 4, 5
DB2-SG-04	Distribution Box 2	12 DIA	12	12	B	No	Aluminum	Manual, hand crank	17.5	19.5	1, 2, 4, 5
DB2-SG-05	Distribution Box 2	24 x 24	24	24	B	No	Aluminum	Manual, hand crank	17.5	19.5	1, 2, 4, 5
DB2-WG-01	Distribution Box 2	36 x 60	60	36	D	Yes	Aluminum	Manual, hand crank	22	17	1, 2, 3, 4
DB2-WG-02	Distribution Box 2	36 x 60	60	36	D	Yes	Aluminum	Manual, hand crank	22	17	1, 2, 3, 4

- (1) All elevations listed are relative to the NAVD 88 datum. Contractor shall field verify all elevations.
(2) Contractor is to field-verify all widths, depths, openings, and conditions for new gate.
(3) Provide flush side and invert seal.
(4) Bottom elevation of gate to match grouted floor.
(5) Provide flush side and invert seal. Provide top seal.

LIST OF PIPING DESIGNATIONS	
PIPE DESIGNATION	PIPE DESCRIPTION
EQI	EQUALIZATION BASIN INFLUENT
EQE	EQUALIZATION BASIN EFFLUENT
SCE	SECONDARY CLARIFIER EFFLUENT
DFI	DENITRIFICATION FILTER INFLUENT
EFW	EQUALIZATION WATER
FSE	FINAL SETTLING TANK EFFLUENT
EFW	EFFLUENT FLUSHING WATER
D, DRN	DRAIN
FIL	VACUUM FILTER FILTRATE
S	SANITARY SEWER
G	NATURAL GAS

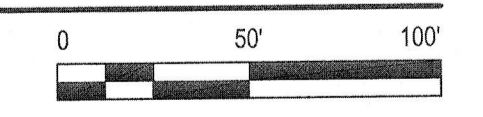
- NOTES:
1. ALL ELEVATIONS ARE APPROXIMATE FIELD VERIFY BEFORE CONSTRUCTION.
2. THE DATUM SHIFT BETWEEN NAVD 1988 AND NGVD 1959 IS -0.834 FT.

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---	--	--	---	--	----------------------



- LEGEND-EXISTING**
- FEMA ZONE AE EL14
 - FEMA 0.2PCT ANNUAL CHANGE
 - NHEP ESTIMATED HABITAT OF RARE WILDLIFE PH-477
 - 200' RIVERFRONT AREA
 - 100' RIVERFRONT AREA
 - BORDERING VEGETATED WETLAND
 - MEAN HIGH WATER
 - EXISTING STRUCTURE

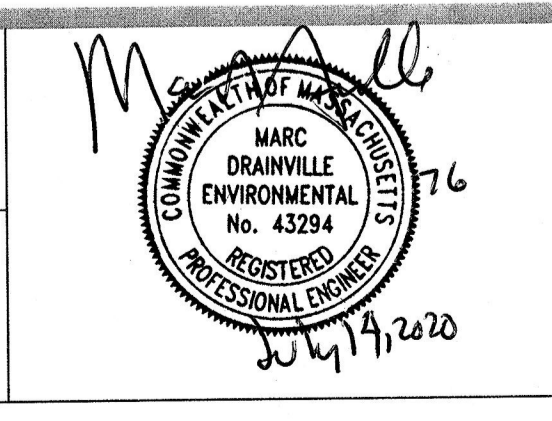
1 SITE PLAN - EXISTING
SCALE: 1" = 50'



No.	Issue	Drawn	Approved	Date
0	FOR BIDDING AND CONSTRUCTION	JDF	MWD	JULY 2020

Bar is one inch on original size sheet
0 1"

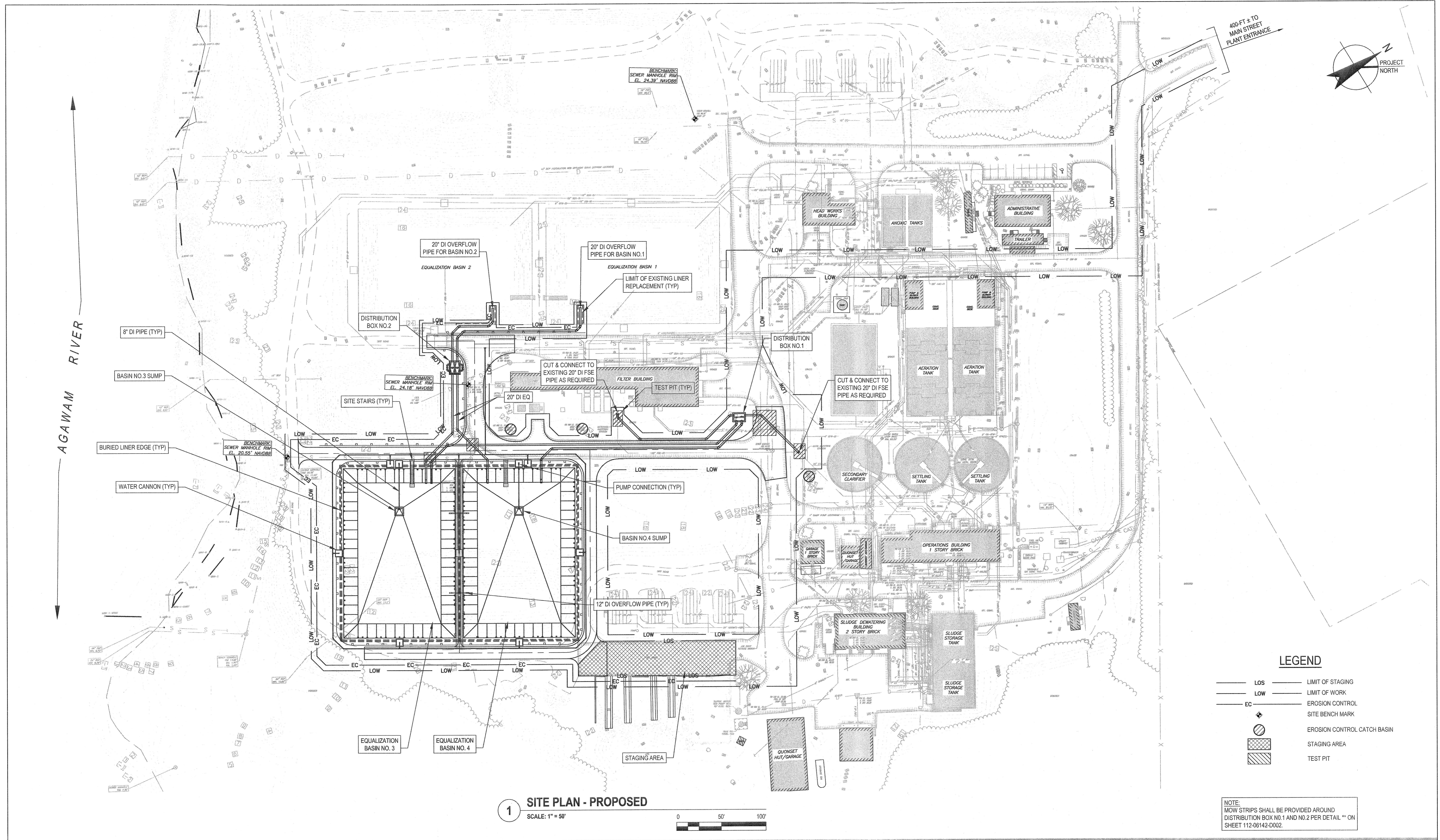
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Drawn JDF	Designer JDF
Drafting Check RHK	Design Check RHK
Project Manager RHK	Date 7/17/20
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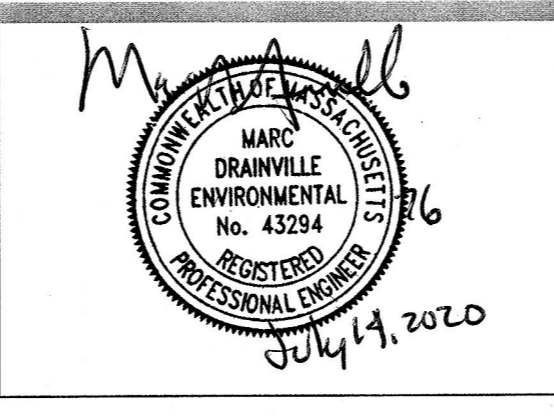
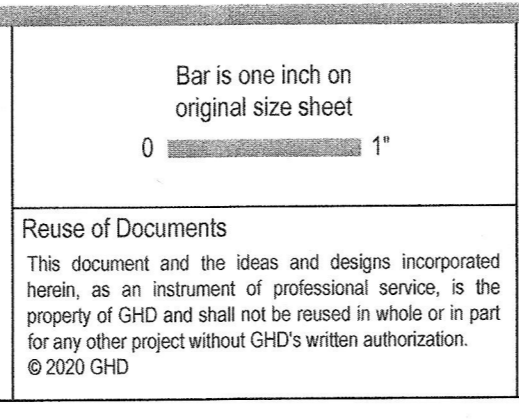
Client	TOWN OF WAREHAM, MASSACHUSETTS	
Project	EQUALIZATION BASIN NO.3 AND 4	
Title	SITE PLAN - EXISTING	
Project No.	112-06142	
Original Size	ANSI D	Sheet No. 112-06142-C001
		Sheet 6 of 17



No.	Issue	Drawn	Approved	Date
0	FOR BIDDING AND CONSTRUCTION	JDF	MJM	JULY 2020

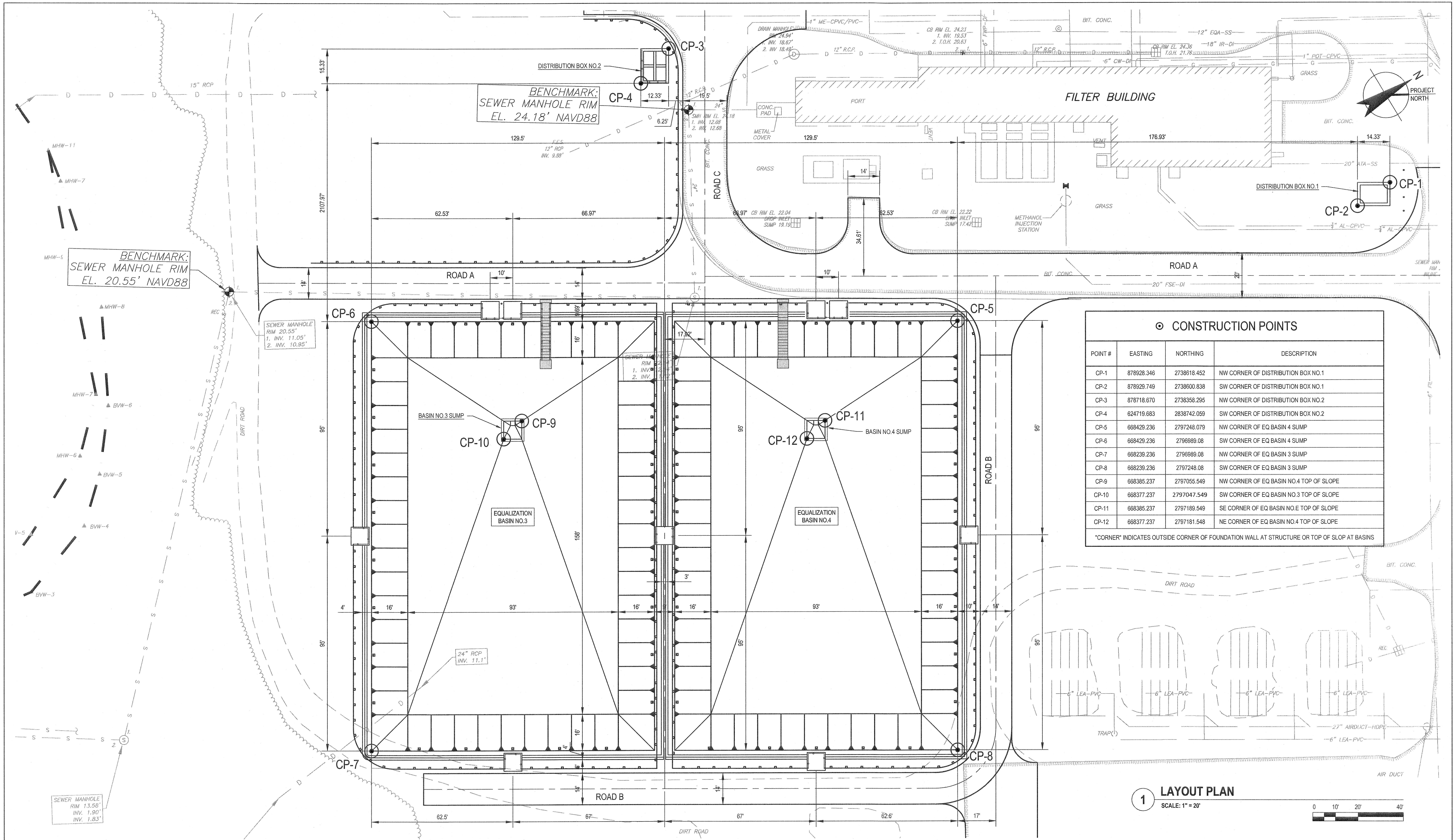
Bar is one inch on original size sheet
0 1"

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Drafting Check	ZHK	Design Check	ZHK
Project Manager	ZHK	Date	7/14/20
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Client	TOWN OF WAREHAM, MASSACHUSETTS
Project	EQUALIZATION BASIN NO.3 AND 4
Title	SITE PLAN - PROPOSED
Project No.	112-06142
Original Size	ANSI D
Sheet No.	112-06142-C002



CONSTRUCTION POINTS			
POINT #	EASTING	NORTHING	DESCRIPTION
CP-1	878028.346	2738618.452	NW CORNER OF DISTRIBUTION BOX NO.1
CP-2	878029.749	2738600.838	SW CORNER OF DISTRIBUTION BOX NO.1
CP-3	878718.670	2738358.295	NW CORNER OF DISTRIBUTION BOX NO.2
CP-4	624719.683	2838742.059	SW CORNER OF DISTRIBUTION BOX NO.2
CP-5	668429.236	2797248.079	NW CORNER OF EQ BASIN 4 SUMP
CP-6	668429.236	2796989.08	SW CORNER OF EQ BASIN 4 SUMP
CP-7	668239.236	2796989.08	NW CORNER OF EQ BASIN 3 SUMP
CP-8	668239.236	2797248.08	SW CORNER OF EQ BASIN 3 SUMP
CP-9	668385.237	2797055.549	NW CORNER OF EQ BASIN NO.4 TOP OF SLOPE
CP-10	668377.237	2797047.549	SW CORNER OF EQ BASIN NO.3 TOP OF SLOPE
CP-11	668385.237	2797189.549	SE CORNER OF EQ BASIN NO.4 TOP OF SLOPE
CP-12	668377.237	2797181.548	NE CORNER OF EQ BASIN NO.4 TOP OF SLOPE

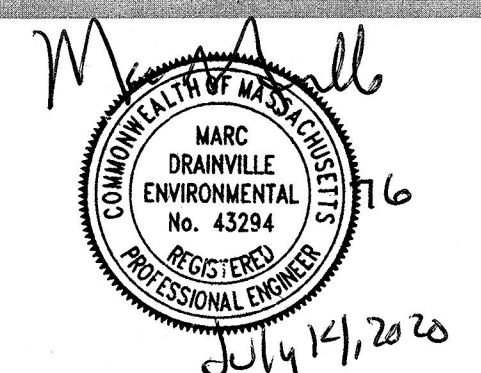
CORNER INDICATES OUTSIDE CORNER OF FOUNDATION WALL AT STRUCTURE OR TOP OF SLOP AT BASINS

1 LAYOUT PLAN
SCALE: 1" = 20'

0	FOR BIDDING AND CONSTRUCTION	JDF	MMO	JULY 2020
No.	Issue	Drawn	Approved	Date

Bar is one inch on original size sheet
0 1'

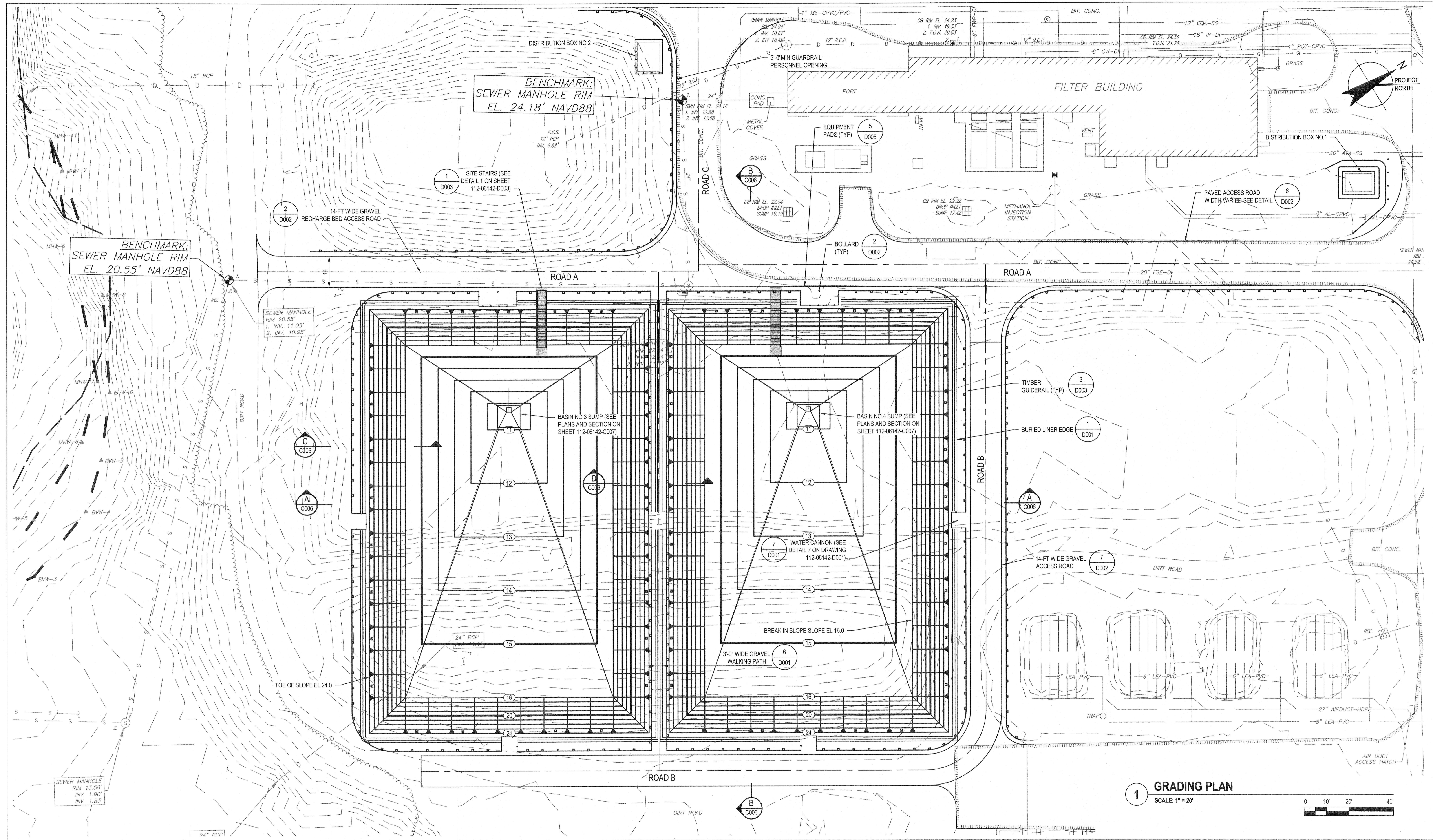
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Drafting Check	RHK	Design Check	RHK
Project Manager	RHK	Date	7/14/20
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Client	TOWN OF WAREHAM, MASSACHUSETTS		
Project	EQUALIZATION BASIN NO.3 AND 4		
Title	LAYOUT PLAN		
Project No.	112-06142		
Original Size	ANSI D	Sheet No.	112-06142-C003
Sheet	8 of 17		



1 GRADING PLAN
 SCALE: 1" = 20'

0	FOR BIDDING AND CONSTRUCTION	JDF	<i>mvd</i>	JULY 2020
No.	Issue	Drawn	Approved	Date

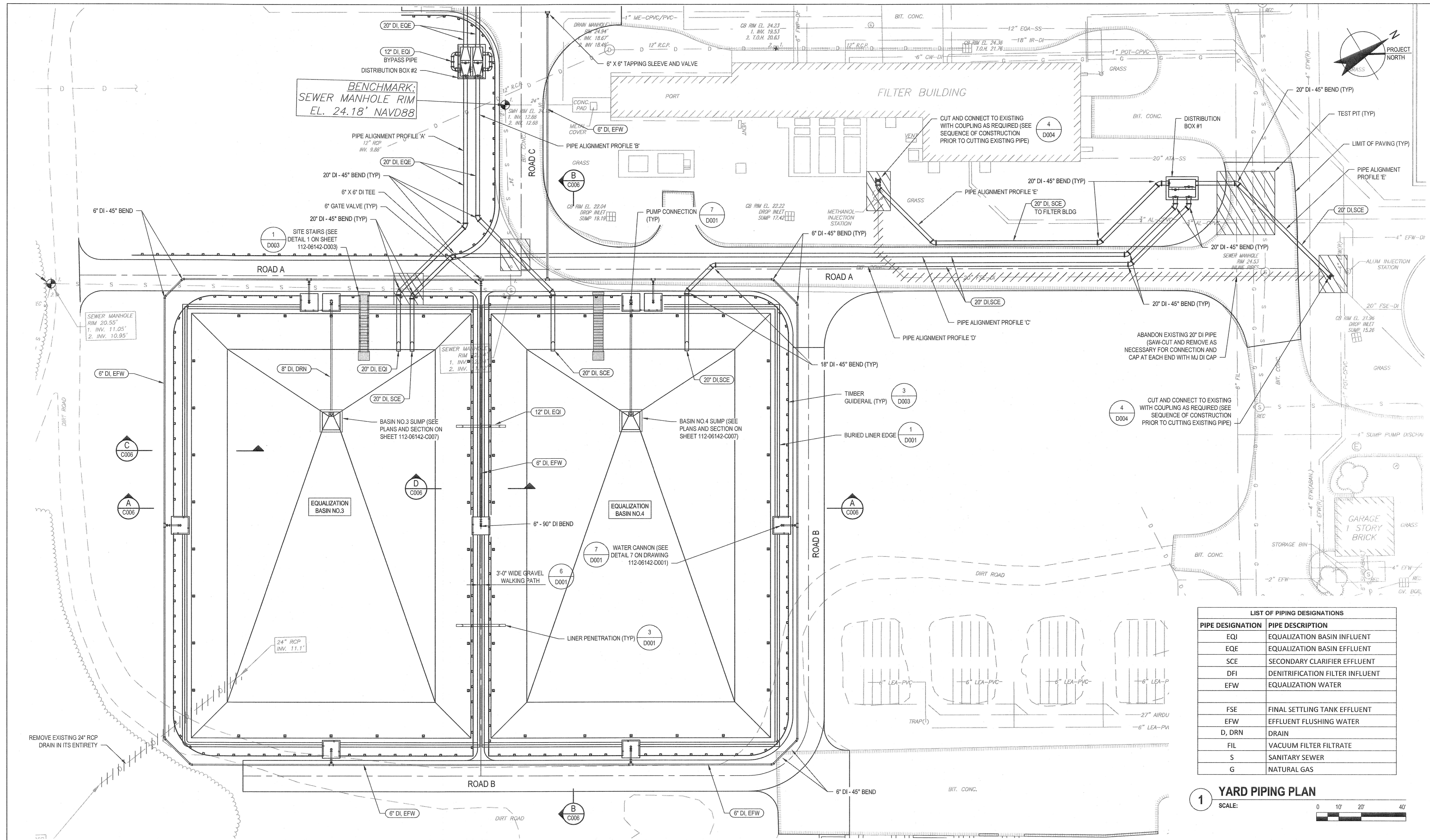
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 0 1'

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MARC DRANVILLE ENVIRONMENTAL No. 43294 REGISTERED PROFESSIONAL ENGINEER
 July 19, 2020

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Drawn	JDF	Designer	JDF	Client	TOWN OF WAREHAM, MASSACHUSETTS
Drafting	<i>RHK</i>	Design	<i>RHK</i>	Project	EQUALIZATION BASIN NO.3 AND 4
Check	<i>RHK</i>	Check	<i>RHK</i>	Title	GRADING PLAN
Project Manager	<i>RHK</i>	Date	7/14/20	Project No.	112-06142
This document shall not be used for construction unless signed and sealed for construction.				Original Size	ANSI D
Scale	AS SHOWN	Sheet No.	112-06142-C004		

