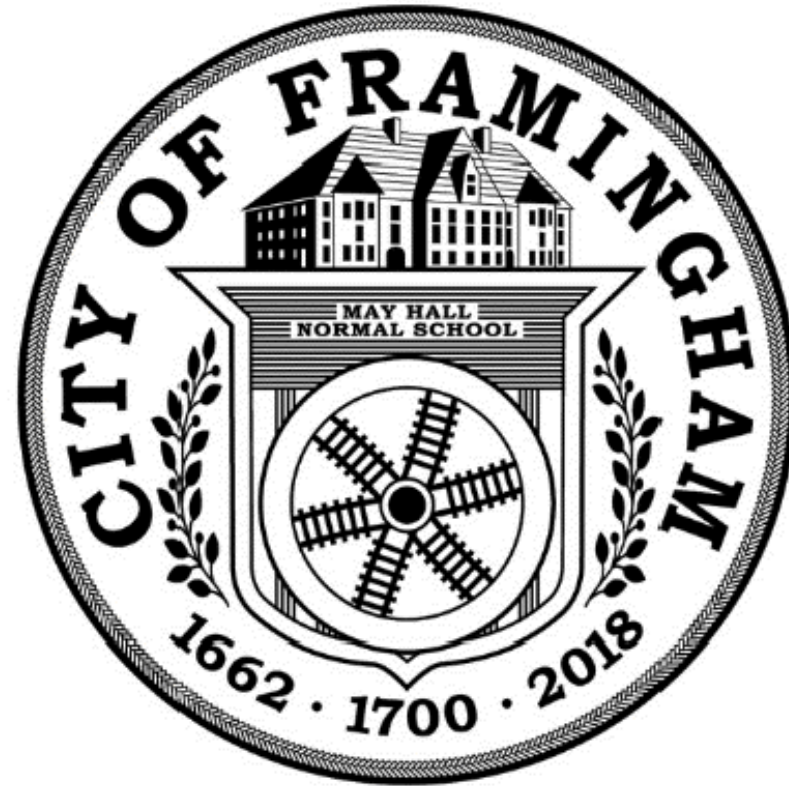


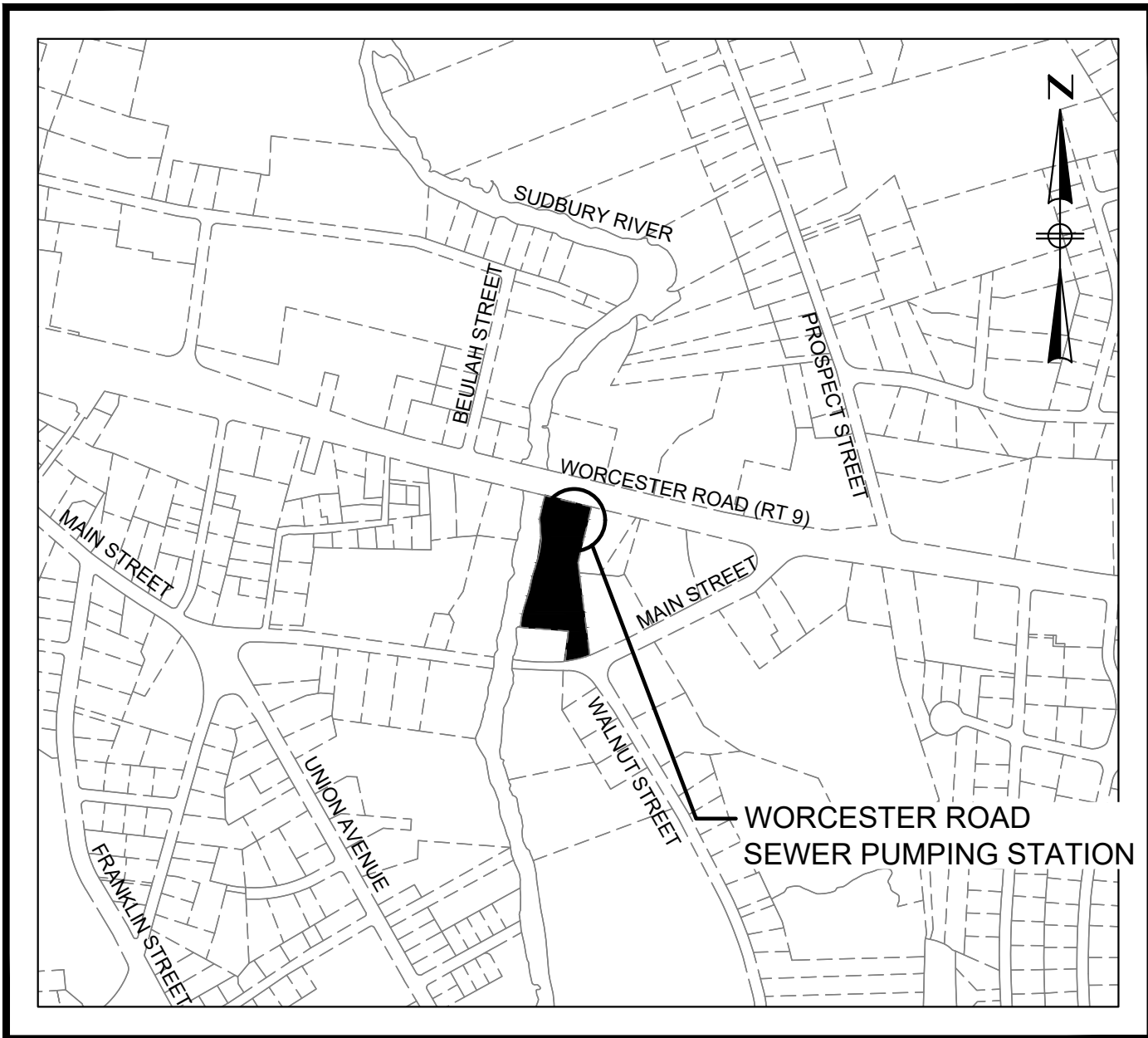
CITY OF FRAMINGHAM, MA
DEPARTMENT OF PUBLIC WORKS
WORCESTER ROAD SEWER PUMPING STATION REPLACEMENT
CONTRACT NO. PW-1025
CWSRF NO. 6999
OCTOBER 2022



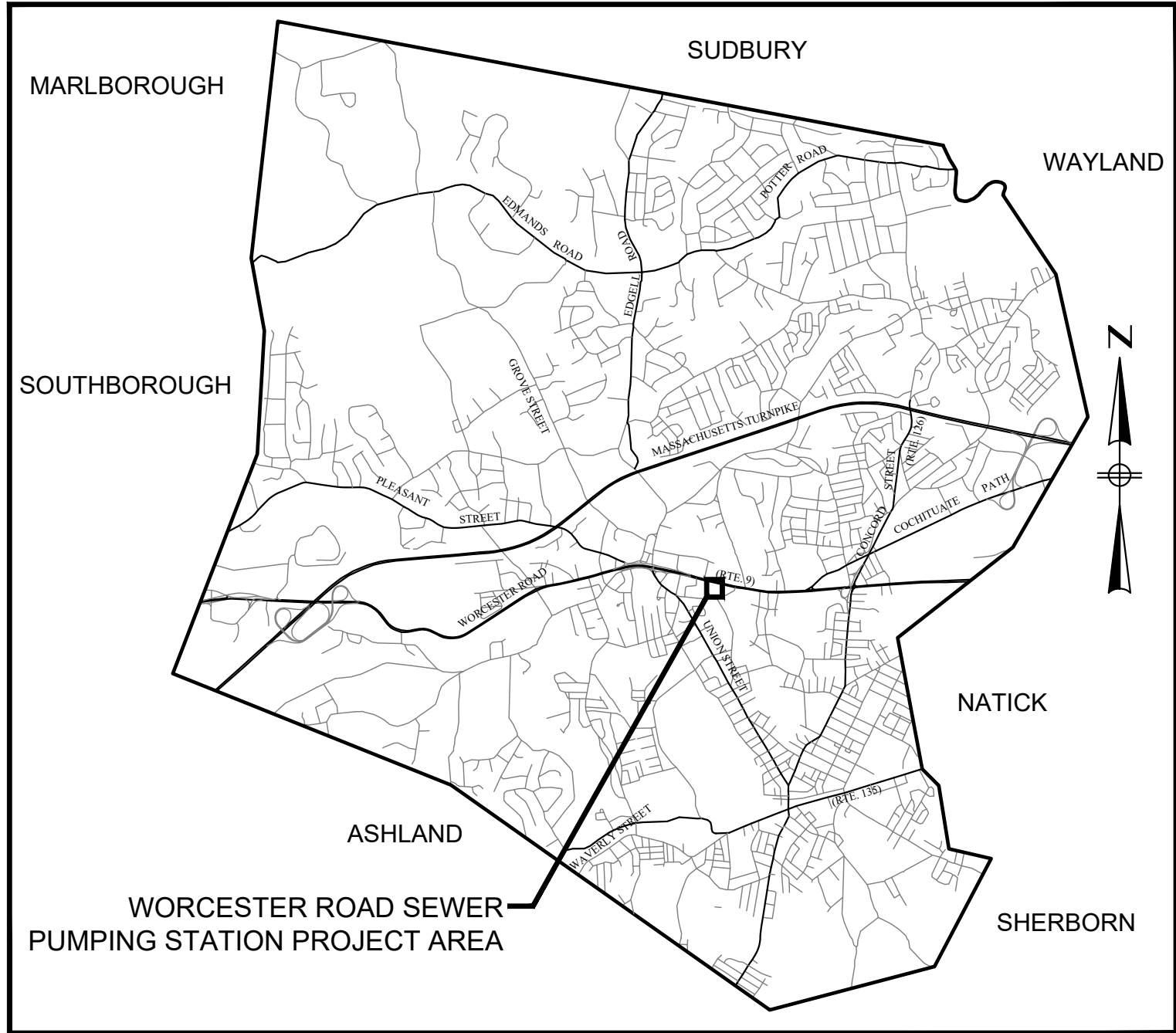
CHARLIE J. SISITSKY MAYOR

ROBERT A. LEWIS DIRECTOR OF PUBLIC WORKS

WILLIAM R. SEDEWITZ, P.E. CHIEF ENGINEER



WORCESTER ROAD SEWER PUMPING STATION
LOCUS MAP
 NOT TO SCALE



LOCATION MAP
 NOT TO SCALE

FOR REVIEW ONLY
SRF SUBMISSION



9/30/2022
 REGISTERED PROFESSIONAL ENGINEER DATE

LEGEND

EXISTING

	STATE HIGHWAY LAYOUT
	CURB OR BERM (TYPE AS NOTED)
	EDGE OF PAVEMENT
	CATCH BASIN
	TELEPHONE MANHOLE
	WATER MANHOLE
	SEWER MANHOLE
	GAS GATE
	CURB STOP
	WATER GATE
	HYDRANT
	VENT PIPE
	UTILITY POLE
	SIGN / POST
	MONITORING WELL
	DRAIN PIPE
	SEWER MAIN
	GAS MAIN
	WATER MAIN
	ELECTRICAL OVERHEAD
	PROPERTY LINE
	EASEMENT LINE
	DECIDUOUS TREE
	TREE LINE
	CHAIN LINK FENCE
	EDGE OF WETLAND W/ FLAGGED NUMBER
	BANK/MAHW
	EDGE OF RIVER/STREAM LINE
	30-FT. NO ALTERATION ZONE
	100-FT. WETLAND BUFFER
	125-FT. WETLAND BUFFER
	200-FT RIVER FRONT LIMIT
	CONTOUR - MAJOR (5FT)
	CONTOUR - MINOR (1FT)
	WETLANDS
	BUILDING
	PAVEMENT

PROPOSED

	EDGE OF PAVEMENT
	SEWER MANHOLE
	SEWER MAIN
	SEWER MAIN BYPASS PIPE
	SEWER MAIN BYPASS PUMP
	WATER SERVICE
	CURB STOP
	SEWER PIPE CAP
	CHAIN LINK FENCE
	SAW CUT LINE
	TEST PIT
	EROSION CONTROL BARRIER/STRAW WATTLES
	PROPOSED SEWER YARD PIPING
	PROPOSED PAVEMENT

GENERAL NOTES

- VERTICAL DATUM = NGVD 29 AND HORIZONTAL COORDINATES ARE IN MASSACHUSETTS STATE PLANE COORDINATE SYSTEM (NAD 83).
- FEMA MAP NUMBER 25017C0516F EFFECTIVE JULY 7, 2014 INDICATES THE PUMP STATION IS LOCATED IN BOTH A ZONE X AREA OF MINIMAL FLOOD HAZARD AND A SPECIAL FLOOD HAZARD AREA ZONE AE WITH BASE FLOOD ELEVATION OF 155.8 (NGVD 29).
- THE MOST CURRENT VERSION OF THE FRAMINGHAM DEPARTMENT OF PUBLIC WORKS CONSTRUCTION STANDARDS SHALL CONTROL, EXCEPT WHERE OTHERWISE SPECIFIED OR SHOWN IN THE CONTRACT DOCUMENTS.
- EXISTING BUILDING CONDITIONS DIGITIZED/SCANNED FROM 'CENTER STATION IMPROVEMENTS' RECORD DRAWINGS, 1965 (HALEY AND WARD ENGINEERS), A FIELD SURVEY BY DGT ASSOCIATES COMPLETED IN FEBRUARY OF 2021, MASSACHUSETTS GIS INFORMATION, AND FIELD EDITS BY BETA GROUP, INC.
- THE LIMIT OF WORK SHOWN IS WITHIN PROPERTY OWNED BY THE CITY OF FRAMINGHAM, MA, ASSESSOR'S PARCEL 101-63-0610. CONTRACTOR RESPONSIBLE FOR ALL REQUIRED PERMITS AND/OR FEES ASSOCIATED WITH WORK. CONTRACTOR SHALL NOT WORK OUTSIDE LIMITS OF PROPOSED WORK WITHOUT WRITTEN PERMISSION OF THE PROPERTY OWNER AND THE CITY.
- EXISTING UTILITIES HAVE BEEN PLOTTED FROM THE BEST AVAILABLE DATA AND AS APPROXIMATE ONLY. THE CONTRACTOR MUST NOTIFY DIG SAFE PRIOR TO ANY EXCAVATION, DEMOLITION WORK IN PUBLIC OR PRIVATE WAYS OR UTILITY COMPANY RIGHT OF WAY OR EASEMENT (PUBLIC AND PRIVATE). THE LOCATION, SIZE, AND MATERIAL OF EXISTING PIPES, DUCTS, CONDUITS AND OTHER UNDERGROUND STRUCTURES AND/OR UTILITIES SHOWN ON THESE PLANS ARE FROM THE BEST SOURCES AVAILABLE AT PRESENT AND ARE NOT WARRANTED TO BE EXACT, NOR IS IT WARRANTED THAT ALL UNDERGROUND PIPES, UTILITIES OR STRUCTURES ARE SHOWN. EXACT LOCATIONS TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR.
- WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR THE RESOLUTION OF THE CONFLICT.
- THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE AND SANITARY STRUCTURES AS NECESSARY FOR THE CHANGES IN GRADE, AND RESET ALL WATER, AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK CONFORMING TO MASSACHUSETTS STANDARDS, OR APPROVED ALTERNATE MATERIAL.
- THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, CABLE TV, FIRE ALARM AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
- AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION OR BETTER AT THE CONTRACTOR'S EXPENSE.
- THE TERM "PROPOSED" (PROP.) OR "REMOVE AND REPLACE" MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS. WHERE APPLICABLE, RE-USING EXISTING MATERIALS IS IDENTIFIED AS "REMOVE AND RESET".
- SHOULD TRENCH DEWATERING BE REQUIRED FOR THIS WORK, A DEWATERING PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. THE DEWATERING PLAN WILL ALSO BE REVIEWED AND APPROVED BY THE CONSERVATION COMMISSION PRIOR TO ANY DEWATERING ACTIVITIES. DISCHARGE OF FINES OR SEDIMENT IS NOT PERMITTED.
- WHERE EXISTING MATERIALS ARE ENCOUNTERED WHICH, IN THE OPINION OF THE OWNER/ENGINEER ARE UNSUITABLE FOR BEDDING, BACK FILLING OR OTHER INTENDED USE, SUCH MATERIALS SHALL BE REMOVED AS DIRECTED AND REPLACED BY THE CONTRACTOR WITH SUITABLE CRUSHED STONE OR BORROW, AS DIRECTED BY THE OWNER/ENGINEER.
- JOINTS BETWEEN NEW BITUMINOUS CONCRETE ROADWAY PAVEMENT AND SAWCUT EXISTING PAVEMENT SHALL BE SEALED WITH BITUMEN AND BACKSANDDED.
- CATCH BASIN AND MANHOLE FRAMES AND GRATES/COVERS SHALL CLEARLY ALIGN WITH THE OPENINGS IN THE PRECAST STRUCTURES AND THE GRADE OF THE ROADWAY.
- IN NO CASE, EXCEPT MAXIMUM LENGTH HIGH SIDE TRANSITIONS, SHALL ANY TRANSITION SLOPE OF ANY RAMP EXCEED 7.5%. PROPOSED RAMP SLOPES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO POURING OF CONCRETE, AND ADJUSTED, IF NECESSARY, AT THE DIRECTION OF THE ENGINEER.
- CONTRACTOR SHALL VERIFY EXISTING GRADE ELEVATIONS. IF ANY ADJUSTMENT IS REQUIRED DUE TO DIFFERENT EXISTING GRADES FOUND IN THE FIELD, THE CONTRACTOR SHALL NOTIFY AND SEEK THE APPROVAL OF THE ENGINEER PRIOR TO PERFORMING THE WORK.
- EXCEPT WHERE NOTED BY PROPOSED CONTOUR LINES AND/OR SPOT GRADES, ALL FINAL CONTOUR LINE ELEVATIONS SHALL BE THE SAME AS EXISTING CONTOUR LINE ELEVATIONS.

PCB DEMOLITION NOTES:

- REFER TO SPECIFICATION SECTION 02095.
- SEE PCB BULK PRODUCT WASTE DISPOSAL PLAN IN APPENDIX G.
- PCB CONCENTRATIONS EXCEEDING 50 PPM HAVE BEEN IDENTIFIED IN THE LOWER LEVEL GRAY PAINT (PUMPS AND PIPING, FLOOR, STAIRS, AND DUCT), GREEN PAINT (FOUNDATION WALLS).
- PCB CONCENTRATIONS EXCEEDING 50 PPM HAVE BEEN IDENTIFIED IN THE UPPER LEVEL: WHITE FLOOR PAINT, GRAY FLOOR PAINT, GRAY/RED FLOOR PAINT, GREEN MOTOR PAINT, GREEN PAINT ON CONCRETE MASONRY UNITS, GREEN PAINT ON FOUNDATION WALLS.
- PAINT COATED SURFACES WITH UNKNOWN PCB CONCENTRATIONS SHALL BE CONSIDERED PCB BULK PRODUCT WASTE IF REMOVED.
- ALL PCB BULK PRODUCT WASTE SHALL BE DISPOSED IN ACCORDANCE WITH TSCA REGULATIONS (40 C.F.R. & 761.62).
- ALL DEMOLITION AND DISPOSAL OF PCB-PAINT COATED MATERIALS (PIPING, PUMPS, DUCT, CONCRETE MASONRY UNITS, CONCRETE SURFACES, ETC.) TO BE CONDUCTED IN ACCORDANCE WITH THE EPA-APPROVED PCB BULK PRODUCT WASTE DISPOSAL PLAN.
- SANDBLASTED SURFACES TO REMAIN SHALL BE ENCAPSULATED IN ACCORDANCE WITH THE EPA-APPROVED PCB BULK PRODUCT WASTE DISPOSAL PLAN.

CONSTRUCTION NOTES

- THE INSTALLATION, TESTING, FUEL, OPERATION, AND MAINTENANCE OF THE BYPASS PUMPING SYSTEM SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION OPERATIONS AND MAINTENANCE ACTIVITIES ASSOCIATED WITH THE BYPASS AND BYPASS CONTROLS WITH THE CITY. THE BYPASS SYSTEM DEPICTED ON THE CONTRACT PLANS IS FOR GENERAL INFORMATION ONLY. THE DESIGN AND LAYOUT IS THE RESPONSIBILITY OF THE CONTRACTOR. SUBMIT DETAILED SHOP DRAWINGS OF THE SPECIFIED BYPASS PUMPS, PIPING, FLOW METER, AND APPURTENANCES FOR THE BYPASS PUMPING SYSTEM IN ACCORDANCE WITH SECTION 01300 - SUBMITTALS AND SECTION 02149 - MAINTAINING EXISTING FLOW. INCLUDE CAPACITY DATA AND CONTROL SYSTEM DESCRIPTION FOR THE PUMPS.
- CONTRACTOR SHALL SUBMIT DESCRIPTIONS OF THE PROCEDURES FOR INSTALLING THE BYPASS SYSTEM AND FOR OPERATING THE BYPASS PUMPING ARRANGEMENT. REFER TO SPECIFICATION SECTION 02149. THE OWNER, ENGINEER, AND CONTRACTOR SHALL BE PRESENT FOR TESTING AND CUT OVER OF BYPASS CONTROLS AND BYPASS PUMPING.
- THE BYPASS SYSTEM, INCLUDING PUMPS, PIPING, AUTOMATIC LEVEL CONTROL, ALARM ANNUNCIATION, AND TELEMETRY SHALL BE IN PLACE, TESTED, AUTOMATICALLY OPERATED FOR UP TO FIVE 24-HOUR CONSECUTIVE DAYS, NOT INCLUDING WEEKENDS, AND APPROVED BY THE CITY PRIOR TO REMOVING THE EXISTING PUMPS FROM OPERATION.
- ALL CITY OF FRAMINGHAM OWNED VALVES AND HYDRANTS ARE TO BE OPERATED BY CITY OF FRAMINGHAM PERSONNEL ONLY. ENGINEER TO COORDINATE WITH FRAMINGHAM DPW FOR ALL VALVE OPERATIONS. PROVIDE A MINIMUM OF 24 HOURS NOTICE TO THE ENGINEER PRIOR WHEN REQUIRED.
- THROUGHOUT BYPASS PUMPING, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MAINTAINING EXISTING FLOWS, OPERATING AND MAINTAINING THEIR BYPASS SYSTEM.
- DISTURBED AREAS SHALL BE RESTORED AT NO ADDITIONAL COST TO THE OWNER.
- DISTURBED GRASSED AREAS SHALL BE RESTORED IN ACCORDANCE WITH SPECIFICATION SECTION 02930.
- DISTURBED PAVED AREAS SHALL BE RESTORED IN ACCORDANCE WITH SPECIFICATION SECTION 02500 AND DETAIL SHOWN ON CD-1.
- THE CONTRACTOR SHALL PROTECT EXISTING MONITORING WELLS PRESENT ON THE SITE. DAMAGED MONITORING WELLS SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

ENVIRONMENTAL NOTES

- SITE IS LISTED UNDER MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION RELEASE TRACKING NUMBERS 3-33648 AND 3-34122.
- WORK WILL BE CONDUCTED UNDER UTILITY-RELATED ABATEMENT MEASURE PLAN TO BE PREPARED BY BETA.
- SOIL CONTAMINATION INCLUDES PETROLEUM, POLYNUCLEAR AROMATIC HYDROCARBONS, AND LEAD.
- SOIL WILL REQUIRE APPROPRIATE HANDLING AND STOCKPILING MEASURES AND EXCESS SOIL WILL REQUIRE CHARACTERIZATION AND PROPER OFF-SITE DISPOSAL.
- GROUNDWATER CONTAMINATION INCLUDES PETROLEUM, CADMIUM, AND ZINC.
- GROUNDWATER WILL REQUIRE APPROPRIATE TREATMENT PRIOR TO DISCHARGE.
- REFER TO SPECIFICATION SECTIONS:
 - 01069 FOR HEALTH AND SAFETY REQUIREMENTS
 - 02076 FOR ASBESTOS CEMENT PIPE REQUIREMENTS
 - 02080 FOR SOIL MANAGEMENT AND DISPOSAL REQUIREMENTS
 - 02082 FOR ASBESTOS ABATEMENT REQUIREMENTS
 - 02090 FOR LEAD BASED PAINT AND OFF-SITE MANAGEMENT REQUIREMENTS
 - 02095 FOR PCB REMOVAL AND RELATED WORK
 - 02140 FOR DEWATERING REQUIREMENTS
 - 02769 FOR DISPOSAL OF MATERIALS REQUIREMENTS

YARD PIPING NOTES

- INVERTS AND DIRECTIONS OF PIPES AND CONDUITS ARE SHOWN FOR THE PURPOSE OF INDICATING THE BASIC PARAMETERS USED DURING THE DESIGN. HOWEVER, MINOR CHANGES IN HORIZONTAL AND VERTICAL LOCATIONS MAY BE REQUIRED DURING CONSTRUCTION AS FIELD CONDITIONS WARRANT. FINAL LOCATIONS OF OTHER PIPES AND/OR CONDUITS SHALL BE DETERMINED IN THE FIELD. ANY CHANGES SHALL BE APPROVED BY THE ENGINEER.
- CONTRACTOR SHALL CONDUCT TEST PITS AS SHOWN AND AS REQUIRED IN ORDER TO ASCERTAIN THE EXACT LOCATION OF EXISTING UNDERGROUND UTILITIES, TO FIELD VERIFY THE EXACT SIZE, MATERIAL, LOCATION, INVERT ELEVATION AND ALIGNMENT (VERTICAL AND HORIZONTAL) OF EXISTING UNDERGROUND UTILITIES, PIPES, AND STRUCTURES.
- UNLESS OTHERWISE NOTED, MINIMUM COVER FOR PIPES AND/OR DUCTS SHALL BE AS FOLLOWS: WATER 5'-0"; SEWER 4'-6"; DRAIN 4'-0"; GAS 3'-6"; ELECTRIC 2'-6". ANY PIPE AND/OR DUCT WITH LESS THAN 2'-0" OF COVER SHALL HAVE AN ADDITIONAL 6" OF CONCRETE ENCASEMENT ON THE UPPER PORTION.
- EXISTING PIPES RETAINED, BUT WHICH MUST BE REMOVED IN ORDER TO INSTALL NEW PIPES, SHALL BE REINSTALLED OR REPLACED IN KIND.
- ALL PIPING SHALL BE PROVIDED WITH FLEXIBLE CONNECTIONS WHERE EXITING OR ENTERING STRUCTURES AND BUILDINGS. FLEXIBLE CONNECTIONS SHALL BE COORDINATED WITH PIPE MANUFACTURER AND APPROVED BY THE ENGINEER.
- ALL NEW PIPING REQUIRED TO BE INSTALLED UNDER THIS CONTRACT IS SHOWN IN BOLD LINES. ALL EXISTING PIPING IS SCREENED.
- ALL NEW AND EXISTING PIPING BEING INSTALLED SHALL BE SUITABLY SUPPORTED AND BRACED AT ALL TIMES BY THE CONTRACTOR.
- THE CONTRACTOR SHALL PROVIDE CONCRETE THRUST BLOCKS FOR ALL UNDERGROUND PIPING, BENDS AND TEES IN PRESSURE LINES AS DETAILED AND SPECIFIED.
- CONCRETE CLOSURE COLLARS, FIELD FABRICATED ELBOWS AND/OR SPECIAL BENDS ROTATED AS NECESSARY SHALL BE INSTALLED TO ALIGN NEW PIPING WITH EXISTING PIPING
- PROVIDE SEPARATION BETWEEN SEWER/DRAIN/WATER TO THE MAXIMUM EXTENT FEASIBLE IN ACCORDANCE WITH THE CITY OF FRAMINGHAM'S CONSTRUCTION STANDARDS.

PLAN INDEX

SHEET NO.	DESCRIPTION
	COVER SHEET
G-1	LEGEND, GENERAL NOTES & INDEX
G-2	PROCESS FLOW DIAGRAM
C-1	EXISTING CONDITIONS SITE PLAN
C-2	DEMOLITION, PROPOSED PIPING, & RESTORATION SITE PLANS
C-3	BYPASS PLANS - PHASE I & PHASE II
C-4	SIDEWALK & CURB MODIFICATION PLAN
CD-1	CONSTRUCTION DETAILS - 1
CD-2	CONSTRUCTION DETAILS - 2
CD-3	CONSTRUCTION DETAILS - 3
AG-01	GENERAL NOTES, ABBR., SYMBOLS AND 3D VIEWS
AD-01	DEMOLITION PLANS
AD-02	WALL DEMOLITION EXTERIOR ELEVATIONS
A-01	FLOOR PLANS
A-02	REFLECTED CEILING PLANS
A-03	EXTERIOR BUILDING ELEVATIONS
A-04	BUILDING SECTIONS
A-05	WALL SECTIONS AND EXTERIOR DETAILS
A-06	EXTERIOR DETAILS & INTERIOR ELEVATIONS
A-07	DOOR SCHEDULE & DETAILS
A-08	CRANE DOOR DETAILS
A-09	WINDOW DETAILS
A-10	EQUIPMENT SCREEN DETAILS
S-1	GENERAL NOTES
S-2	DEMOLITION DETAILS
S-3	UPPER LEVEL PLAN
S-4	LOWER LEVEL PLAN
S-5	ROOF PLAN
S-6	MASONRY DETAILS
S-7	STRUCTURAL ROOF DETAILS
S-8	MISCELLANEOUS DETAILS
S-9	GENERATOR SUPPORT (1 OF 2)
S-10	GENERATOR SUPPORT (2 OF 2)
S-11	STEEL DETAILS (1 OF 2)
S-12	STEEL DETAILS (2 OF 2)
M-1	DEMOLITION PLANS
M-2	DEMOLITION SECTIONS
M-3	PROPOSED PLANS
M-4	PROPOSED SECTIONS
MD-1	MECHANICAL DETAILS - 1
MD-2	MECHANICAL DETAILS - 2
MD-3	MECHANICAL DETAILS - 3
E-1	ELECTRICAL LEGEND AND NOTES
E-2	ELECTRICAL ONE LINE DIAGRAM
E-3	ELECTRICAL SITE PLAN
E-4	ELECTRICAL DEMOLITION PLANS
E-5	ELECTRICAL PROPOSED POWER PLANS
E-6	ELECTRICAL PROPOSED POWER ROOF PLAN
E-7	ELECTRICAL PROPOSED LIGHTING PLANS
E-8	ELECTRICAL DIAGRAMS
E-9	ELECTRICAL SCHEDULES
E-10	ELECTRICAL WIRING DIAGRAMS
E-11	ELECTRICAL DETAILS
E-12	ELECTRICAL SITE DETAILS
E-13	ELECTRICAL TEMPORARY SERVICE
H-1	HVAC LEGEND AND GENERAL NOTES
H-2	HVAC DEMOLITION PLANS
H-3	HVAC FLOOR PLANS
H-4	HVAC ROOF PLANS
H-5	HVAC SECTIONS
H-6	HVAC SCHEDULES AND DETAILS
I-1	INSTRUMENTATION & CONTROLS LEGEND AND ABBREVIATIONS
I-2	INSTRUMENTATION & CONTROLS SEWAGE PUMPS
I-3	INSTRUMENTATION & CONTROLS STATION MONITORING
P-1	PLUMBING LEGEND AND GENERAL NOTES
P-2	PLUMBING SCHEDULES
P-3	PLUMBING DEMOLITION PLANS
P-4	PLUMBING PROPOSED PLANS
P-5	PLUMBING PROPOSED ROOF PLAN
P-6	PLUMBING DETAILS

8/11/2022 1:44 PM \\BETA-INC.COM\RIENVIRON\7385 - FRAMINGHAM WRPS IMPROVEMENTS\DRAWINGFILES\PLANS\G-1 - LEGEND & GENERAL NOTES.DWG (BETA STD BW.CTB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: RTG
DESIGNED BY: AJG
CHECKED BY: JRD

REGISTERED PROFESSIONAL PREPARED BY

For Review Only



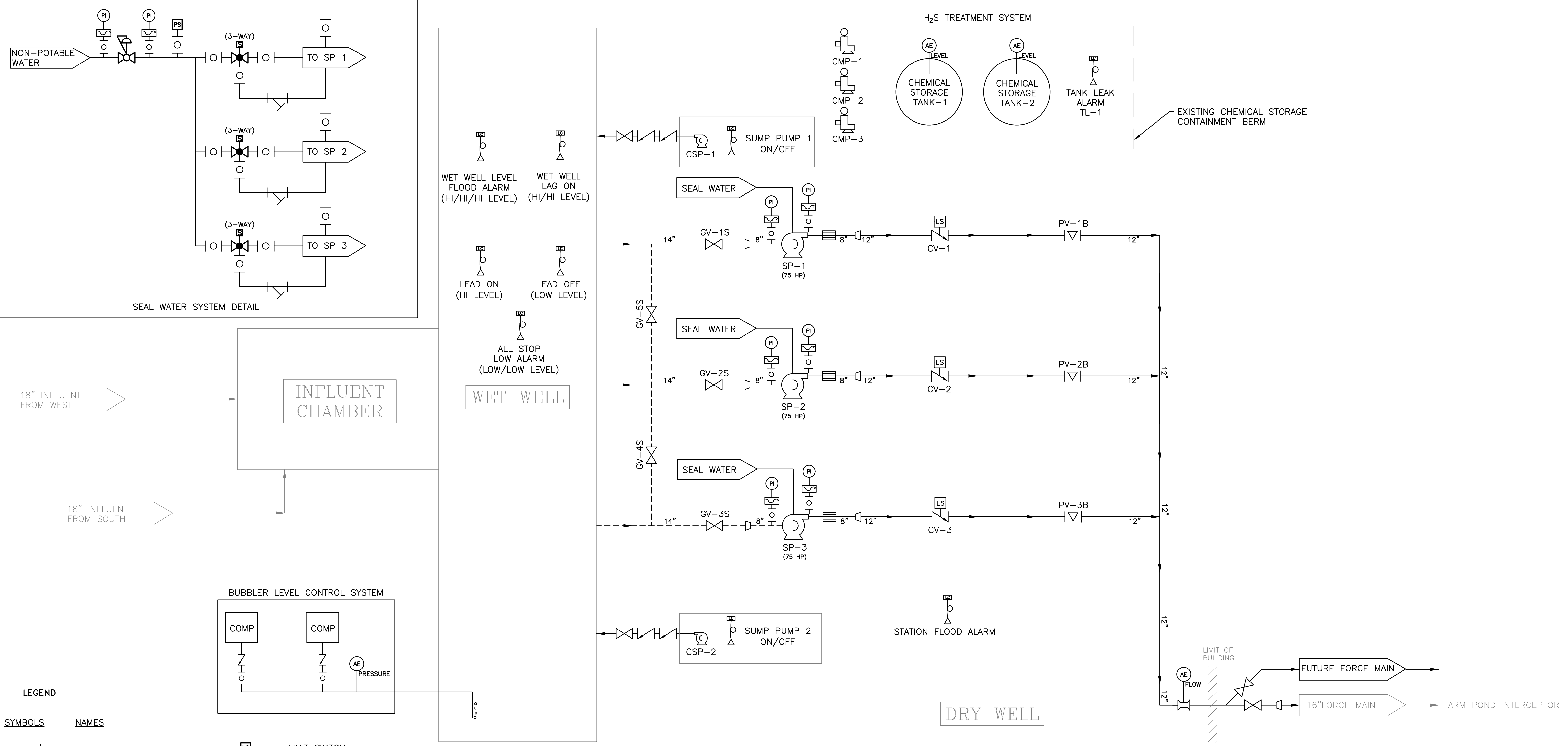
www.BETA-Inc.com

SUBCONSULTANT	SCALE NONE	TITLE Worcester Road Sewer Pumping Station Replacement
---------------	---------------	-----------------------------------------------------------

BETA JOB NO. 7385
ISSUE DATE AUGUST 2022
SHEET NO. G-1

LEGEND, GENERAL NOTES & INDEX

8/11/2022 1:44 PM \\BETA-INC.COM\IRIEN\IRON7385 - FRAMINGHAM WRRPS IMPROVEMENTS\DRAWINGFILES\PLANS\G-2 PROCESS FLOW DIAGRAM.DWG (BETA STD.BW.CTB)



LEGEND

SYMBOLS	NAMES	SYMBOLS	NAMES	ABBREVIATION	NAMES	SYMBOLS	NAMES
	BALL VALVE		LIMIT SWITCH	AE	ANALOG ELEMENT	GV	GATE VALVE
	PLUG VALVE		ANALOG ELEMENT W/DESCRIPTION	AR	AIR RELEASE	LC	LEVEL CONTROL
	CHECK VALVE		FLOAT TYPE LEVEL SENSOR	CMP	CHEMICAL METERING PUMP	LS	LIMIT SWITCH
	GATE VALVE		PRESSURE INDICATOR W/DIAPHRAGM	COMP	COMPRESSOR	M	MOTOR OPERATED
	SOLENOID VALVE		PRESSURE SENSOR	CSP	CENTRIFUGAL SUMP PUMP	PI	PRESSURE INDICATOR
	AIR BLEED VALVE		STRAINER	CV	CHECK VALVE	PS	PRESSURE SENSOR
	PRESSURE REDUCING VALVE			DWF	DRY WELL FLOOD	PV	PLUG VALVE
	NEEDLE VALVE			FE	FLOW ELEMENT	SP	SEWAGE PUMP
				FM	FLOWMETER	TL	TANK LEAK
			FLOWMETER				
			SUCTION PIPING				
			DISCHARGE PIPING				
			REDUCER				
			DISMANTLING COUPLING				
			CENTRIFUGAL PUMP				
			METERING PUMP				

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
RTG

DESIGNED BY:
AJG

CHECKED BY:
JRD

REGISTERED PROFESSIONAL

PREPARED BY

For Review Only



SUBCONSULTANT

SCALE

NONE

TITLE

Worcester Road Sewer Pumping Station Replacement

PROCESS FLOW DIAGRAM

BETA JOB NO. 7385

ISSUE DATE AUGUST 2022

SHEET NO. G-2

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

8/11/2022 1:44 PM \\BETA-INC.COM\IRON\7385 - FRAMINGHAM WRPS IMPROVEMENTS\DRAWING\PLANS\SET-C-1 AND C-2 - EX CONDITIONS - PROP SITE - BYPASS - RESTORATION - PLANS.DWG (BETA STD BW.CTB)



EXISTING SITE PLAN
SCALE: 1" = 10'

100 YEAR FLOOD PLAIN EL.
NAVD88 = 155
NGVD29 = 155.76

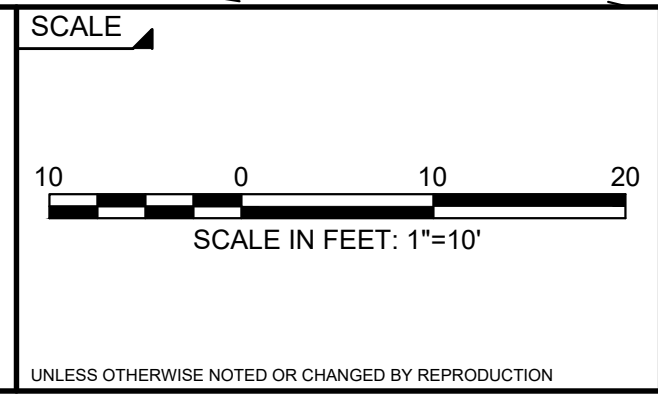
NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
RTG
DESIGNED BY:
AJG
CHECKED BY:
JRD

REGISTERED PROFESSIONAL
For Review Only

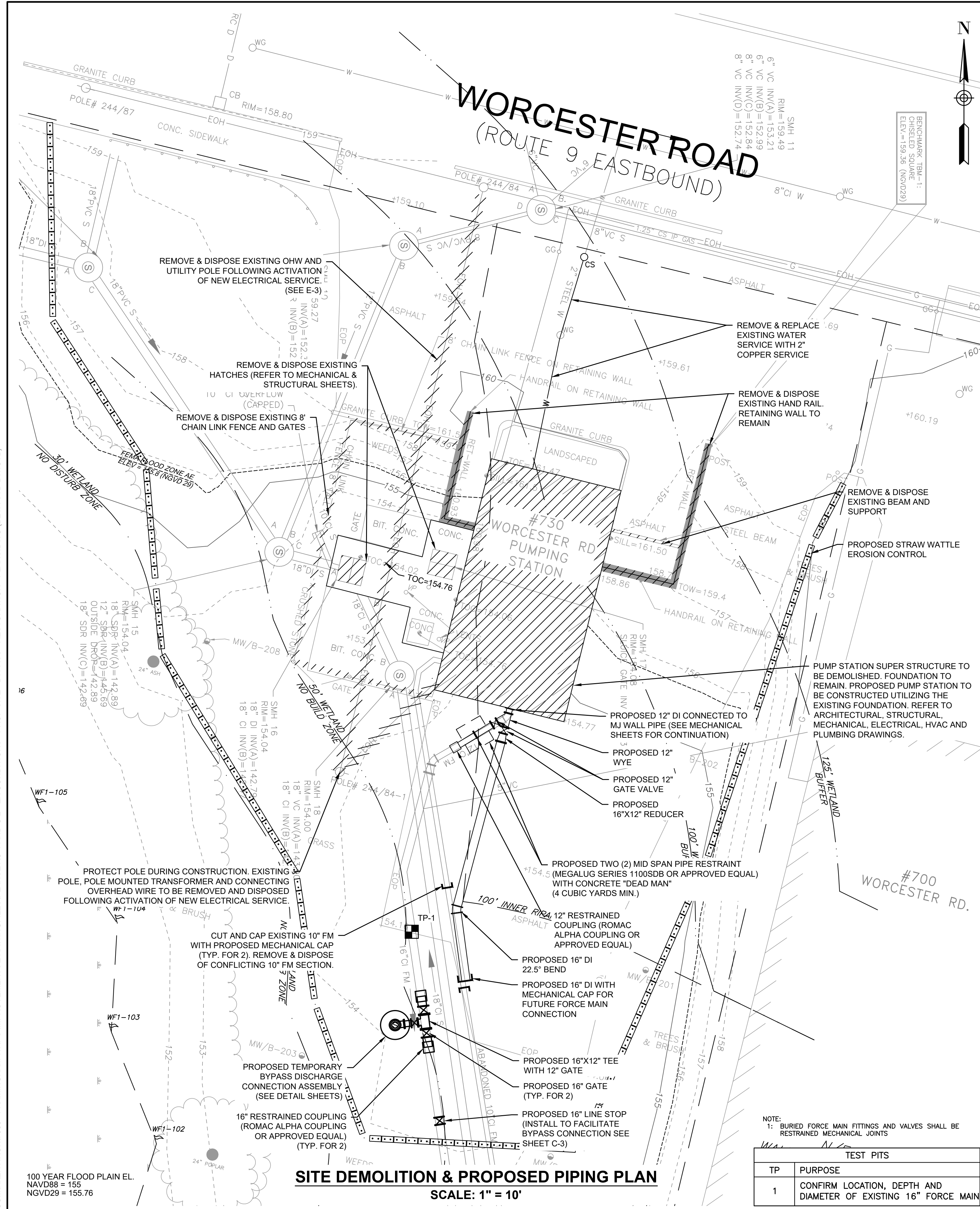


SUBCONSULTANT



TITLE
Worcester Road Sewer Pumping Station Replacement
EXISTING CONDITIONS SITE PLAN

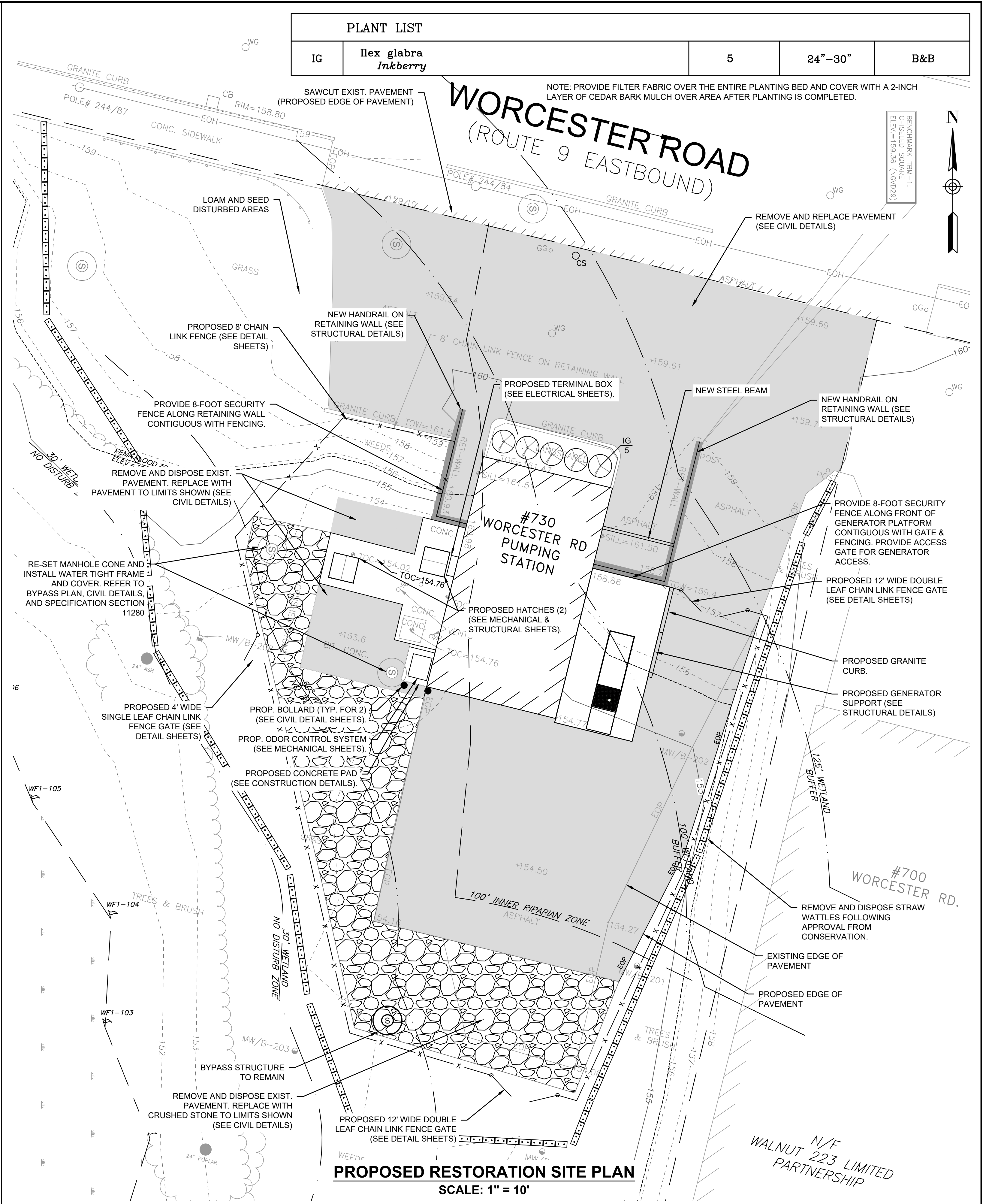
BETA JOB NO. 7385
ISSUE DATE AUGUST 2022
SHEET NO. C-1



SITE DEMOLITION & PROPOSED PIPING PLAN
SCALE: 1" = 10'

NOTE: 1: BURIED FORCE MAIN FITTINGS AND VALVES SHALL BE RESTRAINED MECHANICAL JOINTS

TEST PITS	
TP	PURPOSE
1	CONFIRM LOCATION, DEPTH AND DIAMETER OF EXISTING 16" FORCE MAIN



PROPOSED RESTORATION SITE PLAN
SCALE: 1" = 10'

PLANT LIST				
IG	Ilex glabra <i>Inkberry</i>	5	24"-30"	B&B

NOTE: PROVIDE FILTER FABRIC OVER THE ENTIRE PLANTING BED AND COVER WITH A 2-INCH LAYER OF CEDAR BARK MULCH OVER AREA AFTER PLANTING IS COMPLETED.

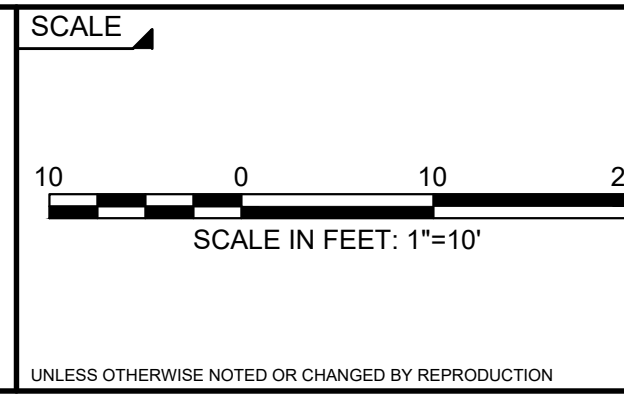
NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
RTG
DESIGNED BY:
AJG
CHECKED BY:
JRD

REGISTERED PROFESSIONAL
For Review Only



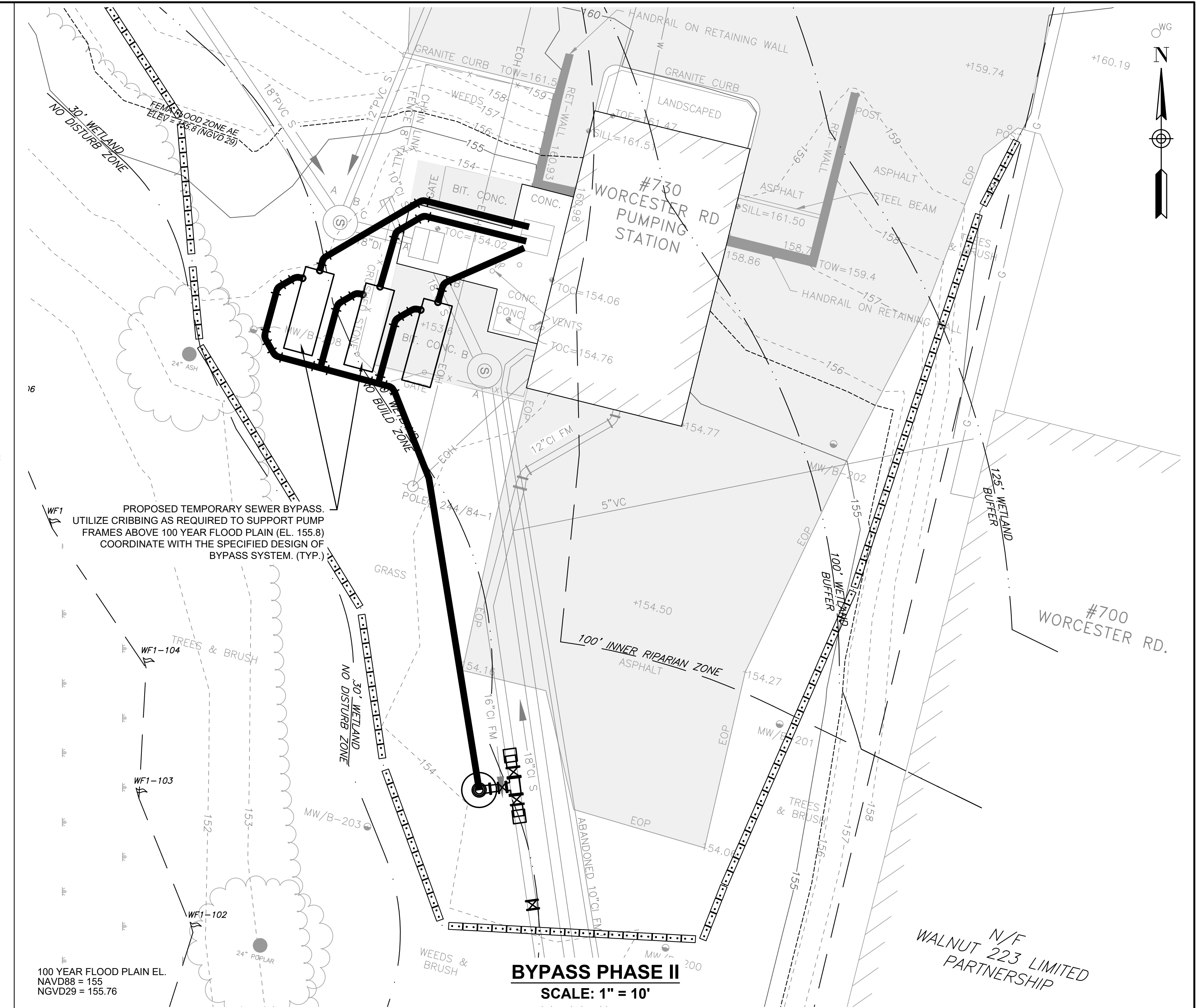
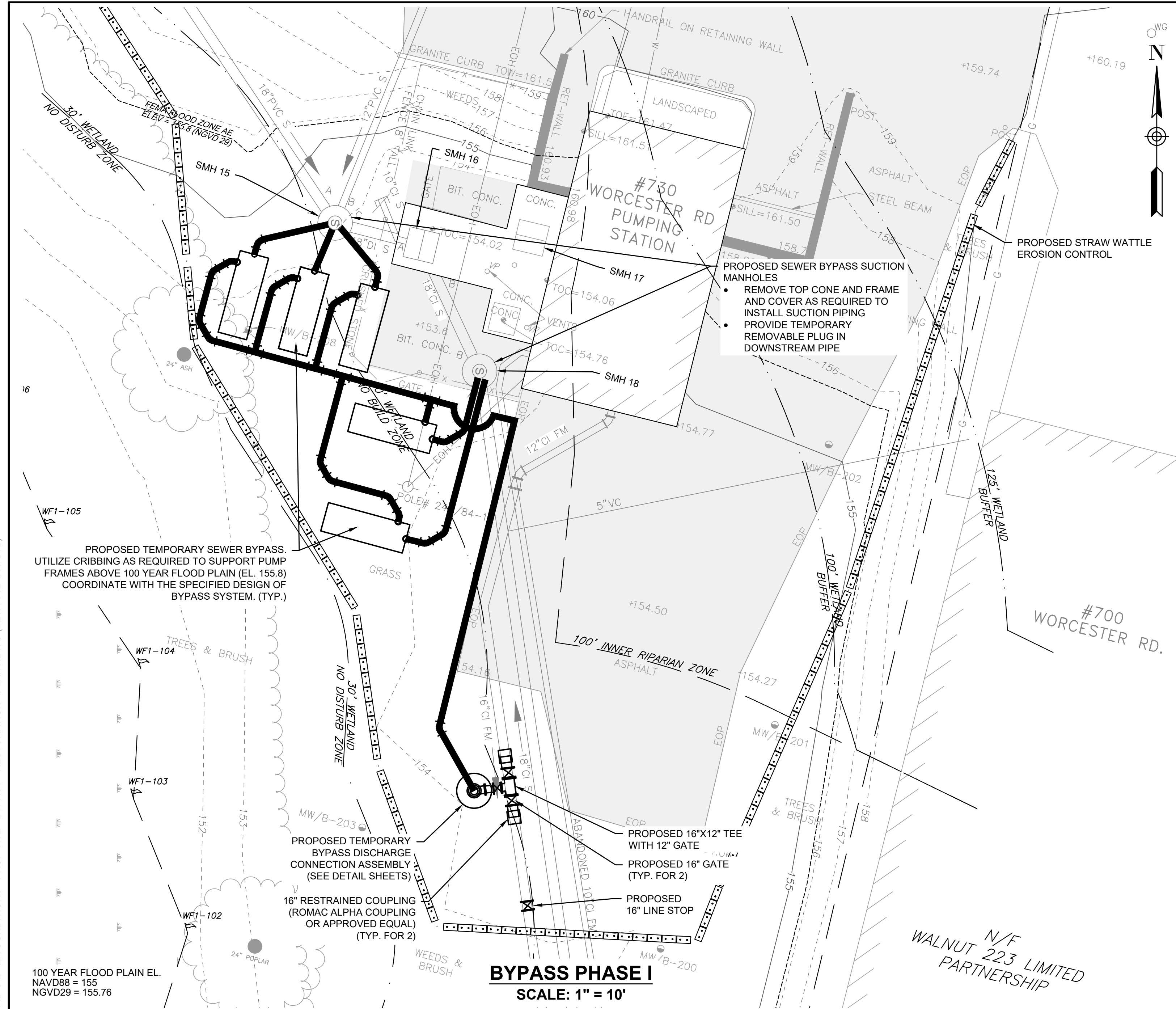
SUBCONSULTANT



TITLE
Worcester Road Sewer Pumping Station Replacement
DEMOLITION, PROPOSED PIPING, & RESTORATION SITE PLANS

BETA JOB NO. 7385
ISSUE DATE AUGUST 2022
SHEET NO. C-2

8/11/2022 1:44 PM \\BETA-INC.COM\IRONY\IRON7385 - FRAMINGHAM WRPS IMPROVEMENT\DRAWINGS\PLANS\SETC-1 AND C-2 - EX. CONDITIONS - PROP. SITE - BYPASS - RESTORATION - PLANS.DWG (BETA STD. BW.CTB)



8/11/2022 1:44 PM \\BETA-INC.COM\IRVEN\IRON7385 - FRAMINGHAM WRPS IMPROVEMENTS\DRAWINGFILES\PLANS\SETC-1 AND C-2 - EX CONDITIONS - PROP SITE - BYPASS - RESTORATION - PLANS.DWG (BETA STD BW.CTB)

BYPASS PHASE I
SCALE: 1" = 10'

BYPASS PHASE II
SCALE: 1" = 10'

BYPASS NOTES

- REFER TO SPECIFICATION SECTION 02149 MAINTAINING FLOW AND CONSTRUCTION NOTES.
- THE CONTRACTOR'S SEQUENCE OF CONSTRUCTION SHALL BE BASED ON THE SCHEDULE SUBMITTED BY THE CONTRACTOR AND APPROVED BY THE OWNER AND ENGINEER AS SPECIFIED. HOWEVER, AS A GUIDE FOR BIDDERS IN THE PREPARATION OF THEIR BID AND FOR THE CONTRACTOR IN THE PREPARATION OF THEIR SCHEDULE, A RECOMMENDED SEQUENCE OF CONSTRUCTION IS PROVIDED ON THIS PLAN.
- THE ORDER OF CONSTRUCTION SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER AND ENGINEER; SUCH APPROVAL OR DIRECTION, HOWEVER, SHALL IN NO WAY RELIEVE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM THE WORK IN STRICT ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONSTRUCTION PLANS AND SPECIFICATIONS HAVE BEEN DEVELOPED TO MINIMIZE THE CONSTRUCTION IMPACTS ON THE OPERATION OF THE CITY'S WASTEWATER COLLECTION SYSTEM. THE CONTRACTOR'S SEQUENCE OF WORK MUST BE SPECIFICALLY DETAILED IN PRELIMINARY CRITICAL PATH METHOD SCHEDULE AS REQUIRED IN GENERAL CONDITIONS 2.03 B.1
- WHENEVER THE CONTRACTOR'S PROPOSED WORK WILL REQUIRE THE OWNER TO DEVIATE FROM THE NORMAL OPERATION OF THE WASTEWATER COLLECTION SYSTEM THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING. SUCH NOTIFICATION SHALL BE SUBMITTED ONE WEEK PRIOR TO THE PLANNED CONSTRUCTION ACTIVITY.

BYPASS RECOMMENDED SEQUENCE OF CONSTRUCTION:

- PHASE I: WET WELL AND PARSHALL FLUME CHAMBER MODIFICATIONS**
- COMPLETE TEST PIT TO CONFIRM ALIGNMENT AND DIAMETER OF EXISTING FORCE MAIN.
 - INSTALL 16-INCH LINE STOP ON EXISTING FORCE MAIN.
 - THE PROPOSED BYPASS CONNECTION SHALL BE COMPLETED BETWEEN THE HOURS OF 10:00 PM AND 5:00 AM
 - SYSTEM STORAGE IS NOT AVAILABLE TO COMPLETE THE WORK. PUMPER TRUCKS WITH SUPPLEMENTAL PUMPING AS REQUIRED TO MANAGE THE FLOWS AT THE FOLLOWING LOCATIONS. OFF-LOAD LOCATIONS MUST BE MANNED AND HAVE POLICE DETAILS AS REQUIRED.
 - WORCESTER ROAD SEWER PUMP STATION
 - ADDRESS: 730 WORCESTER ROAD; OFFLOAD SMH INTERSECTION OF ARTHUR AND BISHOP STREET.
 - WOODLAND SEWER PUMP STATION
 - ADDRESS: OFF FLORITA DRIVE; OFFLOAD SMH ON WATSON PLACE.
 - FENWICK SEWER PUMP STATION
 - ADDRESS: 474 CENTRAL STREET; OFFLOAD SMH ON WATSON PLACE.
 - COMPLETE INSTALLATION OF BYPASS CONNECTION AS SPECIFIED.
 - REMOVE LINE STOP AND RETURN FLOW TO FORCE MAIN.
 - MODIFY SUCTION MANHOLES AS REQUIRED TO:
 - PROVIDE REQUIRED CLEARANCE FOR INSTALLATION OF SUCTION PIPING.
 - PROTECT MANHOLE FROM INUNDATION OF RIVER WATER AS DETAILED ON CD-2.

PHASE I: WET WELL AND PARSHALL FLUME CHAMBER MODIFICATIONS (CONTINUED)

- INSTALL APPROVED TEMPORARY BYPASS PHASE I. BYPASS SYSTEM SHALL INCLUDE WINTER PROTECTION.
 - COMPLETE TESTING OF BYPASS SYSTEM AS SPECIFIED FOR UP TO 5 DAYS FOLLOWING ESTABLISHMENT OF CONTINUOUS AND RELIABLE OPERATION.
- COMPLETE REPAIRS/IMPROVEMENTS TO WET WELL AND PARSHALL FLUME CHAMBER INCLUDING BUT NOT LIMITED TO:
 - REMOVE INFILL FROM EXISTING WET WELL TO LIMITS SHOWN.
 - REPLACE EXISTING SUCTION PIPING FROM WET WELL TO EXISTING PUMPS INCLUDING 14-INCH DI PIPING, 14-INCH GATE VALVE AND APPURTENANCES.
 - REMOVE EXISTING LADDERS, VALVES, PIPING, AND APPURTENANCES AS SHOWN.
 - REPAIR ANY CRACKS AS SPECIFIED AND AS DIRECTED BY THE ENGINEER.
 - COMPLETE CONCRETE INFILL AS SHOWN AND SPECIFIED.
 - REMOVE AND REPLACE HATCH ON PARSHALL FLUME CHAMBER
 - COMPLETE EPOXY COATING OF WET WELL AND PARSHALL FLUME CHAMBER AS SPECIFIED.
 - CLEAN AND PREPARE SURFACE IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
 - APPLY EPOXY AS SPECIFIED IN SECTION 09882.
 - COMPLETE TESTING OF EPOXY. REPAIR WHERE REQUIRED.
 - ALLOW EPOXY TO CURE PRIOR TO RETURNING FLOW.
- COMPLETE HYDRAULIC TEST OF WET WELL WITH POTABLE WATER. WATER TO BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- ONCE ALL SPECIFIED IMPROVEMENTS HAVE BEEN COMPLETED AND APPROVED, RETURN FLOW TO EXISTING PUMP STATION.

PHASE II: PUMP STATION DEMOLITION AND REPLACEMENT

- MODIFY SUCTION WET WELL HATCH AS REQUIRED TO:
 - PROTECT MANHOLE FROM INUNDATION OF RIVER WATER AS DETAILED ON CD-2.
- INSTALL APPROVED TEMPORARY BYPASS PHASE II. BYPASS SYSTEM SHALL INCLUDE WINTER PROTECTION.
 - SYSTEM STORAGE IS NOT AVAILABLE TO COMPLETE THE WORK. PUMPER TRUCKS WITH SUPPLEMENTAL PUMPING AS REQUIRED TO MANAGE THE FLOWS AT THE SAME THREE LOCATIONS REQUIRED DURING INSTALLATION OF THE PHASE I BYPASS.
 - INSTALLATION OF TEMPORARY BYPASS PHASE II SHALL BE COMPLETED AT NIGHT BETWEEN THE HOURS OF 10:00 PM AND 5:00 AM.
 - COMPLETE TESTING OF BYPASS SYSTEM AS SPECIFIED FOR UP TO 5 DAYS FOLLOWING ESTABLISHMENT OF CONTINUOUS AND RELIABLE OPERATION.
- DEMOLISH AND REBUILD PUMP STATION AS SPECIFIED.
- COMPLETE REQUIRED TESTING OF NEW PUMP STATION.
- ONCE THE NEW PUMP STATION HAS BEEN TESTED AND APPROVED, REMOVE BYPASS PHASE II.
- INSTALL NEW HATCH AS SPECIFIED.

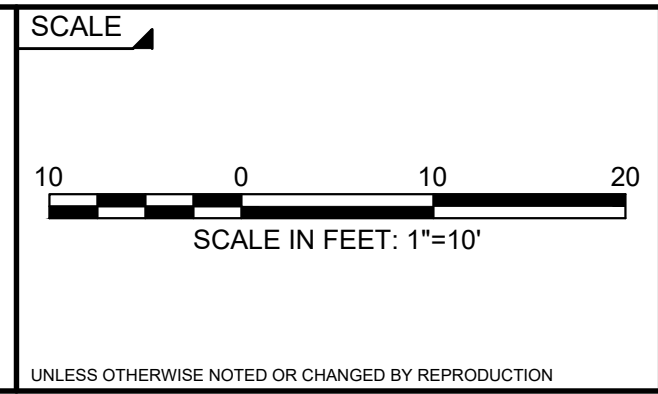
NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
RTG
DESIGNED BY:
AJG
CHECKED BY:
JRD

REGISTERED PROFESSIONAL
For Review Only



SUBCONSULTANT

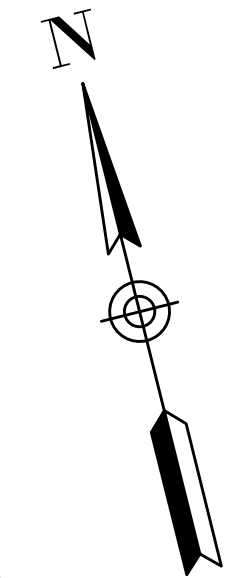


TITLE
Worcester Road Sewer Pumping Station Replacement
BYPASS PLANS - PHASE I & PHASE II

BETA JOB NO. 7385
ISSUE DATE AUGUST 2022
SHEET NO. C-3

1931 SHLO

WORCESTER ROAD
← (ROUTE 9 WESTBOUND)



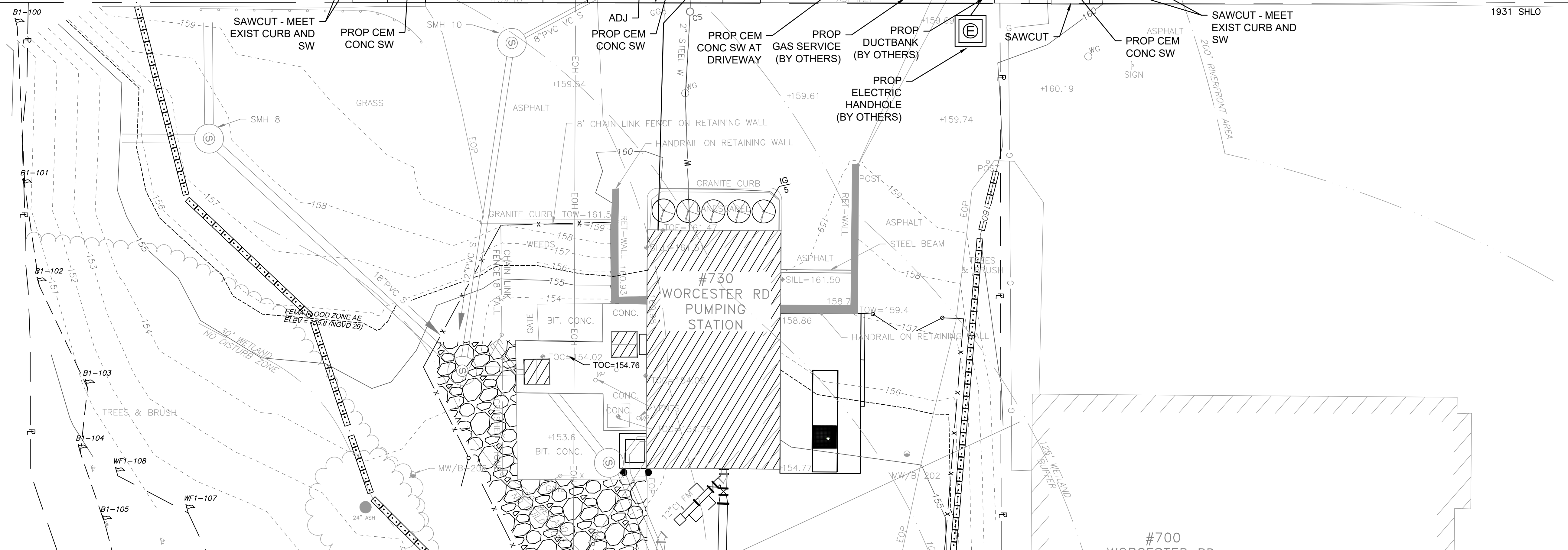
CONC BARRIER

WORCESTER ROAD
(ROUTE 9 EASTBOUND) →

1931 SHLO

1931 SHLO

SUDBURY RIVER



8/11/2022 1:44 PM \\BETA-INC.COM\IRVEN\IRON7385 - FRAMINGHAM WRPS IMPROVEMENTS\DRAWINGFILES\PLANSET\C-4 CURB MODIFICATION PLAN.DWG (BETA STD.BW.CTB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
RTG

DESIGNED BY:
AJG

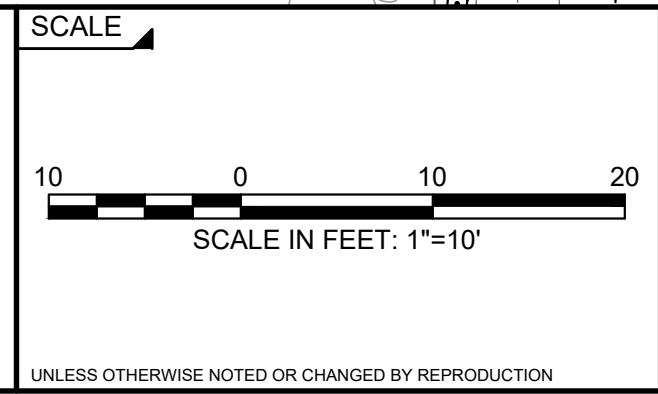
CHECKED BY:
JRD

REGISTERED PROFESSIONAL

For Review Only



SUBCONSULTANT



TITLE

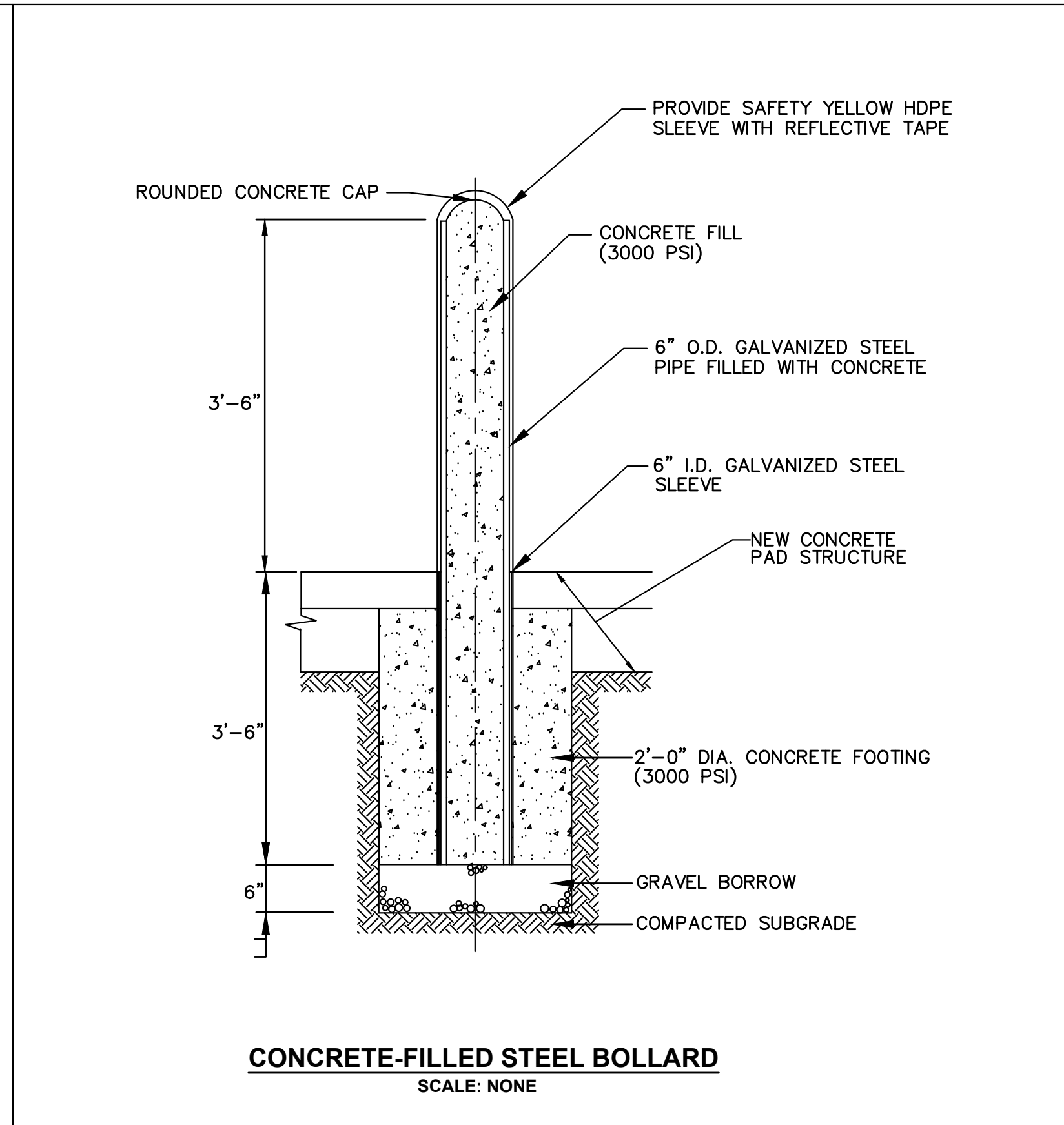
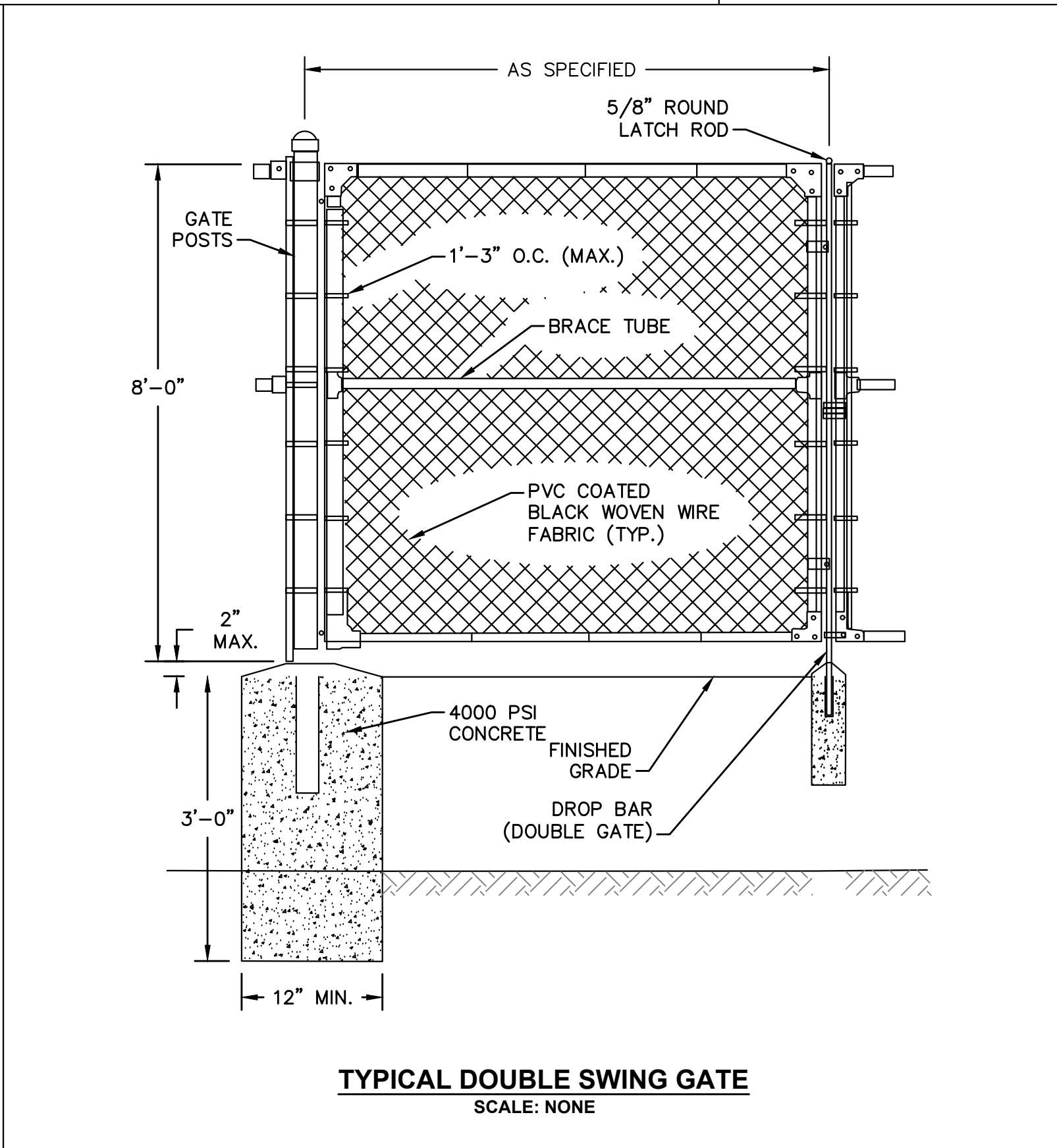
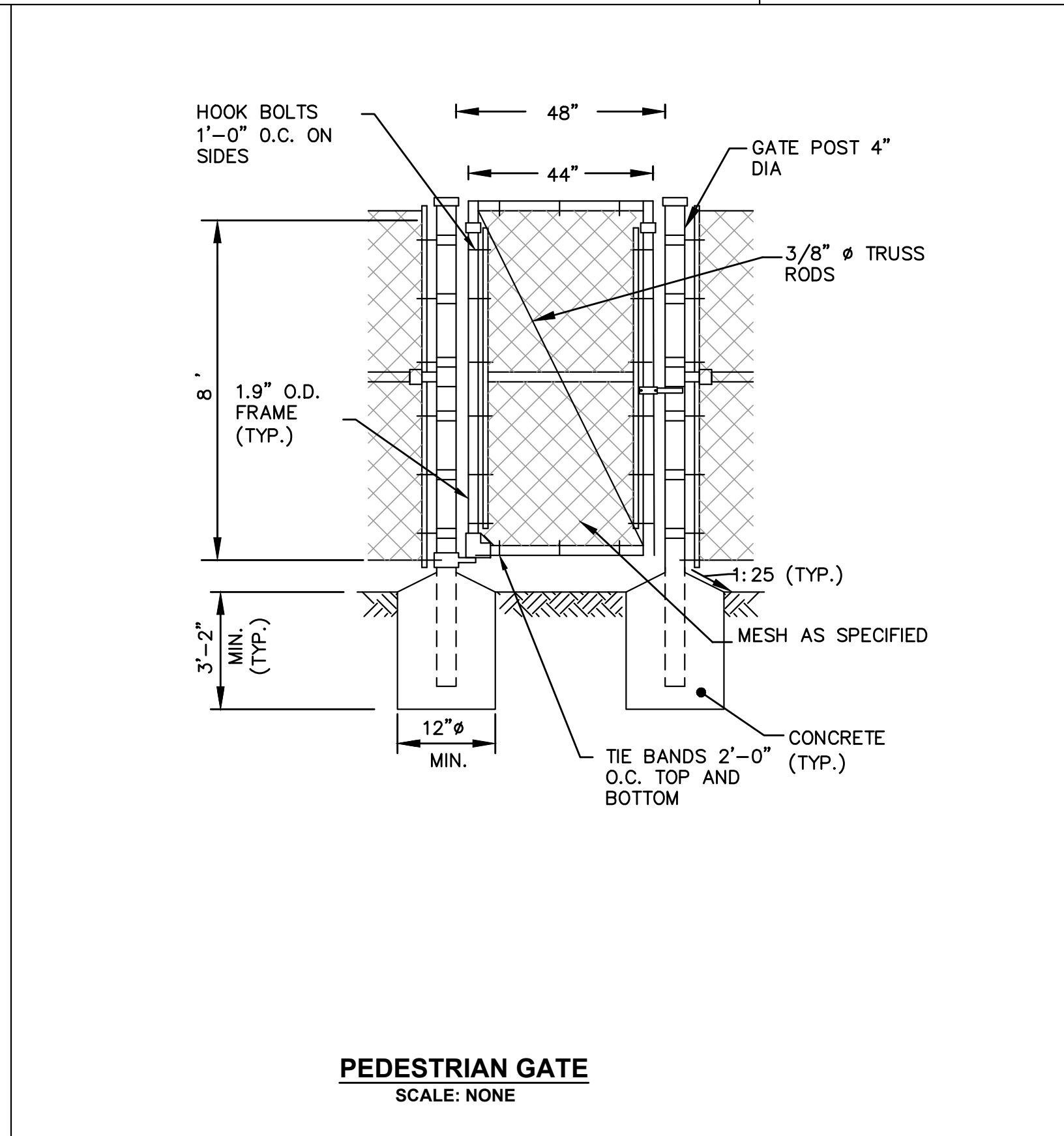
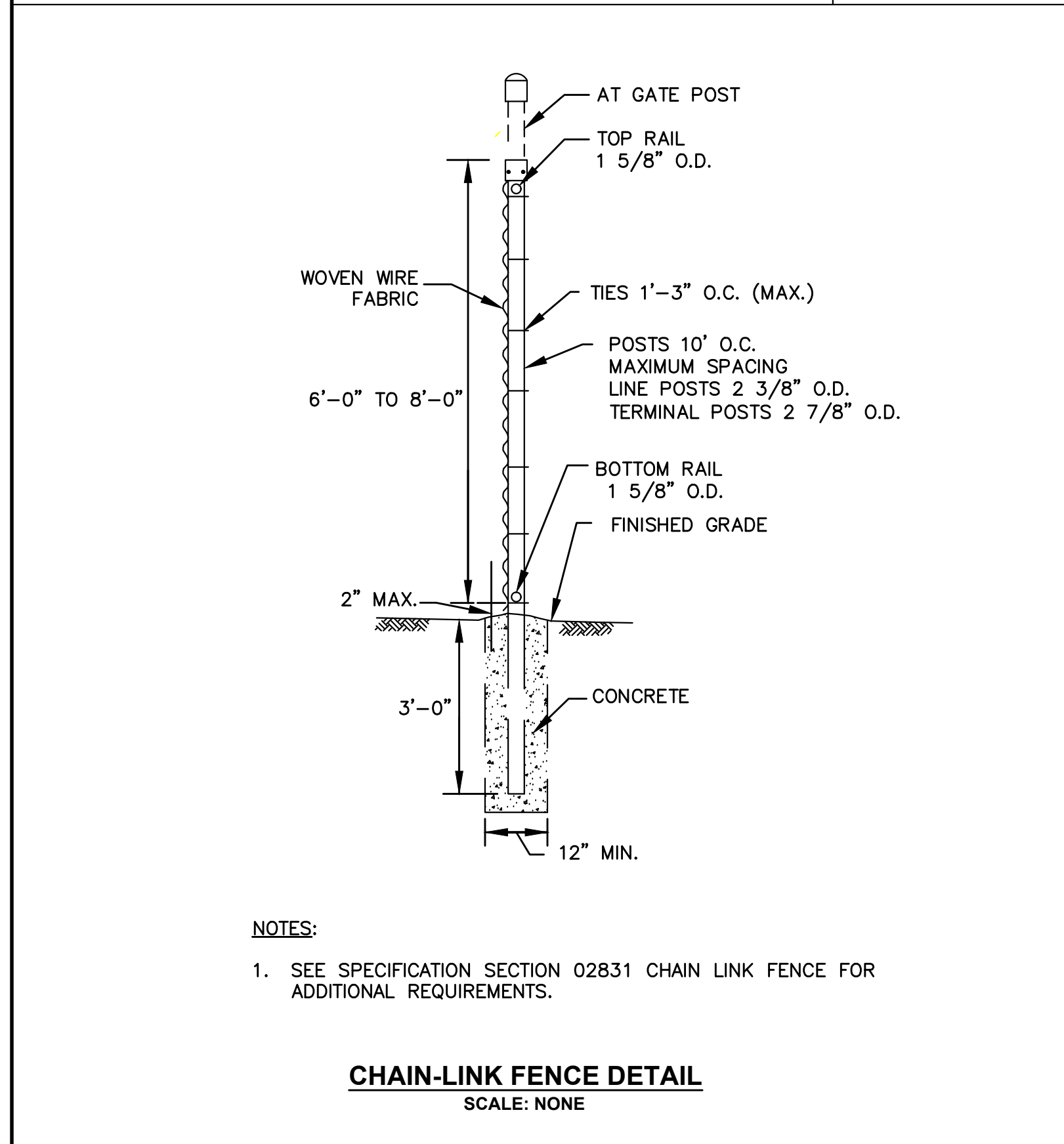
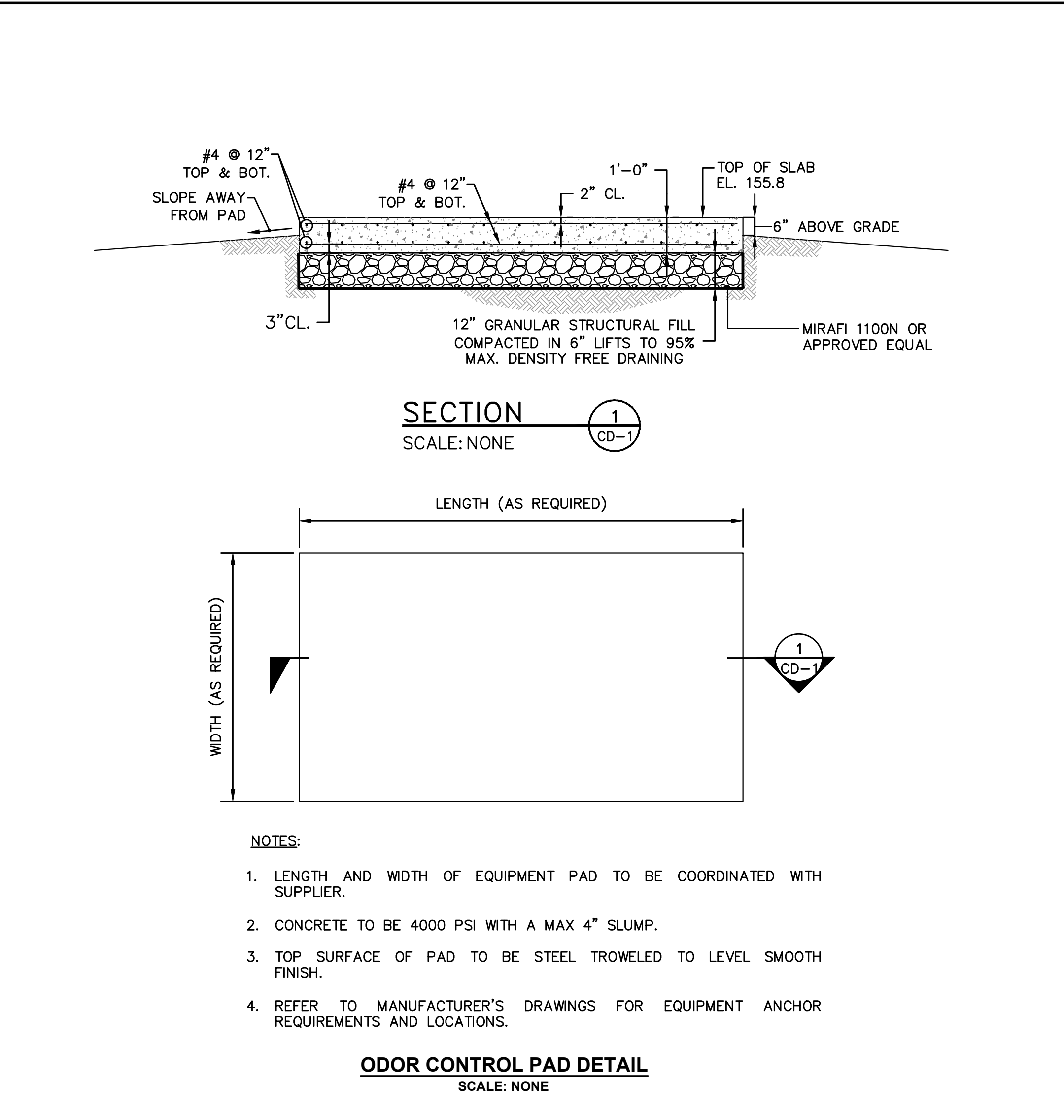
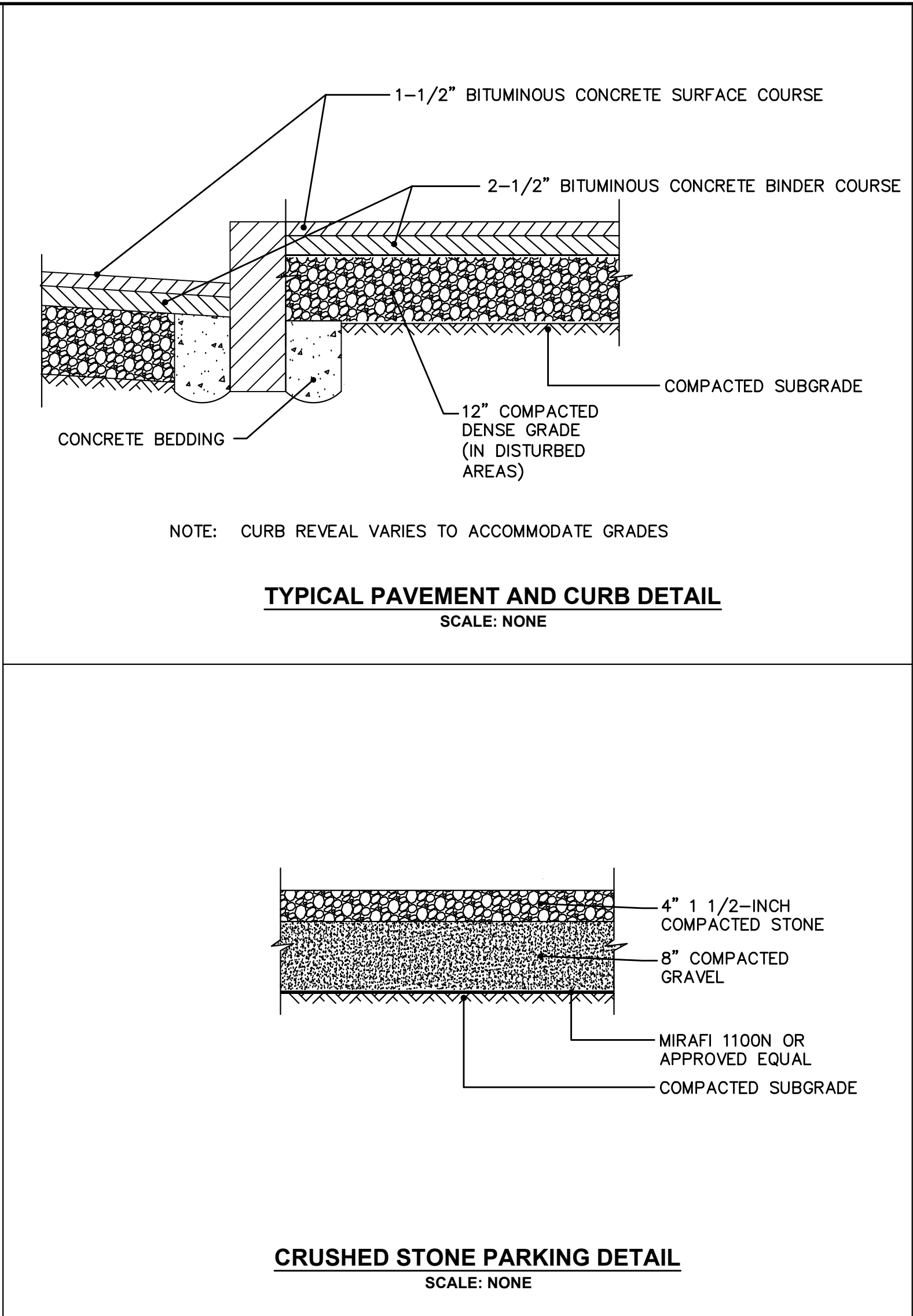
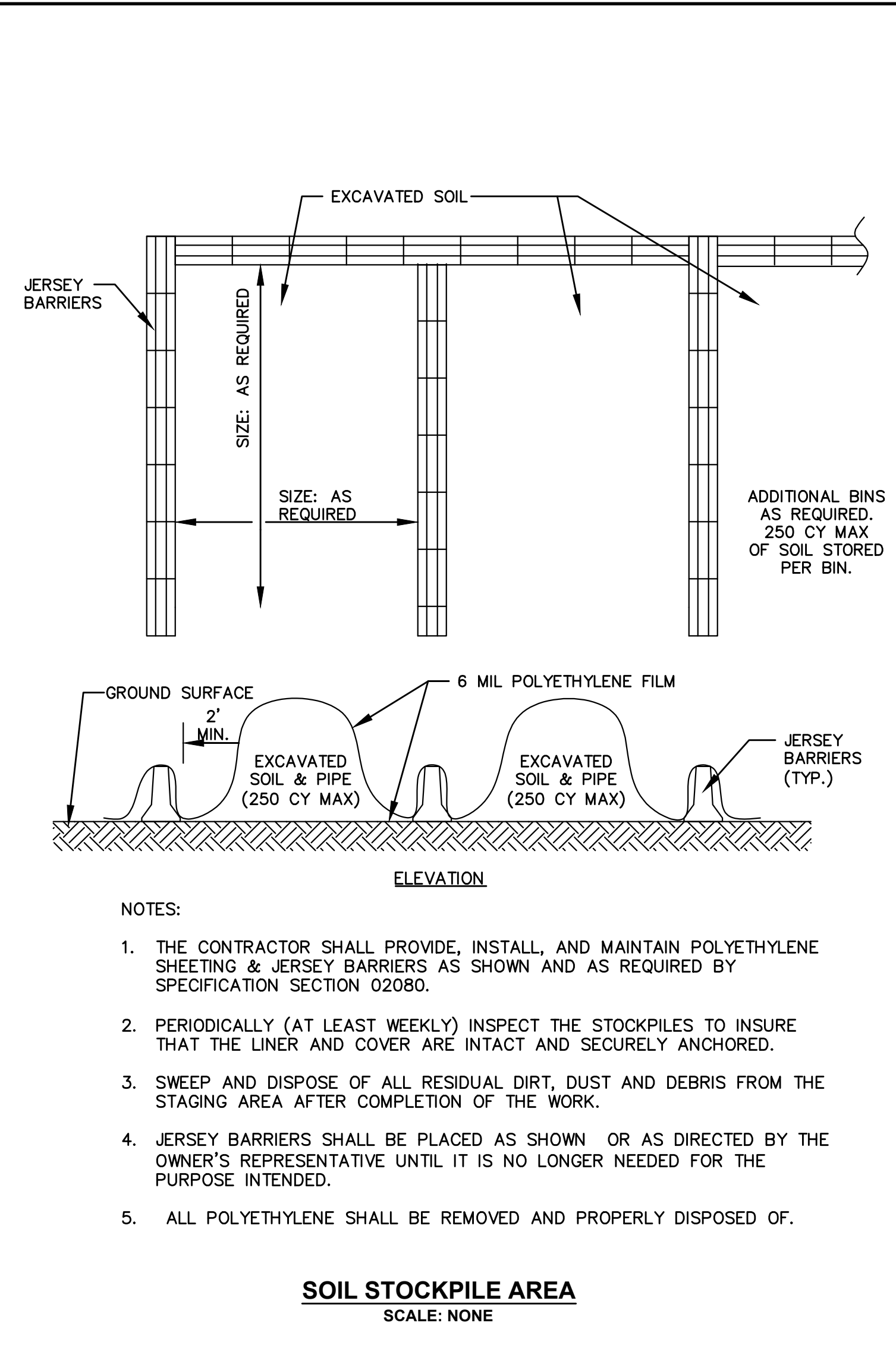
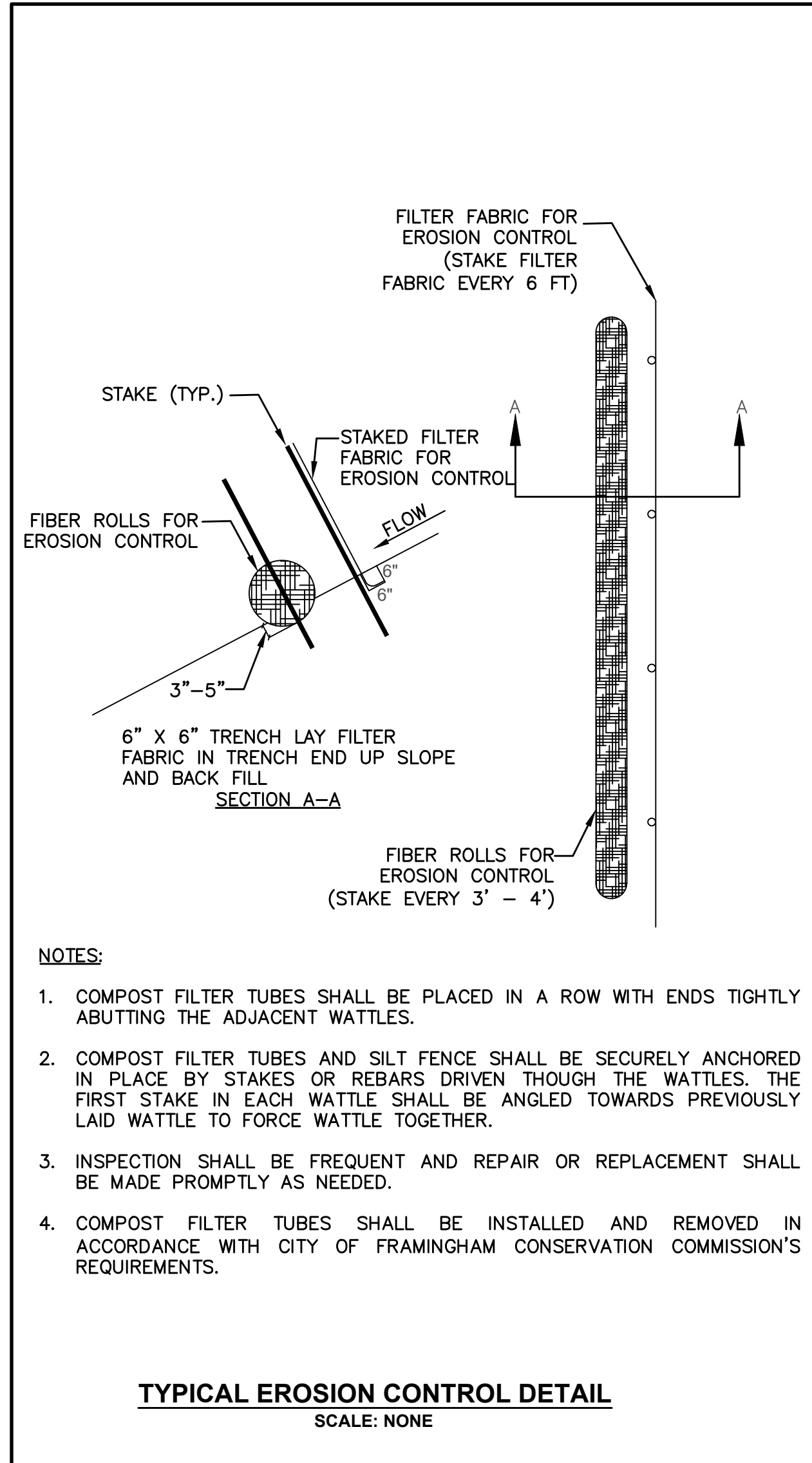
Worcester Road Sewer Pumping Station Replacement

SIDEWALK & CURB MODIFICATION PLAN

BETA JOB NO. 7385

ISSUE DATE AUGUST 2022

SHEET NO. C-4



NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
PAN

DESIGNED BY:
AJG

CHECKED BY:
JRD

REGISTERED PROFESSIONAL PREPARED BY

For Review Only

www.BETA-inc.com

SUBCONSULTANT

SCALE
AS SHOWN

TITLE
Worcester Road Sewer Pumping Station Replacement

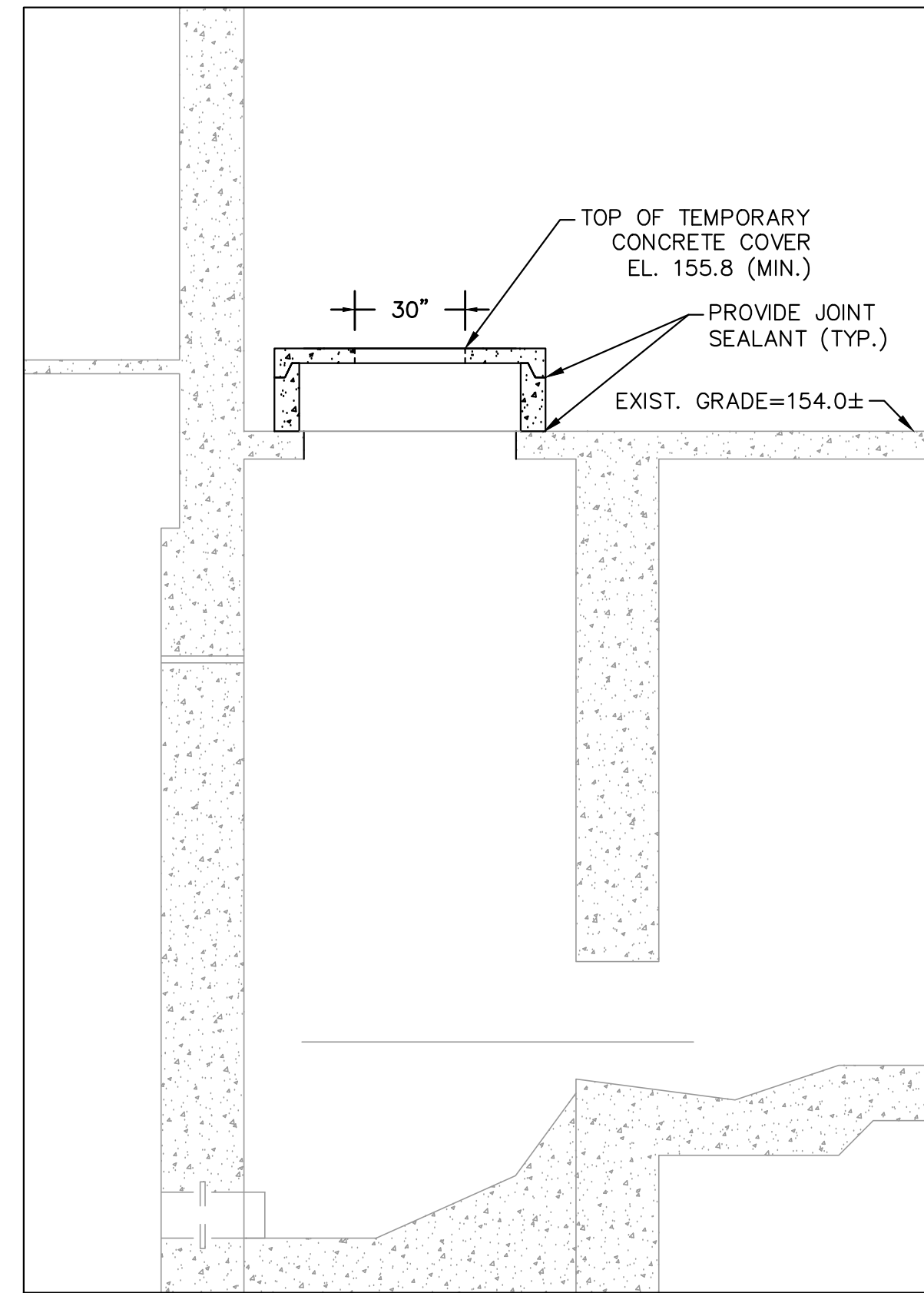
CONSTRUCTION DETAILS - 1

BETA JOB NO. 7385

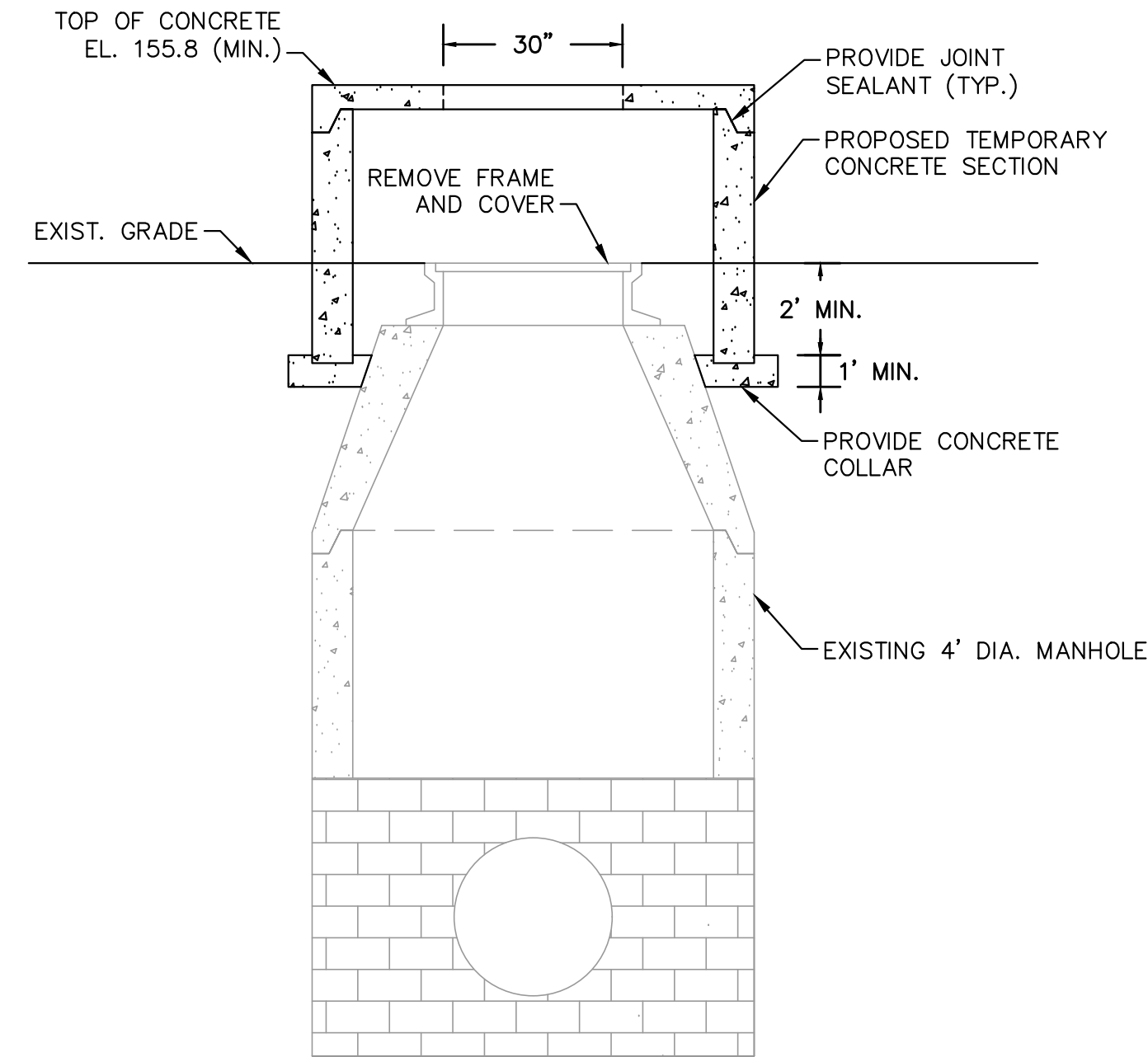
ISSUE DATE AUGUST 2022

SHEET NO. CD-1

8/11/2022 1:45 PM \\BETA-INC.COM\IRVING\IRON\7385 - FRAMINGHAM WRPS IMPROVEMENT\DRAWING\FILES\PLANS\SETCD-1 THRU CD-3 CONSTRUCTION DETAILS.DWG (BETA STD BW.CTB)

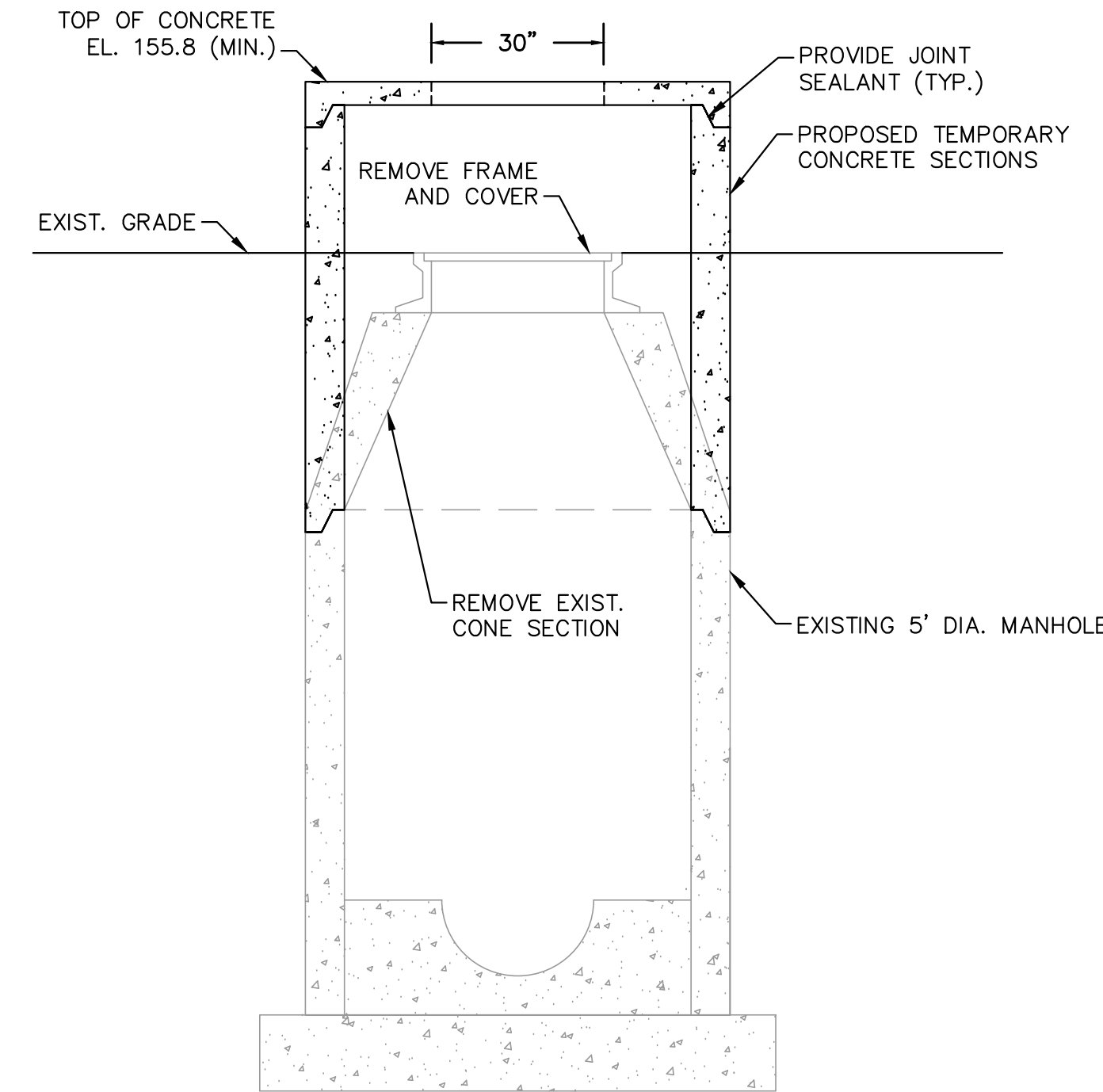


TEMPORARY HATCH MODIFICATION DETAIL
SCALE: NONE



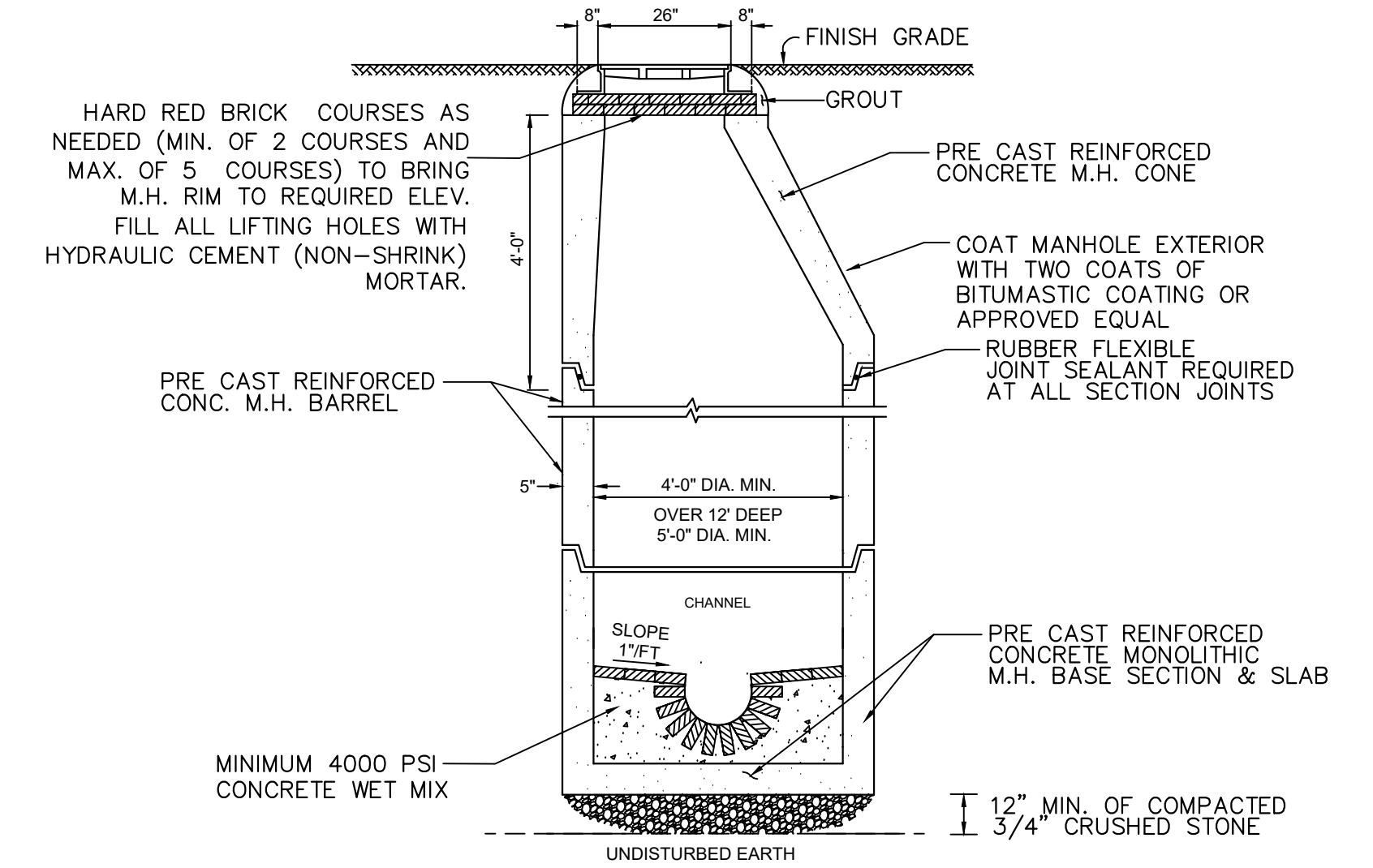
PHASE 1 4-FOOT MANHOLE MODIFICATION
SCALE: NONE

NOTES
1. REMOVE FRAME AND COVER. TEMPORARILY STORE AND REINSTALL ONCE BYPASS IS COMPLETE.



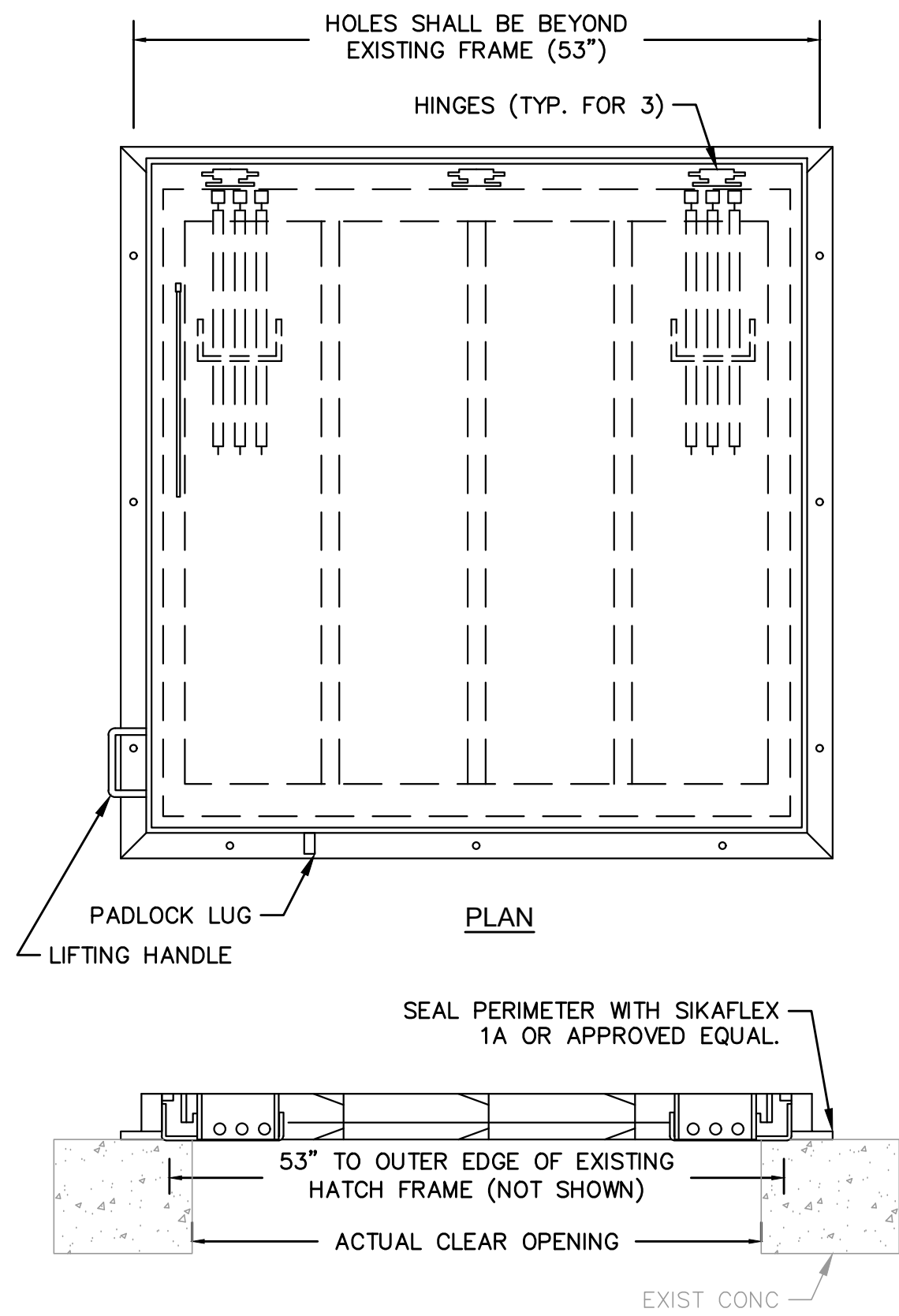
PHASE 1 5-FOOT MANHOLE MODIFICATION
SCALE: NONE

NOTES
1. REMOVE CONE SECTION, FRAME, AND COVER. TEMPORARILY STORE AND REINSTALL ONCE BYPASS IS COMPLETE.



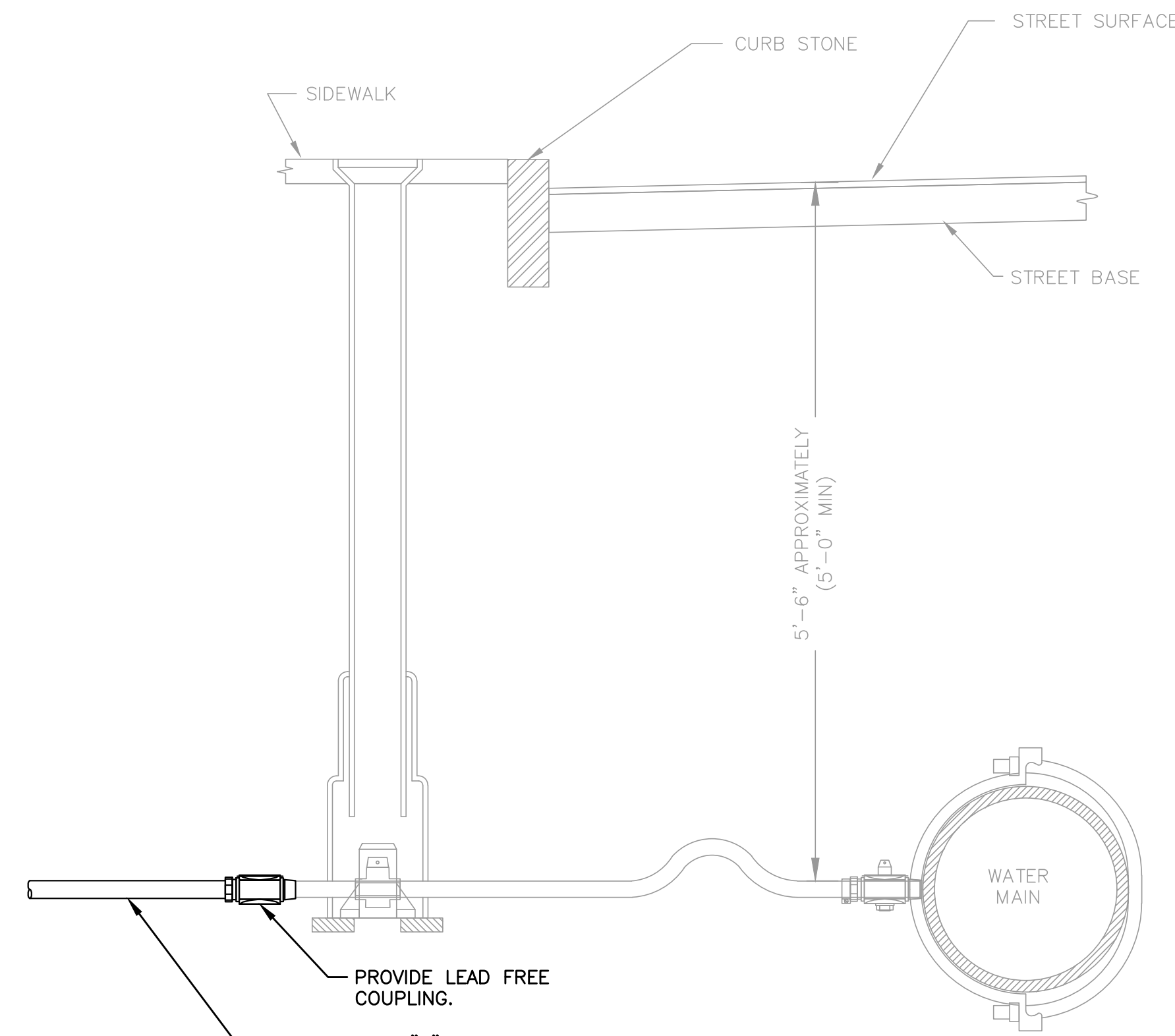
TYPICAL SEWER MANHOLE
SCALE: NONE

NOTES:
1. TYPICAL SANITARY MANHOLE TO BE 4 FEET IN DIAMETER.
2. 5'-0" DIAMETER FOR ALL MANHOLE DEPTHS GREATER THAN 12 FEET OR WHEN ORDERED BY THE ENGINEER.
3. 6" MIN. WALL THICKNESS AND 7" MIN. BASE THICKNESS WITH 5'-0" DIAMETER MANHOLES.
4. OUTER EDGE OF BRICK TABLE TO BE AT ELEVATION OF CROWN OF PIPE.
5. DESIGN LOAD - HS20
6. ALL INVERTS SHALL BE 4,000 PSI CEMENT CONCRETE IN VOID AREAS AND RED SEWER BRICK CONSTRUCTION.
7. INVERTS SHALL NOT BE BUILT ABOVE GRADE. ALL INVERTS SHALL BE BUILT IN PLACE AFTER ALL PIPES HAVE BEEN INSTALLED.



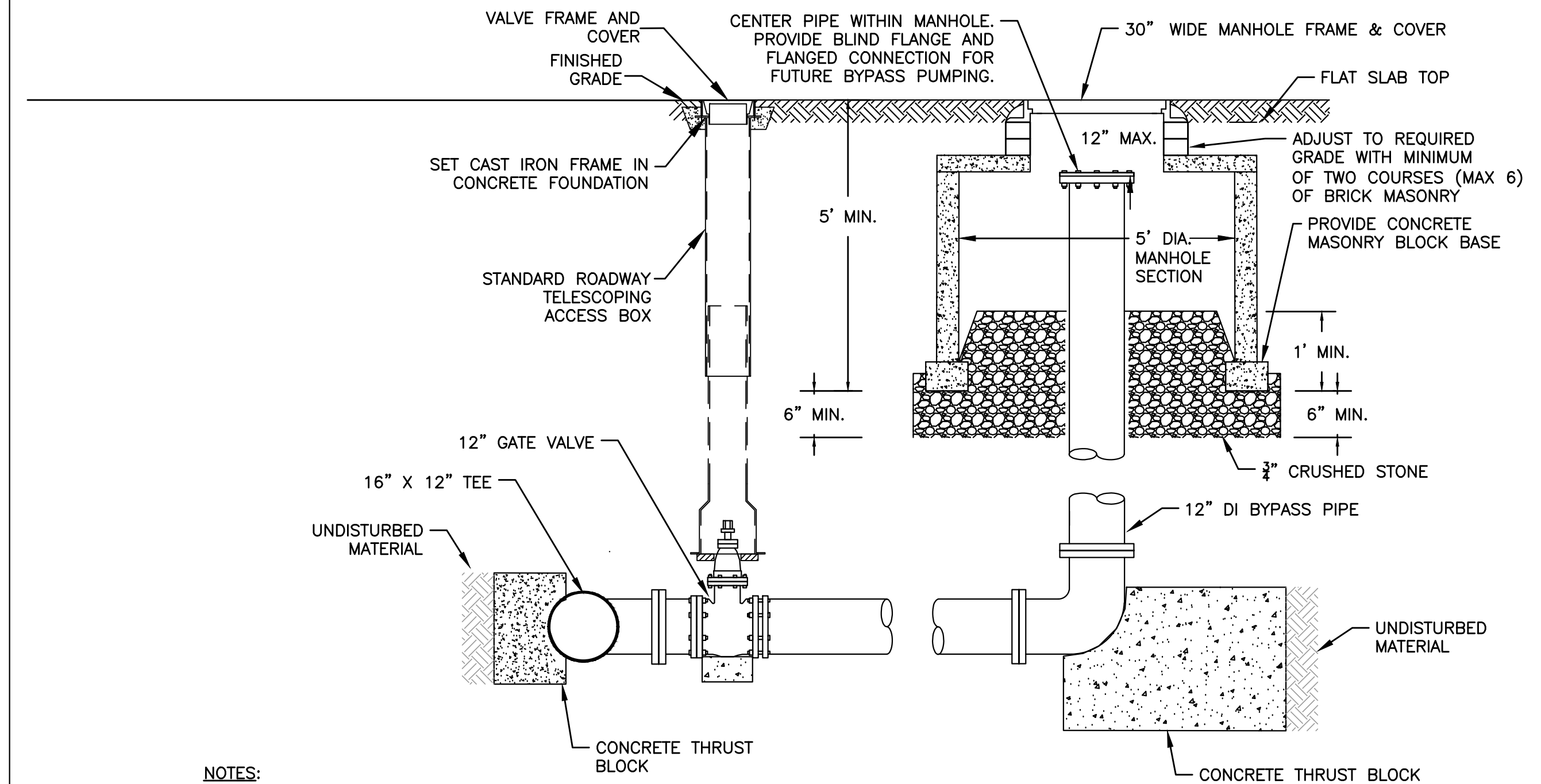
HATCH DETAIL
SCALE: NONE

NOTES
1. HATCH SHALL BE PROVIDED WITH A MINIMUM 46" CLEAR OPENING.



WATER SERVICE CONNECTION
SCALE: NONE

PROVIDE TYPE "K" COPPER SERVICE PIPE. SEE PLUMBING SHEET P-4 FOR CONTINUATION.



PERMANENT WASTEWATER BYPASS CONNECTION
SCALE: NONE

NOTES:
1. ONCE INSTALLED AND ACCEPTED, THE BYPASS DISCHARGE CONNECTION WILL BECOME A PERMANENT PART OF FRAMINGHAM'S WASTEWATER COLLECTION SYSTEM. THE CITY OF FRAMINGHAM MAINTAINS AND OPERATES ALL VALVES, PIPING, AND APPURTENANCES THAT ARE PART OF THE COLLECTION SYSTEM.
2. DISCHARGE CONNECTION WILL BE A 16" X 12" TEE AND A 12" GATE VALVE. SEE SPECIFICATION SECTIONS 02618 AND 02619 FOR REQUIREMENTS.
3. THRUST BLOCKS SHALL BE 4000 PSI CONCRETE BETWEEN THE PIPE AND UNDISTURBED MATERIAL IN ACCORDANCE WITH DUCTILE IRON PIPE RESEARCH ASSOCIATION THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE.
4. POLYPROPYLENE SHEETING SHALL BE PLACED AROUND FITTINGS PRIOR TO POURING CONCRETE IN ACCORDANCE WITH AWWA C105.