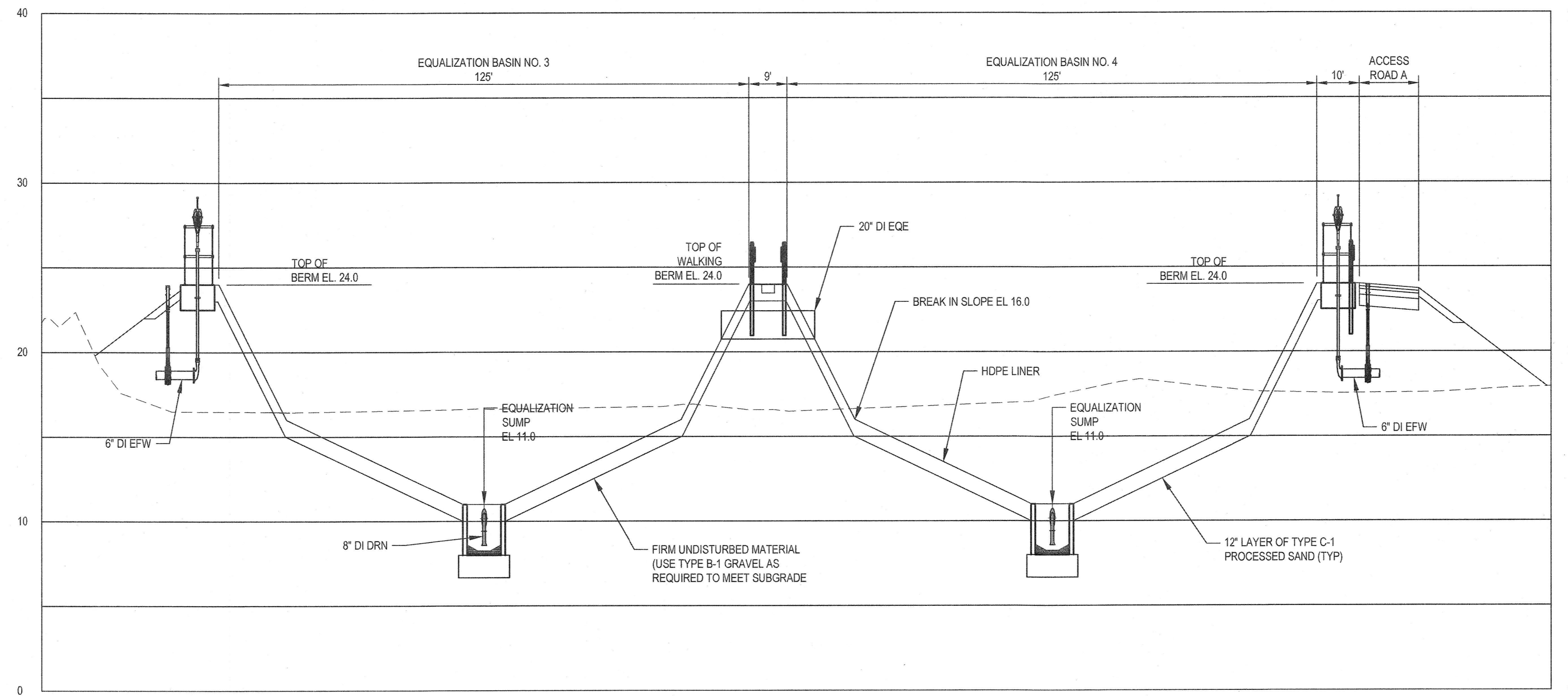


LIST OF PIPING DESIGNATIONS

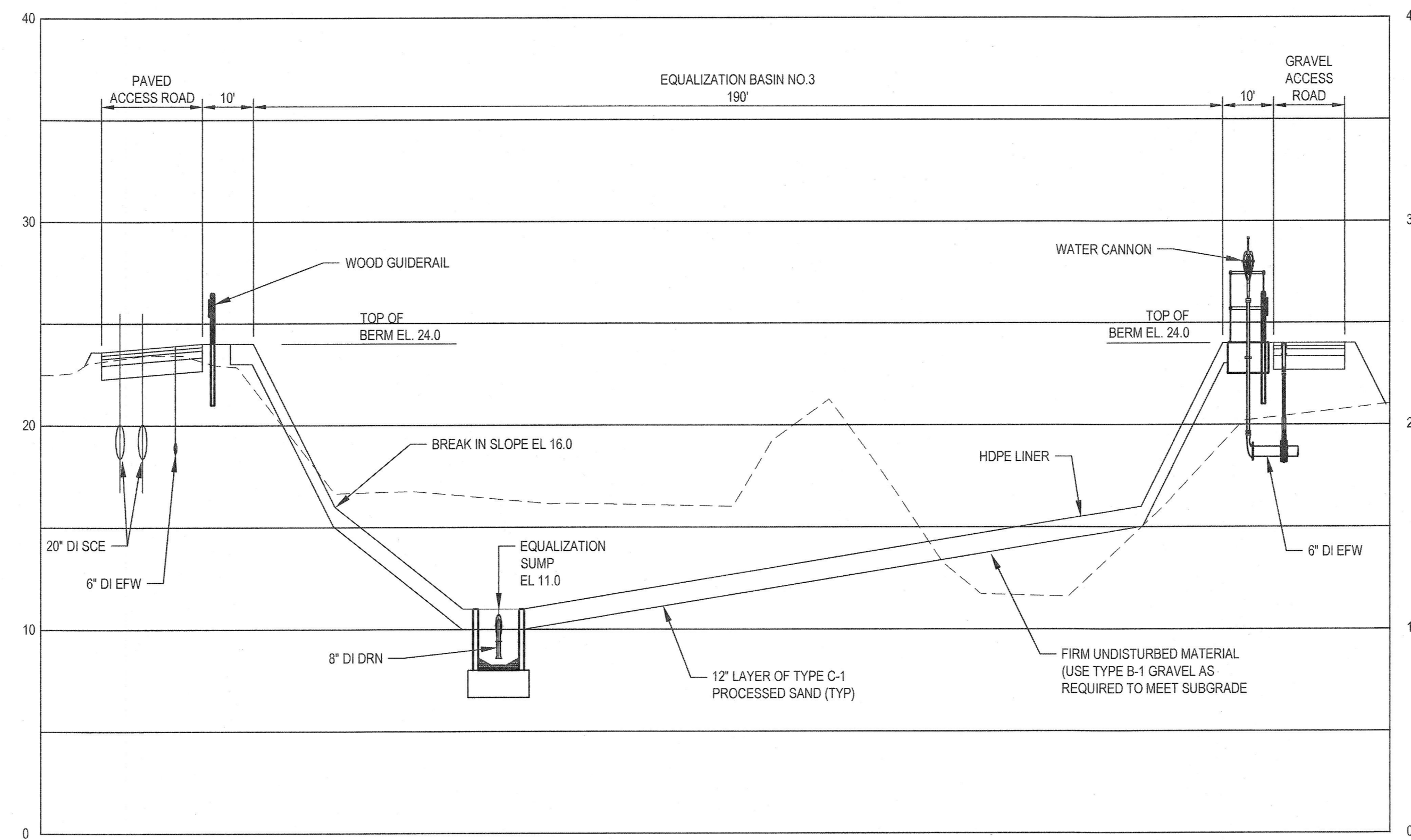
PIPE DESIGNATION	PIPE DESCRIPTION
EQI	EQUALIZATION BASIN INFLUENT
EQE	EQUALIZATION BASIN EFFLUENT
SCE	SECONDARY CLARIFIER EFFLUENT
DFI	DENITRIFICATION FILTER INFLUENT
EFW	EQUALIZATION WATER
FSE	FINAL SETTLING TANK EFFLUENT
EFW	EFFLUENT FLUSHING WATER
D, DRN	DRAIN
FIL	VACUUM FILTER FILTRATE
S	SANITARY SEWER
G	NATURAL GAS

1 YARD PIPING PLAN
 SCALE: 0 10' 20' 40'

Bar is one inch on original size sheet 0 1"				Drawn JDF Drafting Check BHK Project Manager BHK	Designer JDF Design Check BHK Date 7/14/20	Client TOWN OF WAREHAM, MASSACHUSETTS Project EQUALIZATION BASIN NO.3 AND 4 Title YARD PIPING PLAN
0 FOR BIDDING AND CONSTRUCTION No. Issue JDF WWD JULY 2020	Reuse of Documents This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of GHD and shall not be reused in whole or in part for any other project without GHD's written authorization. © 2020 GHD			Project No. 112-06142 Original Size ANSI D Sheet No. 112-06142-C005	Scale AS SHOWN Project No. 112-06142 Sheet No. 10 of 17	

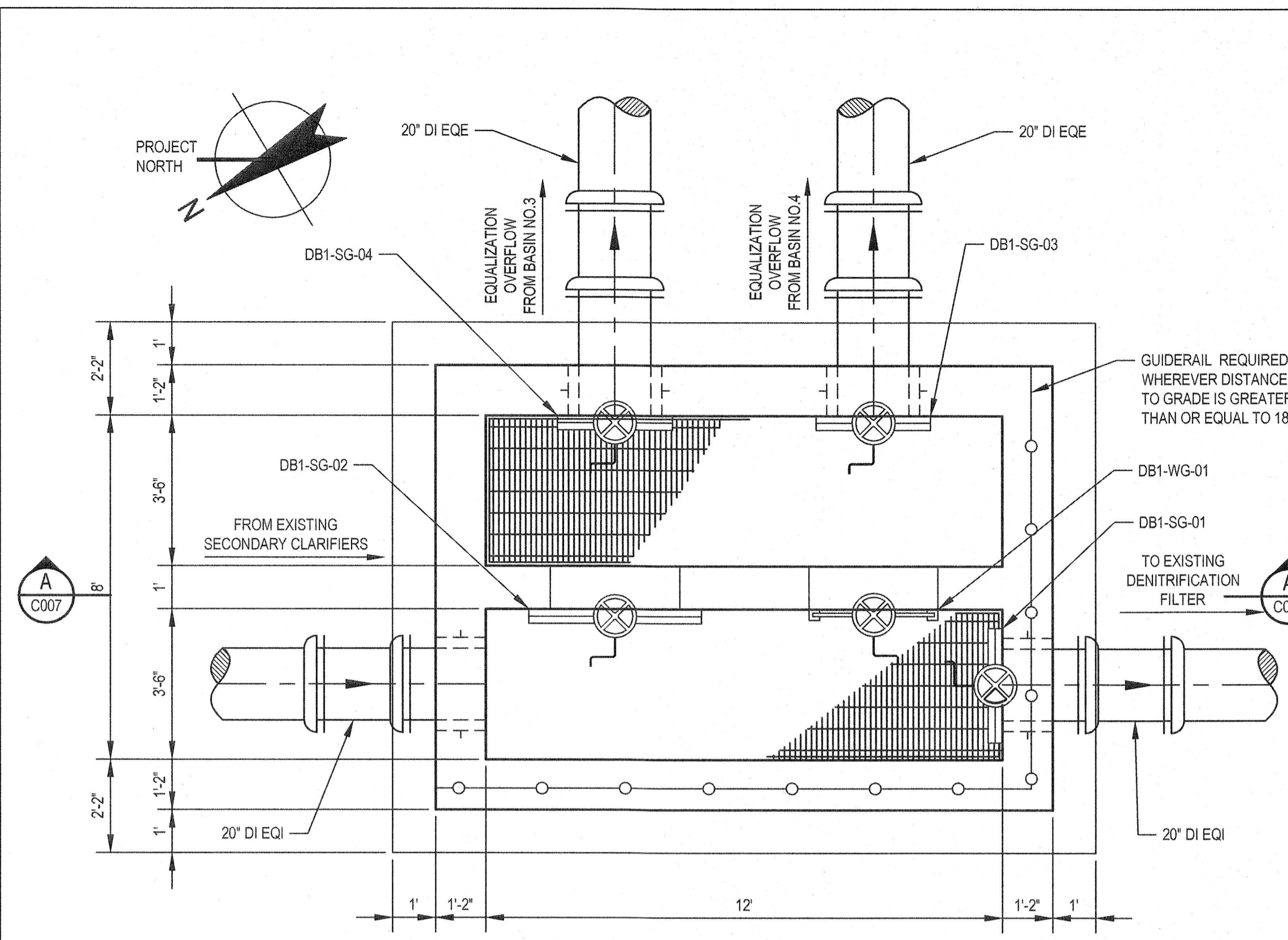


A SECTION
C006 SCALE: 1/4"=1'-0"



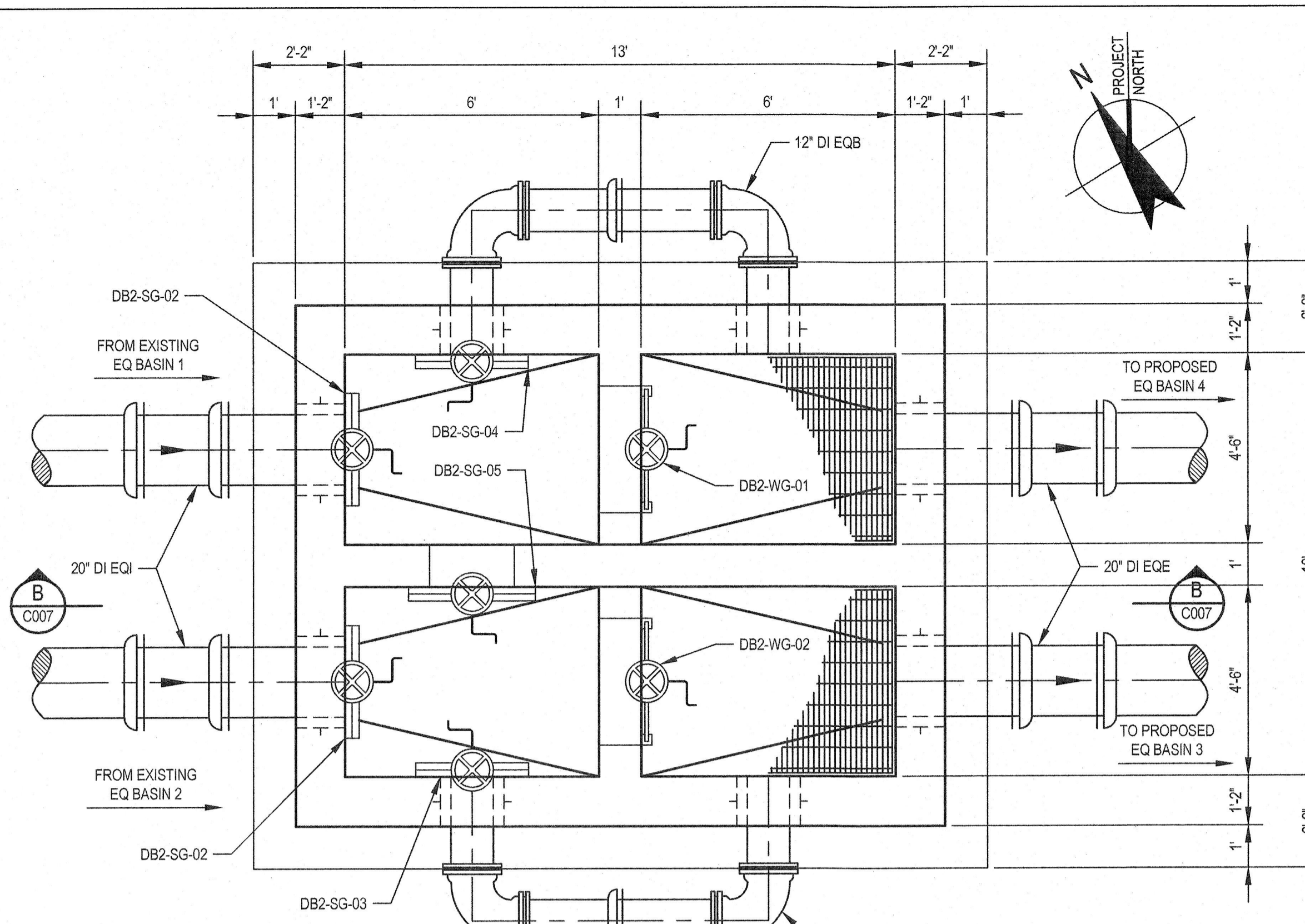
B SECTION
C006 SCALE: 1/4"=1'-0"

					Bar is one inch on original size sheet 0 1"						Client TOWN OF WAREHAM, MASSACHUSETTS Project EQUALIZATION BASIN NO.3 AND 4 Title SITE SECTIONS		
0 FOR BIDDING AND CONSTRUCTION					JDF	MWD	JULY 2020	Drawn JDF Designer JDF		Drafting Check RHK Design Check ZHC		Project Manager RHK Date 7/14/20	
No. Issue Drawn Approved Date					Reuse of Documents This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of GHD and shall not be reused in whole or in part for any other project without GHD's written authorization. © 2020 GHD		GHD Inc. 3075 Breckenridge Boulevard, Suite 470 Duluth GA 30096 USA T 1 678 280 2150 F 1 678 280 2120 W www.ghd.com		Project No. 112-06142 Original Size ANSI D Scale AS SHOWN		Sheet No. 112-06142-C006		



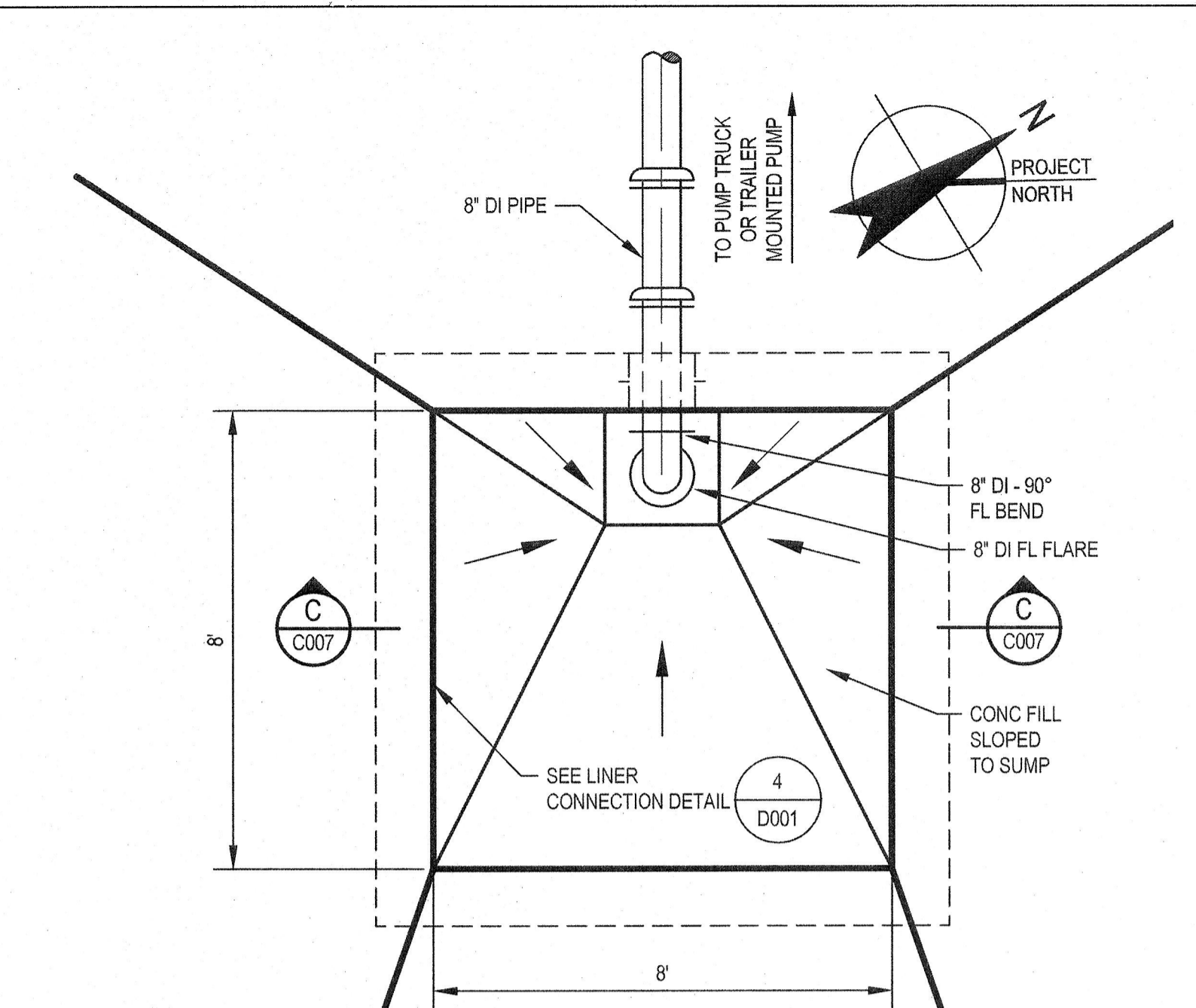
DISTRIBUTION BOX NO.1 PLAN

SCALE: 3/8" = 1'-0"
0 2 4 8



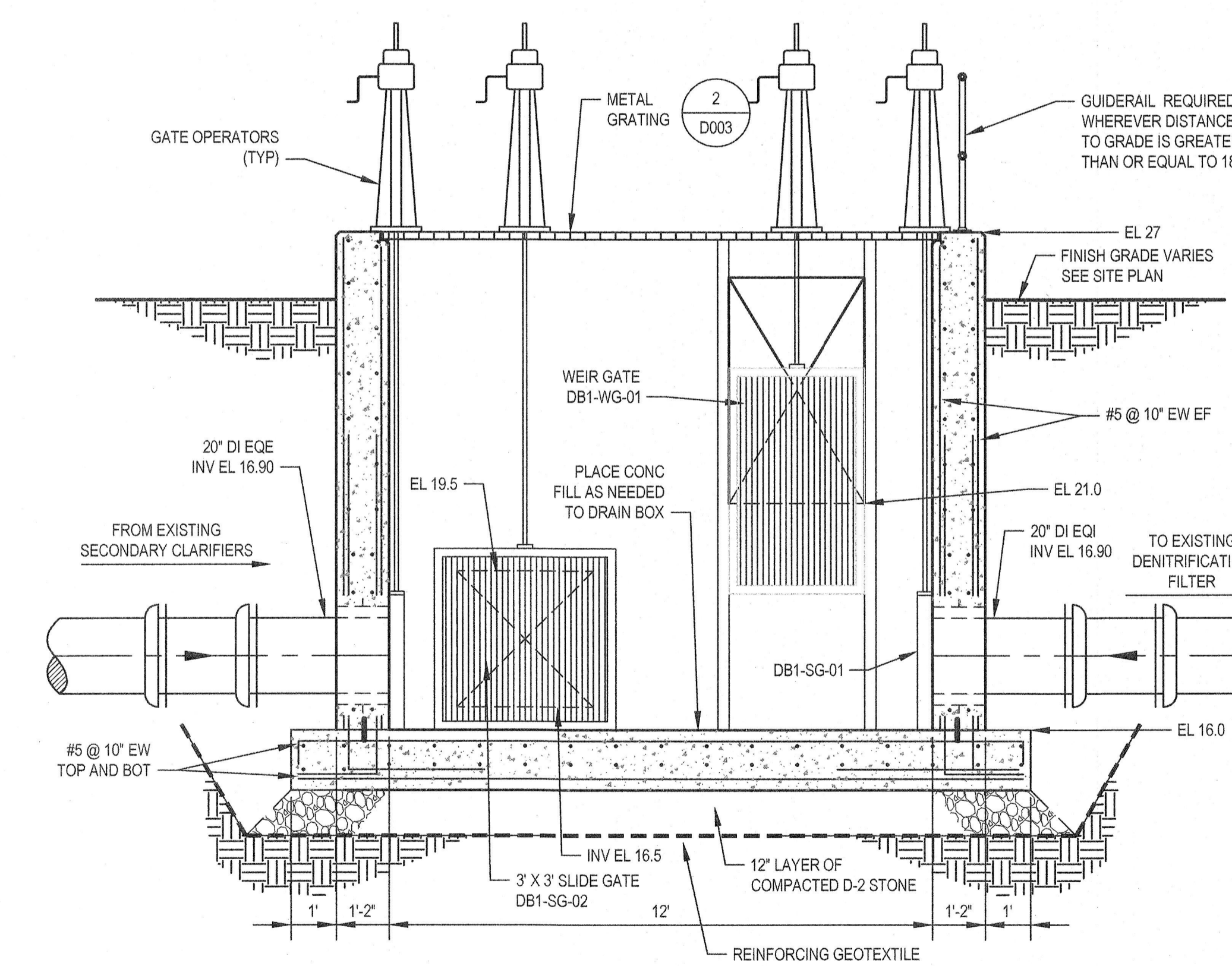
DISTRIBUTION BOX NO.2 PLAN

SCALE: 3/8" = 1'-0"
0 2 4 8



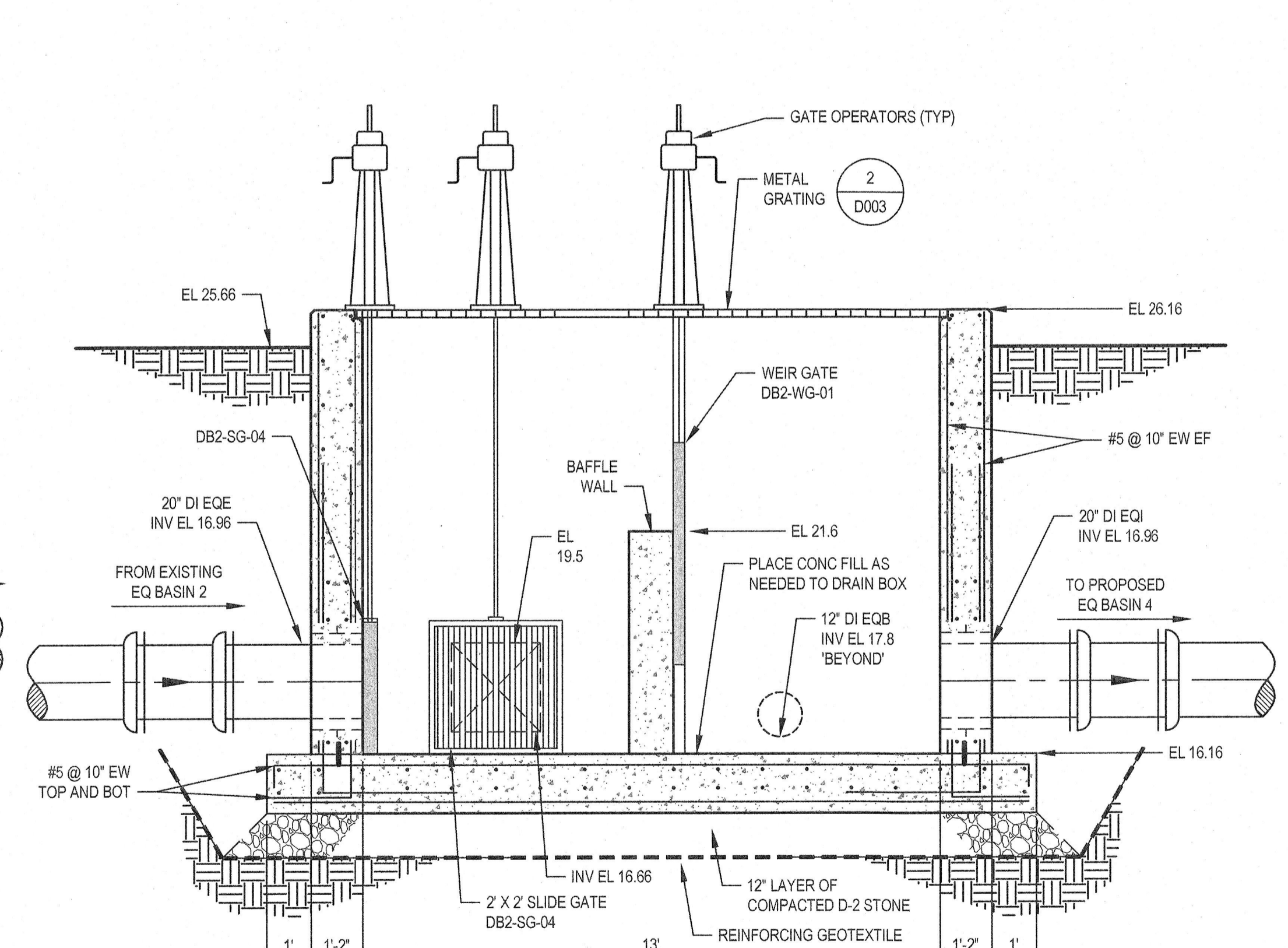
EQUALIZATION SUMP - PLAN

SCALE: 3/8" = 1'-0"
0 2 4 8



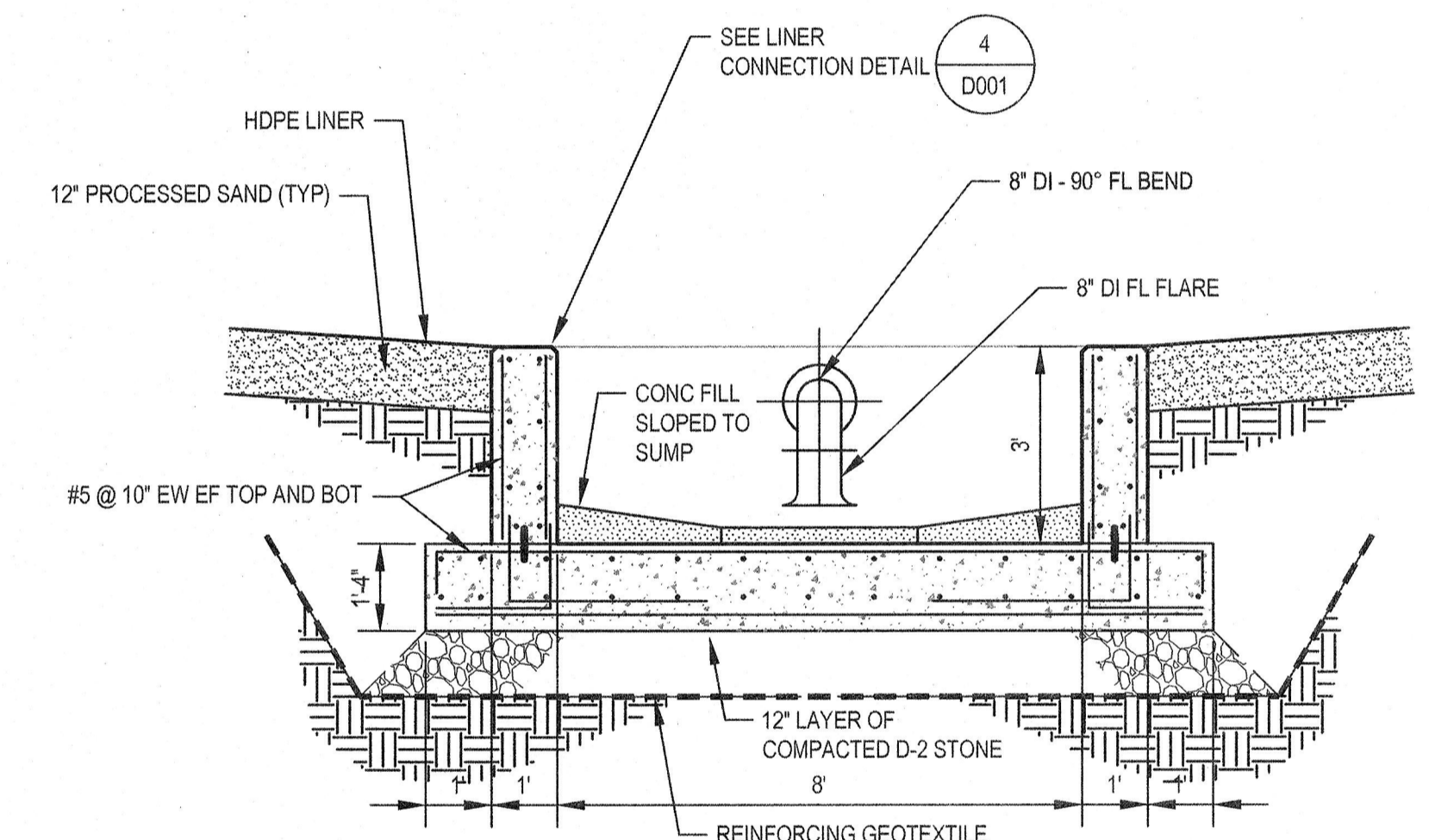
DISTRIBUTION BOX NO.1 SECTION

SCALE: 3/8" = 1'-0"
0 2 4 8



DISTRIBUTION BOX NO.2 SECTION

SCALE: 3/8" = 1'-0"
0 2 4 8



EQUALIZATION SUMP - SECTION

SCALE: 3/8" = 1'-0"
0 2 4 8

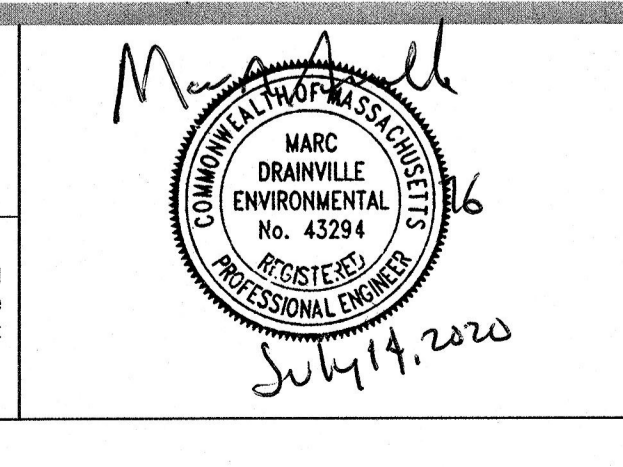
NOTE: REFER TO SHEET 112-06142-G005 FOR VALVE NUMBERING LEGEND.

LIST OF PIPING DESIGNATIONS	
PIPE DESIGNATION	PIPE DESCRIPTION
EQI	EQUALIZATION BASIN INFLUENT
EQE	EQUALIZATION BASIN EFFLUENT
SCE	SECONDARY CLARIFIER EFFLUENT
DFI	DENITRIFICATION FILTER INFLUENT
EFW	EQUALIZATION WATER
FSE	FINAL SETTLING TANK EFFLUENT
EFW	EFFLUENT FLUSHING WATER
D, DRN	DRAIN
FIL	VACUUM FILTER FILTRATE
S	SANITARY SEWER
G	NATURAL GAS

0	FOR BIDDING AND CONSTRUCTION	JDF	MND	JULY 2020
No.	Issue	Drawn	Approved	Date

Bar is one inch on original size sheet
0 1'

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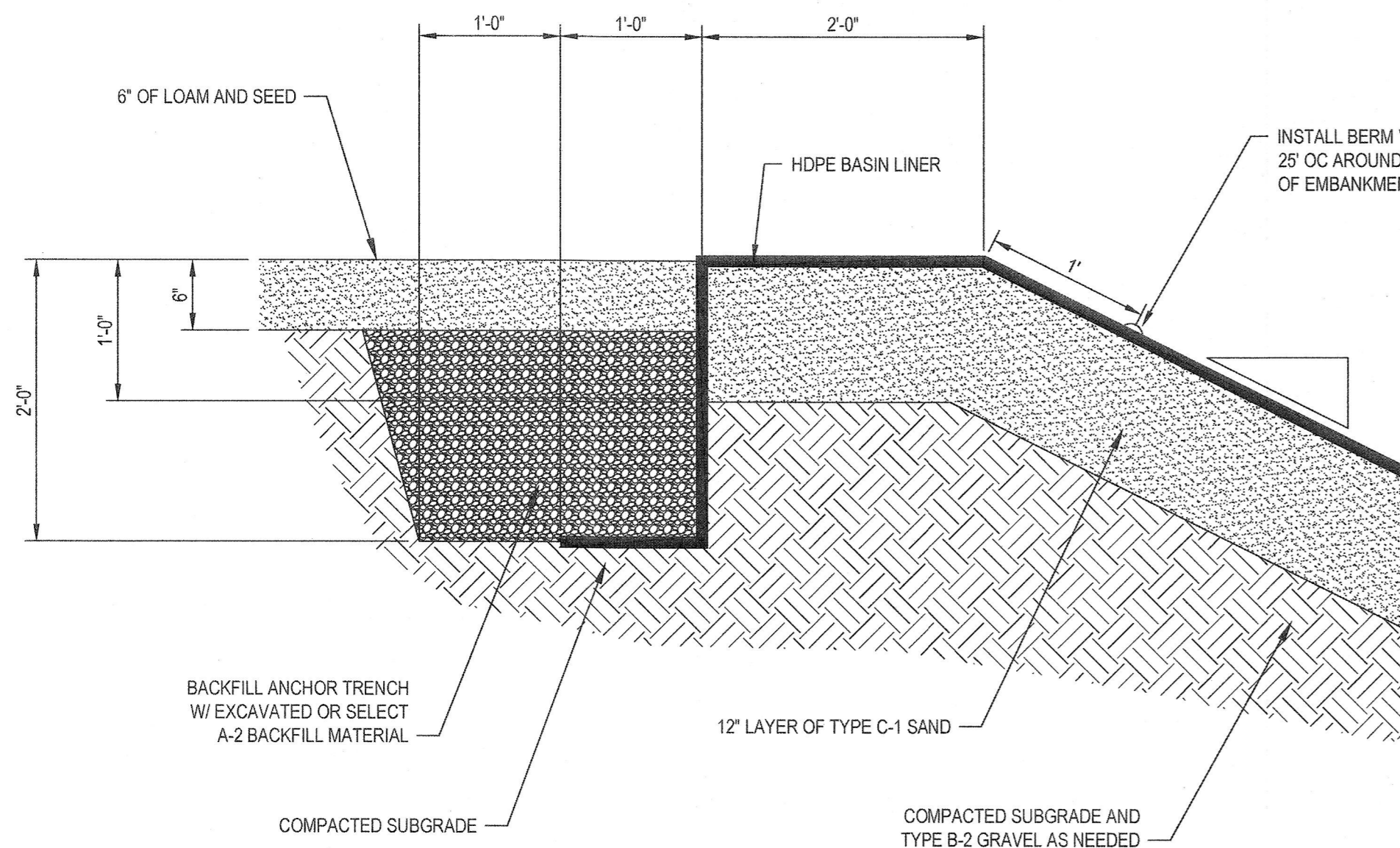


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Project Manager *RHK*
Date 7/14/20

Designer JDF
Design Check *RHK*
Scale AS SHOWN

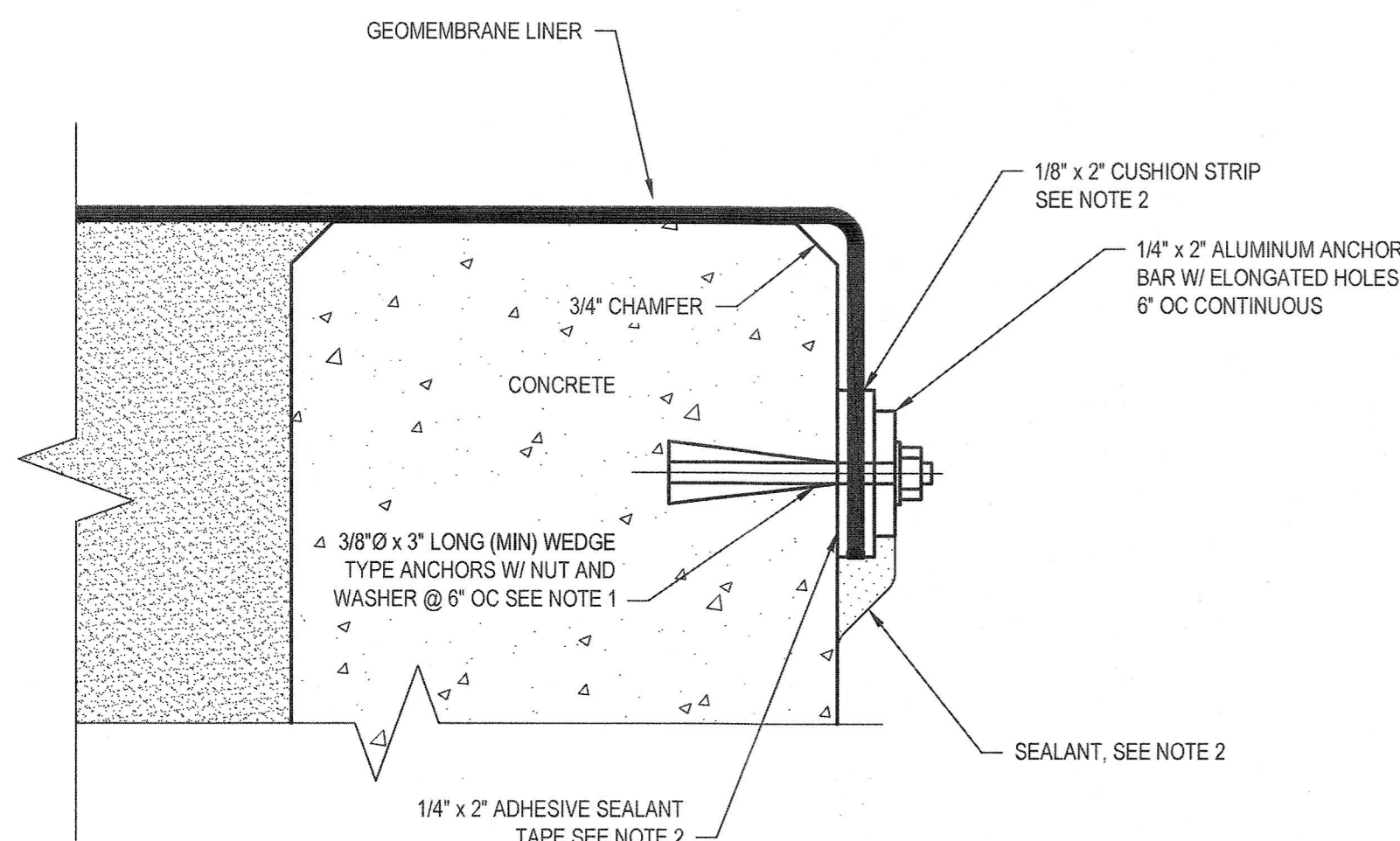
Client **TOWN OF WAREHAM, MASSACHUSETTS**
Project **EQUALIZATION BASIN NO.3 AND 4**
Title **DISTRIBUTION BOX 1 AND 2 AND EQUALIZATION BASIN SUMP PLANS AND SECTIONS**
Project No. 112-06142
Original Size ANSI D
Sheet No. **112-06142-C007**
Sheet 12 of 17



NOTES:

- 1. USE SAND BAGS AS TEMPORARY WEIGHTS IN ANCHOR TRENCH DURING LINER PLACEMENT AS NEEDED.

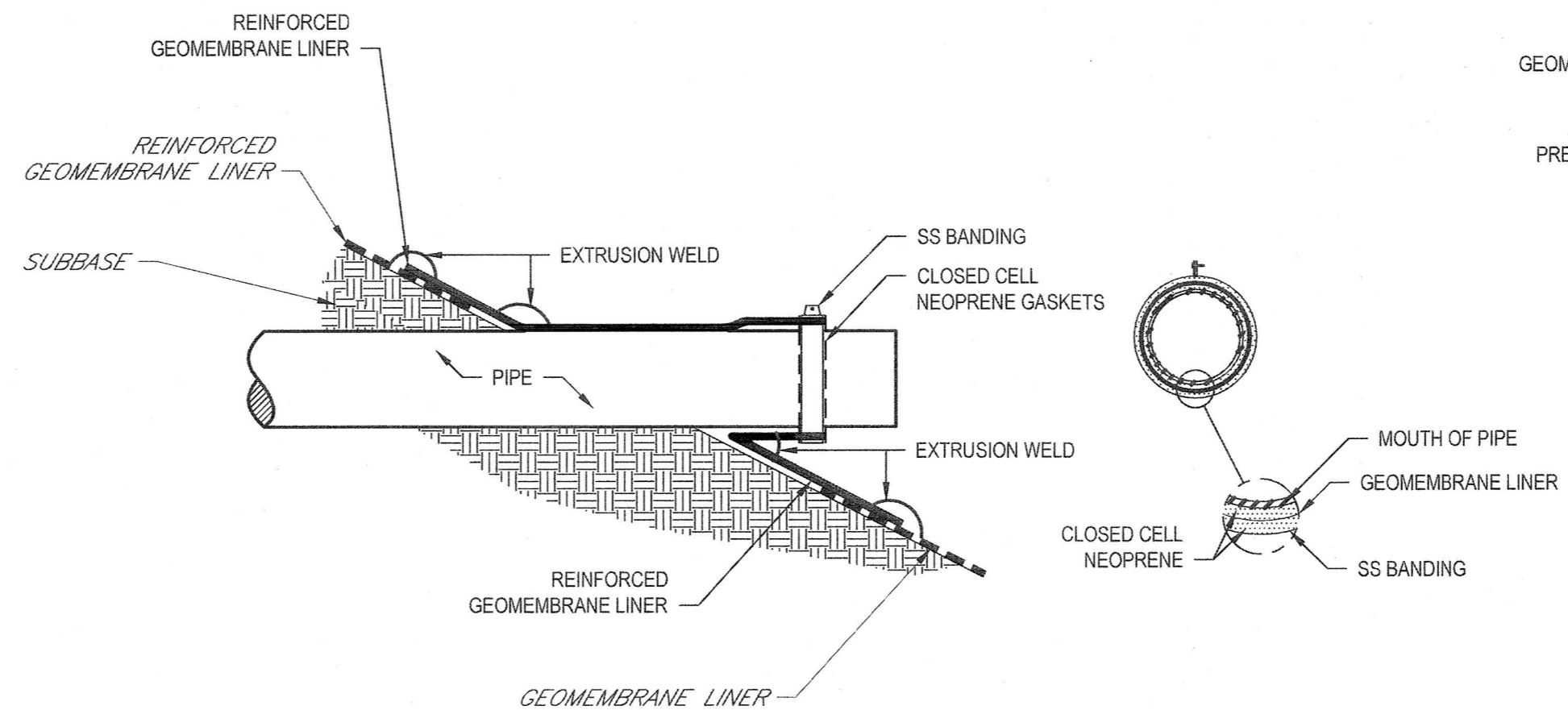
1 ANCHOR TRENCH DETAIL
D001 NOT TO SCALE



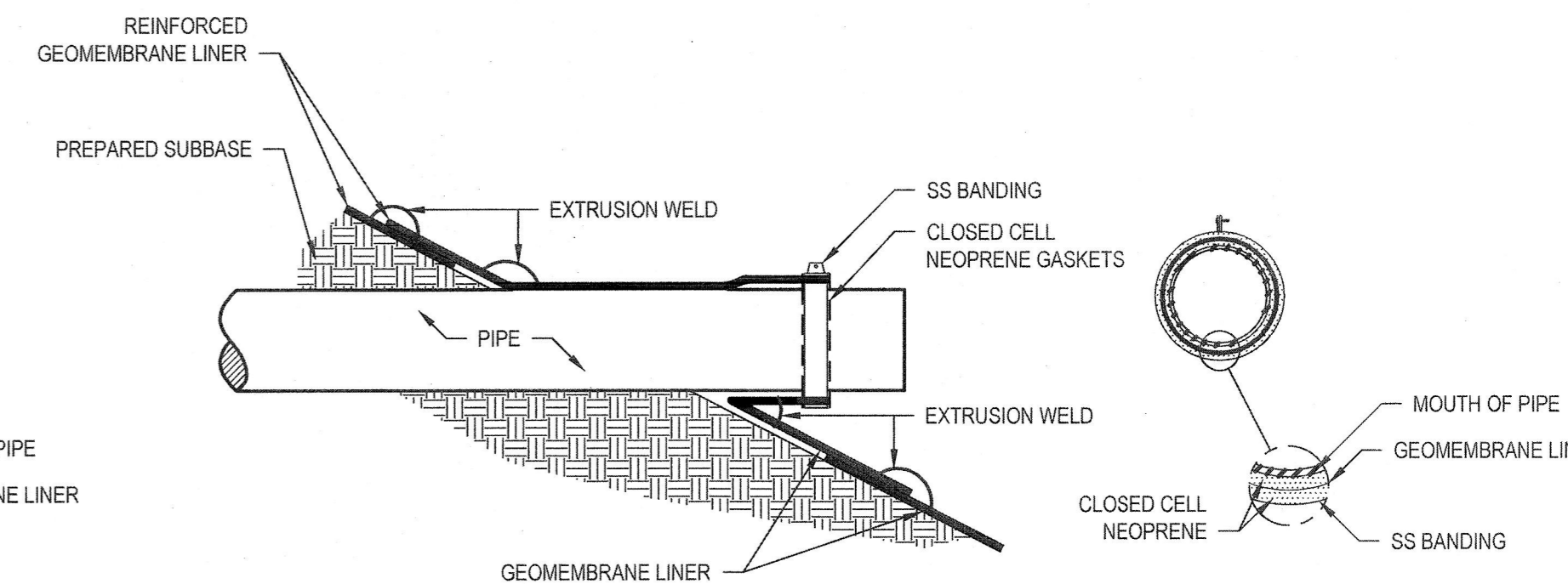
NOTES:

- 1. ALL HARDWARE SHALL BE 316 STAINLESS STEEL, EXCEPT AS NOTED.
- 2. SEALING AND CUSHIONING MATERIALS SHALL BE AS RECOMMENDED BY THE LINER MANUFACTURER.