8/11/2022 1:45 PM \\BETA-INC.COM\IRVING\IRON\385 - FRAMINGHAM WRS IMPROVEMENT\DRAWING\PLANS\SETCD-1 THRU CD-3 CONSTRUCTION DETAILS.DWG (BETA STD BW.CTB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:	PAN
DESIGNED BY:	AJG
CHECKED BY:	JRD

REGISTERED PROFESSIONAL
For Review Only



PREPARED BY
SUBCONSULTANT

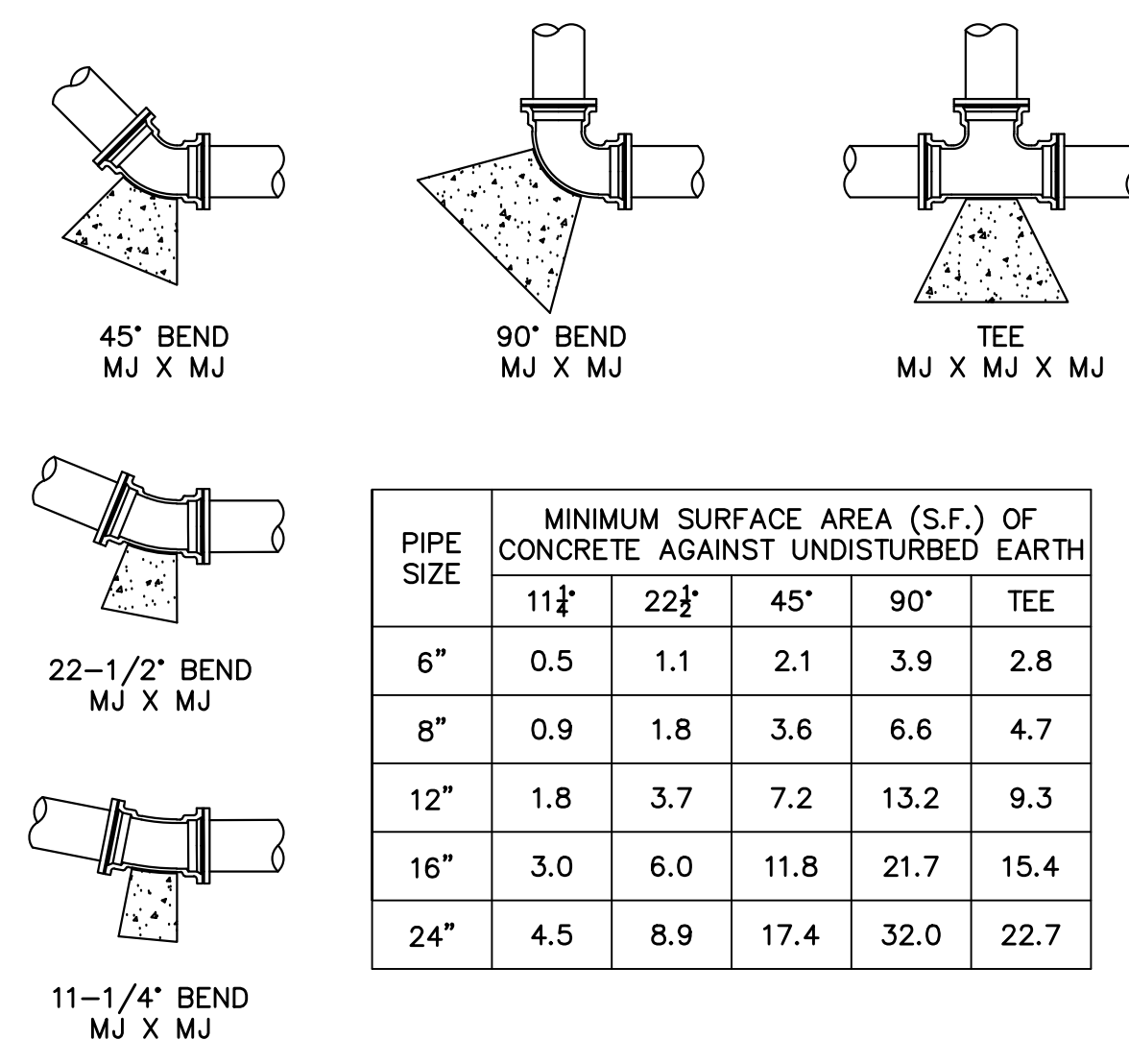
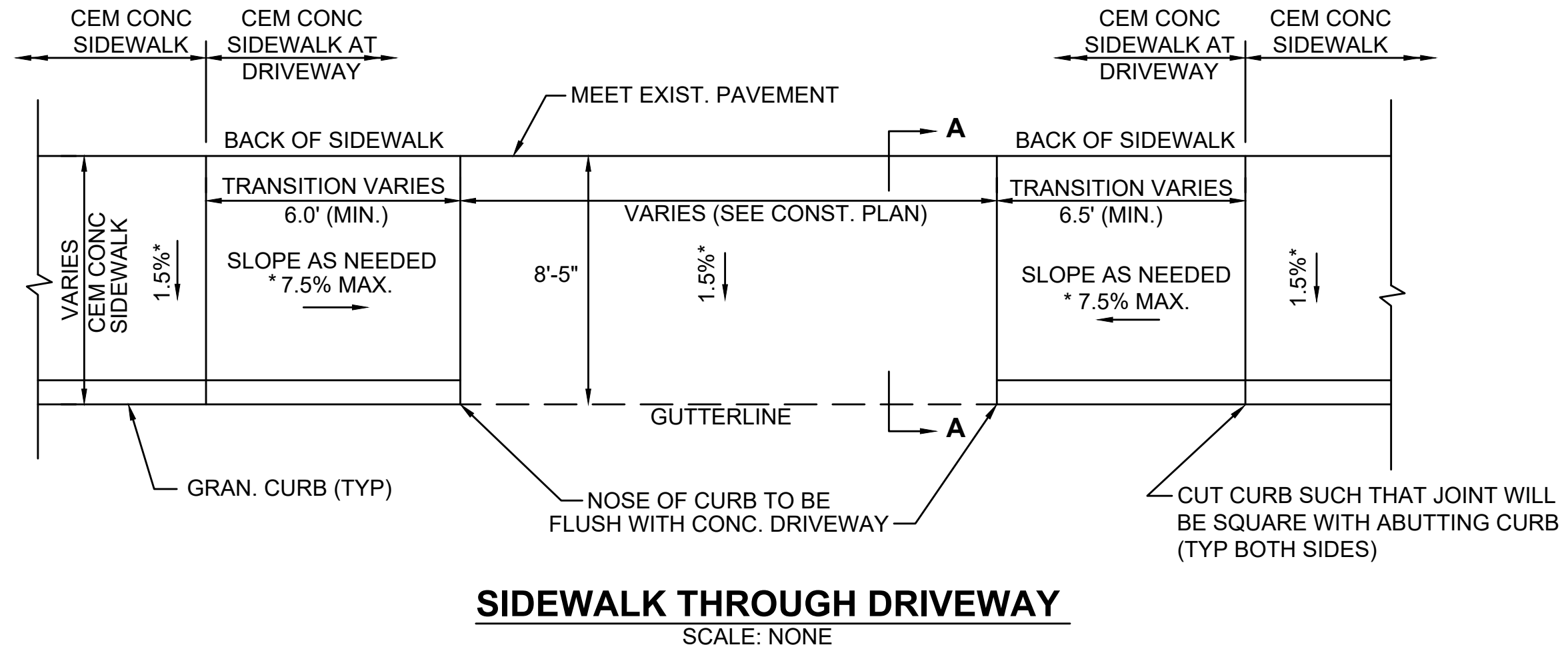
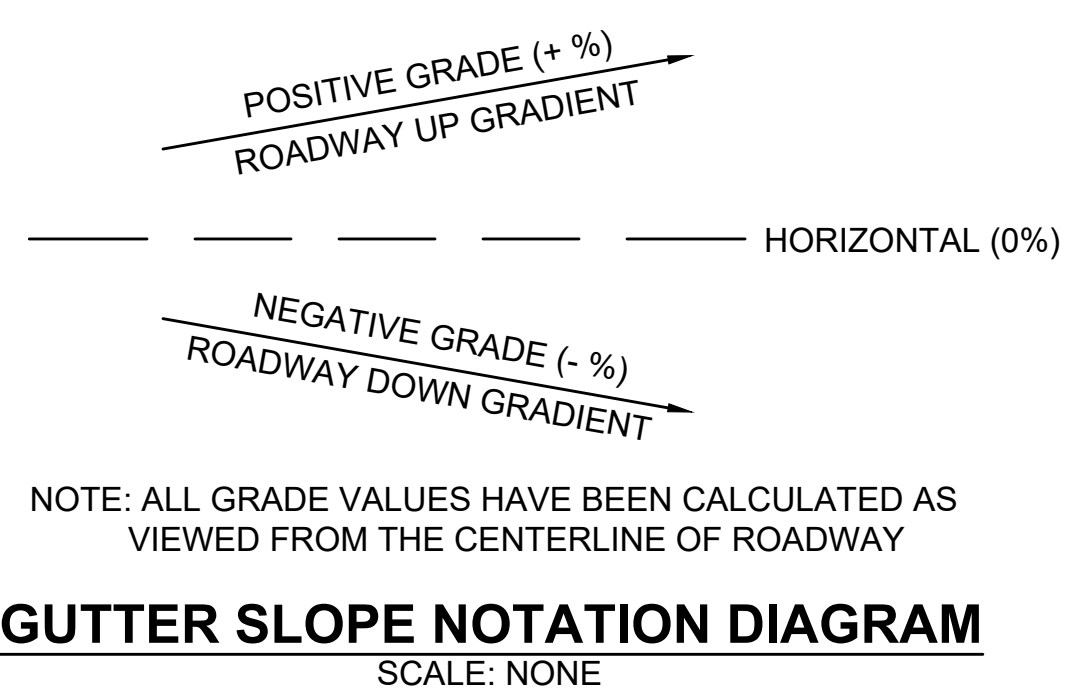
SCALE
AS SHOWN

TITLE
Worcester Road Sewer Pumping Station Replacement
CONSTRUCTION DETAILS - 2

BETA JOB NO.	7385
ISSUE DATE	AUGUST 2022
SHEET NO.	CD-2

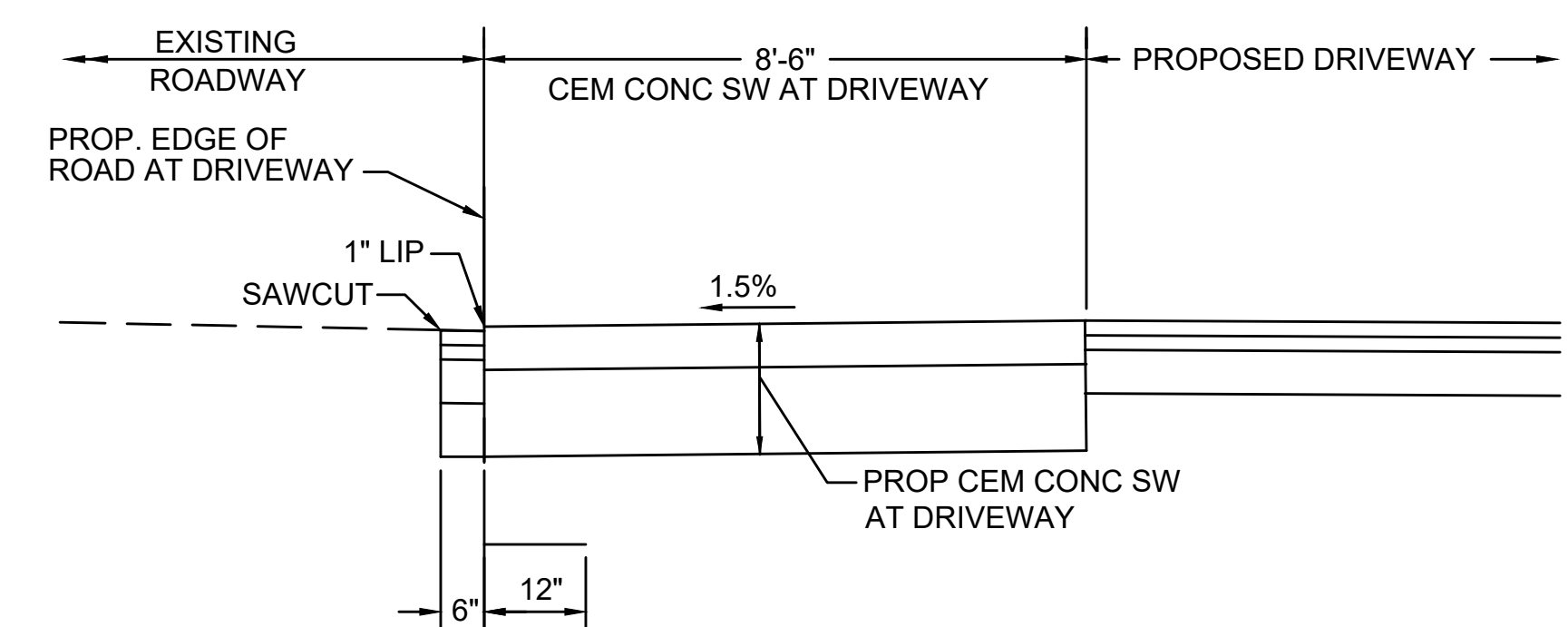
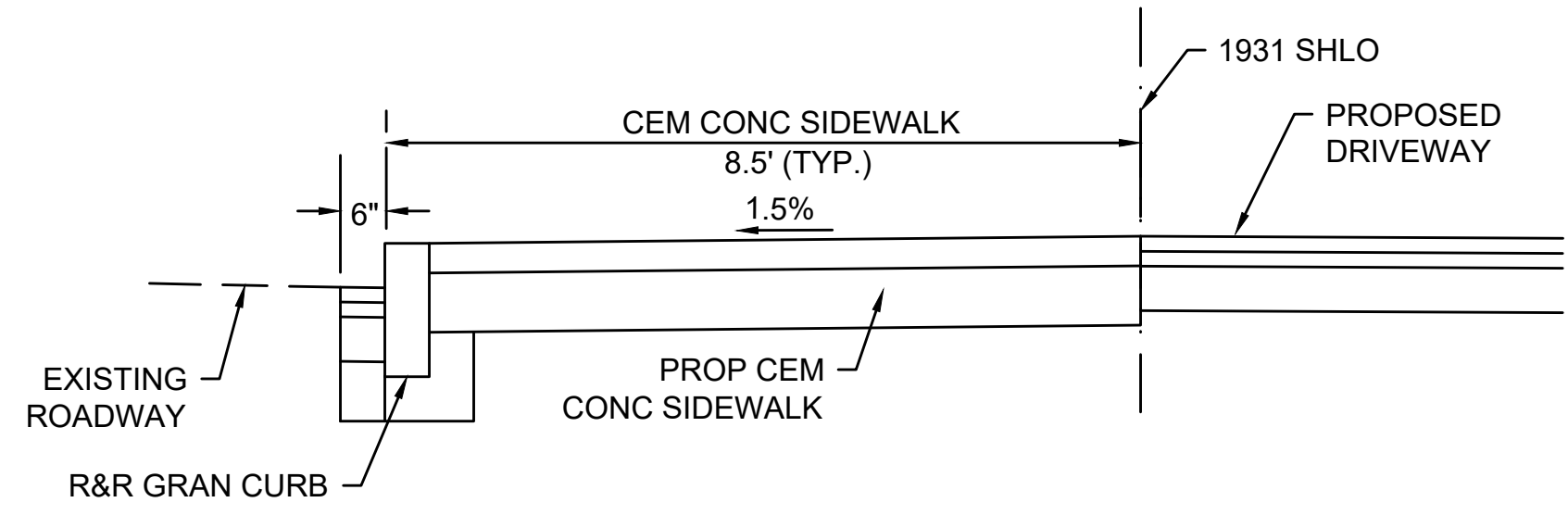
DRIVEWAYS WITH SIDEWALK									
DWY #	LOCATION	RAMP REFERENCE POINT		OPENING WIDTH AT GUTTER (FT)	SIDEWALK WIDTH (FT)	PATH OF TRAVEL (3'-3" MIN) (FT)	ROADWAY GUTTER SLOPE (%)*	TRANSITION LENGTH	
		NORTHING	EASTING					LEFT	RIGHT
1	WORCESTER ROAD	676071.372	2933859.771	20.0	8.5	8.0	-0.7±	7.7	6.5
2	WORCESTER ROAD	676137.199	2933843.795	40.0	8.5	8.0	-1.0±	6.0 2" REVEAL	6.5

*SEE GUTTER SLOPE NOTATION DIAGRAM THIS SHEET



- NOTES:
1. PORTLAND TYPE II CEMENT CONCRETE MEETING SPECIFICATION SECTION 03300 AND SHALL BE PLACED SO AS TO NOT INTERFERE WITH THE JOINTS OF THE FITTING. CONCRETE SHALL BE 4000 PSI.
 2. POLYPROPYLENE SHEETING SHALL BE PLACED AROUND FITTINGS PRIOR TO POURING CONCRETE IN ACCORDANCE WITH AWWA C105.
 3. ALL JOINTS SHALL BE RESTRAINED IN ACCORDANCE WITH SPECIFICATION SECTION 02618.

THRUST BLOCK BEARING AREAS
SCALE: NONE



8/11/2022 1:45 PM \\BETA-INC.COM\RIENVIRON\7385 - FRAMINGHAM WRPS IMPROVEMENTS\DRAWINGFILES\PLANSET\CD-1 THRU CD-3 CONSTRUCTION DETAILS.DWG (BETA STD BW.CTB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
PAN

DESIGNED BY:
AJG

CHECKED BY:
JRD

REGISTERED PROFESSIONAL

For Review Only



PREPARED BY

SUBCONSULTANT

SCALE

AS SHOWN

TITLE

Worcester Road Sewer Pumping Station Replacement

CONSTRUCTION DETAILS - 3

BETA JOB NO. 7385

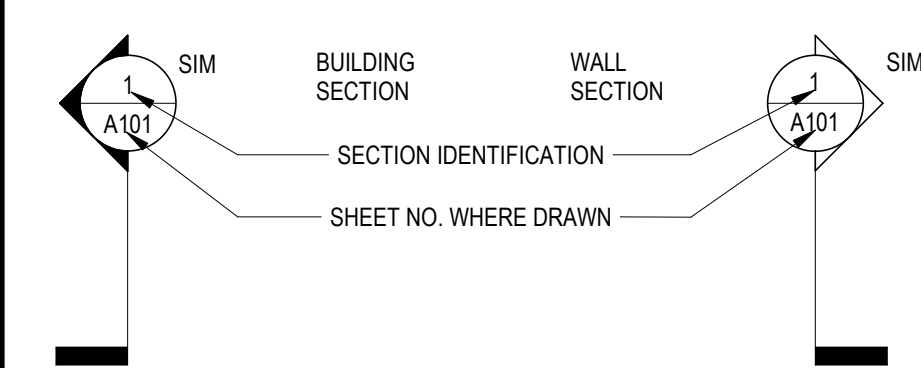
ISSUE DATE AUGUST 2022

SHEET NO. CD-3

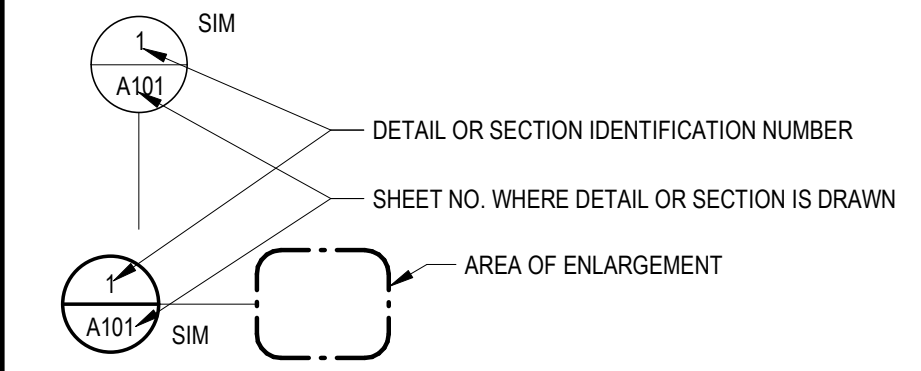
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

ARCHITECTURAL SYMBOLS

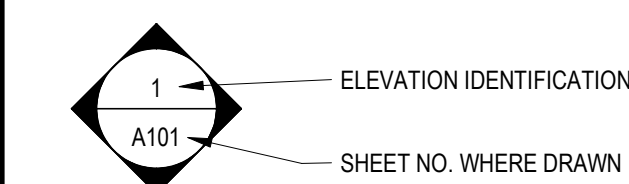
SECTION DESIGNATORS



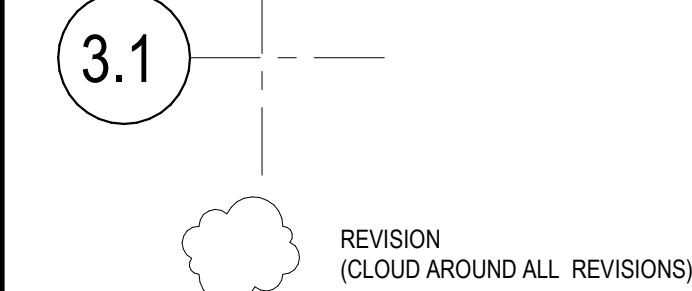
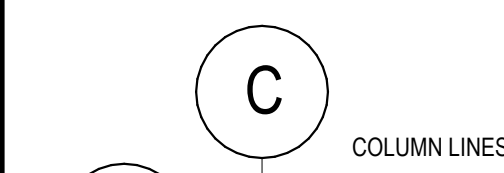
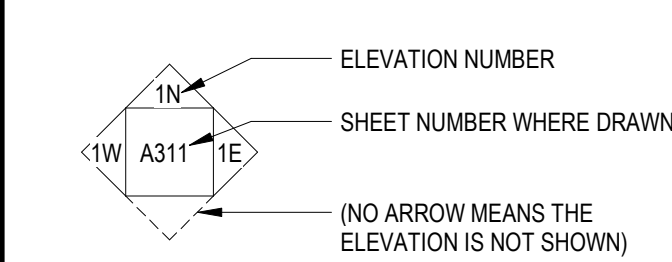
DETAIL / SECTION DESIGNATOR



BUILDING ELEVATION DESIGNATOR



ROOM ELEVATION DESIGNATOR

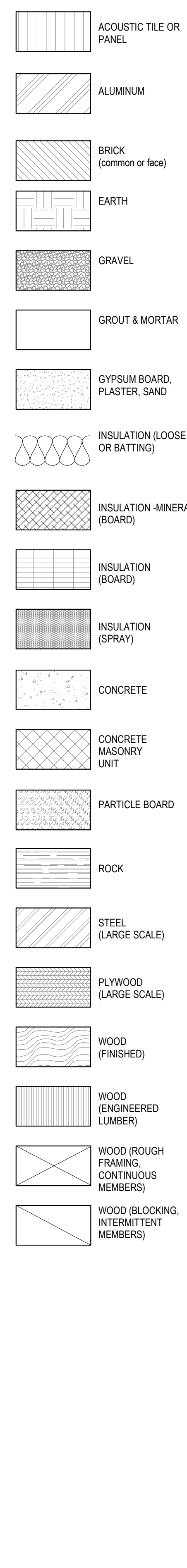


ABBREVIATIONS

@	AT	EOS	EDGE OF SLAB	NTS	NOT TO SCALE
AC	AIR CONDITIONING	EQ	EQUAL	OC	ON CENTER (S)
ACoust	ACOUSTIC, ACOUSTICAL	EQUIP	EQUIPMENT	OH	OVERHEAD
ADJ	ADJUSTABLE	EX, EXIST	EXISTING	OP HND	OPPOSITE HAND
AFF	ABOVE FINISHED FLOOR	EXH	EXHAUST	OP SIM	OPPOSITE SIMILAR
ALUM	ALUMINUM	EXT	EXTERIOR	PL	PLATE
ANOD	ANODIZED	FD	FLOOR DRAIN / FIELD DIMENSION	PLAM	PLASTIC LAMINATED
APPROX	APPROXIMATE	FDN, FDN	FOUNDATION	PLYWD, PLY	PLYWOOD
ARCH	ARCHITECT (URAL)	FH	FULL HEIGHT	PT	PRESSURE TREATED
AUX	AUXILIARY	FIN	FINISH, FINISHED	PTD	PAINTED
BD	BOARD	FIXT, FIX	FIXTURE	RAD, R	RADIUS
BLDG	BUILDING	FLR, FL	FLOOR	RD	ROOF DRAIN
BLK	BLOCK (S)	FLSHG	FLASHING	REF	REFER (ENCE)
BLKG	BLOCKING	FOB	FACE OF BLOCK / BRICK	REFL	REFLECTED
BO	BOTTOM OF	FOB	FACE OF WALL	REFR	REINFORCED (ED) (ING)
BOT	BOTTOM	FR	FIREPROOF, FIREPROOFING	REQD	REQUIRED
CAB	CABINET	FR	FIRE RATED	RM	ROOM
CD	CEILING DIFFUSER	FTG	FOOTING	RO	ROUGH OPENING
CEM	CEMENT	GA	GAUGE	S	SOUTH
CJ	CONTROL JOINT	GALV	GALVANIZED	SCH	SCHEDULE
CL	CENTER LINE	GC	GENERAL CONTRACTOR	SIM	SIMILAR
CLG	CEILING	GL	GLASS	SPEC	SPECIFICATION
CLOS, CLO	CLOSET	GR	GRADE	SPR	SPRINKLER
CLR	CLEAR	GWB	GYPSUM WALL BOARD	SS	SOLID SURFACE
CMU	CONCRETE MASONRY UNIT	HC	HANDICAPPED	SSTL	STAINLESS STEEL
CO	CASED OPENING	HM	HOLLOW METAL	STL	STEEL
COL	COLUMN	HOR	HORIZONTAL	STOR	STORAGE
CONC	CONCRETE	HT	HEIGHT	STRUCT, STR	STRUCTURE (AL)
CONST	CONSTRUCTION	HVAC	HEAT, VENT., AIR COND.	SUSP	SUSPENDED
CONT, CTS	CONTINUOUS	INCL	INCLUDE (ED) (ING)	TEL	TELEPHONE
CORR	CORRIDOR	INSUL	INSULATION	TEMP	TEMPERED
CR	CEILING REGISTER	INT	INTERIOR	THK	THICKNESS
DET	DETAIL	JC	JANITOR'S CLOSET	TLT	TOILET
DF	DRINKING FOUNTAIN	JT	JOINT	TOC	TOP OF CONCRETE
DIA	DIAMETER	LAM	LAMINATE	TOS	TOP OF STEEL
DIAG	DIAGONAL	LAV	LAVATORY	TRANS	TRANSFORMER
DIM	DIMENSION	LBS	POUNDS	TYP	TYPICAL
DISP	DISPENSER	LDR	LEADER	UL	UNDERWRITER'S LABORATORIES
DMB	DRY MARKER BOARD	MATL	MATERIAL	UNO	UNLESS NOTED OTHERWISE
DN	DOWN	MAX	MAXIMUM	VCT	VINYL COMPOSITION TILE
DWG	DRAWING	MECH	MECHANICAL	VERT	VERTICAL
E	EAST	MFR, MFD, MFG	MANUFACTURE (ER) (ED) (ING)	VEST	VESTIBULE
EA	EACH	MIN	MINIMUM	VIF	VERIFY IN FIELD
EJ	EXPANSION JOINT	MO	MASONRY OPENING	W	WEST
EL	ELEVATION	MTL	METAL	WI, W/O	WITH, WITHOUT
ELECT, ELEC	ELECTRIC, ELECTRICAL	N	NORTH	WC	WATER CLOSET
ELEV	ELEVATOR	NC	NOT IN CONTRACT	WD	WOOD
EOD	EDGE OF (ROOF) DECK	NO, #	NUMBER	WVF	WELDED WIRE FABRIC
		NOM	NOMINAL	WWM	WELDED WIRE MESH

FILL PATTERNS

MATERIALS KEY



GENERAL NOTES:

- DRAWINGS INDICATE LOCATION, DIMENSIONS, REFERENCE AND TYPICAL DETAILS FOR CONSTRUCTION. MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT NECESSARY FOR PROPER CONSTRUCTION OF ANY PART OF THE WORK SHALL BE INCLUDED AS IF THEY WERE INDICATED IN THE DRAWINGS. FOR CONDITION(S) NOT ILLUSTRATED, NOTIFY ENGINEER FOR CLARIFICATION AND/OR SIMILAR DETAIL.
- WHEN THE SCOPE OF WORK INCLUDES ALTERATION TO EXISTING FACILITIES, WORK WHICH IS OBVIOUSLY REQUIRED TO BE PERFORMED OR IS OBVIOUSLY NEEDED TO PROVIDE A COMPLETE AND FINISHED PRODUCT WITHIN THE SCOPE OF WORK, BUT WHICH IS NOT SPECIFICALLY INCLUDED ON THE CONTRACT DOCUMENTS, SHALL BE PERFORMED BY THE CONTRACTOR AND BE INCLUDED ON THE BID. CONTRACTOR TO INSPECT AT TIME OF DELIVERY ALL FIXTURES PROVIDED BY OWNER TO INSURE PROPER QUANTITY, THAT ITEMS ARE DEFECT FREE AND MATCH INVOICE. CONTRACTOR TO BE RESPONSIBLE FOR INSTALLATION, WHICH MAY INCLUDE WALL BLOCKING, SHIMMING, ETC.
- DO NOT SCALE DRAWINGS - WRITTEN DIMENSIONS TAKE PRECEDENCE OVER GRAPHIC REPRESENTATION. DETAIL DIMENSIONS TAKE PRECEDENCE OVER LARGER PLAN/SECTIONAL DIMENSIONS. ANY INCONSISTENCY AND/OR CONFLICTING DIMENSIONS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION IMMEDIATELY FOR CLARIFICATION. CONTRACTOR SHALL NOT AT ANY TIME SCALE DIMENSIONS OR ELEMENTS OFF DRAWINGS. PLEASE CONTACT ENGINEER FOR DIMENSION IN QUESTION.

CODE:

USE GROUP U (UTILITY & MISCELLANEOUS)

MINIMUM CONSTRUCTION TYPE TYPE VB

TABULAR VALUE	HEIGHT	FOOTPRINT AREA
(IBC 504.3, 504.4 & 506.2)	1 ST. (40 FT)	5,500 FT ²
FRONTAGE INCREASE		
IBC SECTION 506.2		-4,125 FT ²
100% OPEN PERIMETER		
TOTAL ALLOWED	1 ST. (40 FT)	9,625 FT ²
ACTUAL	1 ST.	APPROX. 650 FT ²

FIRE RATINGS

BUILDING ELEMENT (IBC TABLE 601)	TYPE VB RATINGS IN HOURS
PRIMARY STRUCTURAL FRAME	0
EXTERIOR BEARING WALLS INCLUDING COLUMNS ALONG THE EXTERIOR WALL	0 HOUR (FIRE SEPARATION DISTANCE IS GREATER THAN 10 FEET)
EXTERIOR NON-BEARING WALLS	0
INTERIOR BEARING WALLS	0
FLOOR CONSTRUCTION	0
ROOF CONSTRUCTION	0

INTERIOR FINISHES

NEW INTERIOR FINISHES MUST COMPLY WITH THE FOLLOWING:
IBC TABLE 803.11 USE GROUP U
ROOMS AND ENCLOSED SPACES NO RESTRICTIONS

MEANS OF EGRESS

SPACE	AREA	OCCUPANT LOAD FACTOR	OCCUPANT LOAD
UPPER LEVEL	700 SF	300 SF/PERSON	2
LOWER LEVEL	700 SF	300 SF/PERSON	2
BUILDING TOTAL =			4

THE MAIN LEVEL IS THE ONLY OCCUPIED SPACE WITHIN THE BUILDING THAT REQUIRES MEANS OF EGRESS IN ACCORDANCE WITH CHAPTER 10. SINCE IT HAS AN OCCUPANT LOAD OF LESS THAN 50 PEOPLE AND A COMMON PATH OF TRAVEL OF LESS THAN 75 FEET, IT QUALIFIES AS A SPACE WITH ONE MEANS OF EGRESS IN ACCORDANCE WITH IBC TABLE 1006.3.2(2).

THE LOWER LEVEL IS AN UNOCCUPIED SPACE THAT ONLY REQUIRES ACCESS TO MAINTAIN EQUIPMENT IN ACCORDANCE WITH THE MECHANICAL CODE (IBC 1209). THE PROPOSED ACCESS VIA AN INTERIOR STAIR MEETS THE REQUIREMENTS OF INTERNATIONAL MECHANICAL CODE SECTION 306 FOR ACCESS.

MINIMUM # OF EXITS: SINCE THE OCCUPANT LOAD IS LESS THAN 49 PEOPLE, ONLY A SINGLE MEANS OF EGRESS IS REQUIRED.
MAX TRAVEL DISTANCE: 200 FEET.

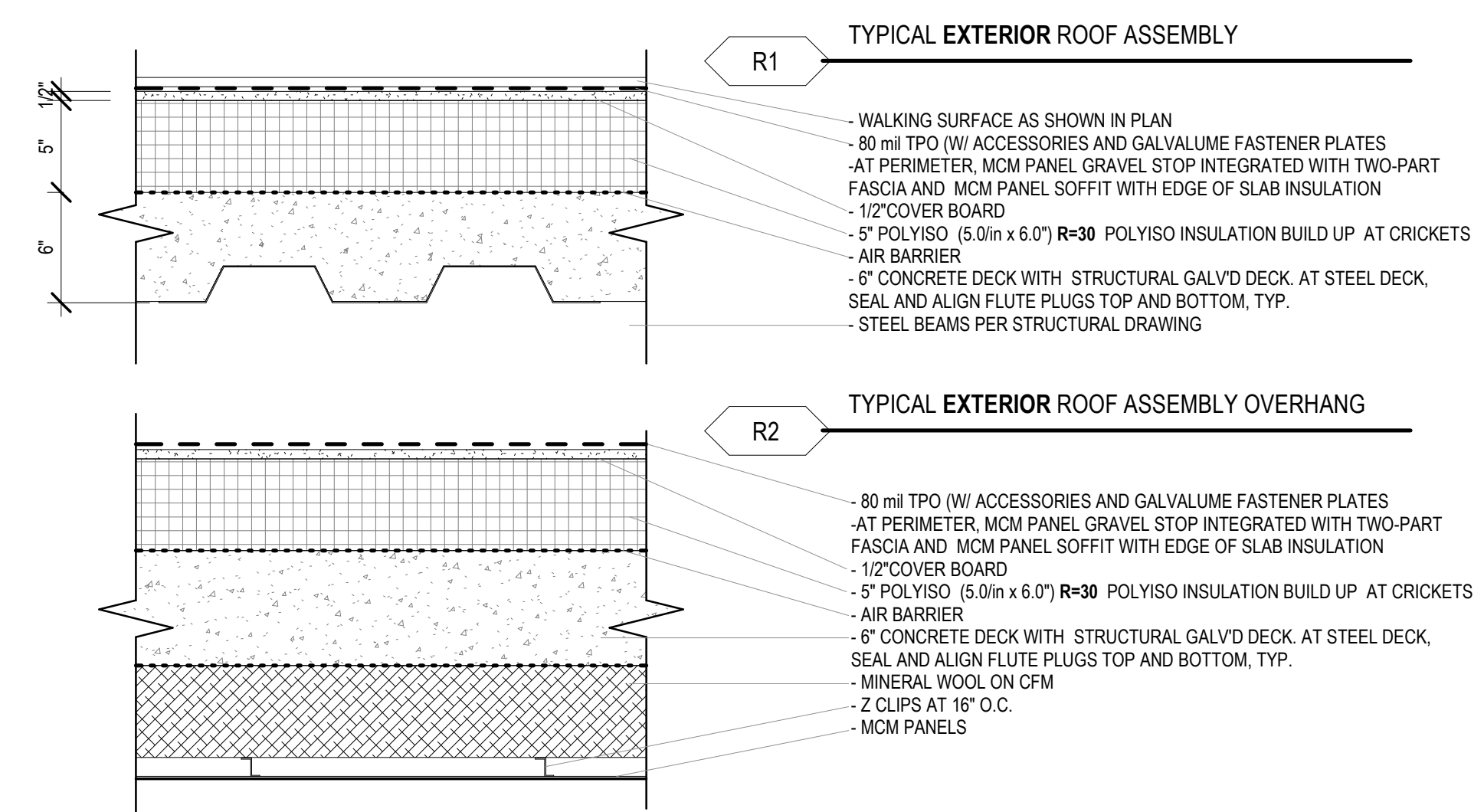
FIRE PROTECTION SYSTEMS
IBC CHAPTER 9 AND THE MASSACHUSETTS AMENDMENTS DO NOT REQUIRE FIRE PROTECTION SYSTEMS FOR USE GROUP U BUILDINGS.

ENERGY CONSERVATION

THE PROJECT IS SUBJECT TO THE PROVISIONS OF THE 2018 INTERNATIONAL ENERGY CONSERVATION CODE OR ANSI/ASHRAE/IESNA 90.1 WITH MASSACHUSETTS AMENDMENTS (MASSACHUSETTS ENERGY CODE). THE CITY OF FRAMINGHAM HAS ALSO ADOPTED THE STRECH ENERGY CODE (780 CMR APPENDIX AA) HOWEVER IT DOES NOT APPLY TO BUILDINGS THAT ARE LESS THAN 100,000 FT² IN AREA AND THEREFORE DOES NOT APPLY TO THIS PROJECT (780 CMR AA103.2)

ACCESSIBILITY FOR PERSONS WITH DISABILITIES:

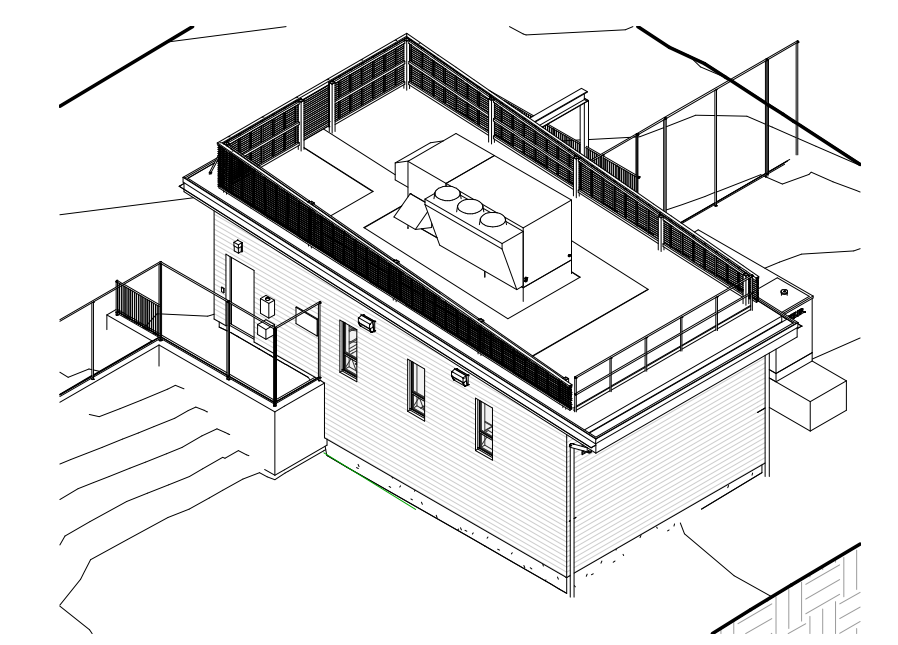
MASSACHUSETTS ARCHITECTURAL ACCESS BOARD REGULATIONS
SINCE THE BUILDING WILL NOT BE OPEN TO THE PUBLIC, IT IS NOT REQUIRED TO COMPLY WITH THE REGULATIONS OF THE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (521 CMR SECTION 11.1).
AMERICAN WITH DISABILITIES ACT
THE ADA GUIDELINES ARE NOT ENFORCED BY THE COMMONWEALTH OF MASSACHUSETTS. THEY CAN ONLY BE ENFORCED THROUGH A CIVIL LAWSUIT OR COMPLAINT FILED WITH THE US DEPARTMENT OF JUSTICE. THE ADA DOES REQUIRE THAT EMPLOYEE WORK SPACES ARE DESIGNED TO ALLOW EMPLOYEES TO APPROACH, ENTER, AND EXIT THE WORK AREA (ADA SECTION 203.9). HOWEVER, THE WORK AREAS ARE NOT REQUIRED TO BE PROVIDED WITH ACCESSIBLE FEATURES (I.E. WORK SINKS, SHELVES, ETC). SPACES FREQUENTED ONLY SERVICE PERSONNEL FOR MAINTENANCE, REPAIR OR OCCASIONAL MONITORING OF EQUIPMENT SHALL NOT BE REQUIRED TO COMPLY WITH THESE REQUIREMENTS OR TO BE ON AN ACCESSIBLE ROUTE (ADA SECTION 203.5).



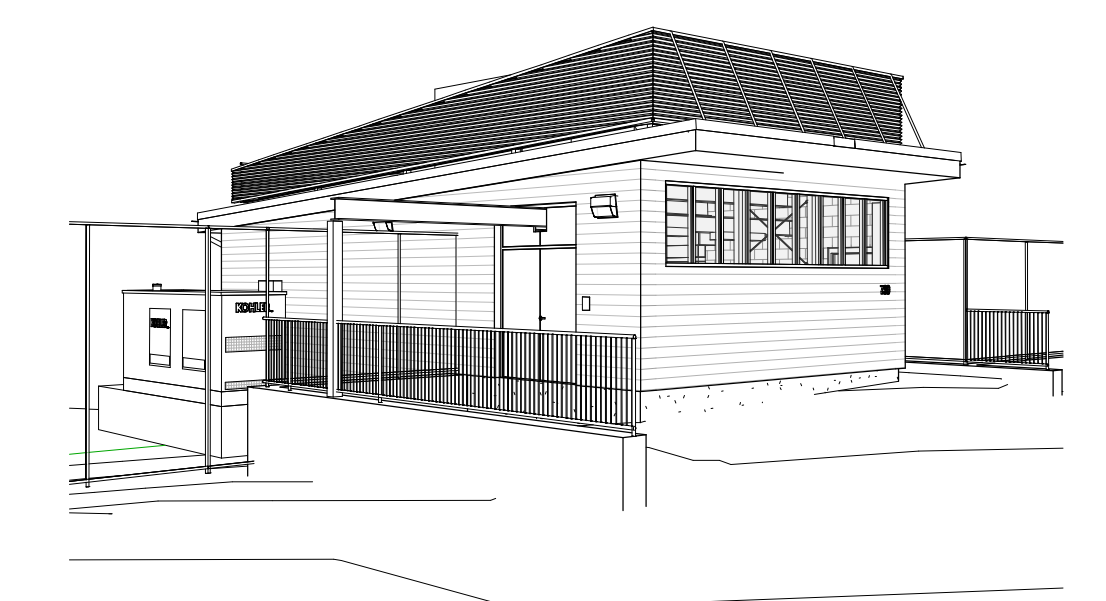
ROOF ASSEMBLY



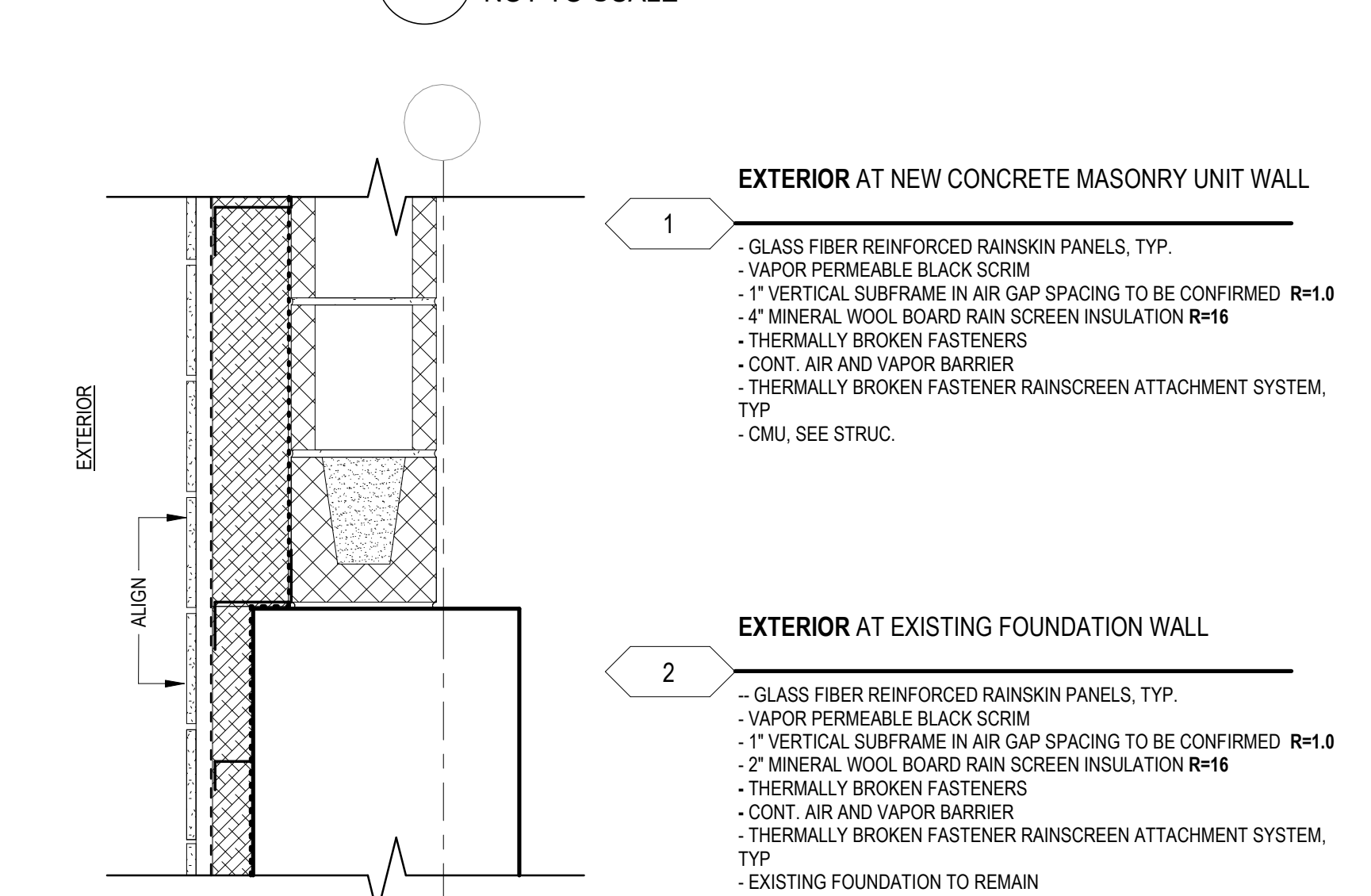
3 VIEW FROM WORCESTER RD NOT TO SCALE



2 SW BIRD'S EYE VIEW NOT TO SCALE



1 VIEW TOWARD SW NOT TO SCALE

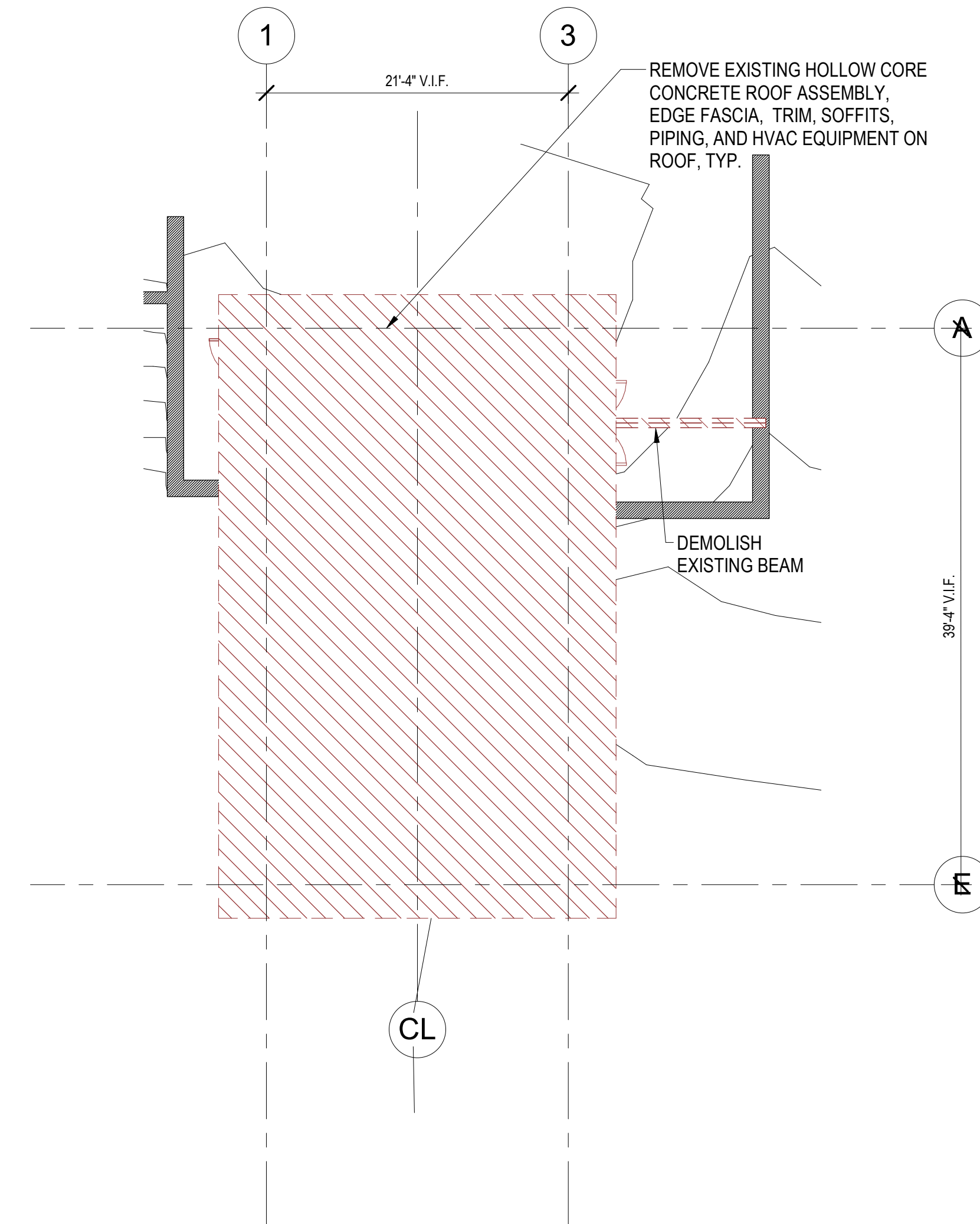


WALL TYPES

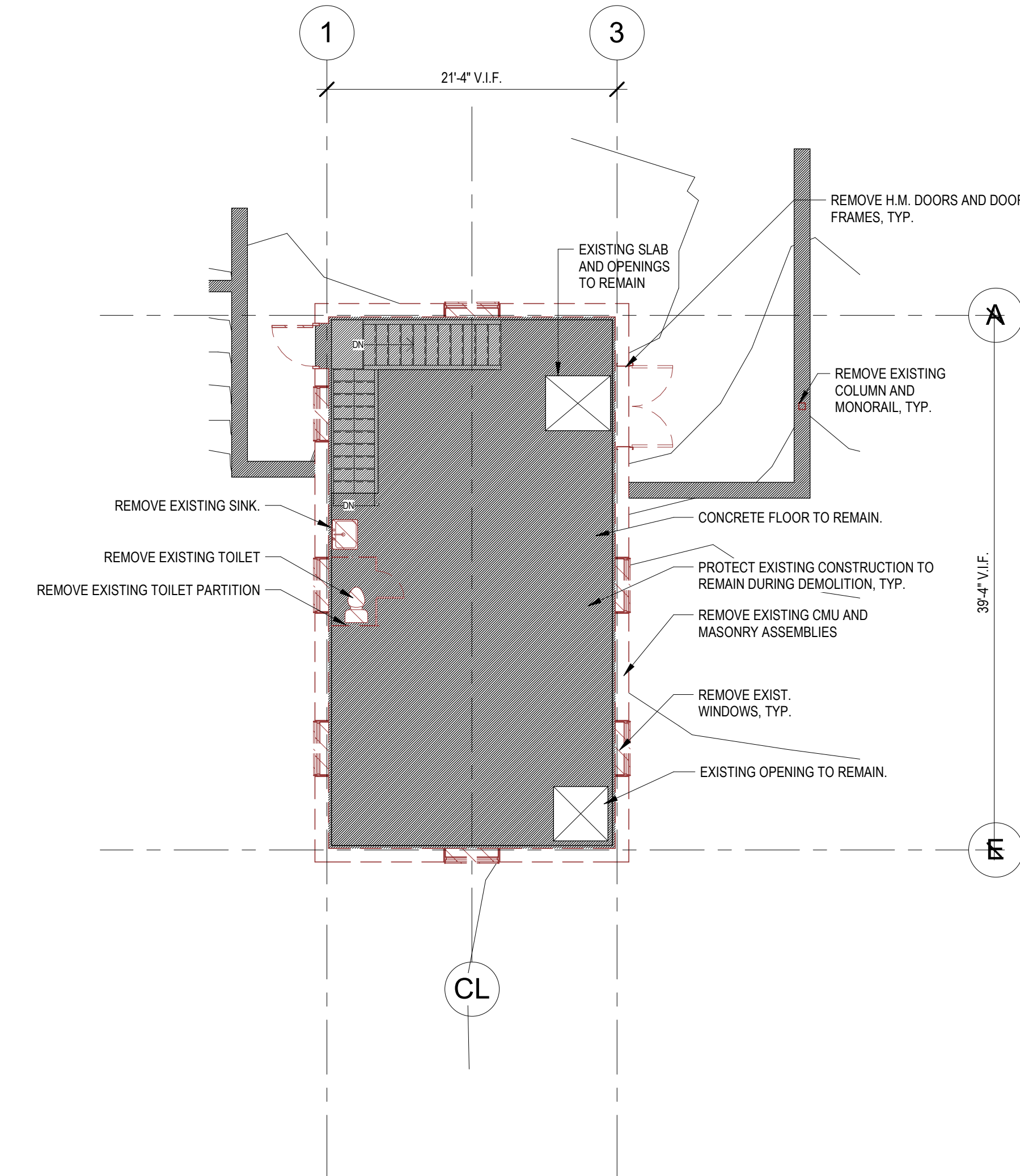
DRAWN BY: ALK		REGISTERED PROFESSIONAL	PREPARED BY: DSK	SUBCONSULTANT: DSK Dewing Schmid Kearns ARCHITECTS + PLANNERS	SCALE: As indicated	TITLE: Worcester Road Sewer Pumping Station Replacement	DSK JOB NO. 20030.00
DESIGNED BY: DSK		FOR REVIEW ONLY		BETA www.BETA-inc.com		GENERAL NOTES, ABBR., SYMBOLS AND 3D VIEWS	ISSUE DATE AUGUST 2022
CHECKED BY: MPS				30 Monument Square Suite 200B Concord, MA 01742 978.371.7500			SHEET NO. AG-01
NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS			

P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWG\601-REVIT\FAMILIES\TITLEBLOCKS\KDC_Arch D 24x36 Vertical Title - BETA

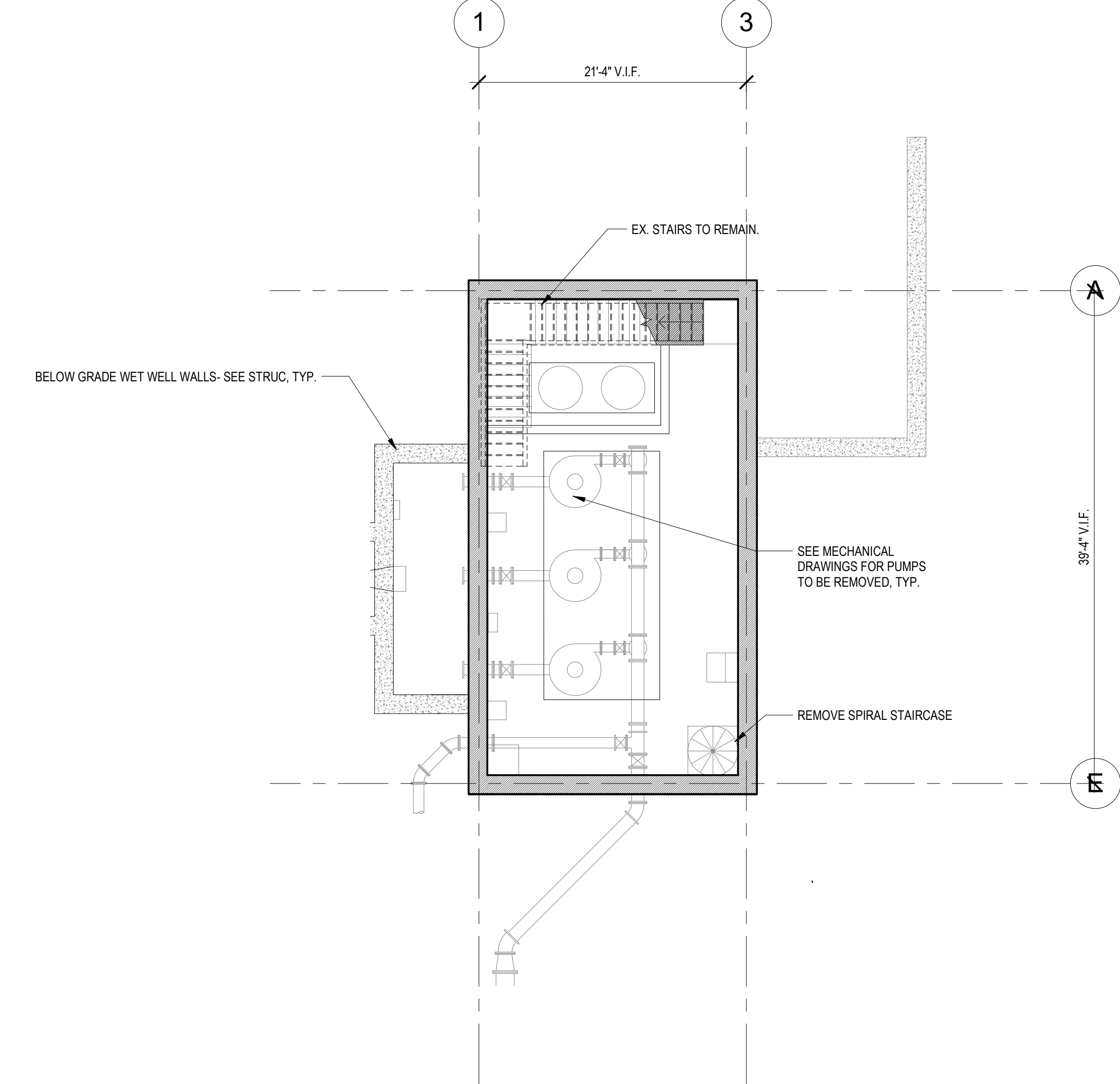
DEMOLITION LEGEND			
WINDOW - TO BE DEMOLISHED		WALL - EXISTING TO REMAIN	
DOOR - TO BE DEMOLISHED		WALL - TO BE DEMOLISHED	



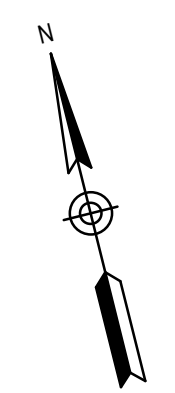
3 ROOF DEMOLITION PLAN
1/8" = 1'-0"



2 02 UPPER LEVEL DEMO PLAN
1/8" = 1'-0"



1 LOWER LEVEL DEMOLITION PLAN
1/8" = 1'-0"



P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWGS\601-REV\T\FAMILIES\TITLEBLOCKS\KDC_Arch D 24x36 Vertical Title - BETA

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
ALK

DESIGNED BY:
DSK

CHECKED BY:
MPS

REGISTERED PROFESSIONAL

FOR REVIEW ONLY



SUBCONSULTANT

DSK Dewing Schmid Kearns
ARCHITECTS + PLANNERS

30 Monument Square
Suite 200B
Concord, MA
01742
978.371.7500

280 Elm Street
South Dartmouth, MA
02748
508.999.0440

SCALE

As indicated

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE

Worcester Road Sewer Pumping Station Replacement
DEMOLITION PLANS

DSK JOB NO. 20030.00

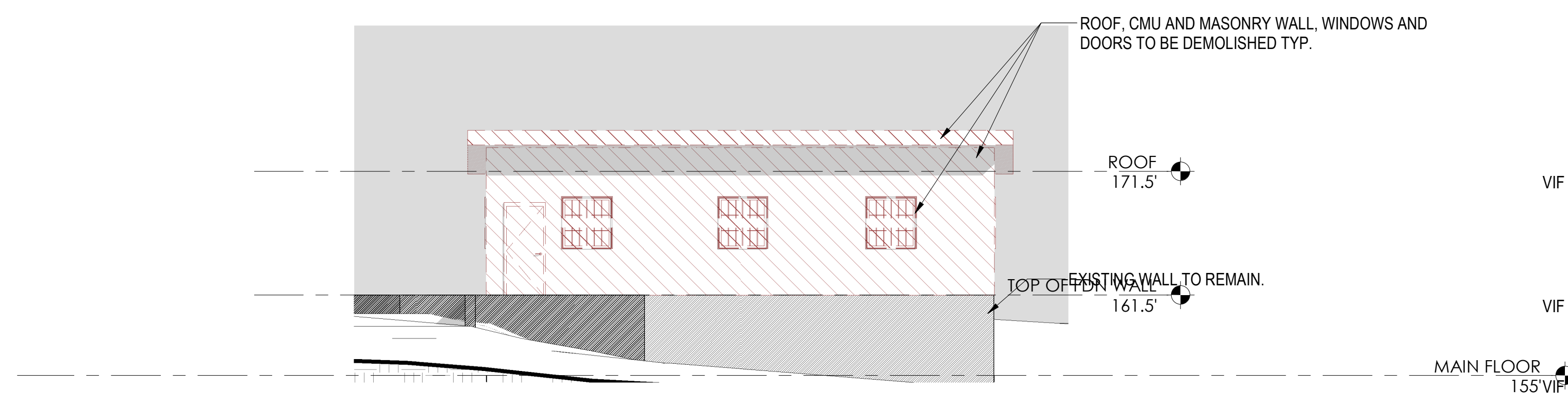
ISSUE DATE AUGUST 2022

SHEET NO. **AD-01**

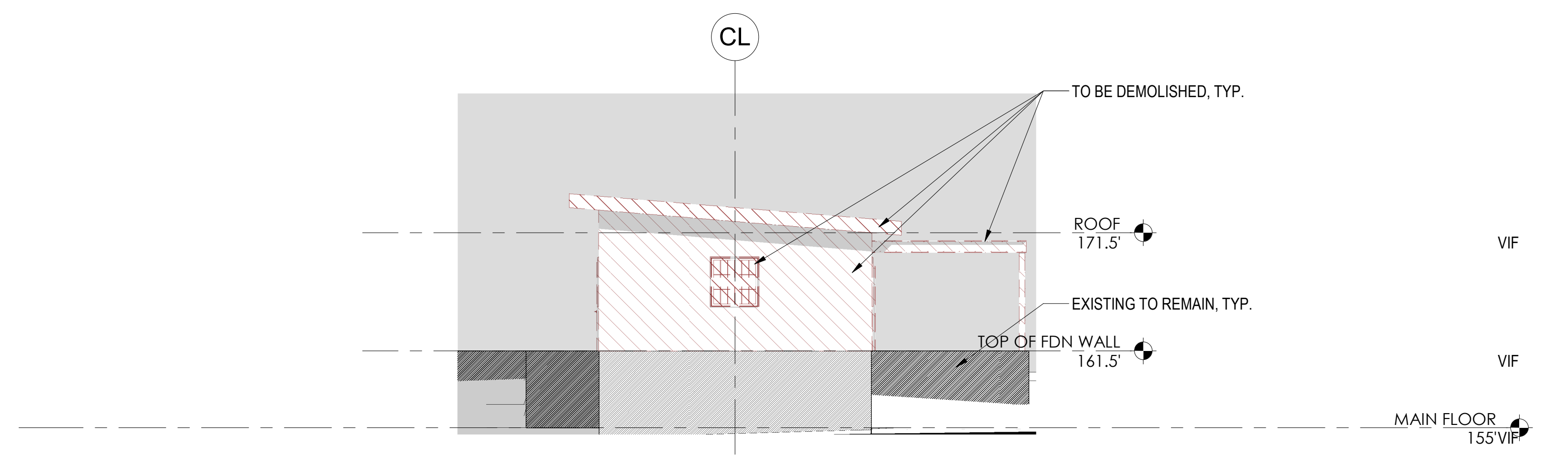
DEMOLITION LEGEND			
WINDOW - TO BE DEMOLISHED		WALL - EXISTING TO REMAIN	
DOOR - TO BE DEMOLISHED		WALL - TO BE DEMOLISHED	

GENERAL NOTES - DEMO:

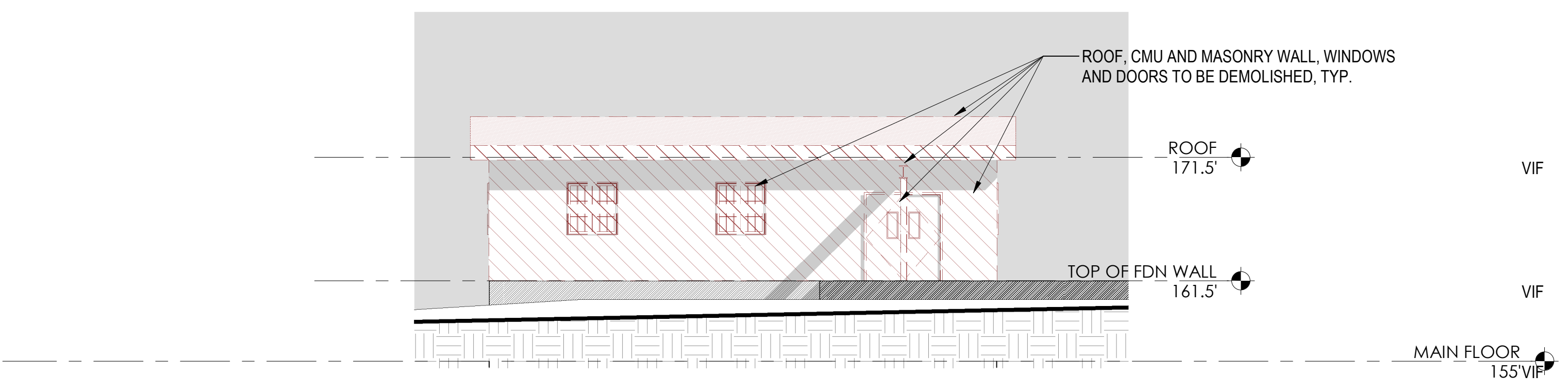
- REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.
- REFER TO STRUCTURAL DRAWING FOR MORE INFO ON DEMO SCOPE.



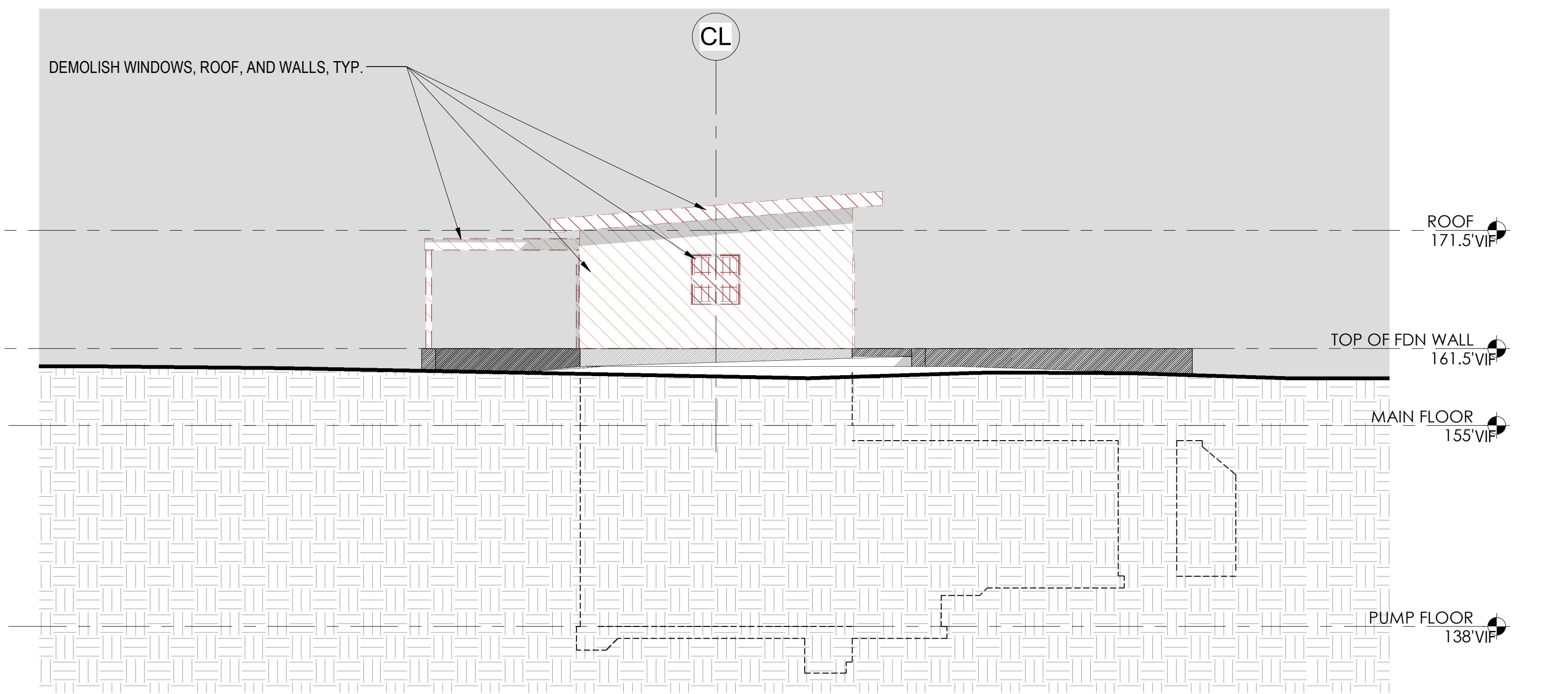
4 WEST DEMOLITION ELEVATION
1/8" = 1'-0"



3 SOUTH DEMOLITION ELEVATION
1/8" = 1'-0"



2 EAST DEMOLITION ELEVATION
1/8" = 1'-0"



1 NORTH DEMOLITION ELEVATION
1/8" = 1'-0"

P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWG\601-REV\IT\FAMILIES\TITLEBLOCKS\KDC_Arch D 24x36 Vertical Title - BETA

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
ALK
DESIGNED BY:
DSK
CHECKED BY:
MPS

REGISTERED PROFESSIONAL
FOR REVIEW ONLY



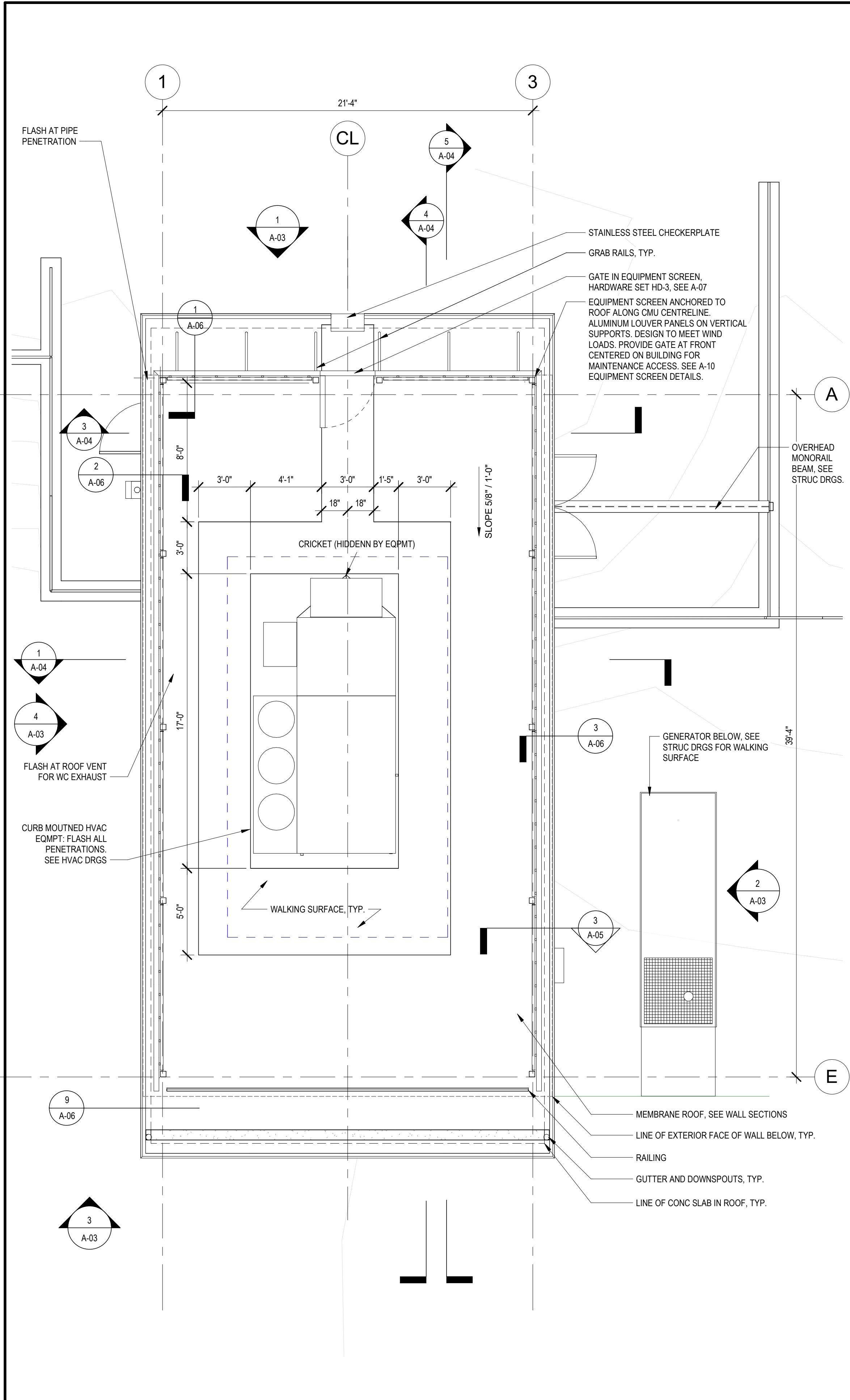
SUBCONSULTANT
DSK Dewing Schmid Kearns
ARCHITECTS + PLANNERS
30 Monument Square
Suite 200B
Concord, MA
01742
978.371.7500
280 Elm Street
South Dartmouth, MA
02748
508.999.0440

SCALE
As indicated
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

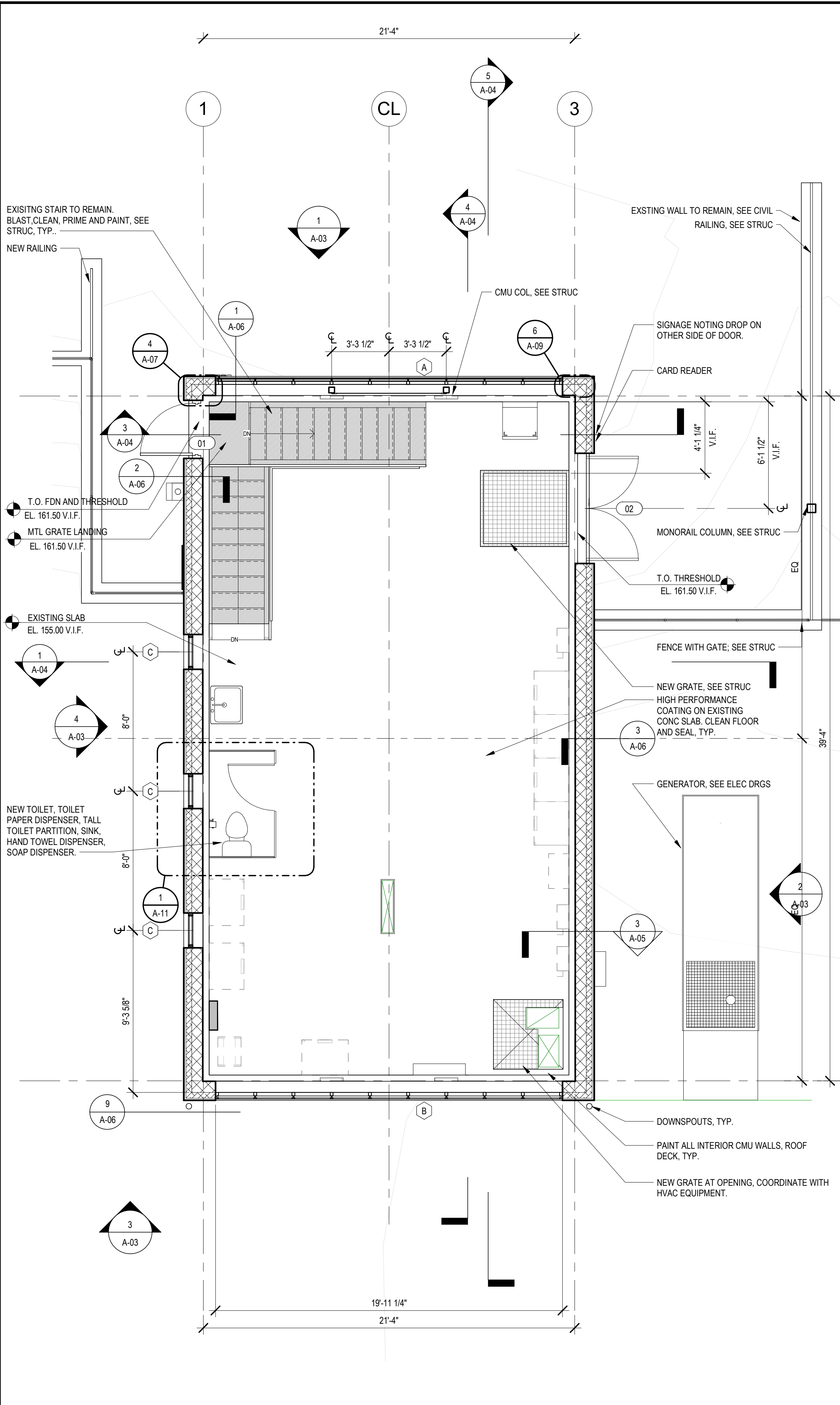
TITLE
Worcester Road Sewer Pumping Station Replacement
WALL DEMOLITION EXTERIOR ELEVATIONS

DSK JOB NO. 20030.00
ISSUE DATE AUGUST 2022
SHEET NO. **AD-02**

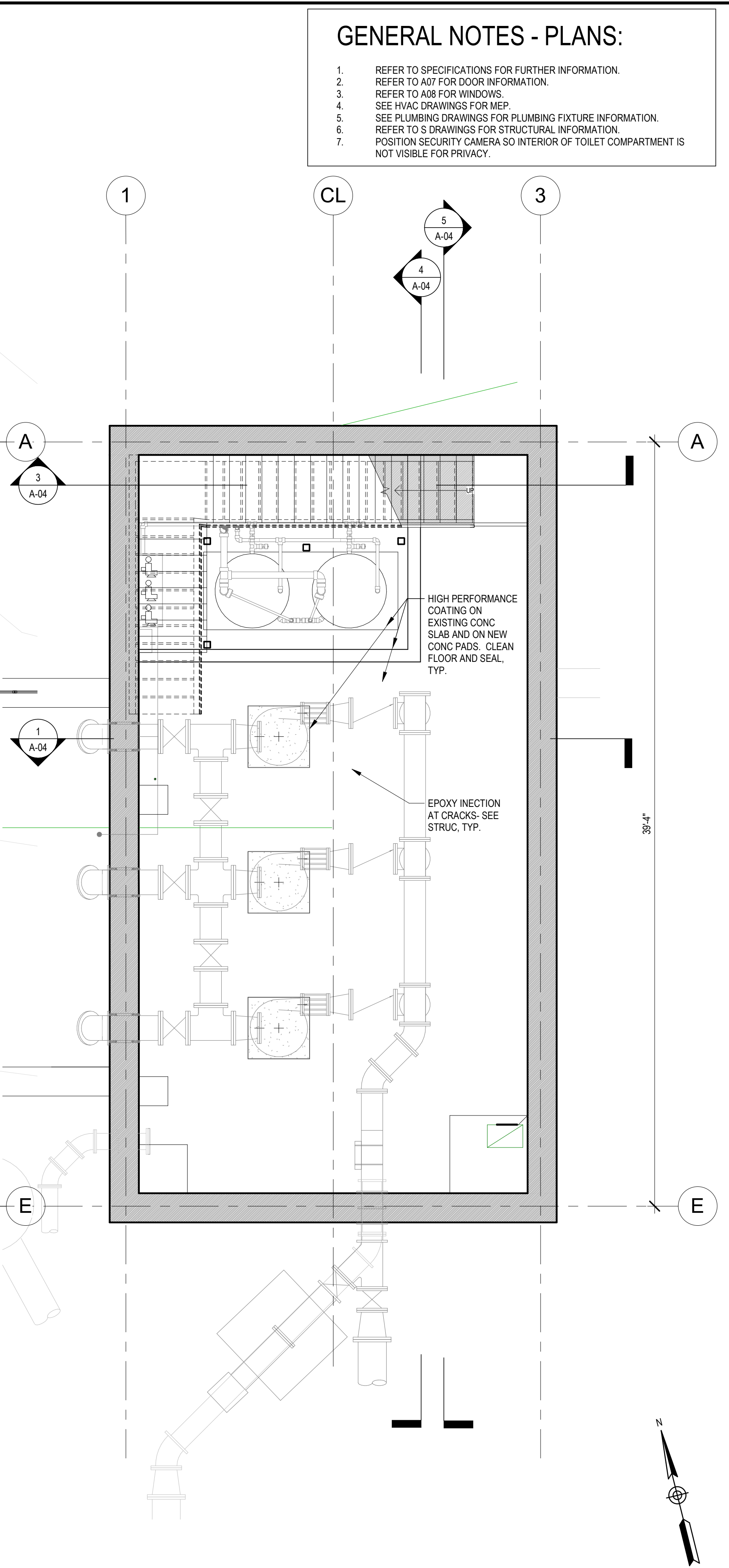
- GENERAL NOTES - PLANS:**
- REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.
 - REFER TO A07 FOR DOOR INFORMATION.
 - REFER TO A08 FOR WINDOWS.
 - SEE HVAC DRAWINGS FOR MEP.
 - SEE PLUMBING DRAWINGS FOR PLUMBING FIXTURE INFORMATION.
 - REFER TO S DRAWINGS FOR STRUCTURAL INFORMATION.
 - POSITION SECURITY CAMERA SO INTERIOR OF TOILET COMPARTMENT IS NOT VISIBLE FOR PRIVACY.



3 ROOF PLAN
1/4" = 1'-0"



2 02 UPPER LEVEL FLOOR PLAN
1/4" = 1'-0"



1 00 LOWER LEVEL FLOOR PLAN
1/4" = 1'-0"

P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWG\601-REV\IT\FAMILIES\TITLEBLOCKS\KDC_Arch D 24x36 Vertical Title - BETA

DRAWN BY:
ALK
DESIGNED BY:
DSK
CHECKED BY:
MPS

REGISTERED PROFESSIONAL
FOR REVIEW ONLY



SUBCONSULTANT
DSK Dewing Schmid Kearns
ARCHITECTS + PLANNERS
30 Monument Square Suite 200B Concord, MA 01742 978.371.7500
280 Elm Street South Dartmouth, MA 02748 508.999.0440

SCALE
1/4" = 1'-0"
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

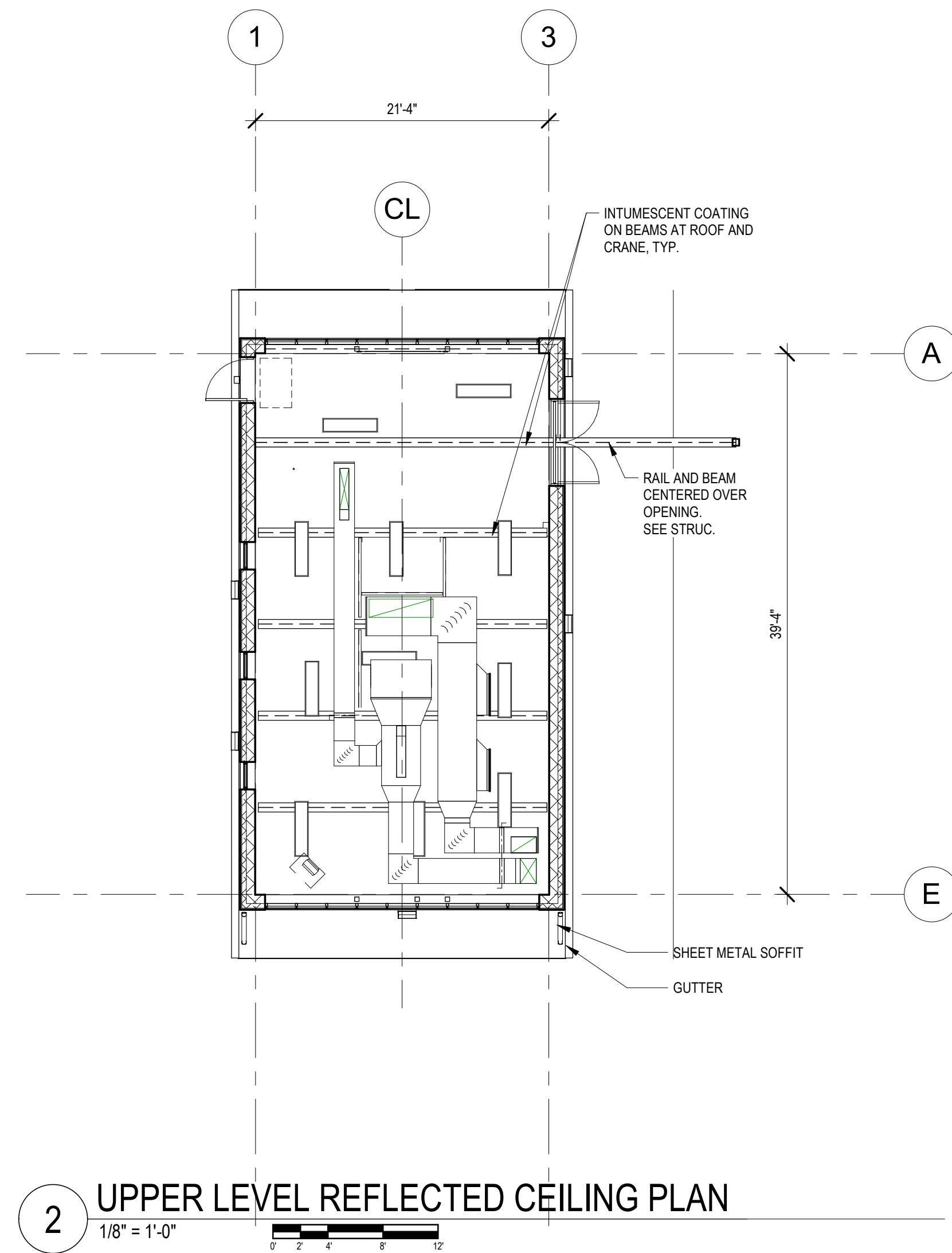
TITLE
FLOOR PLANS

Worcester Road Sewer Pumping Station Replacement

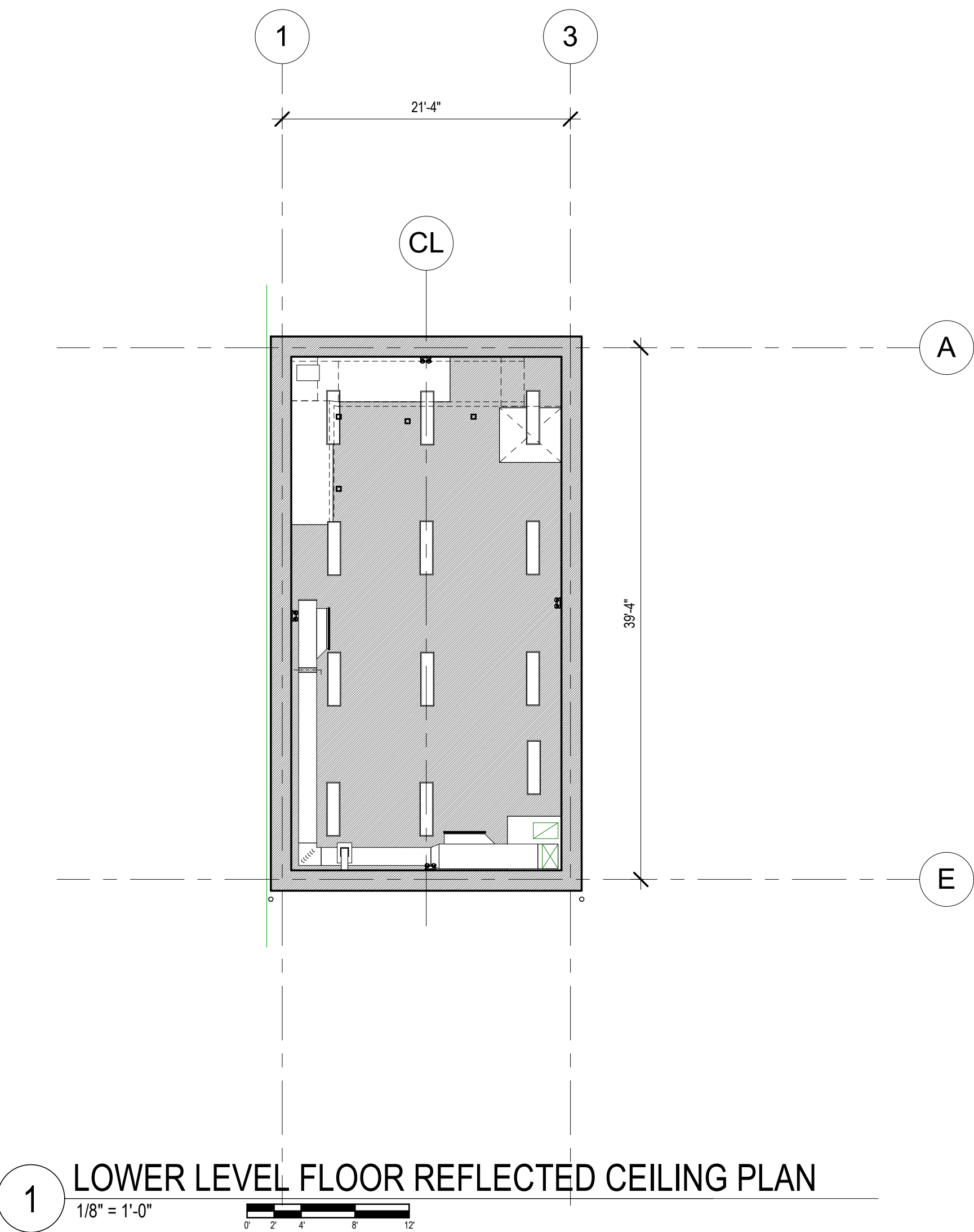
DSK JOB NO. 20030.00
ISSUE DATE AUGUST 2022
SHEET NO. **A-01**

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

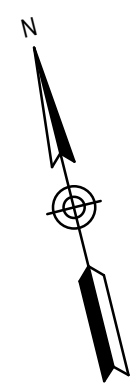
- GENERAL NOTES - RCPs:**
1. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.
 2. REFER TO A07 FOR DOOR INFORMATION.
 3. REFER TO A08 FOR WINDOWS.
 4. SEE HVAC DRAWINGS FOR MEP.
 5. SEE PLUMBING DRAWINGS FOR PLUMBING FIXTURE INFORMATION.
 6. REFER TO S DRAWINGS FOR STRUCTURAL INFORMATION.



2 UPPER LEVEL REFLECTED CEILING PLAN
1/8" = 1'-0"



1 LOWER LEVEL FLOOR REFLECTED CEILING PLAN
1/8" = 1'-0"



P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWGS\601-REV\IT\FAMILIES\TITLEBLOCKS\KDC_Arch D 24x36 Vertical Title - BETA

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
ALK

DESIGNED BY:
DSK

CHECKED BY:
MPS

REGISTERED PROFESSIONAL

FOR REVIEW ONLY



SUBCONSULTANT

DSK Dewing Schmid Kearns ARCHITECTS + PLANNERS

30 Monument Square Suite 200B Concord, MA 01742 978.371.7500

280 Elm Street South Dartmouth, MA 02748 508.999.0440

SCALE

As indicated

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

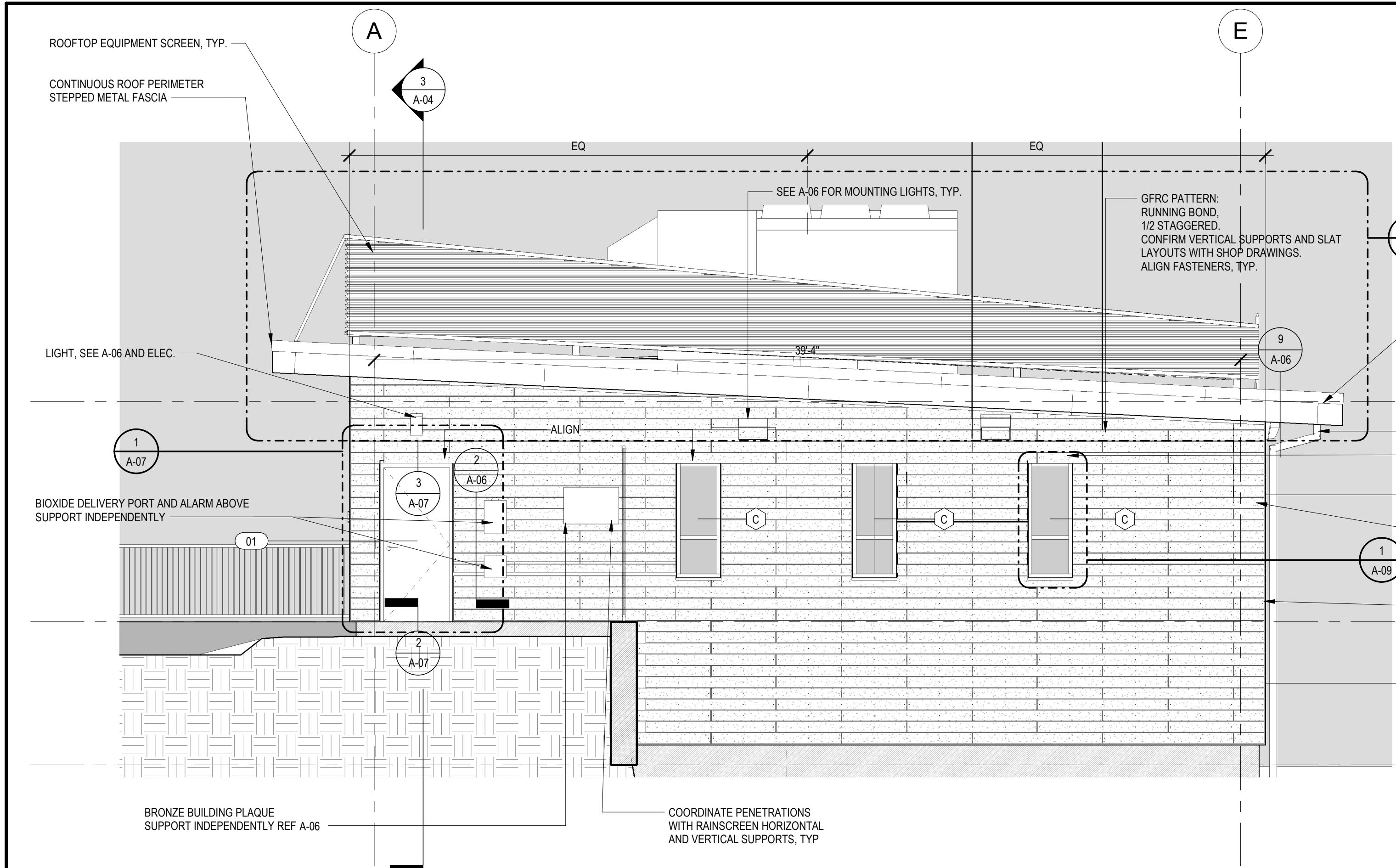
TITLE

Worcester Road Sewer Pumping Station Replacement REFLECTED CEILING PLANS

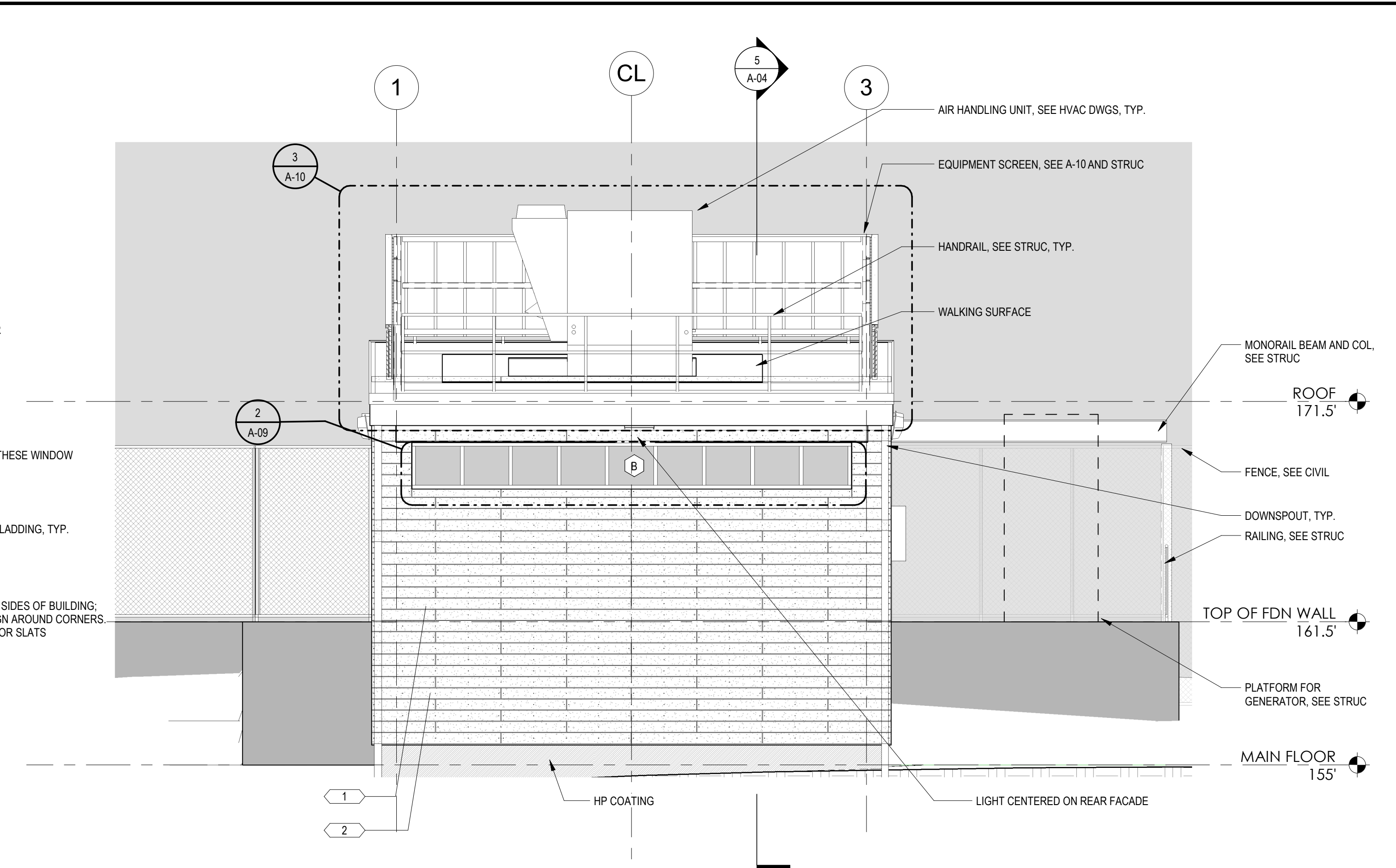
DSK JOB NO. 20030.00

ISSUE DATE AUGUST 2022

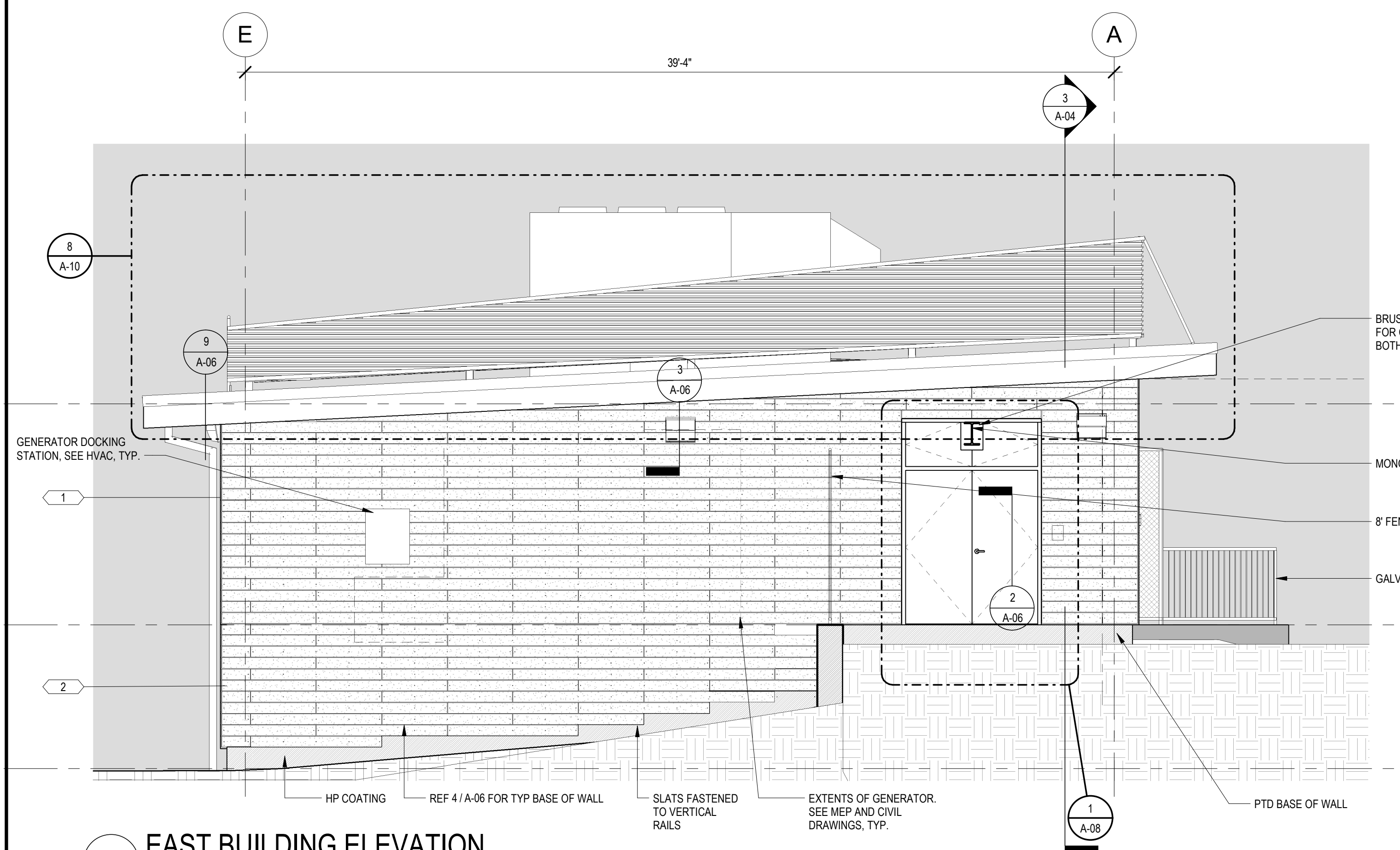
SHEET NO. A-02



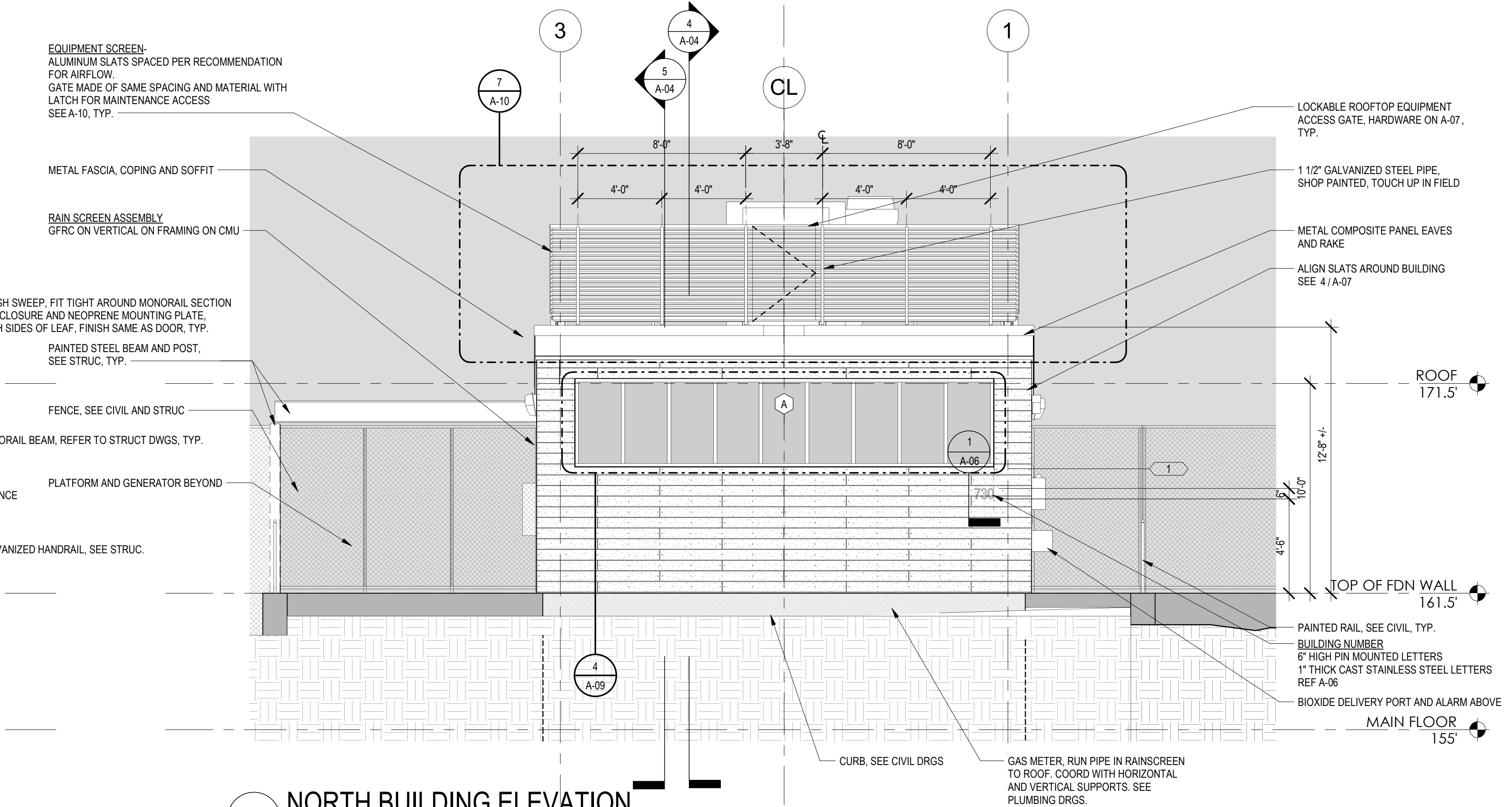
4 WEST BUILDING ELEVATION
1/4" = 1'-0"



3 SOUTH BUILDING ELEVATION
1/4" = 1'-0"



2 EAST BUILDING ELEVATION
1/4" = 1'-0"



1 NORTH BUILDING ELEVATION
1/4" = 1'-0"

P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWGS\601-REV\T\FAMILIES\TITLEBLOCKS\601-Rev\Title - BETA

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
ALK

DESIGNED BY:
DSK

CHECKED BY:
MPS

REGISTERED PROFESSIONAL PREPARED BY

FOR REVIEW ONLY

www.BETA-inc.com

SUBCONSULTANT

DSK Dewing Schmid Kearns
ARCHITECTS + PLANNERS

30 Monument Square Suite 200B
Concord, MA 01742
978.371.7500

280 Elm Street
South Dartmouth, MA 02748
508.999.0440

SCALE

1/4" = 1'-0"

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE

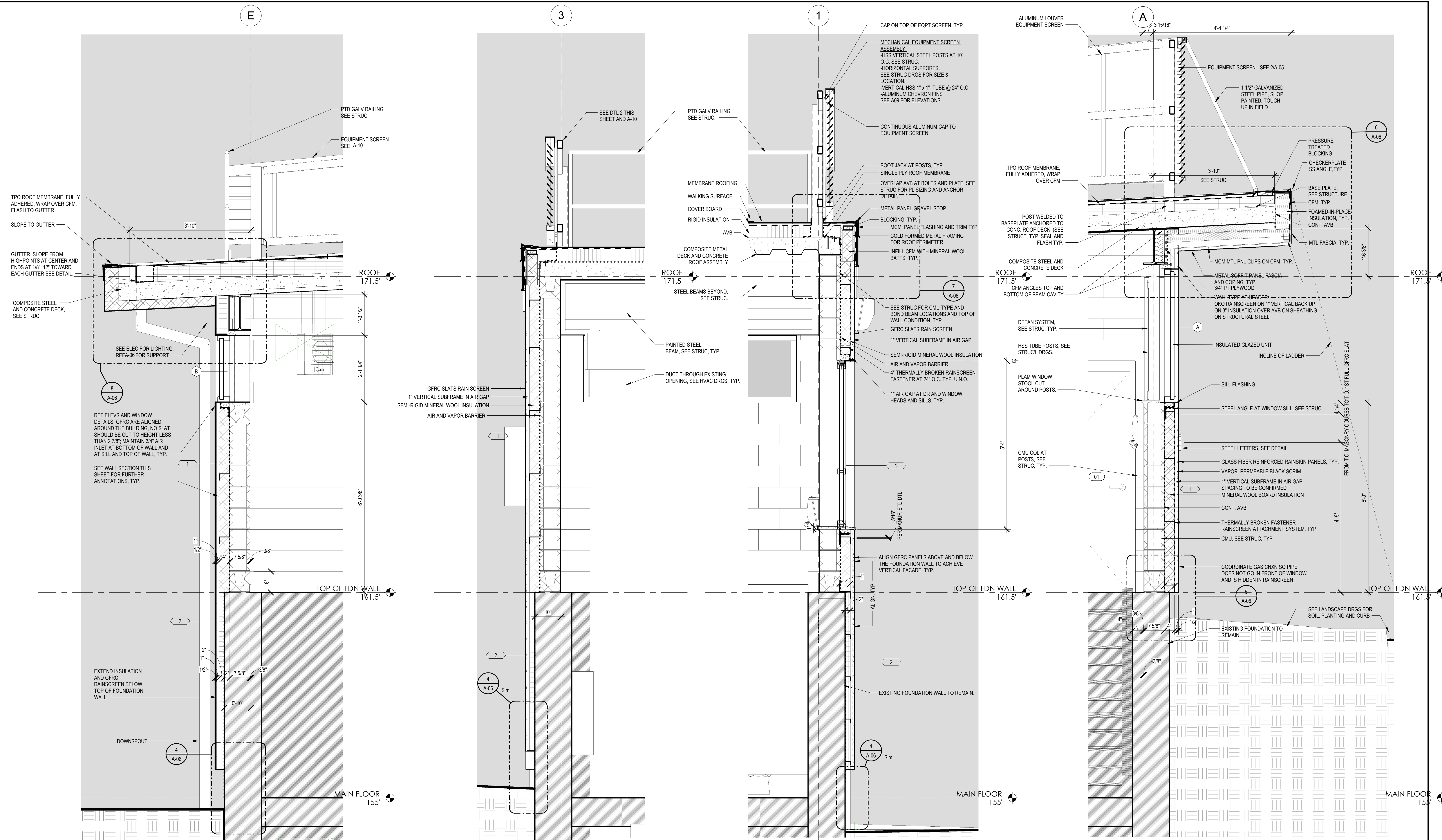
Worcester Road Sewer Pumping Station Replacement
EXTERIOR BUILDING ELEVATIONS

DSK JOB NO. 20030.00

ISSUE DATE AUGUST 2022

SHEET NO. **A-03**

P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWG\600-NPS-TITLEBLOCKS\KDC_Arch D 24x36 Vertical Title - BETA



4 WALL SECTION SOUTH WALL (REAR OF BLDG)
3/4" = 1'-0"

3 WALL SECTION AT EAST WALL LOOKING SOUTH
3/4" = 1'-0"

2 WALL SECTION WEST WALL LOOKING SOUTH
3/4" = 1'-0"

1 WALL SECTION AT NORTH (FRONT) OF BUILDING
3/4" = 1'-0"

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
ALK
DESIGNED BY:
DSK
CHECKED BY:
MPS

REGISTERED PROFESSIONAL PREPARED BY

FOR REVIEW ONLY

www.BETA-inc.com

SUBCONSULTANT

DSK Dewing Schmid Kearns
ARCHITECTS + PLANNERS

30 Monument Square Suite 200B Concord, MA 01742 978.371.7500
280 Elm Street South Dartmouth, MA 02748 508.999.0440

SCALE

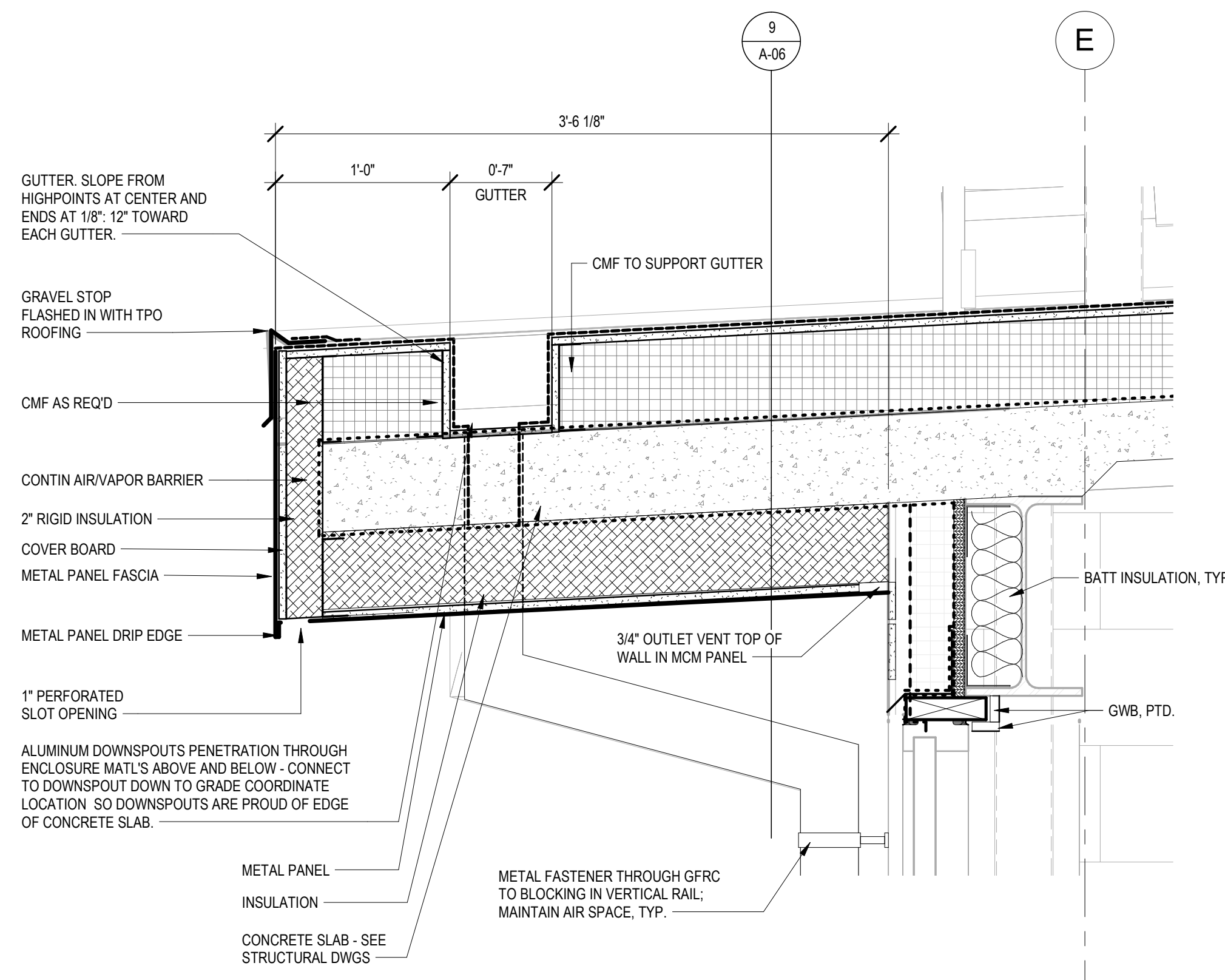
3/4" = 1'-0"

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

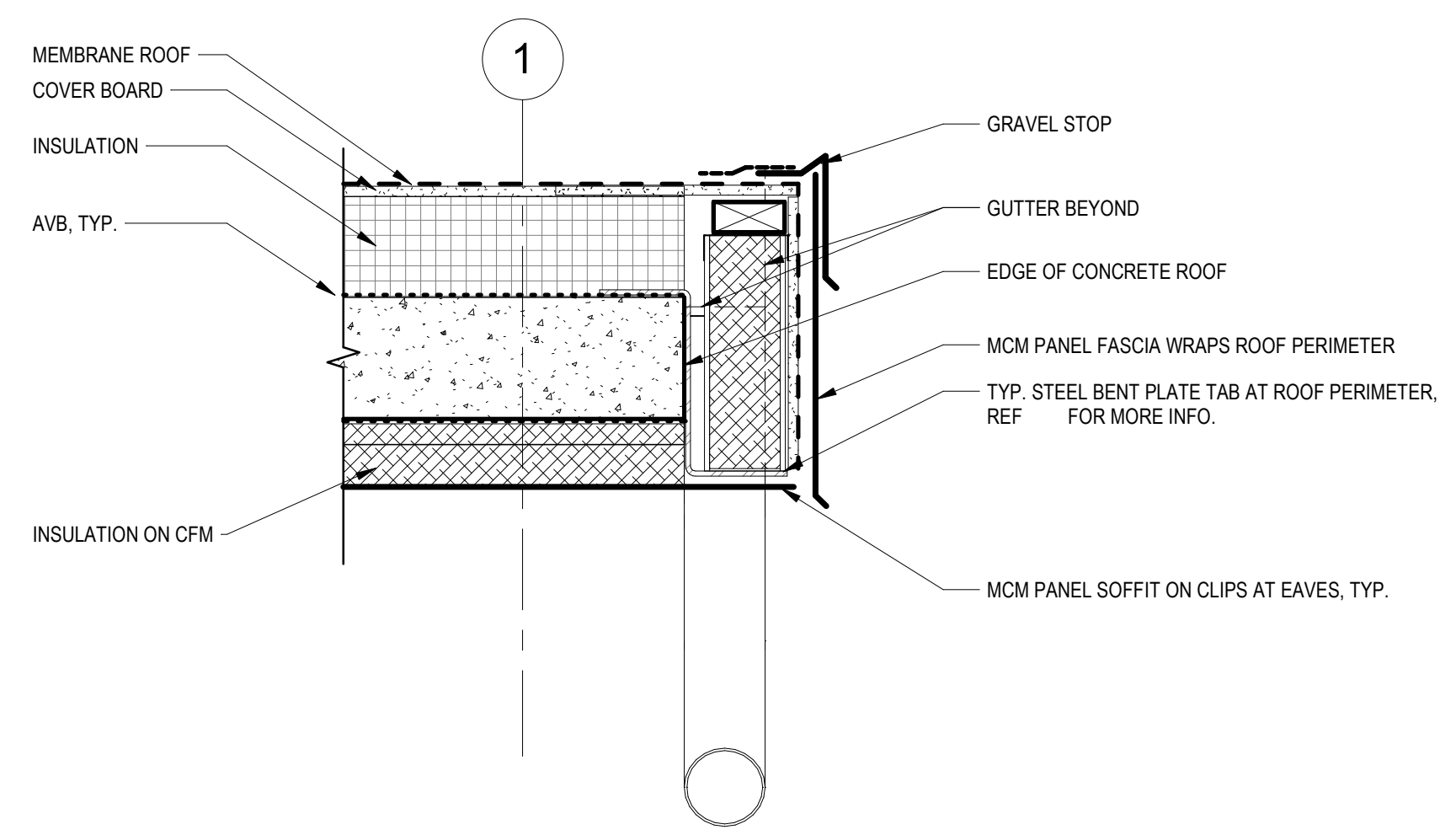
TITLE

Worcester Road Sewer Pumping Station Replacement
WALL SECTIONS AND EXTERIOR DETAILS

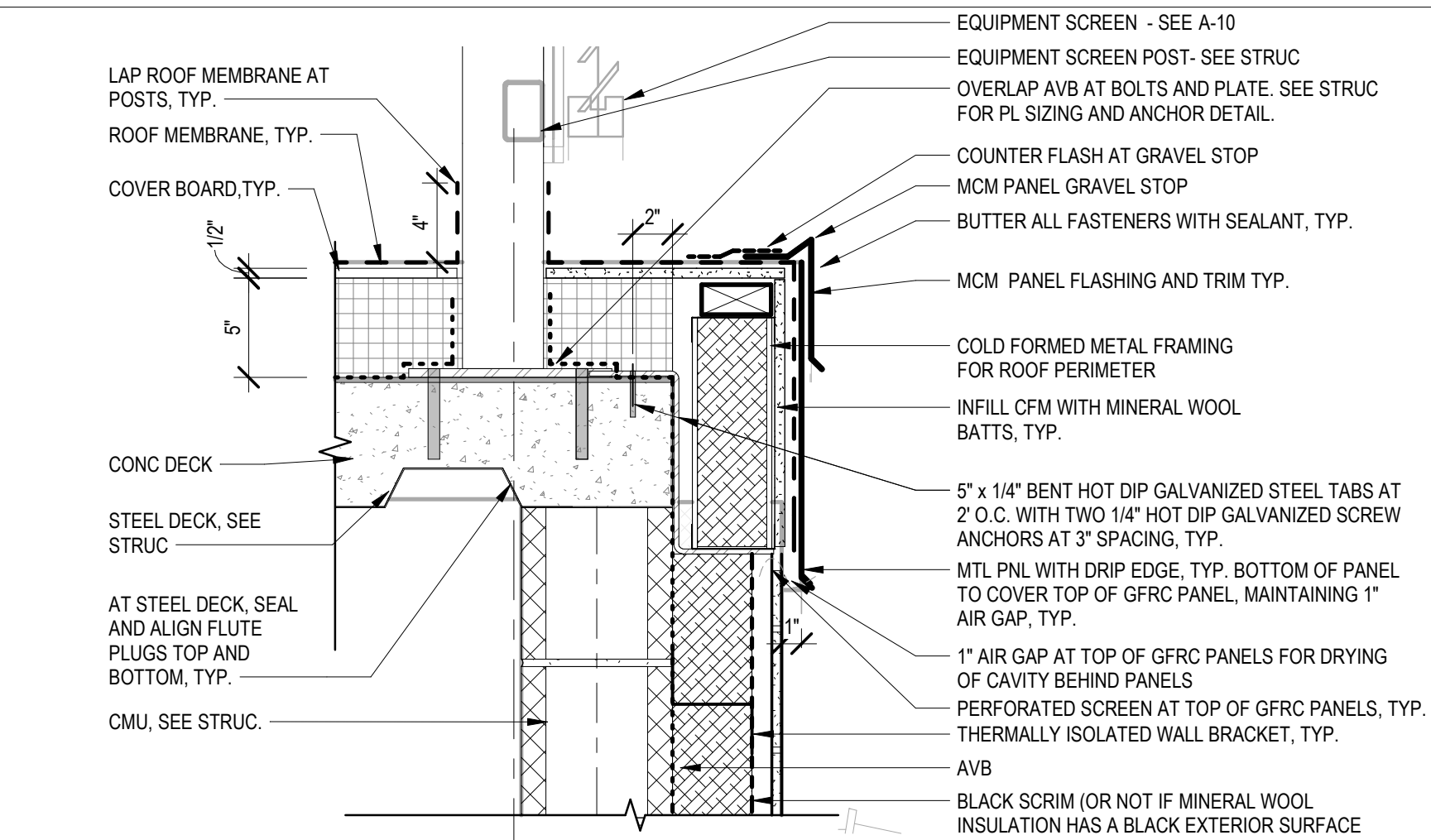
DSK JOB NO. 20030.00
ISSUE DATE AUGUST 2022
SHEET NO. **A-05**



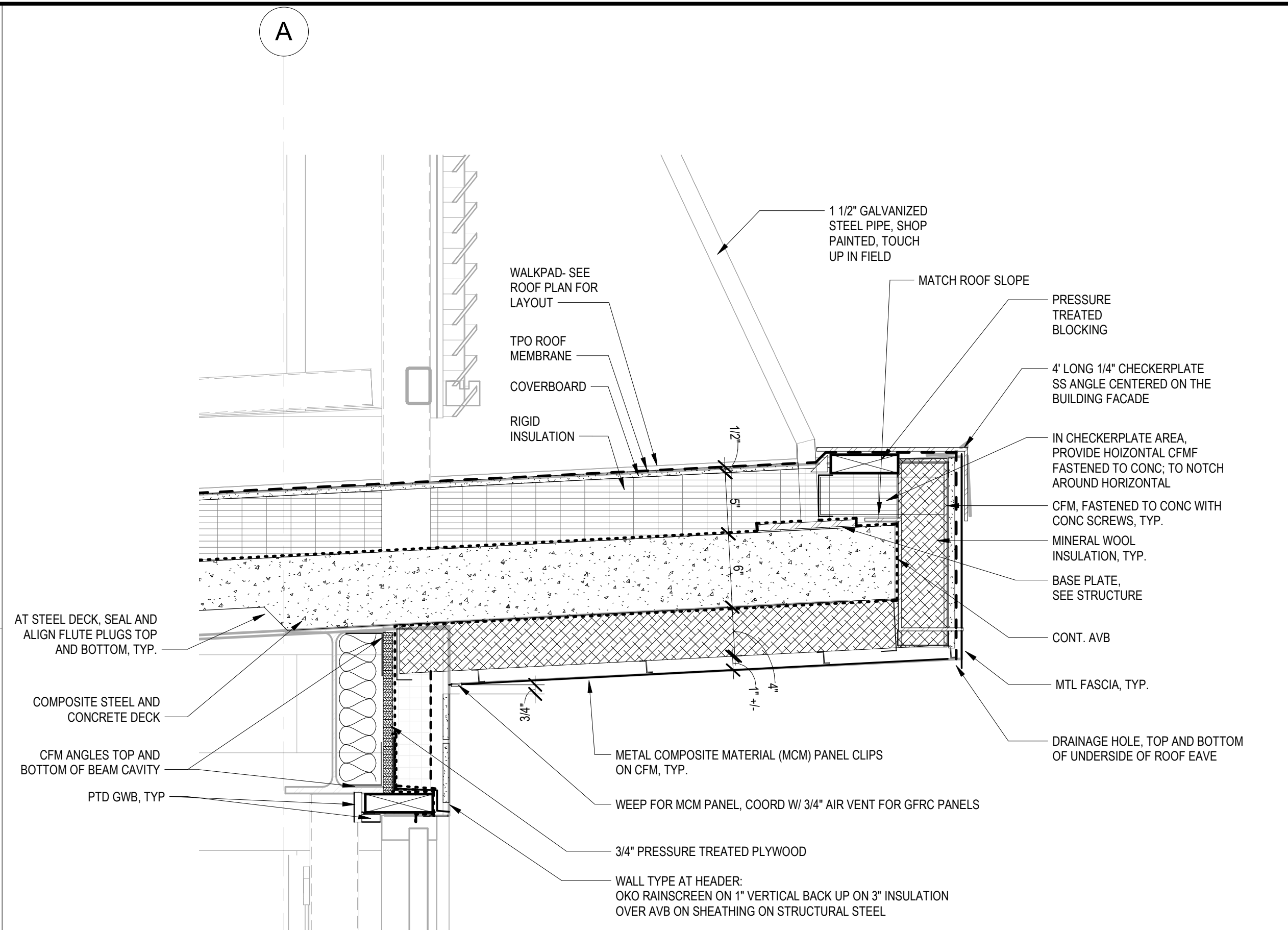
8 SOUTH ROOF DETAIL WITH GUTTER
1 1/2" = 1'-0"