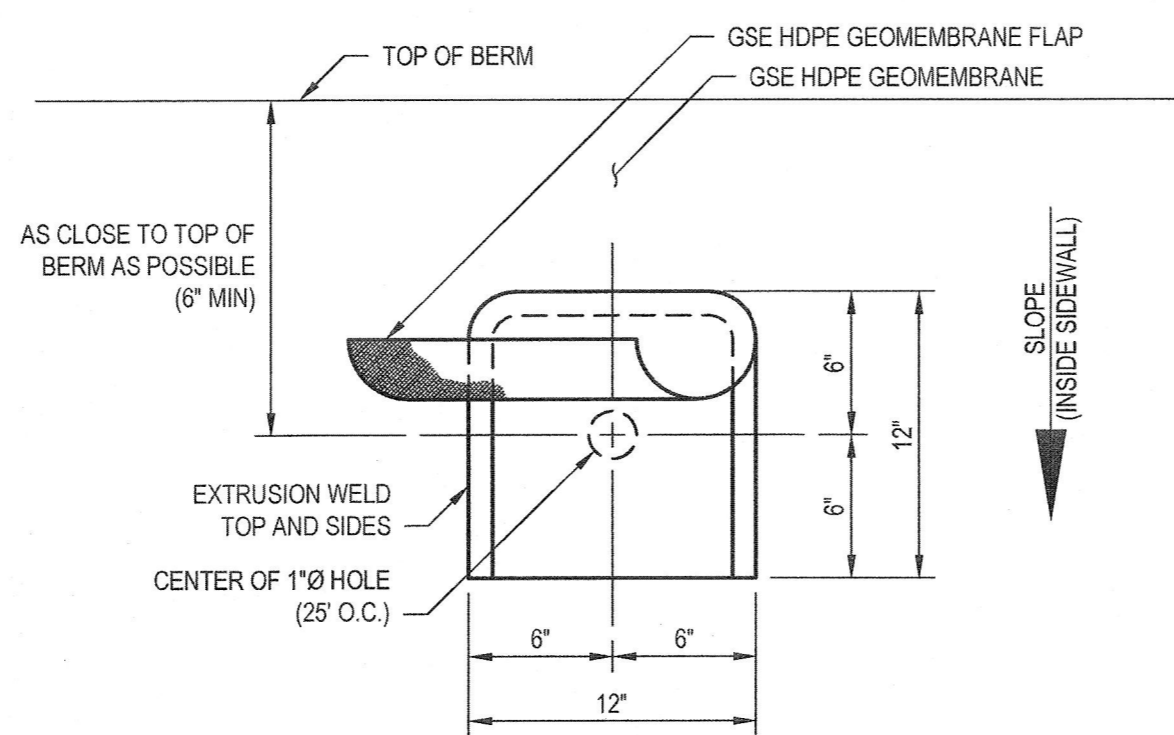
4 LINER CONNECTION DETAIL
D001 NOT TO SCALE



2 PIPE PENETRATION DETAIL IN EXISTING LINER
D001 NOT TO SCALE



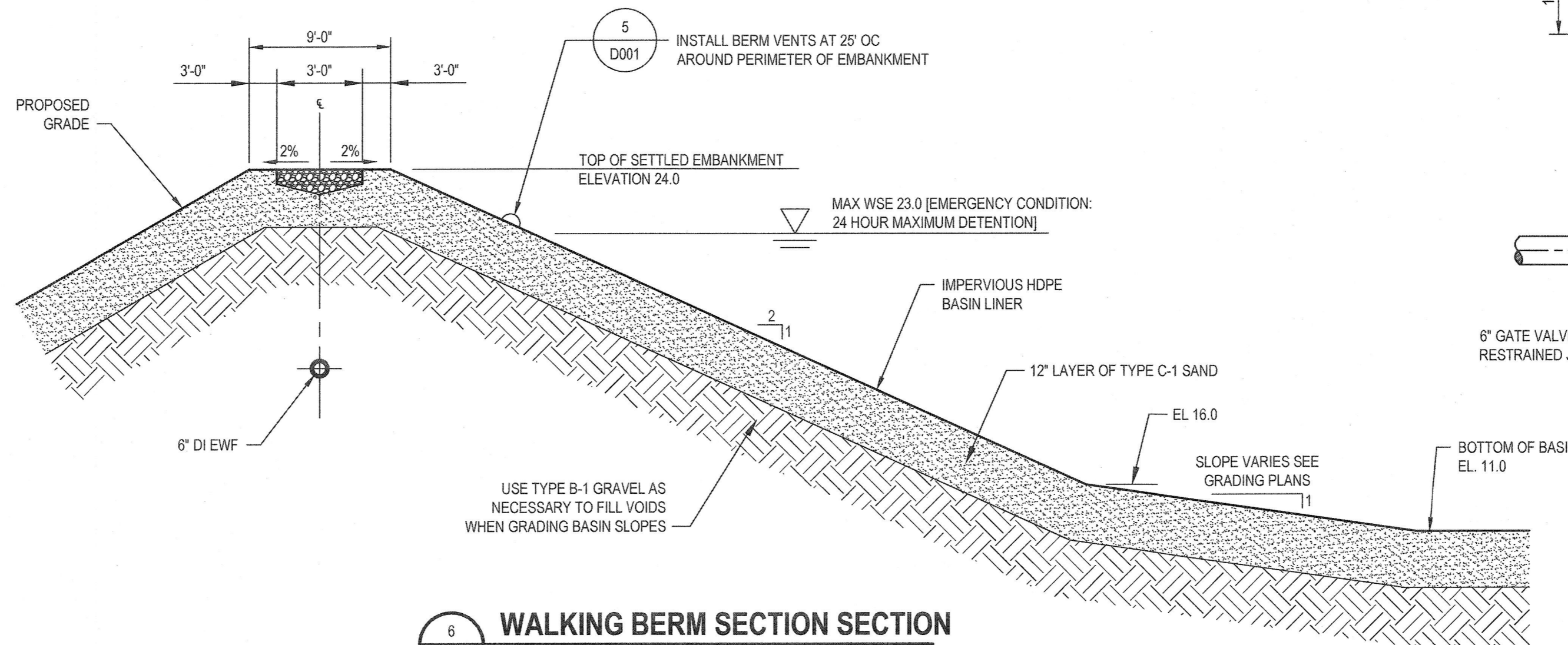
3 PIPE PENETRATION DETAIL IN PROPOSED LINER
D001 NOT TO SCALE



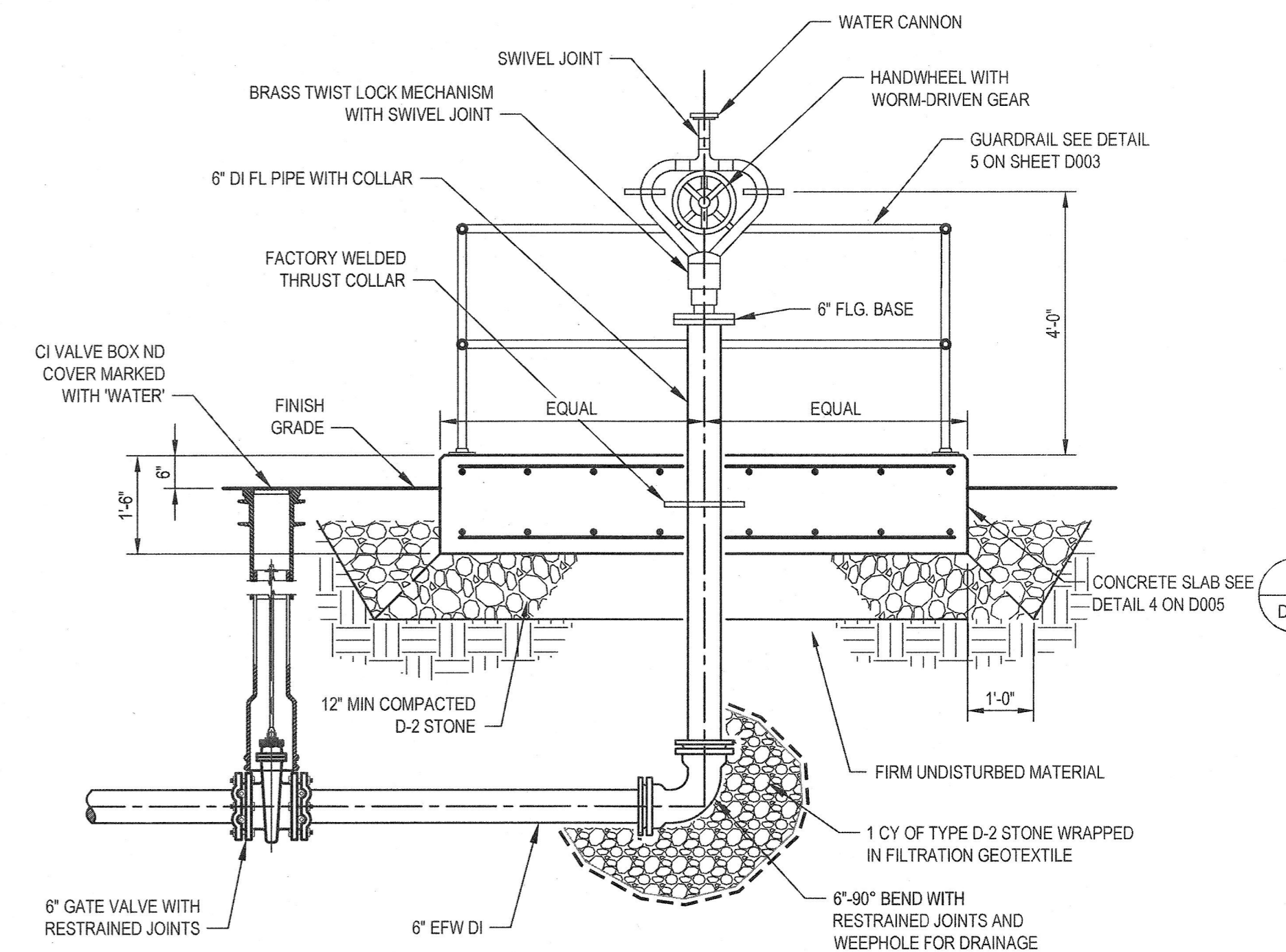
NOTE:

- 1. IN INSTANCES WHERE TWO LAYERS OF LINER ARE PRESENT, VENT HOLE SHALL PENETRATE BOTH LAYERS.

5 TYPICAL BERM VENT
D001 NOT TO SCALE

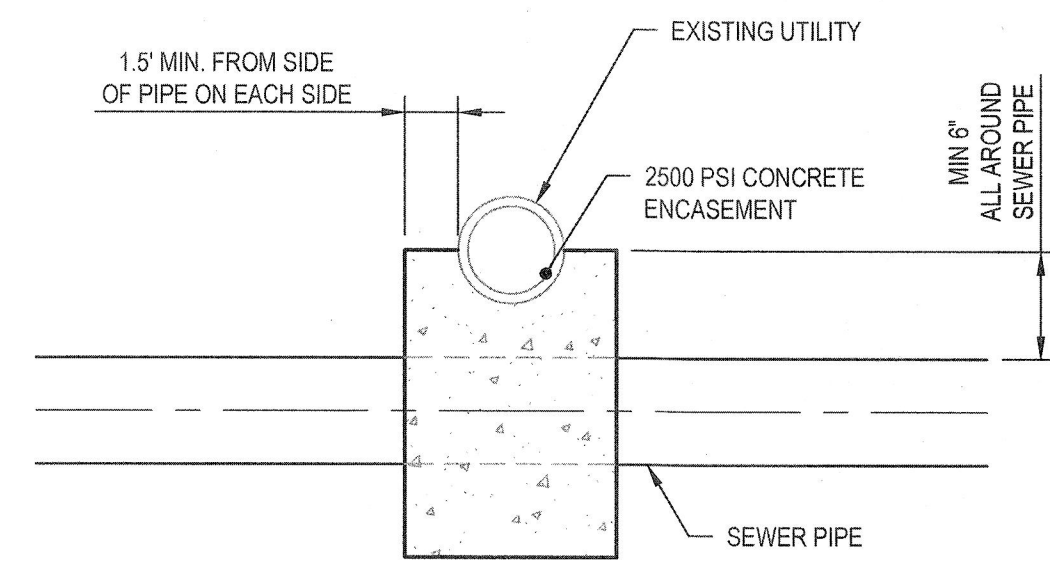


6 WALKING BERM SECTION SECTION
D001 NOT TO SCALE

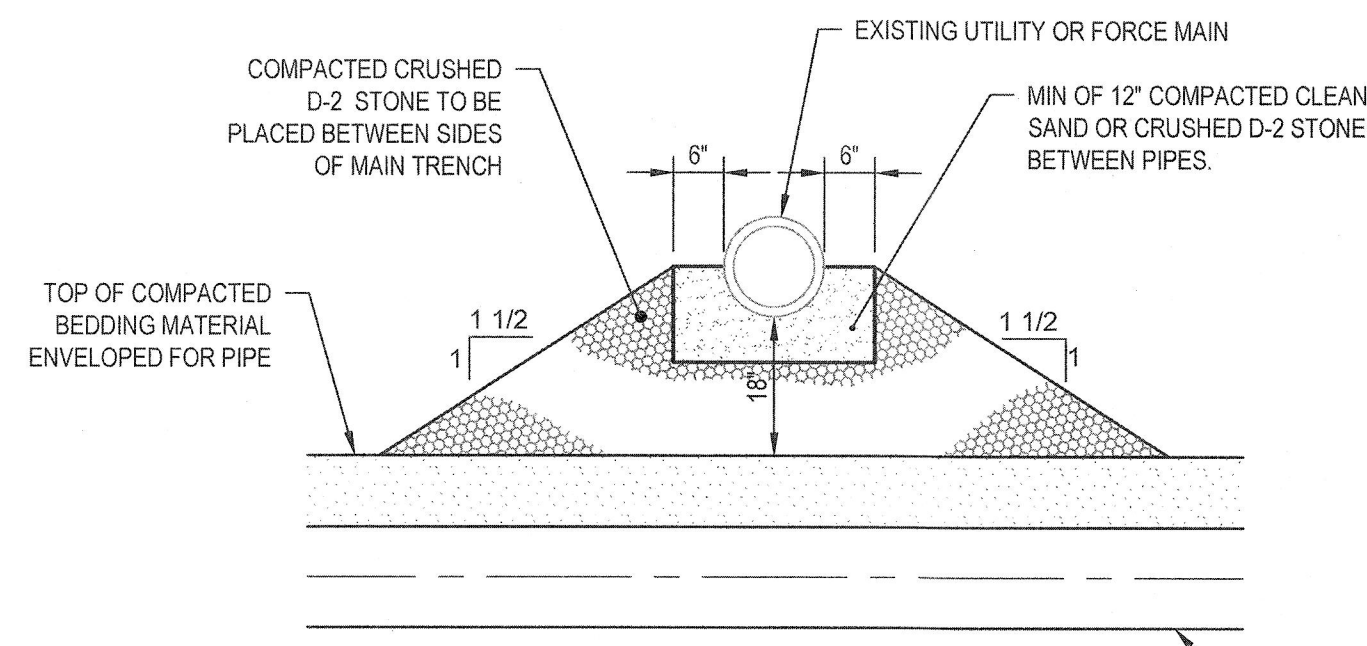


7 WATER CANNON DETAIL
D001 NOT TO SCALE

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1 WHEN CLEARANCE BETWEEN PIPES IS LESS THAN 6"

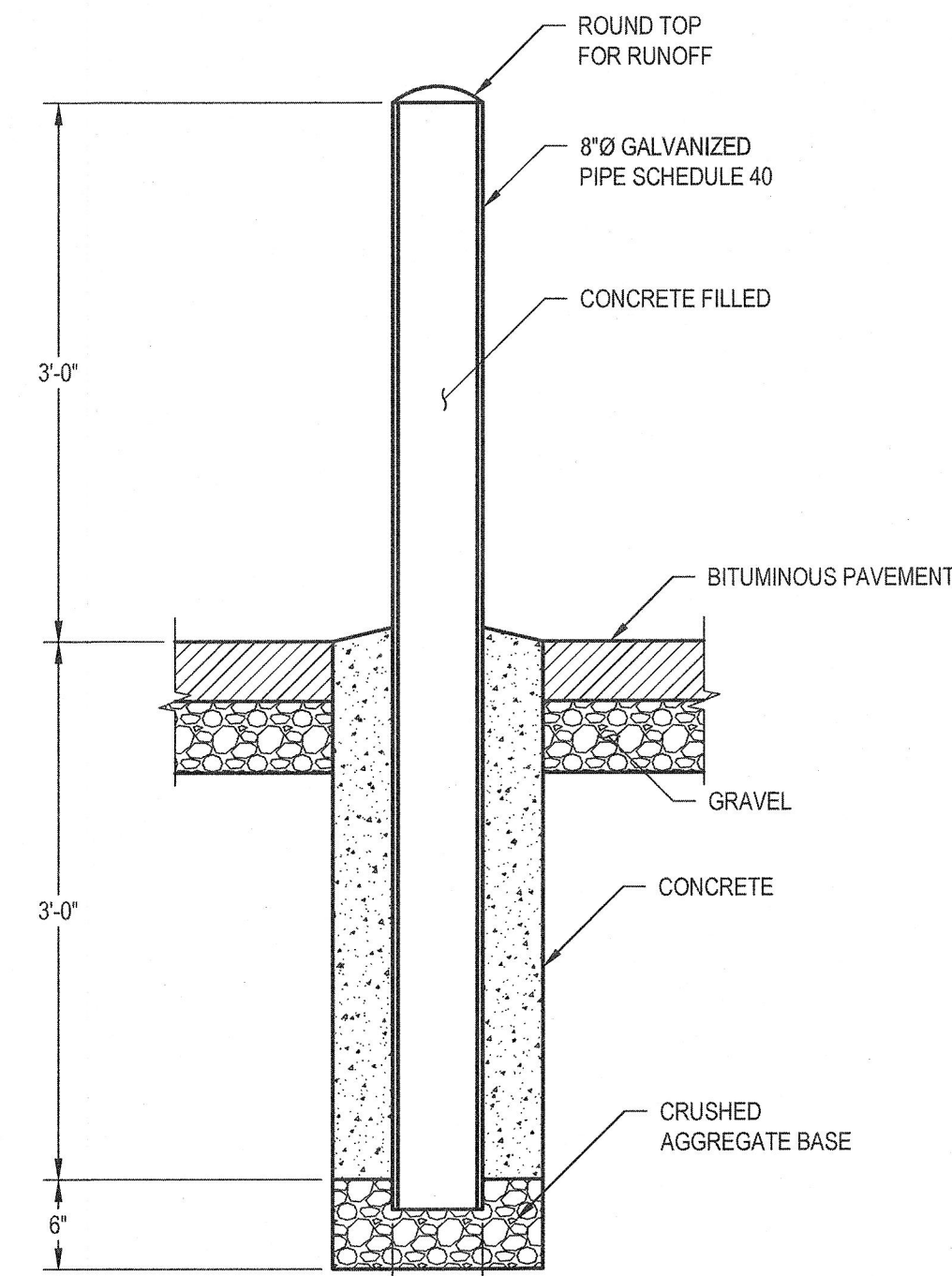


2 WHEN CLEARANCE BETWEEN PIPES IS 6" OR MORE

NOTE:

- CONTRACTOR SHALL IDENTIFY INSTANCES WHERE SEPARATION BETWEEN WATER AND PROPOSED SEWER PIPES WILL BE LESS THAN 18 INCHES AND SUBMIT TO ENGINEER WITHIN 60 DAYS OF NOTICE TO PROCEED. OWNER SHALL SUBMIT A WAIVER REQUEST TO NHDES. WAIVER WILL BE REQUIRED TO PROCEED WITH INSTALLATION OF PIPING THAT IS IN CONFLICT WITH THIS REQUIREMENT
- SEWER PIPE JOINTS SHALL BE LOCATED AS FAR AWAY AS POSSIBLE FROM WATER JOINTS.

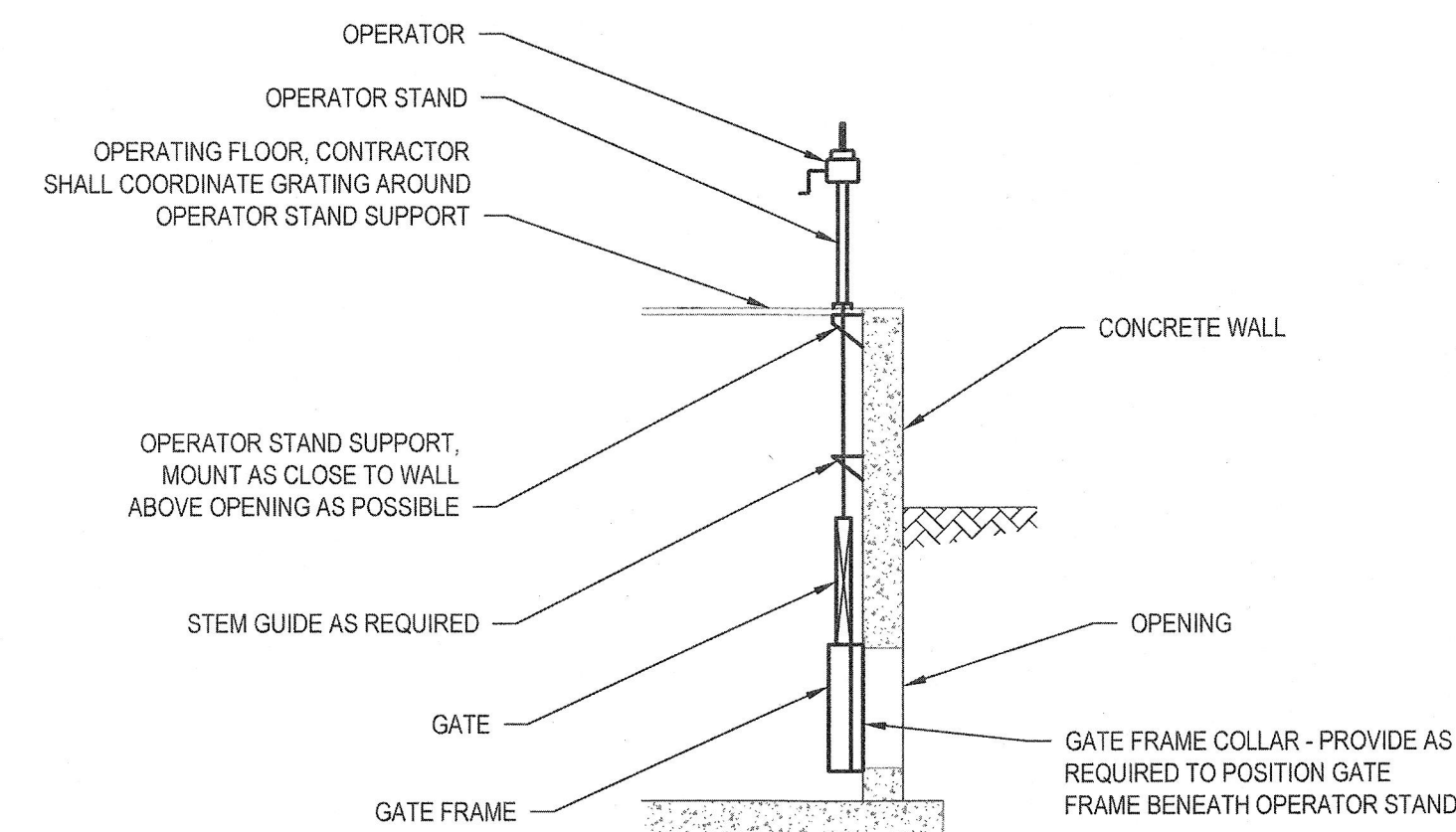
1 UTILITY CROSSING DETAIL
D002 NOT TO SCALE



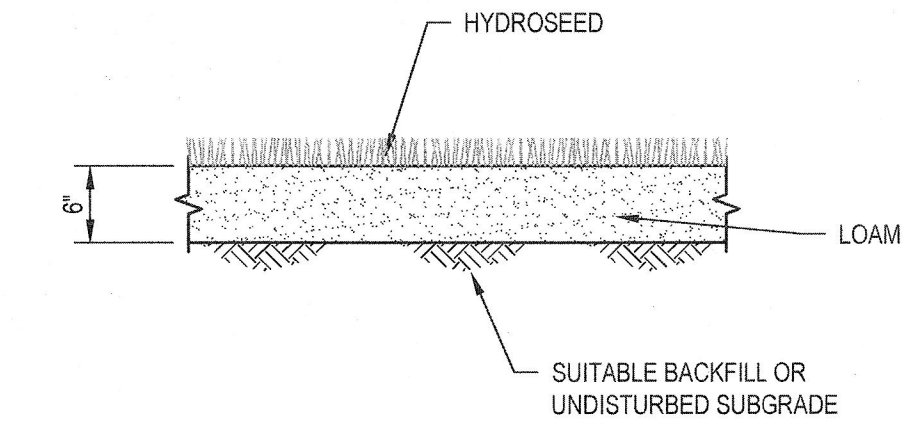
2 BOLLARD DETAIL
D002 NOT TO SCALE

NOTE:

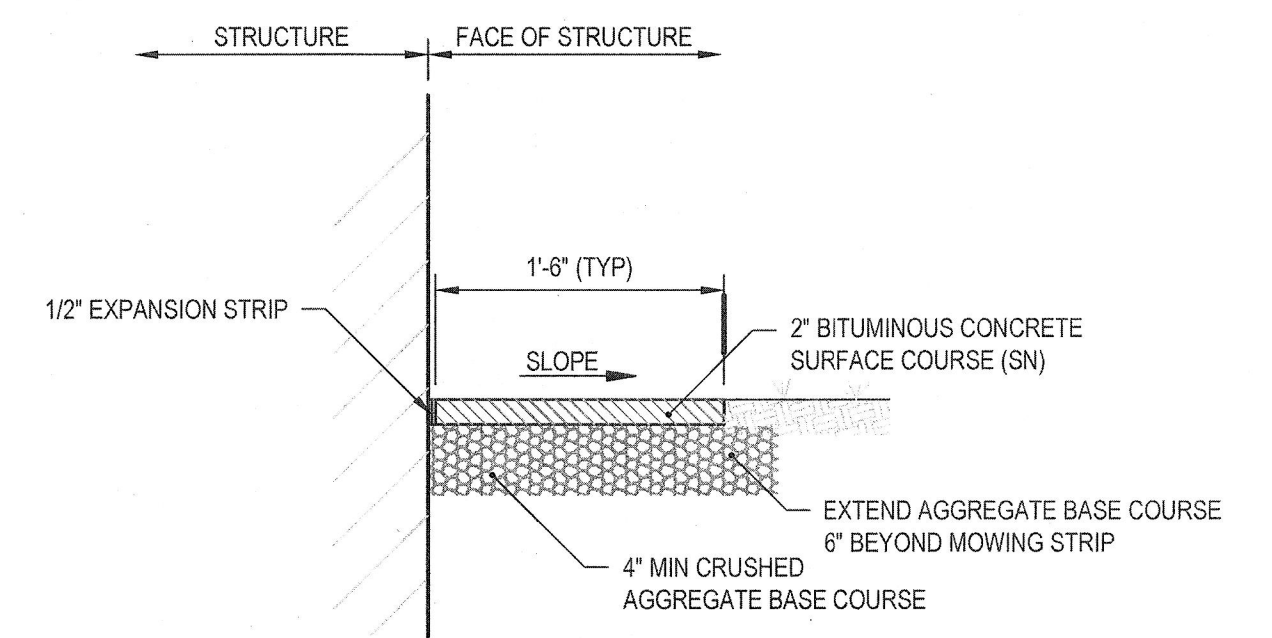
- BOLLARD SHALL BE COVERED WITH "SAFETY YELLOW BUMPER POST SLEEVE" BY INTERSTATE PRODUCTS, INC OR EQUAL SLEEVE SHALL BE SOLID HDPE CONSTRUCTION WITH UV INHIBITORS.



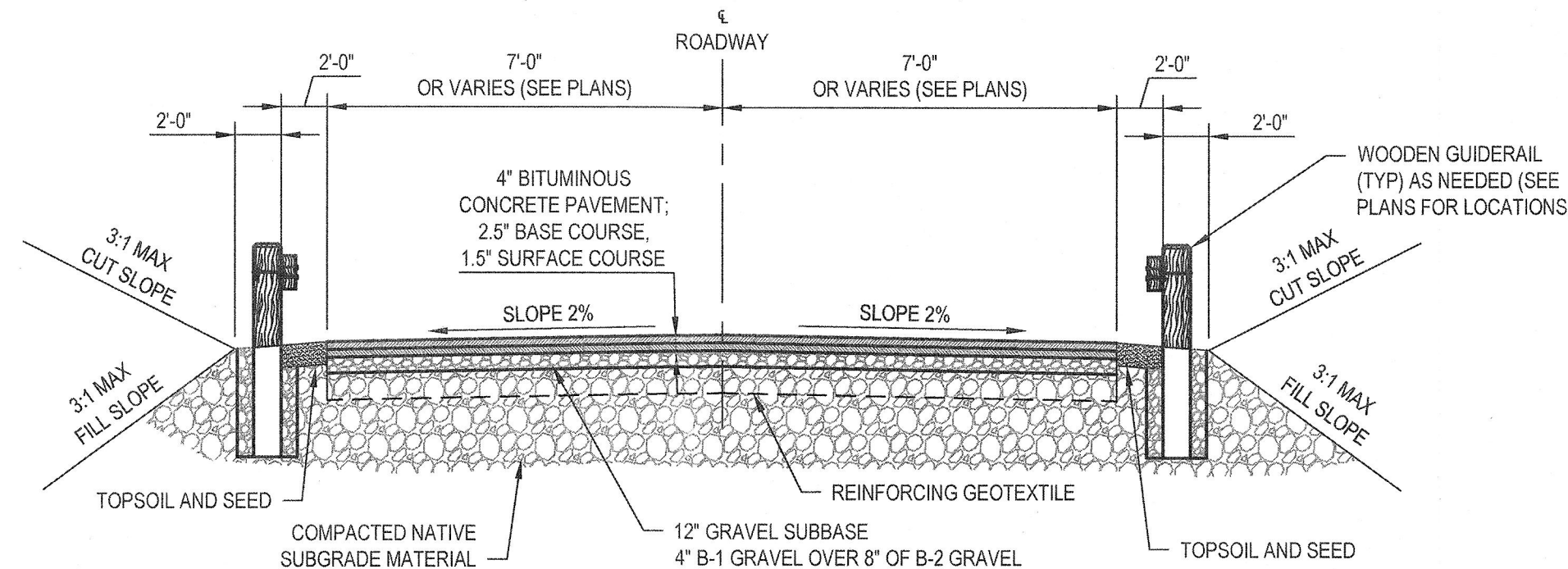
3 TYPE G SLIDE GATE MOUNTING DETAIL
D002 NOT TO SCALE



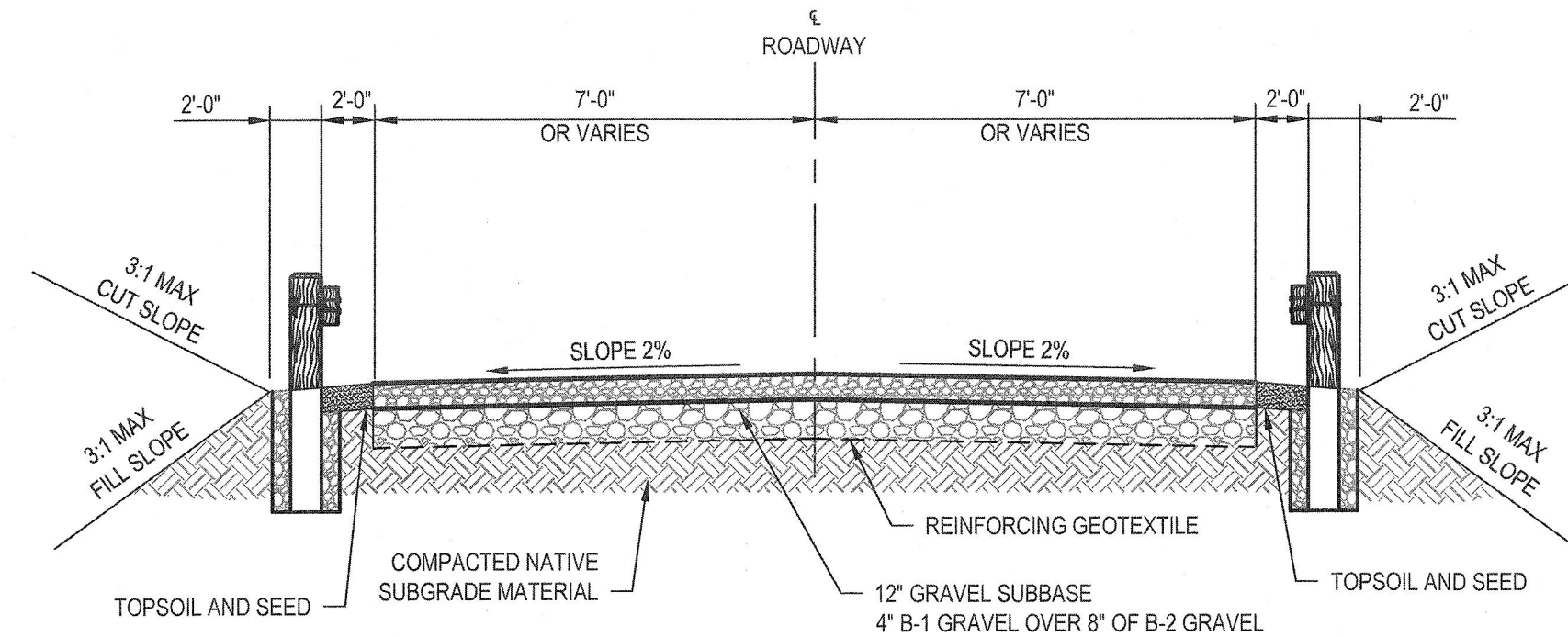
4 LOAM AND SEED - SECTION
D002 NOT TO SCALE



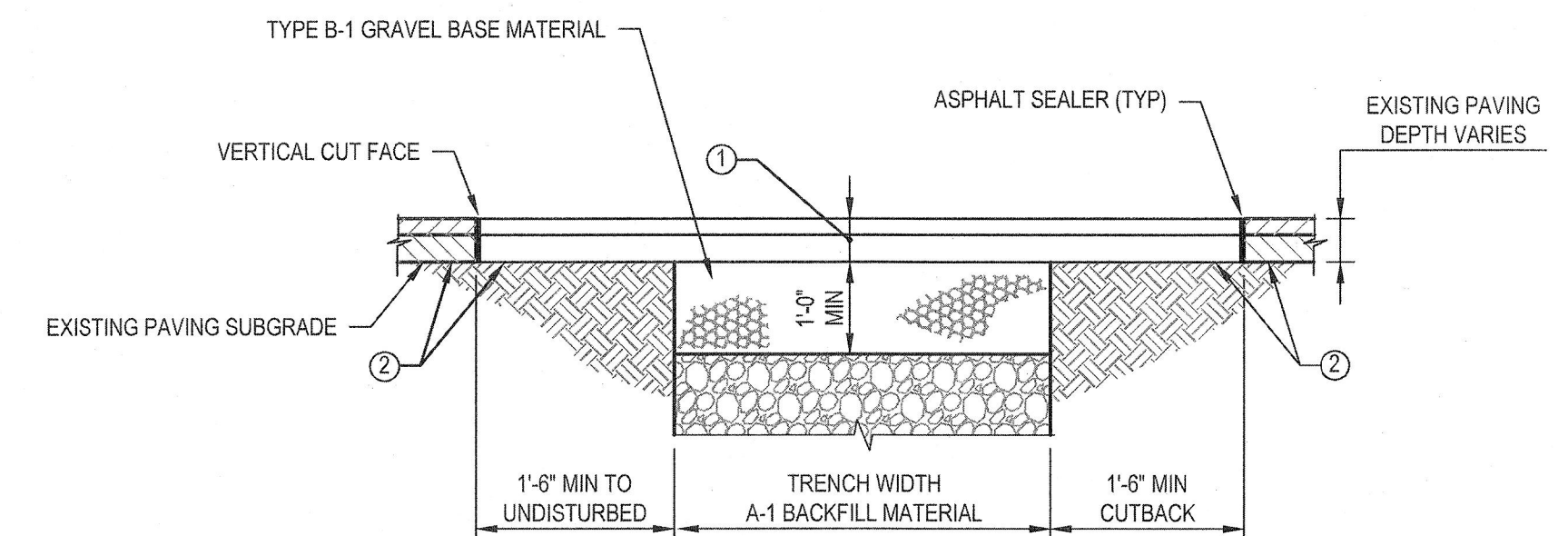
5 MOWING STRIP AT STRUCTURE
D002 NOT TO SCALE



6 TYPICAL PAVED ROAD SECTION
D002 NOT TO SCALE



7 TYPICAL GRAVEL ROAD SECTION
D002 NOT TO SCALE



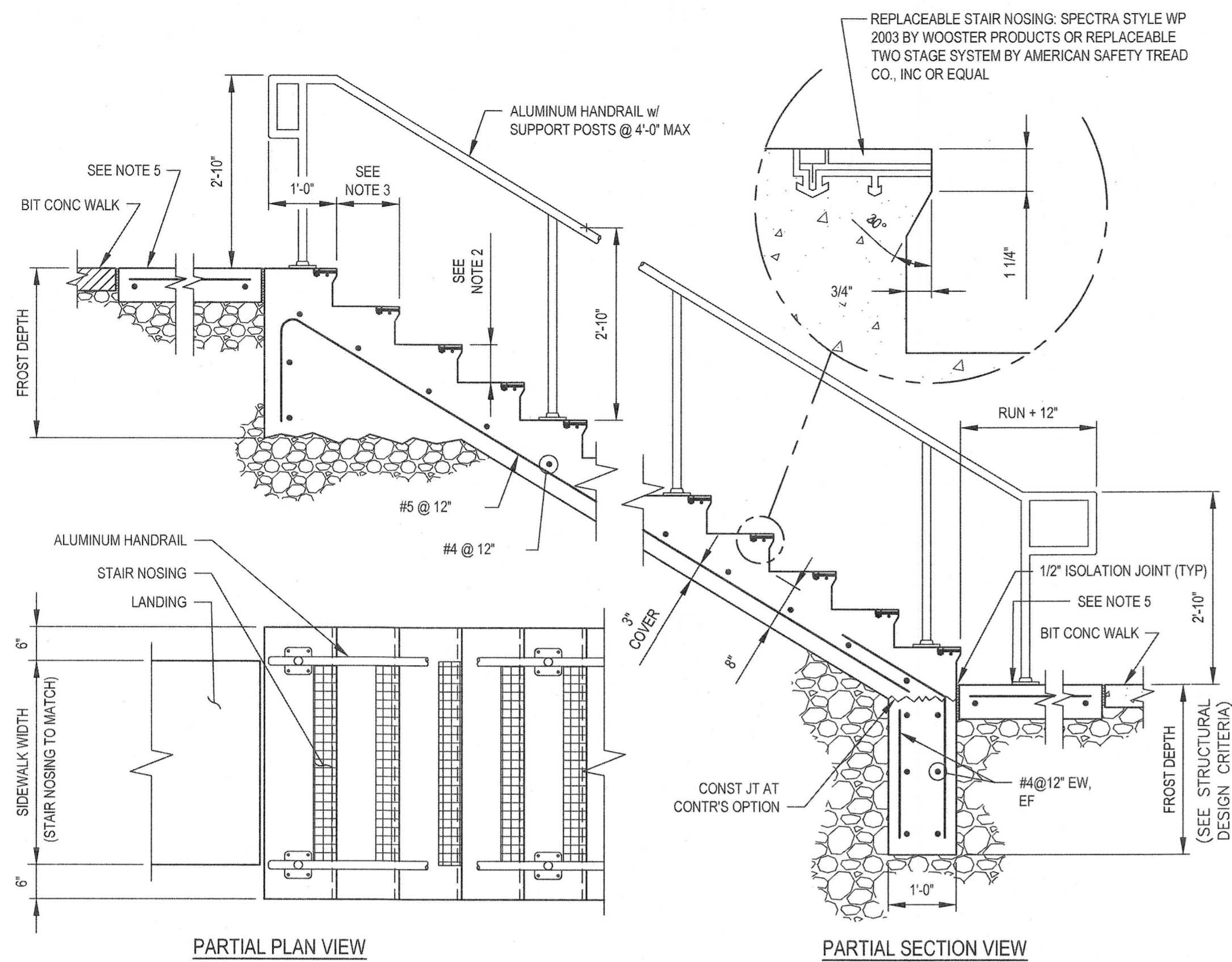
8 CUTTING AND REPAIRING EXISTING ROADWAY PAVEMENT
D002 NOT TO SCALE

NOTES:

(ONLY APPLIES TO AREAS WHERE CONTRACTOR HAS DISTURBED EXISTING. FOR NEW ROADS SHOWN ON SITE PLAN, REFER TO TYPICAL ROAD SECTION).

- PAVEMENT PATCH MATERIALS AND COURSE THICKNESS SHALL BE EQUAL TO EXISTING PAVING SECTION OR AS APPROVED. THE MINIMUM PAVING PATCH SHALL CONSIST OF 4" BITUMINOUS CONCRETE SURFACE MATERIAL PLACED IN TWO COURSES. THE TOP COURSE SHALL BE 1 1/2" OF BITUMINOUS CONCRETE SURFACE COURSE AND THE BOTTOM COURSE SHALL BE 2 1/2" BITUMINOUS CONCRETE BINDER COURSE. STONE BASE MATERIAL SHALL NOT EXCEED 4" THICKNESS PER COURSE.
- TACK SURFACE OF BASE COURSE AT 0.30 TO 0.50 GAL/SY AND PLACE TACK COAT 403.03.01 ALONG VERTICAL FACE OF EXISTING PAVING PRIOR TO PLACING NEW MATERIAL TO INSURE CONTINUOUS BOND. UPON COMPLETION OF PAVING PATCH, EXCESS LIQUID ASPHALT SHALL BE BRUSHED INTO THE JOINT BETWEEN OLD AND NEW PAVING SURFACES TO PREVENT EXCESS LIQUID ASPHALT FROM BEING TRACKED BY TRAFFIC.

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No.	Issue	Drawn	Approved	Date					Drafting Check RHC	Design Check RHC	Project EQUALIZATION BASIN NO.3 AND 4		
								Project Manager RHC	Date 7/14/20	Project No. 112-06142	Title MISCELLANEOUS DETAILS - II		
								This document shall not be used for construction unless signed and sealed for construction.		Original Size ANS I D	Scale AS SHOWN	Sheet No. 112-06142-D002	Sheet 14 of 17

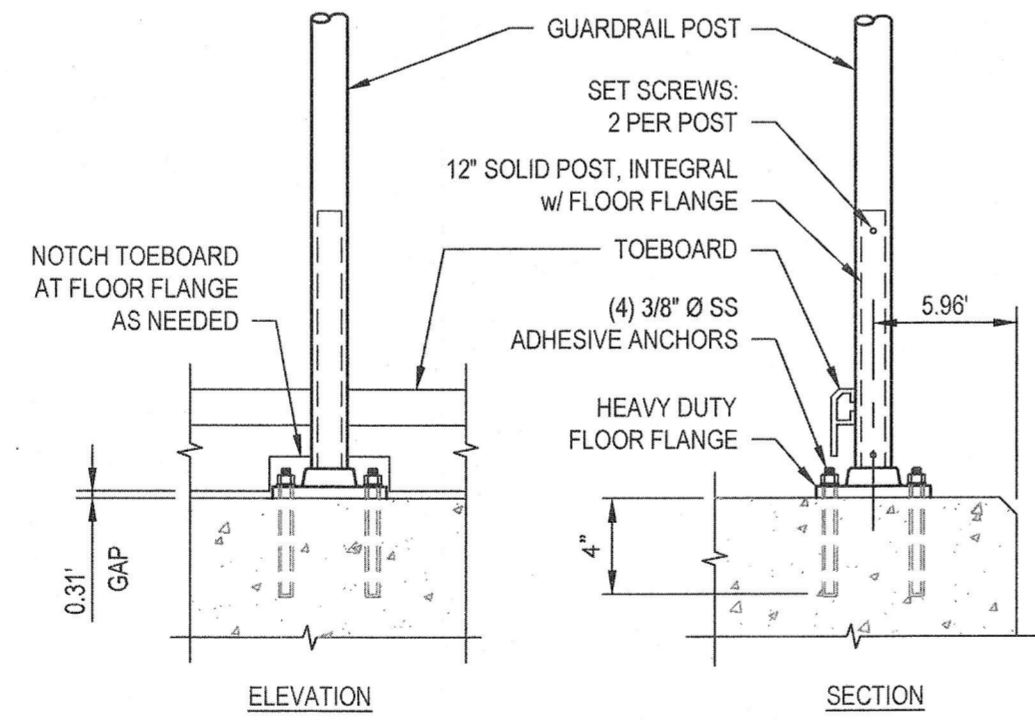


NOTES:

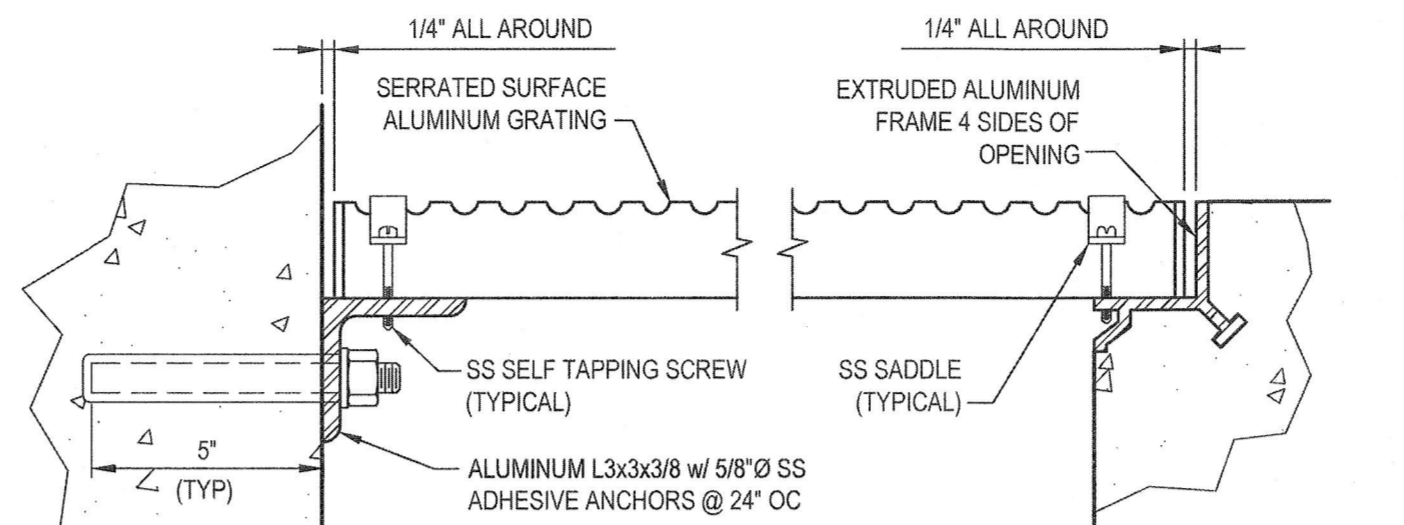
1. DETAILS ARE SCHEMATIC IN NATURE AND DO NOT REPRESENT THE FULL RUN OF THE STAIRS. SEE SPECIFIC BUILDING OR SITE PLAN.
2. ALL RISERS TO BE EQUAL HEIGHT (4" MINIMUM, 7" MAXIMUM); SEE PLAN. IF NO RISER HEIGHT IS SHOWN, USE TALLEST RISER POSSIBLE.
3. ALL RUNS TO BE 11" UNLESS OTHERWISE NOTED.
4. RAILINGS SHALL BE CONSTRUCTED IN CONFORMANCE WITH SPEC SECTION 05520.
5. TOP AND BOTTOM LANDINGS SHALL BE 6" THICK CONCRETE AND SHALL BE REINFORCED W/ #4@12" EW, CENTERED IN SLAB. LENGTH OF LANDING SHALL BE AS SHOWN ON SITE PLAN OR 4'-0" MINIMUM. BOTTOM LANDING WIDTH SHALL MATCH STAIR WIDTH TO ACCOMMODATE INSTALLATION OF HANDRAIL POST.
6. ISOLATE CONCRETE LANDINGS FROM TYPICAL SIDEWALK WITH 1/2" ISOLATION JOINT.

1 EXTERIOR CONCRETE STAIR DETAIL
D003 NOT TO SCALE

- STAIR FRAMING NOTES:**
1. WHERE INDICATED ON DRAWINGS, PROVIDE POSTS, CONCRETE PIERS AND CROSS-BRACING TO SUPPORT INTERMEDIATE STAIR LANDINGS.
 2. PIERS SHALL BE 12" Ø x 3'-6" LONG CONCRETE WITH TOP OF PIER 12" ABOVE BOTTOM STAIR LANDING ELEVATION. REINFORCE PIER WITH (4) #4 VERTICAL BARS W/ (4) #3 CIRCULAR TIES. CROWN TOP OF PIER 1/2" FOR DRAINAGE.
 3. POSTS SHALL BE ALUMINUM L 4x4x3/8 WITH 3/8x6x6 ALUMINUM BASE PLATE. ANCHOR TO PIER WITH 3/4" Ø x 6" SS ADHESIVE ANCHOR.
 4. SETS OF POSTS SHALL BE CROSS-BRACED OR KNEE BRACED WITH ALUMINUM L 2x2x1/4 BRACING.
 5. STAIR FABRICATOR SHALL SHOW AND CLEARLY DETAIL THE ABOVE ITEMS ON THE STAIR SUBMITTALS.
 6. REFER TO STRUCTURAL DWG'S FOR STAIR LANDING SUPPORT BRACKET DETAILS.
 7. REFER TO STRUCTURAL DWG'S FOR 'EXTERIOR STAIR FOUNDATION' DETAIL.