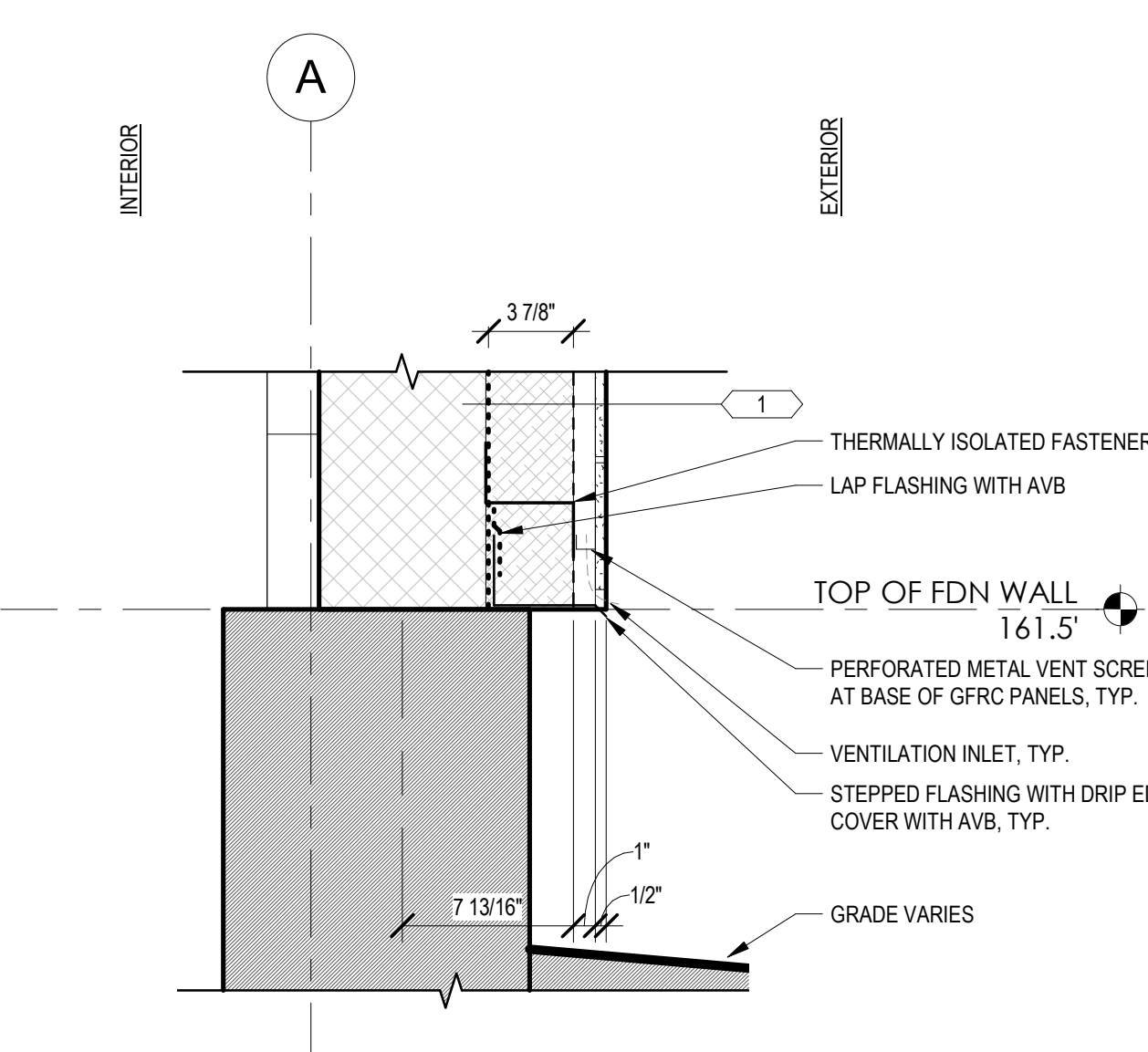
9 TYPICAL RAKE SECTION DETAIL AT ROOF OVERHANG
1 1/2" = 1'-0"



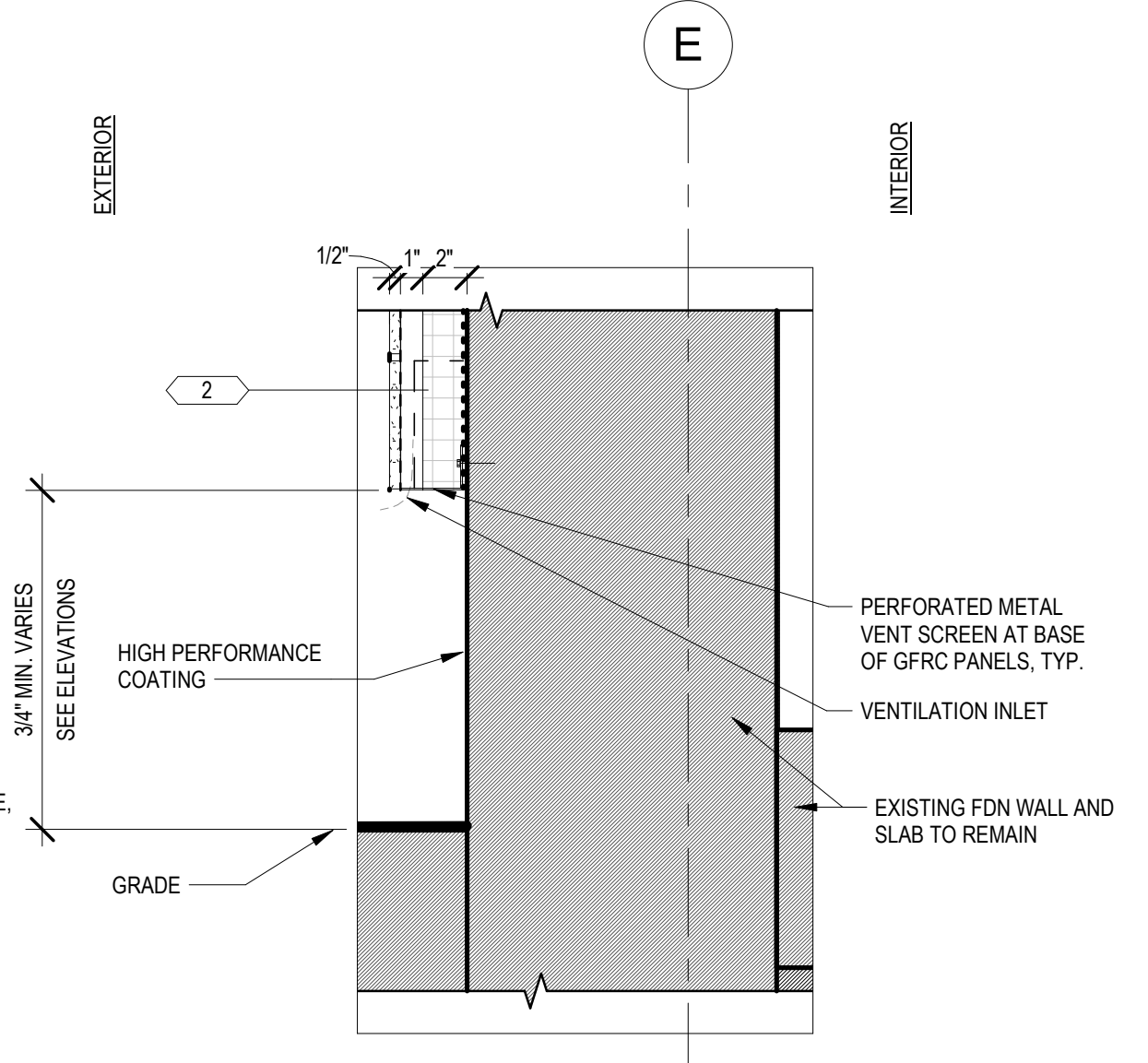
7 RAKE SECTION DETAIL
1 1/2" = 1'-0"



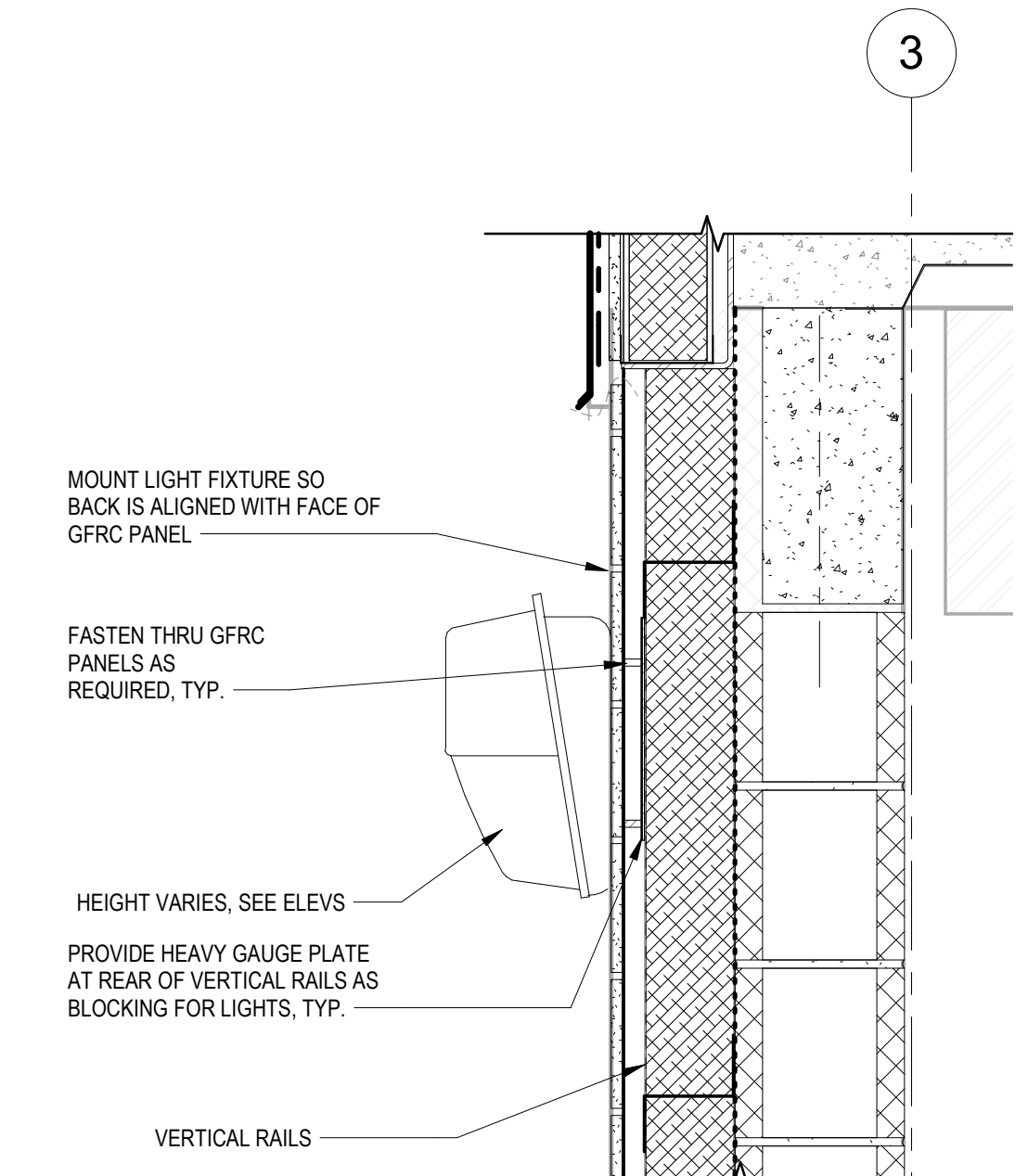
6 ENLARGED SECTION AT FRONT OF ROOF
1 1/2" = 1'-0"



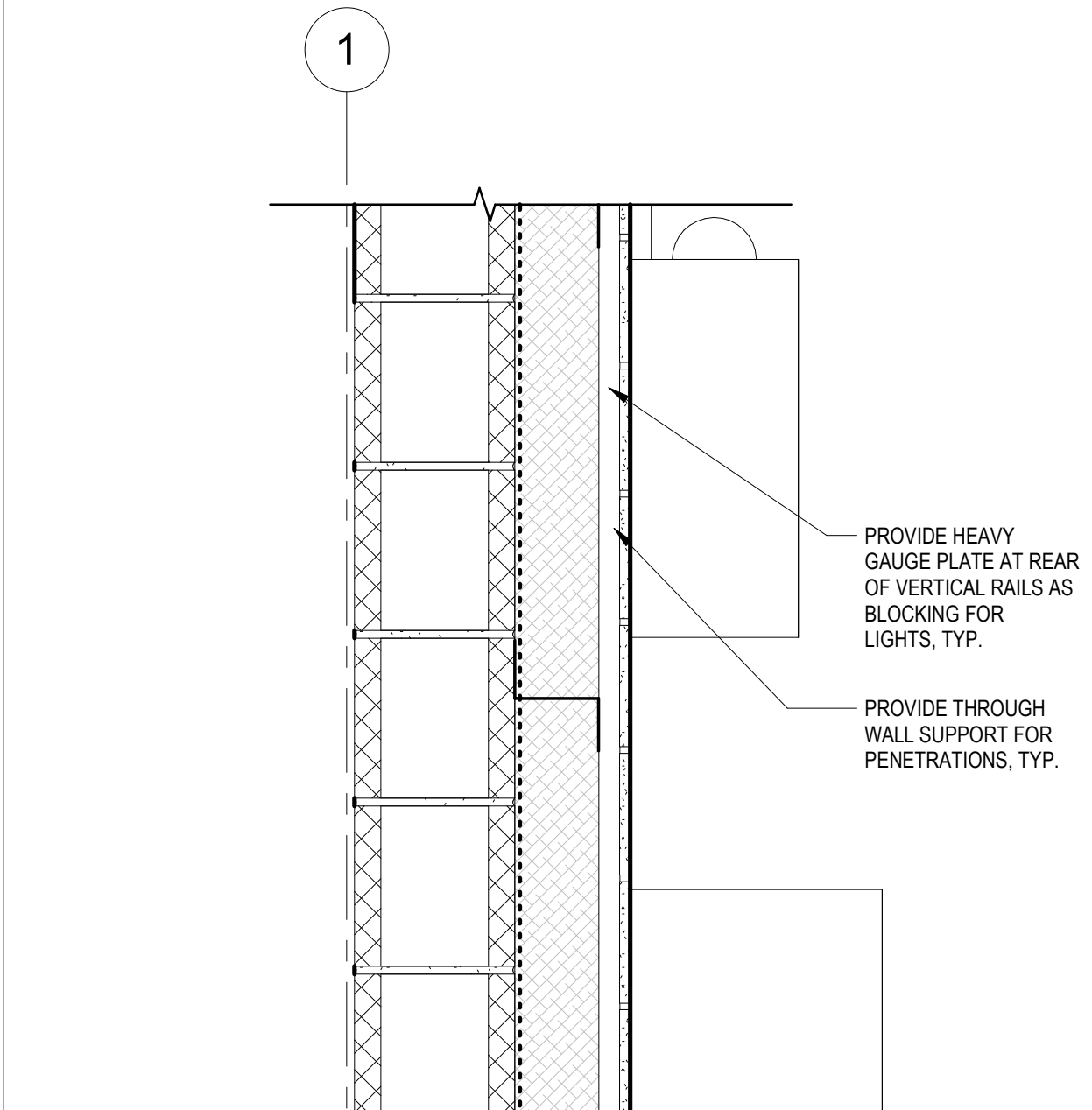
5 TYPICAL DETAIL AT BASE OF TYPE 1 WALL
1 1/2" = 1'-0"



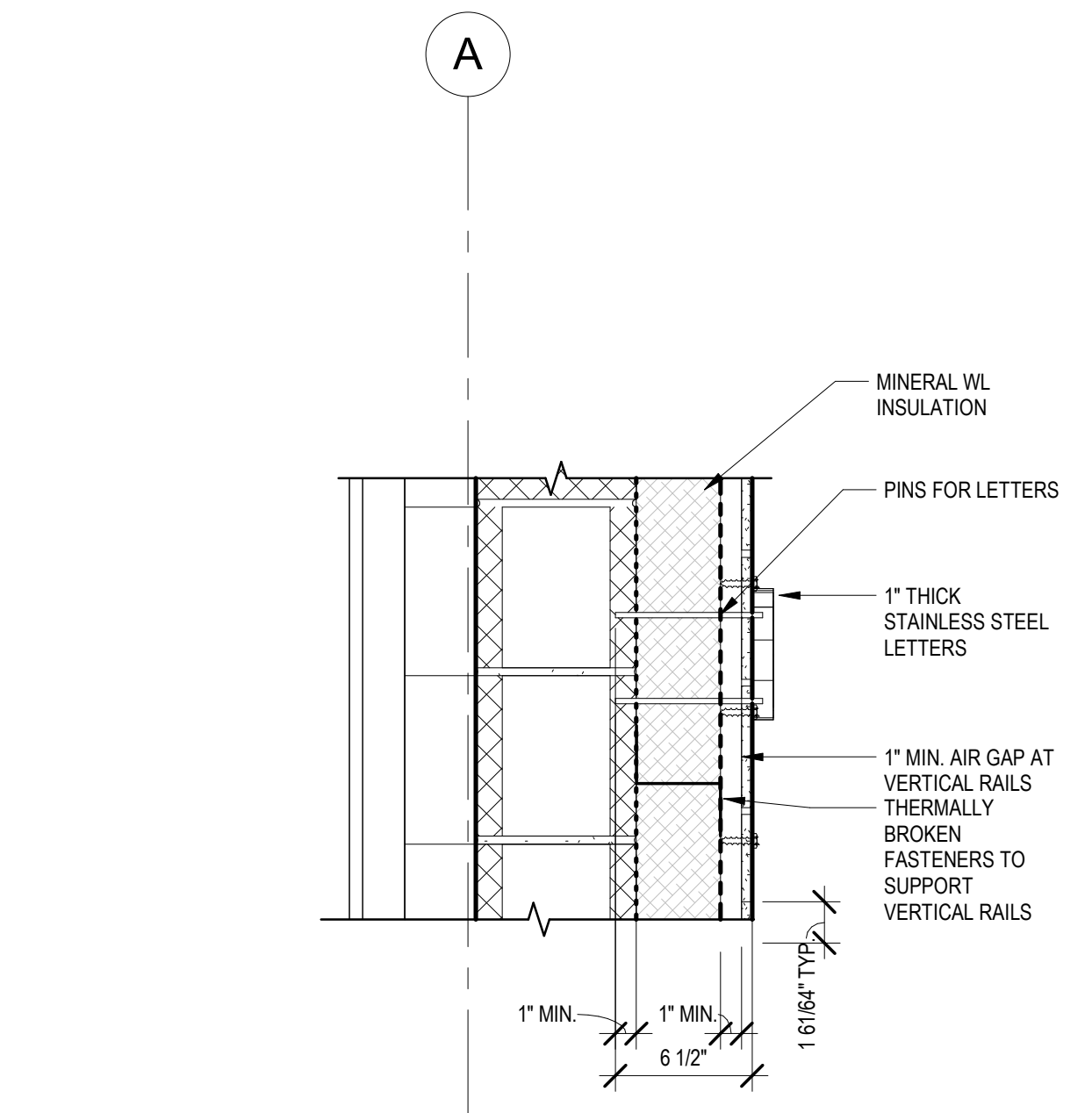
4 TYPICAL DETAIL AT BASE OF TYPE 2 WALL
1 1/2" = 1'-0"



3 TYP SECTION DETAIL AT LIGHT
1 1/2" = 1'-0"



2 TYP. MOUNTING DETAIL AT RAINSCREEN
1 1/2" = 1'-0"



1 TYPICAL BLOCKING FOR PIN LETTERS
1 1/2" = 1'-0"

P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWGS\601-REV\T\FAMILIES\TITLEBLOCKS\KDC_Arch D 24x36 Vertical Title - BETA

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
ALK

DESIGNED BY:
DSK

CHECKED BY:
MPS

REGISTERED PROFESSIONAL

PREPARED BY

FOR REVIEW ONLY

BETA
www.BETA-inc.com

SUBCONSULTANT

DSK Dewing Schmid Kearns
ARCHITECTS + PLANNERS

30 Monument Square Suite 200B
Concord, MA 01742
978.371.7500

280 Elm Street
South Dartmouth, MA 02748
508.999.0440

SCALE

1 1/2" = 1'-0"

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE

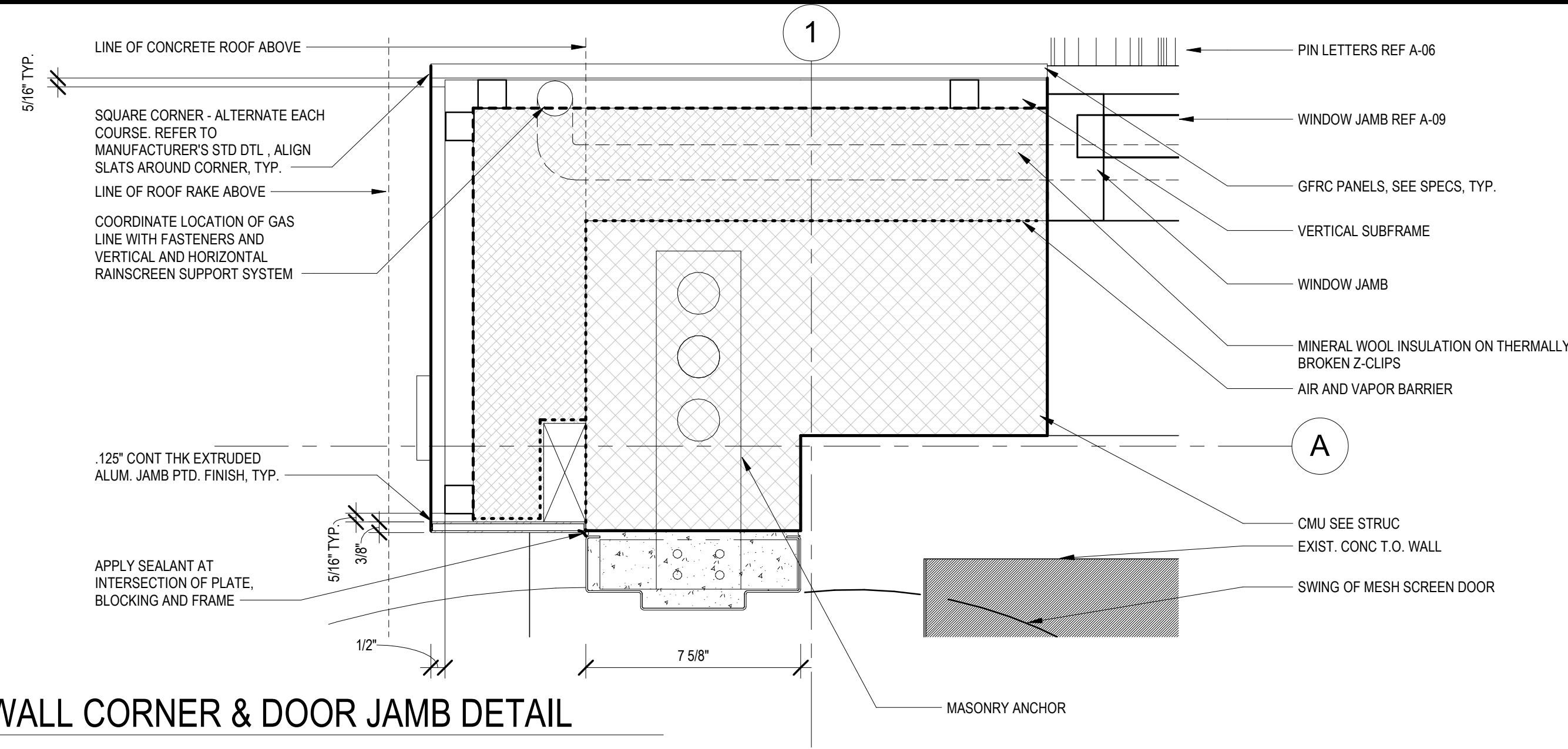
Worcester Road Sewer Pumping Station Replacement

EXTERIOR DETAILS

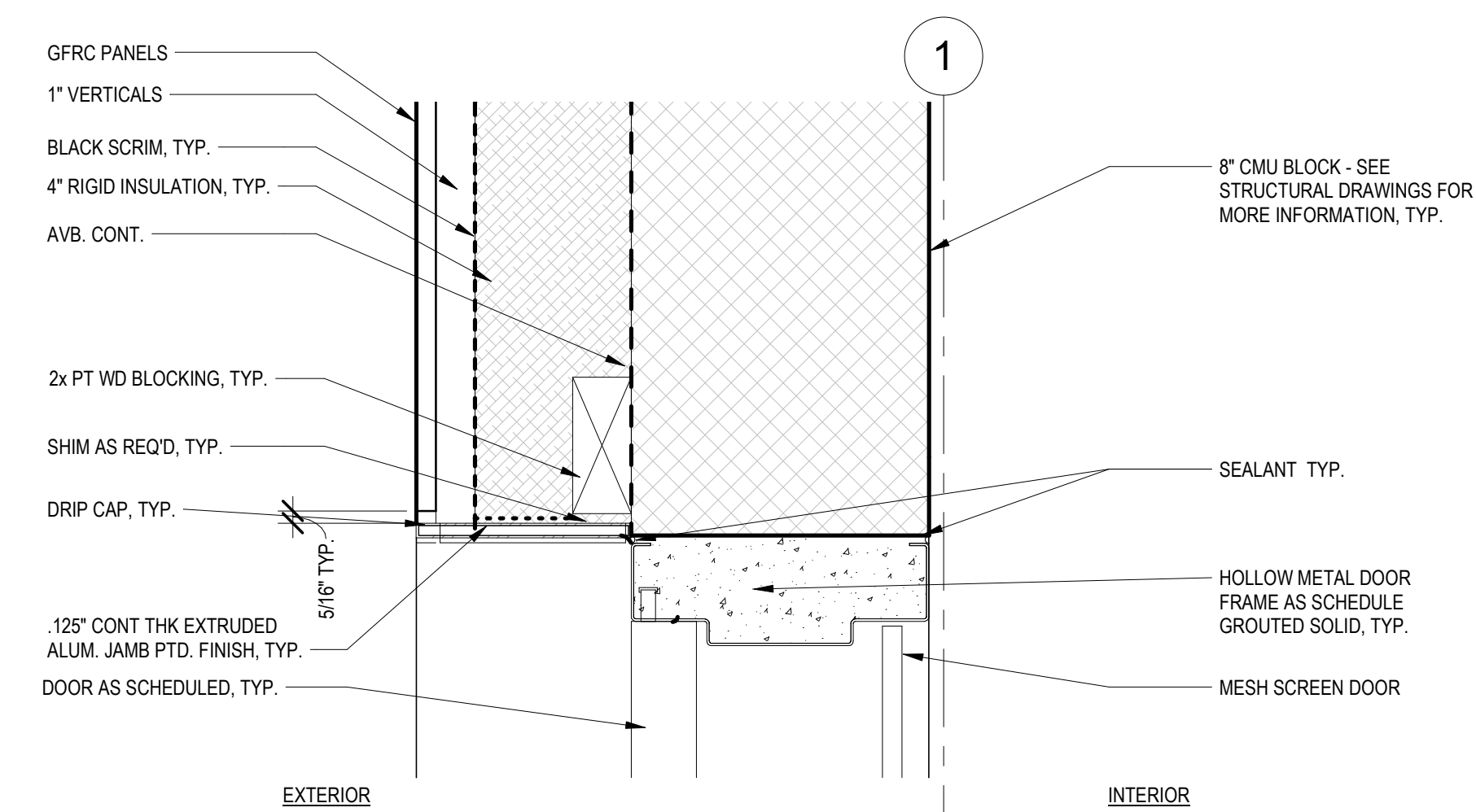
DSK JOB NO. 20030.00

ISSUE DATE AUGUST 2022

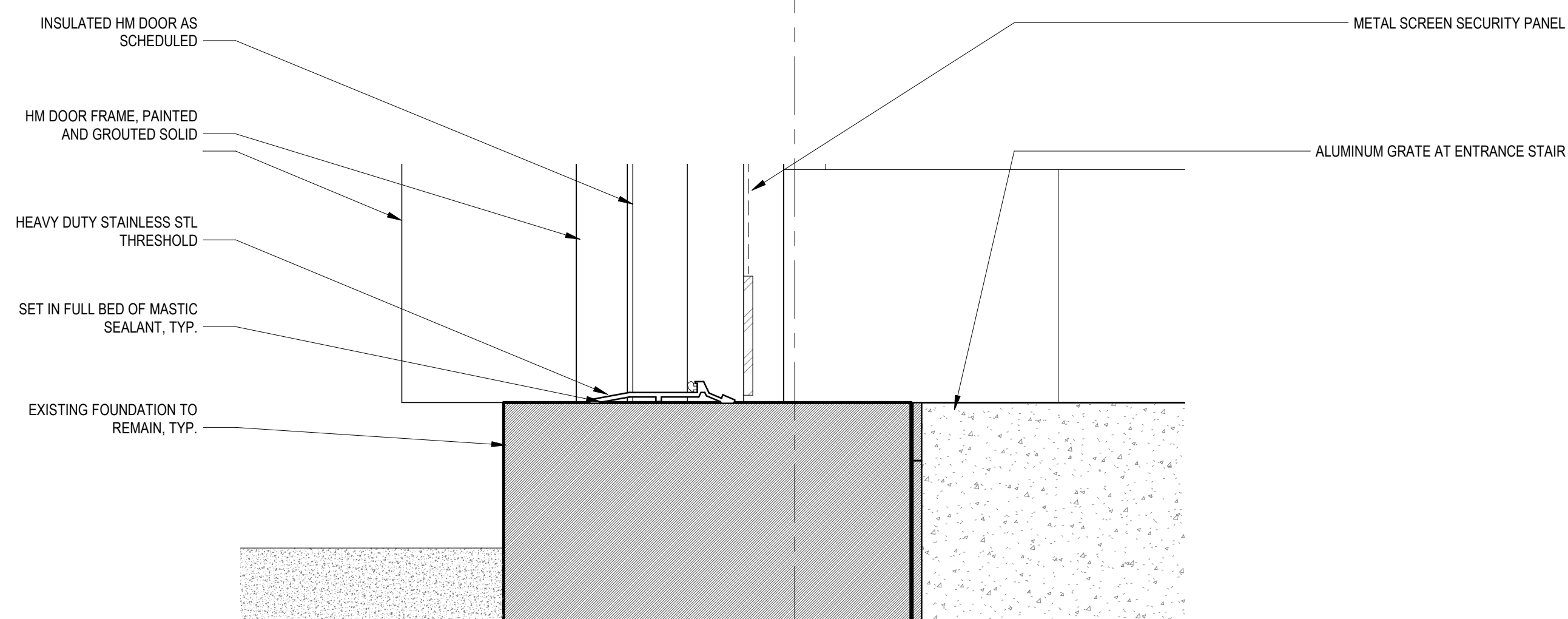
SHEET NO. **A-06**



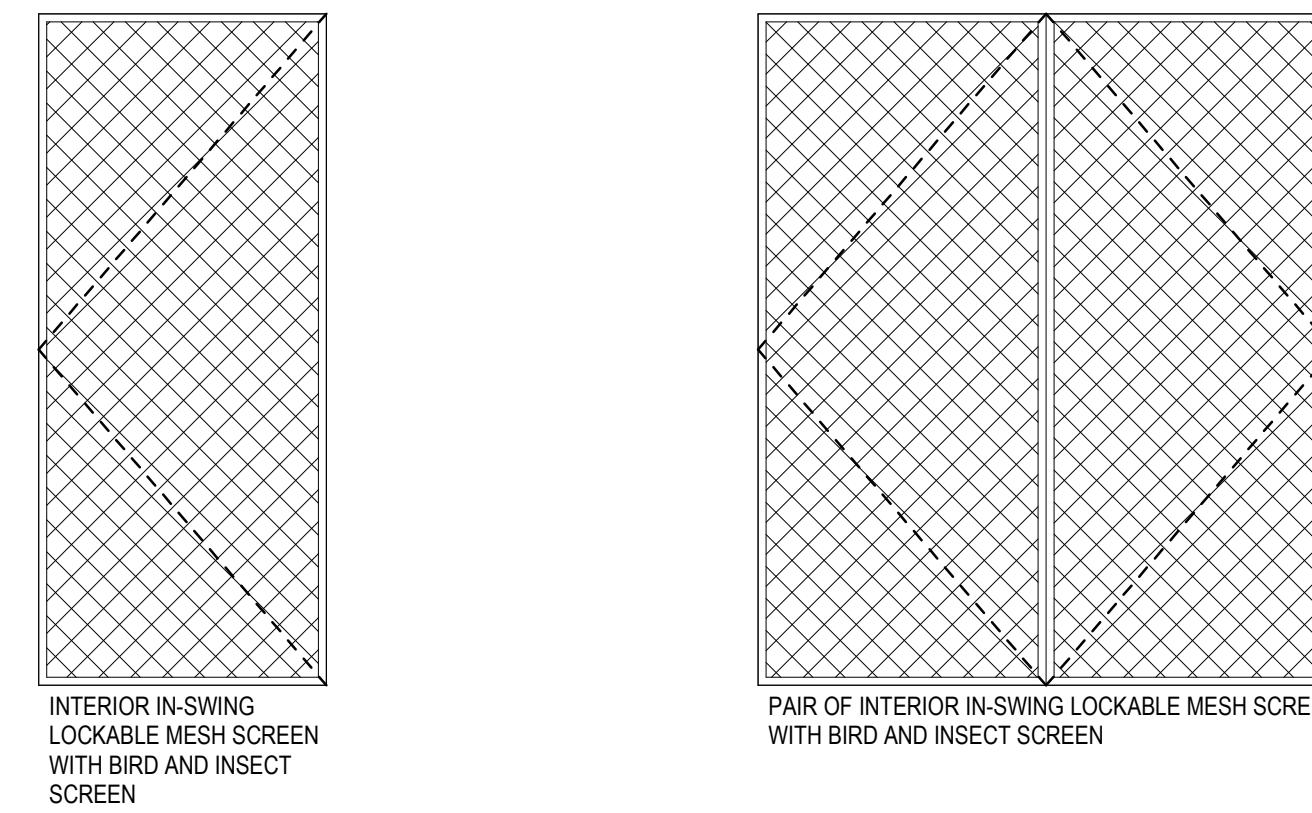
4 TYP. WALL CORNER & DOOR JAMB DETAIL
3" = 1'-0"



3 DETAIL SECTION AT DOOR HEADER
3" = 1'-0"

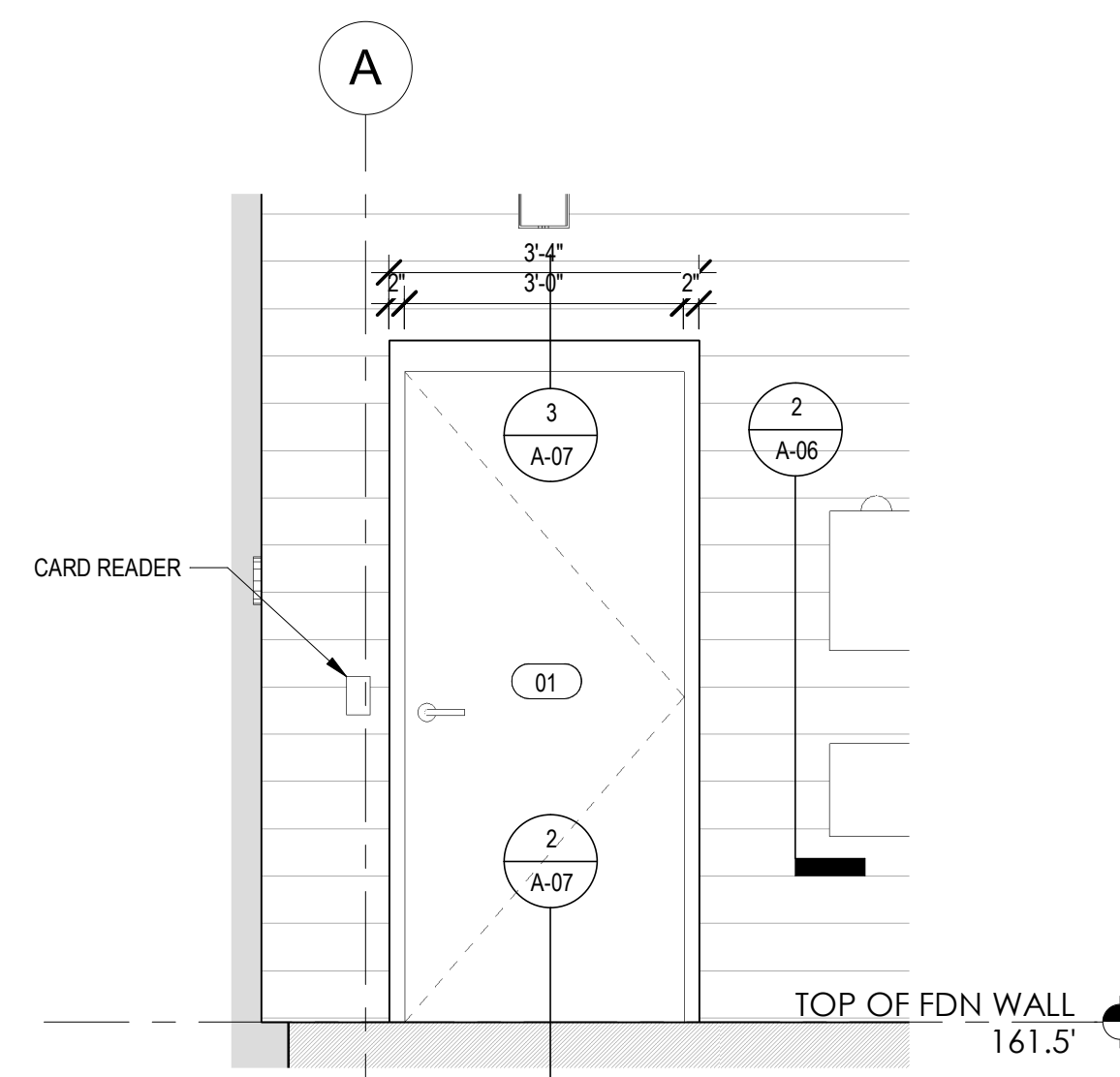


2 HM DOOR SILL DETAIL
3" = 1'-0"



METAL MESH SECURITY PANELS W/ BIRD + INSECT SCREENS

- WIRE MESH PARTITIONS - SCREEN DOORS - WELDED-WIRE GUARD DOORS
- A. HINGED SCREEN DOOR / GUARD DOOR FOR FALL PROTECTION AND ACCESS CONTROL. COMPLETE SYSTEM OF SCREEN DOOR / WIRE PARTITION PANELS INCLUDES ALL SUPPORTS, WIRE PANELS, HARDWARE, BRACING, POLES, FASTENERS PINS, BRACKETS, AND SAFETY NUTS.
- COORDINATE AND PROVIDE PREP FOR DOOR AND FRAME FOR NEW HARDWARE BEING INSTALLED.
 - COORDINATE LAYOUT OF HARDWARE AND PLATES TO AVOID CONFLICT WITH ANY ADJACENT DOOR HARDWARE. PROVIDE FRAMED OPENINGS / CUT-OUTS AS REQUIRED. OFF-SET LOCATION OF HARDWARE TO AVOID CONFLICT LOCATIONS.
 - USE CONCEALED FASTENERS, WHEN POSSIBLE.
 - ALL PANELS, FRAMES, MOUNTING BRACKETS, AND HARDWARE TO BE INCLUDE:
 - PRODUCT TYPE: SCREEN DOOR / WELDED-WIRE MACHINE GUARD DOOR.
 - OPENING TYPE: HINGED (SINGLE AND PAIRED)
 - DOOR HEIGHT AND WIDTH: SEE DOOR SCHEDULE / DRAWINGS.
 - WIRE MESH OPENING HEIGHT: 2 INCHES.
 - WIRE MESH OPENING WIDTH: 2 INCHES.
 - WIRE THICKNESS: 5/32 INCH.
 - INSECT SCREEN: COATED POLYESTER.
 - MATERIAL: WELDED GALVANIZED STEEL.
 - COLOR: BLACK
 - FINISH: POWDER COATED.
 - MOUNTING HARDWARE: PROVIDE REINFORCING PLATES AND/OR FRAMES FOR ALL OPENINGS AND FOR THE MOUNTING OF HARDWARE, INCLUDE ALL SAFETY NUTS, AND FASTENERS.
 - HARDWARE: SEE HARDWARE SCHEDULE / HARDWARE SPECIFICATIONS.



1 DOOR 01
1/2" = 1'-0"

GENERAL NOTES - DOORS AND HARDWARE:

- ALL EXTERIOR DOORS TO HAVE ELECTRIC LOCKS WITH ASSOCIATED POWER SUPPLY.
- SINGLE ENTRY DOOR TO HAVE ELECTRIC LOCK AND PANIC DEVICE OVERRIDE.
- COORDINATE & PREPARE FRAMES, DOORS, & HARDWARE FOR SECURITY DEVICES & CONTACTS, TYP.
- THE DOORS ARE TO BE ALARMED. PROVIDE CONDUIT INSIDE THE MASONRY WALL.
- RECESSED CARD READER FOR ACCESS. SEE ELECTRICAL DRAWINGS.
- PAIR OF DOORS: COPE & FINISH UPPER DOOR PANELS AROUND GANTRY BEAM SUPPORT, PROVIDE NEOPRENE GASKET TO SEAL, TYP.
- ALL EXTERIOR DOORS SHALL BE INSULATED, SEE SPECS 08111.
- ALL NEW HARDWARE SATIN SS FINISH.
- PROVIDE KEYBOX INSIDE.
- PROVIDE SWEEPS AT ALL EXTERIOR DOORS.
- PROVIDE SS DRIP CAP AT ALL EXTERIOR DOORS.
- ROOF EQUIPMENT SCREEN GATE BY EQUIPMENT SCREEN MANUFACTURER

DOOR HARDWARE SCHEDULE:

- HD-1** ENTRANCE LEVER SET (SINGLE) (EXTERIOR OPENING)
ENTRANCE FUNCTION LEVERLOCKSET (ELECTRIC LOCK), COORDINATE WITH ELECTRIC ENTRY SECURITY SYSTEM.
PANIC DEVICE
1 1/2 BUTTS
BUTYL BULB WEATHER-STRIPPING ALL-AROUND
BOTTOM SWEEP
MOP PLATE INTERIOR SIDE ONLY
HEAVY DUTY THRESHOLD WITH GASKET
OVERHEAD CLOSER WITH HOLD-OPEN FEATURE
LONG HOOK AND EYE / WALL STOP HOLD OPEN (16 INCHES MIN).
SILENCERS
DRIP CAP
- HD-2A** MULTI-SET LOWER DOORS (PAIR) (EXTERIOR OPENING)
STOREROOM FUNCTION LEVERLOCKSET (ELECTRIC LOCK) ON ACTIVE LEAF ONLY, COORDINATE W/ ELECTRIC ENTRY SECURITY SYSTEM.
3 BUTTS
BUTYL BULB WEATHER-STRIPPING ALL-AROUND
NO LEVERLOCKSET ON INACTIVE LEAF
BOTTOM SURFACE FLUSH BOLTS ON INACTIVE LEAF
TOP SURFACE FLUSH BOLTS ON INACTIVE LEAF WITH LONG THUMB KICK PLATE BOTH SIDES
ASTRAGAL
SILENCERS
HD STAINLESS STEEL THRESHOLD
OVERHEAD CLOSERS (180 DEGREES) WITH HOLD-OPEN FEATURE (PAIR-BOTH LEAFS)
PAIR OF WALL STOPS WITH HOOK AND EYE BOLTED TO BOLLARDS; SEE PLAN
COORDINATE WITH REMOVABLE HEADER FRAME CROSS RAIL.
- HD-2B** MULTI-SET UPPER DOORS (PAIR) (EXTERIOR OPENING)
PAIR HAS NO LEVER/LOCK SET
2 BUTTS
BULB WEATHER-STRIPPING ALL-AROUND BOTTOM SURFACE FLUSH BOLTS ON BOTH LEAFS
OVERHEAD DOOR HOLDER MINIMUM 90 DEGREE OPENING (PAIR-BOTH LEAFS)
ASTRAGAL
BRUSH WEATHERSTRIPPING AROUND BEAM OPENING - SEE DOOR DETAIL SHEETS FOR NEOPRENE GASKET INFO
SILENCERS
DRIP CAP
DRIP BASE AT BOTTOM OF DOORS (BOTH LEAFS)
COORDINATE WITH REMOVABLE HEADER FRAME CROSS RAIL.
- HD-1AS** WIRE MESH / WELDED-WIRE GUARD DOOR FOR ENTRANCE DOOR
INTERIOR IN-SWING LOCKABLE MESH SCREEN/WELDED-WIRE GUARD DOOR WITH BIRD AND INSECT SCREEN.
1.5 BUTTS - 180 DEGREE SWING
KEY LATCHSET AT EXTERIOR, WITH THUMB TURN AT INTERIOR.
HOOK AND EYE / WALL STOP HOLD OPEN MOUNTED TO RAILING.
- HD-2AS** WIRE MESH / WELDED-WIRE GUARD DOORS FOR MULTI-SET LOWER DOORS
PAIR OF INTERIOR IN-SWING LOCKABLE MESH SCREEN/WELDED-WIRE GUARD DOORS WITH BIRD AND INSECT SCREEN.
3 BUTTS - 180 DEGREE SWING
KEY LOCKSET AT EXTERIOR, WITH THUMB TURN AT INTERIOR OF ACTIVE LEAF.
HOOK AND EYE / WALL STOP HOLD-OPEN.
SURFACE FLUSH BOLTS AT INTERIOR TOP AND BOTTOM, INACTIVE LEAF ONLY
COORDINATE WITH REMOVABLE HEADER FRAME CROSS RAIL.
- HD-3** ROOF EQUIPMENT SCREEN GATE
SINGLE EXTERIOR IN-SWING LATCHING/LOCKABLE EQUIPMENT SCREEN DOOR.
3 BUTTS - 180 DEGREE SWING
KEY LATCHING-LOCKSET AT EXTERIOR, WITH THUMB TURN AT INTERIOR.
HOOK AND EYE / WALL STOP HOLD-OPEN.
COORDINATE WITH EQUIPMENT SCREEN MANUFACTURER.

DOOR SCHEDULE

MARK	DIMENSIONS		THRESHOLD DETAIL	FRAME TYPE	COMMENTS	HARDWARE
	WIDTH	HEIGHT				
TOP OF FDN WALL						
01	3'-0"	7'-0"	0'-1 3/4"	2/A-07	HM	SEE INSWING METAL SCREEN DOOR
02	3'-0"	7'-0"	0'-1 3/4"	2/A-07	STACKING HM	SEE INSWING METAL SCREEN DOOR FOR LOWER PAIR. UPPER DIMS ARE ON ELEVATION

P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWG\600-NPS-FAMILIES\TITLEBLOCKS\KDC_Arch D 24x36 Vertical Title - BETA

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
ALK
DESIGNED BY:
DSK
CHECKED BY:
MPS

REGISTERED PROFESSIONAL
FOR REVIEW ONLY
PREPARED BY
BETA
www.BETA-inc.com

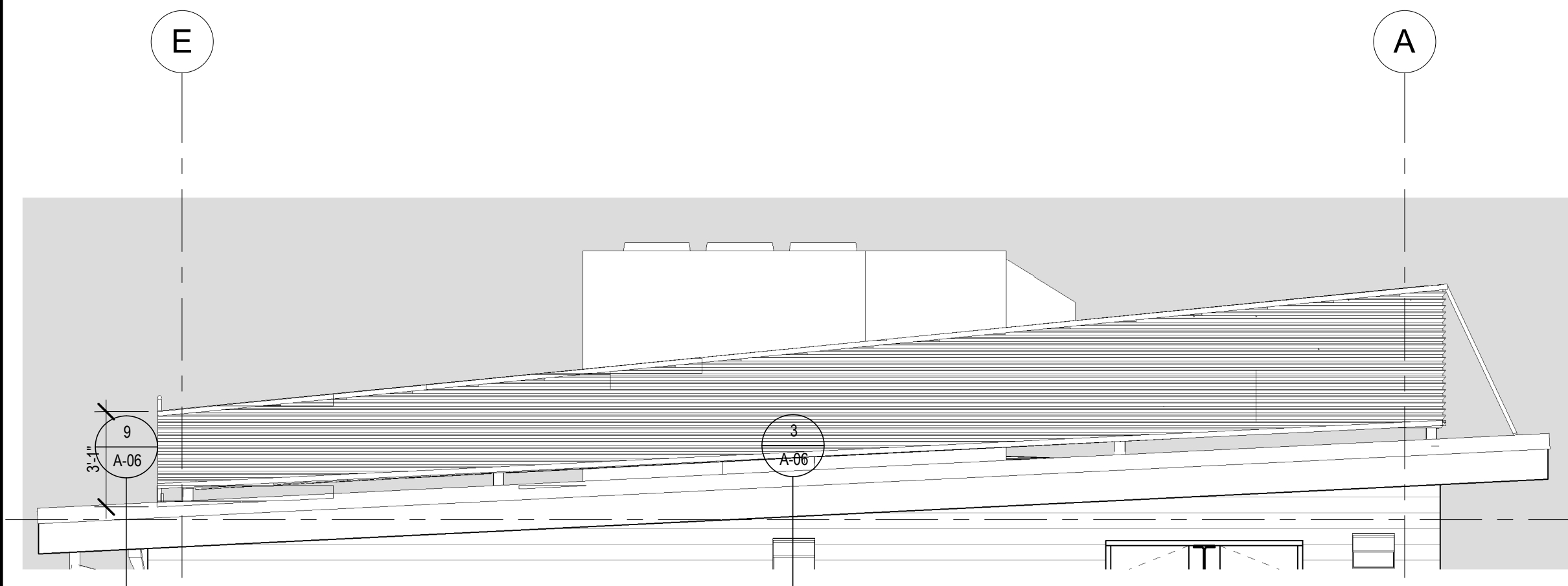
SUBCONSULTANT
DSK Dewing Schmid Kearns
ARCHITECTS + PLANNERS
30 Monument Square
Suite 200B
Concord, MA
01748
978.371.7500
280 Elm Street
South Dartmouth, MA
02748
508.999.0440

SCALE
As indicated
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

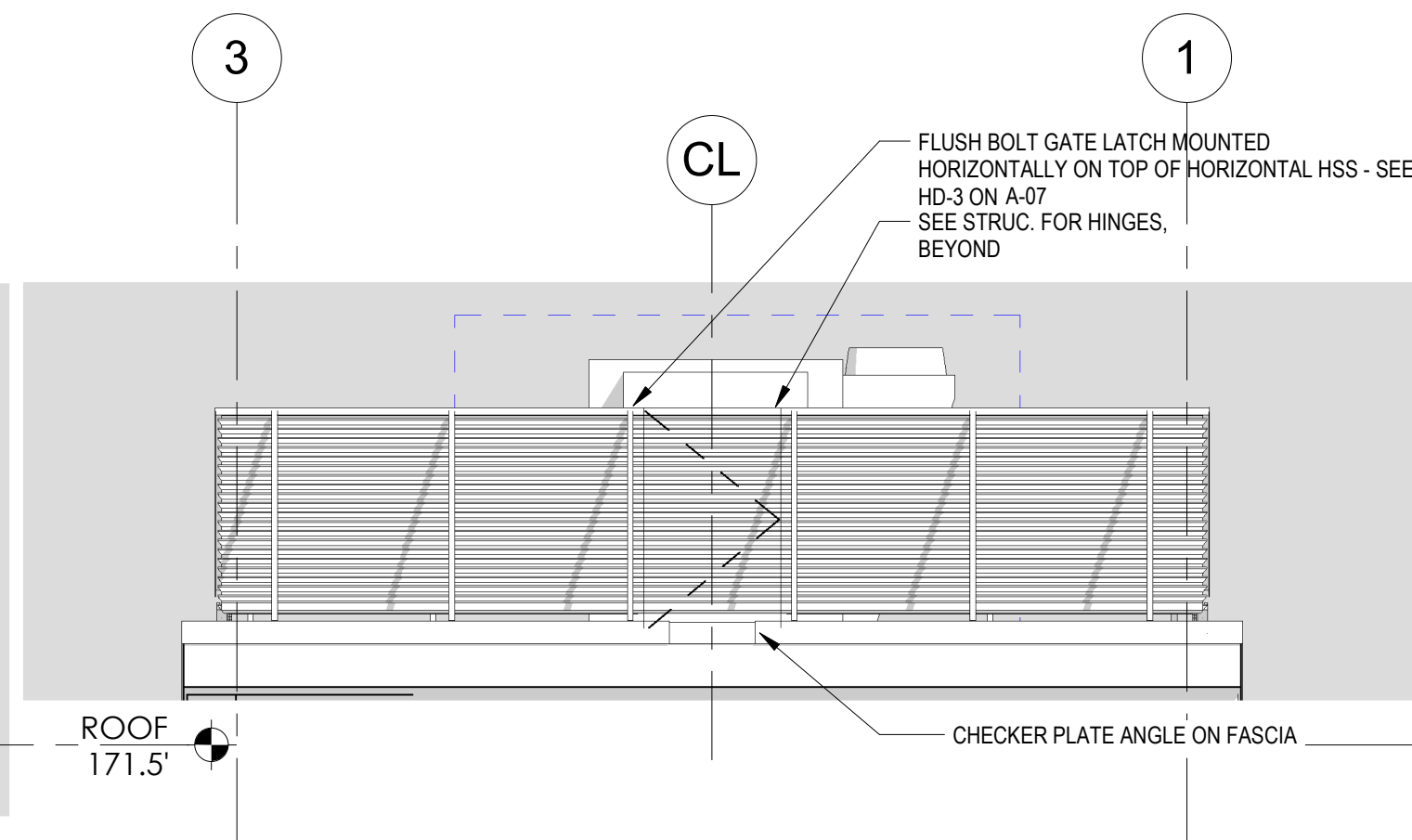
TITLE

Worcester Road Sewer Pumping Station Replacement
DOOR SCHEDULE & DETAILS

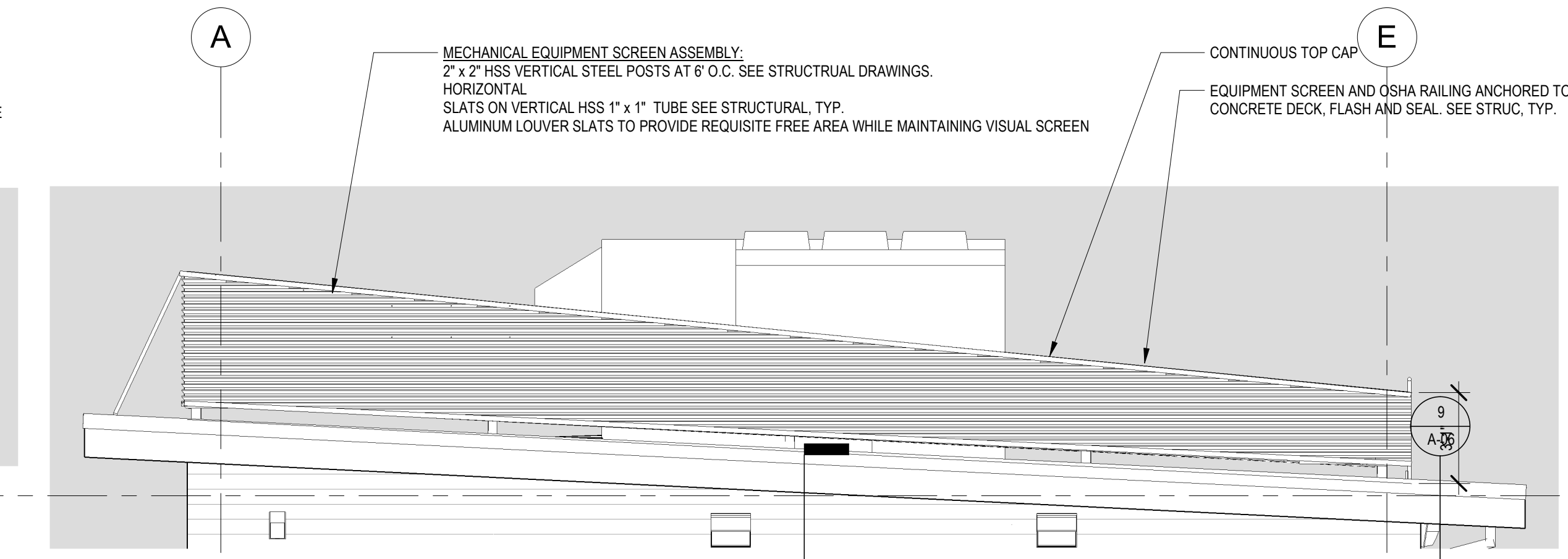
DSK JOB NO. 20030.00
ISSUE DATE AUGUST 2022
SHEET NO. **A-07**



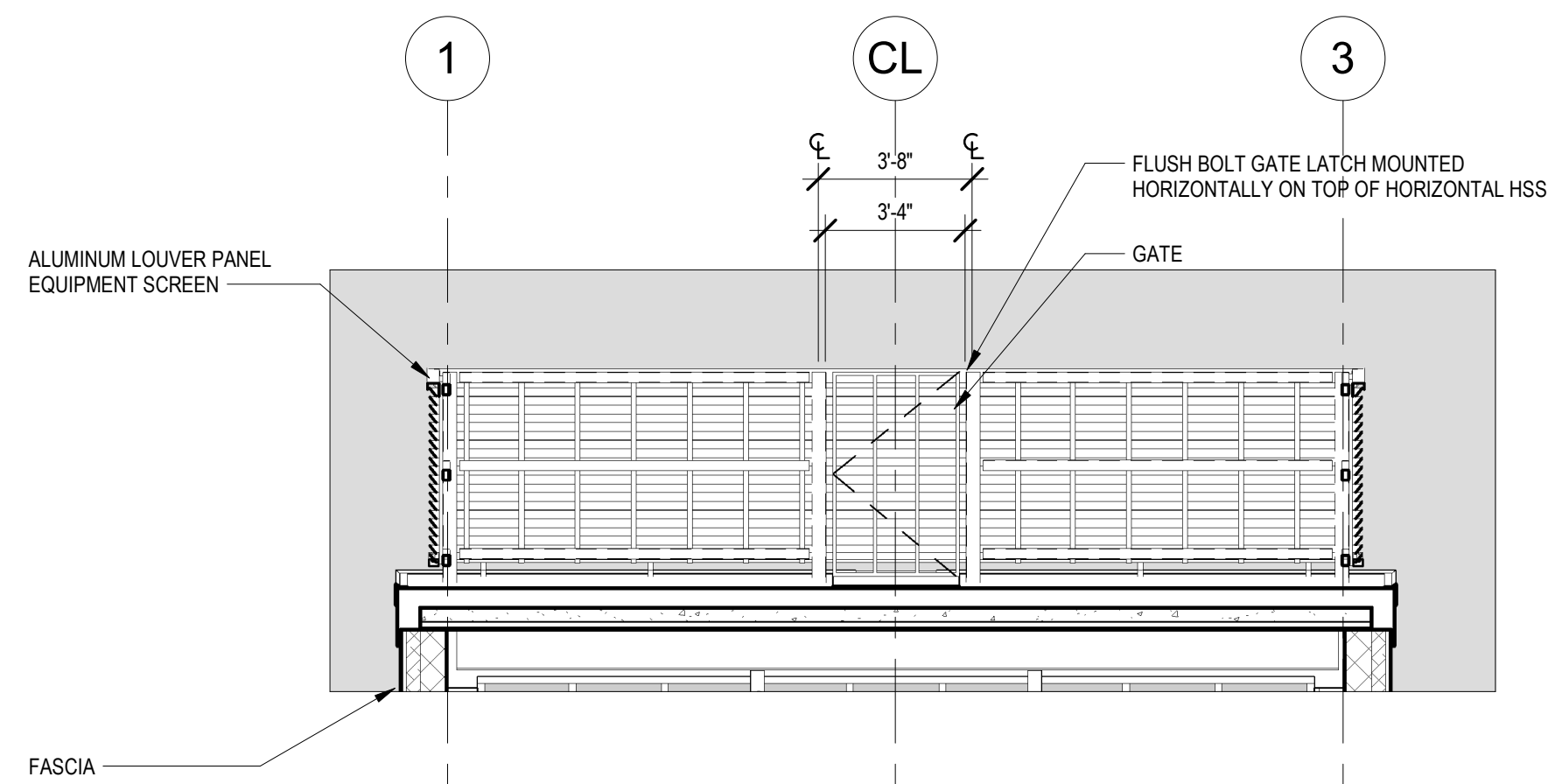
8 EAST ENLARGED BUILDING ELEVATION EQUIPMENT SCREEN
1/4" = 1'-0"



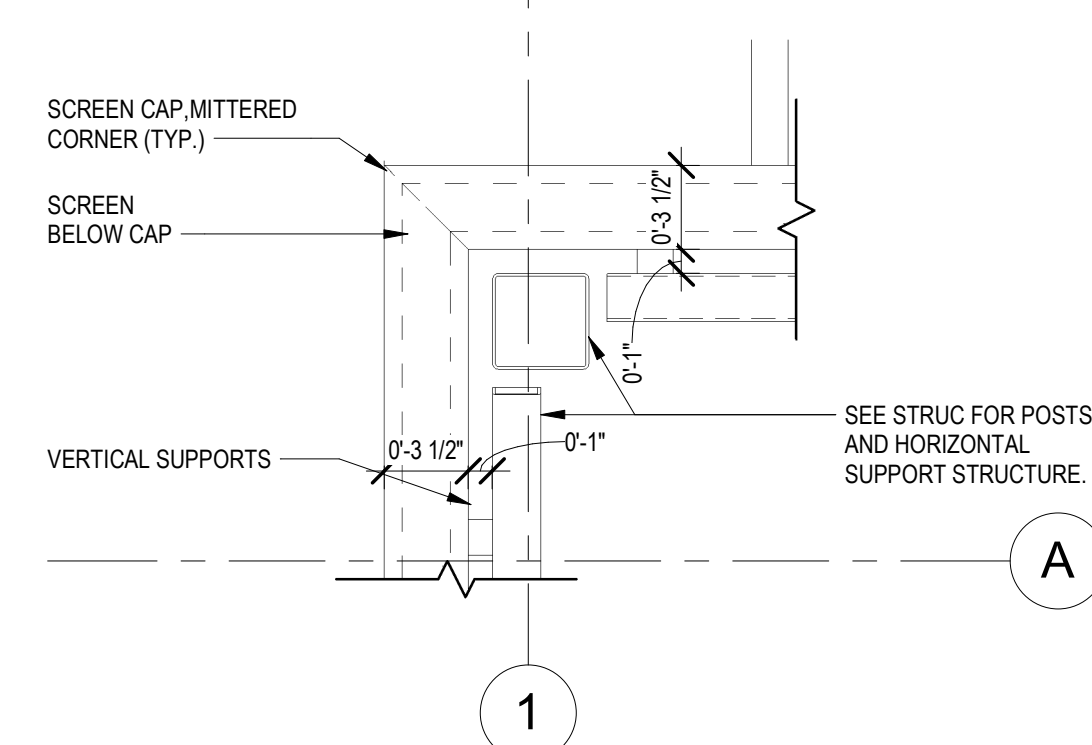
7 NORTH ENLARGED ELEVATION EQUIPMENT SCREEN
1/4" = 1'-0"



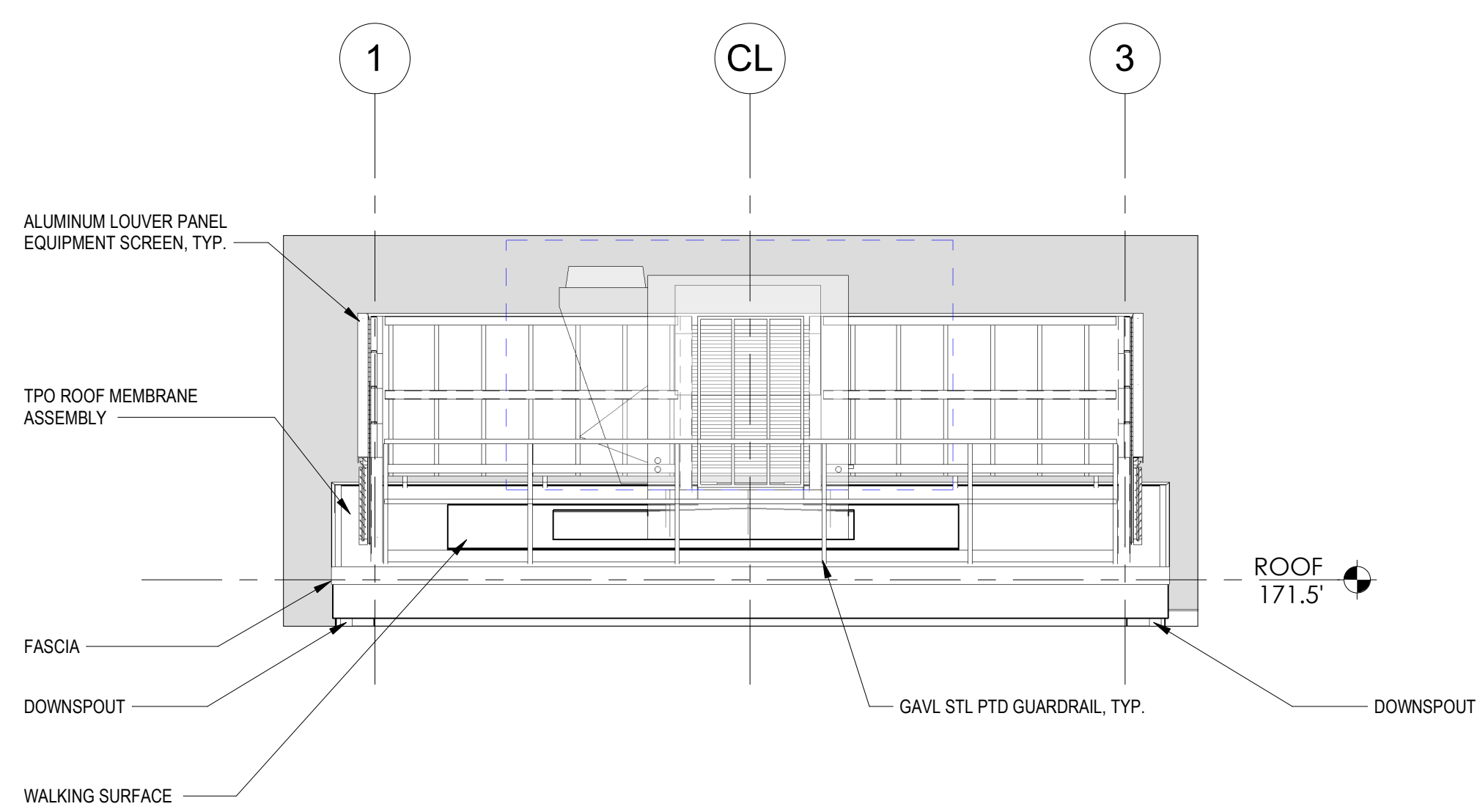
6 WEST ENLARGED ELEVATION EQUIPMENT SCREEN



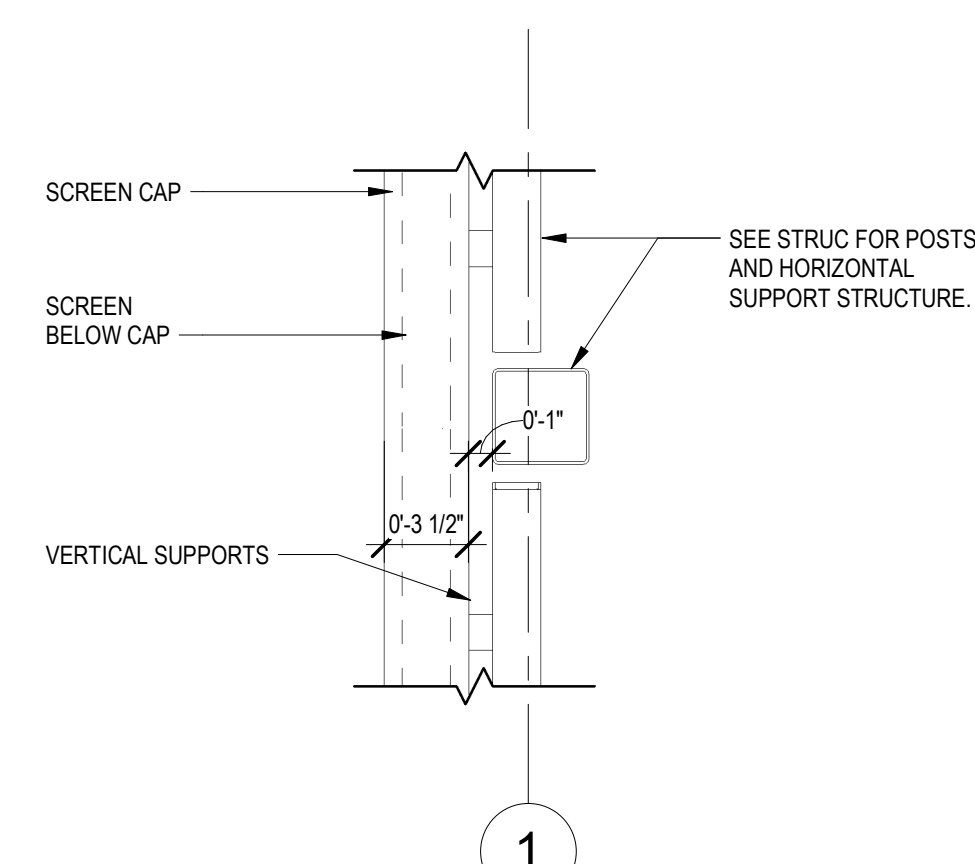
5 EQUIPMENT SCREEN - NORTH WALL, FROM SOUTH
1/4" = 1'-0"



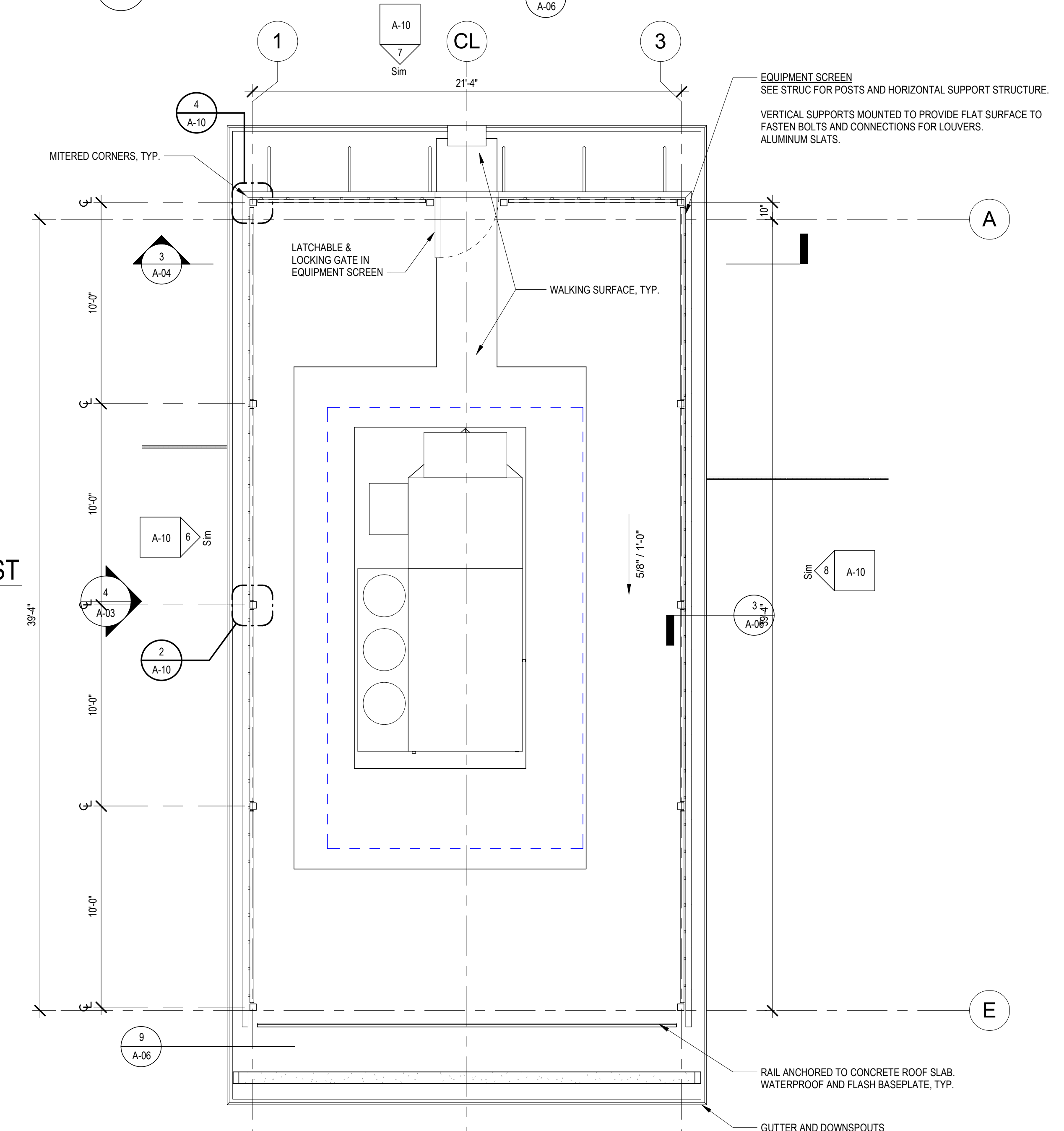
4 EQUIPMENT SCREEN DETAIL AT CORNER POST
1 1/2" = 1'-0"



3 SOUTH ELEVATION- HAND RAIL
1/4" = 1'-0"



2 EQUIPMENT SCREEN DETAIL AT POST
1 1/2" = 1'-0"



1 ROOF EQUIPMENT SCREEN PLAN
1/4" = 1'-0"

P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWG\600-TITLEBLOCKS\KDC_Arch D 24x36 Vertical Title - BETA

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
ALK
DESIGNED BY:
DSK
CHECKED BY:
MPS

REGISTERED PROFESSIONAL
FOR REVIEW ONLY



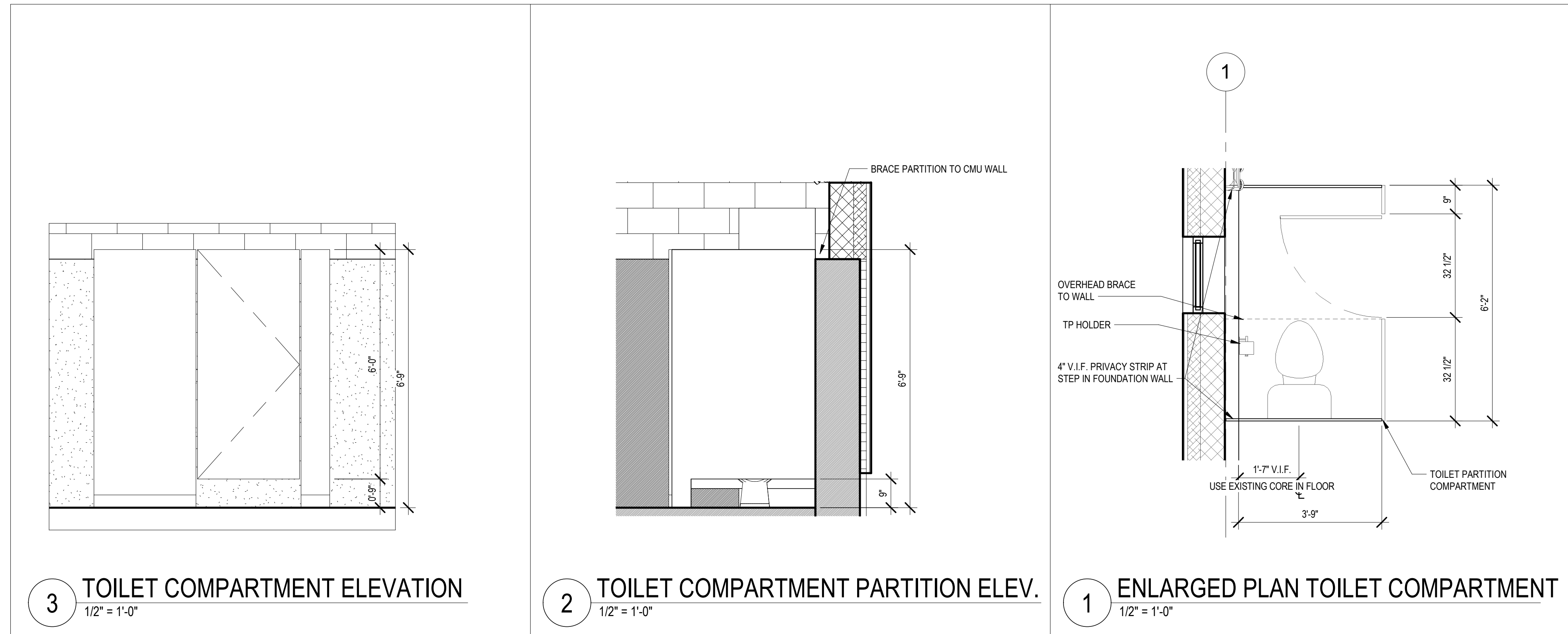
SUBCONSULTANT
DSK Dewing Schmid Kearns
ARCHITECTS + PLANNERS
30 Monument Square Suite 200B
Concord, MA 01742
978.371.7500
280 Elm Street
South Dartmouth, MA
02748
508.999.0440

SCALE
As indicated
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE
Worcester Road Sewer Pumping Station Replacement EQUIPMENT SCREEN DETAILS

DSK JOB NO. 20030.00
ISSUE DATE AUGUST 2022
SHEET NO. **A-10**

P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\1600-NPS-DWG\601-REV\TITLEBLOCKS\KDC_Arch D 24x36 Vertical Title - BETA



NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
ALK
DESIGNED BY:
DSK
CHECKED BY:
MPS

REGISTERED PROFESSIONAL
FOR REVIEW ONLY



SUBCONSULTANT
DSK Dewing Schmid Kearns
ARCHITECTS + PLANNERS
30 Monument Square
Suite 200B
Concord, MA
01742
978.371.7500
280 Elm Street
South Dartmouth, MA
02748
508.999.0440

SCALE
1/2" = 1'-0"
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE
**Worcester Road Sewer
Pumping Station Replacement
INTERIOR ELEVATIONS**

DSK JOB NO. 20030.00
ISSUE DATE AUGUST 2022
SHEET NO. **A-11**

8/11/2022 1:46 PM \\BETA-INC.COM\RIEN\IRON\7385 - FRAMINGHAM\WRPS IMPROVEMENTS\DRAWINGFILES\PLANS\SETSR(1) GENERAL NOTES.DWG (BETA STD BW.CTB)

GENERAL

- STRUCTURAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE COMMONWEALTH OF MASSACHUSETTS STATE BUILDING CODE, 9TH EDITION.
- VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO BEGINNING WORK OR FABRICATING MATERIALS. NOTIFY THE ENGINEER OF DISCREPANCIES BEFORE PROCEEDING WITH ANY PHASE WORK.
- DO NOT SCALE FROM THESE DRAWINGS. REFER TO LABELED DIMENSIONS ONLY.
- DETAILS LABELED "TYPICAL DETAILS" ON DRAWINGS APPLY TO SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY DETAILED. SUCH DETAILS APPLY WHETHER OR NOT DETAILS ARE REFERENCED AT EACH LOCATION. NOTIFY ENGINEER OF CONFLICTS REGARDING APPLICABILITY OF "TYPICAL DETAILS".
- DO NOT LOAD THE SLAB ON GRADE OR SUPPORTED SLAB WITH ERECTION CRANES OR ERECTION EQUIPMENT. THE SLABS HAVE NOT BEEN DESIGNED FOR CRANE LOADS AND WILL REQUIRE AN INCREASE IN THICKNESS AND/OR REINFORCEMENT. OBTAIN ENGINEERS APPROVAL ON PROPOSED CRANE SUPPORT PLAN FOR SLABS PRIOR TO COMMENCING WORK.
- DO NOT STORE OR STACK CONSTRUCTION MATERIALS ON POURED OR ERECTED FLOORS/ROOFS IN EXCESS OF 80 PERCENT OF LIVE LOAD. AVOID IMPACT WHEN PLACING MATERIALS ON POURED OR ERECTED FLOORS OR ROOFS.
- OPENINGS IN SLABS AND WALLS LESS THAN 12" MAXIMUM DIMENSION ARE GENERALLY NOT SHOWN ON STRUCTURAL DRAWINGS. OPENINGS SHOWN ON DRAWINGS SHALL NOT BE REVISED WITHOUT PRIOR WRITTEN APPROVAL.
- WHERE SPECIFIC DETAILS ARE NOT SHOWN THAT ARE SIMILAR IN CHARACTER TO THOSE INDICATED, SIMILAR CONSTRUCTION DETAILS SHALL BE USED.
- THE CONTRACT STRUCTURAL DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION. PROVIDE ALL MEASURES REQUIRED TO PROTECT THE STRUCTURE, WORKMEN, AND OTHER PERSONS DURING CONSTRUCTION, INCLUDING BRACING, SHORING FOR THE BUILDING, FORMS AND SCAFFOLDING, SHORING OF RETAINING WALLS AND OTHER TEMPORARY SUPPORTS AS REQUIRED. COMPLY WITH APPLICABLE REQUIREMENTS OF OSHA AND OTHER GOVERNING BODIES HAVING JURISDICTION AT THE SITE.

DESIGN LOADS

LIVE LOADS	
ROOF	20 PSF, 300 LB
FIRST FLOOR SLAB	100 PSF, 325 LB
SNOW LOADS	
GROUND SNOW LOAD (Pg)	40.0 PSF
FLAT ROOF SNOW LOAD (P _f)	35.0 PSF
WIND LOADS	
BASIC WIND SPEED	120 MPH
IMPORTANCE FACTOR (I _w)	1.00 (CATEGORY IV)
WIND EXPOSURE CATEGORY	B
SEISMIC	
SEISMIC RISK CATEGORY	IV
IMPORTANCE FACTOR (I _e)	1.5 (CATEGORY IV)
DESIGN FACTOR S _s	0.196
DESIGN FACTOR S ₁	0.067
SITE CLASSIFICATION	D
SPECTRAL RESPONSE S _{Ds}	0.209
SPECTRAL RESPONSE S _{D1}	0.107
SEISMIC DESIGN CATEGORY	C
BASIC RESISTING SYSTEM	INTERMEDIATE REINFORCED MASONRY SHEAR BEARING WALL
DESIGN BASE SHEAR	C _{sw}
RESPONSE COEFFICIENT C _s	0.090
RESPONSE MOD FACTOR R	3.5
ANALYSIS METHOD	EQUIVALENT LATERAL FORCE

FOUNDATIONS

- ALL FOOTINGS FOR WALLS AND COLUMNS SHALL BEAR ON NATURALLY DEPOSITED SOILS OR COMPACTED STRUCTURAL FILL.
- SLABS ON GRADE SHALL BE PLACED ON 12 INCHES OF COMPACTED STRUCTURAL FILL OVER PROOF ROLLED NATURAL SOILS.
- ALL UNSUITABLE MATERIAL WITHIN FOUNDATIONS AND SLABS SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE ENGINEER.
- FOUNDATIONS SHALL BE CENTERED UNDER SUPPORTED STRUCTURAL MEMBERS, UNLESS NOTED OTHERWISE ON THE DRAWINGS (OFFSETS ARE A REQUIREMENT OF THIS PROJECT). FOUNDATION WALLS SHALL BE KEYPED TO FOOTINGS.
- FOUNDATIONS MAY BE ALTERED TO SUIT EXISTING CONDITIONS AS DIRECTED BY THE ENGINEER.
- PROVIDE TEMPORARY OR PERMANENT SUPPORTS AS REQUIRED TO PROTECT EXISTING AND NEWLY COMPLETED STRUCTURES AND UTILITIES.
- CARRY OUT CONTINUOUS CONTROL OF SURFACE AND SUBSURFACE WATER DURING CONSTRUCTION SUCH THAT FOUNDATION WORK IS DONE IN DRY AND ON UNDISTURBED SUB GRADE MATERIAL. REFER TO DEWATERING & CONTAMINATION NOTES ON G-1.
- ALL CONCRETE SURFACES SHALL BE FORMED. DO NOT FORM AGAINST EXCAVATIONS WITHOUT PRIOR APPROVAL OF THE ENGINEER.
- NO FOUNDATION CONCRETE SHALL BE PLACED ON FROZEN SUB GRADE MATERIAL.
- PLACE BACKFILL BEHIND WALLS ON BOTH SIDES SIMULTANEOUSLY.

CONCRETE

- CONCRETE WORK SHALL CONFORM TO BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318), AND SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301).
- UNLESS NOTED OTHERWISE, CONCRETE SHALL BE AS FOLLOWS:
 ROOF 4000 PSI (NORMAL WEIGHT)
 FOUNDATION WALLS AND FOOTINGS 4000 PSI (NORMAL WEIGHT)
 SLAB-ON-GRADE 4000 PSI (NORMAL WEIGHT)
 HOUSEKEEPING/MECHANICAL PADS 3000 PSI (NORMAL WEIGHT)
- CONCRETE EXPOSED TO THE WEATHER SHALL BE AIR ENTRAINED.
- PROVIDE VAPOR BARRIER UNDER INTERIOR SLABS CAST ON GRADE.
- CONSTRUCTION JOINTS SHOWN ON THE DRAWINGS ARE MANDATORY. ADDITIONAL CONSTRUCTION JOINTS AND MODIFICATIONS AS REQUIRED TO EXECUTE THE CONSTRUCTION SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
- SIZE OF CONCRETE PLACEMENTS, UNLESS NOTED OTHERWISE, SHALL CONFORM TO ACI GUIDELINES AND RECOMMENDATIONS.

REINFORCEMENT

- REINFORCEMENT SHALL CONFORM TO BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318), ACI DETAILING MANUAL (SP-66), CRSI MANUAL OF STANDARD PRACTICE (MSP), AND THE STRUCTURAL WELDING CODE-REINFORCING STEEL (AWS D1).
- STEEL REINFORCEMENT SHALL CONFORM TO ASTM A615 GRADE 60.
- WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
- PROVIDE SUPPLEMENTAL BARS AND ACCESSORIES AS REQUIRED TO HOLD REINFORCEMENT SECURELY IN POSITION.
- MINIMUM CONCRETE PROTECTIVE COVER, UNLESS NOTED OTHERWISE, SHALL BE AS FOLLOWS:
 FOOTINGS - BOTTOMS 3 INCHES
 FOOTINGS - SIDES AND TOP 2 INCHES
 WALLS 2 INCHES
 SLABS ON GRADE 1 INCH TOP/1½" BOTTOM
- ALL CONTINUOUS REINFORCEMENT SHALL BE EXTENDED AROUND CORNERS AND LAPPED AT NECESSARY SPLICES OR HOOKED AT DISCONTINUOUS ENDS.
- LAPS SHALL BE CLASS B TENSION LAP SPLICES, UNLESS NOTED OTHERWISE.
- REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS.
- COLUMN DOWELS SHALL BE SET WITH A TEMPLATE AND POSITIONED SO AS TO BE ENCLOSED BY THE COLUMN TIES.
- WELDED WIRE FABRIC SHALL LAP 8" OR 1-1/2 SPACES, WHICHEVER IS LARGER, AND SHALL BE WIRED TOGETHER.

MASONRY CONSTRUCTION

- CONCRETE MASONRY UNIT (CMU) CONSTRUCTION SHALL CONFORM TO BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530).
- CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C-90 GRADE N-1.
- MORTAR SHALL CONFORM TO ASTM C-270, TYPE N. MASONRY CEMENT IS NOT PERMITTED FOR SHEAR WALLS.
- GROUT SHALL CONFORM TO ASTM C-476 2,500 PSI.
- PRIOR TO GROUTING CELLS, BARS AND CELLS MUST BE INSPECTED BY THE TESTING AGENCY.
- THE BASE OF EACH CELL IN WHICH A BAR IS PLACED MUST HAVE A CLEAN OUT HOLE.
- SUBMIT SHOP DRAWINGS SHOWING ALL UNITS, REINFORCING, LINTELS, ETC. FOR REVIEW AND APPROVAL.
- PROVIDE AND INSTALL LINTELS FOR ALL OPENINGS AS SHOWN ON THE DRAWINGS.
- MASONRY BLOCK CELLS CONTAINING VERTICAL REINFORCING SHALL BE GROUTED SOLID. FILLING CELLS WITH MORTAR IS UNACCEPTABLE. DO NOT DROP MORTAR IN CELLS TO BE GROUTED.
- REINFORCING SHALL BE SECURELY HELD IN POSITION USING "REBAR POSITIONERS".
- REINFORCING BARS TO EXTEND 12 BAR DIAMETERS BUT NOT LESS THAN 12" BEYOND BEND U.N.O.
- REINFORCING LAP SPLICE LENGTH = 48 BAR DIAMETERS (24" MINIMUM).
- PROVIDE A CONTINUOUS TWO COURSE BOND BEAM WITH (2)-#5 CONTINUOUS HORIZONTAL BARS AT THE TOP OF ALL WALLS IN EACH COURSE. THE BOND BEAMS SHALL STEP ALONG THE SLOPE OF THE WALLS.
- ALL HORIZONTAL REINFORCING, EXCEPT IN THE LINTELS SHALL BE PLACED IN A CMU BOND BEAM BLOCK. PROVIDE GALVANIZED METAL LATH IN THE HORIZONTAL JOINT BELOW THE BLOCK TO RETAIN THE GROUT.

STRUCTURAL STEEL

- WORK SHALL CONFORM TO SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, AND THE STRUCTURAL WELDING CODE.
- STRUCTURAL STEEL SHALL BE DETAILED IN ACCORDANCE WITH "DETAILING FOR STEEL CONSTRUCTION (AISC) AND, WHERE REQUIRED, DESIGNED IN ACCORDANCE WITH THE CITED REFERENCES.
- STRUCTURAL STEEL SHALL BE NEW STEEL CONFORMING TO THE FOLLOWING:
 UNLESS NOTED OTHERWISE ASTM A992 GRADE 50 (FY = 50 KSI)
 CHANNELS, ANGLES, PLATES ASTM A36 (FY = 36 KSI)
 HOLLOW STRUCTURAL SECTIONS ASTM A500 GRADE B (FY = 46 KSI)
 ANCHOR BOLTS ASTM F1554
 HIGH STRENGTH BOLTS ASTM A325
- BOLTED CONNECTIONS SHALL BE MADE WITH 3/4 INCH DIAMETER A325-N HIGH STRENGTH BOLTS.
- WELDED CONNECTIONS SHALL BE MADE BY APPROVED CERTIFIED WELDERS USING FILLER METAL CONFORMING TO E70XX.
- UNLESS OTHERWISE NOTED, BEAM CONNECTIONS SHALL PROVIDE FOR A REACTION LOAD "R" EQUAL TO HALF THE TOTAL UNIFORM LOAD CAPACITY OF BEAM FOR GIVEN SHAPE.
- PROVIDE STIFFENERS WHERE SHOWN ON DRAWINGS.
- PROVIDE TEMPORARY ERECTION BRACING AND SUPPORTS TO HOLD STRUCTURAL STEEL FRAMING SECURELY IN POSITION. SUCH TEMPORARY BRACING AND SUPPORTS SHALL NOT BE REMOVED UNTIL PERMANENT BRACING HAS BEEN INSTALLED AND CONCRETE FOR FLOOR SLABS HAS ATTAINED 75% OF SPECIFIED CONCRETE STRENGTH.
- FIELD CUTTING OF STRUCTURAL STEEL OR ANY FIELD MODIFICATIONS OF STRUCTURAL STEEL SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL.
- STRUCTURAL STEEL ENCASED IN MASONRY OR CONCRETE SHALL BE COVERED WITH MASTIC.
- STRUCTURAL STEEL MEMBERS, LINTELS AND CONNECTIONS EXPOSED TO THE WEATHER SHALL BE GALVANIZED.
- STRUCTURAL STEEL, IF USED FOR THE DESIGN OF THE SHEAR WALLS, SHALL BE DESIGNED IN ACCORDANCE WITH AISC.

METAL DECK

- METAL ROOF DECK SHALL BE 2" DEEP, 36" WIDE, GALVANIZED PER ASTM A924 G-90, TYPE 2VLJ METAL DECK WITH THE FOLLOWING MINIMUM PROPERTIES:
 GAUGE 18
 IP 0.559
 In 0.558
 Sp 0.495
 S₁ 0.504
- UNLESS OTHERWISE INDICATED WELD METAL ROOF DECK TO STRUCTURAL SUPPORTS WITH 5/8" DIAMETER PUDDLE WELDS TO ALL STRUCTURAL SUPPORTS A MINIMUM OF 12 INCHES ON CENTER. WELD ALONG THE BUILDING PERIMETER AND AROUND OPENINGS AT 6 INCHES ON CENTER. PROVIDE SIDE LAP SCREWS AS SHOWN ON DRAWINGS.
- OVERHANGS SHALL BE TEMPORARILY SHORED UNTIL CONCRETE REACHES 75% OF f'c.

SUBMITTALS, TESTING AND INSPECTIONS

- SUBMITTALS AND TESTING SHALL BE AS REQUIRED BY THE MASSACHUSETTS STATE BUILDING CODE AND THESE FOLLOWING REQUIREMENTS.
- THE CONTRACTOR SHALL PROVIDE FOR AN INDEPENDENT TESTING AGENCY TO PERFORM REQUIRED TESTING.
- THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE TESTING AGENCY AND THE ENGINEERS ACCORDINGLY.
- NOTIFY THE ENGINEER PRIOR TO FOUNDATION EXCAVATION.
- NOTIFY THE ENGINEER PRIOR TO FIRST CONCRETE PLACEMENT.
- SUBMITTAL INCLUDES BUT NOT LIMITED TO:
 DEWATERING
 BORROW MATERIAL
 CONCRETE MIX DESIGN
 STEEL REINFORCING ACCESSORIES
 CONCRETE MASONRY UNITS, MORTAR AND GROUT
 STRUCTURAL STEEL
 METAL DECK
- TESTS/INSPECTIONS INCLUDES BUT NOT LIMITED TO:
 EARTHWORK
 CONCRETE STRENGTH
 REINFORCING STEEL INSTALLATION
 CONCRETE PLACEMENT AND CURING
 STEEL BOLTING AND WELDING
 MASONRY MATERIAL INSTALLATION
- THE CONTRACTOR SHALL ALSO KEEP COMPLETE AND ORGANIZED RECORDS OF ALL TESTS AND INSPECTIONS AND PROVIDE THEM TO THE ENGINEER SO THAT THE FINAL AFFIDAVIT CAN BE PREPARED. A BINDER SHALL BE MAINTAINED AT THE JOBSITE AT ALL TIMES FOR THE ENGINEERS INSPECTION.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER, IN ADVANCE, BEFORE CONCEALING ANY WORK THAT WILL REQUIRE OBSERVATION NEEDED TO PREPARE THE FINAL AFFIDAVIT.

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:	JMR
DESIGNED BY:	PJK
CHECKED BY:	CWJ

REGISTERED PROFESSIONAL
For Review Only



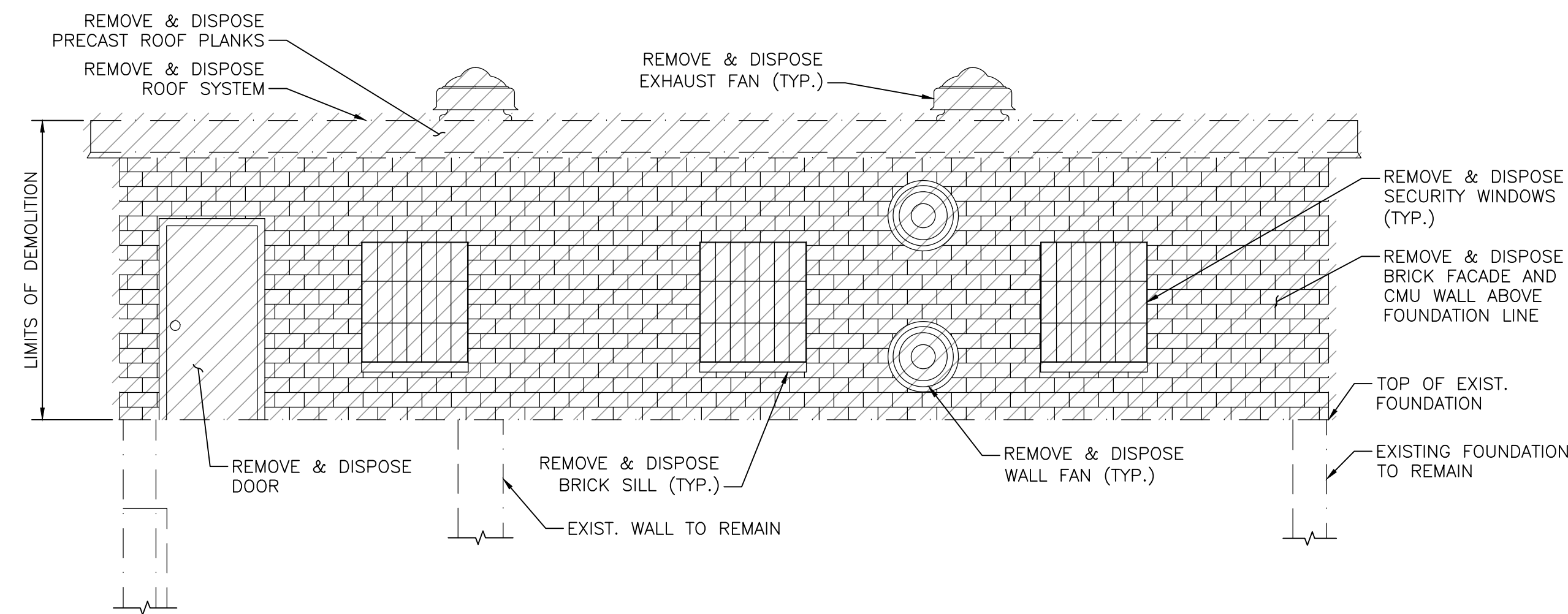
PREPARED BY
 SUBCONSULTANT

SCALE
 AS SHOWN

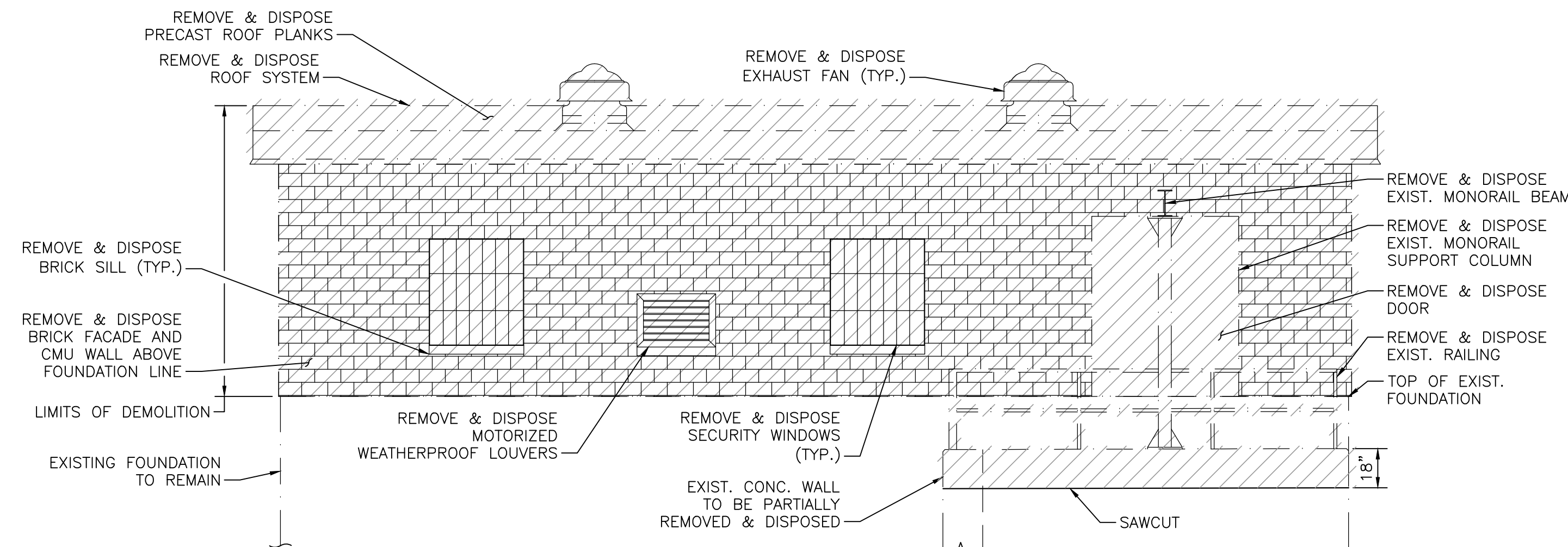
TITLE
Worcester Road Sewer Pumping Station Replacement
 GENERAL NOTES

BETA JOB NO. 7385
 ISSUE DATE AUGUST 2022
 SHEET NO. S-1

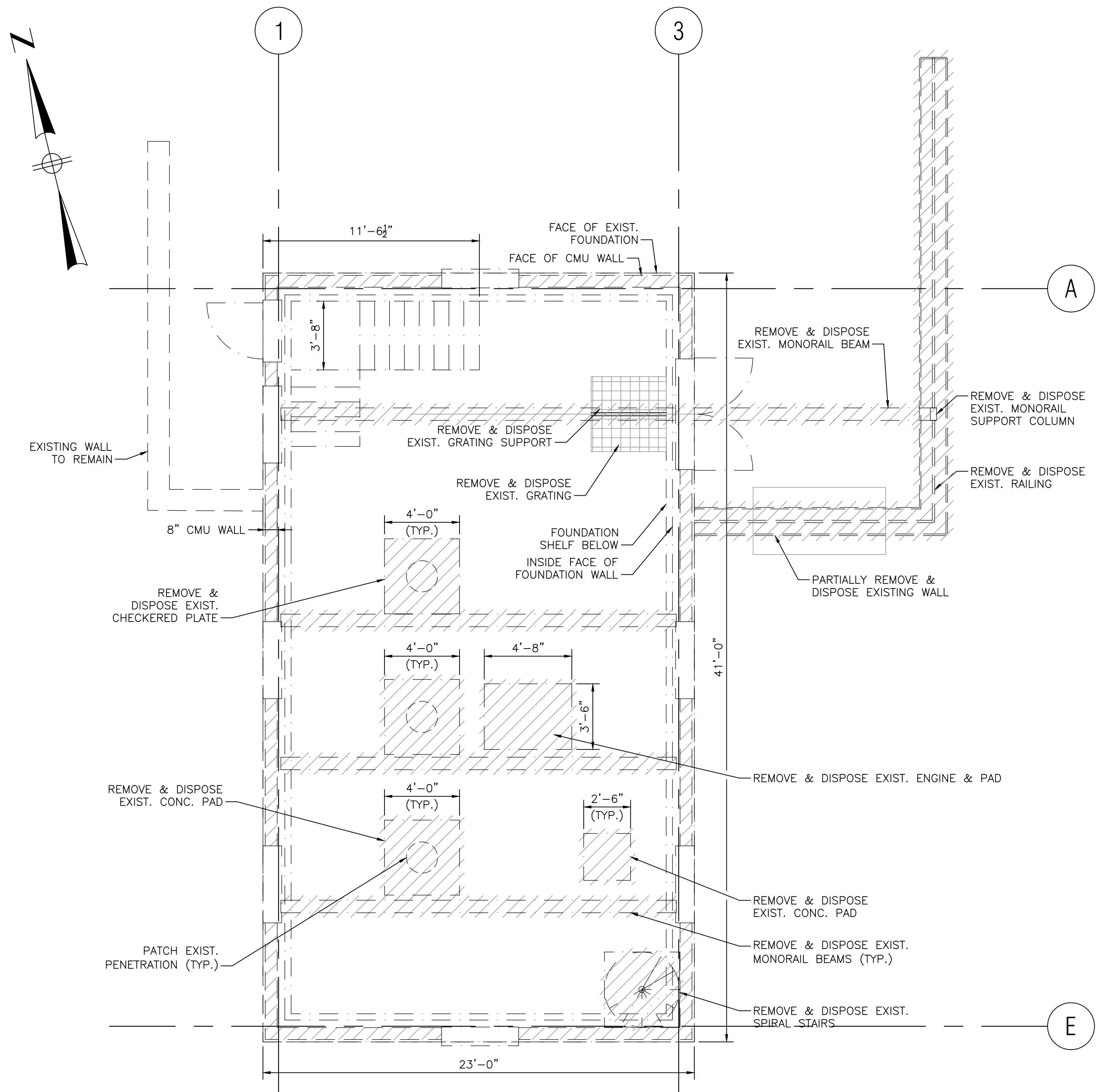
8/11/2022 1:46 PM I:\BETA-INC.COM\RIEN\IRON\7385 - FRAMINGHAM WRRPS IMPROVEMENTS\DRAWING\PLANS\SR(2) DEMOLITION DETAILS.DWG (BETA STD BW.CTB)



WEST DEMO ELEVATION
SCALE: 1/4" = 1'-0"



EAST DEMO ELEVATION
SCALE: 1/4" = 1'-0"

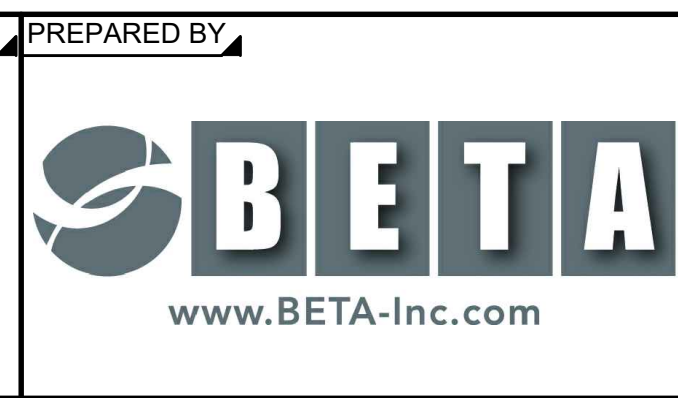


UPPER LEVEL DEMO PLAN
SCALE: 1/4" = 1'-0"

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
JMR
DESIGNED BY:
PJK
CHECKED BY:
CWJ

REGISTERED PROFESSIONAL
For Review Only



PREPARED BY
SUBCONSULTANT

SCALE
AS SHOWN

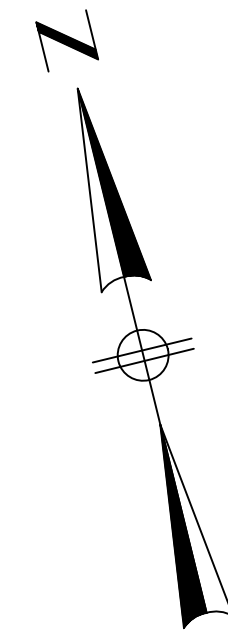
TITLE
Worcester Road Sewer Pumping Station Replacement
DEMOLITION DETAILS

BETA JOB NO. 7385
ISSUE DATE AUGUST 2022
SHEET NO. S-2

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

FIRST FLOOR NOTES:

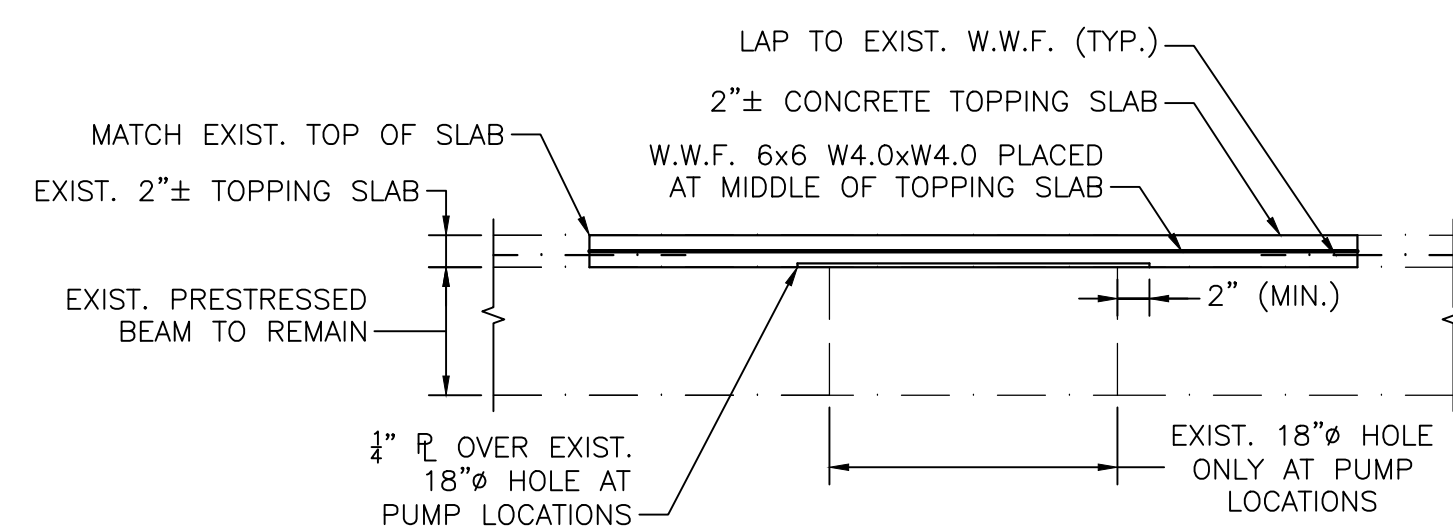
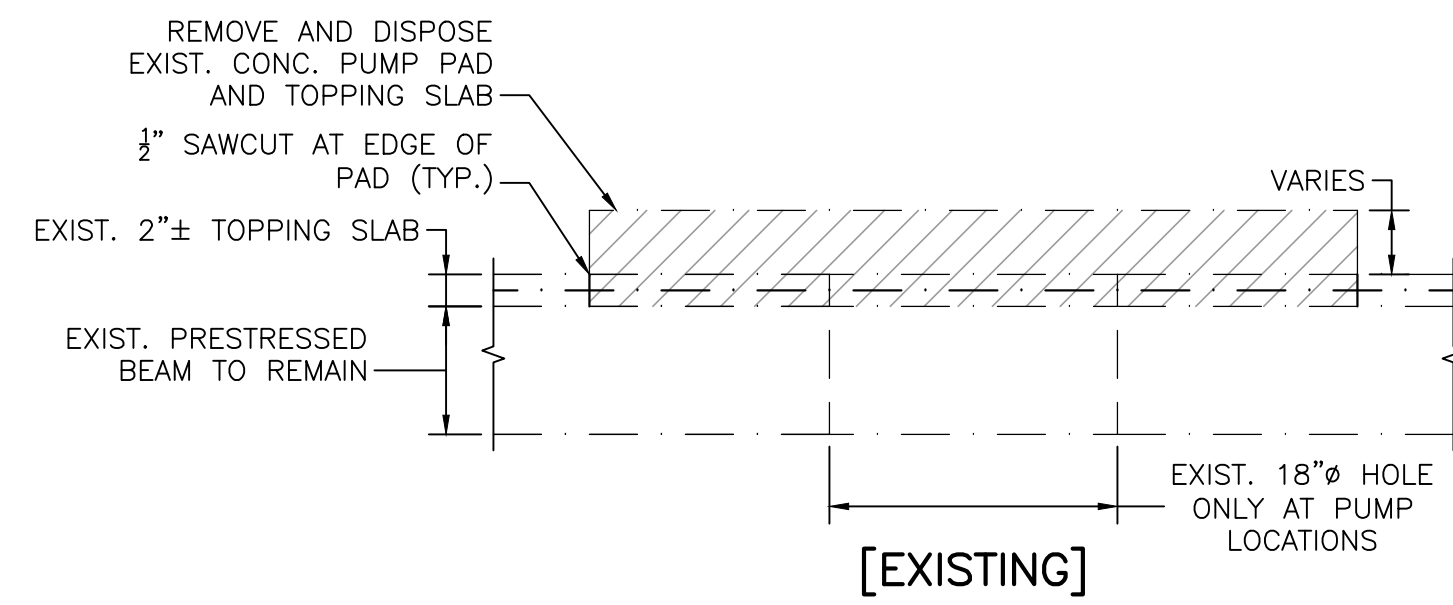
1. DRILLING, CORING, OR CUTTING OF THE EXISTING FIRST FLOOR IS NOT PERMITTED WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER UNLESS NOTED ON THE STRUCTURAL PLANS.
2. CHIPPING HAMMERS SHALL BE LIMITED TO 30 LBS MAX. FOR ANY DEMOLITION WORK ON THE FIRST FLOOR SLAB.



* FIELD VERIFY DIMENSION. ROOF BEAM AND MONORAIL ARE TO ALIGN WITH THE ϕ OF ACCESS HATCH ON THE MAIN LEVEL

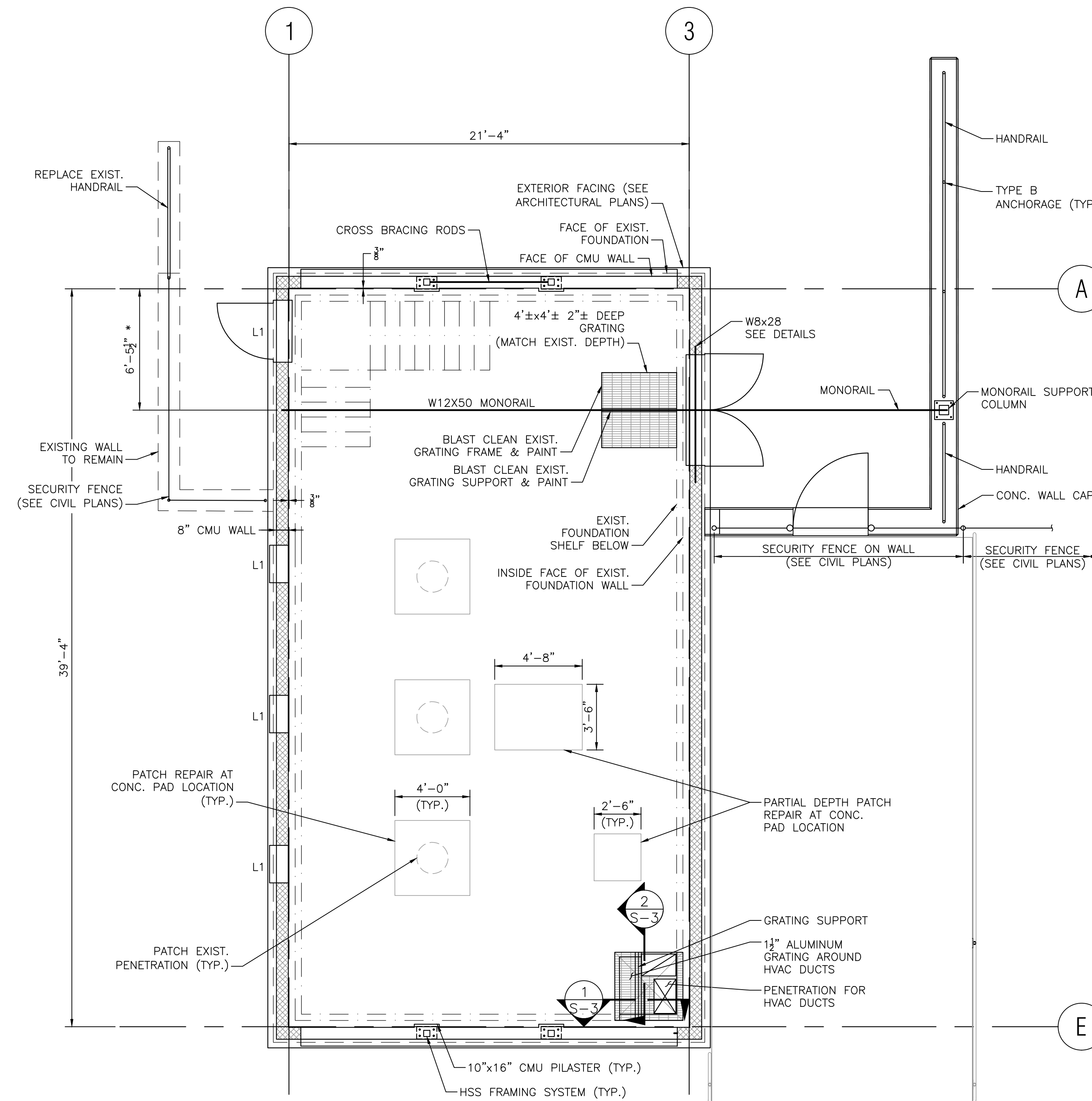
CONCRETE REPAIR NOTES:

1. EXISTING CONCRETE SURFACE SHALL BE CLEAN WITH NO DEBRIS WITH DUST VACUUMED OUT.
2. EXISTING CONCRETE SHALL BE SATURATED SURFACE DRY (SSD) WITH NO STANDING WATER PRIOR TO PLACING NEW CONCRETE.