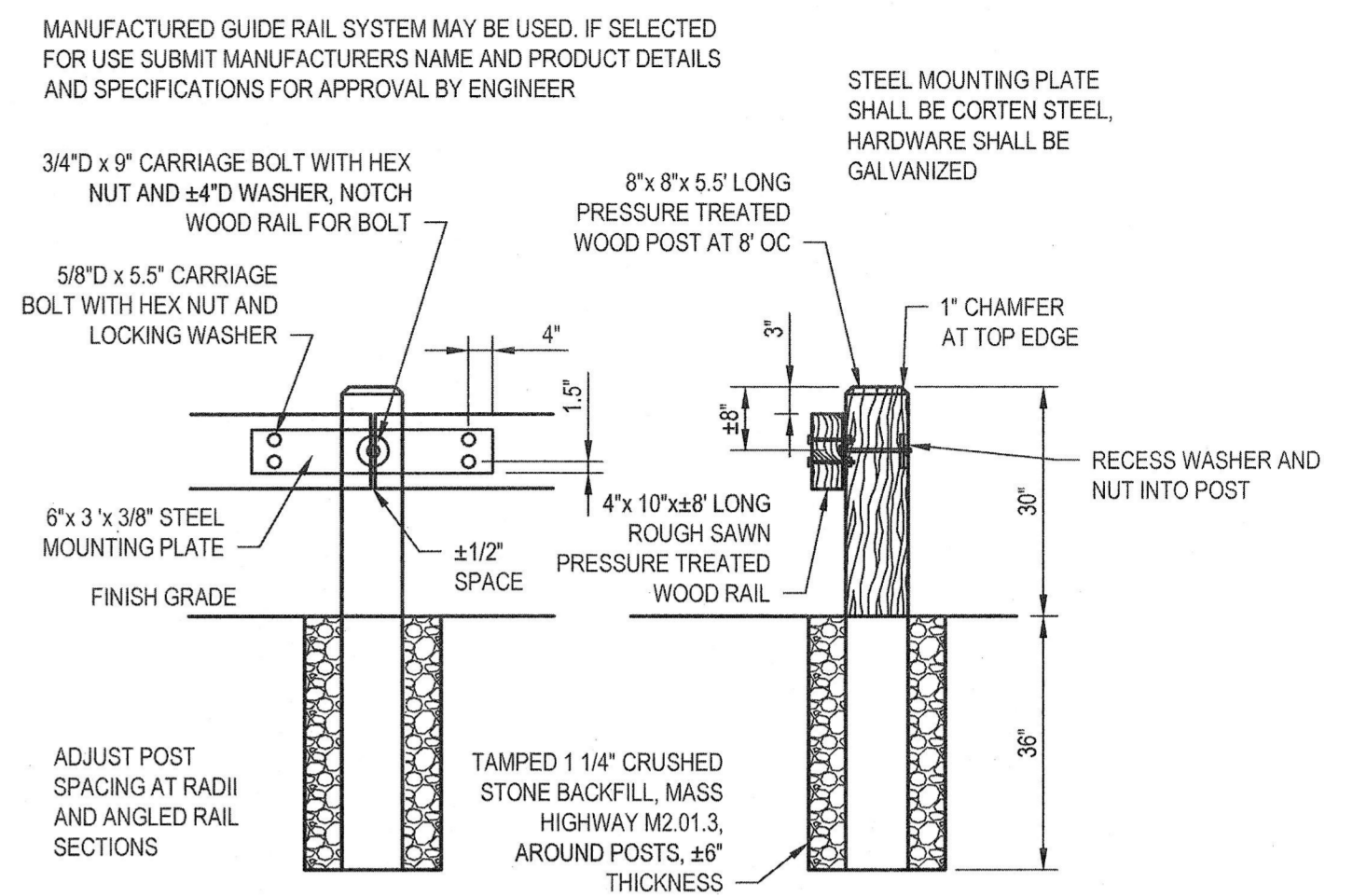
4 GUARDRAIL TOP MOUNT ON CONCRETE
D003 NTS (REFERENCE SECTION 05520)



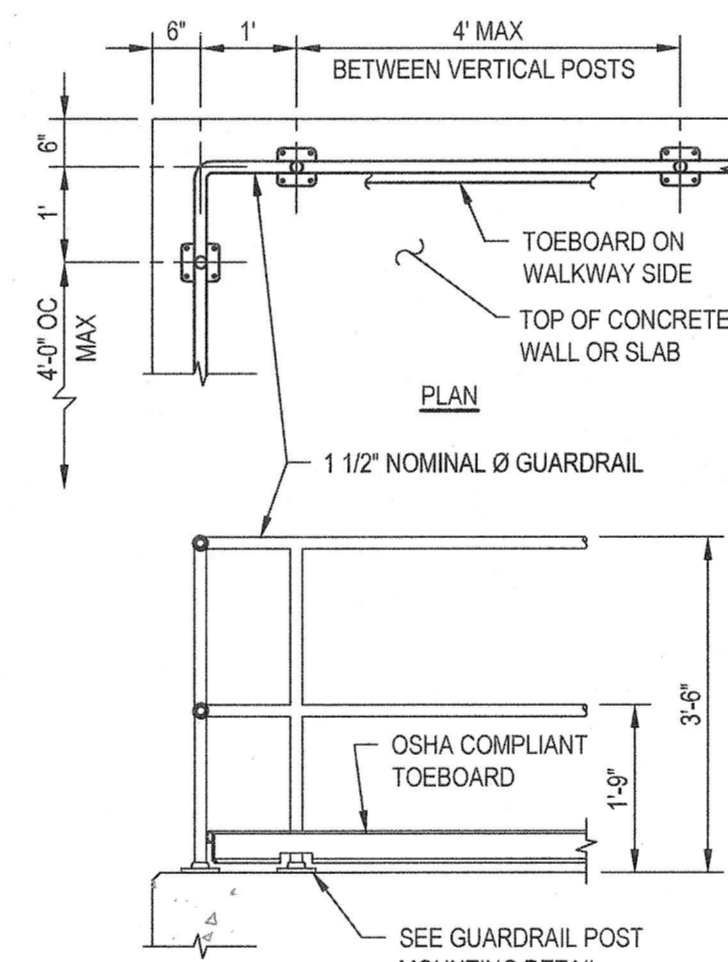
SPAN	BEARING BAR DEPTH		MAXIMUM PANEL WIDTH
	SERRATED ALUMINUM	FRP	
6" TO 2'-0"	1 1/4"	1"	8'-0"
2'-1" TO 3'-0"	1 1/2"	1 1/2"	5'-0"
3'-1" TO 4'-0"	1 1/2"	2"	4'-0"
4'-1" TO 5'-0"	2"	NA	3'-0"
5'-1" TO 6'-0"	2 1/4"	NA	2'-6"

NOTE: FRP GRATING SUPPORT ATTACHMENT DETAILS SIMILAR, EXCEPT SUPPORT ANGLES AND FRAMES TO BE FRP.

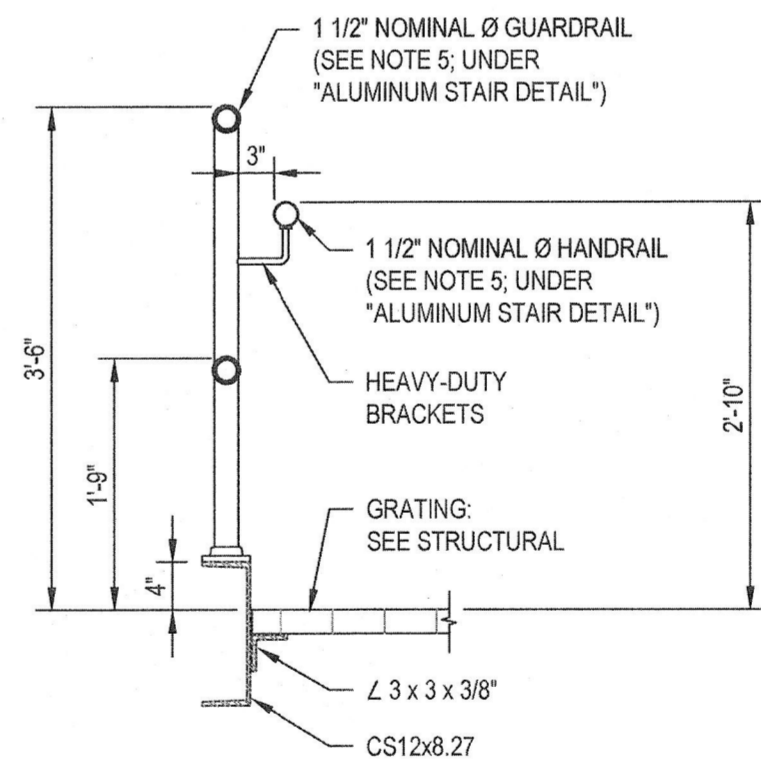
2 GRATING (FOR WET SERVICE)
D003 NOT TO SCALE



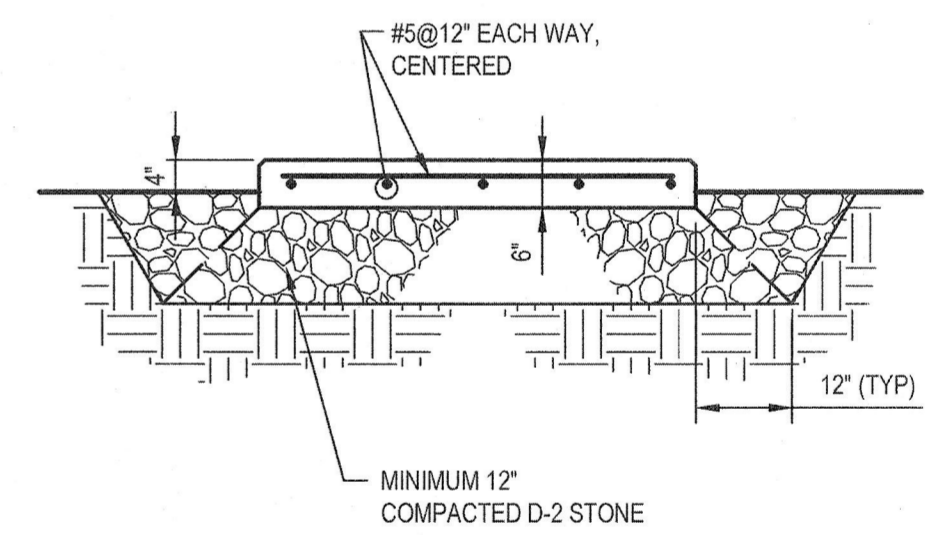
3 WOOD GUIDERAIL DETAIL
D006 NOT TO SCALE



5 GUARDRAIL DETAIL
D003 NTS (REFERENCE SECTION 05520)

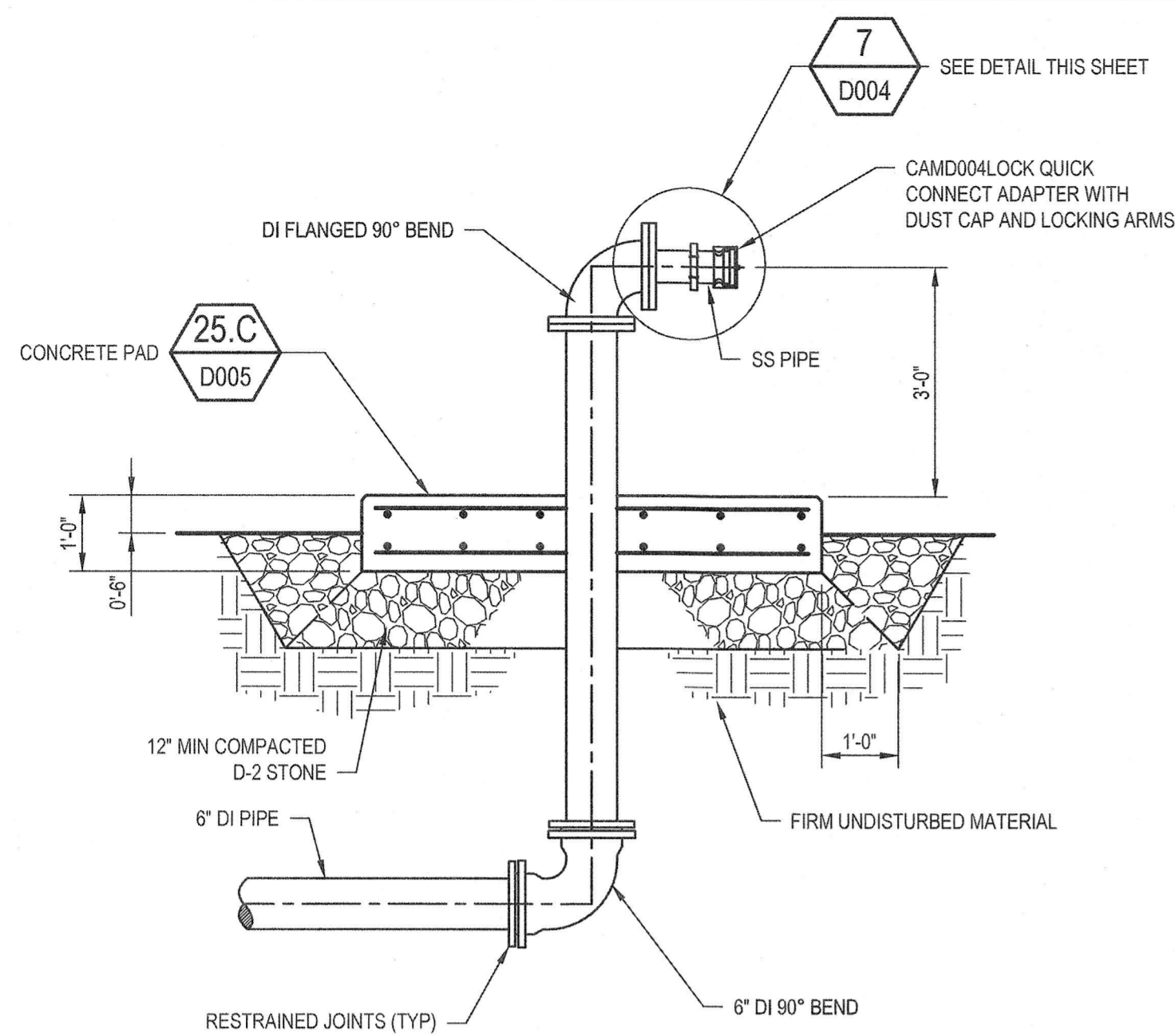


6 SECTION @ STAIR LANDING WITH CHANNEL AS TOEBOARD
D003 NTS

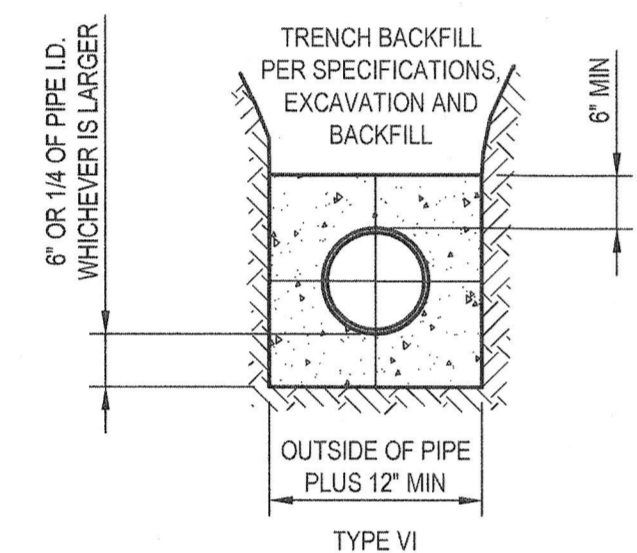


7 EXTERIOR CONCRETE PAD
D003 NOT TO SCALE

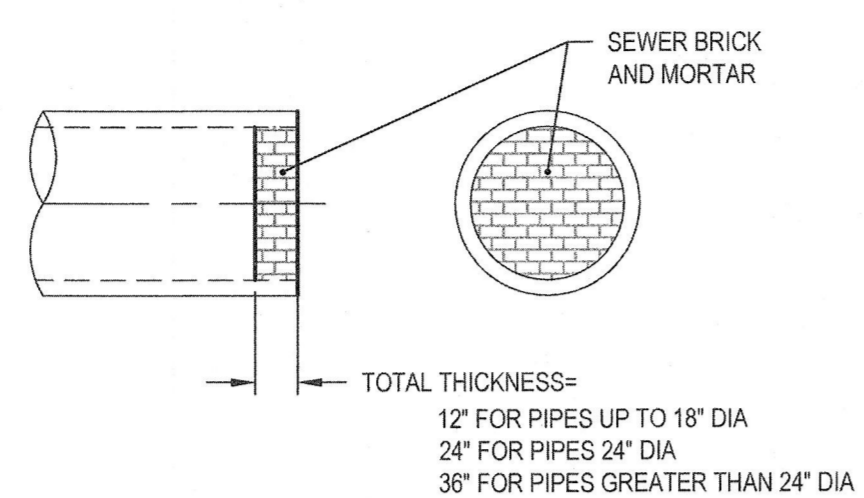
<p>Bar is one inch on original size sheet 0 1"</p>								<p>Drawn JDF Designer JDF</p>		<p>Client TOWN OF WAREHAM, MASSACHUSETTS</p>	
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<p>0 FOR BIDDING AND CONSTRUCTION</p>				<p>JDF <i>RMD</i> JULY 2020</p>		<p>Scale AS SHOWN</p>		<p>Original Size ANSI D</p>		<p>Sheet No. 112-06142-D003</p>	
<p>No. Issued Drawn Approved Date</p>				<p>Drawn Approved Date</p>		<p>Scale AS SHOWN</p>		<p>Original Size ANSI D</p>		<p>Sheet No. 112-06142-D003</p>	



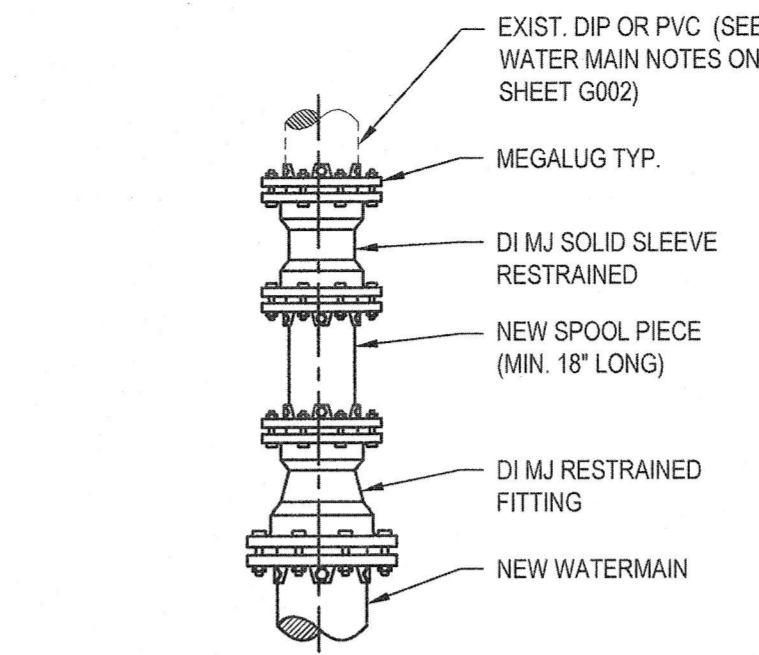
1 SUMP CLEANOUT PUMP CONNECTION DETAIL
D004 NOT TO SCALE



2 BULK HEAD DETAIL
D004 NOT TO SCALE

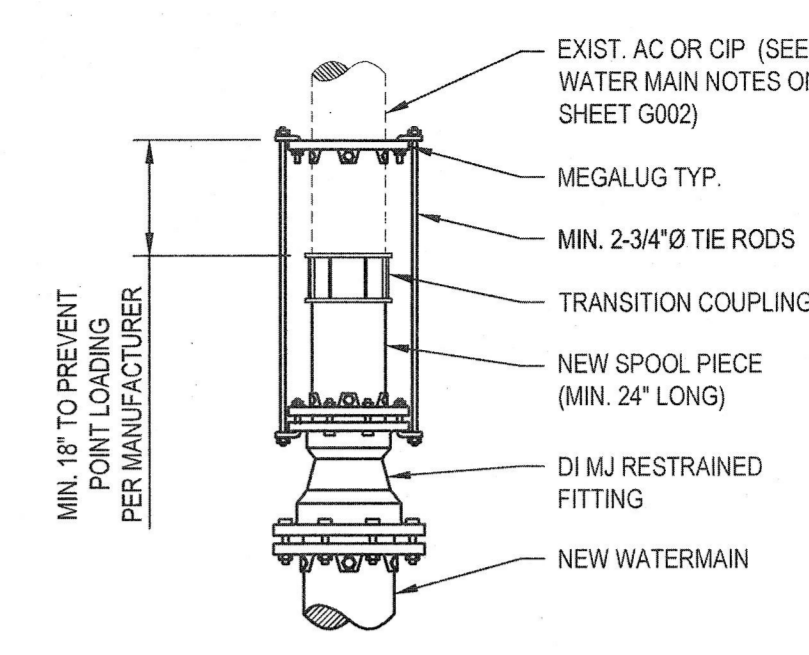


3 MECHANICAL JOINT PLUG
D004 NOT TO SCALE

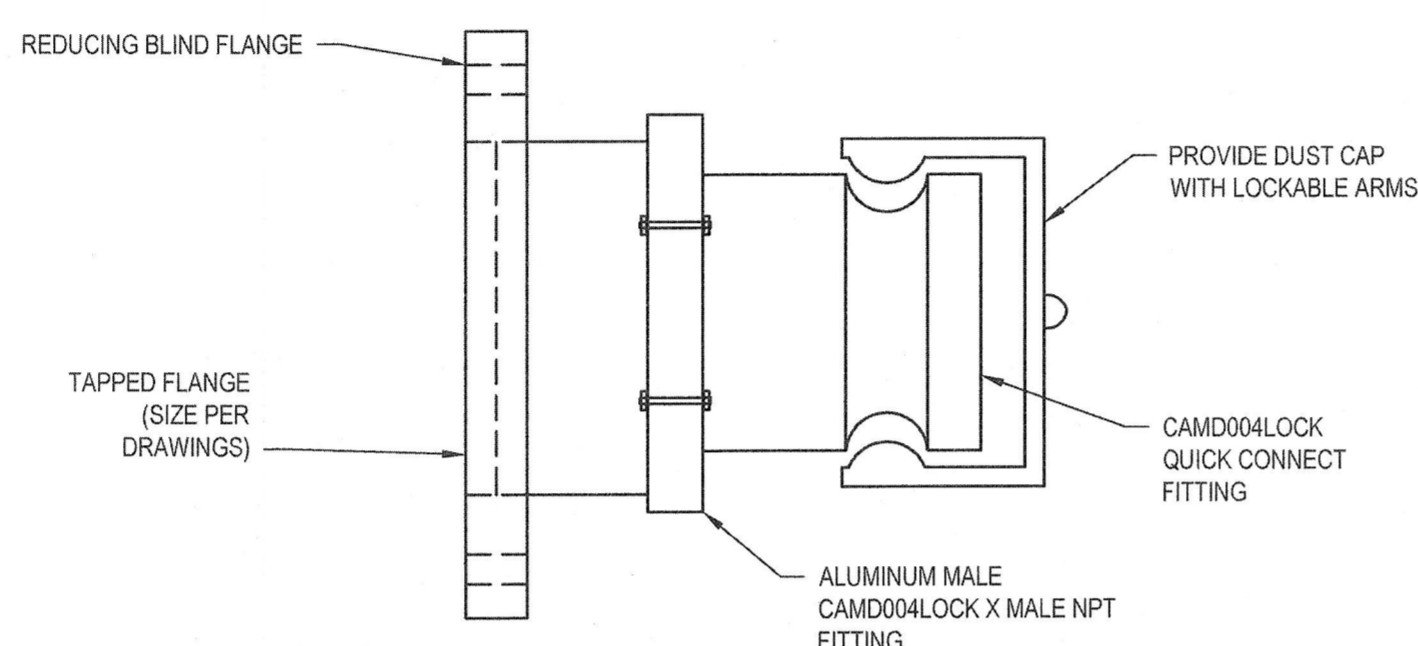


4 STRAIGHT CONNECTION TO DIP OR PVC
D004 NOT TO SCALE

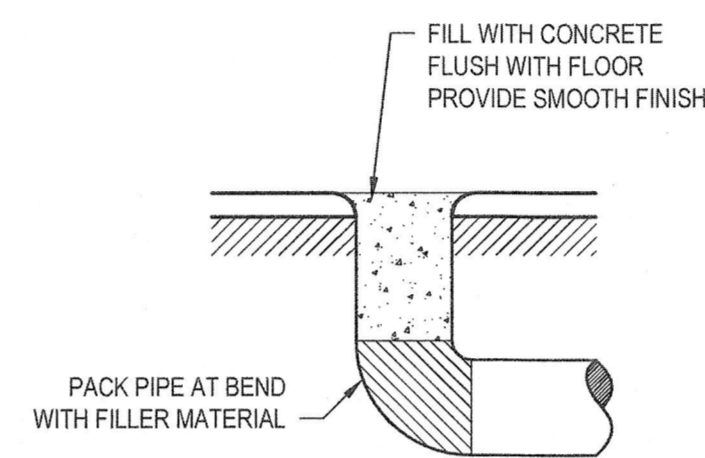
- NOTES:
1. ALL VALVES AND TEES SHALL BE RESTRAINED JOINT.
 2. CONTRACTOR SHALL CONFIRM EXISTING PIPE O.D. PRIOR TO THE CUTTING OF ANY EXISTING PIPE.