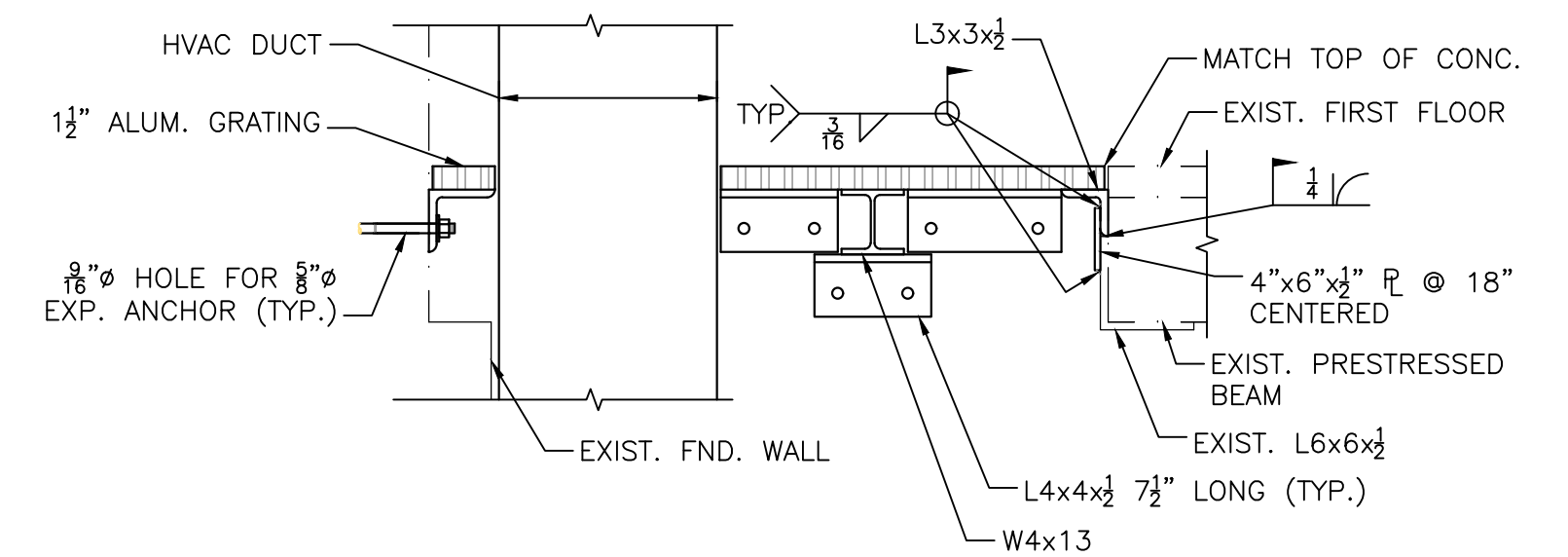
UPPER LEVEL SLAB REPAIR DETAILS

SCALE: 1" = 1'-0"



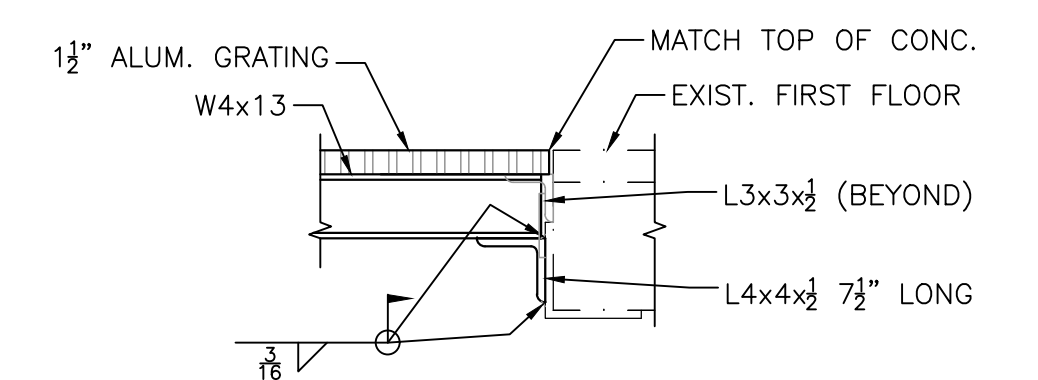
UPPER LEVEL PLAN

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



SECTION 1

SCALE: 1" = 1'-0"



SECTION 2

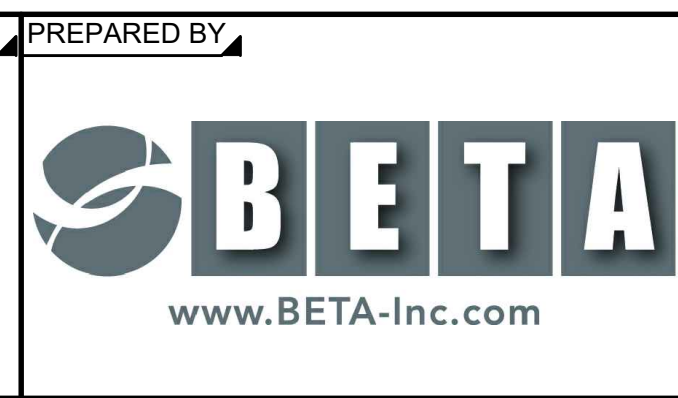
SCALE: 1" = 1'-0"

8/11/2022 1:46 PM - LIBETA-INC. COM\MRIEN\IRON\7385 - FRAMINGHAM\WRPS IMPROVEMENTS\DRAWING\PLANS\SR(3) 1ST FLOOR PLAN.DWG (BETA STD.BW.CTB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: JMR
DESIGNED BY: PJK
CHECKED BY: CWJ

REGISTERED PROFESSIONAL
For Review Only



PREPARED BY
SUBCONSULTANT

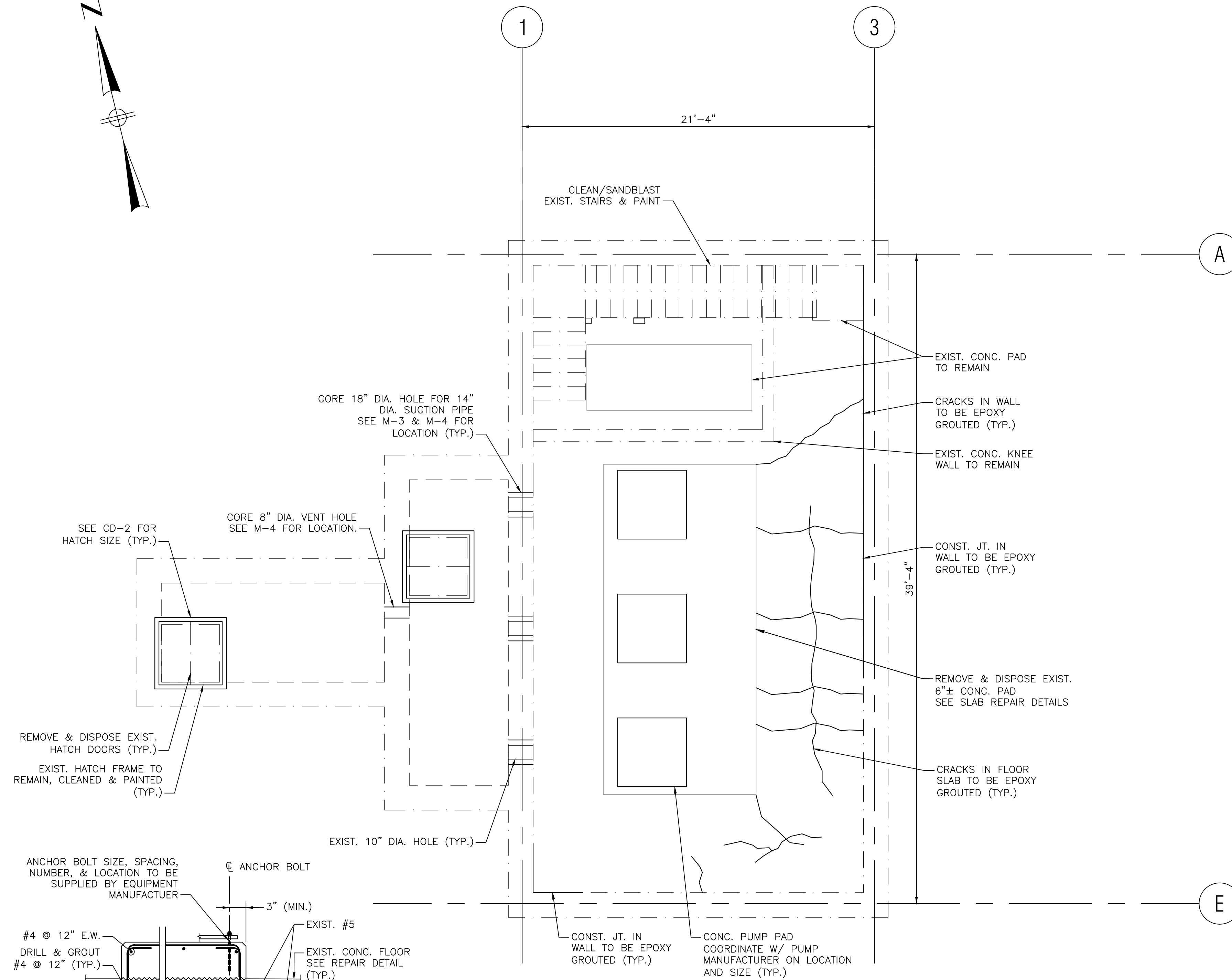
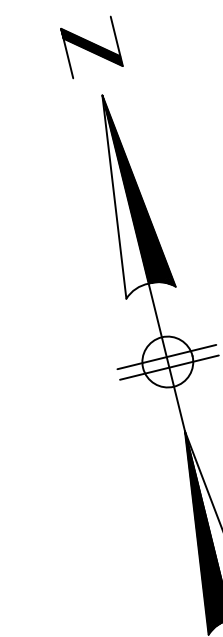
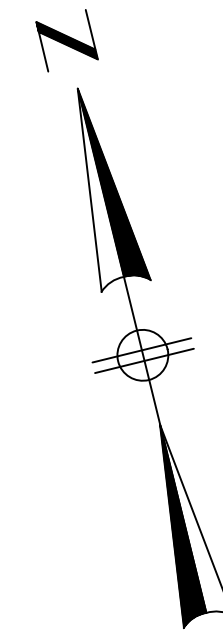
SCALE
AS SHOWN

TITLE
Worcester Road Sewer Pumping Station Replacement
UPPER LEVEL PLAN

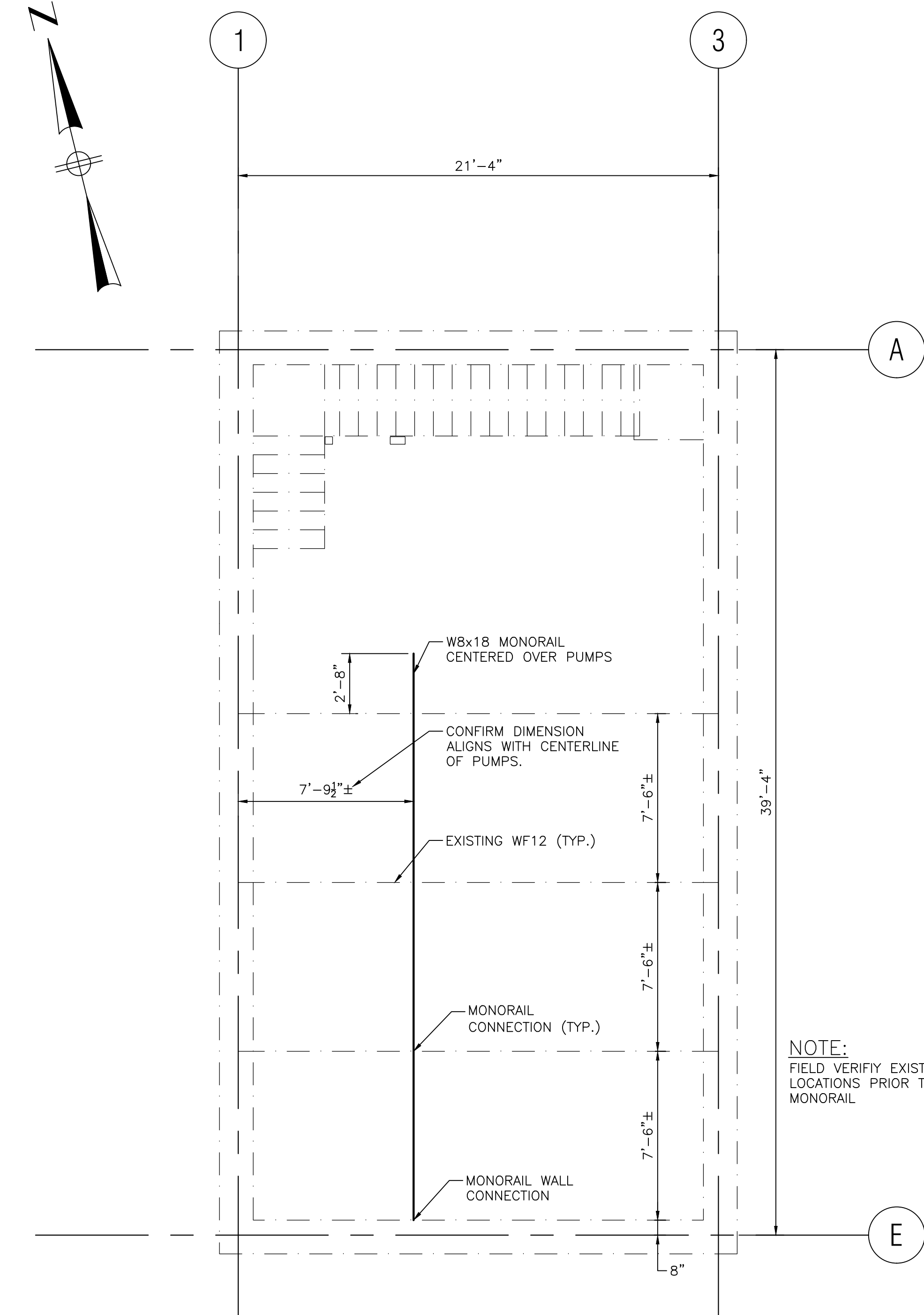
BETA JOB NO. 7385
ISSUE DATE AUGUST 2022
SHEET NO. S-3

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

8/11/2022 1:46 PM \\BETA-INC.COM\RIEN\IRON\7385 - FRAMINGHAM WRRPS IMPROVEMENTS\DRAWING\PLANS\SET\SR(4) BASEMENT PLAN.DWG (BETA STD.BW.CTB)

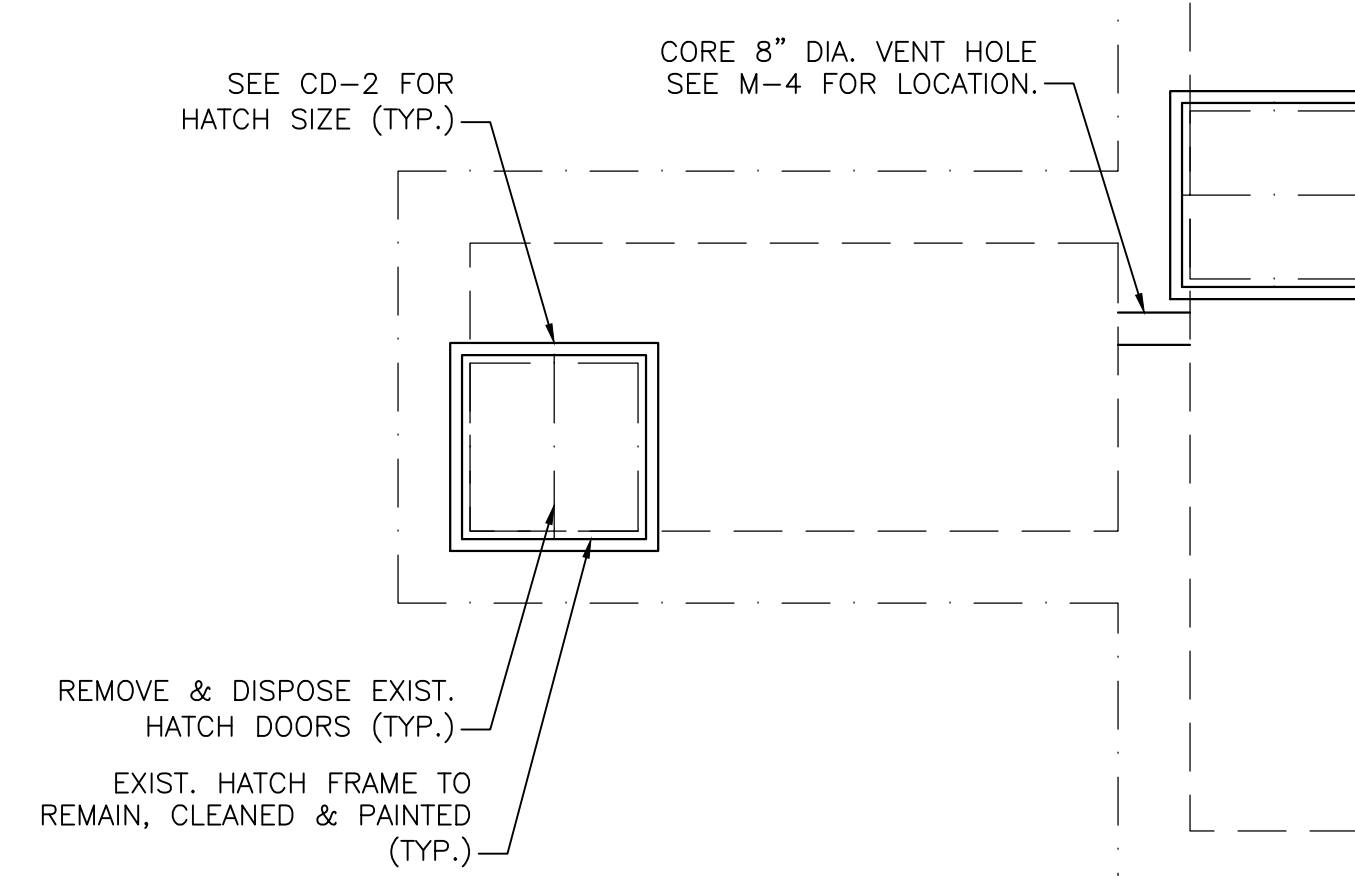


LOWER LEVEL PLAN
SCALE: 1/4" = 1'-0"



LOWER LEVEL REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"

NOTE:
FIELD VERIFY EXISTING BEAM LOCATIONS PRIOR TO FABRICATING MONORAIL



EQUIPMENT PAD
NOT TO SCALE

NOTE:
1. DIMENSIONS OF PAD AS REQUIRED TO SUIT EQUIPMENT (4" MIN. HEIGHT)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: JMR
DESIGNED BY: PJK
CHECKED BY: CWJ

REGISTERED PROFESSIONAL
For Review Only



PREPARED BY
SUBCONSULTANT

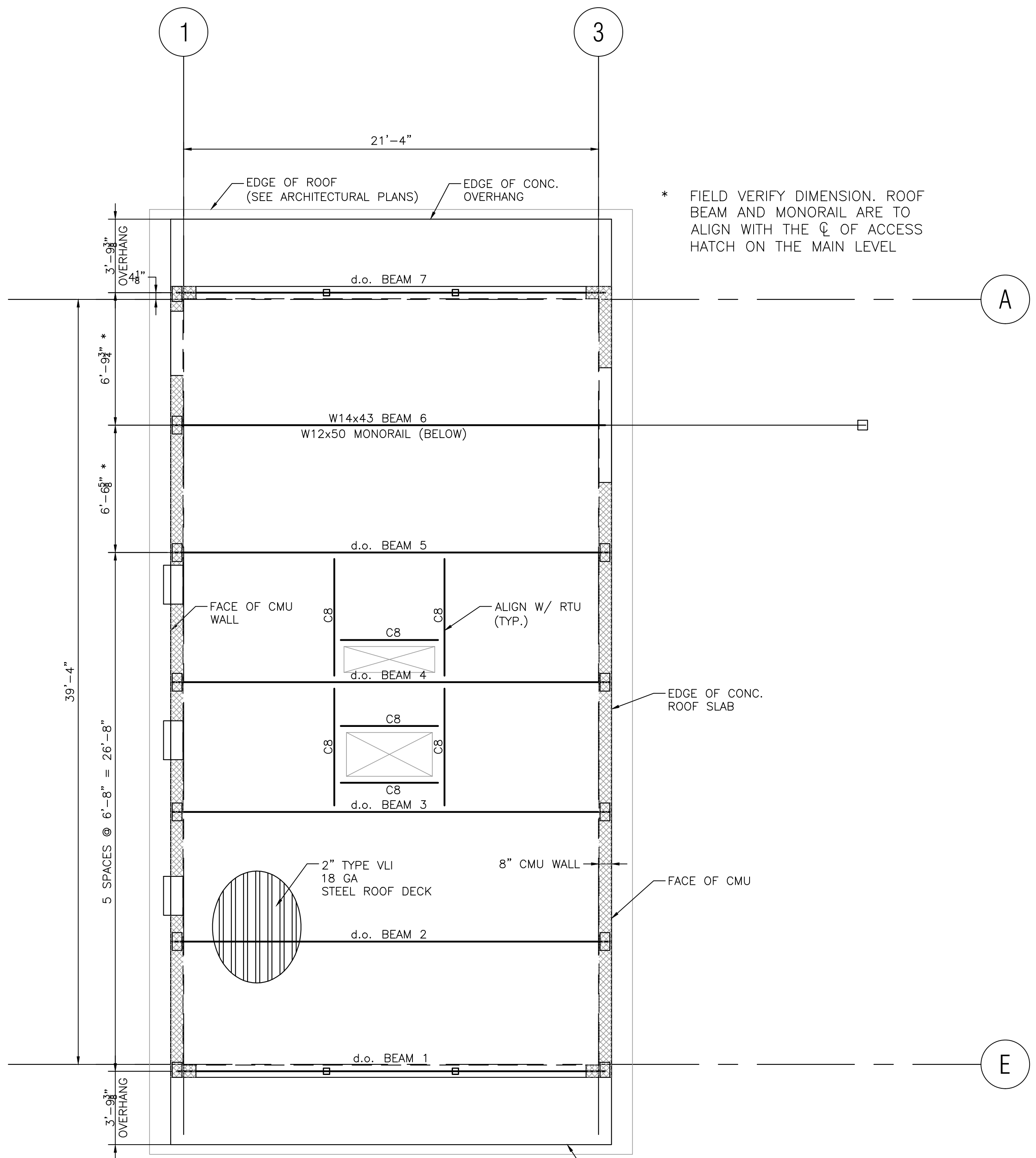
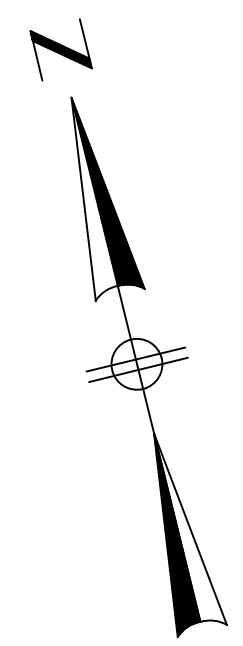
SCALE
AS SHOWN

TITLE
Worcester Road Sewer Pumping Station Replacement
LOWER LEVEL PLAN

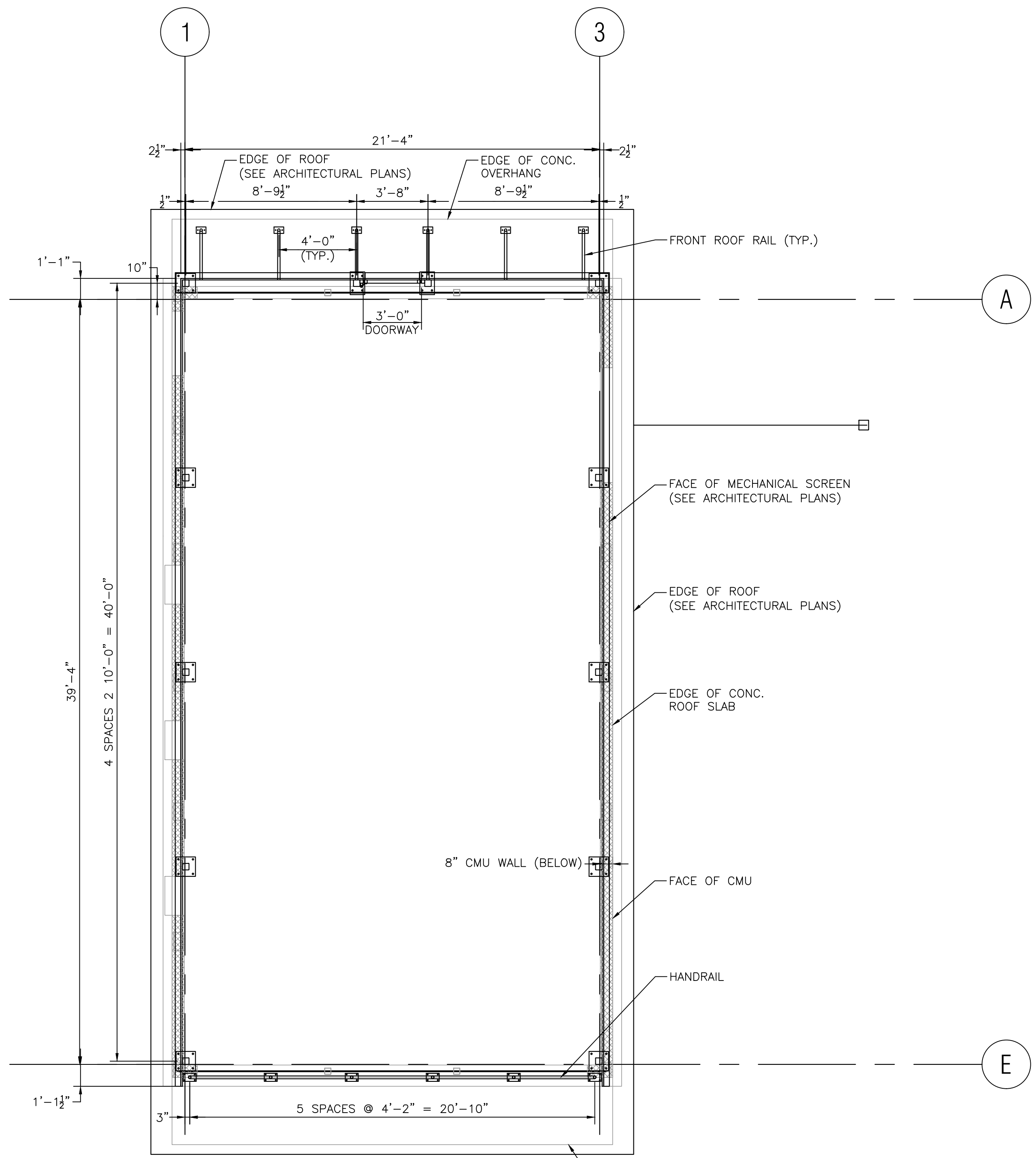
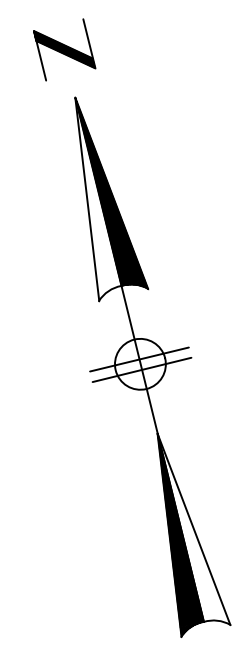
BETA JOB NO. 7385
ISSUE DATE AUGUST 2022
SHEET NO. S-4

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

8/11/2022 1:46 PM \\BETA-INC.COM\RIEN\IRON\7385 - FRAMINGHAM\WRPS IMPROVEMENTS\DRAWINGFILES\PLANS\SR(6) ROOF PLAN.DWG (BETA STD.BW.CTB)



* FIELD VERIFY DIMENSION. ROOF BEAM AND MONORAIL ARE TO ALIGN WITH THE CL OF ACCESS HATCH ON THE MAIN LEVEL



NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: JMR
DESIGNED BY: PJK
CHECKED BY: CWJ

REGISTERED PROFESSIONAL
For Review Only



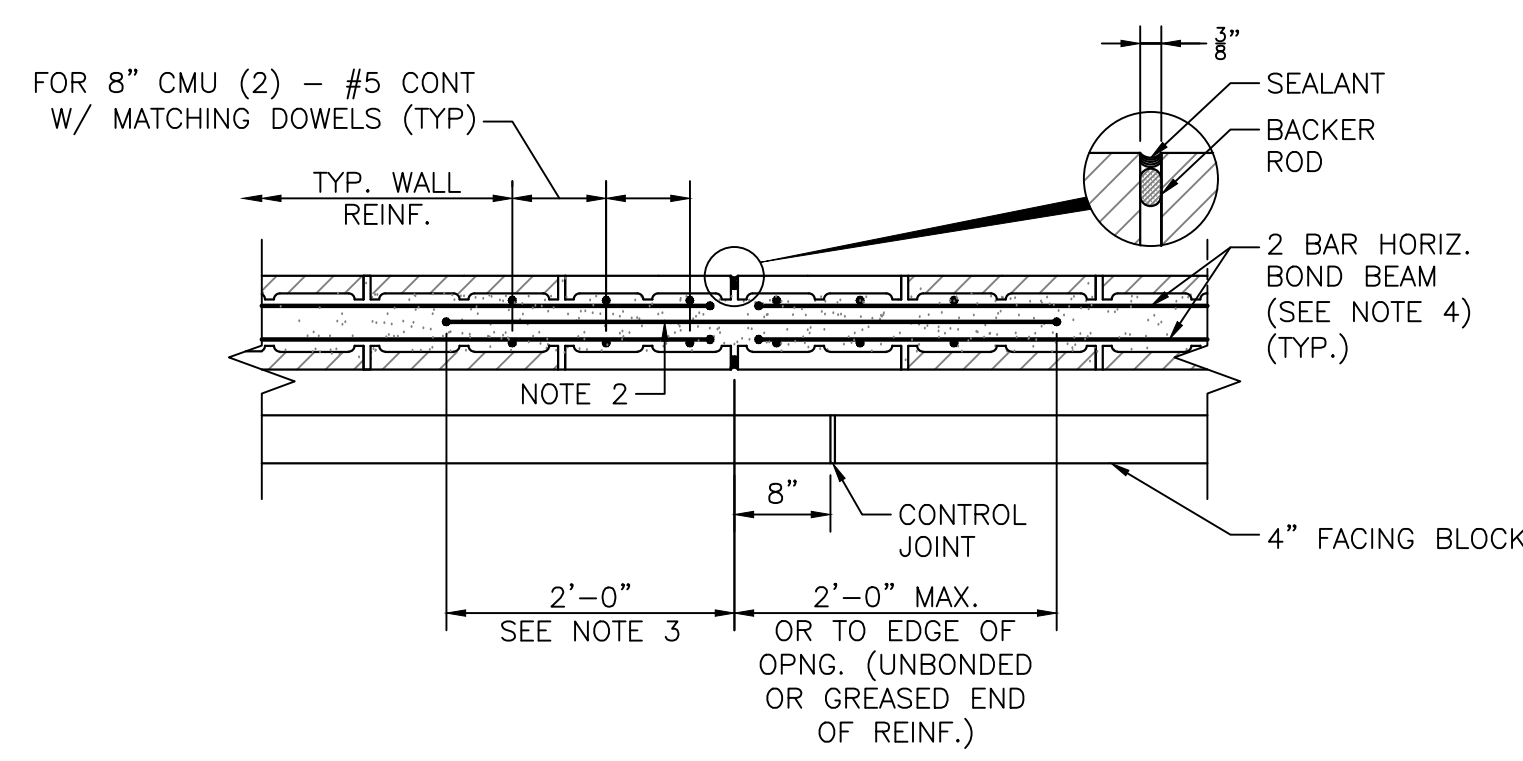
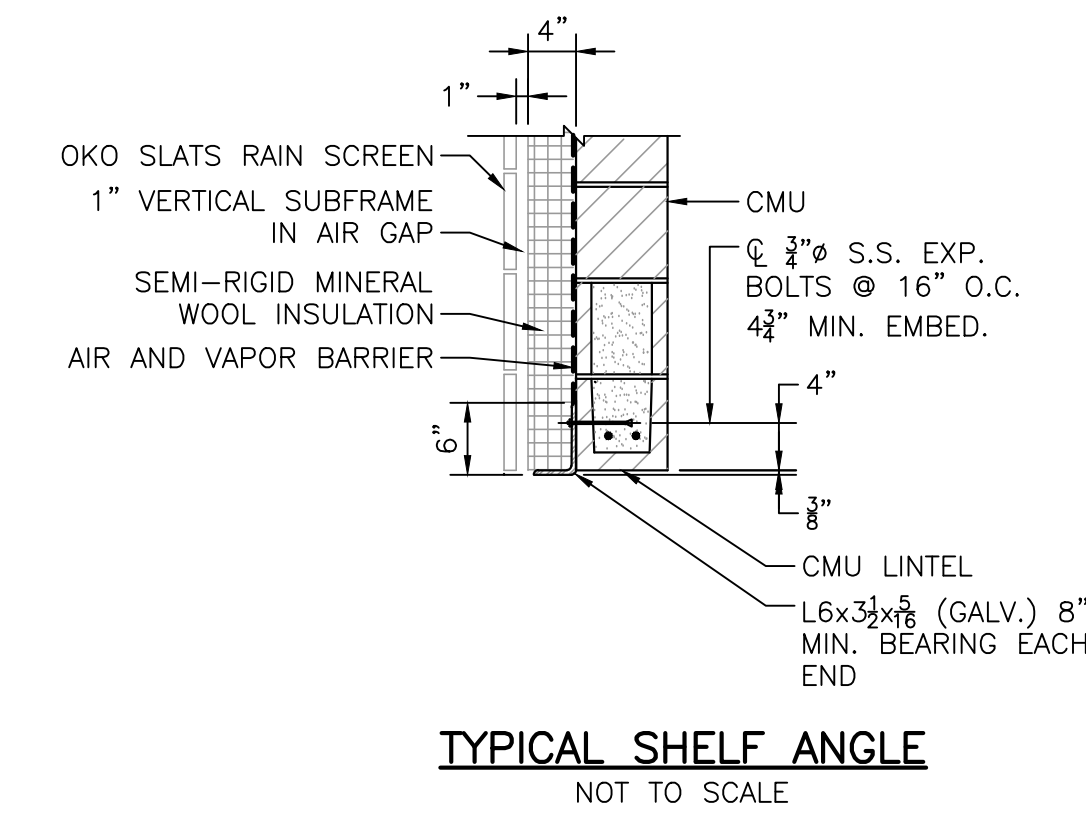
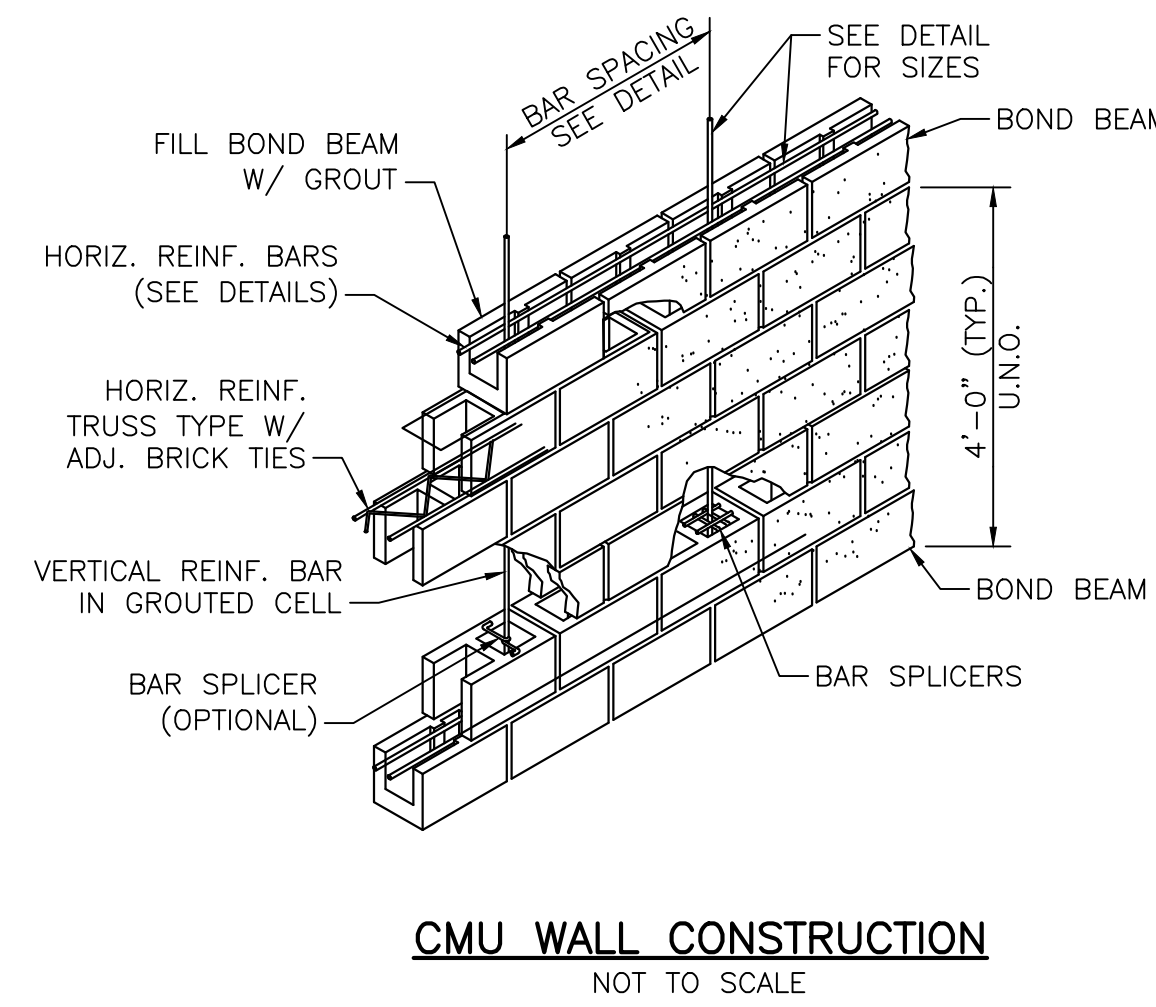
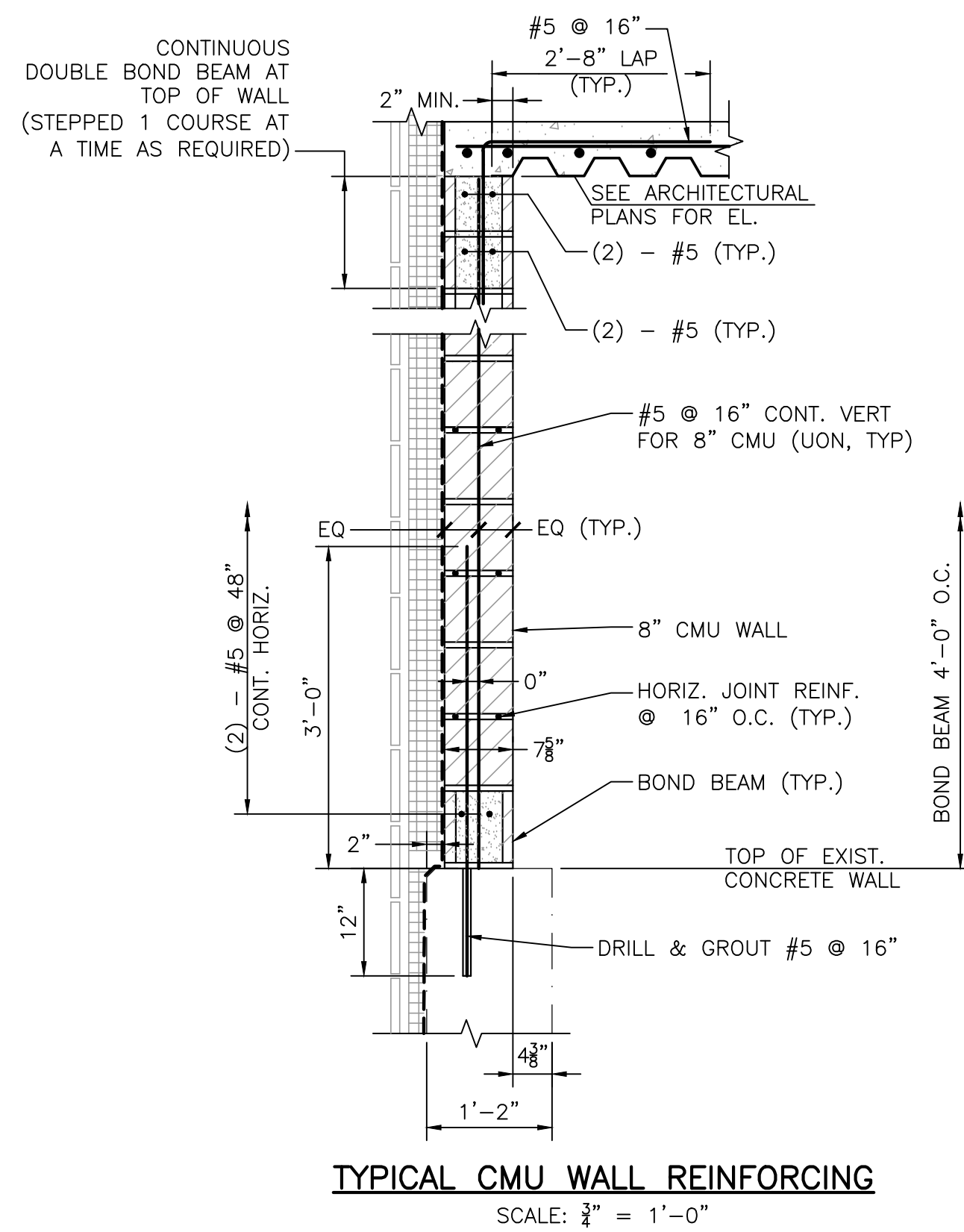
PREPARED BY
SUBCONSULTANT

SCALE
AS SHOWN

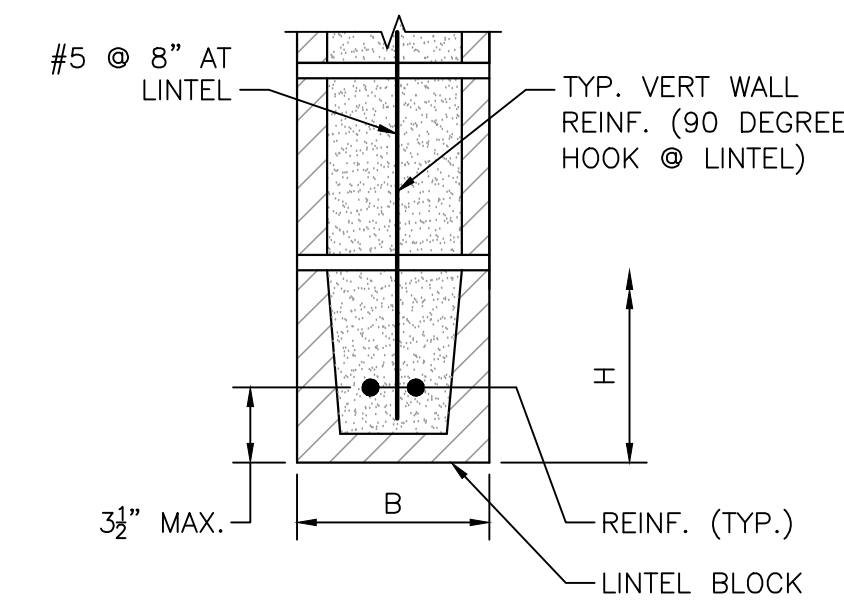
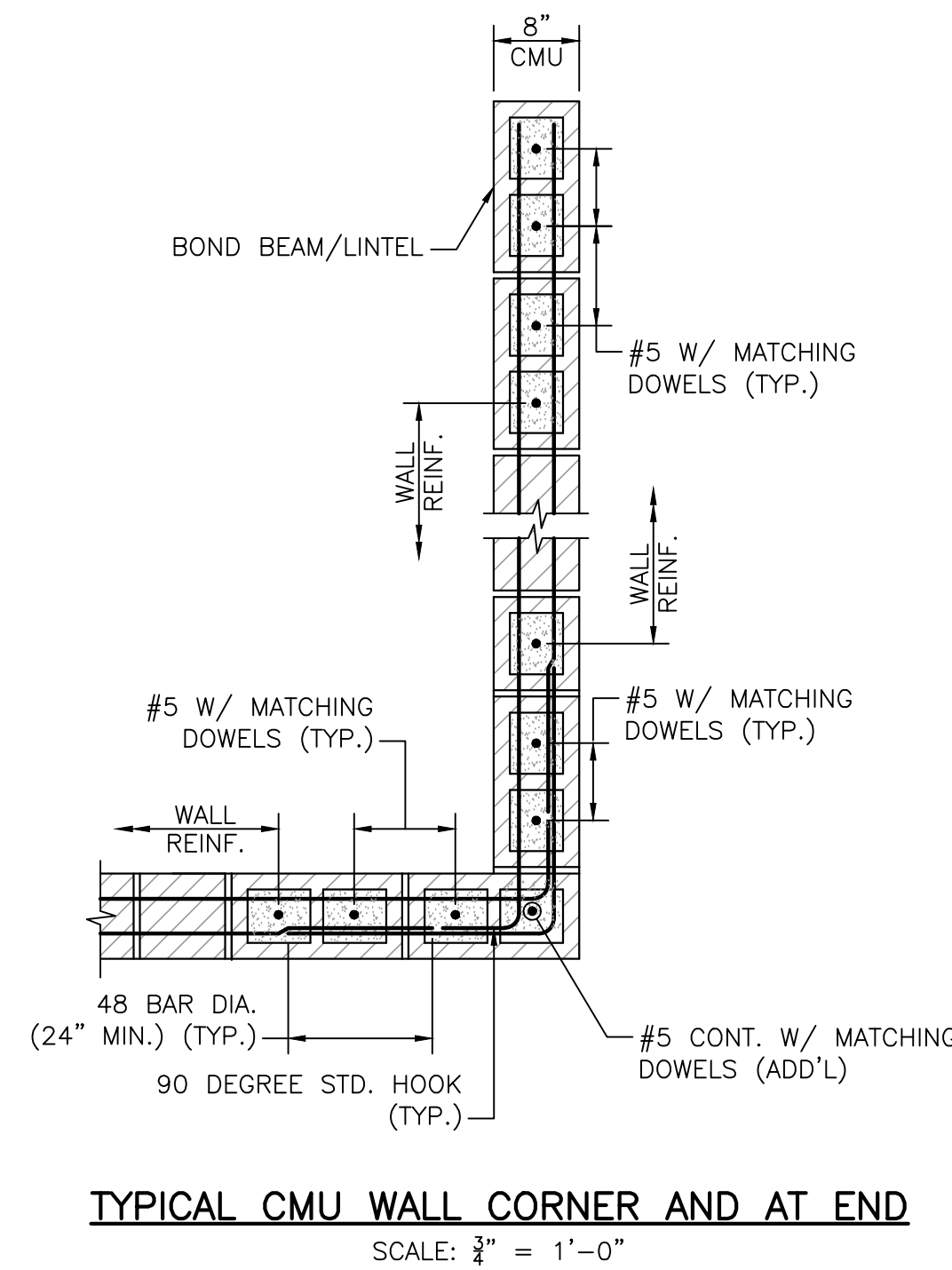
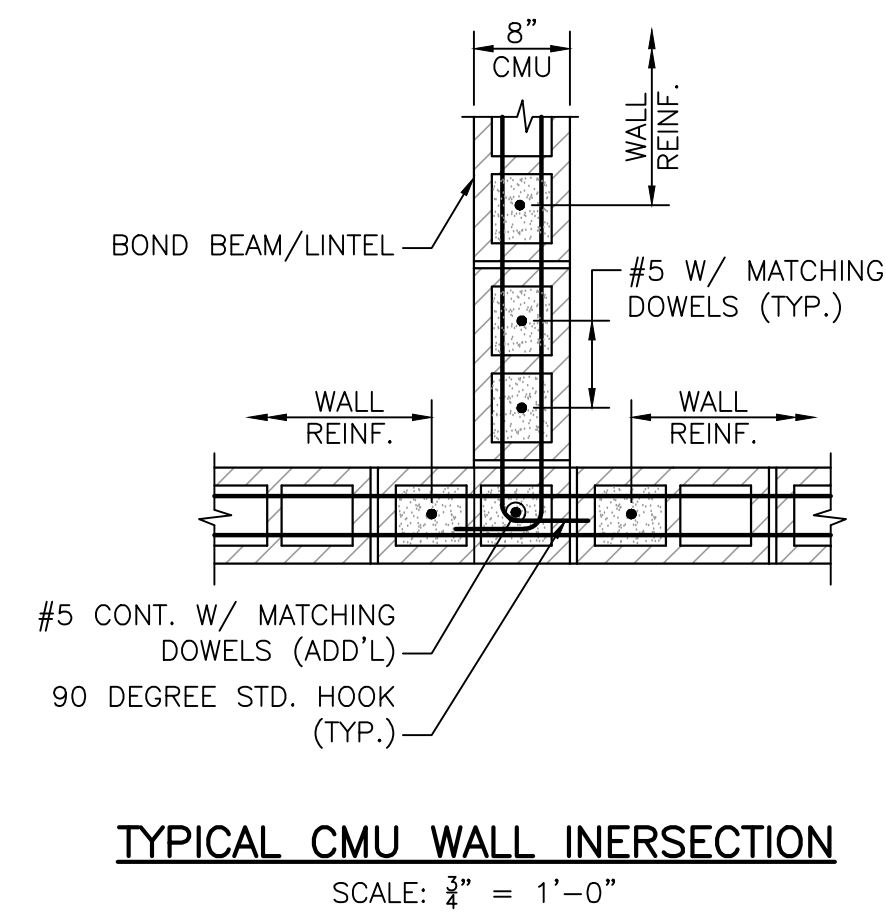
TITLE
Worcester Road Sewer Pumping Station Replacement
ROOF PLAN

BETA JOB NO. 7385
ISSUE DATE AUGUST 2022
SHEET NO. S-5

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

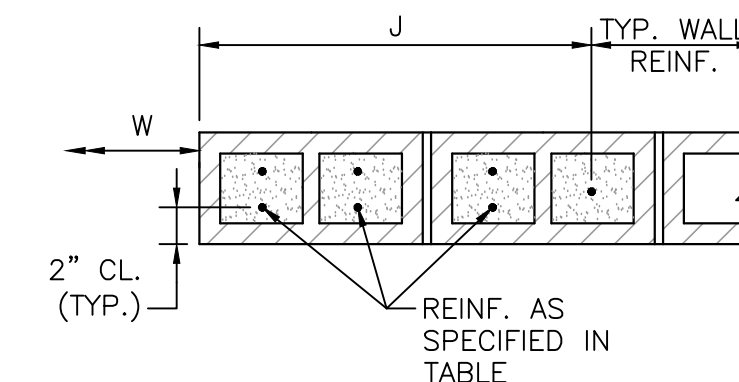


- NOTES:**
1. TERMINATE HORIZ. REINFORCEMENT WITH A STANDARD HOOK TWO INCHES FROM CONTROL JOINTS.
 2. PROVIDE SMOOTH DOWEL IDENTICAL TO HORIZONTAL BAR DIAMETER ACROSS THE JOINT AT HORIZONTAL BAR LOCATIONS. PREVENT BOND BETWEEN BAR AND GROUT ON ONE SIDE OF JOINT WITH PLASTIC SLEEVE OR GREASE. CAP ALL DOWELS TO ALLOW ONE INCH OF MOVEMENT.
 3. PROVIDE STD. HOOK ON SIDE WITH BOND IF 2'-0" LENGTH IS NOT POSSIBLE.
 4. CONTINUE HORIZ. REINF. THROUGH MCJ @ BEAM BEARING, DECK BEARING, T.O.W. BOND BEAMS AND LINTEL REINF. SMOOTH DOWEL BAR NOT REQUIRED.
 5. SEE ARCHITECTURAL DRAWINGS FOR LOCATION OF CONTROL JOINTS.



MARK/LOCATION	W	B	H	REINF
L1	< 3'-4"	WIDTH OF CMU WALL	8"	2-#5 BOT
L2	> 3'-4" BUT < 6'-8"	WIDTH OF CMU WALL	16"	2-#5 BOT
L3	> 6'-8"	12"	24"	2-#5 BOT

- CMU LINTEL NOTES:**
1. PROVIDE 8" MINIMUM BEARING AT EACH SIDE OF CLEAR SPAN.
 2. FULLY GROUT CMU OVER DEPTH "H" TO ENDS OF BEARING.
 3. DEPTH OF LINTEL MAY CONSIST OF FULLY GROUTED CMU LINTEL BLOCK(S) OR 8" CMU LINTEL BLOCK PLUS 8" CMU BLOCK(S), FULLY GROUTED.



W	JAMB WIDTH, J	VERTICAL REINF.
< 3'-4"	1'-6"	2-#5 @ 16" O.C. E.F.
> 3'-4" BUT < 6'-8"	2'-0"	2-#5 @ 8" O.C. E.F.
> 6'-8" BUT < 12'-0"	2'-8"	2-#5 @ 8" O.C. E.F.

8/11/2022 1:46 PM I:\BETA-INC\COM\RIEN\IRON\7385-FRAMINGHAM\WRPS IMPROVEMENTS\DRAWINGFILES\PLANS\SET\7\ MASONRY DETAILS.DWG (BETA STD BW.CTB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: JMR
DESIGNED BY: PJK
CHECKED BY: CWJ

REGISTERED PROFESSIONAL
For Review Only



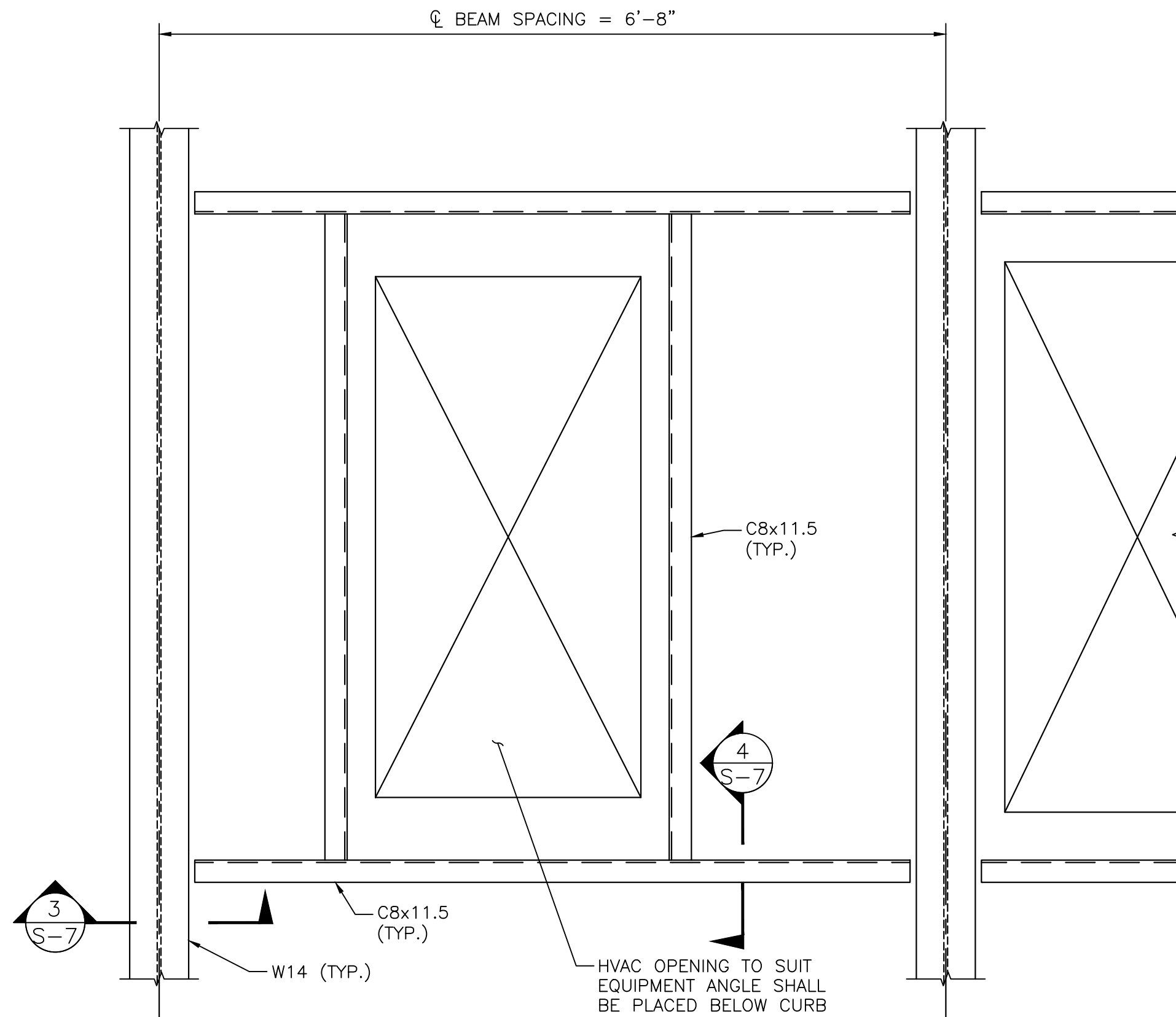
PREPARED BY
SUBCONSULTANT

SCALE
AS SHOWN

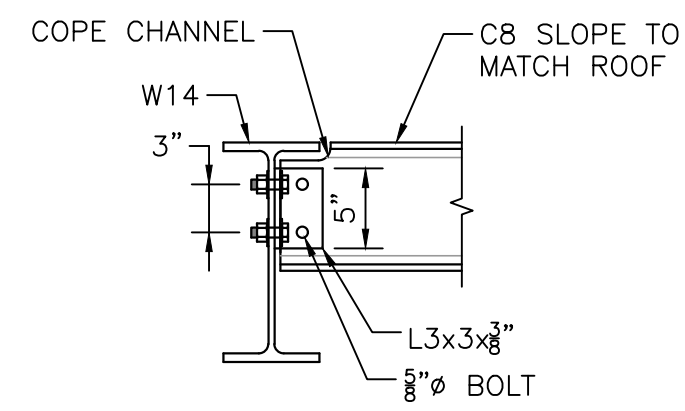
TITLE
Worcester Road Sewer Pumping Station Replacement
MASONRY DETAILS

BETA JOB NO. 7385
ISSUE DATE AUGUST 2022
SHEET NO. S-6

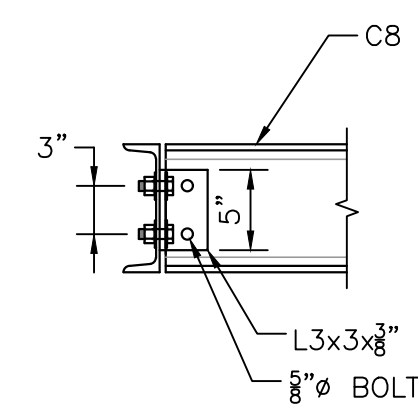
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION



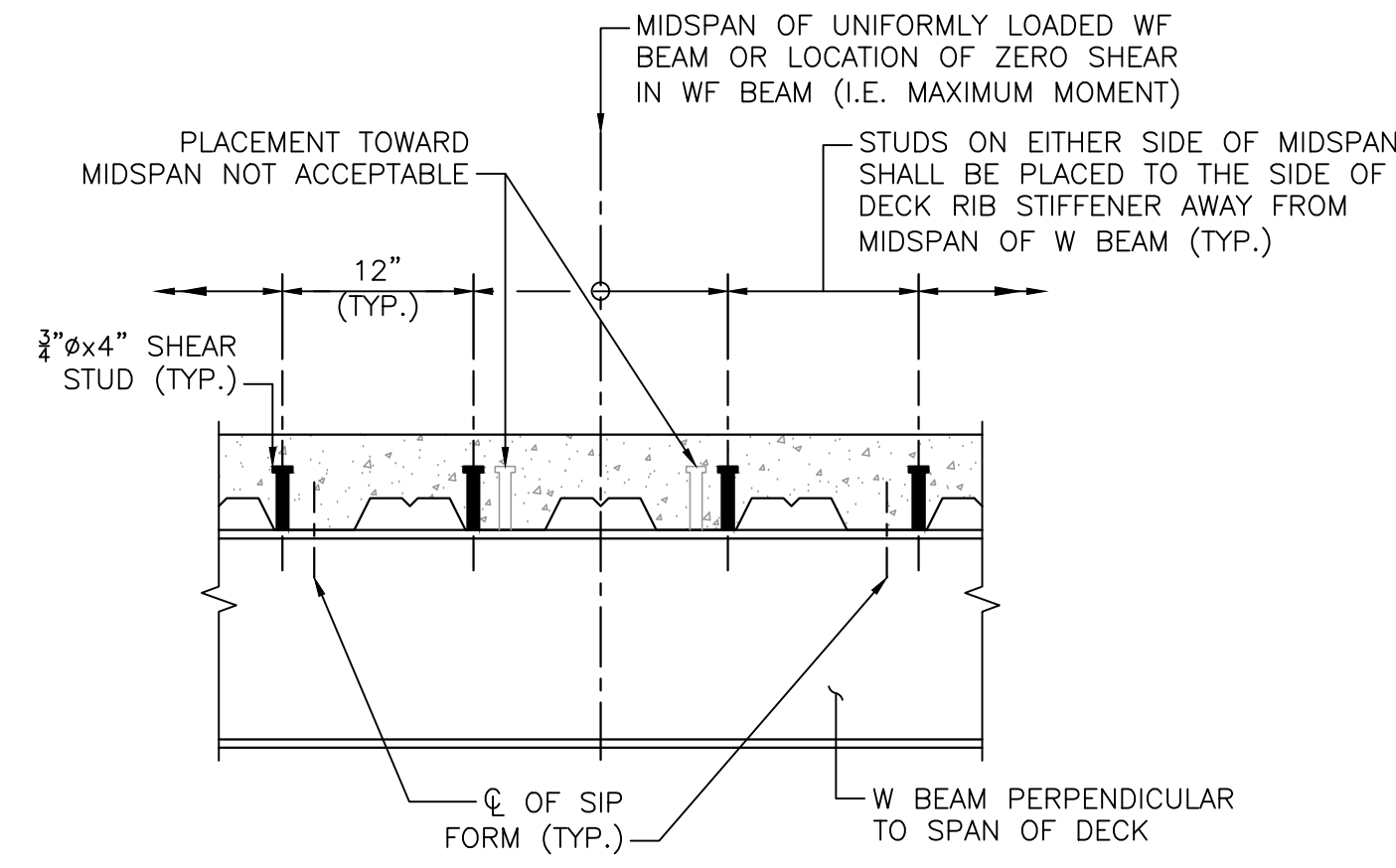
ROOF OPENING FRAME
SCALE: 1" = 1'-0"



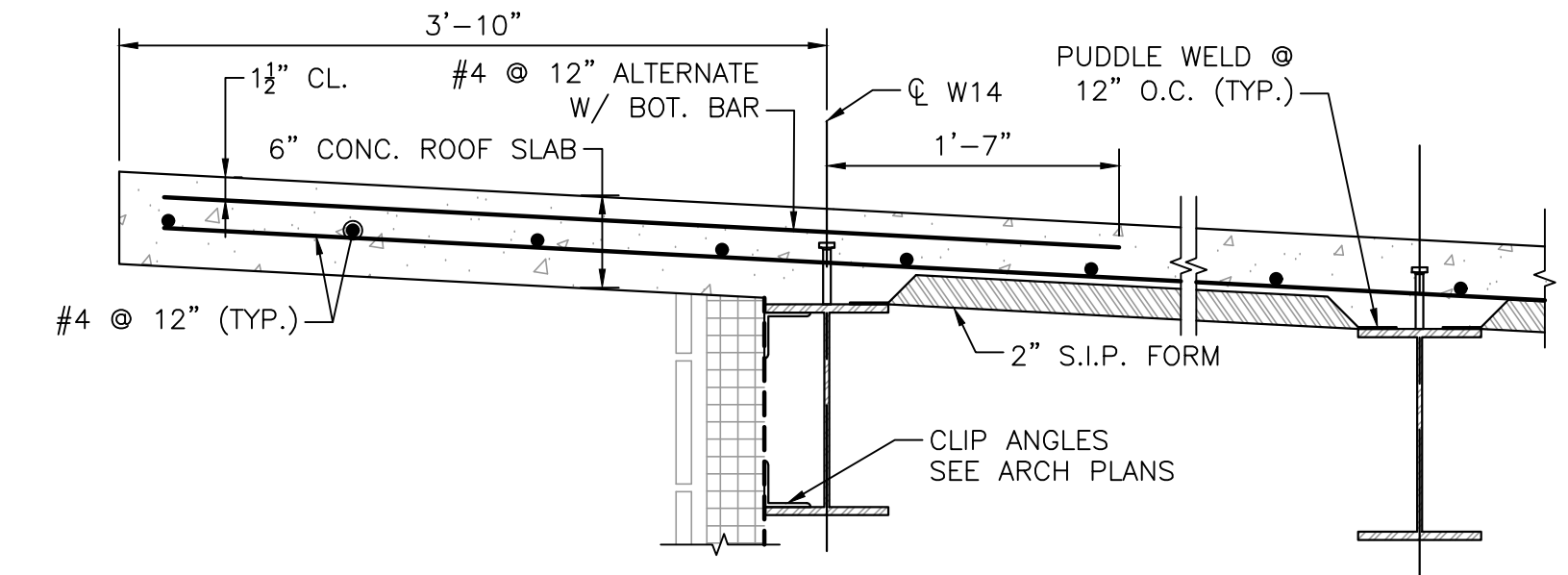
SECTION 3
SCALE: 1" = 1'-0"



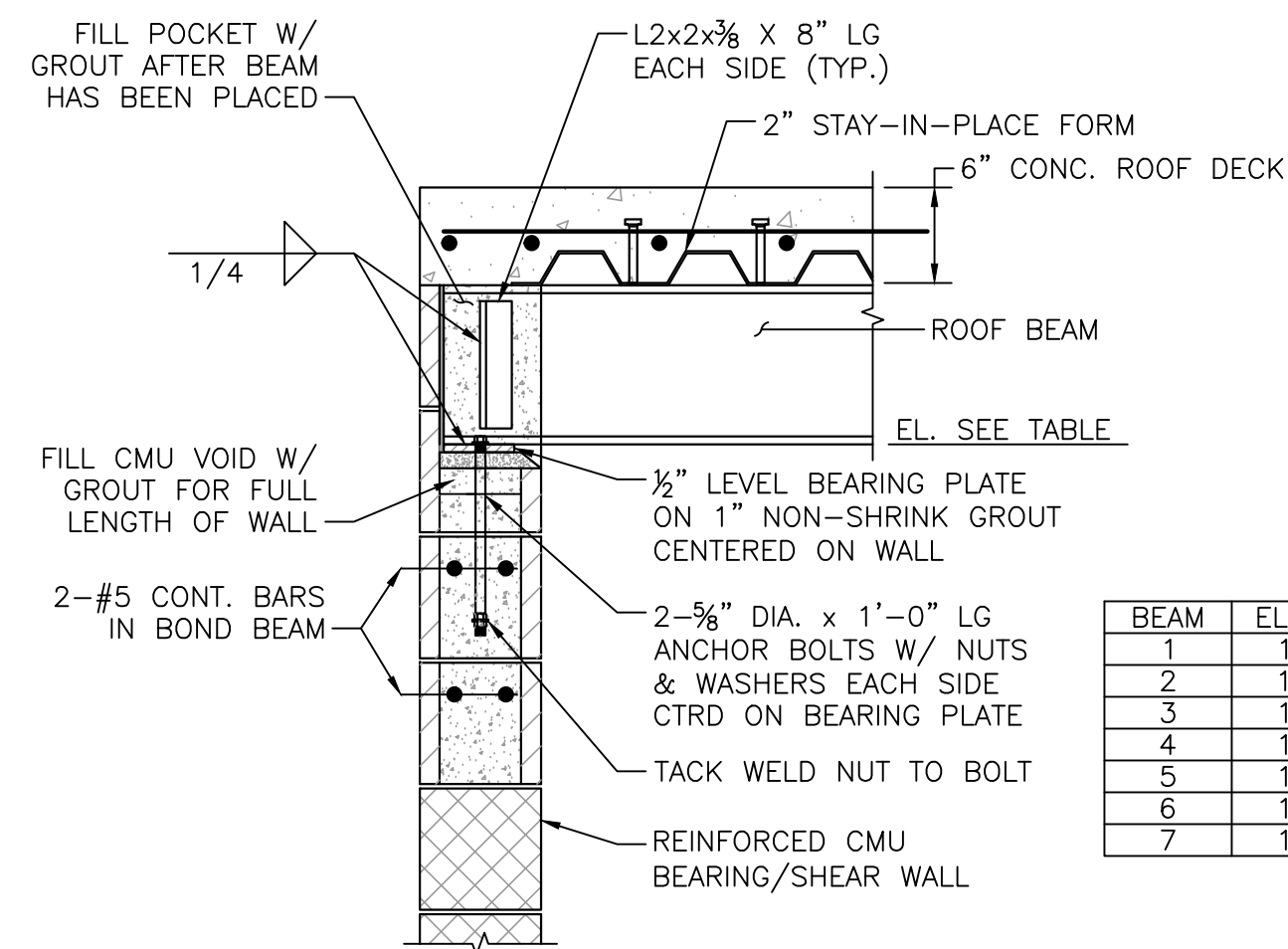
SECTION 4
SCALE: 1" = 1'-0"



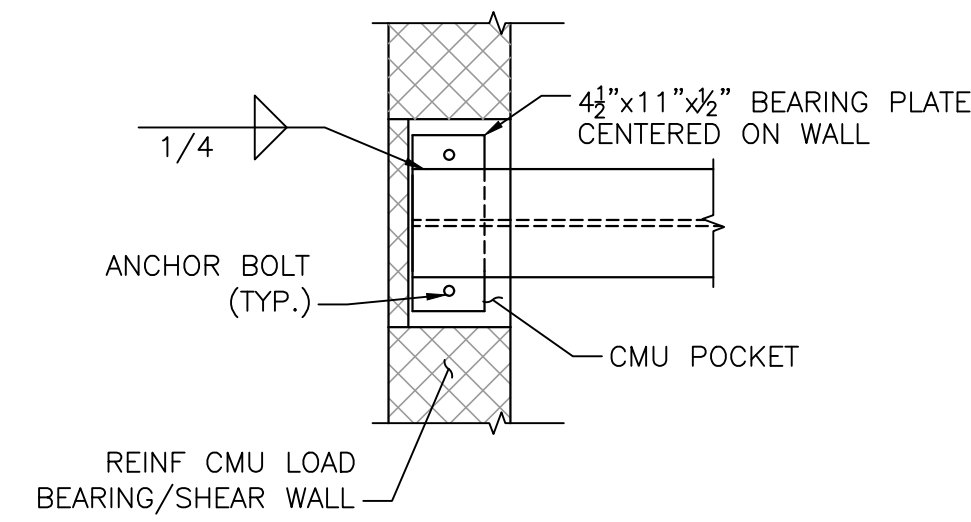
SHEAR STUD LAYOUT DETAIL
SCALE: 1" = 1'-0"



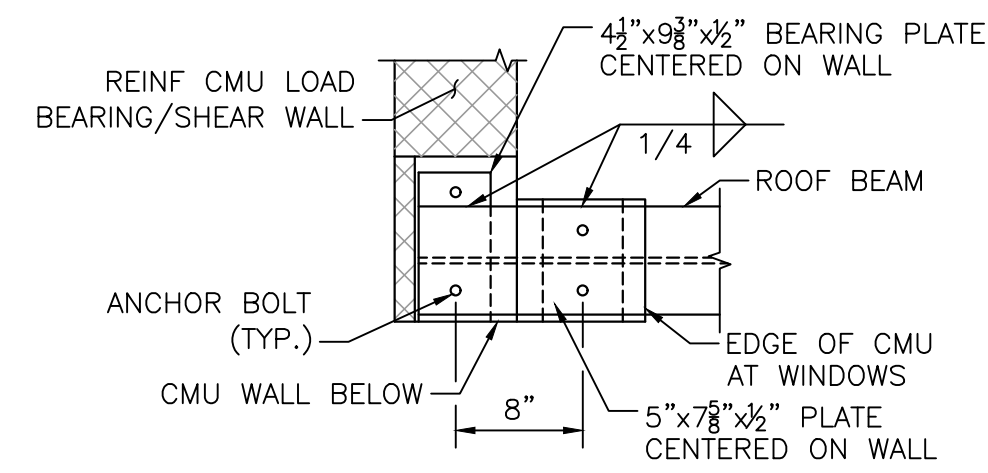
**[NORTH OVERHANG SHOWN, SOUTH SIMILAR]
TYP. ROOF OVERHANG SECTION**
SCALE: 1" = 1'-0"



CMU WALL - BEAM POCKET SECTION
SCALE: 1" = 1'-0"



CMU WALL - BEAM POCKET PLAN
SCALE: 1" = 1'-0"



CMU CORNER - BEAM POCKET PLAN
SCALE: 1" = 1'-0"

8/11/2022 1:47 PM \\BETA-INC.COM\IRVEN\IRON7385 - FRAMINGHAM WRPS IMPROVEMENTS\DRAWING\FILES\PLANS\TSR\08 STRUCTURAL ROOF DETAILS.DWG (BETA STD BW/CTB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
JMR
DESIGNED BY:
CHECKED BY:

REGISTERED PROFESSIONAL
For Review Only



PREPARED BY
SUBCONSULTANT

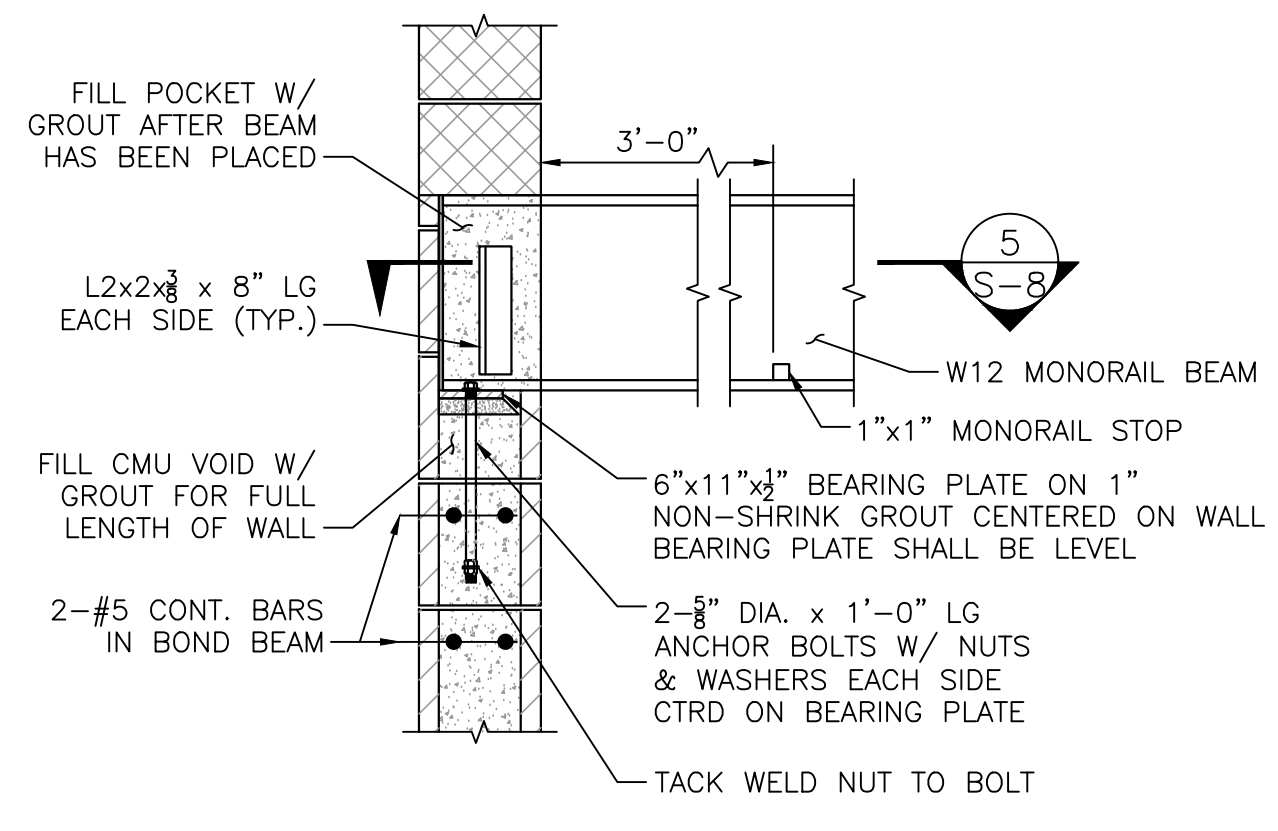
SCALE
AS SHOWN

TITLE
Worcester Road Sewer Pumping Station Replacement
STRUCTURAL ROOF DETAILS

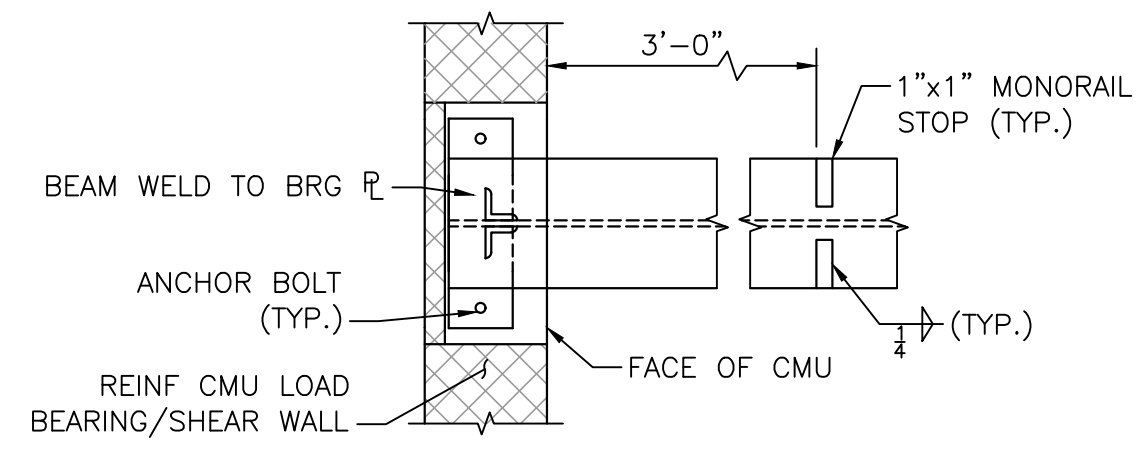
BETA JOB NO. 7385
ISSUE DATE AUGUST 2022
SHEET NO. S-7

CONCRETE REPAIR NOTES:

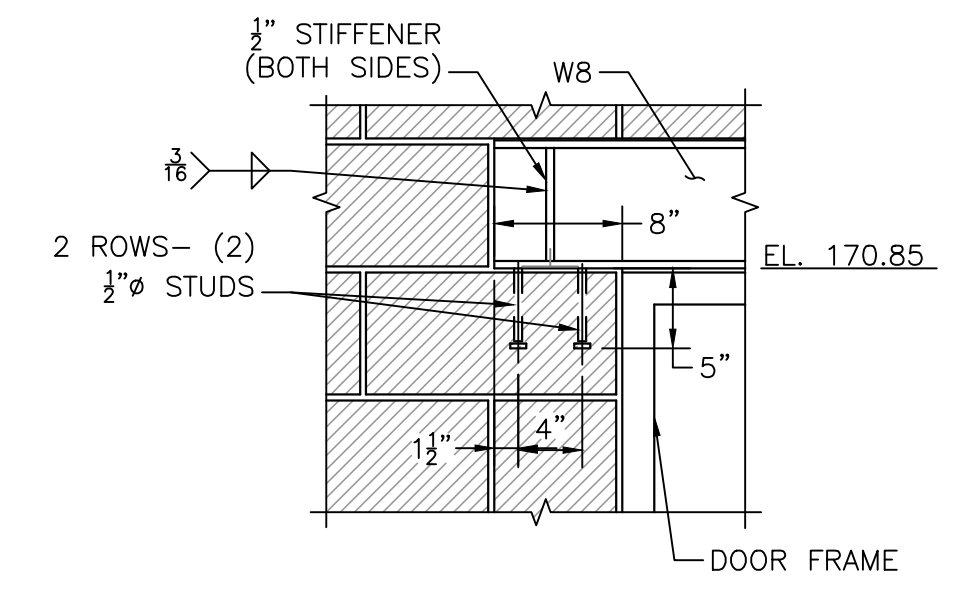
- EXISTING CONCRETE SURFACE SHALL BE CLEAN WITH NO DEBRIS WITH DUST VACUUMED OUT.
- EXISTING CONCRETE SHALL BE SATURATED SURFACE DRY (SSD) WITH NO STANDING WATER PRIOR TO PLACING NEW CONCRETE.
- APPLY APPROVED BONDING COMPOUND TO EXISTING CONCRETE PRIOR TO PLACEMENT OF PATCHING MORTAR OR 4000 PSI - 8" CEMENT CONCRETE REPAIR MATERIAL.



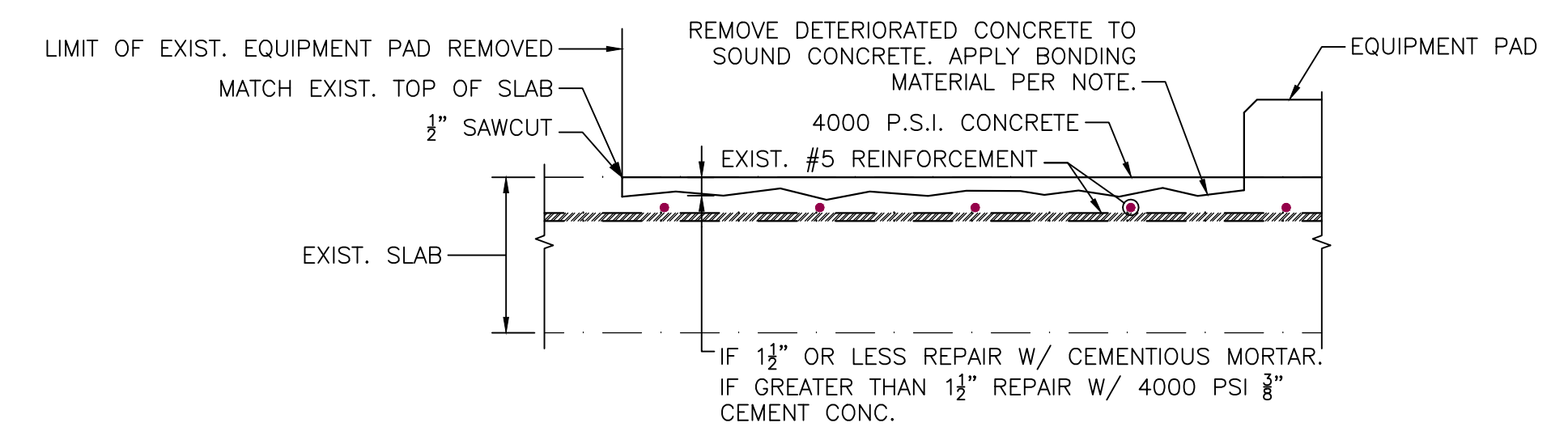
CMU WALL - MONORAIL POCKET SECTION
SCALE: 1" = 1'-0"



SECTION 5
SCALE: 1" = 1'-0"



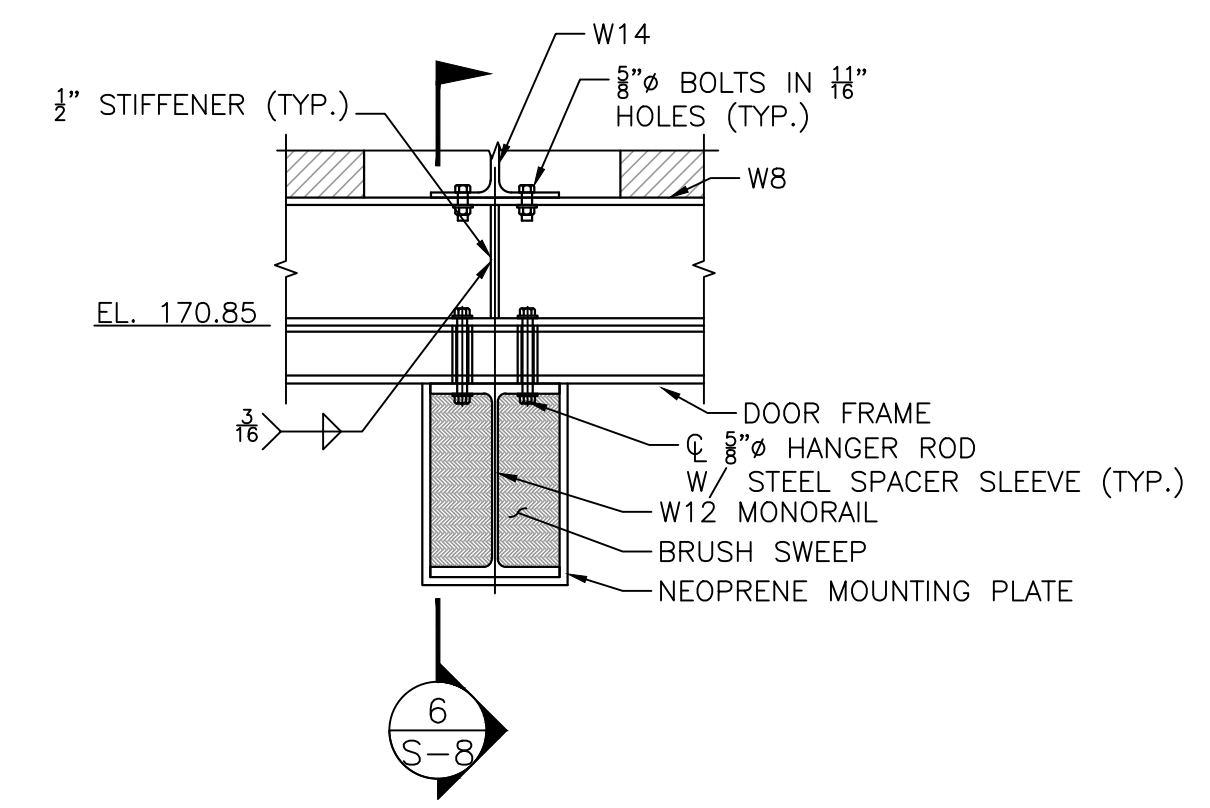
BEAM OVER DOORWAY END BEARING
SCALE: 1" = 1'-0"



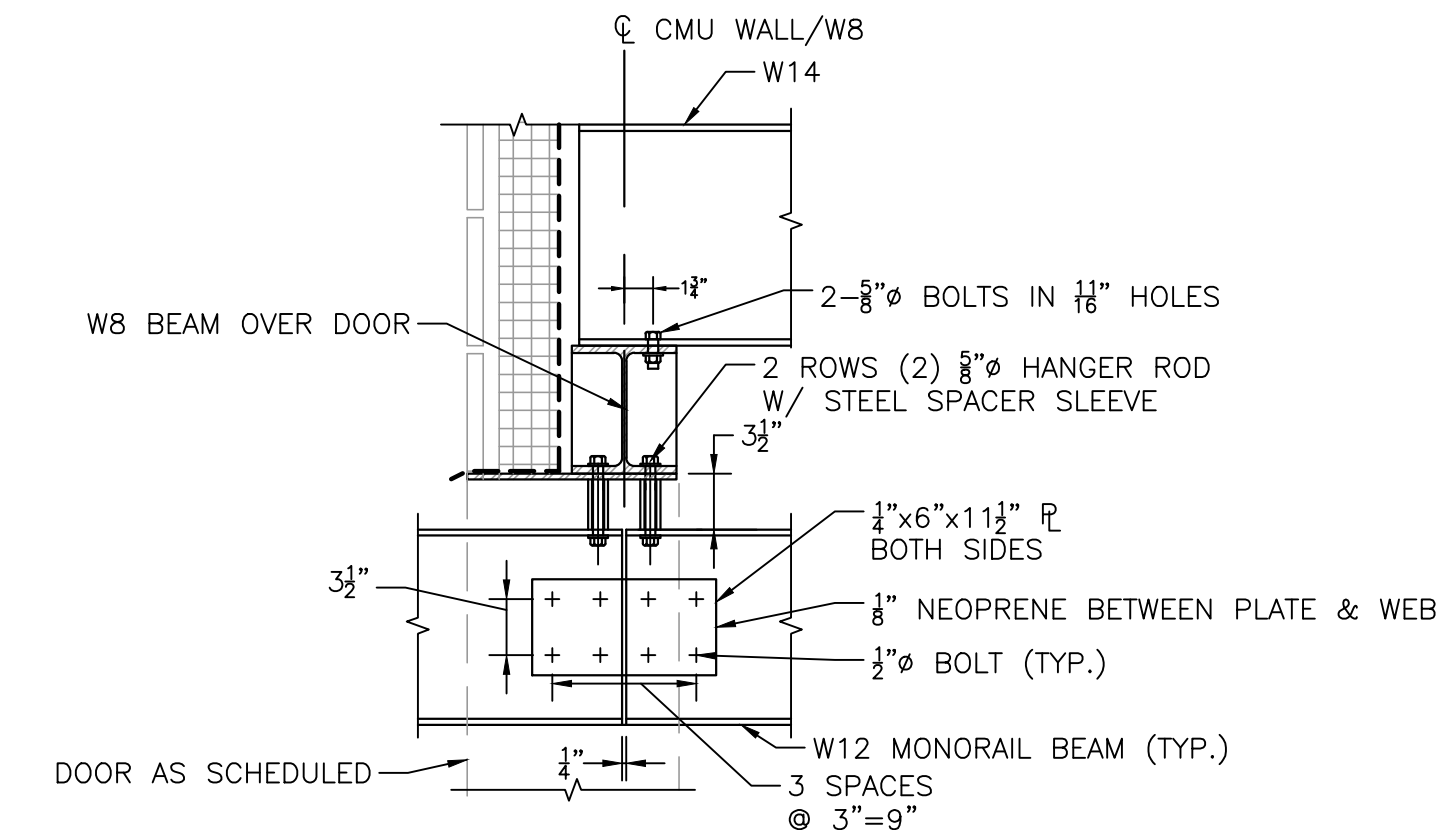
[SHALLOW DEPTH REPAIR]

LOWER LEVEL SLAB REPAIR DETAILS

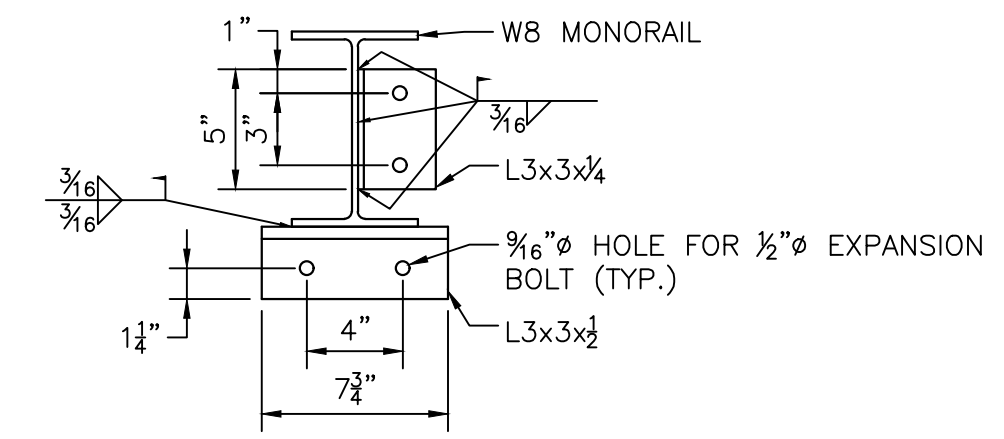
SCALE: 1" = 1'-0"



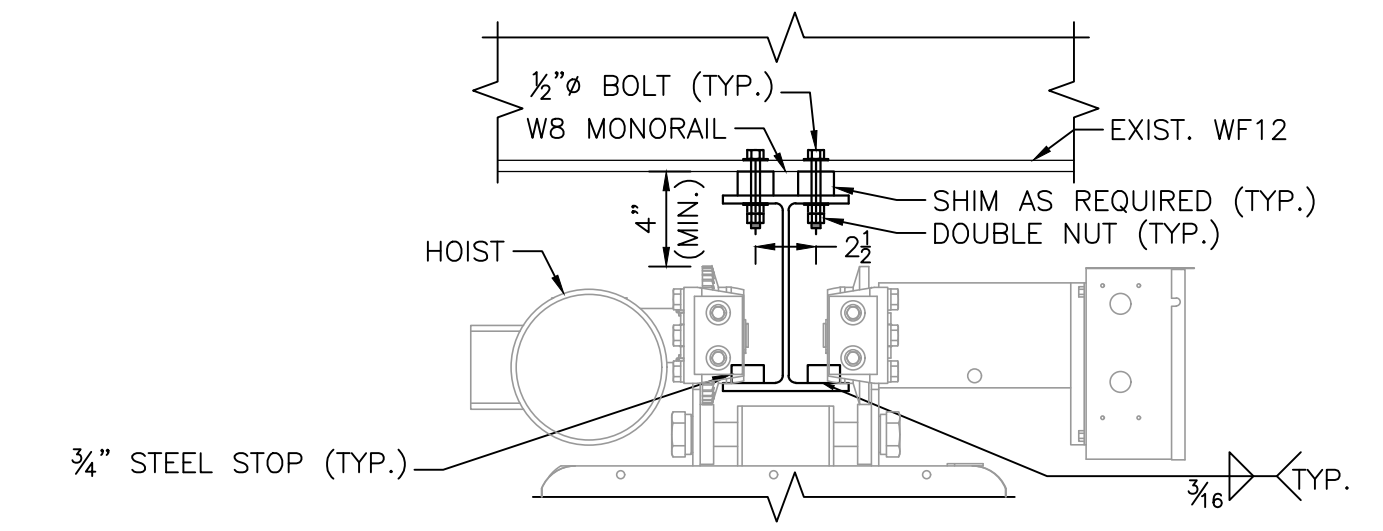
MONORAIL CONNECTION AT DOORWAY
SCALE: 1" = 1'-0"



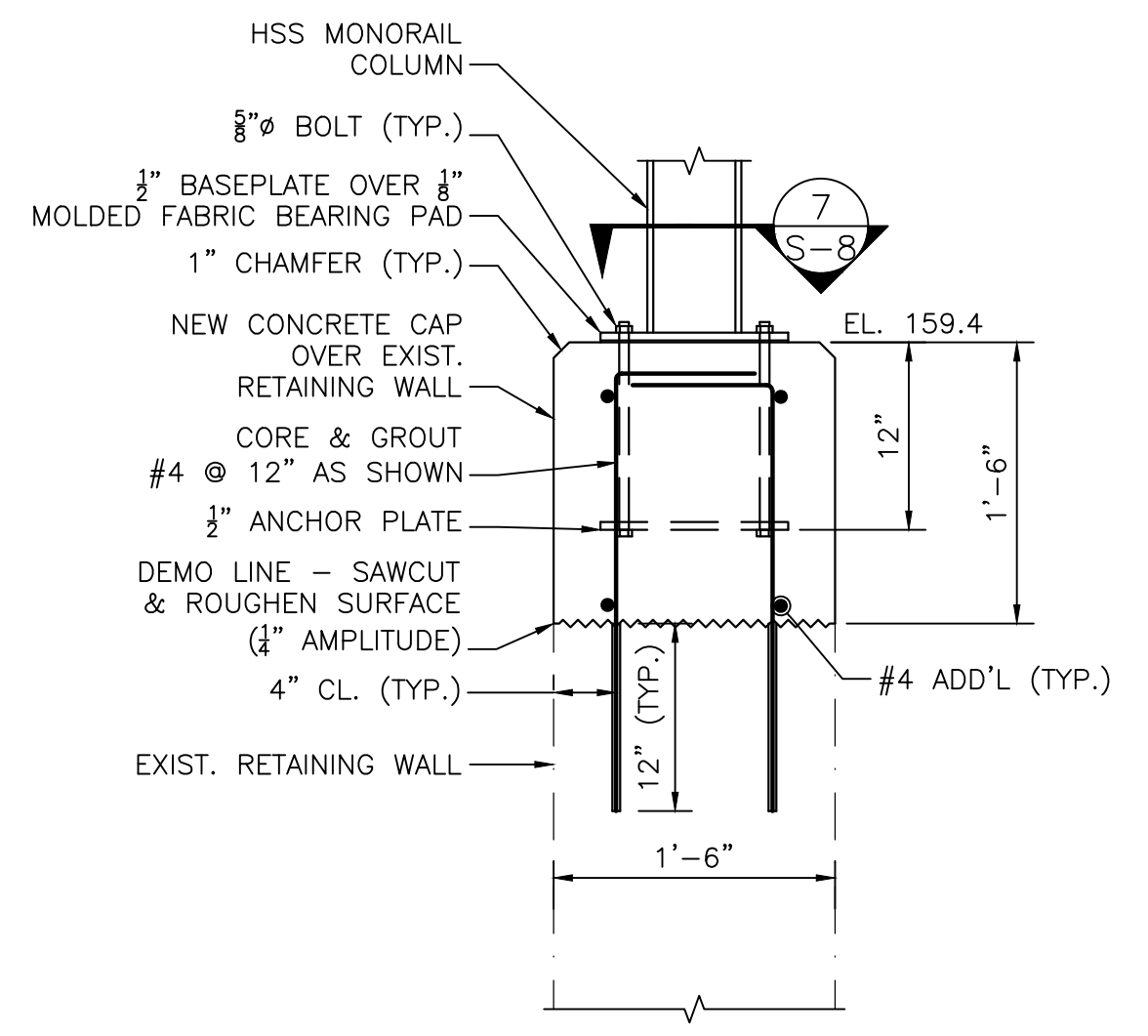
SECTION 6
SCALE: 1" = 1'-0"



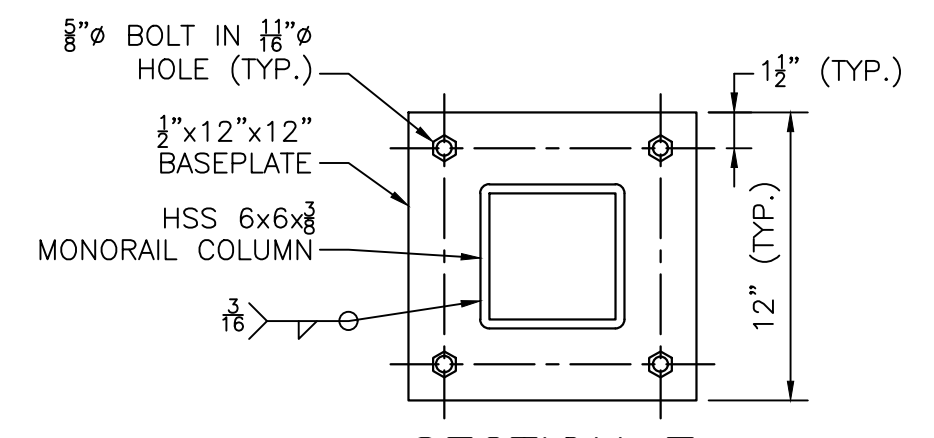
LOWER LEVEL MONORAIL WALL CONNECTION
SCALE: 1 1/2" = 1'-0"



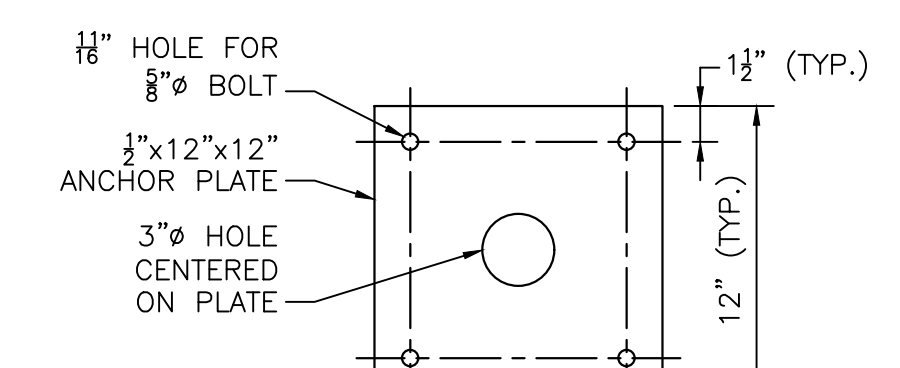
LOWER LEVEL MONORAIL CONNECTION
SCALE: 1 1/2" = 1'-0"



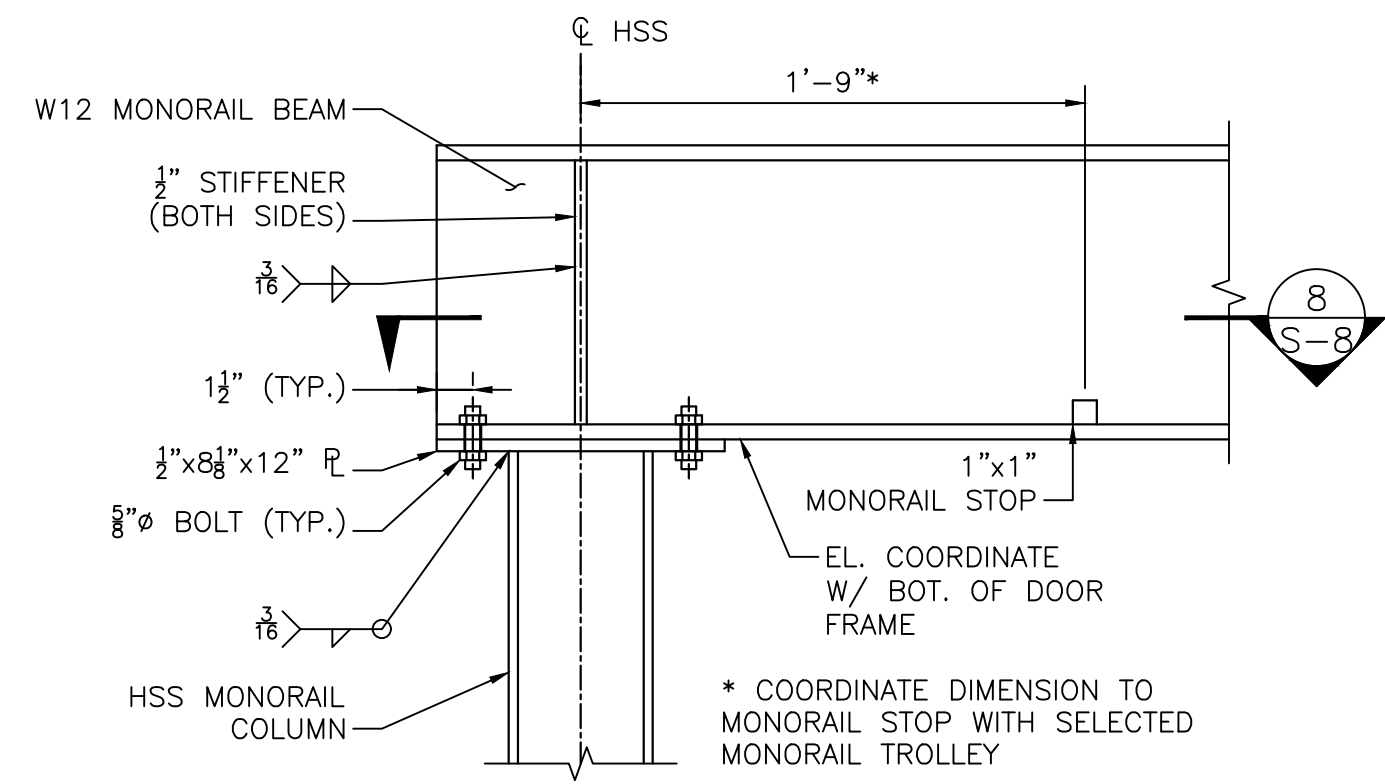
FOUNDATION WALL CAP & MONORAIL COLUMN DETAILS
SCALE: 1" = 1'-0"



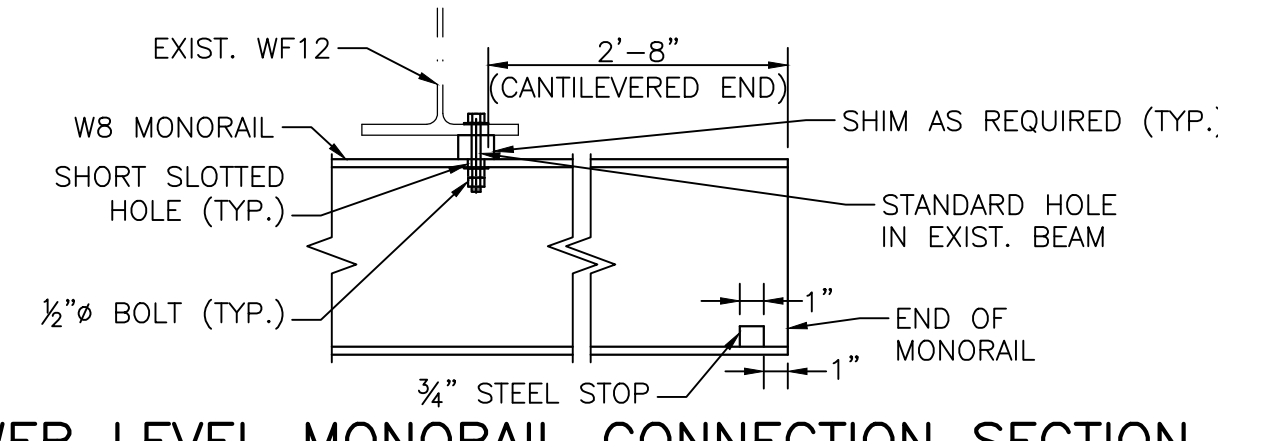
SECTION 7
SCALE: 1 1/2" = 1'-0"



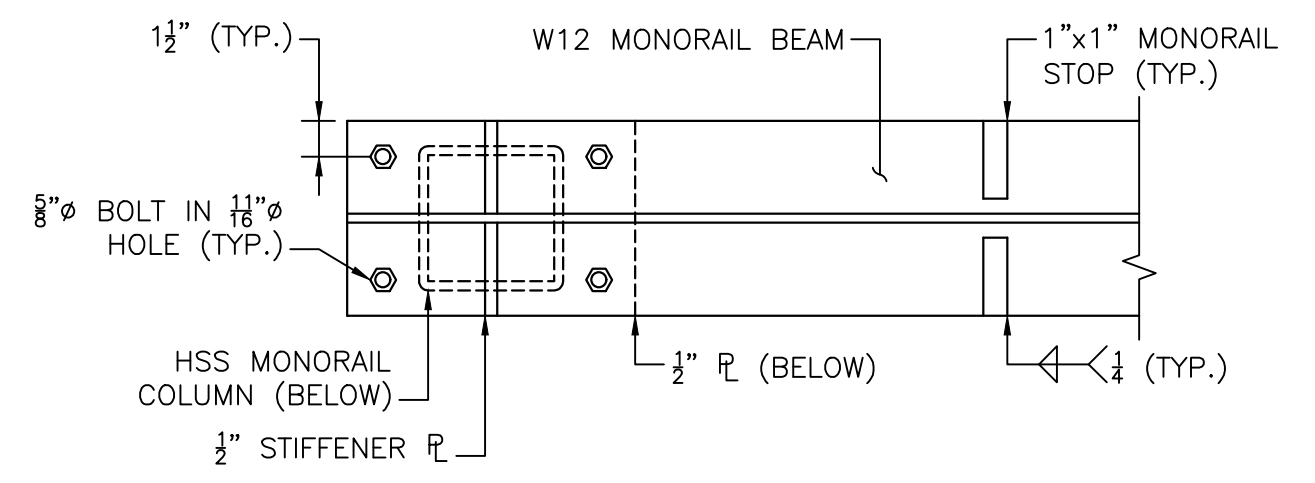
ANCHOR PLATE
SCALE: 1 1/2" = 1'-0"



MONORAIL BEAM & COLUMN CONNECTION DETAILS
SCALE: 1 1/2" = 1'-0"



LOWER LEVEL MONORAIL CONNECTION SECTION
SCALE: 1 1/2" = 1'-0"



SECTION 8
SCALE: 1 1/2" = 1'-0"

8/11/2022 1:47 PM LIBETA-INC.COM\RENWIRON\7385 - FRAMINGHAM\WRPS IMPROVEMENTS\DRAWINGFILES\PLANS\SET(S)\MISCELLANEOUS DETAILS.DWG (BETA STD BW.CTB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
JMR
DESIGNED BY:
CHECKED BY:

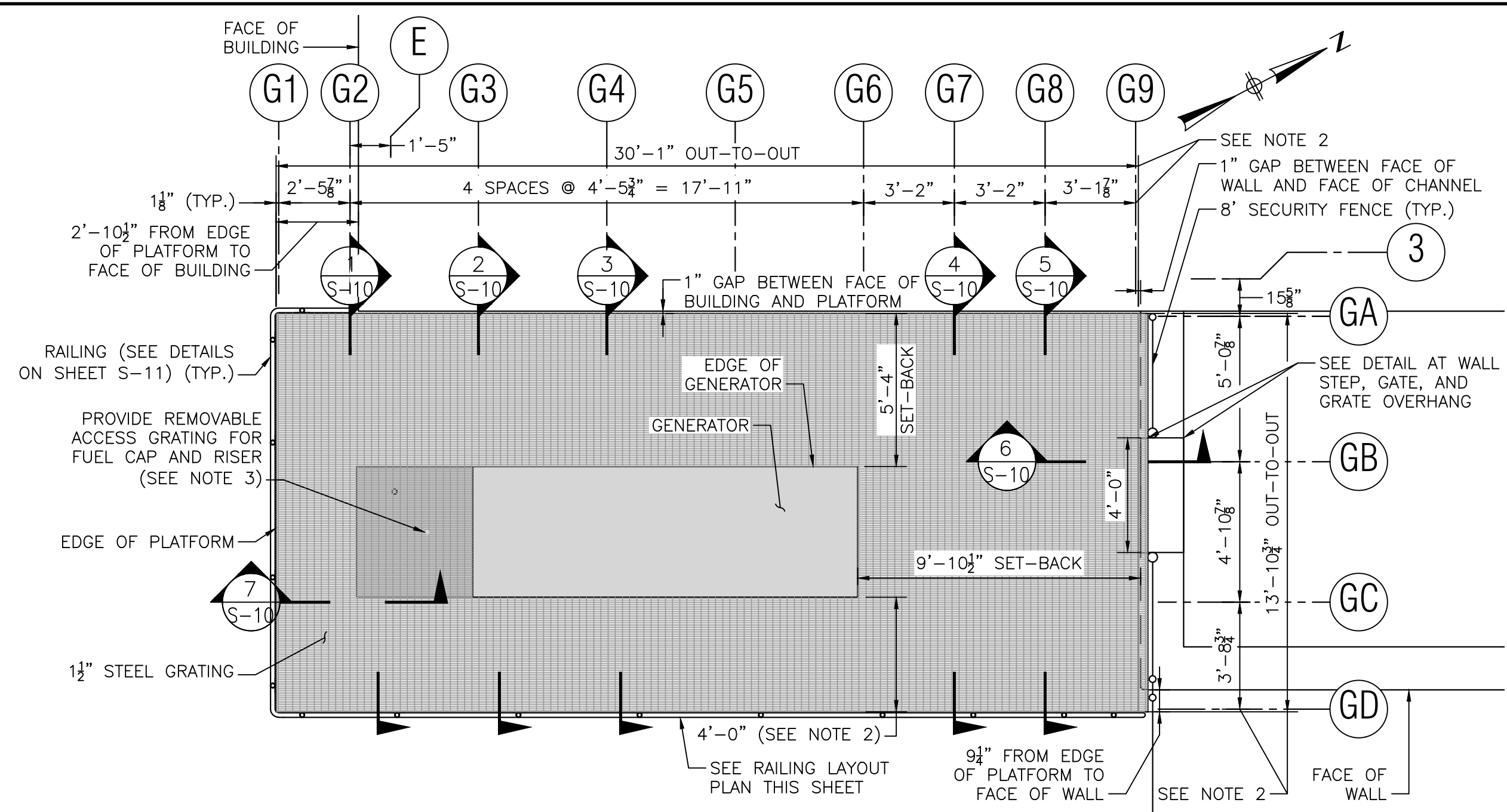
REGISTERED PROFESSIONAL
For Review Only
PREPARED BY
BETA
www.BETA-inc.com

SUBCONSULTANT
SCALE
AS SHOWN

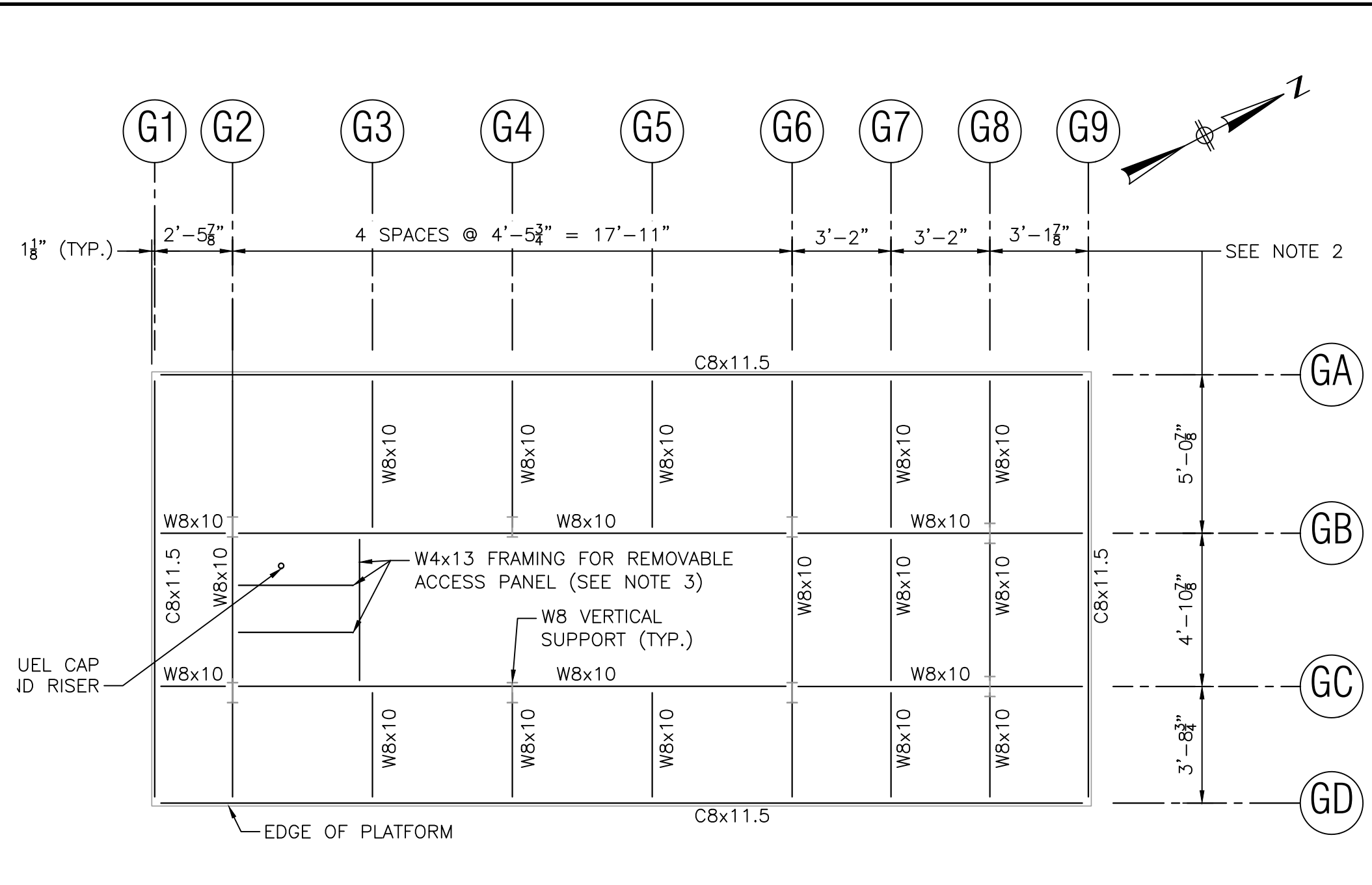
TITLE
Worcester Road Sewer Pumping Station Replacement
MISCELLANEOUS DETAILS

BETA JOB NO. 7385
ISSUE DATE AUGUST 2022
SHEET NO. S-8

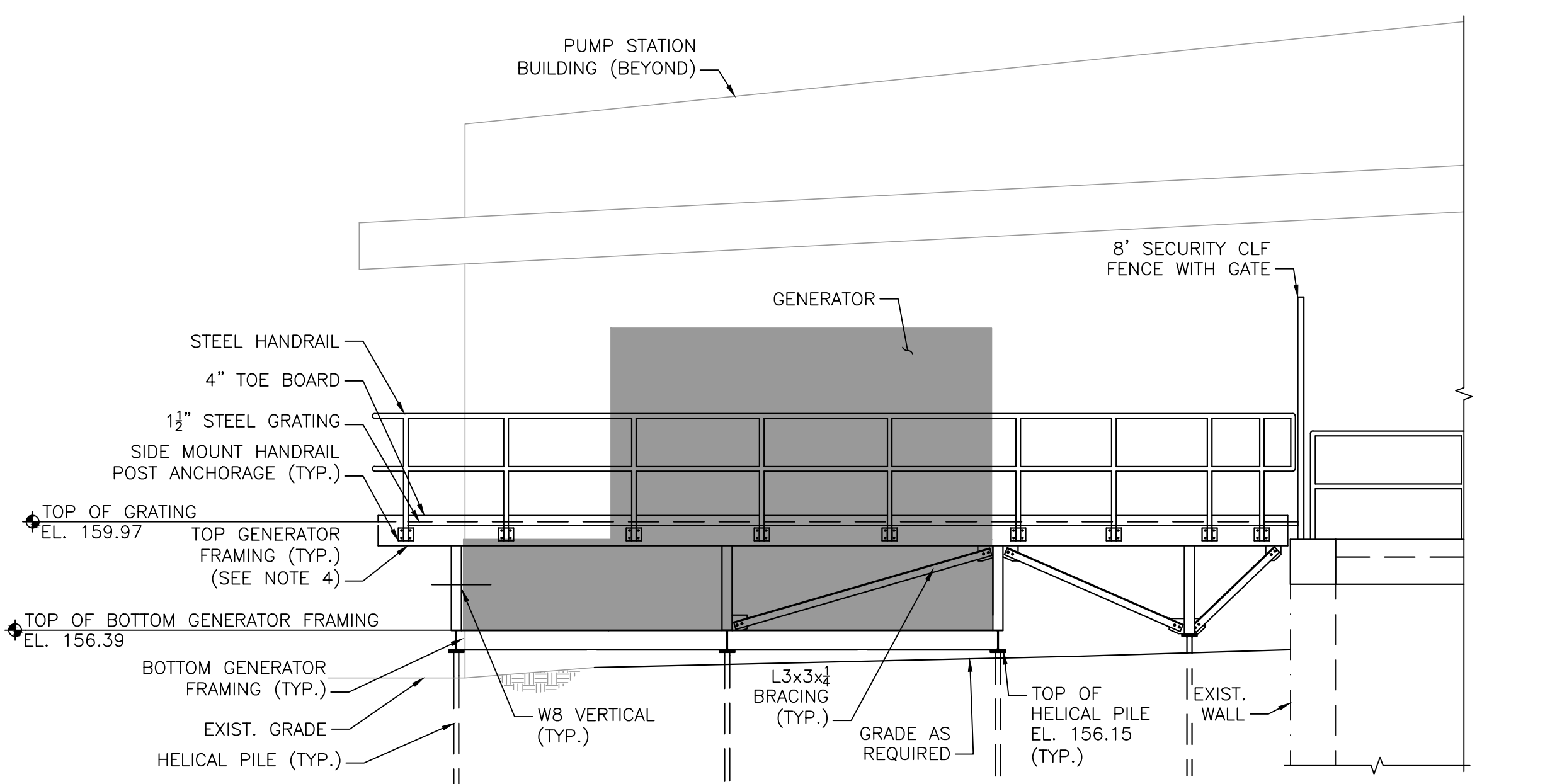
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION



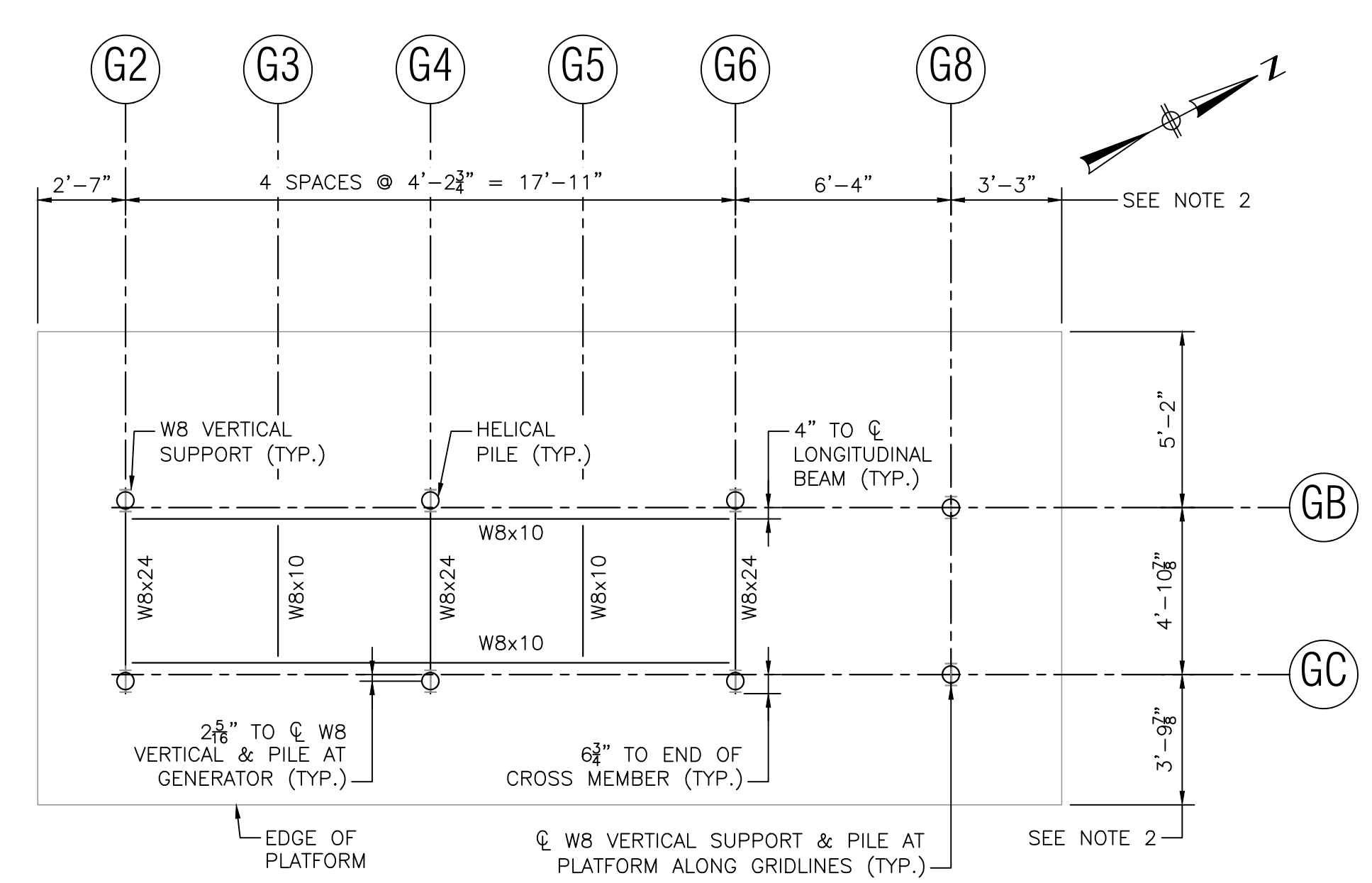
GENERATOR PLAN
SCALE: 1/4" = 1'-0"



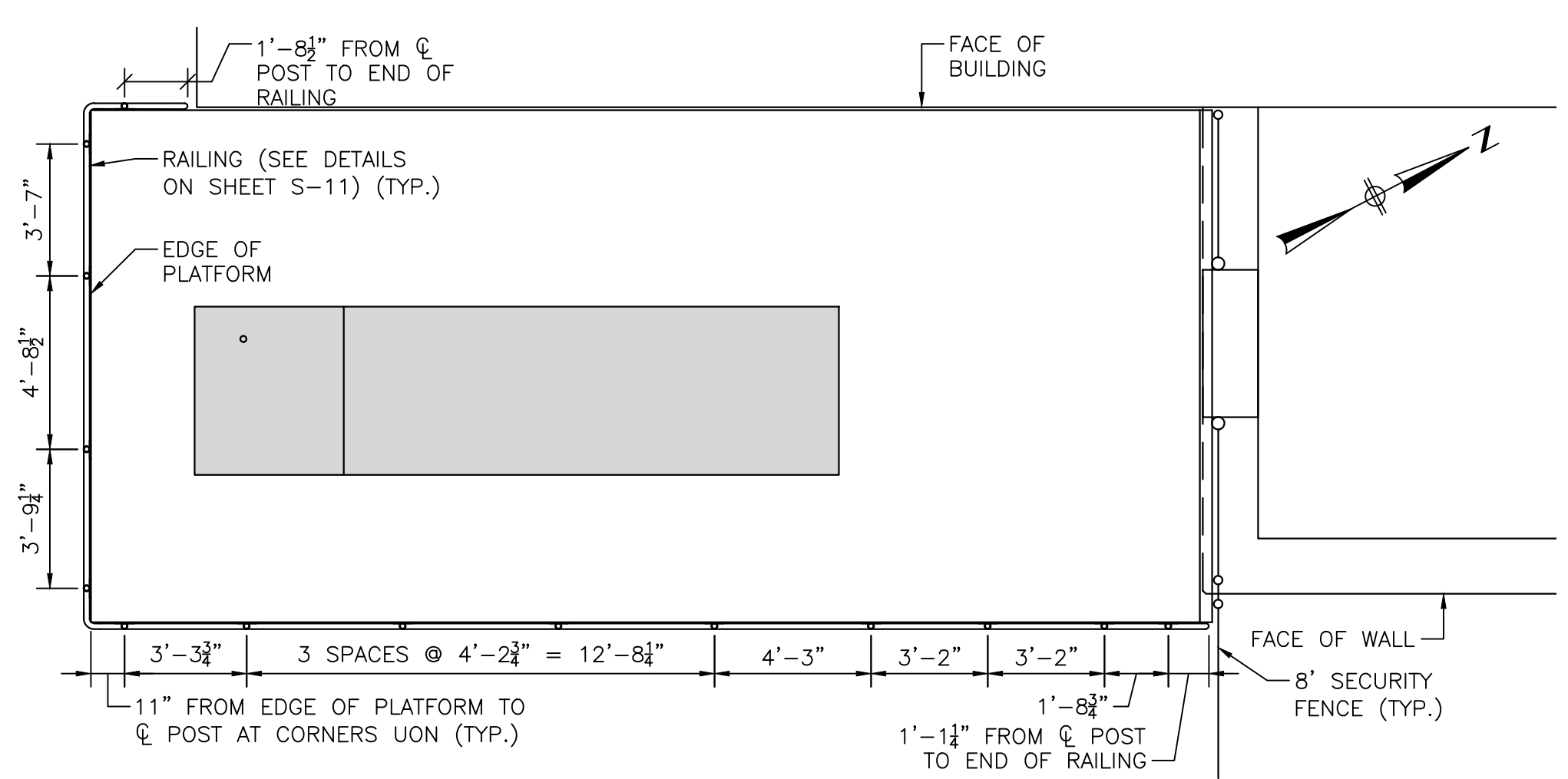
TOP GENERATOR FRAMING PLAN
SCALE: 1/4" = 1'-0"



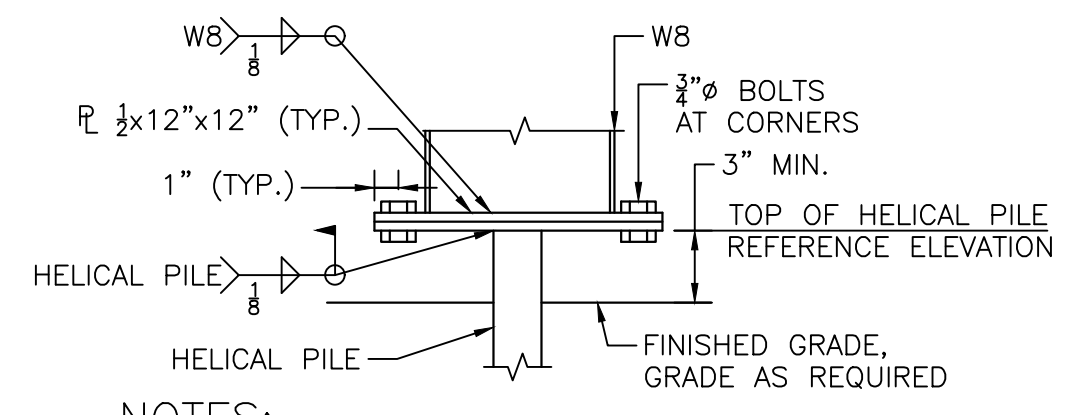
GENERATOR ELEVATION
SCALE: 1/4" = 1'-0"



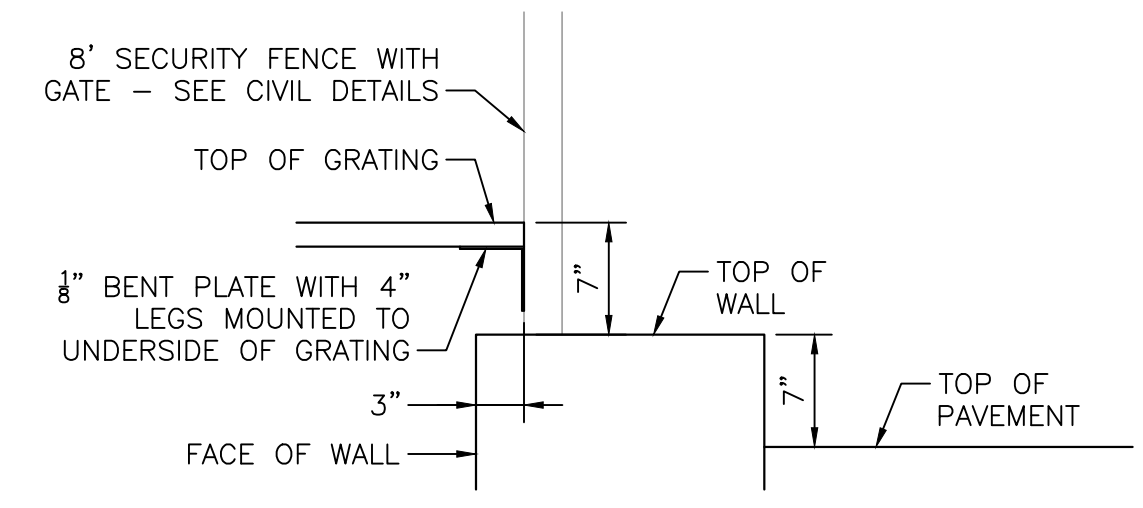
BOTTOM GENERATOR FRAMING PLAN
SCALE: 1/4" = 1'-0"



GENERATOR RAILING LAYOUT PLAN
SCALE: 1/4" = 1'-0"



TOP OF HELICAL PILE DETAIL
SCALE: 1 1/2" = 1'-0"



DETAIL AT WALL STEP, GRATE, AND GRATE OVERHANG
SCALE: 1" = 1'-0"

- GENERATOR SUPPORT NOTES:**
- HELICAL PILES SHALL BE AT LEAST 30 FEET LONG AND BEAR INTO GLACIAL TILL. THE FACTORED AXIAL DESIGN LOAD PER PILE IS 26.0 KIPS.
 - DIMENSIONS SHOWN ARE FOR A KOHLER 250REOZJE STATE CODE 944 GALLON FUEL TANK WITH AN IBC/OSHPD ENCLOSURE.
CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE GENERATOR SUPPORT AND ACCESS PLATFORM IF AN ALTERNATIVE GENERATOR IS SELECTED. CONTRACTOR SHALL MEET MINIMUM SET-BACK DISTANCES AND COORDINATE ADDITIONAL CLEARANCE REQUIREMENTS WITH THE MANUFACTURER.
 - CONTRACTOR TO COORDINATE THE LOCATION OF FRAMING AND ACCESS GRATING FOR THE FUEL CAP AND RISER WITH THE MANUFACTURER.
 - TOP FRAMING TO BE ASSEMBLED OFF PLATFORM AND HOISTED INTO ITS FINAL POSITION DUE TO CLEARANCES TO THE BUILDING.
 - ALL STRUCTURAL STEEL, PLATES, BOLTS, NUTS, AND WASHERS SHALL BE HOT DIPPED GALVANIZED.
- GRATING NOTES:**
- GRATING SHALL BE GALVANIZED STEEL.
 - GRATING SHALL BE INSTALLED WITH THE BEARING BARS PERPENDICULAR TO THE SUPPORTS.
 - IN NO CASE SHALL THE BEARING BARS BE LESS THEN 1 1/2" IN DEPTH.
 - HOLD DOWN CLIPS SHALL BE 316L STAINLESS STEEL.
 - INSTALL GRATING PER MANUFACTURERS RECOMMENDATIONS.
 - GRATING LOAD CRITERIA:
UNIFORM LOAD 200 PSF
CONCENTRATED LOAD 300 LB
MAX DEFLECTION L/300 FOR SPANS 4' AND LESS
L/240 FOR SPANS OVER 4'.