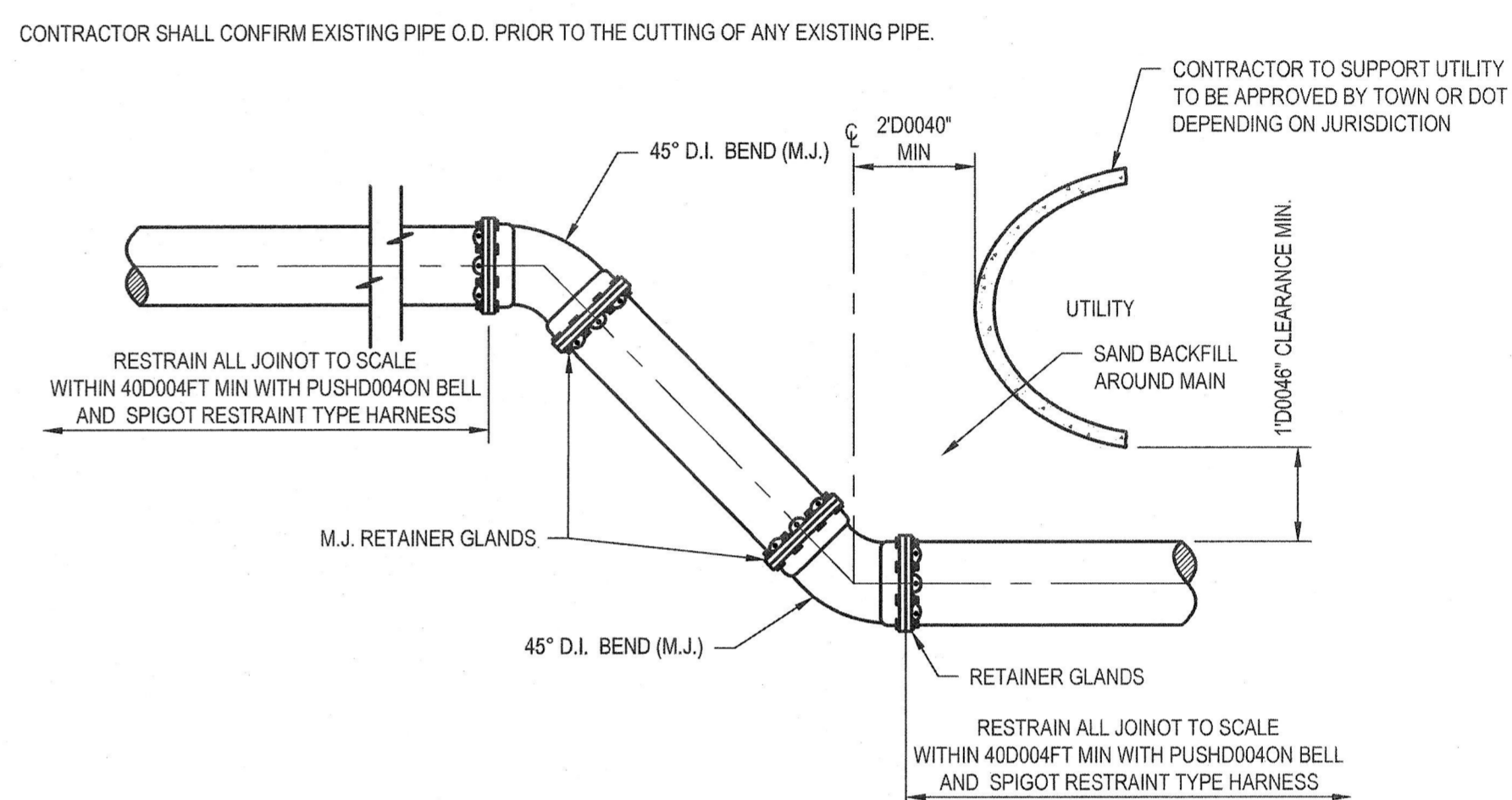
5 STRAIGHT CONNECTION TO AC OR CIP
D004 NOT TO SCALE



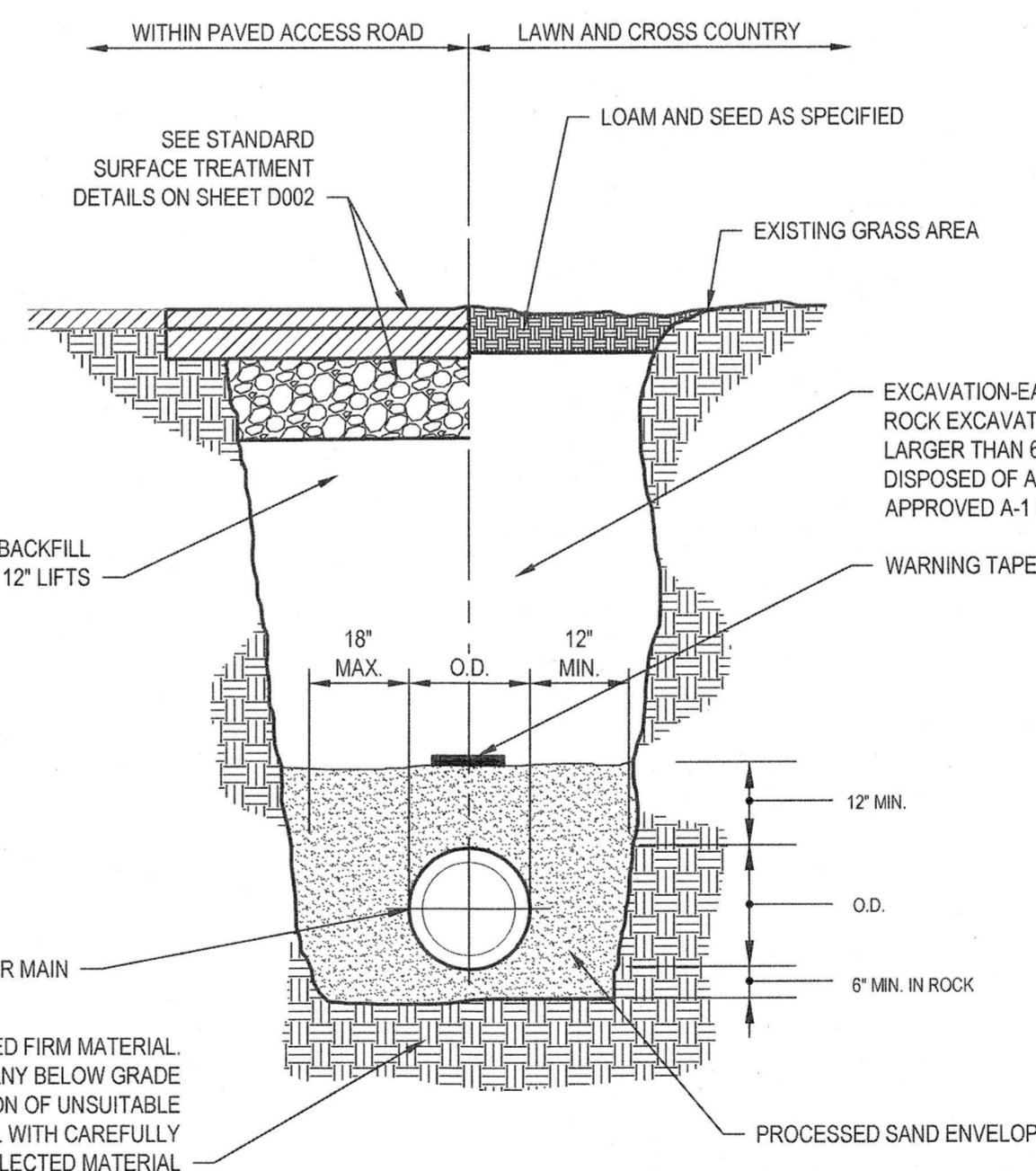
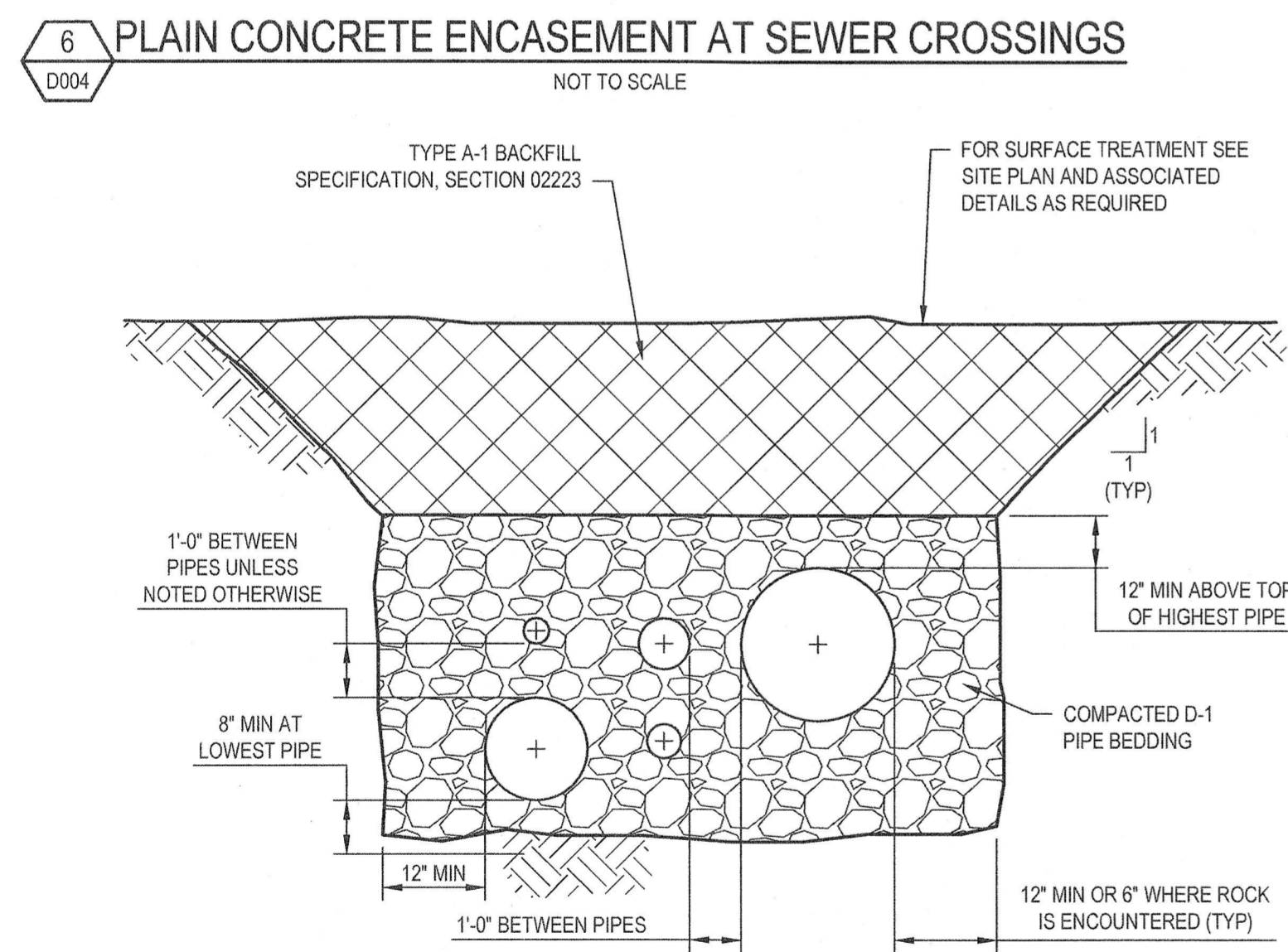
6 PLAIN CONCRETE ENCASMENT AT SEWER CROSSINGS
D004 NOT TO SCALE



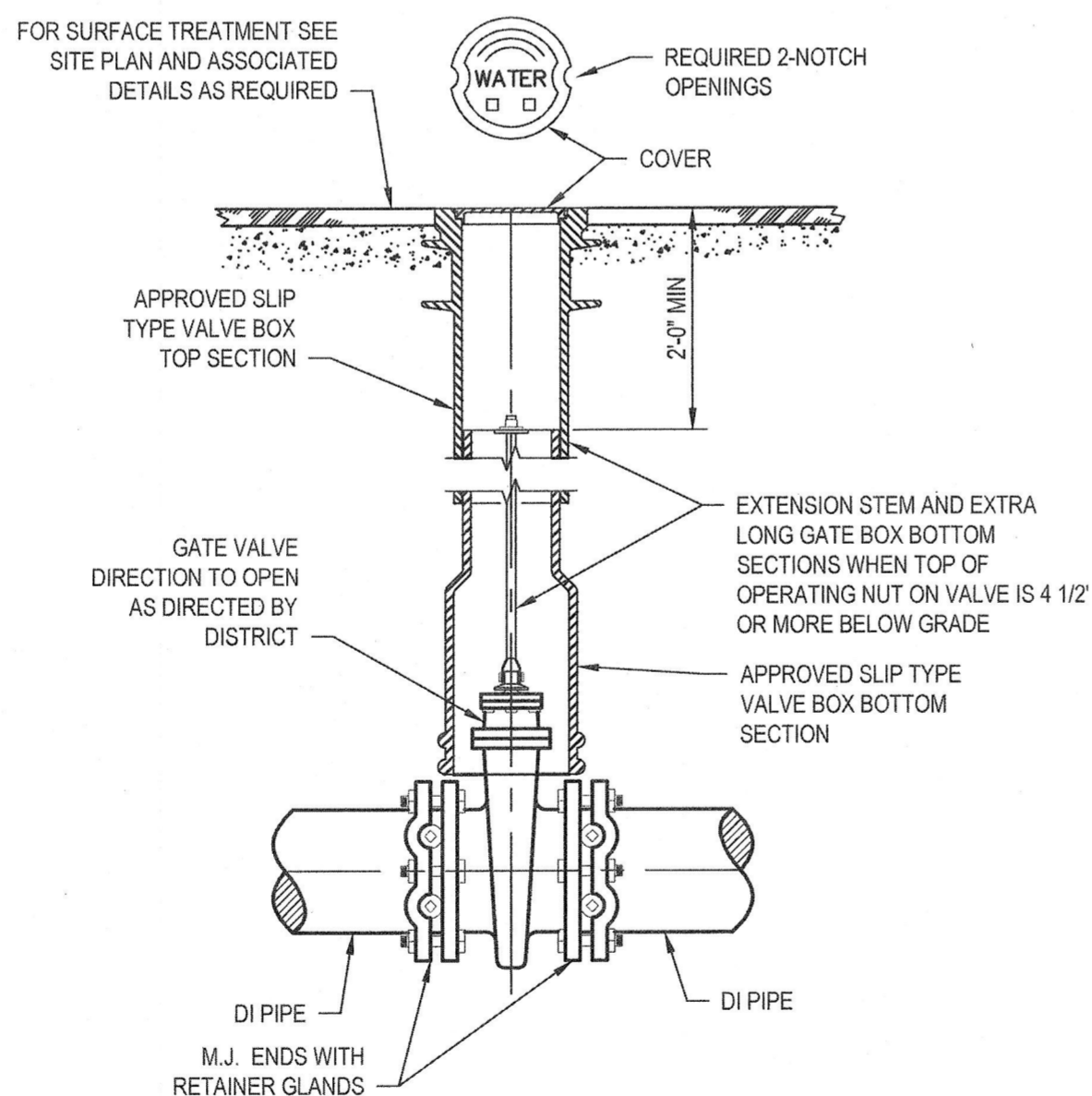
7 FLANGE TAPPED FOR QUICK DISCONNECT DETAIL
D004 NOT TO SCALE



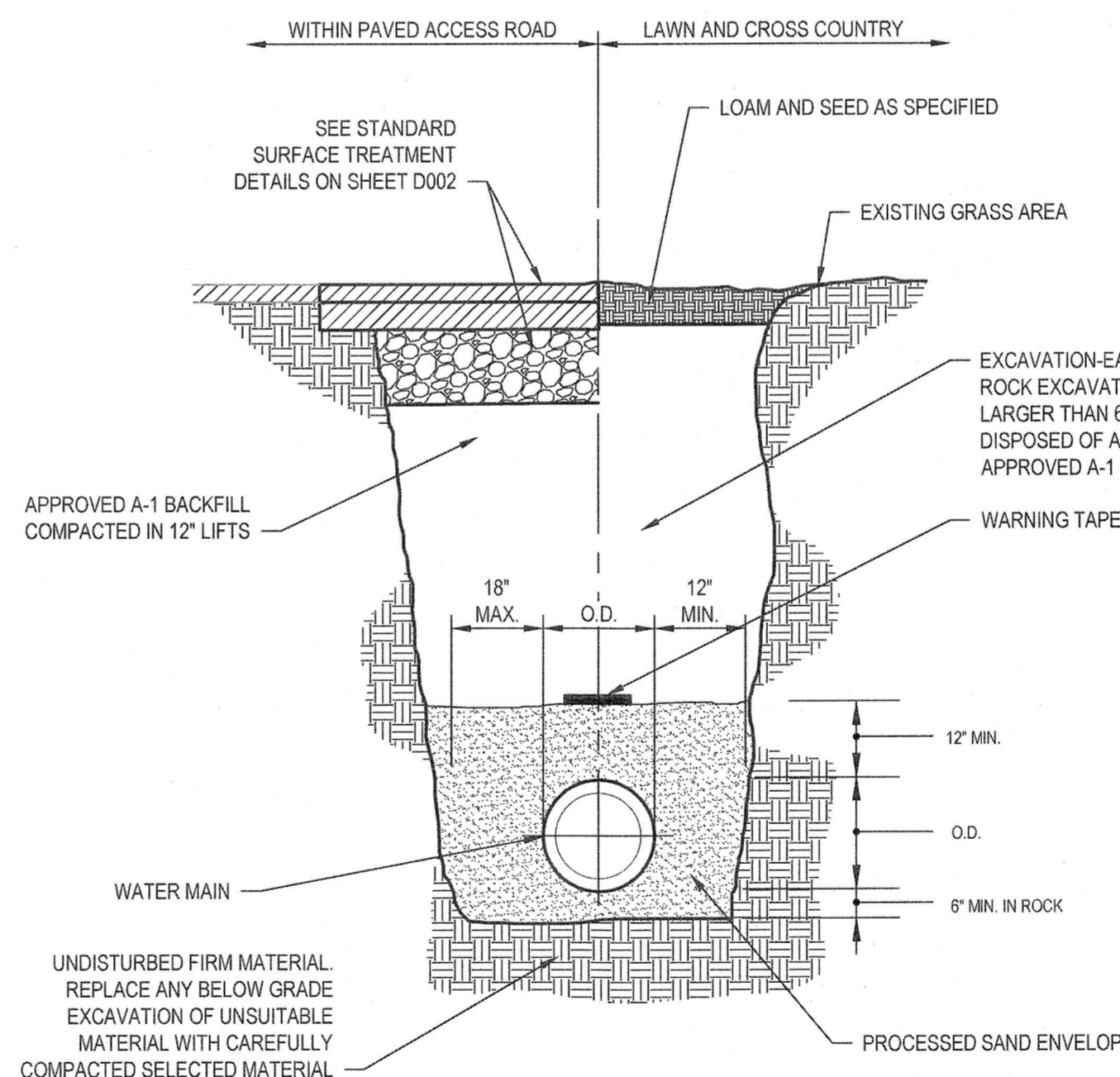
8 PIPE PLUG DETAIL
D004 NOT TO SCALE



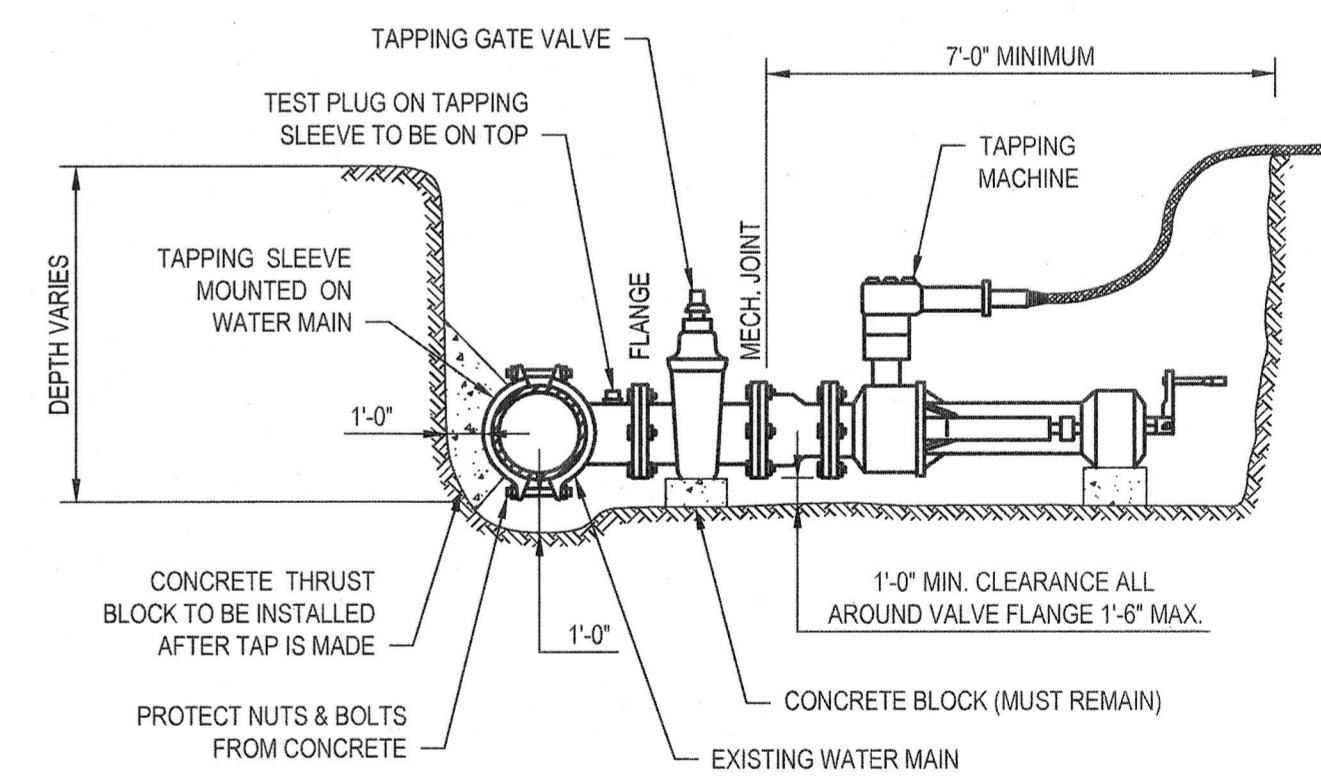
10 TYPICAL TRENCH SECTION YARD PIPING
D004 (FOR SINGLE OR MULTIPLE PIPES) (SEE YARD PIPING PLAN FOR LAYOUT)