8/11/2022 1:48 PM I:\BETA\INC\COM\RIEN\PROJ\7385 - FRAMINGHAM\WRPS IMPROVEMENTS\DRAWING\SET\SR\GENERATOR SUPPORT.DWG (BETA STD.BW.CTB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
DW
DESIGNED BY:
DW
CHECKED BY:
CWJ

REGISTERED PROFESSIONAL
For Review Only



PREPARED BY
SUBCONSULTANT

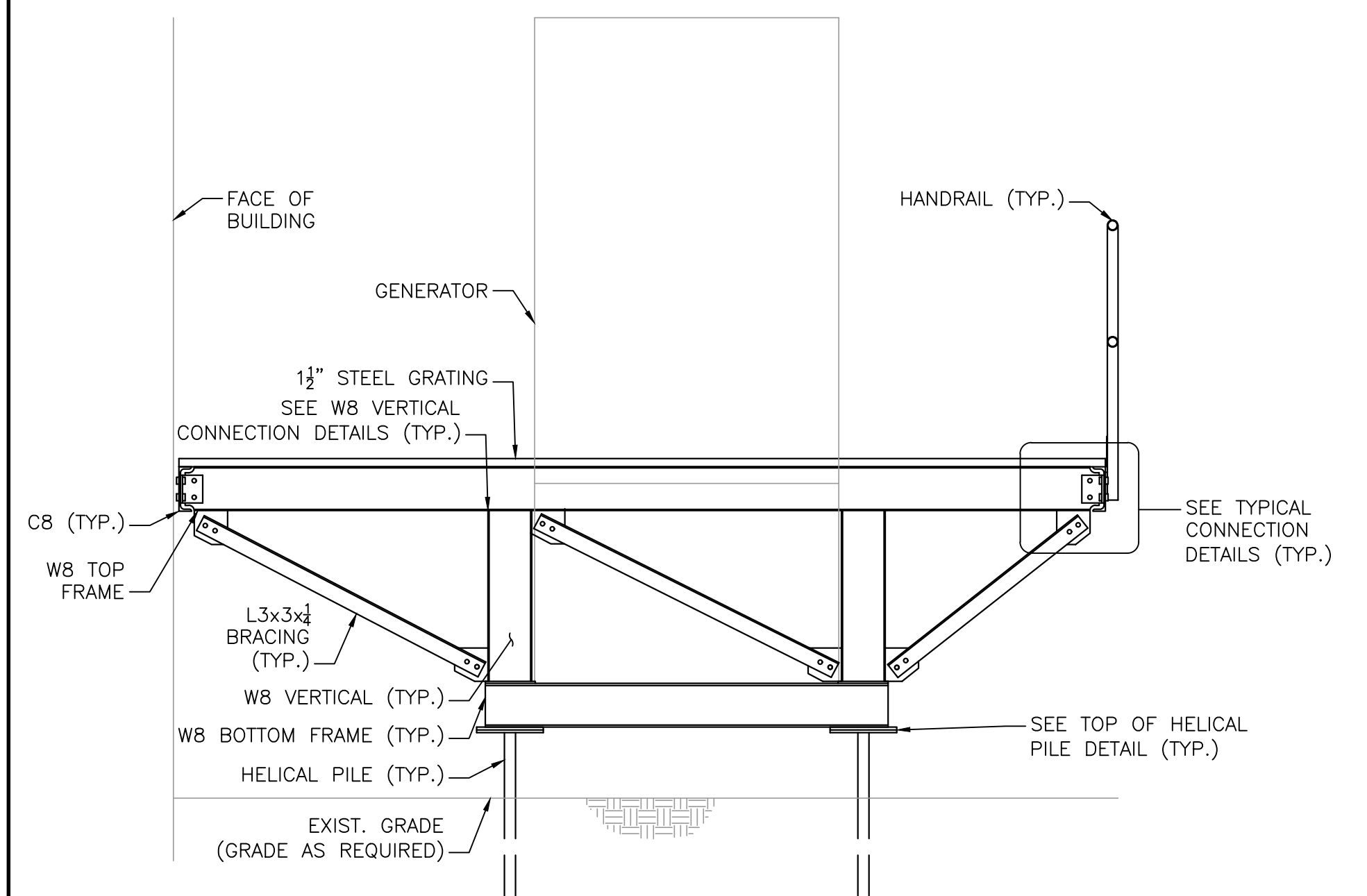
SCALE
AS SHOWN

TITLE
Worcester Road Sewer Pumping Station Replacement
GENERATOR SUPPORT (1 OF 2)

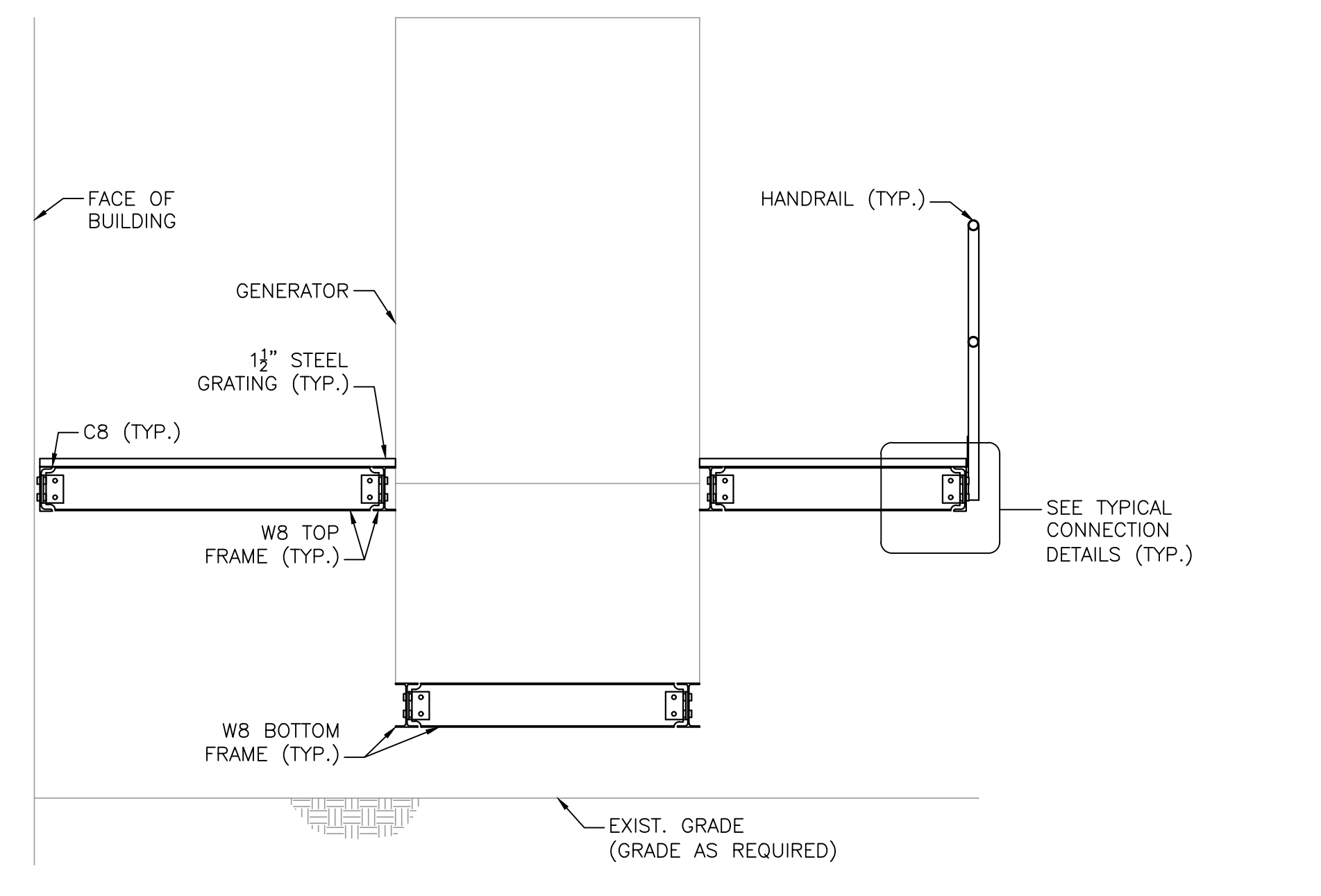
BETA JOB NO. 7385
ISSUE DATE AUGUST 2022
SHEET NO. S-9

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

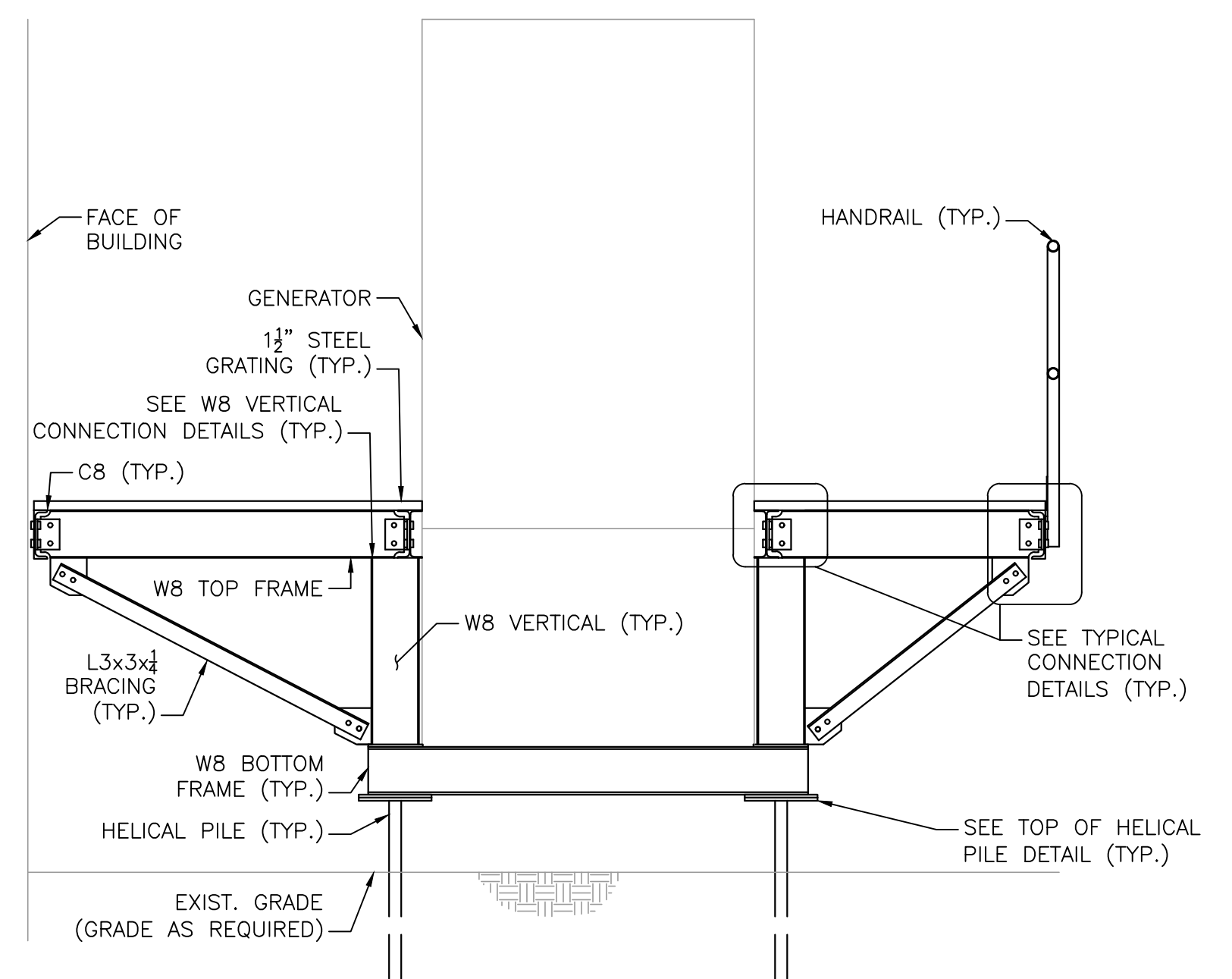
8/11/2022 1:48 PM - LIBETA, INC. COMRIEN/IRON/7385 - FRAMINGHAM WRRPS IMPROVEMENTS/DRAWINGFILES/PLANS/SET/RSR/GENERATOR SUPPORT 2.DWG (BETA STD BW/CTB)



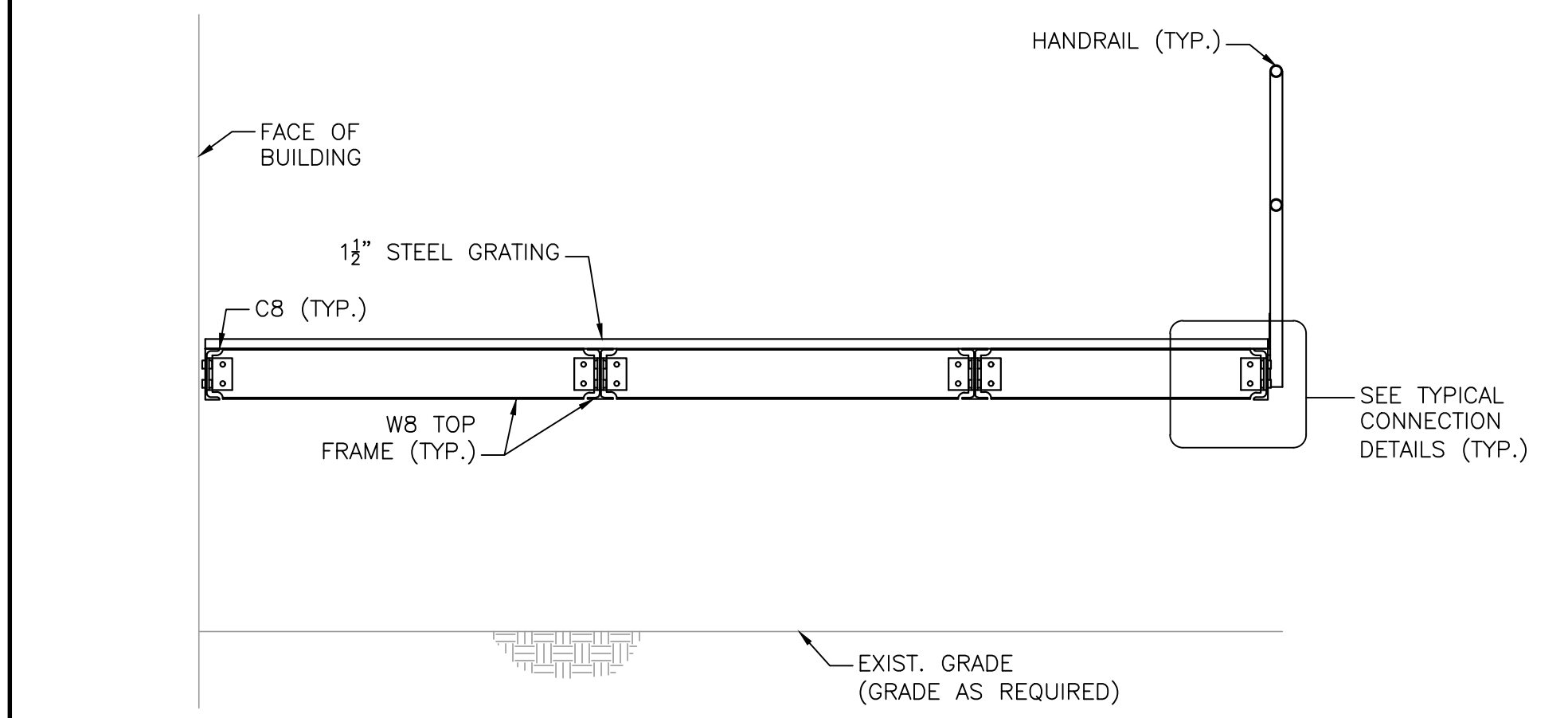
SECTION 1 - AT GRIDS G2 & G6
SCALE: 1/2" = 1'-0"



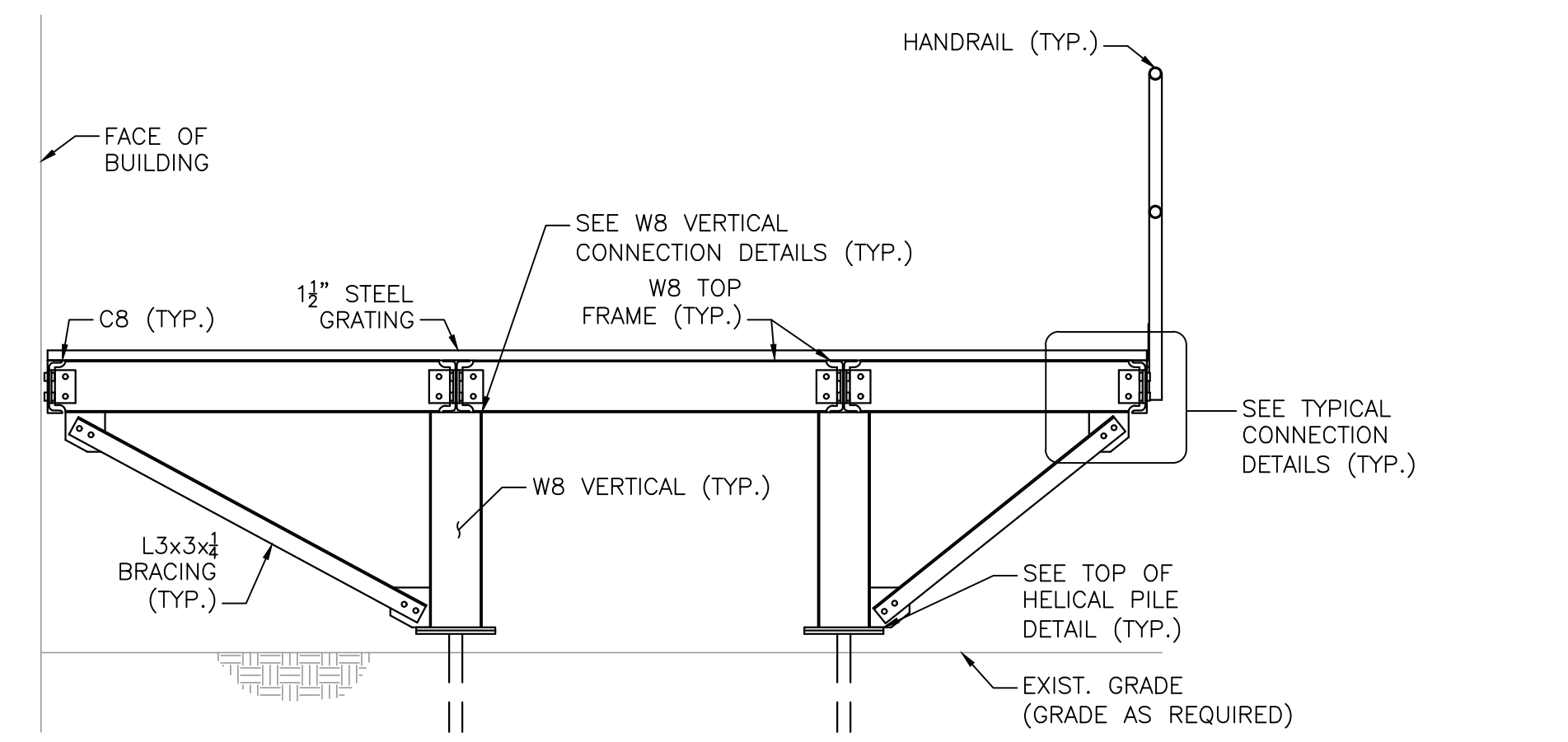
SECTION 2 - AT GRIDS G3 & G5
SCALE: 1/2" = 1'-0"



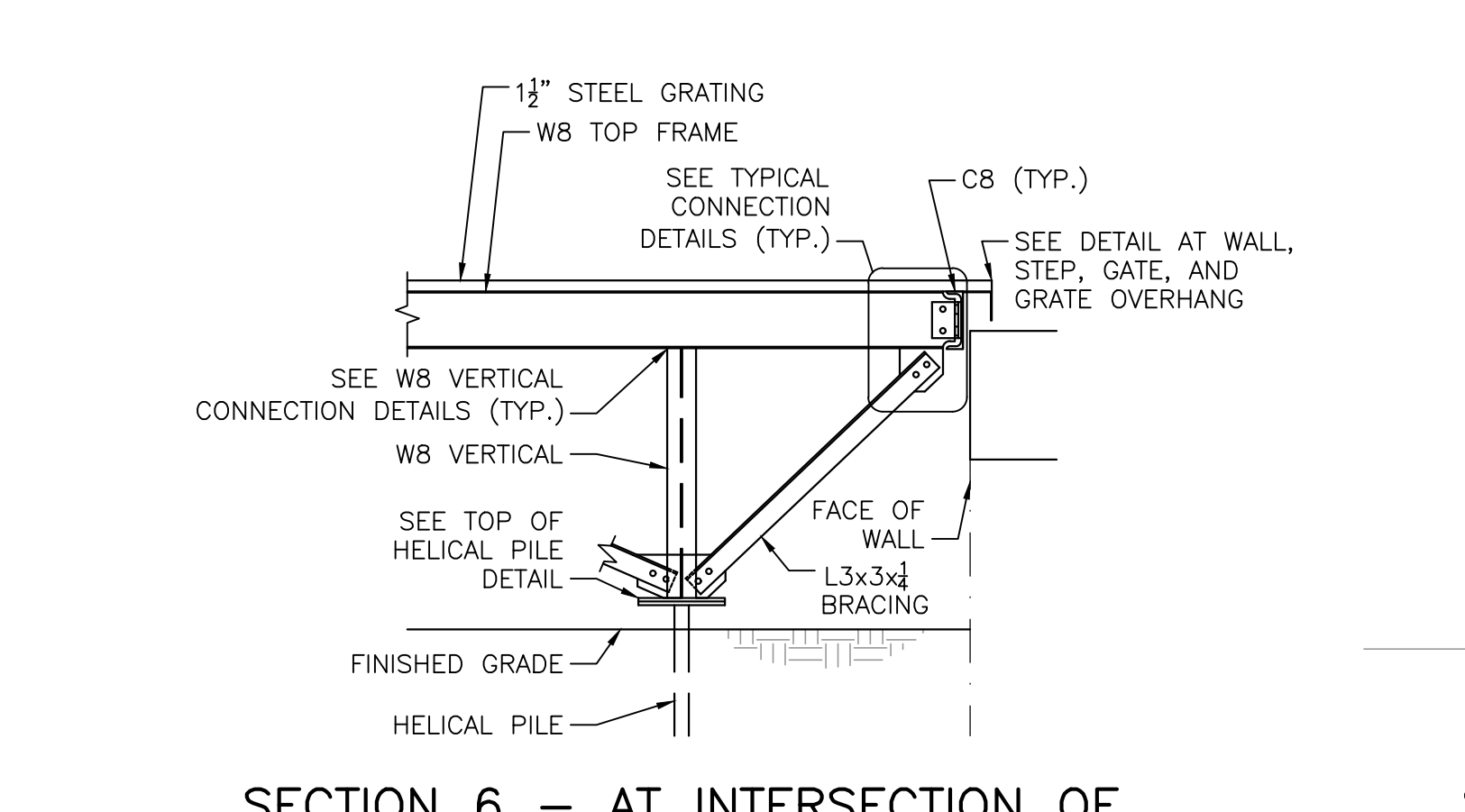
SECTION 3 - AT GRID G4
SCALE: 1/2" = 1'-0"



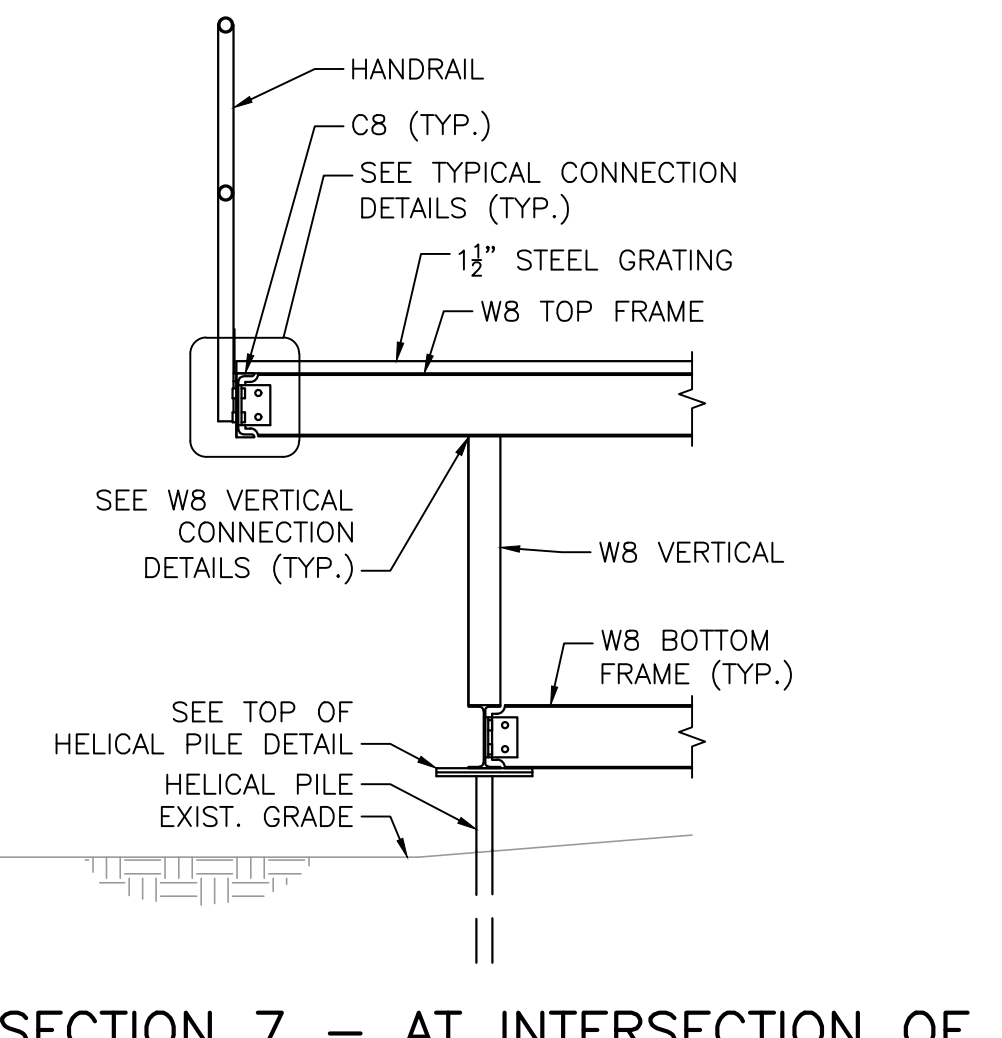
SECTION 4 - AT GRID G7
SCALE: 1/2" = 1'-0"



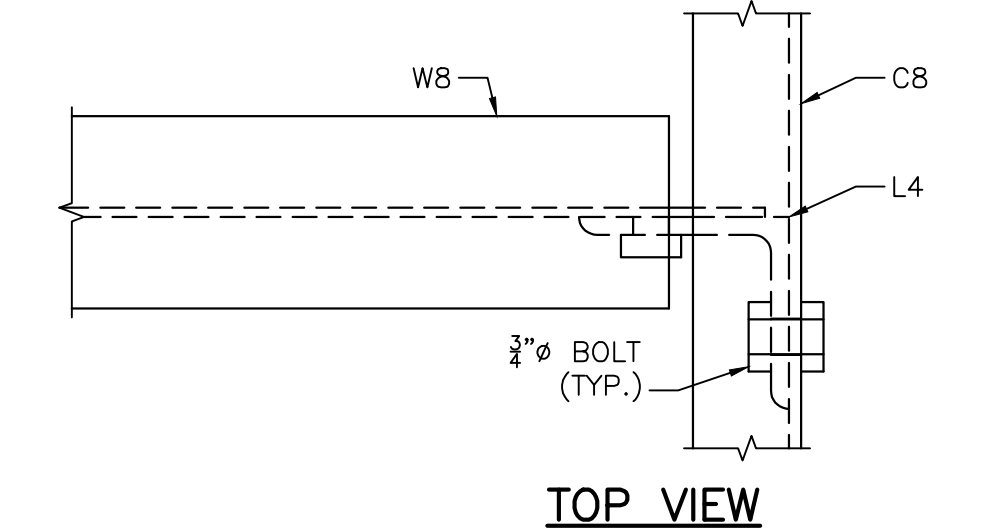
SECTION 5 - AT GRID G8
SCALE: 1/2" = 1'-0"



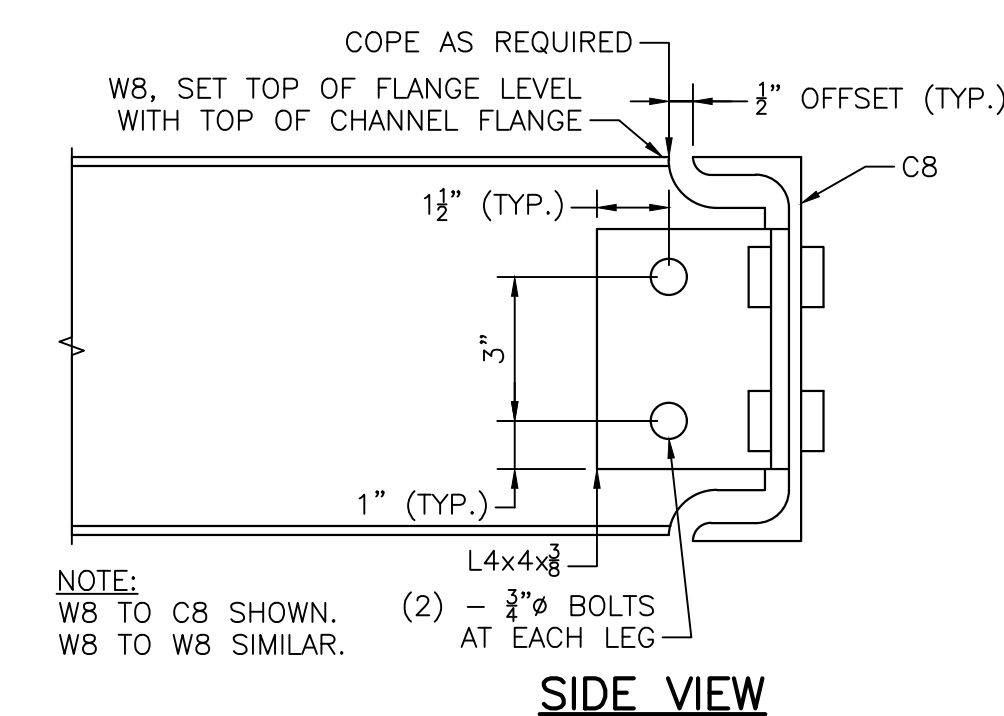
SECTION 6 - AT INTERSECTION OF GRIDS G8-G9/GB & G8-G9/GC
SCALE: 1/2" = 1'-0"



SECTION 7 - AT INTERSECTION OF GRIDS G1-G2/GB & G1-G2/GC
SCALE: 1/2" = 1'-0"

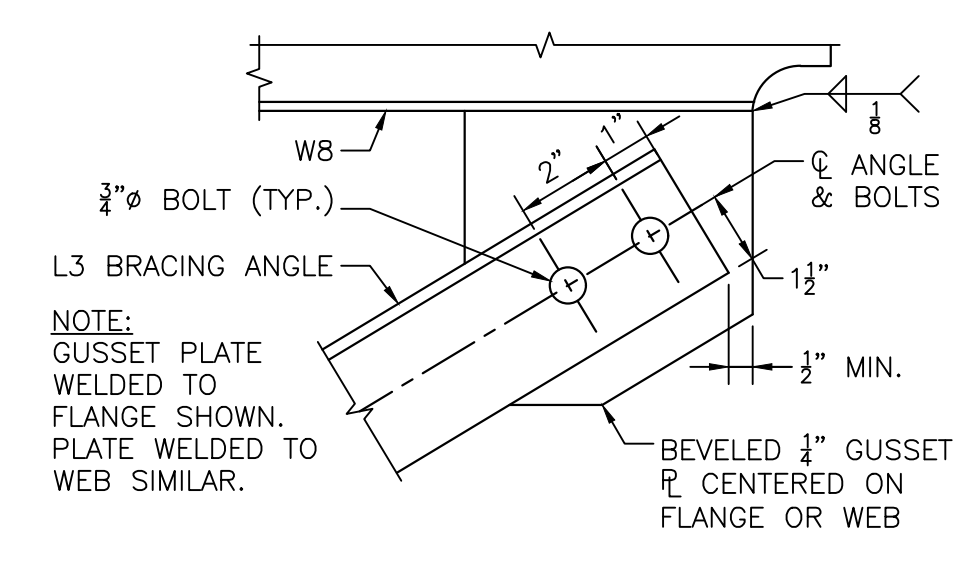


TOP VIEW



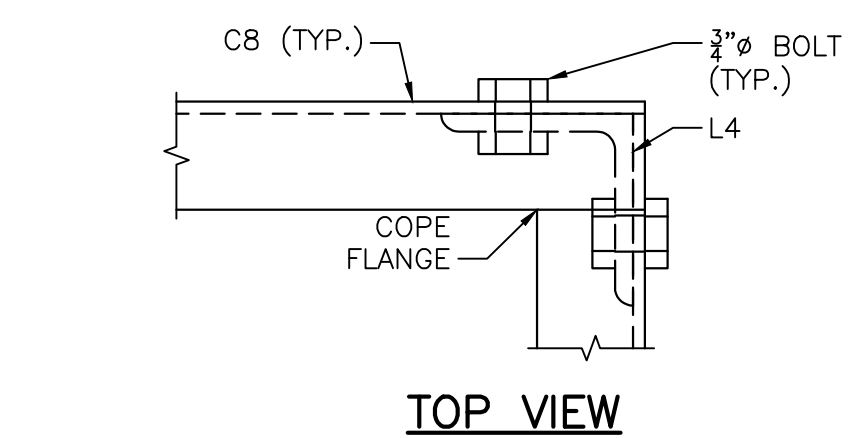
SIDE VIEW

[W8 TO C8 OR W8 TO W8]

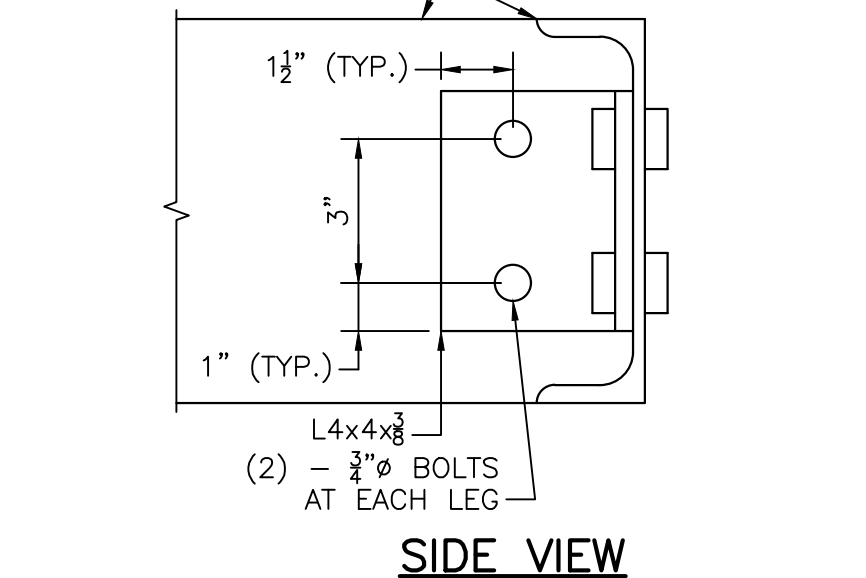


NOTE: GUSSET PLATE WELDED TO FLANGE SHOWN. PLATE WELDED TO WEB SIMILAR.

[ANGLE BRACING]

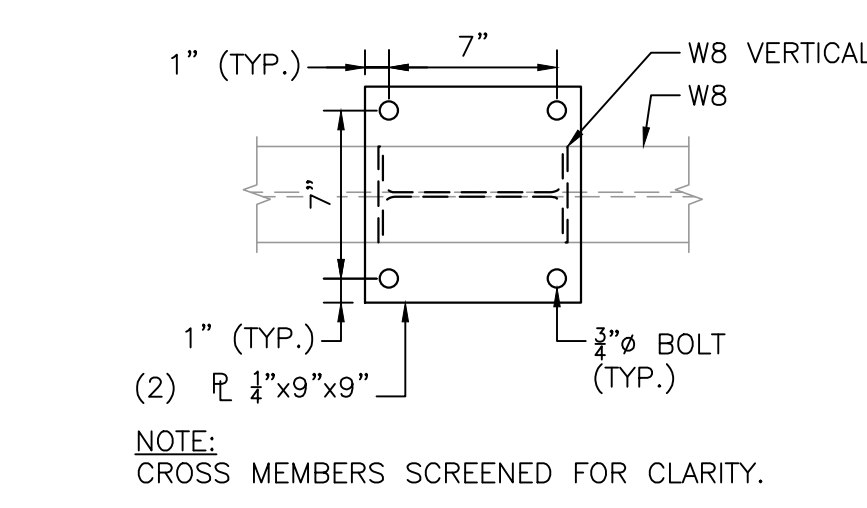


TOP VIEW

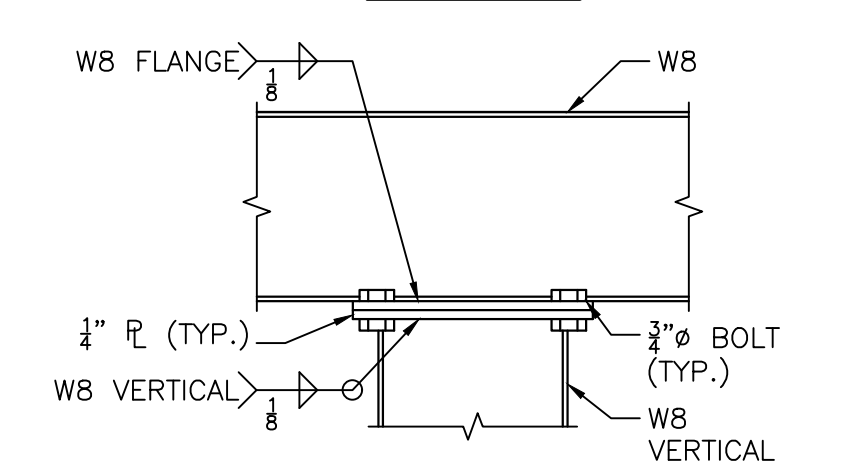


SIDE VIEW

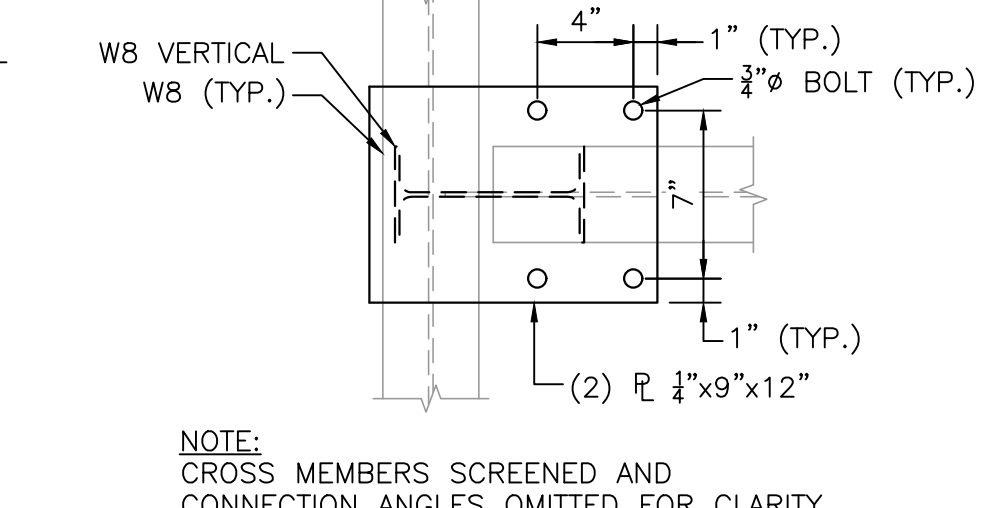
[C8 TO C8 AT PLATFORM CORNERS]



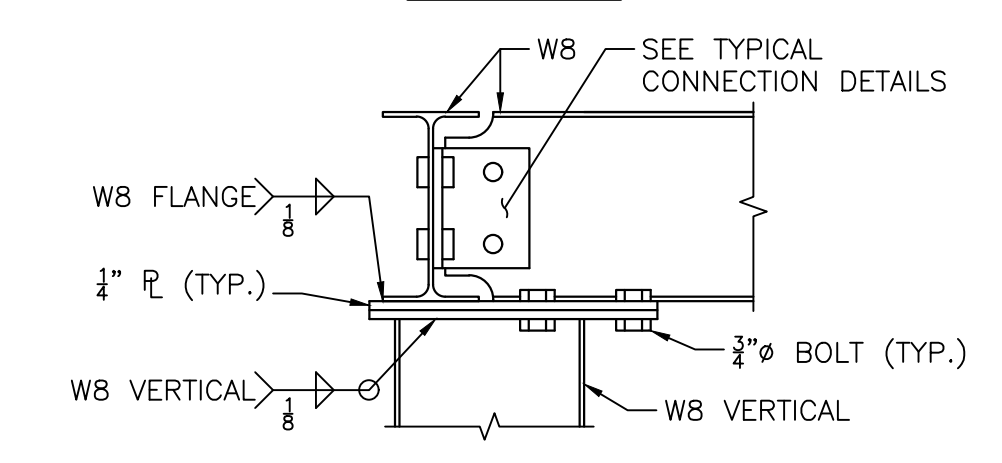
TOP VIEW



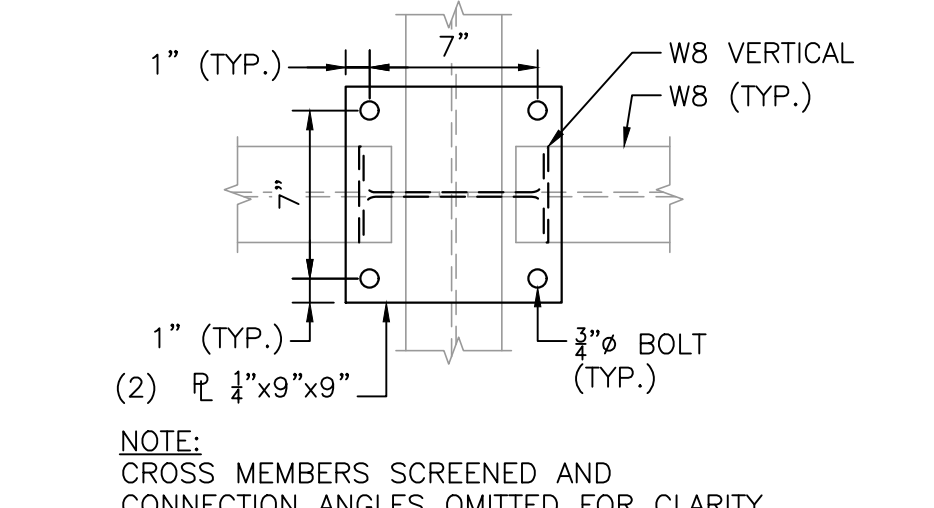
CONDITION 1



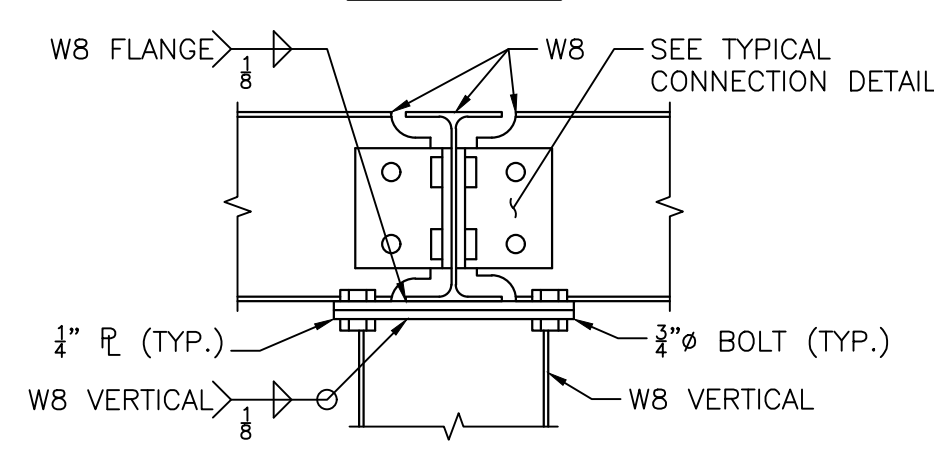
TOP VIEW



CONDITION 2



TOP VIEW



CONDITION 3

W8 VERTICAL CONNECTION DETAILS
SCALE: 1/2" = 1'-0"

TYPICAL CONNECTION DETAILS
SCALE: 3" = 1'-0"

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
DW
DESIGNED BY:
DW
CHECKED BY:
PJK

REGISTERED PROFESSIONAL
For Review Only



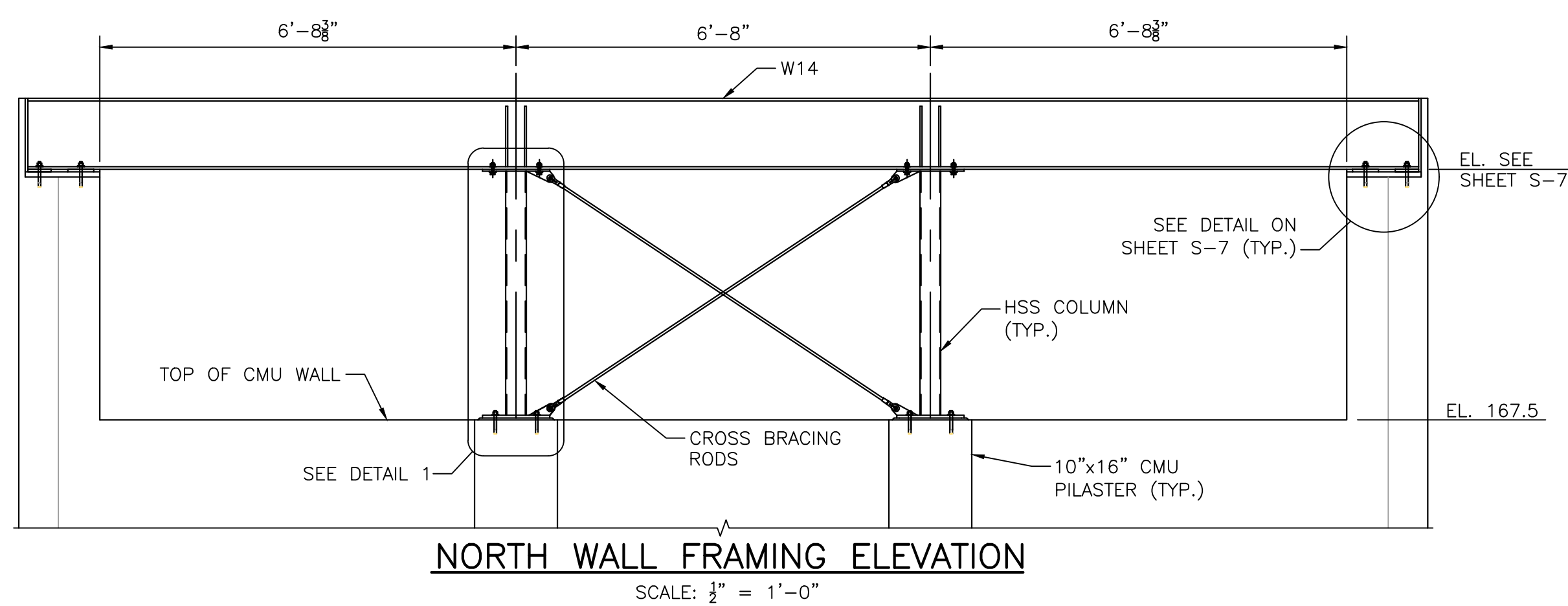
PREPARED BY
SUBCONSULTANT

SCALE
AS SHOWN

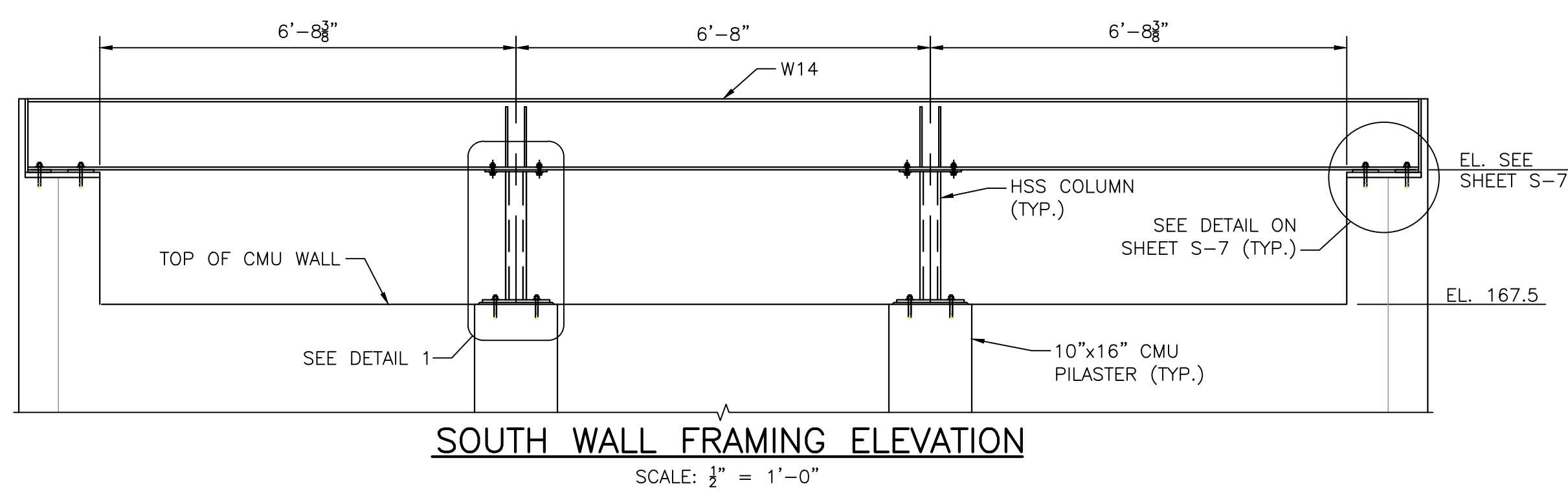
TITLE
Worcester Road Sewer Pumping Station Replacement
GENERATOR SUPPORT (2 OF 2)

BETA JOB NO. 7385
ISSUE DATE AUGUST 2022
SHEET NO. S-10

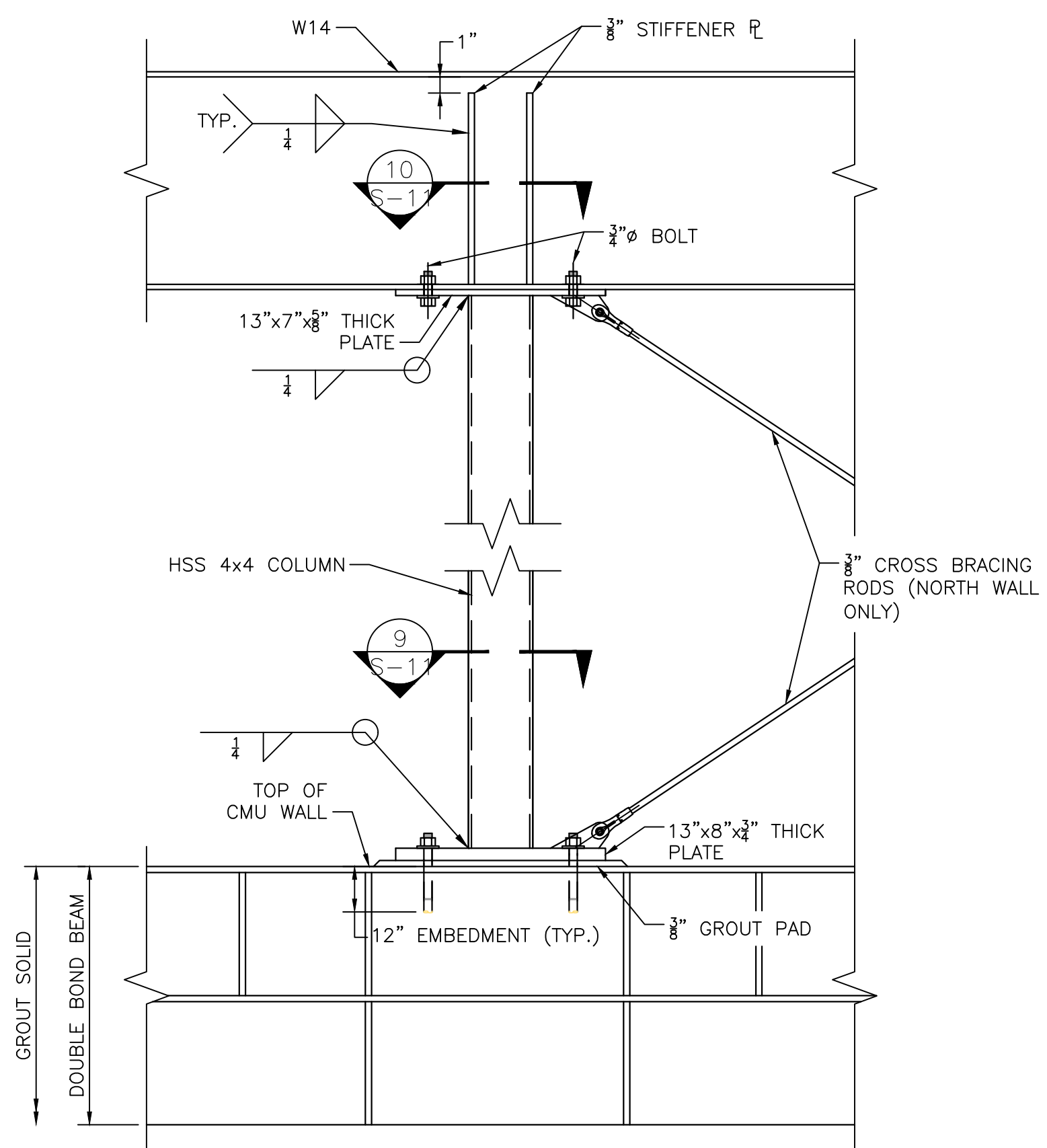
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION



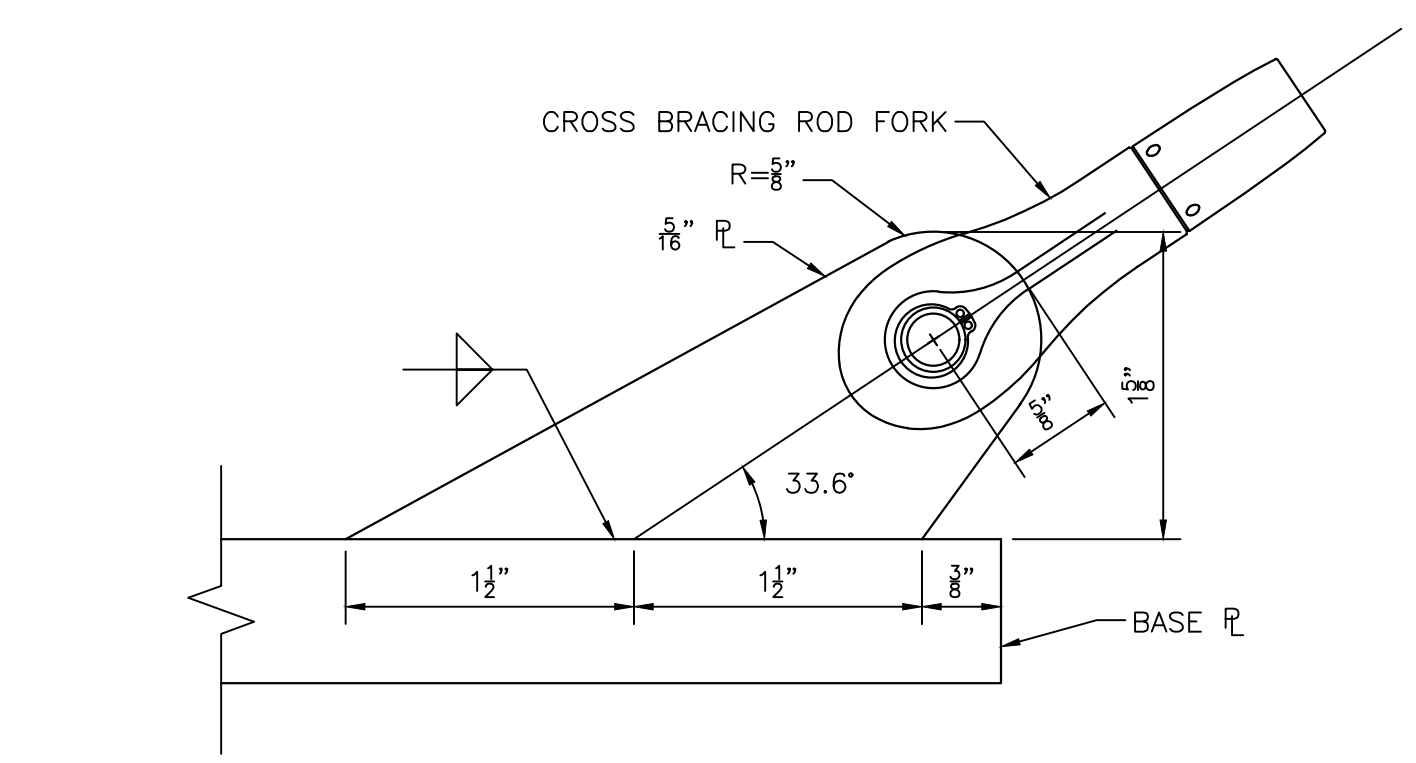
NORTH WALL FRAMING ELEVATION
SCALE: 1/2" = 1'-0"



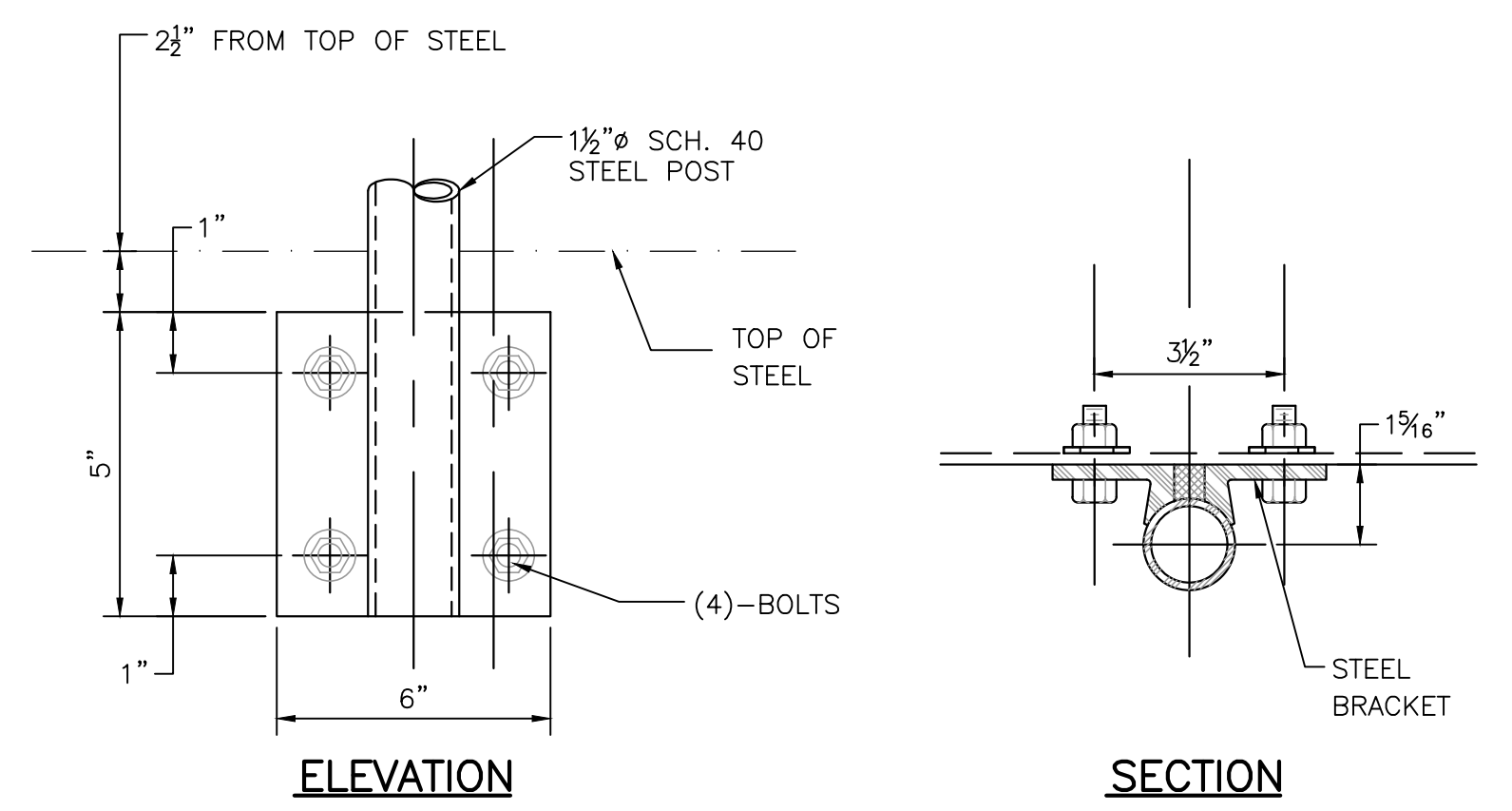
SOUTH WALL FRAMING ELEVATION
SCALE: 1/2" = 1'-0"



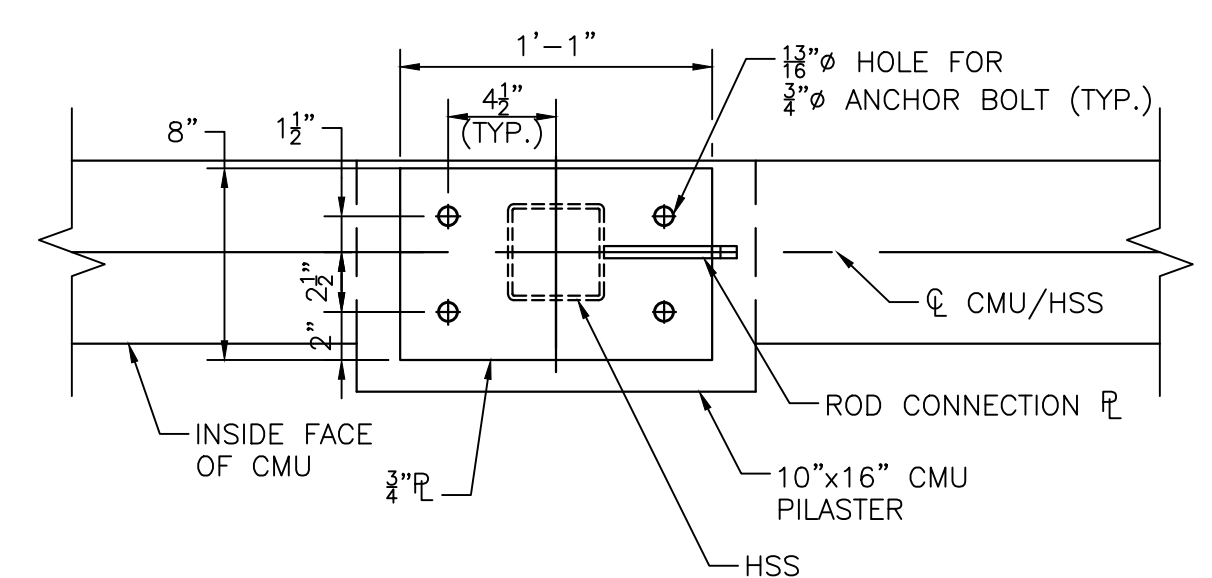
DETAIL 1
SCALE: 1 1/2" = 1'-0"



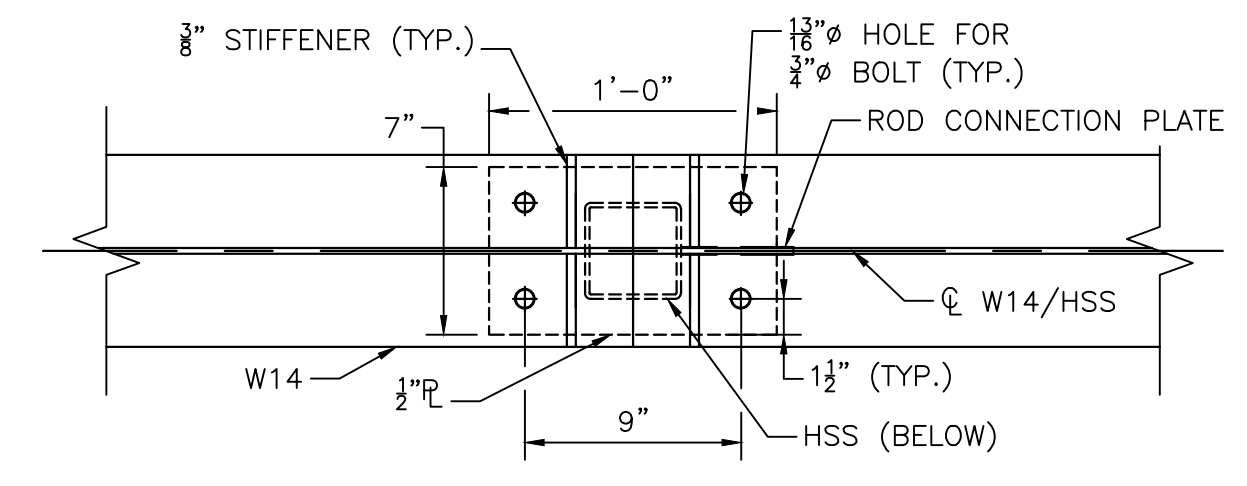
CROSS BRACING ROD CONNECTION PLATE
SCALE: 3" = 1'-0"



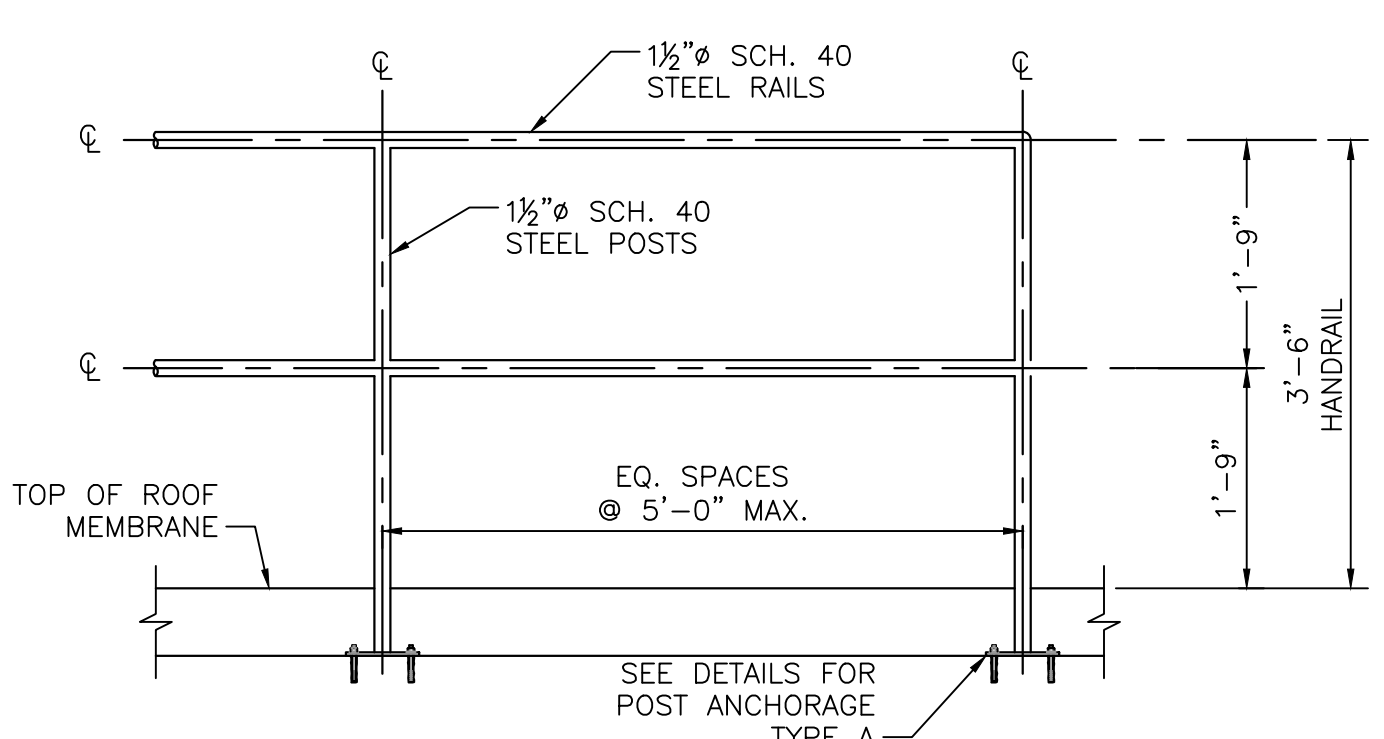
[TYPE C] PLATFORM HANDRAIL POST ANCHORAGE
SCALE: 3" = 1'-0"



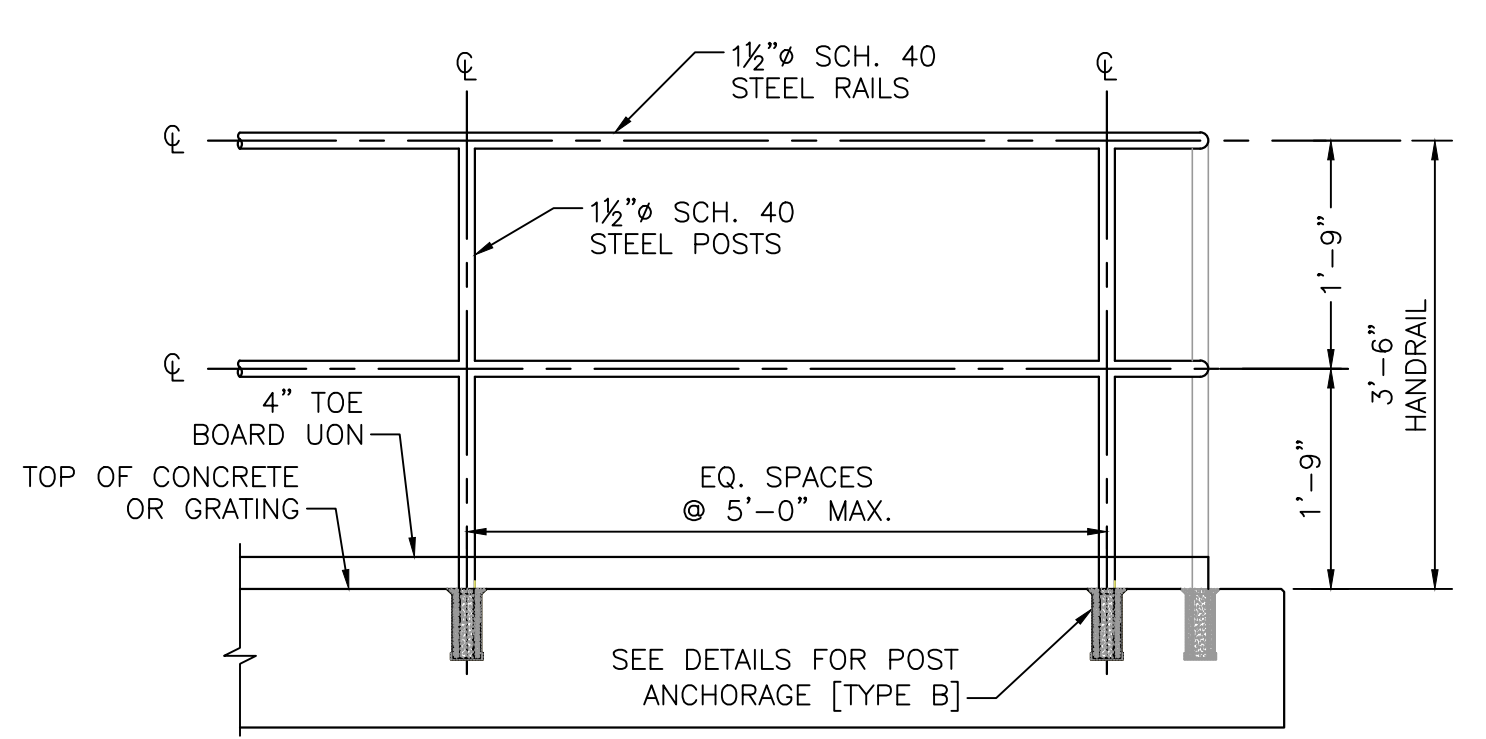
SECTION 9
SCALE: 1 1/2" = 1'-0"



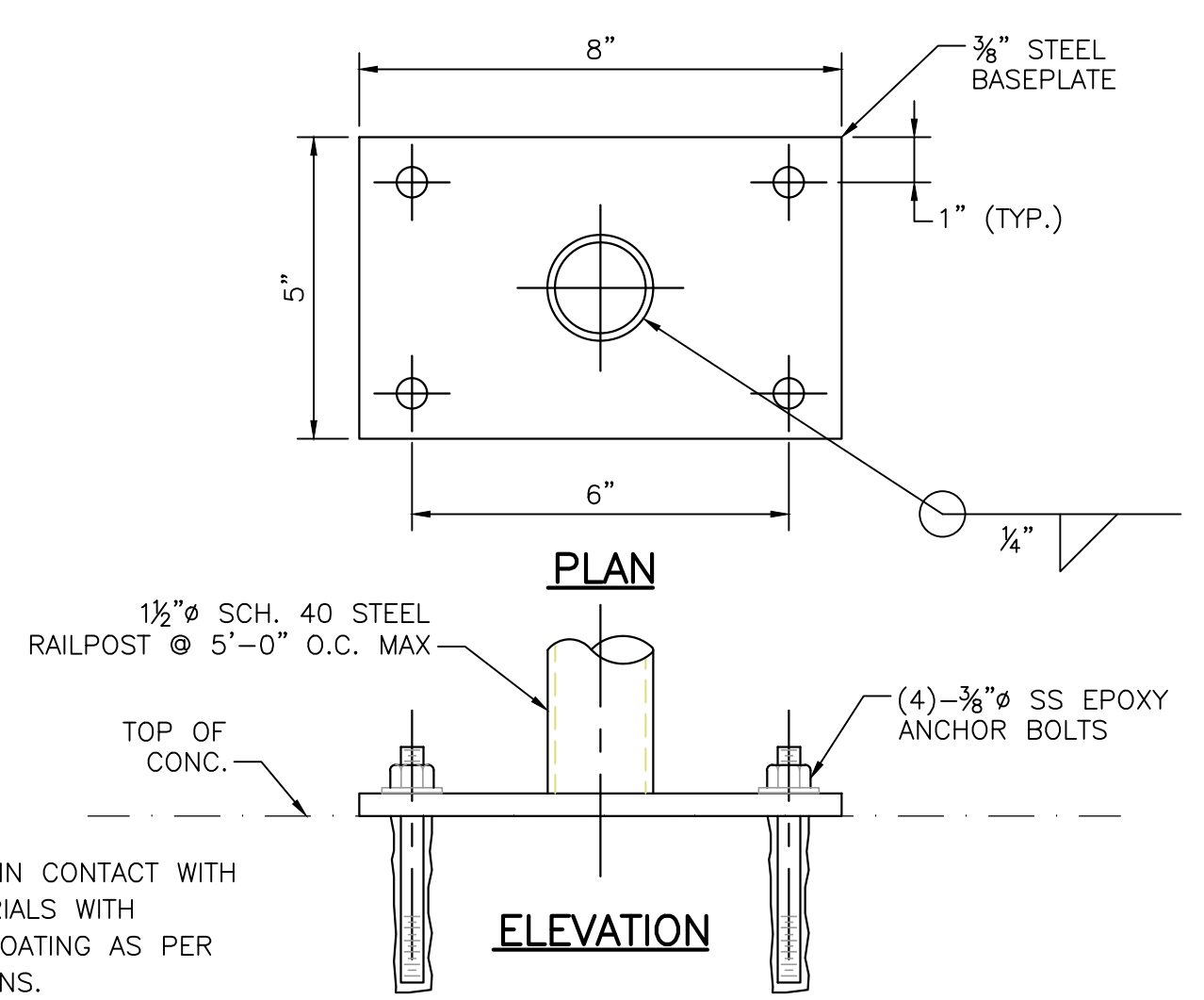
SECTION 10
SCALE: 1 1/2" = 1'-0"



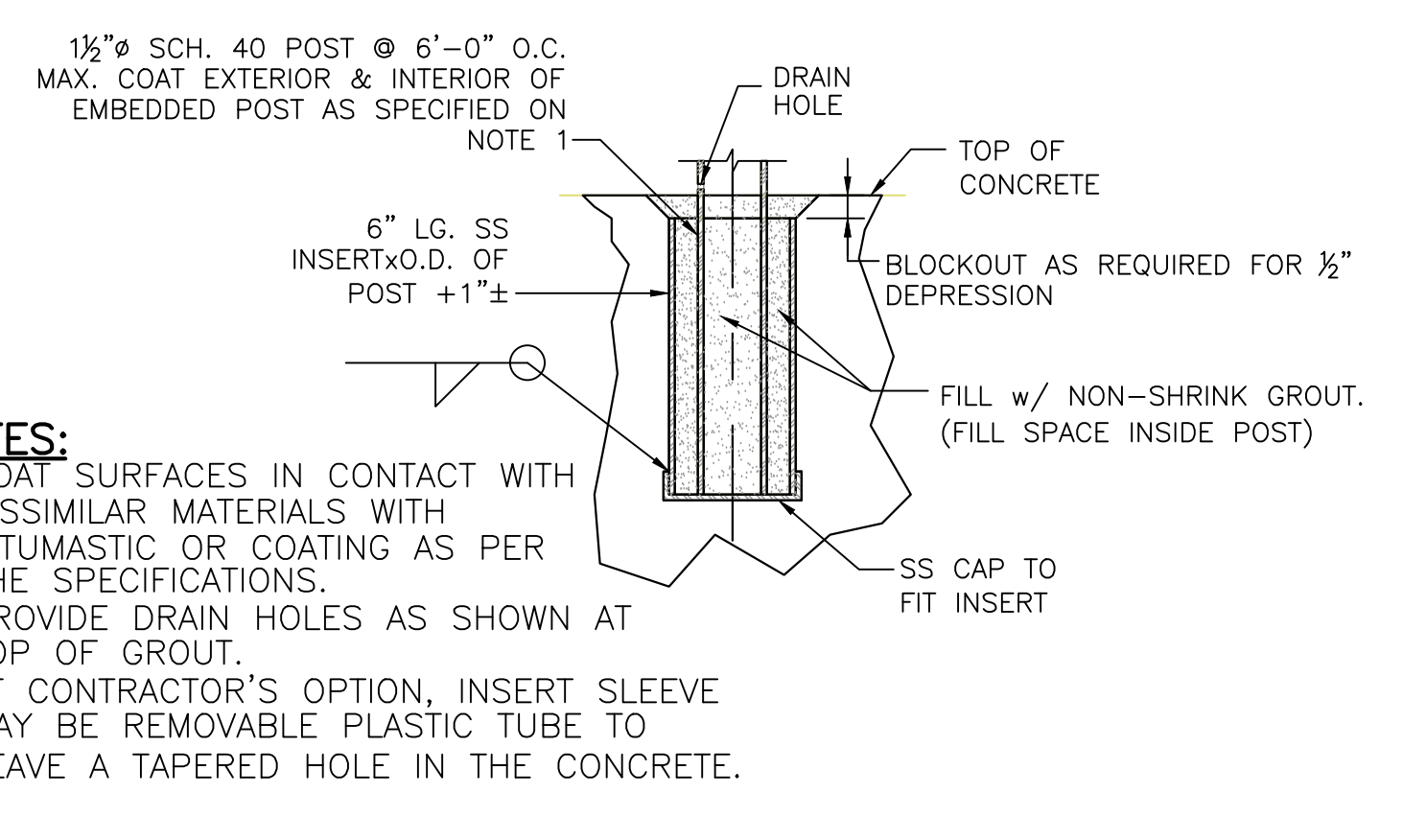
HANDRAIL AT ROOF
NOT TO SCALE



HANDRAIL ON WALL OR PLATFORM
NOT TO SCALE



[TYPE A] ROOF HANDRAIL POST ANCHORAGE
SCALE: 3" = 1'-0"



NOTES:
1. COAT SURFACES IN CONTACT WITH DISSIMILAR MATERIALS WITH BITUMASTIC OR COATING AS PER THE SPECIFICATIONS.
2. PROVIDE DRAIN HOLES AS SHOWN AT TOP OF GROUT.
3. AT CONTRACTOR'S OPTION, INSERT SLEEVE MAY BE REMOVABLE PLASTIC TUBE TO LEAVE A TAPERED HOLE IN THE CONCRETE.

[TYPE B] WALL HANDRAIL POST ANCHORAGE
SCALE: 3" = 1'-0"

8/11/2022 1:48 PM \\BETA-INC.COM\PROJECTS\DRAWING\IMPROVEMENTS\DRAWING\PLANS\SET(S)\10 STEEL DETAILS 1.DWG (BETA STD BW.CTB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
JMR
DESIGNED BY:
CHECKED BY:

REGISTERED PROFESSIONAL PREPARED BY

For Review Only



www.BETA-inc.com

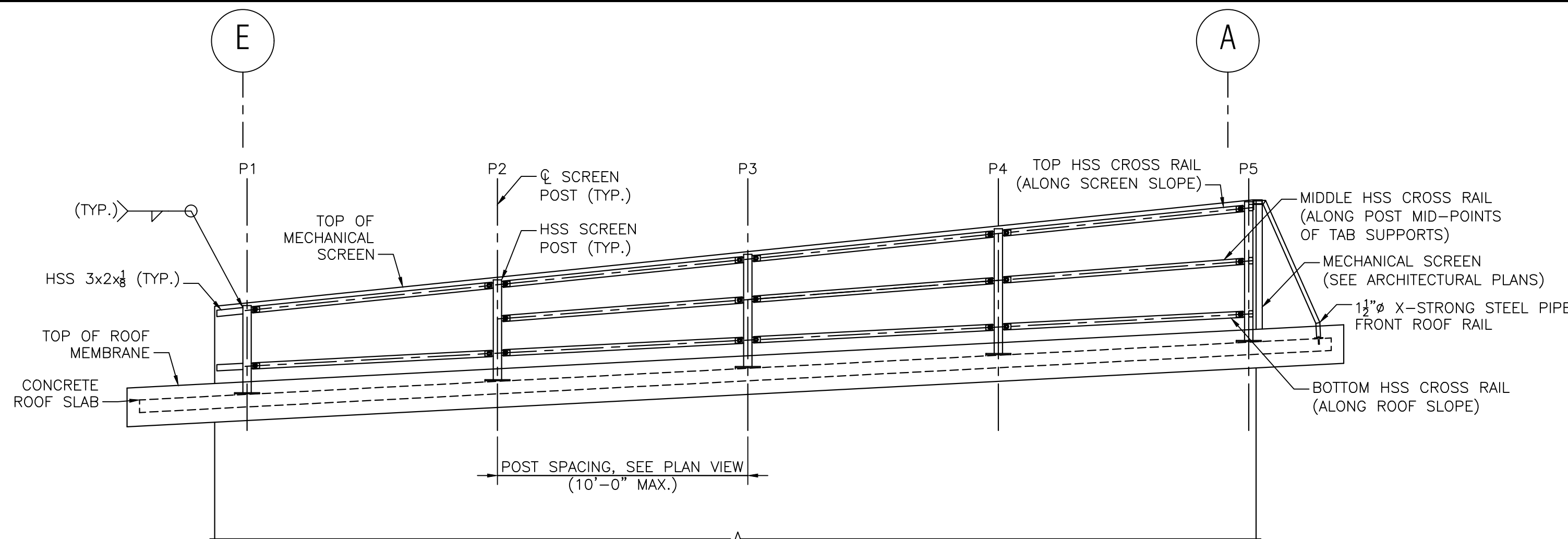
SUBCONSULTANT

SCALE
AS SHOWN

TITLE
Worcester Road Sewer Pumping Station Replacement
STEEL DETAILS (1 OF 2)

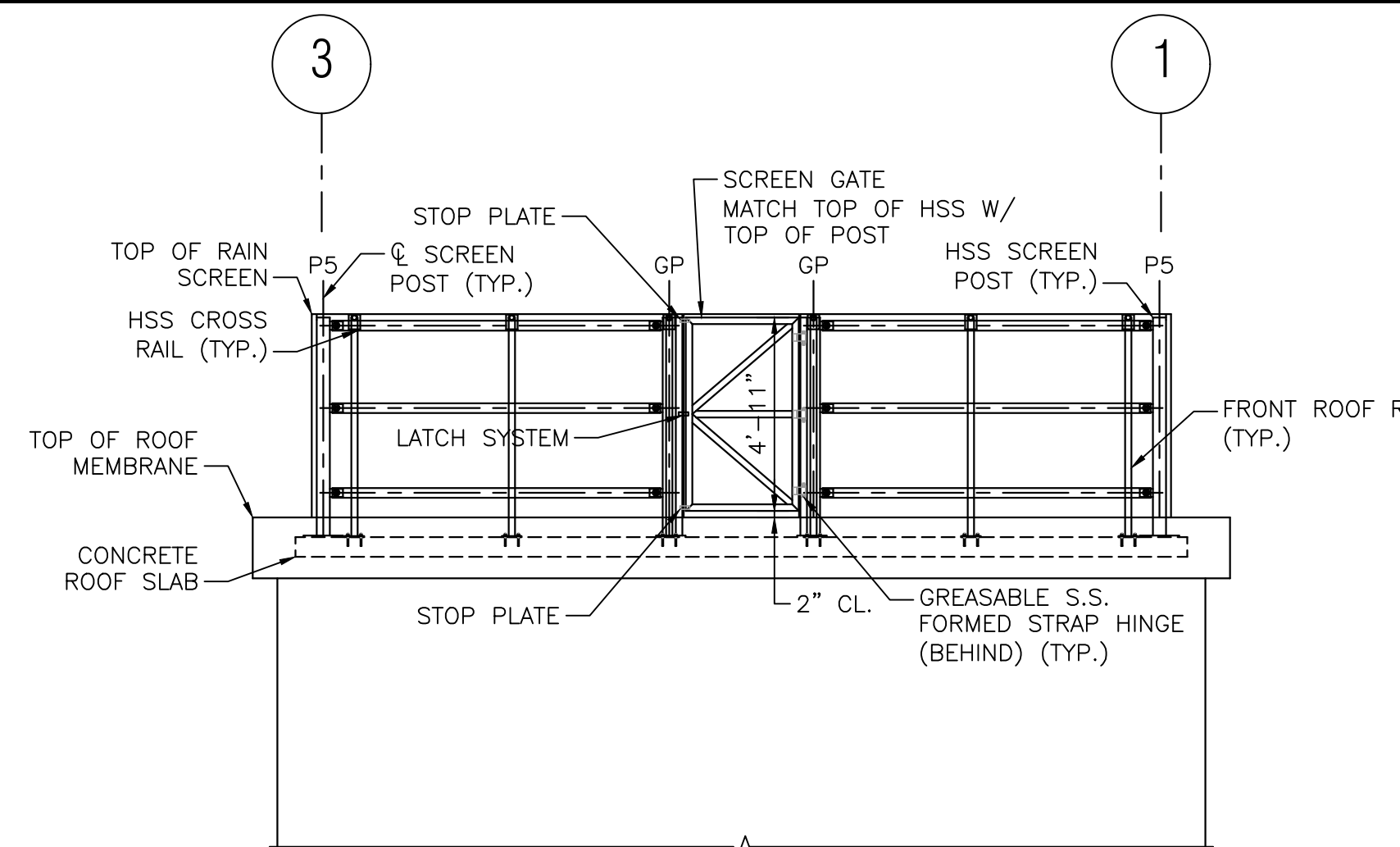
BETA JOB NO. 7385
ISSUE DATE AUGUST 2022
SHEET NO. S-11

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION



NOTE:
POSTS, RAILS, AND HARDWARE BEHIND SCREEN ARE SHOWN FOR CONCEPTUAL PURPOSES.

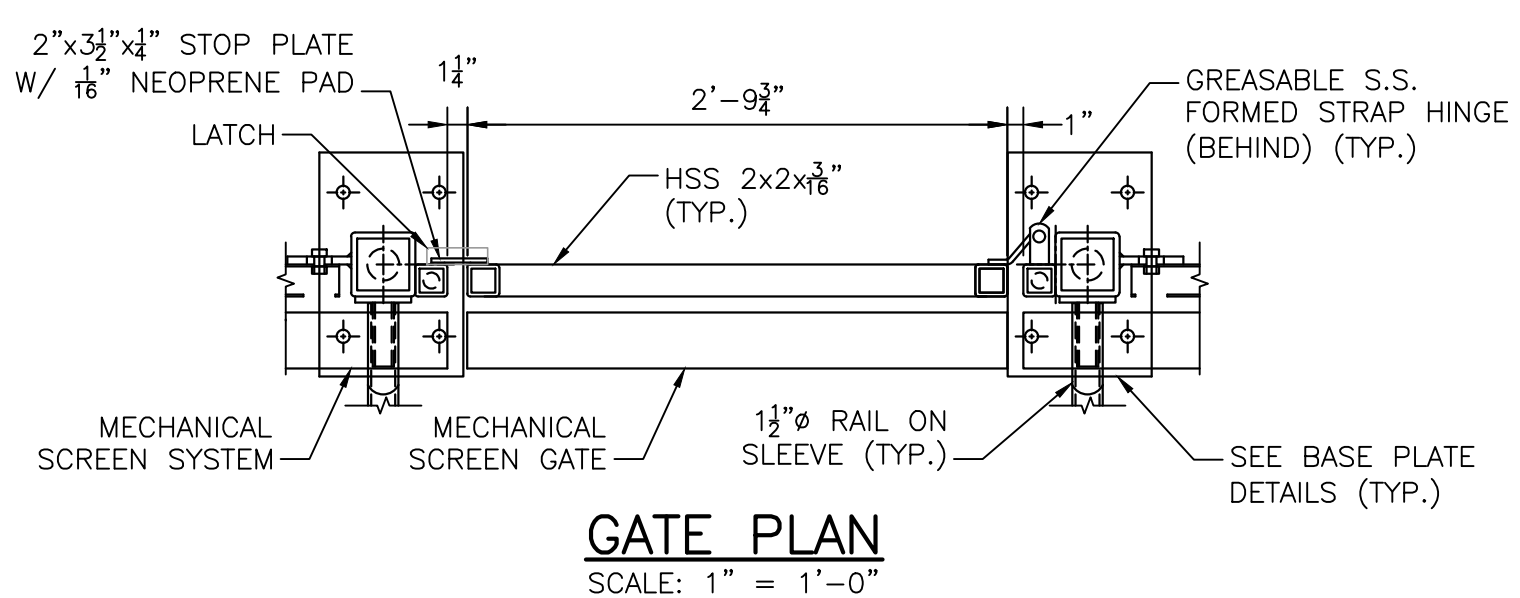
[WEST SIDE SIMILAR]
EAST MECHANICAL SCREEN ELEVATION
SCALE: 1/4" = 1'-0"



NOTE:
POSTS, RAILS, AND HARDWARE BEHIND SCREEN ARE SHOWN FOR CONCEPTUAL PURPOSES.

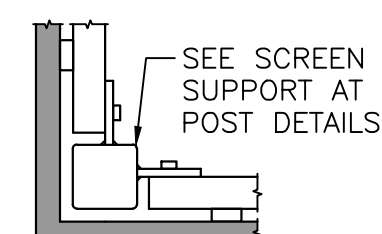
NORTH MECHANICAL SCREEN ELEVATION
SCALE: 1/4" = 1'-0"

MECHANICAL SCREEN FRAMING NOTES:
1. ALL MECHANICAL SCREEN FRAMING MEMBERS AND CONNECTIONS SHALL BE HOT-DIPPED GALVANIZED AND PAINTED PER THE ARCHITECT.

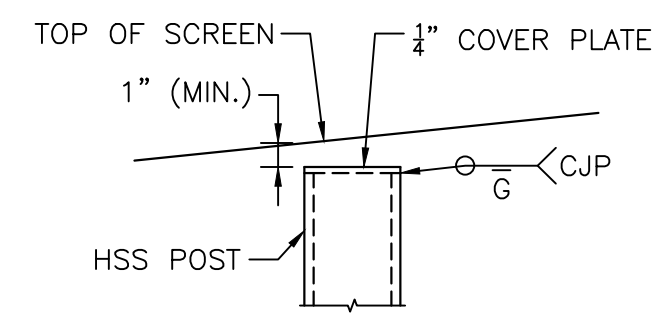


GATE PLAN
SCALE: 1" = 1'-0"

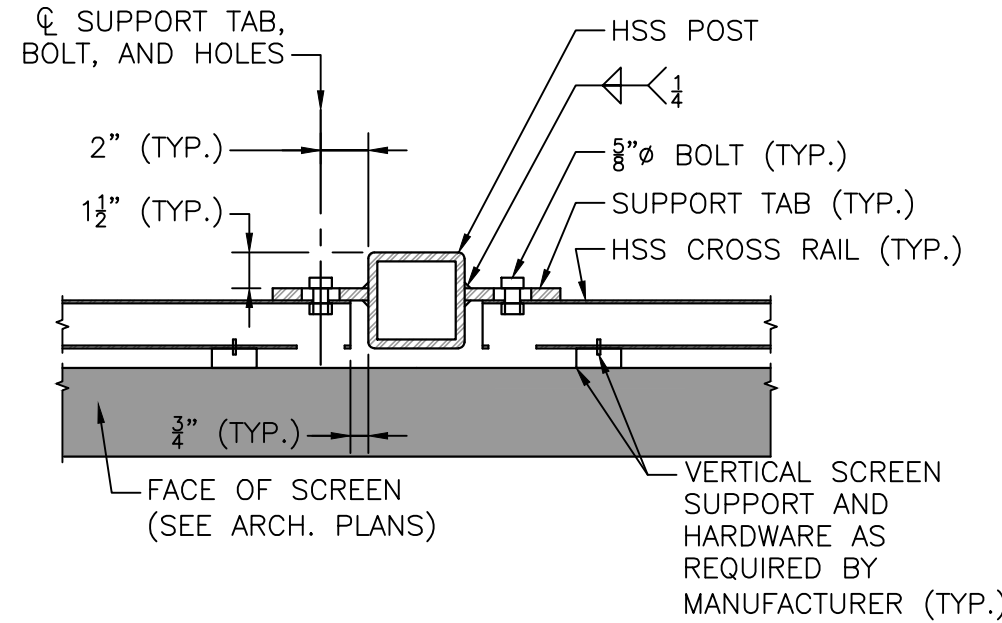
EAST SIDE POST DIMENSIONS			
POST NUMBER	"H"	"A"	"B"
P1	3'-10 3/8"	-	2'-7 1/2"
P2	4'-3 1/4"	3'-0"	3'-0 3/8"
P3	4'-8 3/4"	3'-4 3/8"	3'-5 1/4"
P4	5'-1"	3'-9 3/4"	3'-10 3/8"



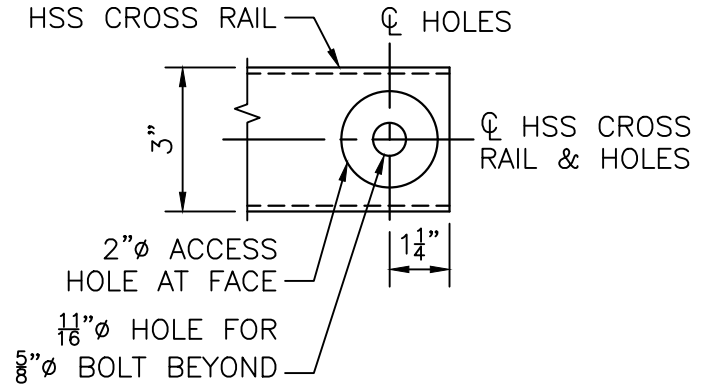
POST P5 TOP VIEW



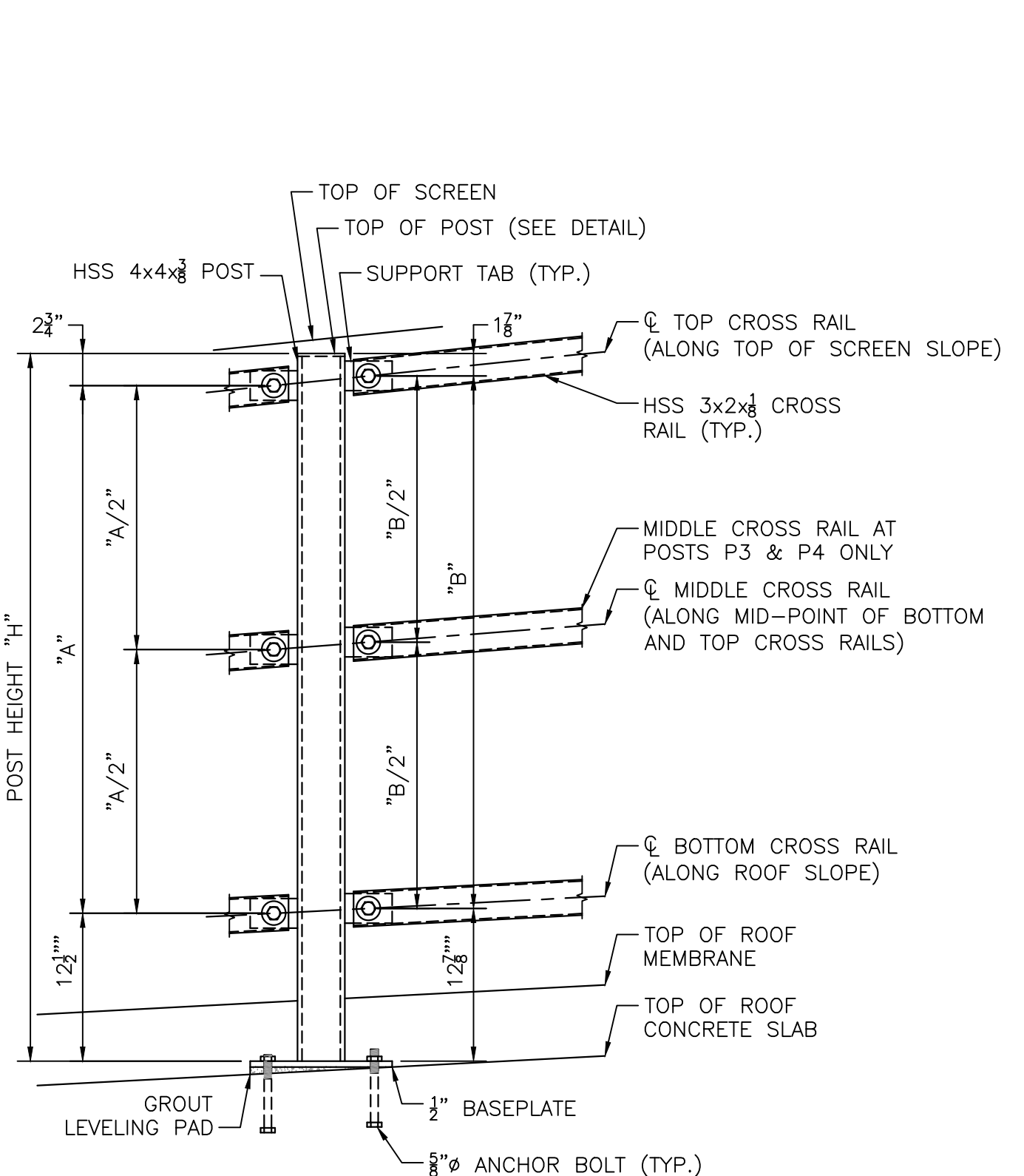
TOP OF POST DETAILS
SCALE: 1 1/2" = 1'-0"



SCREEN SUPPORT AT POST DETAILS
SCALE: 1 1/2" = 1'-0"

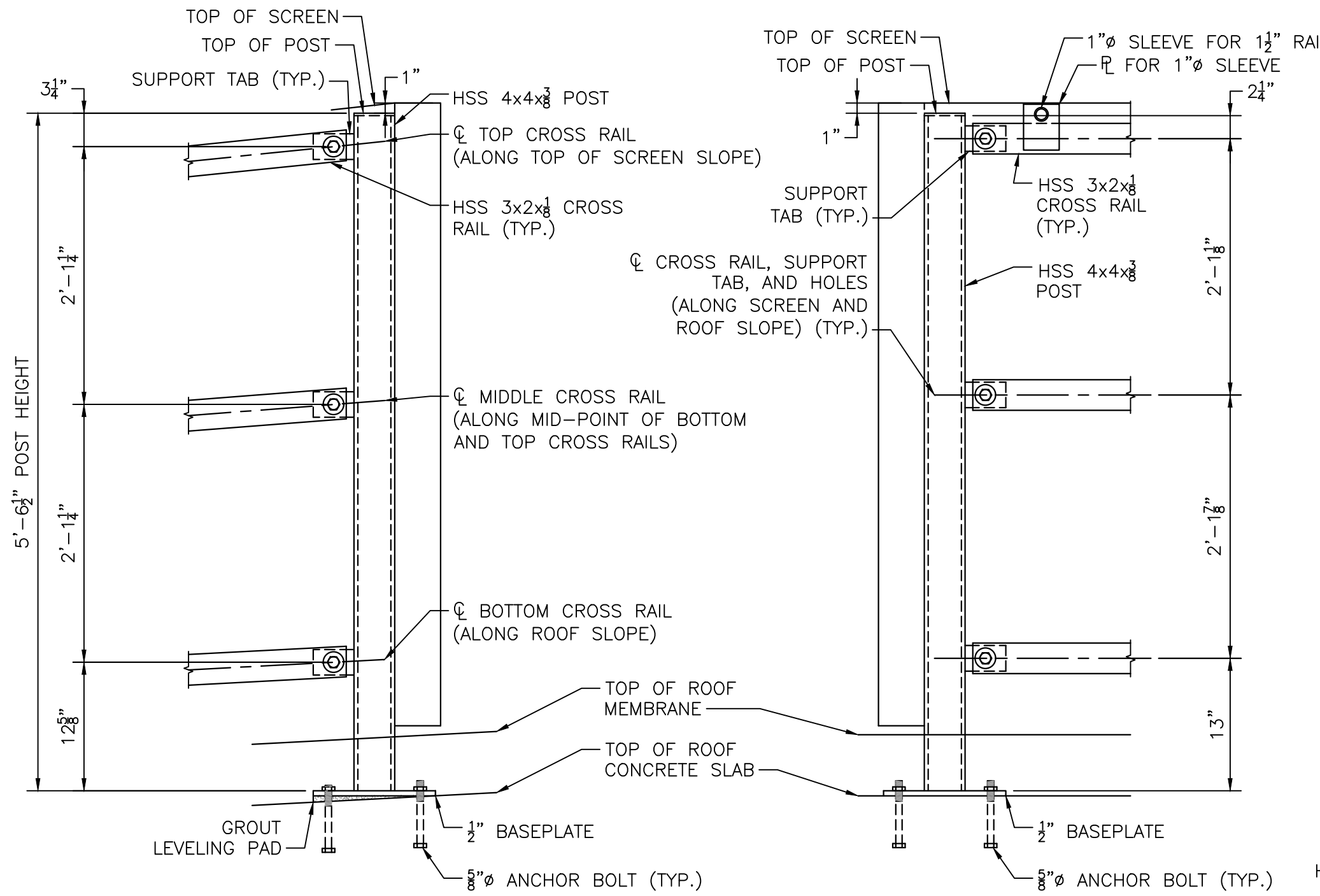


END OF HSS CROSS RAIL DETAILS
SCALE: 3" = 1'-0"



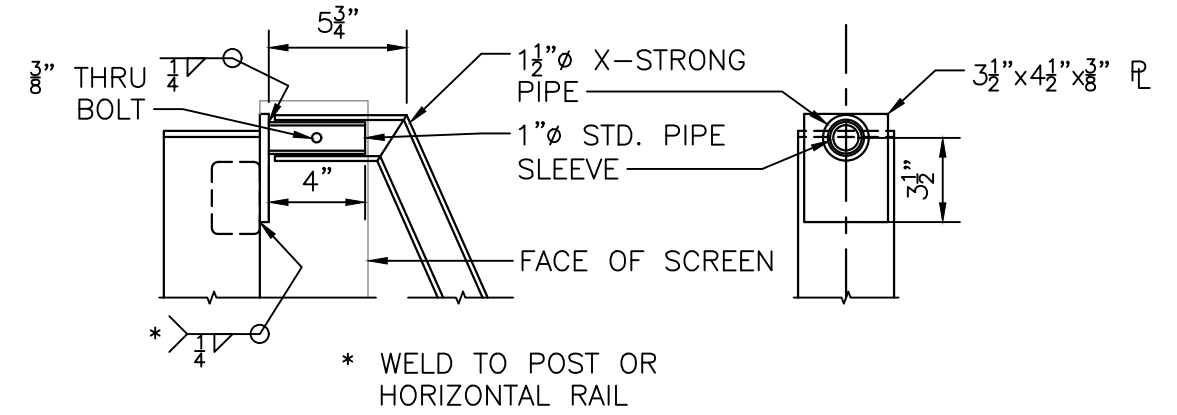
NOTES:
1. EAST SIDE POST SHOWN. SEE TABLES FOR EAST SIDE POST DIMENSIONS. WEST SIDE SIMILAR AND TO BE MIRRORED.
2. DIMENSION BANDS "A" AND "B" ARE TAKEN FROM TOP AND BOTTOM OF POST AS WELL AS C OF SUPPORT TAB AND HOLES.

POST P1 TO P4 DETAILS
SCALE: 1" = 1'-0"

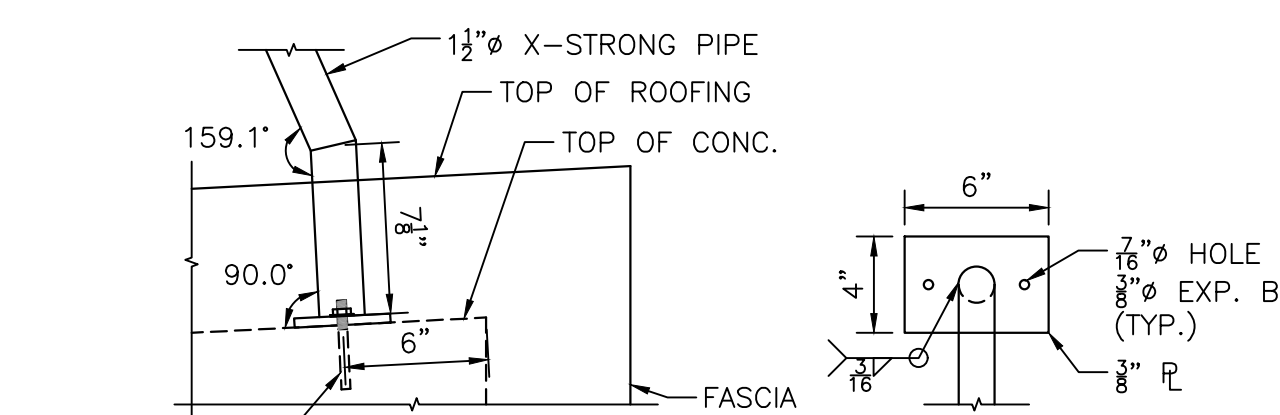


NOTES:
1. NORTHEAST CORNER POST SHOWN, NORTHWEST CORNER SIMILAR AND TO BE MIRRORED.
2. DIMENSIONS ARE TAKEN FROM TOP AND BOTTOM OF POST AS WELL AS C OF SUPPORT TAB AND HOLES.

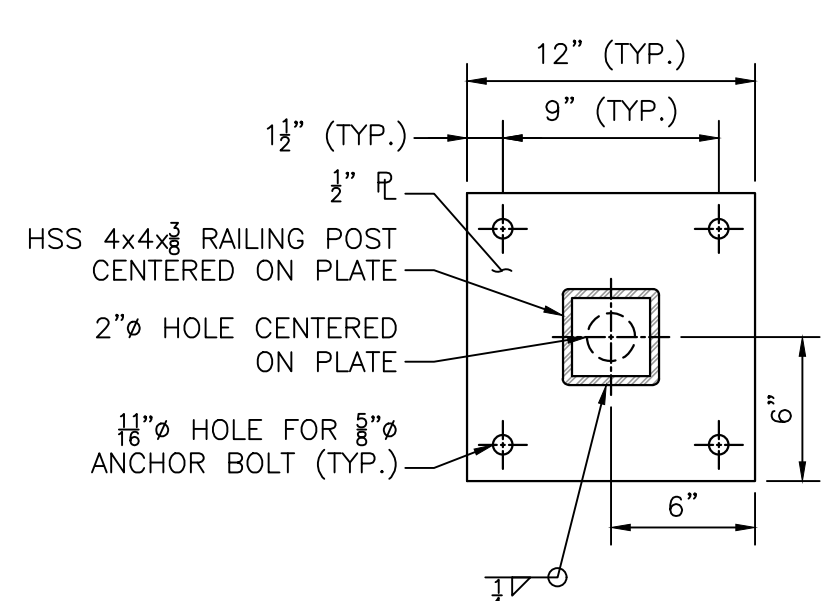
POST P5 DETAILS
SCALE: 1" = 1'-0"



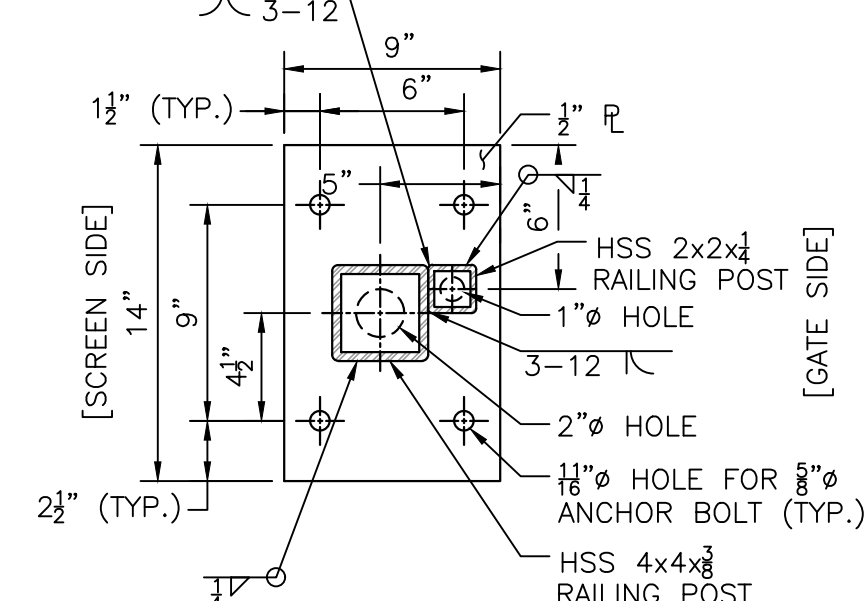
[SECTION] [ELEVATION]
RAIL UPPER CONNECTION
SCALE: 1 1/2" = 1'-0"



[SECTION] [PLAN]
RAIL LOWER CONNECTION
SCALE: 1 1/2" = 1'-0"

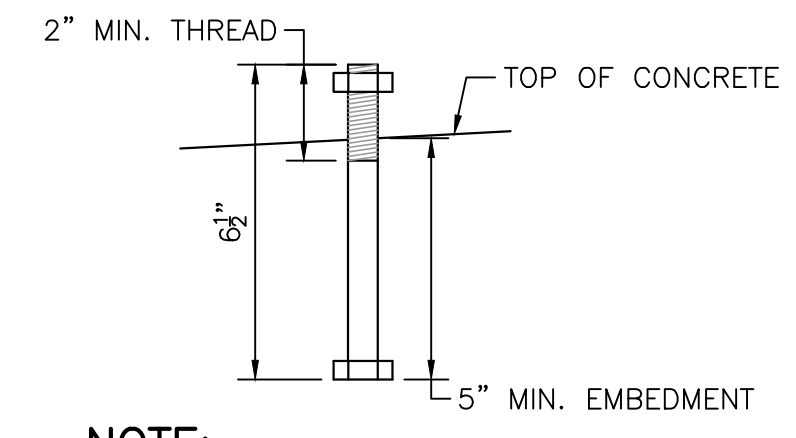


[POSTS P1 TO P5]



[POST GP ONLY]

BASEPLATE DETAILS
SCALE: 1 1/2" = 1'-0"



NOTE:
ANCHOR BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F1554 GRADE 36.

ANCHOR BOLT DETAIL
SCALE: 3" = 1'-0"

8/11/2022 1:49 PM \\BETA-INC.COM\INVENTORY\IRON\385 - FRAMINGHAM WPFS IMPROVEMENT\DRAWINGFILES\PLANS\SETSR(11) STEEL DETAILS 2.DWG (BETA STD BW.CTB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
DW

DESIGNED BY:

CHECKED BY:

REGISTERED PROFESSIONAL

For Review Only



PREPARED BY:

SUBCONSULTANT

SCALE

AS SHOWN

TITLE

Worcester Road Sewer Pumping Station Replacement

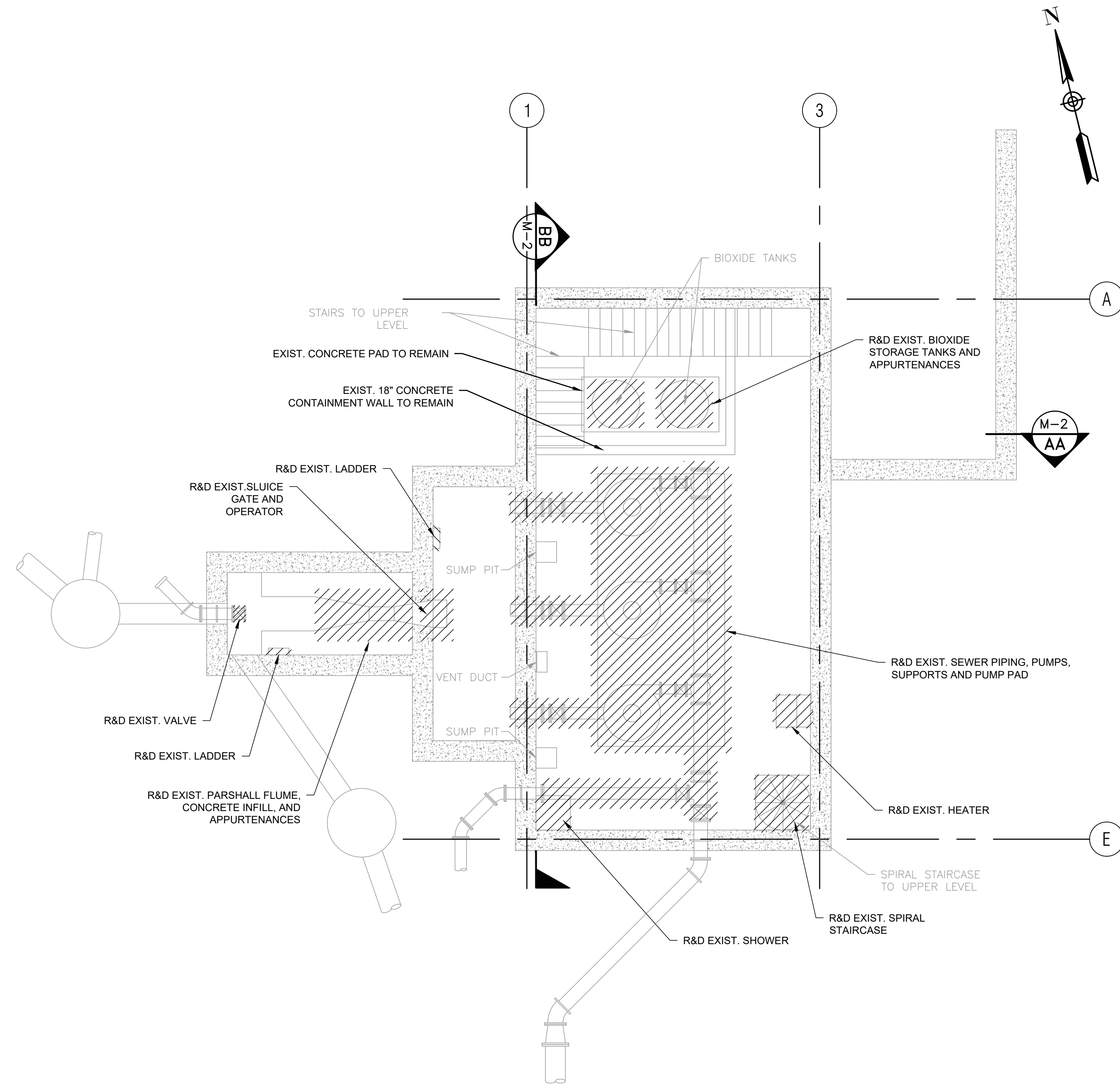
STEEL DETAILS (2 OF 2)

BETA JOB NO. 7385

ISSUE DATE AUGUST 2022

SHEET NO. S-12

8/11/2022 1:45 PM \\BETA-INC.COM\PROJECTS\WROSR\WPS-IMPROVEMENTS\DRAWINGFILES\PLANS\M-1 - PROP DEMOLITION PLANS & SECTIONS.DWG (BETA STD BW.CTB)

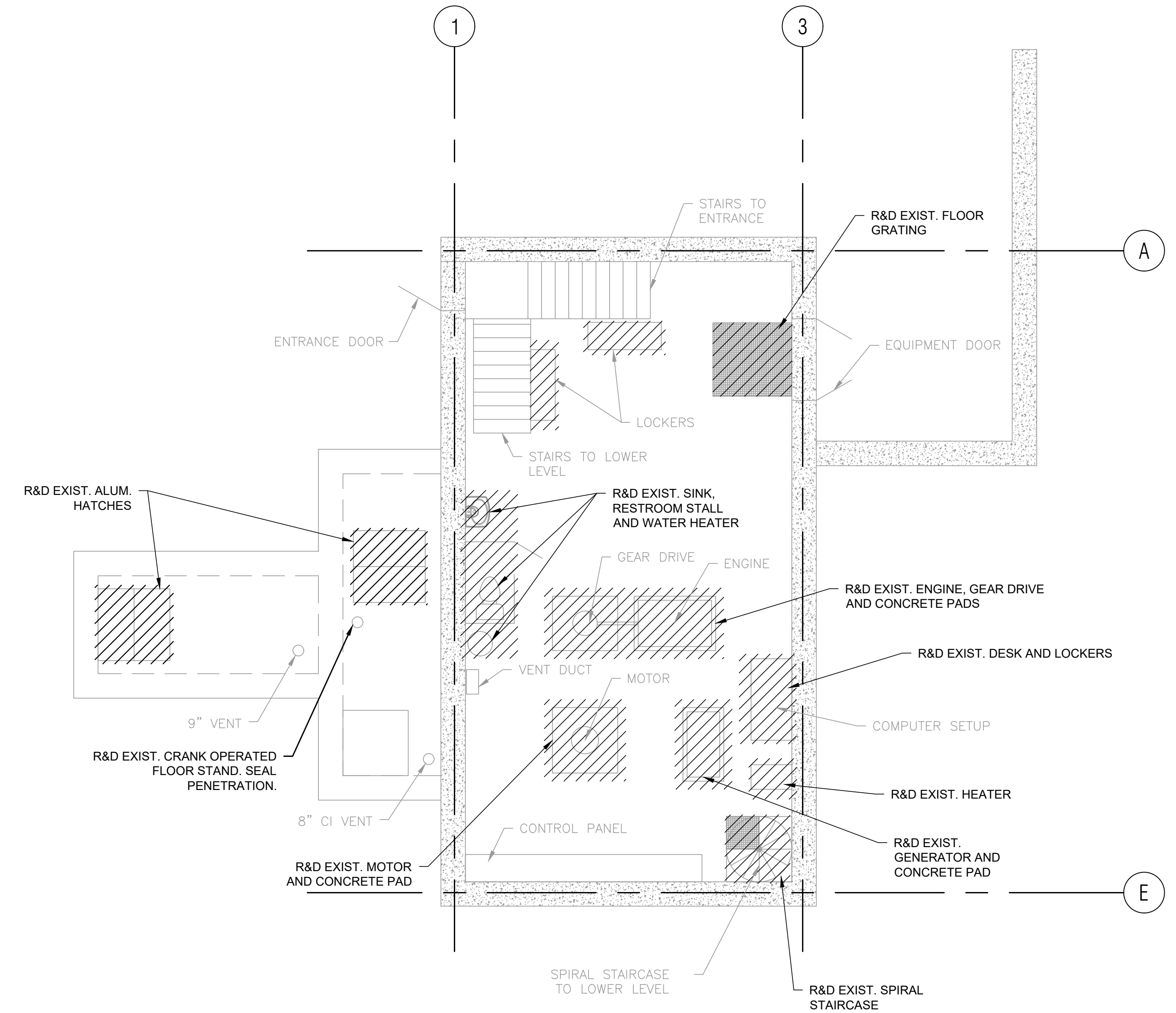


LOWER LEVEL - MECHANICAL PIPING PLAN - DEMOLITION

SCALE: 3/16" = 1'-0"

MECHANICAL DEMOLITION NOTES:

1. REFER TO SPECIFICATION 02095 AND THE RISK BASED PCB BULK PRODUCT WASTE DISPOSAL PLAN IN APPENDIX G FOR REQUIREMENTS ASSOCIATED WITH PCBs.
2. REFER TO SPECIFICATION SECTION 02050.
3. DEMOLITION CANNOT BEGIN UNTIL THE TEMPORARY BYPASS SYSTEM HAS BEEN INSTALLED, STARTED UP, TESTED AND ACCEPTED BY THE OWNER/ENGINEER IN ACCORDANCE WITH SPECIFICATION SECTION 02149.
4. ALL DEMOLITION AND REMOVAL OF EXISTING STRUCTURES, UTILITIES, EQUIPMENT AND APPURTENANCES SHALL BE ACCOMPLISHED WITHOUT DAMAGING THE INTEGRITY OF THE EXISTING STRUCTURES TO REMAIN, UTILITIES, EQUIPMENT AND APPURTENANCES THAT ARE TO REMAIN. EQUIPMENT TO BE SALVAGED SHALL BE REMOVED AND DELIVERED BY THE CONTRACTOR TO AN AREA AT THE CITY OF FRAMINGHAM DPW, INDICATED BY THE ENGINEER.
5. ALL DEMOLITION MATERIAL INCLUDING CONCRETE, PIPE AND BRICK THAT WAS IN CONTACT WITH SEWAGE SHALL BE CLEANED IN ACCORDANCE WITH MASSDEP REQUIREMENTS AND DISPOSED OF ACCORDINGLY. ONCE CLEANED, DEMOLITION MATERIALS SHALL NOT BE CONSIDERED SPECIAL WASTE, UNLESS QUALIFIED AS SUCH BY OTHER CRITERIA.
6. MATERIALS TO BE REMOVED THAT ARE NOT DESIGNATED TO BE SALVAGED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED OFF-SITE AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE AND IN ACCORDANCE WITH ALL STATE AND LOCAL REQUIREMENTS, CONTRACT REQUIREMENTS, AND SPECIFICATION SECTION 02080.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE LEGAL AND PROPER DISPOSAL OF ALL DEMOLITION MATERIAL ACCORDING TO SECTION 02080 AND ANY RELEVANT LAWS OF THE CITY OF FRAMINGHAM AND STATE OF MASSACHUSETTS.
8. ADDITIONAL DEMOLITION WORK IS SHOWN ON THE CIVIL, STRUCTURAL, ARCHITECTURAL, HVAC, I&C, PLUMBING, AND ELECTRICAL DRAWINGS.
9. PLANS OF THE EXISTING FACILITY WERE BASED ON EXISTING DRAWINGS. THE DRAWINGS SHOW OVERALL DIMENSIONS OF THE STRUCTURES, AND THE LOCATION OF MAJOR EQUIPMENT AND PIPING. MISCELLANEOUS EQUIPMENT, PIPING, CONCRETE EQUIPMENT PADS, PIPE SUPPORTS AND MATERIALS ARE NOT NECESSARILY SHOWN BUT MAY BE INCLUDED IN THE DEMOLITION. THE CONTRACTOR SHALL INSPECT FACILITY DURING THE BIDDING PHASE OF THE PROJECT TO FAMILIARIZE THEMSELVES WITH THE EXTENT OF THE DEMOLITION WORK REQUIRED.



UPPER LEVEL - MECHANICAL PIPING PLAN - DEMOLITION

SCALE: 3/16" = 1'-0"

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: RTG
DESIGNED BY: AJG
CHECKED BY: JRD

REGISTERED PROFESSIONAL
For Review Only



SUBCONSULTANT

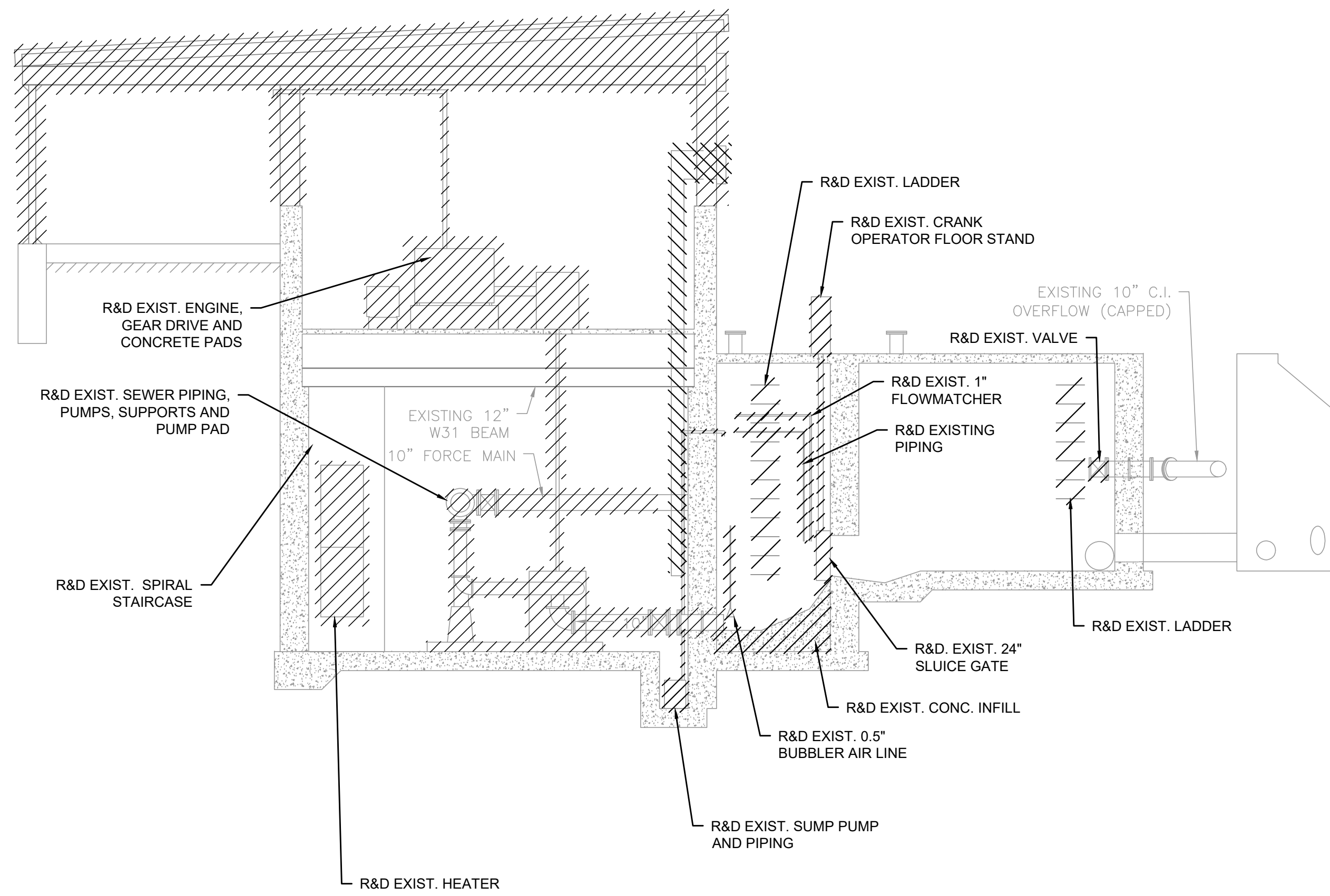
SCALE
AS SHOWN

TITLE
Worcester Road Sewer Pumping Station Replacement
DEMOLITION PLANS

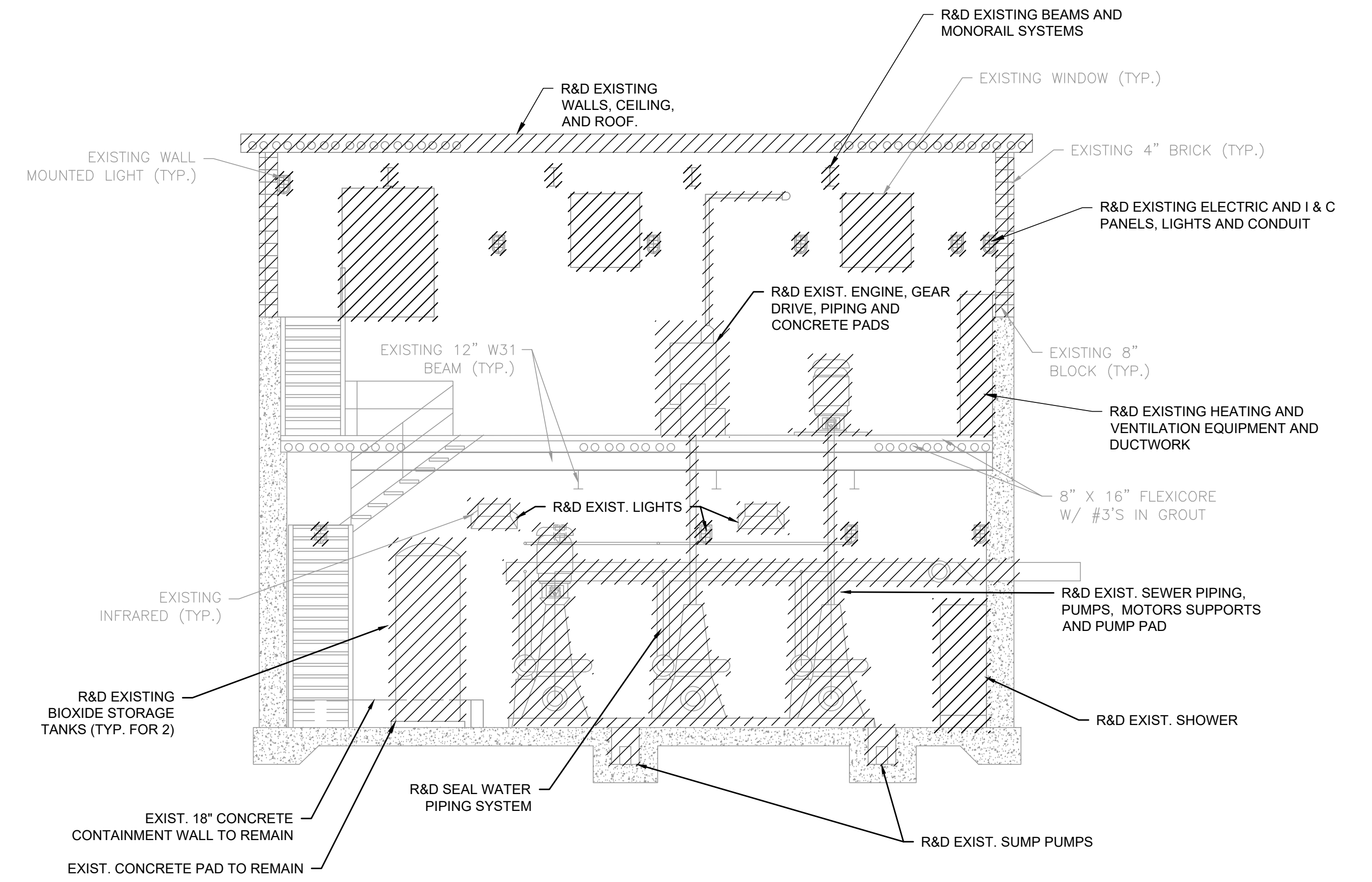
BETA JOB NO. 7385
ISSUE DATE AUGUST 2022
SHEET NO. M-1

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

8/11/2022 1:45 PM \\BETA-INC.COM\INVENTORY\7385 - FRAMINGHAM WRRPS IMPROVEMENTS\DRAWINGFILES\PLANS\SETM-1 - PROP DEMOLITION PLANS & SECTIONS.DWG (BETA STD.BW.CTB)



SECTION A-A - DEMOLITION
SCALE: 3/16" = 1'-0"



SECTION B-B - DEMOLITION
SCALE: 3/16" = 1'-0"

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:	RTG
DESIGNED BY:	AJG
CHECKED BY:	JRD

REGISTERED PROFESSIONAL
For Review Only



SUBCONSULTANT

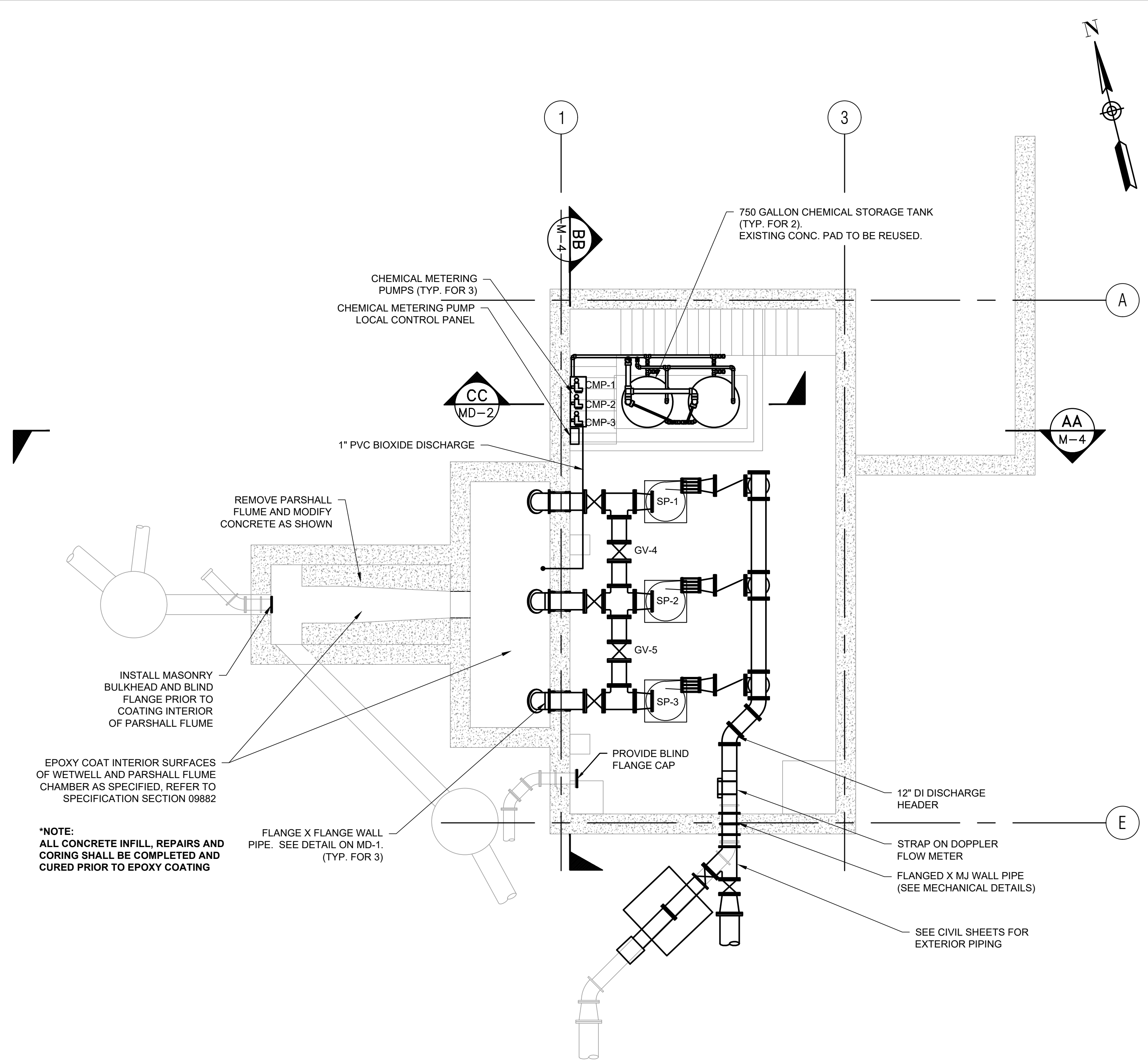
SCALE
AS SHOWN

TITLE
Worcester Road Sewer Pumping Station Replacement
DEMOLITION SECTIONS

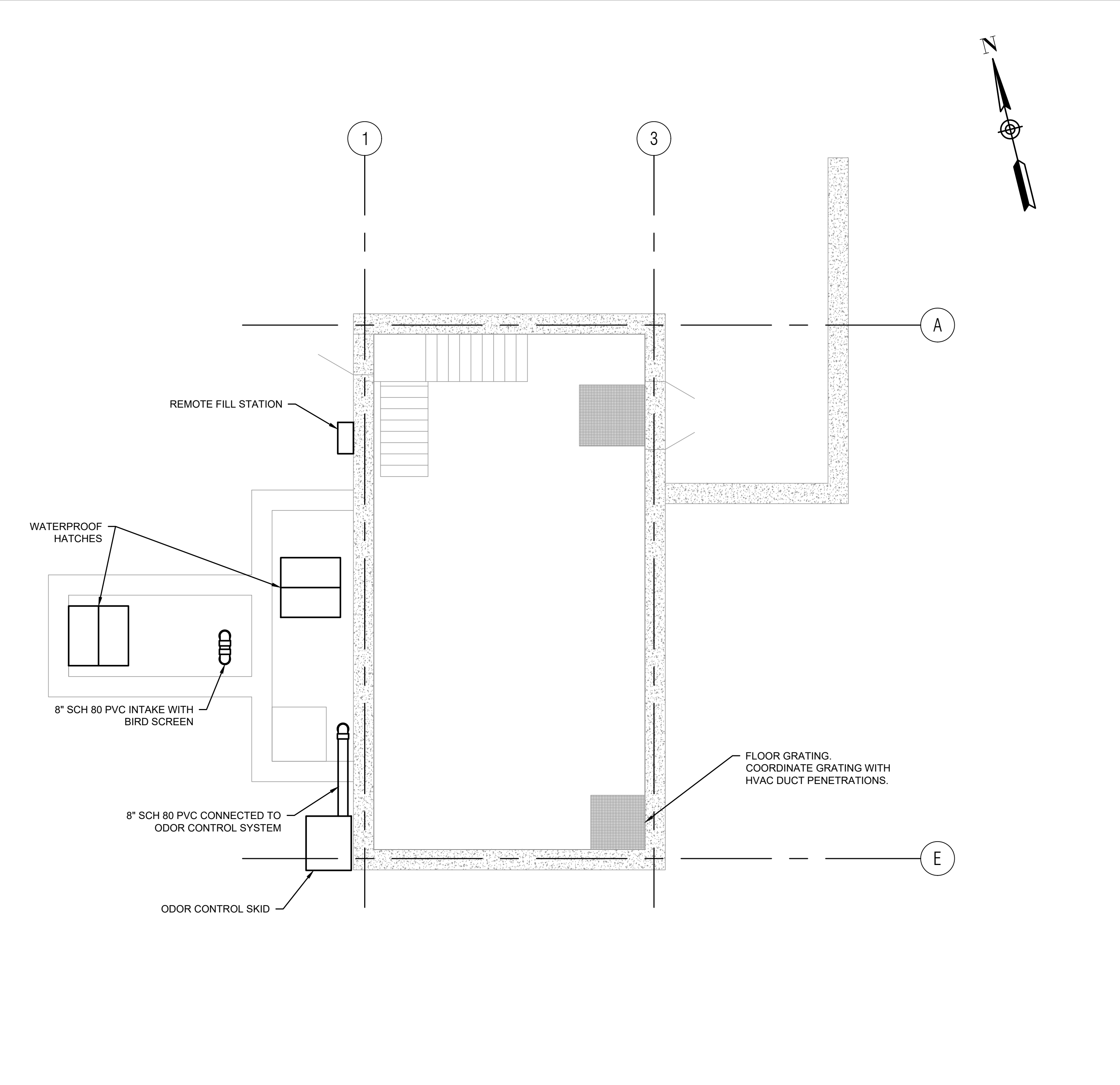
BETA JOB NO. 7385
ISSUE DATE AUGUST 2022
SHEET NO. M-2

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

8/11/2022 1:45 PM \\BETA-INC\COMPLETION\IRON\7385 - FRAMINGHAM WRPS IMPROVEMENTS\DRAWINGFILES\PLANS\M-3 - PROP MECHANICAL PLANS & SECTIONS.DWG (BETA STD BWI.CTB)




LOWER LEVEL - MECHANICAL PIPING PLAN - PROPOSED
SCALE: 3/16" = 1'-0"



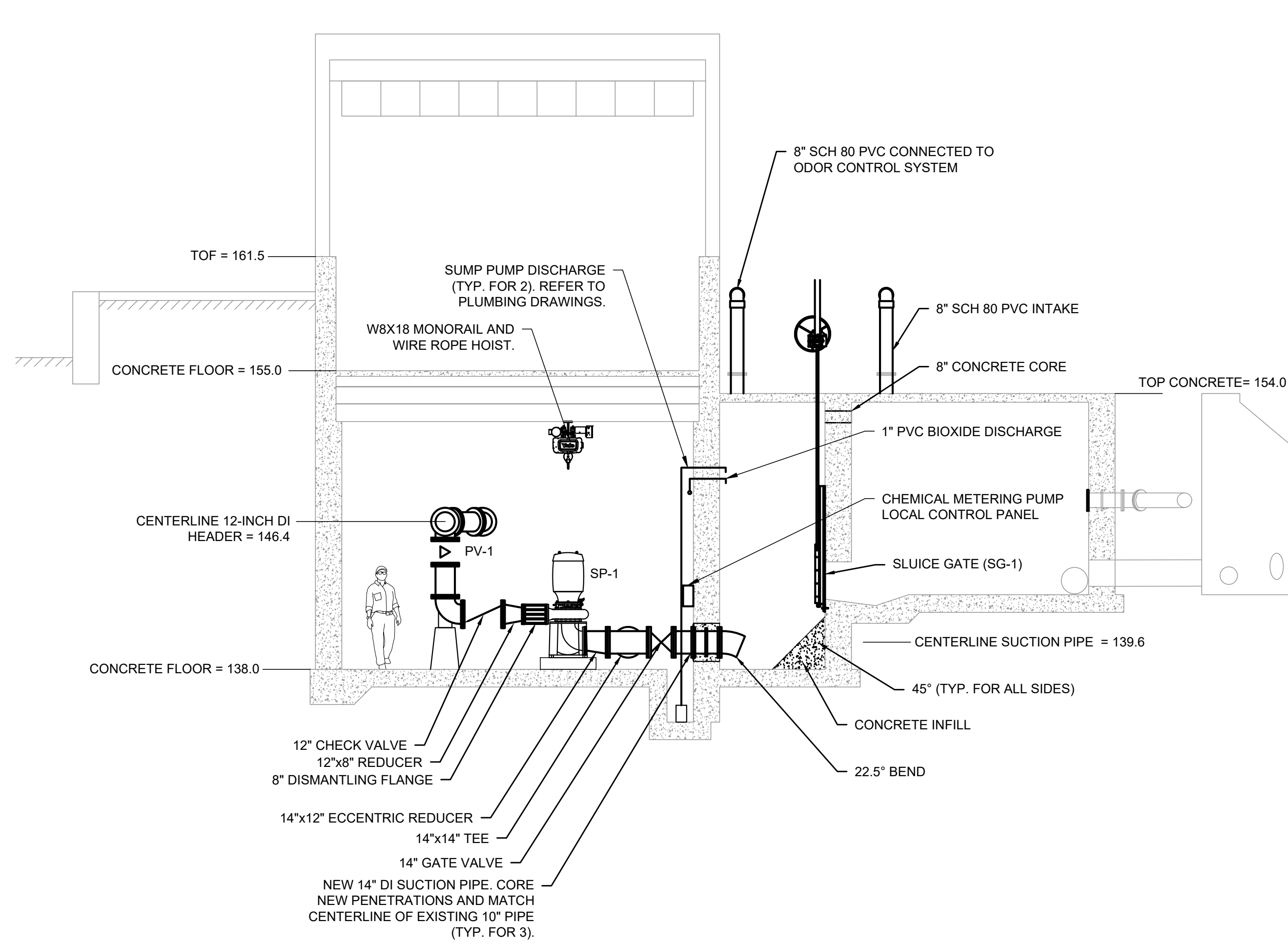
UPPER LEVEL - MECHANICAL PIPING PLAN - PROPOSED
SCALE: 3/16" = 1'-0"

- PCB NOTES:**
- REFER TO SPECIFICATION 02095 AND THE RISK BASED PCB BULK PRODUCT WASTE DISPOSAL PLAN IN APPENDIX G FOR REQUIREMENTS ASSOCIATED WITH PCBs.

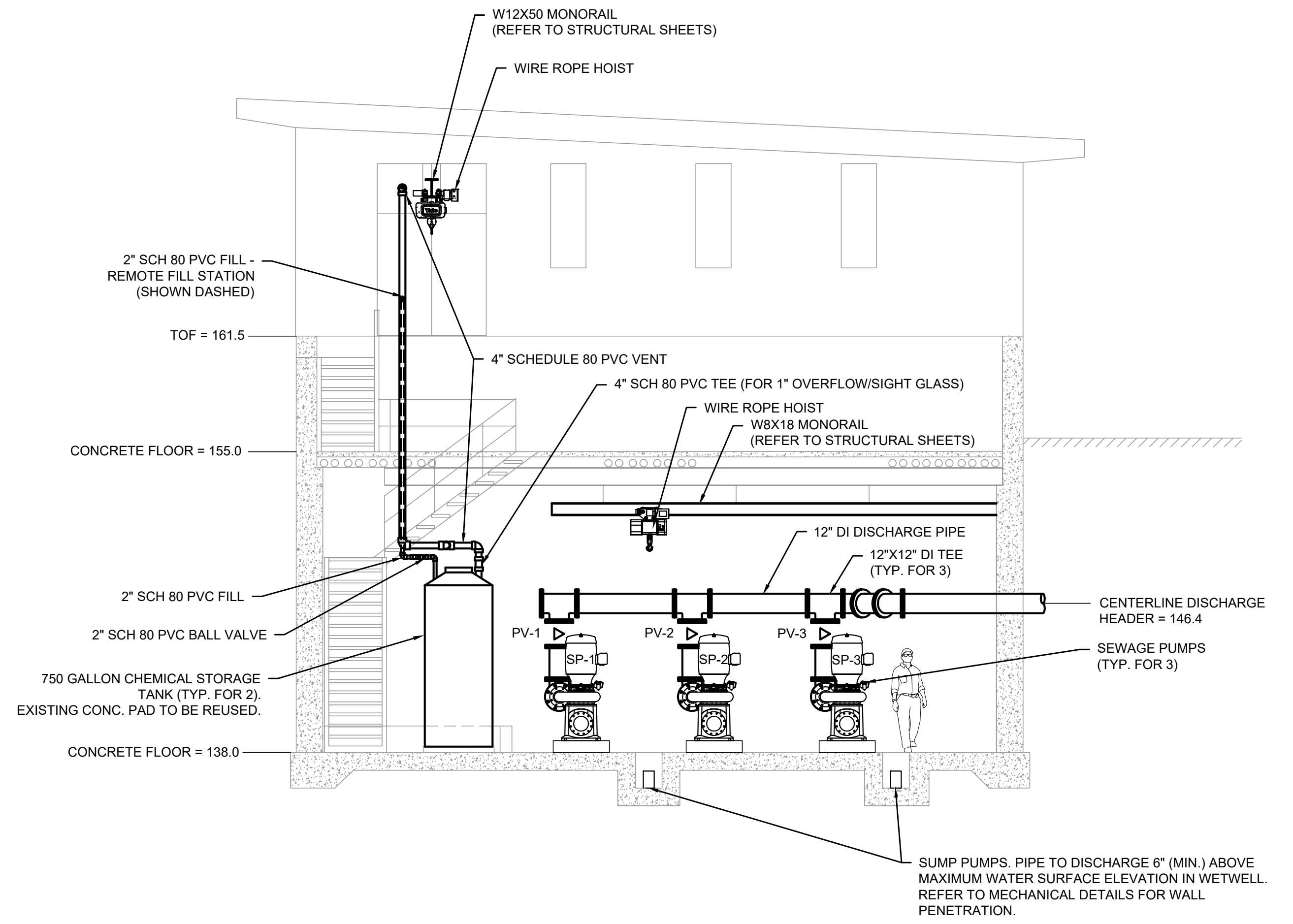
				DRAWN BY: RTG DESIGNED BY: AJG CHECKED BY: JRD	REGISTERED PROFESSIONAL For Review Only	PREPARED BY:  www.BETA-Inc.com	SUBCONSULTANT	SCALE: AS SHOWN	TITLE: Worcester Road Sewer Pumping Station Replacement PROPOSED PLANS	BETA JOB NO. 7385 ISSUE DATE AUGUST 2022 SHEET NO. M-3
NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS						

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

8/11/2022 1:45 PM \\BETA-INC.COM\PROJECTS\DRAWINGS\PLANS\SETM-3 - PROP MECHANICAL PLANS & SECTIONS.DWG (BETA STD.BW.CTB)



SECTION A-A - PROPOSED
SCALE: 3/16" = 1'-0"



SECTION B-B - PROPOSED
SCALE: 3/16" = 1'-0"

PCB NOTES:

- REFER TO SPECIFICATION 02095 AND THE RISK BASED PCB BULK PRODUCT WASTE DISPOSAL PLAN IN APPENDIX G FOR REQUIREMENTS ASSOCIATED WITH PCBs.

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:	RTG
DESIGNED BY:	AJG
CHECKED BY:	JRD

REGISTERED PROFESSIONAL
For Review Only



SUBCONSULTANT

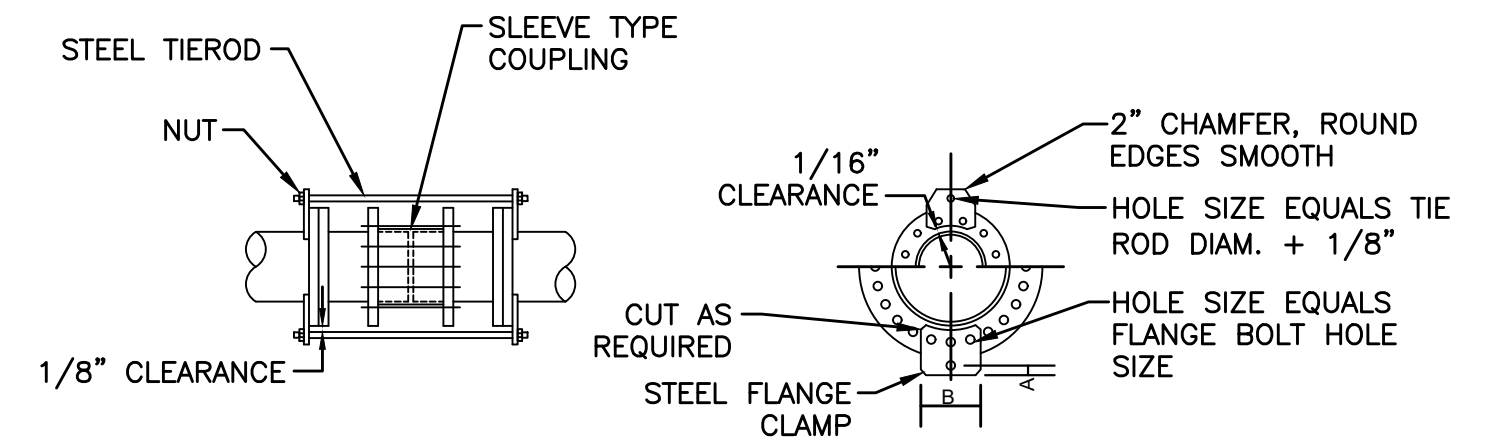
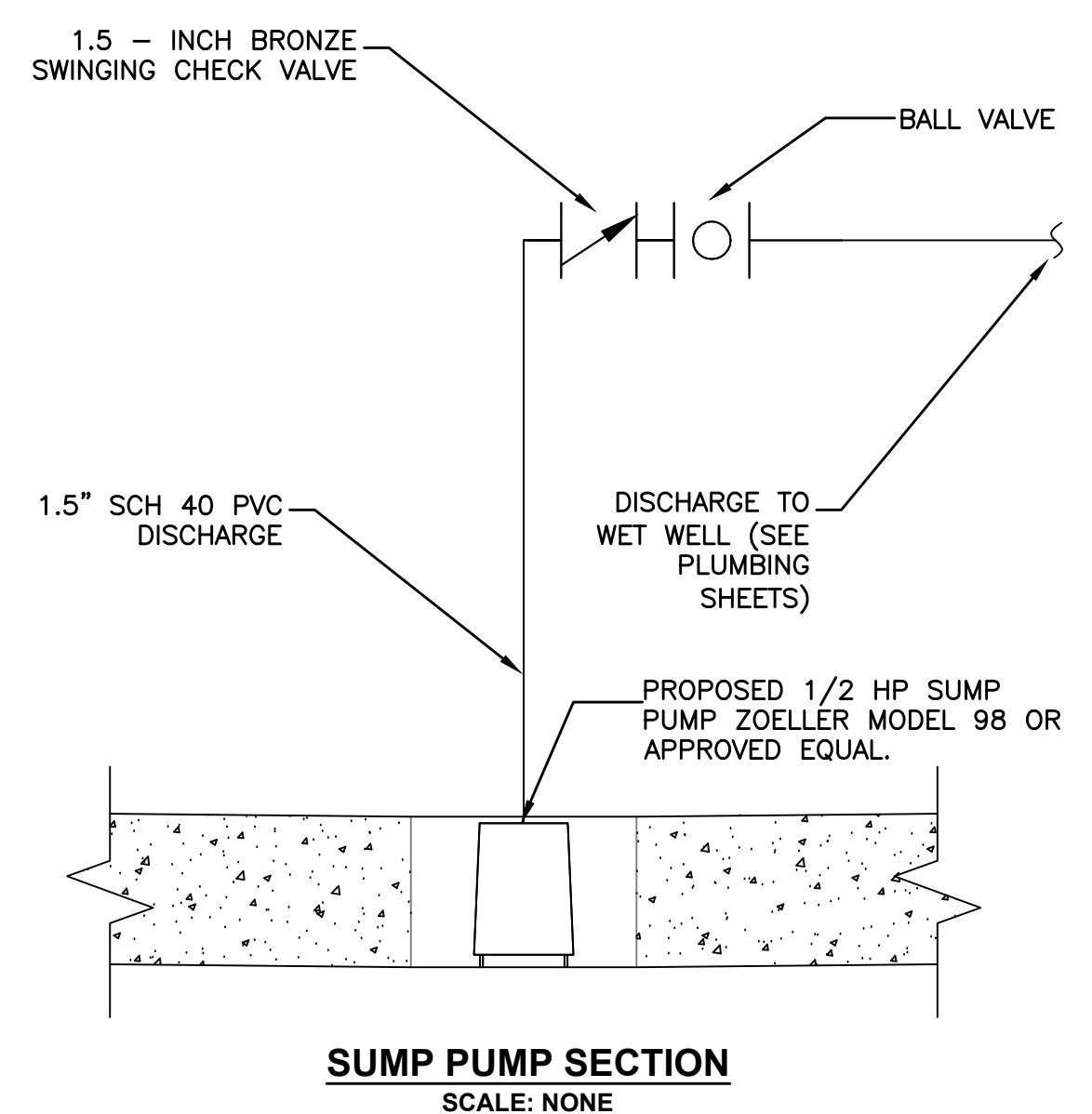
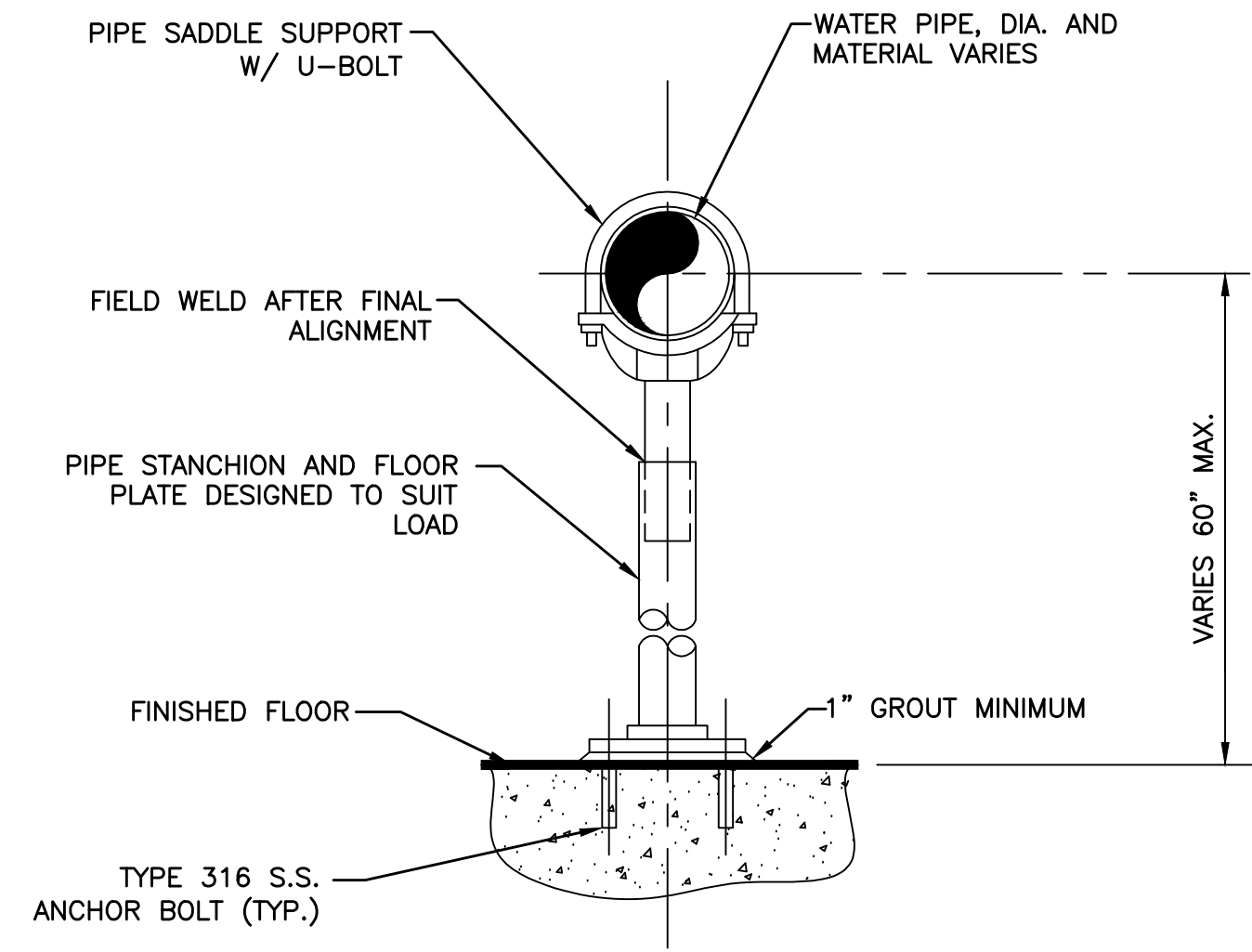
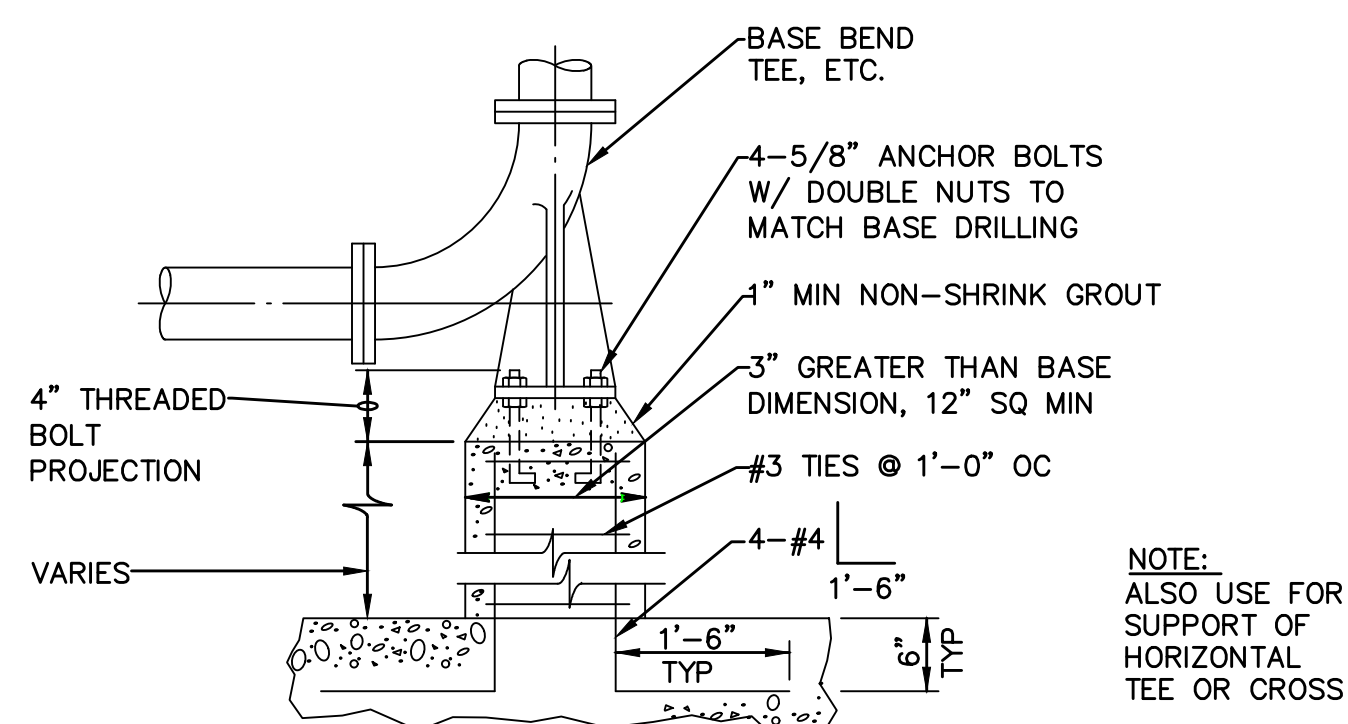
SCALE
AS SHOWN

TITLE
Worcester Road Sewer Pumping Station Replacement
PROPOSED SECTIONS

BETA JOB NO. 7385
ISSUE DATE AUGUST 2022
SHEET NO. M-4

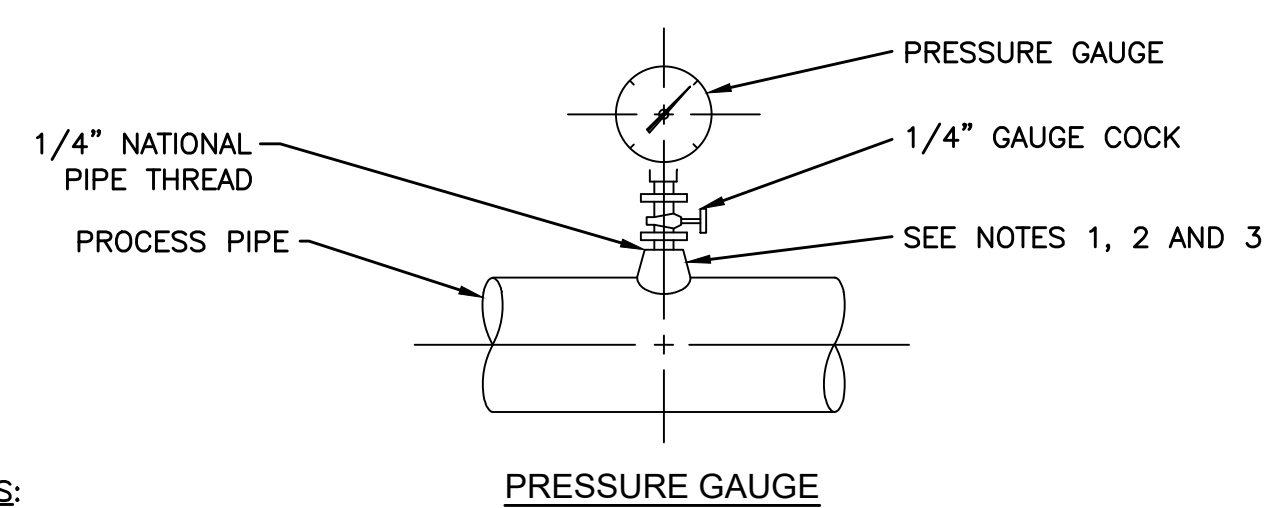
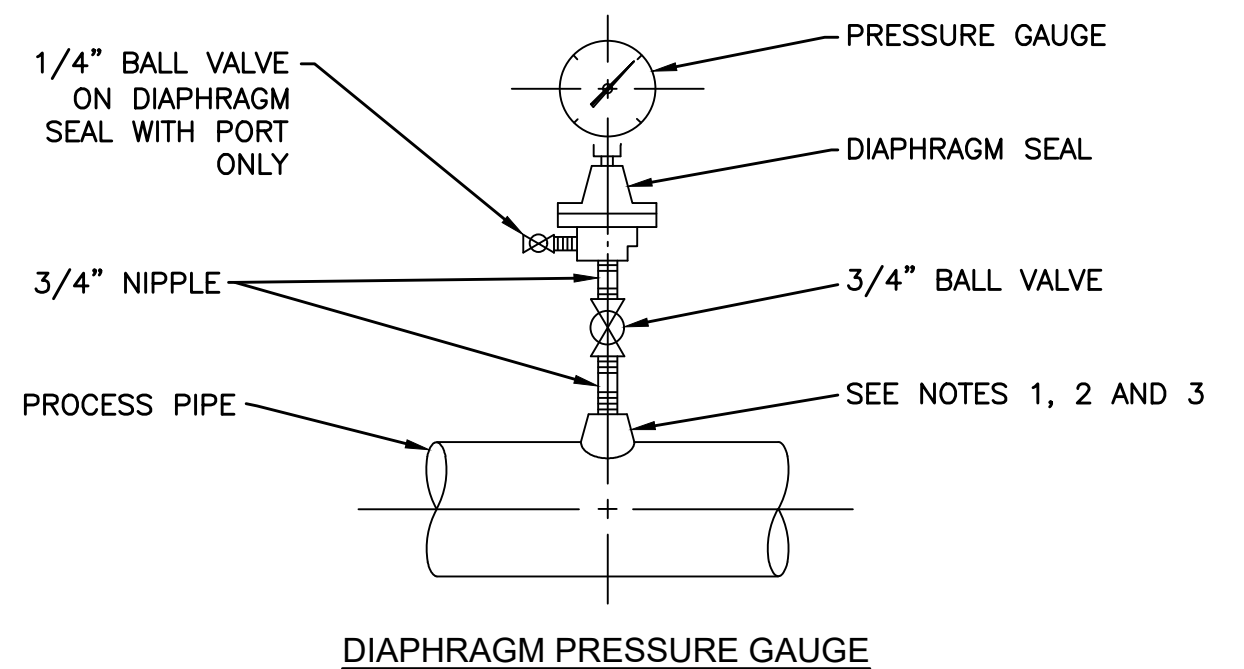
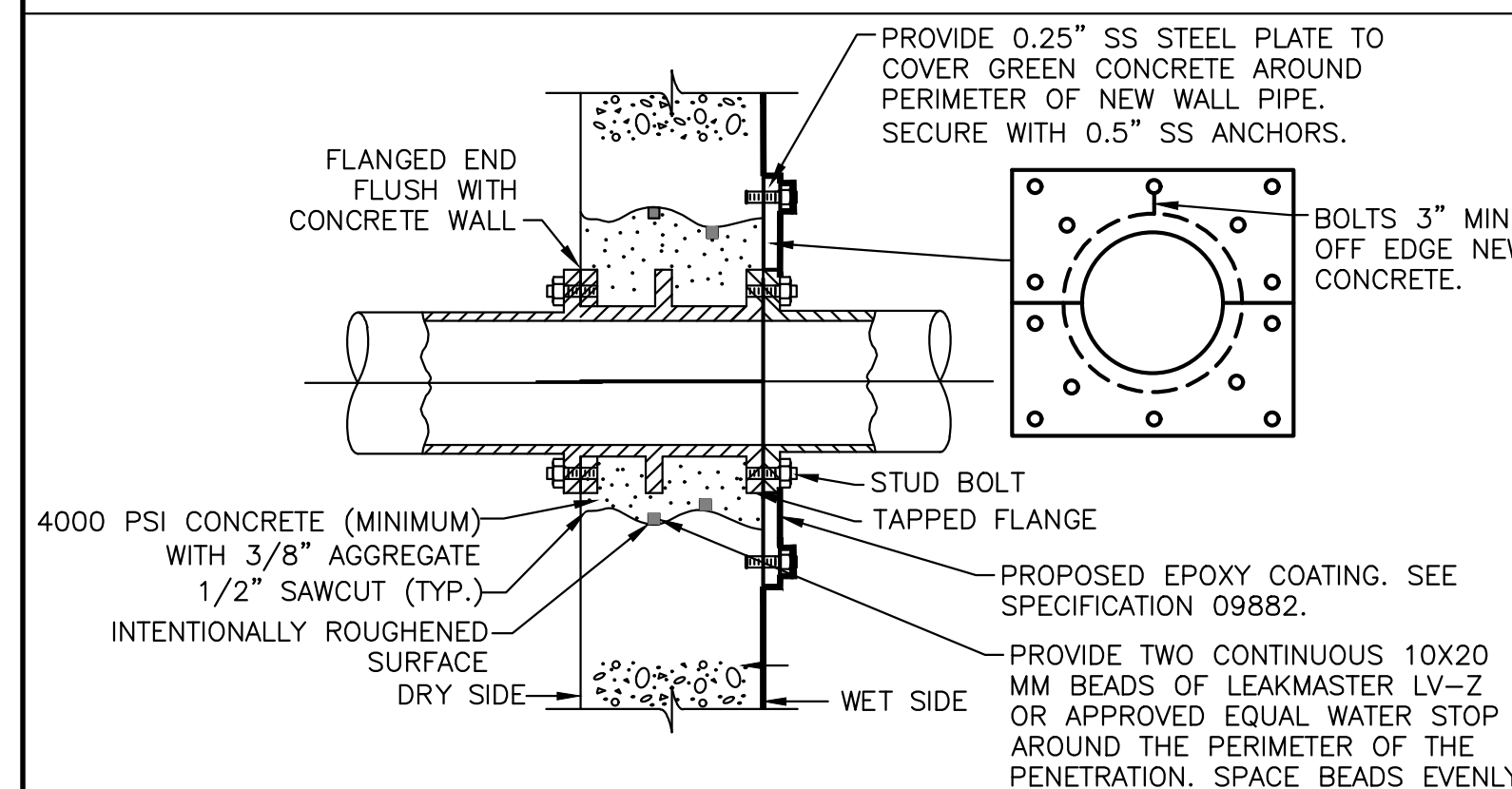
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

8/11/2022 1:45 PM \\BETA-INC.COM\IRVING\IRON\385 - FRAMINGHAM WPIS IMPROVEMENT\DRAWING\PLANS\MD-1 - MECHANICAL DETAILS 1.DWG (BETA STD BW.CTB)

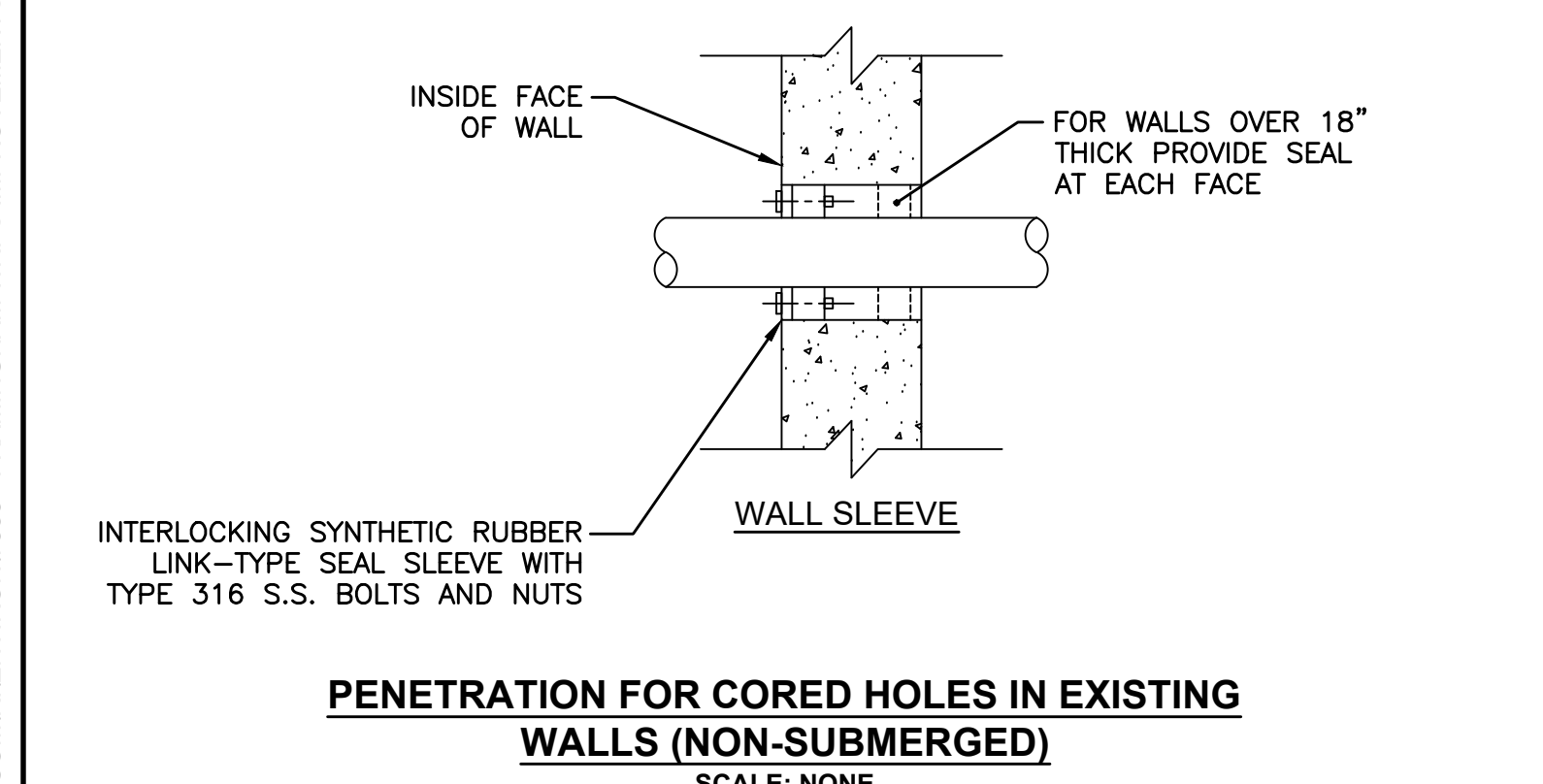
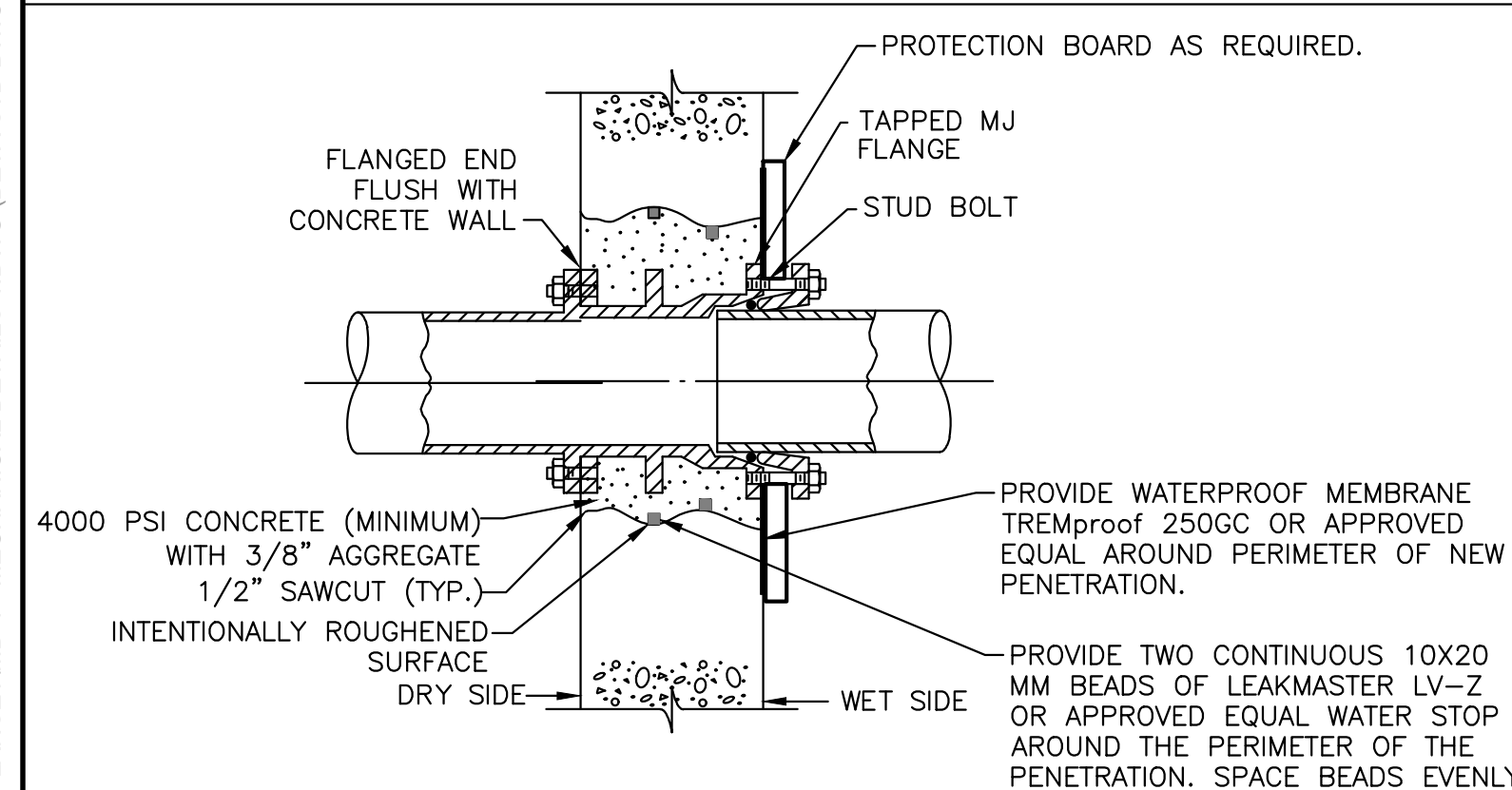
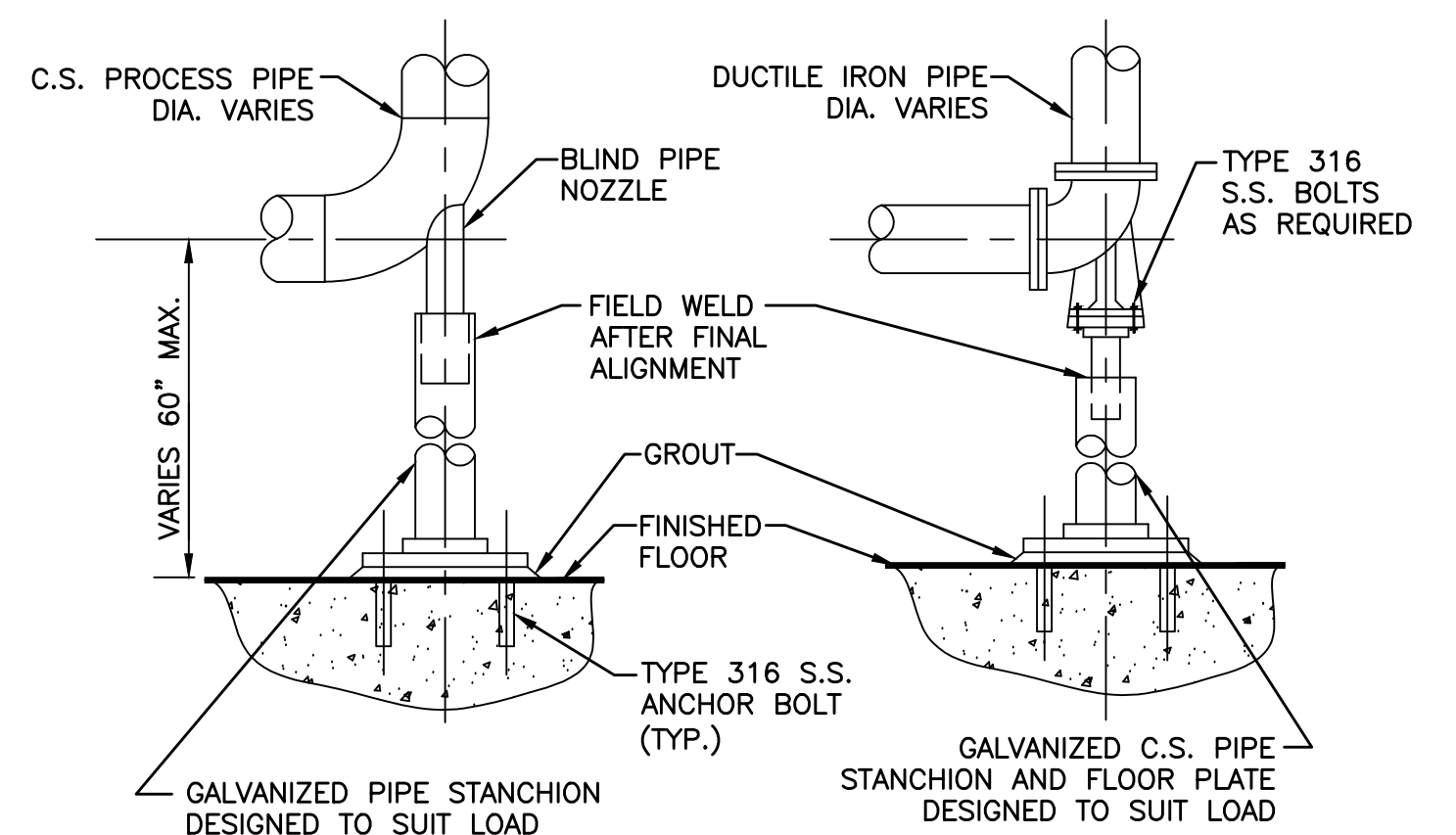


PIPE SIZE	TIE RODS NO.	TIE RODS DIA.	FLANGE CLAMP		
			THICKNESS	NO. OF FLANGE BOLTS PER CLAMP	"A" "B"
6"	2	1/2"	1/2"	2	2" 7-3/4"
8"	2	5/8"	1/2"	2	2" 8-5/8"
10"	2	3/4"	1/2"	2	2" 7-3/4"
12"	2	1"	1/2"	2	2" 8-1/2"
14"	2	1-1/8"	3/4"	2	2" 9"
16"	2	1-1/4"	7/8"	3	2" 12-1/4"
18"	2	1-3/8"	7/8"	3	2-1/2" 13"
20"	3	1-3/8"	1"	2	2-1/2" 8"
24"	4	1-3/8"	1"	2	2-1/2" 8-3/4"
30"	4	1-3/4"	1"	3	2-1/2" 12-1/4"
36"	6	1-3/4"	1-1/4"	3	2-1/2" 8-1/2"
42"	6	1-3/4"	1-1/4"	3	2-1/2" 12-3/4"
48"	8	1-3/4"	1-1/4"	3	2-1/2" 12-1/2"

- NOTES:
- PROVIDE HALF-ROUND RIGID INSULATION WAND INSULATION SHIELD FOR INSULATED PIPING.
 - PROVIDE NEOPRENE ISOLATION PAD UNDER SUPPORT FOOT FOR ISOLATED PIPING OR WHEN SUPPORT IS ADJACENT TO MECHANICAL EQUIPMENT.



- NOTES:
- FOR STEEL, GALVANIZED STEEL, AND PVC 2 1/2" AND SMALLER USE A BUSHING IN A TEE. FOR DUCTILE IRON AND FIBERGLASS REINFORCED PLASTIC PIPE.
 - ALL SIZES, USE PIPE SADDLE WITH BUSHING.
 - FOR STEEL AND STAINLESS STEEL PIPES 3" AND LARGER, AND PRESSURE VESSELS, USE THRED-O-LET AS SHOWN.
 - PROVIDE SNUBBER FOR POSITIVE DISPLACEMENT PUMP INSTALLATIONS.



PUMP TAG	PUMP CONFIGURATION	NO. REQUIRED	CAPACITY		MOTOR		DISCHARGE SIZE (IN)	TYPE	MINIMUM EFFICIENCY AT DESIGN POINT (%)	SHUT OFF HEAD (FT)
			FLOW (GPM)	TDH (FT)	POWER (HP)	PUMP SPEED (RPM)				
SP-1 SP-2 SP-3	SINGLE PUMP OPERATION	3	2,700 PER PUMP	54 FT	75 HP	1170 RPM	8-INCH	DRY PIT IMMERSIBLE SOLIDS HANDLING	68%	99 FT

PUMP TAG	NO. REQUIRED	FLUID PROPERTIES			RATED CAPACITY (GPH)	RATED PRESSURE (PSIG)	MOTOR SPEED (RPM)	NPSHA	POWER (VDC)
		FLUID	SPECIFIC GRAVITY	TEMPERATURE RANGE (°F)					
CMP-1 CMP-2 CMP-3	3	CALCIUM NITRATE SOLUTION (TRADE NAME - BIOXIDE)	1.49	55-95°F	6.2 PER PUMP	100 PSI	1750 RPM	3 PSI	90 DC

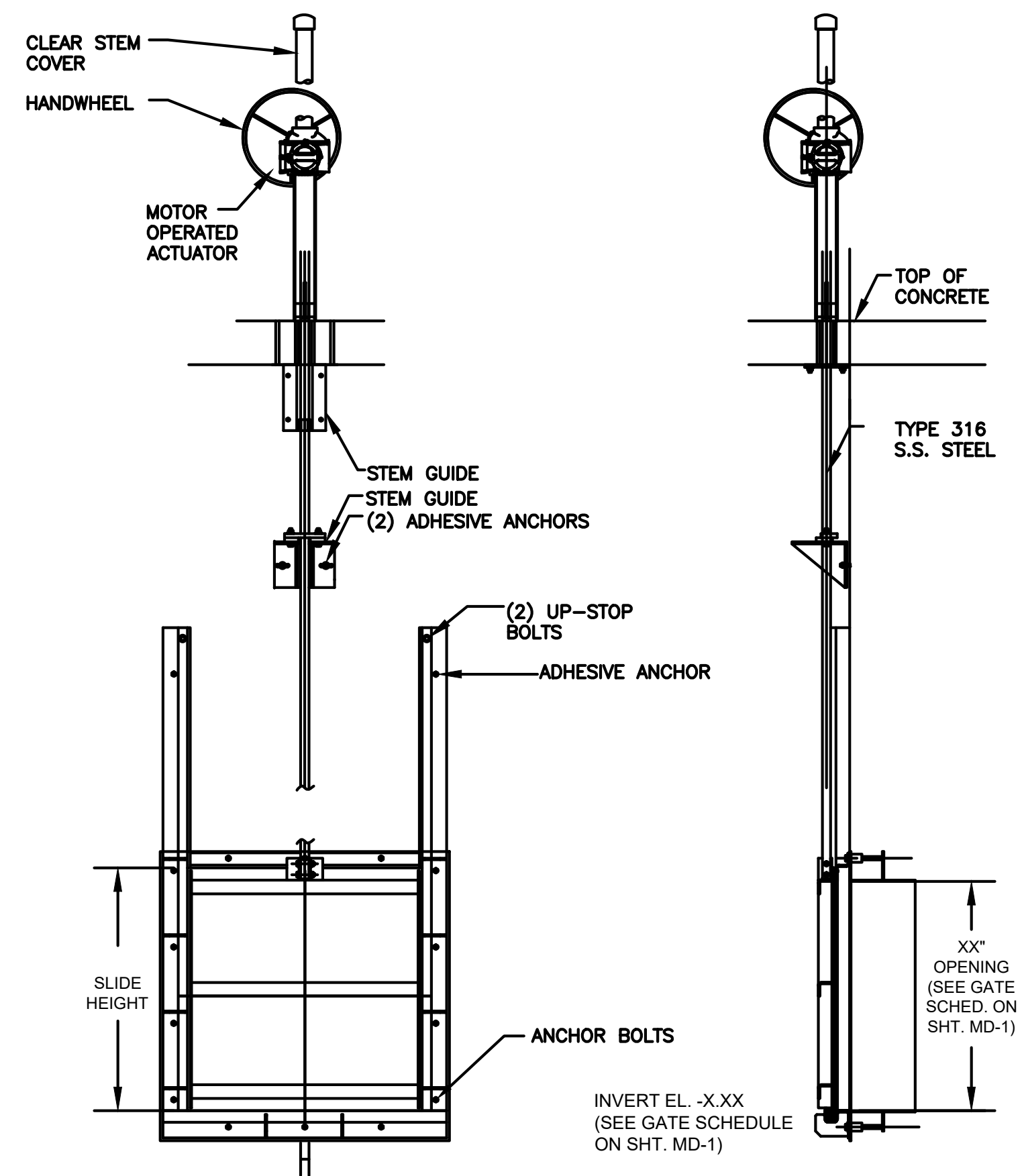
VALVE TAG	NO. REQUIRED	VALVE TYPE	SIZE	MATERIAL	ACTUATOR	LOCATION	CONNECTION
GV-1 TO GV-5	5	GATE VALVE	14"	DUCTILE IRON	MANUAL	LOWER LEVEL	FL X FL
PV-1 TO PV-3	3	PLUG VALVE	12"	CAST IRON	CHAIN WHEEL	LOWER LEVEL	FL X FL

GATE TAG	TYPE	GATE WIDTH (IN)	GATE HEIGHT (IN)	GATE MATERIAL	MOUNTING TYPE	OPERATOR	OPENING INVERT ELEV. (FT)	OPERATING FLOOR ELEV. (FT)

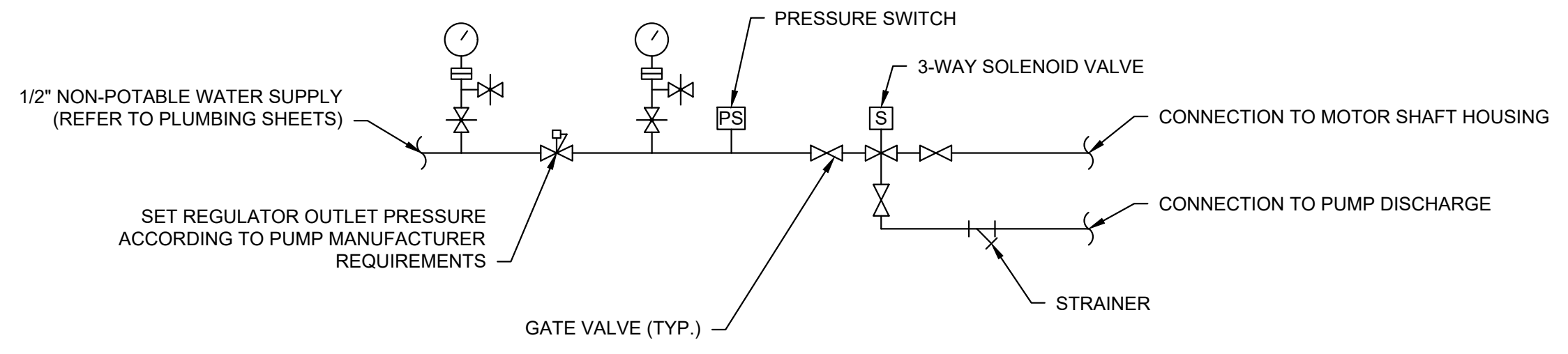
PUMP, VALVE, & GATE SCHEDULE
SCALE: NONE

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

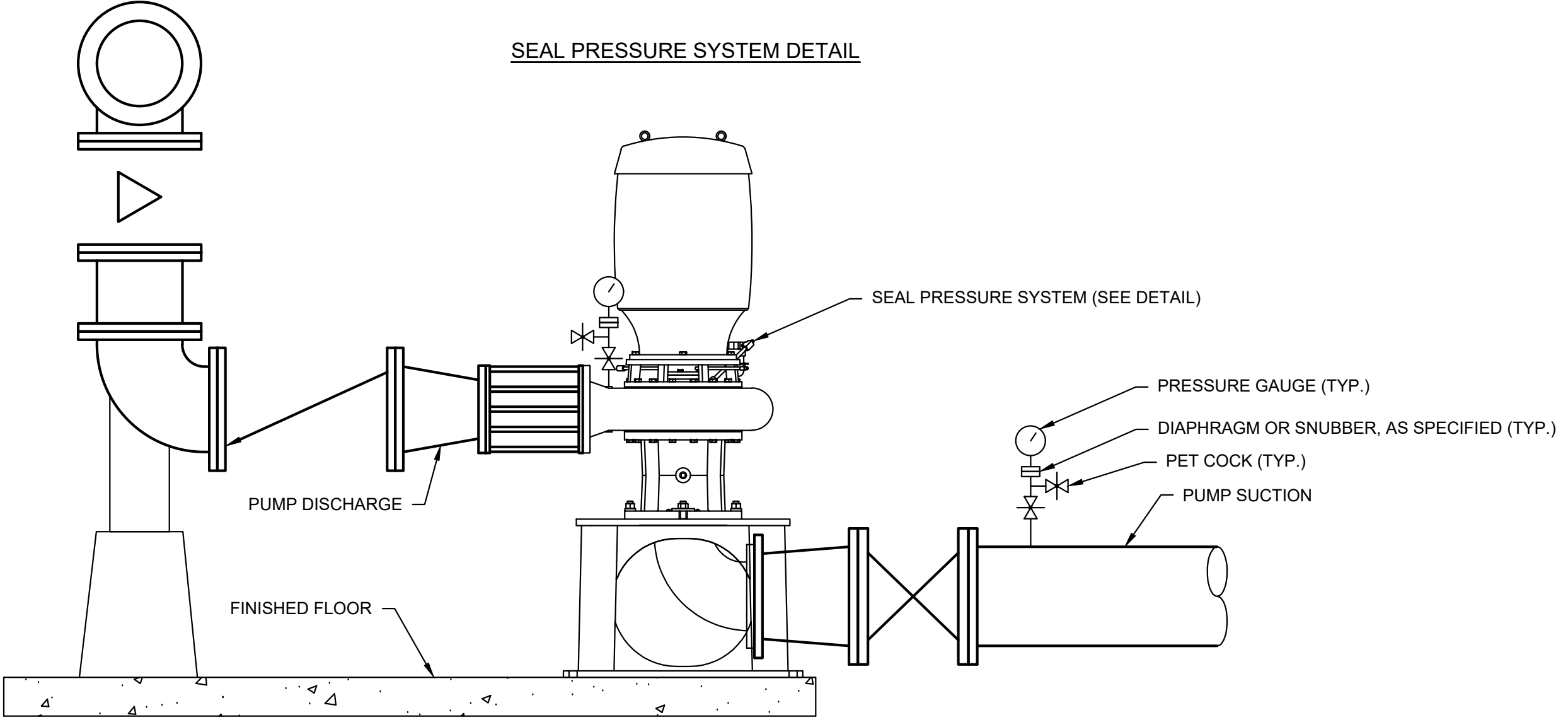
DRAWN BY: PAN DESIGNED BY: AJG CHECKED BY: JRD	REGISTERED PROFESSIONAL For Review Only www.BETA-Inc.com	PREPARED BY: SUBCONSULTANT: SCALE: AS SHOWN TITLE: Worcester Road Sewer Pumping Station Replacement MECHANICAL DETAILS - 1	BETA JOB NO. 7385 ISSUE DATE AUGUST 2022 SHEET NO. MD-1
---------------------------------------------------------------	---------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------



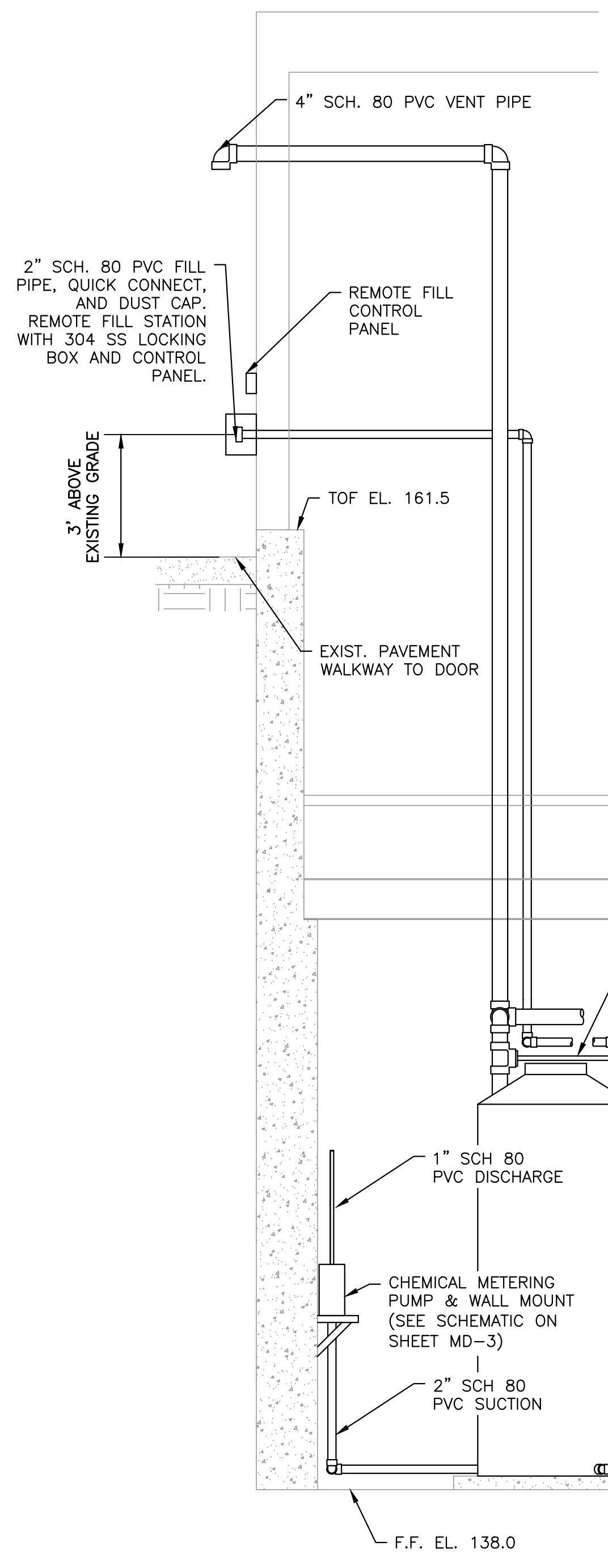
SLUICE GATE
SCALE: NONE



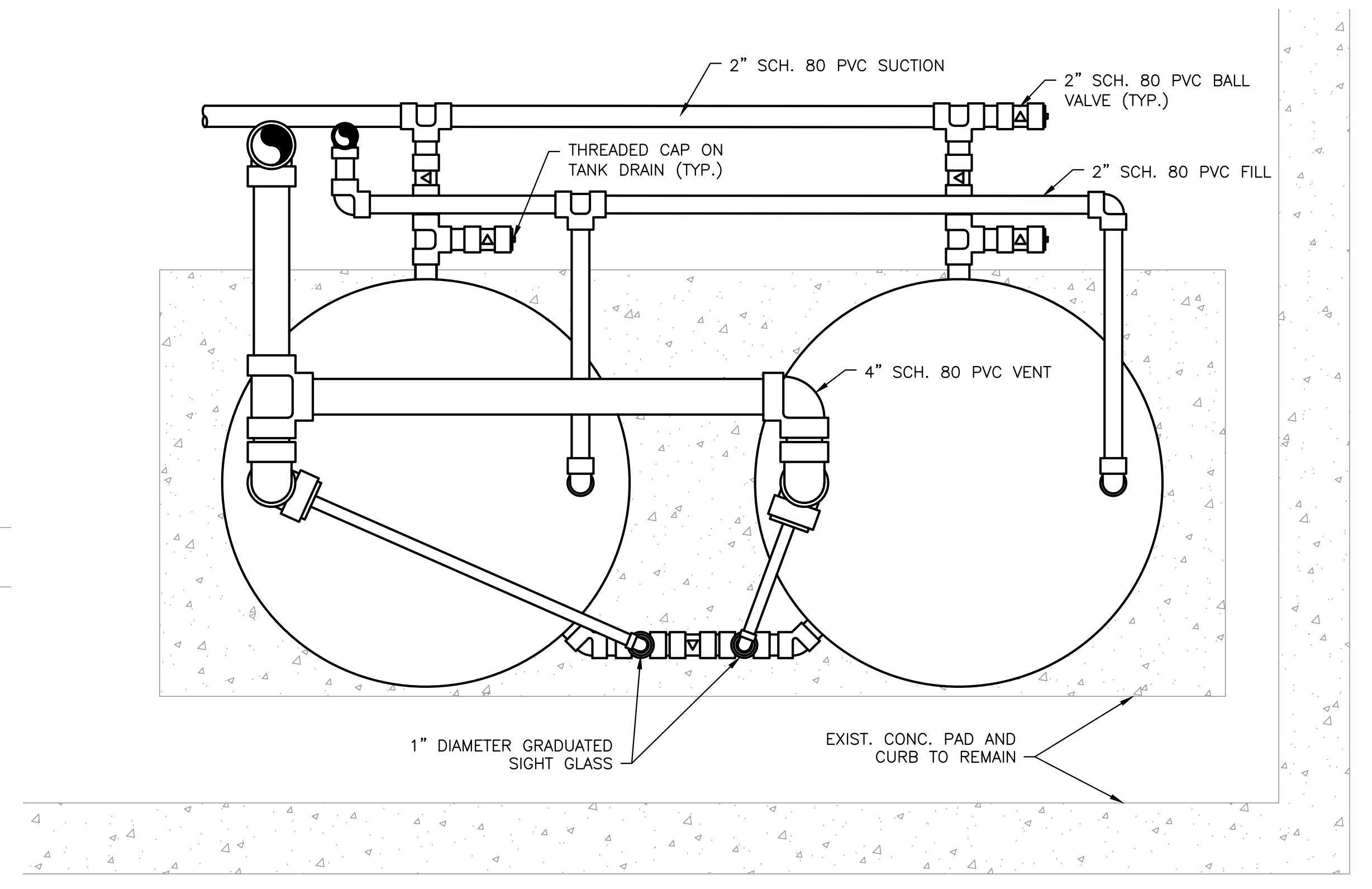
SEAL PRESSURE SYSTEM DETAIL



PUMP SECTION
TYPICAL WATER SEALED PUMP MISCELLANEOUS CONNECTIONS
SCALE: NONE



SECTION C-C - PROPOSED
SCALE: 3/8" = 1'-0"



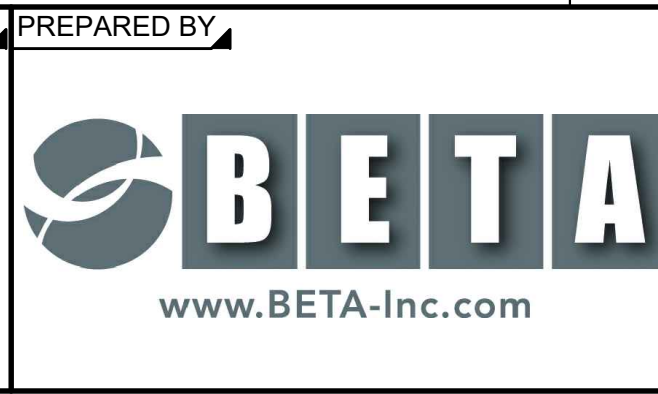
CHEMICAL STORAGE TANKS - PROPOSED PLAN
SCALE: NONE

8/11/2022 1:45 PM \\BETA-INC.COM\IRVEN\IRON7385 - FRAMINGHAM WRPS IMPROVEMENT\DRAWINGFILES\PLANS\SETMD-1 - MECHANICAL DETAILS 1.DWG (BETA STB.BW.STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
PAN
DESIGNED BY:
AJG
CHECKED BY:
JRD

REGISTERED PROFESSIONAL
For Review Only



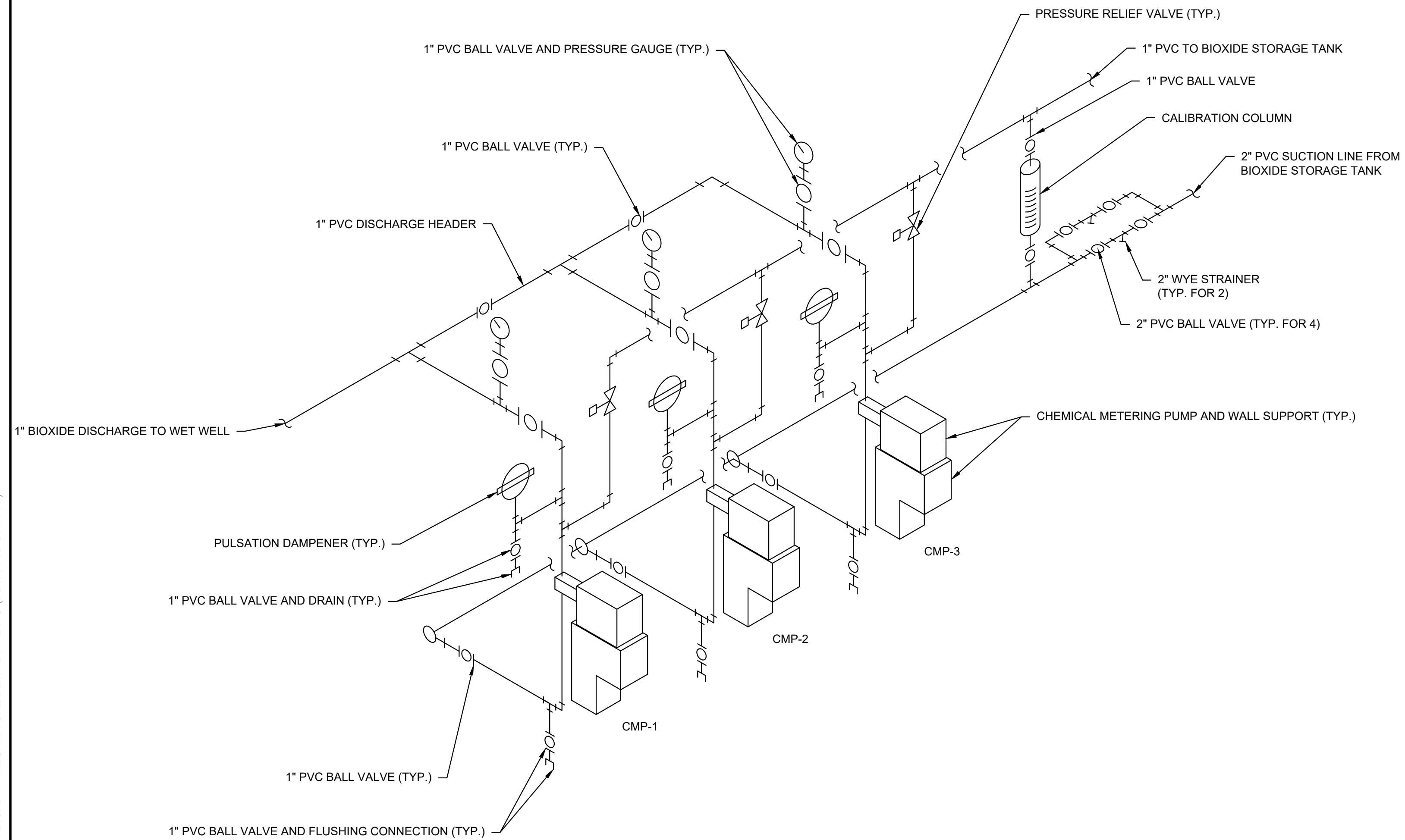
SUBCONSULTANT
SCALE
AS SHOWN

TITLE
Worcester Road Sewer Pumping Station Replacement
MECHANICAL DETAILS - 2

BETA JOB NO. 7385
ISSUE DATE AUGUST 2022
SHEET NO. MD-2

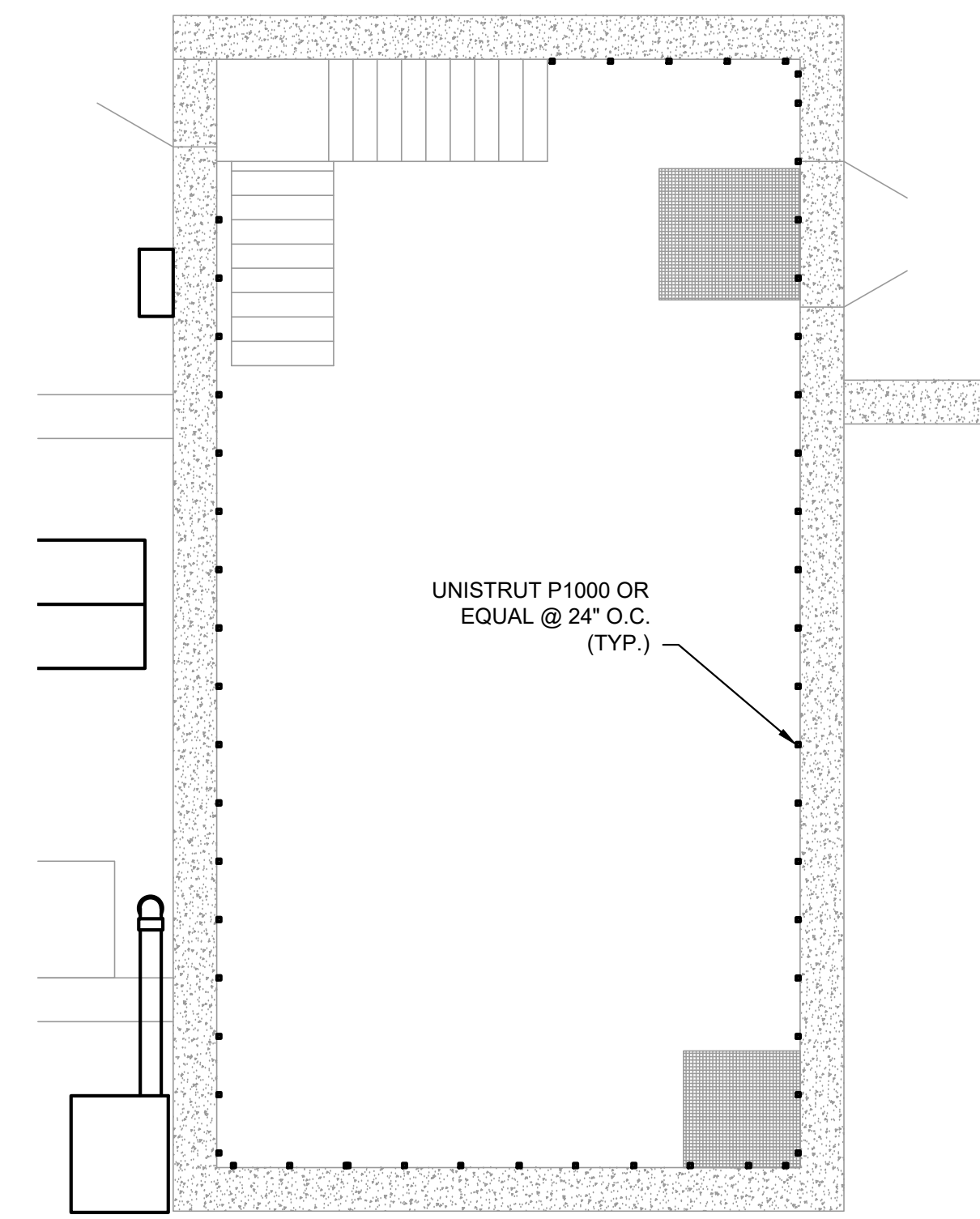
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

8/11/2022 1:46 PM \\BETA-INC.COM\RIENVIRON\7385 - FRAMINGHAM WRPS IMPROVEMENT\DRAWINGFILES\PLANS\MID-1 - MECHANICAL DETAILS 1.DWG (BETA STB.BW.STB)

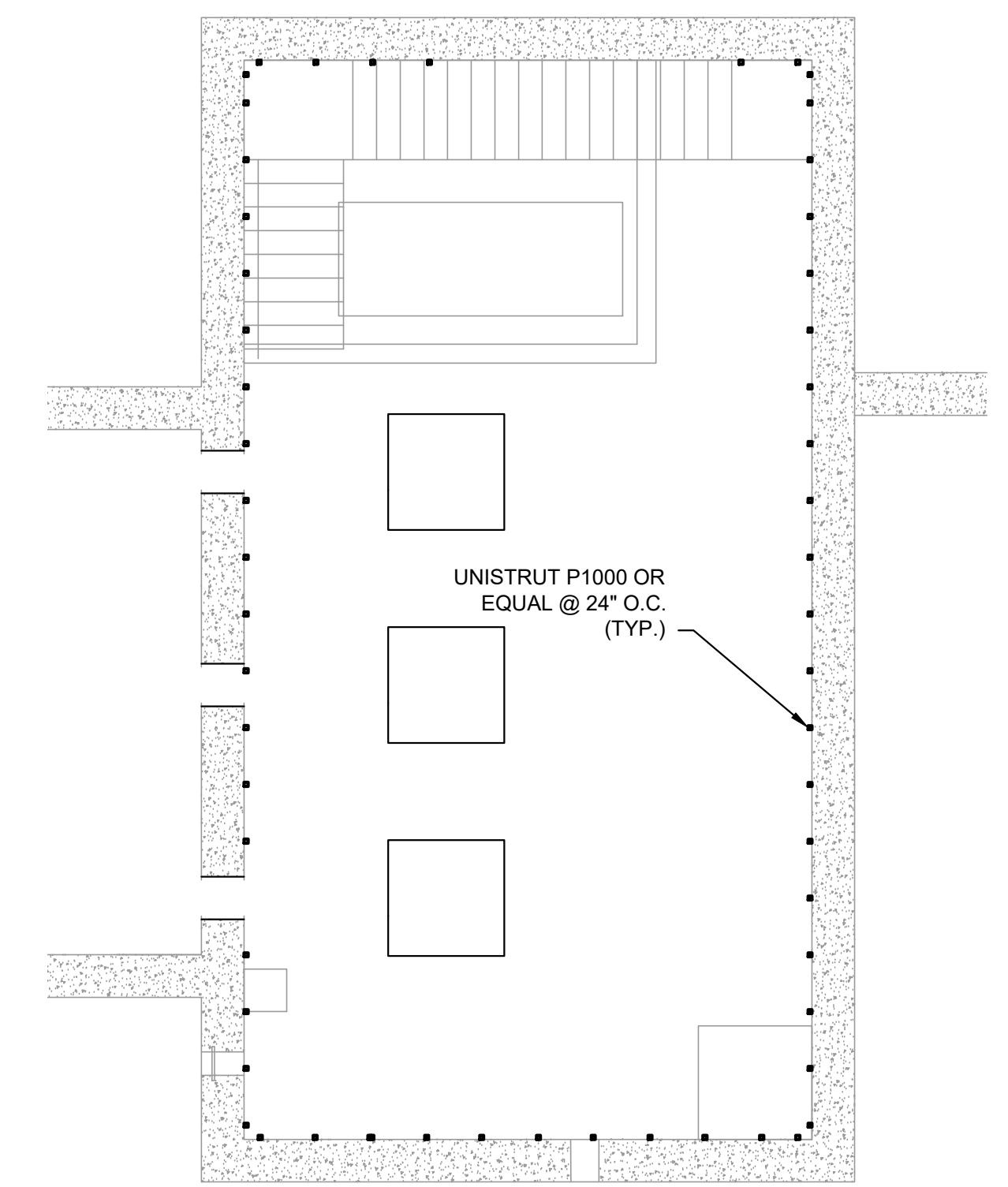


BIOXIDE METERING PUMP PIPING SCHEMATIC
SCALE: NONE

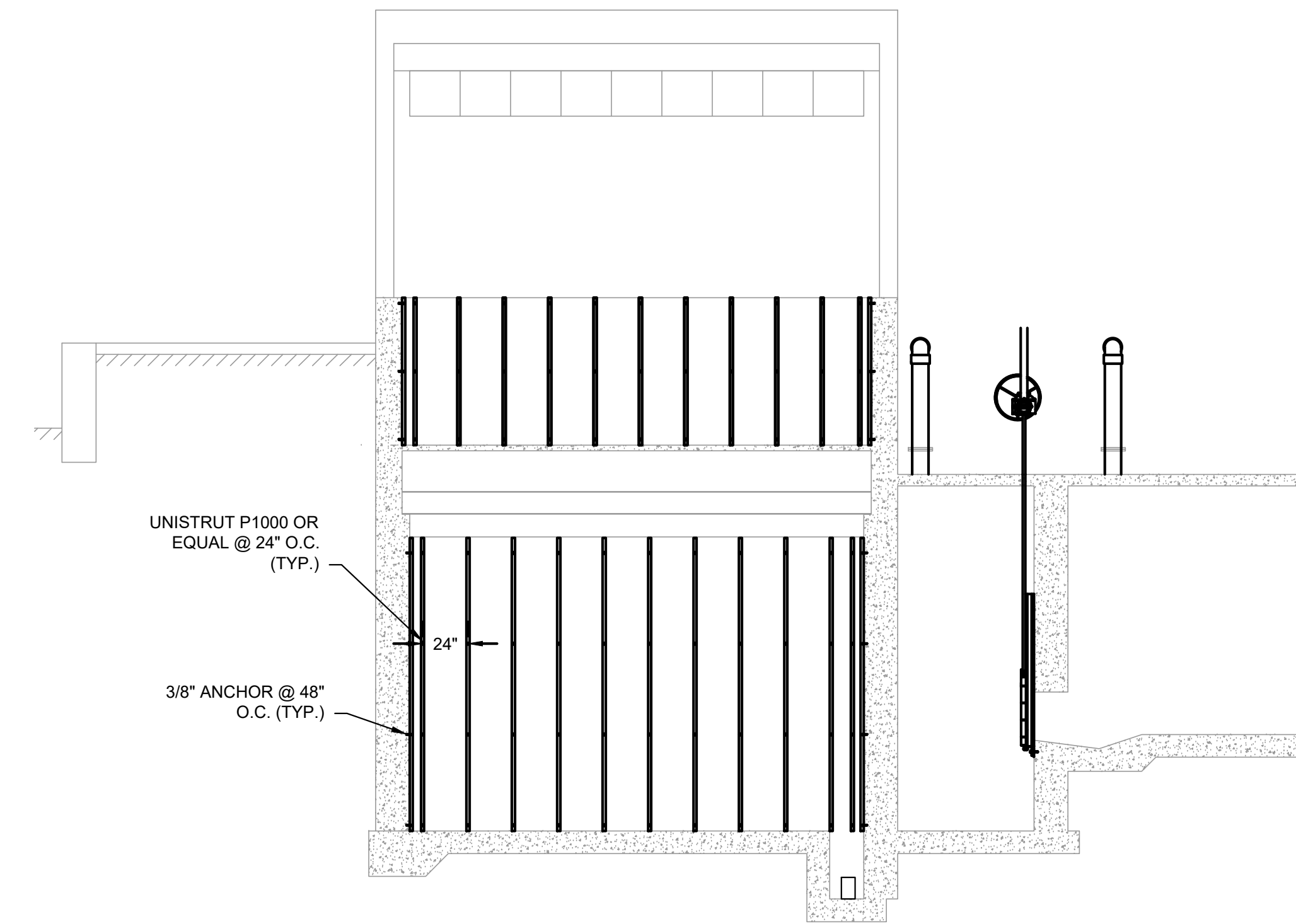
NOTE: ALL CHEMICAL PIPING AND FITTINGS SHALL BE SCHEDULE 80 PVC. ALL CHEMICAL SERVICE VALVES SHALL BE PVC AND TEFLON.



UNISTRUT SUPPORT DETAIL PLAN UPPER LEVEL
SCALE: NONE



UNISTRUT SUPPORT DETAIL PLAN LOWER LEVEL
SCALE: NONE



UNISTRUT SUPPORT DETAIL PROFILE
SCALE: NONE

- NOTE:
1. P1000 UNISTRUT (OR EQUAL) SHALL BE HOT DIP GALVANIZED.
 2. ANCHORS SHALL BE HOT DIP GALVANIZED.
 3. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH SPECIFICATION SECTION 02095 PRIOR TO APPLICATION OF EPOXY COATING. PROTECT THREADS AS REQUIRED.
 4. IF WEDGE ANCHORS ARE USED THEY SHALL BE RATED FOR CRACKED CONCRETE. INSTALL PER MANUFACTURER'S REQUIREMENTS.

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

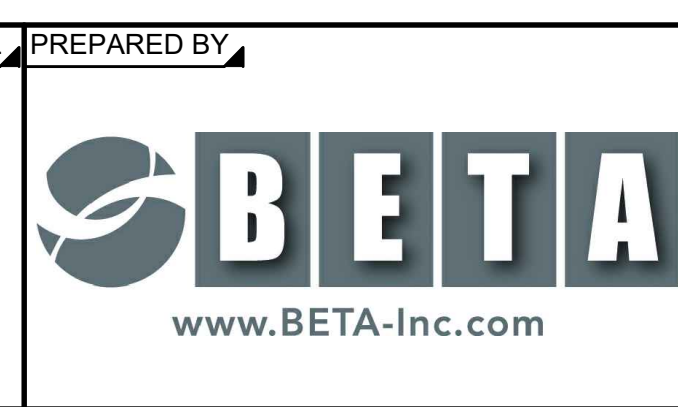
DRAWN BY:
CJM

DESIGNED BY:
AJG

CHECKED BY:
JRD

REGISTERED PROFESSIONAL

For Review Only



SUBCONSULTANT

SCALE

AS SHOWN

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE

Worcester Road Sewer Pumping Station Replacement

MECHANICAL DETAILS - 3

BETA JOB NO. 7385

ISSUE DATE AUGUST 2022

SHEET NO. MD-3

3/24/2022 7:24 AM - W:\YEAR - 2018\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\ELECTRICAL DEPARTMENT\19020.00 ELECTRICAL PLANS.DWG (BETA STB.BIV.STB)

ELECTRICAL SYMBOLS	
	LINEAR FLUORESCENT LIGHTING FIXTURES "F1" INDICATES FIXTURE TYPE - TYPICAL FOR ALL FIXTURES "1" INDICATES CIRCUIT NUMBER - TYPICAL FOR ALL FIXTURES "a" INDICATES THE SWITCH CONTROL - TYPICAL FOR ALL FIXTURES
	WALL MOUNTED LIGHTING FIXTURE.
	SURFACE OR PENDANT MOUNTED FIXTURE.
	EMERGENCY EXIT SIGN
	EMERGENCY LIGHTING BATTERY UNIT WITH TWO LIGHT HEADS
	REMOTE EMERGENCY LIGHTING UNIT WITH TWO LIGHTING HEADS PROVIDE 3/4", 2#10, 1#10GND TO NEAREST THE EMERGENCY LIGHTING BATTERY UNIT
	SINGLE POLE SWITCH 120V, 20A "a" INDICATES THE SWITCH CONTROL
	2-POLE SWITCH 120V, 20A 1 POLE FOR ROOM LIGHT FIXTURES, 1-POLE FOR EXHAUST FAN CONTROL
	3-WAY SWITCH 120V, 20A "a" INDICATES THE SWITCH CONTROL
	DIGITAL TIME CLOCK SWITCH
	DUPLEX RECEPTACLE, WEATHER-RESISTANT 120V, 20A WITH WEATHERPROOF COVER "1" INDICATES CIRCUIT NUMBER - TYPICAL FOR ALL RECEPTACLES
	DUPLEX RECEPTACLE, 120V, 20A "GFCI" INDICATES GROUND FAULT INTERRUPTER TYPE
	(2) DUPLEX (QUAD) RECEPTACLE 120V, 20A
	SIMPLEX RECEPTACLE, WP INDICATES WEATHER RESISTANT 120V, 20A
	45" AFF WALL MOUNTED DATA OUTLET UNO, 2D INDICATES (2) CAT6E TERMINAL DATA CONNECTORS, 1T INDICATES (1) CAT6E TERMINAL TELEPHONE CONNECTOR
	96" AFF WALL MOUNTED WIRELESS ACCESS POINT MOUNTING BOX WITH (2) CAT6E TERMINATED DATA CONNECTORS.
	UNFUSED DISCONNECT SWITCH, "30" INDICATES 30 AMP RATING, PROVIDE 3-POLE FOR 3-PHASE CIRCUITS AND 2-POLE FOR 1-PHASE CIRCUITS.
	FUSED DISCONNECT SWITCH, "20" INDICATES 20 AMP FUSE RATING, PROVIDE 3-POLE FOR 3-PHASE CIRCUITS AND 2-POLE FOR 1-PHASE CIRCUITS.
	3-PHASE RECEPTACLE
	WALL MOUNTED COMBINATION MOTOR STARTER WITH MOTOR CIRCUIT PROTECTOR, "FVNR" INDICATES TYPE OF MOTOR STARTER
	ENCLOSED VARIABLE FREQUENCY DRIVE
	MANUAL MOTOR STARTER 120V, 20A
	JUNCTION BOX
	ELECTRIC HAND HOLE (REFER TO ELECTRICAL SITE DETAILS)
	ALARM RELAY, "AR1" REFERS TO RELAY NAME DESIGNATION
	CONTROL RELAY, "CR1" REFERS TO RELAY NAME DESIGNATION
	TIMING RELAY, "TR1" REFERS TO RELAY NAME DESIGNATION
	SOLENOID VALVE
	NORMALLY OPEN RELAY CONTACT
	NORMALLY CLOSED RELAY CONTACT
	OPERATOR PUSH BUTTON NORMALLY OPEN CONTACT
	OPERATOR PUSH BUTTON NORMALLY CLOSED CONTACT
	PRESSURE SWITCH - CLOSSES ON HIGH PRESSURE
	PRESSURE SWITCH - CLOSSES ON LOW PRESSURE
	LIMIT SWITCH - CLOSSES ON POSITION BEING MADE
	CLOSSES SWITCH - OPENS ON POSITION BEING MADE

ELECTRICAL SYMBOLS	
	UNDERGROUND CONDUIT DUCT BANK
	HOMERUN DESIGNATION TO PANEL PP1 CIRCUIT #1. WITH THE FOLOWING CONDUIT/WIRES UNLESS OTHERWISE NOTED: • 3/4"C WITH 2#12, 1#12GND FOR 20AMP SINGLE PHASE CIRCUITS. • 3/4"C WITH 3#12, 1#12GND FOR 20AMP THREE PHASE CIRCUITS. • 3/4"C WITH 2#10, 1#10GND FOR 30AMP SINGLE PHASE CIRCUITS. • 3/4"C WITH 3#10, 1#10GND FOR 30AMP THREE PHASE CIRCUITS. • 3/4"C WITH 2#8, 1#10GND FOR 40AMP & 50AMP SINGLE PHASE CIRCUITS. • 3/4"C WITH 3#8, 1#10GND FOR 40AMP & 50AMP THREE PHASE CIRCUITS.
	EYS TYPE CONDUIT SEAL, "EX" REPRESENTS PROVIDING UL LISTED EXPLOSION PROOF SEALANT IN CONDUIT SEAL, "NEX" REPRENTS PROVIDE ELECTRICAL SEALANT PUTTY IN CONDUIT SEAL.
	SURGE PROTECTION DEVICE
	AUTOMATIC TRANSFER CONTROL SYSTEM
	UTILITY POLE
	MOLDED CASE CIRCUIT BREAKER, 3-POLE UNLESS OTHERWISE INDICATED, "20" INDICATES TRIP AMPREE RATING, "100" INDICATES FRAME SIZE, "GFCI" INDICATES CIRCUIT BREAKER TO HAVE GROUND FAULT CIRCUIT INTERRUPT
	ELECTRICALLY OPERATED MOLDED CASE CIRCUIT BREAKER, 3-POLE UNLESS OTHERWISE INDICATED, "20" INDICATES TRIP AMPREE RATING, "100" INDICATES FRAME SIZE, "GFCI" INDICATES CIRCUIT BREAKER TO HAVE GROUND FAULT CIRCUIT INTERRUPT
	3/4"Ø X 10'-0" COPPER CLAD GROUND ROD
	BUILDING GROUNDING SYSTEM
	MOTOR, "10" INDICATES HORSEPOWER RATING
	CABLE/CONDUIT DESIGNATION, "XX" REFERS CABLE CONDUIT REFERENCE, REFER TO CABLE/CONDUIT SCHEDULES
	EMGERGENCY STOP OR HAND SWITCH, "XXXX" REFERS TO TAGNAME ID
	OPERATOR STATION, "XXXX" REFERS TO TAGNAME ID
	UNLESS OTHERWISE NOTED INSTRUMENATION OR PROCESS EQUIPMENT "XX-XXXX" REFERS TO TAGNAME ID
	GENERATOR EMERGENCY STOP
	THERMOSTAT
	OCCUPIED/UNOCCUPIED SELECTOR SWITCH.
	HVAC RTU REMOTE USER INTERFACE
	MOTOR OPERATED DAMPER
	ELECTRIC UNIT HEATER, "X" INDICATES UNIT ELECTRIC COIL RATING
	HVAC EQUIPMENT TAG DESIGNATION, BRANCH CIRCUIT POWER FEEDER FROM PANEL PP1-LP CIRCUIT #21.

SECURITY ALARM SYMBOLS	
	HEAT DETECTOR
	DOOR SWITCH
	MOTION DETECTOR
	SECURITY SYSTEM ALARM KEY PAD
	HELP CALL PUSHBUTTON - MOUNTED 30" AFF
	PAN, TILT, ZOOM CCTV CAMERA WITH PARAPET MOUNTING ARM
	SECURITY ALARM CONTROL PANEL
	CARD READER PROVIDE BACKBOX, COVER PLATES AND 3/4" CONDUIT WITH CABLE TO ACS LOCATION
	DOOR ELECTRIC LOCK - PROVIDED BY DIVISION 8.
	DOOR POWER SUPPLY, WALL MOUNT ABOVE DOOR - PROVIDED BY DIVISION 8.
	ACCESS CONTROL SYSTEM DOOR CONTROL PANEL.

GENERAL NOTES	
1.	PROVIDE CONCRETE HOUSEKEEPING PADS ON ALL FLOOR OR GRADE MOUNTED ELECTRICAL EQUIPMENT, THE FOLLOWING EQUIPMENT IS THE MINIMUM REQUIREMENT FOR HOUSEKEEPING PADS. ADDITIONAL PADS MAYBE REQUIRED BASED ON THE MOUNTING METHODS. 1.1. MAIN SWITCHBOARD 1.2. GENERATOR 1.3. DRY TYPE TRANSFORMER 1.4. VARIABLE FREQUENCY DRIVES
2.	ALL CONDUIT AND EQUIPMENT SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND APPLICABLE LOCAL CODES.
3.	BACK BOXES SHALL BE RECESSED INTO WALLS, RACEWAYS SHALL BE INSTALLED IN WALLS WHERE POSSIBLE AND ABOVE SUSPENDED CEILING, ONLY VERTICAL RUNS OF RACEWAY SHALL BE ALLOWED TO BE EXPOSED.
4.	BONDING JUMPERS, CONDUIT CLAMPS AND POINTS OF ATTACHMENT ARE NOT SHOWN ON DRAWINGS. SIZE BONDING JUMPERS IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. THE POINTS OF ATTACHMENT OF THE GROUND CLAMPS SHALL BE IN ACCESSIBLE LOCATIONS.
5.	EQUIPMENT & CONDUIT INSTALLATIONS ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND STRUCTURAL CONDITIONS. EXPOSED CONDUITS SHALL BE INSTALLED PARALLEL TO BEAMS AND WALLS.
6.	CONDUITS SHALL BE TERMINATED SO AS TO PERMIT NEAT CONNECTIONS TO MOTORS AND OTHER EQUIPMENT.
7.	NO CONDUIT SMALLER THAN 3/4" PIPE SIZE NOR WIRE SMALLER THAN NO. 12 A.W.G. SHALL BE USED UNLESS OTHERWISE NOTED.
8.	RECEPTACLES AND SWITCHES SHALL BE MOUNTED 45" ABOVE FINISHED FLOOR.
9.	THE WIRING AND BLOCK DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUIT REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL AND PROCESS EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER, MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED. THE BASIC SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND/OR SPECIFICATIONS.
10.	THE CONTRACTOR SHALL COORDINATE WITH EVERSOURCE AND VERIZON FOR NEW SERVICES TO THE UPGRADED BUILDING.

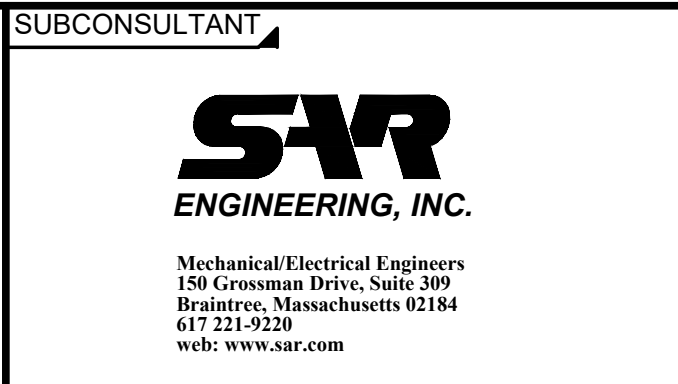
DEMOLITION NOTES	
1.	UNLESS OTHERWISE NOTED, ALL EXISTING ELECTRICAL SYSTEMS (POWER, LIGHTING, LOW VOLTAGE, CONTROLS, ETC) AND ASSOCIATED EQUIPMENT IS TO BE DEMOLISHED OR SALVAGED. DISCONNECT AND DE-ENERGIZE THE EQUIPMENT. REMOVE THE EQUIPMENT TO BE DEMOLISHED OR SALVAGED PER SECTION 02050. ALL CONTROL DEVICES, CONDUIT, CABLING, BOXES, SUPPORTS, ETC, ASSOCIATED WITH THE DEMOLISHED EQUIPMENT SHALL BE REMOVED. THE CONDUIT AND CABLING SHALL BE REMOVED BACK TO SOURCE.
2.	DISCONNECT AND REMOVE THE ELECTRICAL SERVICE BACK TO UTILITY POLE AND MAKE THE PUMP STATION SAFE FOR COMPLETE BUILDING DEMOLITION. COORDINATE WITH EVERSOURCE ELECTRIC FOR DISCONNECTION OF SERVICE AT TRANSFORMERS.
3.	NO DEVICE OR EQUIPMENT INDICATED FOR DEMOLITION WILL BE REUSED OR SALVAGED UNLESS SPECIFICALLY NOTED AS SUCH. ALL EQUIPMENT REMOVED SHALL BE REMOVED FROM SITE AND PROPERLY DISPOSED OF, PRIOR TO REMOVAL OF EQUIPMENT COORDINATE WITH OWNER FOR ANY EQUIPMENT THE OWNER WILL KEEP.
4.	EXISTING EQUIPMENT INDICATED ON THE DEMOLITION PLANS ARE BASED ON SITE OBSERVATIONS AND IT IS NOT THE INTENTION OF THESE DRAWINGS TO SHOW ALL EQUIPMENT AND MATERIALS TO BE DISCONNECTED AND/OR REMOVED.
5.	THE CONTRACTOR SHALL COORDINATE WITH EVERSOURCE AND VERIZON FOR DISCONNECTION OF SERVICES TO THE EXISTING BUILDING.

ABBREVIATIONS	
(2)1"C, 3#8, #10GND	2, 1-INCH CONDUITS EACH CONDUIT CONTAINING 3--#8 AWG WIRES AND 1--#10 GROUND CONDUCTOR
3/4" CE	EMPTY CONDUIT. NUMERAL DENOTES SIZE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AR	ALARM RELAY
ATS	AUTOMATIC TRANSFER SWITCH
CR	CONTROL RELAY
CP	CONTROL PANEL
DRG. DWG.	DRAWING
EAN	EXCEPT AS NOTED
EC	ELECTRICAL CONTRACTOR
ETM	ELAPSED TIME METER
FE	FLOW ELEMENT
FIT	FLOW INDICATOR TRANSMITTER
FS	FLOW SWITCH
FT	FLOW TRANSMITTER
FVNR	FULL VOLTAGE NON-REVERSING
GND, GRD	GROUNDING CONDUCTOR (EQUIPMENT)
HOA	HAND-OFF-AUTOMATIC
HH	HANDHOLE
J OR JB	JUNCTION BOX
JPB	JOG PUSHBUTTON
LE	LEVEL ELEMENT
LIT	LEVEL INDICATOR TRANSMITTER
LL	LOW LEVEL
LS	LEVEL SWITCH
LT	LEVEL TRANSMITTER
MC	MOTOR CONTROLLER (STARTER)
MCC	MOTOR CONTROL CENTER
MH	MANHOLE
MFR	MANUFACTURER
MS	MOTION SENSOR
NTS	NOT TO SCALE
OEM	ORIGINAL EQUIPMENT MANUFACTURE SUPPLIED
OH	OVERHEAD
OL	MOTOR OVERLOAD HEATER
OS	OPERATOR STATION
PB	PUSHBUTTON CONTROL STATION MOMENTARY CONTACT TYPE, STOP START
PBE	PUSHBUTTON CONTROL STATION MAINTAINED EMERGENCY STOP TYPE, TWIST TO RELEASE
PBL	PUSHBUTTON CONTROL STATION MOMENTARY TYPE WITH LOCK-OUT DEVICE, STOP-START
PBM	PUSHBUTTON CONTROL STATION MAINTAINED CONTACT TYPE, STOP START
PIT	PRESSURE INDICATOR TRANSMITTER
PL	PUSHBUTTON CONTROL STATION MOMENTARY TYPE WITH LOCK-OUT DEVICE, STOP
PS	PRESSURE SWITCH
PT	PRESSURE TRANSMITTER
RGS	RIGID GALVANIZED STEEL
RVNR	REDUCED VOLTAGE NON-REVERSING
SPD	SURGE SUPPRESSOR DEVICE
SOV	SOLENOID VALVE
S/S	SOFT STARTER
TB	TERMINAL BOX
TD	MOTOR TEMPERATURE DETECTOR
TR	TIMING RELAY
TS	TEMPERATURE SWITCH
TSP	TWISTED SHIELDED PAIR
TSTW	TWO SPEED TWO WINDING
TYP	TYPICAL
UG	UNDERGROUND
UNO	UNLESS OTHERWISE NOTED
VFD	VARIABLE FREQUENCY DRIVE
WP	WATER PROOF
XFMR	TRANSFORMER

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: RLB
DESIGNED BY: MC
CHECKED BY: MC

REGISTERED PROFESSIONAL
For Review Only



SUBCONSULTANT
SCALE
AS SHOWN

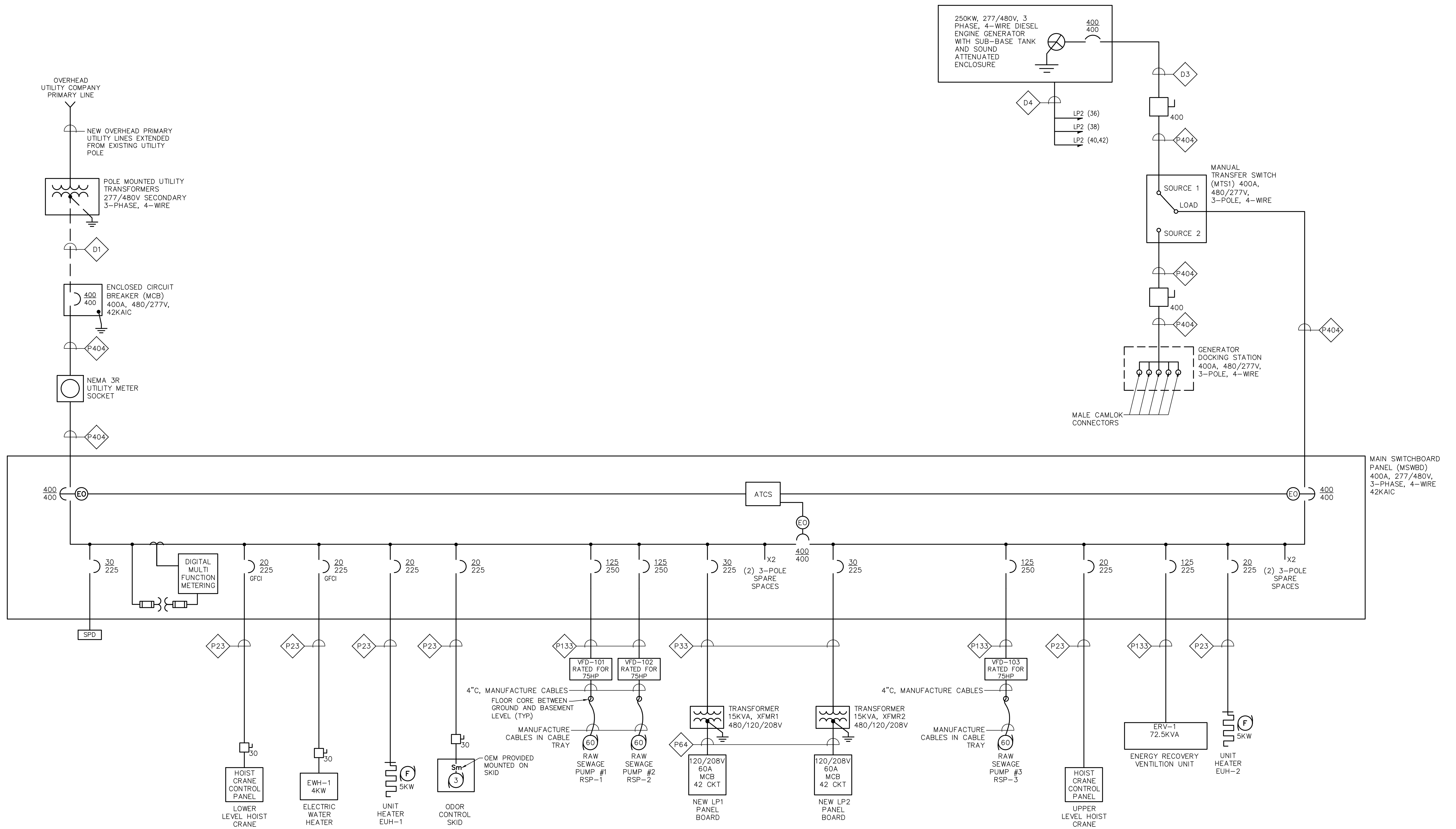
TITLE

Worcester Road Sewer Pumping Station Replacement
ELECTRICAL LEGEND AND NOTES

BETA JOB NO. 7385
ISSUE DATE APRIL 2022
SHEET NO. E-1

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

3/24/2022 7:25 AM - W:\YEAR - 2018\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\ELECTRICAL DEPARTMENT\19020.00 ELECTRICAL PLANS.DWG (BETA STB.BW.STB)



ONE LINE DIAGRAM
NOT TO SCALE

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:	RTG
DESIGNED BY:	AJG
CHECKED BY:	AJG

REGISTERED PROFESSIONAL
For Review Only

PREPARED BY
BETA
www.BETA-inc.com

SUBCONSULTANT
SAR ENGINEERING, INC.
Mechanical/Electrical Engineers
150 Grossman Drive, Suite 309
Burlington, Massachusetts 01914
617.221.9120
web: www.sar.com

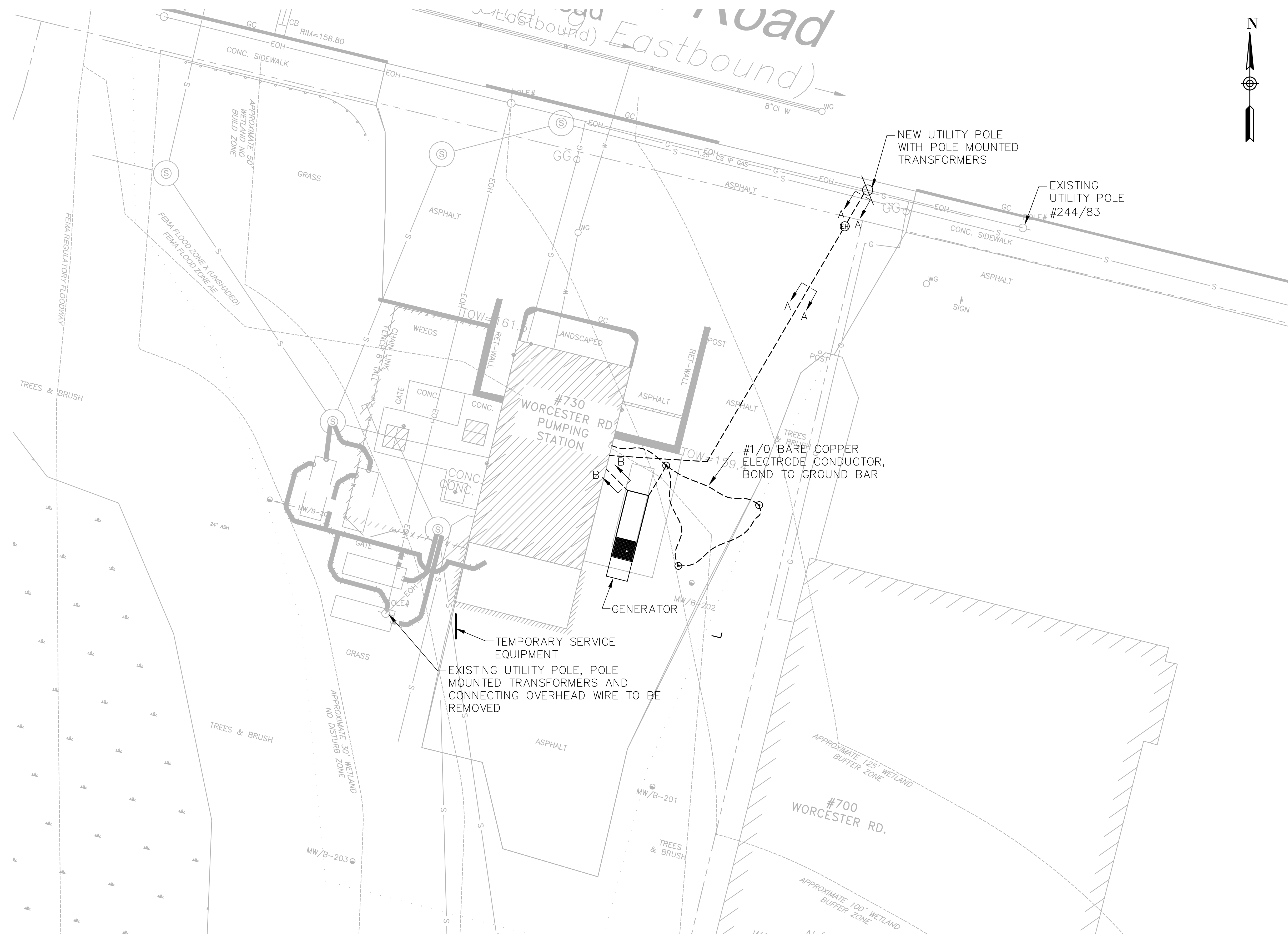
SCALE
AS SHOWN

TITLE
Worcester Road Sewer Pumping Station Replacement
ELECTRICAL ONE LINE DIAGRAM

BETA JOB NO.	7385
ISSUE DATE	APRIL 2022
SHEET NO.	E-2

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

NOTES:
 1. REFER TO DRAWING E-11 FOR DUCTBANK SECTIONS.



PROPOSED SITE PLAN
 SCALE: 1" = 10'

3/24/2022 7:25 AM - W:\YEAR - 2019\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\ELECTRICAL DEPARTMENT\19020.00 ELECTRICAL PLANS.DWG (BETA STB.BW.STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: RLB
DESIGNED BY: MC
CHECKED BY: MC

REGISTERED PROFESSIONAL
For Review Only



SCALE
 AS SHOWN

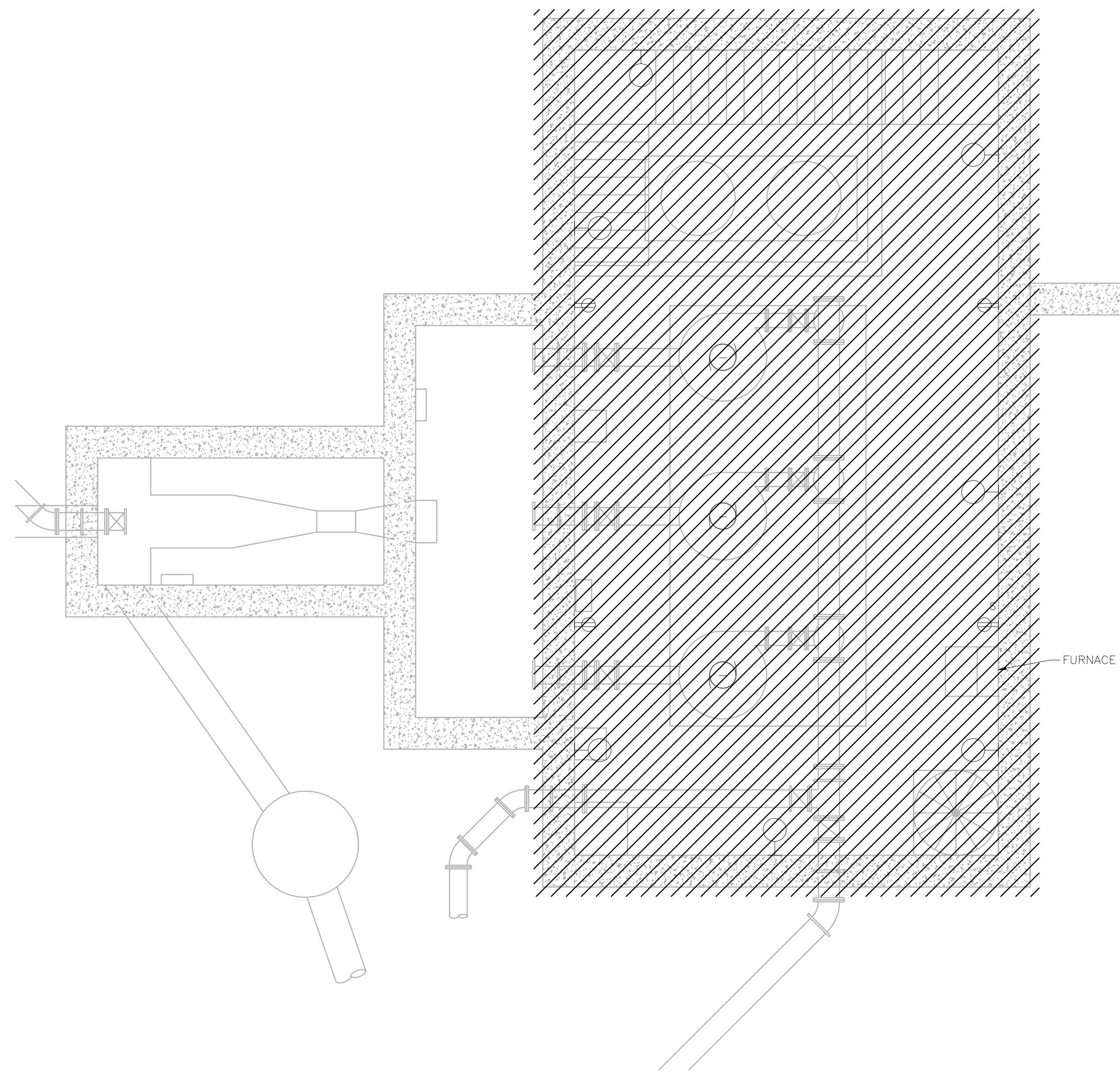
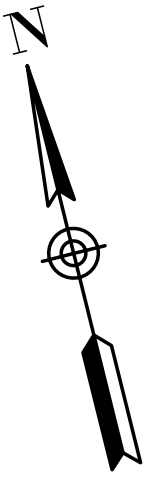
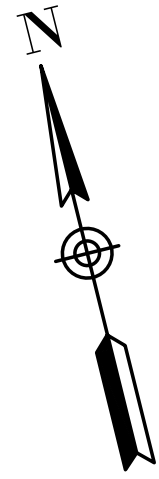
TITLE
Worcester Road Sewer Pumping Station Replacement
ELECTRICAL SITE PLAN

BETA JOB NO. 7385
 ISSUE DATE APRIL 2022
 SHEET NO. E-3

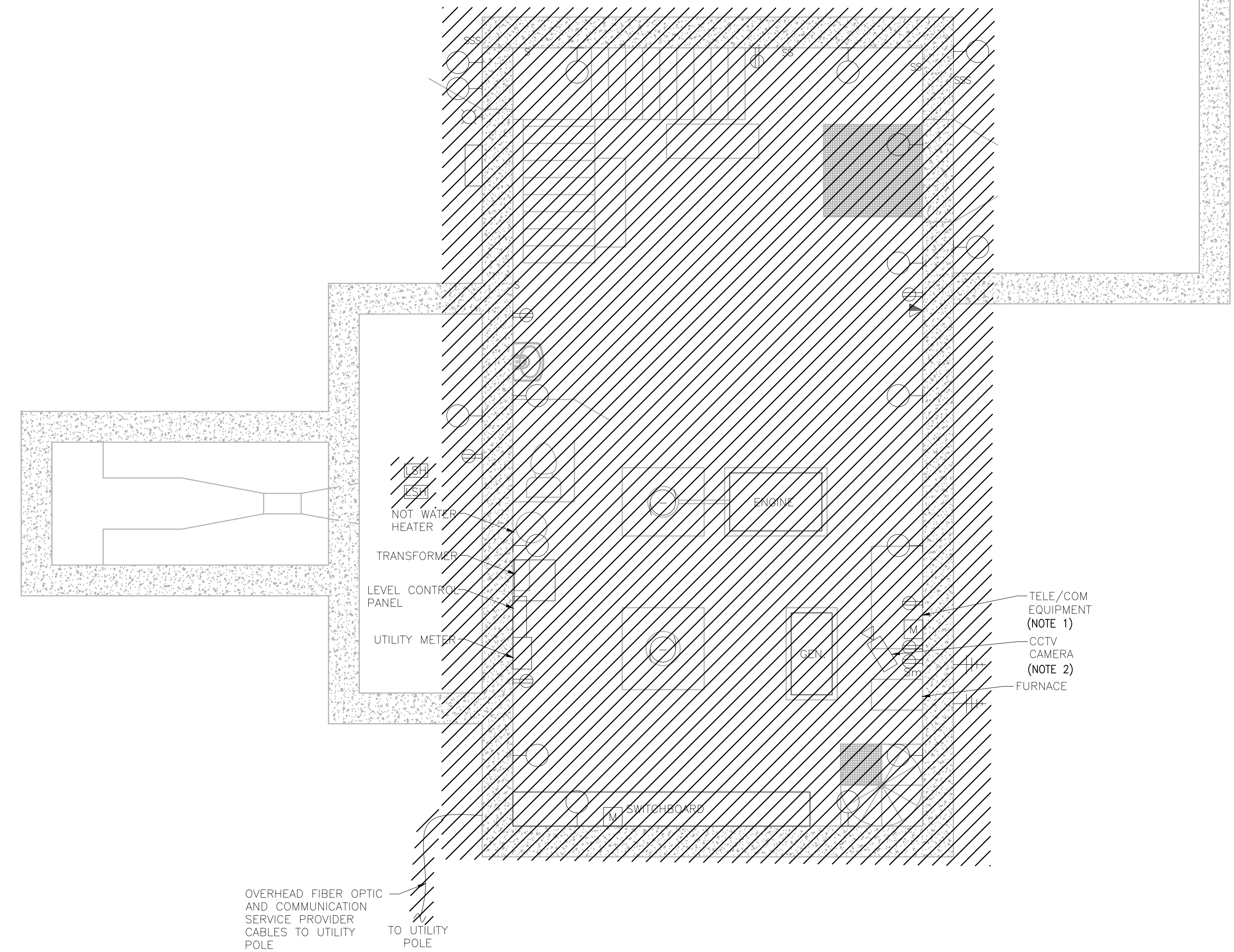
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

NOTES:

1. DISCONNECT AND REMOVE TELE/COM RACK MOUNTED EQUIPMENT, AND EQUIPMENT RACK. EQUIPMENT SHALL BE RETURNED TO OWNER.
2. DISCONNECT AND REMOVE CCTV CAMERA. PROPERLY STORE AND REINSTALL IN NEW PUMP STATION STRUCTURE.