11 TYPICAL GATE VALVE INSTALLATION
D004 NOT TO SCALE



12 TYPICAL TRENCH DETAIL
D004 NOT TO SCALE

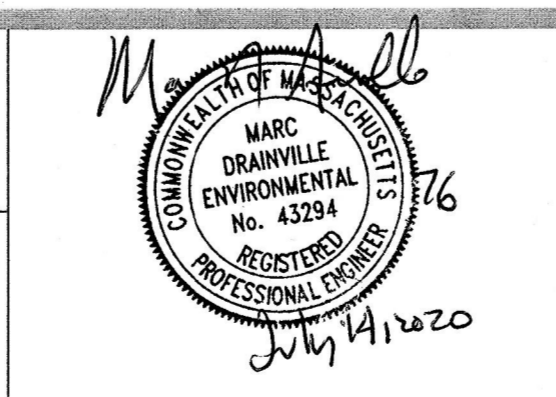


13 TAPPING SLEEVE CONNECTION DETAIL
D005 NOT TO SCALE

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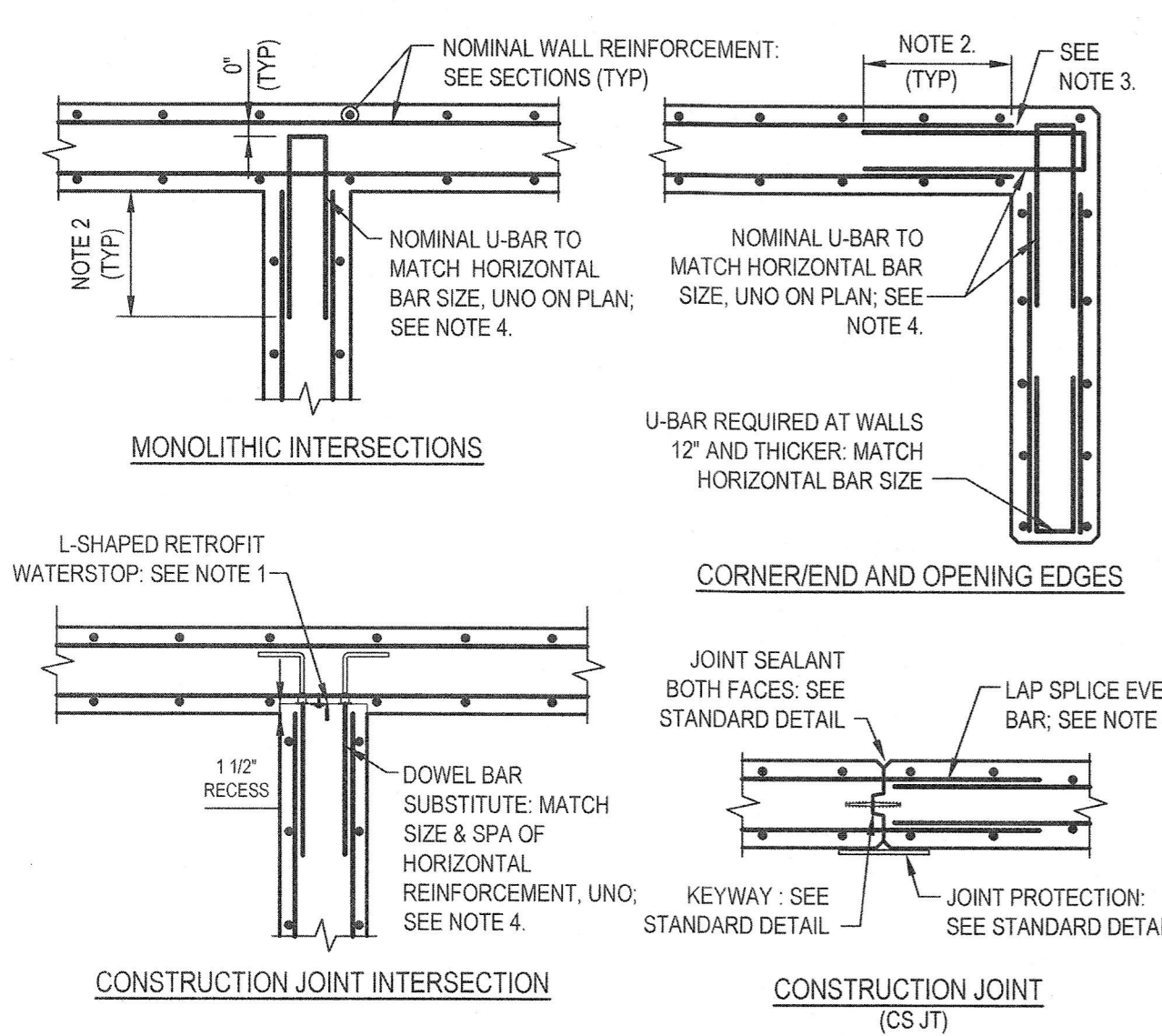
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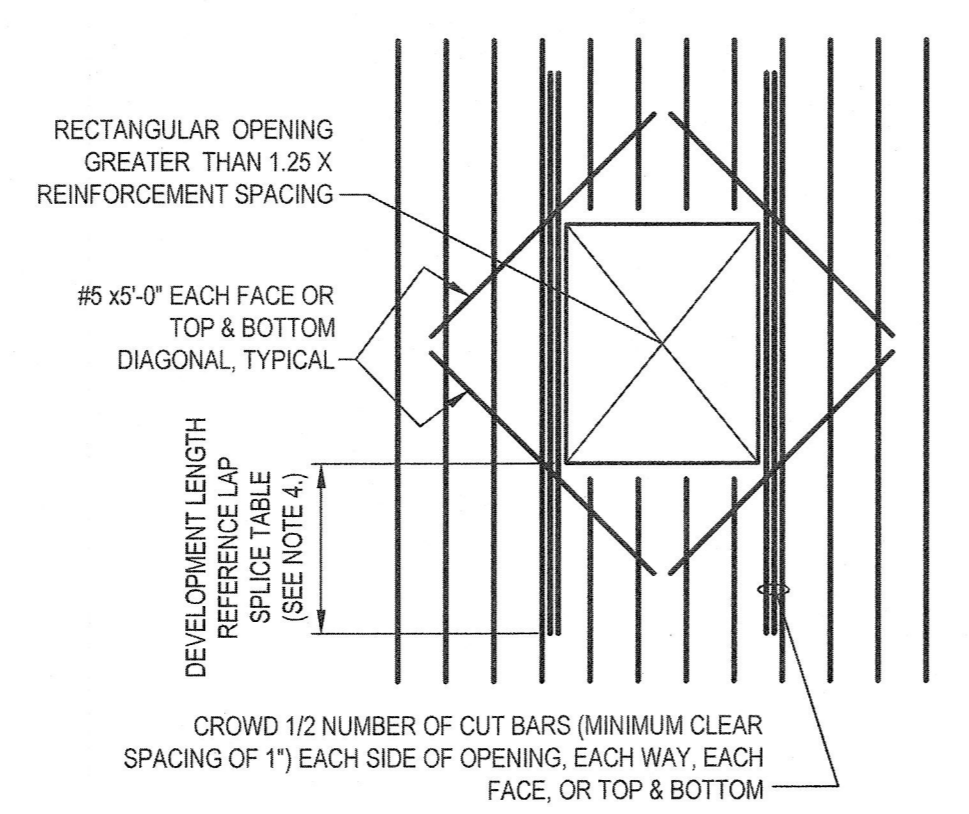
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Project No.	112-06142		
Original Size	ANSI D		
Sheet No.	112-06142-D004		
Sheet	16 of 17		



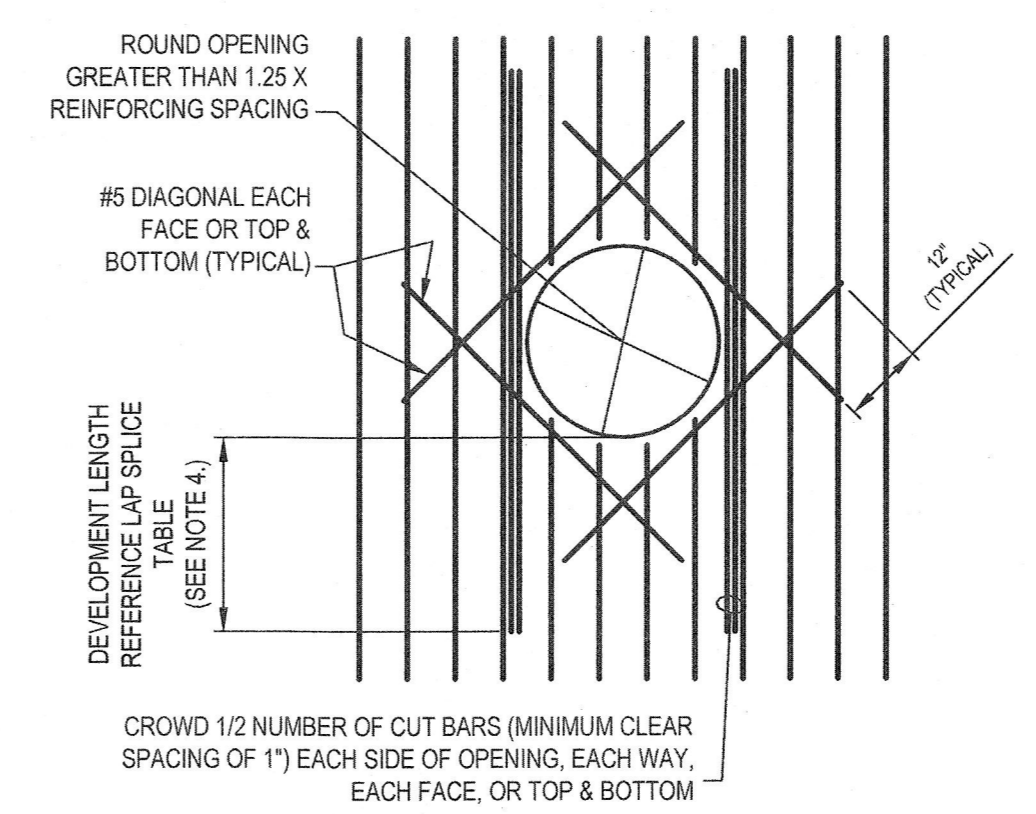
- NOTES:**
- WATERSTOPS SHALL BE USED FOR:
 - LIQUID CONTAINMENT STRUCTURES (TANKS, CHANNELS, WETWELLS, ETC.)
 - BASEMENTS AND GALLERIES BELOW GRADE (TERMINATE WATERSTOP 6" ABOVE FINISHED GRADE)
 - REINFORCEMENT LAP SPlice LENGTH. SEE DEVELOPMENT LENGTH TABLE.
 - TERMINATE NOMINAL HORIZONTAL BARS IN LINE WITH INSIDE FACE OF WALL. DO NOT EXTEND INTO WALL CORNER.
 - DO NOT PROVIDE CORNER U-BARS FOR "SHRINKAGE CONTROL" BARS. REFER "HORIZONTAL WALL REINFORCEMENT - SECTION VIEW" DETAIL.

1 HORIZONTAL WALL REINFORCEMENT - PLAN VIEW
D005 NOT TO SCALE



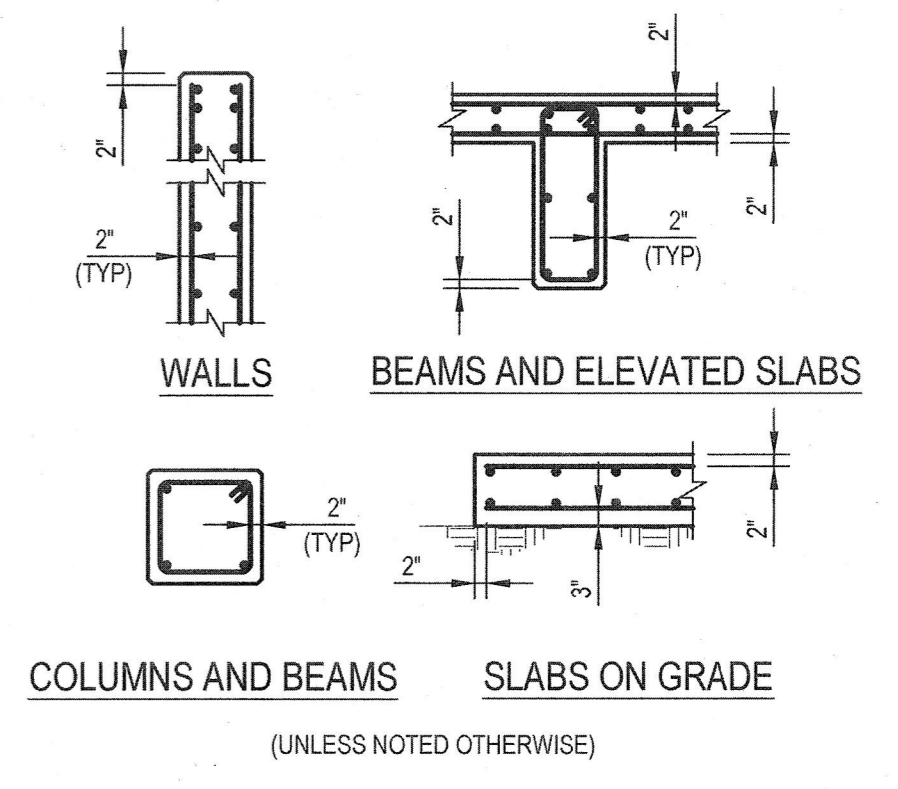
- NOTES:**
- BARS ARE REQUIRED IN BOTH DIRECTIONS. BARS ARE SHOWN IN ONE DIRECTION FOR CLARITY. INSTALL BARS IN OTHER DIRECTION IN SAME MANNER.
 - DETAIL TO BE USED AT ALL WALL/SLAB PENETRATIONS MEETING OPENING CRITERIA ABOVE. AT SMALLER OPENINGS, SPREAD REINFORCING AROUND OPENING.
 - CROWDED BARS ARE NOT REQUIRED AT AN OPENING EDGE PARALLEL TO AND WITHIN 6 INCHES OF A WALL OR BEAM.
 - PROVIDE STANDARD HOOK IF FULL DEVELOPMENT LENGTH IS NOT POSSIBLE.
 - REINFORCEMENT STEEL IS TO BE CARRIED THROUGH ALL CONSTRUCTION JOINTS.
 - AT DOORWAYS WHERE OPENING TERMINATES AT BOTTOM OF WALL, PROVIDE 1/2 CROWDED VERTICAL BARS EACH SIDE OF OPENING AND 1/2 CROWDED HORIZONTAL BARS ALONG TOP OF OPENING. PROVIDE DIAGONAL BARS ONLY AT TOP TWO CORNERS OF OPENING.
 - BARS ARE ROLLED TO THE APPLICABLE RADIUS AT CURVED CONSTRUCTION.

2 RECTANGULAR OPENING IN WALL/SLAB
D005 NOT TO SCALE

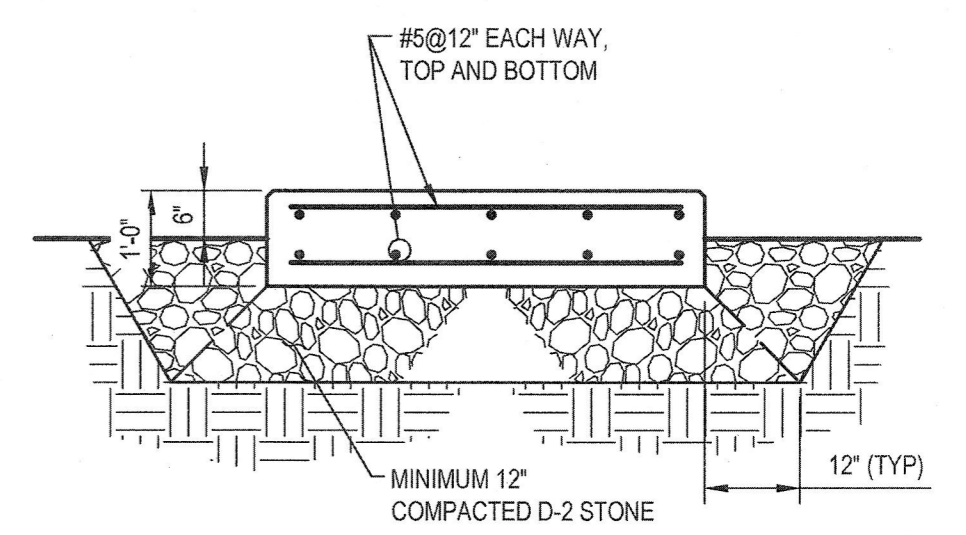


- NOTES:**
- BARS SHOWN IN ONE DIRECTION FOR CLARITY. INSTALL BARS IN OTHER DIRECTION IN SAME MANNER.
 - DETAIL TO BE USED AT ALL WALL/SLAB PENETRATIONS MEETING OPENING CRITERIA ABOVE. AT SMALLER OPENINGS, SPREAD REINFORCING AROUND OPENING.
 - CROWDED BARS ARE NOT REQUIRED AT AN OPENING EDGE PARALLEL TO AND WITHIN 6 INCHES OF A WALL OR BEAM.
 - PROVIDE STANDARD HOOK IF FULL DEVELOPMENT LENGTH IS NOT POSSIBLE.
 - REINFORCEMENT STEEL IS TO BE CARRIED THROUGH ALL CONSTRUCTION JOINTS.

3 CIRCULAR OPENING IN WALL/SLAB
D005 NOT TO SCALE

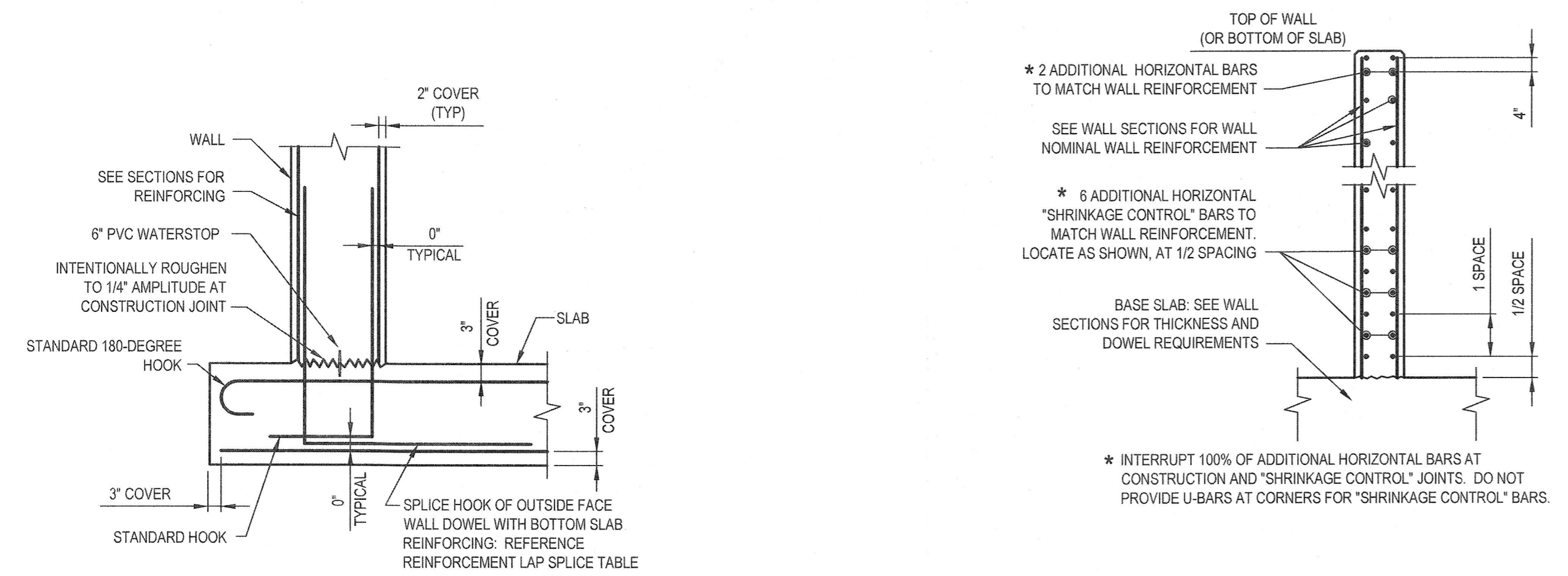


4 REINFORCEMENT BAR CLEARANCES
D005 NOT TO SCALE



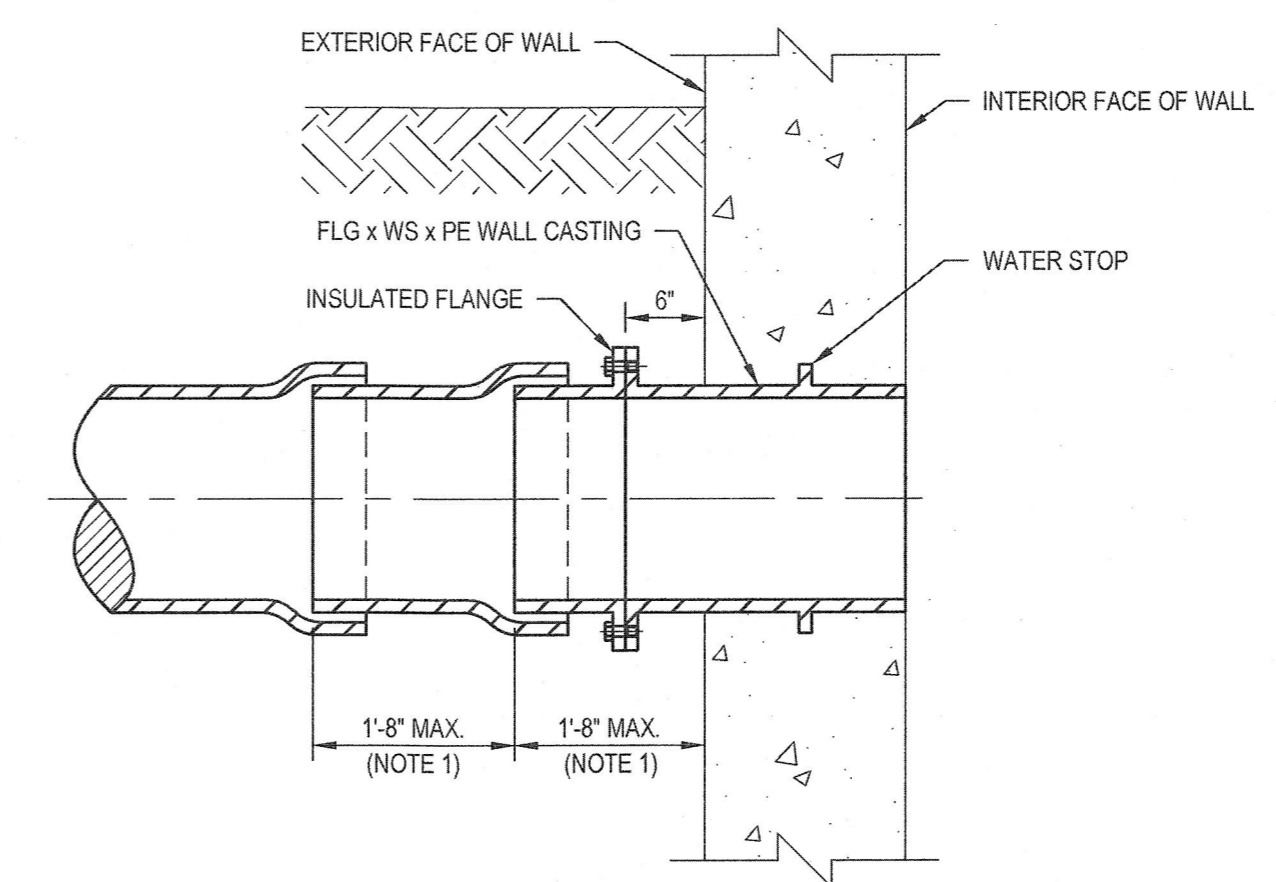
NON FROST-PROTECTED PADS 6'-0" OR LARGER IN ANY DIRECTION

5 EXTERIOR EQUIPMENT PAD
D005 NOT TO SCALE



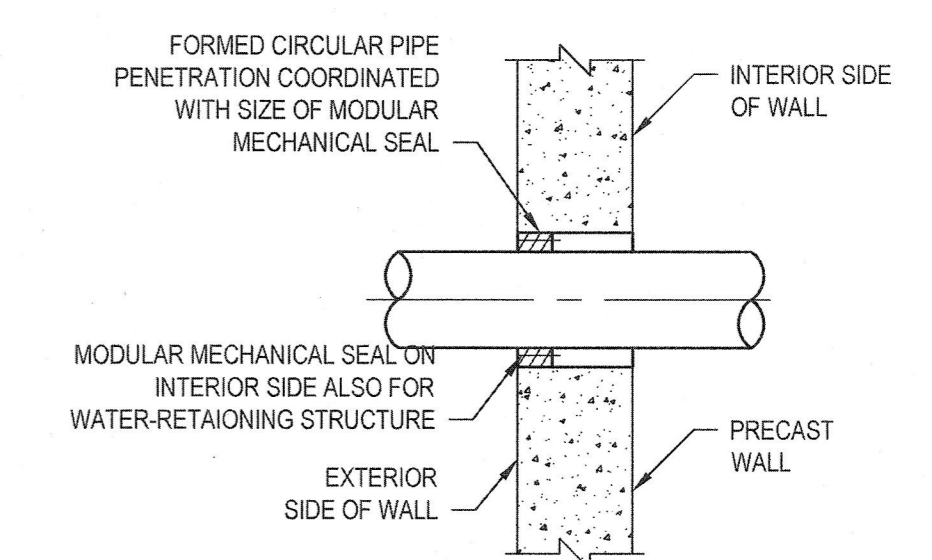
6 WALL BASE SECTION
D005 NOT TO SCALE

7 HORIZONTAL WALL REINFORCEMENT SECTION VIEW
D005 NOT TO SCALE



- NOTE:**
- PROVIDE TWO MECHANICAL PIPE JOINTS WITHIN 4 FEET FROM THE EXTERIOR FACE OF THE WALL.

8 FLG x WS x PE DIP WALL CASTING
D005 NOT TO SCALE



9 PRECAST WALL PIPE PENETRATION
D005 NOT TO SCALE

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MARC DRAINVILLE ENVIRONMENTAL No. 43294 REGISTERED PROFESSIONAL ENGINEER

July 14, 2020

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Project Manager	RHK	Date	7/14/20
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Project No.	112-06142		
Original Size	ANSI D		
Sheet No.	112-06142-D005		
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