LOWER LEVEL - ELECTRICAL PLAN - DEMOLITION
SCALE: 1/4" = 1'



UPPER LEVEL - ELECTRICAL PLAN - DEMOLITION
SCALE: 1/4" = 1'

3/24/2022 7:25 AM - W:\YEAR - 2019\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\ELECTRICAL DEPARTMENT\19020.00 ELECTRICAL PLANS.DWG (BETA STB.BW.STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: RLB
DESIGNED BY: MC
CHECKED BY: MC

REGISTERED PROFESSIONAL
For Review Only

PREPARED BY
BETA
www.BETA-Inc.com

SUBCONSULTANT
SAR ENGINEERING, INC.
Mechanical/Electrical Engineers
150 Grossman Drive, Suite 309
Burlington, Massachusetts 01894
617-221-9120
web: www.sar.com

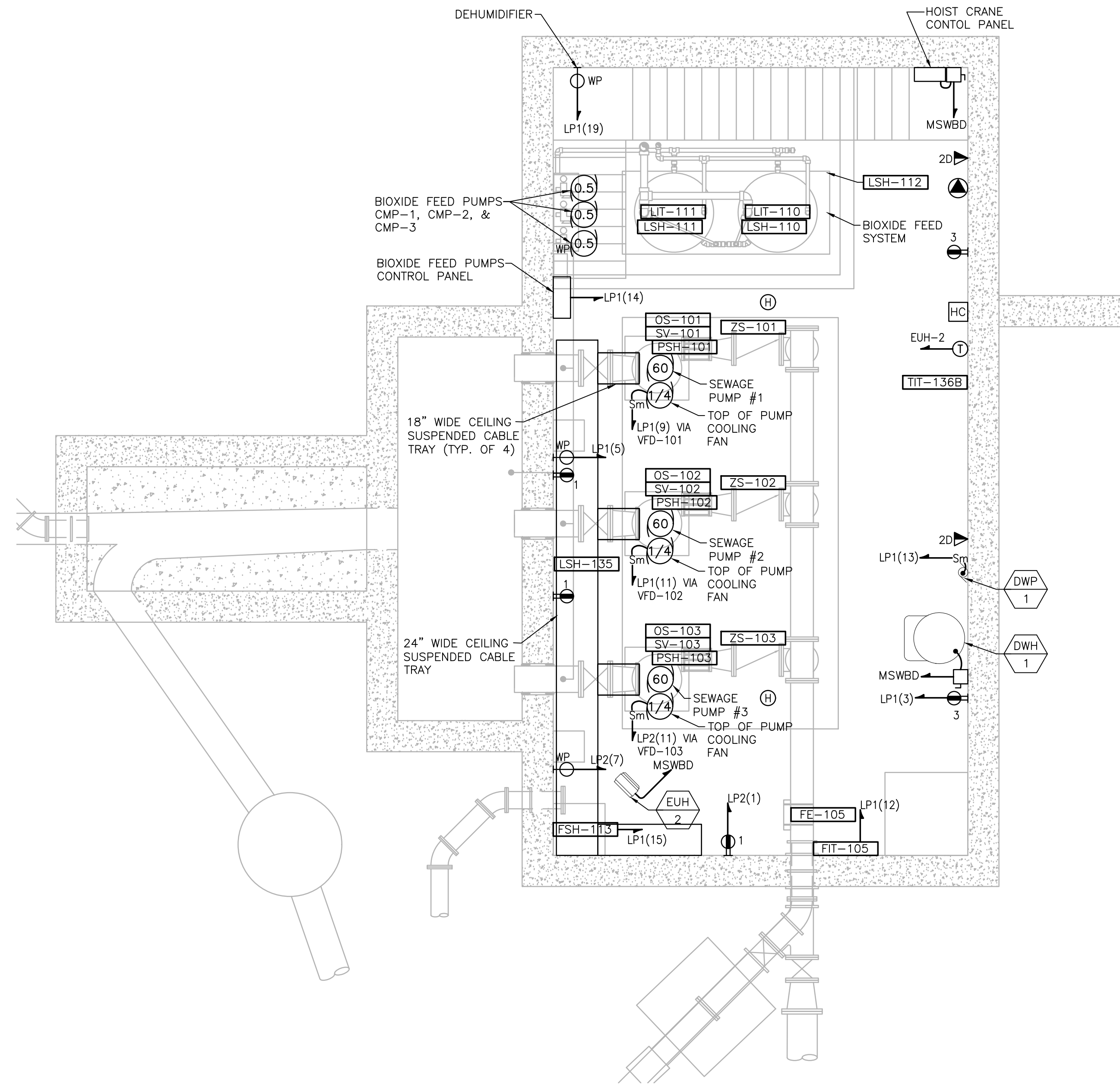
SCALE
AS SHOWN

TITLE
Worcester Road Sewer Pumping Station Replacement
ELECTRICAL DEMOLITION PLANS

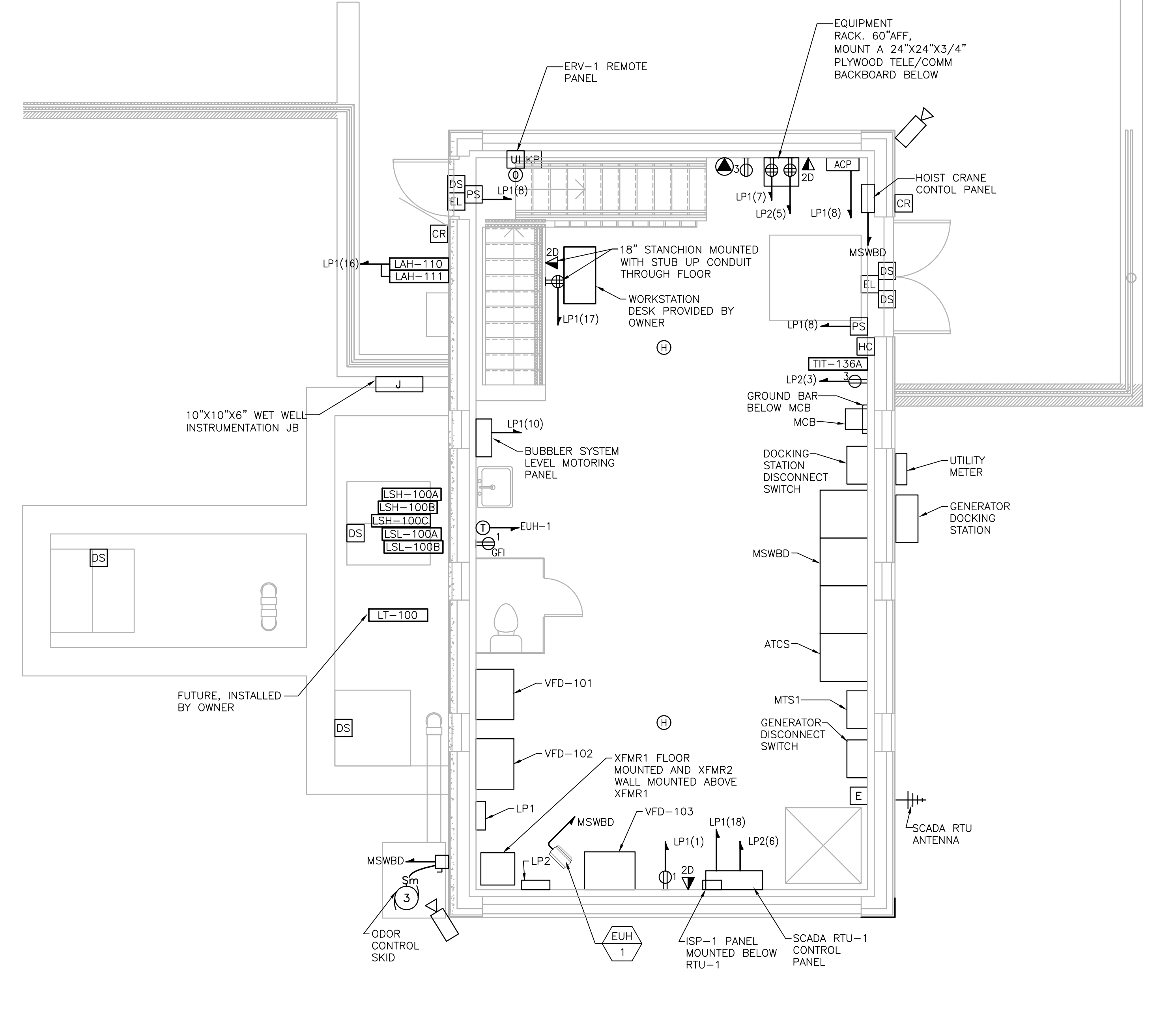
BETA JOB NO. 7385
ISSUE DATE APRIL 2022
SHEET NO. E-4

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

3/24/2022 7:25 AM - W:\YEAR-2019\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\ELECTRICAL DEPARTMENT\19020.00 ELECTRICAL PLANS DWG (BETA STB BIV STB)



LOWER LEVEL - ELECTRICAL POWER PLAN - PROPOSED
SCALE: 3/16" = 1'

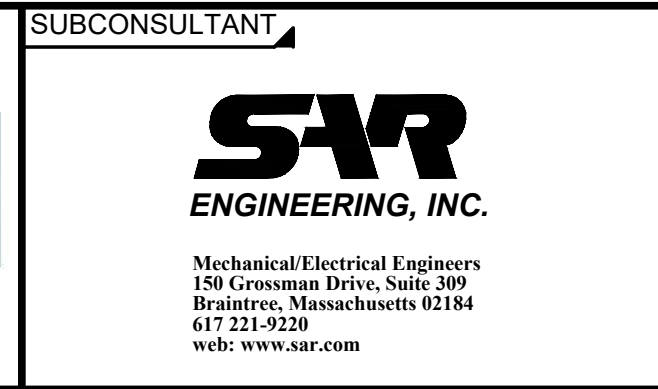


UPPER LEVEL - ELECTRICAL POWER PLAN - PROPOSED
SCALE: 3/16" = 1'

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:	RLB
DESIGNED BY:	MC
CHECKED BY:	MC

REGISTERED PROFESSIONAL
For Review Only

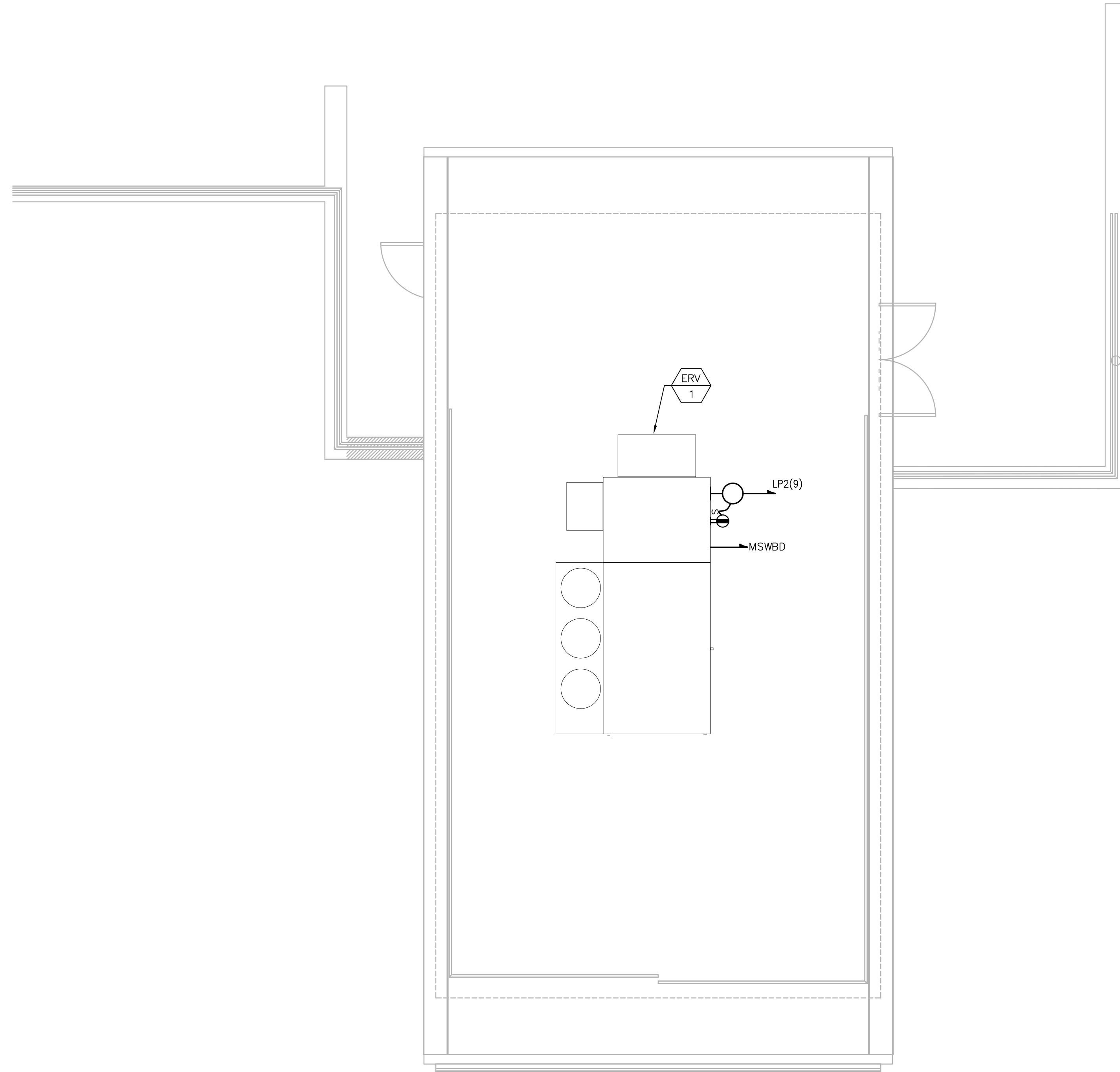


SUBCONSULTANT
SCALE: AS SHOWN
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE: **Worcester Road Sewer Pumping Station Replacement**
ELECTRICAL PROPOSED POWER PLANS

BETA JOB NO. 7385
ISSUE DATE: APRIL 2022
SHEET NO. E-5

3/24/2022 7:26 AM - W:\YEAR - 2018\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\ELECTRICAL DEPARTMENT\19020.00 ELECTRICAL PLANS DWG (BETA STB BY STB)



ROOF - ELECTRICAL POWER PLAN - PROPOSED
SCALE: 3/16" = 1'

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: RLB
DESIGNED BY: MC
CHECKED BY: MC

REGISTERED PROFESSIONAL
For Review Only

PREPARED BY
BETA
www.BETA-Inc.com

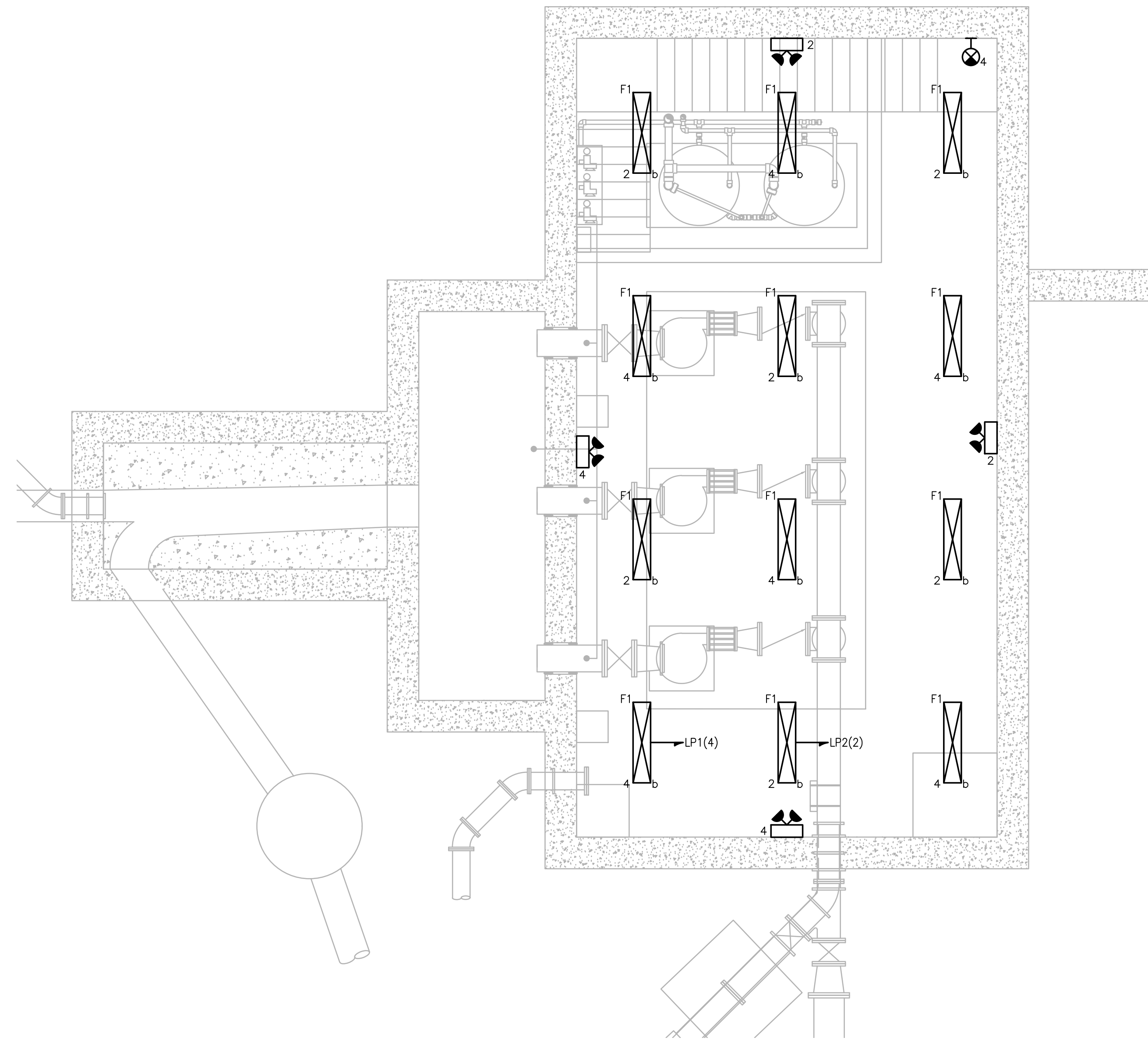
SUBCONSULTANT
SAR
ENGINEERING, INC.
Mechanical/Electrical Engineers
150 Grossman Drive, Suite 309
Braintree, Massachusetts 02104
617.221-9220
web: www.sar.com

SCALE
AS SHOWN
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

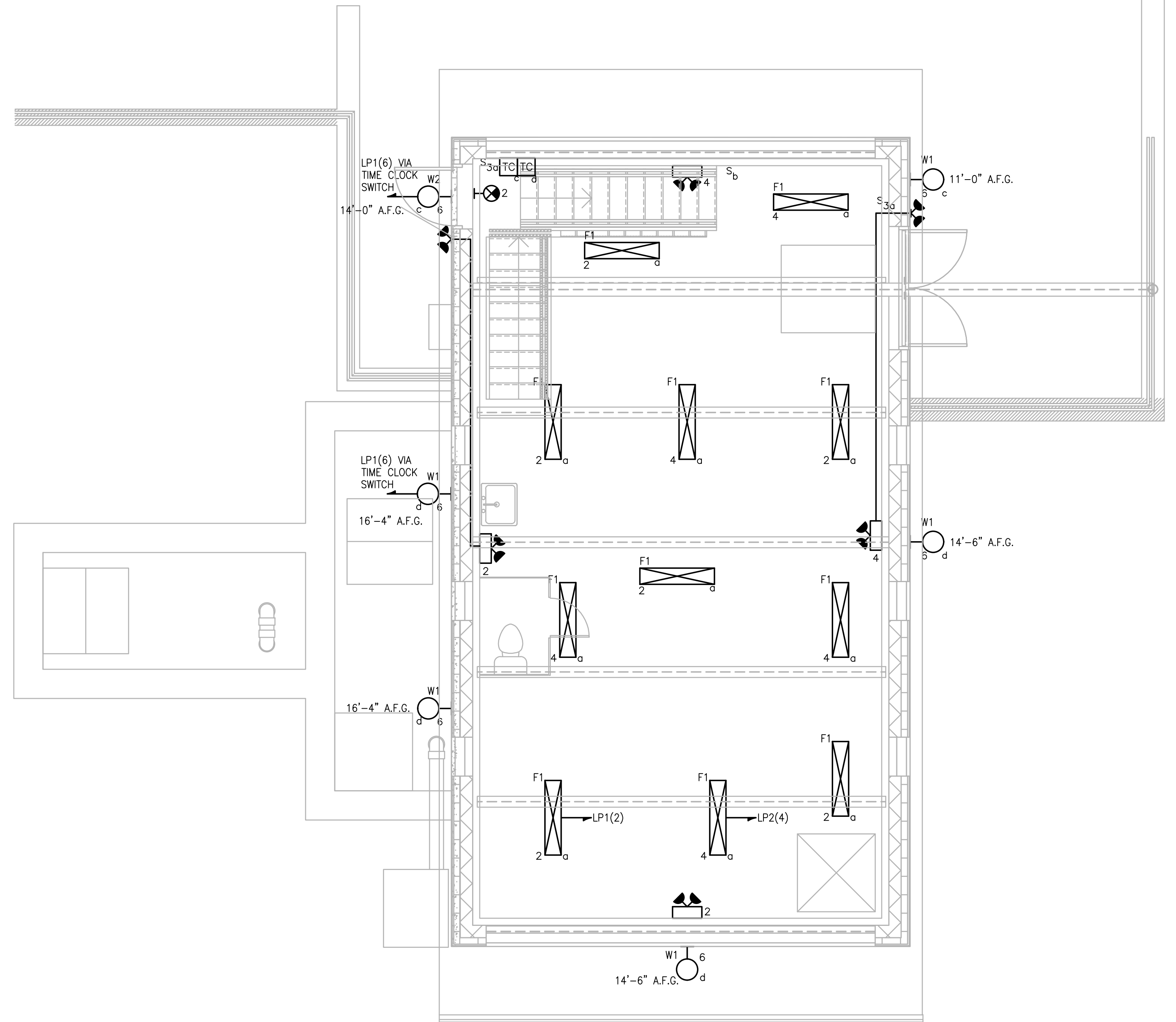
TITLE
**Worcester Road Sewer
Pumping Station Replacement**
**ELECTRICAL
PROPOSED POWER ROOF PLAN**

BETA JOB NO. 7385
ISSUE DATE APRIL 2022
SHEET NO. E-6

3/24/2022 7:26 AM - W:\YEAR - 2018\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\ELECTRICAL DEPARTMENT\19020.00 ELECTRICAL PLANS DWG (BETA STB BW STB)



LOWER LEVEL - ELECTRICAL LIGHTING PLAN - PROPOSED
SCALE: 3/16" = 1'

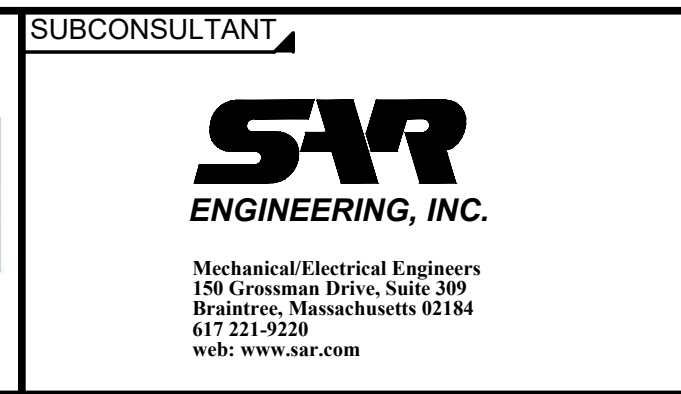


UPPER LEVEL - ELECTRICAL LIGHTING PLAN - PROPOSED
SCALE: 3/16" = 1'

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
RLB
DESIGNED BY:
MC
CHECKED BY:
MC

REGISTERED PROFESSIONAL
For Review Only

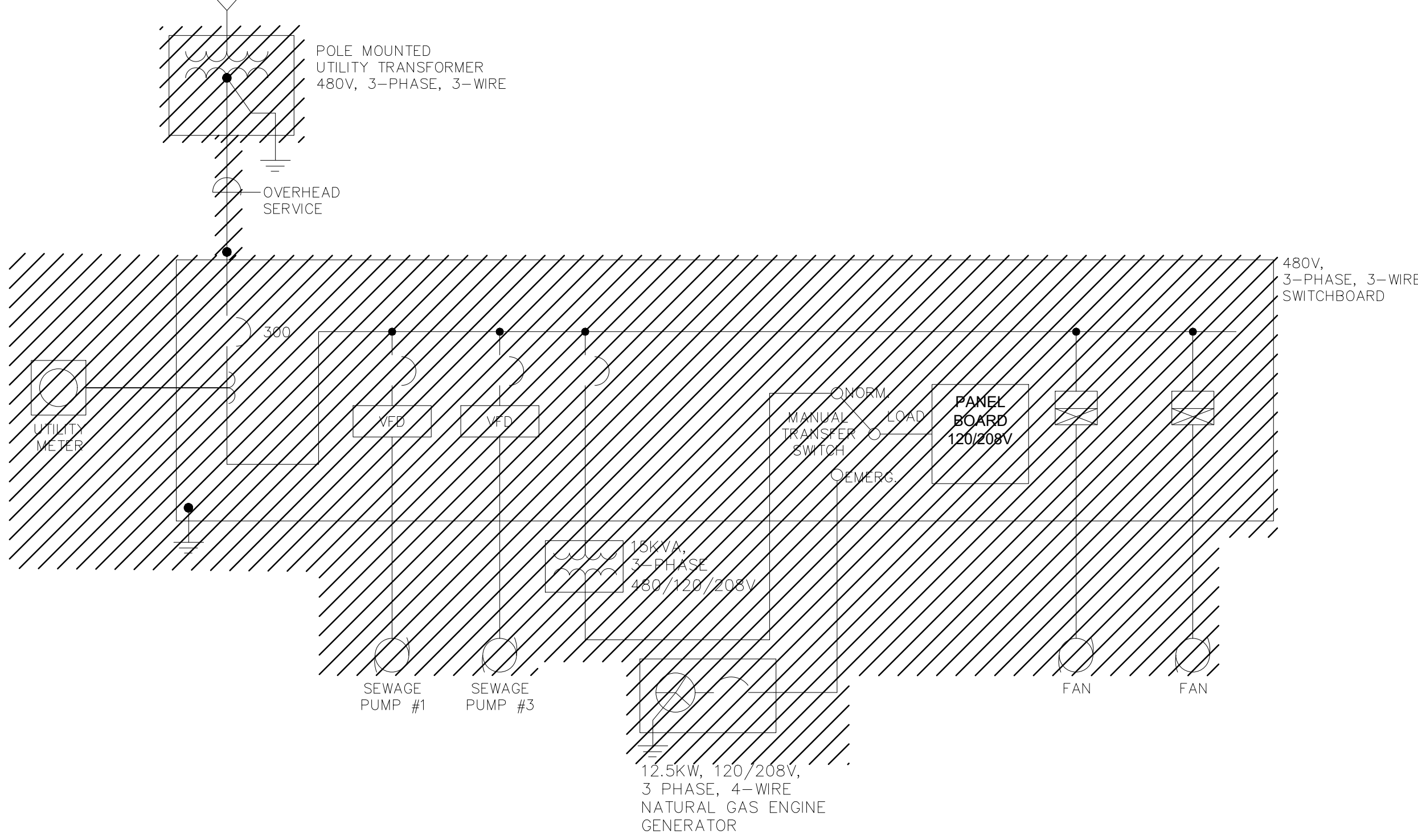


SCALE
AS SHOWN
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE
Worcester Road Sewer Pumping Station Replacement
ELECTRICAL PROPOSED LIGHTING PLANS

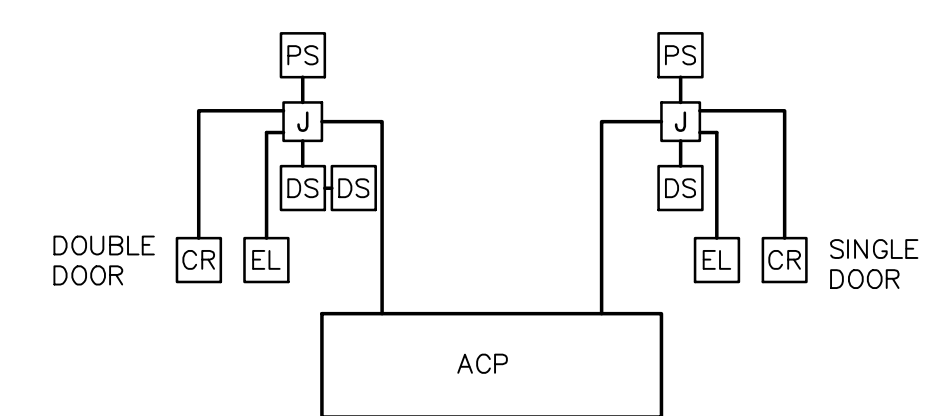
BETA JOB NO. 7385
ISSUE DATE APRIL 2022
SHEET NO. E-7

INCOMING POWER COMPANY OVERHEAD PRIMARY LINE



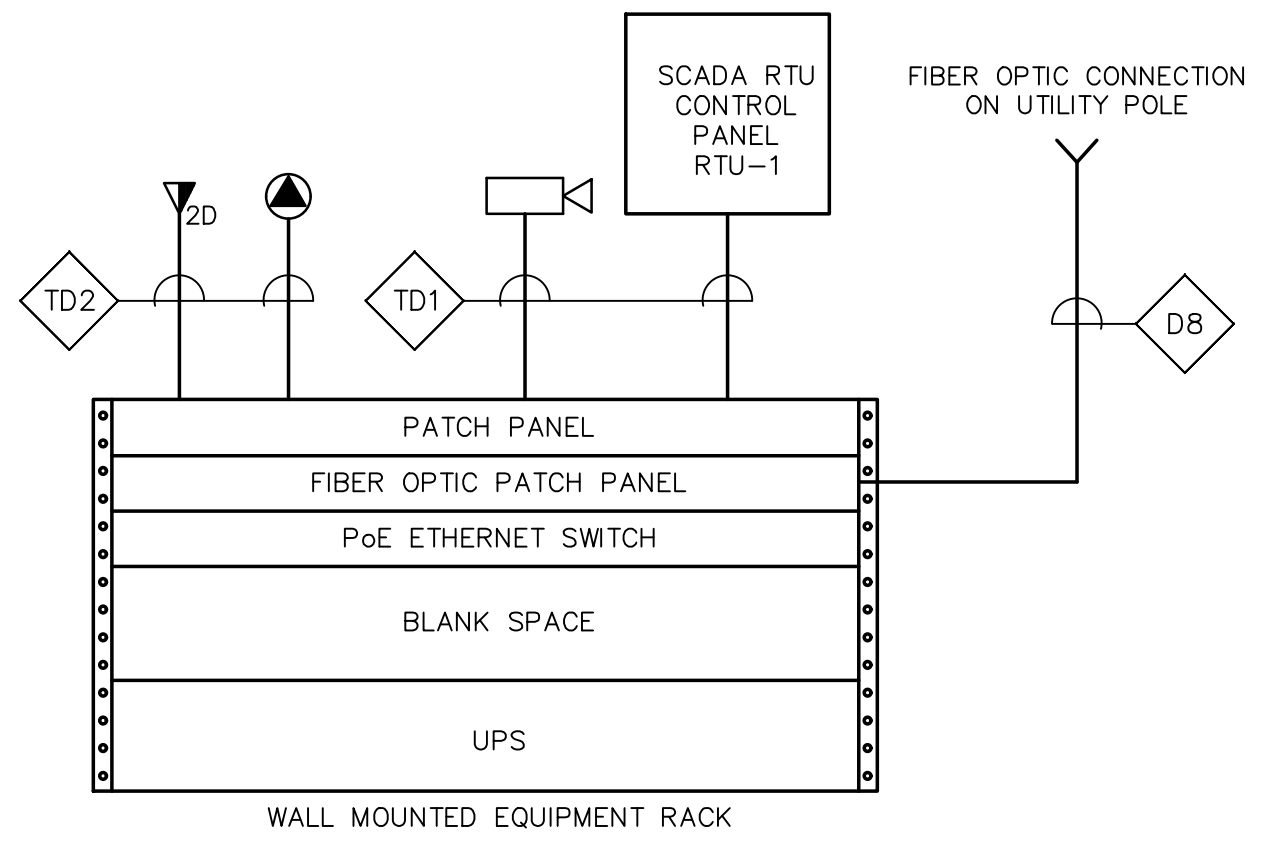
ONE LINE DIAGRAM - DEMOLITION
NOT TO SCALE

NOTES:
1. RISER DIAGRAM ONLY REPRESENTS EXISTING CONDITIONS WITHOUT THE IMPLEMENTATION OF TEMPORARY SERVICE WORK. ALL EXISTING ELECTRICAL AND TEMPORARY SERVICE EQUIPMENT IS TO BE REMOVED IN A PHASED MANNER.



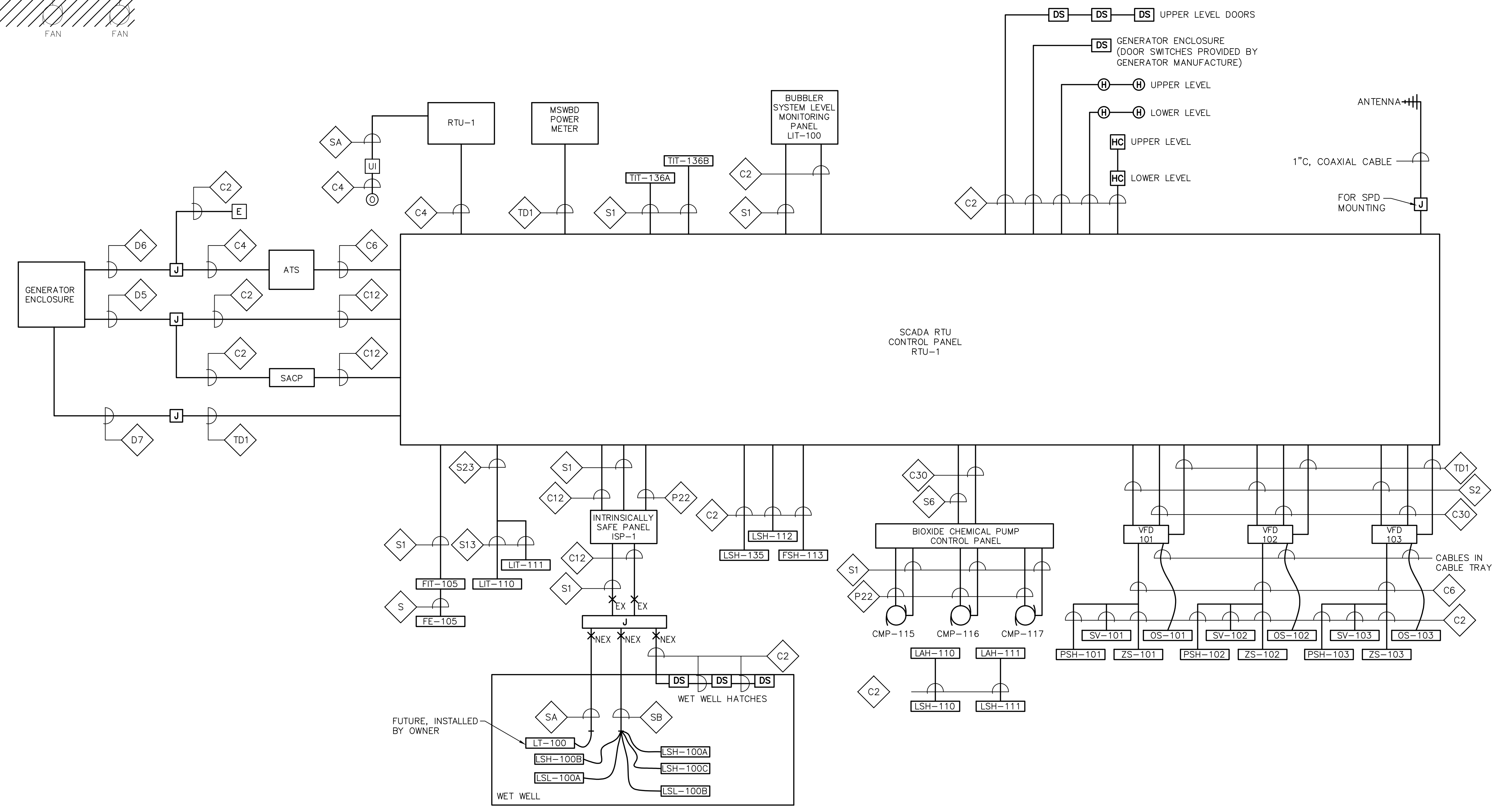
ACCESS CONTROL RISER
NOT TO SCALE

ACCESS CONTROL NOTES:
1. MINIMUM SIZE CONDUIT SHALL BE 3/4" UNLESS NOTED OTHERWISE.
2. SYSTEM CABLING SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH EQUIPMENT SUPPLIERS APPROVED SHOP DRAWINGS AND WIRING DIAGRAMS.



COMMUNICATIONS & CCTV RISER DIAGRAM
NOT TO SCALE

NOTES:
1. RISER DIAGRAM ONLY REPRESENTS TYPE OF DEVICES AND DOES NOT REPRESENT ACTUAL QUANTITIES. REFER TO PLAN DRAWINGS QUANTITIES AND LOCATIONS OF DEVICES.



CONTROL BLOCK WIRING DIAGRAM
NOT TO SCALE

3/24/2022 7:26 AM - W:\YEAR-2018\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\ELECTRICAL DEPARTMENT\19020.00 ELECTRICAL PLANS.DWG (BETA STB.BW.STB)

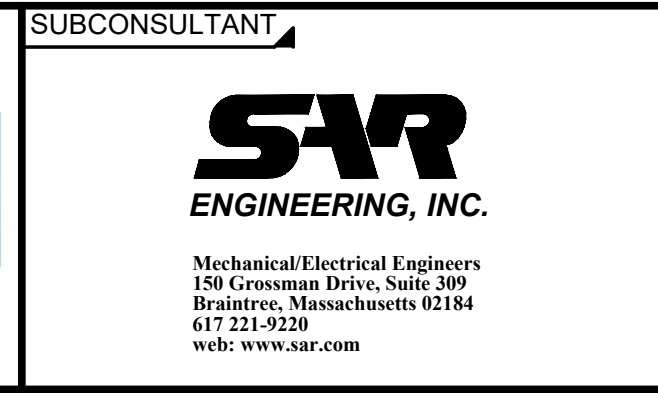
NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
RLB

DESIGNED BY:
MC

CHECKED BY:
MC

REGISTERED PROFESSIONAL
For Review Only



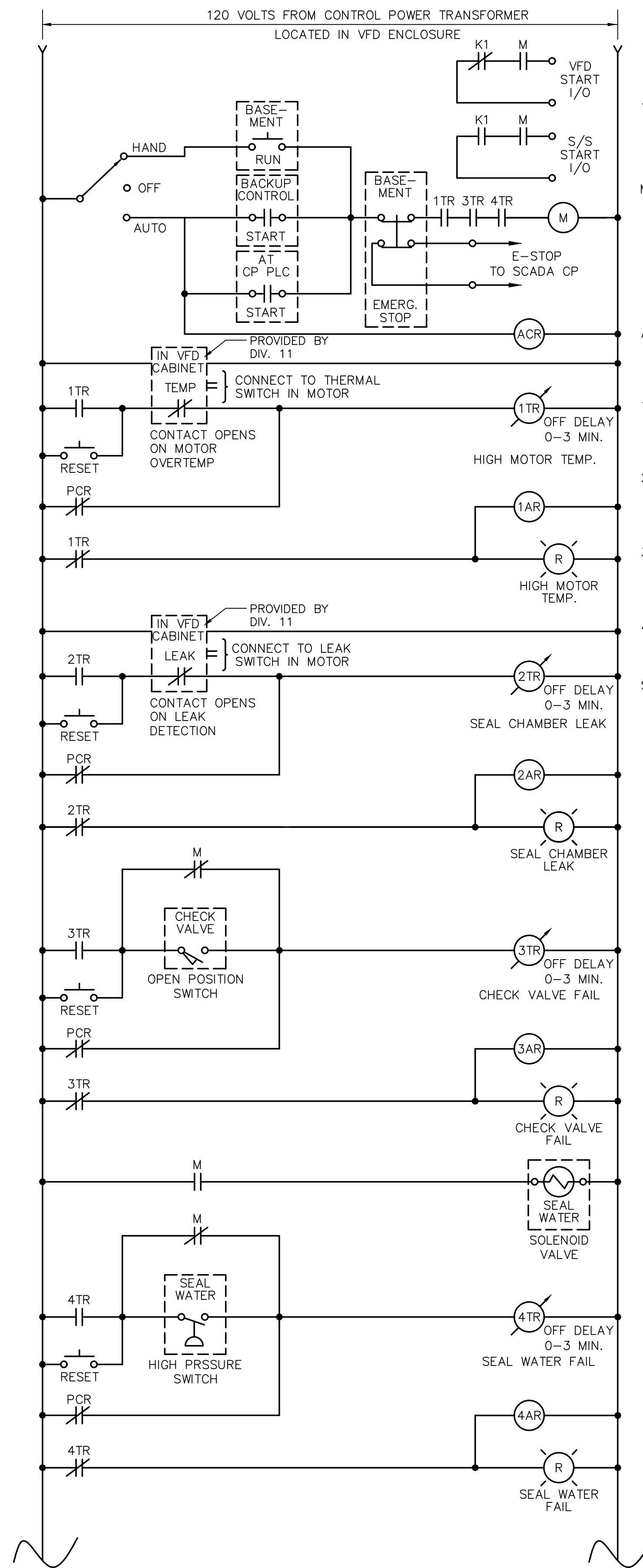
SUBCONSULTANT
SCALE
AS SHOWN

TITLE
Worcester Road Sewer Pumping Station Replacement
ELECTRICAL DIAGRAMS

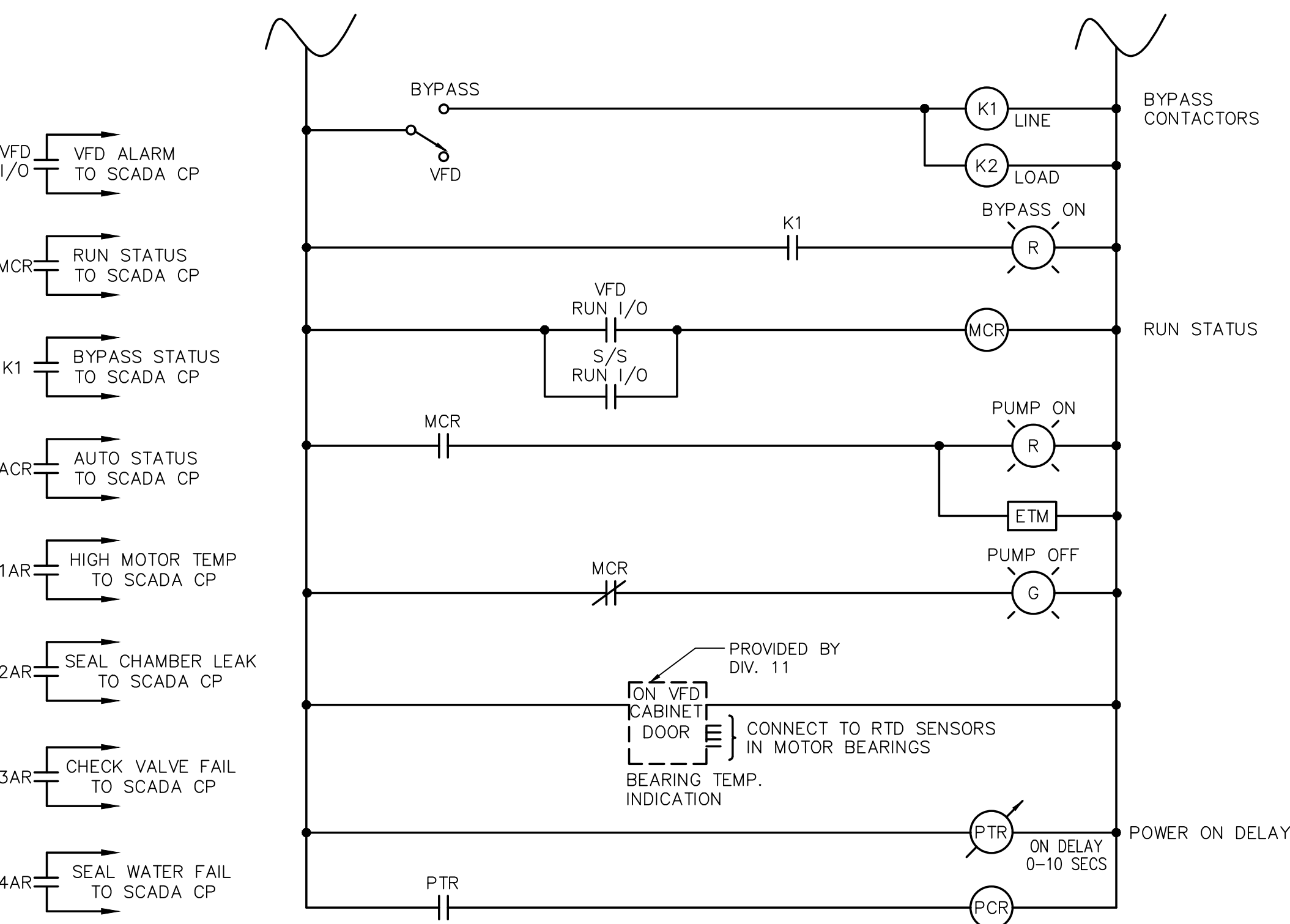
BETA JOB NO. 7385
ISSUE DATE APRIL 2022
SHEET NO. E-8

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

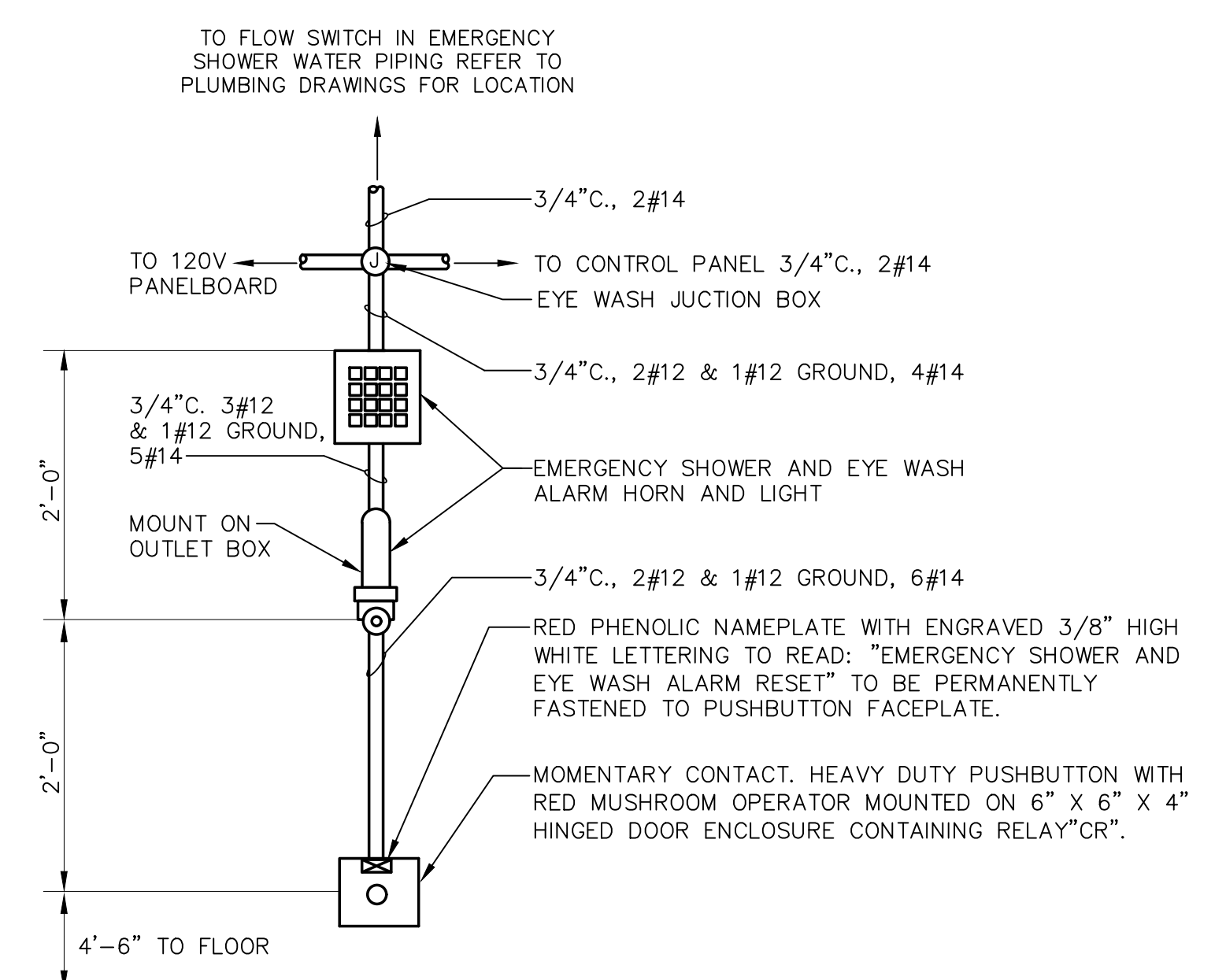
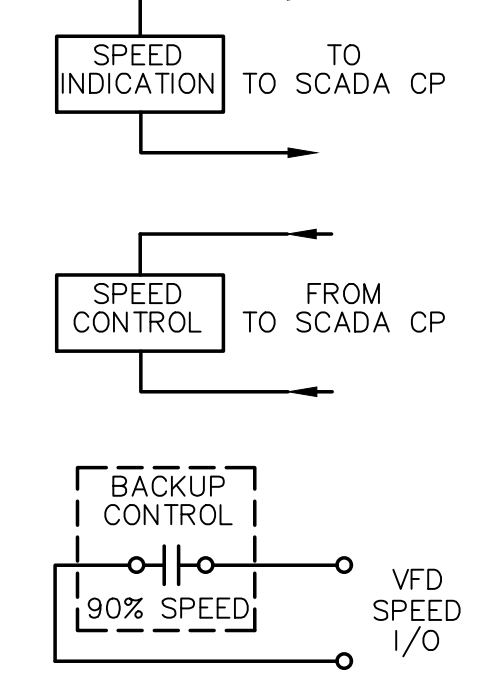
3/24/2022 7:27 AM - W:\YEAR - 2018\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\ELECTRICAL DEPARTMENT\19020.00 ELECTRICAL PLANS.DWG (BETA STB BY STB)



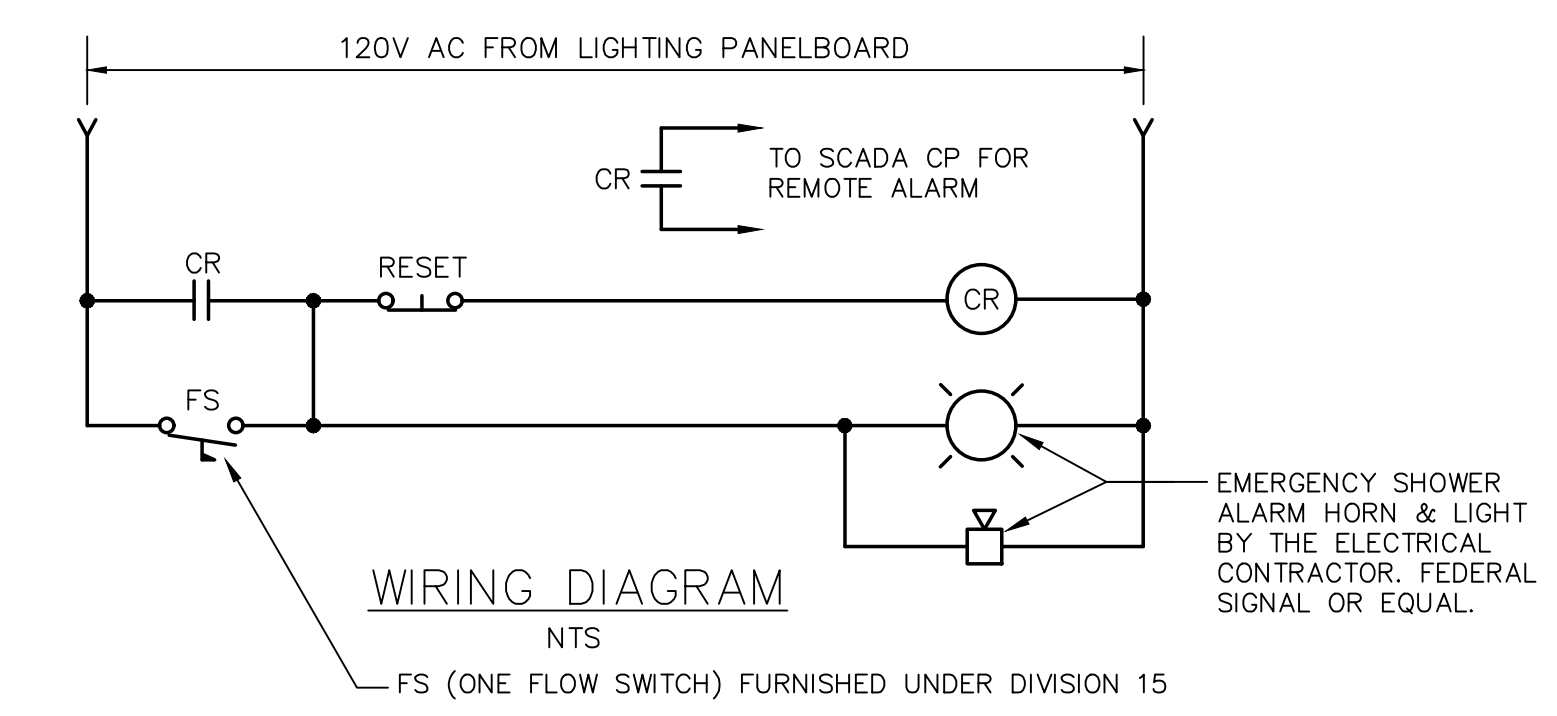
**CONTROL WIRING DIAGRAM
RAW SEWAGE PUMPS**
NOT TO SCALE



**CONTROL WIRING DIAGRAM
RAW SEWAGE PUMPS - CONT.**
NOT TO SCALE



ELEVATION VIEW
NOT TO SCALE



WIRING DIAGRAM
NTS

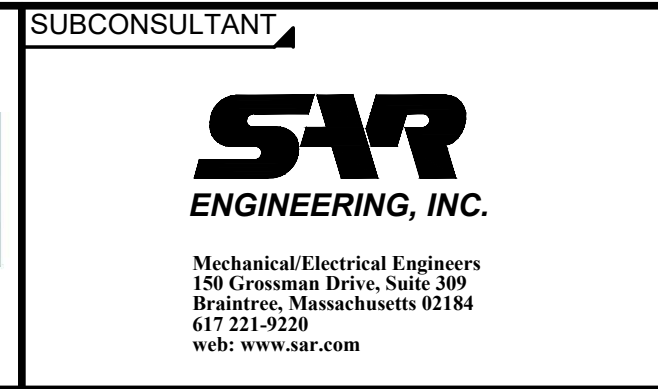
NOTE:
1. ALARM STATION TO BE MOUNTED DIRECTLY NEAR EACH EMERGENCY SHOWER. REFER TO PLAN DRAWINGS FOR EYEWASH LOCATIONS.

**EMERGENCY EYE WASH
ALARM STATION**
NOT TO SCALE

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: RLB
DESIGNED BY: MC
CHECKED BY: MC

REGISTERED PROFESSIONAL
For Review Only



SUBCONSULTANT
SCALE
AS SHOWN

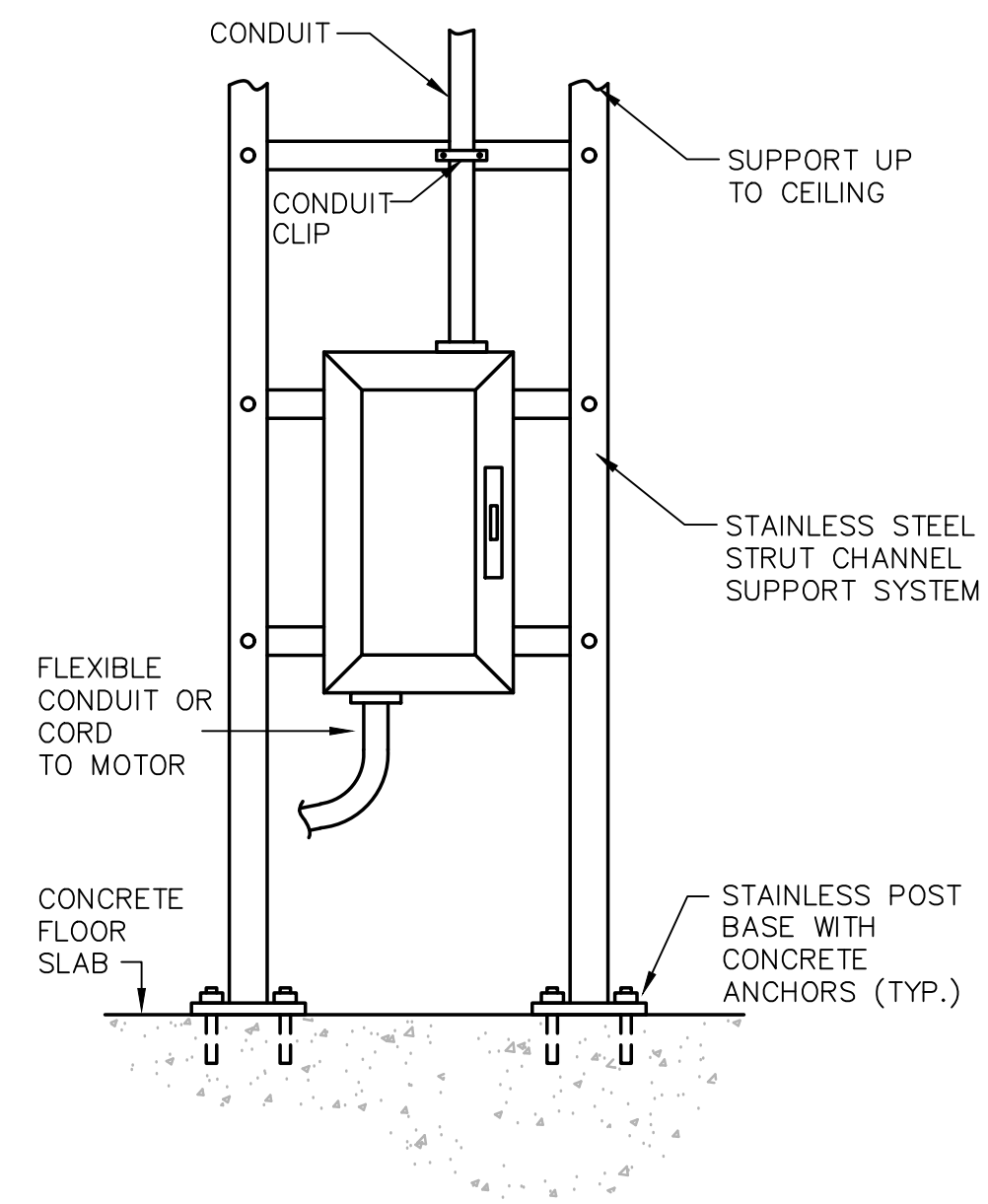
TITLE
**Worcester Road Sewer
Pumping Station Replacement**
ELECTRICAL
WIRING DIAGRAMS

BETA JOB NO. 7385
ISSUE DATE APRIL 2022
SHEET NO. E-10

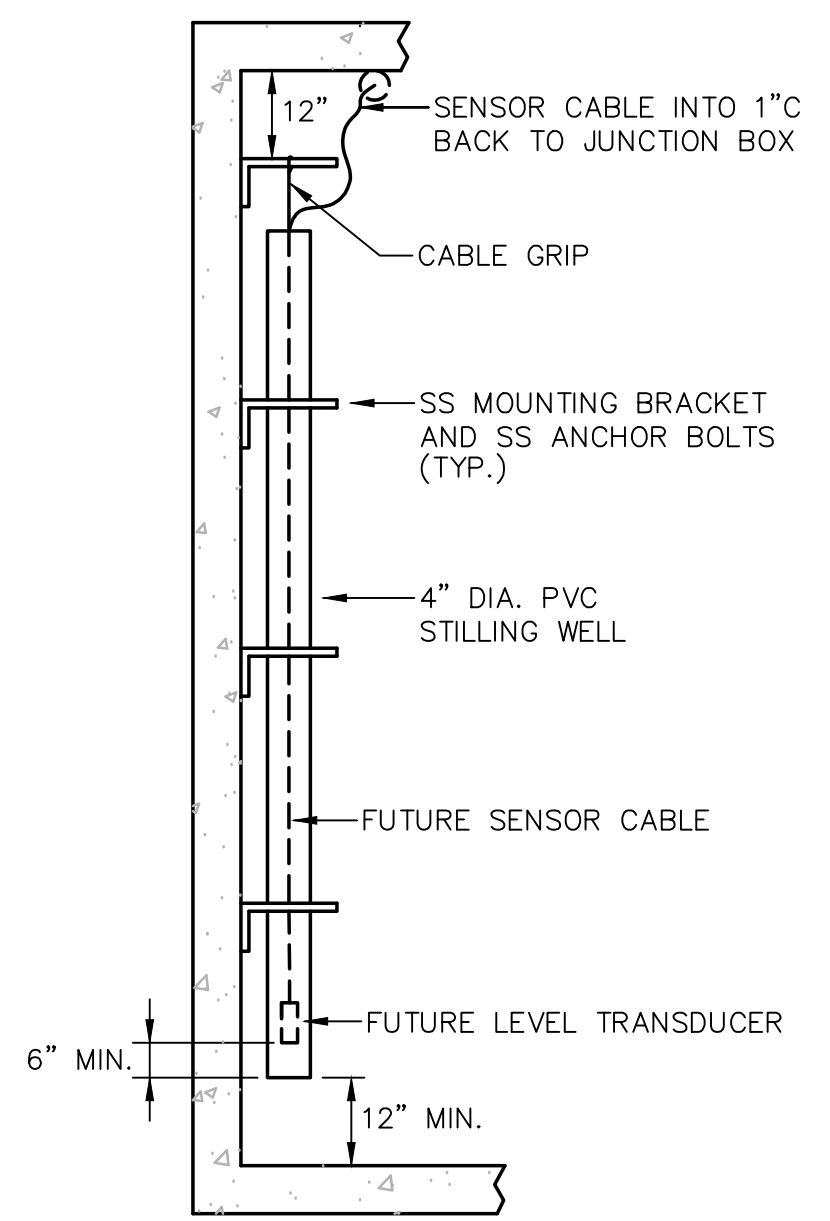
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

GENERAL NOTES:

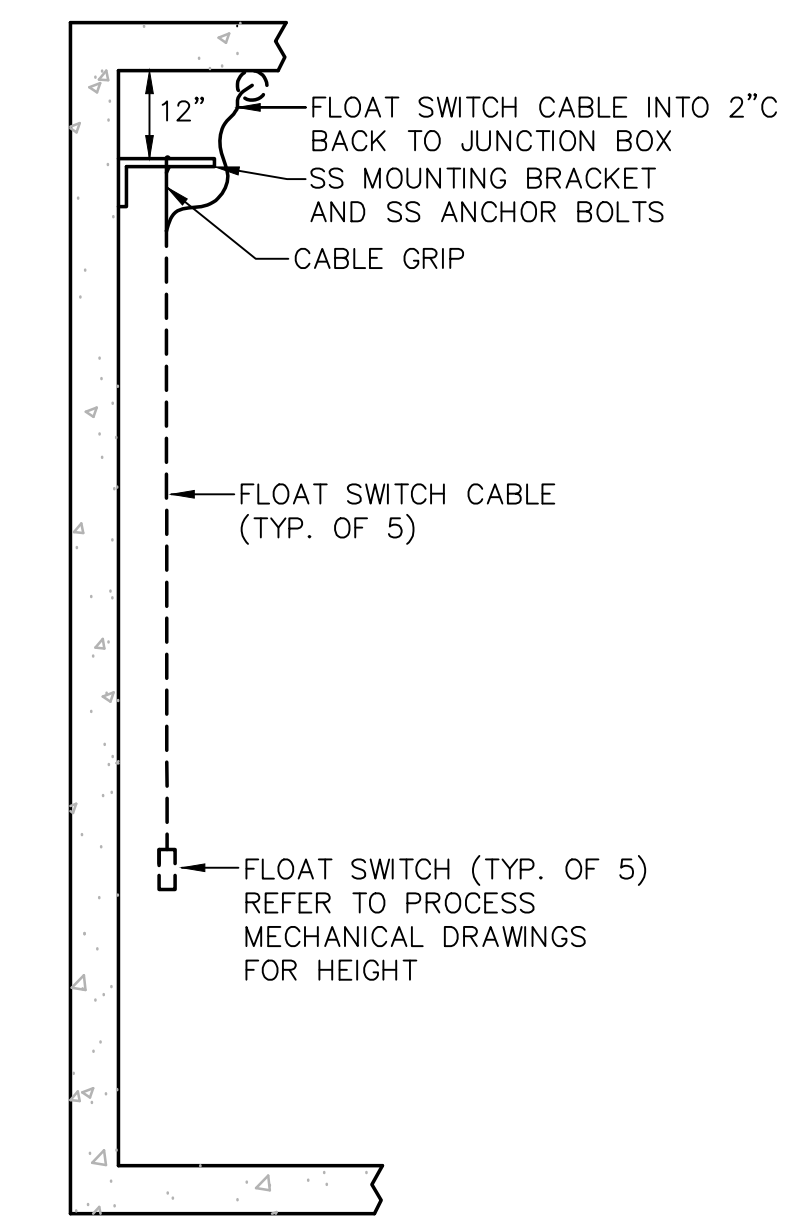
1. ALL MOUNTING BRACKETS, SUPPORTS, FASTENERS, AND ECT. WITHIN THE WET WELL SHALL BE STAINLESS STEEL.



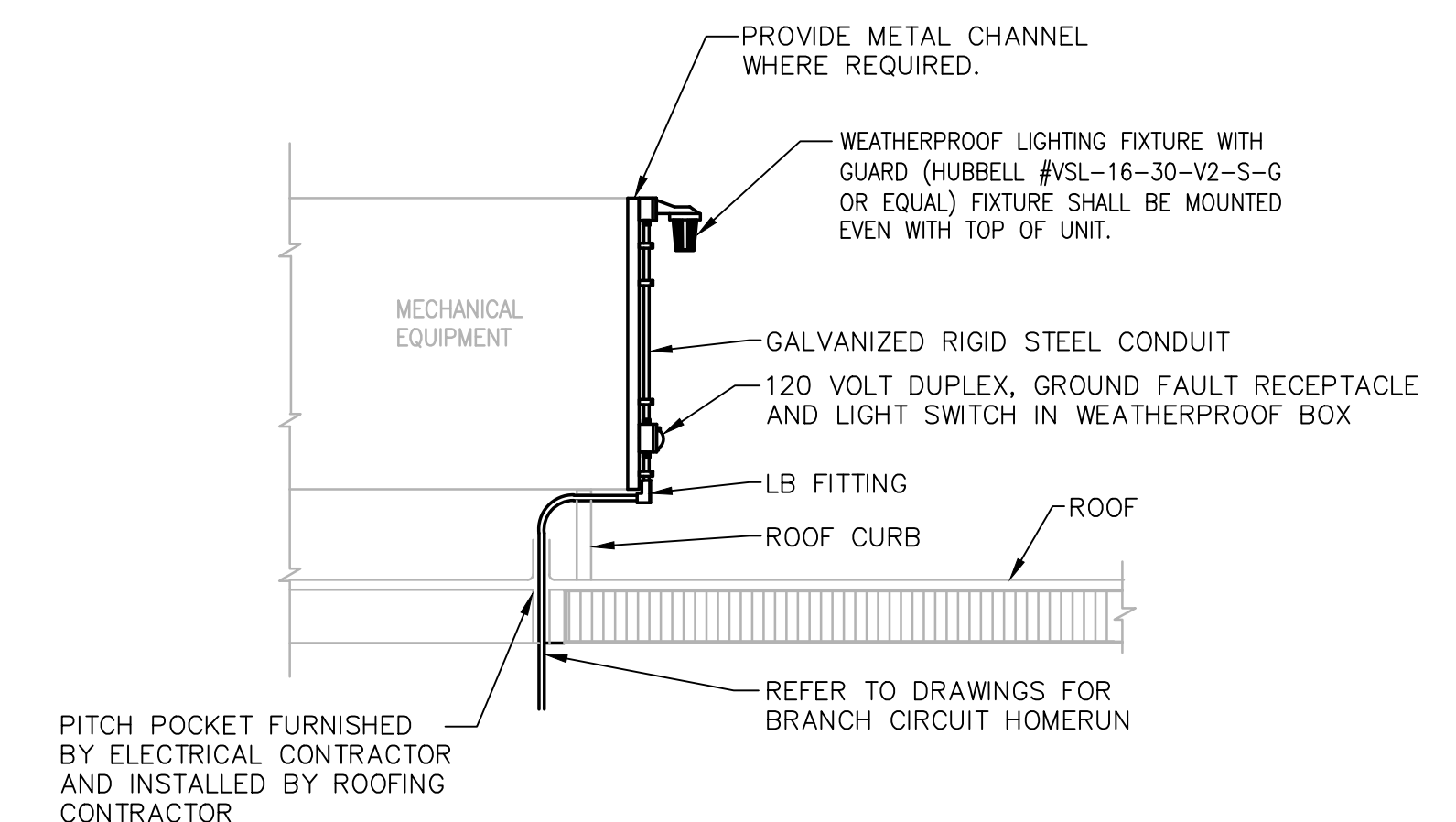
ELECTRICAL EQUIPMENT STANCHION MOUNTING DETAIL
NOT TO SCALE



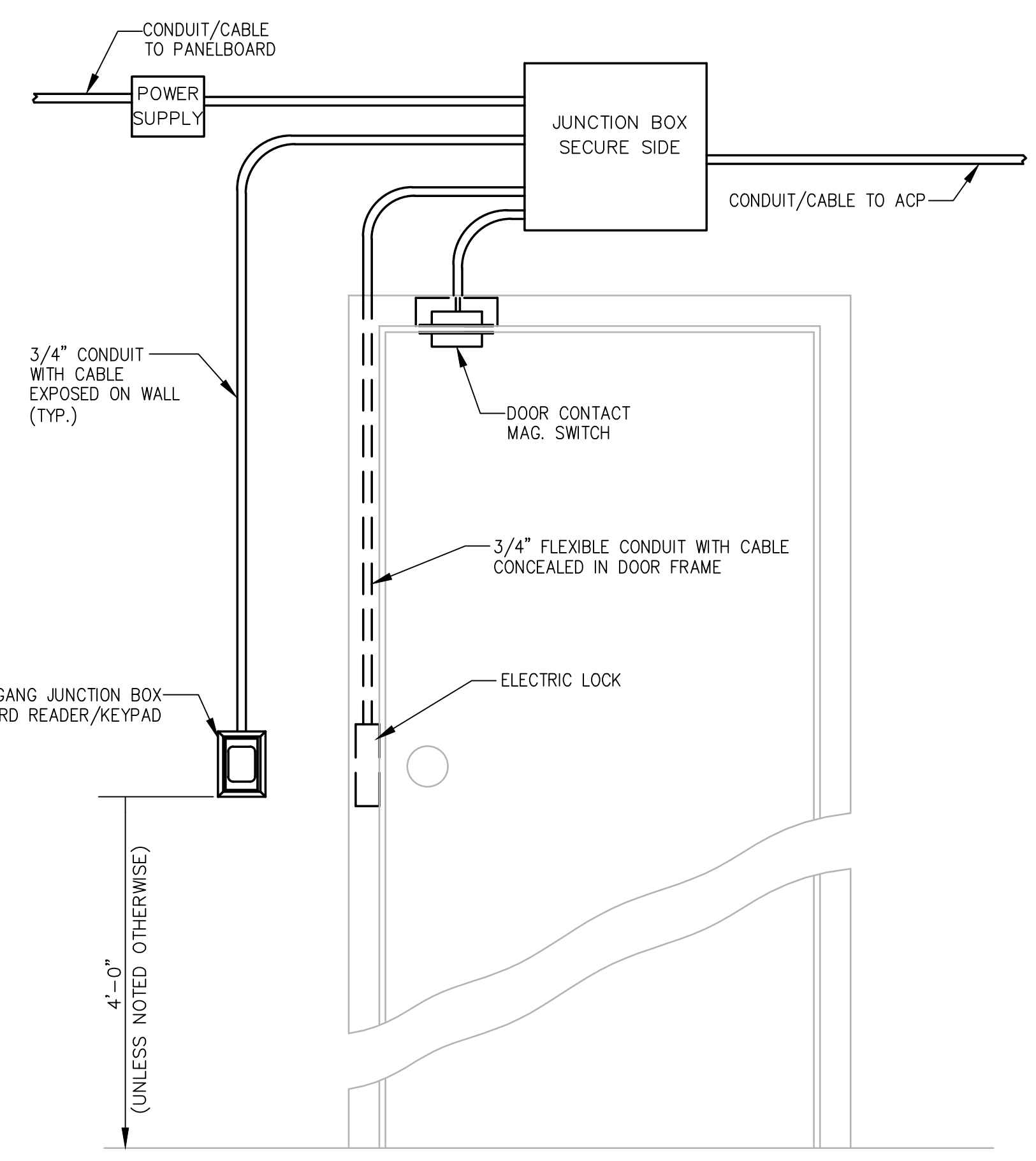
SUBMERSIBLE LEVEL TRANSDUCER IN WET WELL
NOT TO SCALE



FLOAT LEVEL SWITCH IN WET WELL
NOT TO SCALE

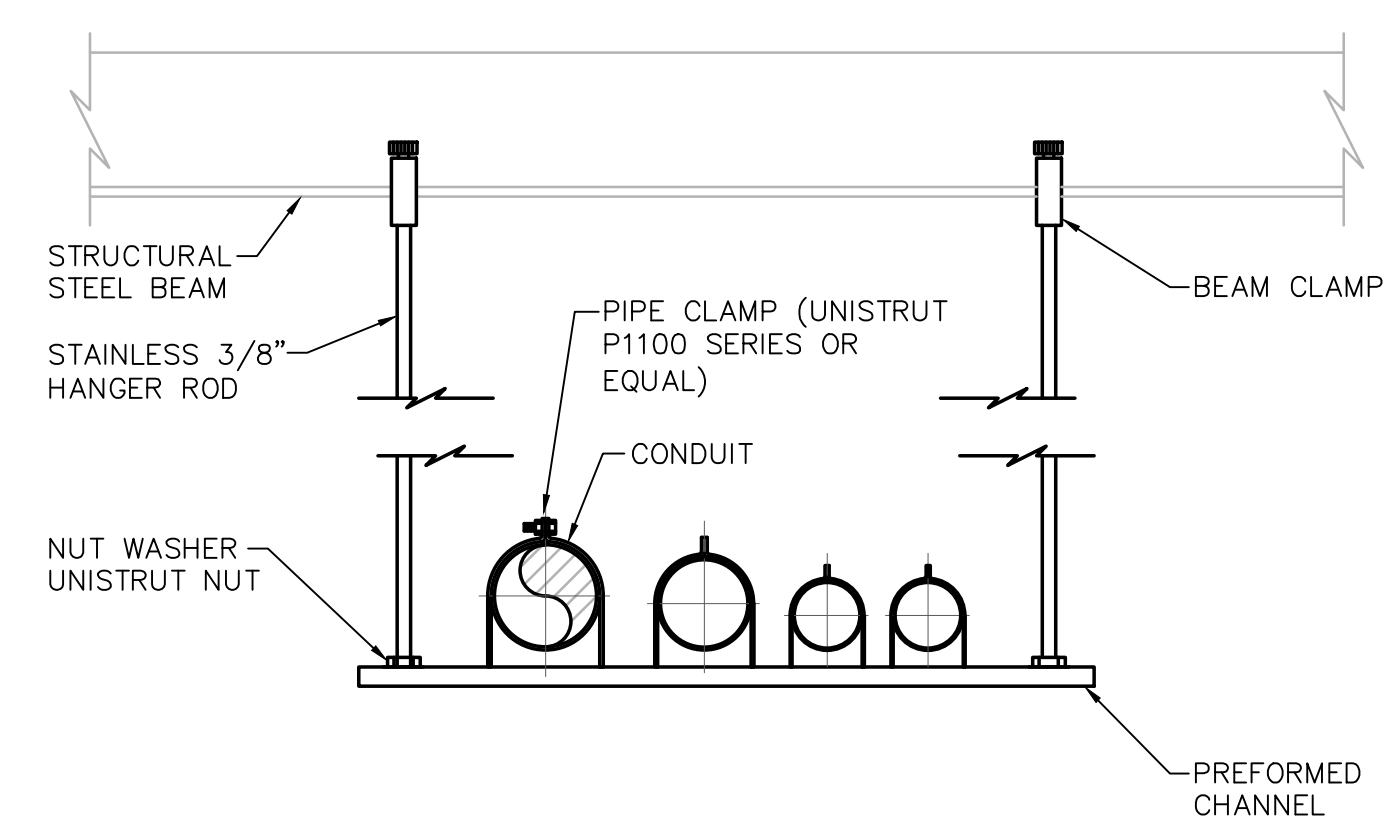


ROOFTOP LIGHT AND RECEPTACLE DETAIL
NOT TO SCALE

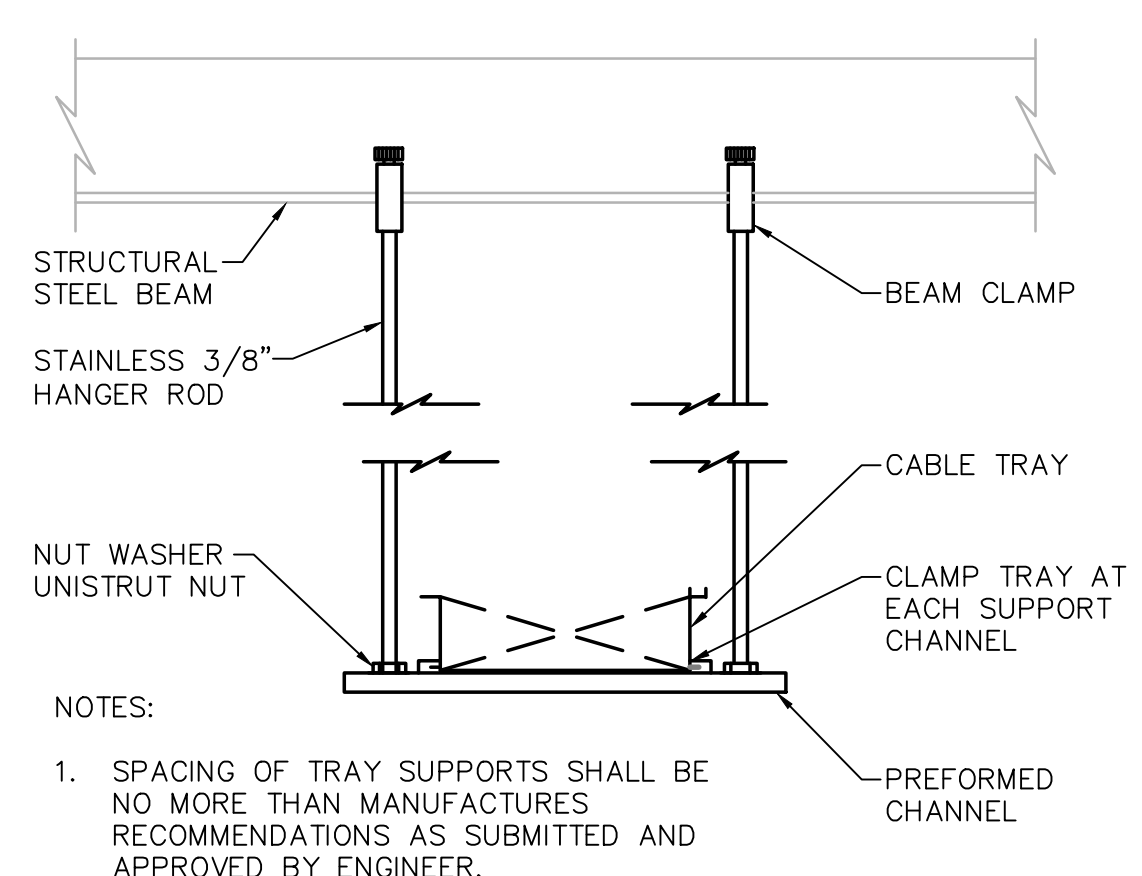


TYPICAL DOOR WITH ACCESS CONTROL
NOT TO SCALE

- NOTES:
1. REFER TO PLAN DRAWINGS FOR DEVICES REQUIRED AND THEIR APPROXIMATE LOCATIONS AT EACH DOOR

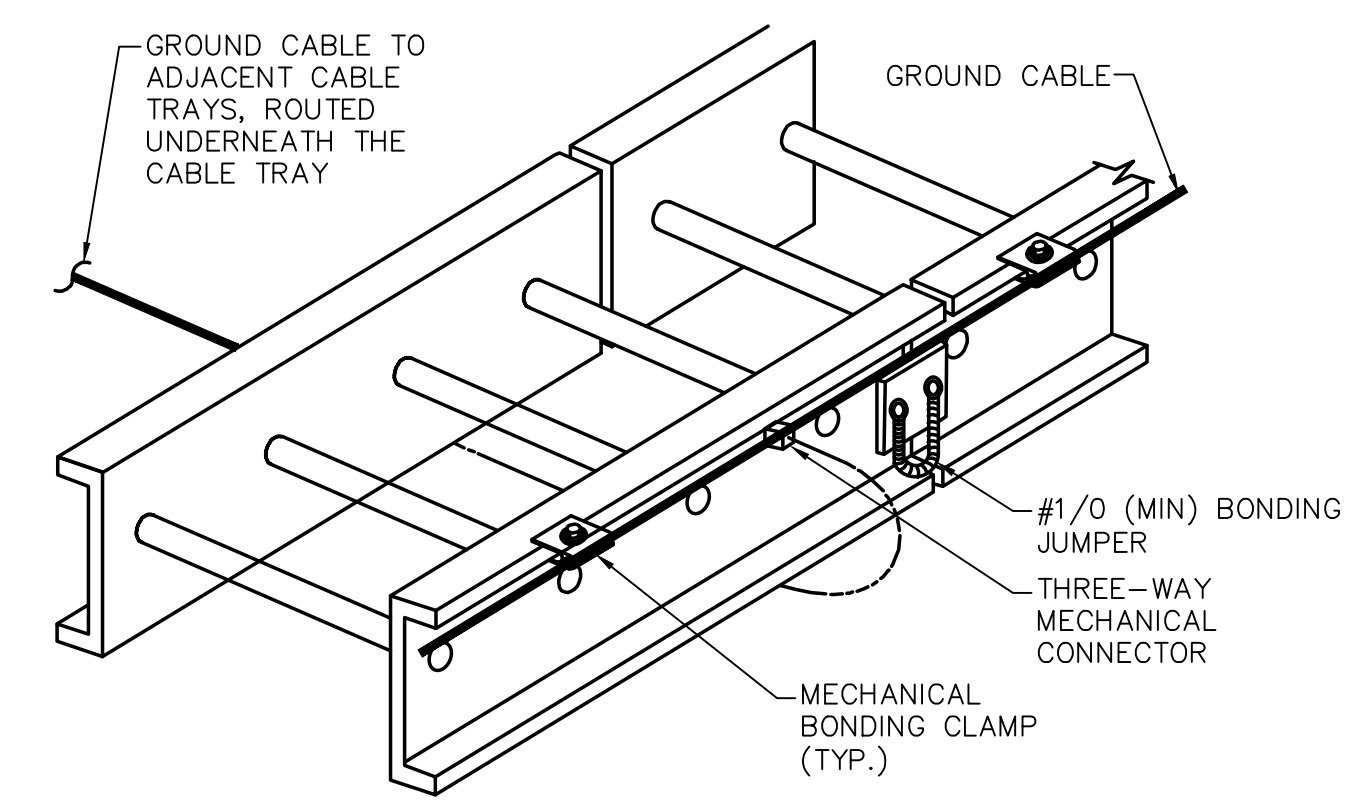


TYPICAL CABLE TRAY HANGER
NOT TO SCALE

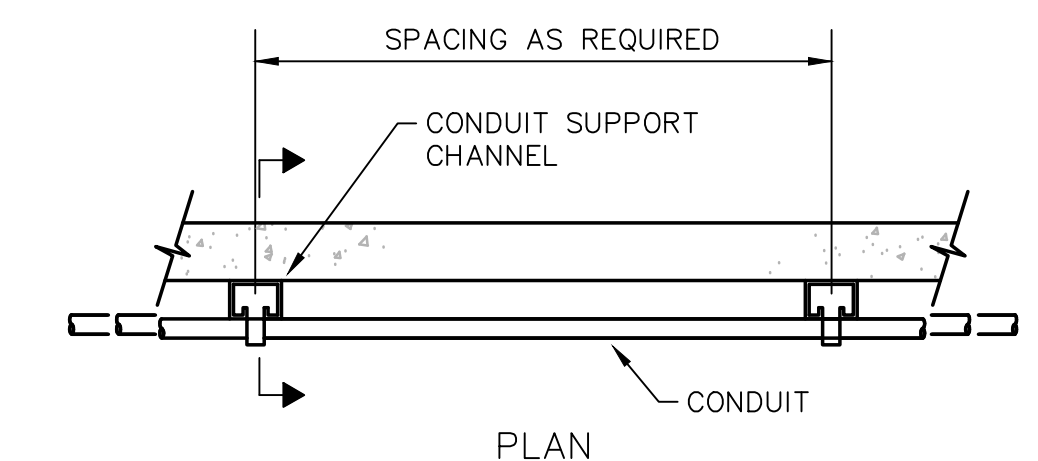


TYPICAL CABLE TRAY HANGER
NOT TO SCALE

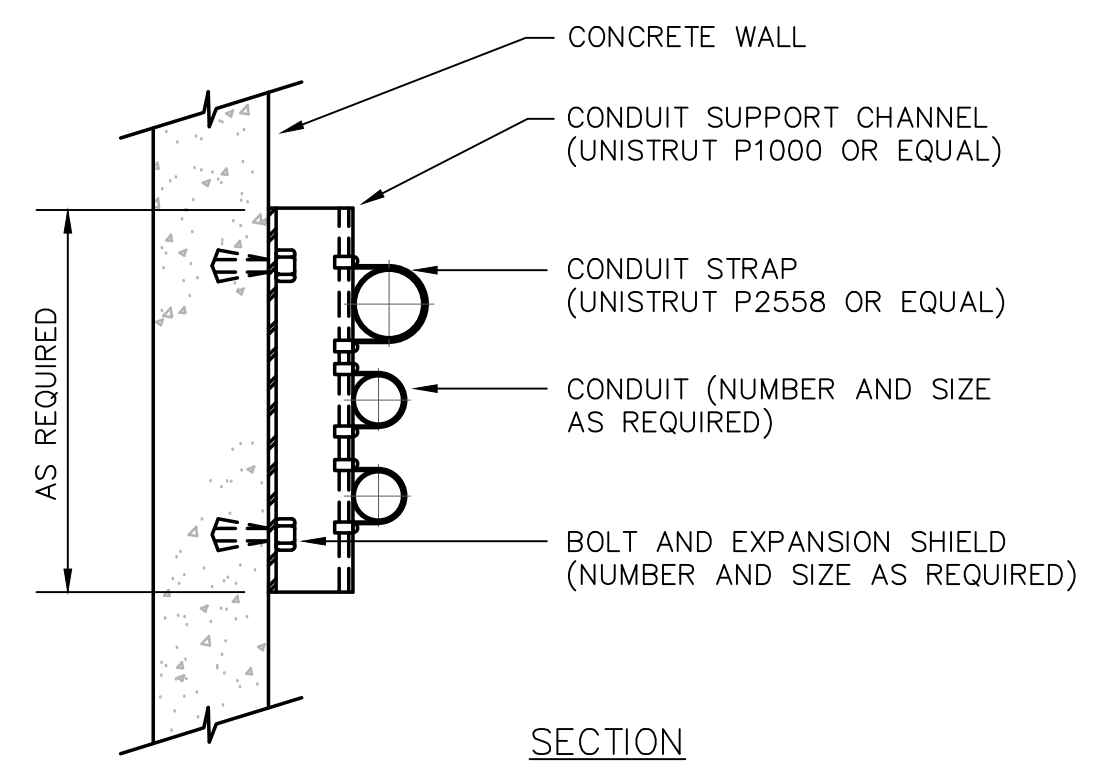
- NOTES:
1. SPACING OF TRAY SUPPORTS SHALL BE NO MORE THAN MANUFACTURERS RECOMMENDATIONS AS SUBMITTED AND APPROVED BY ENGINEER.



GROUNDING EACH CABLE TRAY SECTION
NOT TO SCALE

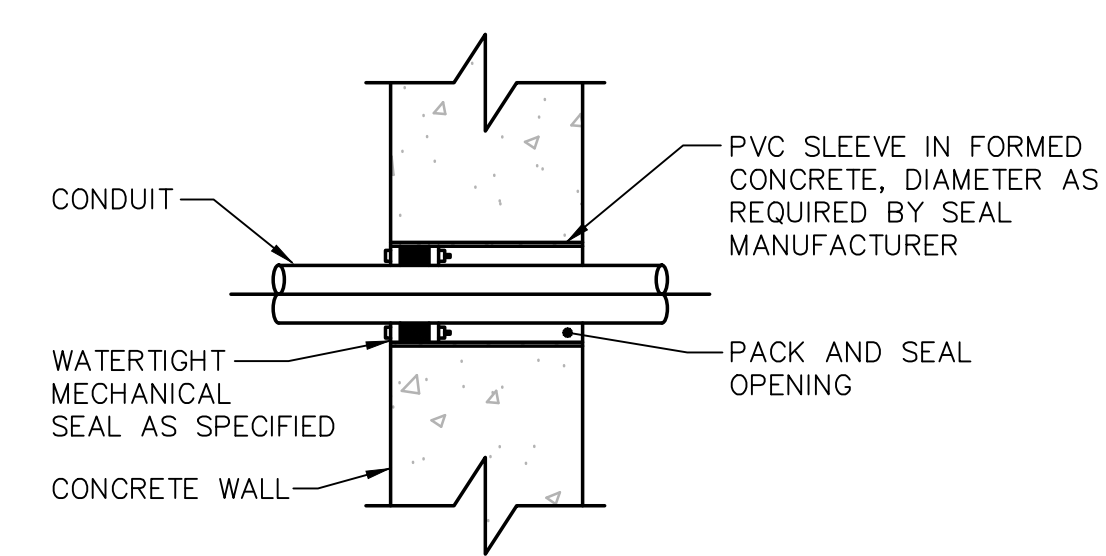


PLAN

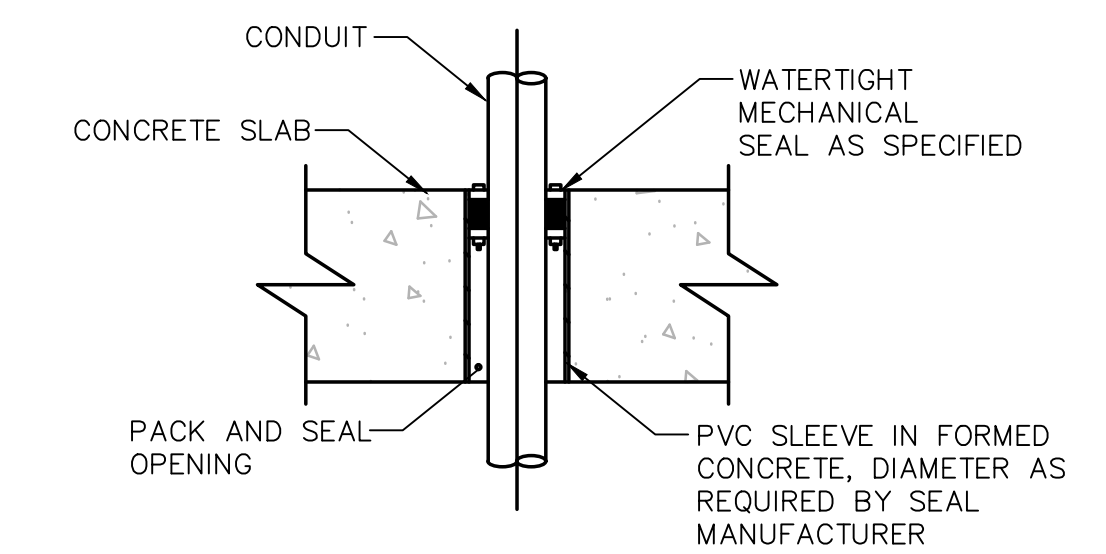


SECTION

TYPICAL CONDUIT WALL SUPPORT
NOT TO SCALE



CONDUIT PENETRATION THROUGH CONCRETE WALL
NOT TO SCALE



CONDUIT PENETRATION PASSING THROUGH CONCRETE SLAB
NOT TO SCALE

3/24/2022 7:27 AM - W:\YEAR - 2018\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\ELECTRICAL DEPARTMENT\19020.00 ELECTRICAL PLANS.DWG (BETA STB BIV STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:	RLB
DESIGNED BY:	MC
CHECKED BY:	MC

REGISTERED PROFESSIONAL
For Review Only

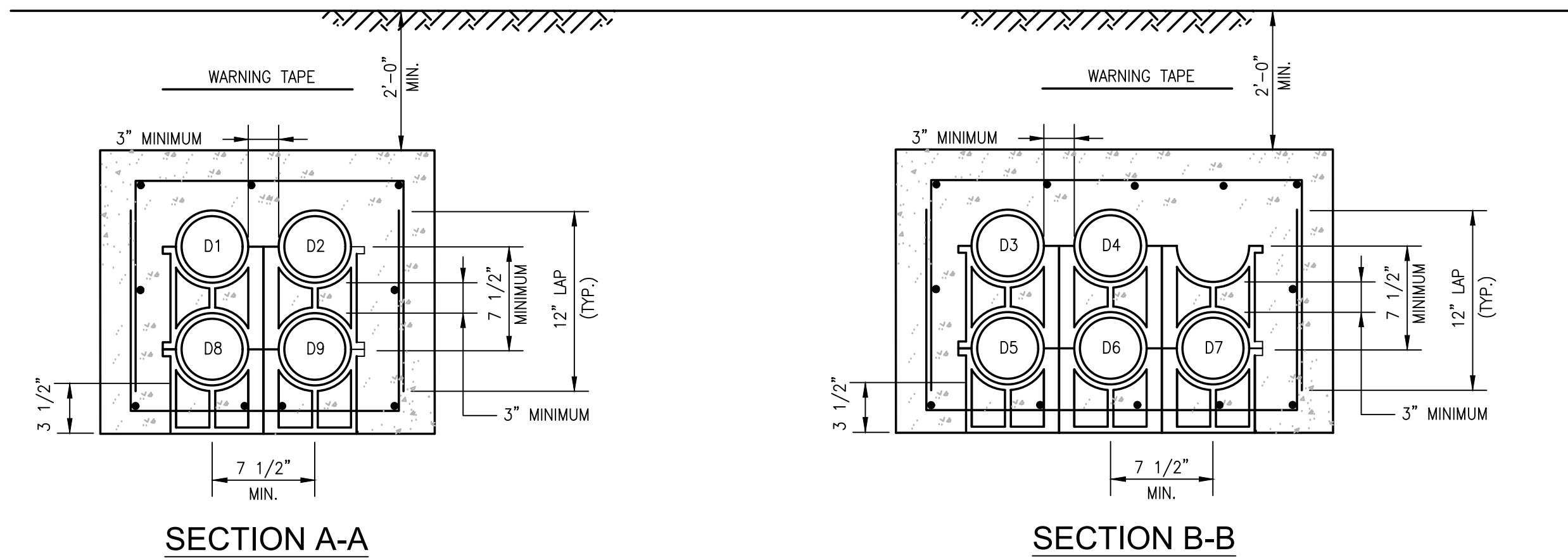


SCALE
AS SHOWN
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE
Worcester Road Sewer Pumping Station Replacement
ELECTRICAL DETAILS

BETA JOB NO. 7385
ISSUE DATE APRIL 2022
SHEET NO. E-11

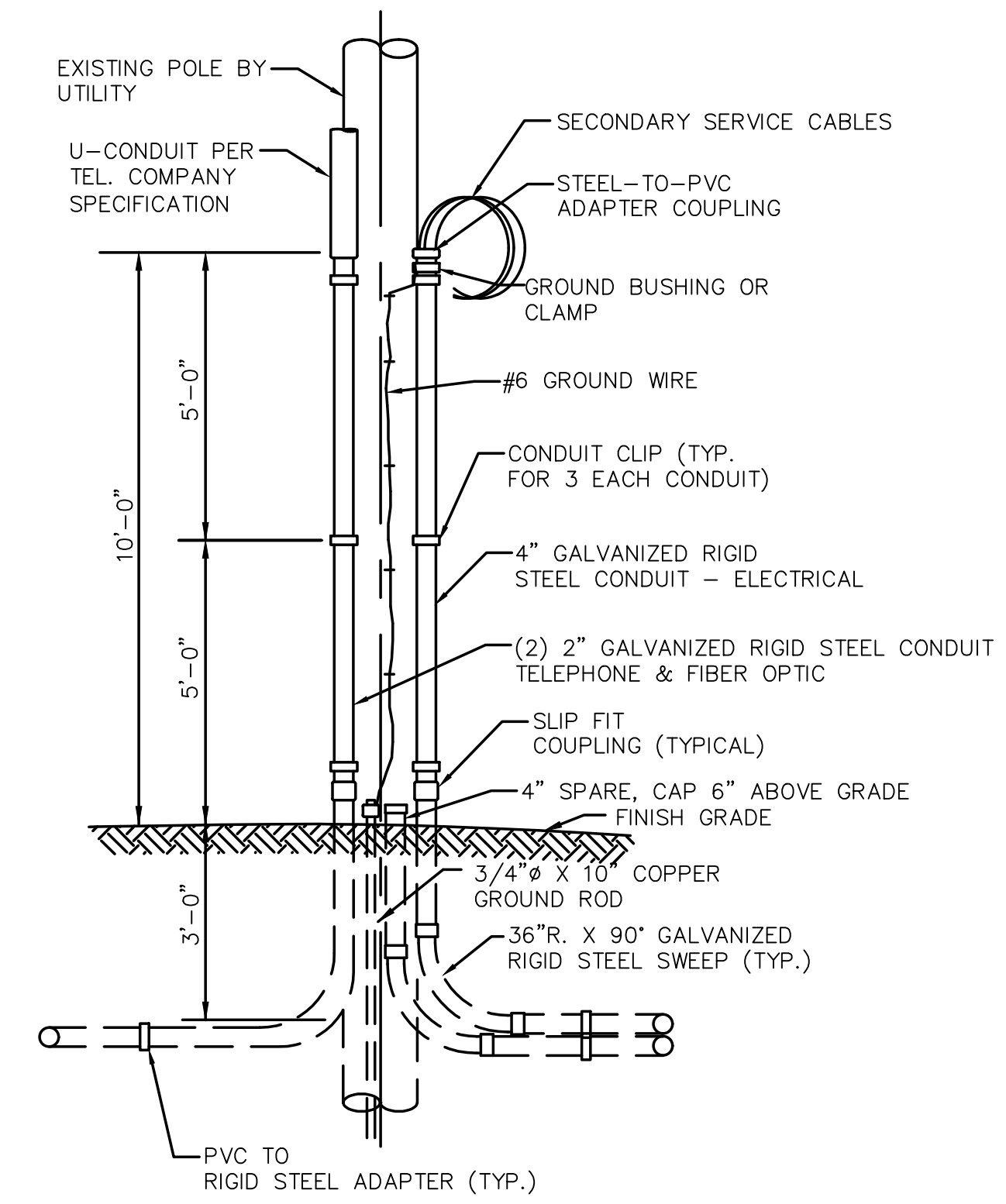
DUCT / CABLE SCHEDULE				
DUCT NO.	SIZE	CONDUCTORS	FROM	TO
D1	4"	(4) 600kcmil	UTILITY POLE	MCB
D2	4"	PULL STRING	UTILITY POLE	STUB UP AND CAP BELOW MCB
D3	4"	(4) 600kcmil, #2 GND	GENERATOR	GENERATOR DISCONNECT SWITCH
D4	1"	(6) #12, #12GND	LP-1	GENERATOR AUXILIARY SYSTEMS
D5	1"	(20) #14	GENERATOR	SCADA RTU CONTROL PANEL & SECURITY CONTROL PANEL
D6	1"	(6) #14	GENERATOR	ATS & EMERGENCY STOP
D7	1"	(1) CAT6 CABLE	GENERATOR	SCADA RTU CONTROL PANEL
D8	2"	FIBER OPTIC CABLE	UTILITY POLE	EQUIPMENT RACK
D9	2"	PULL STRING FOR TELE/COM	UTILITY POLE	TELE/COM BACKBOARD



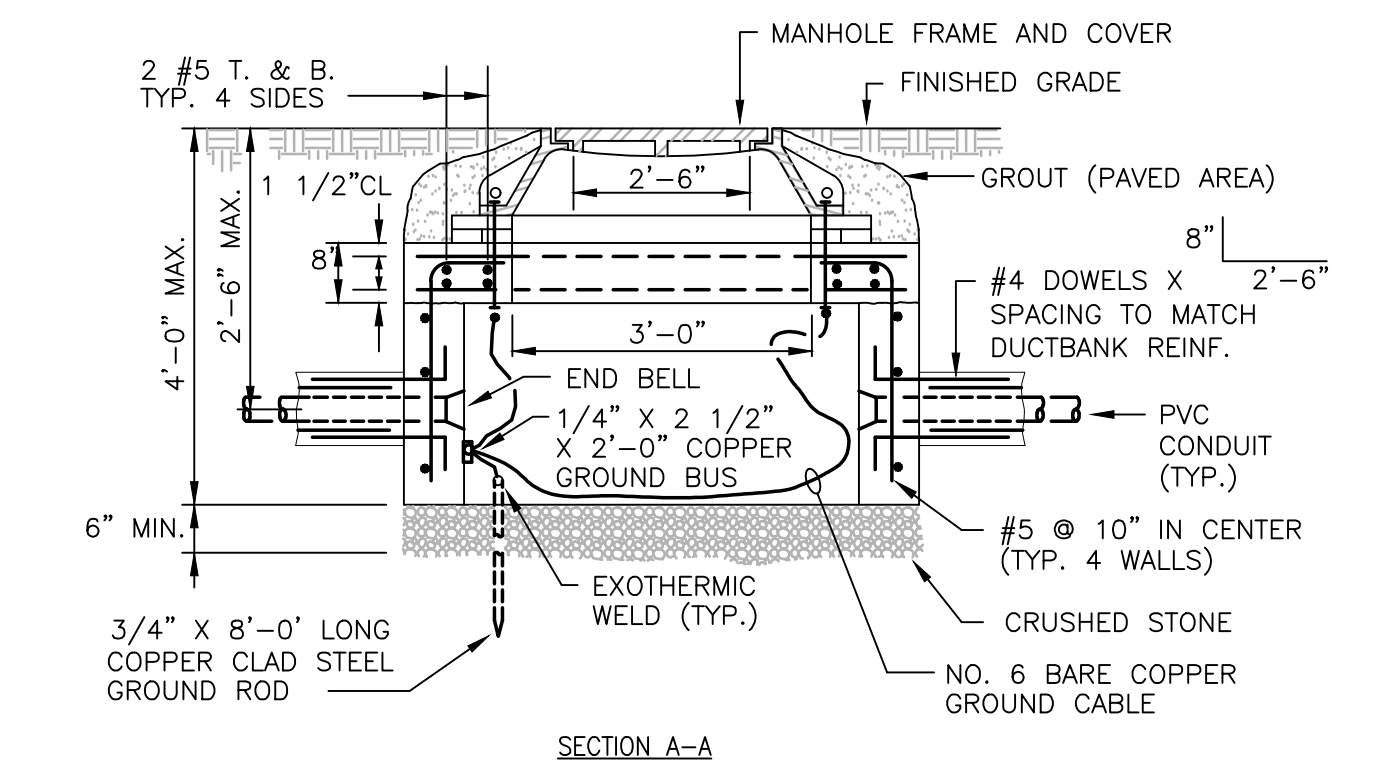
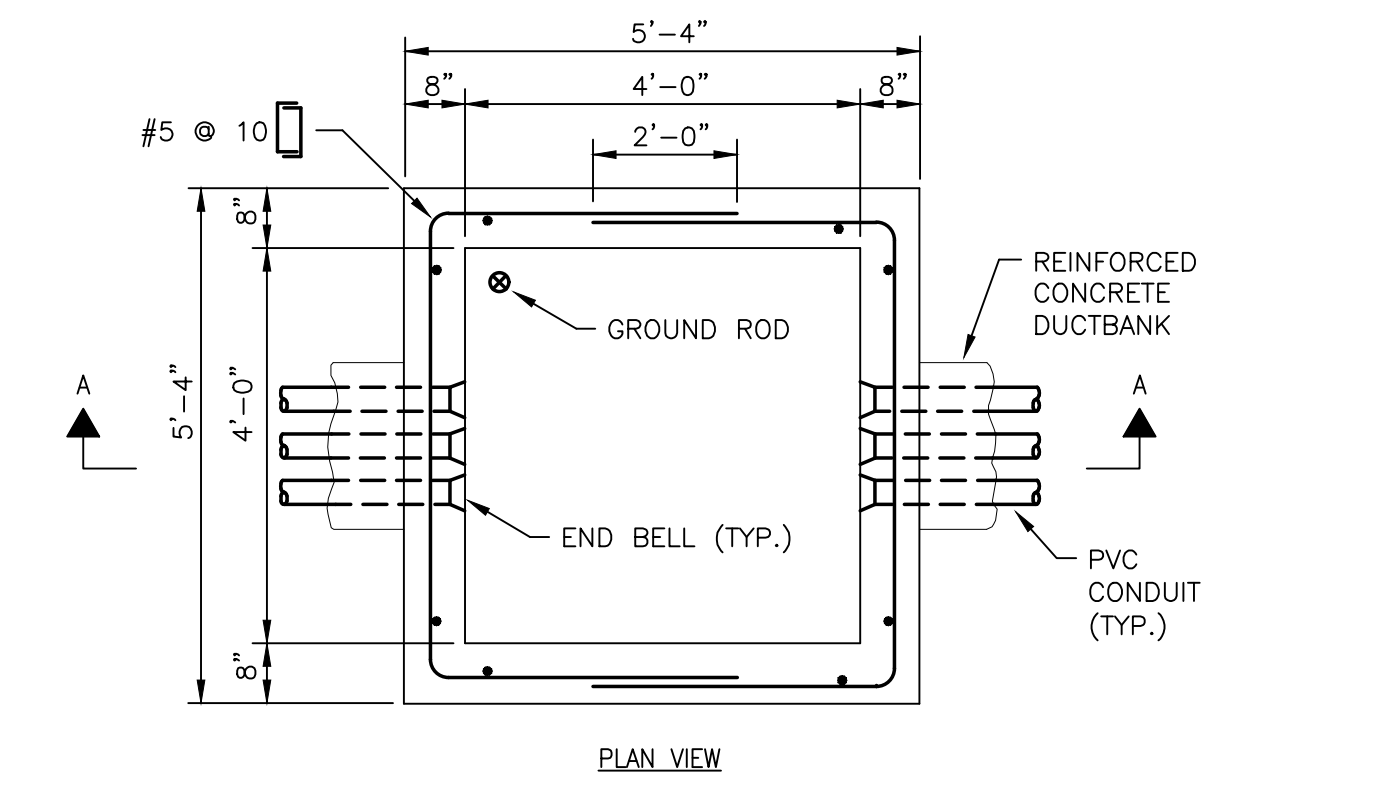
NOTES:

- BACKFILL DUCT BANK IN LAYERS AND MANUALLY TAMP OR "PUDDLE" CONCRETE FILL. PROVIDE RED DUCT BANK MARKER TAPES, READING "CAUTION - ELECTRICAL LINES BELOW", OVER ENTIRE LENGTH OF DUCTLINE. LOCATE TAPES 12 INCHES BELOW GRADE. PROVIDE A TAPE FOR EVERY 12 INCHES OF WIDTH OF DUCTLINE.

DUCTBANK SECTIONS
NO SCALE



UTILITY POLE SERVICE RISER DETAIL
NOT TO SCALE



NOTES:

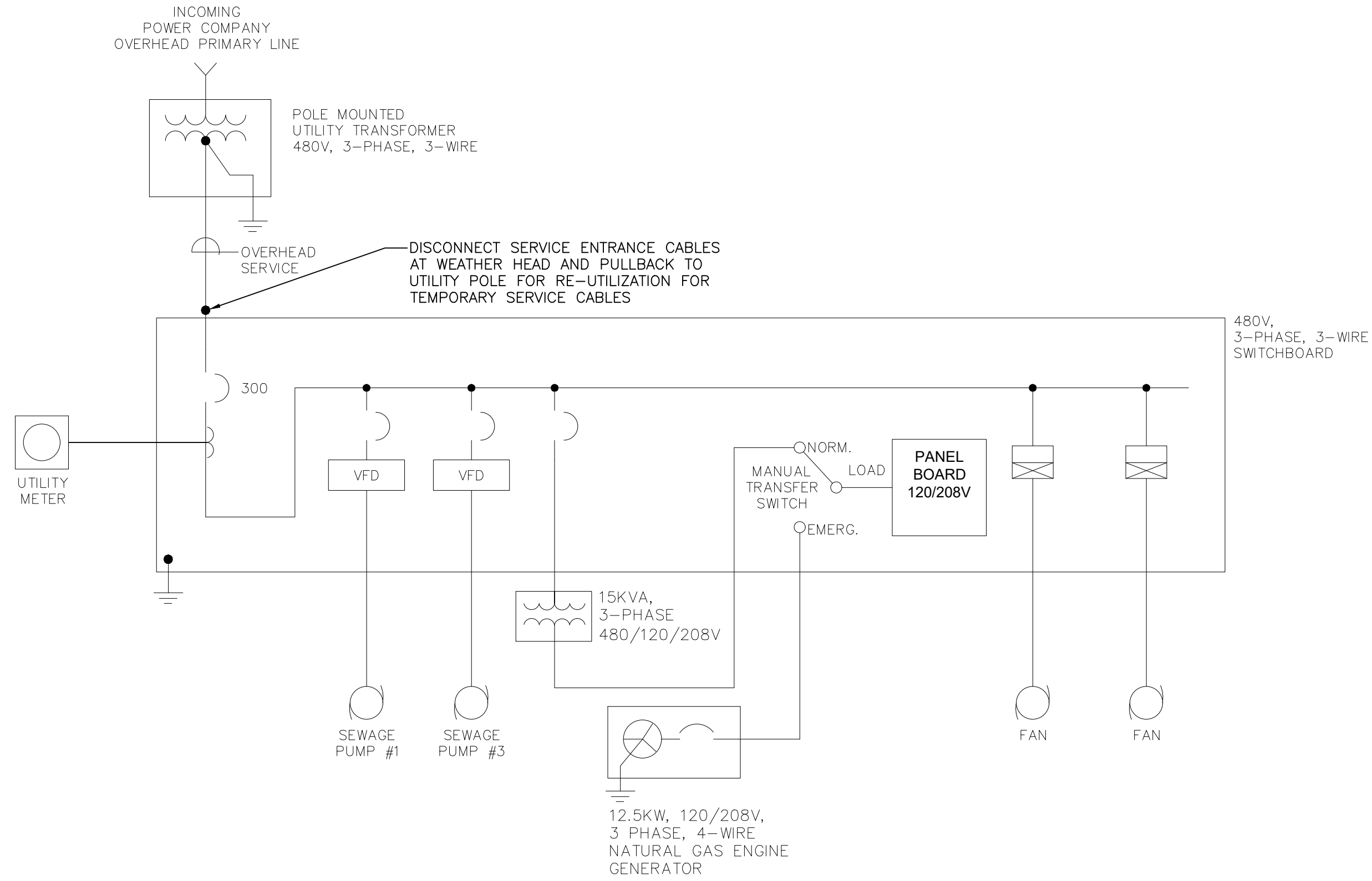
- CHIMNEY HEIGHT IS KEPT TO MINIMUM TO FACILITATE PLACING COMPLETED SPLICES IN HANDHOLE FROM ABOVE GRADE
- CONCRETE PER SPECIFICATIONS WITH MINIMUM STRENGTH OF 5,000 PSI AT 28 DAYS
- PROVIDE HANDHOLE FRAME, RING AND COVER.
- REFER TO DUCTBANK SECTIONS FOR THE REQUIRED NUMBER OF CONDUIT ENTRANCES. PROVIDE CONDUIT ENTRY SPACE ON NON-USED SIDES FOR A MINIMUM (8) 4" FUTURE CONDUITS.

UTILITY HANDHOLE DETAIL
NO SCALE

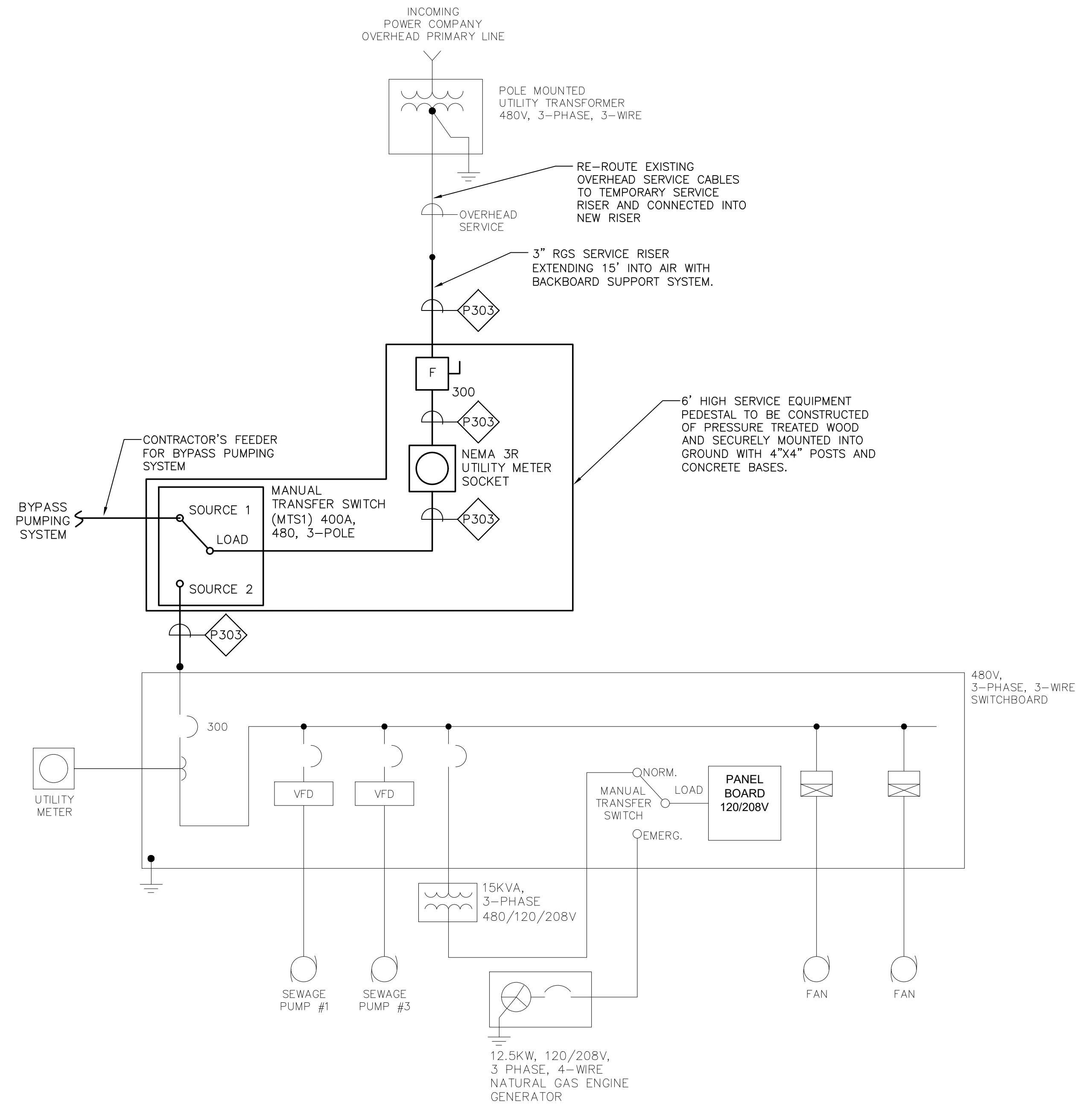
3/24/2022 7:27 AM - W:\YEAR-2018\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\ELECTRICAL DEPARTMENT\19020.00 ELECTRICAL PLANS.DWG (BETA STB BIV STB)

DRAWN BY: RLB				REGISTERED PROFESSIONAL		PREPARED BY: BETA		SUBCONSULTANT SAR ENGINEERING, INC.		SCALE AS SHOWN		TITLE Worcester Road Sewer Pumping Station Replacement		BETA JOB NO. 7385	
DESIGNED BY: MC				For Review Only		BETA www.BETA-inc.com		SAR ENGINEERING, INC. Mechanical/Electrical Engineers 150 Grossman Drive, Suite 309 Braintree, Massachusetts 02184 617-221-9220 www.sar.com		UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION		ELECTRICAL SITE DETAILS		ISSUE DATE: APRIL 2022	
CHECKED BY: MC														SHEET NO. E-12	
NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS											

3/24/2022 7:27 AM - W:\YEAR - 2018\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\ELECTRICAL DEPARTMENT\19020.00 ELECTRICAL PLANS.DWG (BETA STB.BW.STB)



TEMPORARY SERVICE ONE LINE DIAGRAM - DEMOLITION
NOT TO SCALE



TEMPORARY SERVICE ONE LINE DIAGRAM
NOT TO SCALE

TEMPORARY SERVICE NOTES

1. A TEMPORARY SERVICE SHALL BE PROVIDED TO THE TRANSFER OF THE EXISTING SERVICE BETWEEN THE EXISTING PUMP STATION AND THE BY PASS PUMP STATION AND SHALL REMAIN INTACT UNTIL THE NEW ELECTRICAL SERVICE IS ENERGIZED AND THE BY-PASS PUMPING SYSTEM IS NO LONGER REQUIRED. THE TEMPORARY SERVICE ONE LINE DIAGRAMS ONLY INDICATE A POSSIBLY METHOD OF ACHIEVING TEMPORARY SERVICE POWER, THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A FULL RELIABLE TEMPORARY SERVICE POWER SYSTEM AND MAY UTILIZE OTHER METHODS TO ACHIEVE THIS.
2. THE WORK SHALL BE DONE ACCORDANCE WITH NEC ARTICLE 590, INSTALLED IN A NEAT MANNER AND WORKMAN LIKE MANNER.
3. THE USE OF PVC CONDUIT, AL CABLE WHERE ALLOWED BY NEC SHALL BE ACCEPTABLE FOR TEMPORARY WORK. AL CABLE AND ASSOCIATED CONDUIT SHALL BE SIZED TO MEET THE AMP RATING OF THE INDICATED COPPER CONDUCTORS.
4. WORK SHALL BE PROPERLY FASTENED TO STRUCTURE EXTERIOR SURFACES AND PROPERLY PROTECTED FROM VEHICLE DAMAGE WHERE RUN BETWEEN STRUCTURES BY MEANS OF OVERHEAD, UNDERGROUND, VEHICLE RAMP SYSTEMS.

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: RLB
DESIGNED BY: MC
CHECKED BY: MC

REGISTERED PROFESSIONAL
For Review Only

PREPARED BY
BETA
www.BETA-Inc.com

SUBCONSULTANT
SAR ENGINEERING, INC.
Mechanical/Electrical Engineers
150 Grossman Drive, Suite 309
Braintree, Massachusetts 02184
617-221-9220
web: www.sar.com

SCALE
AS SHOWN
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE
Worcester Road Sewer Pumping Station Replacement
ELECTRICAL TEMPORARY SERVICE

BETA JOB NO. 7385
ISSUE DATE APRIL 2022
SHEET NO. E-13

GENERAL NOTES

- HVAC WORK IS INDICATED DIAGRAMMATICALLY. EXACT LOCATIONS OF ALL COMPONENTS ARE TO BE DETERMINED IN THE FIELD AND BY THE ACTUAL BUILDING CONDITIONS. EXISTING DUCTS, PIPING OR EQUIPMENT INTERFERING WITH OTHER INSTALLATIONS SHALL BE RELOCATED AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER. EXACT LOCATIONS MUST HAVE THE APPROVAL OF THE ENGINEER.
- ALL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES BEFORE ANY INSTALLATION IS MADE.
- ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH STATE CODES, MANUFACTURER'S APPROVED PUBLISHED LITERATURE, AND AUTHORITIES HAVING JURISDICTION.
- INSTALLATION OF EQUIPMENT SHALL PERMIT ACCESSIBILITY FOR SERVICE AND/OR REPLACEMENT.
- ALL CEILING MOUNTED EQUIPMENT SHALL BE INSTALLED IN SUCH A WAY THAT LIGHTS, PIPING, AND DUCTWORK DO NOT BLOCK ACCESS TO UNITS AND RELATED ACCESSORIES.
- CONTRACTOR SHALL COORDINATE ALL WALL, CEILING, FLOOR, ROOF AND BEAM PENETRATIONS.
- ALL DUCT SIZES SHOWN ARE NET INSIDE CLEAR DIMENSIONS.
- PROVIDE VOLUME DAMPERS AT EVERY MAIN BRANCH TAKE-OFF AND AS INDICATED AND IN SUCH OTHER LOCATIONS WHERE REQUIRED TO PROPERLY BALANCE THE SYSTEM.
- PROVIDE INSTRUMENT TEST HOLES WITH CAPS IN AIR DISTRIBUTION SYSTEMS AS REQUIRED TO BALANCE SYSTEM.
- ALL OPEN ENDED DUCTS IN THE CEILING PLENUM SHALL BE UNOBSTRUCTED FOR A MINIMUM DISTANCE OF 24" FROM THE OPENING TO ALLOW FREE AIR FLOW AND SHALL HAVE 3/4" WIRE MESH SCREENING.
- INSTALL ALL PIPING BELOW DUCTWORK UNLESS CLEARANCE CONDITION REQUIRES PIPING TO BE ABOVE.
- EXACT ELEVATION FOR SIDE WALL DIFFUSERS, REGISTERS AND GRILLES SHALL BE APPROVED BY THE ENGINEER BEFORE INSTALLATION.
- ALL EXPOSED EQUIPMENT (REGISTERS, UNIT HEATERS, ETC.) SHALL HAVE COLORS SELECTED BY THE ENGINEER, UNLESS NOTED OTHERWISE.
- BLANK OFF AND INSULATE ALL UNUSED LOUVER AREA.
- ALL REGISTERS, GRILLES AND DIFFUSERS LOCATED IN WALLS NEAR FLOOR SHALL BE HEAVY-DUTY TYPE DESIGNED TO WITHSTAND RUGGED IMPACT. REFER TO SCHEDULE. THE SECTION OF DUCTWORK BEHIND THE AIR DEVICE SHALL BE PAINTED FLAT BLACK.
- EXACT LOCATION OF THERMOSTAT TO BE COORDINATED WITH FINAL LOCATION OF WALL MOUNTED ARCHITECTURAL AND ELECTRICAL EQUIPMENT.
- ALL MAIN BRANCH PIPES FROM RISERS SHALL HAVE ISOLATION VALVES NEAR SHAFTS. PROVIDE SHUT-OFF VALVES AT EACH SUPPLY BRANCH AND COMBINATION BALANCING SHUT-OFF VALVE AT EACH RETURN BRANCH.
- ROOF OPENINGS SHALL BE SIZED FROM APPROVED SHOP DRAWINGS.
- ALL FLOOR MOUNTED MECHANICAL EQUIPMENT, BOILERS, PUMPS, AIR HANDLERS, ETC. SHALL HAVE A CONCRETE PAD 4" HIGH AND 6" BEYOND EQUIPMENT FOOT PRINT ON ALL FOUR SIDES. CONCRETE PADS SHALL BE SIZED FROM APPROVED SHOP DRAWINGS.
- ALL DAMPER MOTORS SHALL BE 120 VOLT.

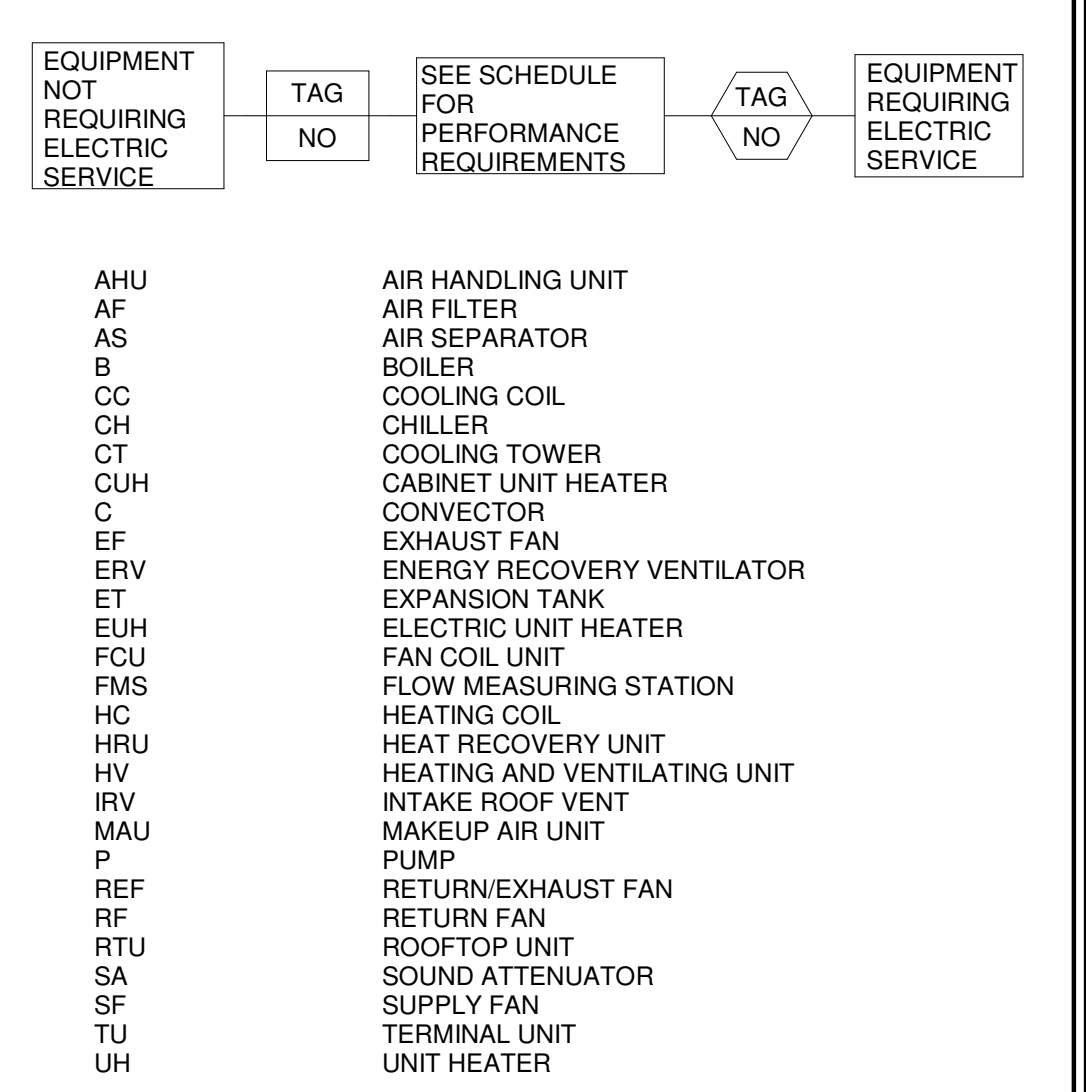
SEQUENCE OF OPERATIONS

- ERV-1: SEE SPECIFICATIONS
- ELECTRICAL UNIT HEATERS: EUH FAN AND HEATING COIL SHALL CYCLE FROM WALL MOUNTED THERMOSTAT TO MAINTAIN SPACE TEMPERATURE SETPOINT.

ABBREVIATIONS

ACD	AUTOMATIC CONTROL DAMPER
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHAP	AS HIGH AS POSSIBLE ACCESS PANEL
AP	ARCHITECT
ARCH	ARCHITECT
ATC	AUTOMATIC TEMPERATURE CONTROL
BDD	BACKDRAFT DAMPER
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
BOD	BOTTOM OF DUCT
CAP	CAPACITY
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CO	CLEANOUT
CONT	CONTROLLER
CP	CUT AND CAP
DIA	DIAMETER
DB	DRY BULB TEMPERATURE
DC	DUST COLLECTOR
DDC	DIRECT DIGITAL CONTROL
DN	DOWN
DWG	DRAWING
DX	DIRECT EXPANSION COOLING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EBB	ELECTRIC BASEBOARD RADIATION
ECH	ELECTRIC CABINET HEATER
ECON	AIR-SIDE ECONOMIZER
EF	EXHAUST FAN
EFF	EFFICIENCY
ELV	ELEVATION
ERV	EXHAUST REGISTER
ESP	EXTERNAL STATIC PRESSURE
ERV	ENERGY RECOVERY VENTILATOR
ETR	EXISTING TO REMAIN
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
FA	FREE AREA
FD	FIRE DAMPER
FLA	FULL LOAD AMPS
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FPI	FINS PER INCH
FPM	FEET PER MINUTE
FT	FEET
FTR	FINNED TUBE RADIATION
GAL	GALLONS
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GF	GLYCOL FEED
GPM	GALLONS PER MINUTE
HP	HORSEPOWER
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HGRH	HOT GAS REHEAT
HW	HOT WATER
HZ	HERTZ
IN	INCHES
KW	KILOWATTS
LAT	LEAVING AIR TEMPERATURE
LD	LINEAR DIFFUSER
LF	LINEAR FEET
LWT	LEAVING WATER TEMPERATURE
MBH	THOUSANDS OF BTUS PER HOUR
MCC	MOTOR CONTROL CENTER
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAT	OUTSIDE AIR TEMPERATURE
OBD	OPPOSED BLADE DAMPER
OD	OUTSIDE DIAMETER
OED	OPEN ENDED DUCT
POS	PROVIDED UNDER OTHER SECTIONS
PSI	POUNDS PER SQUARE INCH (GAUGE)
PD	PRESSURE DROP
PRV	PRESSURE REDUCING VALVE
R	RETURN
RA	RETURN AIR
RF	RETURN/EXHAUST FAN
RG	RETURN GRILLE
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
RR	RETURN REGISTER
S	SUPPLY
SA	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SF	SQUARE FEET, SUPPLY FAN
SP	STATIC PRESSURE
SR	SUPPLY REGISTER
SS	STAINLESS STEEL
STL	STEEL
TYTP	TYPICAL
UC	UNDERCUT DOOR
V	VOLTS
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
W	WITH
W/O	WITHOUT
WB	WET BULB TEMPERATURE
WG	WATER GAUGE
WMS	WIRE MESH SCREEN

EQUIPMENT TAG SYMBOLS & ABBREVIATIONS



AHU	AIR HANDLING UNIT
AF	AIR FILTER
AS	AIR SEPARATOR
ET	EXPANSION TANK
BOILER	BOILER
CC	COOLING COIL
CH	CHILLER
CT	COOLING TOWER
CUH	CABINET UNIT HEATER
C	CONVECTOR
EF	EXHAUST FAN
ERV	ENERGY RECOVERY VENTILATOR
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
FCU	FAN COIL UNIT
FMS	FLOW MEASURING STATION
HC	HEATING COIL
HFRU	HEAT RECOVERY UNIT
HV	HEATING AND VENTILATING UNIT
IRV	INTAKE ROOF VENT
MAU	MAKEUP AIR UNIT
P	PUMP
REF	RETURN/EXHAUST FAN
RF	RETURN FAN
RTU	ROOFTOP UNIT
SA	SOUND ATTENUATOR
SF	SUPPLY FAN
TU	TERMINAL UNIT
UH	UNIT HEATER

DUCTWORK LEGEND/SYMBOLS

DOUBLE LINE	DESCRIPTION
	SUPPLY AIR FLOW
	OUTSIDE AIR FLOW
	RETURN/EXHAUST AIR FLOW
	SUPPLY/OUTSIDE AIR FLOW
	RETURN AIR FLOW
	EXHAUST AIR FLOW
	RECTANGULAR SUPPLY DUCT ELBOW (UP & DN)
	RECTANGULAR RETURN DUCT ELBOW (UP & DN)
	RECTANGULAR EXHAUST DUCT ELBOW (UP & DN)
	ROUND SUPPLY DUCT ELBOW (UP & DN)
	ROUND RETURN DUCT ELBOW (UP & DN)
	ROUND EXHAUST DUCT ELBOW (UP & DN)
	12"x10" DENOTES RECTANGULAR DUCT SIZE IN INCHES (DIMENSIONS INSIDE CLEAR)
	10"Ø DENOTES ROUND DUCT SIZE IN INCHES (DIMENSIONS INSIDE CLEAR)
	SUPPLY AIR TERMINALS CEILING OR DUCT MOUNTED (SQUARE, RECTANGULAR, CIRCULAR & SIDEWALL W/ AIR VOLUME EXTRACTOR) CFM, SIZE & TYPE AS NOTED.
	RETURN AIR TERMINAL CFM, SIZE & TYPE AS NOTED
	EXHAUST AIR TERMINAL CFM, SIZE & TYPE AS NOTED
	SUPPLY GRILLE W/ INSIDE COLLAR
	DUCT RISING IN DIRECTION OF ARROW
	TRANSITION DUCT CONCENTRIC & ECCENTRIC
	DUCT ACCESS DOOR
	FLEXIBLE CONNECTION
	FLEXIBLE DUCT
	HUMIDIFIER - DUCT MOUNTED
	FIRE DAMPER W / ACCESS DOOR
	SMOKE DAMPER W / ACCESS DOOR

DUCTWORK LEGEND/SYMBOLS

DOUBLE LINE	DESCRIPTION
	COMBINATION FIRE/SMOKE DAMPER W / ACCESS DOOR
	MANUAL VOLUME DAMPER
	MOTOR OPERATED DAMPER
	DUCT MOUNTED SMOKE DETECTOR
	SQUARE VANED ELBOW
	RADIUS TYPE ELBOW WITH OR WITHOUT VANES
	DUCT SPLIT WITH VANED ELBOW
	STRAIGHT TEE
	CONICAL TEE
	45° TEE
	DOOR UNDERCUT - SQUARE FEET SIZE AS PER PLANS
	DOOR LOUVER - SQUARE FEET SIZE AS PER PLANS
	HORIZONTAL AIR DELIVERY UNIT HEATER
	VERTICAL AIR DELIVERY UNIT HEATER
	THERMOSTAT
	OCCUPIED / UNOCCUPIED SWITCH
	RISER UP
	RISER DOWN
	ELBOW - 90°
	ELBOW - 45°
	LATERAL CONNECTION
	TEE CONNECTION
	SECTION OR DETAIL IDENTIFICATION

NOTE- NOT ALL SYMBOLS APPEAR ON DRAWINGS

P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWG\601-REV\IT\FAMILIES\TITLEBLOCKS\KDC_Arch D 24x36 Vertical Title - BETA

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:	REGISTERED PROFESSIONAL	PREPARED BY
RLB		
DESIGNED BY:		
RLB		
CHECKED BY:		
RHB		

For Review Only

www.BETA-Inc.com

SUBCONSULTANT

Mechanical/Electrical Engineers
150 Grossman Drive, Suite 309
Braintree, MA 02184
617-221-9220

SCALE

N.T.S.

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

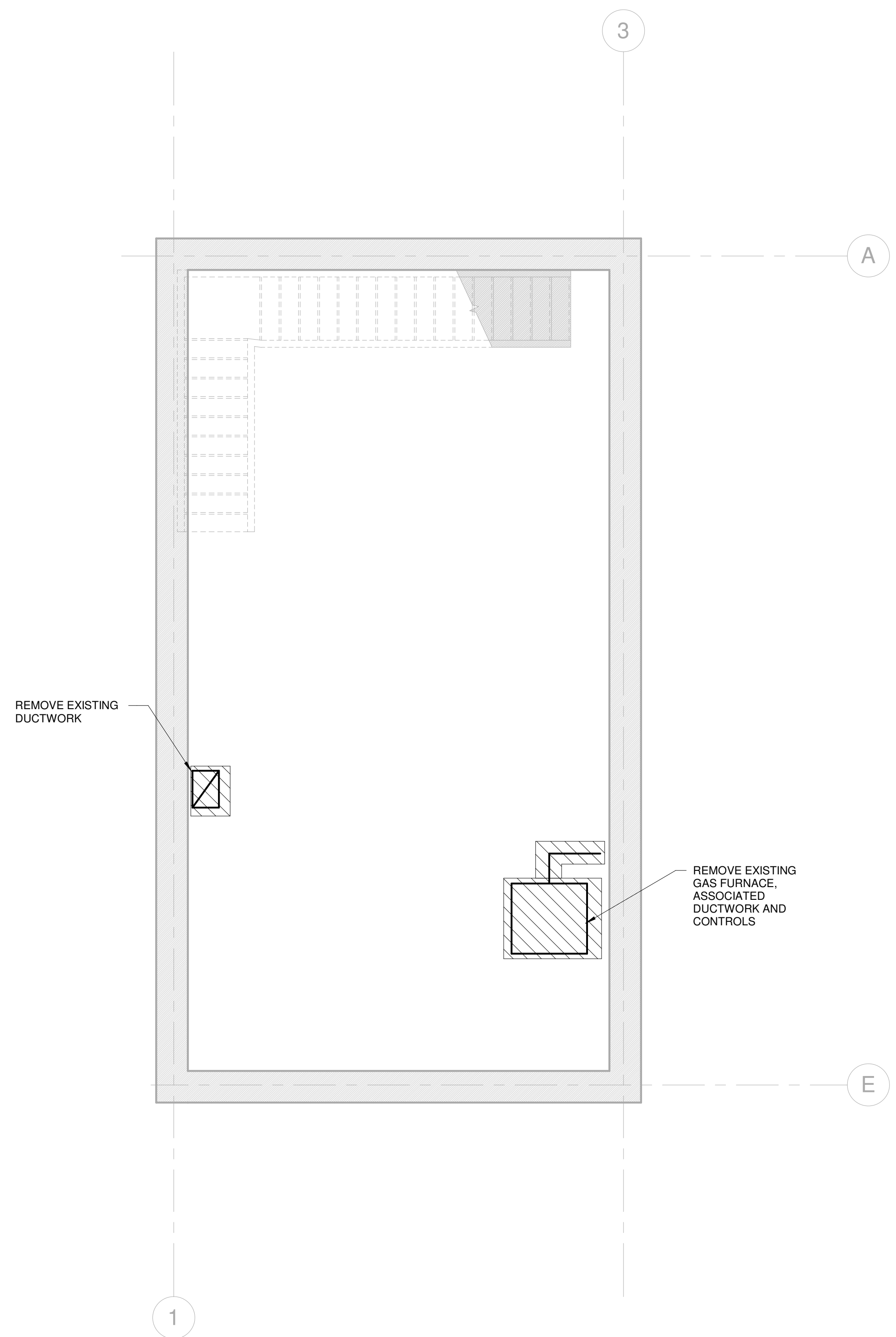
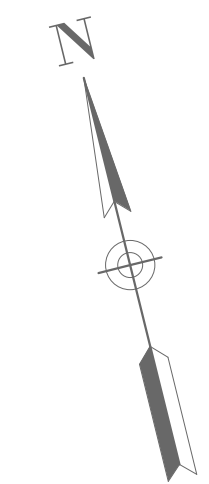
TITLE

Worcester Road Sewer Pumping Station Replacement

HVAC LEGEND AND GENERAL NOTES

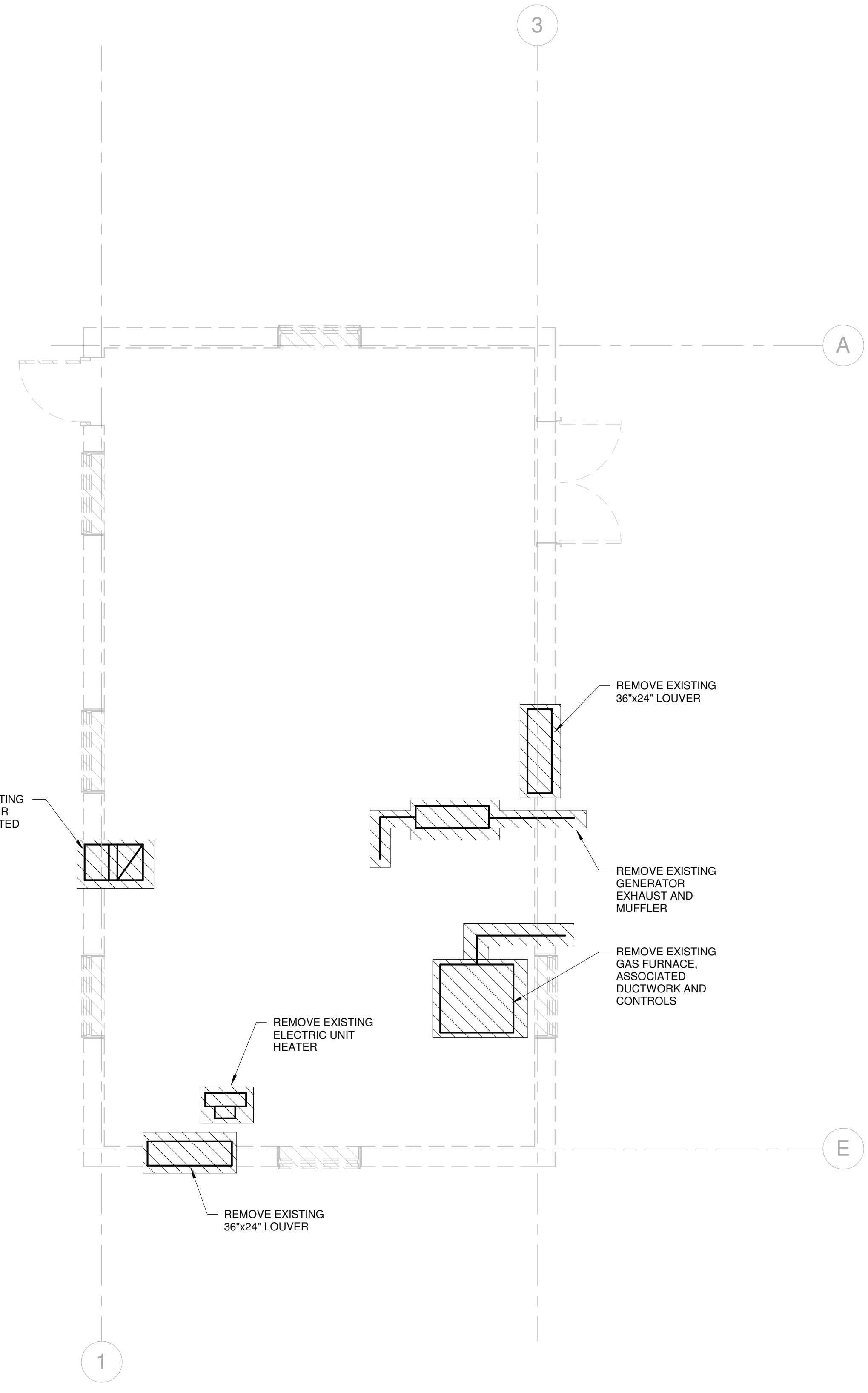
DSK JOB NO.	20030.00
ISSUE DATE	APRIL 2022
SHEET NO.	H-1

P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWG\601-REV\TITLEBLOCKS\KDC_Arch D 24x36 Vertical Title - BETA



LOWER LEVEL - HVAC PLAN - DEMOLITION

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



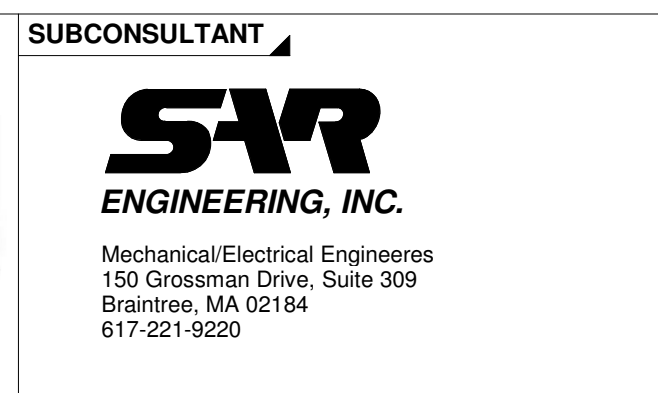
UPPER LEVEL - HVAC PLAN - DEMOLITION

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

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
RLB
DESIGNED BY:
RLB
CHECKED BY:
RHB

REGISTERED PROFESSIONAL
For Review Only

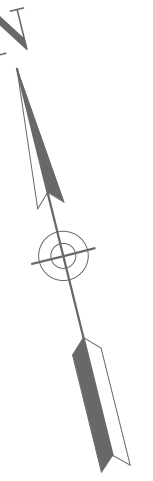
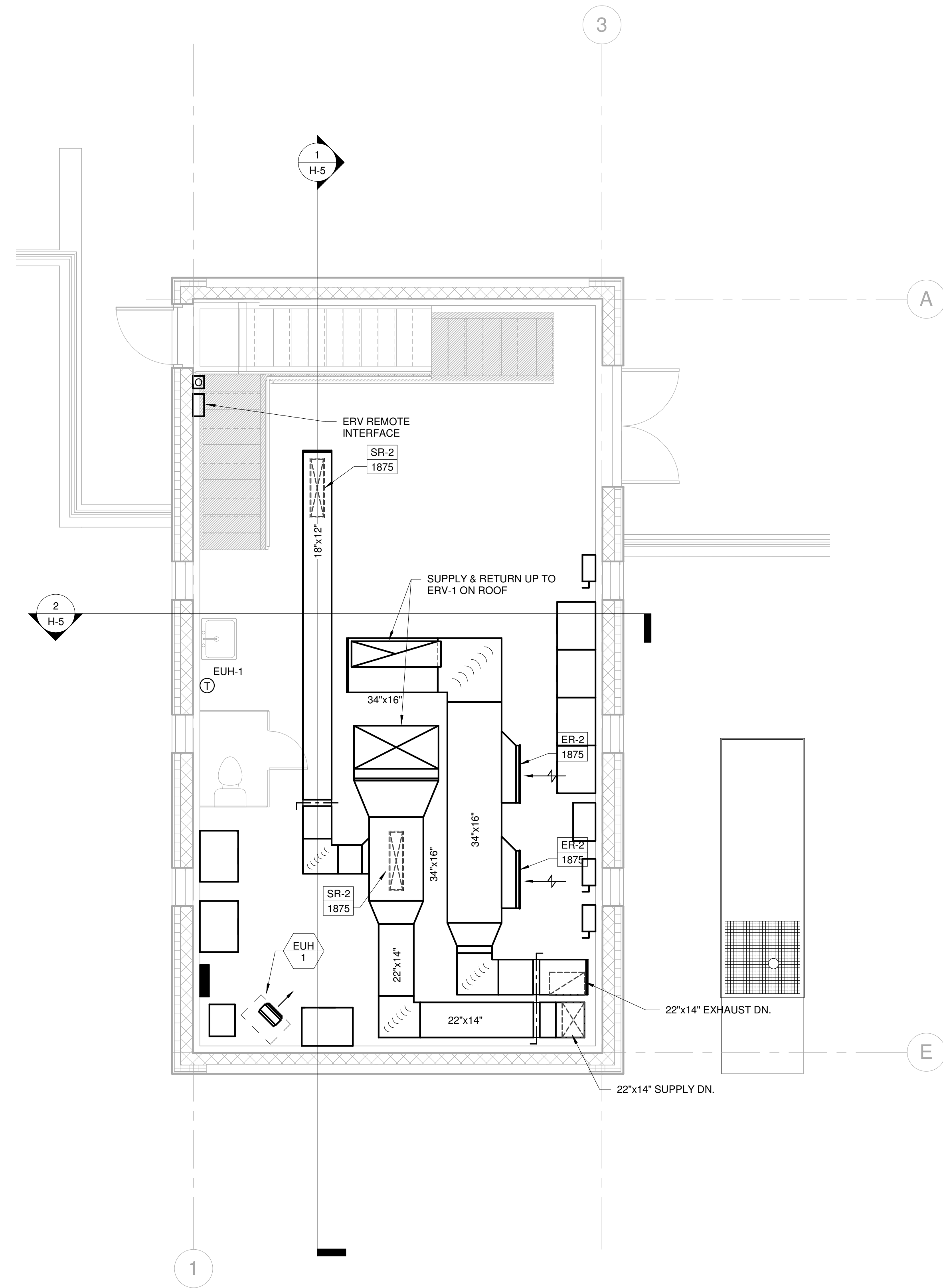
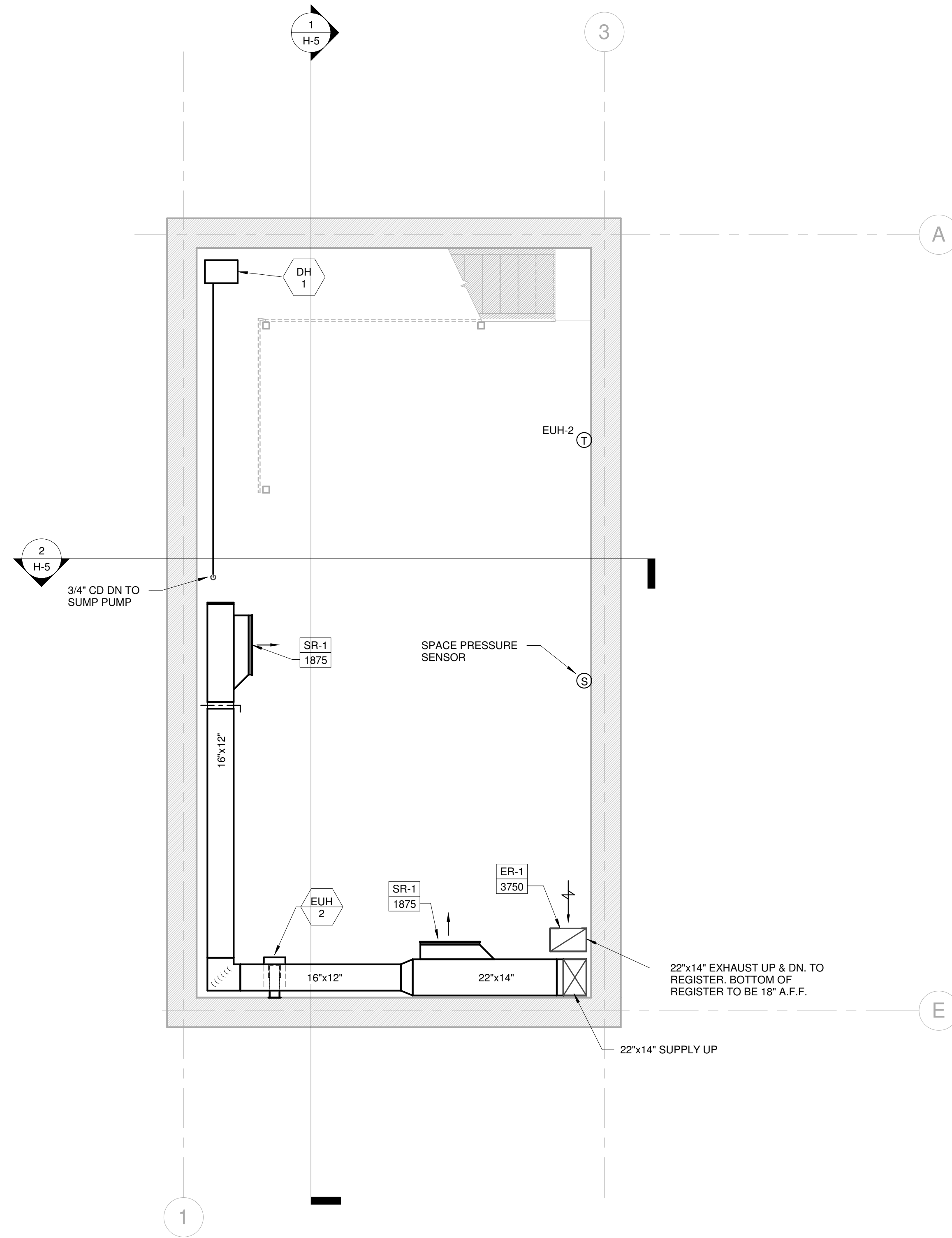


SUBCONSULTANT
SCALE
1/4" = 1'-0"
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE
Worcester Road Sewer Pumping Station Replacement HVAC DEMOLITION PLANS

DSK JOB NO. 20030.00
ISSUE DATE APRIL 2022
SHEET NO. **H-2**

P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWG\601-REV\TITLES\TITLEBLOCKS\KDC_Arch D 24x36 Vertical Title - BETA



NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
RLB
DESIGNED BY:
RLB
CHECKED BY:
RHB

REGISTERED PROFESSIONAL
For Review Only

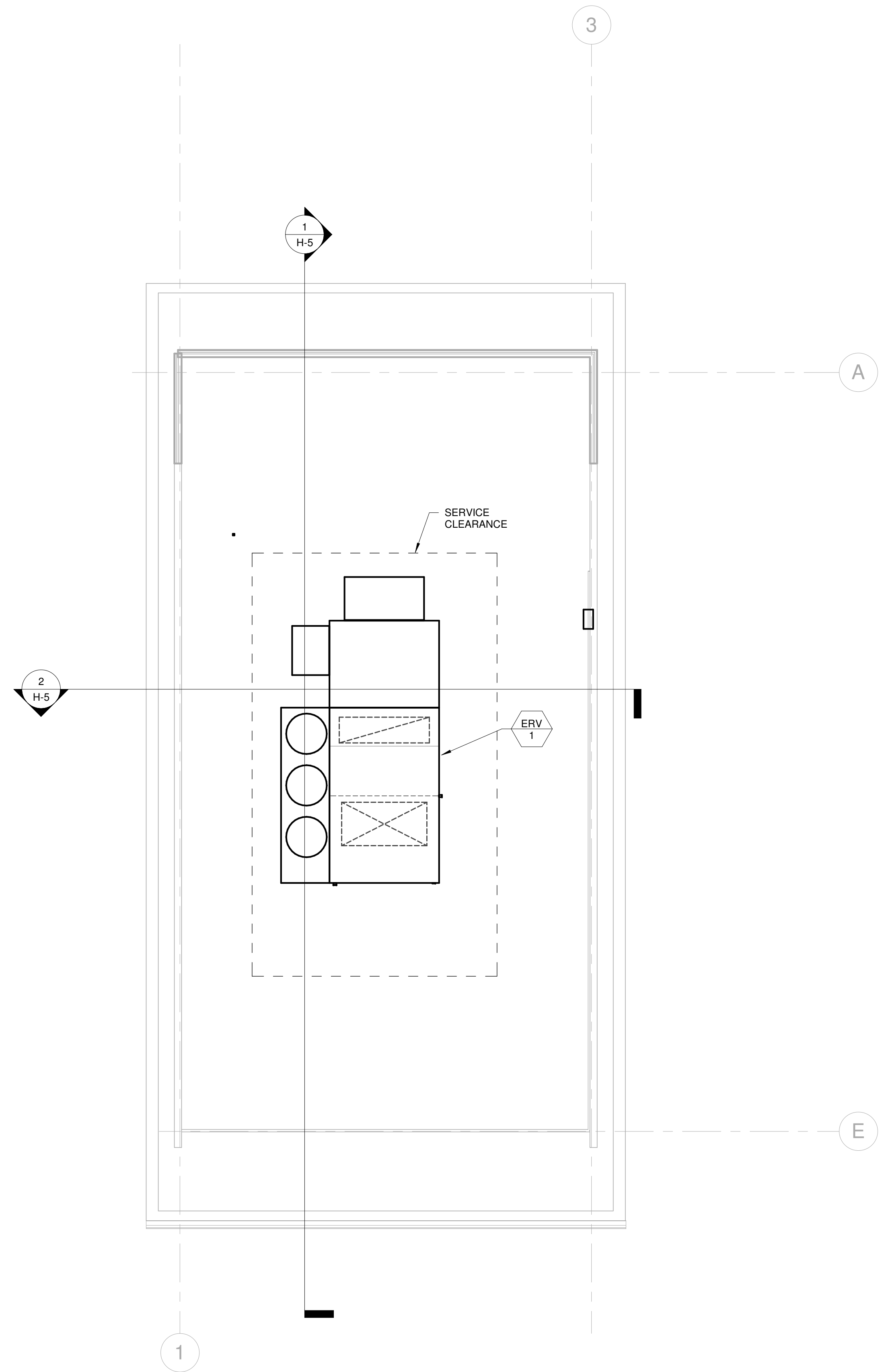


SCALE
1/4" = 1'-0"
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE
Worcester Road Sewer Pumping Station Replacement HVAC FLOOR PLANS

DSK JOB NO. 20030.00
ISSUE DATE APRIL 2022
SHEET NO. **H-3**

P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWG\601-REV\TITLEBLOCKS\KDC_Arch D 24x36 Vertical Title - BETA



ROOF - HVAC PLAN - PROPOSED

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

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
RLB
DESIGNED BY:
RLB
CHECKED BY:
RHB

REGISTERED PROFESSIONAL
For Review Only

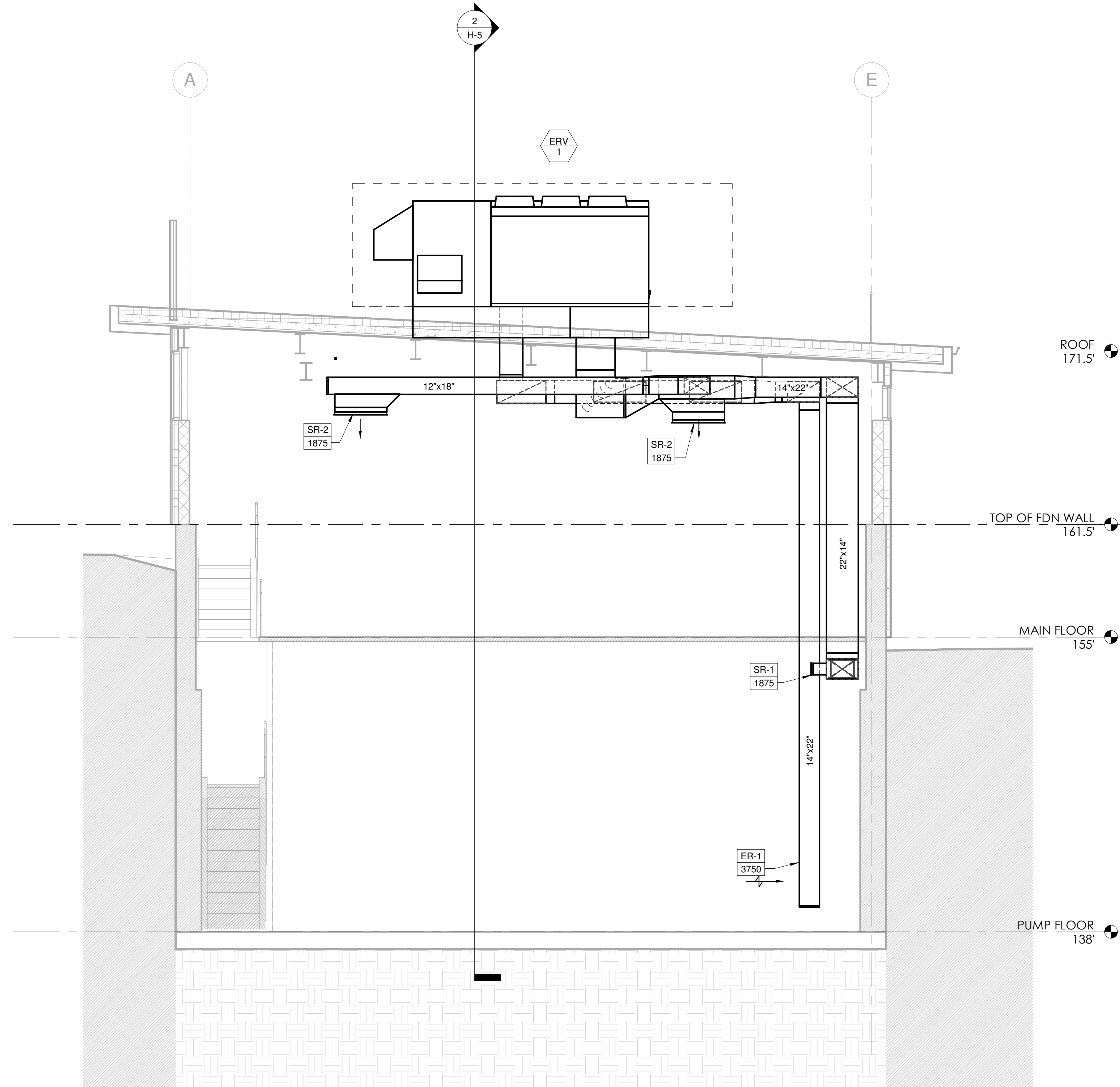


SCALE
1/4" = 1'-0"
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

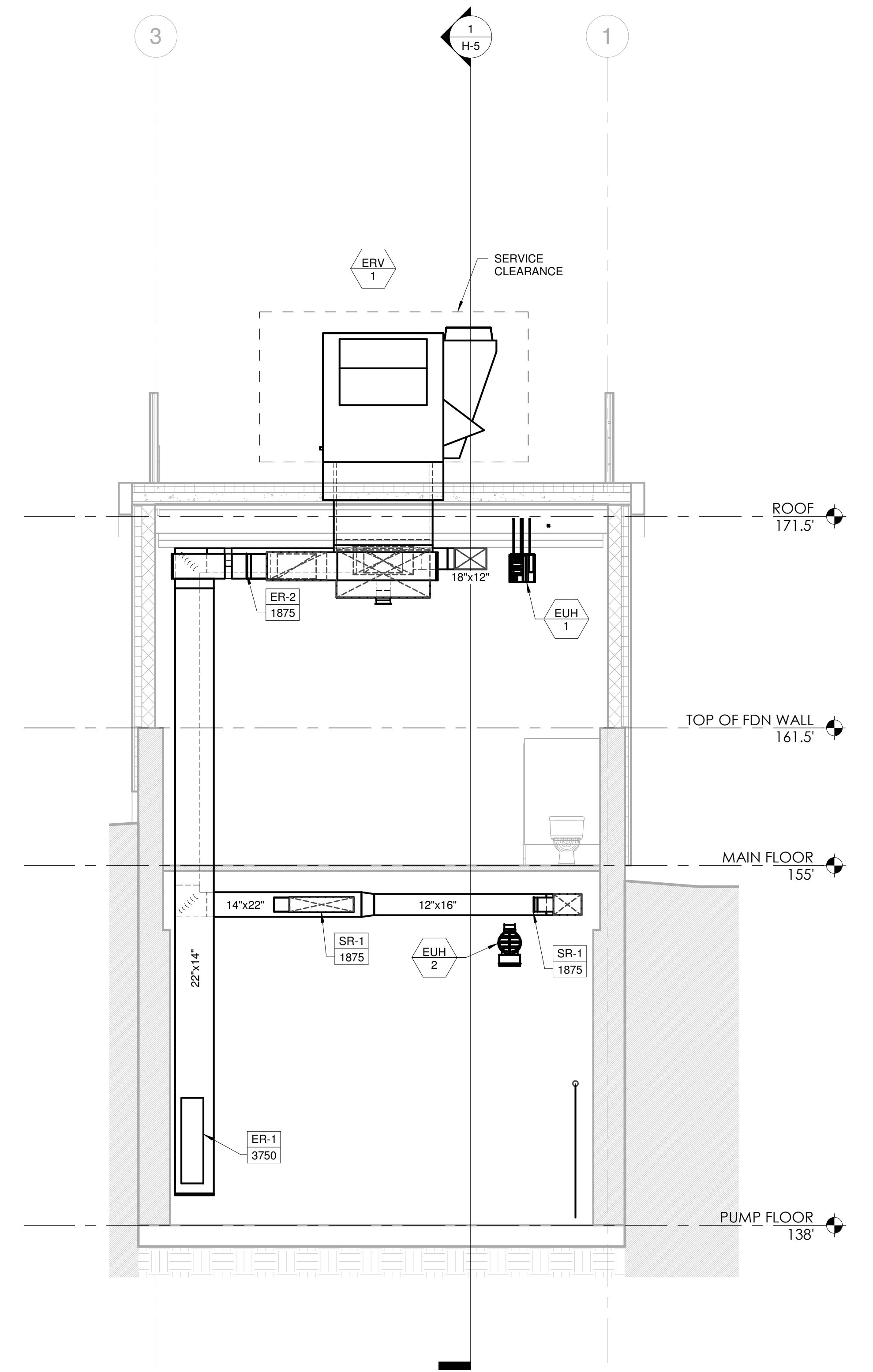
TITLE
**Worcester Road Sewer Pumping Station Replacement
HVAC ROOF PLANS**

DSK JOB NO. 20030.00
ISSUE DATE APRIL 2022
SHEET NO. **H-4**

P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWG\601-REV\IT\FAMILIES\TITLEBLOCKS\KDC_Arch D 24x36 Vertical Title - BETA



① Section 1
1/4" = 1'-0"



② Section 2
1/4" = 1'-0"

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
RLB
DESIGNED BY:
RLB
CHECKED BY:
RHB

REGISTERED PROFESSIONAL
For Review Only

PREPARED BY
BETA
www.BETA-Inc.com

SUBCONSULTANT
SAR
ENGINEERING, INC.
Mechanical/Electrical Engineers
150 Grossman Drive, Suite 309
Braintree, MA 02184
617-221-9220

SCALE
1/4" = 1'-0"

TITLE
**Worcester Road Sewer
Pumping Station Replacement
HVAC SECTIONS**

DSK JOB NO. 20030.00

ISSUE DATE APRIL 2022

SHEET NO. **H-5**

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

ENERGY RECOVERY UNIT SCHEDULE (PART 1)

Type Mark	SUPPLY AIR PERFORMANCE						EXHAUST AIR NORMAL PERFORMANCE					DX COOLING COIL				GAS HEATING PERFORMANCE				ELECTRICAL DATA			Manufacturer	Model	OPER. WEIGHT		
	SUPPLY FAN CFM	MIN. O.A. CFM	E.S.P.	T.S.P.	R.P.M.	HP	EXHAUST FAN CFM	E.S.P.	T.S.P.	R.P.M.	HP	TOTAL BTU/H	SENSIBLE BTU/H	EAT DB	EAT WB	LAT DB	LAT WB	INPUT	OUTPUT	E.A.T.	L.A.T.	MCA				MOP	V/PH/Hz
ERV 1	7500	7500	1.40 in-wg	5.08 in-wg	2040	10.0 hp	7500	1.20 in-wg	2.99 in-wg	1879	7.5 hp	338200.0 Btu/h	218600.0 Btu/h	80.4 °F	68.0 °F	53.9 °F	53.6 °F	300000.0 Btu/h	240000.0 Btu/h	48 °F	77.5 °F	87.2 A	110 A	480/3/60	Valent	VXE-212-58-30H-25-J	4893.00 lb

ENERGY RECOVERY UNIT SCHEDULE (PART 2)

Type Mark	WHEEL WINTER DESIGN CONDITION										WHEEL SUMMER DESIGN CONDITION									
	OUTDOOR AIR		SUPPLY AIR		RETURN AIR		EXHAUST AIR		CAPACITY REDUCTION	OUTDOOR AIR		SUPPLY AIR		RETURN AIR		EXHAUST AIR		CAPACITY REDUCTION		
	DB	WB	DB	WB	DB	WB	DB	WB		DB	WB	DB	WB	DB	WB	DB	WB			
ERV 1	7.4 °F	5.3 °F	47.9 °F	40.5 °F	72.0 °F	55.8 °F	30.1 °F	27.7 °F	328050.0 Btu/h	90.8 °F	76.2 °F	80.4 °F	68.0 °F	75.0 °F	62.5 °F	81.5 °F	71.5 °F	246375.0 Btu/h		

SUPPLY REGISTER...

TAG. NO	CONNECTION SIZE	Manufacturer	Model
SR-1	36"x8"	NAILOR	81DV
SR-2	36"x8"	NAILOR	81DV

ELECTRIC UNIT HEATER

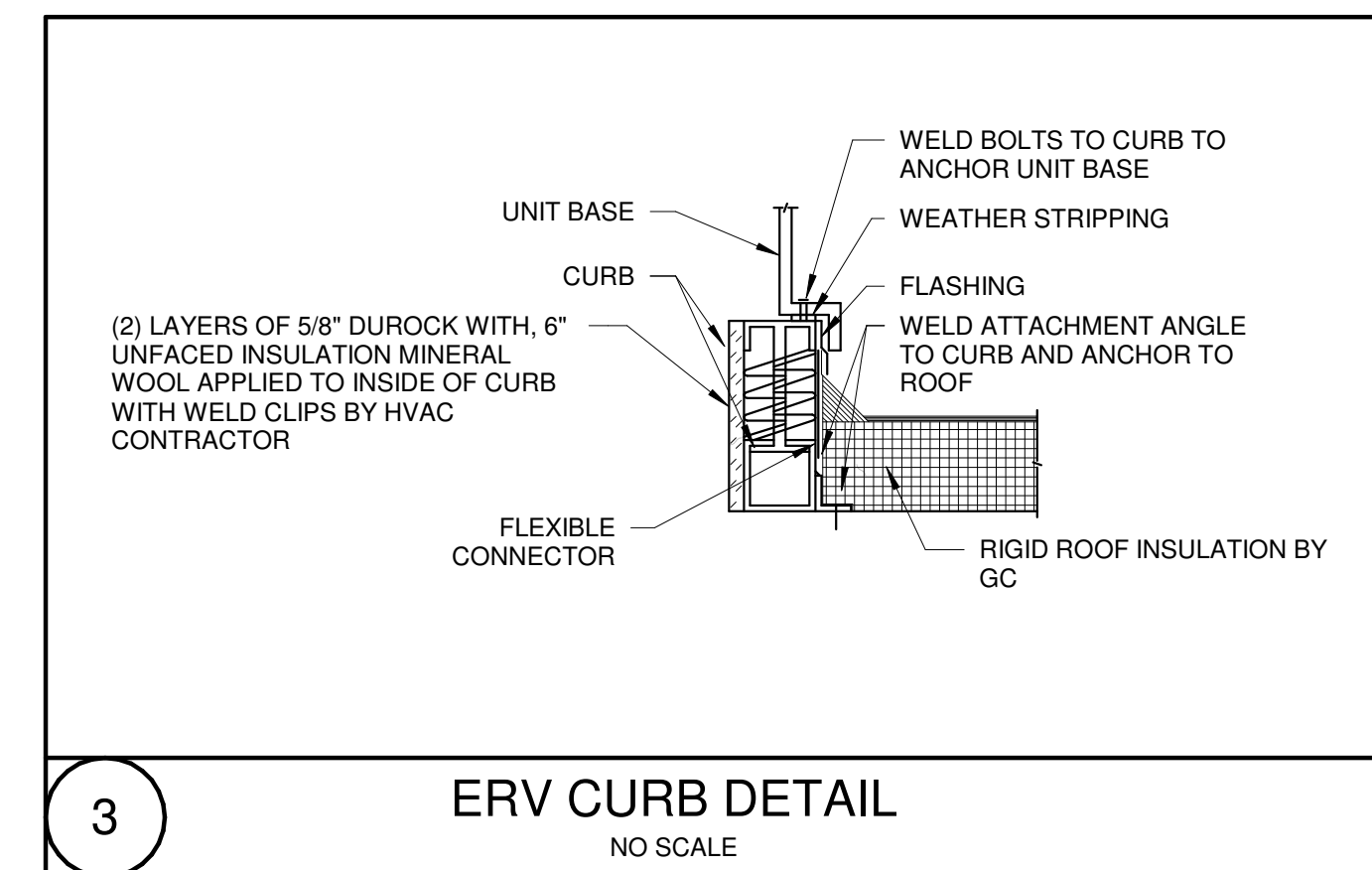
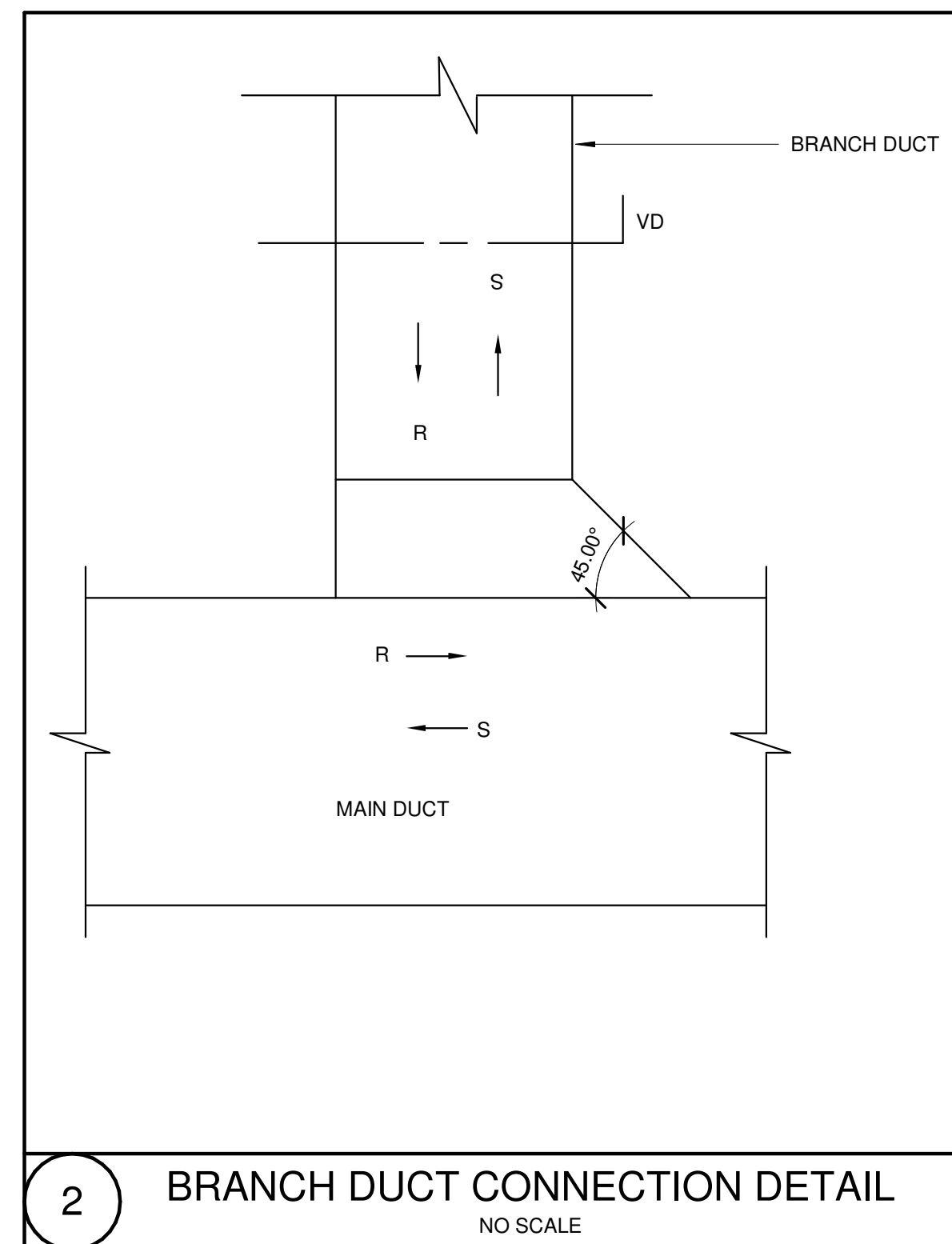
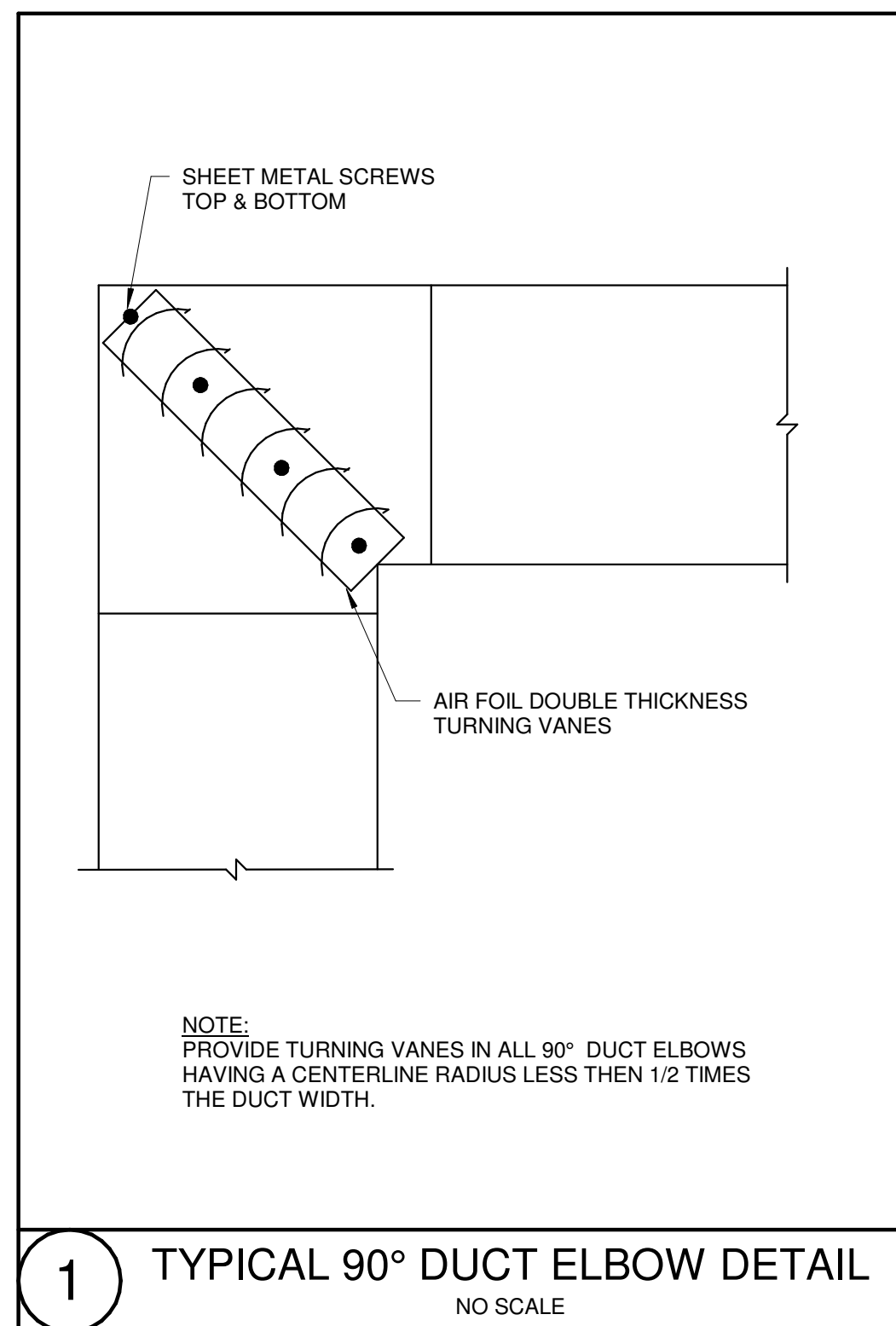
Type Mark	CAPACITY	CFM	V/PH/Hz	Manufacturer	Model
EUH 1	5000 W	350	480/3/60	Marley Engineered Products	MUH
EUH 2	5000 W	700	480/3/60	Marley Engineered Products	QWDD05432

EXHAUST REGISTER...

Type Mark	SIZE	Manufacturer	Model
ER-1	12"x48"	NAILOR	51FH-HD
ER-2	36"x14"	NAILOR	51FH-HD

DEHUMIDIFIER SCHEDULE

TAG NO.	EXTRACT PPD	V/PH/Hz	MANUFACTURER	MODEL	NOTES
DH 1	56	120/1/60	EBAC IND.	CS60	PROVIDE WALL BRACKET AND COND. PUMP



P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWG\600-NPS-TITLEBLOCKS\KDC_Arch D 24x36 Vertical Title - BETA

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
RLB

DESIGNED BY:
RLB

CHECKED BY:
RHB

REGISTERED PROFESSIONAL

For Review Only

BETA
www.BETA-Inc.com

PREPARED BY

SAR ENGINEERING, INC.
Mechanical/Electrical Engineers
150 Grossman Drive, Suite 309
Braintree, MA 02184
617-221-9220

SUBCONSULTANT

SCALE

12" = 1'-0"

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE

**Worcester Road Sewer Pumping Station Replacement
HVAC SCHEDULES AND DETAILS**

DSK JOB NO. 20030.00

ISSUE DATE APRIL 2022

SHEET NO. **H-6**

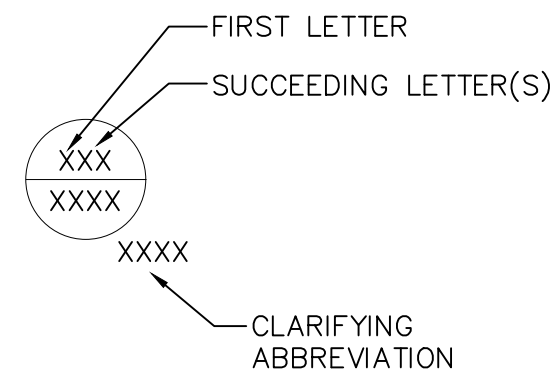
3/24/2022 7:22 AM - W:\YEAR - 2019\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\ELECTRICAL DEPARTMENT\19020.00 I&C.DWG (BETA STB BIV STB)

ABBREVIATIONS

AM	AUTO-MANUAL
CP	CONTROL PANEL
DO	DISSOLVED OXYGEN
ES	EMERGENCY STOP
ETH	ETHERNET
FR	FORWARD-REVERSE
HI	HIGH
HOA	HAND-OFF-AUTO
JB	JUNCTION BOX
LR	LOCAL-REMOTE
MC	MOTOR CONTROLLER (STARTER)
OAC	OPEN-AUTO-CLOSE
OIT	OPERATOR INTERFACE TERMINAL
ORP	OXYGEN REDUCTION POTENTIAL
OS	OPERATOR STATION
PH	HYDROGEN ION CONCENTRATION
PRESS	PRESSURE
SS	START-STOP
TEMP	TEMPERATURE
TURB	TURBIDITY
VFD	VARIABLE FREQUENCY DRIVE
BIX	BIOXIDE
BTE	BIOLOGICAL TREATED EFFLUENT
CEN	CENTRATE
FA	FOUL AIR
LS	LIME SLURRY
PM	POLYMER
PI	PRIMARY INFLUENT
PS	PRIMARY SLUDGE
PTE	PRIMARY TANK EFFLUENT
RAS	RETURN ACTIVATED SLUDGE
RSW	RAW SEWAGE WATER
SAN	SANITRAY WASTE
SC	SCUM
SBS	SODIUM BISULFITE
SHC	SODIUM HYPOCHLORITE
SSE	SECONDARY SETTLED EFFLUENT
STO	SLUDGE THICKENER OVERFLOW
TEF	TREATED EFFLUENT WATER
TS	THICKENED SLUDGE
WAS	WASTE ACTIVATED SLUDGE

INSTRUMENT IDENTIFICATION LETTERS

FIRST LETTER	SUCCEEDING LETTER(S)				
	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUST.		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE		USER'S CHOICE	CLOSE	USER'S CHOICE
D	USER'S CHOICE	DIFFERENCE	USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
E	VOLTAGE		PRIMARY ELEMENT		
F	FLOW	FRACTION			
G	USER'S CHOICE		GLASS		
H	HAND, MANUAL		HORN		HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME, SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOISTURE, HUMIDITY				MIDDLE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		USER'S CHOICE	OPEN	USER'S CHOICE
P	PRESSURE, VACUUM		POINT, TEST		
Q	QUANTITY, EVENT	TOTALIZE			
R	RADIATION		RECORD, PRINT		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMP.			TRANSMIT	
U	MULTI-VARIABLE		MULTI-FUNCTION	MULTI-FUNCTION	MULTI-FUNCTION
V	VIBRATION			VALVE, DAMPER	
W	WEIGHT, FORCE		WELL		
X	UN-CLASSIFIED		UN-CLASSIFIED	UN-CLASSIFIED	UN-CLASSIFIED
Y	EVENT, STATE			RELAY, COMPUTE	
Z	POSITION			DRIVE, ACTUATOR	



LINE LEGEND

	NEW PROCESS PIPING
	EXISTING PROCESS PIPING
	PNEUMATIC AIR PIPING
	DIGITAL SIGNAL
	ANALOG SIGNAL
	ELECTRICAL POWER OR CONTROL
	FIELD INSTRUMENTATION
	PLC INTERFACE
	PANEL/OIT/SCADA DISPLAY AND OR CONTROL
	INDEPENDENT CONTROL CIRCUIT
	DRAWING AND OR PROCESS REFERENCE

SYMBOL LEGEND

	ACTUATOR - MOTORIZED
	ACTUATOR - SOLENOID
	AIR REGULATOR/SEPARATOR
	ANALYZER
	BLOWER/FAN
	CALIBRATION COLUMN
	COMPRESSOR - ROTARY TYPE
	DRAIN
	EDUCATOR
	ELECTRIC MOTOR
	EMERGENCY EYEWASH/SHOWER
	FLEX CONNECTION
	FLOW METER - MAGNETIC
	FLOW METER - ULTRASONIC STRAP ON
	FLOW METER - ROTAMETER
	FLOW METER - THERMAL MASS
	FLOW SWITCH
	GRINDER
	HOSE
	LEVEL SWITCH - FLOAT SWITCH
	LEVEL SWITCH - PADDLE WHEEL
	LEVEL TRANSMITTER - SUBMERSIBLE PRESSURE
	LEVEL TRANSMITTER - ULTRASONIC
	LEVEL TRANSMITTER - RADAR
	MACERATOR
	MIXER
	MIXER - SUBMERSIBLE
	MOTOR
	POSITION SWITCH
	PULSATION DAMPENER
	PUMP - CENTRIFUGAL
	PUMP - PERISTALTIC
	PUMP - PROGRESSING/CAVITY
	PUMP - RECIPROCATING/METERING
	PUMP - ROTARY LOBE
	PUMP - SUBMERSIBLE
	SLIDE OR SLUICE GATE
	SOLENOID
	STATIC MIXER
	VALVE - BALL
	VALVE - BUTTERFLY
	VALVE - CHECK
	VALVE - GATE
	VALVE - GLOBE
	VALVE - PINCH
	VALVE - PLUG
	VALVE - PRESSURE REGULATING
	VALVE - PRESSURE REGULATING
	VIBRATOR

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:	RLB
DESIGNED BY:	MC
CHECKED BY:	MC

REGISTERED PROFESSIONAL
For Review Only

PREPARED BY
BETA
www.BETA-inc.com

SUBCONSULTANT
SAR ENGINEERING, INC.
Mechanical/Electrical Engineers
150 Grossman Drive, Suite 309
Burlington, Massachusetts 01914
617.221-9120
web: www.sar.com

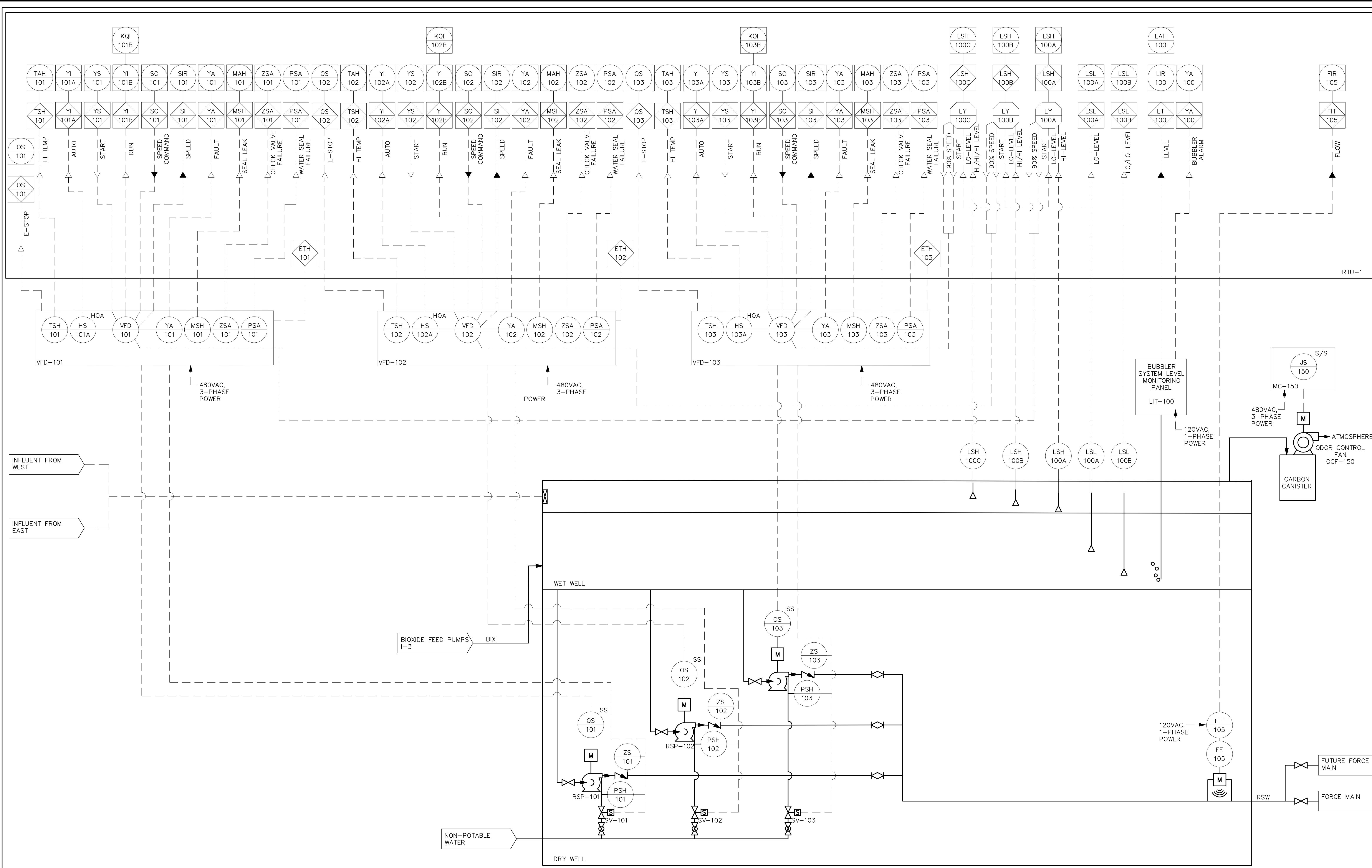
SCALE
AS SHOWN

TITLE
Worcester Road Sewer Pumping Station Replacement
INSTRUMENTATION & CONTROLS LEGEND AND ABBREVIATIONS

BETA JOB NO.	7385
ISSUE DATE	APRIL 2022
SHEET NO.	I-1

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

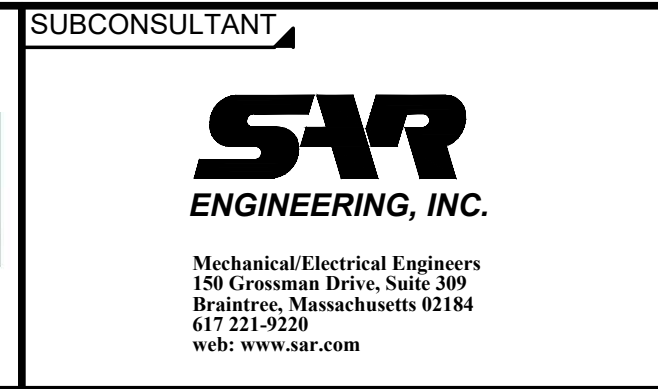
3/24/2022 7:22 AM - W:\YEAR-2019\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\ELECTRICAL DEPARTMENT\19020.00 I&C DWG (BETA STB BY STB)



NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
RLB
DESIGNED BY:
MC
CHECKED BY:
MC

REGISTERED PROFESSIONAL
For Review Only



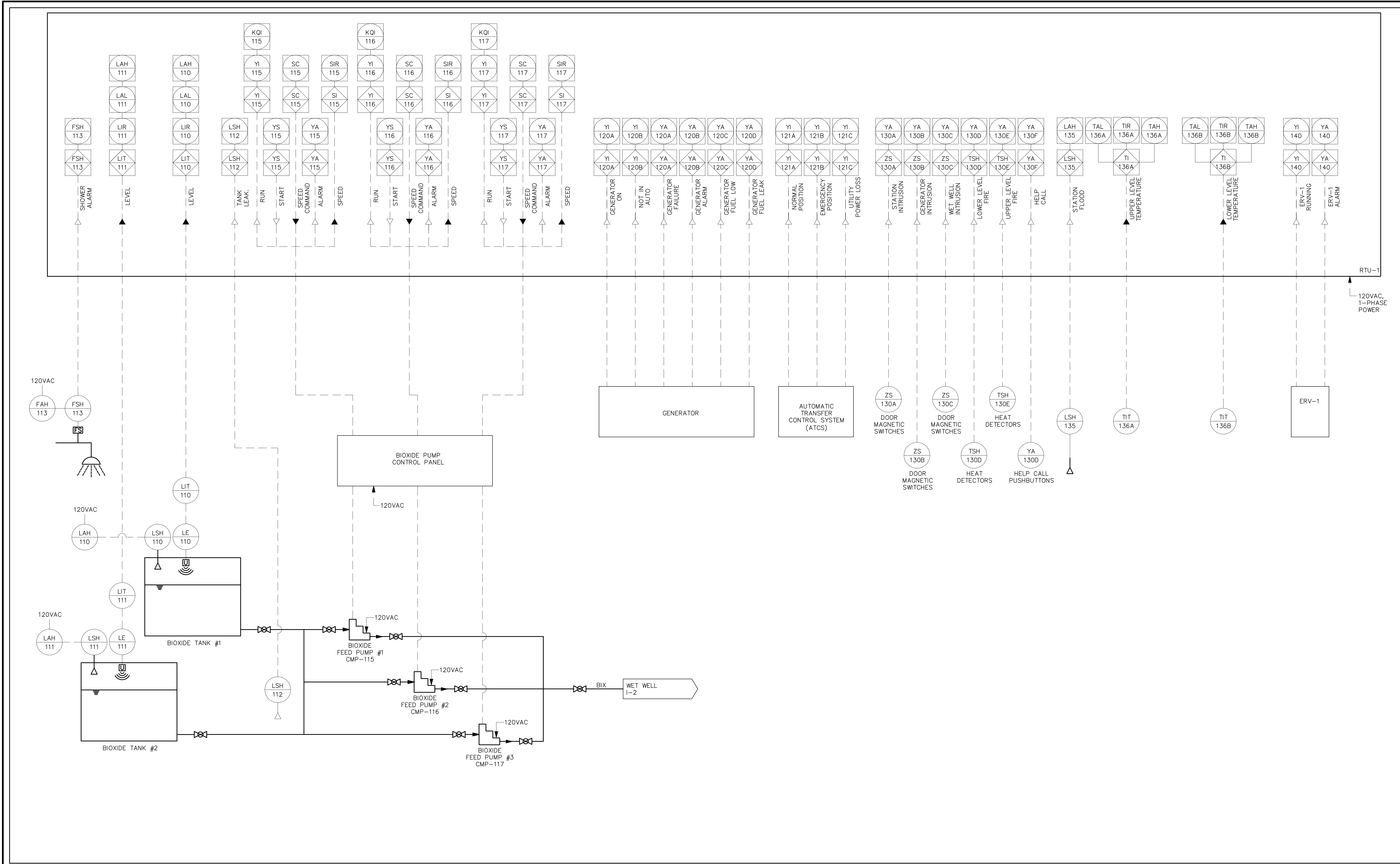
SCALE
AS SHOWN

TITLE
Worcester Road Sewer Pumping Station Replacement
INSTRUMENTATION & CONTROLS
SEWAGE PUMPS

BETA JOB NO. 7385
ISSUE DATE APRIL 2022
SHEET NO. 1-2

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

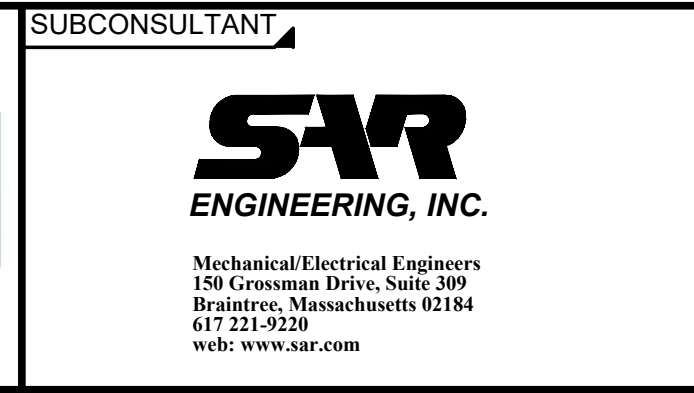
3/24/2022 7:23 AM - W:\YEAR - 2018\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\ELECTRICAL DEPARTMENT\19020.00 I&C DWG (BETA STB BYV STB)



NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
RLB
DESIGNED BY:
MC
CHECKED BY:
MC

REGISTERED PROFESSIONAL
For Review Only



SCALE
AS SHOWN
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE
Worcester Road Sewer Pumping Station Replacement
INSTRUMENTATION & CONTROLS STATION MONITORING

BETA JOB NO. 7385
ISSUE DATE APRIL 2022
SHEET NO. I-3

3/24/2022 7:20 AM W:\YEAR-2018\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\PLUMBING DEPARTMENT\19020.00 PLUMBING PLANS.DWG (BETA STB BW STB)

PLUMBING NOTES	
1.	THE WORK COVERED CONSISTS OF FURNISHING ALL LABOR AND MATERIALS NECESSARY TO INSTALL, COMPLETE AND READY FOR CONTINUOUS OPERATION, THE PLUMBING SYSTEMS, APPARATUS AND EQUIPMENT FOR THIS PROJECT.
2.	ALL PLUMBING EQUIPMENT AND MATERIALS SHALL BE IN COMPLETE ACCORDANCE WITH THE STATE BUILDING CODE, LOCAL FUEL GAS AND PLUMBING CODES, ALL LOCAL CODES AND REGULATIONS, NATIONAL FIRE PROTECTION ASSOCIATION, INSURANCE REGULATIONS AND REQUIREMENTS GOVERNING SUCH WORK.
3.	ANY AND ALL PERMITS REQUIRED FOR INSTALLATION OF ANY MATERIAL SHALL BE OBTAINED AS PART OF THE WORK OF THE SPECIFICATION INCLUDING ALL FEES OR EXPENSES INCURRED.
4.	ALL PRODUCTS USED AS PART OF THE POTABLE WATER SYSTEM WHERE THE INTENDED PURPOSE IS TO DELIVER OR CONVEY POTABLE WATER FOR HUMAN CONSUMPTION SHALL BE LEAD FREE AND CONFORM TO THE LATEST "LEAD FREE" LAW.
5.	WHERE WATER PIPING IS SHOWN DROPPING INTO PLUMBING CHASES WITH SIZES NOTED, THAT SIZE SHALL BE CARRIED FULL LENGTH THROUGH THE CHASE. REFER TO PLUMBING FIXTURE SCHEDULE ON THIS DRAWING FOR INDIVIDUAL FIXTURE CONNECTION SIZES.
6.	UNLESS OTHERWISE NOTED, ALL HORIZONTAL DRAINAGE PIPING WHICH IS 3" OR LESS IN DIAMETER SHALL PITCH OF NOT LESS THAN 1/4" PER FOOT AND ALL HORIZONTAL DRAINAGE PIPING WHICH IS 4" OR LARGER IN DIAMETER SHALL PITCH OF NOT LESS THAN 1/8" PER FOOT.
7.	PROVIDE ALL FLOOR CLEANOUTS WITH HUB AND SPIGOT; LEAD AND OAKUM JOINTS FROM CLEANOUT TO AND INCLUDING CONNECTION TO SANITARY OR STORM DRAIN.
8.	REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND HEIGHT OF ALL PLUMBING FIXTURES.
9.	MISCELLANEOUS DISCREPANCIES OR OMISSIONS WHICH MIGHT APPEAR ON THE PLANS OR SPECIFICATIONS WILL NOT RELIEVE THE CONTRACTOR OF CODE COMPLIANCE.
10.	ALL FLOOR DRAINS SHALL BE PROVIDED WITH A TRAP PRIMER CONNECTION. CONTRACTOR SHALL PROVIDE ALL ASSOCIATED EQUIPMENT NECESSARY TO PROVIDE A COMPLETE SYSTEM.
11.	PROVIDE CLEANOUTS AT ALL CHANGE OF DIRECTIONS FOR STORM AND SANITARY/WASTE PIPING.
12.	PROVIDE WALL CLEANOUTS WITH ACCESS PANELS AT ALL STORM AND SANITARY/WASTE PIPING WITHIN PIPE CHASES OR WALLS.
13.	ALL INTERIOR BURIED DOMESTIC WATER PIPING, NON-POTABLE WATER PIPING, TEMPERED WATER PIPING OR AIR PIPING SHALL BE SOFT ROLLED "K" COPPER COIL AND BE PROTECTED WITH A HIGH DENSITY RUBBER INSULATION. FITTINGS SHALL NOT BE PERMITTED IN OR UNDER SLAB. PROVIDE SLAB PENETRATIONS WITH SLEEVE AND FIRE STOPPING.

PLUMBING DEMOLITION NOTES	
1.	UNLESS OTHERWISE NOTED, ALL EXISTING PLUMBING SYSTEMS WITHIN HATCH MARKS (COLD WATER, HOT WATER, HOT WATER RETURN, SANITARY, RAIN LEADERS, ETC) AND ASSOCIATED EQUIPMENT IS TO BE DEMOLISHED OR SALVAGED. REMOVE THE EQUIPMENT TO BE DEMOLISHED OR SALVAGED PER SECTION 02050. ALL CONTROL DEVICES ASSOCIATED WITH THE DEMOLISHED EQUIPMENT SHALL BE REMOVED.
2.	NO PIPING OR EQUIPMENT INDICATED FOR DEMOLITION WILL BE REUSED OR SALVAGED UNLESS SPECIFICALLY NOTED AS SUCH. ALL EQUIPMENT REMOVED SHALL BE REMOVED FROM SITE AND PROPERLY DISPOSED OF. PRIOR TO REMOVAL OF EQUIPMENT COORDINATE WITH OWNER FOR ANY EQUIPMENT THE OWNER WILL KEEP.
3.	EXISTING EQUIPMENT INDICATED ON THE DEMOLITION PLANS ARE BASED ON SITE OBSERVATIONS AND IT IS NOT THE INTENTION OF THESE DRAWINGS TO SHOW ALL EQUIPMENT AND MATERIALS TO BE DISCONNECTED AND/OR REMOVED.

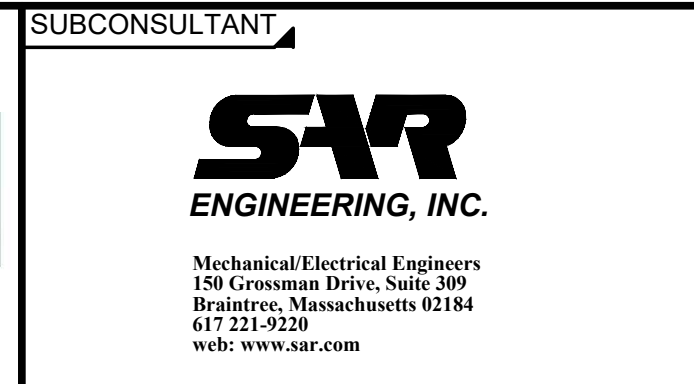
PLUMBING LEGEND		
SYMBOL	ABBREVIATION	DESCRIPTION
	ETR	LIGHT LINE INDICATES EXISTING PIPING TO REMAIN
	RE	REMOVE EXISTING PIPING
	CTE	CONNECT TO EXISTING
	C&C	CUT & CAP
		BELOW FLOOR PIPING (INDICATED AS DOUBLE LINEWORK)
	CW	COLD WATER
	HW	HOT WATER
	HWR	HOT WATER RECIRCULATION
	NPCW	NON-POTABLE COLD WATER
	NPHW	NON-POTABLE HOT WATER
	S or W	SOIL OR WASTE
	V	VENT
	AV	ACID VENT
	GTV	GAS TRAIN VENT
	RW	RAIN WATER CONDUCTOR
	PD	PUMP DISCHARGE
	G	NATURAL GAS
	CONT	CONTINUATION
	UP	PIPE RISE OR UP
	DN	PIPE DROP OR DOWN
	TEE	PIPE TEE
	SOV	SHUT-OFF VALVE
		GAS COCK
	PRV	PRESSURE REDUCING VALVE
	CV	CHECK VALVE
	BVA	BALANCING VALVE ASSEMBLY
	W & T	WASTE & TRAP
	CO	CLEANOUT PLUG
	FCO	FLUSH FLOOR CLEANOUT
	DCO	DANDY CLEANOUT
		CAPPED PIPE
		ARROW INDICATES DIRECTION OF FLOW
		ARROW INDICATES DIRECTION OF SLOPE
		UNION
	PA	PIPE ANCHORS
	PGD	PIPE GUIDES
		FLEXIBLE CONNECTOR
	HB	HOSE BIBB
	WH	WALL HYDRANT
		DIAGRAM NO. & DWG. NO. REFERENCE
	FD "A"	FLOOR DRAIN & TYPE
	RD "A"	ROOF DRAIN & TYPE
	OED	OPEN END DRAIN (WITH CHECK VALVE)
	BFP/RPZ	BACKFLOW PREVENTER/REDUCED PRESSURE ZONE ASSY
	WM	WATER METER
	T	THERMOMETER
	PG	PRESSURE GAUGE WITH PETCOCK
	T&P	TEMPERATURE AND PRESSURE RELIEF VALVE
	SA	SHOCK ABSORBER WITH SHUT-OFF VALVE
		VACUUM RELIEF VALVE

PLUMBING LEGEND	
ABBREVIATION	DESCRIPTION
WH-1	WATER HEATER & NUMBER
SS	SOIL STACK
VS	VENT STACK
VTR	VENT THRU ROOF
INV	INVERT
TMV	THERMOSTATIC MIXING VALVE
TW	TEMPERED WATER (70°F)
TYP	TYPICAL
NTS	NOT TO SCALE
AFF	ABOVE FINISHED FLOOR
LPC	LIMIT OF PLUMBING CONTRACT
GC	GENERAL CONTRACTOR
FPC	FIRE PROTECTION CONTRACTOR
PC	PLUMBING CONTRACTOR
EC	ELECTRICAL CONTRACTOR
HVAC	HVAC CONTRACTOR
LPC	LIMIT OF PLUMBING CONTRACT
WC	WATER CLOSET
UR	URINAL
LAV	LAVATORY
MR	MOP RECEPTOR
SHR	SHOWER
DF	DRINKING FOUNTAIN
SK	SINK
F & I	FURNISH & INSTALL
S=.01	SLOPE = 1/8" PER FOOT
S=.02	SLOPE = 1/4" PER FOOT
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
F.F.E.	FINISHED FLOOR ELEVATION

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:	RLB
DESIGNED BY:	RLB
CHECKED BY:	JAL

REGISTERED PROFESSIONAL
For Review Only



SUBCONSULTANT
SCALE
AS SHOWN
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE
Worcester Road Sewer Pumping Station Replacement
PLUMBING LEGEND AND GENERAL NOTES

BETA JOB NO. 7385
ISSUE DATE APRIL 2022
SHEET NO. P-1

PLUMBING FIXTURE SCHEDULE

DESIGNATION	FIXTURE DESCRIPTION	CONNECTION SIZE						REMARKS
		CW	HW	TW	SAN	V	NPHW	
HB	HOSE BIBB	-	-	-	-	-	3/4"	-
EWU-1	EMERGENCY SHOWER/EYEWASH	-	-	1 1/4"	-	-	-	INTERIOR MOUNTED, CORROSION RESISTANT, EMERGENCY SHOWER/EYEWASH (COMBINATION UNIT) WITH HORN, STROBE AND FLOW SWITCH
P-1	WATER CLOSET - FLOOR MTD.	3/4"	-	-	4"	2"	-	SEE SPECIFICATION
P-2	LAVATORY	1/2"	1/2"	-	2"	2"	-	SEE SPECIFICATION

1. ALL EXPOSED VALVES, PIPING AND FITTINGS SHALL BE CHROME PLATED.
2. CONTRACTOR SHALL PROVIDE EACH CONNECTION TO EACH SINK OR PIECE OF EQUIPMENT ITS OWN INDIVIDUAL SHUTOFF VALVE

ELECTRIC WATER HEATER SCHEDULE

DESIGNATION	MANUFACTURER	MODEL	LOCATION	GALS.	RECOVERY		KW	VOLTS	PHASE	HZ.	REMARKS
					G.P.H.	Δ TEMP °F					
DWH-1	A.O. SMITH	DRE-120-15	CHEMICAL BLDG	120	61	100	15	480	3	60	-

* MANUFACTURERS NAMES AND MODEL NUMBERS ARE SHOWN ONLY TO REPRESENT TYPE, STYLE AND LEVEL OF QUALITY EXPECTED, REFER TO SPECIFICATIONS FOR ACCEPTABLE EQUAL MANUFACTURERS

CIRCULATING PUMP SCHEDULE

DESIGNATION	LOCATION	WATER HEATER SERVED	MODEL	CAPACITY (GPM)	HEAD (FEET)	TYPE	ELECTRICAL REQUIREMENTS				REMARKS
							RPM	HP	VOLTS	Φ	
DWP-1	MECH ROOM	DWH-1	TACO 006B	2	6	INLINE	3250	1/40	115	1	SERVES 140° HW SYSTEM

* MANUFACTURERS NAMES AND MODEL NUMBERS ARE SHOWN ONLY TO REPRESENT TYPE, STYLE AND LEVEL OF QUALITY EXPECTED, REFER TO SPECIFICATIONS FOR ACCEPTABLE EQUAL MANUFACTURERS

SHOCK ABSORBER SCHEDULE

PDI RATING SYMBOL	A	B	C	D	E
PRECISION PLUMBING PRODUCTS OR EQUAL	SC-500	SC-750	SC-1000	SC-1250	SC-1500
WATTS REGULATOR COMPANY OR EQUAL	0750030	0750053	0750060	0750070	0750090
WADE OR EQUAL	5-P	10-P	20-P	50-P	75-P

* MANUFACTURERS NAMES AND MODEL NUMBERS ARE SHOWN ONLY TO REPRESENT TYPE, STYLE AND LEVEL OF QUALITY EXPECTED, SIMILAR EQUALS BY OTHER SPECIFIED MANUFACTURERS WILL BE ACCEPTABLE

SUMP PUMP SCHEDULE

DESIGNATION	LOCATION	MODEL	CAPACITY (GPM)	HEAD (FEET)	TYPE	ELECTRICAL REQUIREMENTS				REMARKS
						RPM	HP	VOLTS	Φ	
SP-1	BASEMENT	LIBERTY PUMPS 237	20	15	SIMPLEX SUBMERSIBLE	1725	1/3	120	1	AUTOMATIC WITH FLOAT
SP-2	BASEMENT	LIBERTY PUMPS 237	20	15	SIMPLEX SUBMERSIBLE	1725	1/3	120	1	AUTOMATIC WITH FLOAT

3/24/2022 7:20 AM - W15YEAR - 201819020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS/PLUMBING DEPARTMENT/19020.00 PLUMBING PLANS.DWG (BETA STB B/W/STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: RLB
DESIGNED BY: RLB
CHECKED BY: JAL

REGISTERED PROFESSIONAL
For Review Only



SCALE
AS SHOWN

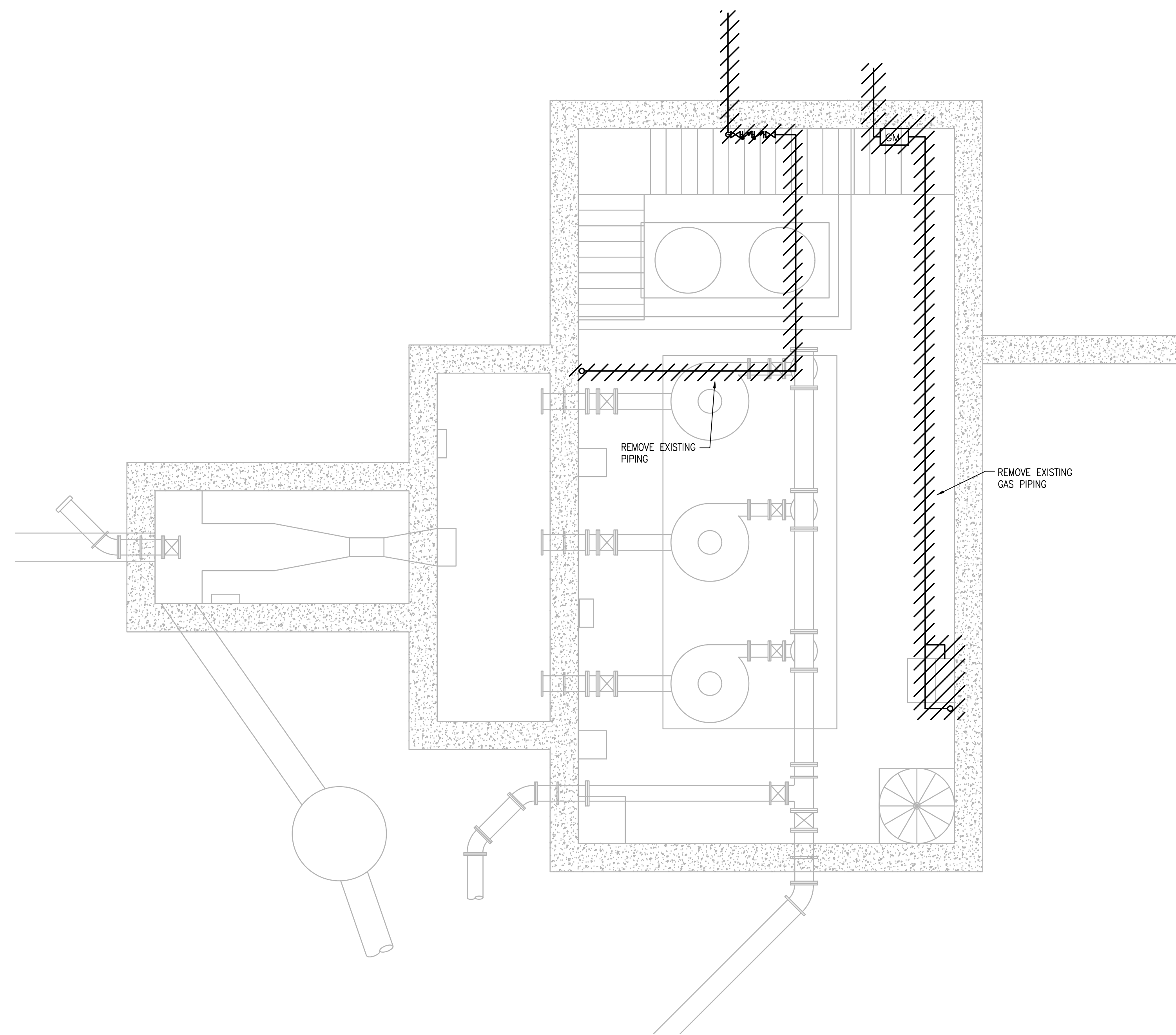
TITLE
Worcester Road Sewer Pumping Station Replacement

PLUMBING SCHEDULES

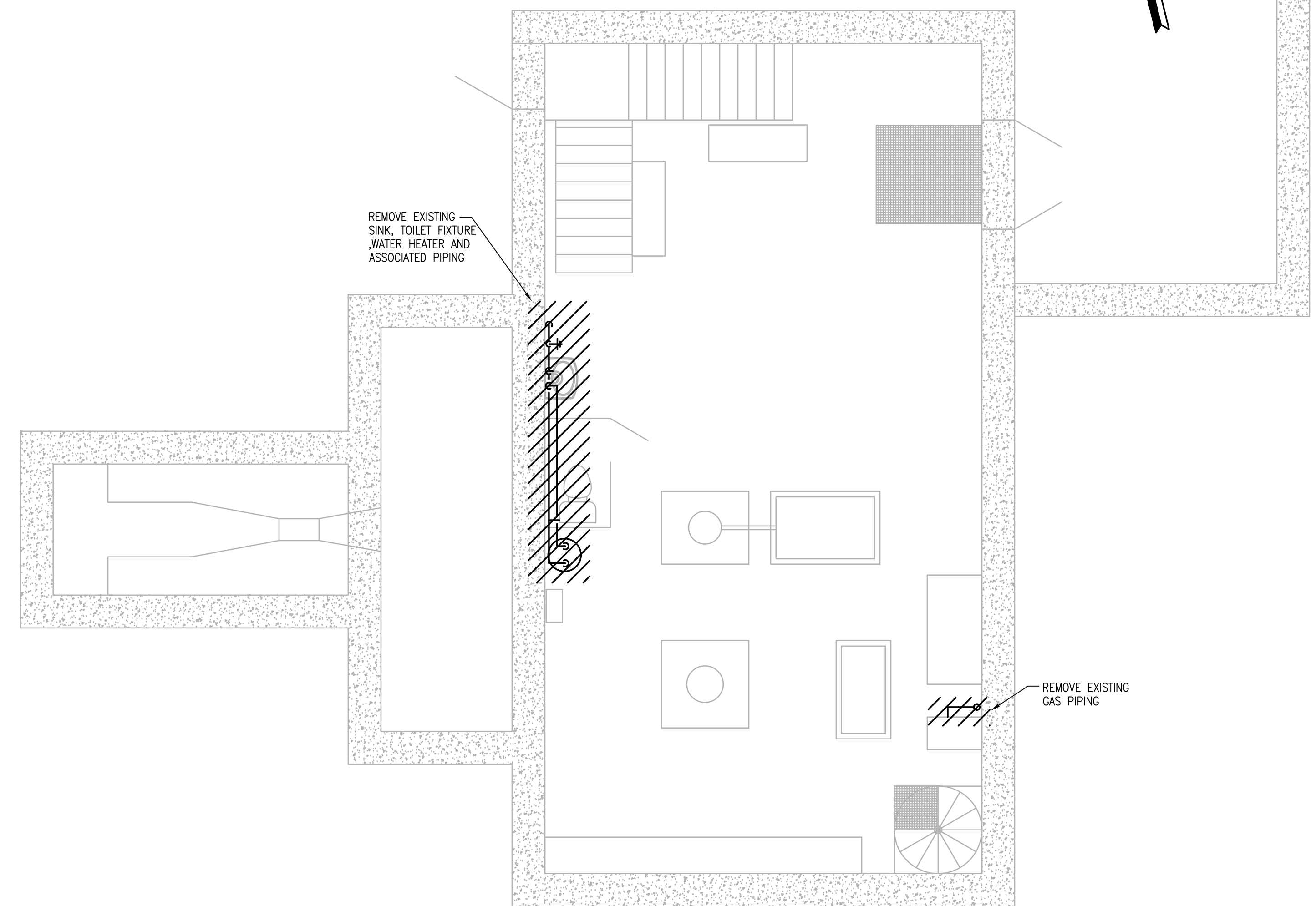
BETA JOB NO. 7385
ISSUE DATE APRIL 2022
SHEET NO. P-2

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

3/24/2022 7:20 AM - W:\YEAR - 2019\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\PLUMBING DEPARTMENT\19020.00 PLUMBING PLANS.DWG (BETA STB BW STB)



LOWER LEVEL - PLUMBING PLAN - DEMOLITION
SCALE: 1/4" = 1'



UPPER LEVEL - PLUMBING PLAN - DEMOLITION
SCALE: 1/4" = 1'

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:	RLB
DESIGNED BY:	RLB
CHECKED BY:	JAL

REGISTERED PROFESSIONAL
For Review Only

PREPARED BY
BETA
www.BETA-Inc.com

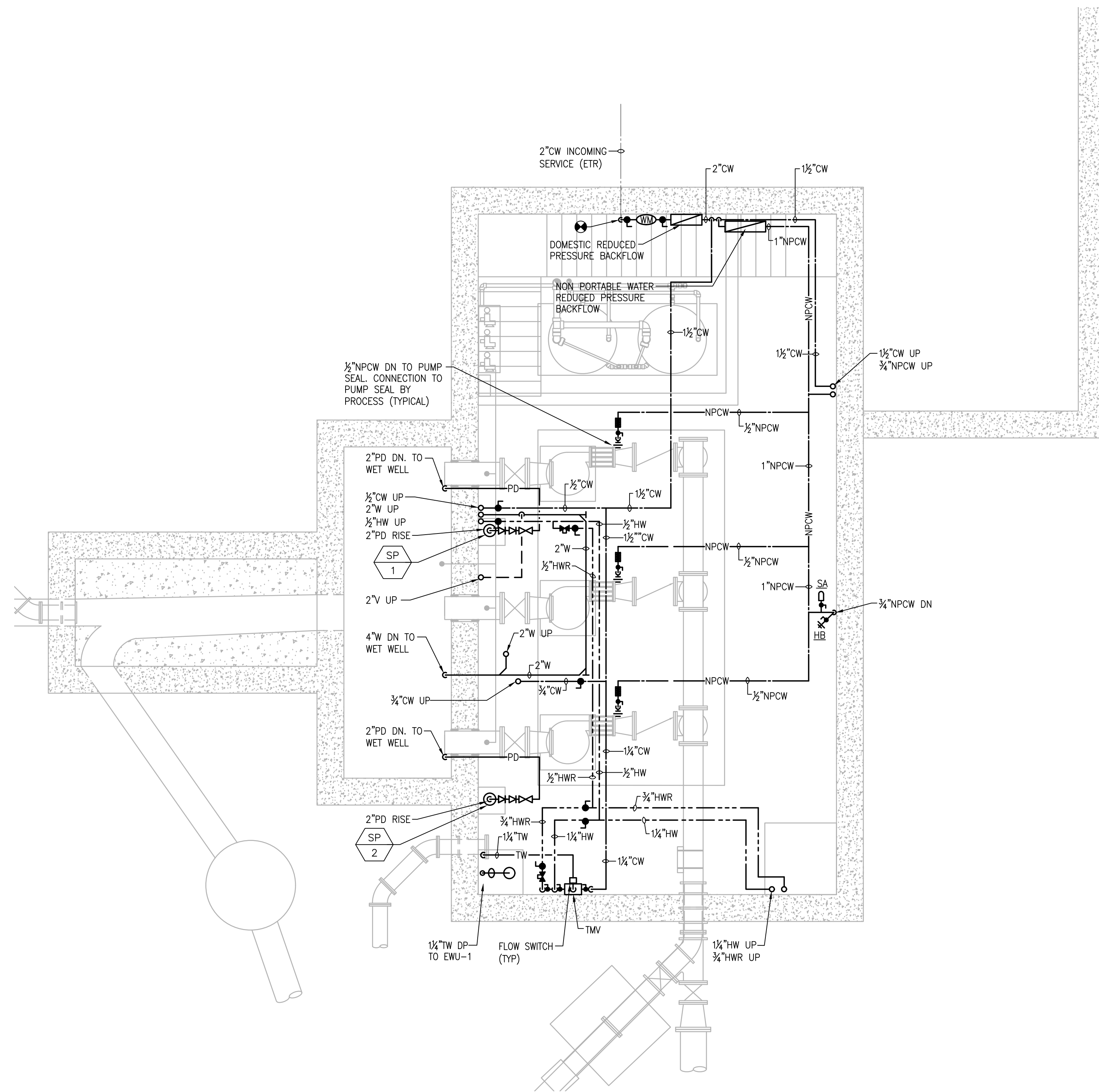
SUBCONSULTANT
SAR ENGINEERING, INC.
Mechanical/Electrical Engineers
150 Grossman Drive, Suite 309
Burlington, Massachusetts 01914
617.221-9220
web: www.sar.com

SCALE
AS SHOWN
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

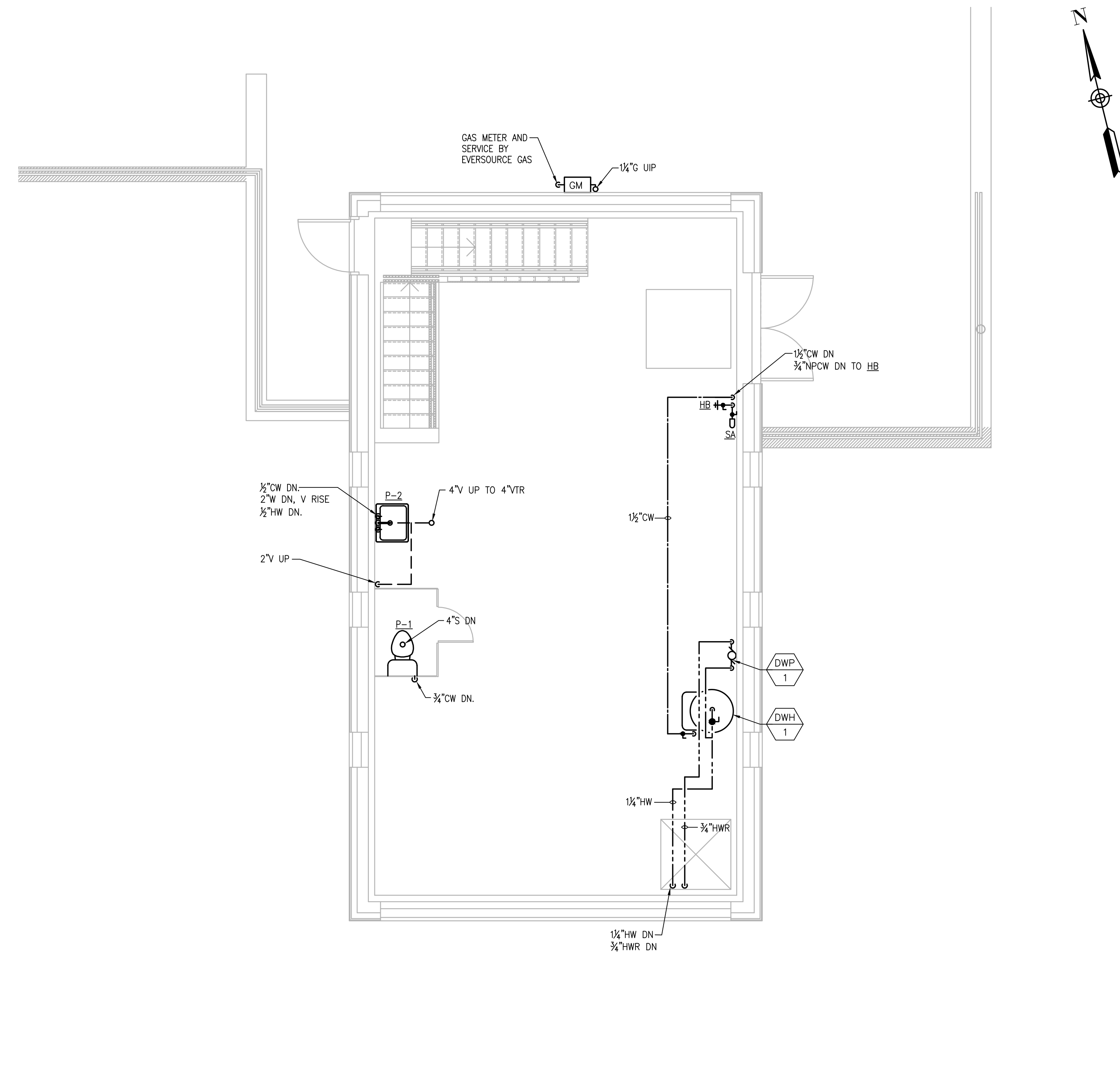
TITLE
Worcester Road Sewer Pumping Station Replacement
PLUMBING DEMOLITION PLANS

BETA JOB NO.	7385
ISSUE DATE	APRIL 2022
SHEET NO.	P-3

3/24/2022 7:20 AM - W:\YEAR - 2019\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\PLUMBING\DEPARTMENT\19020.00 PLUMBING PLANS.DWG (BETA STB BW STB)



LOWER LEVEL - PLUMBING PLAN - PROPOSED
SCALE: 1/4" = 1'



UPPER LEVEL - PLUMBING PLAN - PROPOSED
SCALE: 1/4" = 1'

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:	RLB
DESIGNED BY:	RLB
CHECKED BY:	JAL

REGISTERED PROFESSIONAL
For Review Only

PREPARED BY
BETA
www.BETA-Inc.com

SUBCONSULTANT
SAR
ENGINEERING, INC.
Mechanical/Electrical Engineers
150 Grossman Drive, Suite 309
Braintree, Massachusetts 02184
617-221-9220
web: www.sar.com

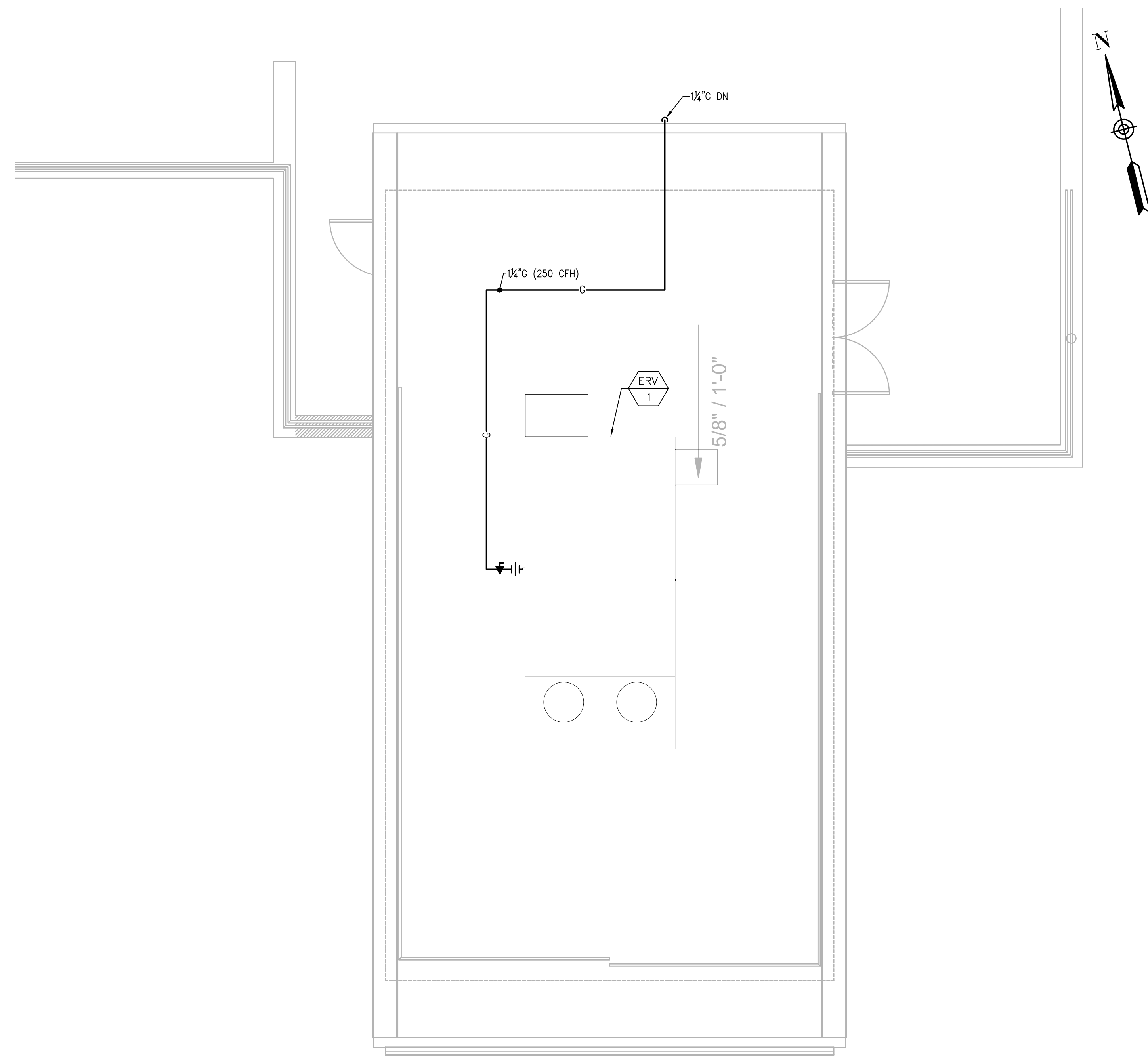
SCALE
AS SHOWN

TITLE
Worcester Road Sewer Pumping Station Replacement
PLUMBING PROPOSED PLANS

BETA JOB NO. 7385
ISSUE DATE APRIL 2022
SHEET NO. P-4

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

3/24/2022 7:21 AM - W:\YEAR - 2019\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\PLUMBING DEPARTMENT\19020.00 PLUMBING PLANS.DWG (BETA STB BW STB)



ROOF-HVAC-PLAN - PROPOSED
SCALE: 1/4" = 1'

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: RLB
DESIGNED BY: RLB
CHECKED BY: JAL

REGISTERED PROFESSIONAL
For Review Only

PREPARED BY
BETA
www.BETA-Inc.com

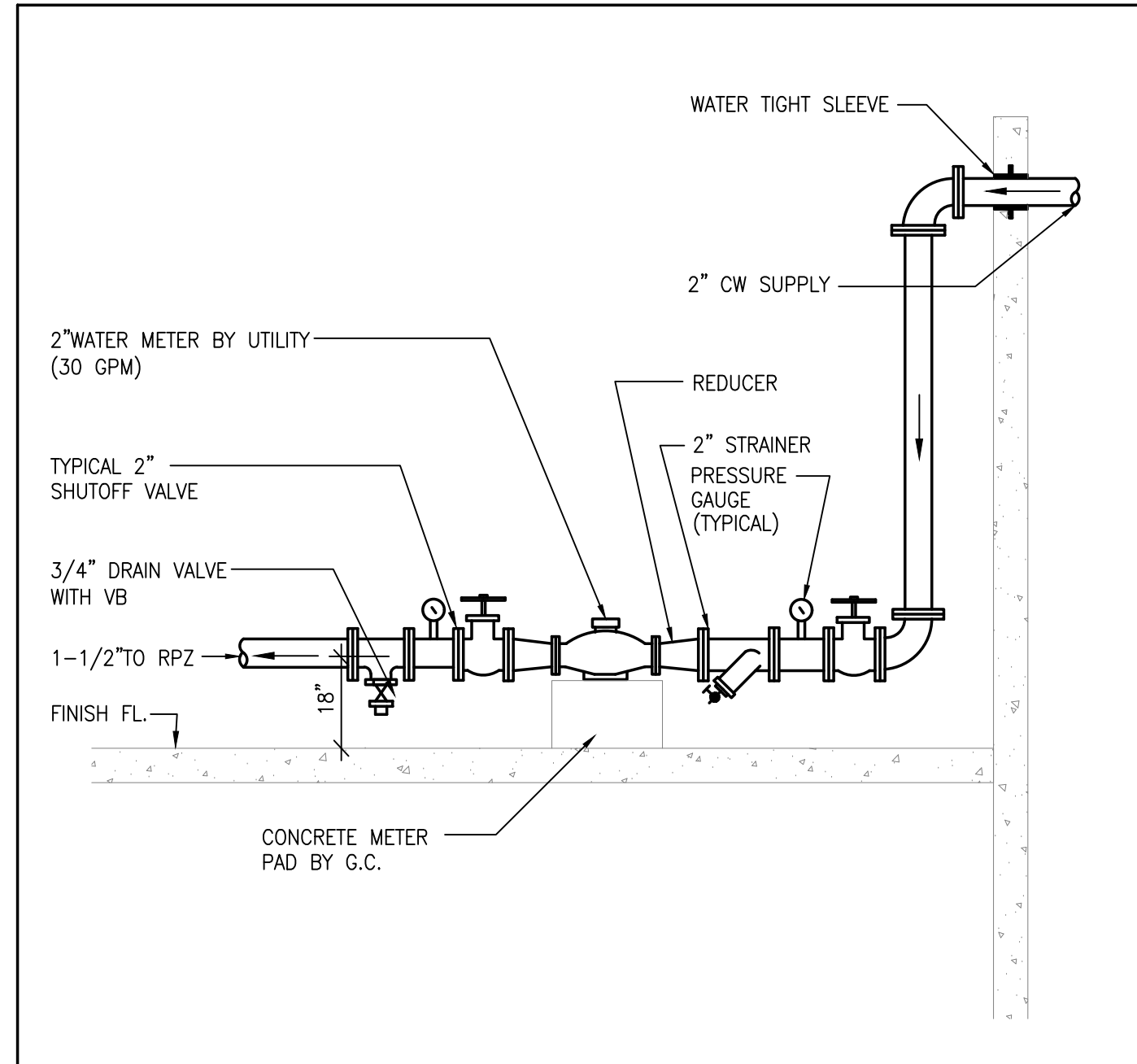
SUBCONSULTANT
SAR
ENGINEERING, INC.
Mechanical/Electrical Engineers
150 Grossman Drive, Suite 309
Burlington, Massachusetts 01794
617-221-9220
web: www.sar.com

SCALE
AS SHOWN
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

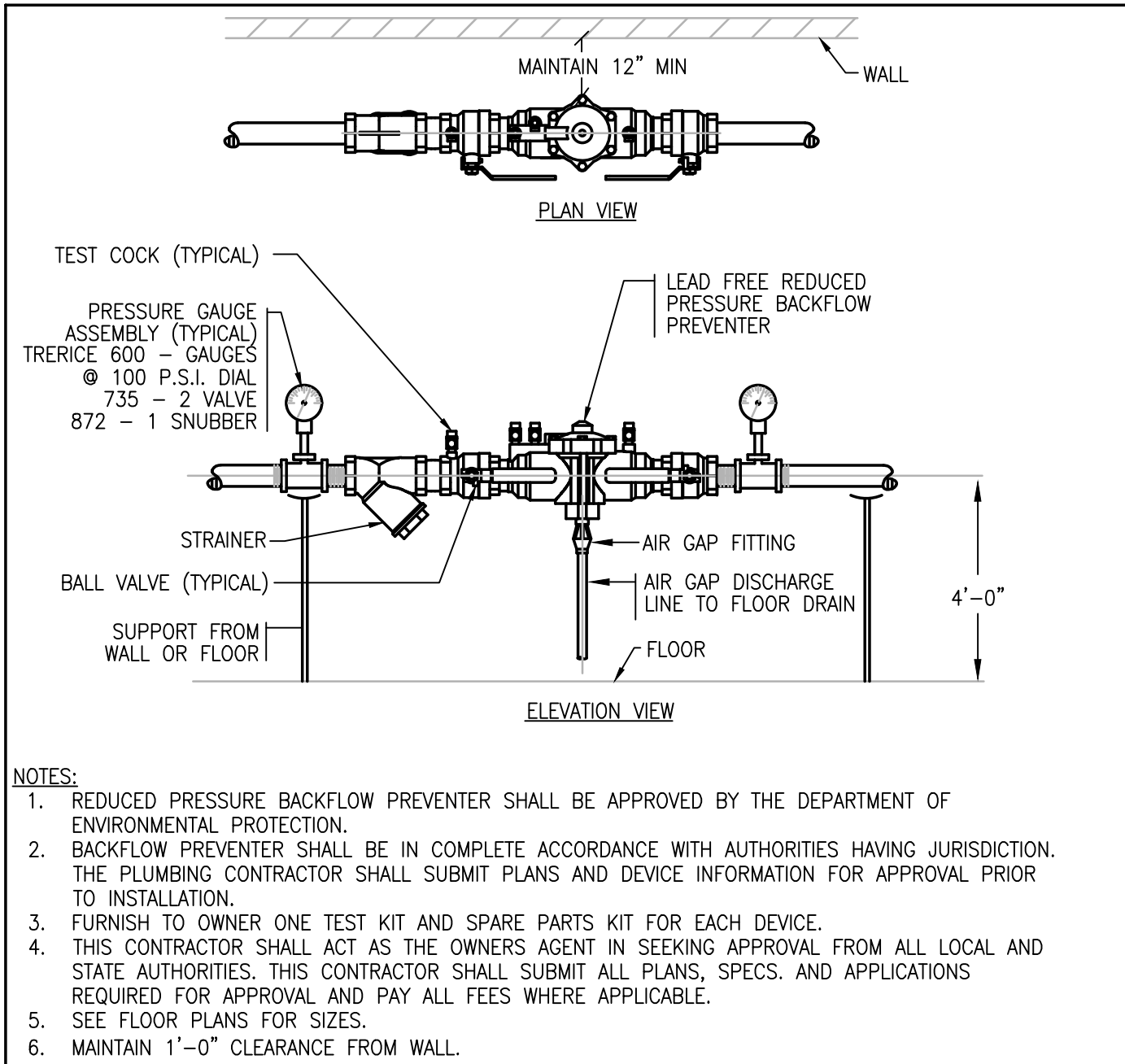
TITLE
Worcester Road Sewer Pumping Station Replacement
PLUMBING
PROPOSED ROOF PLAN

BETA JOB NO. 7385
ISSUE DATE APRIL 2022
SHEET NO. P-5

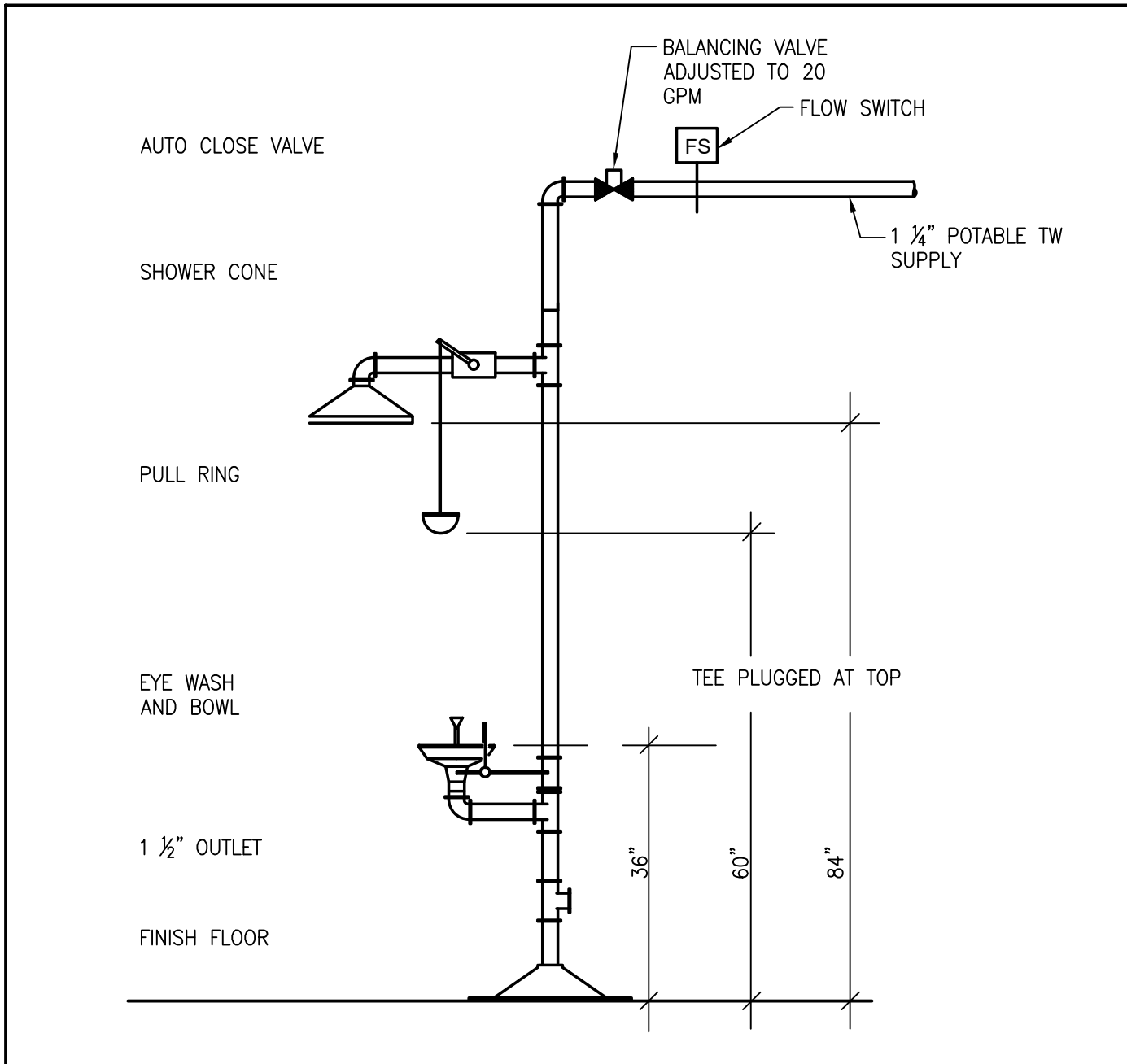
3/24/2022 7:21 AM - W:\YEAR - 2018\19020.00 - FRAMINGHAM WORCESTER ROAD PUMP STATION IMPROVEMENTS\PLUMBING\DEPARTMENT\19020.00 PLUMBING PLANS.DWG (BETA STB SW STB)



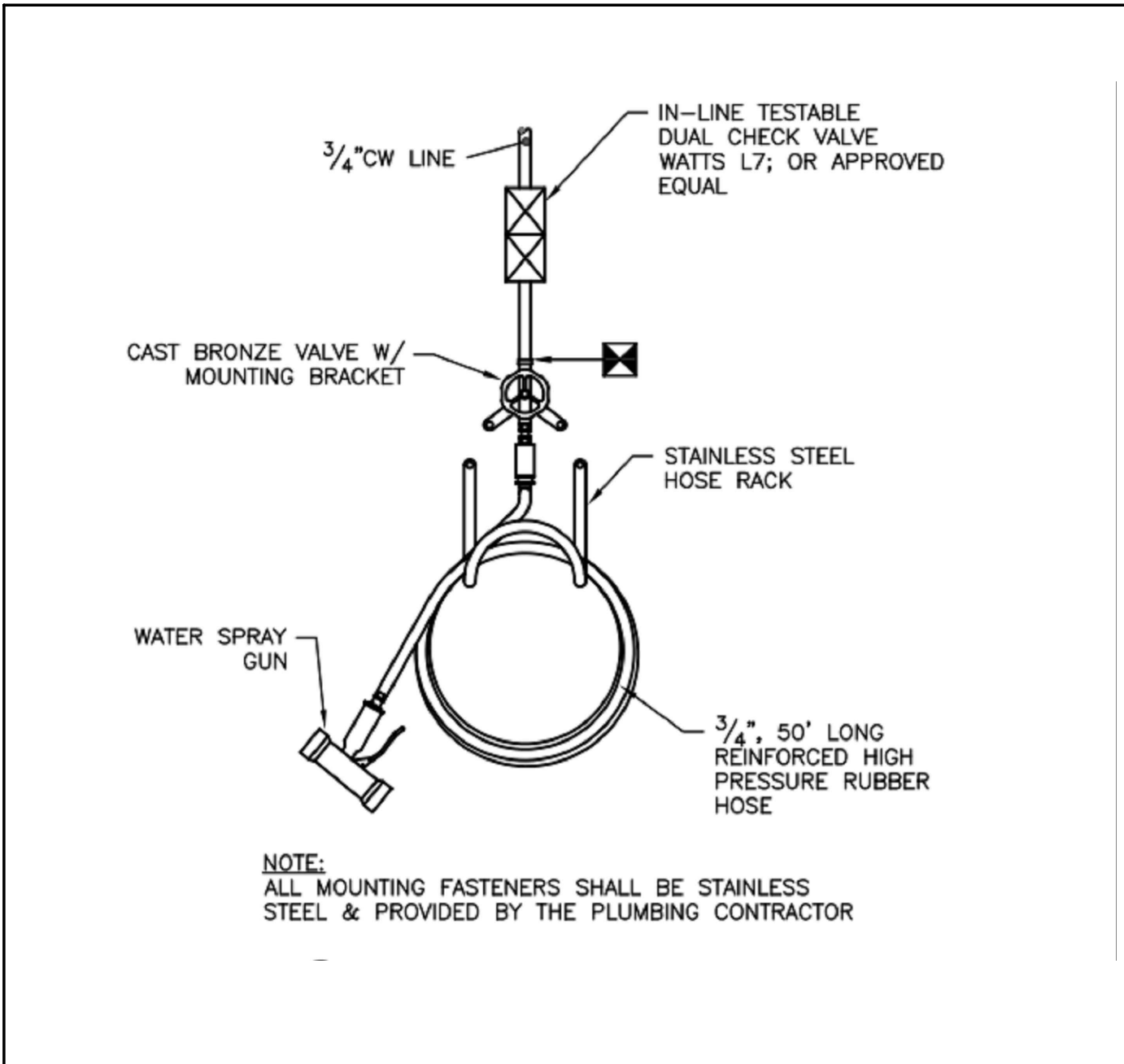
1 DOMESTIC WATER METER DETAIL NTS



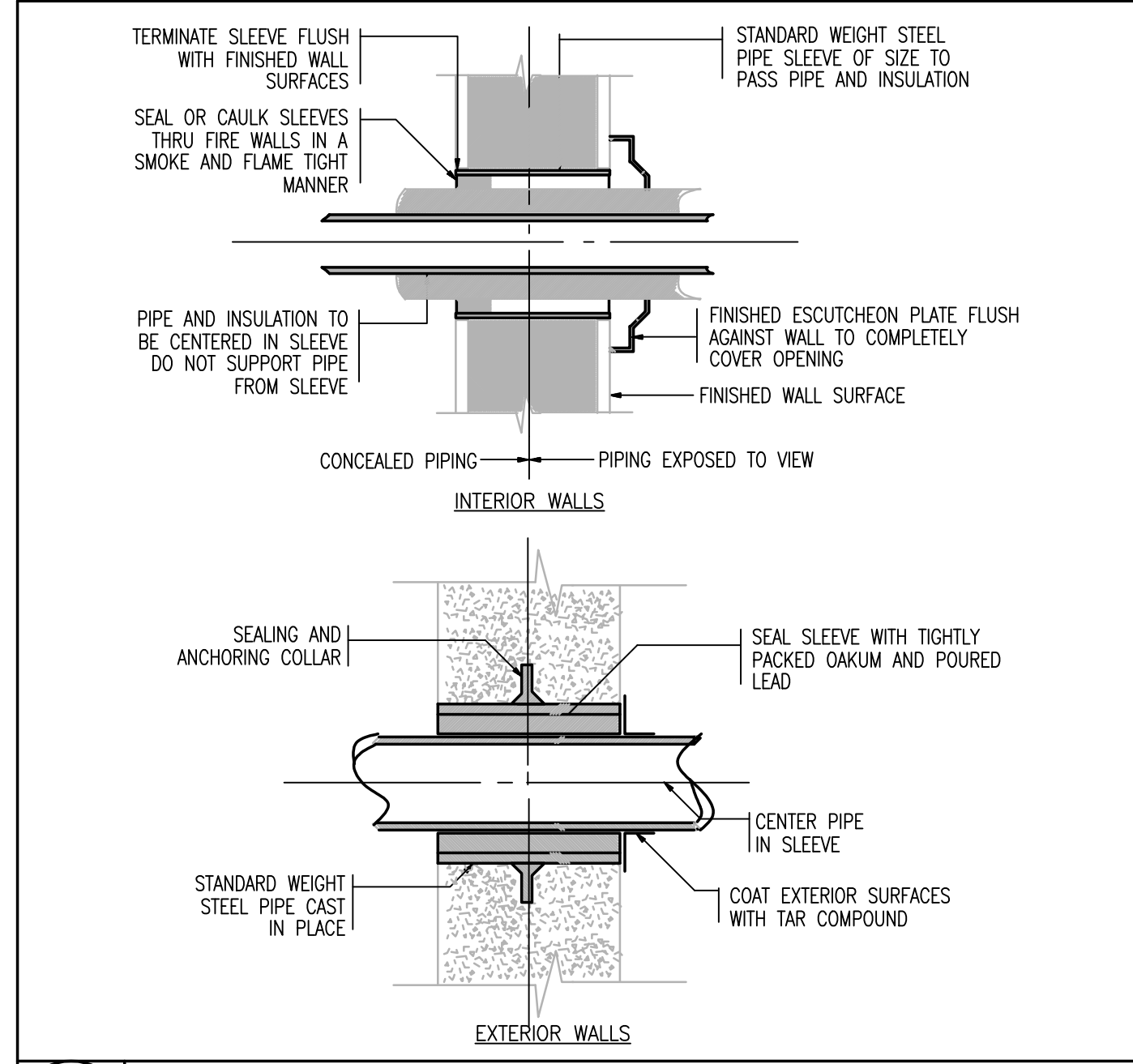
2 REDUCED PRESSURE BACKFLOW DETAIL NTS



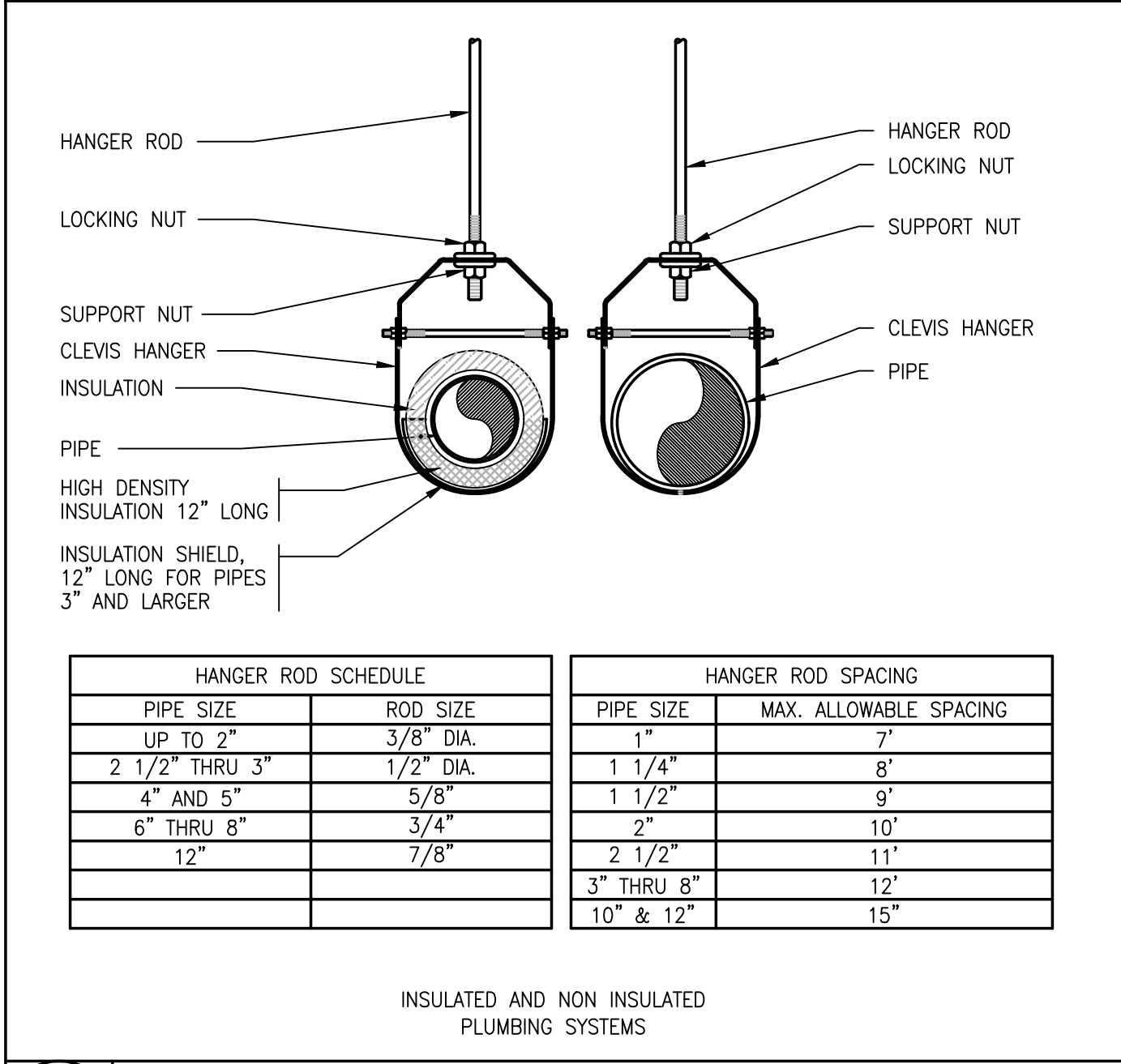
3 EMERGENCY SHOWER & EYE WASH NTS



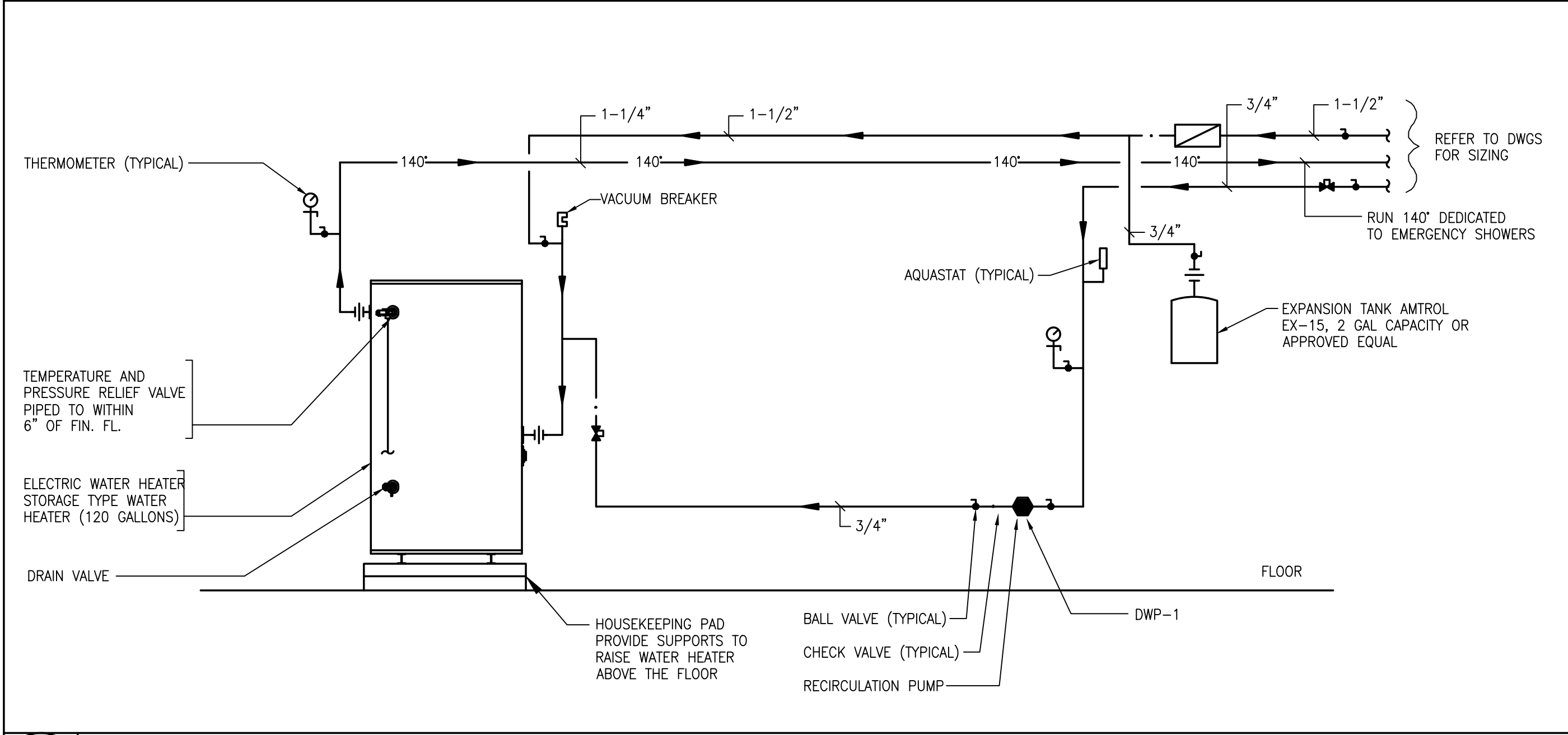
4 WASH DOWN STATION AT HOSEBID DETAIL NTS



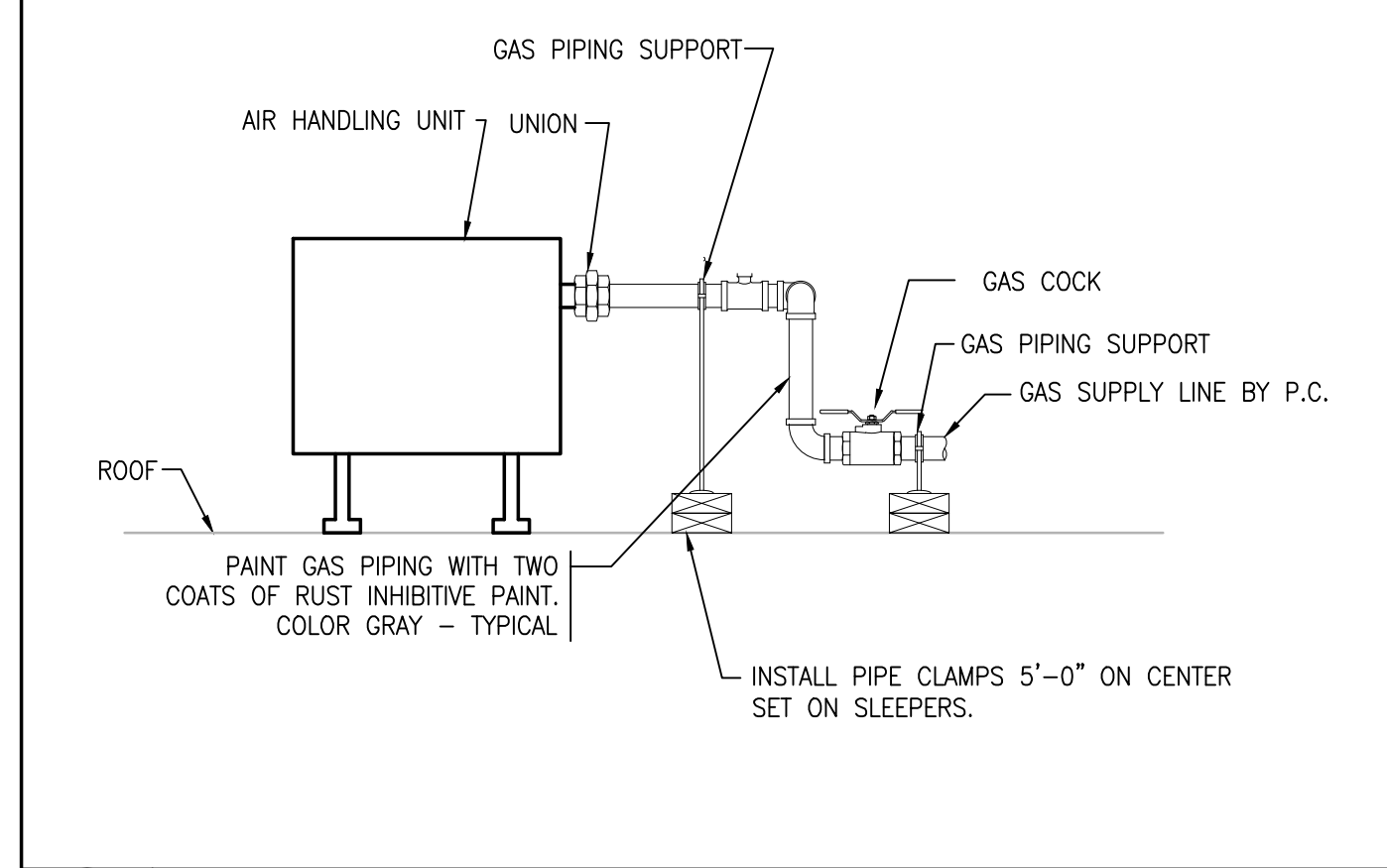
5 PIPING SLEEVE DETAIL NTS



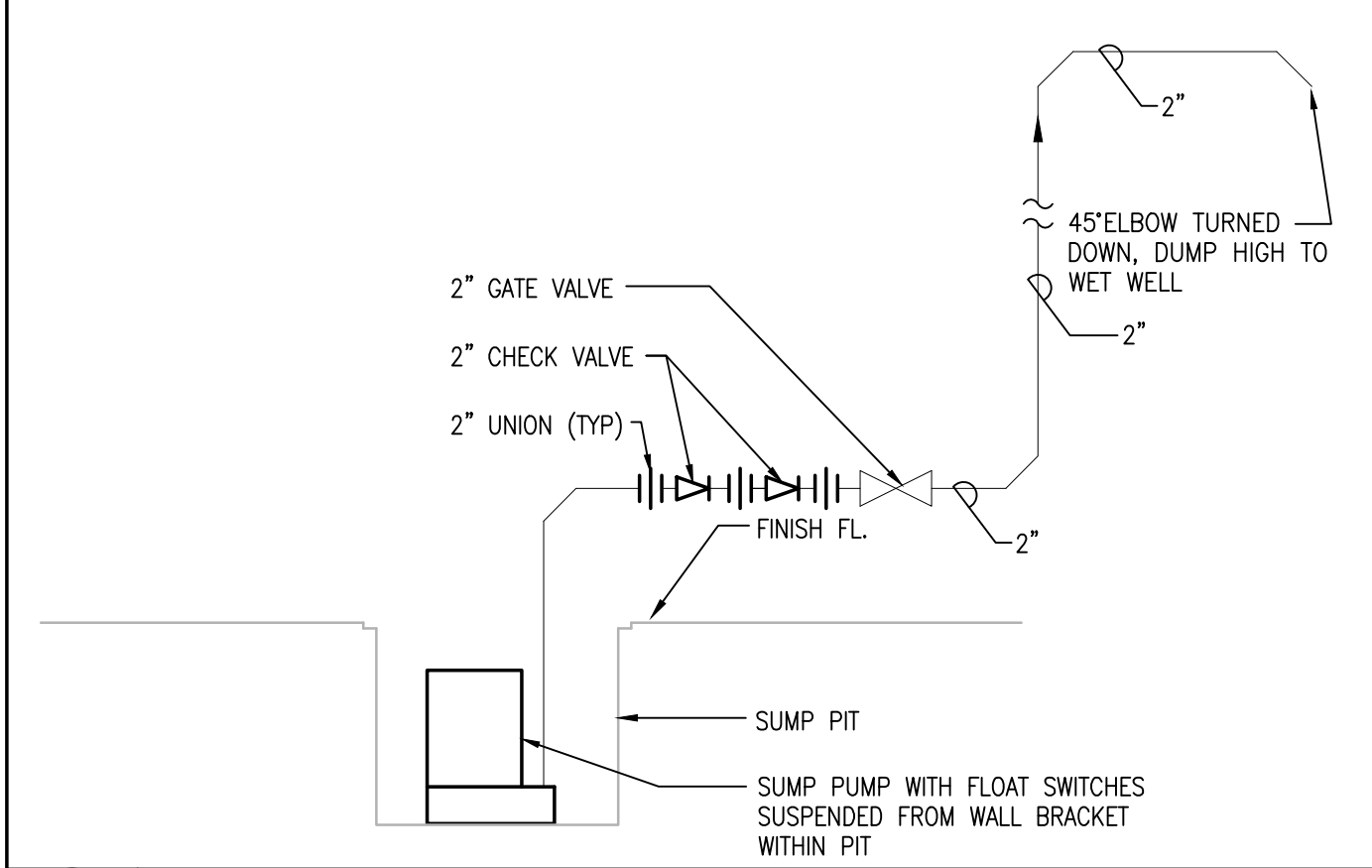
6 CLEVIS PIPE HANGER DETAIL NTS



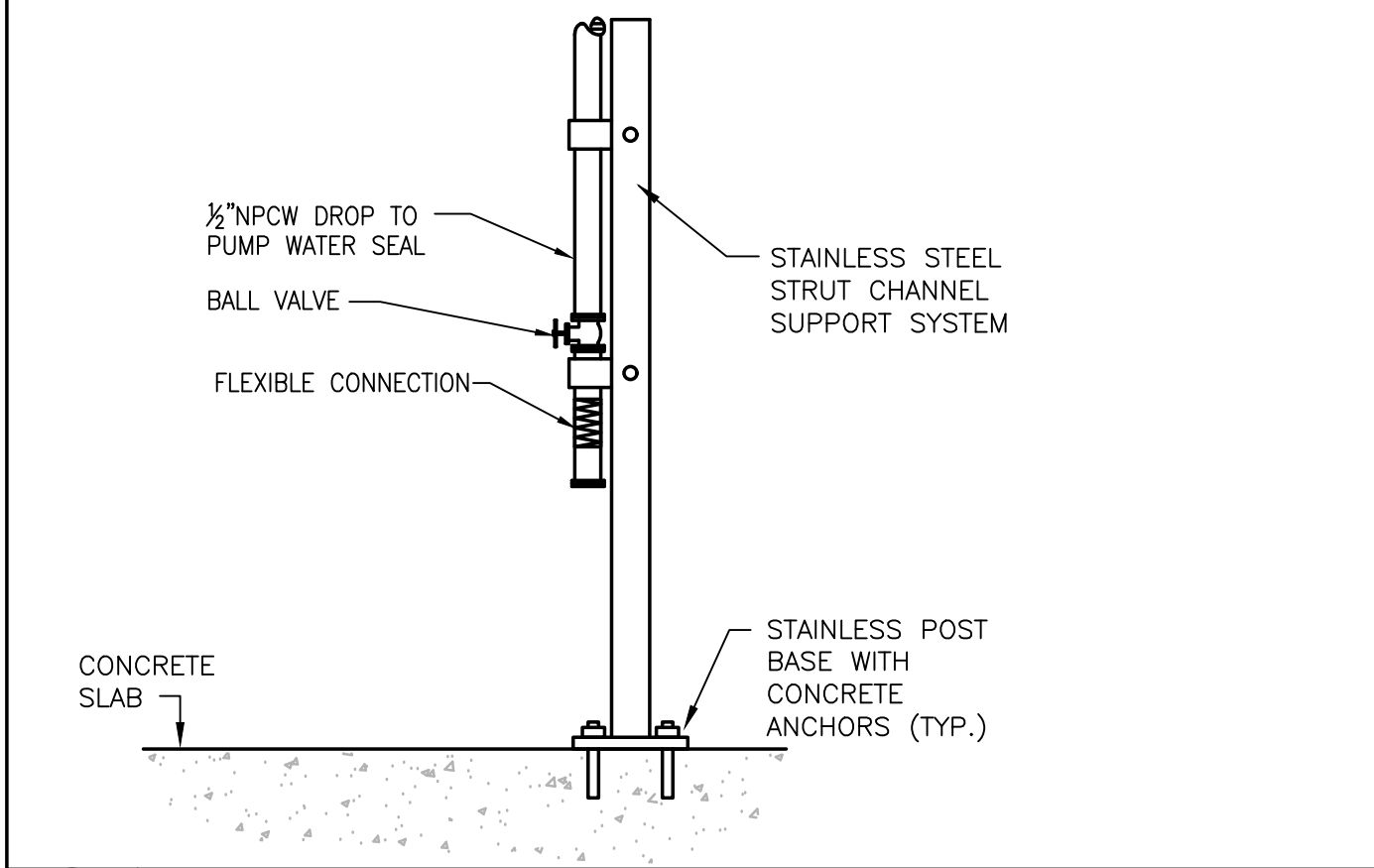
7 ELECTRIC WATER HEATER DETAIL NTS



8 ROOFTOP UNIT GAS PIPING DETAIL NTS



9 SUMP PUMP DETAIL NTS



10 PIPE SUPPORT FOR DROP TO WATER SEAL DETAIL NTS

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
RLB
DESIGNED BY:
RLB
CHECKED BY:
JAL

REGISTERED PROFESSIONAL
For Review Only
BETA
www.BETA-inc.com

SUBCONSULTANT
SAR ENGINEERING, INC.
Mechanical/Electrical Engineers
150 Grossman Drive, Suite 309
Burlington, Massachusetts 01784
617.221-9120
web: www.sar.com

SCALE
AS SHOWN

TITLE
Worcester Road Sewer Pumping Station Replacement
PLUMBING DETAILS

BETA JOB NO. 7385
ISSUE DATE APRIL 2022
SHEET NO. P-6

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION