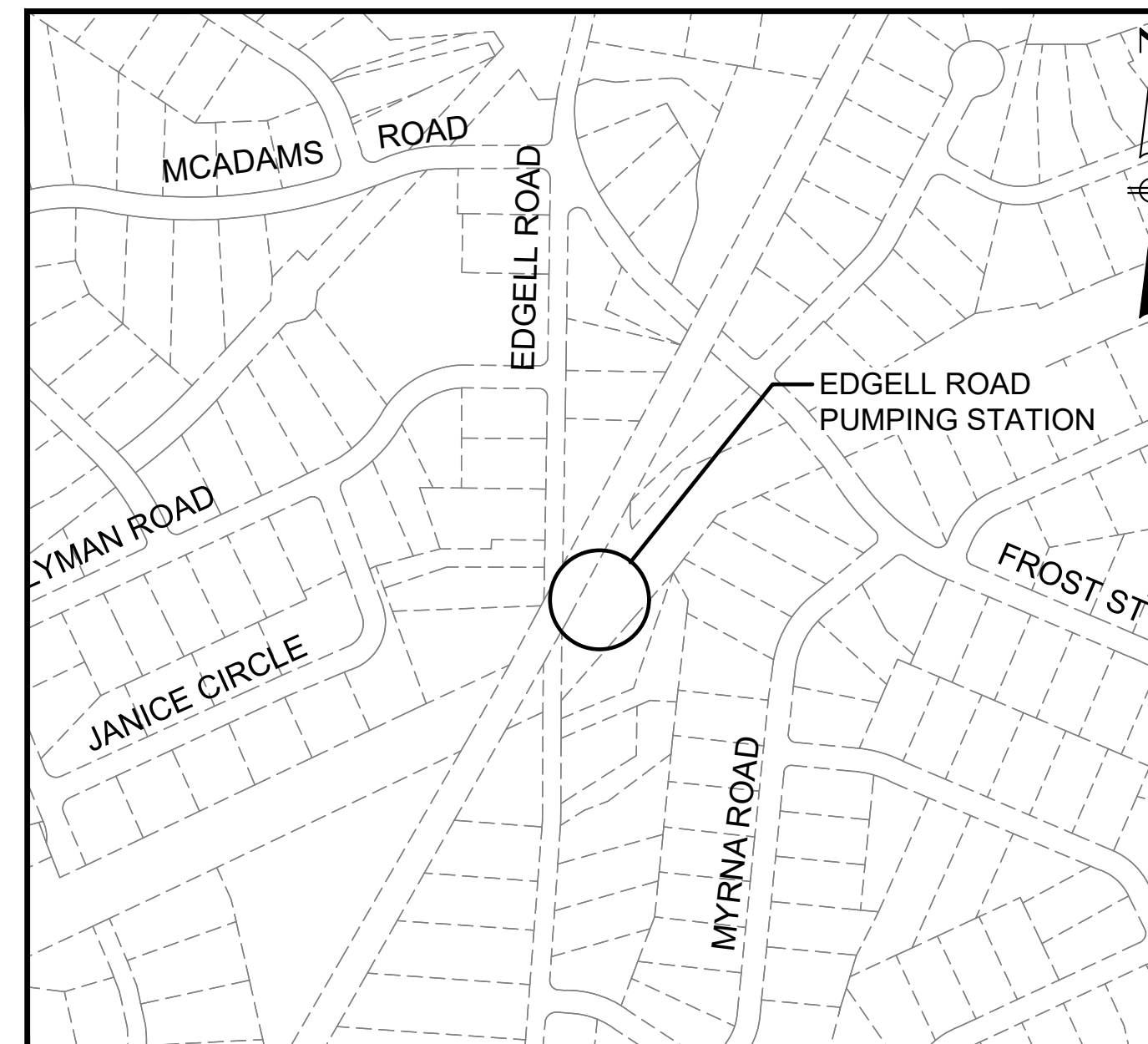


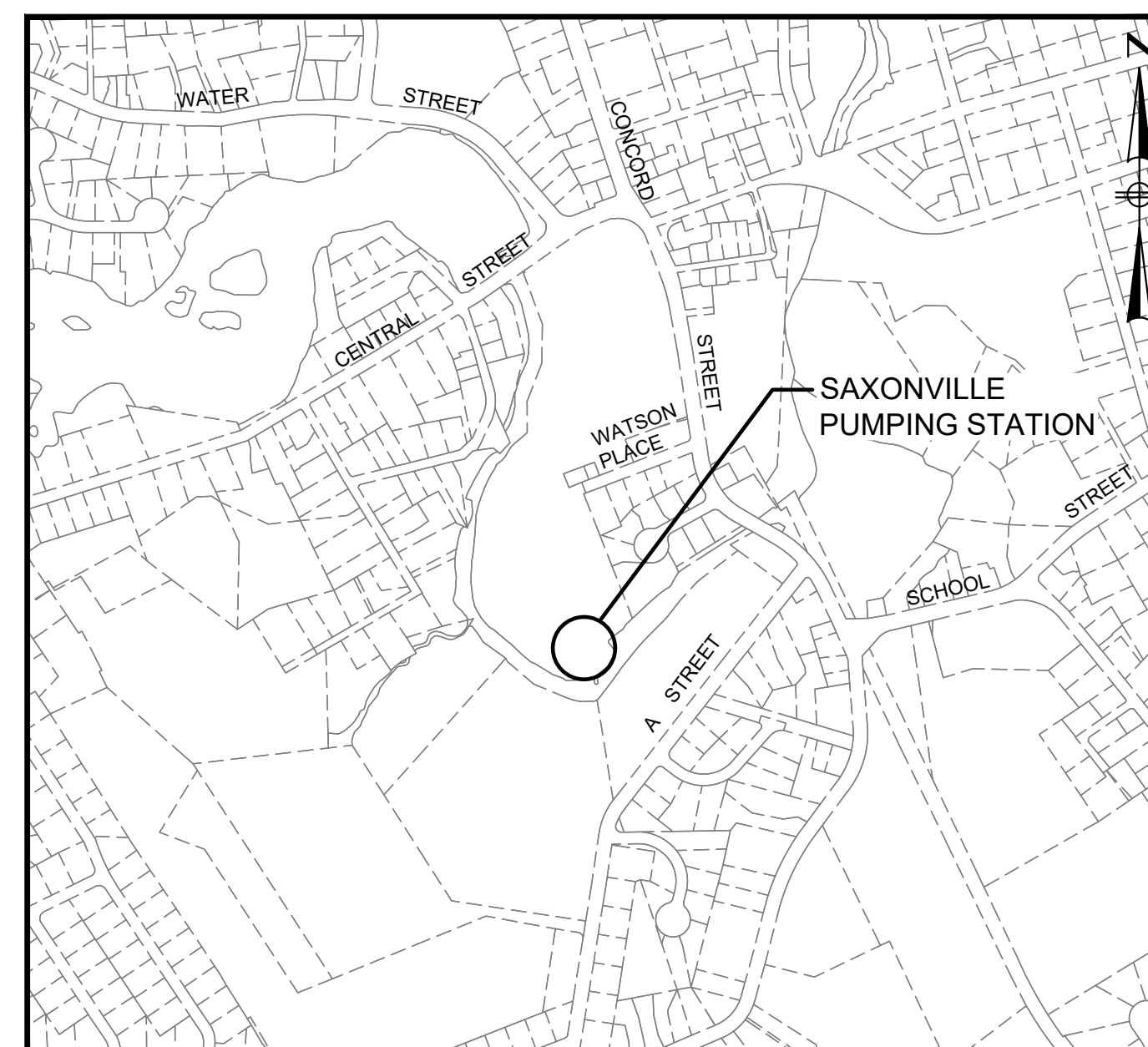
CITY OF FRAMINGHAM, MA DEPARTMENT OF PUBLIC WORKS EDGELL ROAD WATER PUMPING STATION REPLACEMENT CONTRACT NO. PW-428 JANUARY 2020



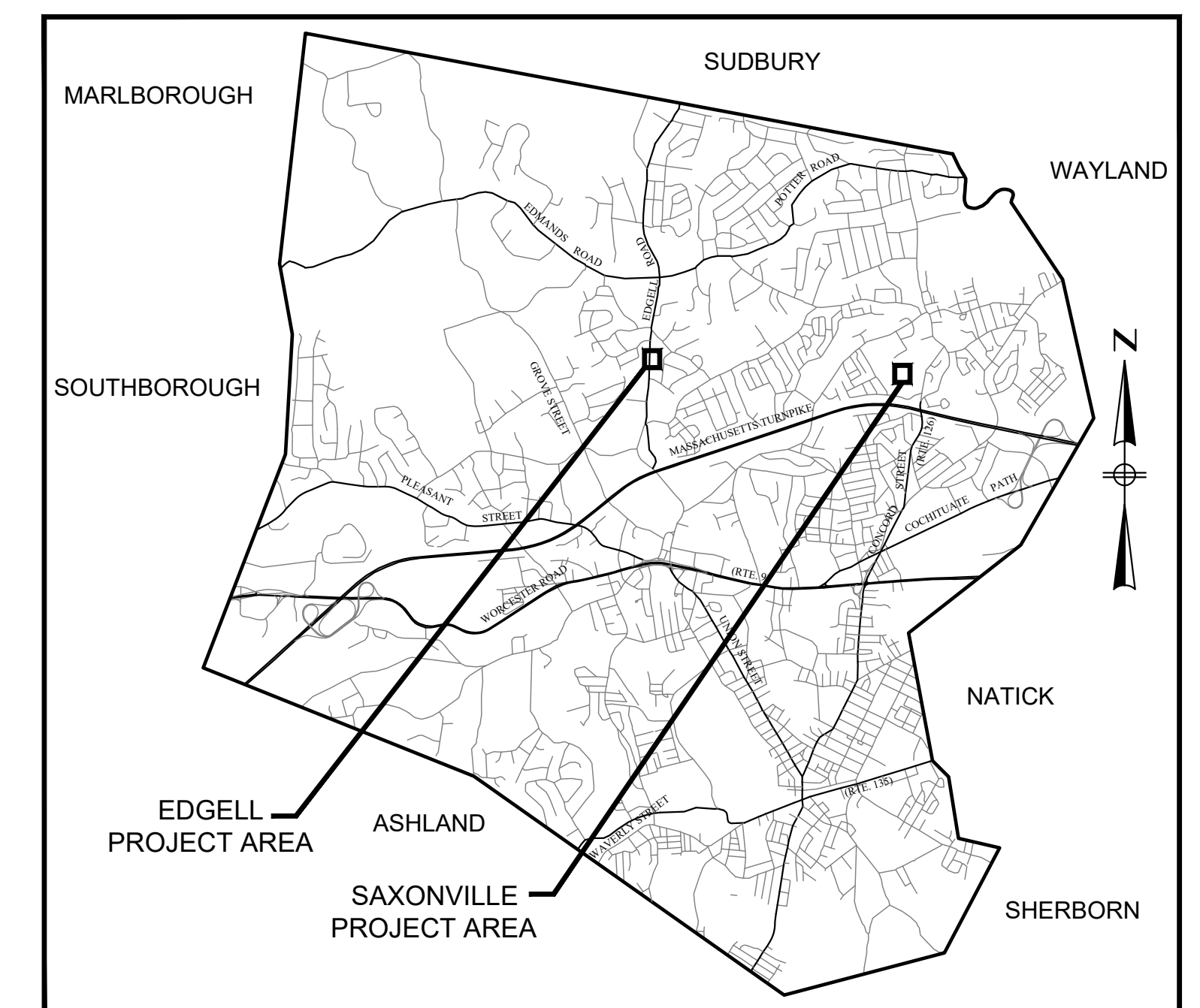
DR. YVONNE M. SPICER MAYOR
PETER A. SELLERS EXECUTIVE DIRECTOR OF PUBLIC WORKS
WILLIAM R. SEDEWITZ, P.E. CHIEF ENGINEER



EDGELL LOCUS MAP
NOT TO SCALE



SAXONVILLE LOCUS MAP
NOT TO SCALE



LOCATION MAP
NOT TO SCALE



Joseph J. D'Allesio 1/25/20
REGISTERED PROFESSIONAL ENGINEER DATE

LEGEND

EXISTING

	CURB OR BERM (TYPE AS NOTED)
	EDGE OF PAVEMENT
	CATCH BASIN
	TELEPHONE MANHOLE
	WATER MANHOLE
	SEWER MANHOLE
	GAS GATE
	WATER GATE
	HYDRANT
	UTILITY POLE
	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
	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)
	BUILDING

PROPOSED

	EDGE OF PAVEMENT
	SEWER MANHOLE
	SEWER MAIN
	WATER MAIN BYPASS
	CHAIN LINK FENCE
	SAW CUT LINE
	TEST PIT
	EROSION CONTROL BARRIER/STRAW WATTLES

GENERAL NOTES

- VERTICAL DATUM = NGVD 29
- FEMA MAP NUMBER 25017C0508F REVISED JULY 7, 2014 INDICATES THE PUMP STATION IS LOCATED IN ZONE X AREA OF MINIMAL FLOOD HAZARD.
- FRAMINGHAM DEPARTMENT OF PUBLIC WORKS CONSTRUCTION STANDARDS DATED MARCH 2009 AND REVISED MARCH 2018 SHALL CONTROL, EXCEPT WHERE OTHERWISE SPECIFIED OR SHOW IN THE CONTRACT DOCUMENTS.
- EXISTING BUILDING CONDITIONS DIGITIZED/SCANNED FROM 'EDGELL ROAD PUMPING STATION' RECORD DRAWINGS, 1941 (WHITMAN & HOWARD INC. ENGINEERS), SUPPLEMENTED BY MWRA RECORD DOCUMENTS, A PARTIAL FIELD SURVEY BY GOLDSMITH, PREST & RINGWALL, INC., MASSACHUSETTS GIS INFORMATION, AND FIELD EDITS BY BETA GROUP, INC.
- PROJECT LIMITS ARE WITHIN PROPERTY OWNED BY THE CITY OF FRAMINGHAM, MA., MAP 100 LOT 367 AND THE CITY OF FRAMINGHAM, MAP 100 LOT 367. 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 ARE APPROXIMATE ONLY. THE CONTRACTOR MUST NOTIFY DIG SAFE PRIOR TO ANY EXCAVATION, DEMOLITION OR EXPLOSION 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 AT THE CONTRACTOR'S EXPENSE.
- THE TERM "PROPOSED" (PROP.) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
- SHOULD TRENCH DEWATERING BE REQUIRED FOR THIS WORK AND DISCHARGE OF FINES OR SEDIMENTS 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 WITH SUITABLE GRAVEL BORROW, CRUSHED STONE AND/OR SELECTED 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 WHEELCHAIR RAMP EXCEED 7.5%. PROPOSED WHEELCHAIR 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.
- THE METRO WEST TUNNEL IS LOCATED APPROXIMATELY 200 TO 500 FEET BELOW THE PROJECT SITE
- THE EDGELL ROAD PUMP STATION IS HYDRAULICALLY CONNECTED TO BOTH THE METRO WEST TUNNEL AND THE HULTMAN AQUEDUCT. THE AVERAGE STATIC PRESSURE IS 31 PSI.

CONSTRUCTION NOTES

- THE ABOVE GROUND STORAGE TANK SHALL BE REMOVED IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS. THE ABOVE GROUND STORAGE TANK SHALL BE EMPTIED BY THE CONTRACTOR PRIOR TO STARTING REMOVAL. REMOVAL AND DISPOSAL SHALL INCLUDE ALL PIPING, ANCHORAGE, SUPPORT PAD, PIPING, RESIDUAL FUEL, FUEL TANK, FENCING AND APPURTENANCES. SEE SECTION 01060 FOR PERMIT REQUIREMENTS.
- THE EXISTING CESSPOOL SHALL BE ABANDONED IN PLACE IN ACCORDANCE WITH CMR310.354 AND ANY ADDITIONAL STATE AND LOCAL REQUIREMENTS. SEE SECTION 01060 OF THE CONTRACT SPECIFICATIONS FOR SEWAGE DISPOSAL SYSTEM ABANDONMENT APPLICATION. THE CONTRACTOR IS RESPONSIBLE FOR ALL ASSOCIATED COSTS INCLUDING THE APPLICATION FEE.
- THE OPERATION AND MAINTENANCE OF THE BYPASS PUMPING SYSTEM SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. 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 11280 - MAINTAINING EXISTING FLOW. INCLUDE CAPACITY DATA AND CENTRAL SYSTEM DESCRIPTION FOR THE PUMPS.
- CONTRACTOR SHALL SUBMIT DESCRIPTIONS OF THE PROCEDURES FOR INSTALLING THE BYPASS FACILITY AND FOR OPERATING THE BYPASS PUMPING ARRANGEMENT.
- THE BYPASS SHALL BE IN PLACE, TESTED AND APPROVED BY THE CITY PRIOR TO COMMENCING WORK IN THE STATION.
- 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.
- ALL MWRA OWNED VALVES ARE TO BE OPERATED BY MWRA PERSONNEL ONLY. ENGINEER TO COORDINATE WITH MWRA FOR ALL VALVE OPERATIONS.
- MWRA IS NOT A CUSTOMER OF DIG SAFE IN THE FRAMINGHAM AREA. THE ENGINEER MUST CONTACT MWRA DIRECTLY FOR MARK-OUT, INSPECTION SERVICES, AND REQUESTS FOR VALVE OPERATIONS.
- CONSTRUCTION EQUIPMENT AND OTHER EQUIPMENT INCLUDING GRAVEL OR "FILL" MAY NOT BE STATIONED, STORED, OR STOCKPILED OVER OR WITHIN THE MWRA'S EASEMENT OR ON MWRA PROPERTY.
- THE MWRA DOES NOT GUARANTEE A "WATER TIGHT SHUTDOWN" AND THE CONTRACTOR WILL BE RESPONSIBLE FOR MITIGATION OF ANY WATER.
- A DISINFECTION PLAN PREPARED TO CONFORM TO CITY OF FRAMINGHAM STANDARDS MUST BE SUBMITTED TO THE CITY AND MWRA FOR APPROVAL. SEE SPECIFICATION SECTION 02675 FOR REQUIREMENTS.
- 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.

PLAN INDEX

SHEET NO.	DESCRIPTION
	COVER SHEET
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C-2	BYPASS AND RESTORATION PLAN
CD-1	CONSTRUCTION DETAILS - 1
CD-2	CONSTRUCTION DETAILS - 2
CD-3	CONSTRUCTION DETAILS - 3
A-00	ABBREVIATIONS, GENERAL NOTES & MOUNTING HEIGHTS
A-01	DEMOLITION DRAWINGS
A-02	PROPOSED FLOOR PLAN AND REFLECTING CEILING PLAN
A-03	PROPOSED ROOF PLAN AND 3D VIEW
A-04	PROPOSED ELEVATIONS
A-05	BUILDING SECTIONS
A-06	PROPOSED INTERIOR ELEVATIONS
A-07	WALL SECTIONS
A-08	BRICK, MASONRY AND PARAPET DETAILS
A-09	DOOR AND WINDOW DETAILS
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A-11	BUILDING ENTRANCE DETAILS & ROOF DETAILS
A-12	SAXONVILLE ROOF REPLACEMENT
S-1	GENERAL NOTES
S-2	FIRST FLOOR PLAN
S-3	ROOF FRAMING PLAN
S-4	MASONRY DETAILS
S-5	ROOF DETAILS
S-6	MISCELLANEOUS DETAILS
M-1	PROPOSED DEMOLITION PLANS & SECTIONS
M-2	PROPOSED MECHANICAL PLANS & SECTIONS
MD-1	MECHANICAL DETAILS-1
E-1	ELECTRICAL LEGEND AND GENERAL NOTES
E-2	ELECTRICAL ONE LINE DIAGRAM
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E-6	ELECTRICAL ROOF PLAN
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E-8	ELECTRICAL SCHEDULES
E-9	ELECTRICAL WIRING DIAGRAMS
E-10	ELECTRICAL DETAILS
H-1	HVAC LEGEND AND GENERAL NOTES
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I-1	INSTRUMENTATION & CONTROLS LEGEND AND ABBREVIATIONS
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I-3	INSTRUMENTATION & CONTROLS STATION MONITORING
P-1	PLUMBING LEGEND, NOTES AND SCHEDULES
P-2	PLUMBING DEMOLITION PLAN
P-3	PLUMBING GROUND LEVEL PLAN
P-4	PLUMBING ROOF PLAN
P-5	PLUMBING DETAILS

1/30/2020 3:34 PM J:\6481 - EDGELL ROAD WATER PUMP STATION\AUTOCAD\PLAN SET\LEGEND & GENERAL NOTES.DWG (BETA STB BW.STB)

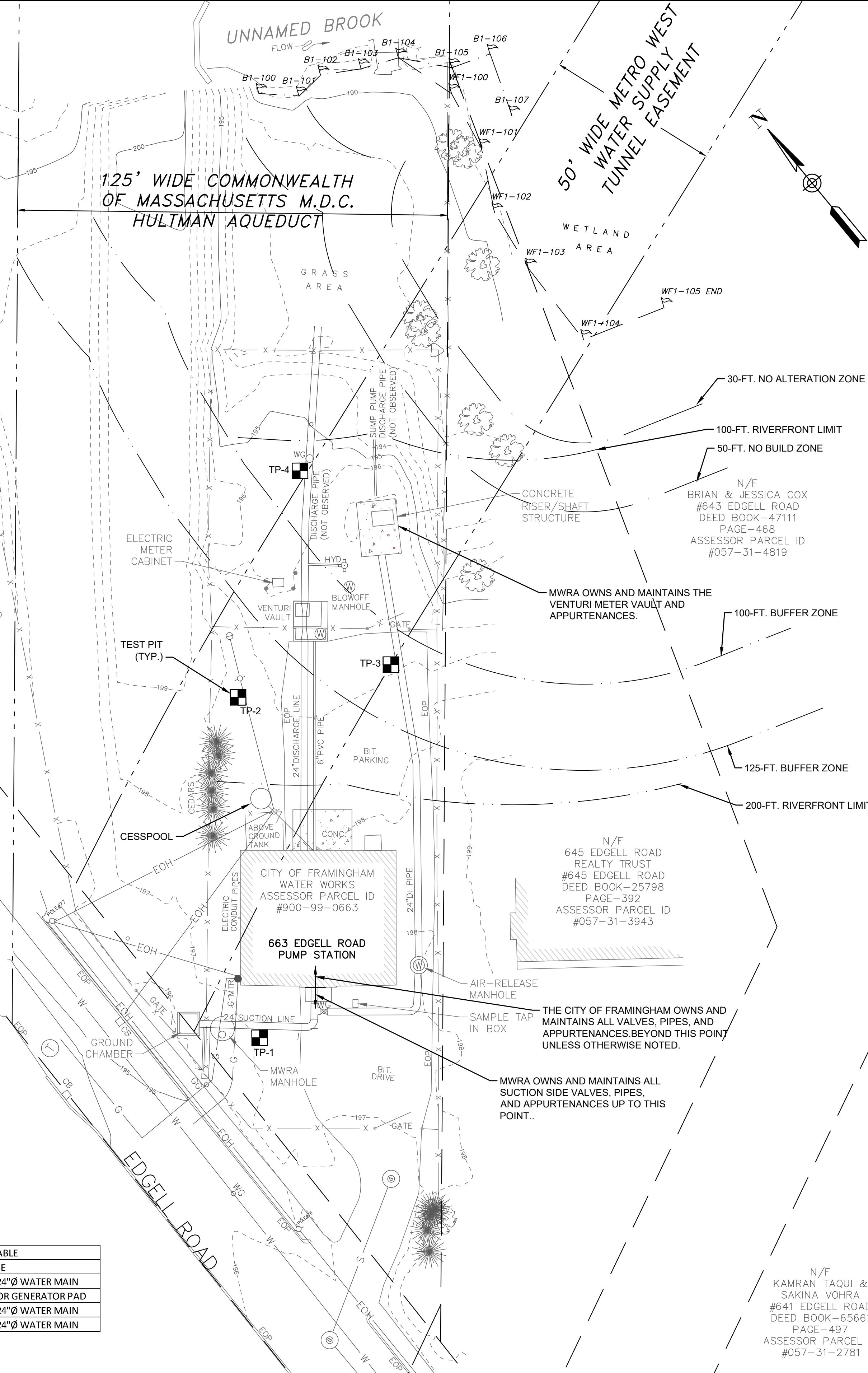
NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS	DRAWN BY: PAN	REGISTERED PROFESSIONAL 	PREPARED BY 	SUBCONSULTANT	SCALE NONE	TITLE Edgell Road Water Pumping Station Replacement Legend, General Notes, & Index	BETA JOB NO. 6481
					DESIGNED BY: AJG						ISSUE DATE January 2020
					CHECKED BY: AJG						SHEET NO. G-1

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

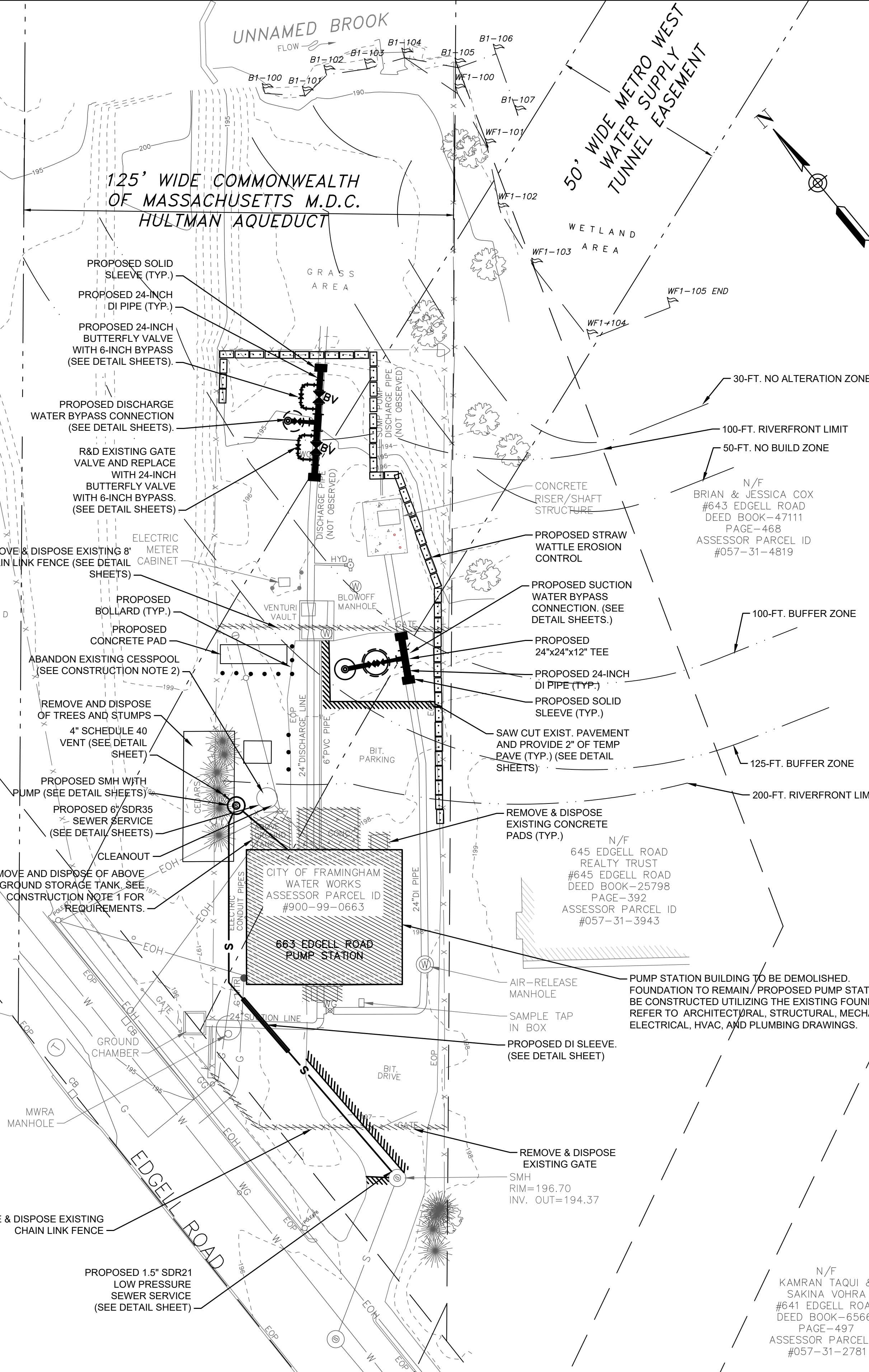
2/7/2020 2:45 PM J:\6481 - EDGELL ROAD WATER PUMP STATION\AUTOCAD\PLAN SET\1.1 EXISTING AND PROPOSED CONDITIONS.DWG (BETA STB BW STB)

(FORMERLY THE PENN CENTRAL RAIL CORPORATION COMPANY, INC.)
 CONSOLIDATED RAIL CORPORATION COMPANY, INC.

(FORMERLY THE PENN CENTRAL RAIL CORPORATION COMPANY, INC.)
 CONSOLIDATED RAIL CORPORATION COMPANY, INC.



EXISTING SITE PLAN
SCALE: 1" = 20'



PROPOSED SITE PLAN
SCALE: 1" = 20'

PROPOSED TEST PIT TABLE	
TEST PIT #	PURPOSE
1	CONFIRM DEPTH TO TOP OF 24"Ø WATER MAIN
2	CONFIRM SOILS SUITABLE FOR GENERATOR PAD
3	CONFIRM DEPTH TO TOP OF 24"Ø WATER MAIN
4	CONFIRM DEPTH TO TOP OF 24"Ø WATER MAIN

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

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



REGISTERED PROFESSIONAL PREPARED BY
SUBCONSULTANT

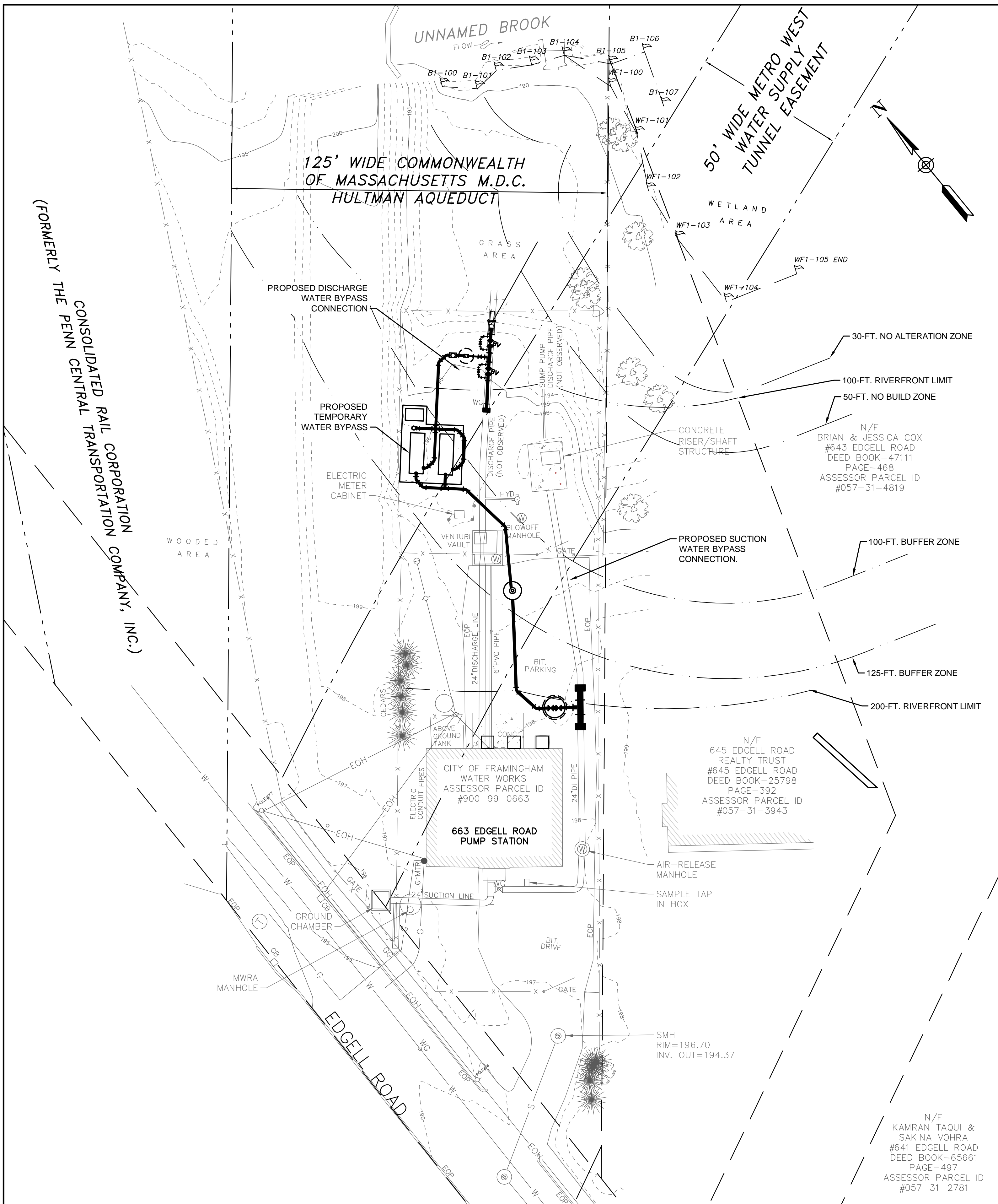
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TITLE
Edgell Road Water Pumping Station Replacement
Existing Conditions And Proposed Site Plan

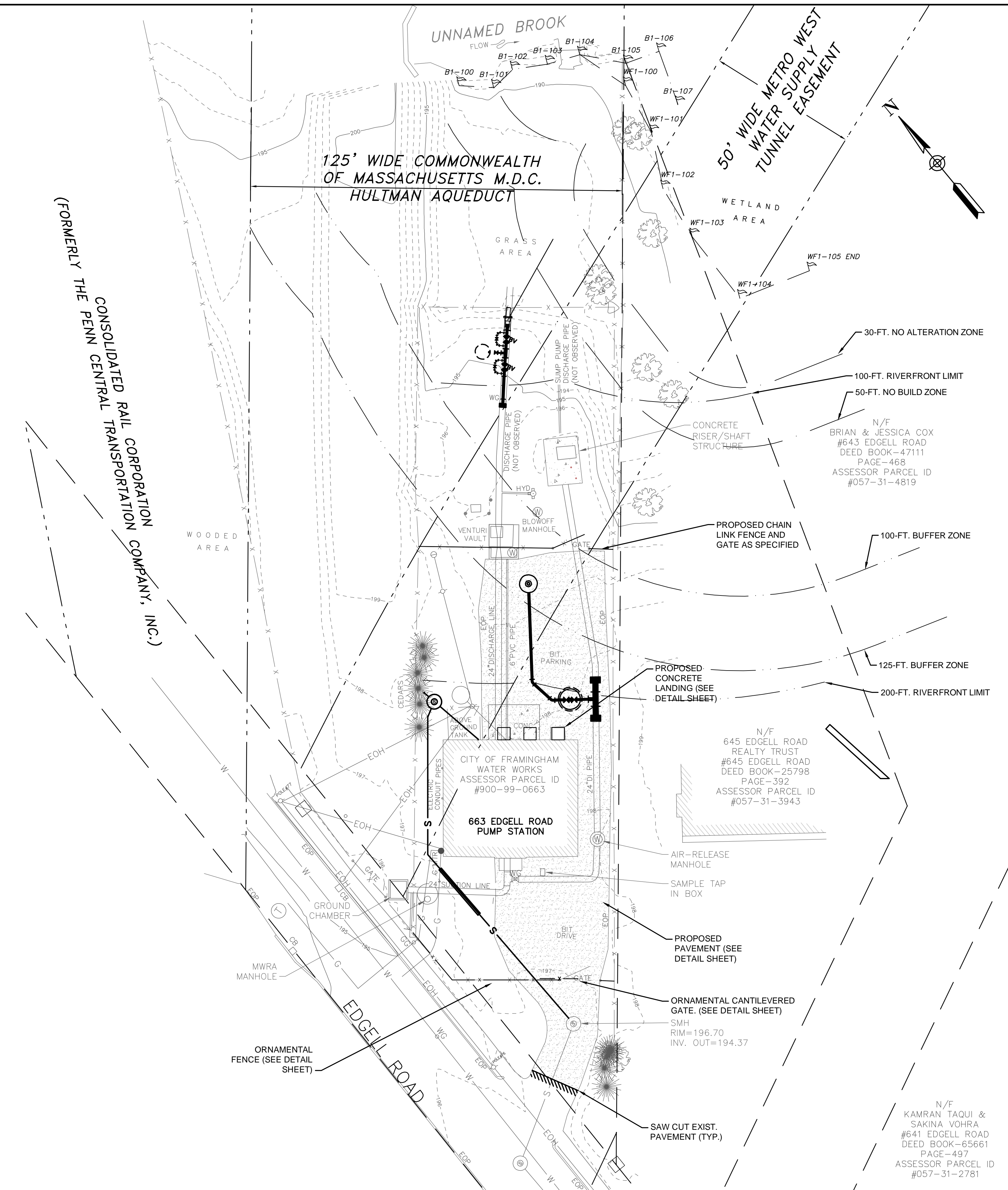
BETA JOB NO. 6481
ISSUE DATE January 2020
SHEET NO. C-1

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

9/14/2021 1:31 PM U:\7163 - EDGELL WPS CONSTRUCTION SERVICES\CHANGE ORDERS\CONSTRUCTION STAGE CHANGES\UPDATED CITY BYPASS CONNECTION.DWG (BETA STB BW.STB)



PROPOSED BYPASS PLAN
SCALE: 1" = 20'



PROPOSED RESTORATION PLAN
SCALE: 1" = 20'

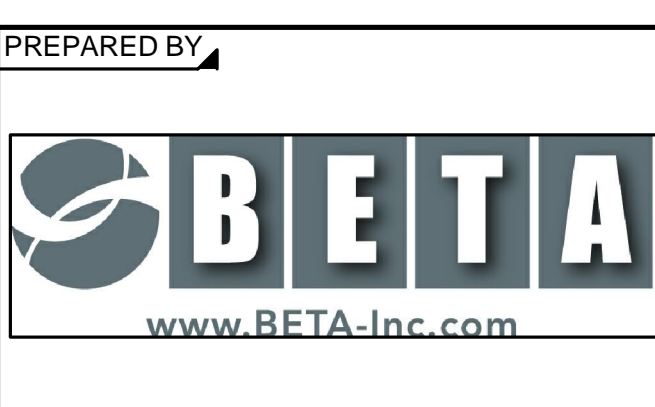
NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS
1	5/14/21	AJG	JRD	UPDATED BYPASS CONNECTIONS

DRAWN BY:
PAN

DESIGNED BY:
AJG

CHECKED BY:
AJG

REGISTERED PROFESSIONAL
Not for Construction



SUBCONSULTANT

SCALE
AS SHOWN

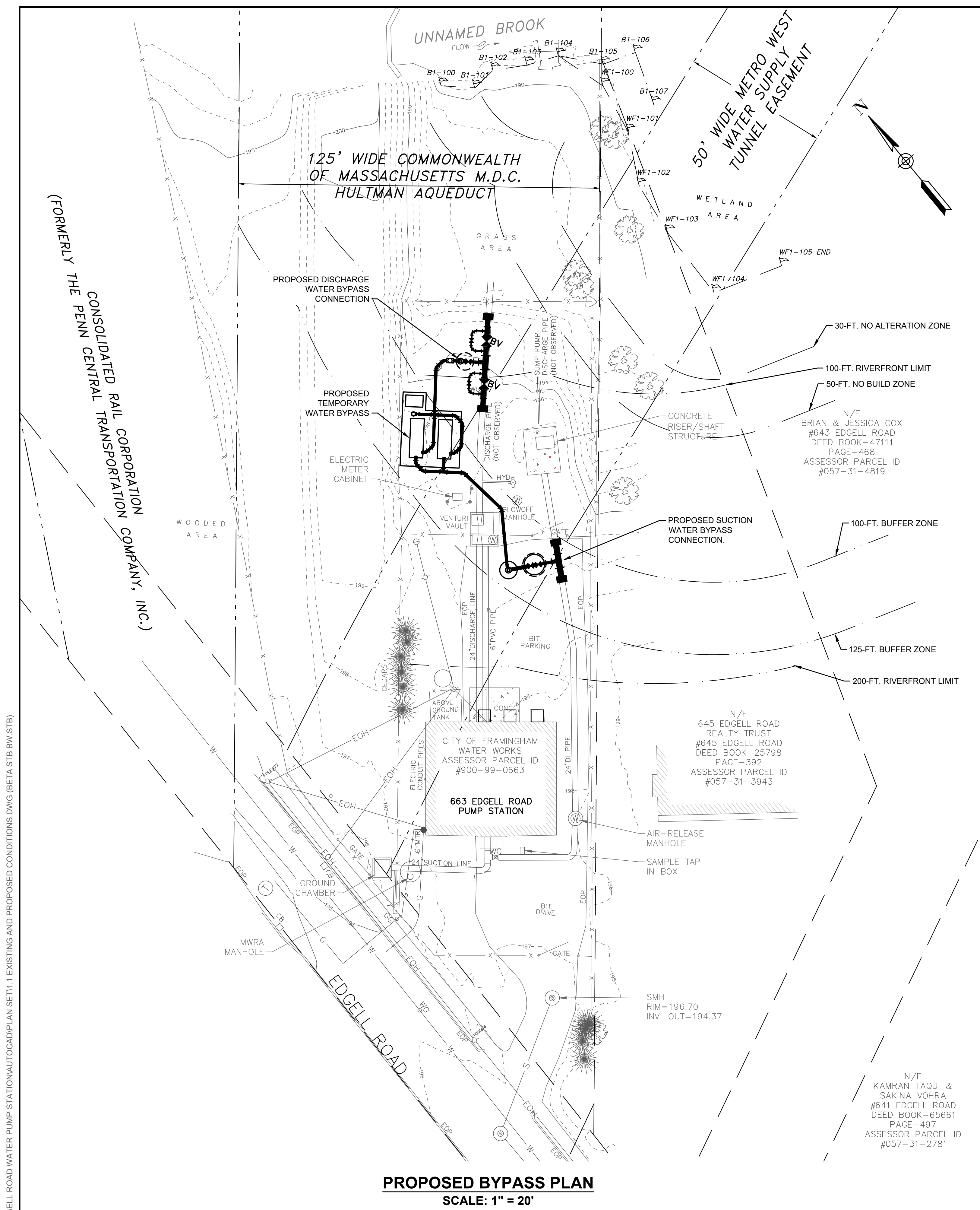
TITLE
Edgell Road Water Pumping Station Replacement
Bypass And Restoration Plan

BETA JOB NO. 6481

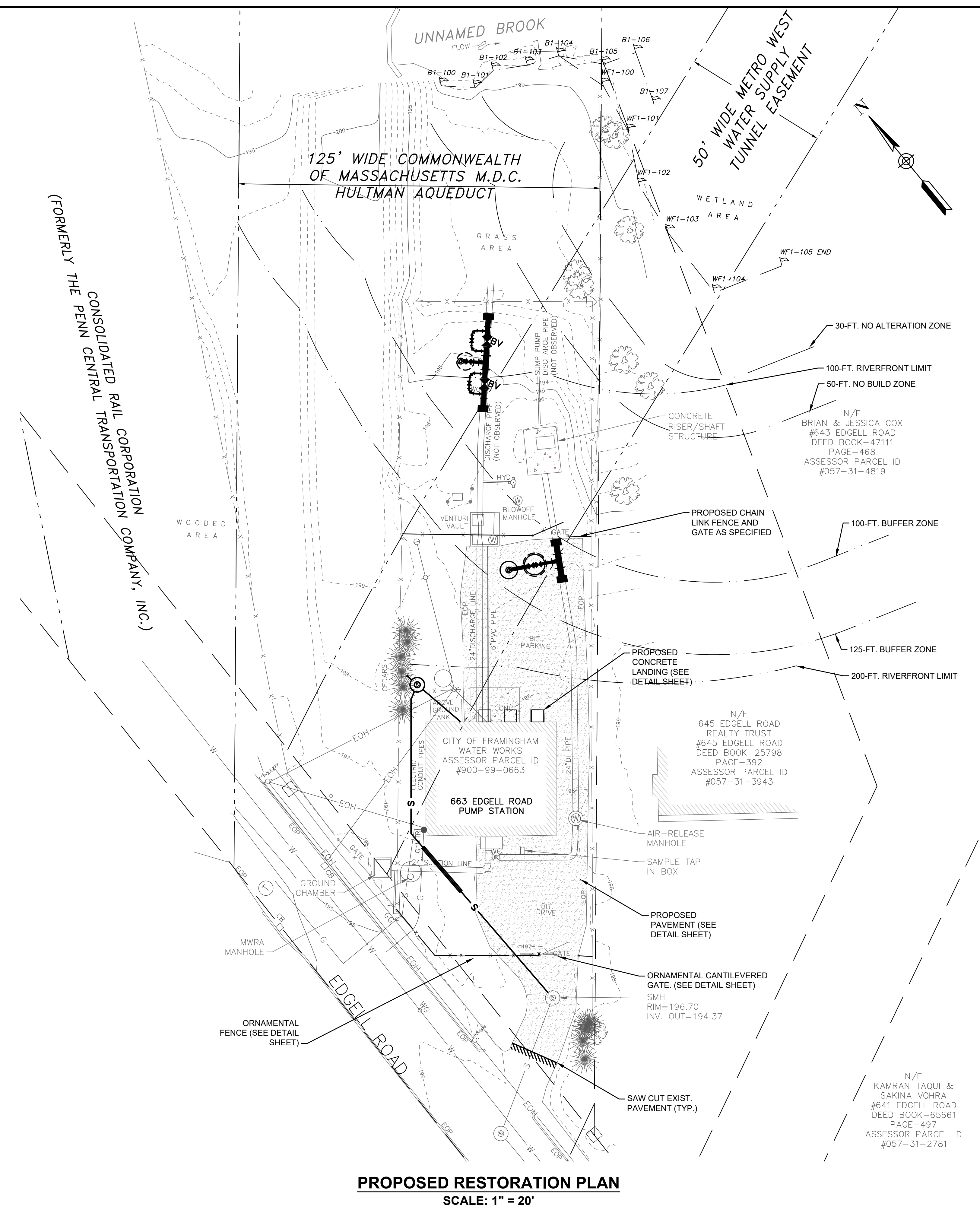
ISSUE DATE January 2020

SHEET NO. C-2

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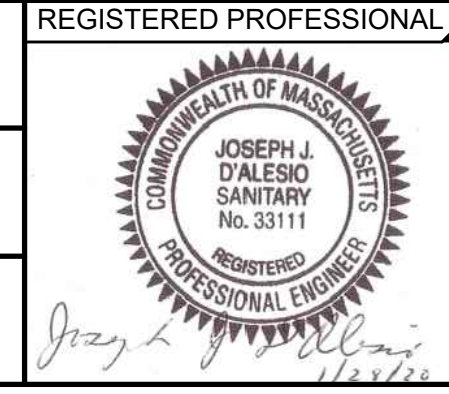
PROPOSED BYPASS PLAN
SCALE: 1" = 20'



PROPOSED RESTORATION PLAN
SCALE: 1" = 20'

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

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PAN
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AJG
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AJG



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SUBCONSULTANT

SCALE
AS SHOWN

TITLE
Edgell Road Water Pumping Station Replacement
Bypass And Restoration Plan

BETA JOB NO. 6481
ISSUE DATE January 2020
SHEET NO. C-2

2/7/2020 2:45 PM J:\6481 - EDGELL ROAD WATER PUMP STATION\AUTOCAD\PLAN SET\1.1 EXISTING AND PROPOSED CONDITIONS.DWG (BETA STB BW STB)

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GENERAL DETAIL NOTES:

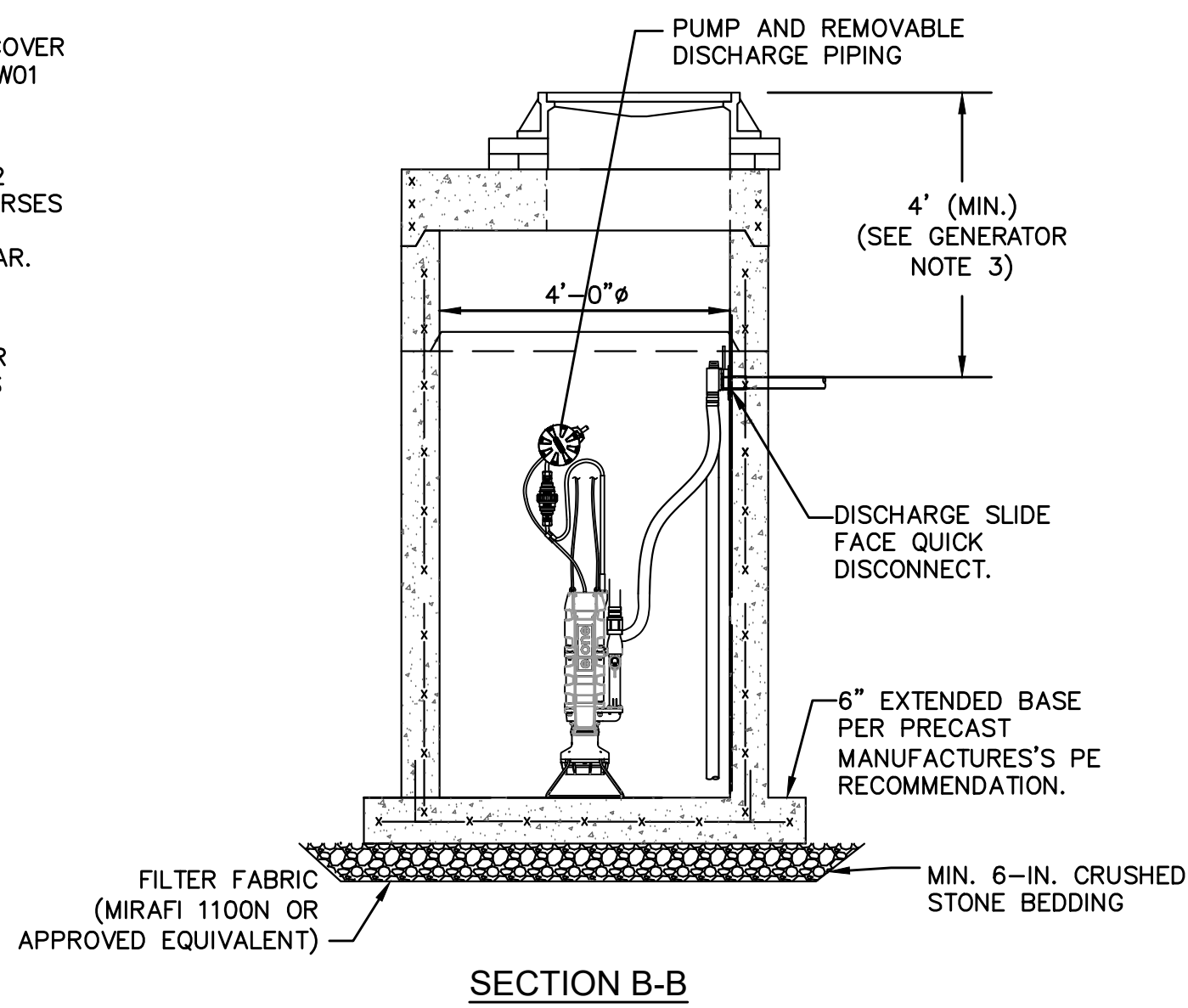
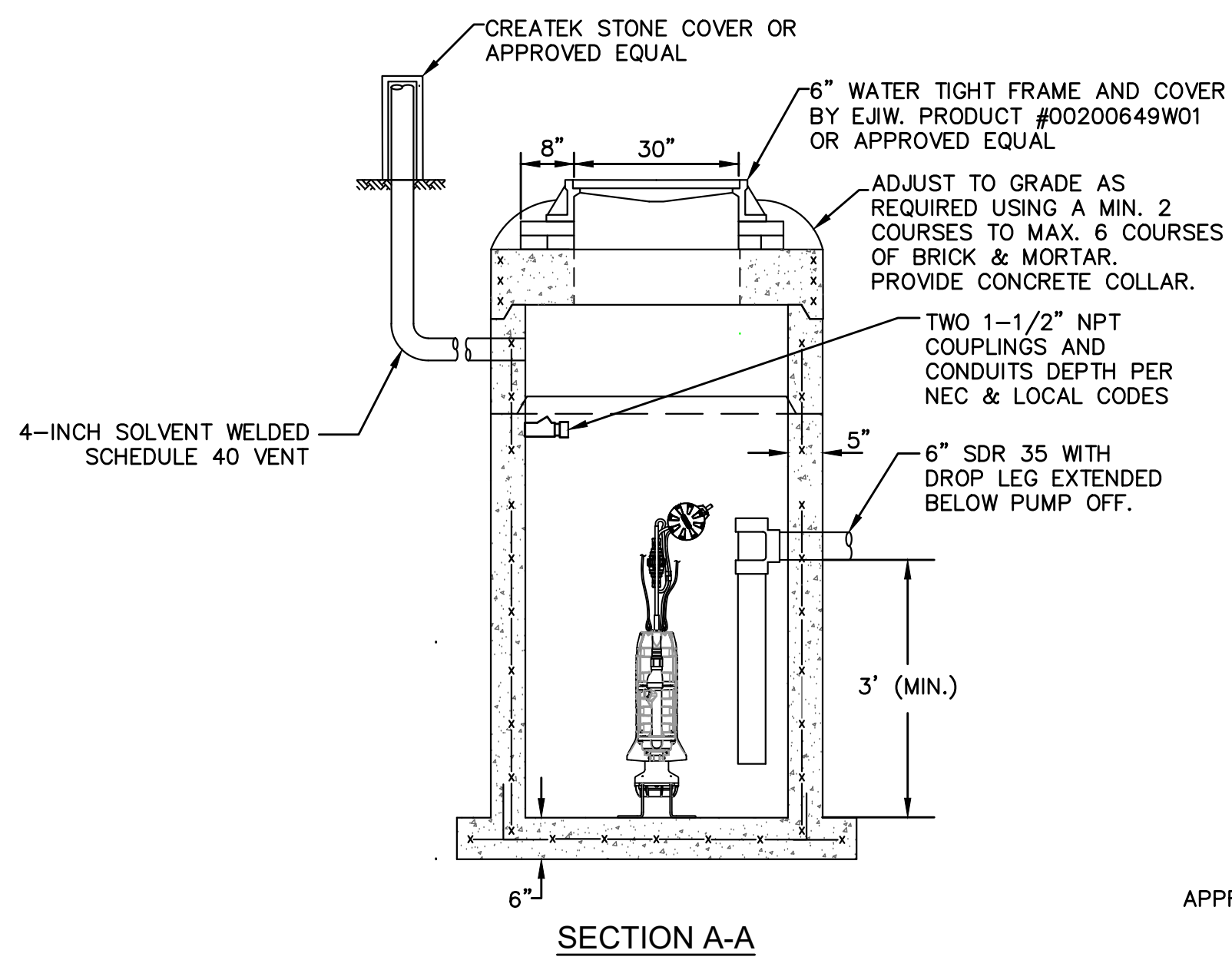
- ALL PIPING PENETRATIONS SHALL BE LINK-SEAL TYPE WATERTIGHT SLEEVE W/ S.S. HARDWARE. PROVIDE FLEXIBLE DRESSER TYPE COUPLINGS W/ S.S. HARDWARE ON ALL PIPING.
- PIPE SHALL BE INSULATED AT LOCATIONS WHERE 4- FEET OF COVER CANNOT BE PROVIDED.

PRECAST NOTES:

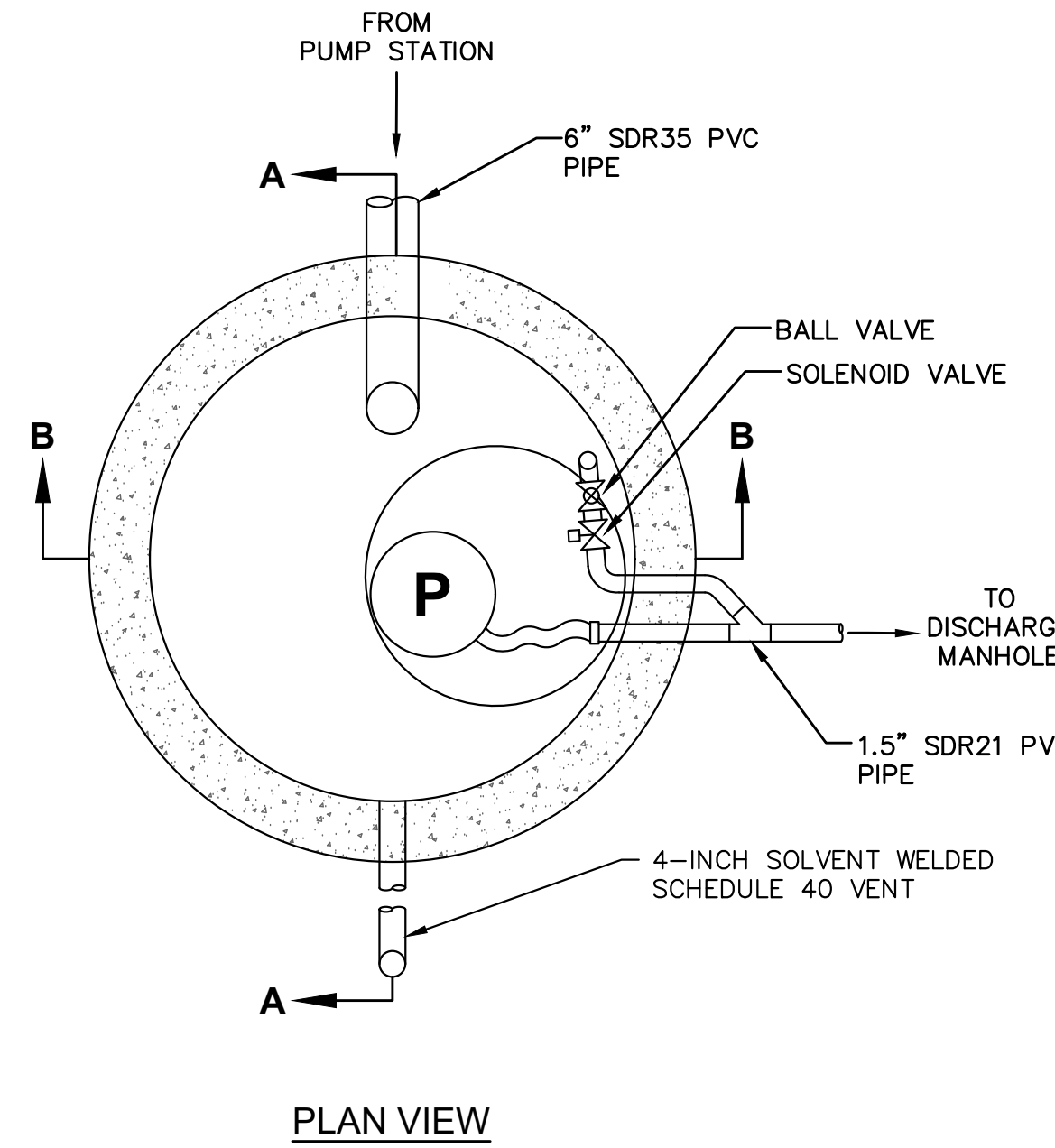
- THE PRECAST STRUCTURE AND APPURTENANCES SHALL BE DESIGNED TO MEET H-20 LOADING REQUIREMENTS.
- DESIGN SHALL BE BASED ON GROUNDWATER AT GRADE. PROVIDE BUOYANCY CALCULATIONS BY A MASSACHUSETTS PE.

PUMP AND CONTROL PANEL NOTES:

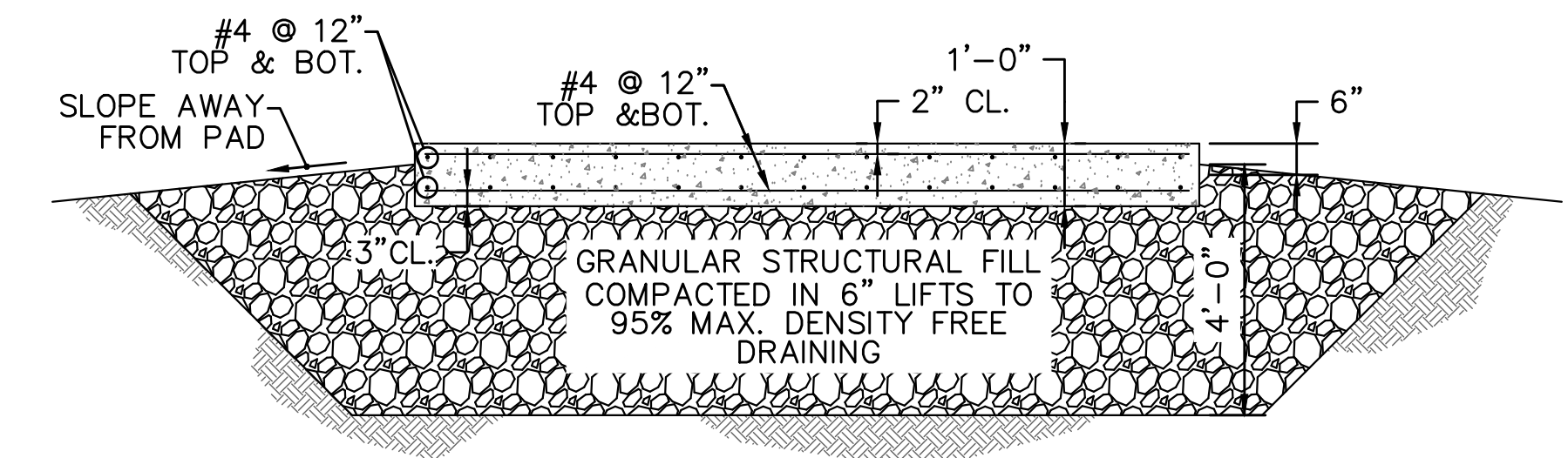
- THE PUMP SHALL BE ENVIRONMENT ONE U SERIES MODEL DH071 GRINDER PUMP OR APPROVED EQUAL. PUMP SHALL BE 1 HP, 240 VOLT, SINGLE PHASE. THE PUMP SHALL INCLUDE LEVEL CONTROLS, SIPHON BREAKER, CHECK VALVE, 72" DISCHARGE HOSE WITH SLIDE FACE AND SLIDE FACE RECEIVER.
- THE PANEL SHALL BE E-ONE SIMPLEX ALARM PANEL OR APPROVED EQUAL WITH NEMA 4X ENCLOSURE, HIGH WATER ALARM, 3 FLOAT LEVEL CONTROL. THE PANEL SHALL HAVE CIRCUIT BREAKERS, VISUAL & AUDIO ALARM, CONTACT GROUP, AND BE UL LISTED.



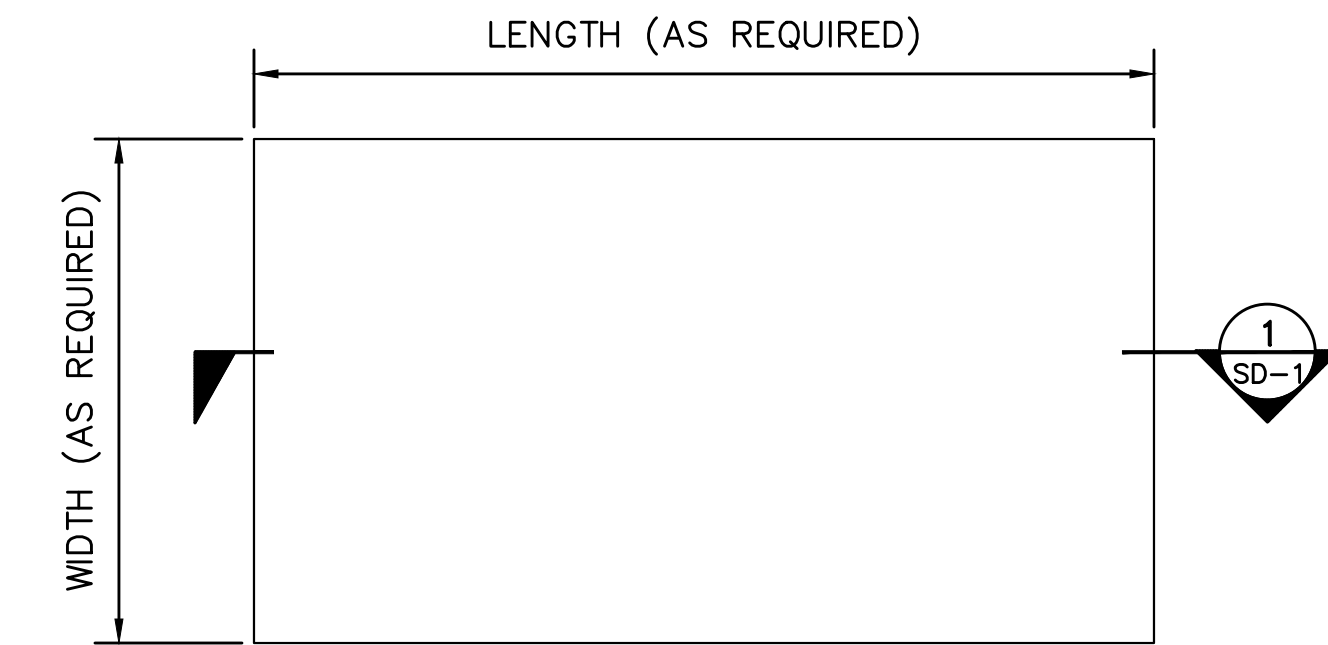
4'-0" ROUND PRECAST CONCRETE GRINDER PUMP DETAIL
SCALE: NONE



PLAN VIEW

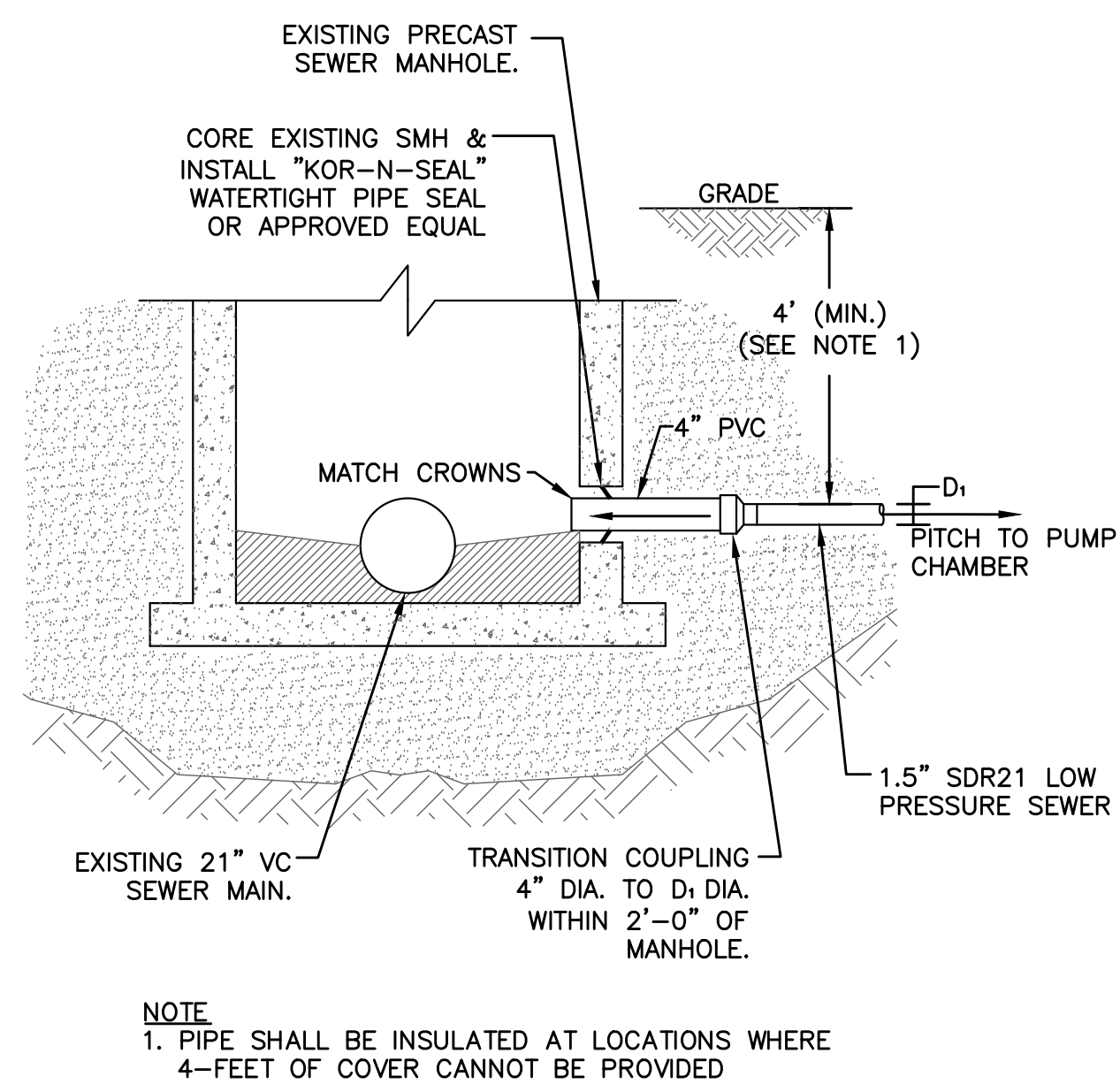


SECTION 1
SCALE: 3/8" = 1'-0"



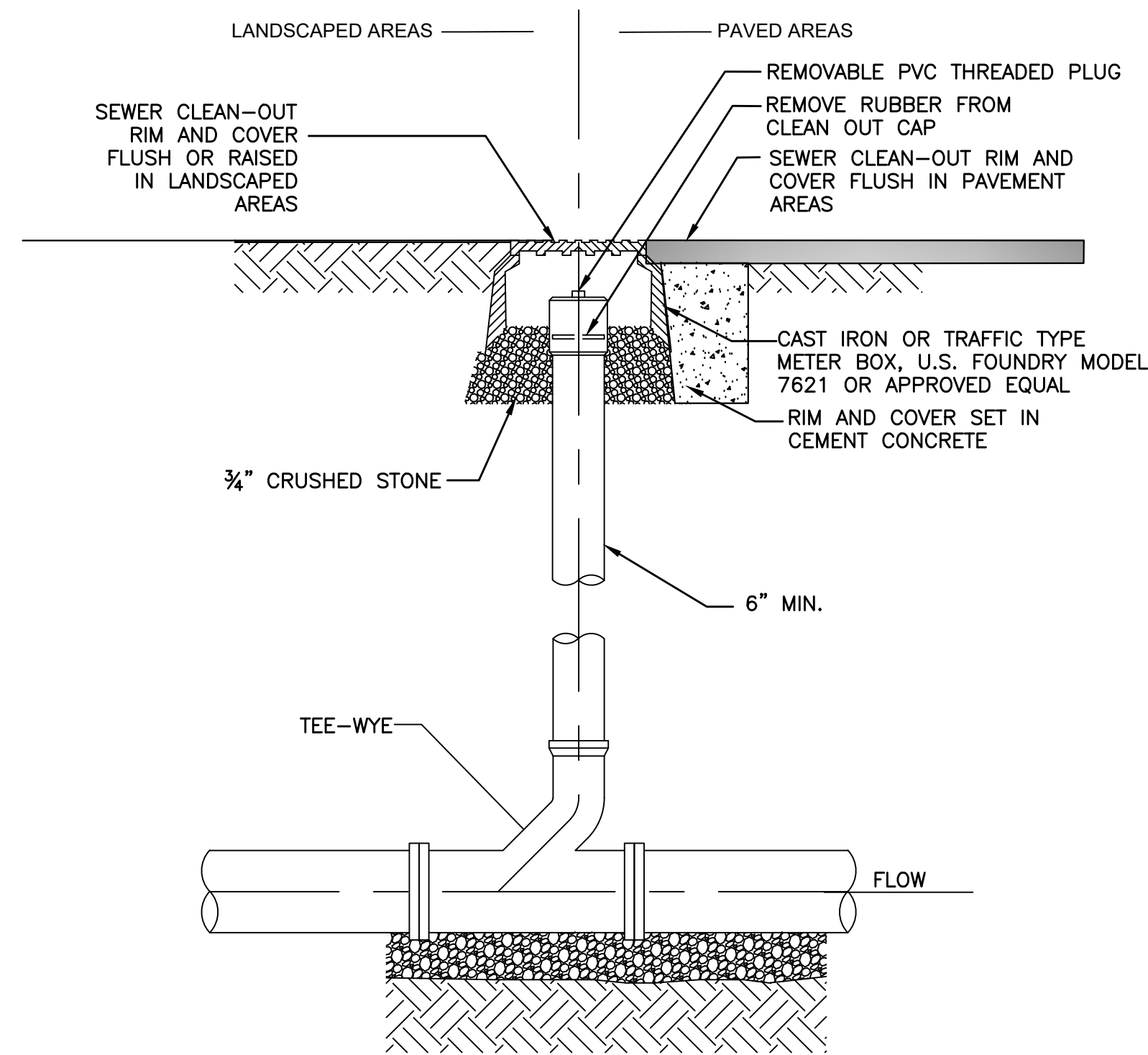
- NOTES:**
- LENGTH AND WIDTH OF GENERATOR PAD TO BE COORDINATED WITH GENERATOR SUPPLIER.
 - CONCRETE TO BE 3500 PSI WITH A MAX 4" SLUMP.
 - TOP SURFACE OF PAD TO BE STEEL TROWELED TO LEVEL SMOOTH FINISH.
 - REFER TO MANUFACTURERS DRAWINGS FOR GENERATOR ANCHOR REQUIREMENTS AND LOCATIONS.

ENGINE / GENERATOR PAD DETAIL
SCALE: 3/8" = 1'-0"



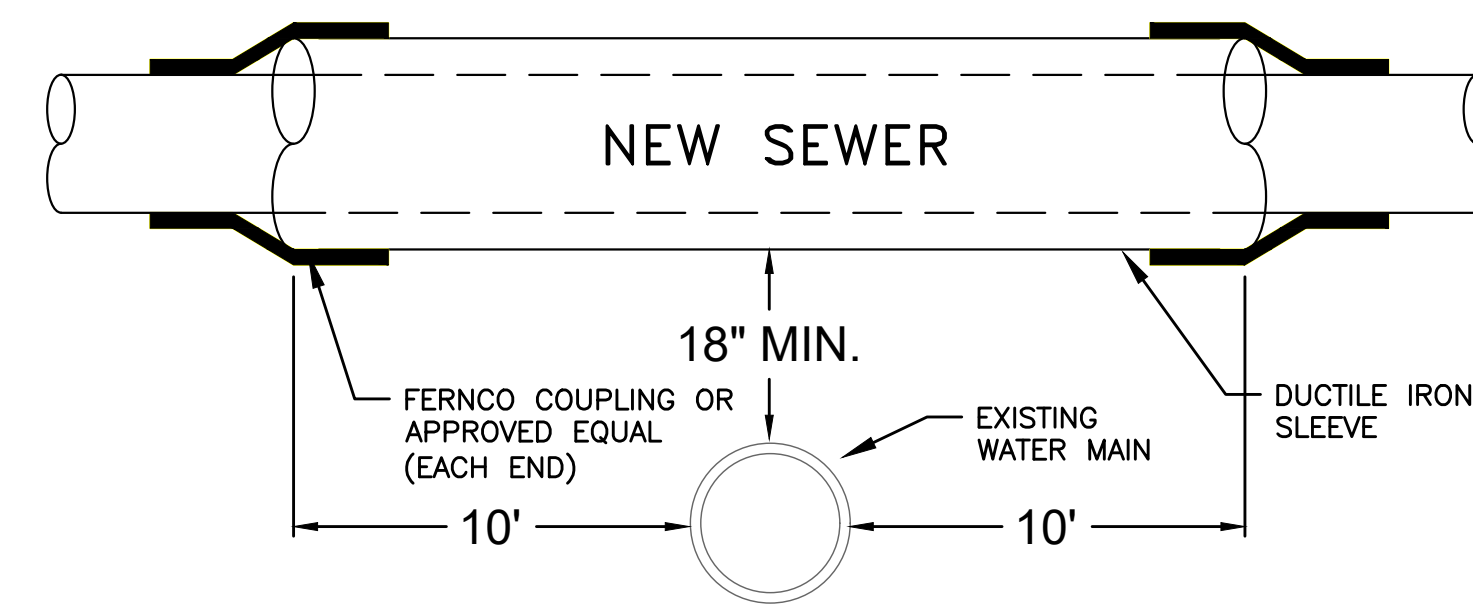
NOTE
1. PIPE SHALL BE INSULATED AT LOCATIONS WHERE 4- FEET OF COVER CANNOT BE PROVIDED

LOW PRESSURE SEWER TO GRAVITY SEWER MANHOLE CONNECTION
SCALE: NONE

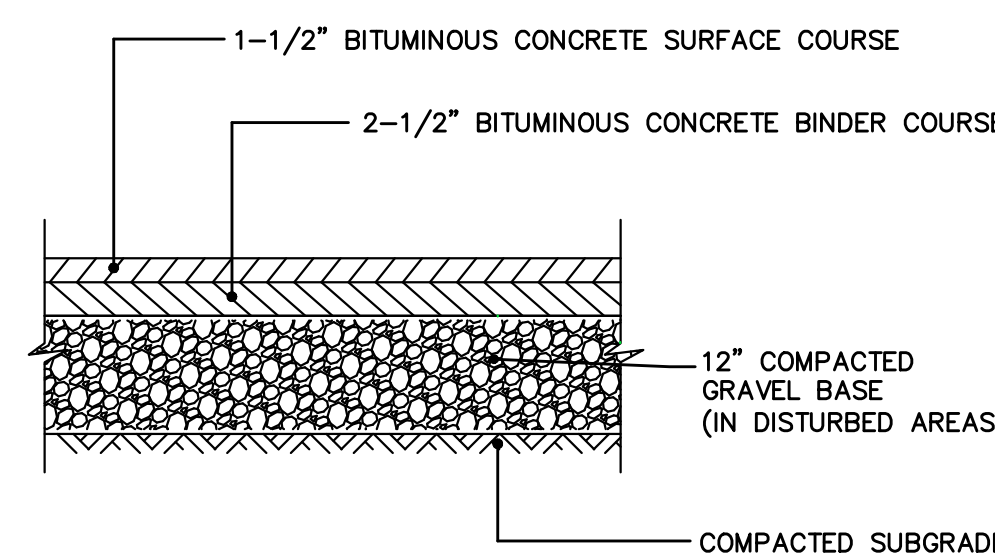


- NOTES:**
- PLACE CLEAN OUT WITHIN 5 FEET OF HOUSE FOUNDATION.
 - CLEAN OUT SHALL BE ACCESSIBLE AT ALL TIMES.
 - 6" MIN. LAYER OF 3/4" CRUSHED STONE 12" IN LEDGE.
 - FLUSH MOUNT BOLT-DOWN BOX ACCEPTABLE UPON SPECIFIC APPROVAL BY DPW.

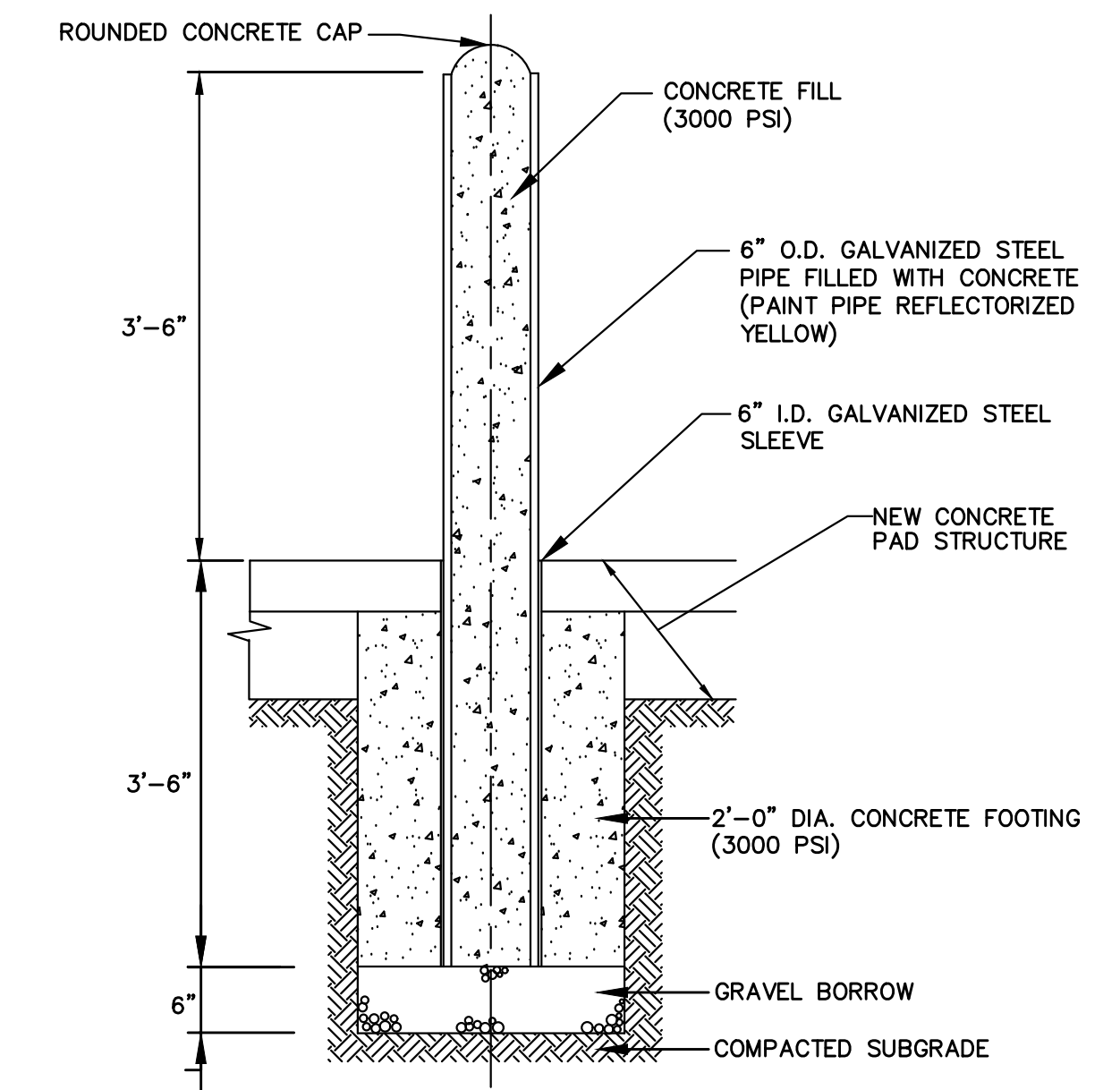
SEWER CLEANOUT DETAIL
SCALE: NONE



DUCTILE IRON SLEEVE DETAIL
SCALE: NONE



TYPICAL PAVEMENT DETAIL
SCALE: NONE



CONCRETE-FILLED STEEL BOLLARD
SCALE: NONE

1/30/2020 3:34 PM J:\6481 - EDGELL ROAD WATER PUMP STATION\AUTOCAD\PLAN SET\CD-1.DWG (BETA STB BW STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

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

REGISTERED PROFESSIONAL

 JOSEPH J. D'ALELIO
 SANITARY
 No. 33111
 REGISTERED PROFESSIONAL ENGINEER

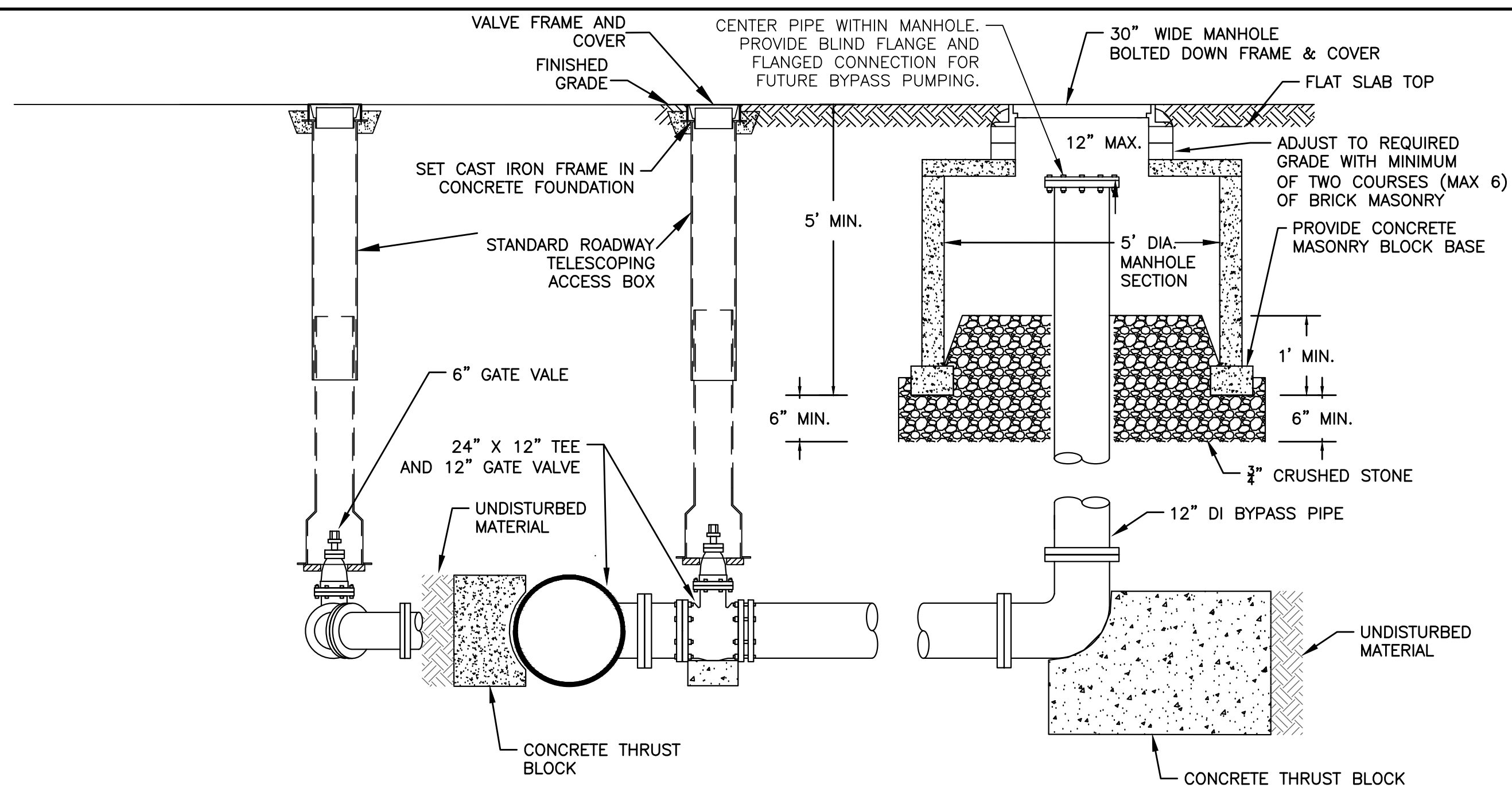
PREPARED BY

 BETA
 www.BETA-Inc.com

SUBCONSULTANT
SCALE AS SHOWN

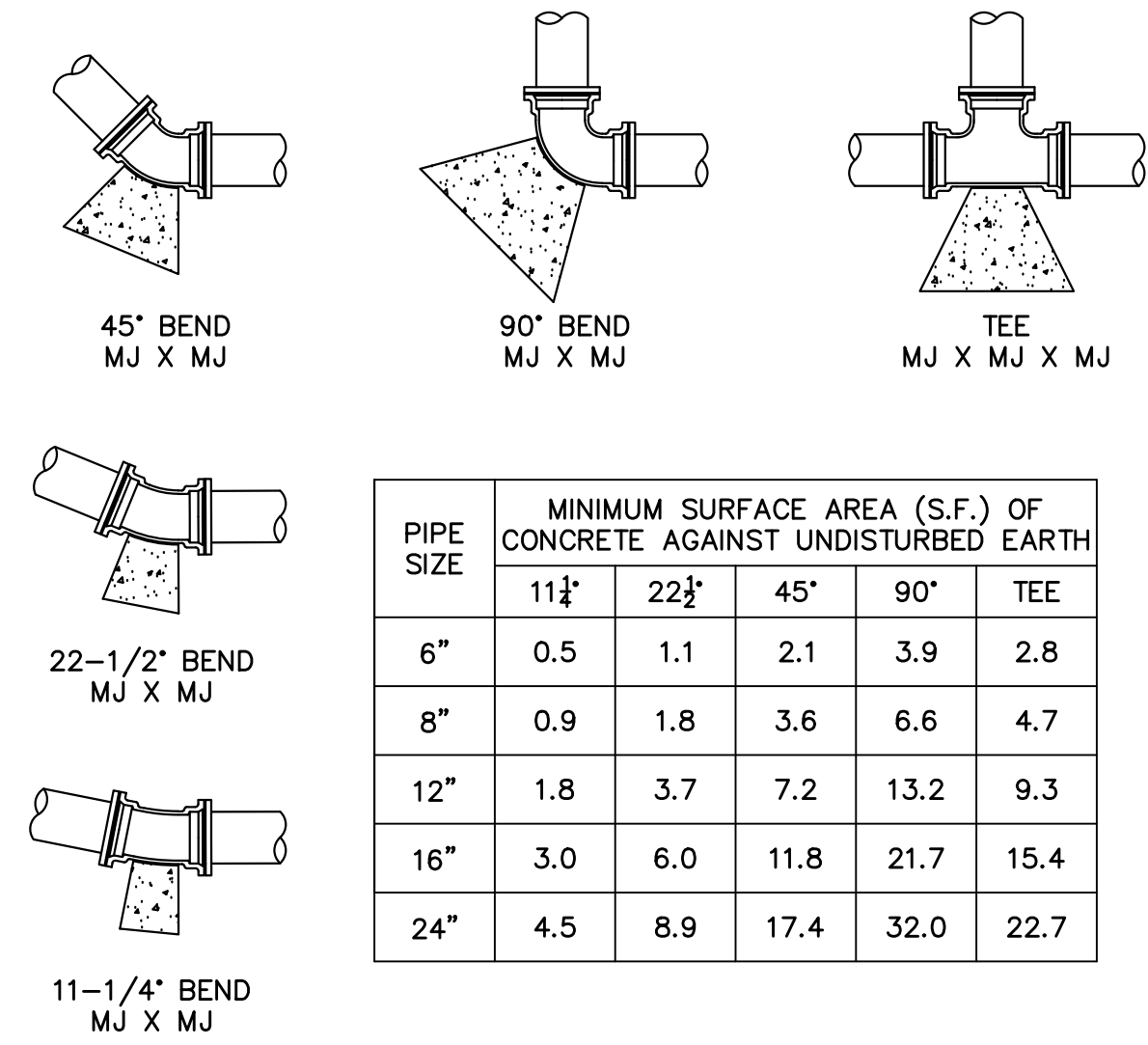
TITLE Edgell Road Water Pumping Station Replacement Construction Details - 1
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BETA JOB NO. 6481
ISSUE DATE January 2020
SHEET NO. CD-1



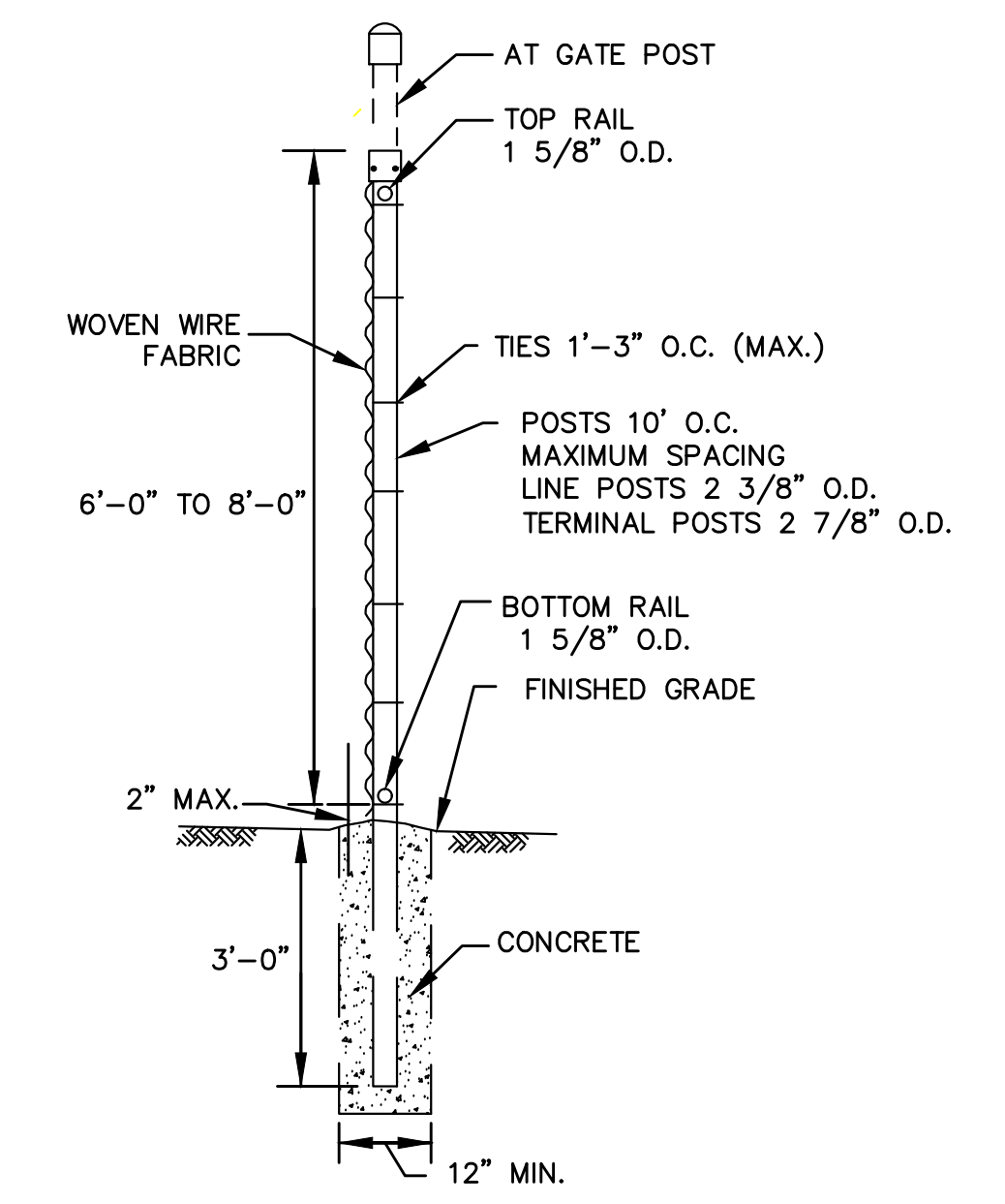
- NOTES:**
- THE CITY OF FRAMINGHAM MAINTAINS AND OPERATES ALL VALVES, PIPING, AND APPURTENANCES BEYOND WHERE THE SUCTION PIPING ENTERS THE PUMP STATION UNLESS OTHERWISE NOTED.
 - DISCHARGE CONNECTION WILL BE A 24" X 12" TEE AND A 12" GATE VALVE. A 24" BUTTERFLY VALVE, 6" BYPASS WITH 6" GATE VALVE WILL BE INSTALLED ON BOTH SIDES OF THE BYPASS CONNECTION. SEE SPECIFICATION SECTIONS 02618 AND 02619 FOR REQUIREMENTS.
 - 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.
 - POLYPROPYLENE SHEETING SHALL BE PLACED AROUND FITTINGS PRIOR TO POURING CONCRETE IN ACCORDANCE WITH AWWA C105.

DISCHARGE BYPASS CONNECTION
(CITY OF FRAMINGHAM)
SCALE: NONE



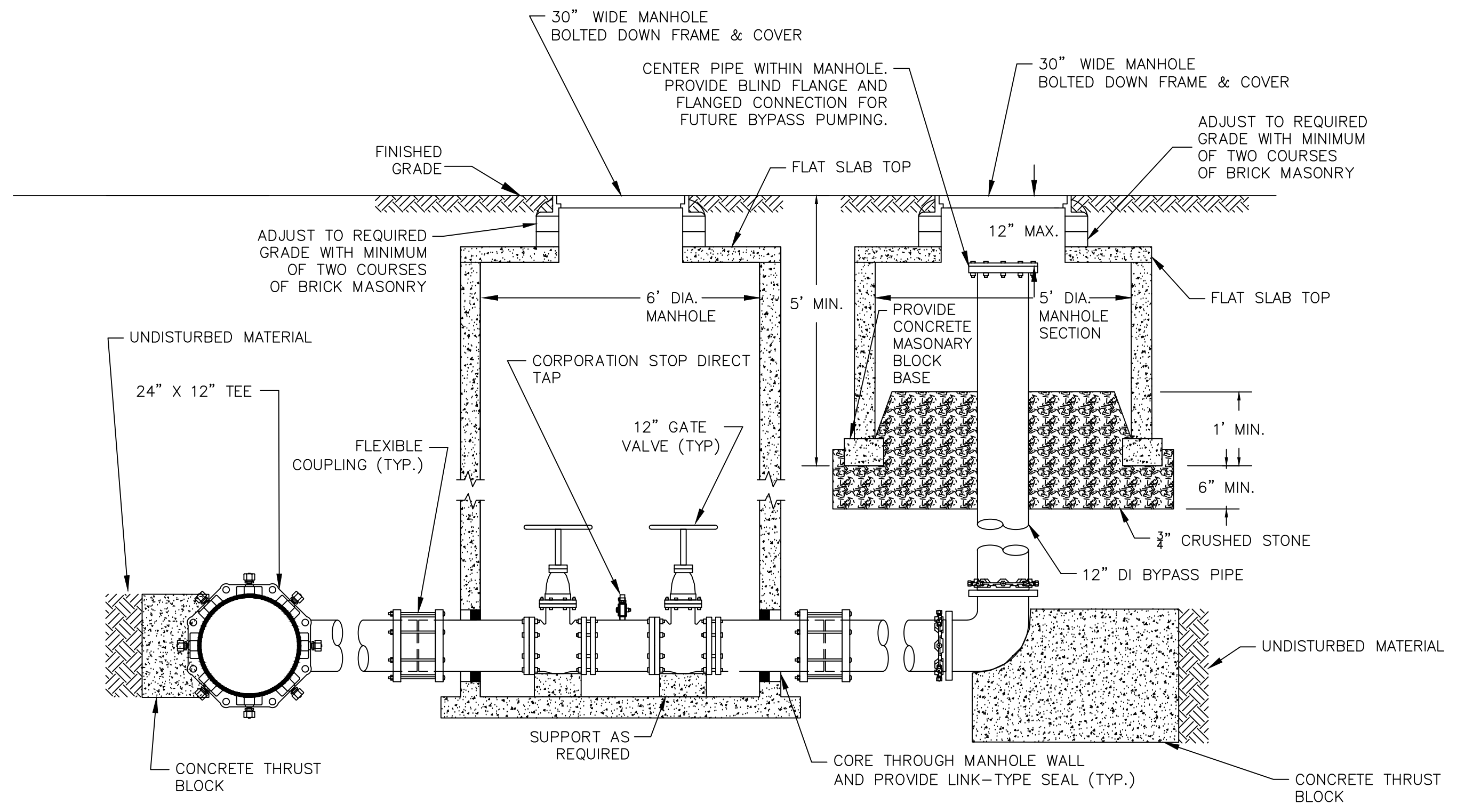
- NOTE:**
- PORTLAND TYPE II CEMENT CONCRETE MEETING SPECIFICATION SECTION 03300 AND SHALL BE PLACED SO AS TO NOT INTERFERE WITH THE JOINTS OF THE FITTING. CONCRETE SHALL BE 4000 PSI.
 - POLYPROPYLENE SHEETING SHALL BE PLACED AROUND FITTINGS PRIOR TO POURING CONCRETE IN ACCORDANCE WITH AWWA C105.
 -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

THRUST BLOCK BEARING AREAS
SCALE: NONE



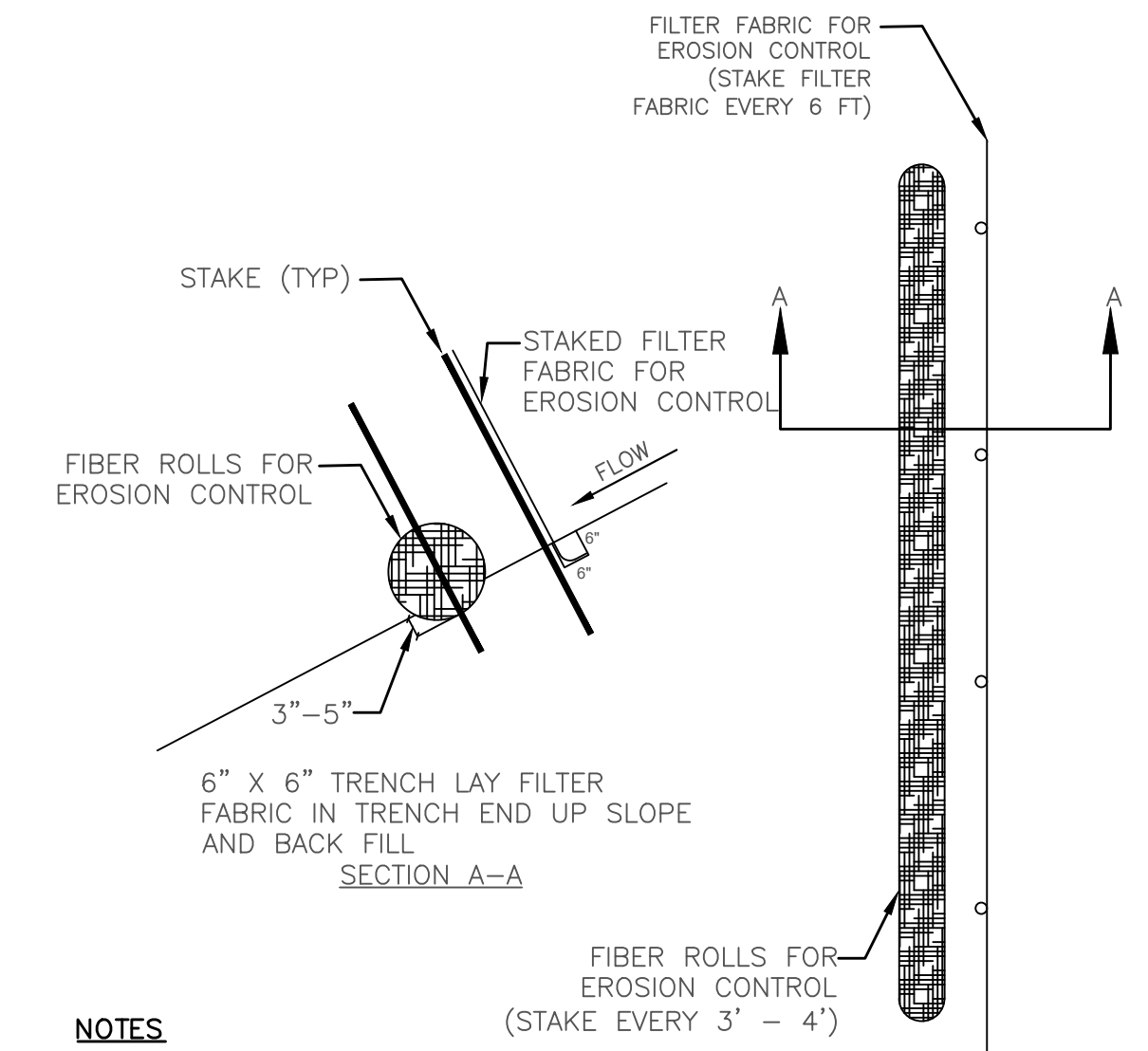
CHAIN-LINK FENCE DETAIL
SCALE: NONE

- NOTES:**
- SEE SPECIFICATION SECTION 02831 CHAIN LINK FENCE FOR ADDITIONAL REQUIREMENTS.



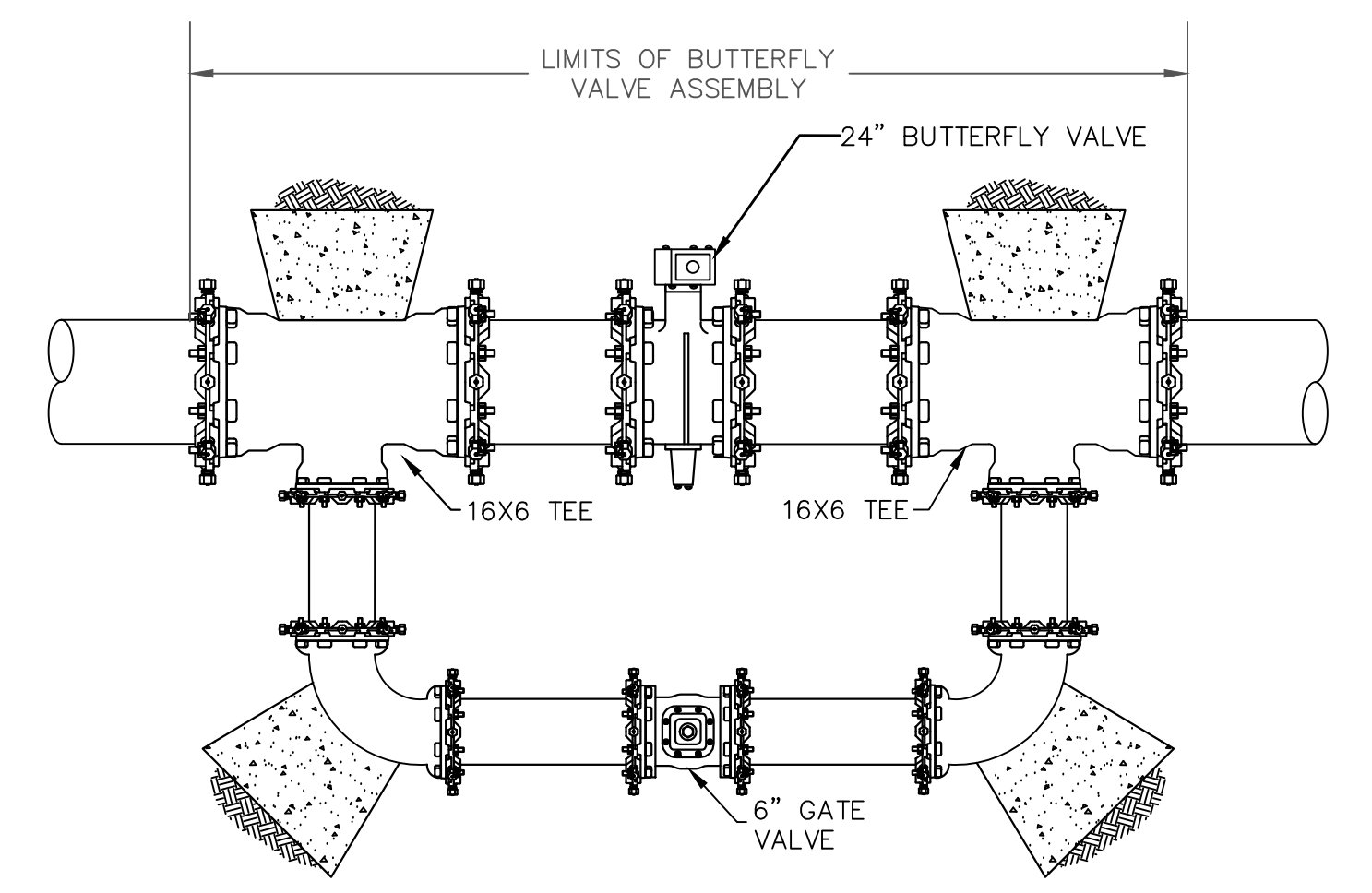
- NOTES:**
- MWRA MAINTAINS AND OPERATES SUCTION SIDE VALVES, PIPING AND APPURTENANCES OUTSIDE THE PUMP STATION.
 - SUCTION CONNECTION WILL BE A 24" X 12" TEE AND 12" GATE VALVES. SEE SPECIFICATION SECTIONS 02514 AND 02518.
 - THRUST BLOCKS SHALL BE 4000 PSI CONCRETE BETWEEN THE PIPE AND UNDISTURBED MATERIAL IN ACCORDANCE WITH DUCTILE IRON PIPE RESEARCH ASSOCIATION THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE.
 - POLYPROPYLENE SHEETING SHALL BE PLACED AROUND FITTINGS PRIOR TO POURING CONCRETE IN ACCORDANCE WITH AWWA C105.

SUCTION BYPASS CONNECTION
(MWRA)
SCALE: NONE



- NOTES:**
- STRAW WATTLES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT WATTLES.
 - STRAW WATTLES AND SILT FENCE SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR REBARS DRIVEN THROUGH THE WATTLES. THE FIRST STAKE IN EACH WATTLE SHALL BE ANGLED TOWARDS PREVIOUSLY LAID WATTLE TO FORCE WATTLE TOGETHER.
 - INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
 - WATTLES SHALL BE INSTALLED AND REMOVED IN ACCORDANCE WITH CITY OF FRAMINGHAM CONSERVATION COMMISSION'S REQUIREMENTS.

TYPICAL EROSION CONTROL DETAIL
SCALE: NONE



TYPICAL BUTTERFLY VALVE ASSEMBLY
SCALE: NONE

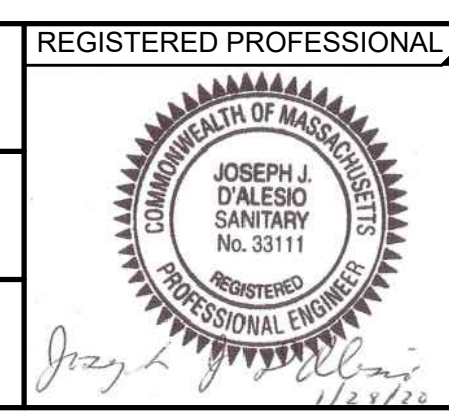
2/7/2020 3:08 PM J:\6481 - EDGELL ROAD WATER PUMP STATION\AUTOCAD\PLAN SET\CD-1.DWG (BETA STB BW STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
PAN

DESIGNED BY:
AJG

CHECKED BY:
AJG



REGISTERED PROFESSIONAL
PREPARED BY

SUBCONSULTANT

SCALE
AS SHOWN

TITLE
Edgell Road Water Pumping Station Replacement

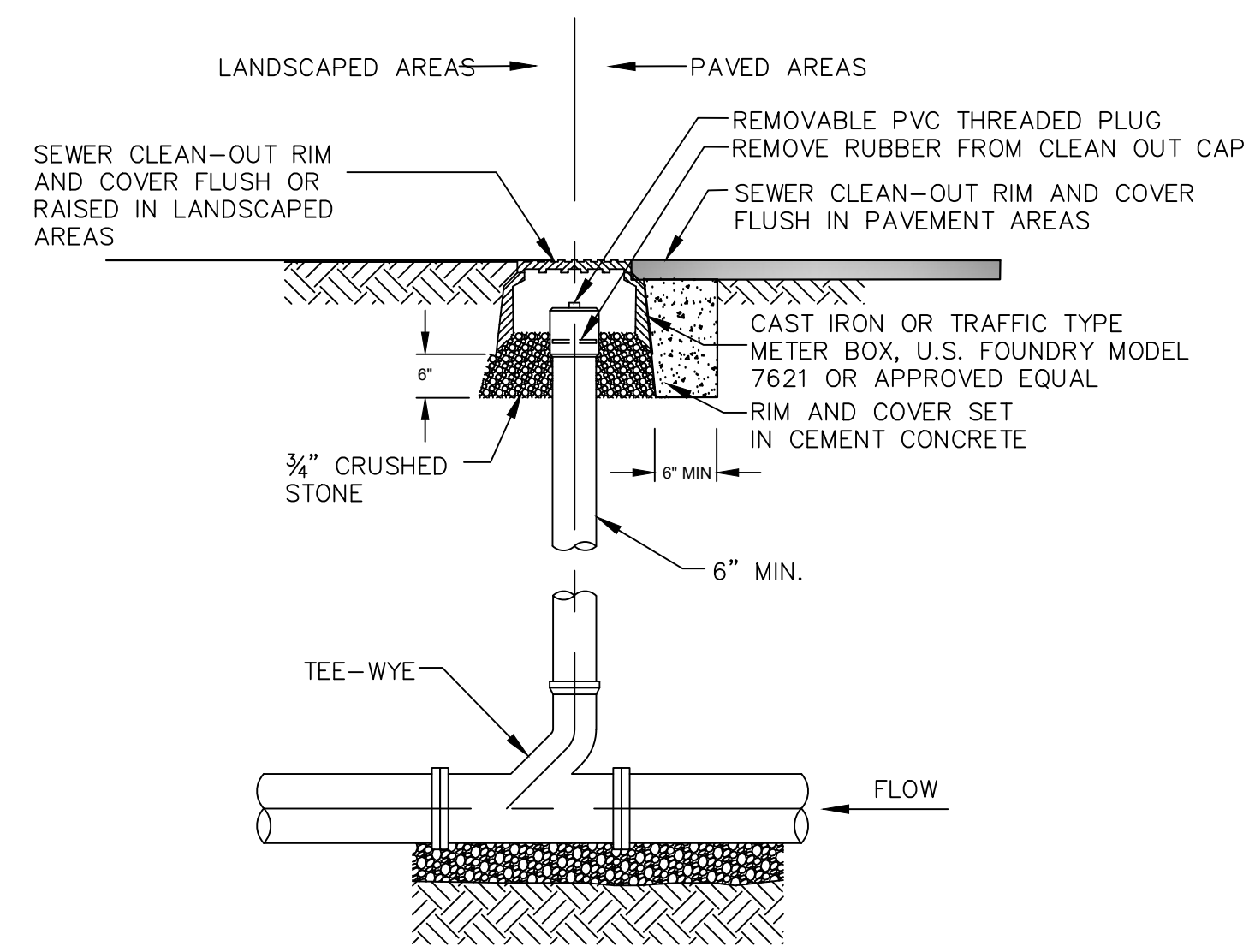
Construction Details - 2

BETA JOB NO. 6481

ISSUE DATE January 2020

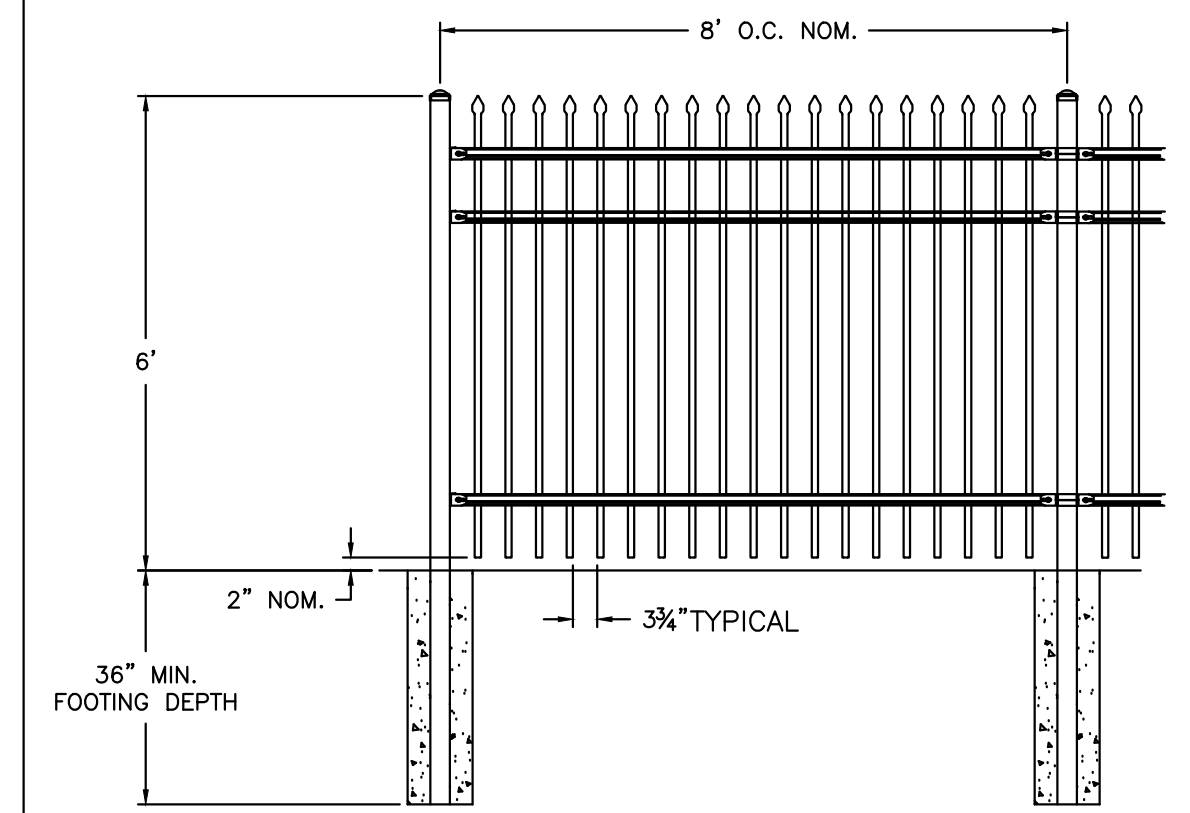
SHEET NO. CD-2

1/30/2020 3:34 PM J:\6481 - EDGELL ROAD WATER PUMP STATION\AUTOCAD\PLAN SET\CD-1.DWG (BETA STB BW STB)



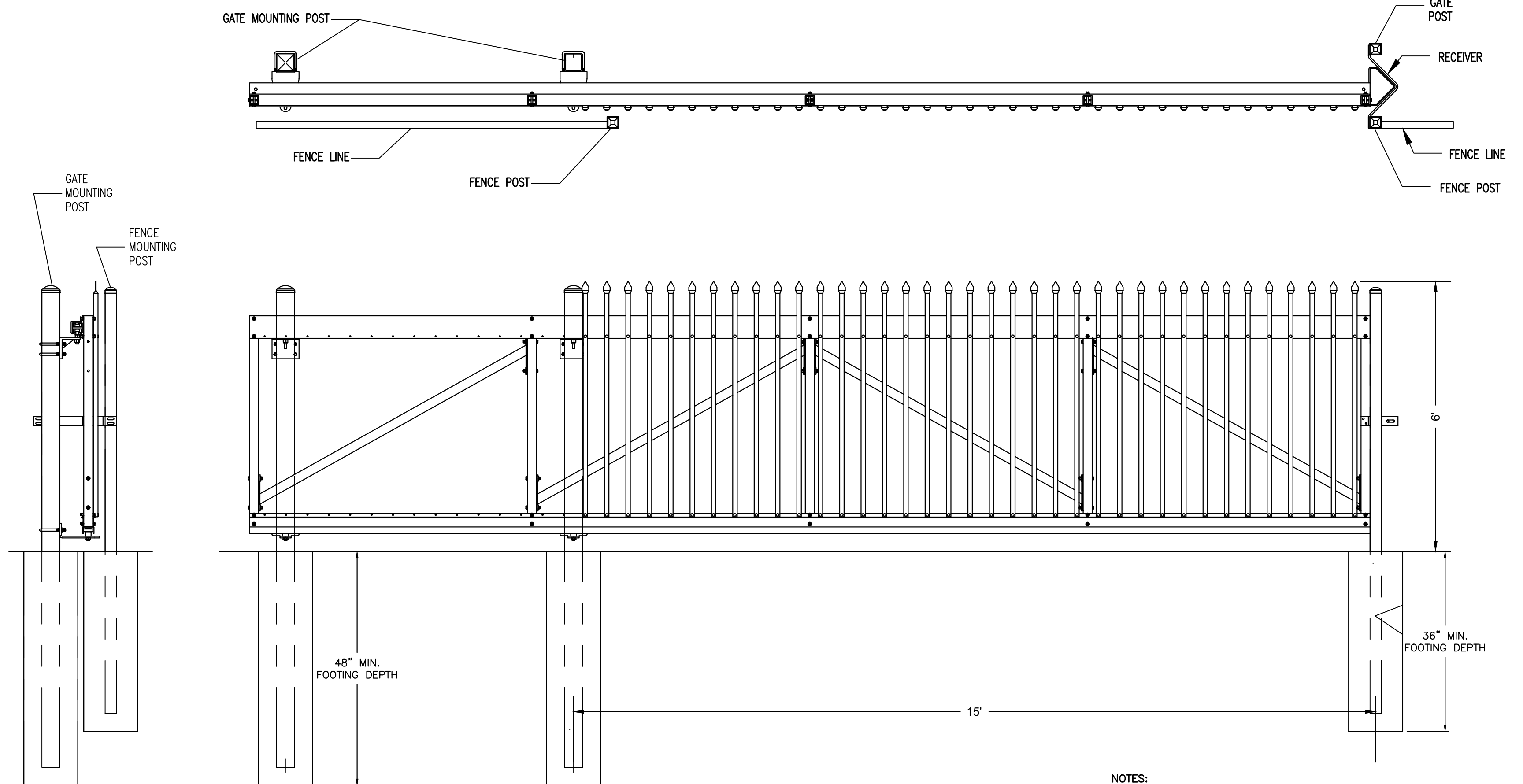
SEWER CLEANOUT DETAIL
SCALE: NONE

- NOTES:
1. PLACE CLEAN OUT WITHIN 5 FEET OF HOUSE FOUNDATION.
 2. CLEAN OUT SHALL BE ACCESSIBLE AT ALL TIMES.
 3. 6" MIN. LAYER OF 3/4" CRUSHED STONE 12" IN LEDGE.
 4. FLUSH MOUNT BOLT-DOWN BOX ACCEPTABLE UPON SPECIFIC APPROVAL BY DPW.



ORNAMENTAL FENCE GATE DETAIL
SCALE: NONE

- NOTES:
1. SEE SPECIFICATION SECTION 02832 ORNAMENTAL FENCE FOR ADDITIONAL REQUIREMENTS.



ORNAMENTAL FENCE GATE DETAIL
SCALE: NONE

- NOTES:
1. SEE SPECIFICATION SECTION 02832 ORNAMENTAL FENCE FOR ADDITIONAL REQUIREMENTS.

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

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DESIGNED BY:
AJG
CHECKED BY:
AJG



PREPARED BY
SUBCONSULTANT

SCALE
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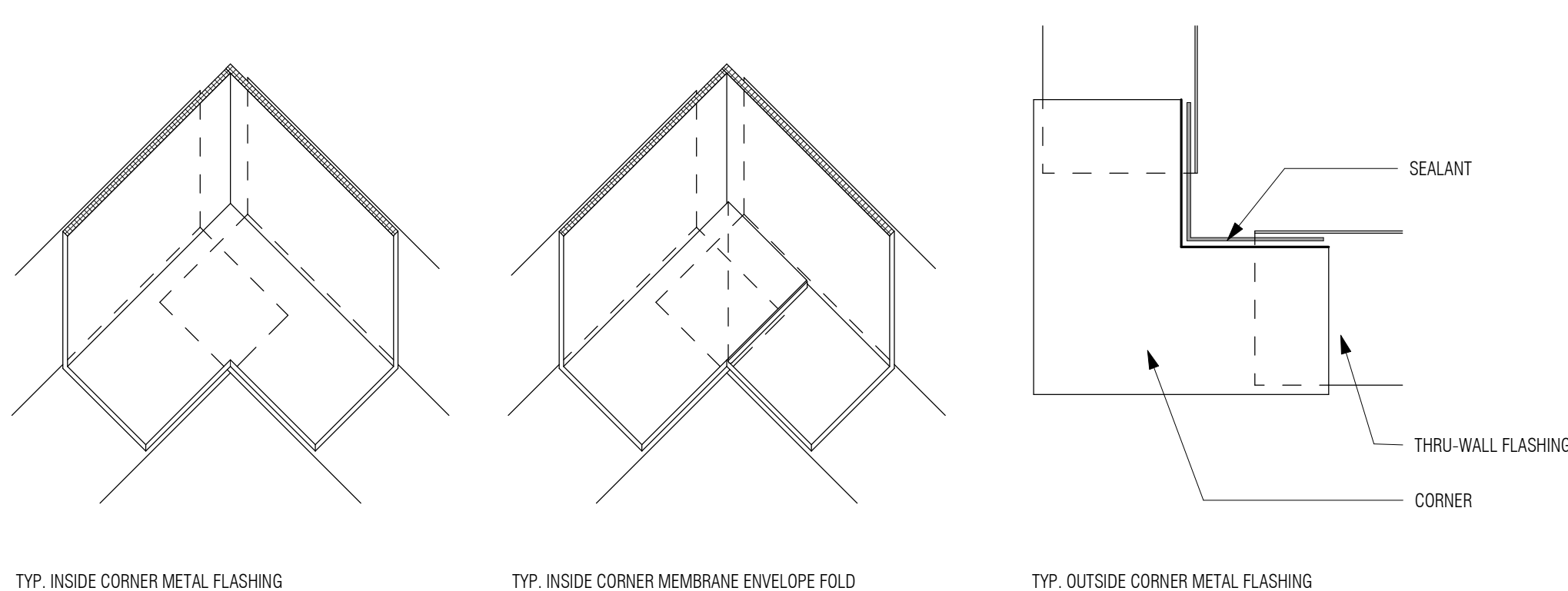
TITLE
Edgell Road Water Pumping Station Replacement
Construction Details - 3

BETA JOB NO. 6481
ISSUE DATE January 2020
SHEET NO. CD-3

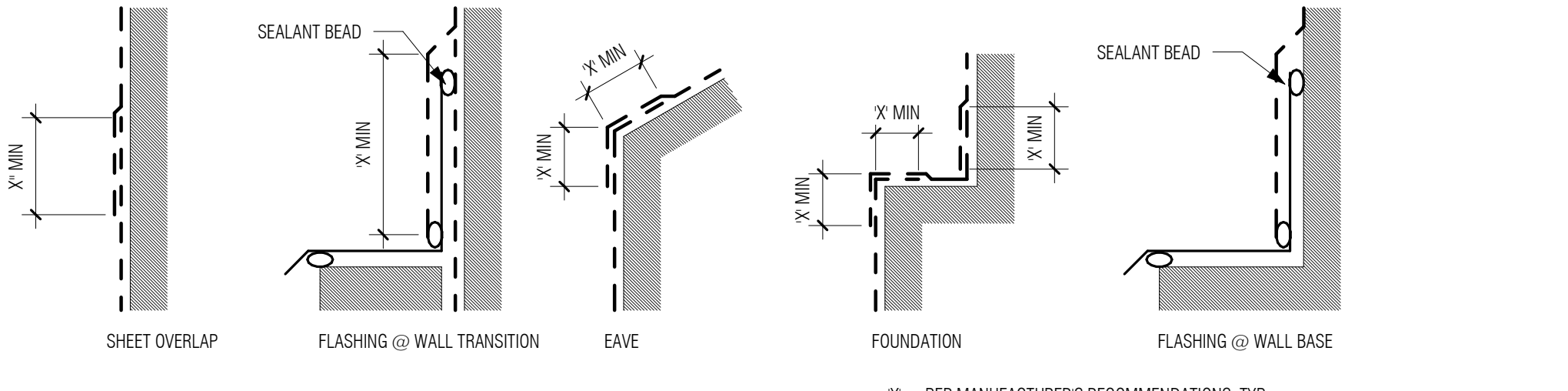
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

ABBREVIATIONS

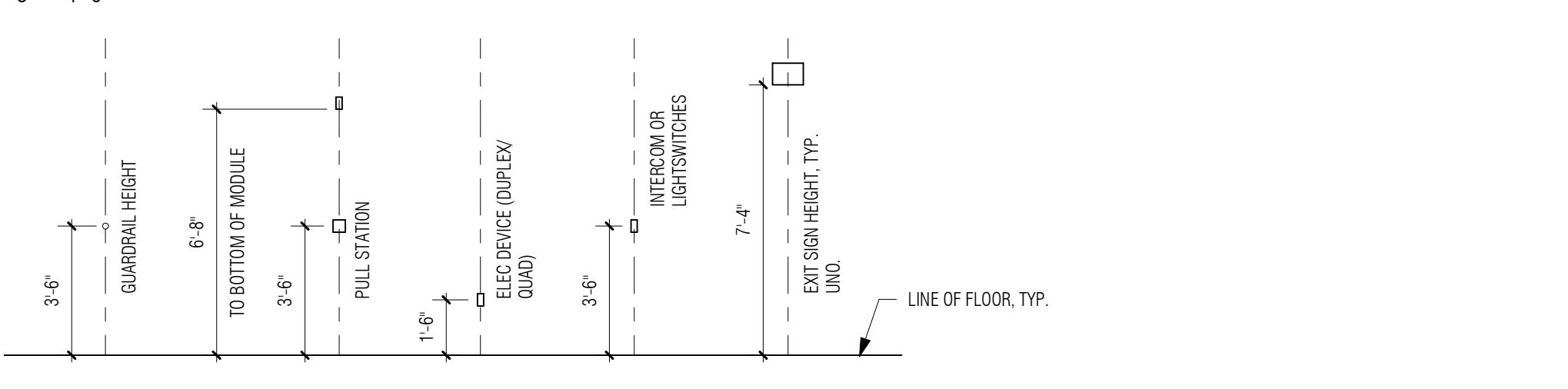
Table of abbreviations and their corresponding full names, organized in columns. Includes terms like AFF ABOVE FINISHED FLOOR, ENT ENTRANCE, LAG LAG BOLT OR POUND, REMOTE CONTROL, etc.



3 WATERPROOFING DETAILS 3D 3" = 1'-0"



2 WATERPROOFING DETAILS 3" = 1'-0"



1 TYP. MOUNTING HEIGHTS 1/4" = 1'-0"

GENERAL NOTES
1. REFER TO SPECIFICATIONS GENERAL CONDITIONS FOR SCOPE AND REQUIREMENTS.
2. STATEMENT OF INTENT: THE INTENT OF THE PROJECT IS TO COMPLETE THE WORK DESCRIBED IN THE DRAWINGS AND SPECIFICATIONS FOR THE CONSTRUCTION OF THE EDGELL ROAD PUMP STATION REPLACEMENT...

CODE OVERVIEW table listing applicable codes for building, fire prevention, accessibility, electrical, mechanical, plumbing, and energy conservation.

USE GROUP CLASSIFICATION
USE GROUP F-2 (WATER PUMPING)
USE GROUP B (WORK STATIONS)
NON-SEPARATED OCCUPANCIES IN ACCORDANCE WITH IBC SECTION 508.3

REQUIRED FIRE PROTECTION SYSTEMS table with columns for system type and provided details.

INTERIOR FINISHES table with columns for room type, IBC table reference, and use group classification.

MINIMUM CONSTRUCTION TYPE
TYPE VB (COMBUSTIBLE, UNPROTECTED - STRUCTURAL ELEMENTS, EXTERIOR WALLS AND INTERIOR WALLS ARE PERMITTED TO BE OF ANY MATERIALS PERMITTED BY THE BUILDING CODE.

ENERGY CONSERVATION PROVISIONS
IECC 2015 WITH MA AMENDMENTS. THE CITY OF FRAMINGHAM HAS ALSO ADOPTED THE STRETCH ENERGY CODE (78-0 CMR APPENDIX AA)...

MEANS OF EGRESS table with columns for occupant load, area, and occupant load factor.

HEIGHT AND AREA LIMITATIONS table with columns for use group, height, and area.

ACCESSIBILITY FOR PERSONS WITH DISABILITIES table detailing requirements for architectural and Americans with Disabilities Act (ADA).

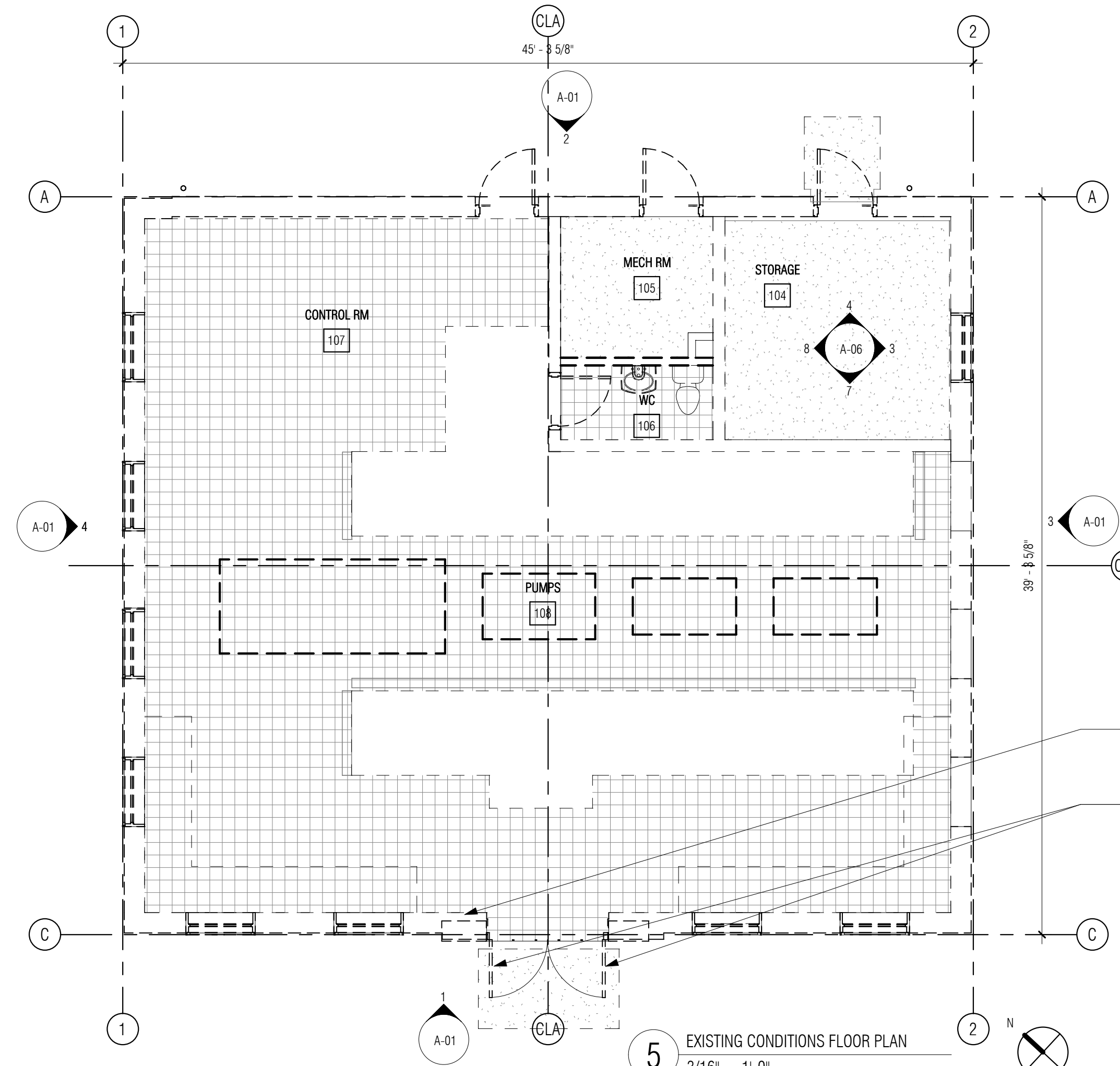
PLUMBING FIXTURES table detailing requirements for exit signs, emergency lighting, and toilet room fixtures.

FIRE RATINGS table detailing requirements for building elements and fire separation distances.

Project information block including drawing title (Edgell Road Water Pumping Station Replacement), scale (As indicated), title, and a table for drawing revisions.

Project identification block including DSK Job No. 19033, Issue Date January 2020, and Sheet No. A-00.

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



REMOVE, STORE, REFURBISH AND REINSTALL INTERIOR BRONZE DEDICATION PLAQUE. SEE DEMO NOTES THIS SHEET AND PHOTOS.

REMOVE, STORE, REFURBISH AND REINSTALL INTERIOR AND EXTERIOR PUSH-PULL HANDLE, BOTH LEAFS. SEE DEMO NOTES THIS SHEET AND PHOTOS.

DEMOLITION NOTES

CONTRACTOR SHALL REMOVE, REFURBISH, STORE AND REINSTALL THE FOLLOWING ITEMS. SEE PHOTOS BELOW AND SHEETS A-10 AND A-11:

- INTERIOR BRONZE DEDICATION PLAQUE.
- EXTERIOR 'FRAMINGHAM WATER WORKS' SIGN.
- INTERIOR AND EXTERIOR PUSH-PULL BRONZE DOOR HANDLES AND ROUND PLATES.
- FOR EXISTING ELECTRICAL EQUIPMENT, SEE ELECTRICAL DEMO DWG.
- REMOVE EXISTING MILLWORK AND FURNITURE, TYP.
- REMOVE EXISTING HVAC EQUIPMENT. SEE HVAC DEMO DRAWING.
- REMOVE EXISTING GUTTER AND DOWNSPOUTS, TYP.
- REMOVE ALL EXISTING DOORS AND FRAMES, TYP.
- REMOVE ALL EXISTING WINDOWS AND FRAMES, TYP.
- REMOVE PARTITION WALLS AND ALL PLUMBING FIXTURES, TYP. SEE PLUMBING DEMO DWG.
- REMOVE TILE FLOORING, METAL GRATING, AND TILE WALL FINISH, TYP.
- EXISTING PUMPS TO BE REMOVED, TYP. SEE MECHANICAL DEMO DWG.
- EXISTING SLAB AND FOUNDATION TO REMAIN, DO NOT DAMAGE EXISTING SLAB AND FOUNDATION, TYP.
- REMOVE EXISTING EXTERIOR WALLS DOWN TO THE SLAB. CAREFULLY REMOVE CURB. SEE STRUCTURAL DRAWINGS.

REMOVE, REFURBISH, STORE, AND REINSTALL THE FOLLOWING:



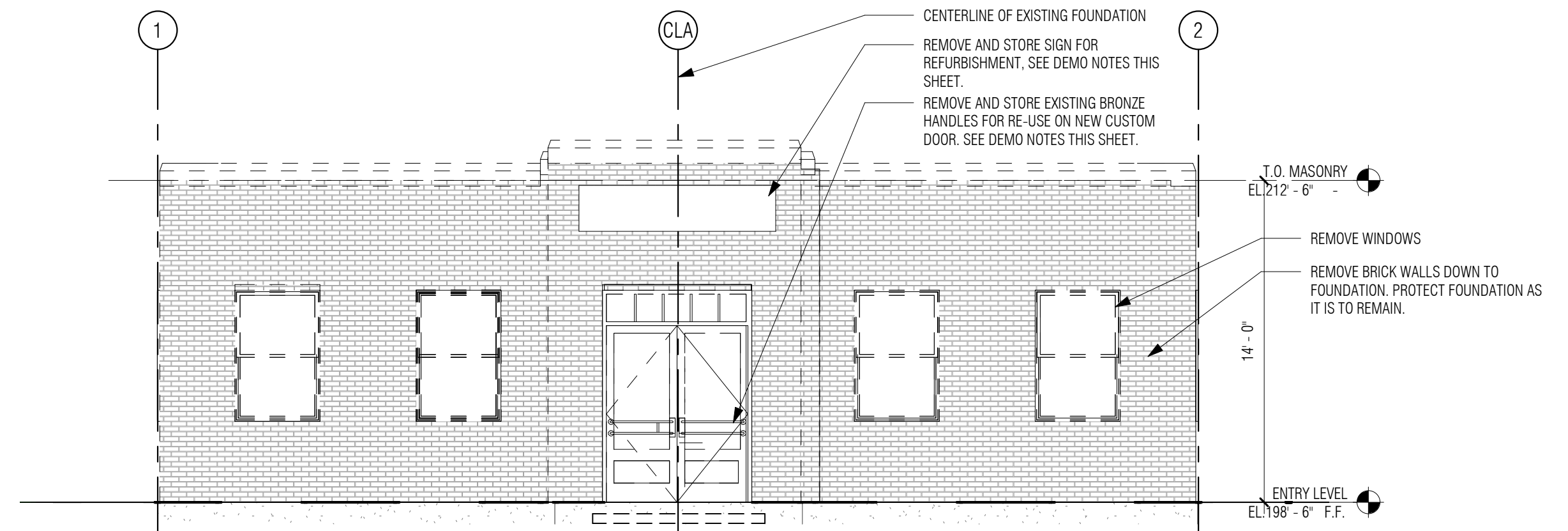
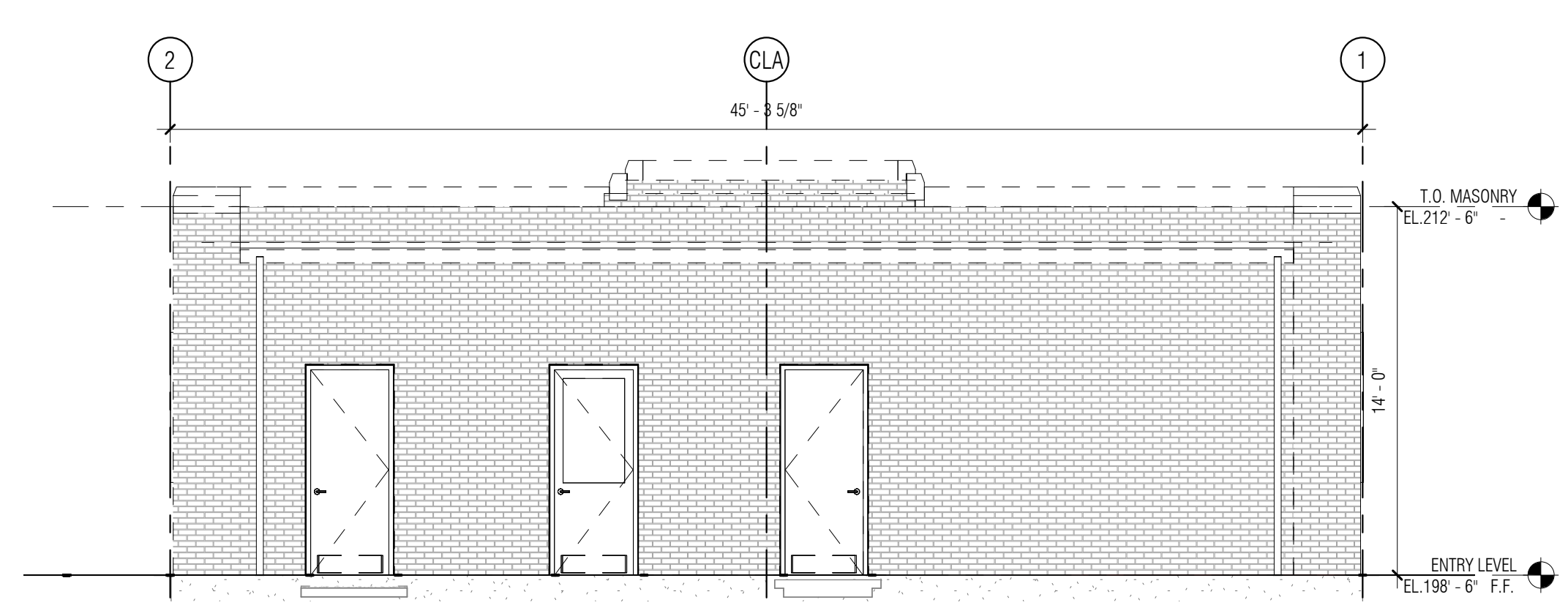
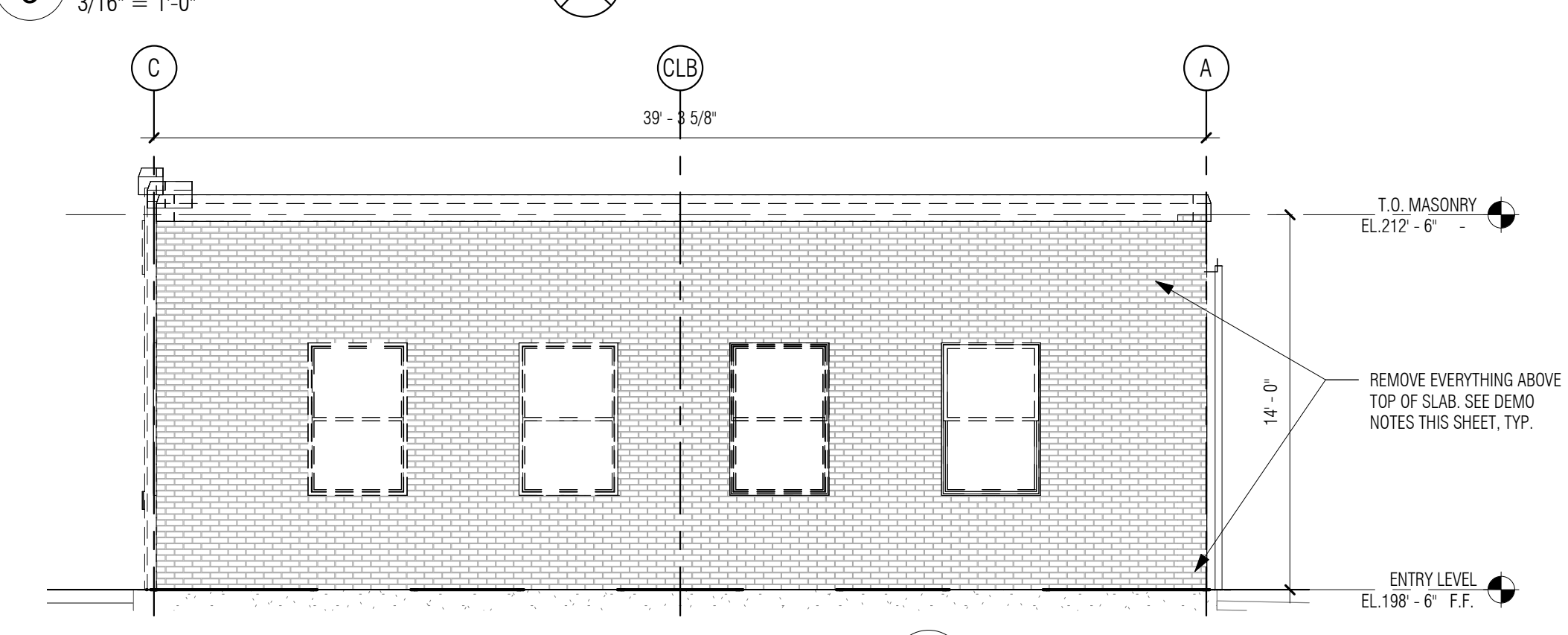
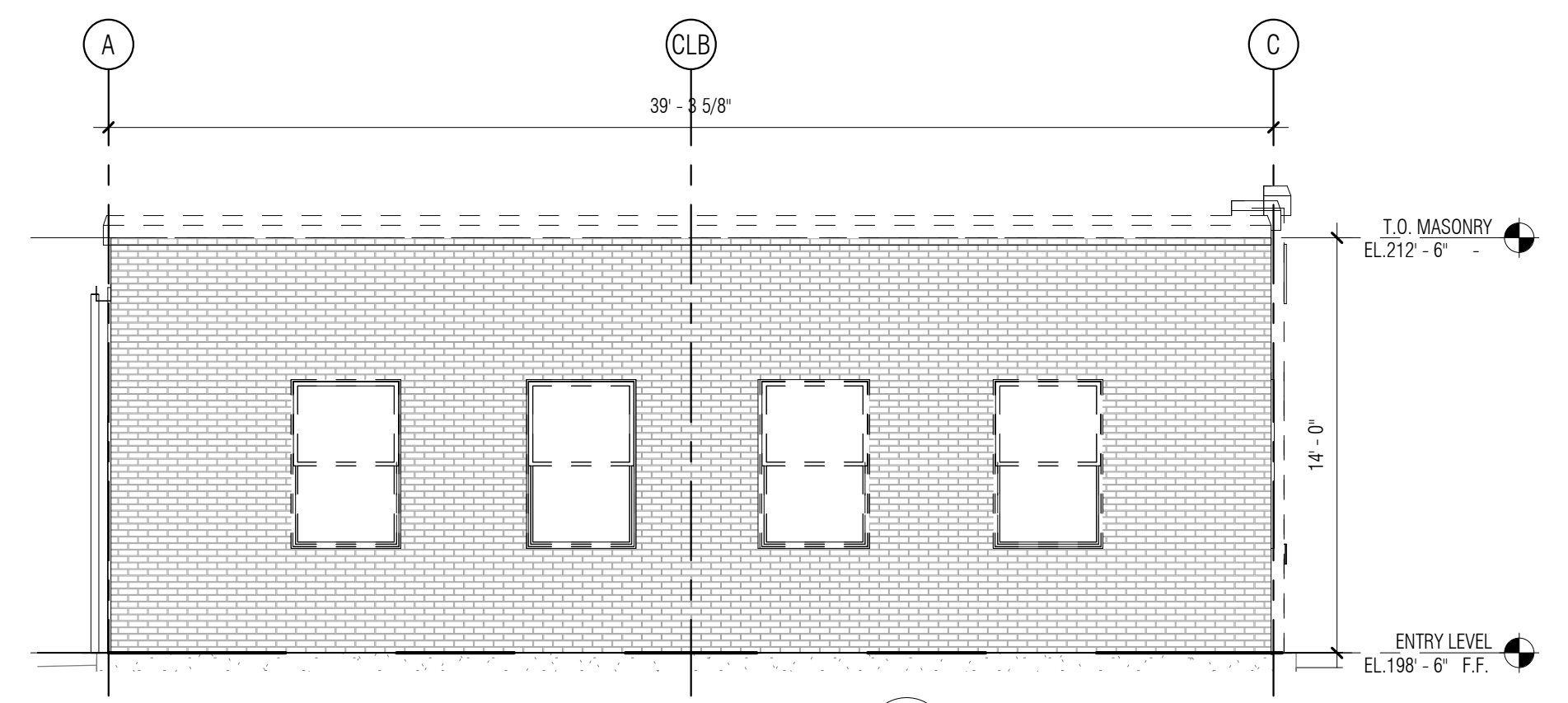
FRAMINGHAM WATER WORKS SIGN



EXTERIOR AND INTERIOR BRONZE HARDWARE



BRONZE DEDICATION PLAQUE



NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
ALK

DESIGNED BY:
DSK

CHECKED BY:
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508.999.0440

SCALE

As indicated

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TITLE

Edgell Road Water Pumping Station Replacement

DEMOLITION DRAWINGS

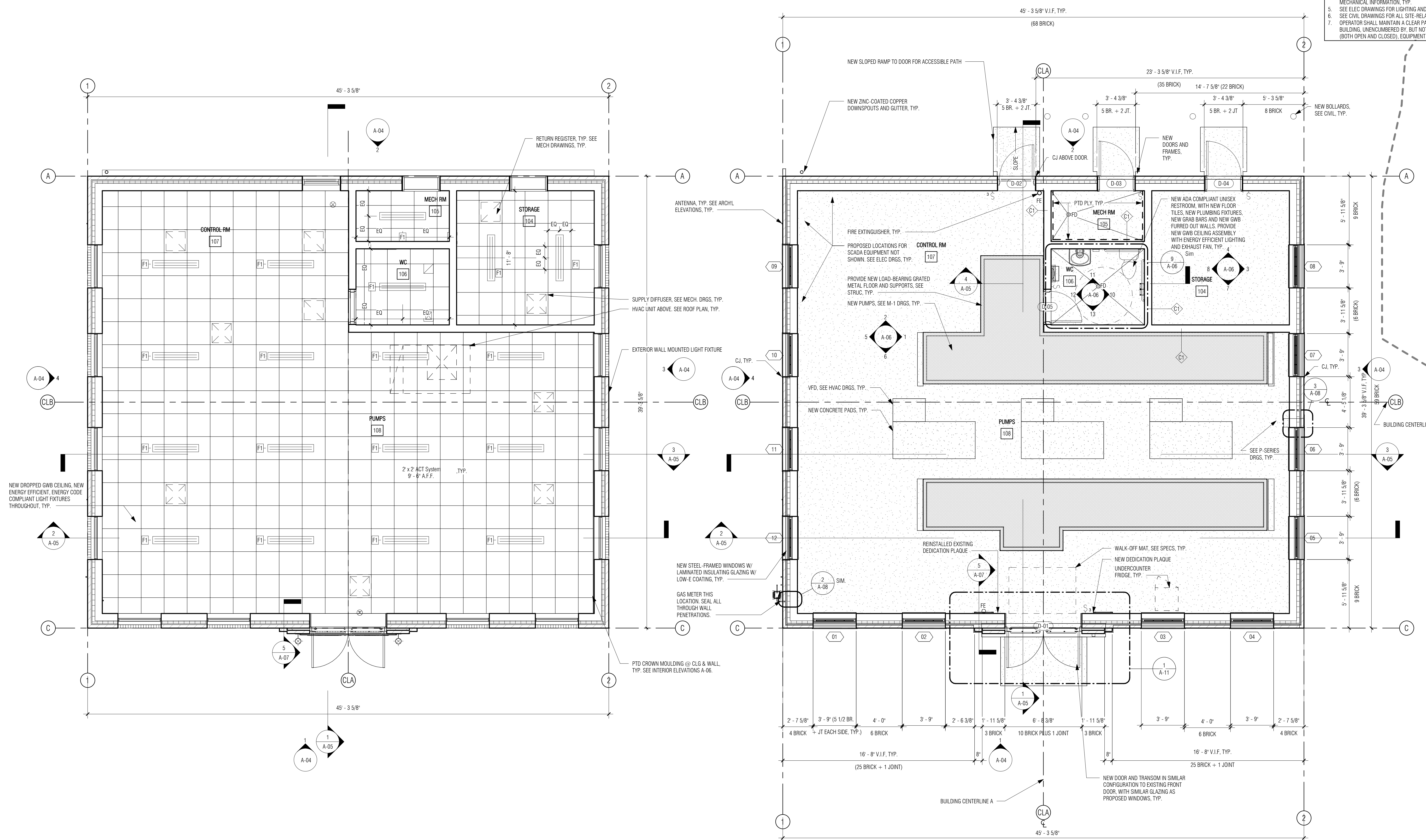
DSK JOB NO. 19033

ISSUE DATE January 2020

SHEET NO. **A-01**

GENERAL NOTES: FLOOR PLANS

1. REFER TO DWG A-00 FOR GENERAL NOTES, ABBREVIATIONS, SYMBOLS & MOUNTING HEIGHTS
2. REFER TO DWG A-10 FOR DOOR, WINDOW AND LOUVER SCHEDULES, FINISH SCHEDULE AND MATERIALS LEGEND.
3. VERIFY ALL DIMENSIONS IN FIELD.
4. REFER TO HVAC DRAWINGS FOR DUCTING LAYOUTS AND OTHER MECHANICAL INFORMATION, TYP.
5. SEE ELEC DRAWINGS FOR LIGHTING AND ELEC INFORMATION, TYP.
6. SEE CIVIL DRAWINGS FOR ALL SITE-RELATED WORK, TYP.
7. OPERATOR SHALL MAINTAIN A CLEAR PATH OF TRAVEL WITHIN THE BUILDING, UNENCUMBERED BY, BUT NOT LIMITED TO PIPING, VALVES (BOTH OPEN AND CLOSED), EQUIPMENT, TOOLS, ETC., TYP.



2 LEVEL 1 REFLECTED CEILING PLAN
1/4" = 1'-0"

1 PROPOSED FLOOR PLAN
1/4" = 1'-0"

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

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ALK

DESIGNED BY:
DSK

CHECKED BY:
MPS

REGISTERED PROFESSIONAL

PREPARED BY



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TITLE

Edgell Road Water Pumping Station Replacement

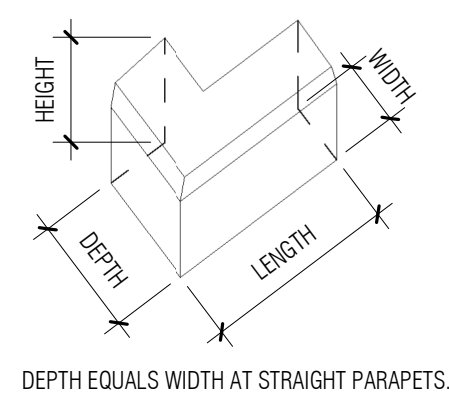
PROPOSED FLOOR PLAN AND REFLECTED CEILING PLAN

DSK JOB NO. 19033

ISSUE DATE January 2020

SHEET NO. A-02

P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\NPS-DWG\SS\601-REV\T\FAMILIES\TITLEBLOCKS\KOC_Arch D 24x36 Vertical Title - BETA

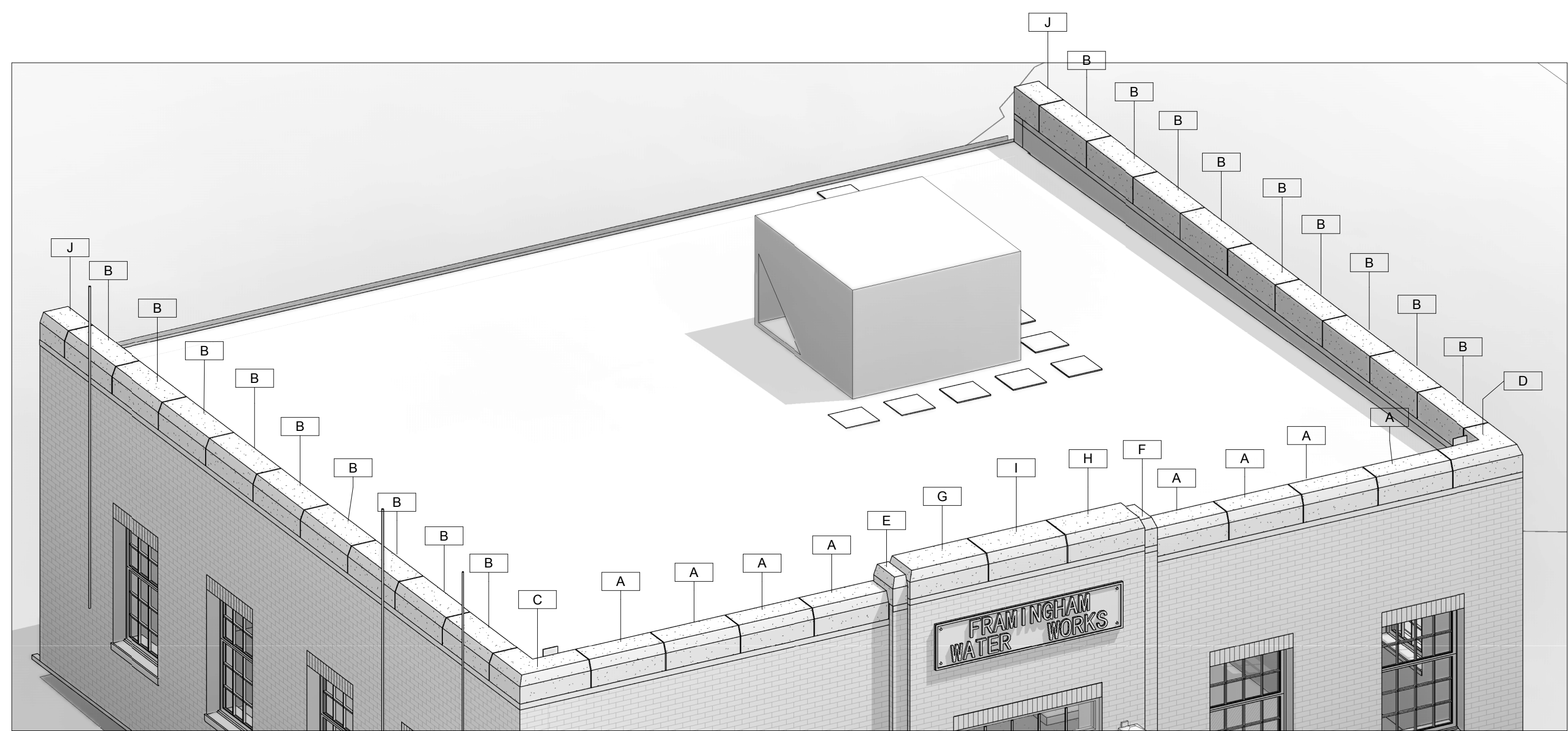


4 PRECAST PARAPET DIMS
1/4" = 1'-0"

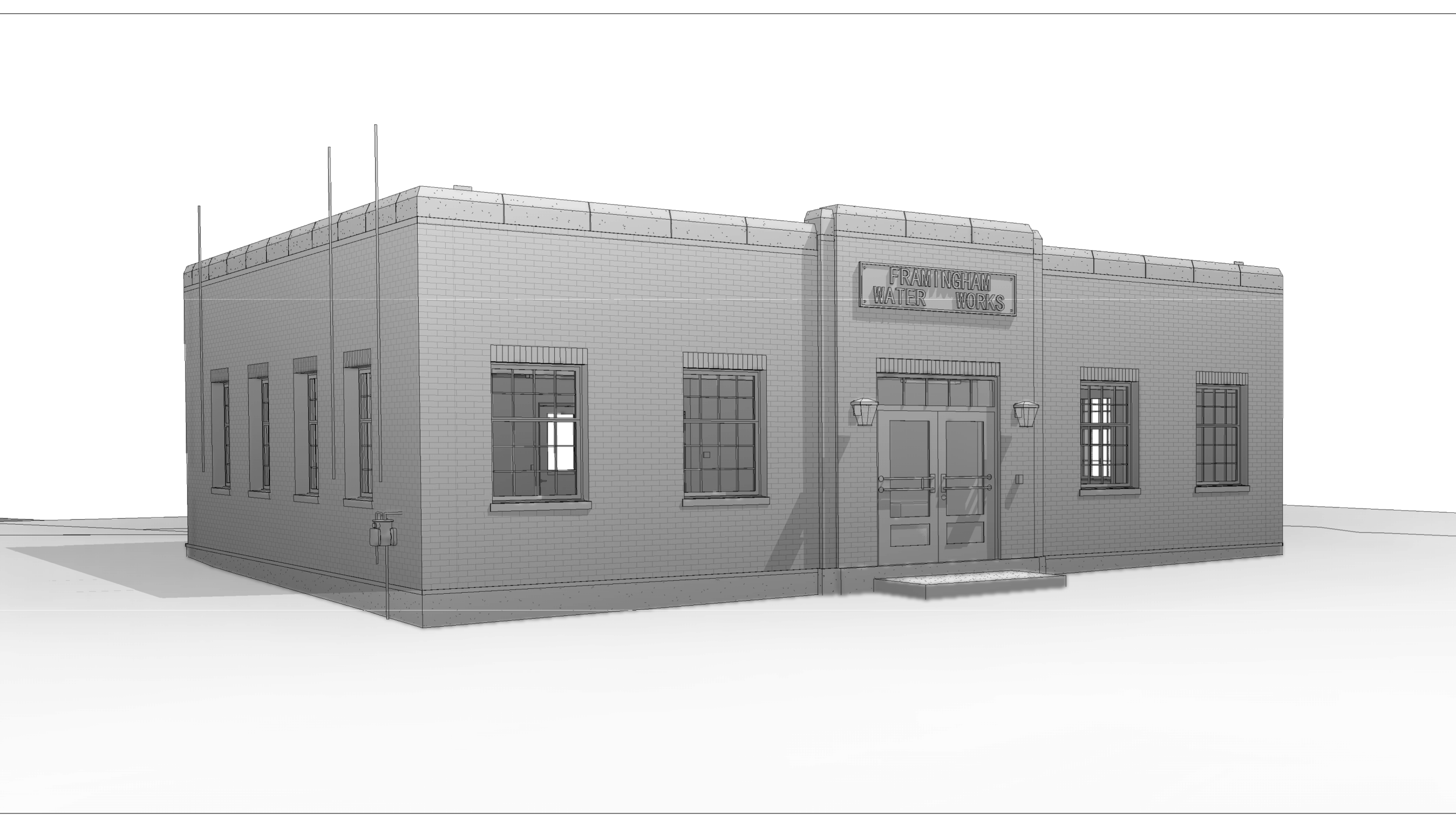
CONCRETE PARAPET SCHEDULE					
TYPE MARK	LENGTH	WIDTH	DEPTH	HEIGHT	COMMENTS
A	3'-4"	1'-3 1/4"		1'-2"	
B	3'-10"	1'-3 1/4"		1'-2"	
C	3'-2 1/8"	1'-3 1/4"	2'-6"	1'-2"	EMBEDDED METAL PLATE FOR MOUNTING SECURITY CAMERA, AS INDICATED ON ROOF PLAN
D	3'-2 1/8"	1'-3 1/4"	2'-6"	1'-2"	
E	0'-8"	1'-6 3/4"		1'-2"	CHAMFER ON FRONT AND SIDE
F	0'-8"	1'-6 3/4"		1'-2"	CHAMFER ON FRONT AND SIDE
G	3'-6 1/4"	1'-9"		1'-2"	CHAMFER ON FRONT AND SIDE
H	3'-6 1/4"	1'-9"		1'-2"	CHAMFER ON FRONT AND SIDE
I	3'-6 1/4"	1'-9"		1'-2"	
J	2'-0"	1'-3 1/4"		1'-2"	

NOTE:
ALL CONCRETE PRECAST PARAPETS DIMENSIONS TO BE VERIFIED IN FIELD, TYP.
3/8" SEALANT BETWEEN, TYP.

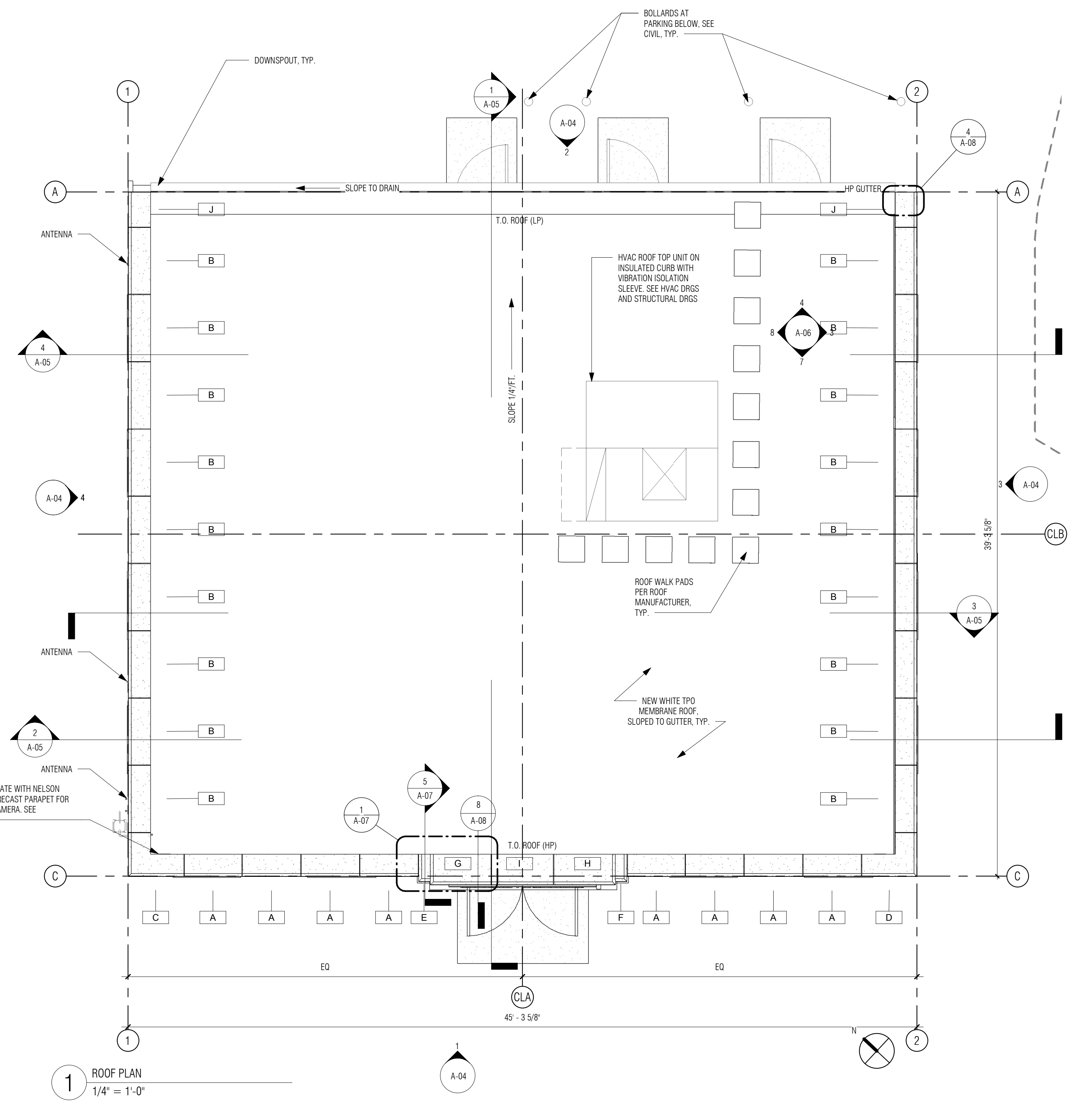
- GENERAL NOTES: FLOOR PLANS**
- REFER TO DWG A-00 FOR GENERAL NOTES, ABBREVIATIONS, SYMBOLS & MOUNTING HEIGHTS
 - REFER TO DWG A-10 FOR DOOR, WINDOW AND LOUVER SCHEDULES, FINISH SCHEDULE AND MATERIALS LEGEND.
 - VERIFY ALL DIMENSIONS IN FIELD.
 - REFER TO HVAC DRAWINGS FOR DUCTING LAYOUTS AND OTHER MECHANICAL INFORMATION, TYP.
 - SEE ELEC DRAWINGS FOR LIGHTING AND ELEC INFORMATION, TYP.
 - SEE CIVIL DRAWINGS FOR ALL SITE-RELATED WORK, TYP.
 - OPERATOR SHALL MAINTAIN A CLEAR PATH OF TRAVEL WITHIN THE BUILDING, UNENCUMBERED BY, BUT NOT LIMITED TO PIPING, VALVES (BOTH OPEN AND CLOSED), EQUIPMENT, TOOLS, ETC., TYP.



3 3D - PARAPET



2 EXTERIOR ENTRY VIEW



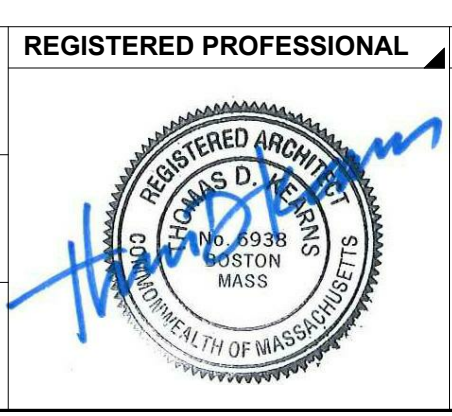
1 ROOF PLAN
1/4" = 1'-0"

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
ALK

DESIGNED BY:
DSK

CHECKED BY:
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SCALE

As indicated

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TITLE

**Edgell Road Water
Pumping Station Replacement
PROPOSED ROOF PLAN AND 3D VIEW**

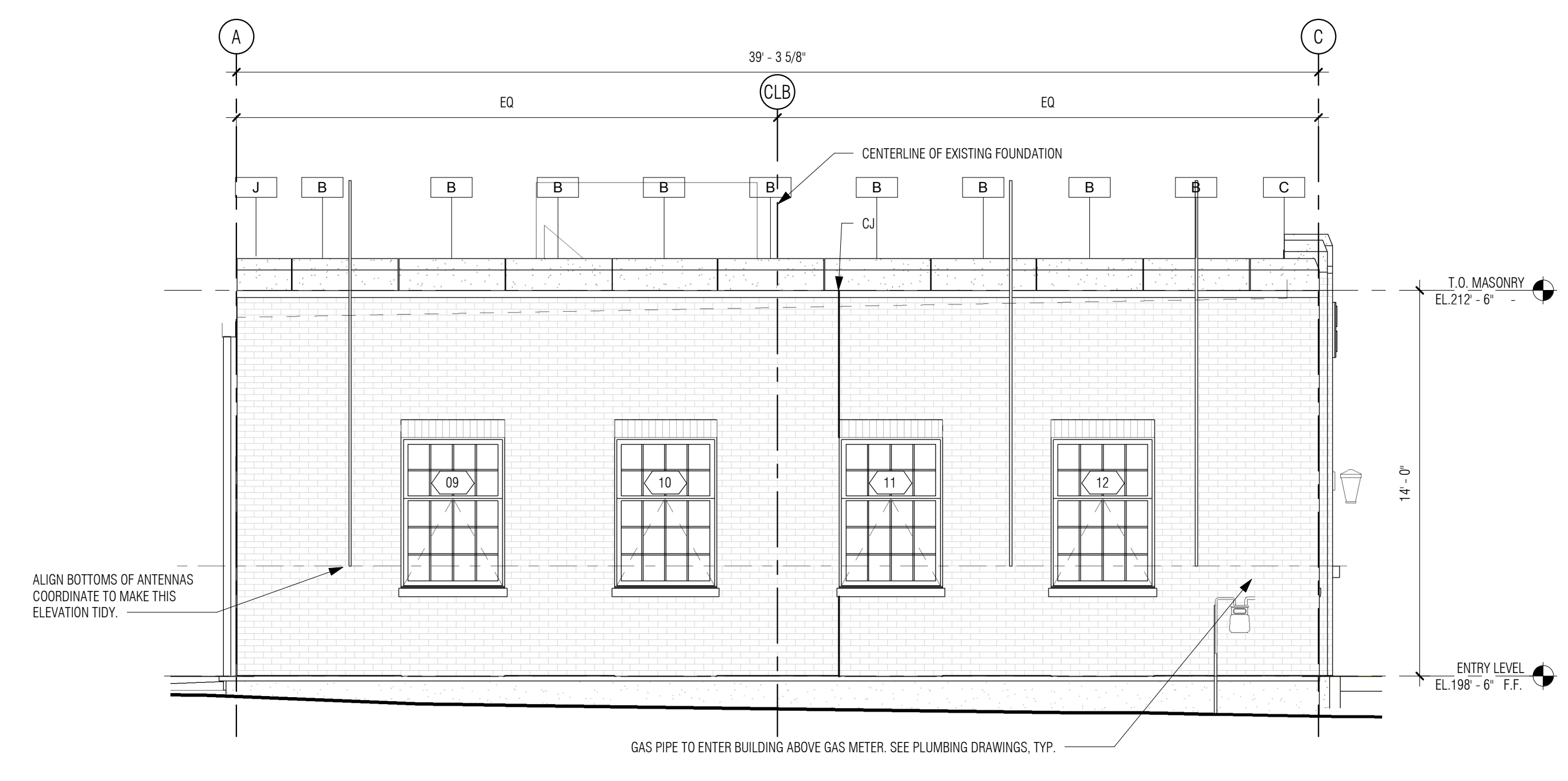
DSK JOB NO. 19033

ISSUE DATE January 2020

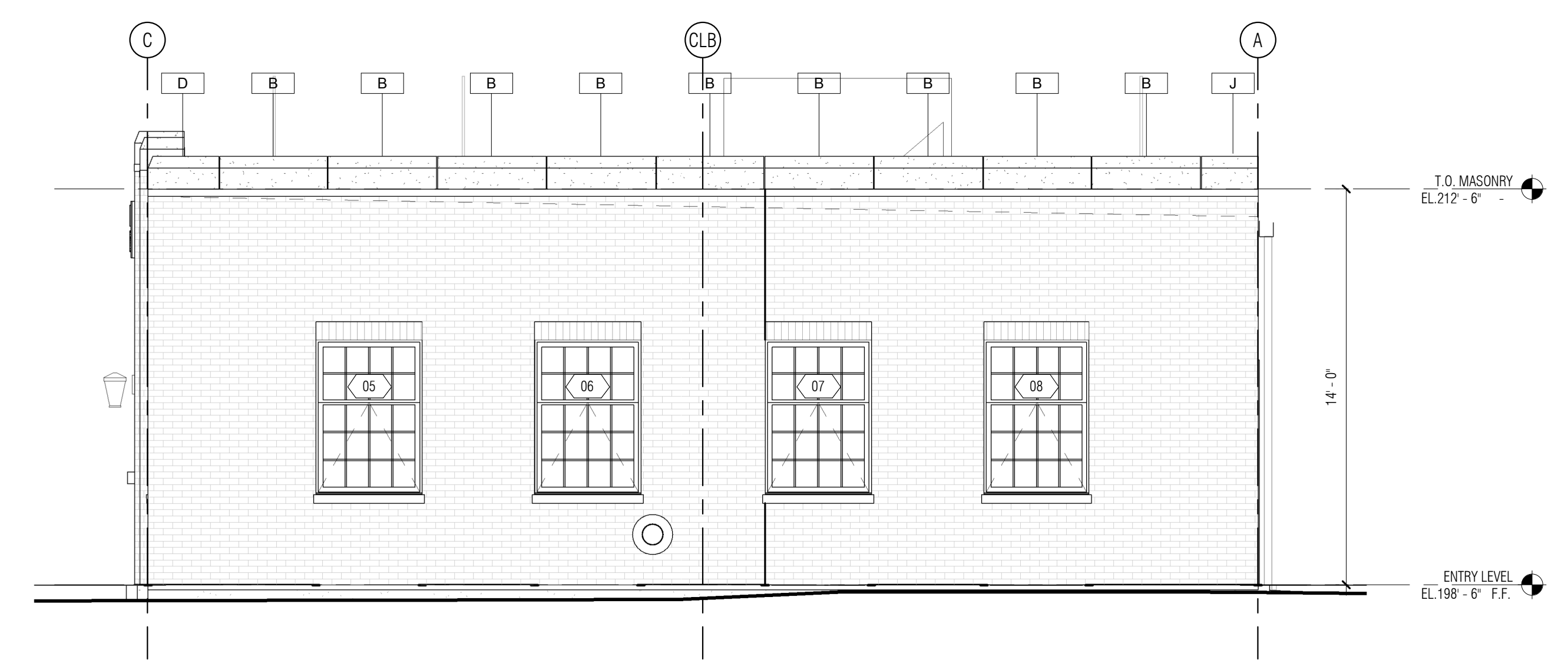
SHEET NO. **A-03**

GENERAL NOTES: BUILDING SECTIONS & ELEVATIONS

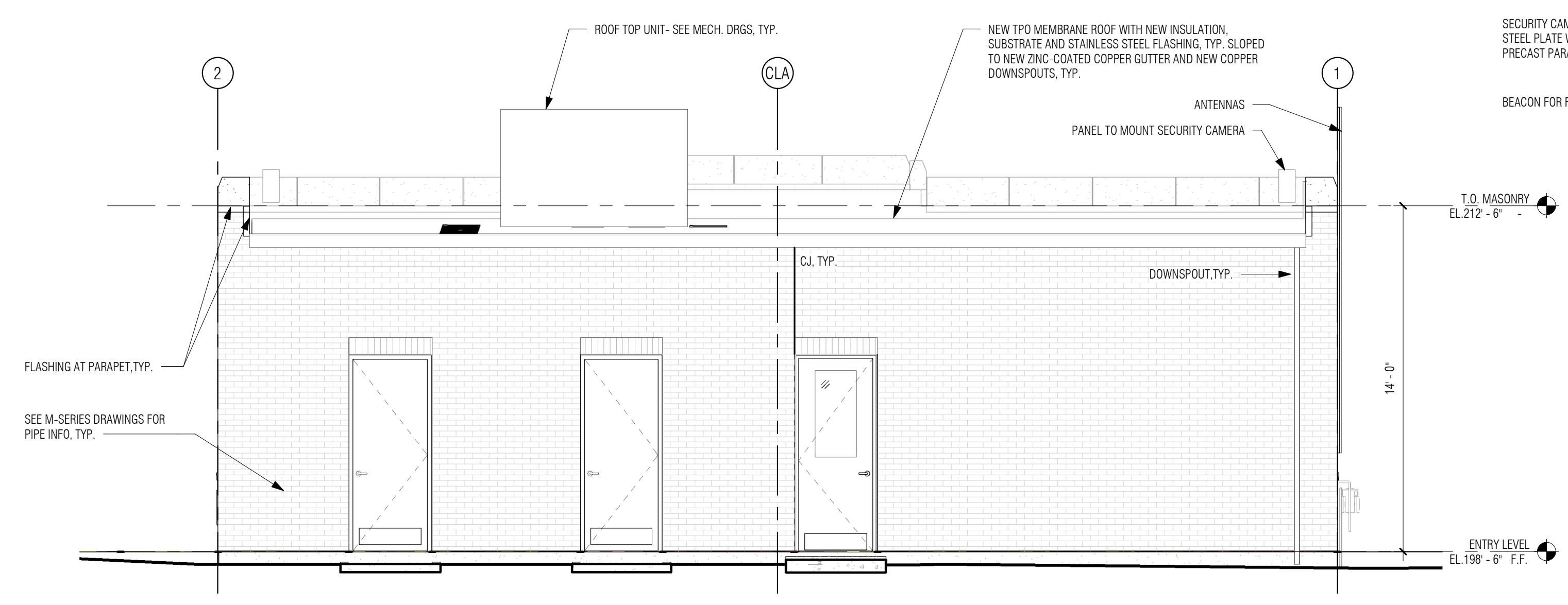
- REFER TO DWG A-00 FOR GENERAL NOTES, ABBREVIATIONS, SYMBOLS, MOUNTING HEIGHTS.
- SEE A-03 FOR PRE-CAST CONCRETE CURB PARAPET SCHEDULE.
- SEE A-10 FOR MATERIAL FINISH LEGEND AND DOOR AND WINDOW SCHEDULES.



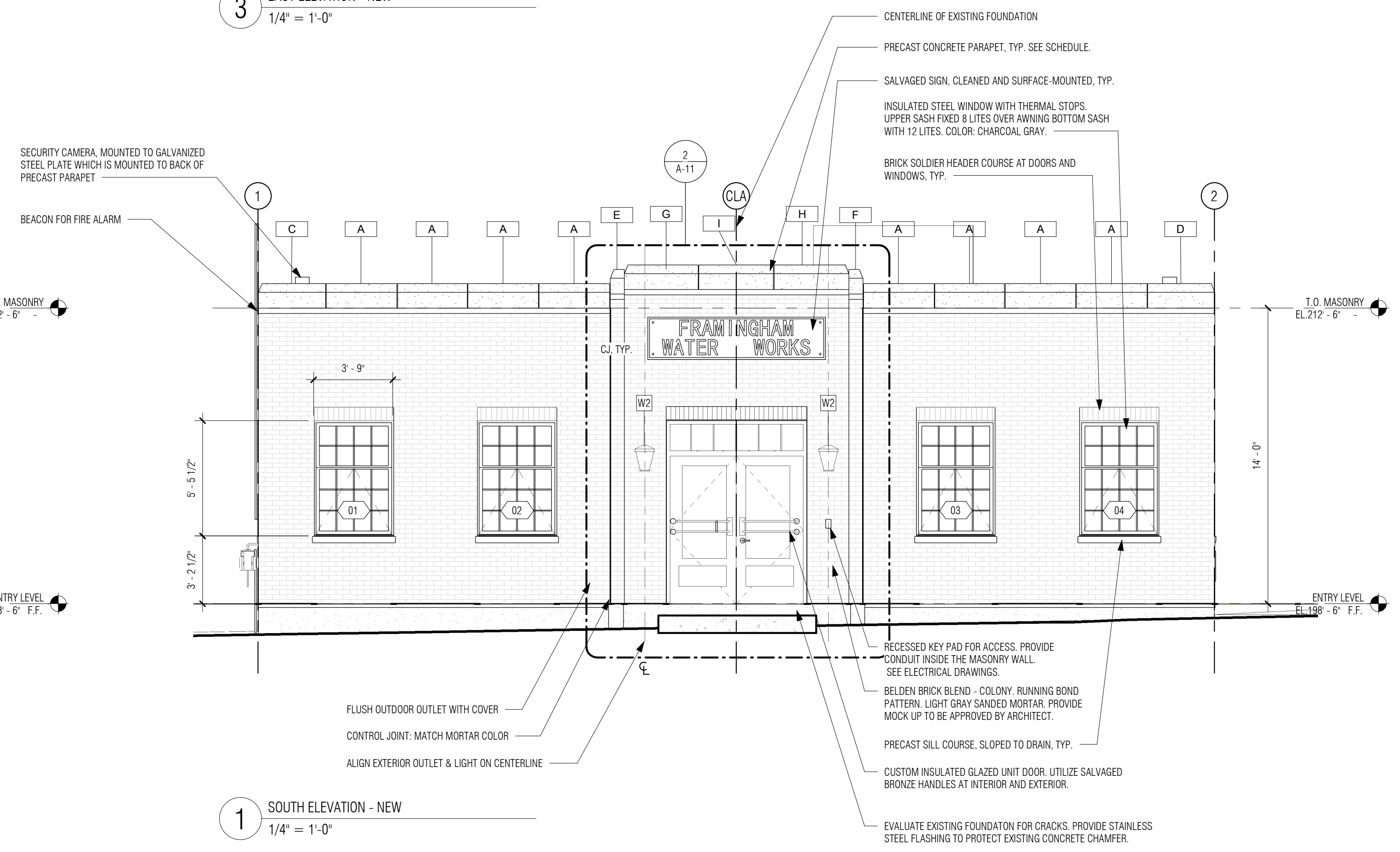
4 WEST ELEVATION - NEW
1/4" = 1'-0"



3 EAST ELEVATION - NEW
1/4" = 1'-0"



2 NORTH ELEVATION - NEW
1/4" = 1'-0"



1 SOUTH ELEVATION - NEW
1/4" = 1'-0"

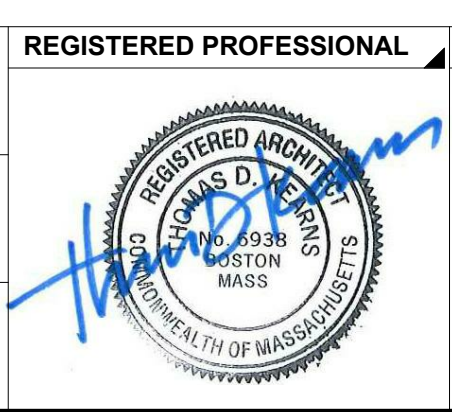
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ALK

DESIGNED BY:
DSK

CHECKED BY:
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SCALE

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TITLE

Edgell Road Water Pumping Station Replacement

PROPOSED ELEVATIONS

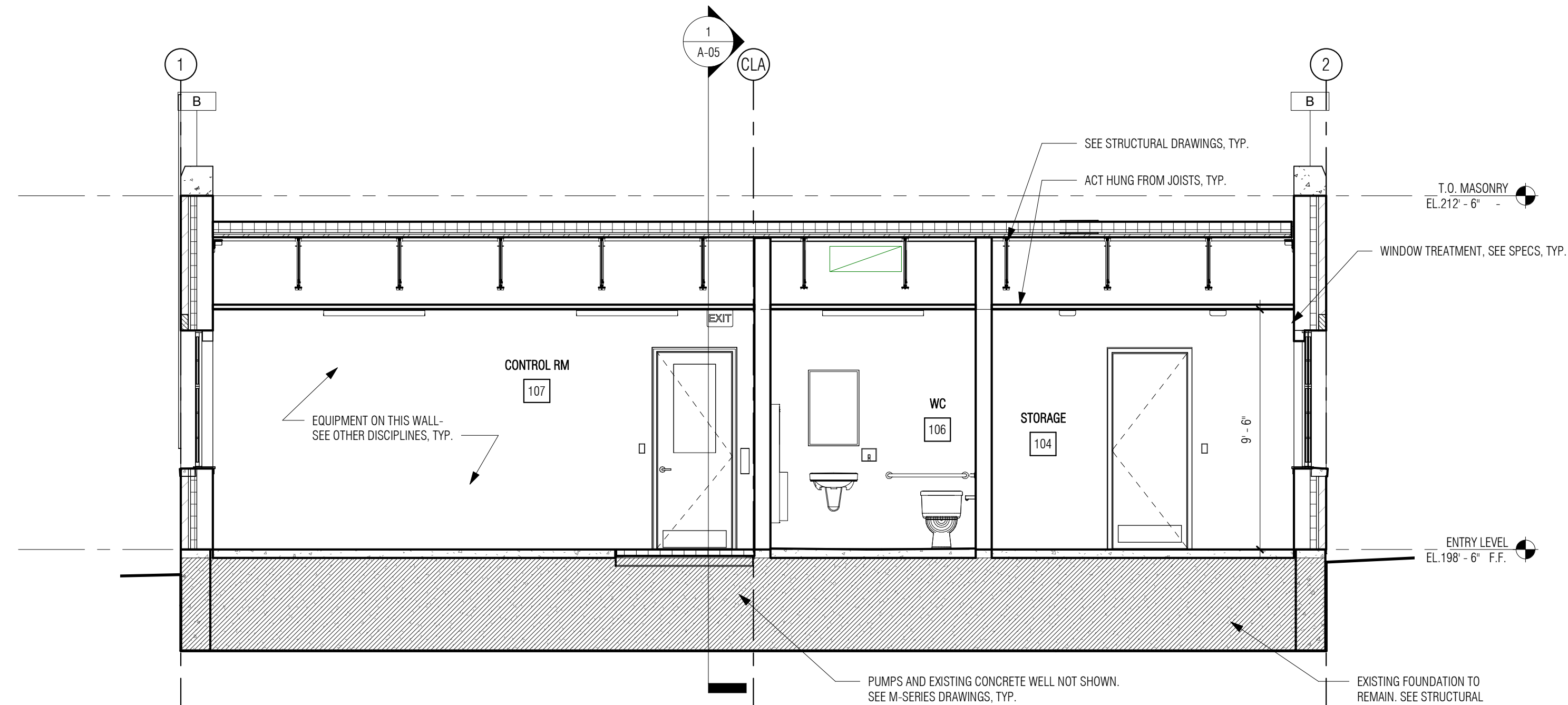
DSK JOB NO. 19033

ISSUE DATE January 2020

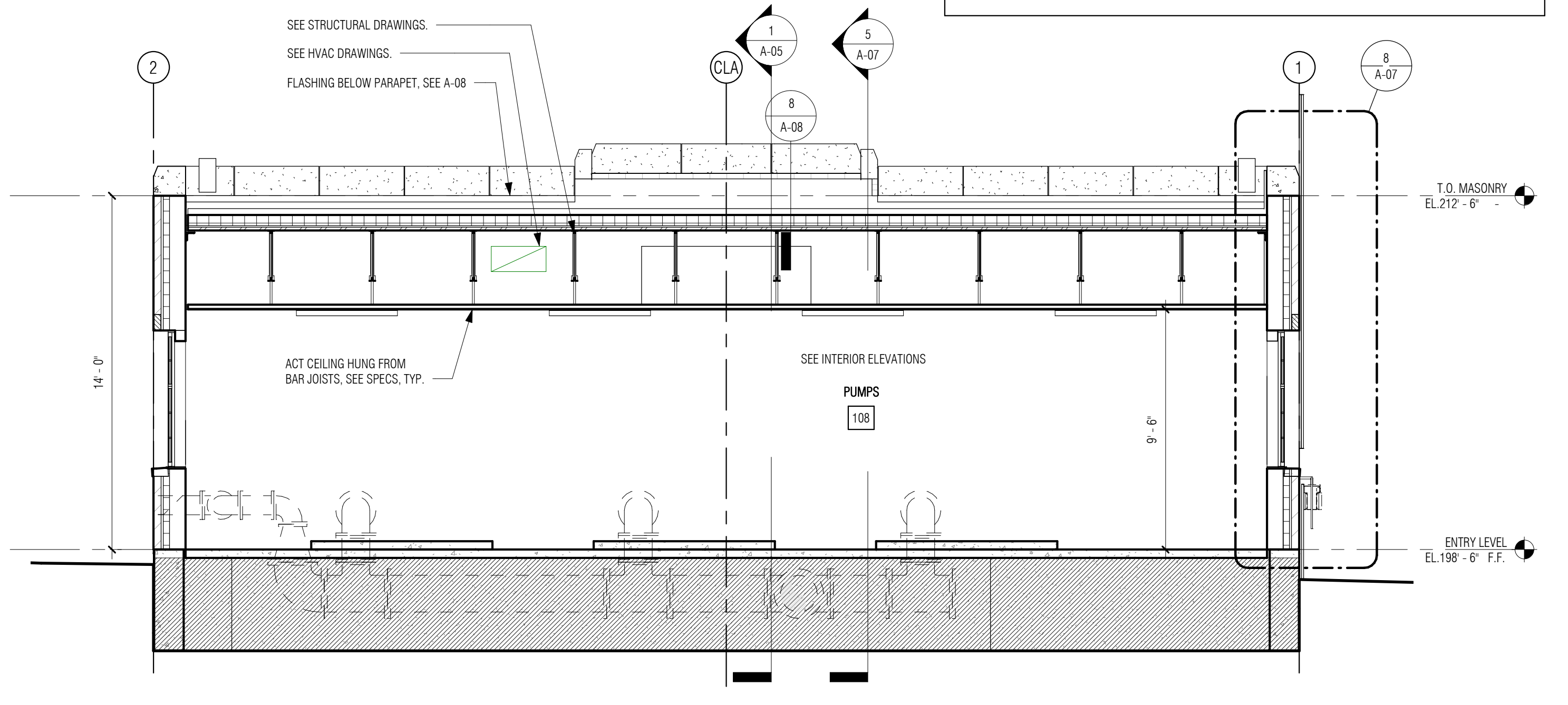
SHEET NO. **A-04**

GENERAL NOTES: BUILDING SECTIONS & ELEVATIONS

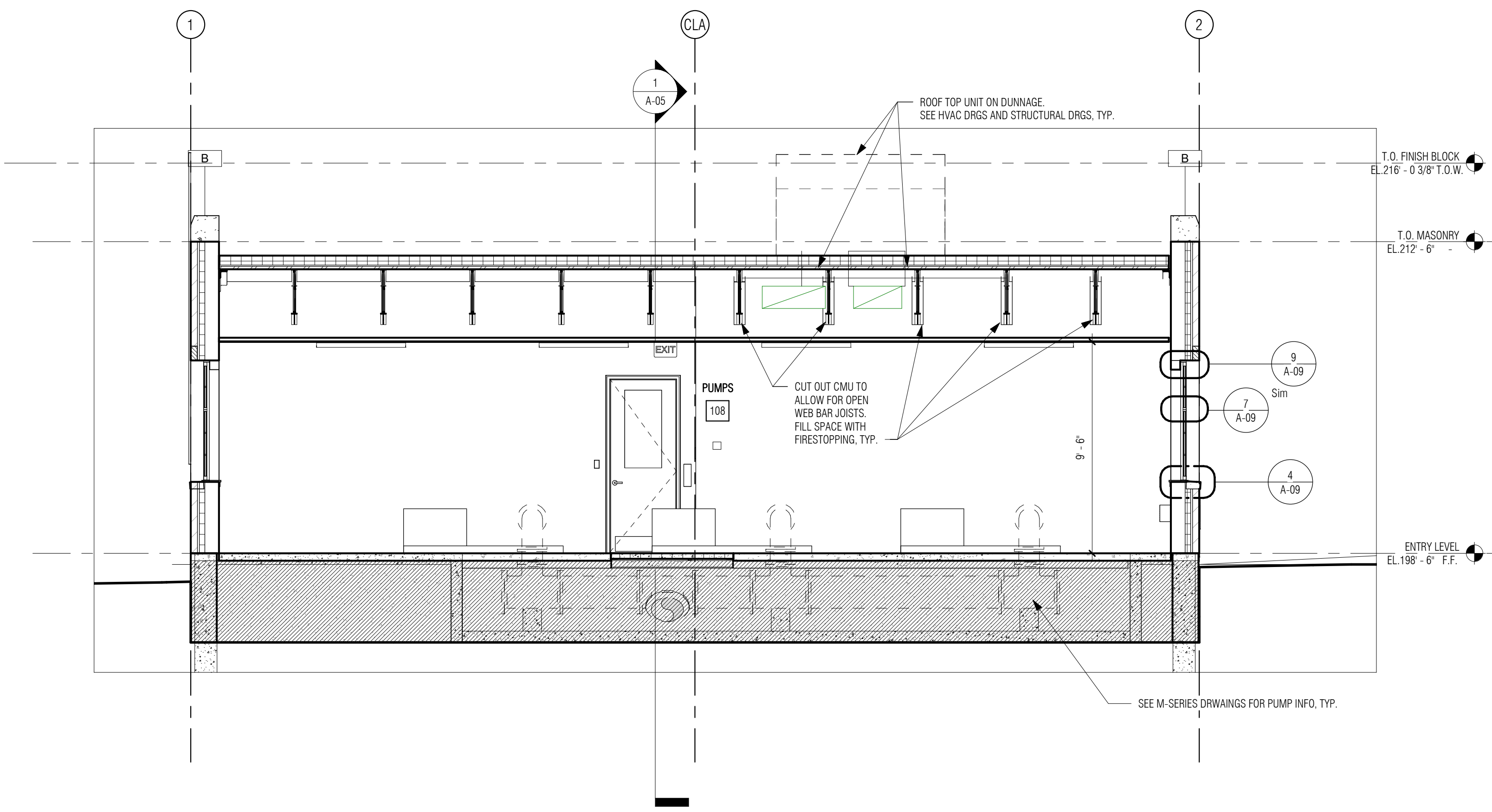
1. REFER TO DWG A-00 FOR GENERAL NOTES, ABBREVIATIONS, SYMBOLS, MOUNTING HEIGHTS.
2. SEE A-03 FOR PRE-CAST CONCRETE CURB PARAPET SCHEDULE.
3. SEE A-10 FOR MATERIAL FINISH LEGEND AND DOOR AND WINDOW SCHEDULES.



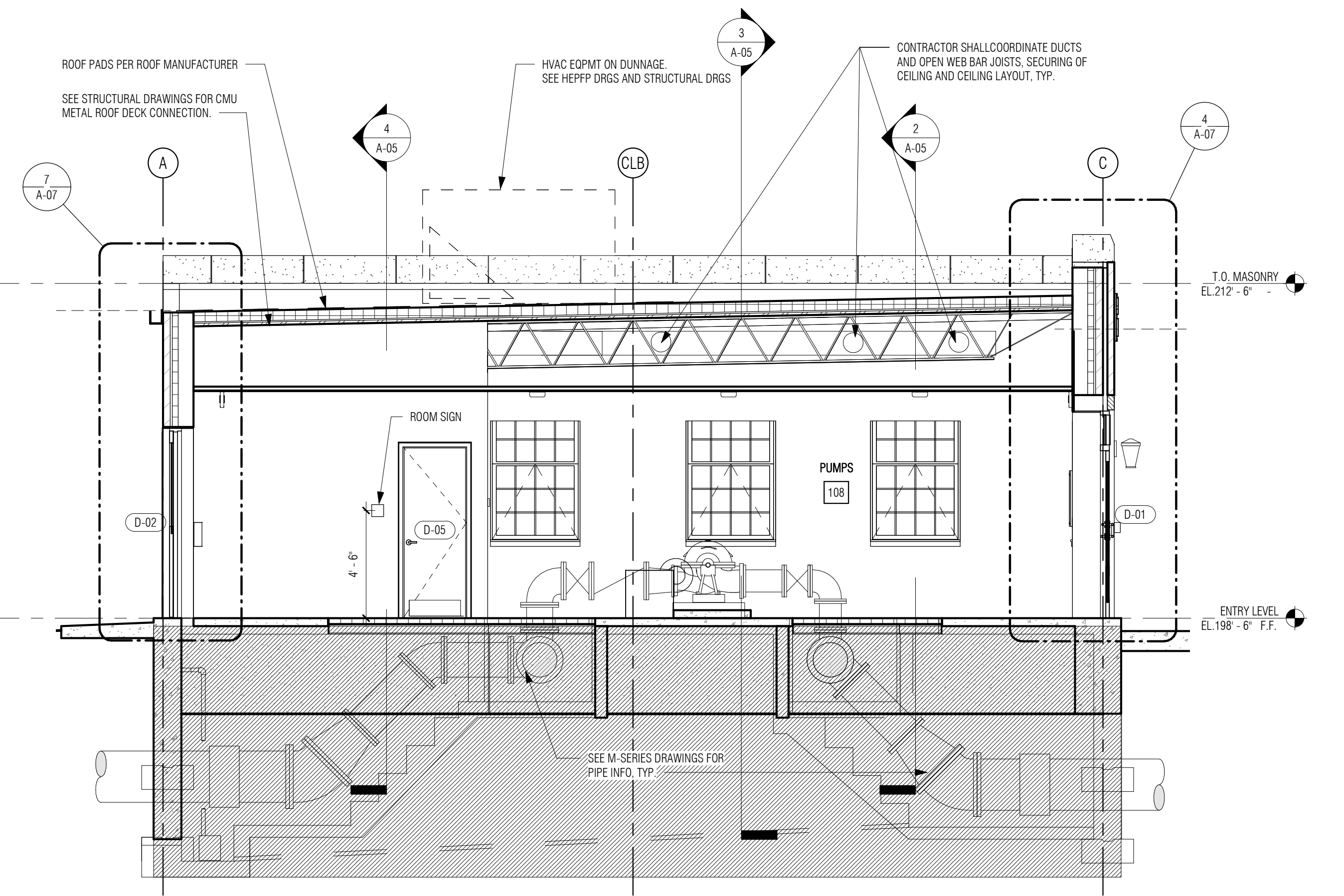
4 CROSS SECTION AT STORAGE AND WC
1/4" = 1'-0"



3 EAST-WEST SECTION THROUGH PUMP RM LOOKING TOWARD FRONT
1/4" = 1'-0"



2 CROSS SECTION AT PUMPS
1/4" = 1'-0"



1 BUILDING SECTION
1/4" = 1'-0"

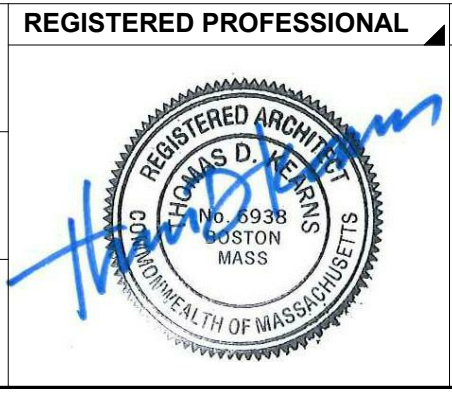
P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWG\600-NPS-FAMILIES\TITLEBLOCKS\KDC_Arch D 24x36 Vertical Title - BETA

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ALK

DESIGNED BY:
DSK

CHECKED BY:
MPS



SUBCONSULTANT

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ARCHITECTS + PLANNERS

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280 Elm Street South Dartmouth, MA 02748 508.999.0440

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TITLE

Edgell Road Water Pumping Station Replacement

BUILDING SECTIONS

DSK JOB NO. 19033

ISSUE DATE January 2020

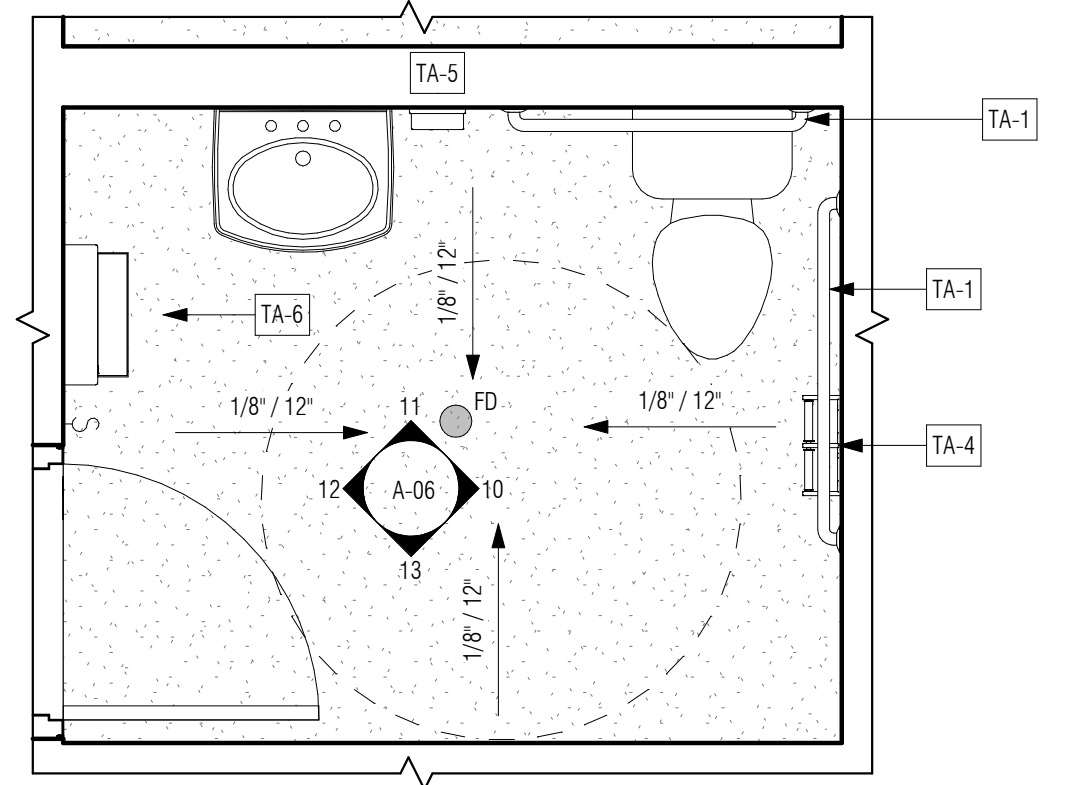
SHEET NO. **A-05**

GENERAL NOTES: INTERIOR ELEVATIONS

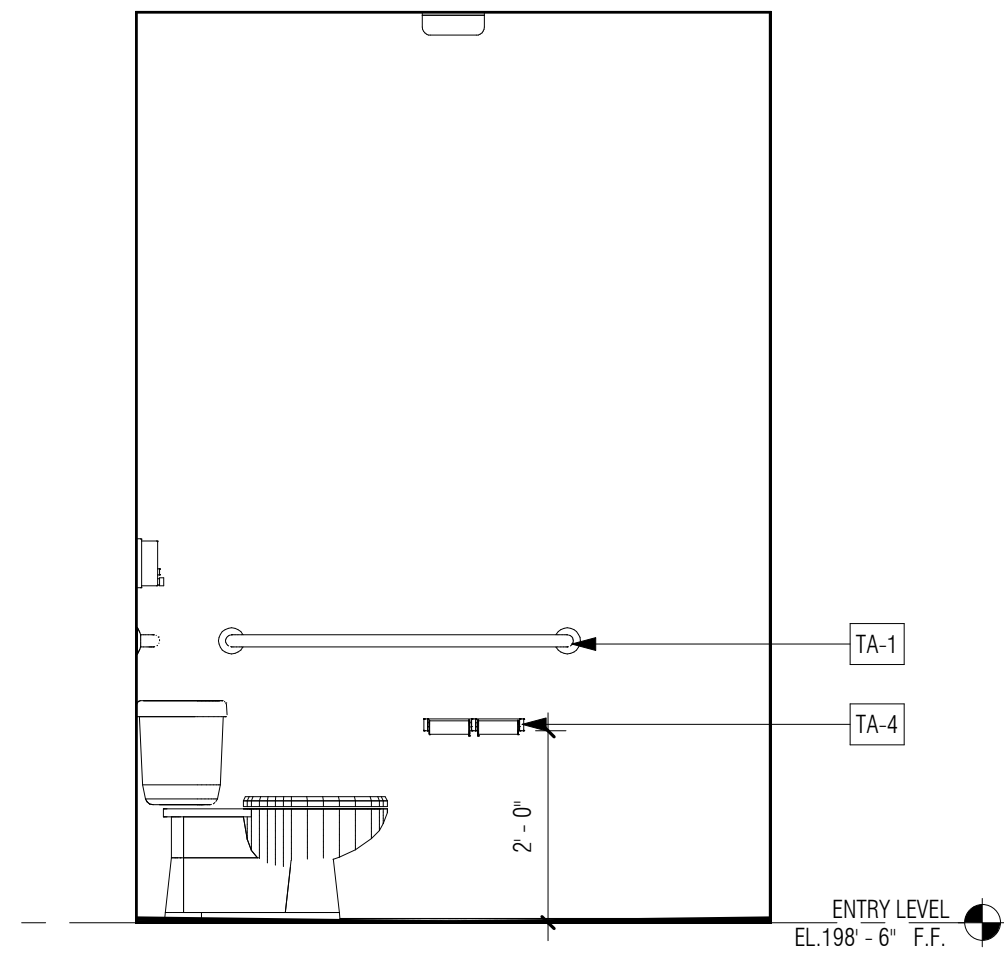
1. REFER TO DWG A-00 FOR GENERAL NOTES, ABBREVIATIONS, SYMBOLS & MOUNTING HEIGHTS
2. REFER TO DWG A-10 FOR DOOR, WINDOW AND LOUVER SCHEDULES.
3. REFER TO DWG A-11 FOR FINISH SCHEDULE AND MATERIALS.
4. ALL FURNITURE AND EQUIPMENT SHOWN FOR REFERENCE ONLY. N.I.C. TYP.
5. REFER TO MEP DRAWINGS FOR MORE INFORMATION ABOUT PLUMBING AND LIGHT FIXTURES, MECHANICAL AND ELECTRICAL EQUIPMENT AND SERVICES, TYP.

TOILET ACCESSORY SCHEDULE

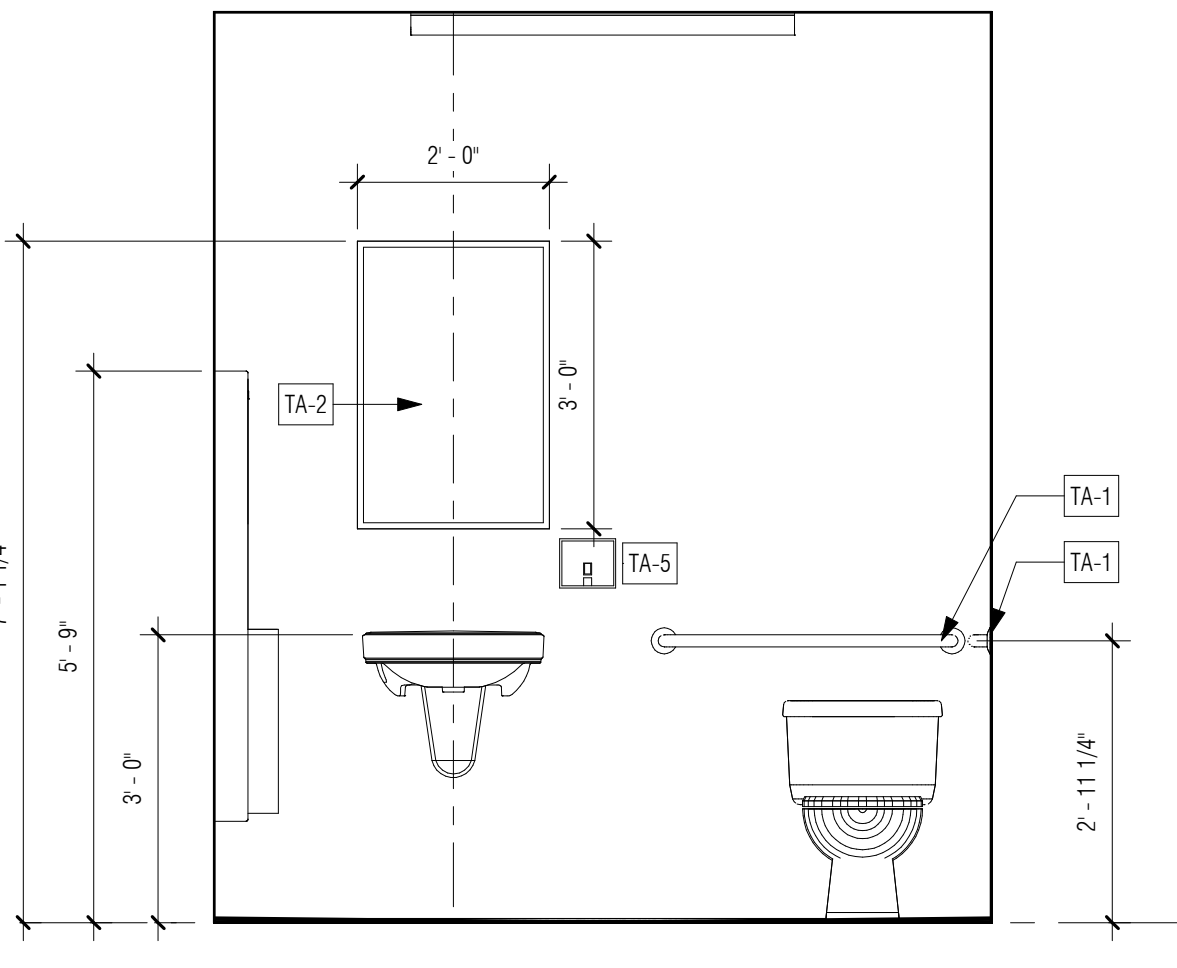
CODE	DESCRIPTION
TA-1	1 1/2" DIAMETER S.S. GRAB BARS W/ SNAP FLANGE
TA-2	24"x36" MIRROR
TA-4	SURFACE MOUNTED DOUBLE TOILET PAPER DISPENSER
TA-5	CONTURA SERIES SURFACE MOUNTED SOAP DISPENSER
TA-6	BOBRICK B-3949 CLASSIC SERIES SURFACE MOUNTED CONVERTIBLE COMBINATION TOWEL AND WASTE UNIT



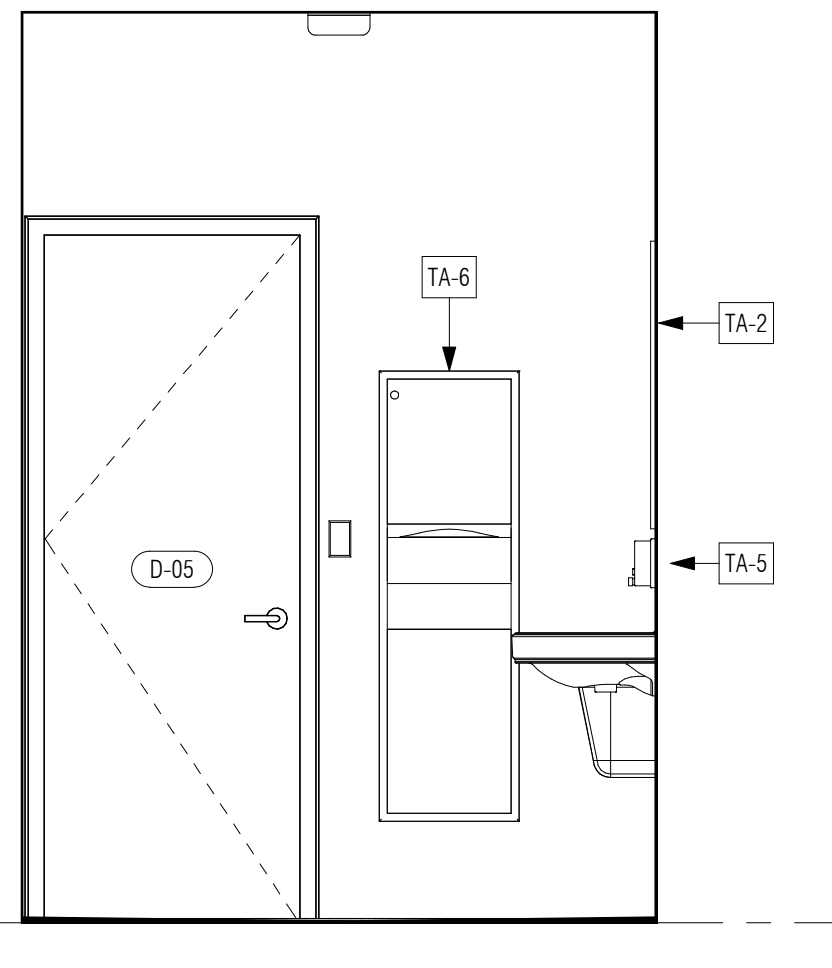
9 ENLARGED WC PLAN
1/2" = 1'-0"



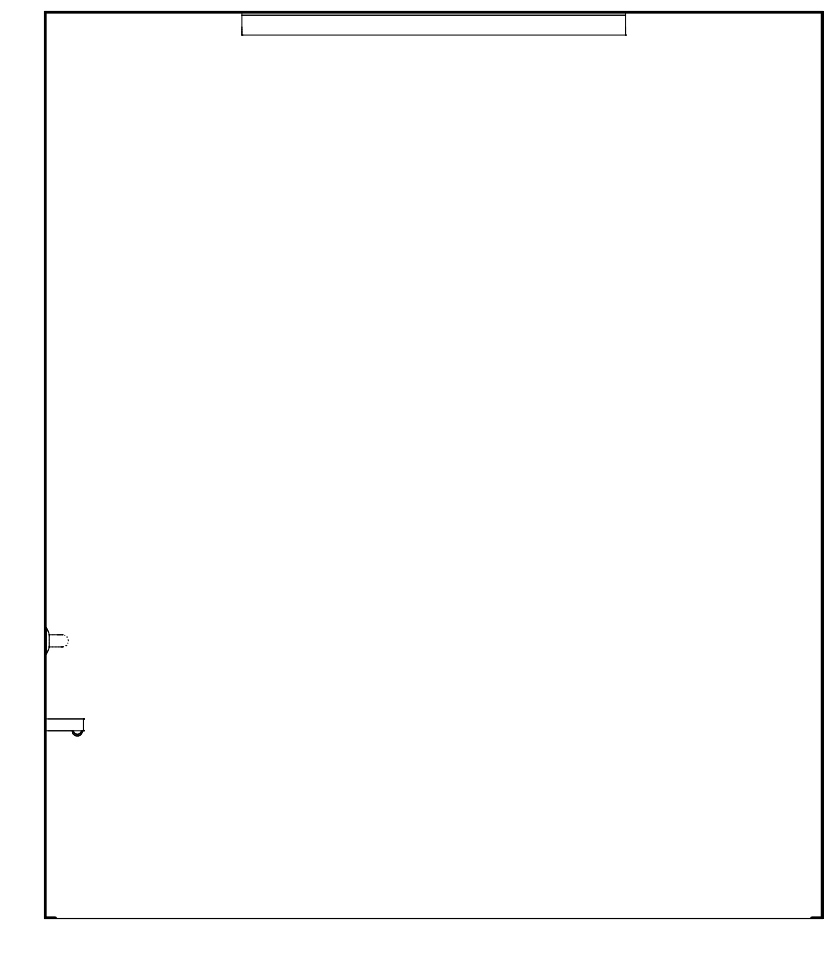
10 INT ELEV - WC EAST
1/2" = 1'-0"



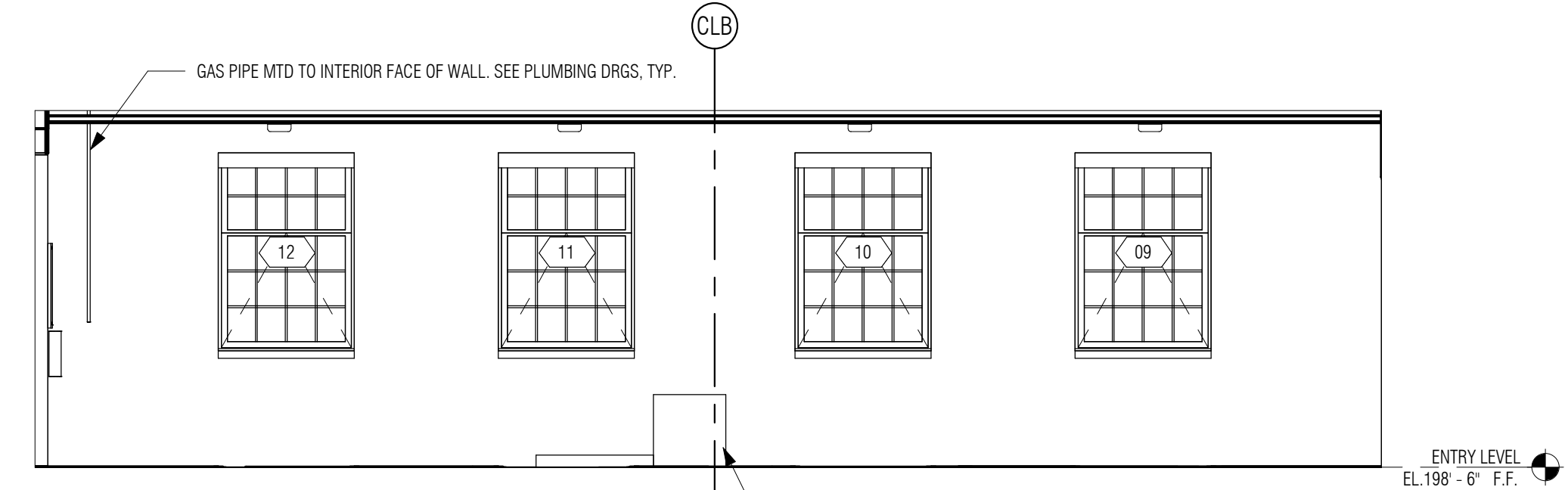
11 INT ELEV - WC NORTH
1/2" = 1'-0"



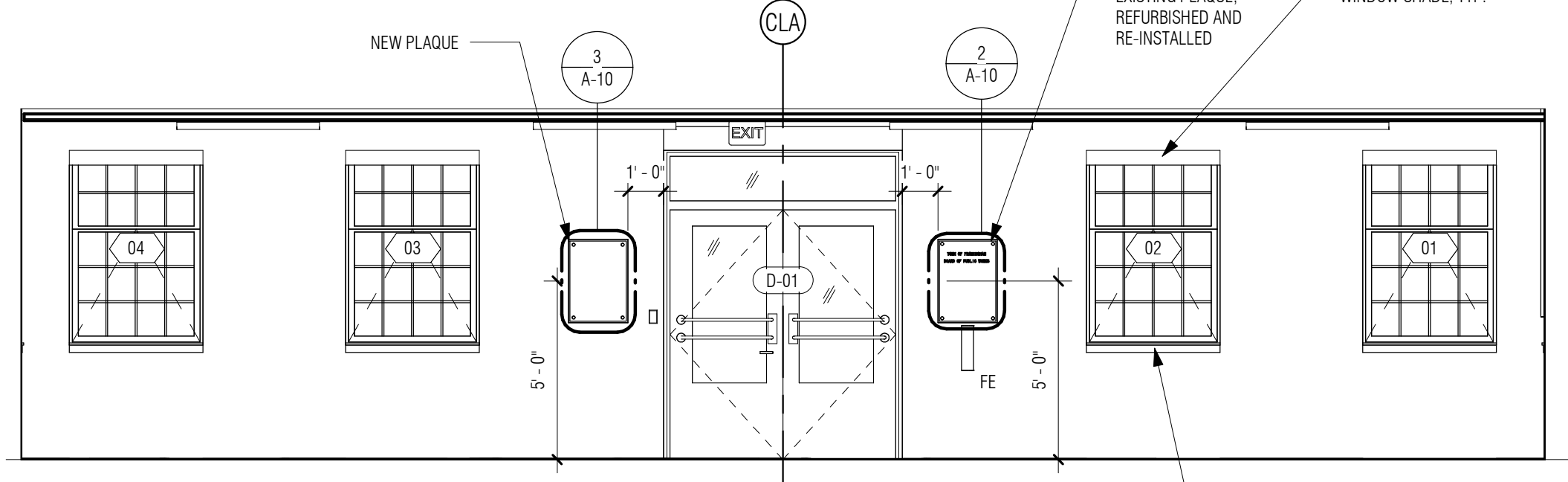
12 INT ELEV - WC WEST
1/2" = 1'-0"



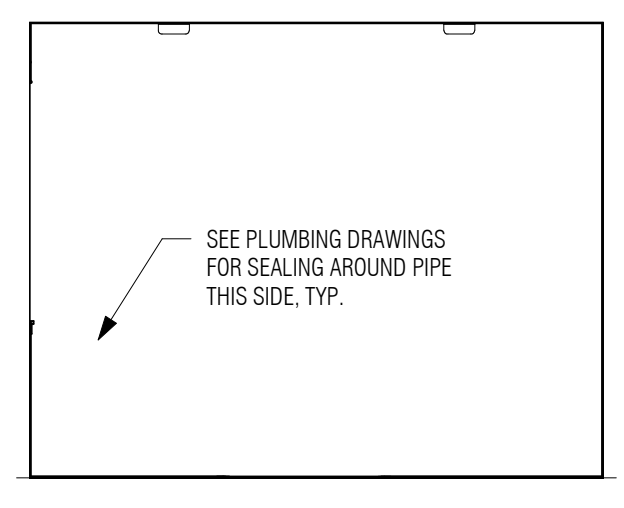
13 INT ELEV - WC SOUTH
1/2" = 1'-0"



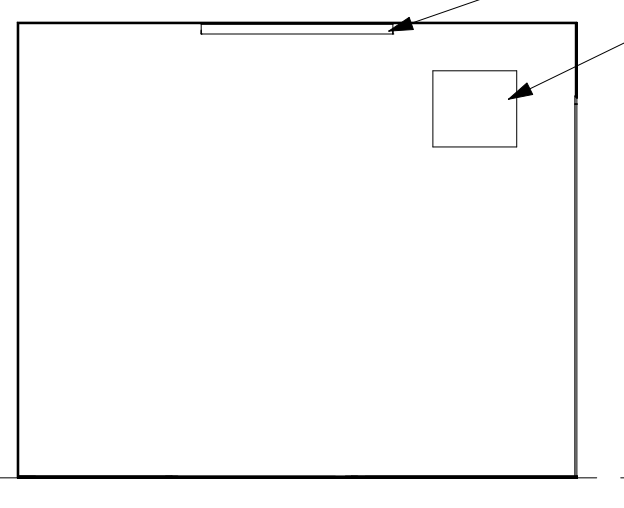
5 INT ELEV - PUMP CONTROL RM WEST
1/4" = 1'-0"



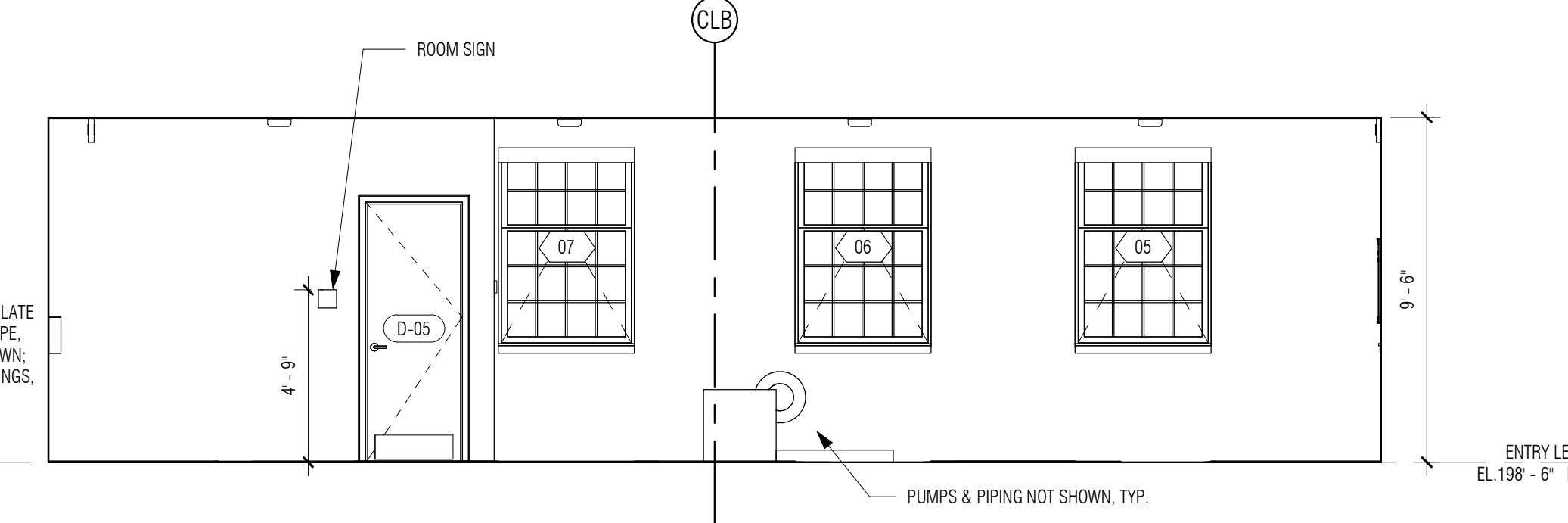
6 INT ELEV - PUMP CONTROL RM SOUTH
1/4" = 1'-0"



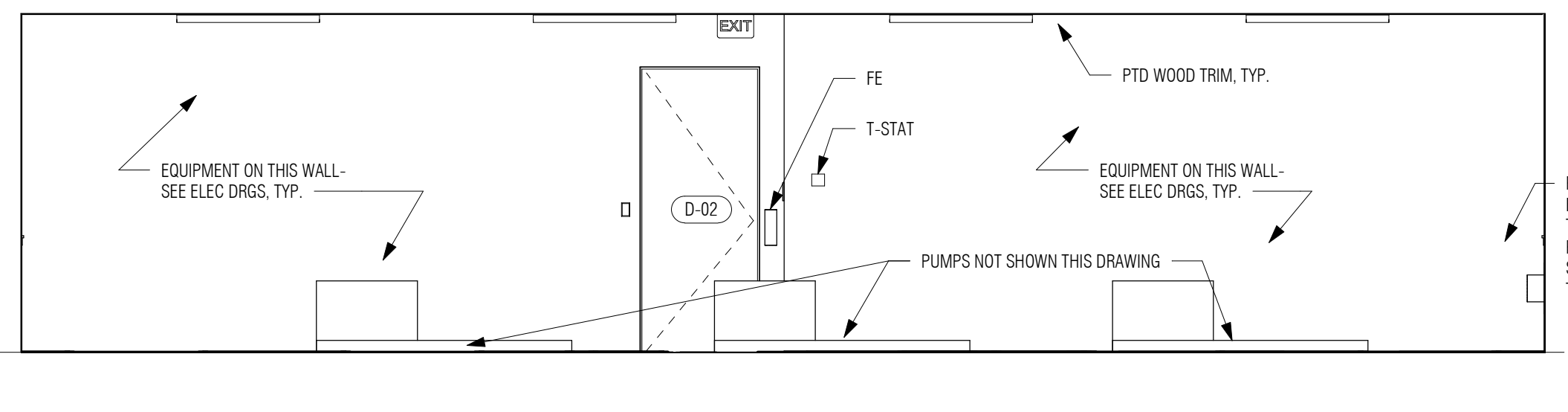
7 STOR. INT. ELEV. SOUTH
1/4" = 1'-0"



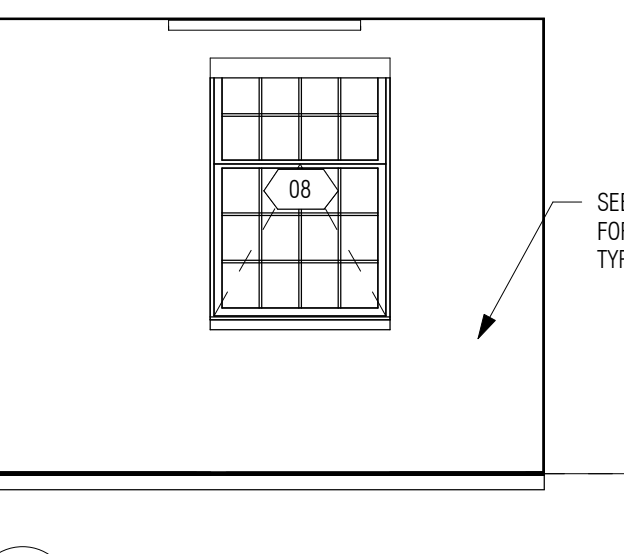
8 STOR. INT. ELEV. WEST
1/4" = 1'-0"



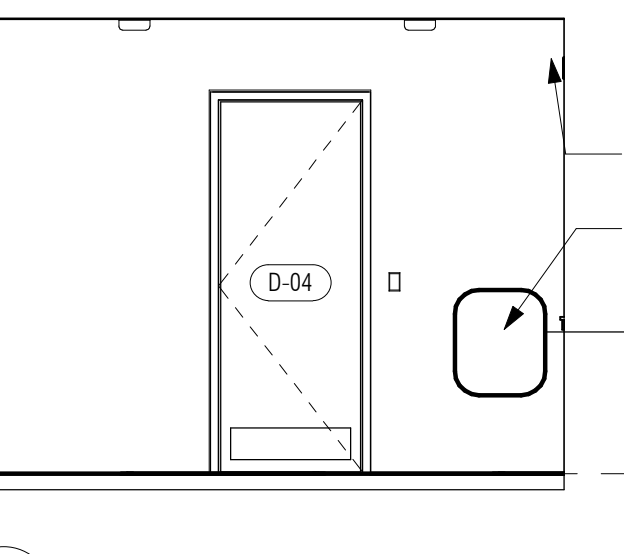
1 INT ELEV - PUMP CONTROL RM EAST
1/4" = 1'-0"



2 INT ELEV - PUMP CONTROL RM NORTH
1/4" = 1'-0"



3 STOR. INT. ELEV. EAST
1/4" = 1'-0"



4 STORAGE INT. ELEV. NORTH
1/4" = 1'-0"

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

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

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ALK
DESIGNED BY:
DSK
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MPS

REGISTERED PROFESSIONAL
PREPARED BY



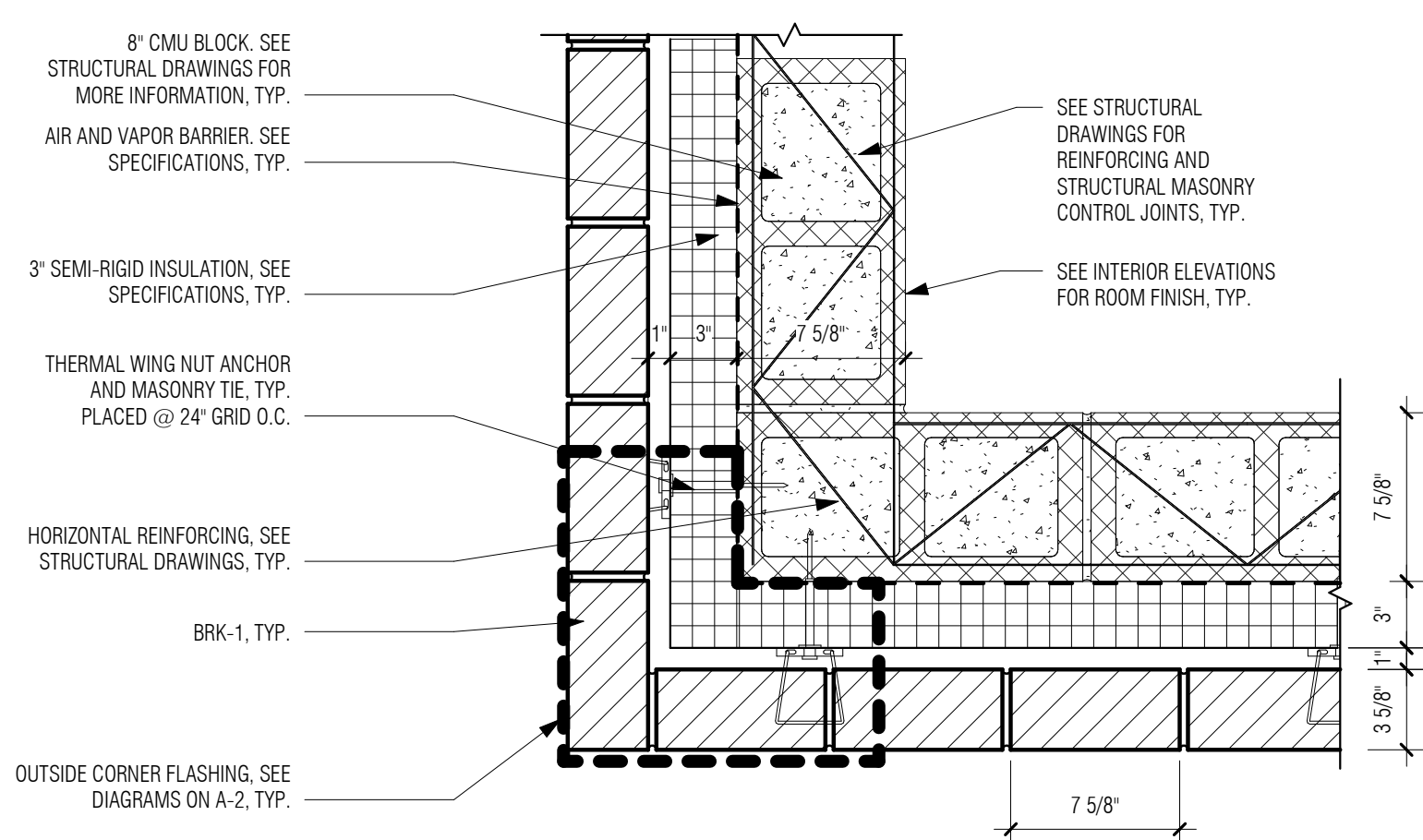
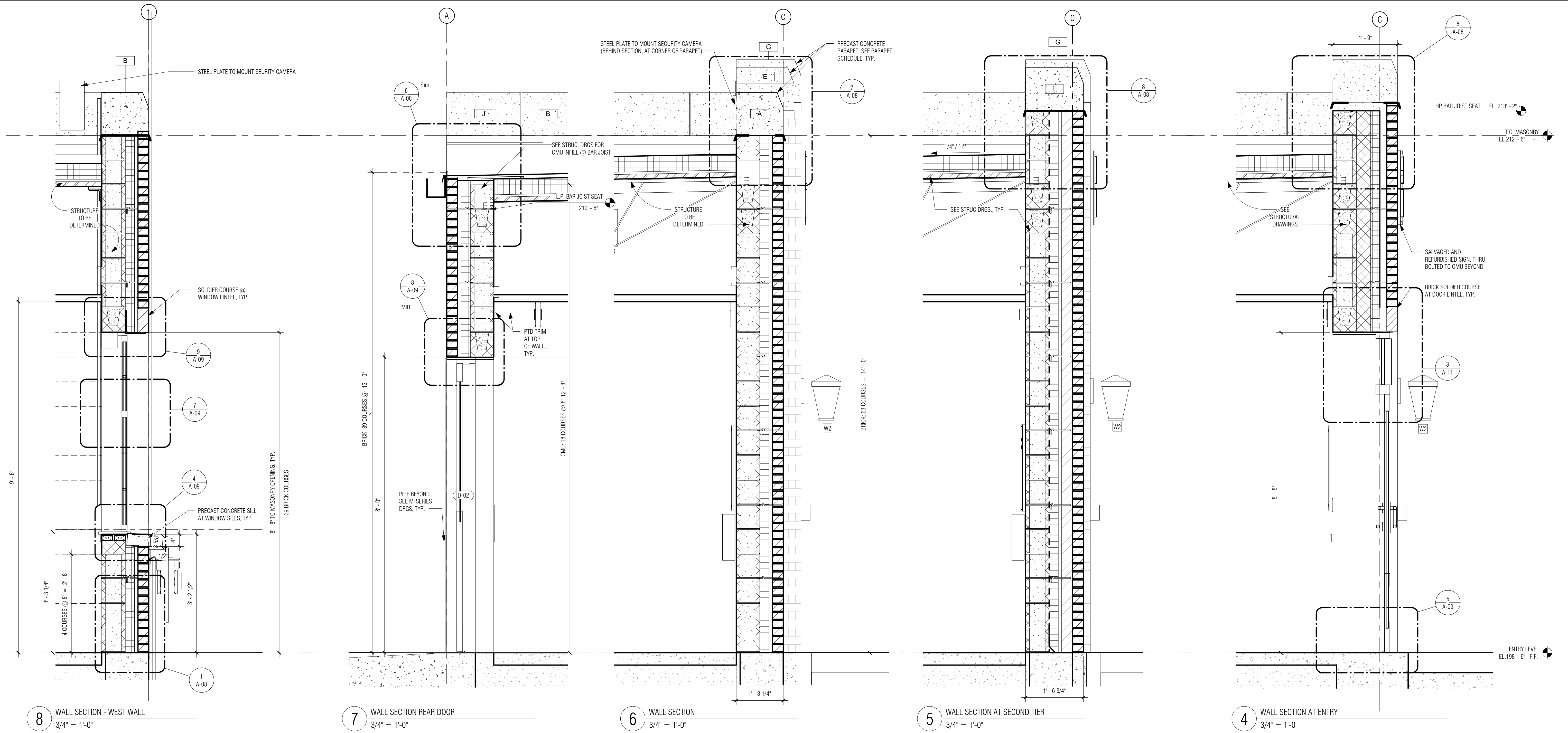
SUBCONSULTANT
DSK Dewing Schmid Kearns
ARCHITECTS + PLANNERS
30 Monument Square Suite 200B Concord, MA 01742 978.371.7500
280 Elm Street South Dartmouth, MA 02748 508.999.0440

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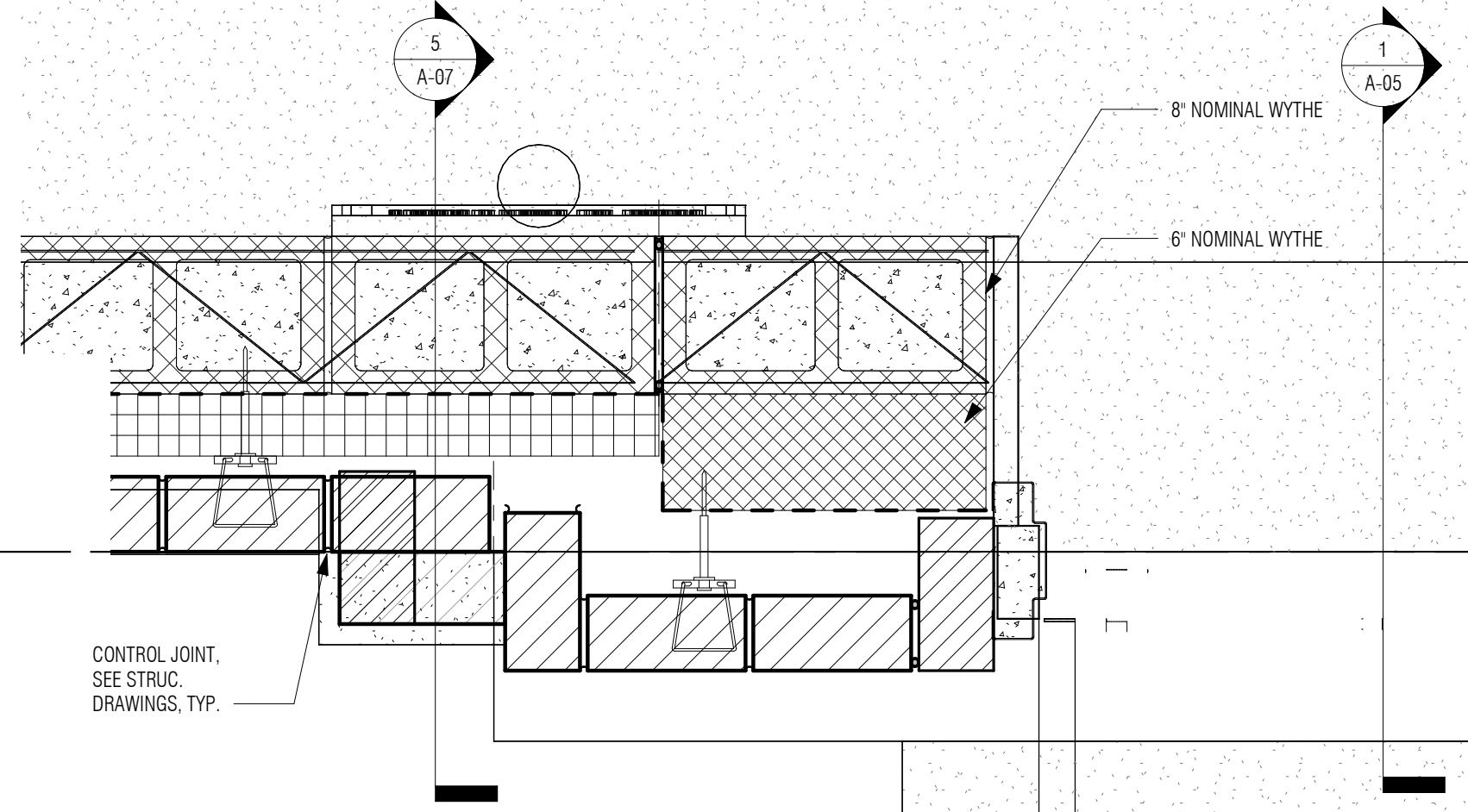
TITLE
Edgell Road Water Pumping Station Replacement
PROPOSED INTERIOR ELEVATIONS

DSK JOB NO. 19033
ISSUE DATE January 2020
SHEET NO. **A-06**

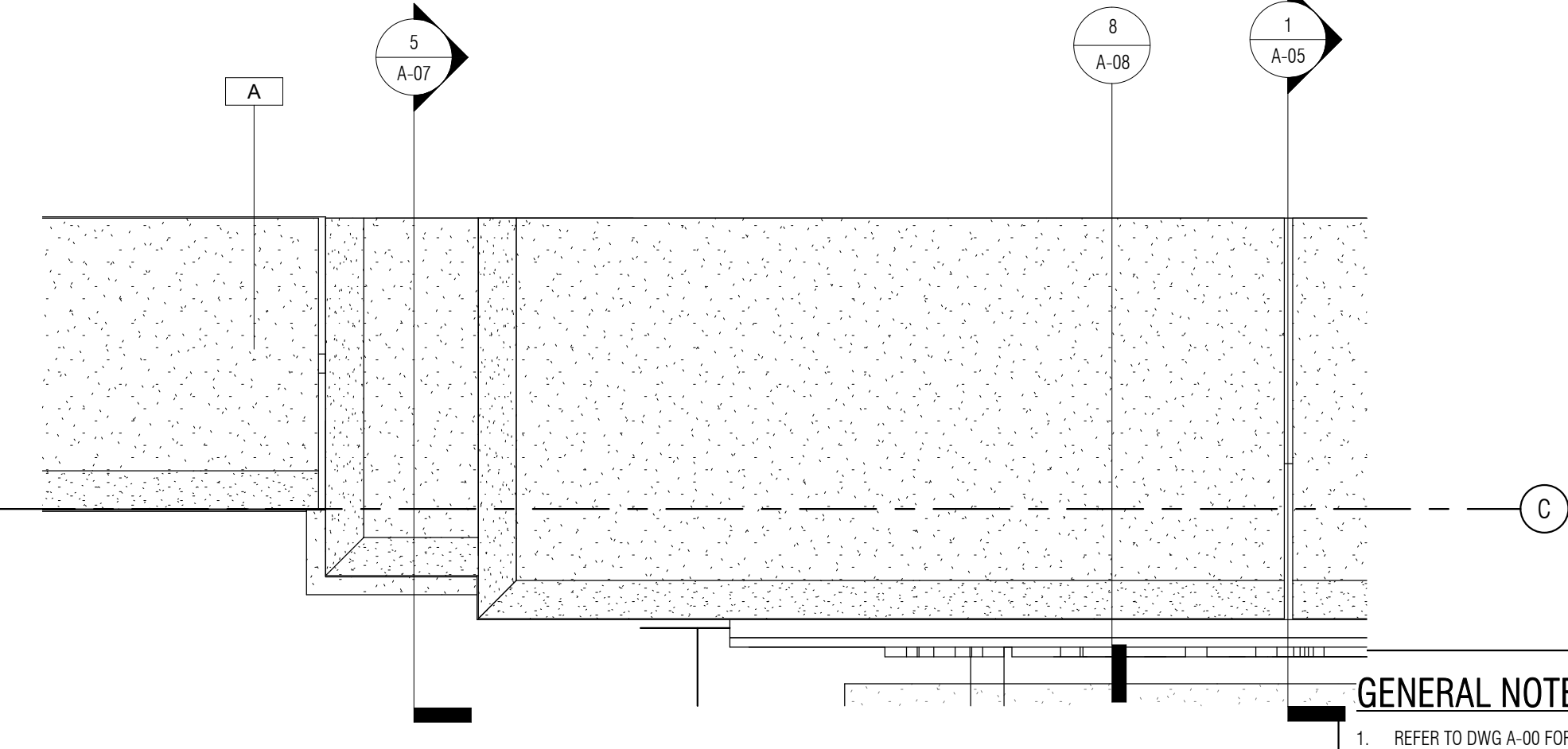
P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWG\600-NPS-FAMILIES\TITLEBLOCKS\KDC_Arch D 24x36 Vertical Title - BETA



3 PLAN DETAIL - BRICK - CORNER DETAILS
1 1/2" = 1'-0"



2 PLAN DETAIL FRONT WALL
1 1/2" = 1'-0"



1 DETAIL PLAN ROOF PARAPET AT ENTRANCE
1 1/2" = 1'-0"

GENERAL NOTES: DETAILS
 1. REFER TO DWG A-00 FOR GENERAL NOTES, ABBREVIATIONS, SYMBOLS, MOUNTING HEIGHTS.
 2. SEE A-03 FOR PARAPET SCHEDULE.
 3. SEE A-10 FOR MATERIAL FINISH LEGEND AND DOOR AND WINDOW SCHEDULES.

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DSK

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MPS



SUBCONSULTANT

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508.999.0440

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TITLE
Edgell Road Water
Pumping Station Replacement
WALL SECTIONS

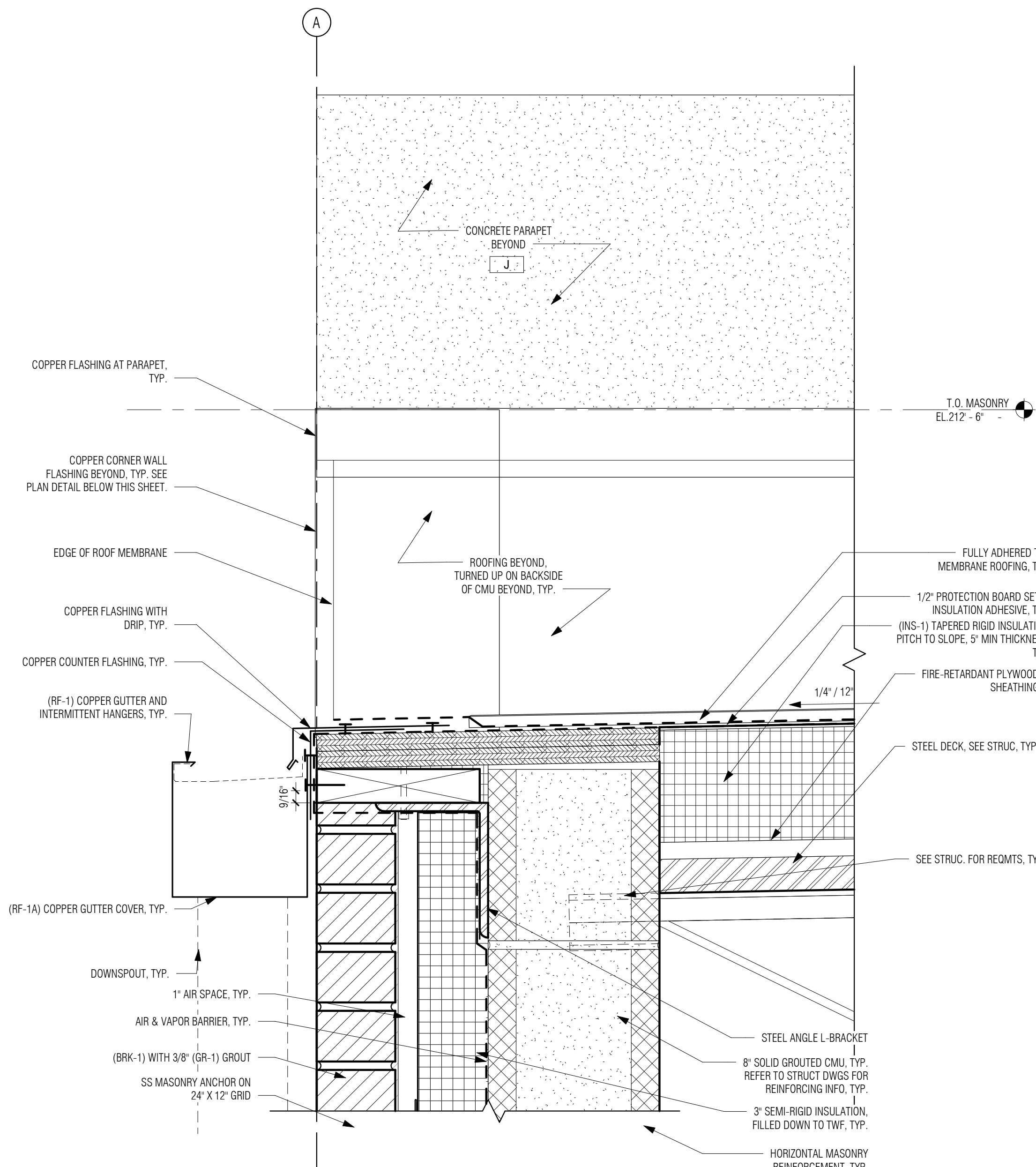
DSK JOB NO. 19033

ISSUE DATE January 2020

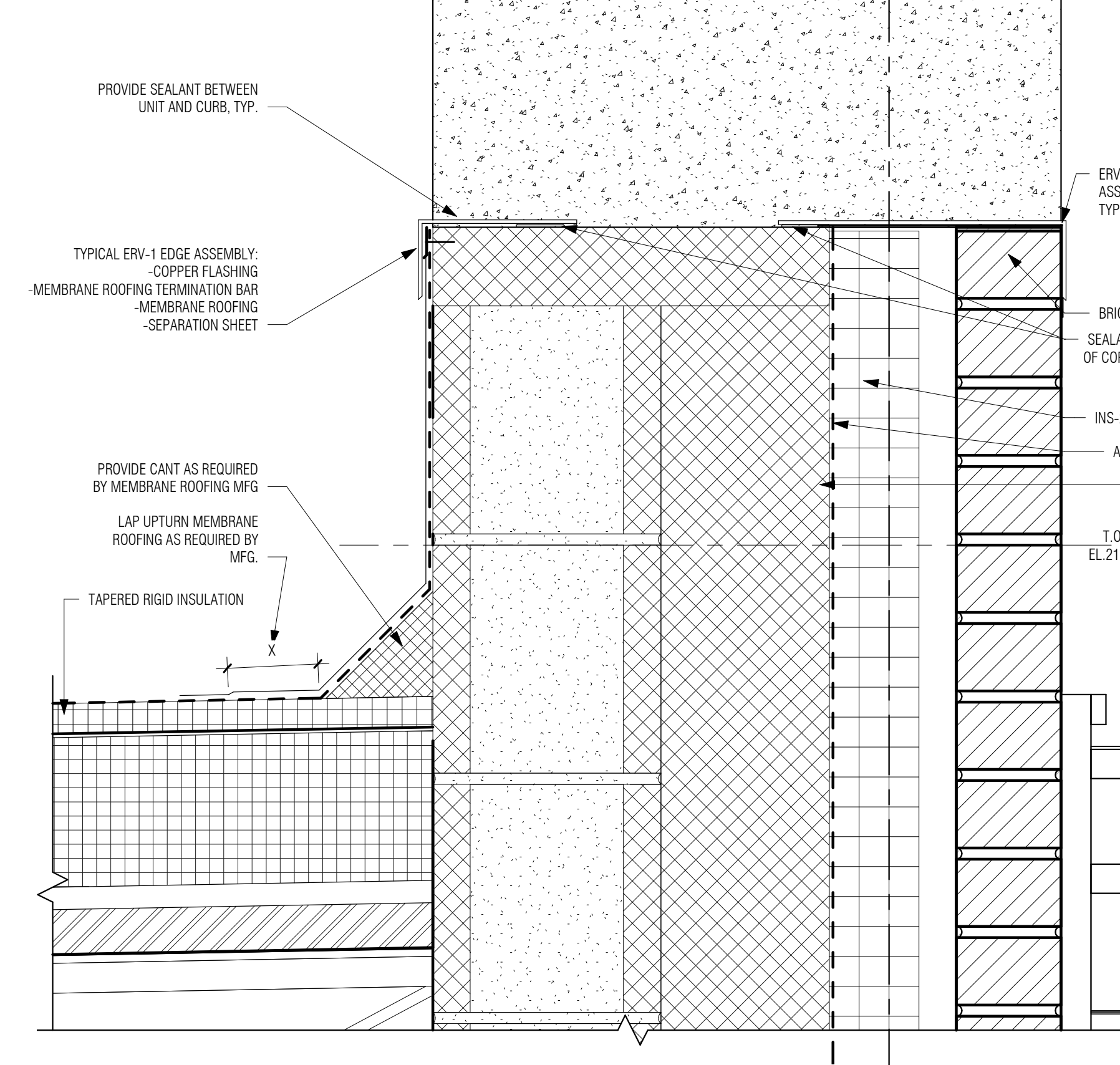
SHEET NO. A-07

GENERAL NOTES: DETAILS

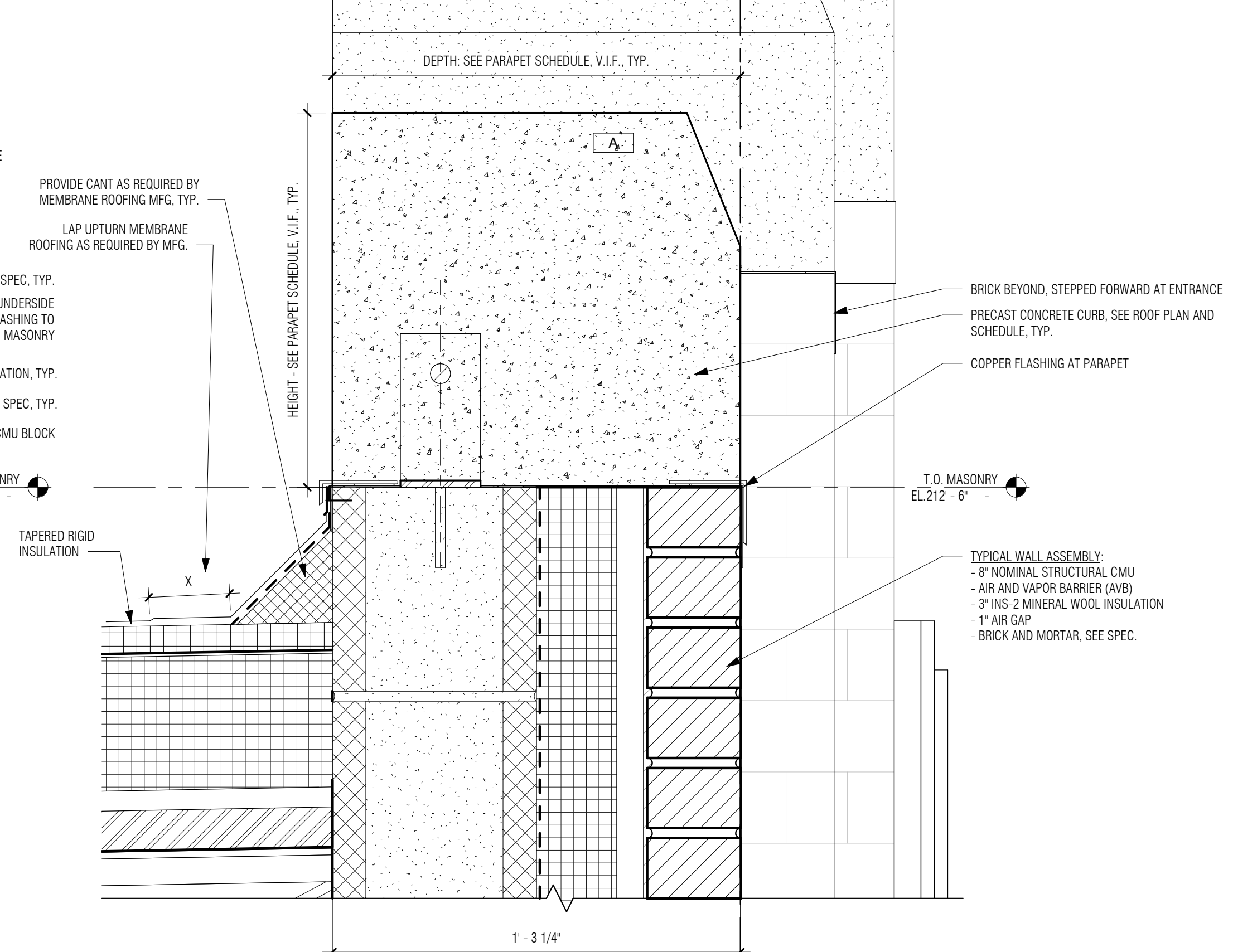
- REFER TO DWG A-00 FOR GENERAL NOTES, ABBREVIATIONS, SYMBOLS, MOUNTING HEIGHTS.
- SEE A-03 FOR PARAPET SCHEDULE.
- SEE A-10 FOR MATERIAL FINISH LEGEND AND DOOR AND WINDOW SCHEDULES.



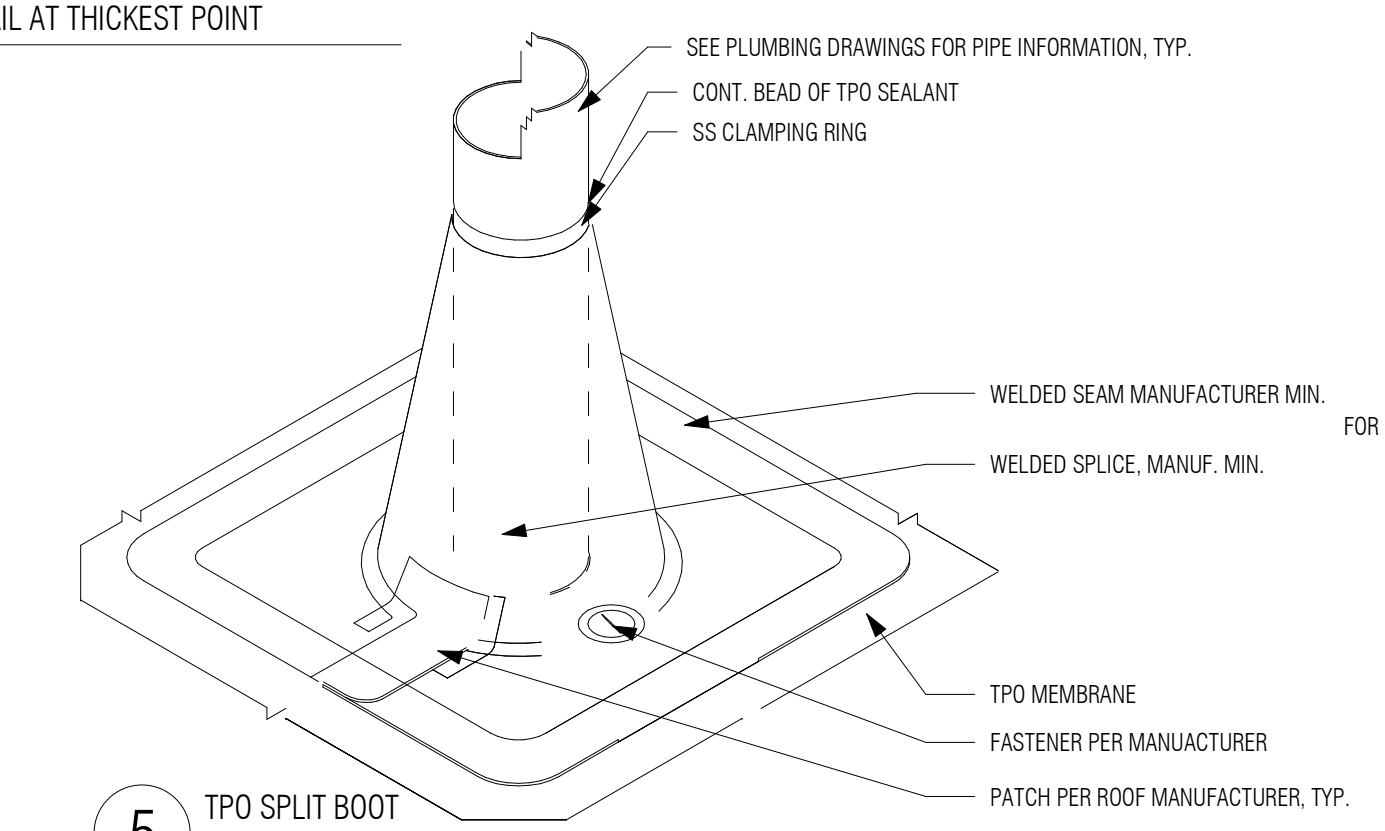
6 TYP. SECTION DETAIL @ GUTTER
3" = 1'-0"



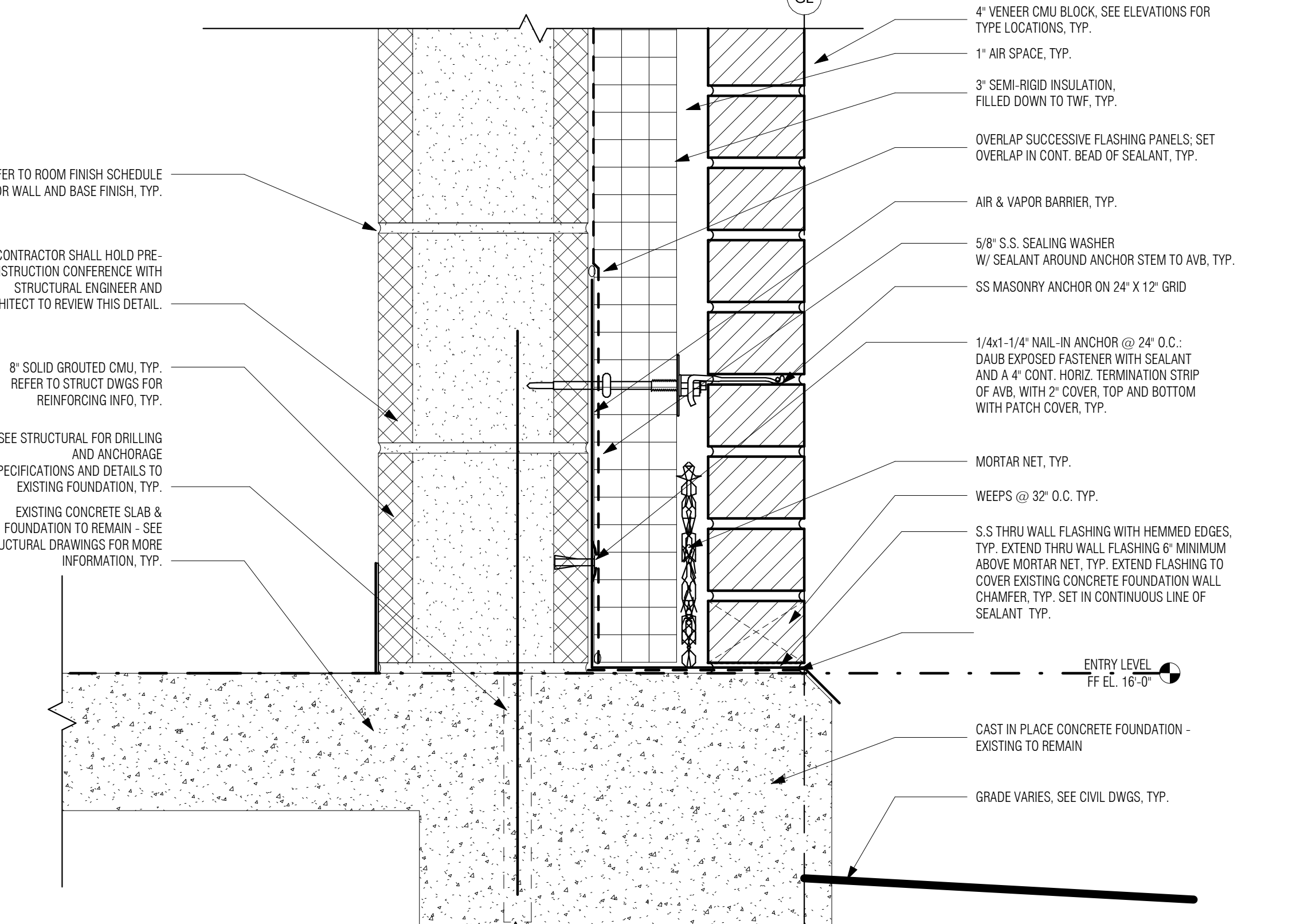
8 PARAPET DETAIL AT THICKEST POINT
3" = 1'-0"



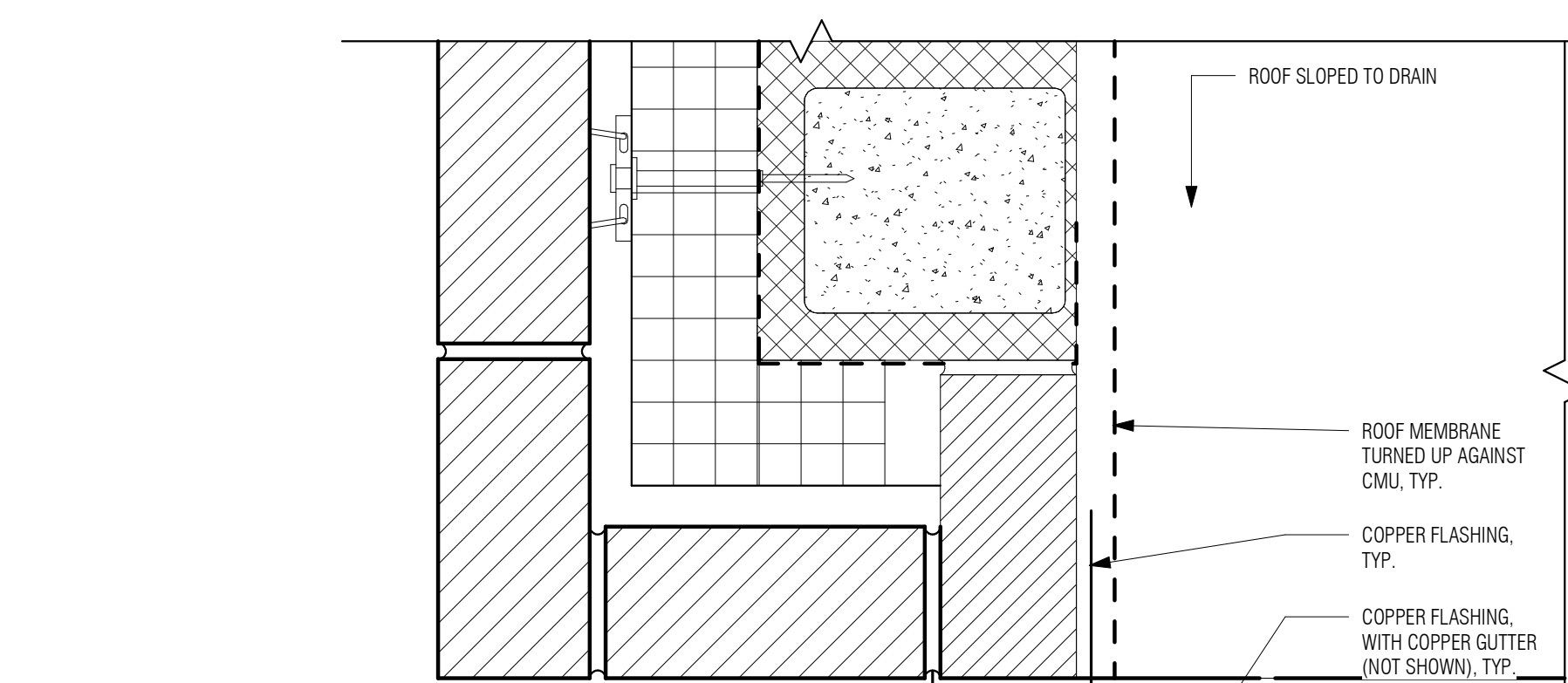
7 DETAIL WALL SECTION - PARAPET
3" = 1'-0"



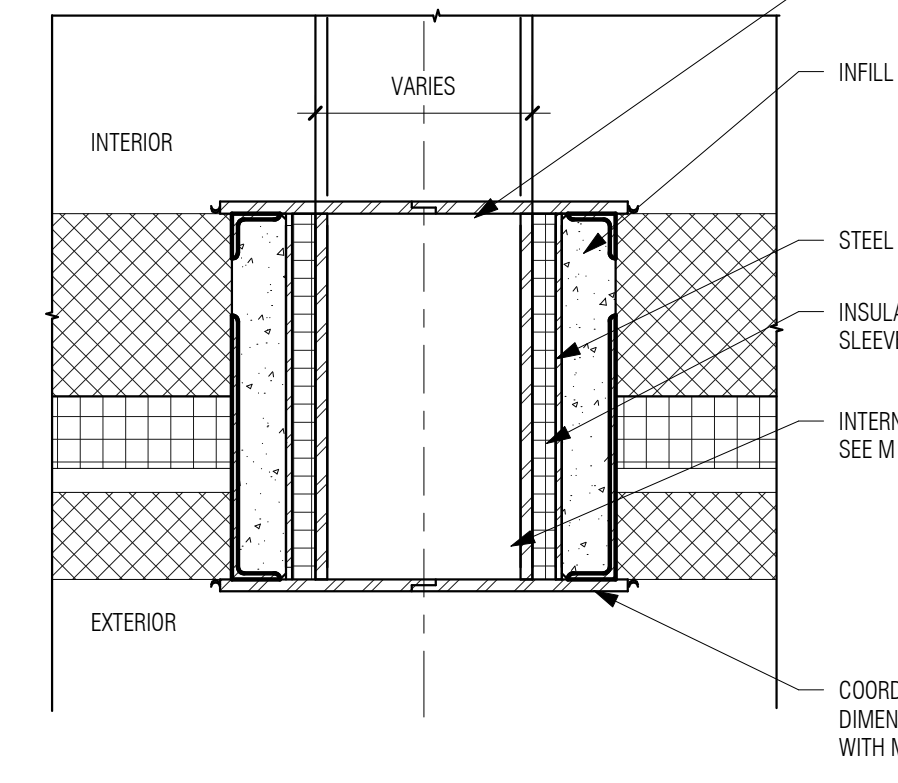
5 TPO SPLIT BOOT
1" = 1'-0"



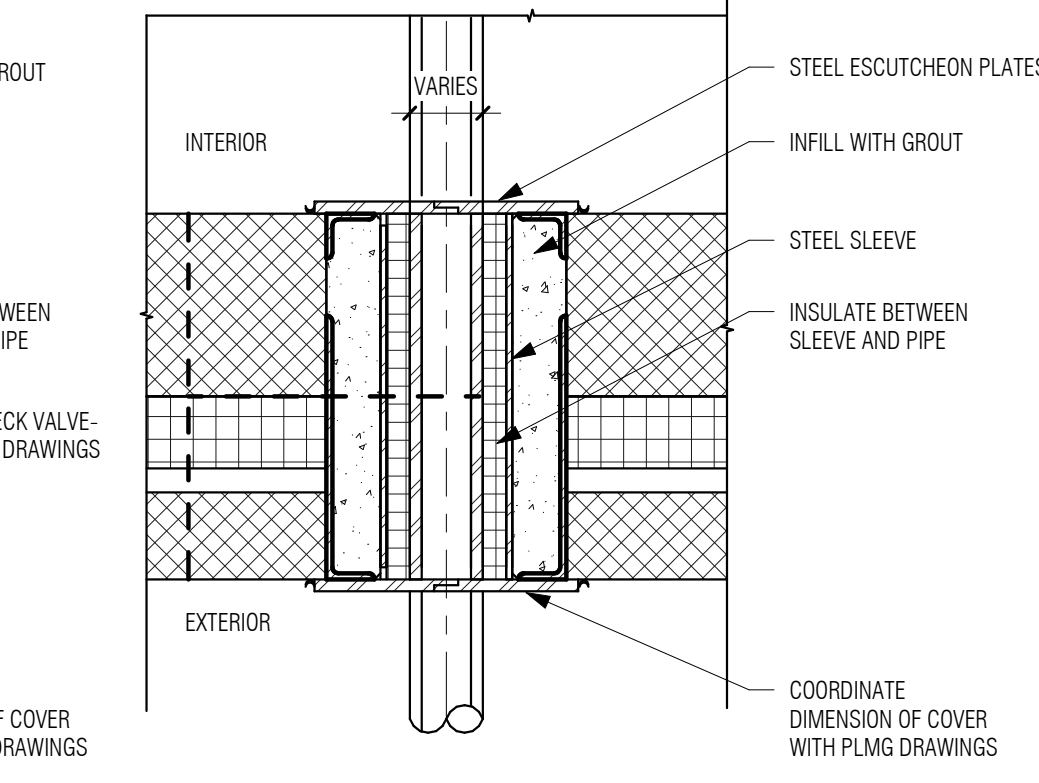
1 TYP. WALL SECTION DETAIL
3" = 1'-0"



4 PLAN DETAIL - BRICK - FLASHING @ CORNER, BELOW CONCRETE PARAPET
3" = 1'-0"



3 THROUGH WALL PIPE PENETRATION @ EXTERIOR WALL
1 1/2" = 1'-0"



2 THROUGH WALL SMALLER PIPE PENETRATION @ EXTERIOR WALL
1 1/2" = 1'-0"

P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWG\600-NPS-DWG\600-NPS-DWG-Vertical Title - BETA

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ALK

DESIGNED BY:
DSK

CHECKED BY:
MPS

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TITLE

Edgell Road Water Pumping Station Replacement

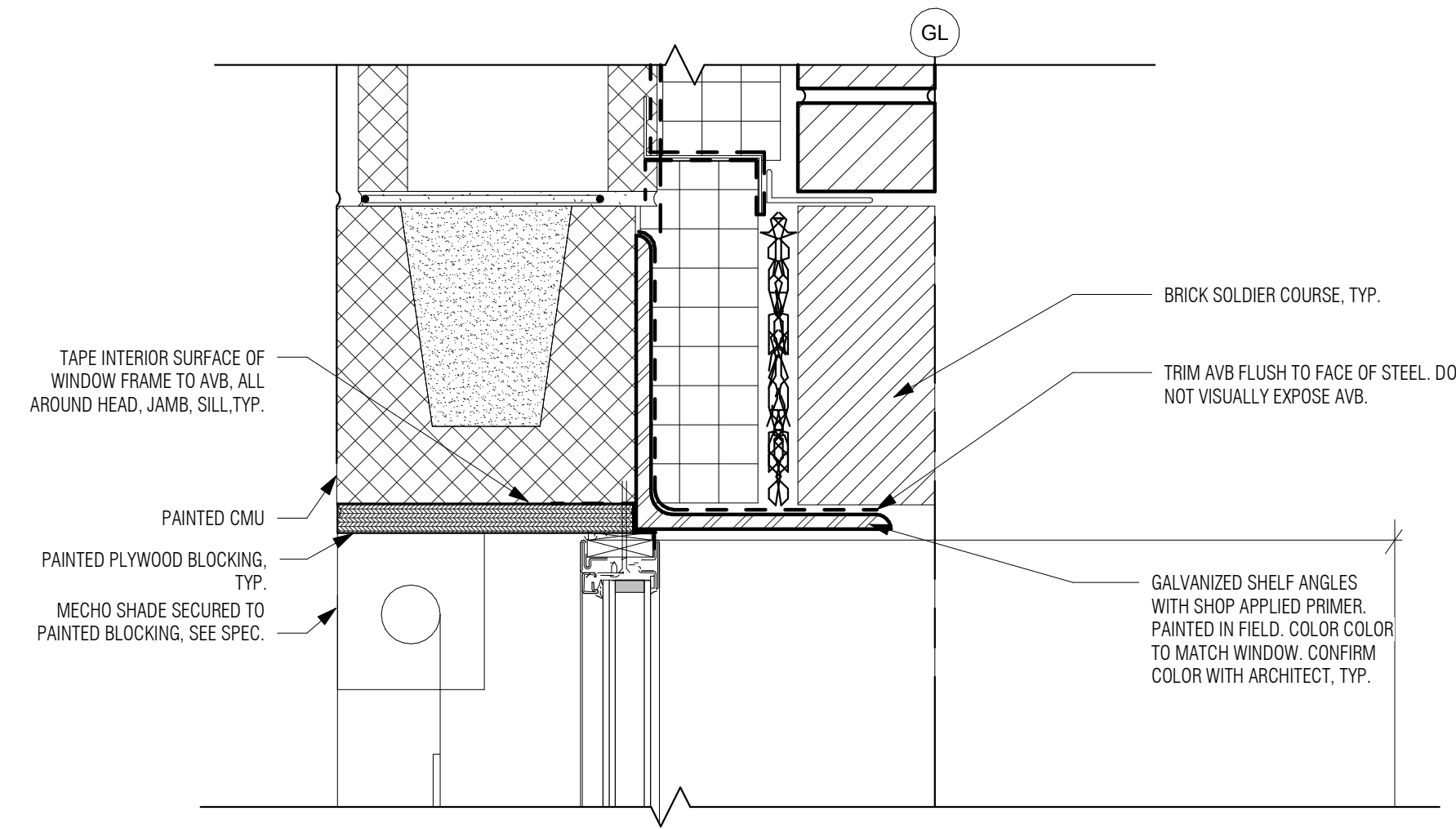
BRICK, MASONRY & ROOF PARAPET DETAILS

DSK JOB NO. 19033

ISSUE DATE January 2020

SHEET NO. **A-08**

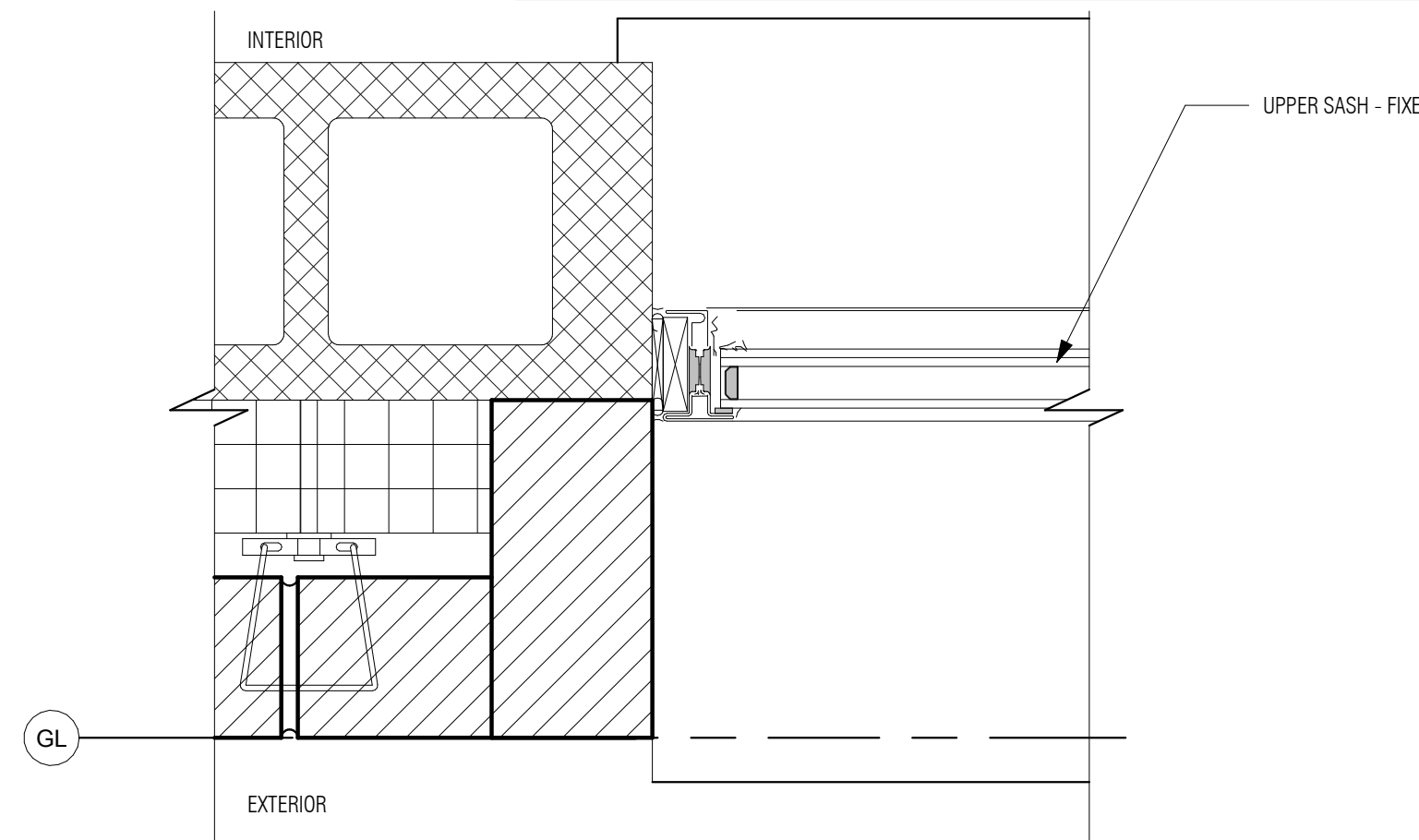
P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWG\601-REV\T\FAMILIES\TITLEBLOCKS\KOC_Arch D 24x36 Vertical Title - BETA



9 TYP. SECTION DETAIL @ WINDOW HEAD
3" = 1'-0"

GENERAL NOTES: WINDOWS

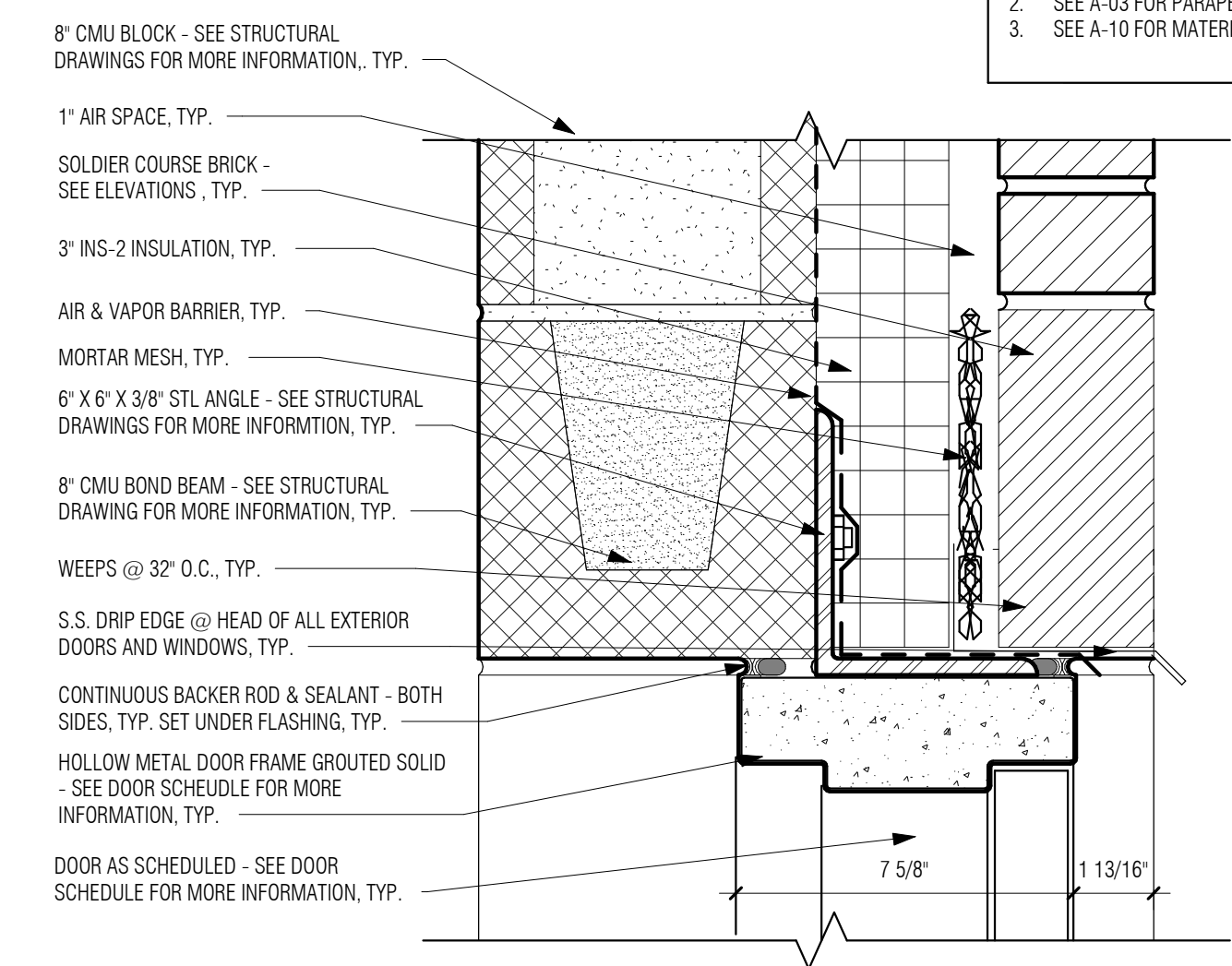
THE STEEL WINDOWS ARE TO BE SET INTO DOUBLE-WYTHE, INSULATED CAVITY, MASONRY-WALL OPENINGS THE WINDOWS ARE TO HAVE THERMALLY BROKEN PAINTED STEEL FRAMES THE STEEL WINDOW FRAMES ARE TO BE FASTENED TO THE INNER WYTHE 8" CMU, AND MUST STRADDLE THE WALL-CAVITY. THE STEEL WINDOW FRAMES ARE TO BE SEALED (AND WEEP) TO THE OUTER, SINGLE WYTHE COMMON BRICK VENEER. THE MASONRY OPENINGS WILL HAVE A PAINTED GALVANIZED STEEL LINTEL ANGLE AT THE HEAD, AND A PRE-CAST CONCRETE SLOPED SILL. THE MASONRY OPENINGS WILL HAVE BRICK JAMB RETURNS. THE WINDOW FRAMES ARE TO BE SET IN THE WALL OPENINGS, SO AS TO ALIGN WITH THE PLANE OF THE CAVITY-WALL INSULATION LAYER. THE CAVITY-WALL AIR VAPOR BARRIER IS TO BE BROUGHT TO AND SEALED TO THE STEEL WINDOW FRAMES AT THE HEAD, JAMBS, AND SILL.



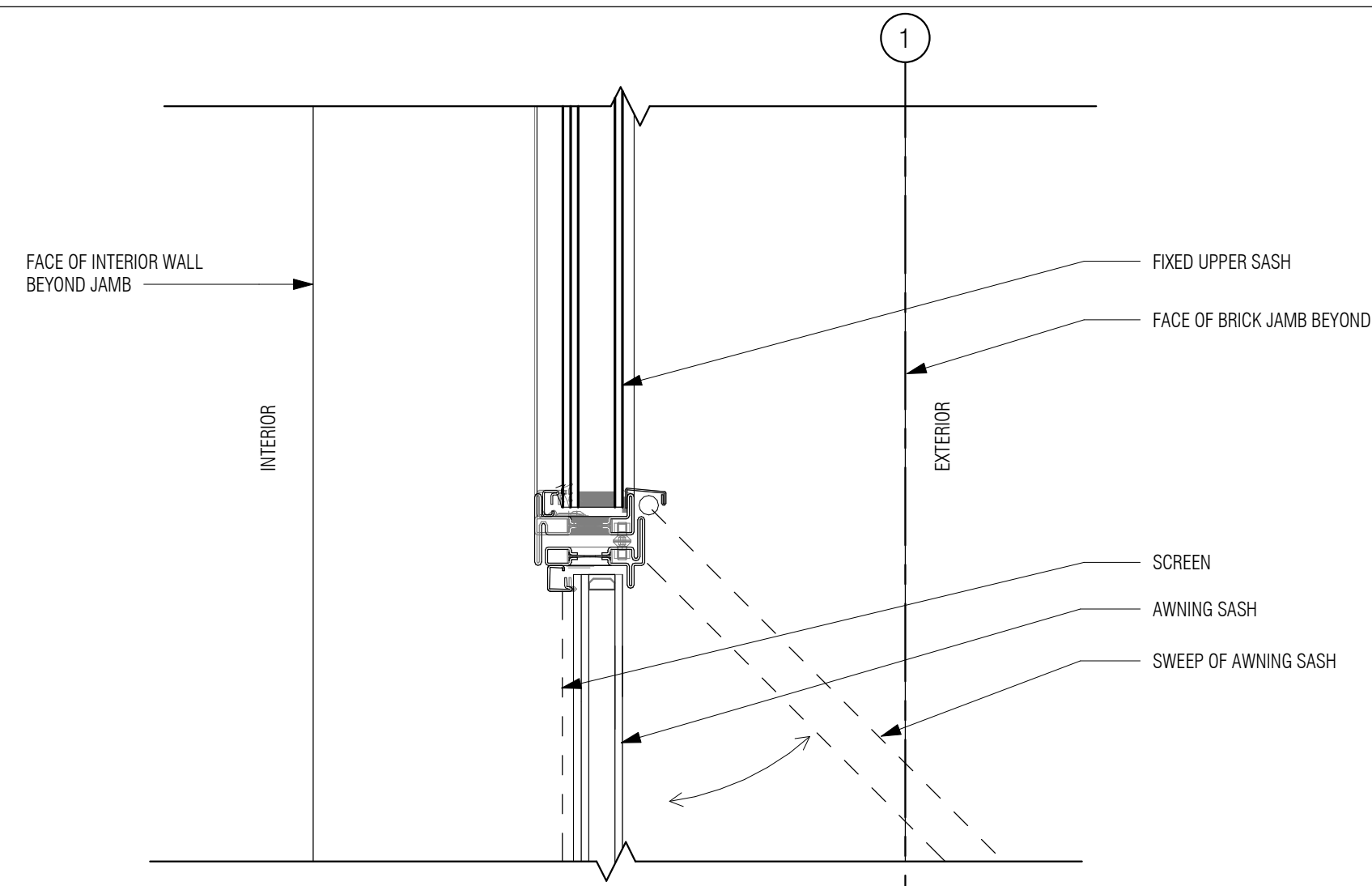
6 TYP. PLAN DETAIL @ WINDOW JAMB AT AWNING - LOWER SASH
3" = 1'-0"

GENERAL NOTES: DETAILS

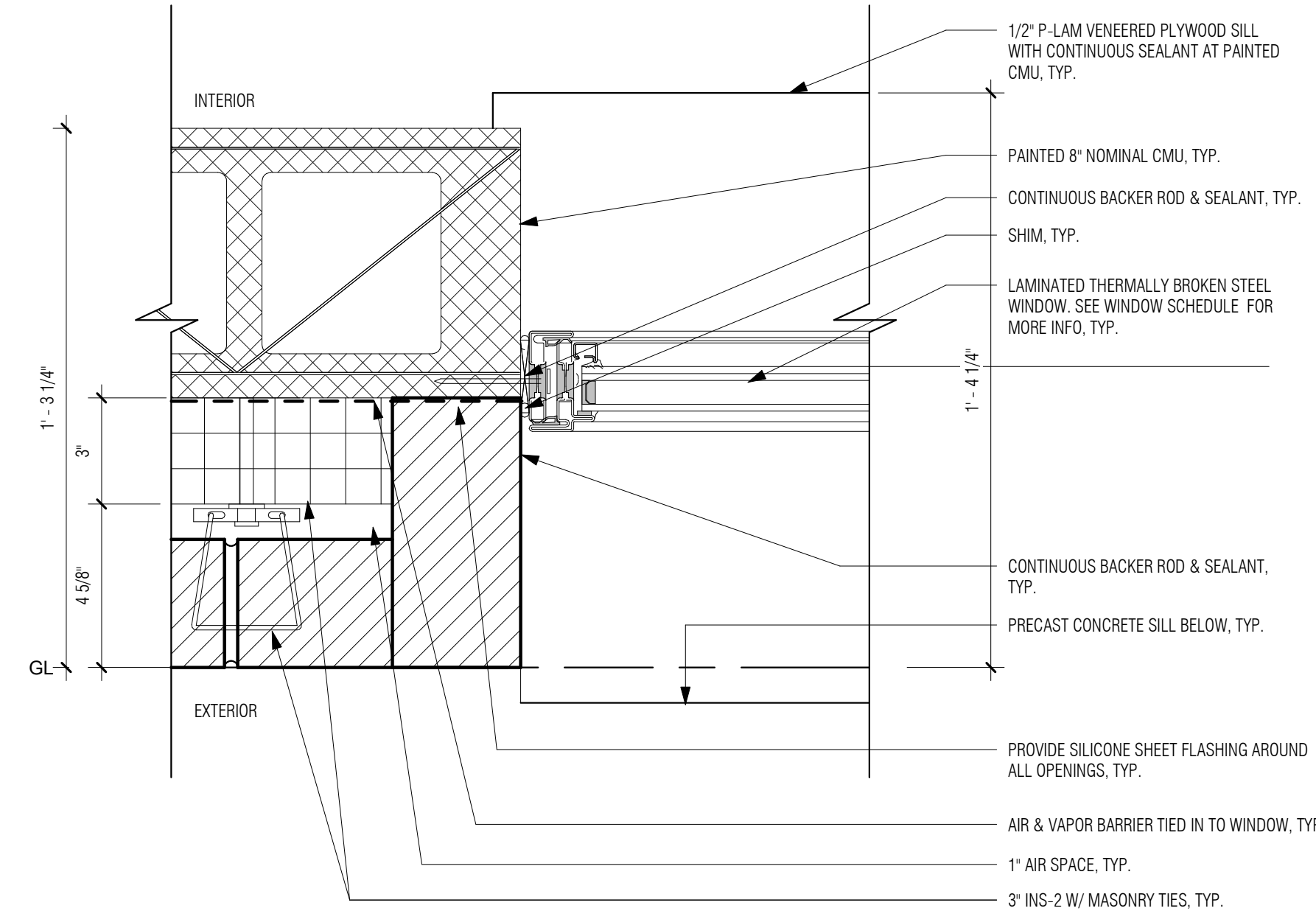
- 1. REFER TO DWG A-00 FOR GENERAL NOTES, ABBREVIATIONS, SYMBOLS, MOUNTING HEIGHTS
- 2. SEE A-03 FOR PARAPET SCHEDULE.
- 3. SEE A-10 FOR MATERIAL FINISH LEGEND AND DOOR AND WINDOW SCHEDULES.



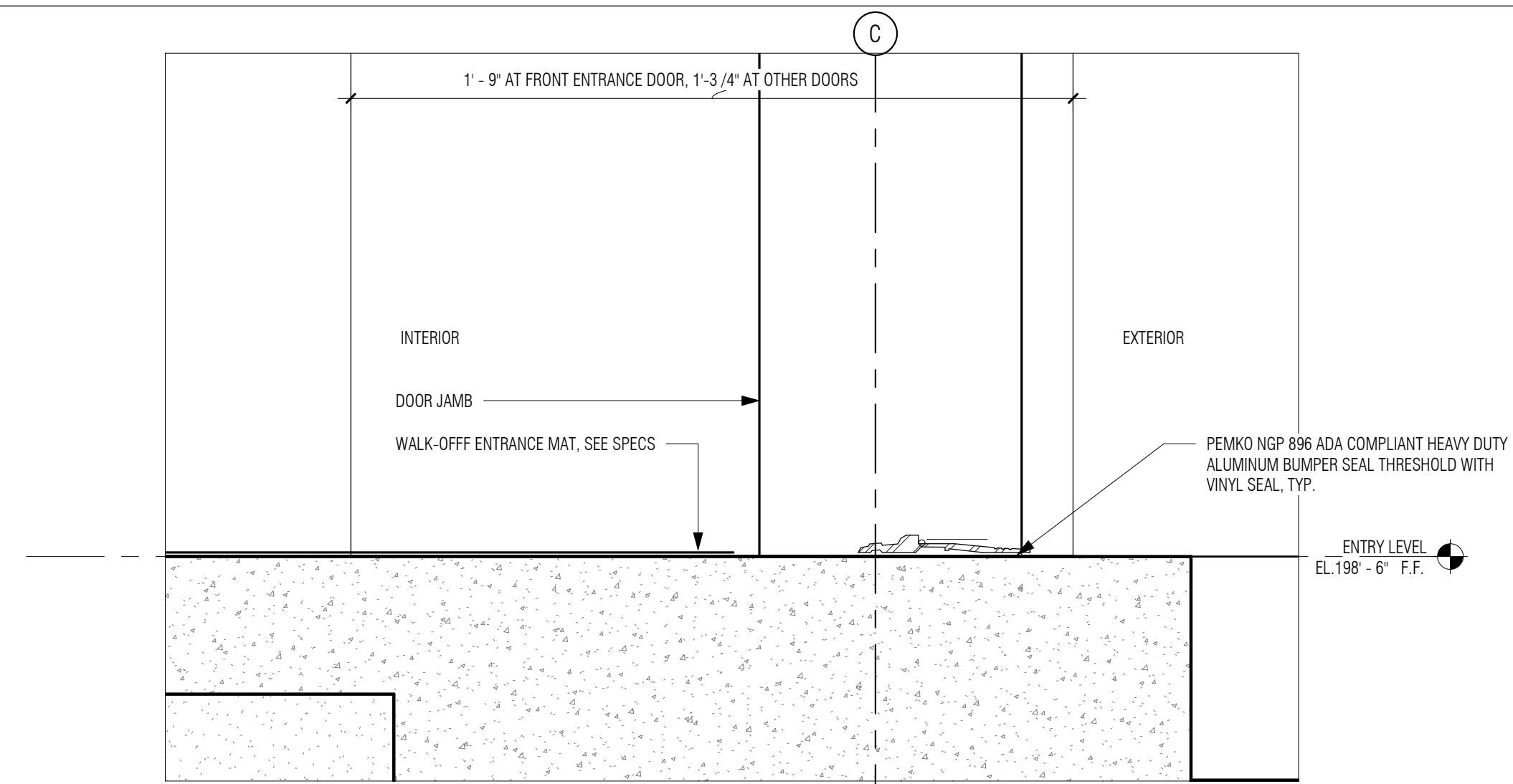
8 TYP. EXT. HOLLOW METAL DOOR W/ CMU DETAIL - HEAD
3" = 1'-0"



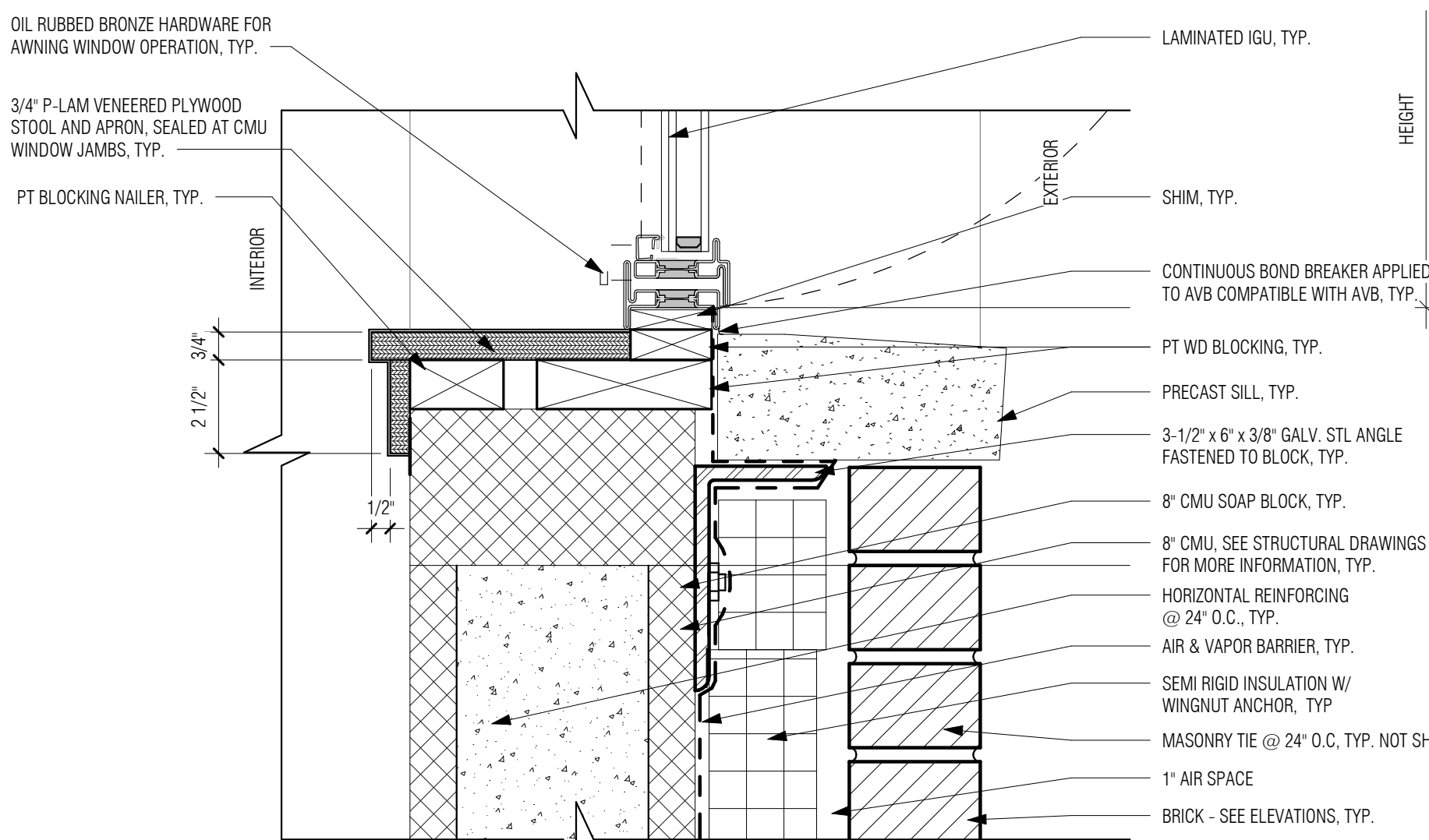
7 WINDOW CHECK RAIL
3" = 1'-0"



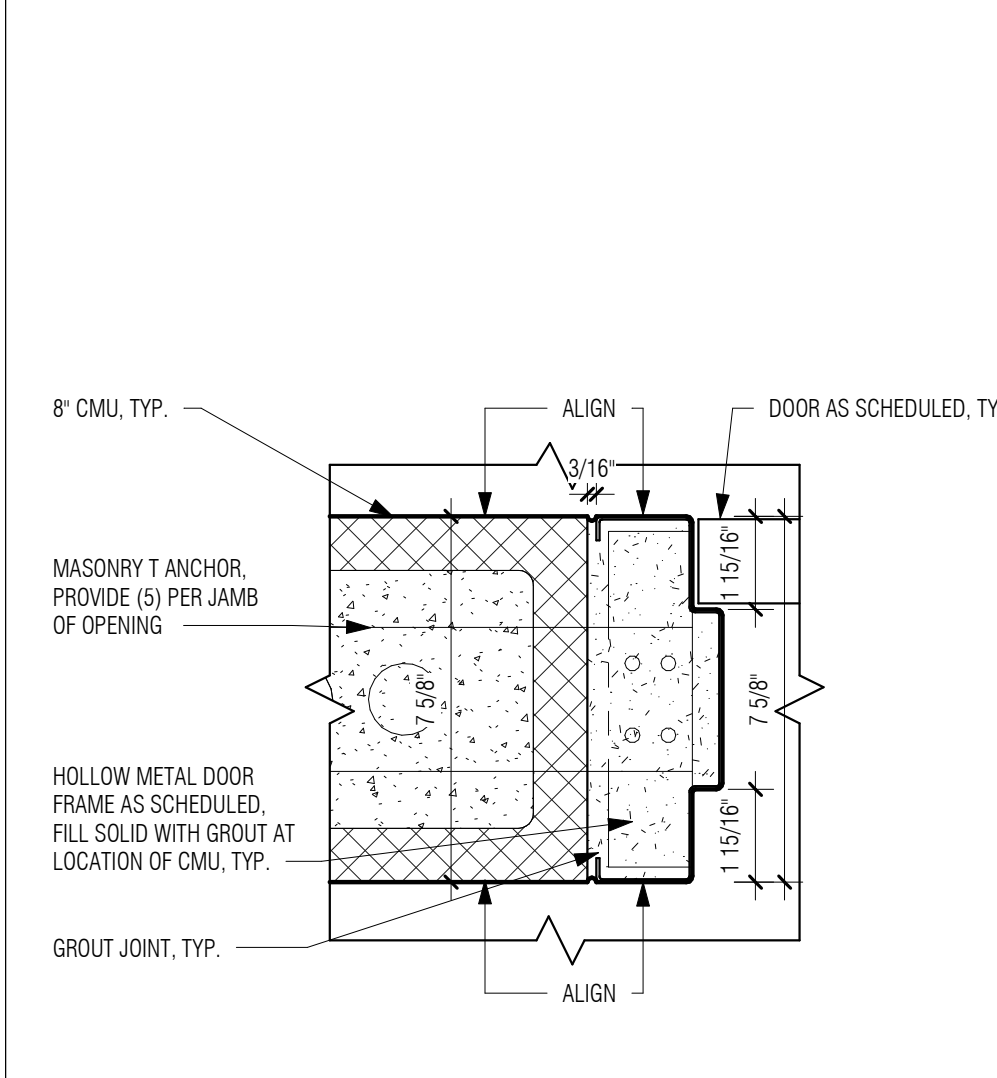
6 TYP. PLAN DETAIL @ WINDOW JAMB AT AWNING - UPPER SASH
3" = 1'-0"



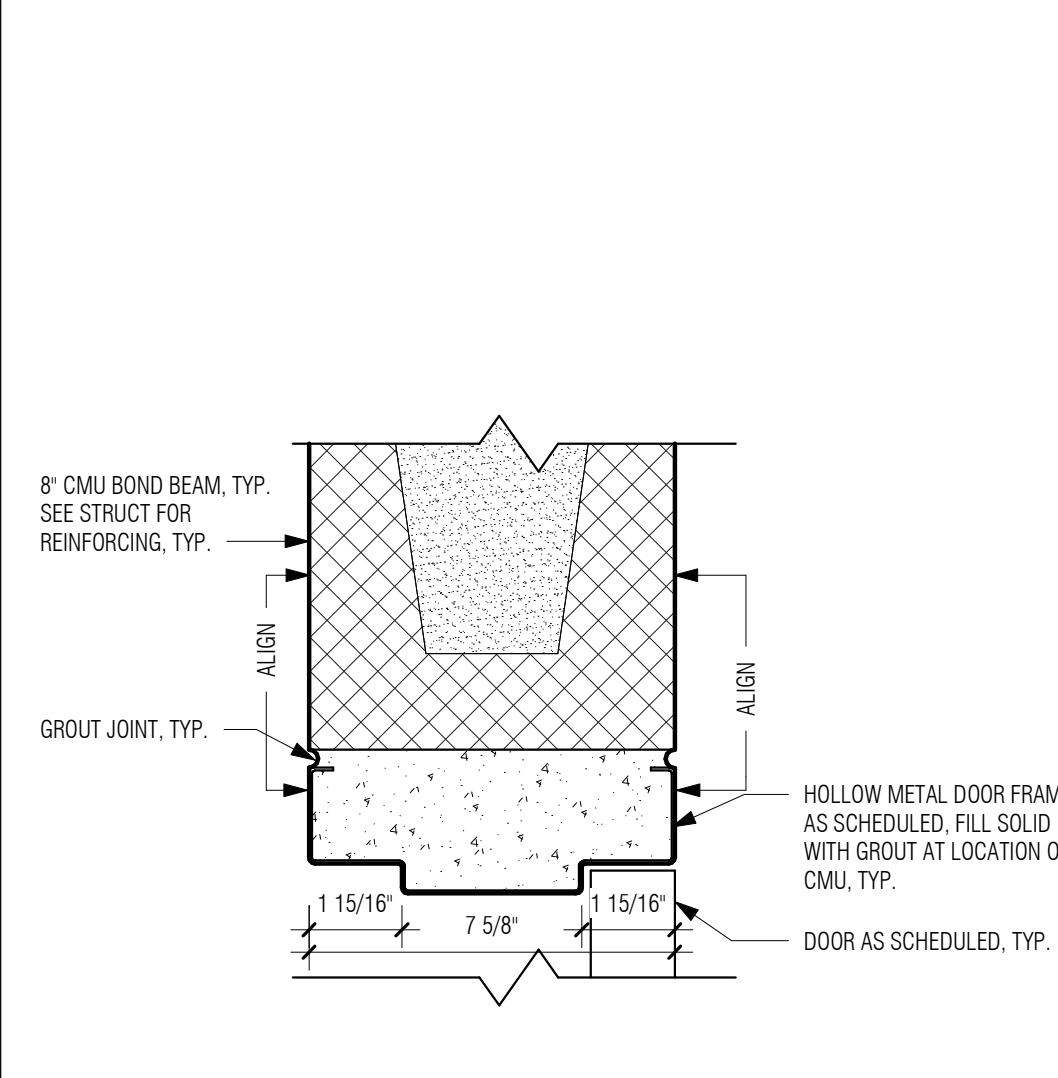
5 TYP. ENTRY DOOR THRESHOLD
3" = 1'-0"



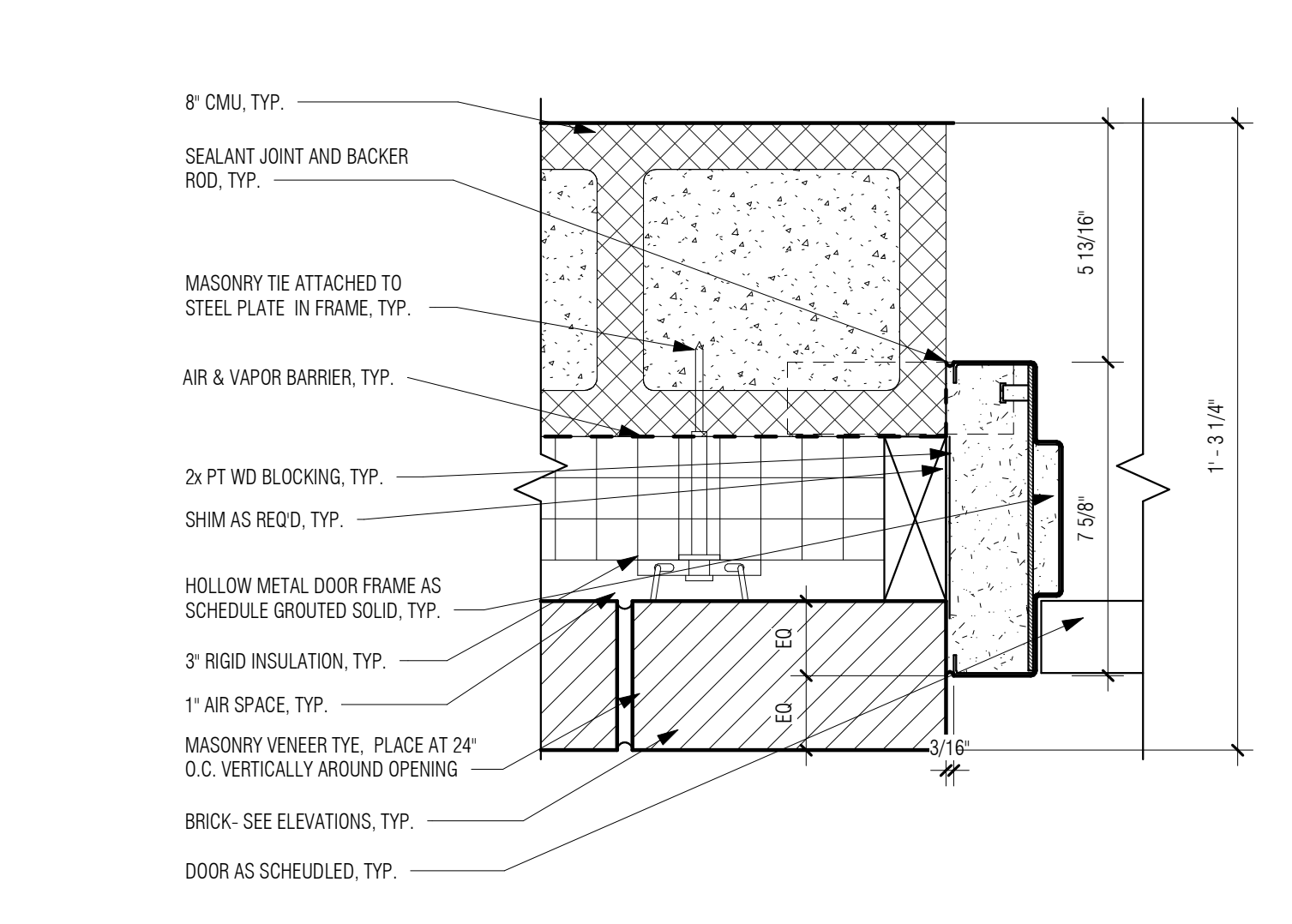
4 TYP. SECTION DETAIL @ WINDOW SILL
3" = 1'-0"



3 TYP. INT. HOLLOW METAL DOOR IN CMU WALL - JAMB
3" = 1'-0"



2 TYP. INT. HOLLOW METAL DOOR IN CMU WALL - HEAD
3" = 1'-0"



1 TYP. EXT. HOLLOW METAL DOOR W/ CMU DETAIL - JAMB
3" = 1'-0"

Table with columns: NUMBER, DATE, MADE BY, CHECKED BY, REVISIONS

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

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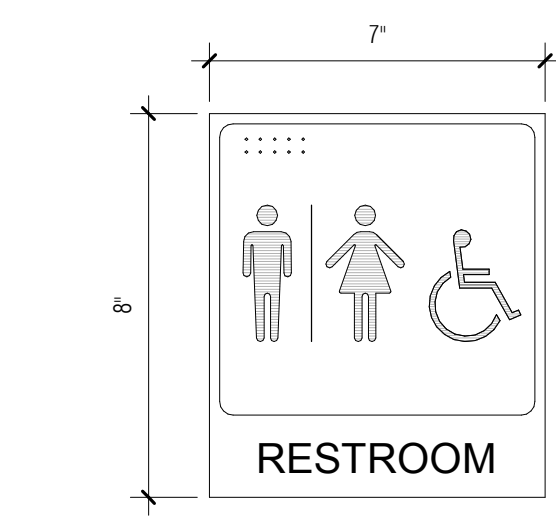
TITLE: Edgell Road Water Pumping Station Replacement
DOOR & WINDOW DETAILS

DSK JOB NO. 19033
ISSUE DATE January 2020
SHEET NO. A-09

MATERIAL FINISH LEGEND								
CODE	PRODUCT NAME / TYPE	LOCATION	SIZE (HxWxD)	COLOR	PATTERN	TEXTURE / FINISH	MANUFACTURER	NOTES
04210 : ARCHITECTURAL FACE BRICK								
BRK-1	BRICK - FACE BRICK	EXTERIOR WALLS	2.25x7.625x3.5	FULL RANGE DANISH	RUNNING BOND		BELDEN BRICK	SOLDER AND RUNNING BOND COURSES AS INDICATED ON DRAWINGS
04222 : ARCHITECTURAL UNIT MASONRY								
MT-1	MORTAR	USED WITH BRK-1	3/8" JOINTS	GRAY				
04222 : REINFORCED UNIT MASONRY								
CMU-1	CMU BLOCK	SEE DRAWINGS	8x16x8 NOMINAL CONCRETE BLOCKS				JANDRIS	RAKE JOINTS FLAT
05500 : METAL FABRICATIONS								
AL-1	ALUMINUM	RAILINGS						
GRT-1	ALUMINUM GRATING	PUMPS						
06100 : ROUGH CARPENTRY								
PLY	PLYWOOD PANELING	AT MECH RM AND ALL WALL-MOUNTED ELEC PANELS	8' x 4' x 3/4" SHEET					
06402 : INTERIOR ARCHITECTURAL WOODWORK								
PL-1	PLASTIC LAMINATE	ALL WINDOW SILLS		COLOR TBD			WILSONART	
07210 : THERMAL INSULATION								
INS-1	RIGID INSULATION	ROOF						
INS-2	MINERAL WOOL	EXTERIOR WALLS						
INS-3	SPRAY FOAM INSULATION	GAPS						
07620 : SHEET METAL FLASHING + TRIM								
DS-1	DOWNSPOUT TO MATCH GU-1							
GU-1	BOX GUTTER						COPPER	
08800 : GLAZING								
GLX-1	1 1/4" IGU - LAMINATED VISION GLASS	WINDOWS & DOORS	SEE DOOR AND WINDOW SCHEDULE	TRANSLUCENT				EXTERIOR PANE TO BE LAMINATED
09211 : GYPSUM BOARD ASSEMBLIES								
GWB-1	GYPSUM WALL BOARD	CEILING	5/8" THICKNESS					
09671 : RESINOUS FLOORING								
SL-1	SEALER - CONCRETE							
09900 : PAINTING AND COATING								
HPC-1	HIGH PERFORMANCE COATING - CMU WALLS AND INTEGRAL BASE							
PT-1	PAINT - ALL GWB-1 CEILING			WHITE				
PT-1B	PAINT - ALL EXPOSED STRUCTURE (DRY-FALL)			WHITE				
PT-2	PAINT - DOORS AND FRAMES			CHARCOAL GRAY COLOR				MATCH EFCO ULTRAPON 2-COAT BLACK
PT-3	PAINT - BOLLARDS			SAFETY YELLOW				
12240 : WINDOW TREATMENTS								
WT-1	WINDOW TREATMENTS	EXTERIOR WINDOWS		SNOW S01	3% OPENNESS FACTOR		PHIFER SHEER WEAVE 8000	
12481 : ENTRANCE FLOOR MATS								
CPT-1	CARPET WALK-OFF MAT	ENTRY DOOR AT CONTROL RM		CHARCOAL	BERBER - RB		MATS INC	

ROOM FINISH SCHEDULE								
ROOM #	ROOM NAME	FLOOR FINISH	BASE FINISH	WALL FINISH				CEILING FINISH
				NORTH	EAST	SOUTH	WEST	
104	STORAGE	SL-1	HPC-1	HPC-1	HPC-1	HPC-1	HPC-1	PT-1
105	MECH RM	SL-1	HPC-1	HPC-1	HPC-1	HPC-1	HPC-1	PT-1
106	WC	SL-1	HPC-1	HPC-1	HPC-1	HPC-1	HPC-1	PT-1
107	CONTROL RM	SL-1	HPC-1	HPC-1	HPC-1	HPC-1	HPC-1	PT-1
108	PUMPS	SL-1	HPC-1	HPC-1	HPC-1	HPC-1	HPC-1	PT-1

SIGNAGE SCHEDULE		
ROOM NO.	DESCRIPTION	Comments
-	BUILDING STREET ADDRESS	EXTERIOR
-	FRAMINGHAM WATER WORKS SIGN	EXTERIOR REFINISHED BRONZE
106	WC	



4 RESTROOM SIGNAGE
3' x 1'-0"

CHARACTER PROPORTIONS WIDTH-TO-HEIGHT RATIO BETWEEN 3:5 TO 1:1
STROKE WIDTH-TO-HEIGHT RATIO BETWEEN 1:5 AND 1:10
FINISH: ADAAG 4.30.5: NON-GLARE
CONTRAST: LIGHT ON DARK
REQUIREMENTS: RAISED LETTERS AND BRAILLE
LOCATION: ON WALL ADJACENT TO LATCH SIDE OF DOOR, 60" A.F.F TO SIGN CENTERLINE
OBSTACLES: A PERSON MUST BE ABLE TO APPROACH WITHIN 3' OF SIGN WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR STANDING (SITTING) WITHIN SWING OF DOOR
THE RESTROOM SHALL USE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY

HARDWARE SCHEDULE

- HD-1** ENTRANCE LEVER SET (EXTERIOR DOORS: PAIR ENTRANCE), OIL RUBBED BRONZE REFINISHED EXISTING PUSH-PULL HANDLES: SEE PHOTOS ON A-01 AND DETAIL THIS SHEET
ROSETTES TO COVER EXISTING PLATES, ORB
3 BUTTS: OIL RUBBED BRONZE
BULB WEATHER STRIPPING ALL AROUND
BOTTOM SWEEP
MOP PLATE INTERIOR SIDE ONLY, SS
HEAVY DUTY THRESHOLD WITH GASKET, ORB
SURFACE HEAVY DUTY FLUSH BOLTS TOP AND BOTTOM AT INACTIVE LEAF, SS
OVERHEAD CLOSER, MOUNTED INTERIOR, SS
OVERHEAD COORDINATOR, MOUNTED INTERIOR, SS
ASTRAGAL ON INTERIOR SIDE OF INACTIVE LEAF, SS
SILENCERS, BLACK
 - HD-2** PRIVACY LEVER SET (INTERIOR DOOR: RESTROOM), STAINLESS STEEL
1 1/2 BUTTS
SS MOP PLATE ON INTERIOR SIDE
EXTERIOR STAINLESS SILL SWEEP
OVERHEAD CLOSER, MOUNTED INTERIOR SIDE, SS
WALL STOP
SILENCERS, BLACK
 - HD-3** STOREROOM LEVER SET (EXTERIOR DOOR: CONTROL ROOM, MECH ROOM, STOREROOM)
STAINLESS STEEL
1 1/2 BUTTS
OVERHEAD RAIN DRIP GUARD (EXTERIOR SIDE)
BULB WEATHER STRIPPING ALL AROUND
BOTTOM SWEEP
SS MOP PLATE INTERIOR SIDE ONLY
HEAVY DUTY THRESHOLD WITH GASKET
OVERHEAD CLOSER (INTERIOR SIDE)
SILENCERS
- NOTES:**
ALL NEW HARDWARE SATIN SS FINISH.
PROVIDE KEYBOX INSIDE.
ALL EXTERIOR DOORS TO BE INSULATED.
PROVIDE SWEEPS AT ALL EXTERIOR DOORS.
PROVIDE SS DRIP CAP AT ALL EXTERIOR DOORS.
THE DOORS ARE TO BE ALARMED. PROVIDE CONDUIT INSIDE THE MASONRY WALL.
RECESSED KEY PAD FOR ACCESS, SEE ELECTRICAL DRAWINGS.

DOOR SCHEDULE (SEE DOOR DETAILS SHEET FOR ADD'L INFO)

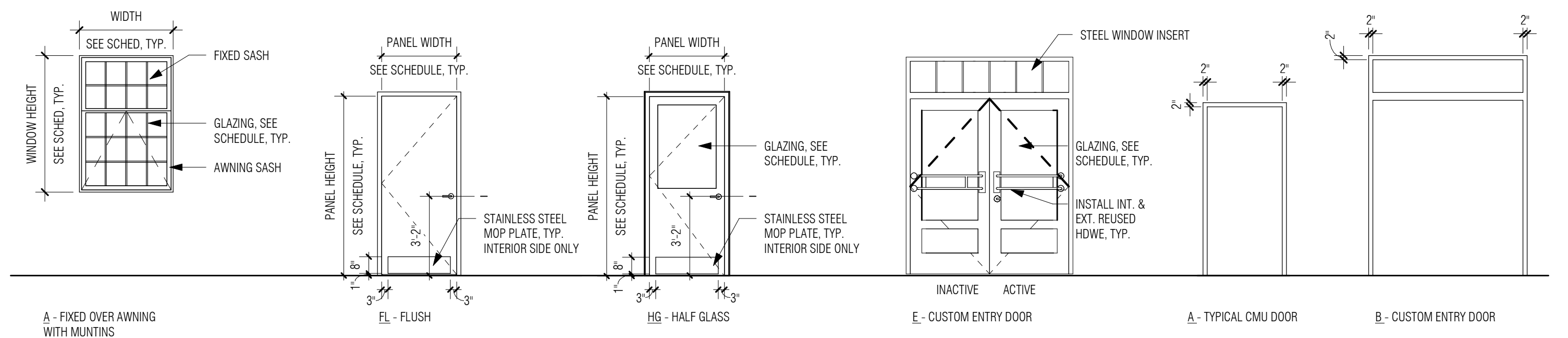
DOOR NUMBER	DOOR TYPE	ROOM NUMBER	ROOM NAME	INT/EXT	DOOR PANEL SIZE			DOOR PANEL MATERIALS		FRAME TYPE	FIRE RATING	HARDWARE	NOTES
					WIDTH	HEIGHT	THICKNESS	MATERIAL	GLAZING				
ENTRY LEVEL													
D-01	F	108	PUMPS	EXT	3'-2"	7'-0"	0'-1 3/4"	HM	GLX-1	B		HD-1	CUSTOM DOOR WITH TRANSOM - SEE ELEVATIONS
D-02	HG	107	CONTROL RM	EXT	3'-0"	7'-10"	0'-1 3/4"	HM	GLX-1	A		HD-3	
D-03	FL	105	MECH RM	EXT	3'-0"	7'-10"	0'-1 3/4"	HM		A		HD-3	
D-04	FL	104	STORAGE	EXT	3'-0"	7'-10"	0'-1 3/4"	HM		A		HD-3	
D-05	FL	107	CONTROL RM	INT	3'-0"	7'-0"	0'-1 3/4"	HM		A		HD-2	

INSULATED HOLLOW METAL DOORS WITH INSULATED GLAZED UNITS SHALL HAVE U-FACTOR OF 0.7.
EXTERIOR DOORS: COORDINATE CONCEALED DOOR SWITCHES WITH SECURITY SYSTEM: SEE ELEC. DRAWINGS, TYP.

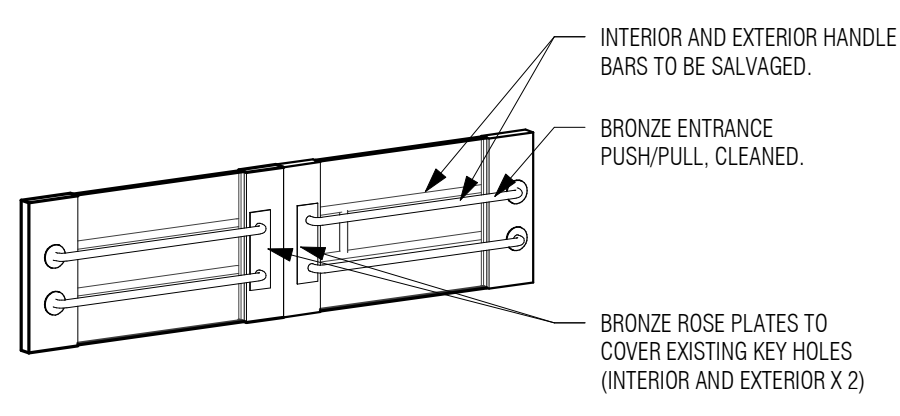
WINDOW AND LOUVER SCHEDULE (SEE WINDOW DETAILS SHEET FOR ADD'L INFO)

WINDOW NUMBER	WINDOW TYPE	ROOM NUMBER	ROOM NAME	WINDOW DIMENSIONS			FRAME MATERIAL	GLASS TYPE	MATERIAL	HEAD	JAMB	SILL	NOTES
				WIDTH	HEIGHT	THICKNESS							
01	A			3'-9"	5'-5 1/2"	STL-1	GLX-1		9/A-09	6/A-09	4/A-09		
02	A			3'-9"	5'-5 1/2"	STL-1	GLX-1		9/A-09	6/A-09	4/A-09		
03	A			3'-9"	5'-5 1/2"	STL-1	GLX-1		9/A-09	6/A-09	4/A-09		
04	A			3'-9"	5'-5 1/2"	STL-1	GLX-1		9/A-09	6/A-09	4/A-09		
05	A			3'-9"	5'-5 1/2"	STL-1	GLX-1		9/A-09	6/A-09	4/A-09		
06	A	108	PUMPS	3'-9"	5'-5 1/2"	STL-1	GLX-1		9/A-09	6/A-09	4/A-09		
07	A	108	PUMPS	3'-9"	5'-5 1/2"	STL-1	GLX-1		9/A-09	6/A-09	4/A-09		
08	A	104	STORAGE	3'-9"	5'-5 1/2"	STL-1	GLX-1		9/A-09	6/A-09	4/A-09		
09	A	107	CONTROL RM	3'-9"	5'-5 1/2"	STL-1	GLX-1		9/A-09	6/A-09	4/A-09		
10	A	108	PUMPS	3'-9"	5'-5 1/2"	STL-1	GLX-1		9/A-09	6/A-09	4/A-09		
11	A	108	PUMPS	3'-9"	5'-5 1/2"	STL-1	GLX-1		9/A-09	6/A-09	4/A-09		
12	A			3'-9"	5'-5 1/2"	STL-1	GLX-1		9/A-09	6/A-09	4/A-09		
15	A	104	STORAGE	3'-9"	5'-5 1/2"	STL-1	GLX-1		9/A-09	6/A-09	4/A-09		
16	A	108	PUMPS	3'-9"	5'-5 1/2"	STL-1	GLX-1		9/A-09	6/A-09	4/A-09		

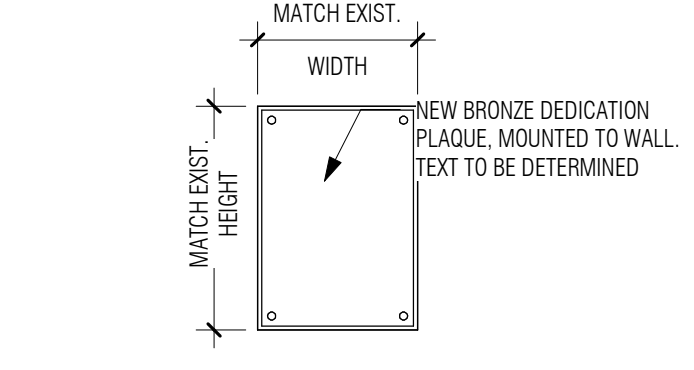
THERMALLY BROKEN STEEL WINDOWS WITH INSULATED GLAZED UNITS SHALL HAVE U-FACTOR OF 0.45 AS THEY ARE OPERABLE.
MAXIMUM SOLAR HEAT COEFFICIENT IS 0.4 FOR THE WINDOWS, WHICH ARE ON THE SOUTH, WEST AND EAST ELEVATIONS. (PROJECT FACTOR IS 7' / 65.5' = 0.1) SEE TABLE C402.4.3.
WINDOW BASIS OF DESIGN BROMBAL USA STEEL WINDOW, FIXED SASH OVER AWNING WITH DIVIDED LITES.
SEE WINDOW GENERAL NOTES ON A-09 AND SPECS.



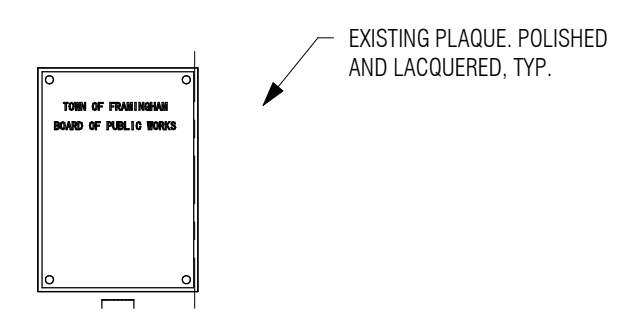
WINDOW TYPE **DOOR PANEL TYPES** **DOOR FRAME TYPES**



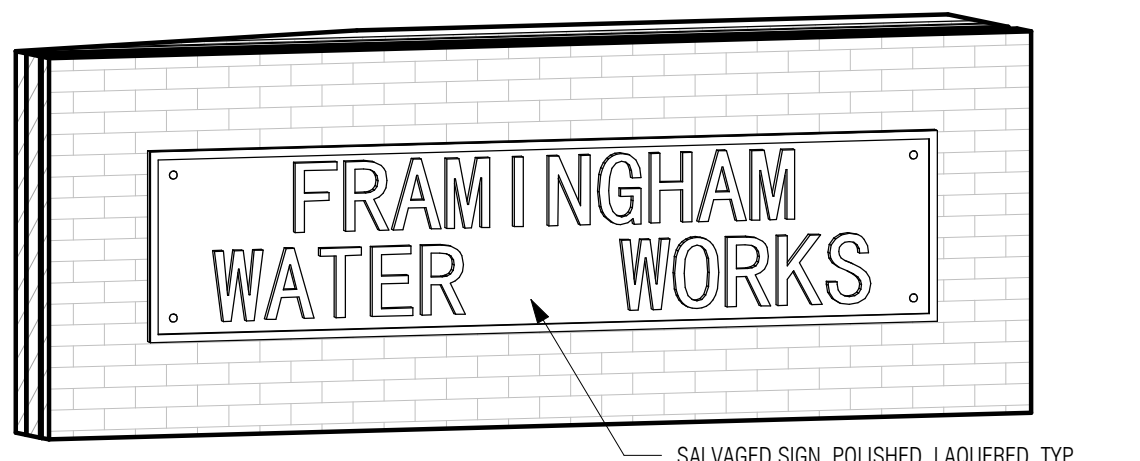
5 SALVAGED HARDWARE AT FRONT DOOR



3 NEW INTERIOR PLAQUE
1/2" x 1'-0"



2 EXISTING PLAQUE, RE-MOUNTED
1/2" x 1'-0"

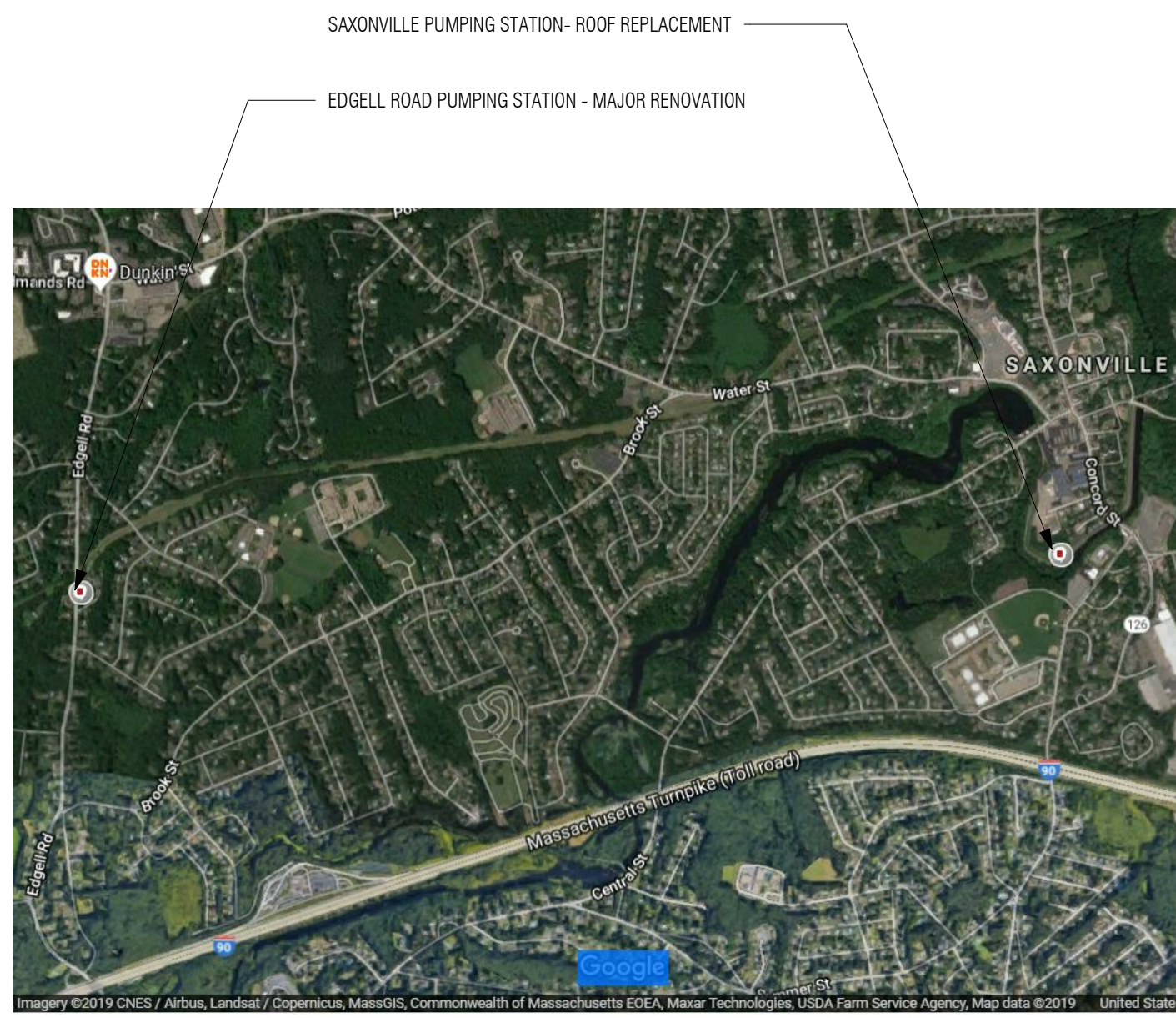


1 3D-SIGN - FRAMINGHAM WATER WORKS

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 	PREPARED BY www.BETA-inc.com	SUBCONSULTANT DSK Dewing Schmid Kearns ARCHITECTS + PLANNERS 30 Monument Square Suite 200B Concord, MA 01742 978.371.7500	SCALE As indicated UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION	TITLE Egell Road Water Pumping Station Replacement DOOR, WINDOW AND FINISH SCHEDULES	DSK JOB NO. 19033 ISSUE DATE January 2020 SHEET NO. A-10
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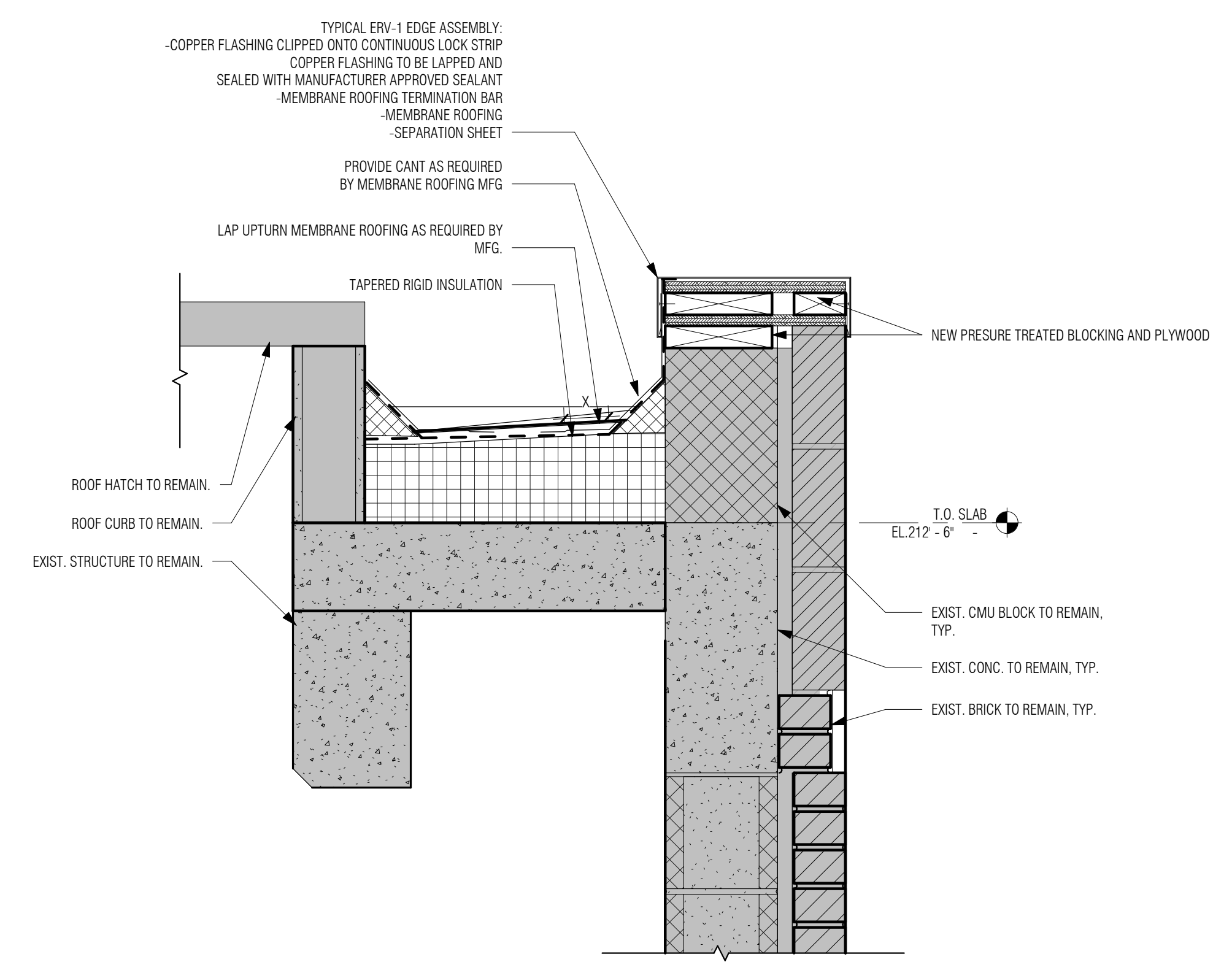


4 LOCATION PLAN
6" = 1'-0"

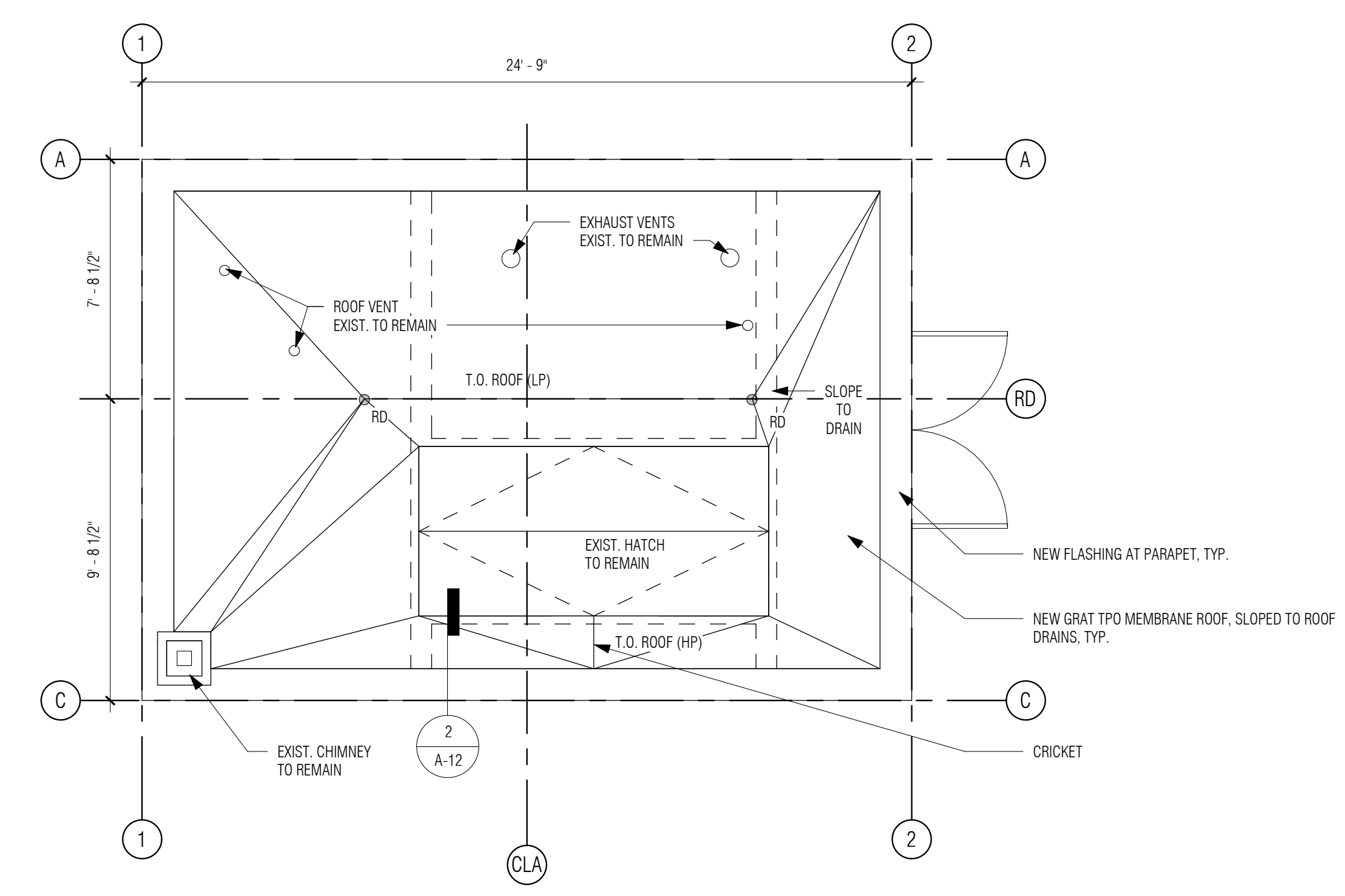


3 PHOTO - EXISTING SAXONVILLE PUMP STATION
3" = 1'-0"

- GENERAL NOTES: SAXONVILLE**
1. THE SAXONVILLE PUMPING STATION IS AN EXISTING PUMPING STATION IN FRAMMINGHAM 2 MILES FROM THE EDGELL ROAD PUMPING STATION.
 2. AT SAXONVILLE, CONTRACTOR SHALL REMOVE EXISTING BUILT UP ROOFING TO CONCRETE DECK.
 3. SEE SPECIFICATIONS, IN PARTICULAR DEMOLITION AND:
 - 06100 ROUGH CARPENTRY
 - 07545 TPO THERMOPLASTIC SINGLE-PLY ROOFING
 - 07210 THERMAL INSULATION
 - 07620 SHEET METAL FLASHING AND TRIM
 - 07920 JOINT SEALANTS
 4. EXISTING HATCH AND VENTS TO REMAIN.



2 PARAPET DETAIL
1 1/2" = 1'-0"



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

P:\PROJECTS\1510 NPS - NEWBURYPORT PUMP STATION\600-NPS-DWG\600-NPS-DWG\600-NPS-DWG-Vertical Title - BETA

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

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TITLE
Edgell Road Water Pumping Station Replacement
SAXONVILLE ROOF REPLACEMENT

DSK JOB NO. 19033
ISSUE DATE January 2020
SHEET NO. **A-12**

1/27/2020 1:44 PM I:\BETA\IN\DC01\RIEN\IRON\6481 - EDGELL ROAD WATER PUMP STATION\AUTOCAD\STRUCTURAL\GENERAL NOTES\6481-SR-GENERAL NOTES.DWG (BETA STB B.V. STB)

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 (Pf)	35.0 PSF
WIND LOADS	
BASIC WIND SPEED	120 MPH
IMPORTANCE FACTOR (Iw)	1.00 (CATEGORY IV)
WIND EXPOSURE CATEGORY	B
SEISMIC	
SEISMIC RISK CATEGORY	IV
IMPORTANCE FACTOR (Ie)	1.5 (CATEGORY IV)
DESIGN FACTOR Ss	0.196
DESIGN FACTOR S1	0.067
SITE CLASSIFICATION	D
SPECTRAL RESPONSE Sds	0.209
SPECTRAL RESPONSE SD1	0.107
SEISMIC DESIGN CATEGORY	C
BASIC RESISTING SYSTEM	INTERMEDIATE REINFORCED MASONRY SHEAR BEARING WALL
DESIGN BASE SHEAR	CsW
RESPONSE COEFFICIENT Cs	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 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 KEYS 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.
- 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:

FOUNDATION WALLS AND FOOTINGS 4000 PSI (NORMAL WEIGHT)
SLAB-ON-GRADE 4000 PSI (NORMAL WEIGHT)
HOUSEKEEPING/MECHANICAL PADS 3000 PSI (NORMAL WEIGHT)
PRECAST CONCRETE PARAPET 4000 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/1 1/2" 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"

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.

OPEN WEB STEEL JOISTS

- DESIGN, DETAILING, FABRICATION AND ERECTION OF STEEL JOISTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE STEEL JOIST INSTITUTE.
- DESIGN AND INSTALL JOIST BRIDGING IN ACCORDANCE WITH STEEL JOIST INSTITUTE SPECIFICATIONS.
- HANGERS FOR DUCTS AND OTHER ATTACHMENTS SHALL BE AT PANEL POINTS, OR ADDITIONAL REINFORCEMENT SHALL BE PROVIDED AS INDICATED OR AS REQUIRED.

METAL DECK

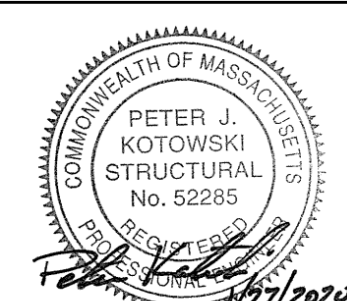

- METAL ROOF DECK SHALL BE 1-1/2" DEEP, 36" WIDE, GALVANIZED PER ASTM A924 G-90, TYPE B METAL DECK WITH THE FOLLOWING MINIMUM PROPERTIES:
GAUGE 20
IP 0.22
In 0.24
Sp 0.25
Sn 0.26
- UNLESS OTHERWISE INDICATED WELD METAL ROOF DECK TO STRUCTURAL SUPPORTS WITH 5/8" DIAMETER PUDDLE WELDS TO ALL STRUCTURAL 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.

COLD FORM METAL FRAMING

- PROVIDE ALL STUDS AND/OR JOISTS AND ACCESSORIES OF THE TYPE, SIZE, GAGE AND SPACING SHOWN ON THE DRAWINGS. ALL LIGHT GAGE METAL FRAMING AS PER SSMA (STEEL STUD MANUFACTURERS ASSOCIATION), ER-4943P.
- DESIGN ALL STRUCTURAL MEMBERS IN ACCORDANCE WITH AMERICAN IRON AND STEEL INSTITUTE (AISI) "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS", LATEST EDITION.
- FORM ALL FRAMING MEMBERS FROM CORROSION RESISTANCE STEEL, CORRESPONDING TO THE REQUIREMENTS OF ASTM A653 AND THE FOLLOWING STRENGTH REQUIREMENTS:
FRAMING MEMBER GAGE MINIMUM YIELD
STUDS, JOISTS 18, 20 33 KSI
STUDS, JOISTS 10-16 50 KSI
TRACKS, SOLID BLOCKING 18, 20 33 KSI
- PLACE ALL COLD-FORMED STEEL STUD WALL BRIDGING EVEN HORIZONTALLY WITH A MAXIMUM VERTICAL SPACING OR FOUR FEET UNLESS NOTED OTHERWISE. AS AN OPTION, CONTINUOUS COLD-FORMED CHANNELS MAY BE POSITIONED THROUGH THE STUD PUNCH OUTS AS BRIDGING PROVIDED THE CHANNEL IS PROPERLY FASTENED TO EACH STUD.
- FASTEN COMPONENTS WITH SELF-DRILLING SCREWS PER ESR-2196* OR WELDING. PROVIDE SCREWS OF SUFFICIENT SIZE TO INSURE THE STRENGTH OF THE CONNECTION. WIRE TYING OF COMPONENTS IS NOT PERMITTED. TOUCH UP ALL WELDS WITH A ZINC-RICH PAINT.
- WELDING OF COLD-FORMED STUDS MAY BE PERFORMED USING A MINIMUM ONE-EIGHTH INCH AWS TYPE 6013 WELDING ROD.

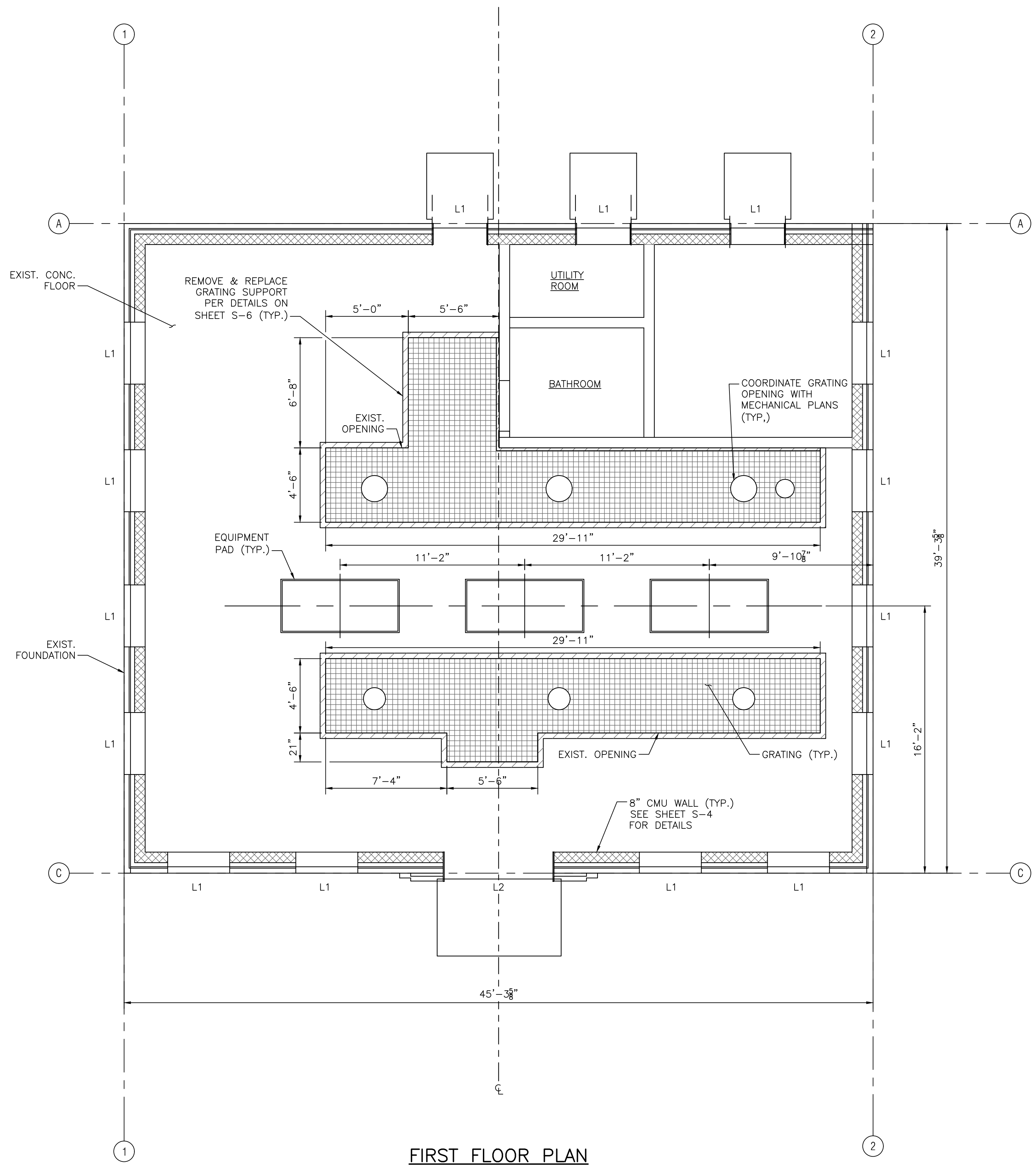
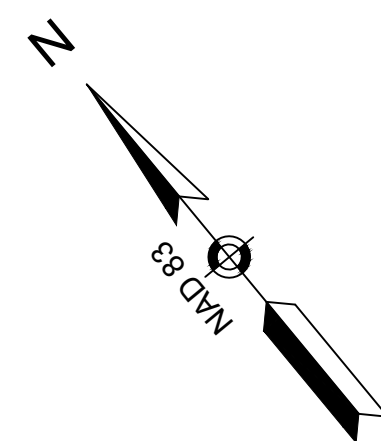
SUBMITTALS, TESTING AND INSPECTIONS

- 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 STRUCTURAL ENGINEER-OF-RECORD PRIOR TO FIRST CONCRETE PLACEMENT.
- SUBMITTALS INCLUDES BUT NOT LIMITED TO:
DEWATERING
BORROW MATERIAL
CONCRETE MIX DESIGN
STEEL REINFORCING
ACCESSORIES
CONCRETE MASONRY UNITS, MORTAR AND GROUT
STRUCTURAL STEEL/COLD FORMED METAL
STEEL JOISTS AND 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 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: BWN	REGISTERED PROFESSIONAL 	PREPARED BY  www.BETA-Inc.com	SUBCONSULTANT	SCALE NONE	TITLE Edgell Road Water Pumping Station Replacement General Notes	BETA JOB NO. 6481
					DESIGNED BY: PJK						ISSUE DATE January 2020
					CHECKED BY: CWJ						SHEET NO. S-1

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

1/31/2020 3:44 PM I:\BETA\LIN\DC01\RIEN\IRON\6481 - EDGELL ROAD WATER PUMP STATION\AUTOCAD\STRUCTURAL\FIRST FLOOR PLAN\6481-SR-PLAN.DWG (BETA\STB BW\STB)



FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

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BWN
DESIGNED BY:
PJK
CHECKED BY:
CWJ



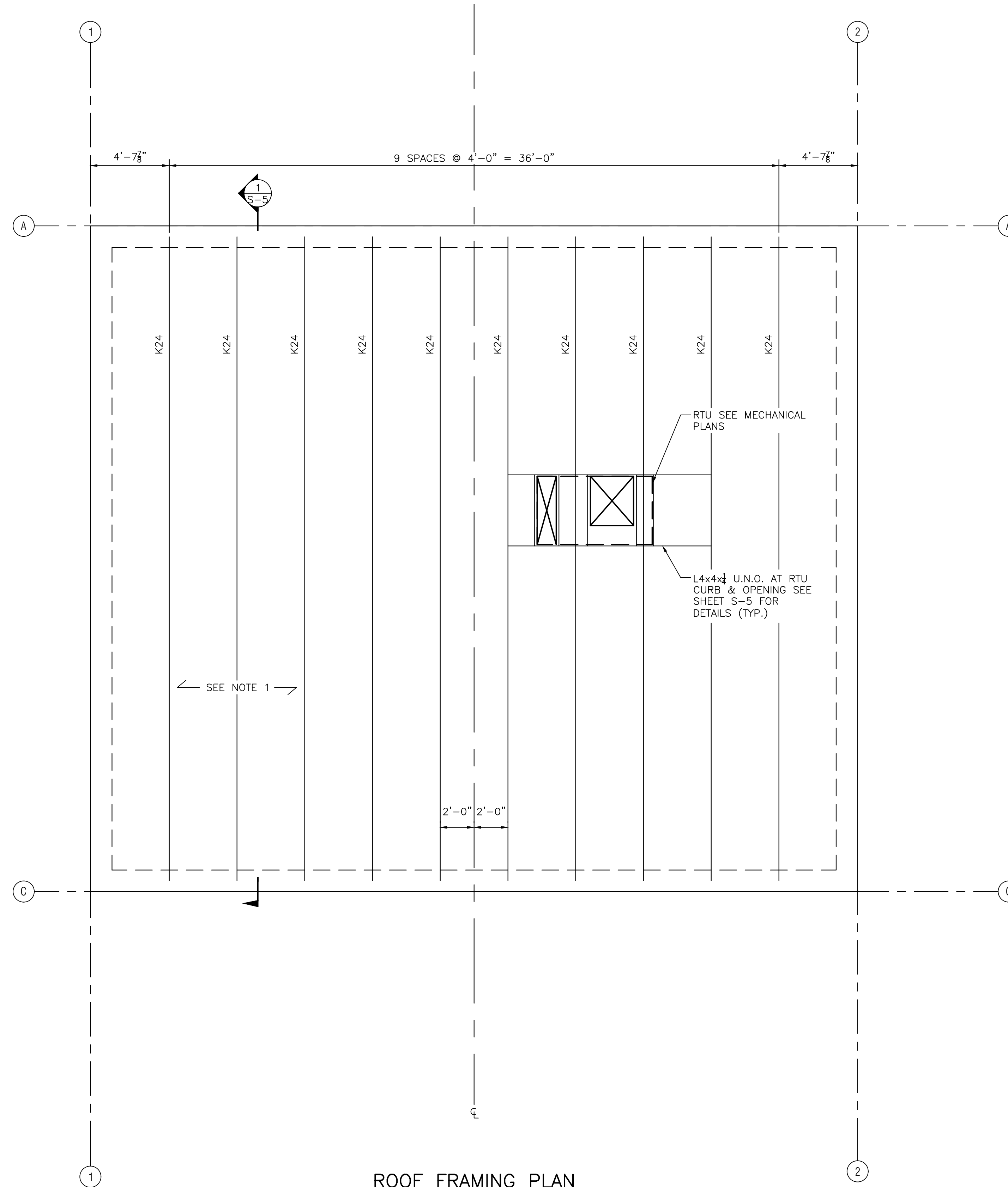
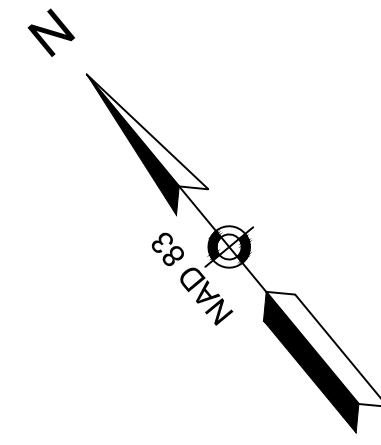
SUBCONSULTANT

SCALE
AS SHOWN
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TITLE
Edgell Road Water Pumping Station Replacement
First Floor Plan

BETA JOB NO. 6481
ISSUE DATE January 2020
SHEET NO. S-2

1/27/2020 1:45 PM I:\BETA\LIN\DC01\RIEN\IRON\6481 - EDGELL ROAD WATER PUMP STATION\AUTOCAD\STRUCTURAL\ROOF FRAMING PLAN\6481-SR-ROOF-FRAMING_PLAN.DWG (BETA STB B.W.STB)



- FRAMING PLAN NOTES:**
1. 1 1/2" 20 GAUGE GALVANIZED WIDE RIB ROOF DECK. FASTEN DECK PER SHEET S-6.
 2. SEE GENERAL NOTES ON SHEET S-1 FOR METAL ROOF DECK PROPERTIES.

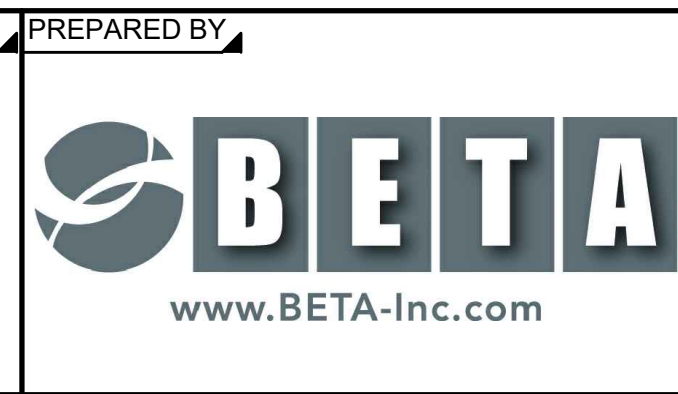
ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
BWN

DESIGNED BY:
PJK

CHECKED BY:
CWJ



SUBCONSULTANT

SCALE

AS SHOWN

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE

Edgell Road Water Pumping Station Replacement

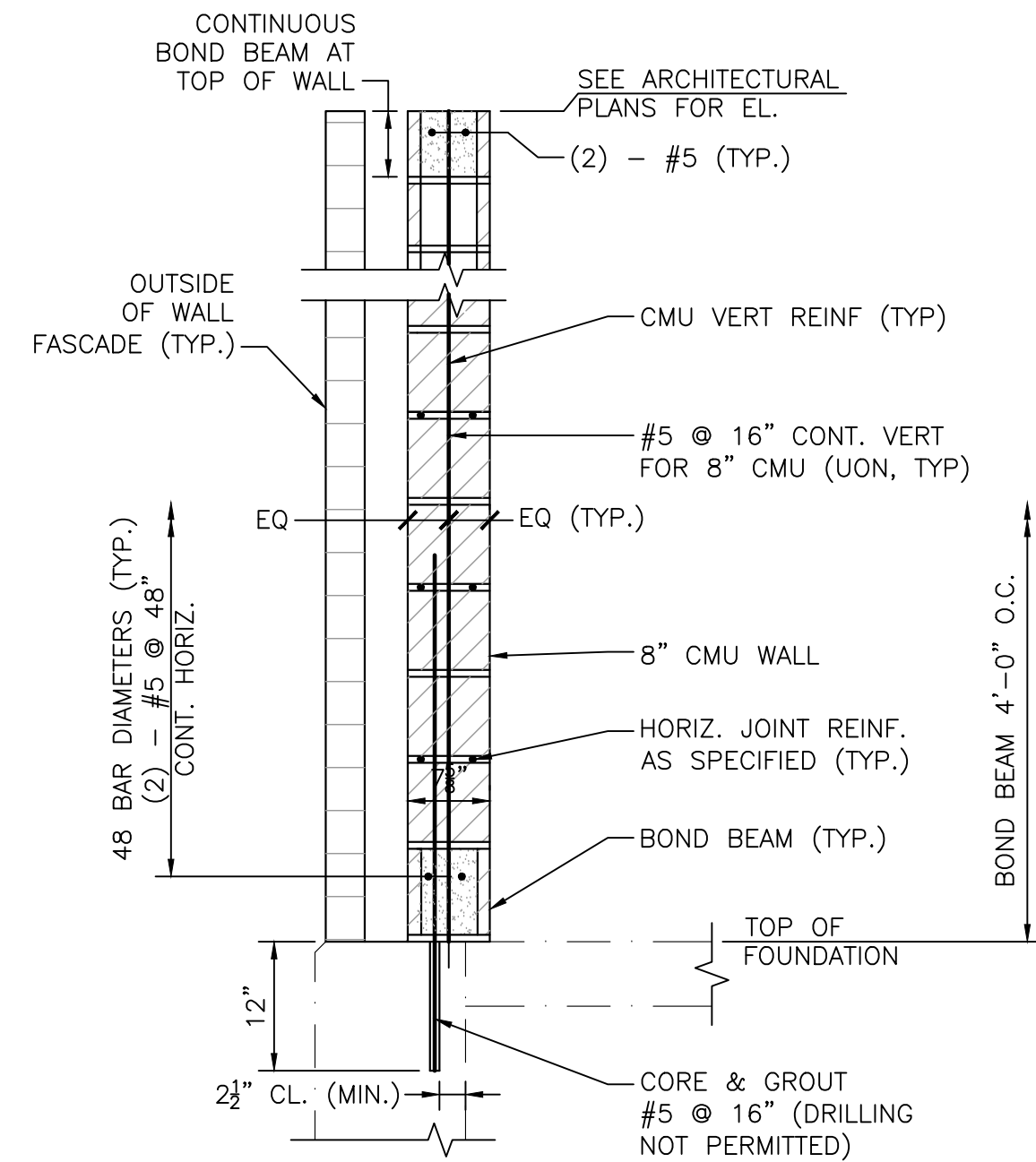
Roof Framing Plan

BETA JOB NO. 6481

ISSUE DATE January 2020

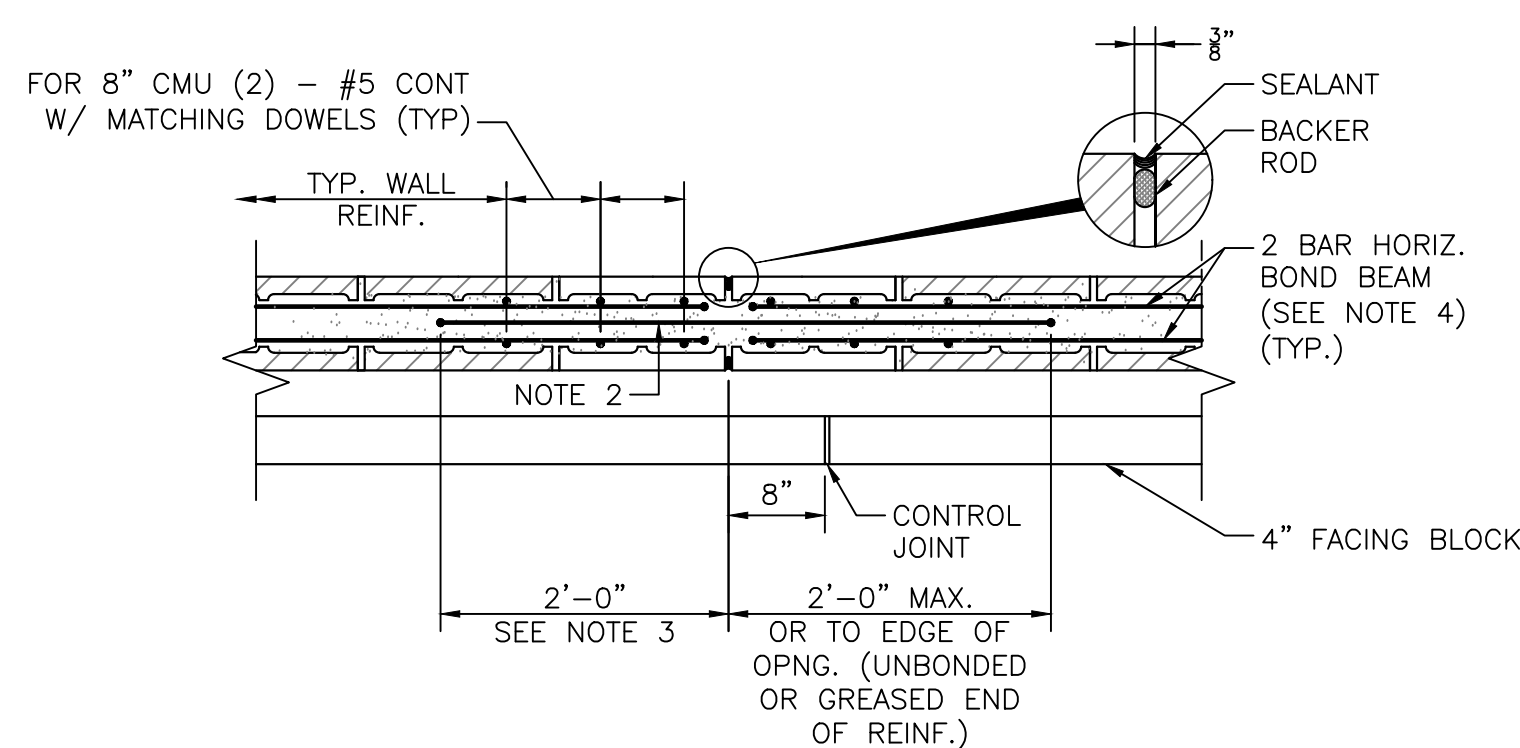
SHEET NO. S-3

1/27/2020 1:45 PM I:\BETA\IN\DC01\TRIVEN\IRON\6481 - EDGELL ROAD WATER PUMP STATION\AUTOCAD\STRUCTURAL\MASONRY DETAILS.DWG (BETA STB.BW.STB)



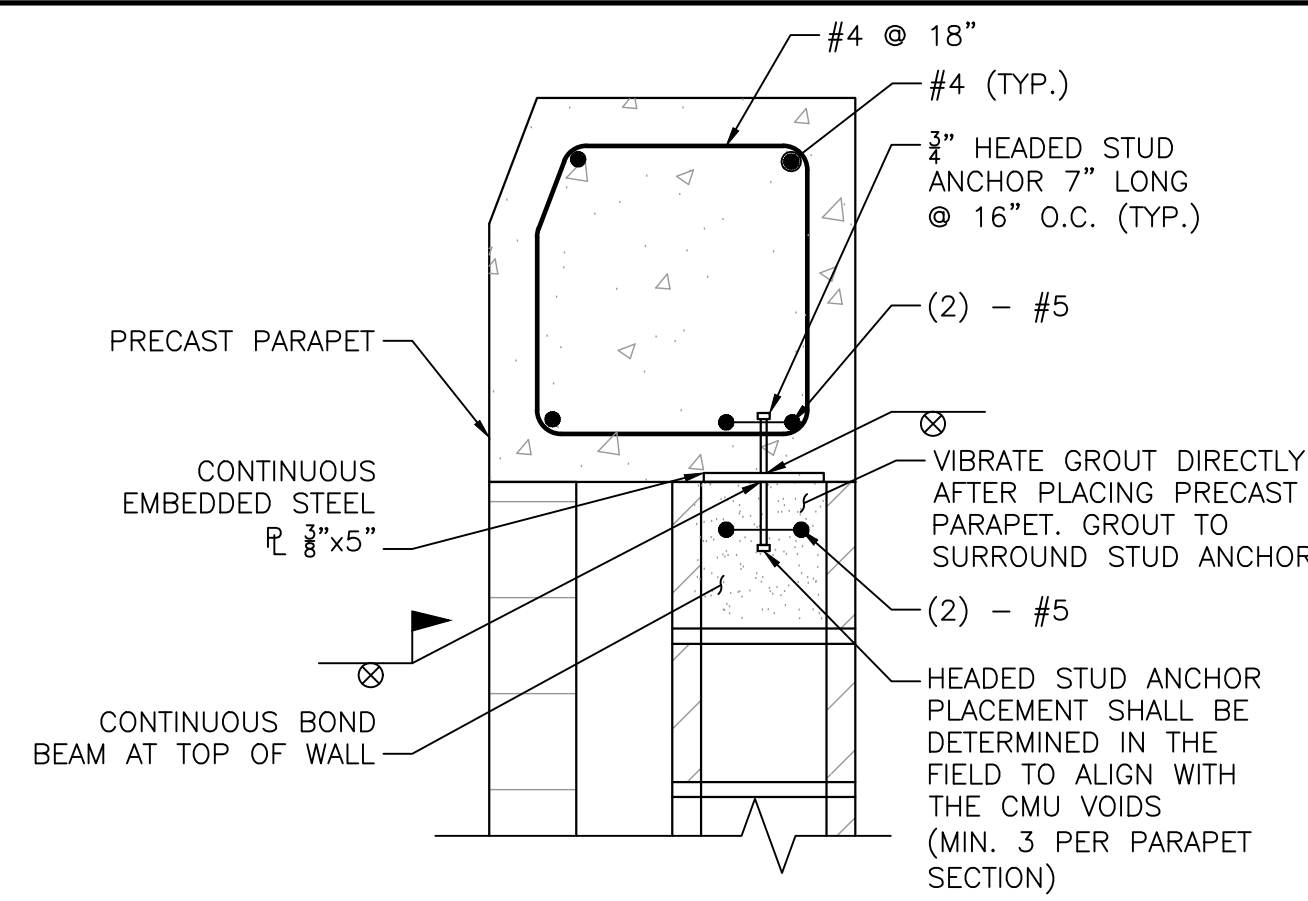
NOTE:
CMU EXTERIOR CONDITION SHOWN

TYPICAL CMU WALL REINFORCING
SCALE: 3/4" = 1'-0"



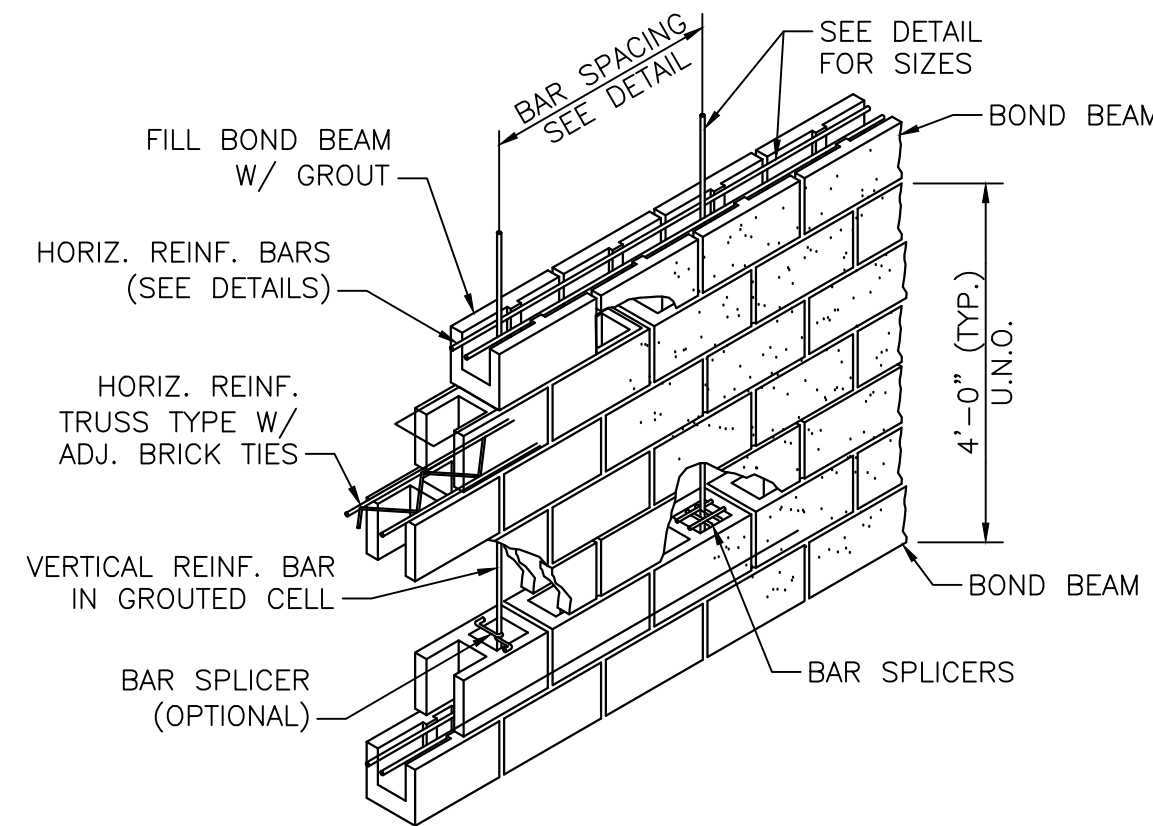
- NOTES:**
1. TERMINATE HORIZ. REINFORCEMENT WITH A STANDARD HOOK TWO INCHES FROM CONTROL JOINTS.
 2. PROVIDE SMOOTH DOWEL INDICAL TO HORIZONTAL BAR DIAMETER ACROSS THE JOINT AT HORIZONTAL BAR LOCATIONS. PREVENT BOND BETWEEN BAR AND GROUT ON ONE SIDE OF JOINT WITH PLASTIC SLEEVE OR GREASE. CAP ALL DOWELS 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.

MASONRY CONTROL JOINT (MCJ)
SCALE: 3/4" = 1'-0"

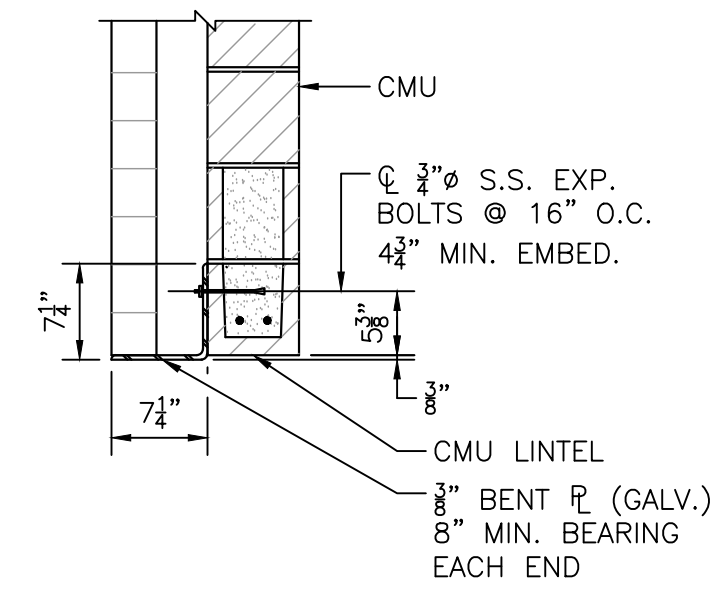


- NOTES:**
1. SEE ARCHITECTURAL DRAWINGS FOR PARAPET DIMENSIONS.
 2. PRECAST PARAPET SHALL BE 4000 PSI. CONCRETE.

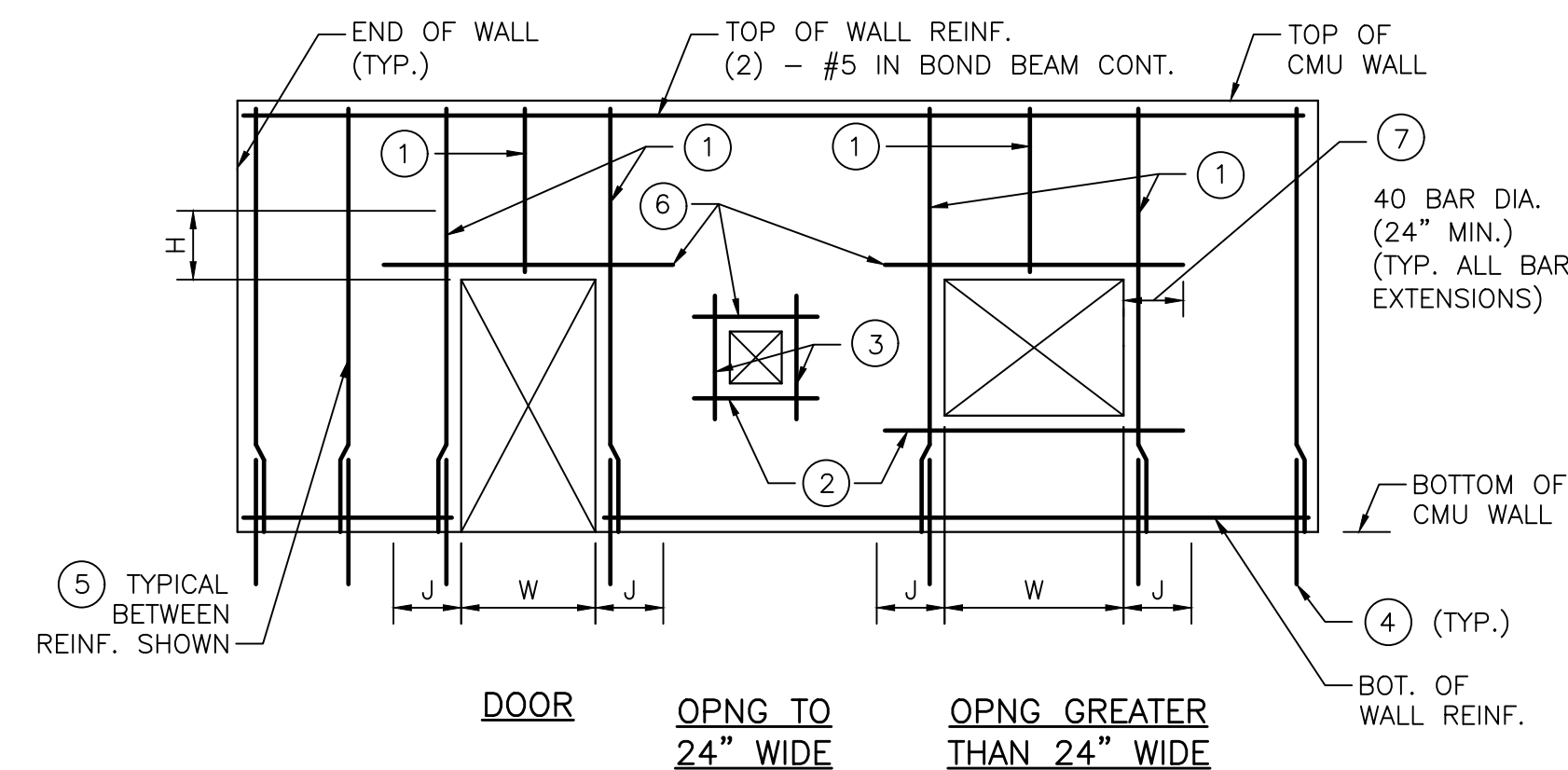
PRECAST PARAPET ANCHORAGE DETAIL
NOT TO SCALE



CMU WALL CONSTRUCTION
NOT TO SCALE

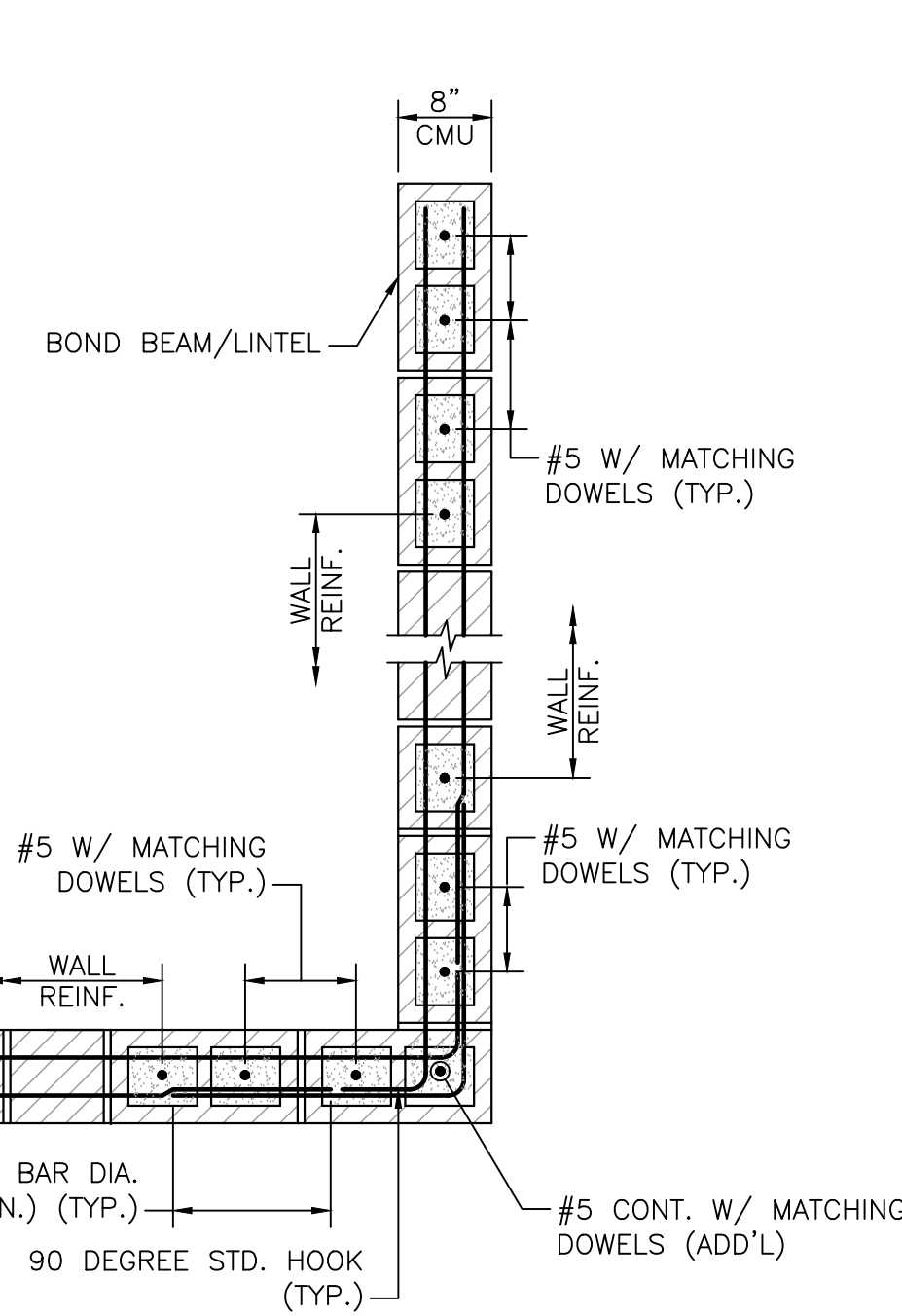


TYPICAL SHELF ANGLE
NOT TO SCALE

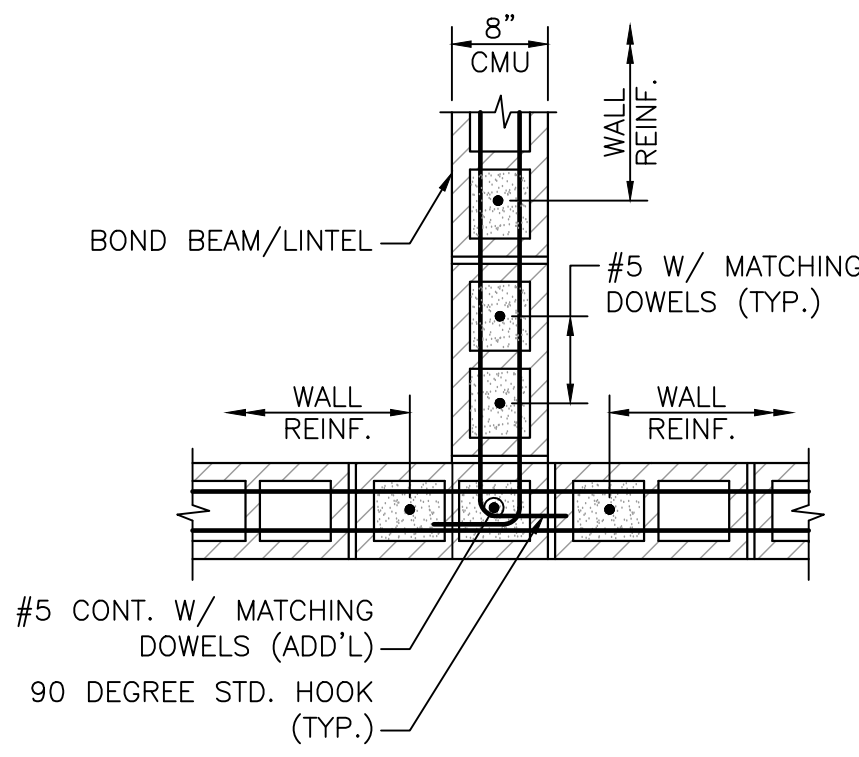


TYPICAL CMU WALL ELEVATION
NOT TO SCALE

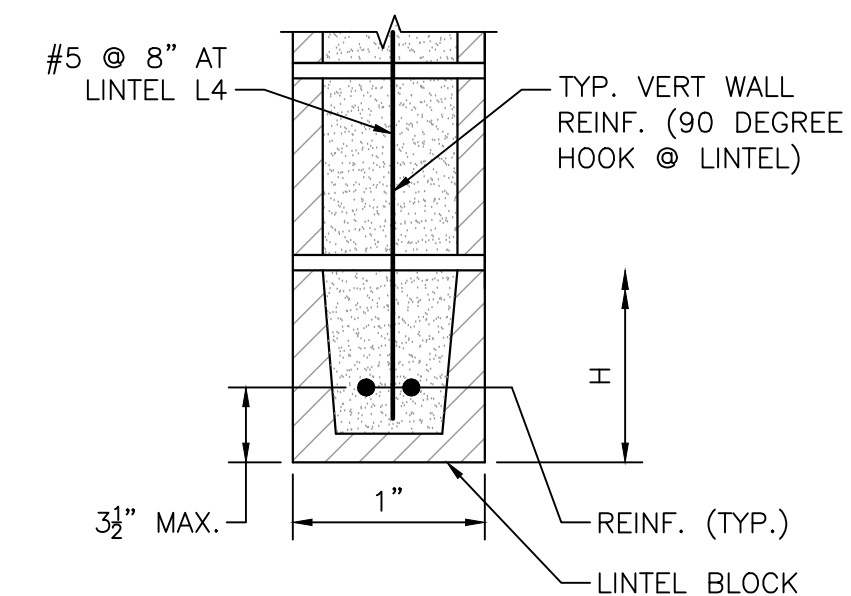
- LEGEND:**
1. SEE TYPICAL CMU WALL OPENING DETAIL ON THIS SHEET.
 2. SILL BARS, 2-#5 IN BOND BEAM.
 3. 1-#5 EACH SIDE.
 4. SEE TYPICAL CMU WALL CORNER AND END DETAIL ON THIS SHEET.
 5. BETWEEN BARS SHOWN, PROVIDE TYPICAL WALL REINFORCING PER TYPICAL CMU WALL REINFORCING DETAIL ON THIS SHEET.
 6. SEE TYPICAL CMU LINTEL DETAIL ON THIS SHEET, AND THE ARCHITECTURAL DRAWINGS.
 7. IF FULL LENGTH IS NOT AVAILABLE, EXTEND AS FAR AS POSSIBLE, HOOK 90 DEGREE, THEN EXTEND, BEYOND BEND, REMAINDER OF LENGTH REQUIRED (BUT NOT LESS THAN 12")



TYPICAL CMU WALL CORNER AND AT END
SCALE: 3/4" = 1'-0"



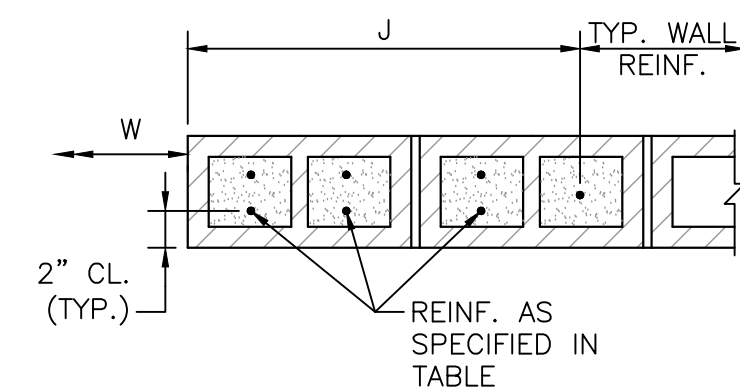
TYPICAL CMU WALL INTERSECTION
SCALE: 3/4" = 1'-0"



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

- 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. D MAY CONSIST OF FULLY GROUTED H=16" CMU LINTEL BLOCK OR H=8" CMU LINTEL BLOCK PLUS 8" CMU BLOCK(S), FULLY GROUTED.

TYPICAL CMU LINTEL
NOT TO SCALE

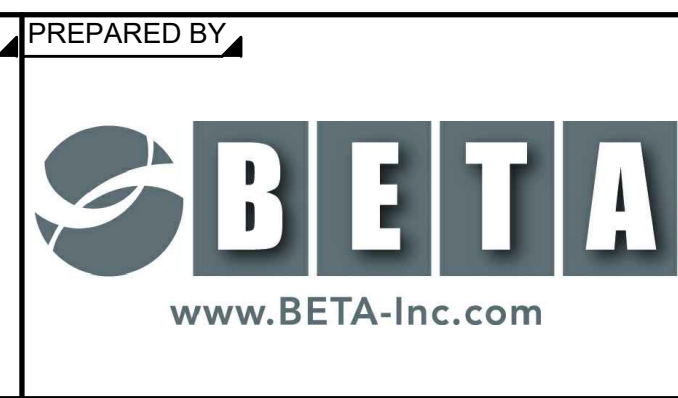


TYPICAL CMU WALL OPENING
NOT TO SCALE

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.

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:	BWN
DESIGNED BY:	PJK
CHECKED BY:	CWJ



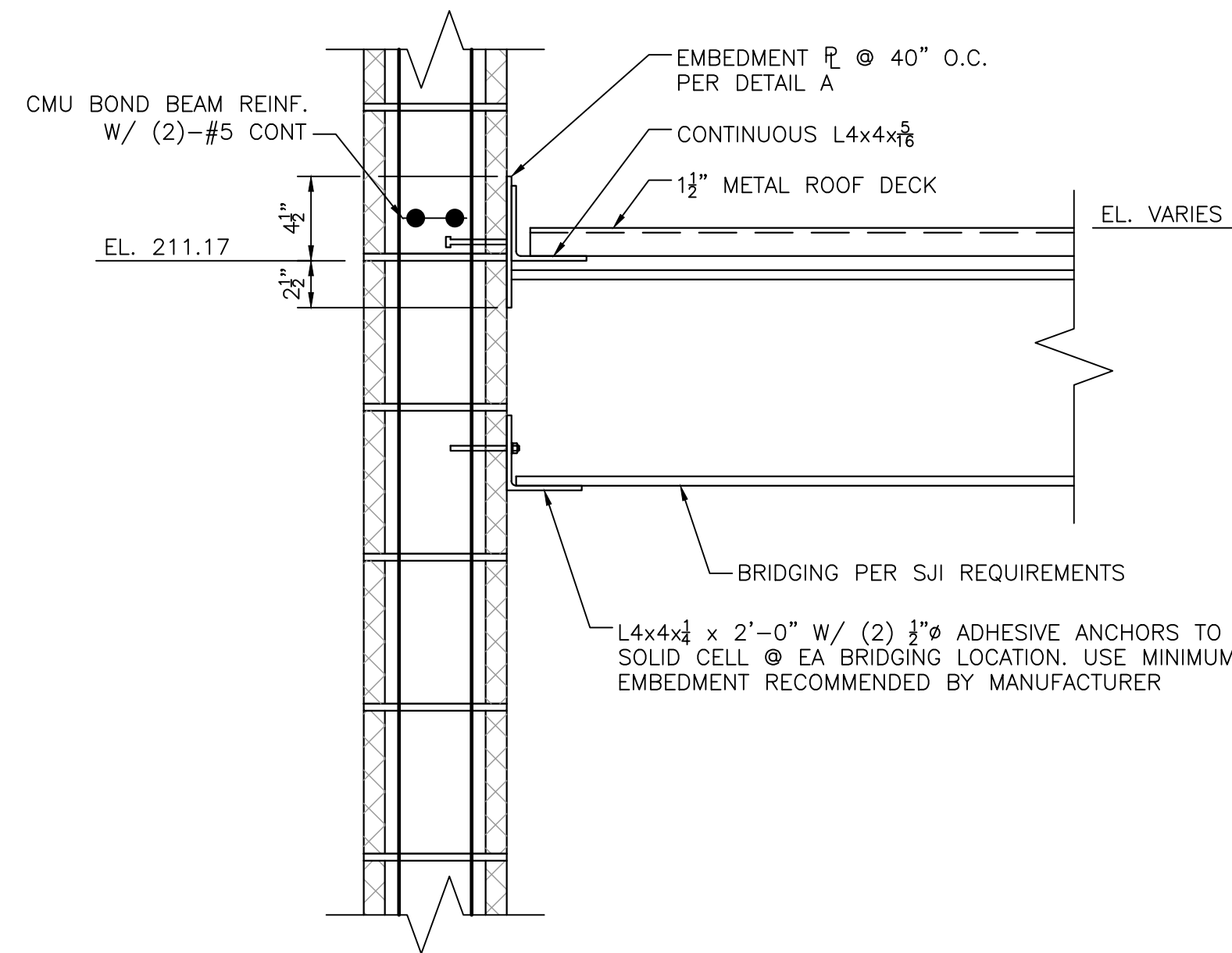
REGISTERED PROFESSIONAL	PREPARED BY	SUBCONSULTANT	SCALE	TITLE
			AS SHOWN	

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

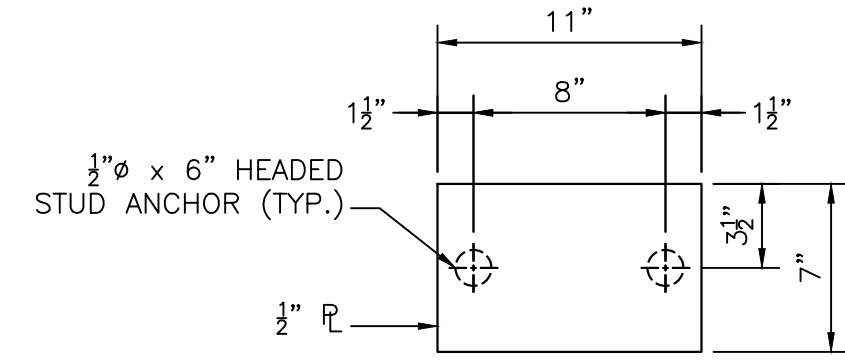
Edgell Road Water Pumping Station Replacement	
Masonry Details	

BETA JOB NO.	6481
ISSUE DATE	January 2020
SHEET NO.	S-4

1/27/2020 1:45 PM I:\BETA\IN\DC01\RIEN\IRON\6481 - EDGELL ROAD WATER PUMP STATION\AUTOCAD\STRUCTURAL\DETAILS\SR-STRUCTURAL_ROOF_DETAILS.DWG (BETA STB B/W STB)



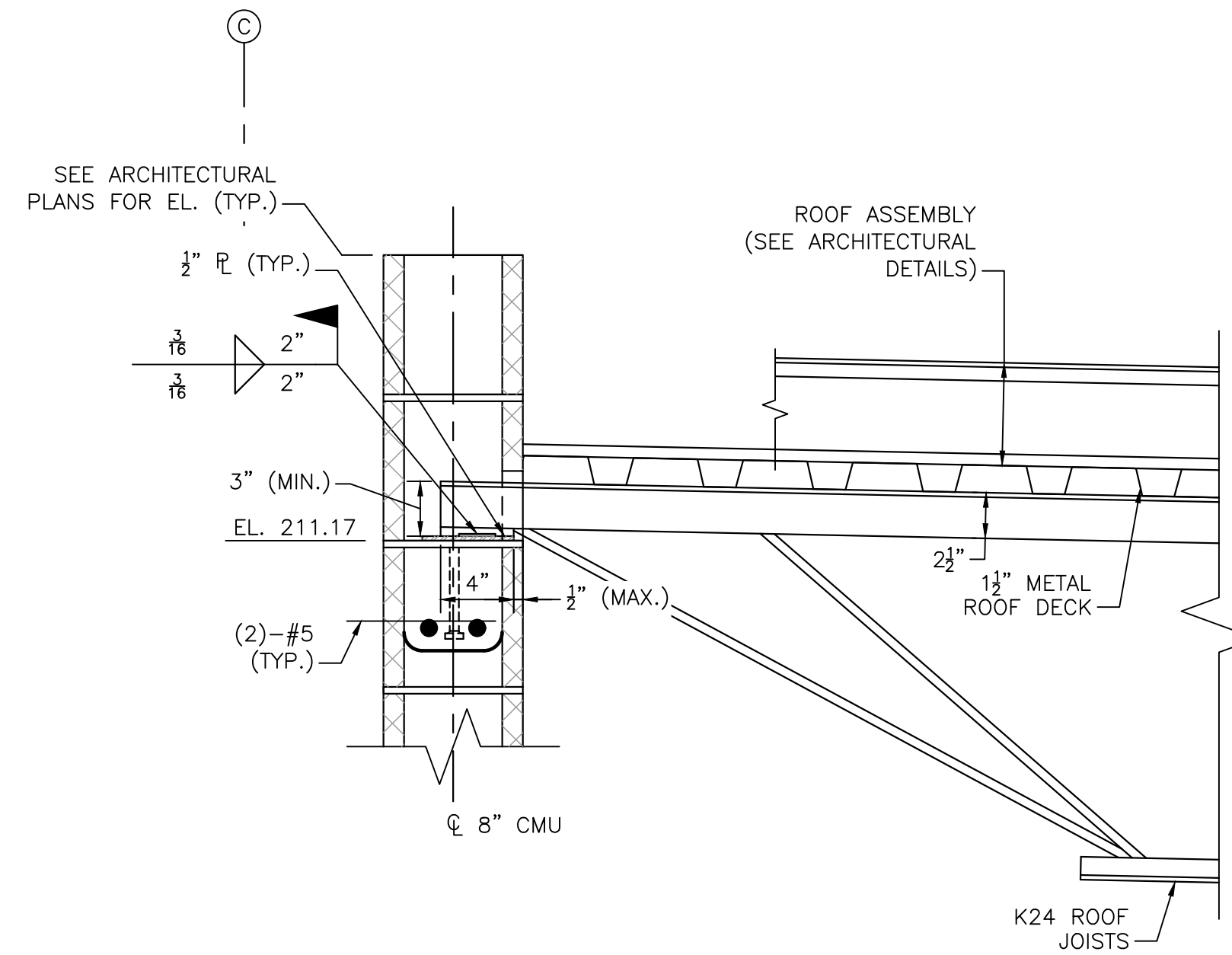
JOIST BRIDGING
SCALE: 1/2" = 1'-0"



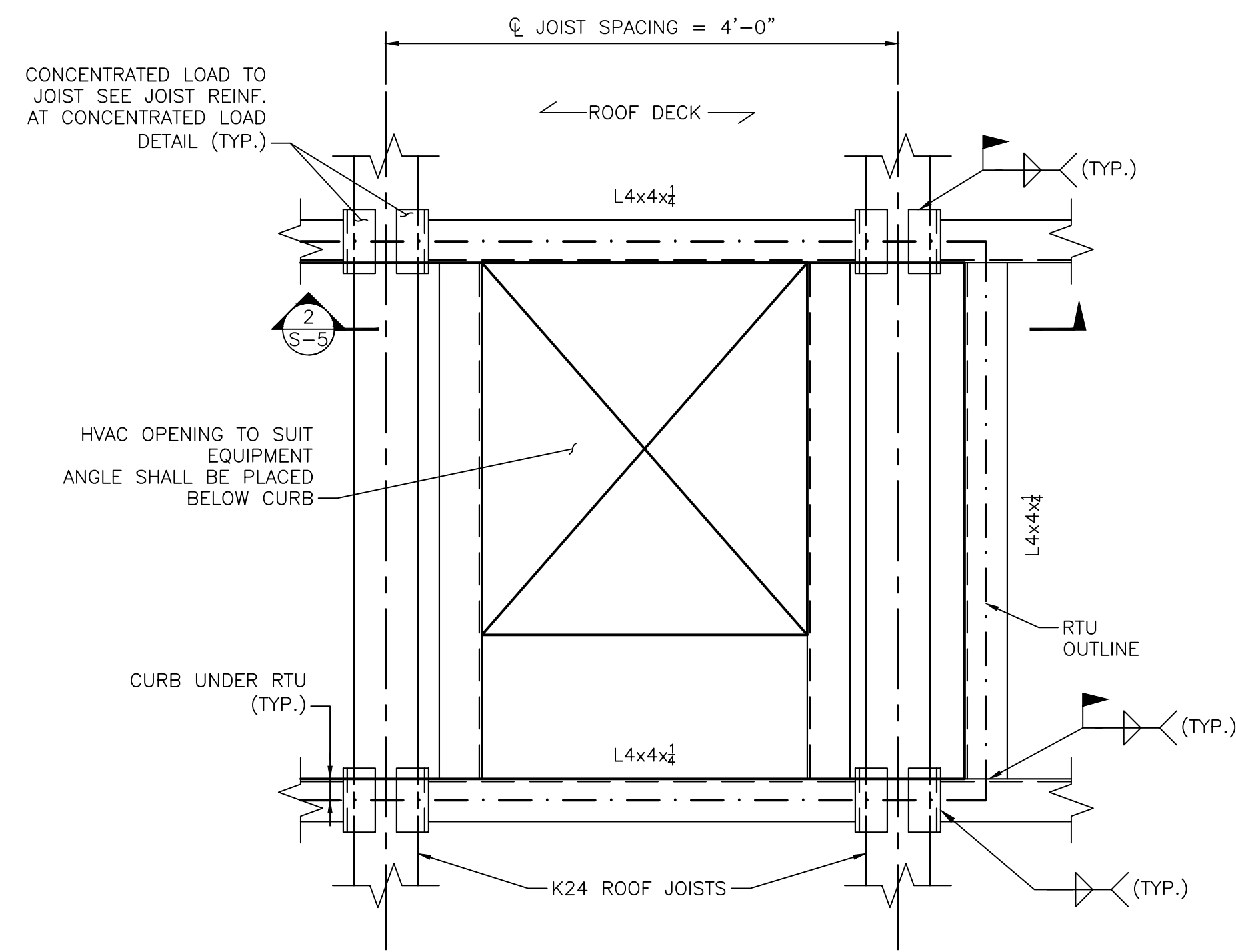
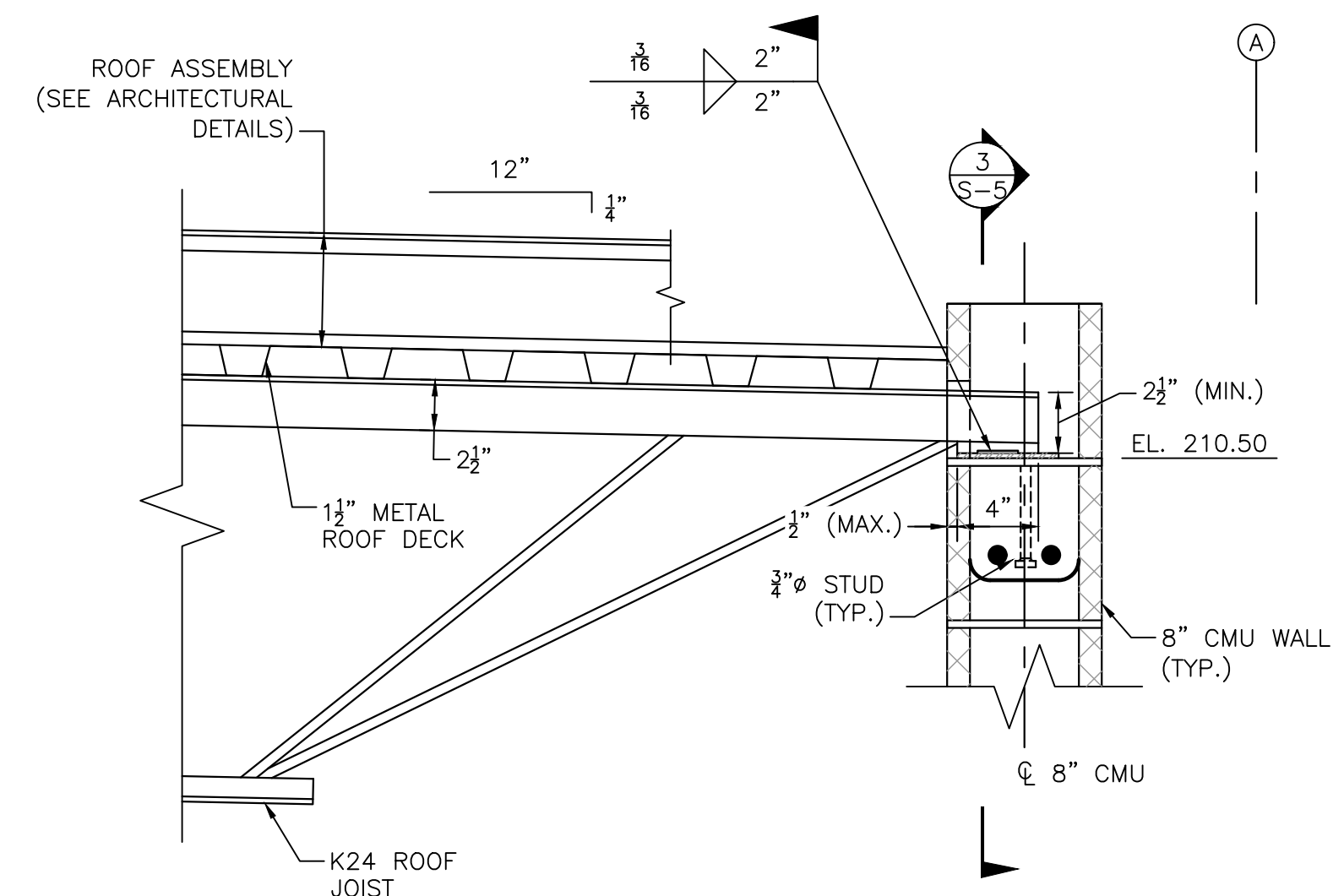
NOTE:

1. LOCATE C. OF EMBED PLATE 16" FROM MASONRY CONTROL JOINTS. EA SIDE PROVIDE A MEAN CLEARANCE OF 1'-0" FROM COLUMNS.
2. DO NOT PLACE HEADED STUD ANCHOR IN VERTICAL CMU JOINTS.
3. POSITION PLATE WITHIN GROUTED COURSES.

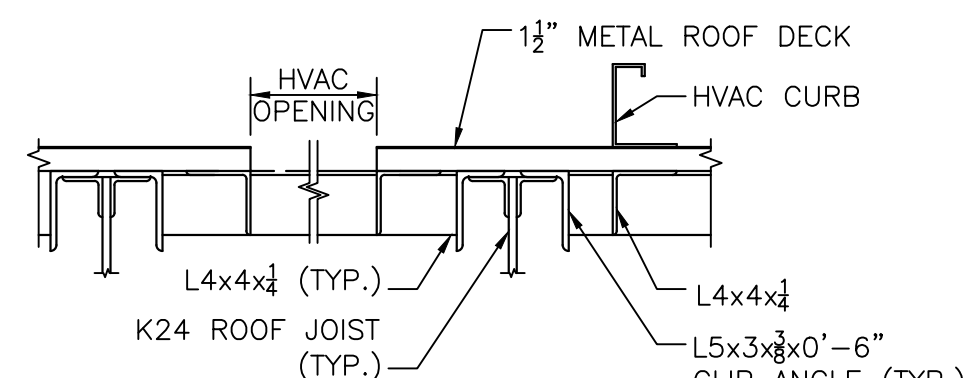
EMBED DETAIL A
SCALE: 1/2" = 1'-0"



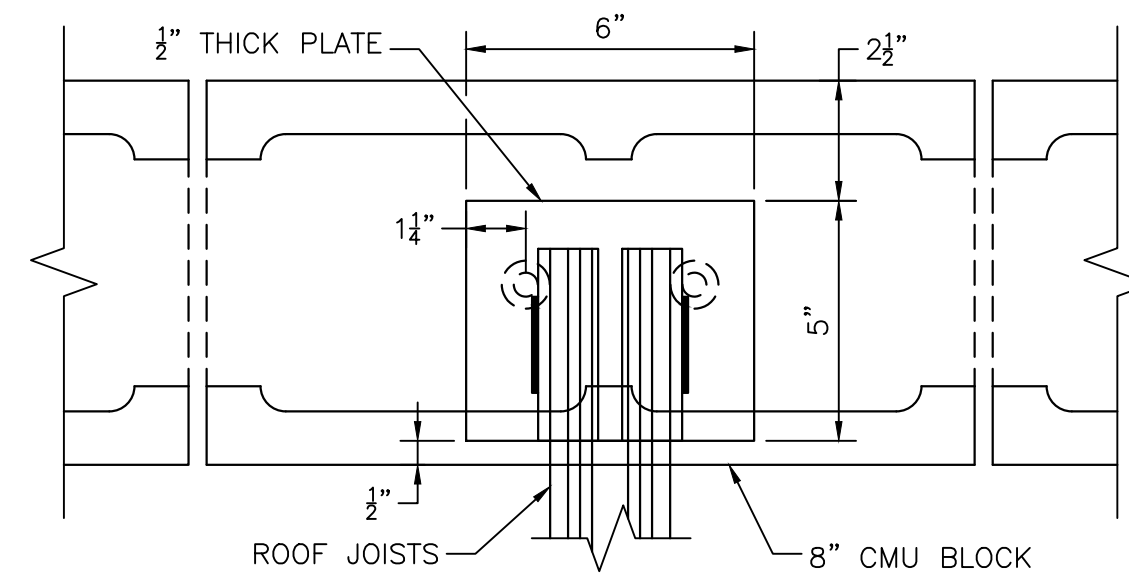
SECTION 1
SCALE: 1/2" = 1'-0"



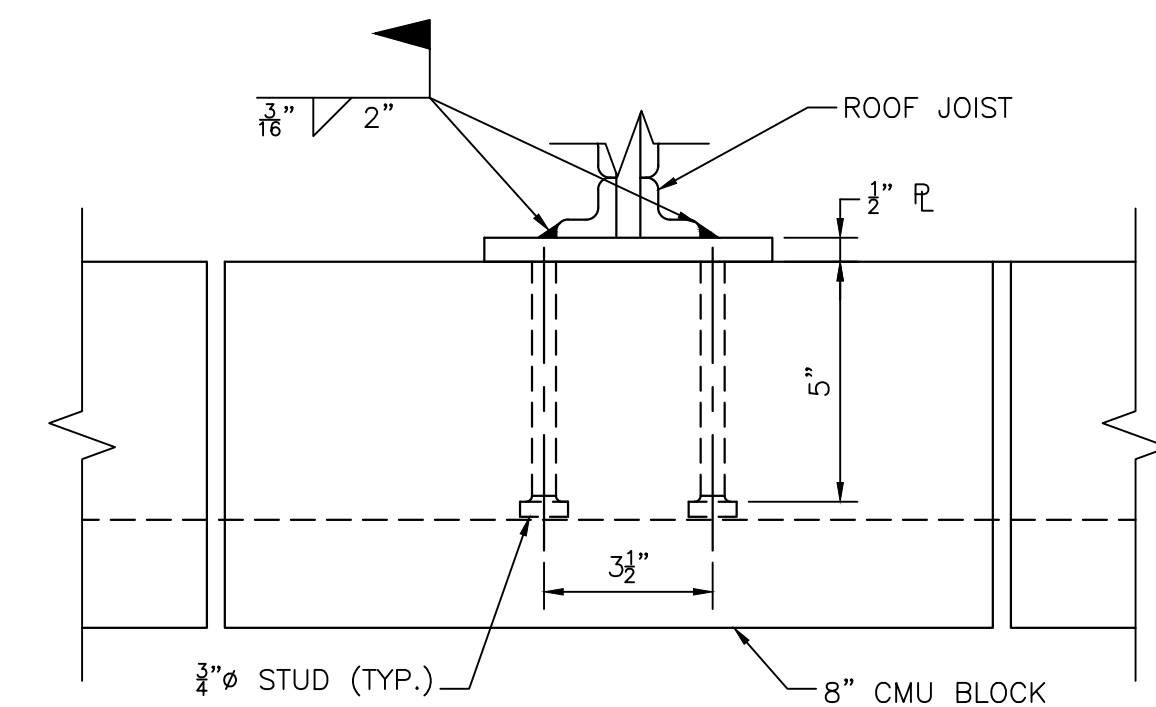
ROOF OPENING FRAME
SCALE: 1" = 1'-0"



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



JOIST ANCHOR PLATE DETAILS
SCALE: 3" = 1'-0"



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

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
BWN

DESIGNED BY:
PJK

CHECKED BY:
CWJ

REGISTERED PROFESSIONAL

PETER J. KOTOWSKI
STRUCTURAL
No. 52285

PREPARED BY

BETA
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SUBCONSULTANT

SCALE

AS SHOWN

TITLE

Edgell Road Water Pumping Station Replacement

Structural Roof Details

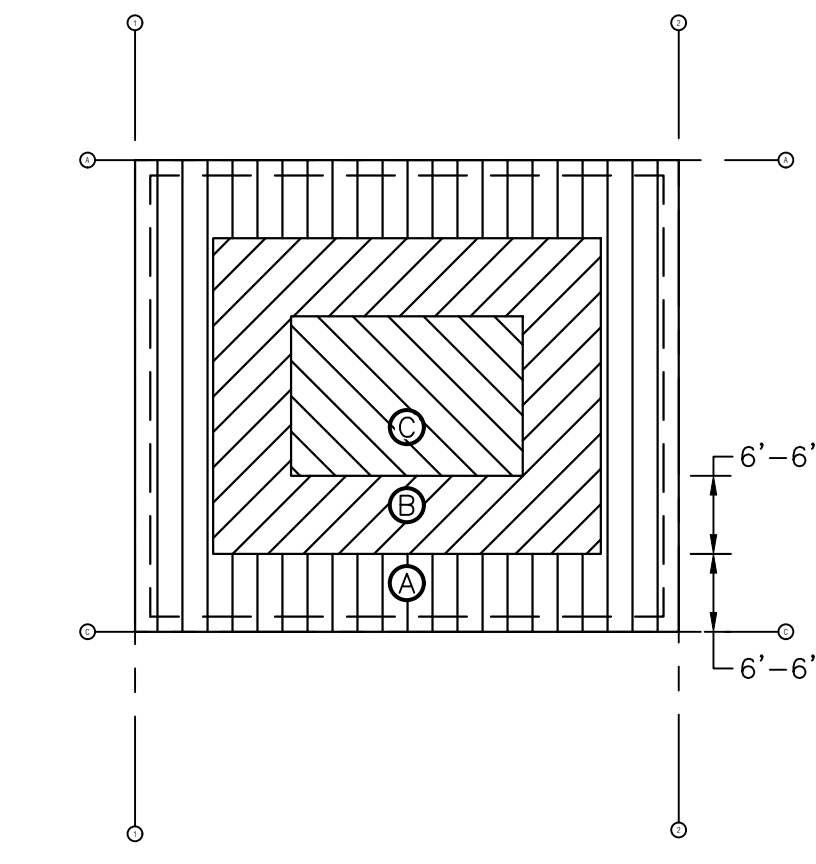
BETA JOB NO. 6481

ISSUE DATE January 2020

SHEET NO. S-5

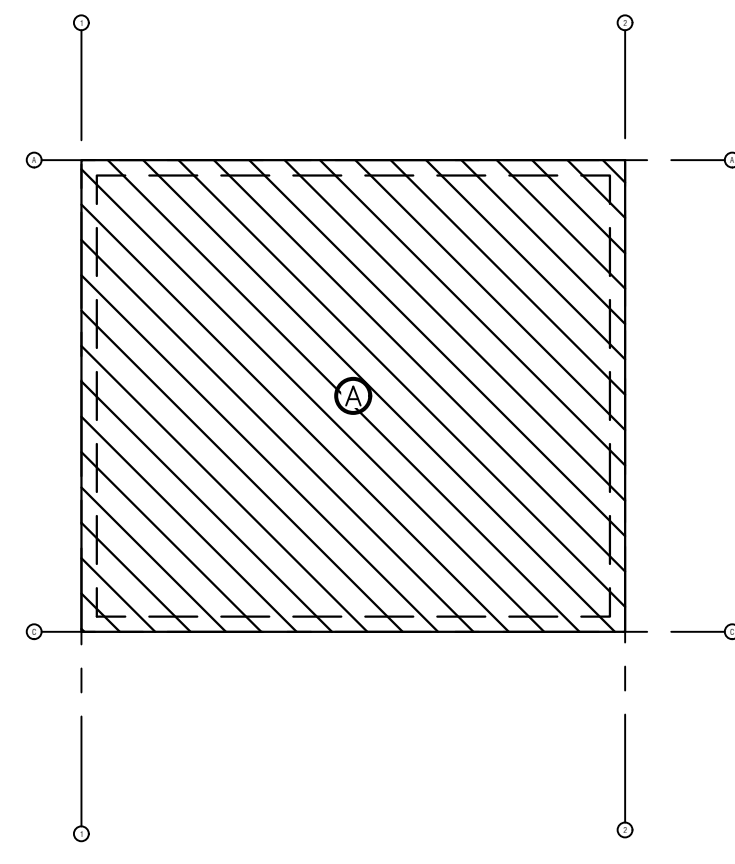
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1/27/2020 1:46 PM I:\BETA\IN\DC01\TRIVEN\IRON\6481 - EDGELL ROAD WATER PUMP STATION\AUTOCAD\STRUCTURAL\MISCELLANEOUS DETAILS\DWG (BETA STB BW STB)



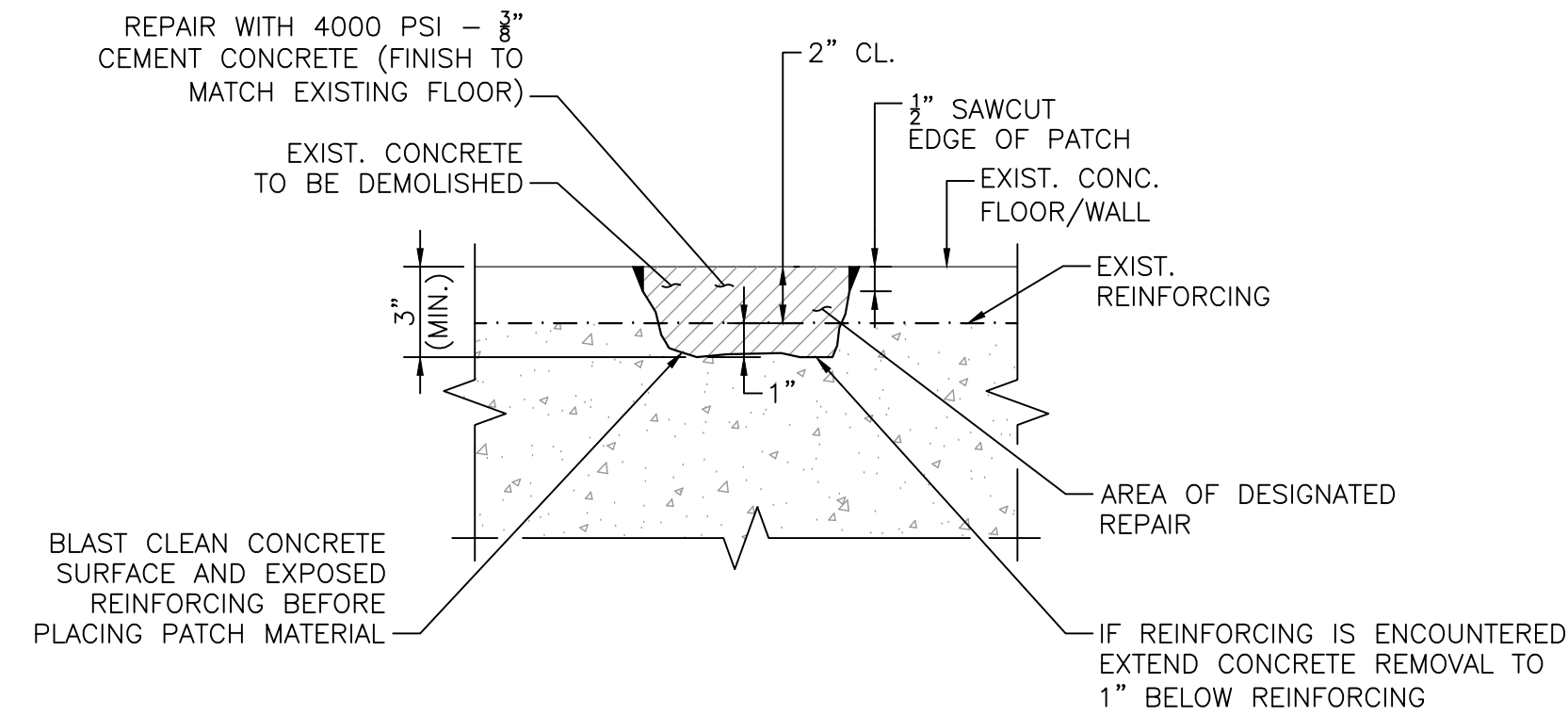
ZONE	DOWNWARD	UPLIFT
A	25.61 PSF	0 PSF
B	22.81 PSF	0 PSF
C	18.74 PSF	0 PSF

DESIGN WIND LOAD
SCALE: 1/8" = 1'-0"



FLAT ROOF SNOW LOAD	
ZONE	BALANCED SNOW LOAD
A	35 PSF

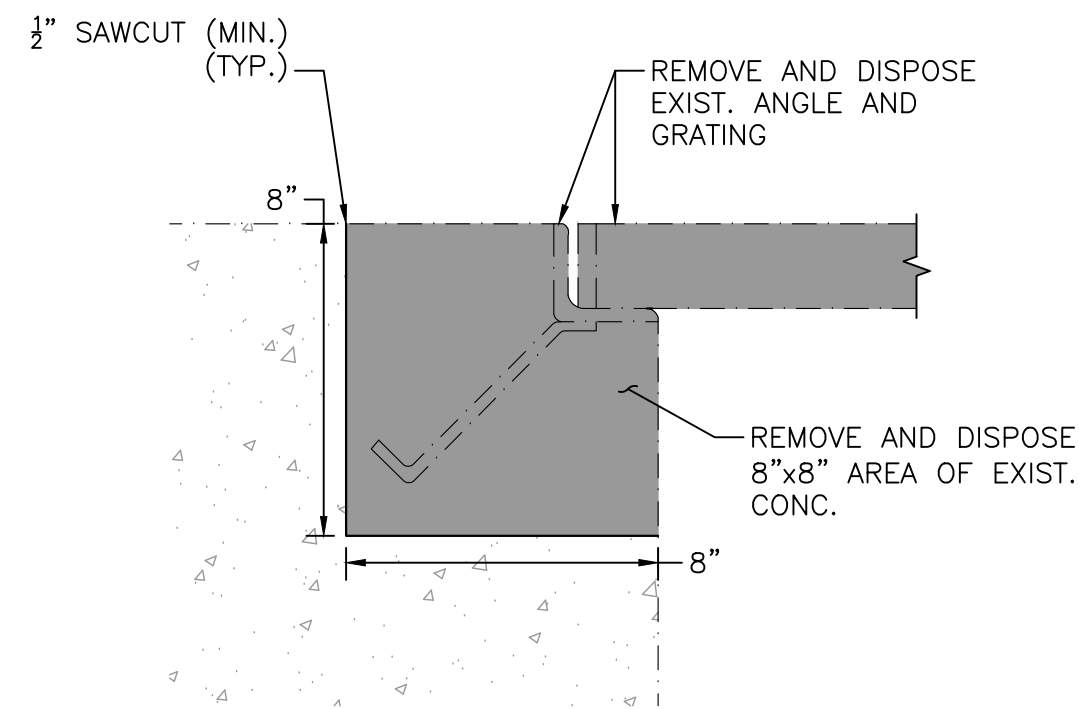
DESIGN SNOW LOAD
SCALE: 1/8" = 1'-0"



SHALLOW DEPTH CONCRETE PATCH DETAIL
SCALE: 1/2" = 1'-0"

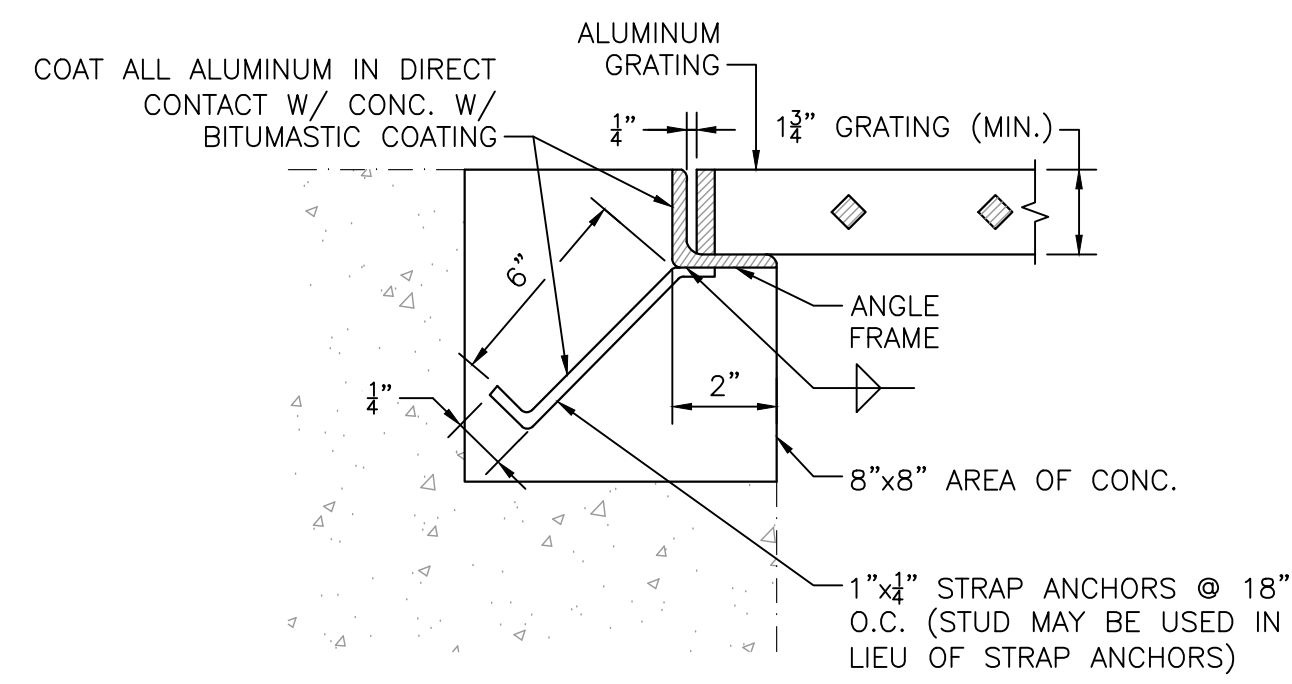
METAL GRATING NOTES:

- GRATING, COVER PLATES, ANGLE FRAMES AND SUPPORTS SHALL BE ALL ALUMINIUM CONSTRUCTION UNLESS OTHERWISE NOTED. COVER PLATES SHALL BE DIAMOND PLATE ALUMINIUM ALLOY 6061-T6. GRATING SHALL BE ALUMINIUM ALLOY 6063-T6.
- FASTENERS, ANCHORS, BOLTS, NUTS AND WASHERS FOR GRATING, COVER PLATES AND SUPPORTS SHALL BE TYPE 316 STAINLESS STEEL.
- FIELD VERIFY GRATING SUPPORT LOCATIONS BEFORE FABRICATING GRATING, AT TRENCHES 12" OR LESS PROVIDE 1"x3/8" GRATING WITH SUPPORTS AT 3'-0" ON CENTER. PLATE SUPPORTS WITH EXTREME CARE TO PROVIDE TOLERANCES SHOWN OR SPECIFIED.
- GRATING PANEL LAYOUT SHALL PROVIDE FOR THE REMOVAL OF GRATING AROUND PIPE AND OTHER GRATING PENETRATIONS.
- BAND ALL GRATING ALONG EDGES AND AROUND OPENINGS WITH CONTINUOUS BAR SAME DEPTH & THICKNESS AS BEARING BARS.
- ALL ANGLE FRAMES FOR GRATING AND COVER PLATES ARE TO BE MITERED AND WELDED AT CORNERS.
- ALL GRATING IS TO BE SECURELY FASTENED TO SUPPORTS, UNLESS OTHERWISE NOTED.
- ALL COVER PLATES SHALL BE SECURELY FASTENED TO SUPPORTS WITH 3/8" STAINLESS STEEL FLAT-HEAD MACHINE SCREWS AT 2'-0" ON CENTER, UNLESS OTHERWISE NOTED.
- ANY ADDITIONAL GRATING SUPPORTS SHALL BE ALUMINIUM, DESIGNED BY THE CONTRACTOR AND SHOWN ON THE GRATING PANEL LAYOUT.
- COAT ALL ALUMINIUM IN DIRECT CONTACT WITH CONCRETE WITH A BITUMASTIC COATING.

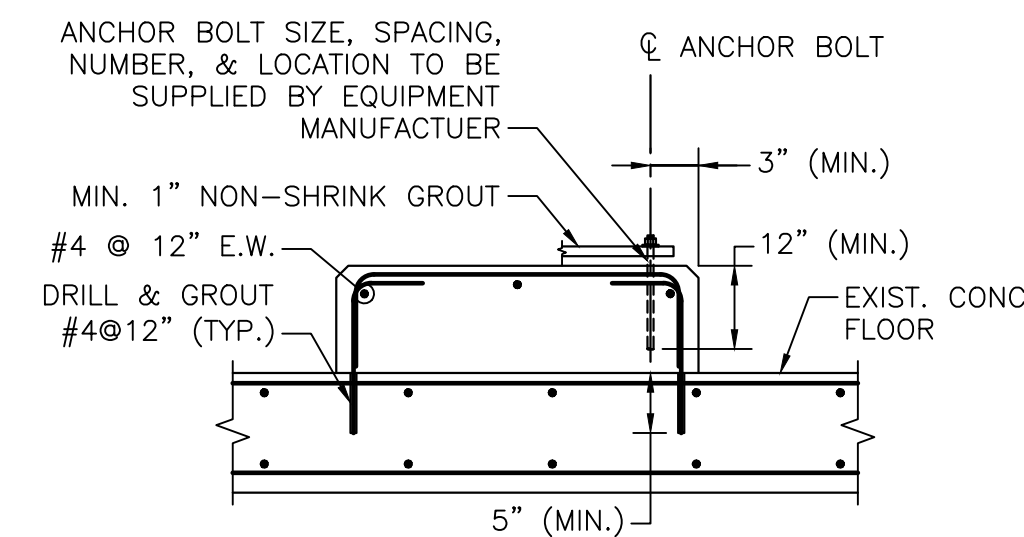


NOTE:
PROTECT ANY REINFORCEMENT ENCOUNTERED DURING DEMOLITION.

GRATING SEAT DEMOLITION
NOT TO SCALE

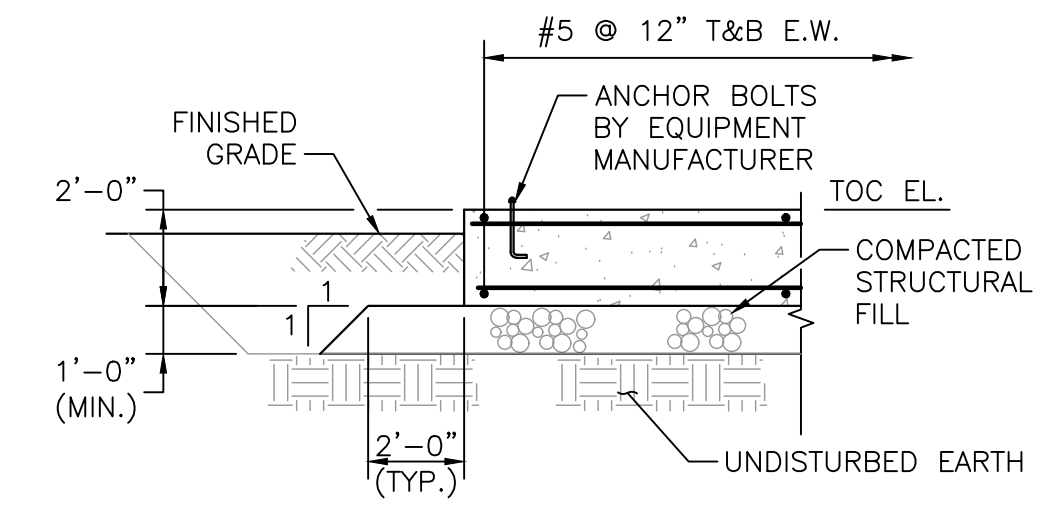


GRATING SEAT DETAIL
NOT TO SCALE

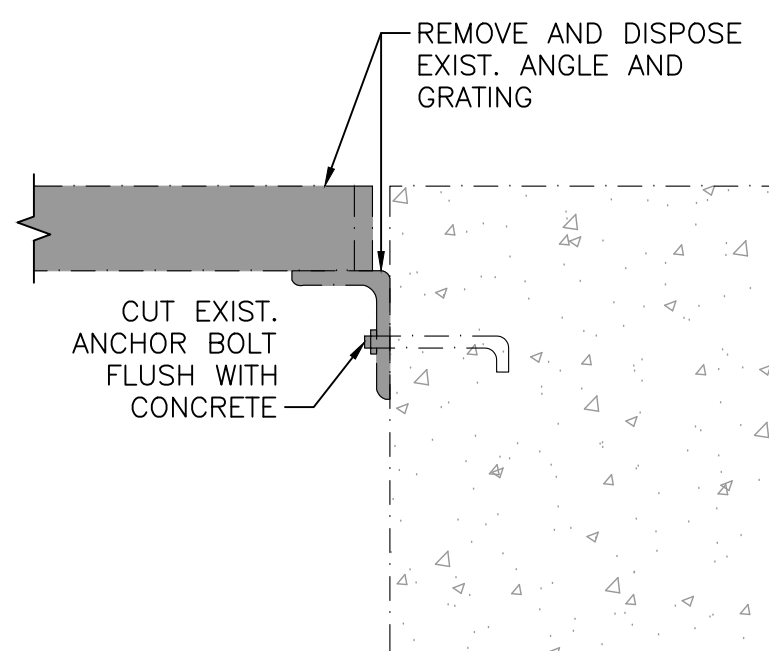


NOTE:
1. DIMENSIONS OF PAD AS REQUIRED TO SUIT EQUIPMENT (4" MIN. HEIGHT)

EQUIPMENT PAD
NOT TO SCALE

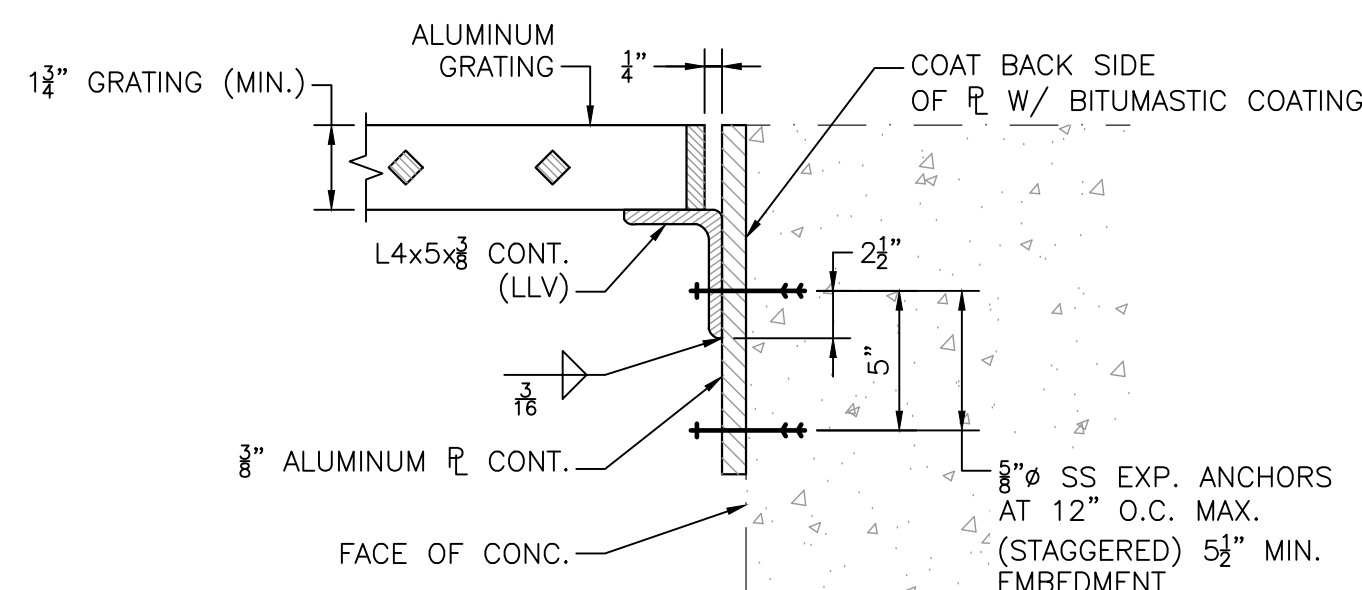


EXTERIOR PAD ON GRADE
SCALE: 1/4" = 1'-0"

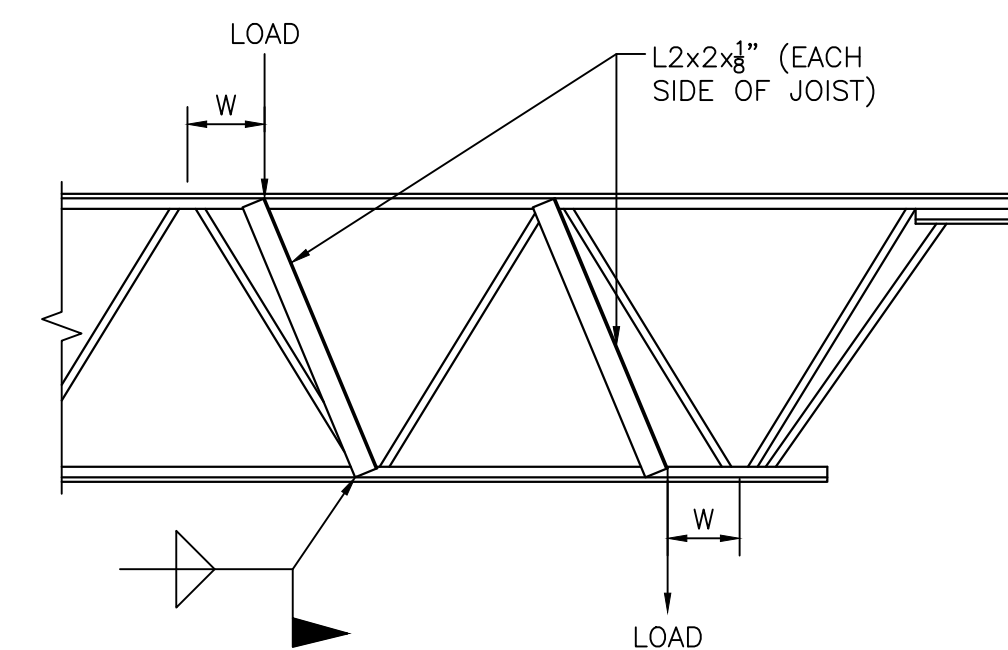


NOTE:
PROTECT ANY REINFORCEMENT ENCOUNTERED DURING DEMOLITION.

GRATING AT WALL DEMOLITION
NOT TO SCALE

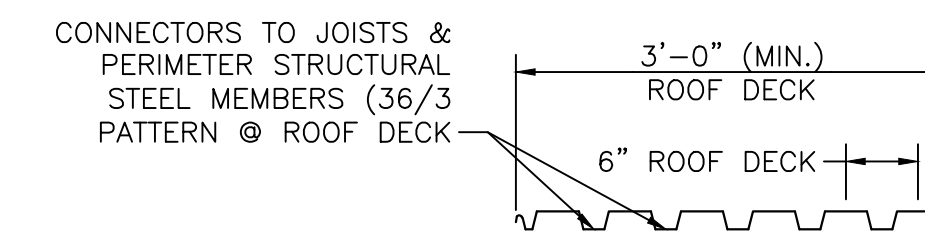


GRATING AT WALL SUPPORT
NOT TO SCALE



NOTE:
1. PROVIDE L2x2 ON EACH SIDE OF JOIST WHERE CONCENTRATED LOAD DOES NOT OCCUR WITHIN W=3" OF PANEL POINT AND CONCENTRATED LOAD EXCEEDS 100 POUNDS.

JOIST REINF. AT CONCENTRATED LOAD
SCALE: 1/2" = 1'-0"



DIAPHRAGM SCHEDULE		
AREA	DECK TO STEEL MEMBER CONNECTION TYPE	SIDE LAP CONNECTORS
ROOF	3/8" DIAMETER WELDS	(5) #10-16 TEK SCREWS

TYPICAL ROOF DECK DETAILS
SCALE: 1/2" = 1'-0"

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:	BWN
DESIGNED BY:	PJK
CHECKED BY:	CWJ

REGISTERED PROFESSIONAL

 PREPARED BY

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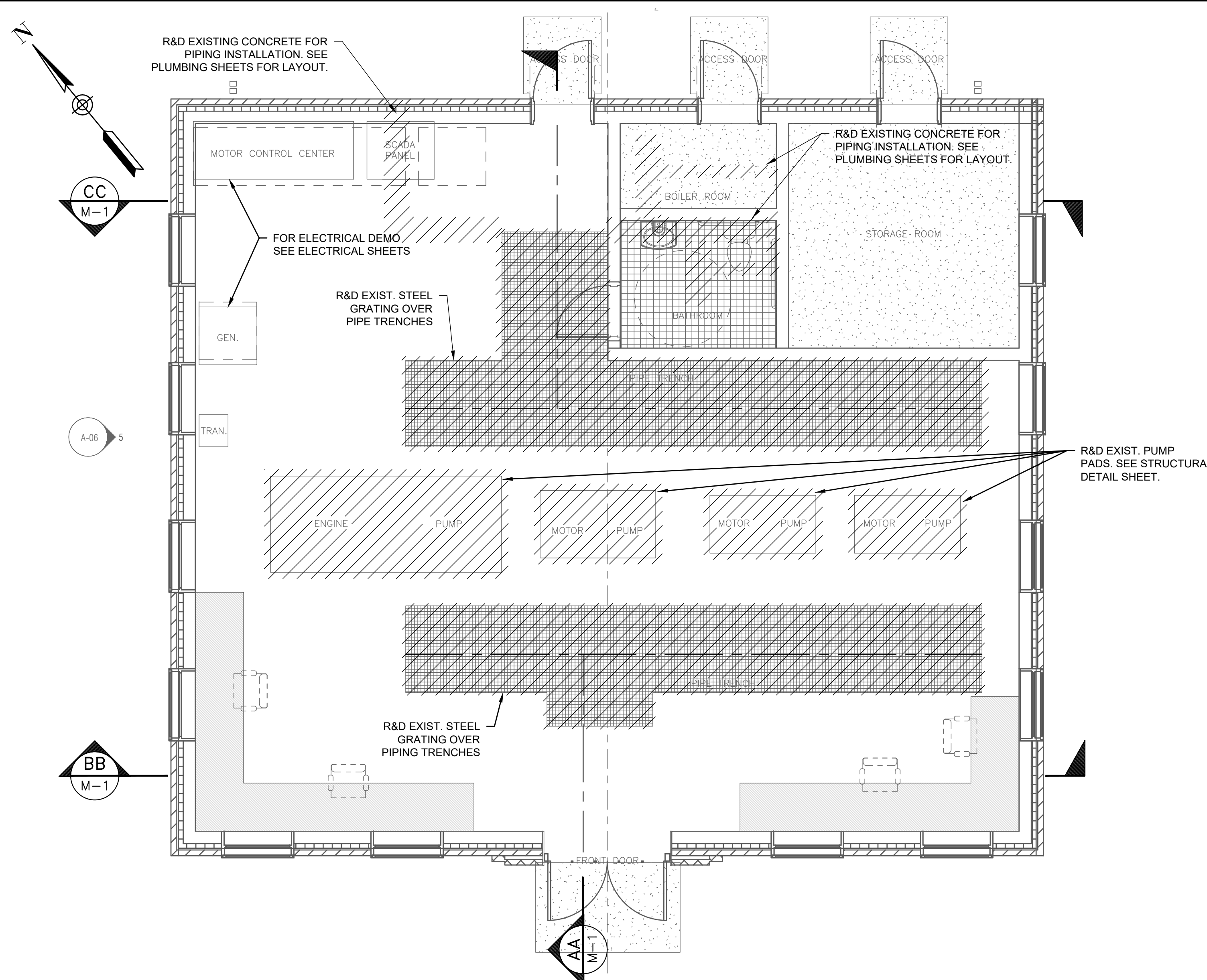
SUBCONSULTANT

SCALE
AS SHOWN

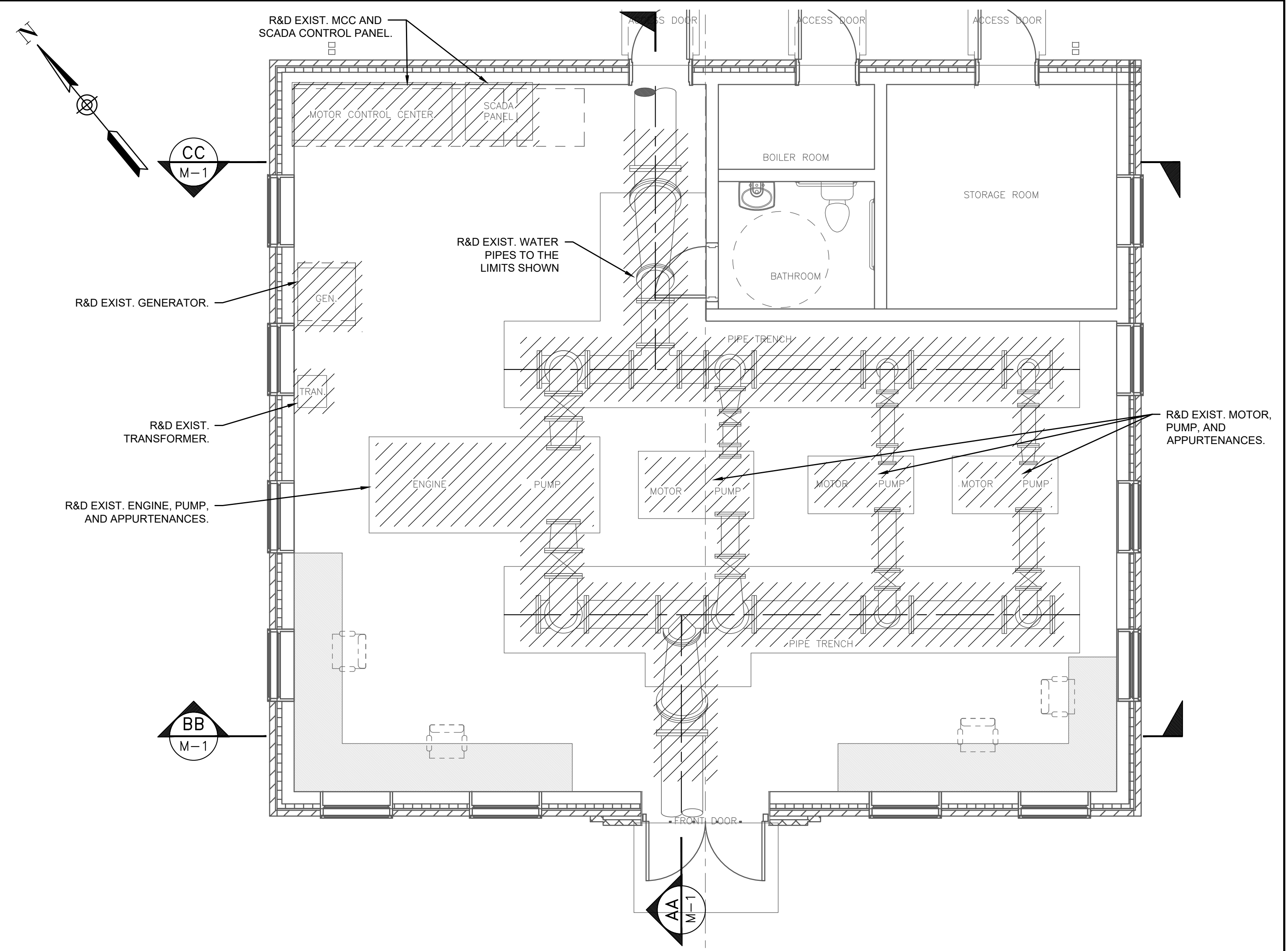
TITLE
Edgell Road Water Pumping Station Replacement
 Miscellaneous Details

BETA JOB NO.	6481
ISSUE DATE	January 2020
SHEET NO.	S-6

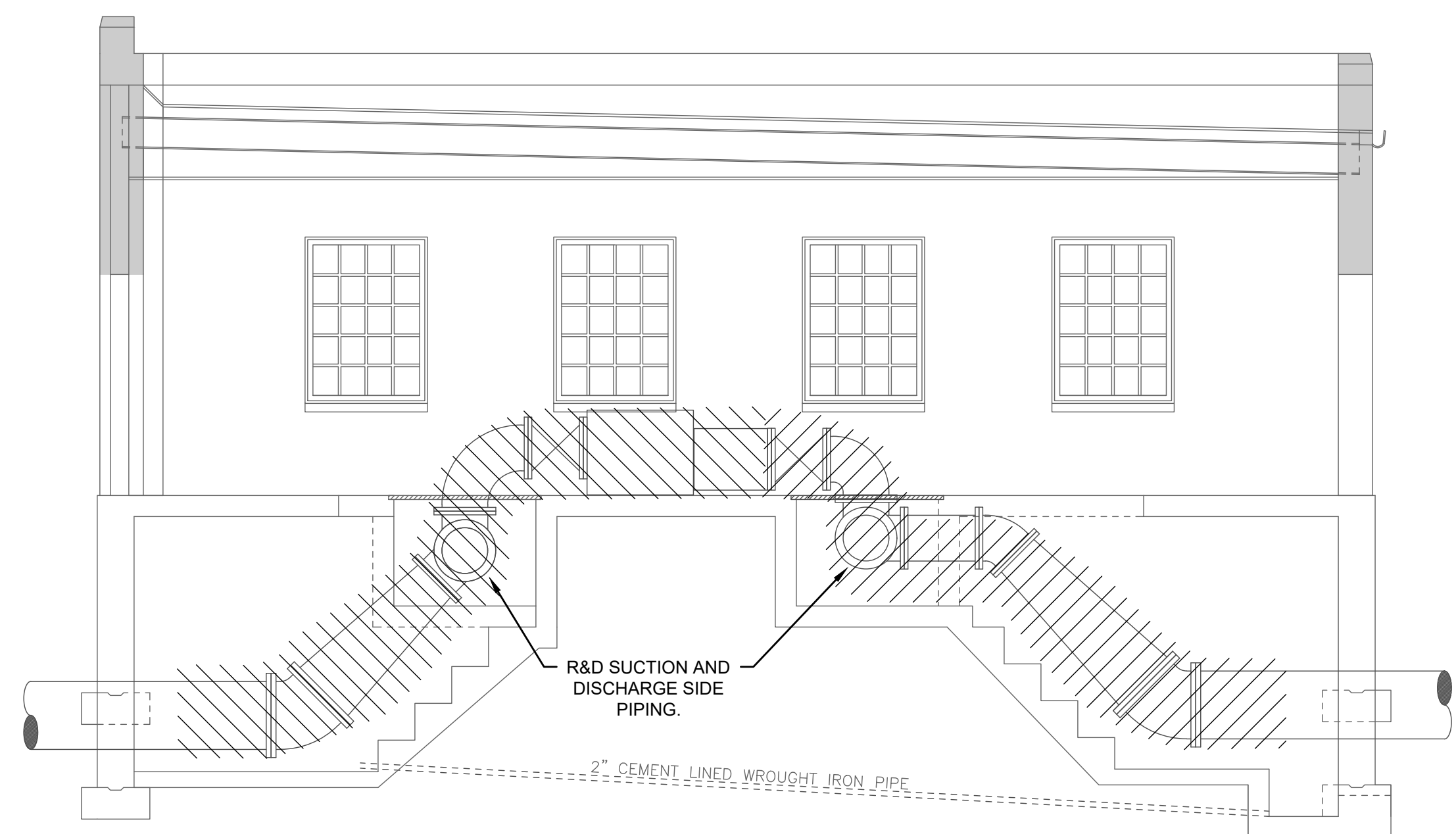
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION



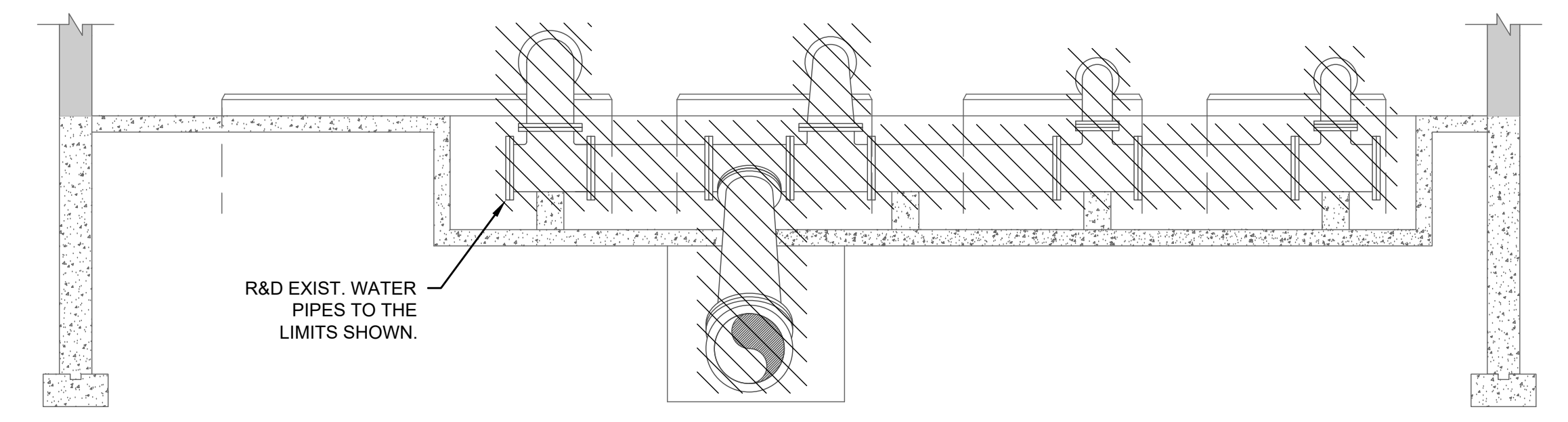
FLOOR PLAN - DEMOLITION
SCALE: 1/4" = 1'



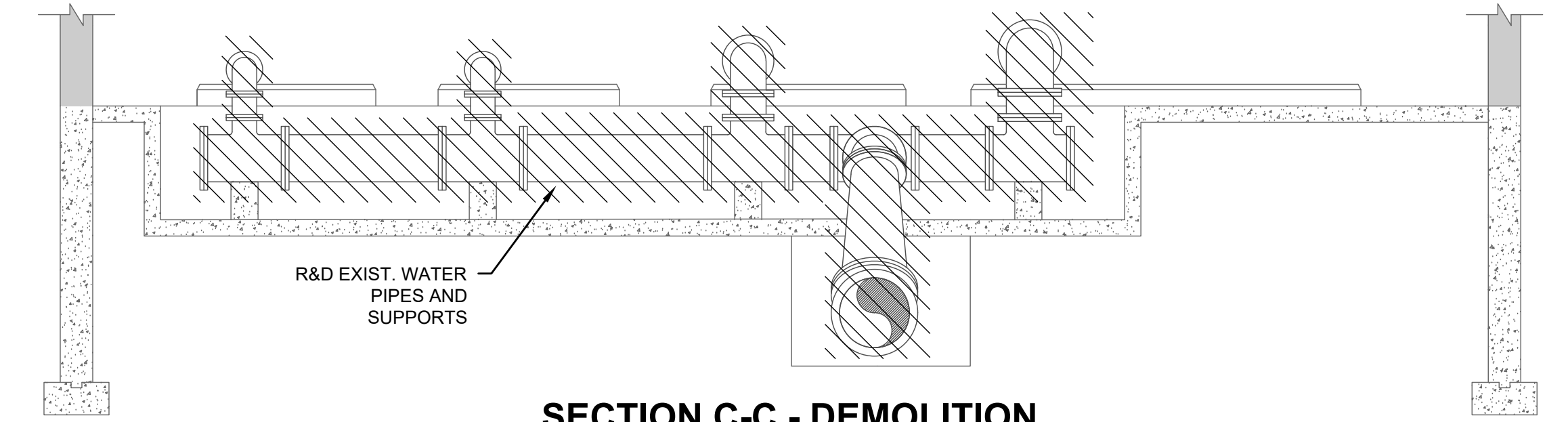
MECHANICAL PIPING PLAN - DEMOLITION
SCALE: 1/4" = 1'



SECTION A-A - DEMOLITION
SCALE: 1/4" = 1'



SECTION B-B - DEMOLITION
SCALE: 1/4" = 1'



SECTION C-C - DEMOLITION
SCALE: 1/4" = 1'

1/30/2020 3:34 PM J:\6481 - EDGELL ROAD WATER PUMP STATION\AUTOCAD\PLAN SET\EXISTING MECHANICAL PLANS & SECTIONS.DWG (BETA STB.BW.STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
PAN

DESIGNED BY:
AJG

CHECKED BY:
AJG

REGISTERED PROFESSIONAL

JOSEPH J. D'ALESSIO
SANITARY
No. 33111
REGISTERED PROFESSIONAL ENGINEER

PREPARED BY

BETA

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SUBCONSULTANT

SCALE

AS SHOWN

TITLE

Edgell Road Water Pumping Station Replacement

Proposed Demolition Plans & Sections

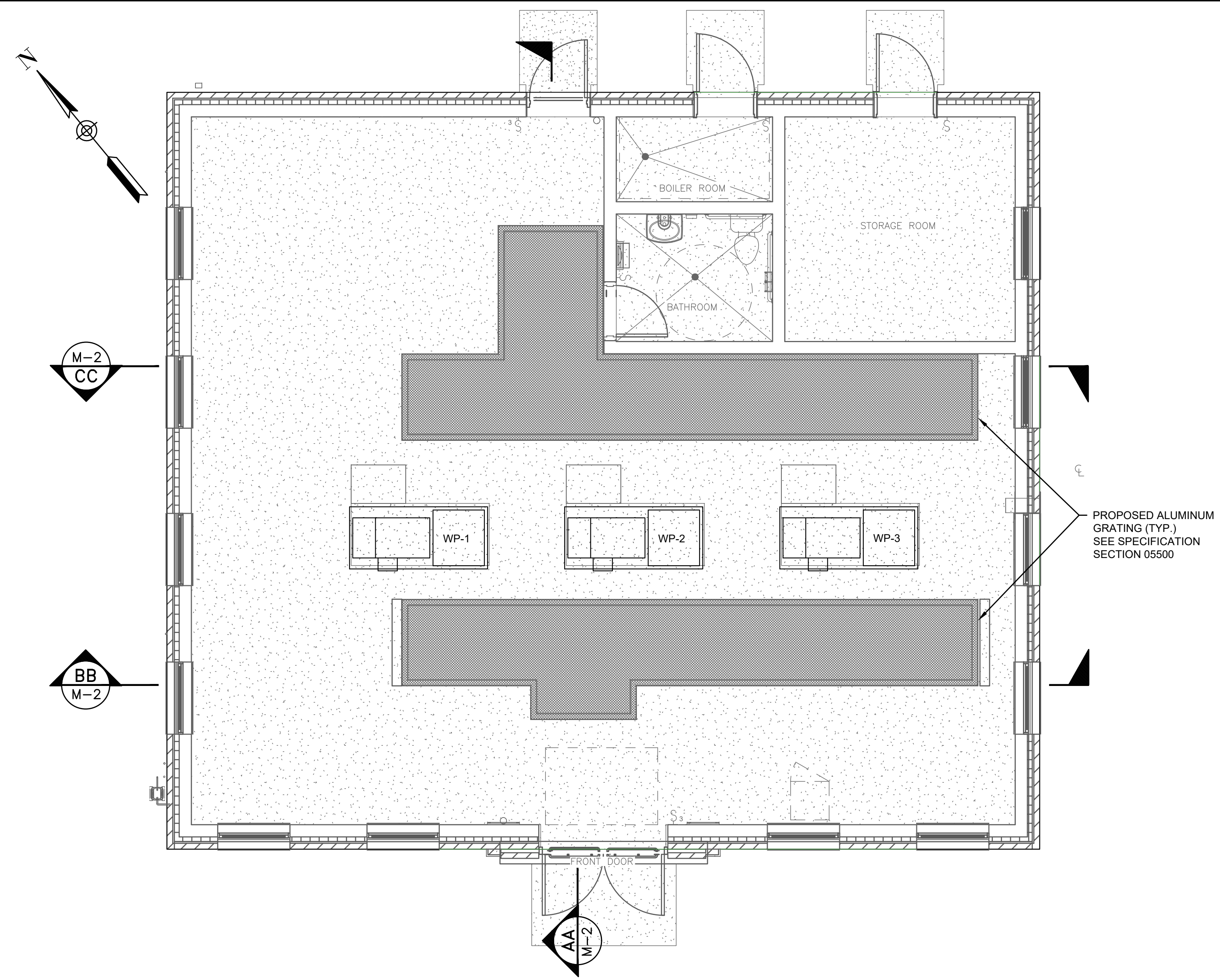
BETA JOB NO. 6481

ISSUE DATE January 2020

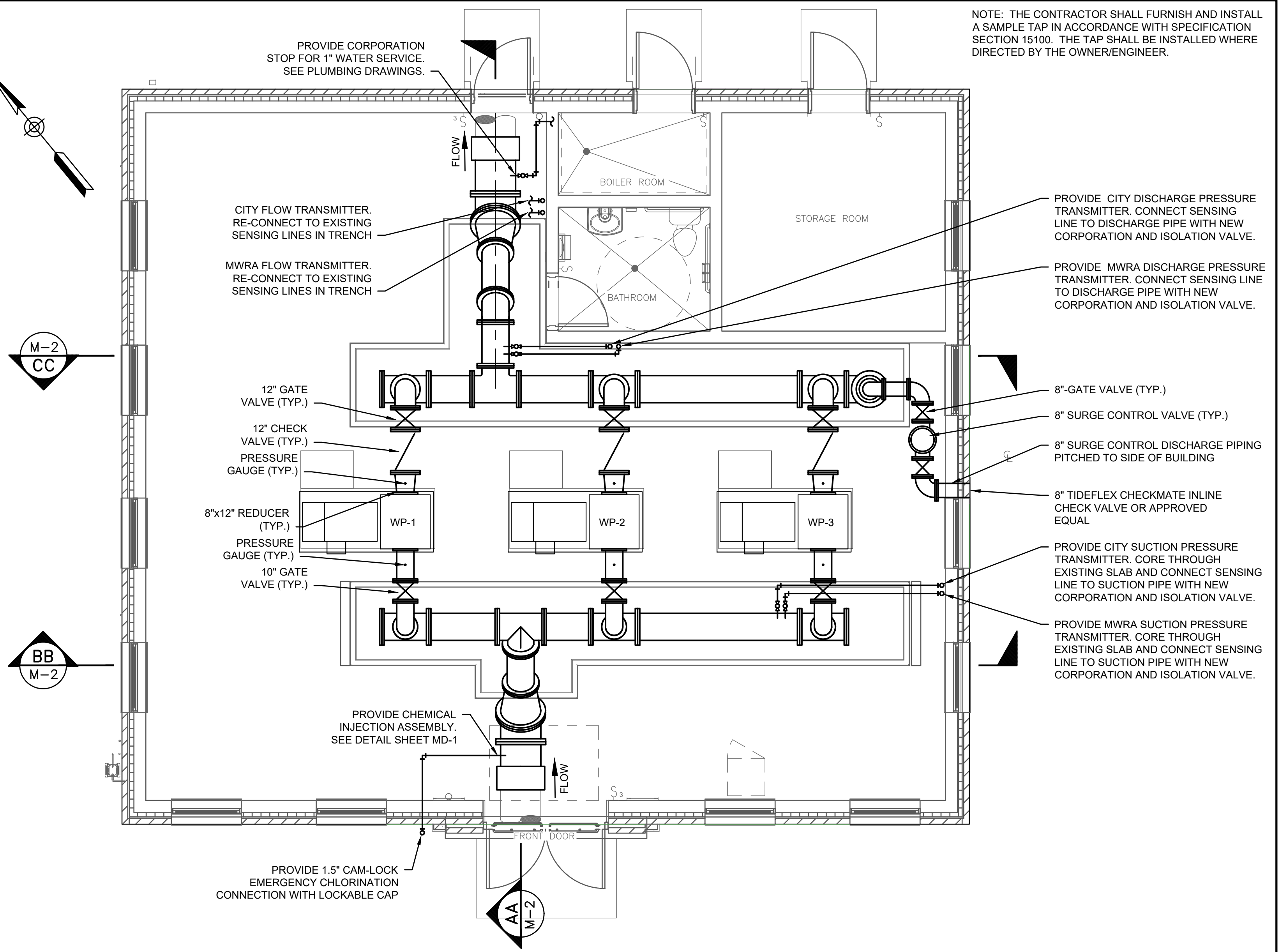
SHEET NO. M-1

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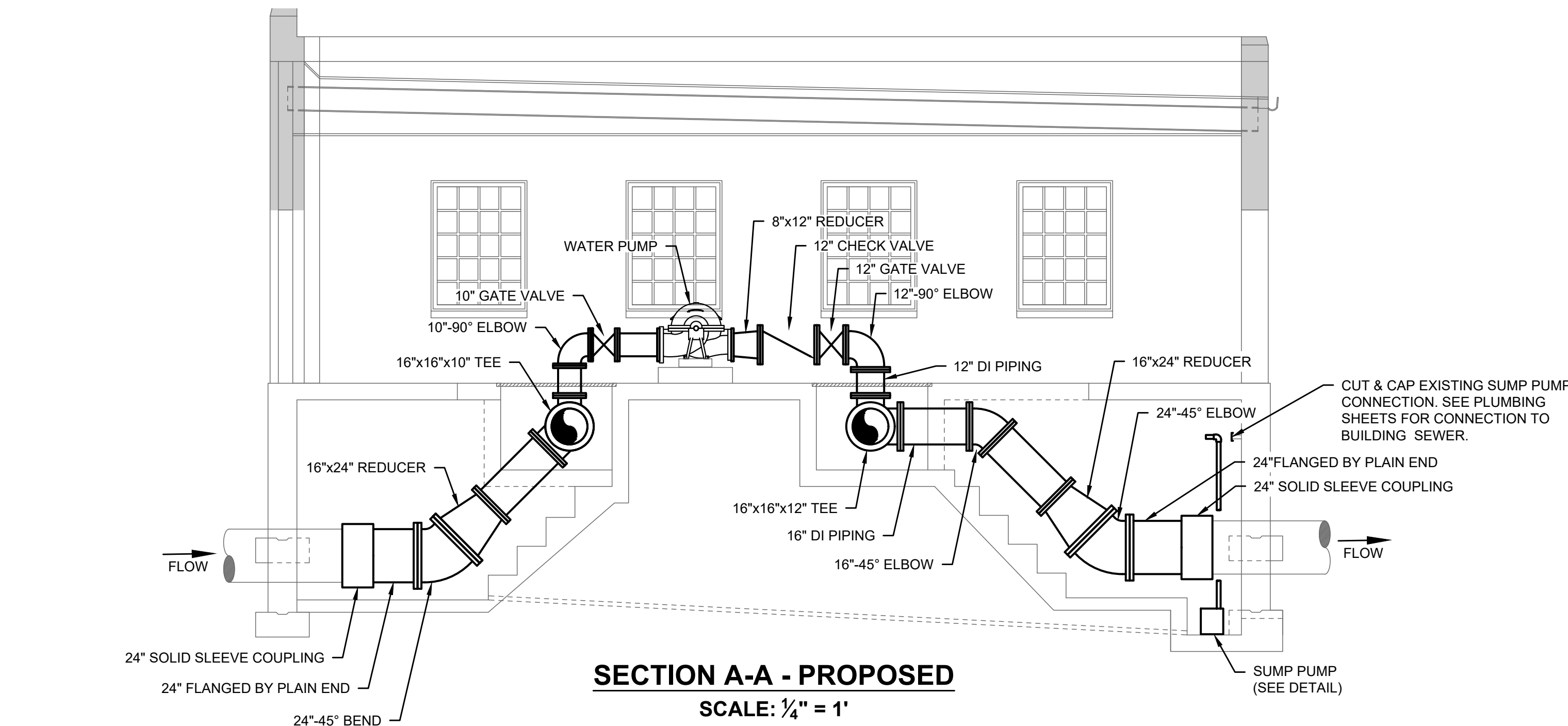
NOTE: THE CONTRACTOR SHALL FURNISH AND INSTALL A SAMPLE TAP IN ACCORDANCE WITH SPECIFICATION SECTION 15100. THE TAP SHALL BE INSTALLED WHERE DIRECTED BY THE OWNER/ENGINEER.



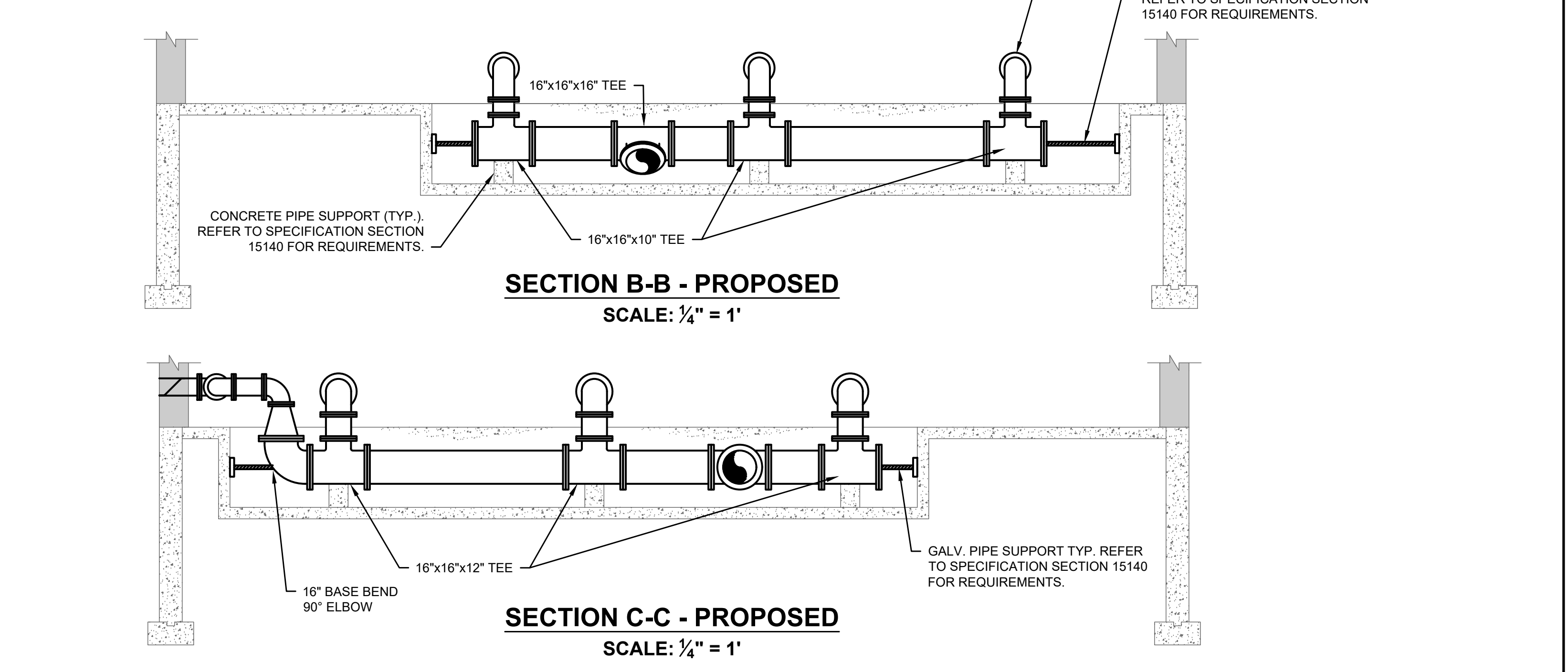
FLOOR PLAN - PROPOSED
SCALE: 1/4" = 1'



MECHANICAL PIPING PLAN - PROPOSED
SCALE: 1/4" = 1'



SECTION A-A - PROPOSED
SCALE: 1/4" = 1'



SECTION B-B - PROPOSED
SCALE: 1/4" = 1'

SECTION C-C - PROPOSED
SCALE: 1/4" = 1'

1/30/2020 3:34 PM J:\6481 - EDGELL ROAD WATER PUMP STATION\AUTOCAD\PLAN SET\PROPOSED MECHANICAL PLANS & SECTIONS.DWG (BETA STB BW.STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

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PAN
DESIGNED BY:
AJG
CHECKED BY:
AJG

REGISTERED PROFESSIONAL PREPARED BY


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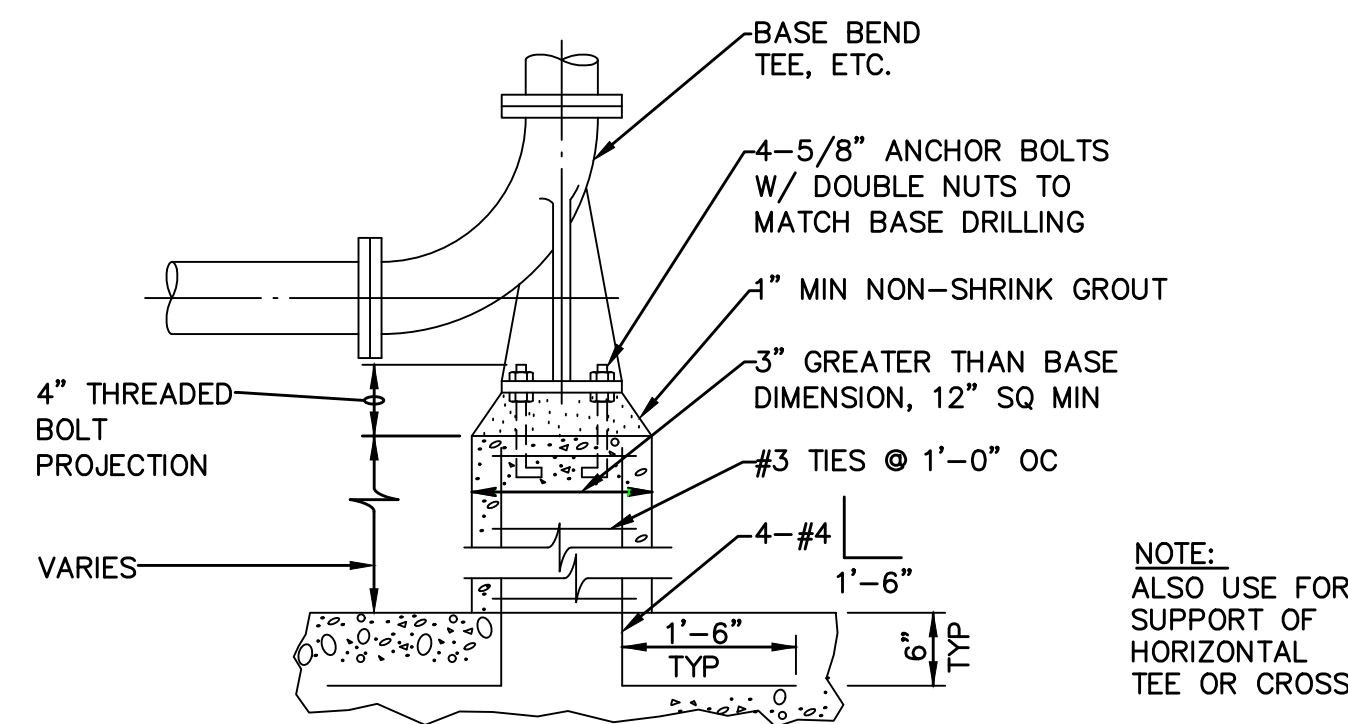
SUBCONSULTANT

SCALE
AS SHOWN

TITLE
Edgell Road Water Pumping Station Replacement
 Proposed Mechanical Plans & Sections

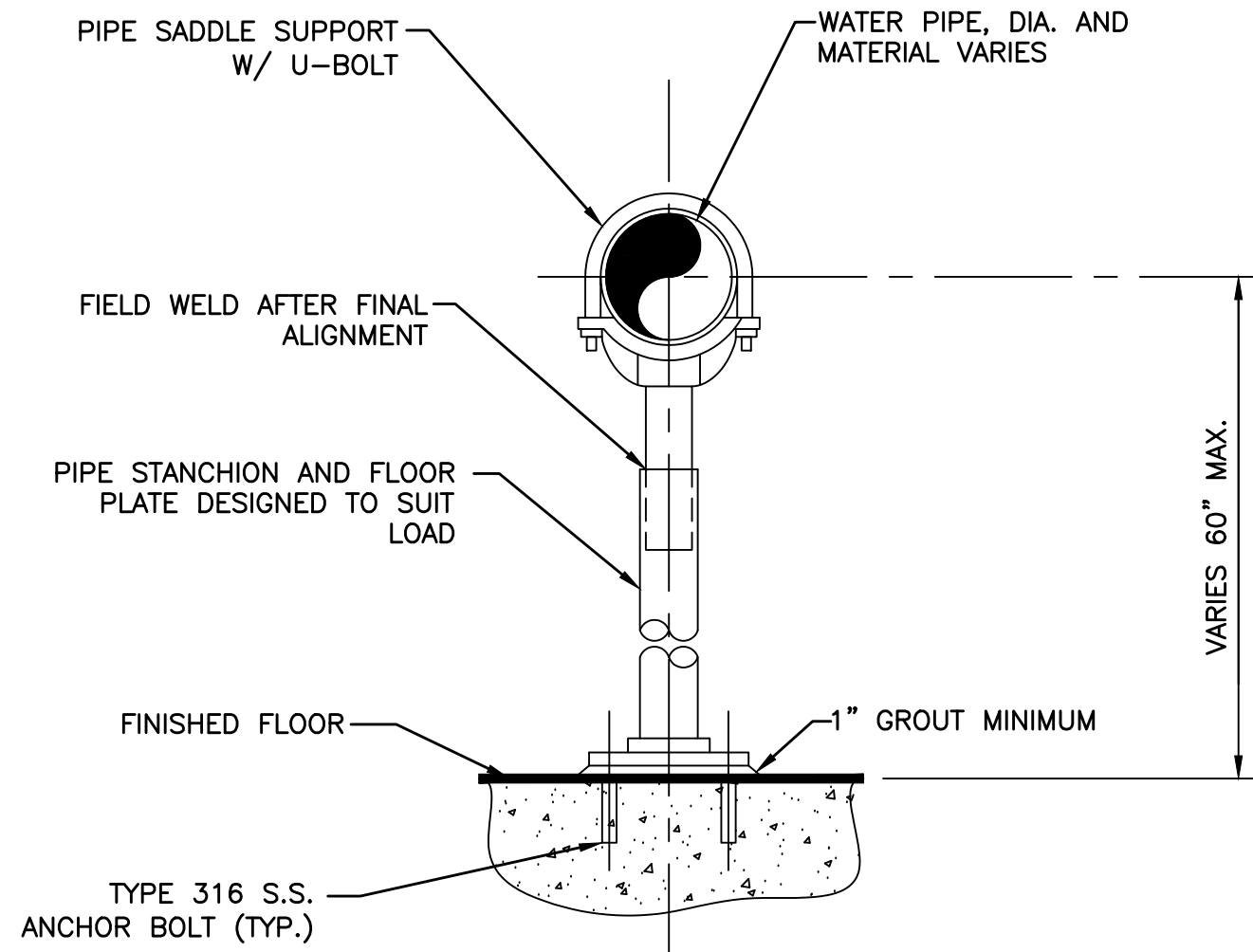
BETA JOB NO. 6481
 ISSUE DATE January 2020
 SHEET NO. M-2

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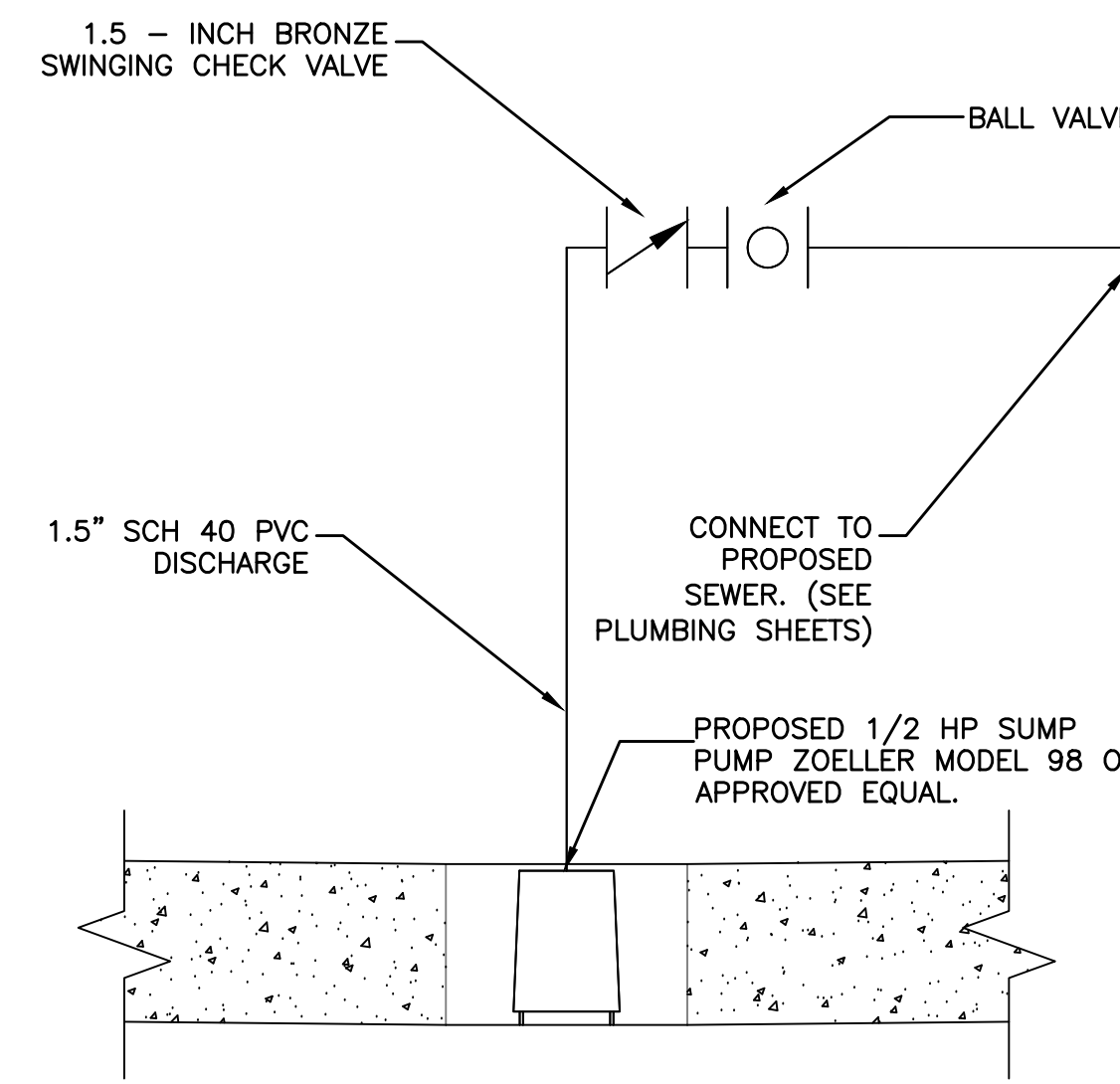
BASE BEND
SCALE: NONE

NOTE:
ALSO USE FOR
SUPPORT OF
HORIZONTAL
TEE OR CROSS

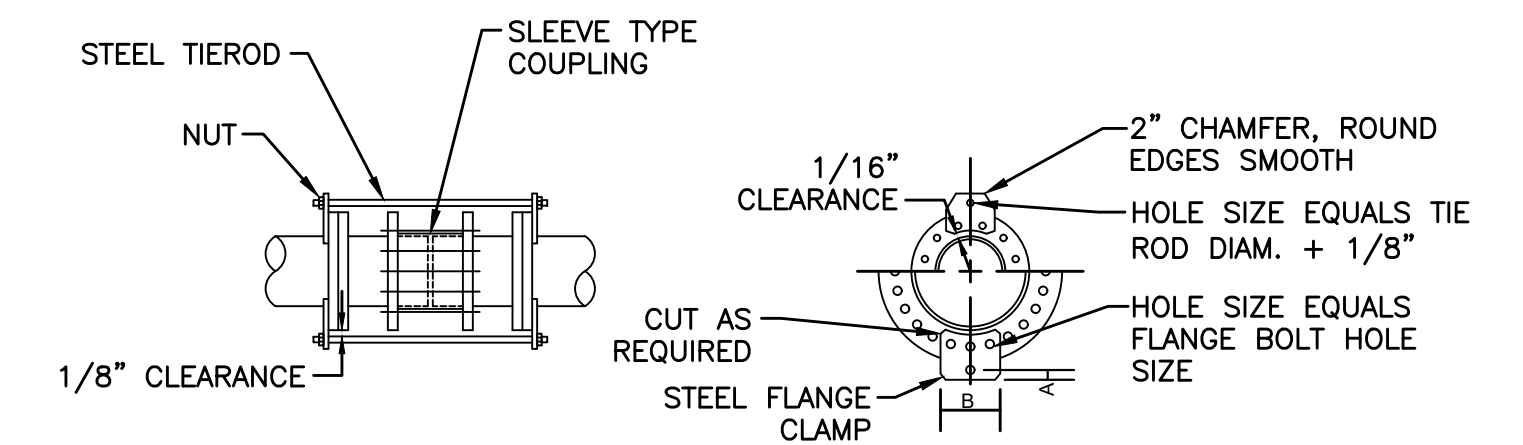


FLOOR PIPE SUPPORT
SCALE: NONE

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



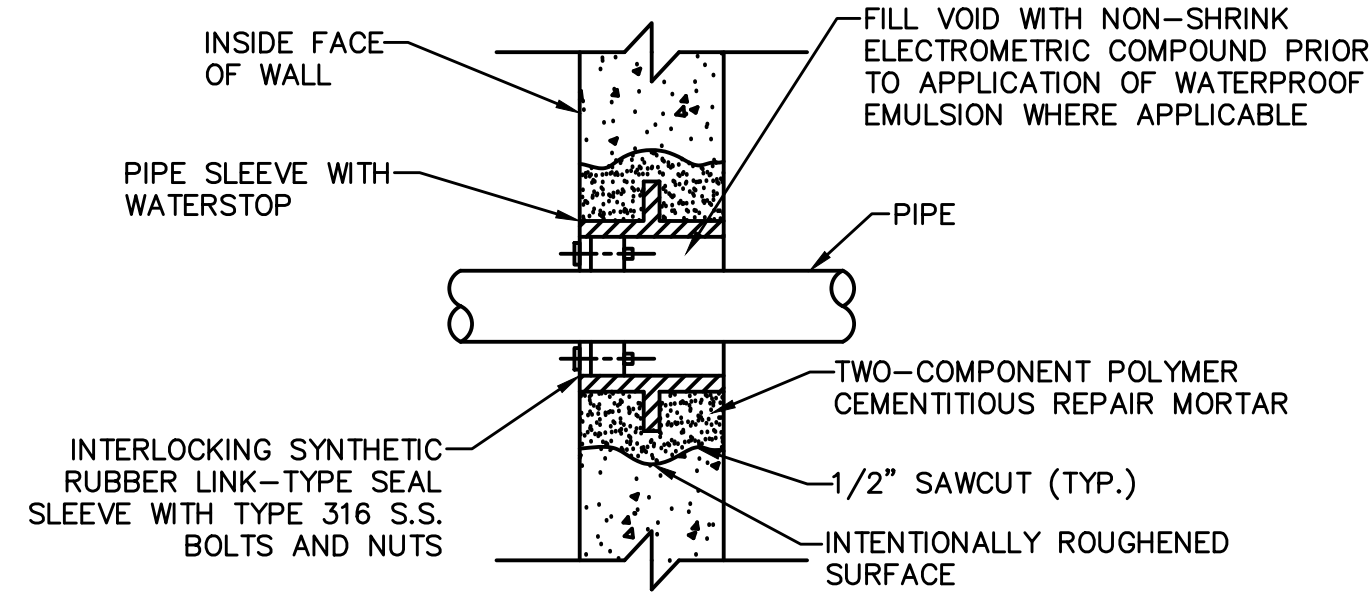
SUMP PUMP SECTION
SCALE: NONE



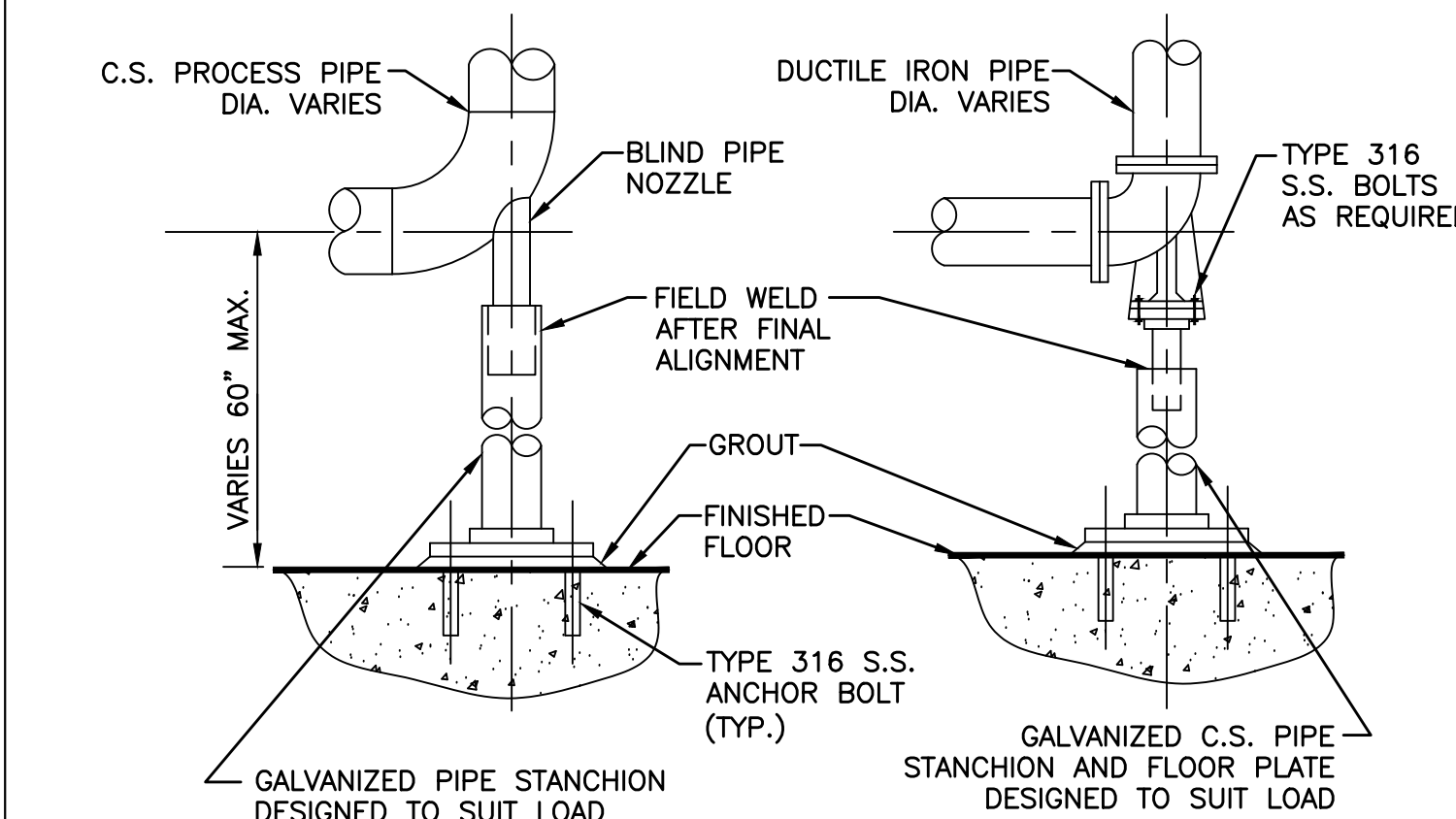
NOTE: TIERODS SHALL BE EQUALLY SPACED AROUND PIPE.

PIPE SIZE	TIERODS		FLANGE CLAMP			
	NO.	DIA.	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"	2	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"

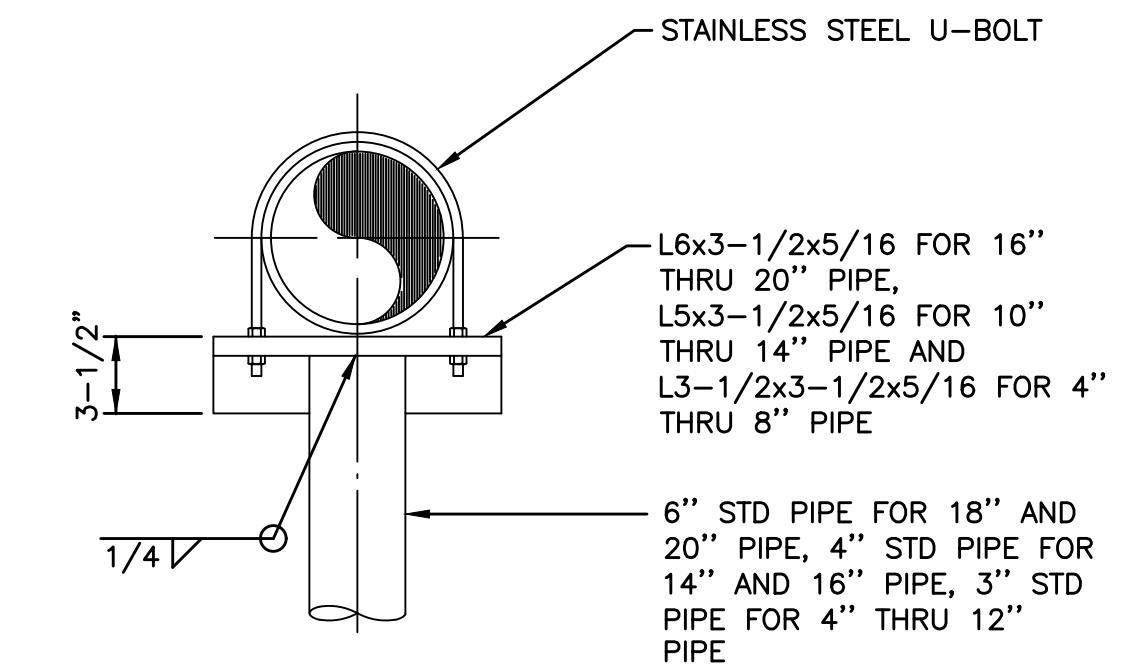
SLEEVE COUPLING RESTRAINT (150 PSI FLANGED CLAMP ASSEMBLY)
SCALE: NONE



TYPICAL WALL SLEEVE - EXISTING WALL
SCALE: NONE

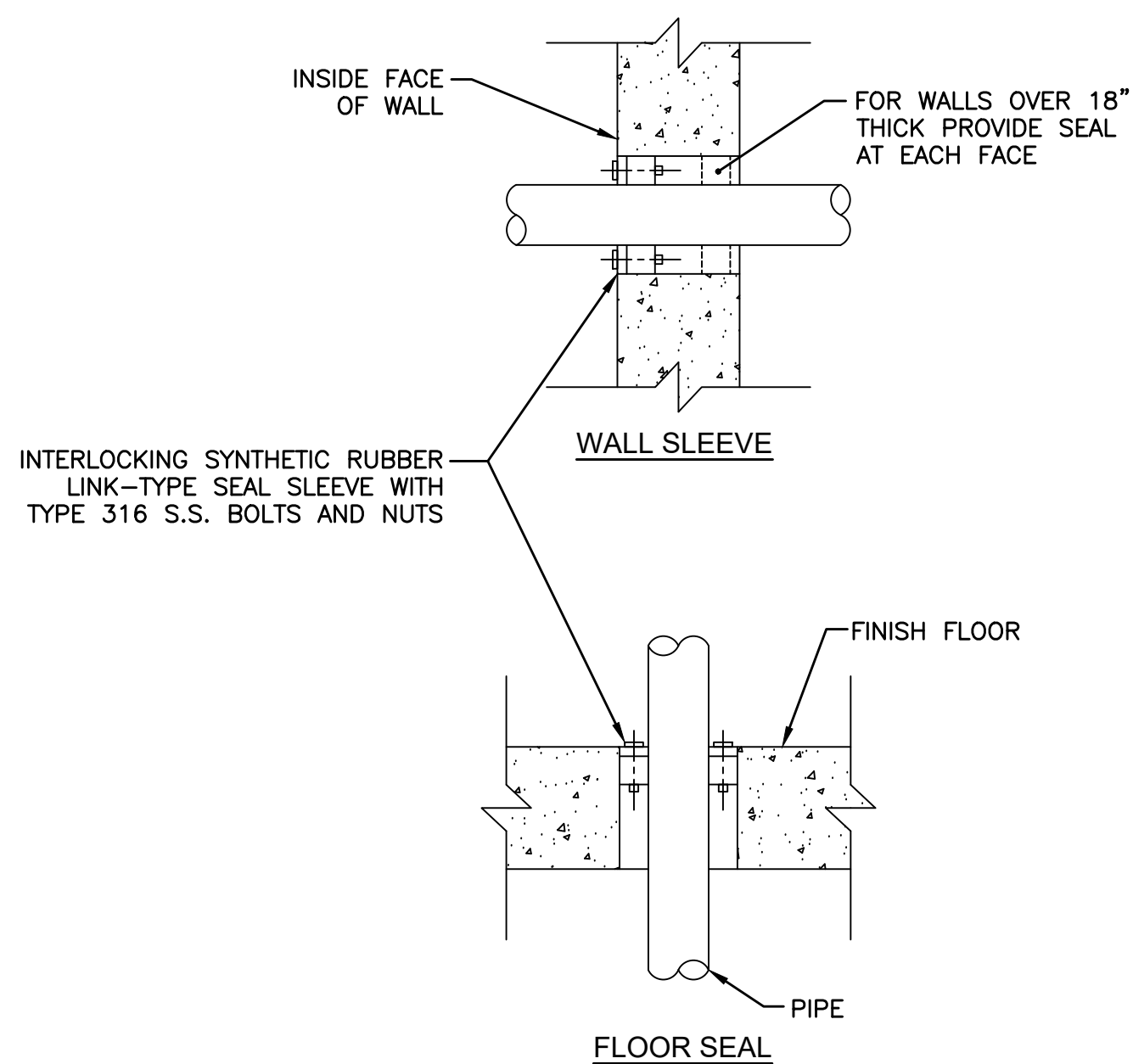


FLOOR PIPE SADDLE
SCALE: NONE

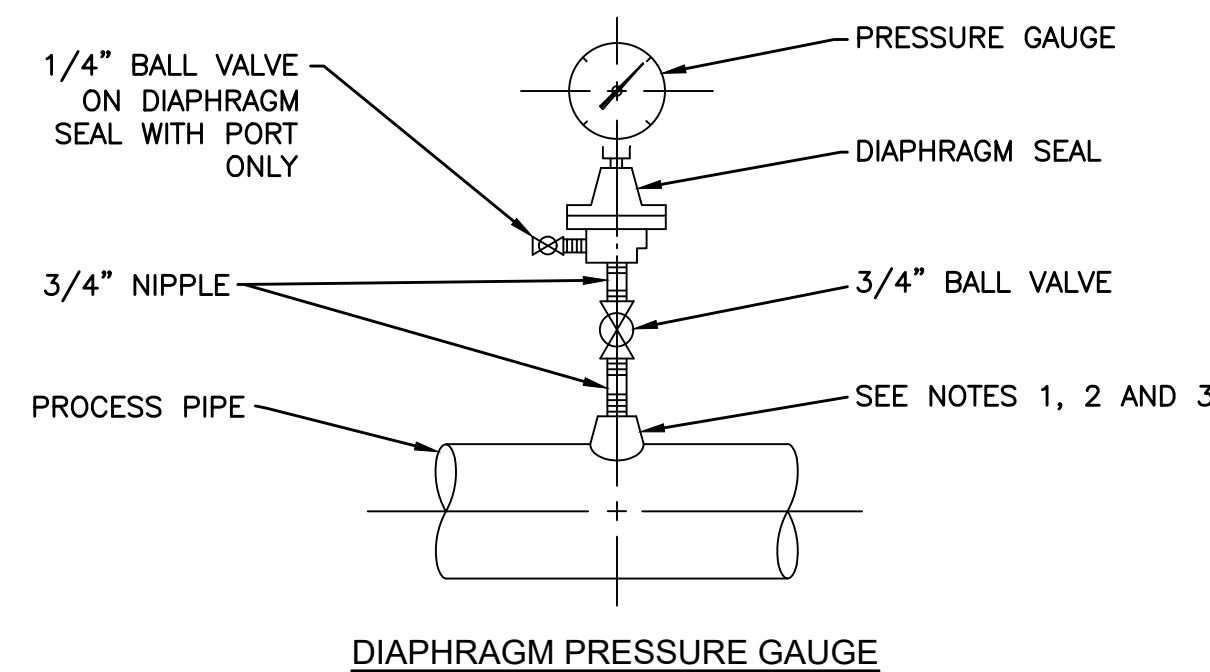


NOTE:
USE STANDARD AWWA RING FLANGE FOR BASE.

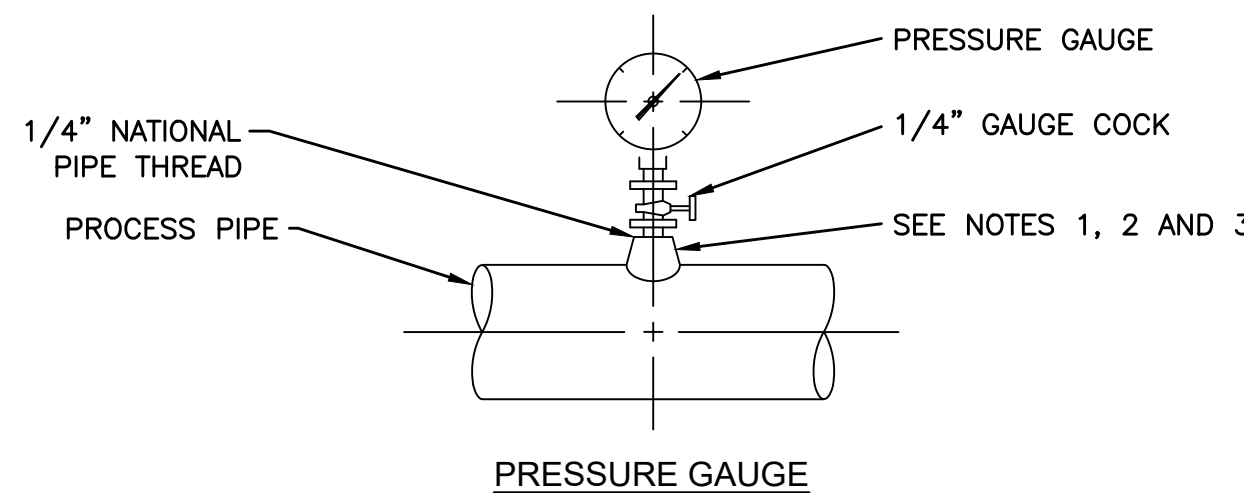
PIPE SUPPORT
SCALE: NONE



PENETRATION FOR CORED HOLES IN EXISTING WALLS AND FLOORS
SCALE: NONE



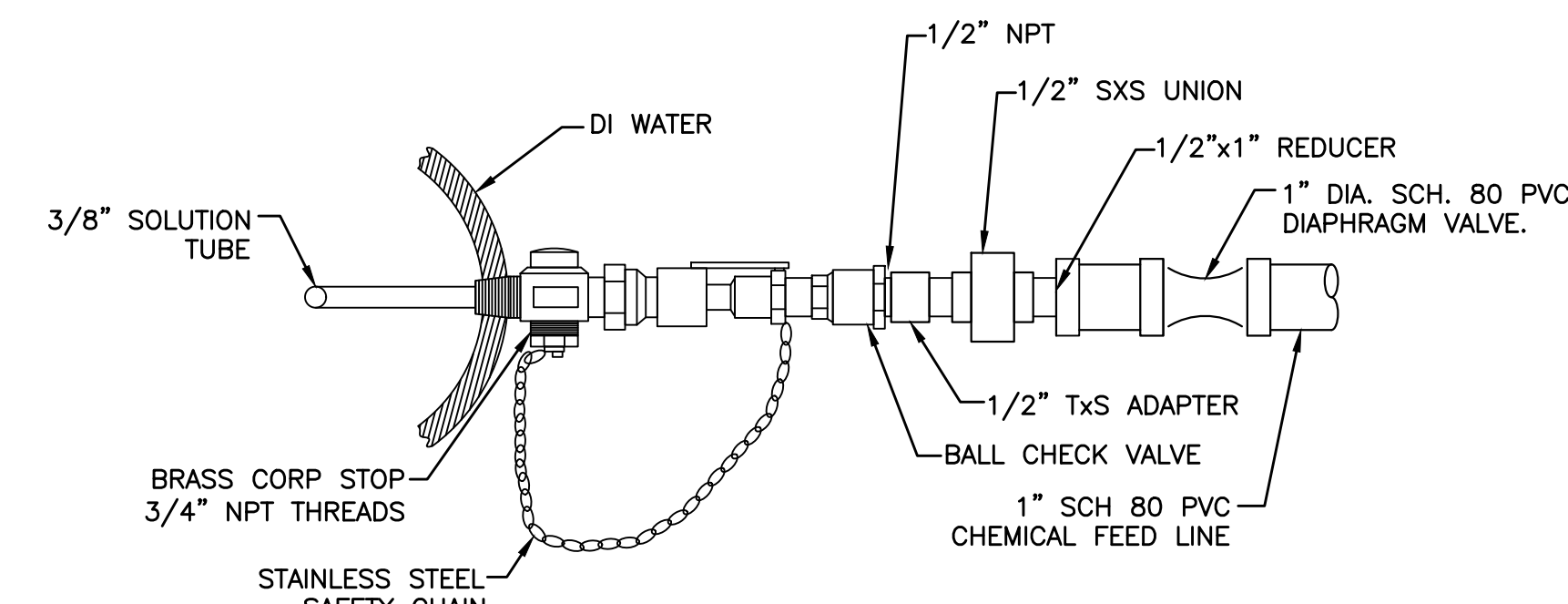
DIAPHRAGM PRESSURE GAUGE



PRESSURE GAUGE

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

PRESSURE GAUGE MOUNTING DETAILS
SCALE: NONE



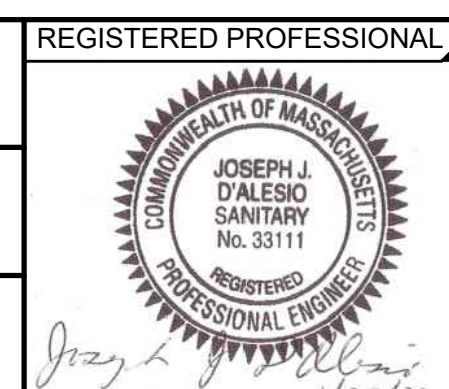
CHEMICAL INJECTION ASSEMBLY DETAIL
SCALE: NONE

- NOTES:
1. PROVIDE CHEMICAL INJECTION ASSEMBLIES FOR POINTS OF CHEMICAL INTRODUCTION INTO PROCESS PIPELINES AS INDICATED ON THE DRAWINGS. ASSEMBLIES SHALL BE SAF-T-FLOW CHEMICAL INJECTION ASSEMBLIES BY RYAN HERCO PRODUCTS CORPORATION OR EQUAL.
 2. ASSEMBLIES SHALL CONSIST OF 3/4-INCH BRASS CORPORACTIONS WITH WETTED PARTS OF PVC, HASTELLOY C AND VITON, AND SUITABLE FOR THE CHEMICAL SERVICE INTENDED. CHECK VALVE BALLS AND SEATS SHALL BE TEFLON. CONNECTIONS TO CHEMICAL FEED TUBING SHALL BE 1/2-INCH NPT.
 3. ASSEMBLIES SHALL HAVE STAINLESS STEEL SAFETY CHAINS TO ALLOW THE CLOSING OF THE CORPORATION STOP WITHOUT WITHDRAWING THE SOLUTION TUBE BEYOND THE CORPORATION PACKING.
 4. ASSEMBLIES SHALL BE RATED FOR 150 PSIG WORKING PRESSURE.

1/30/2020 3:34 PM J:\6481 - EDGELL ROAD WATER PUMP STATION\AUTOCAD\PLAN SET\MECHANICAL DETAILS.DWG (BETA STB BW.STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

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



REGISTERED PROFESSIONAL PREPARED BY
SUBCONSULTANT

SCALE
AS SHOWN

TITLE
Edgell Road Water Pumping Station Replacement
Mechanical Details-1

BETA JOB NO. 6481
ISSUE DATE January 2020
SHEET NO. MD-1

1/24/2020 10:06 AM W:\YEAR - 2018\18004-00 - FRAMINGHAM EDGEHILL WATER PUMPING STATION\ELECTRICAL\DEPARTMENT\18004-00.ELEC.DWG (BETA STB BW STB)

ELECTRICAL SYMBOLS	
	LINEAR FLUORESCENT LIGHTING FIXTURES "F1" INDICATES FIXTURE TYPE - TYPICAL FOR ALL FIXTURES "1" INDICATES CIRCUIT NUMBER - TYPICAL FOR ALL FIXTURES "o" 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 "o" 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 "o" INDICATES THE SWITCH CONTROL
	DUPLEX RECEPTACLE, WEATHER-RESISTANT 120V, 20A WITH WEATHERPROOF COVER "1" INDICATES CIRCUIT NUMBER - TYPICAL FOR ALL RECEPTACLES
	DUPLEX RECEPTACLE 120V, 20A
	(2) DUPLEX (QUAD) RECEPTACLE 120V, 20A
	WALL MOUNTED DATA OUTLET, 2D INDICATES (2) CAT6 TERMINAL DATA CONNECTORS, 1T INDICATES (1) CAT6 TERMINAL TELEPHONE CONNECTOR
	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
	HAND HOLE
	CONTROL RELAY, "CR1" REFERS TO RELAY NAME DESIGNATION
	TIMING RELAY, "TR1" REFERS TO RELAY NAME DESIGNATION
	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

ELECTRICAL SYMBOLS	
	UNDERGROUND CONDUIT DUCT BANK
	HOMERUN DESIGNATION TO PANEL PP1 CIRCUIT #1, WITH THE FOLLOWING CONDUIT/WIRES UNLESS OTHERWISE NOTED: <ul style="list-style-type: none"> 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
	SURGE PROTECTION DEVICE
	UTILITY POLE
	MOLDED CASE CIRCUIT BREAKER, 3-POLE UNLESS OTHERWISE INDICATED, "20" INDICATES TRIP AMPERE 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
	EMERGENCY STOP OR HAND SWITCH, "XXXX" REFERS TO TAGNAME ID
	OPERATOR STATION, "XXXX" REFERS TO TAGNAME ID
	UNLESS OTHERWISE NOTED INSTRUMENTATION OR PROCESS EQUIPMENT "XX-XXXX" REFERS TO TAGNAME ID
	GENERATOR EMERGENCY STOP
	THERMOSTAT
	HVAC RTU REMOTE USER INTERFACE
	MOTOR OPERATED DAMPER

SECURITY ALARM SYMBOLS	
	HEAT DETECTOR
	DOOR SWITCH
	MOTION DETECTOR
	SECURITY SYSTEM ALARM KEY PAD
	HELP CALL PUSHBUTTON - MOUNTED 18" AFF
	CCTV CAMERA
	SECURITY ALARM CONTROL PANEL
	FUTURE CARD READER PROVIDE BACKBOX, COVER PLATES AND EMPTY 3/4" CONDUIT WITH PULL STRING FROM BACKBOX TO ACS LOCATION
	FUTURE ELECTRIC LOCK PROVIDE JUNCTION BOX ABOVE DOOR, COVER PLATES AND EMPTY 3/4" CONDUIT WITH PULL STRING FROM BACKBOX TO ACS LOCATION
	FUTURE CARD ACCESS CONTROL SYSTEM CONTROL PANEL LOCATION, PROVIDE JUNCTION BOX WITH COVER FOR TERMINATION OF 120V BRANCH CIRCUIT.

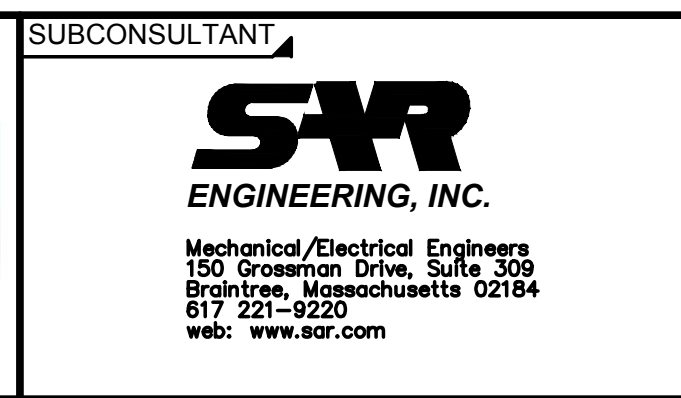
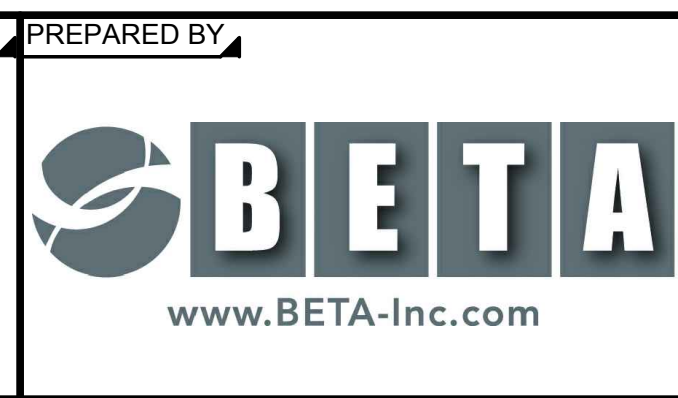
GENERAL NOTES	
1.	PROVIDE CONCRETE HOUSEKEEPING PADS ON ALL FLOOR OR GRADE MOUNTED ELECTRICAL EQUIPMENT, THE FOLLOWING EQUIPMENT IS THE MINIMUM REQUIREMENT FOR HOUSEKEEPING PADS. ADDITIONAL PADS MAYBE REQUIRED BASED ON THE MOUNTING METHODS. 1.1. MAIN DISTRIBUTION PANEL 1.2. GENERATOR 1.3. DRY TYPE TRANSFORMER 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.
5.	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 THE UTILITY COMPANY 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
FIR	FLOW INDICATOR CHART RECORDER
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
MCC	MOTOR CONTROL CENTER
MFR	MANUFACTURER
MH	MANHOLE
NTS	NOT TO SCALE
OH	OVERHEAD
OL	MOTOR OVERLOAD HEATER
PB	PUSHBUTTON CONTROL STATION MOMENTARY CONTACT TYPE, STOP START
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
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
TYF	TYPICAL
UG	UNDERGROUND
UIR	MULTI CHANNEL INDICATOR CHART RECORDER
VFD	VARIABLE FREQUENCY DRIVE
WP	WATER PROOF

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: RLB
DESIGNED BY: MJC
CHECKED BY: MJC



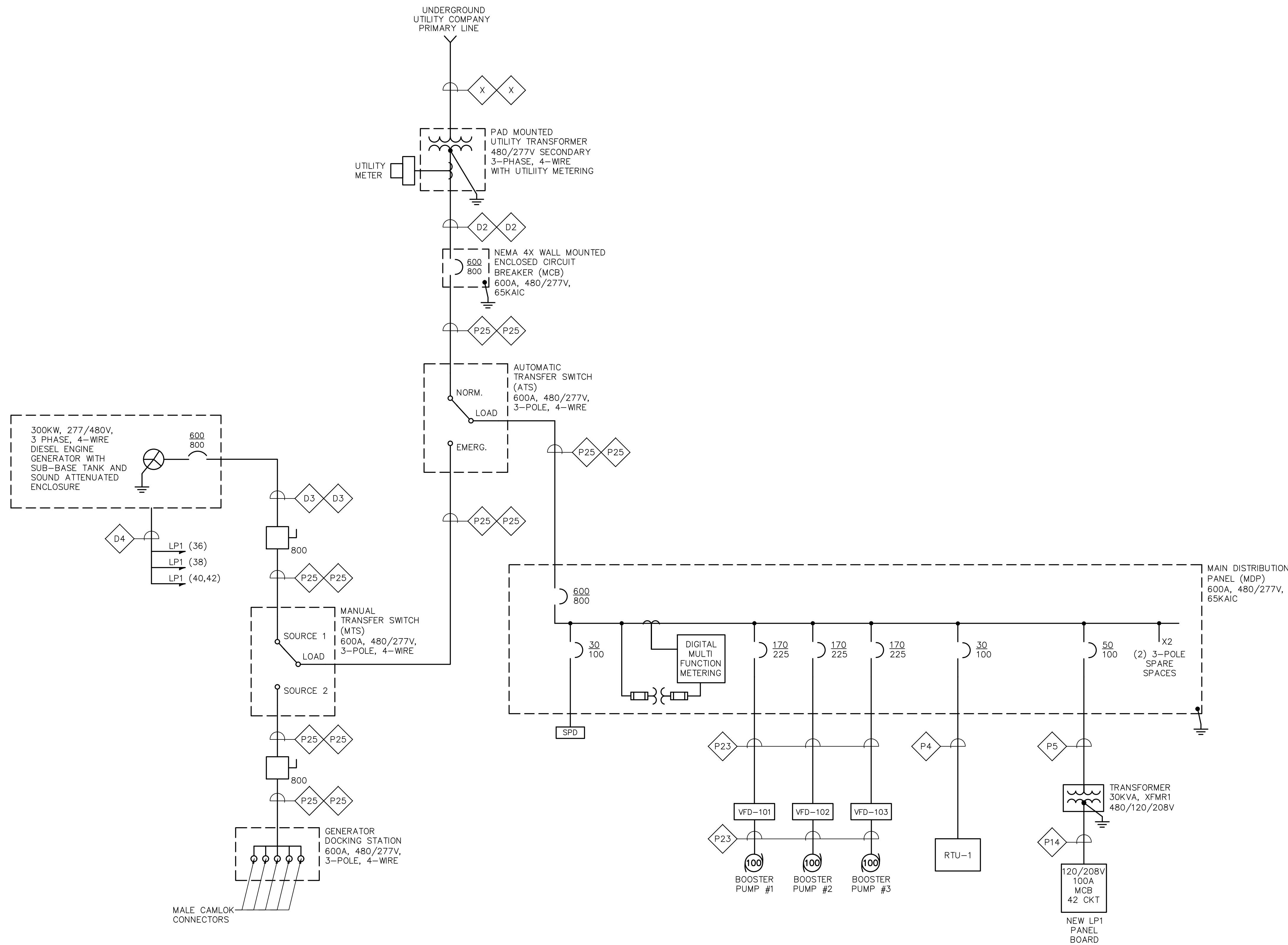
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Edgell Road Water Pumping Station Replacement ELECTRICAL LEGEND AND GENERAL NOTES	
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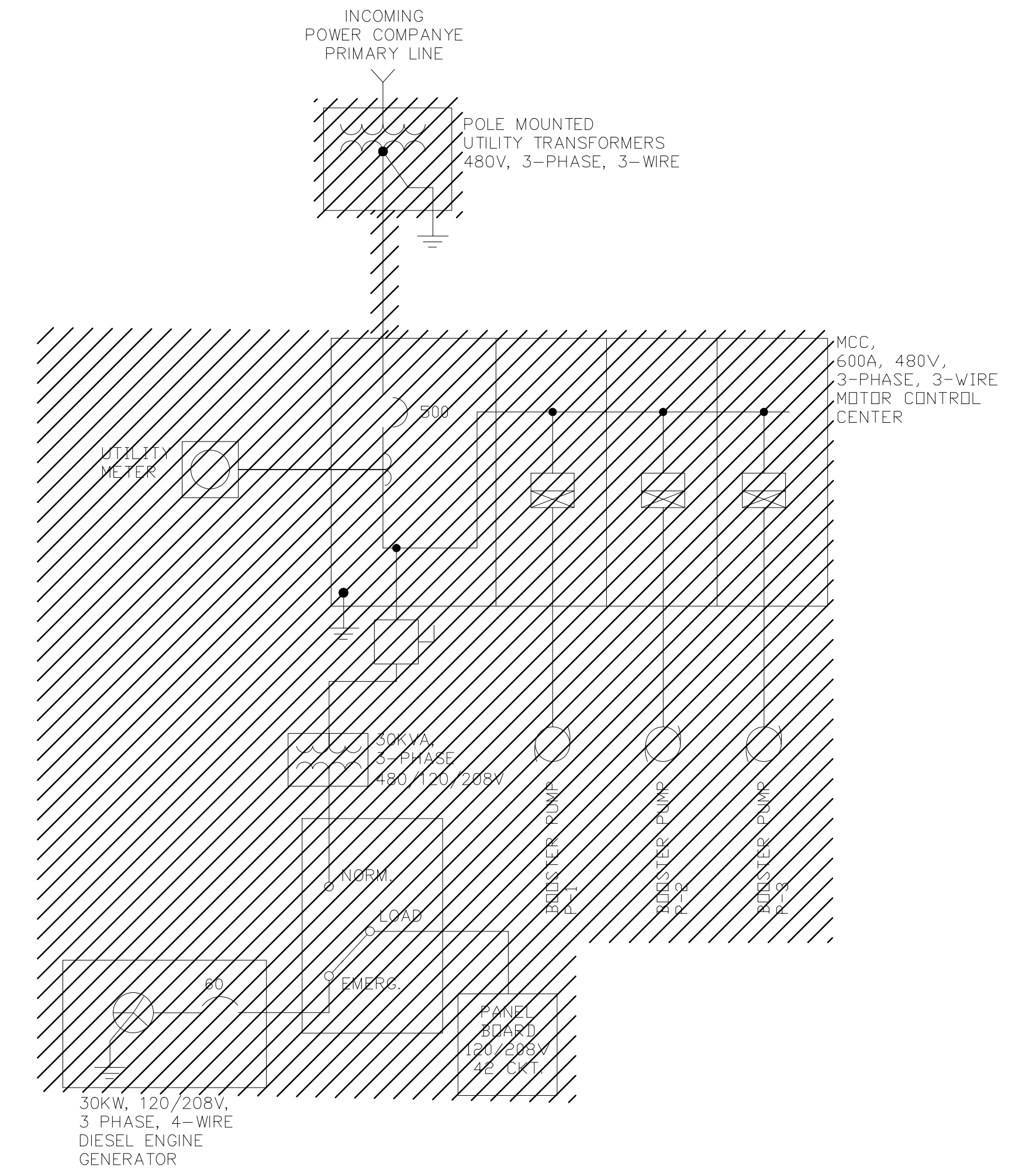
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ISSUE DATE	JANUARY 2020
SHEET NO.	E-1

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ONE LINE DIAGRAM
NOT TO SCALE



ONE LINE DIAGRAM -- DEMOLITION
NOT TO SCALE

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RLB
DESIGNED BY:
MJC
CHECKED BY:
MJC

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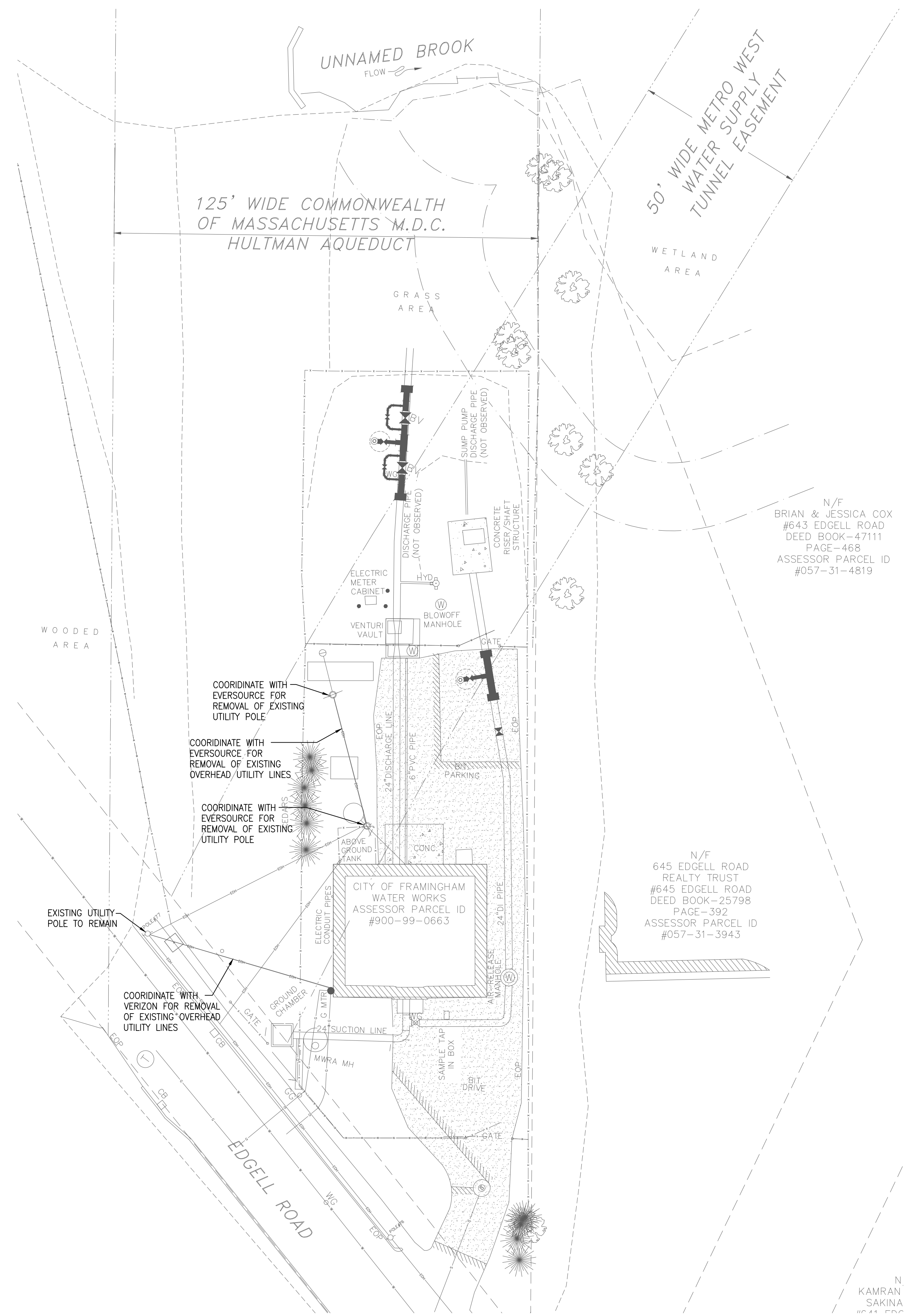
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ELECTRICAL
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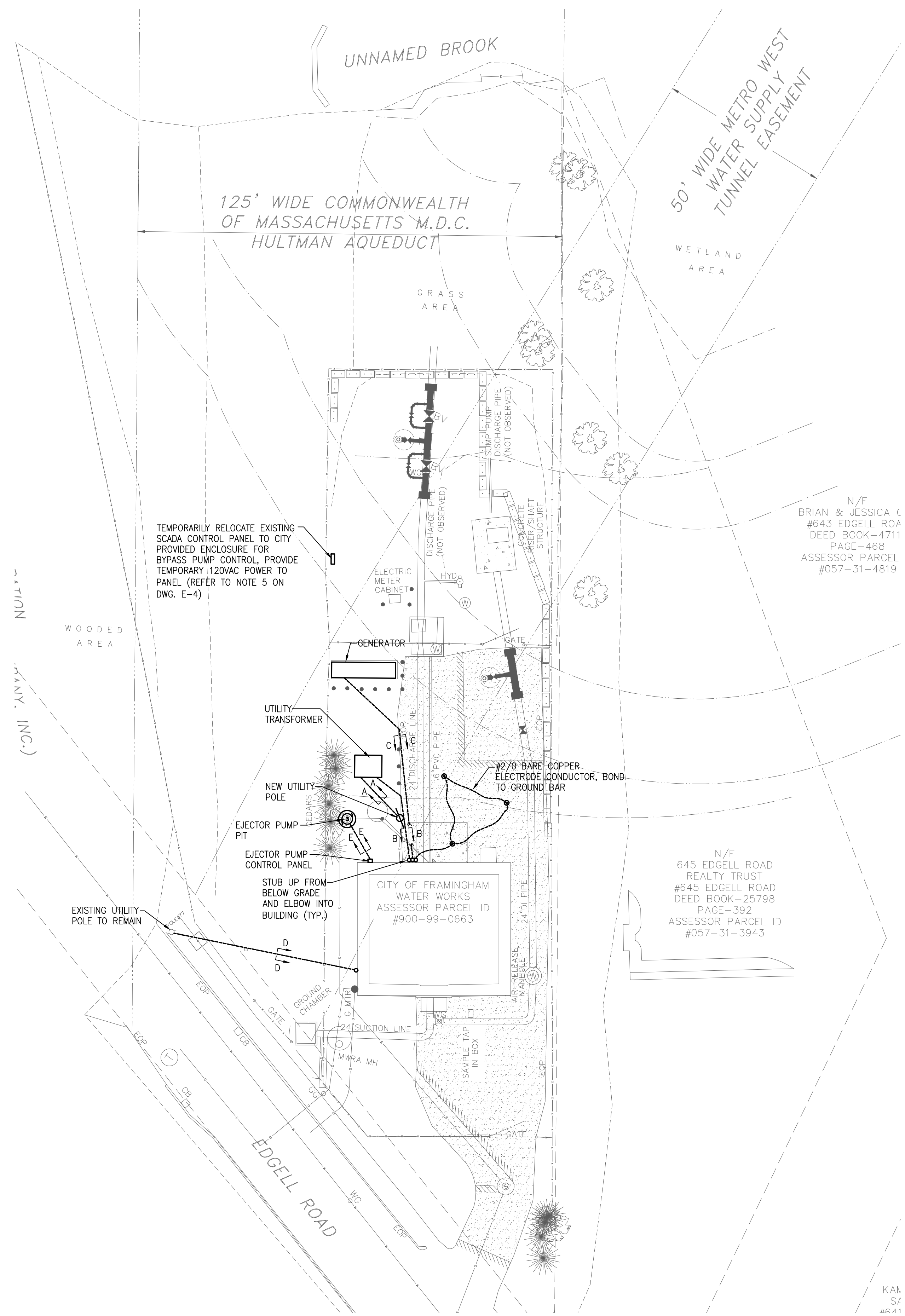
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EXISTING SITE PLAN
SCALE: 1" = 20'



PROPOSED SITE PLAN
SCALE: 1" = 20'

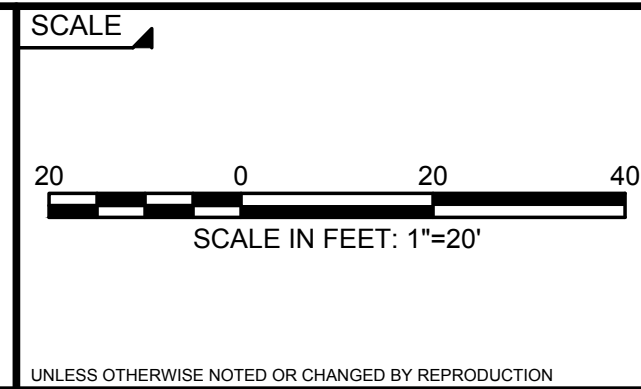
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REGISTERED PROFESSIONAL
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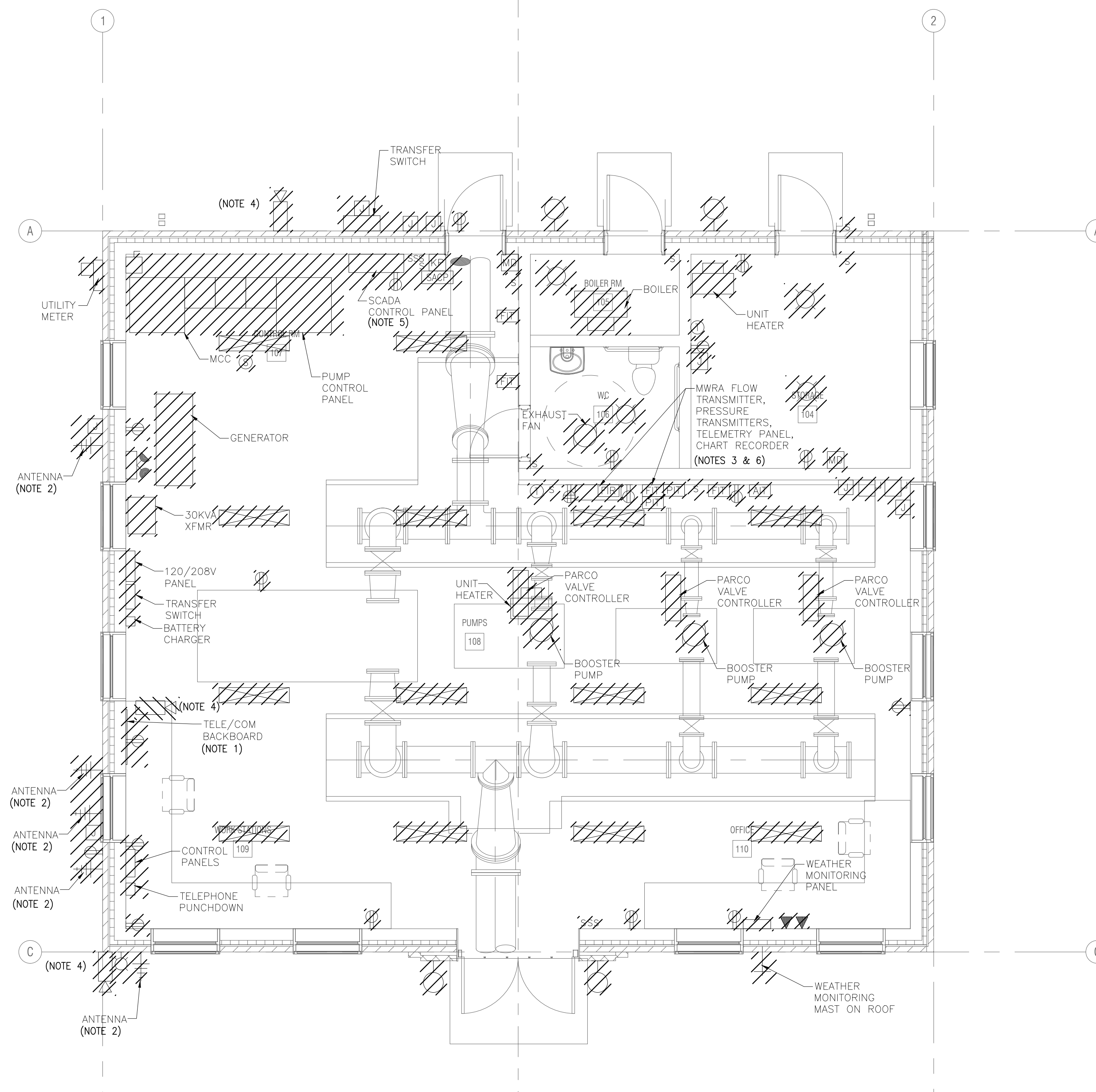
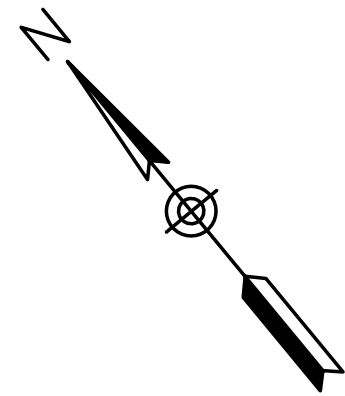
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TITLE
Edgell Road Water Pumping Station Replacement ELECTRICAL SITE PLAN

BETA JOB NO. 6481
ISSUE DATE JANUARY 2020
SHEET NO. E-3



DEMOLITION PLAN
SCALE: 1" = 4'

- NOTES:**
1. DISCONNECT AND REMOVE TELE/COM, RACK MOUNTED EQUIPMENT, AND EQUIPMENT RACK. EQUIPMENT SHALL BE RETURNED TO OWNER.
 2. DISCONNECT AND REMOVE ANTENNA EQUIPMENT AND EQUIPMENT RACK. PROPERLY STORE THE ANTENNAS ASSOCIATED WITH THE SCADA CONTROL PANEL AND THE MWRA TELEMTRY PANEL AND REINSTALL IN NEW PUMP STATION.
 3. DISCONNECT AND REMOVE MWRA FLOW TRANSMITTER, PRESSURE TRANSMITTERS, CHART RECORDER AND TELEMTRY PANEL. PROPERLY STORE AND REINSTALL IN NEW PUMP STATION.
 4. DISCONNECT AND REMOVE CCTV CAMERA. PROPERLY STORE AND REINSTALL IN NEW PUMP STATION.
 5. PRIOR TO DEMOLITION PHASE PROVIDE (12)#14 TEMPORARY WIRING FROM SCADA CONTROL PANEL TO BYPASS PUMP CONTROL PANEL, PROVIDE (1)#16TSP TEMPORARY WIRING FROM SCADA CONTROL PANEL TO TEMPORARY FLOW METER, WIRE TO BE IN FLEXIBLE CONDUIT. FOR DEMOLITION PHASE DISCONNECT AND RELOCATE SCADA CONTROL PANEL, SCADA ANTENNA, ANTENNA CABLE AND SPD TO THE VICINITY OF THE BYPASS PUMP CONTROL PANEL, RECONNECT TEMPORARY WIRING AND PROVIDE TEMPORARY 120VAC TO SCADA CONTROL PANEL. PROVIDE TEMPORARY WEATHER TIGHT SHELTER FOR MOUNTING OF THE CONTROL PANEL AND ANTENNA MOUNTING.
 6. FOR DEMOLITION PHASE DISCONNECT AND RELOCATE MWRA TELEMTRY CONTROL PANEL, ANTENNA, ANTENNA CABLE AND SPD TO THE VICINITY OF THE RELOCATED SCADA CONTROL PANEL, PROVIDE (1)#16TSP TEMPORARY WIRING FROM SCADA CONTROL PANEL TO MWRA TELEMTRY PANEL, TEMPORARY WIRE TO BE FLEXIBLE CONDUIT. PROVIDE TEMPORARY 120VAC TO SCADA CONTROL PANEL. PROVIDE TEMPORARY WEATHER TIGHT SHELTER FOR MOUNTING OF THE MWRA TELEMTRY PANEL AND ANTENNA MOUNTING.

1/24/2020 10:01 AM W:\YEAR - 2018\18004.00 - FRAMINGHAM EDGELL WATER PUMPING STATION\ELECTRICAL DEPARTMENT\18004.00.ELEC.DWG (BETA STB BW STB)

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RLB

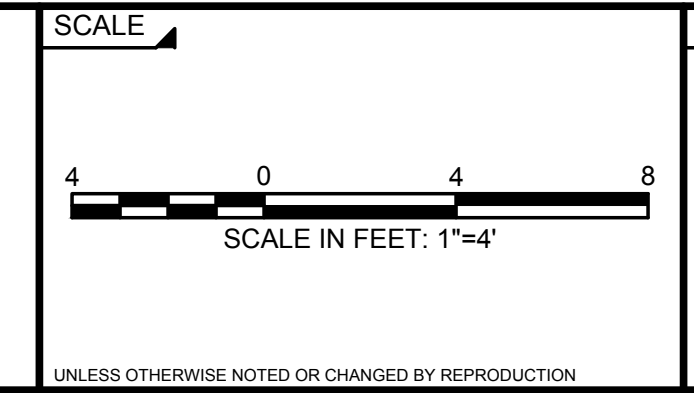
DESIGNED BY:
MJC

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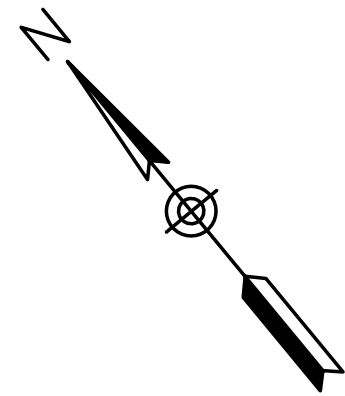
TITLE

Edgell Road Water Pumping Station Replacement
ELECTRICAL
DEMOLITION PLAN

BETA JOB NO. 6481

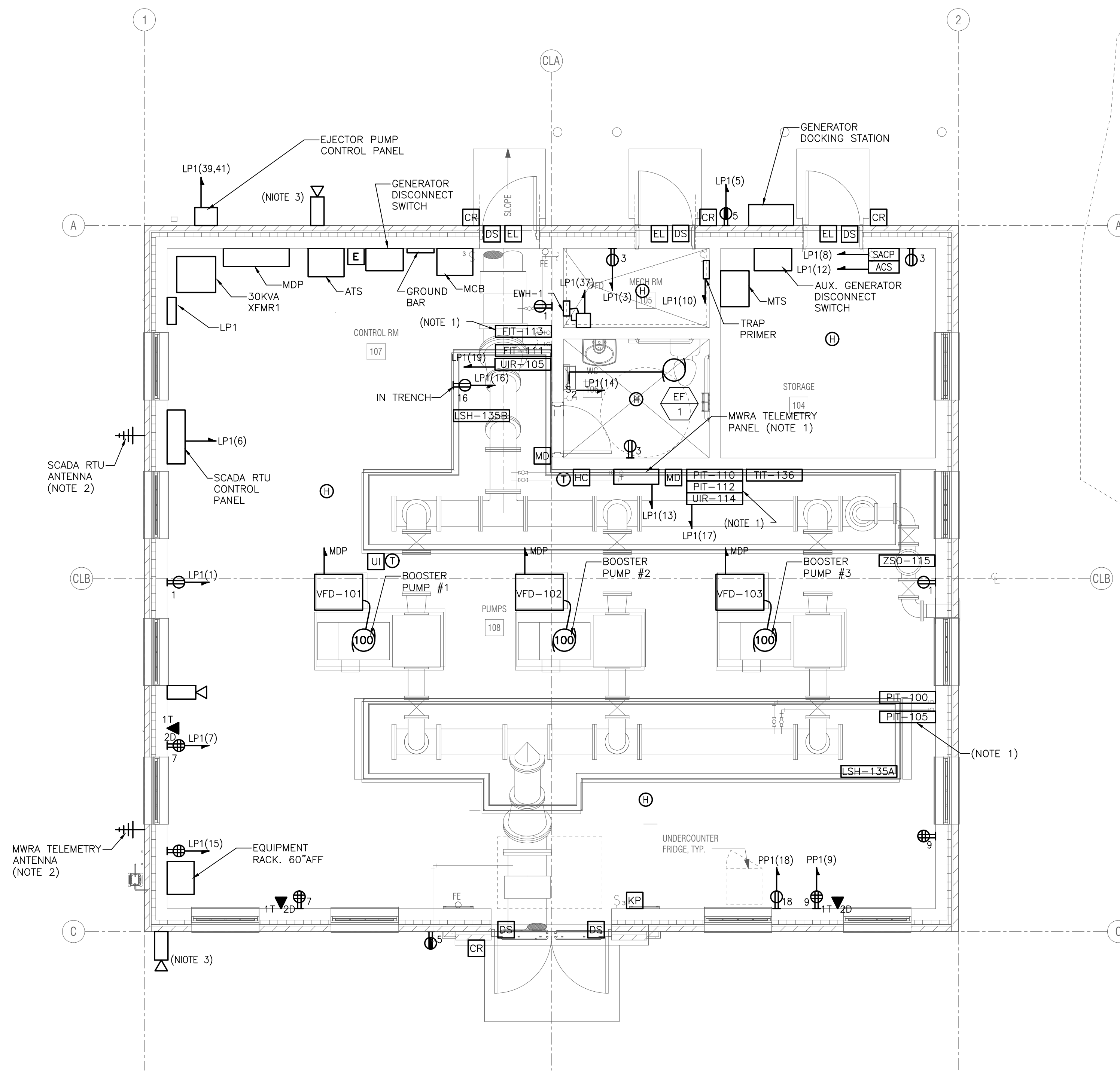
ISSUE DATE: JANUARY 2020

SHEET NO. E-4



NOTES:

1. MWRA FLOW TRANSDUCER (FIT-113), PRESSURE TRANSDUCERS (PIT-105 & PIT-112), CHART RECORDER (MIR-114) AND TELEMETRY PANEL REMOVED FROM OLD PUMP STATION.
2. ANTENNAS ASSOCIATED WITH THE SCADA CONTROL PANEL, THE MWRA TELEMETRY PANEL, THE REMOTE I/O PANEL REMOVED FROM OLD PUMP STATION.
3. CAMERA BRACKET TO BE MOUNTED TO PLATE WITHIN ROOF COORDINATED LOCATION AND MOUNTING WITH ARCHITECTURAL DRAWINGS.



POWER AND LOW VOLTAGE PLAN
SCALE: 1" = 4'

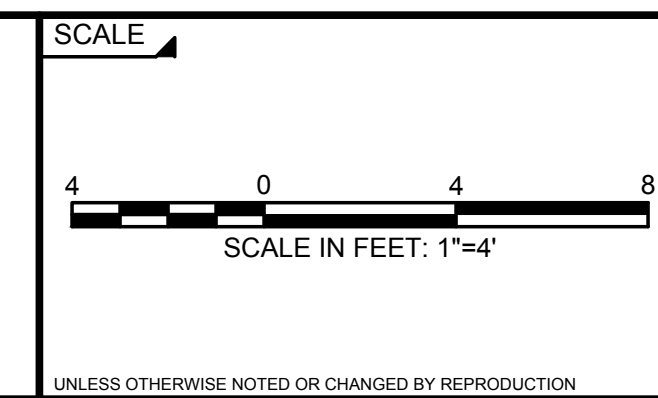
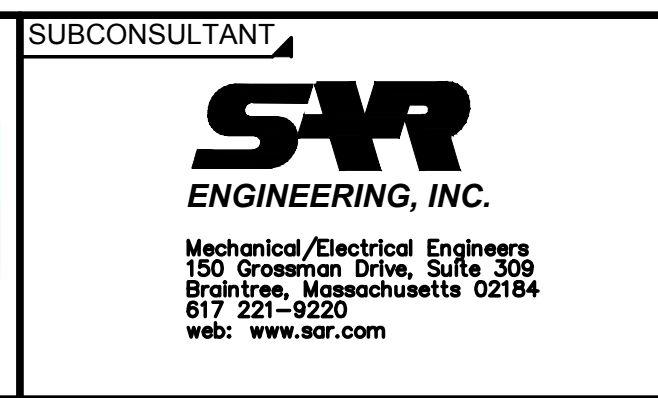
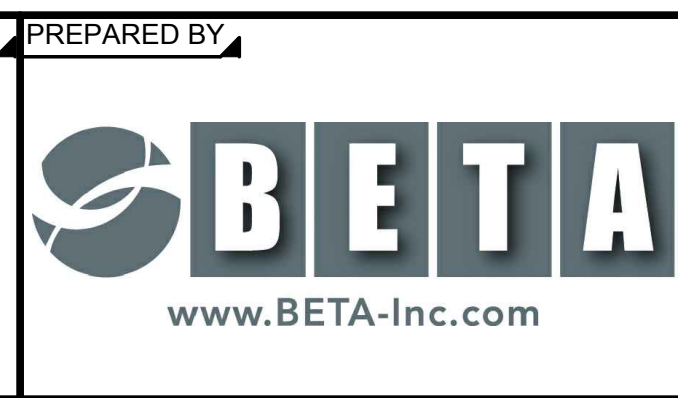
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NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
RLB

DESIGNED BY:
MJC

CHECKED BY:
MJC

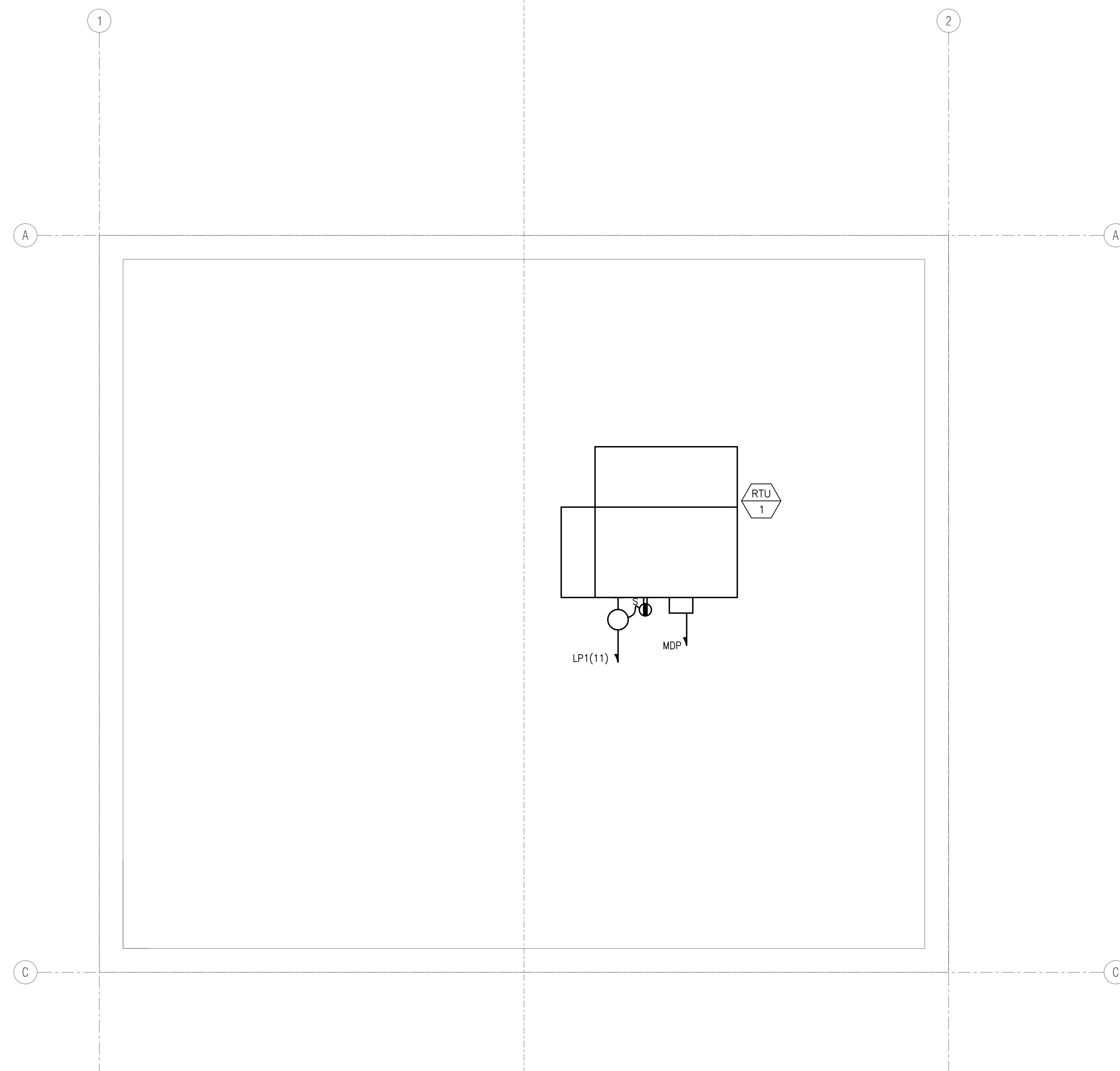
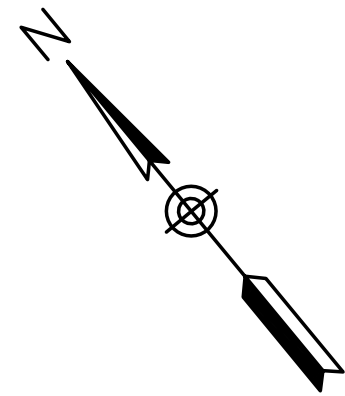


Edgell Road Water Pumping Station Replacement
ELECTRICAL
POWER AND LOW VOLTAGE PLAN

BETA JOB NO. 6481

ISSUE DATE: JANUARY 2020

SHEET NO. E-5



ROOF PLAN
SCALE: 1" = 4'

1/24/2020 10:03 AM W:\YEAR - 2018\18004.00 - FRAMINGHAM EDGEHILL WATER PUMPING STATION\ELECTRICAL DEPARTMENT\18004.00 ELEC.DWG (BETA STB BW.STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

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RLB

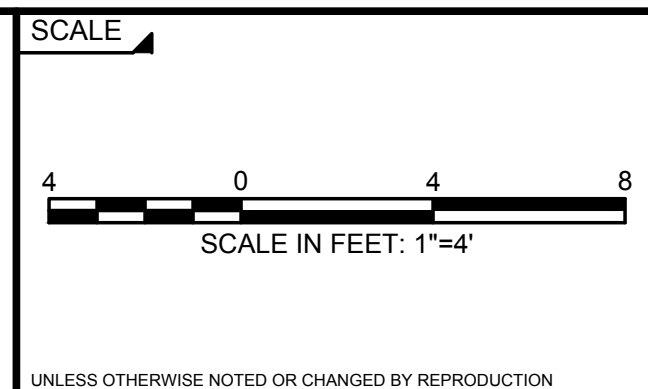
DESIGNED BY:
MJC

CHECKED BY:
MJC



SUBCONSULTANT

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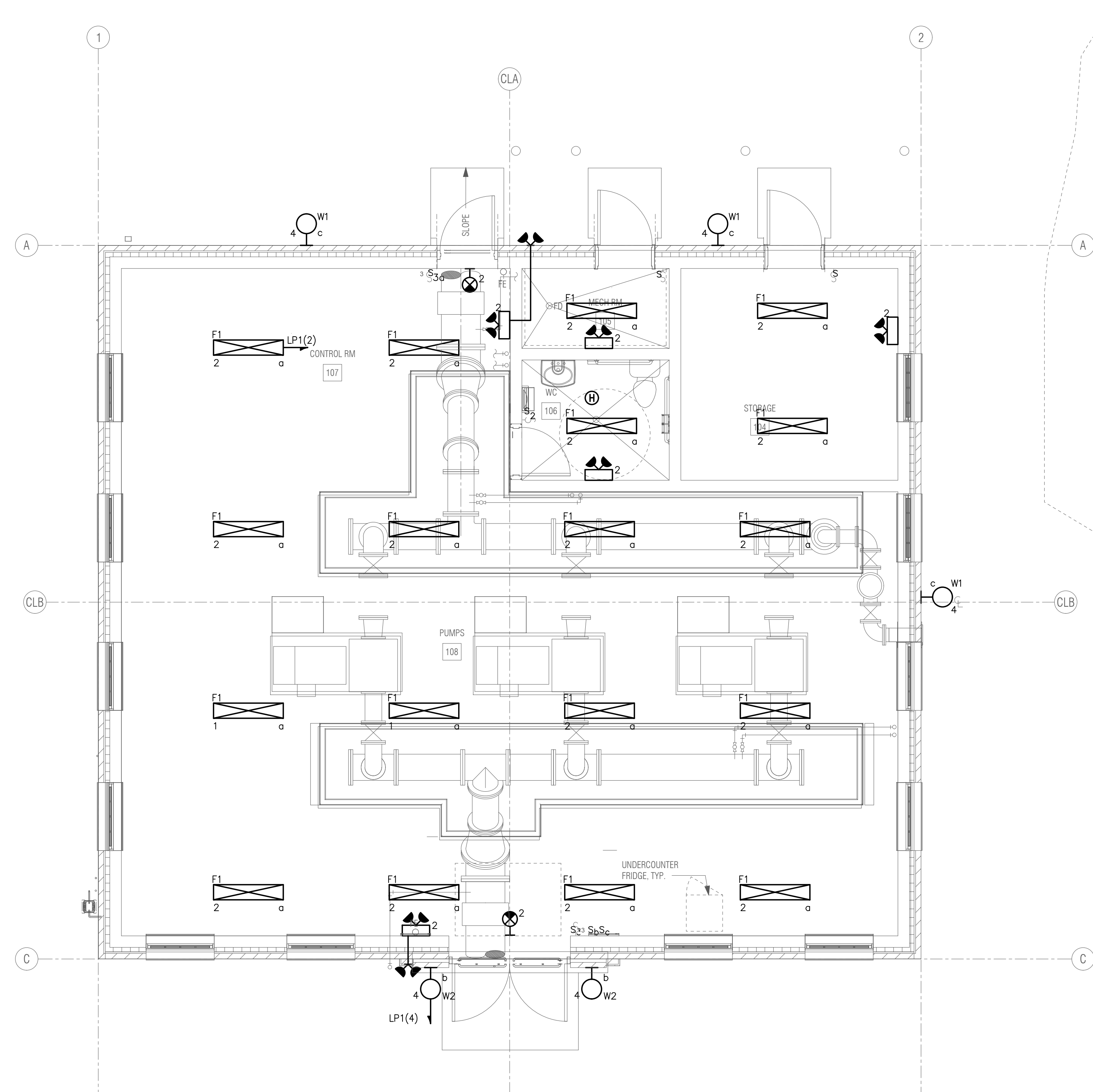
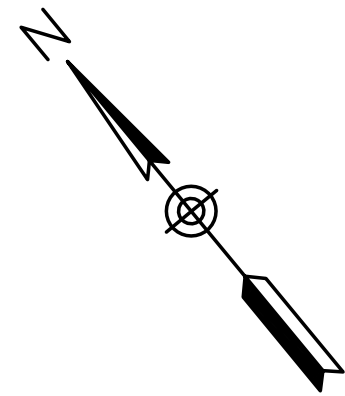
TITLE

**Edgell Road Water
Pumping Station Replacement
ELECTRICAL
ROOF PLAN**

BETA JOB NO. 6481

ISSUE DATE: JANUARY 2020

SHEET NO. E-6



LIGHTING PLAN
SCALE: 1" = 4'

1/24/2020 10:51 AM W:\YEAR - 2018\18004.00 - FRAMINGHAM EDGELL WATER PUMPING STATION\ELECTRICAL DEPARTMENT\18004.00 ELEC.DWG (BETA STB BW STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS


DRAWN BY:
RLB
DESIGNED BY:
MJC
CHECKED BY:
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REGISTERED PROFESSIONAL

 MICHAEL J. DOTTER
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SCALE

 SCALE IN FEET: 1"=4'

TITLE
**Edgell Road Water
 Pumping Station Replacement
 ELECTRICAL
 LIGHTING PLAN**

BETA JOB NO. 6481
 ISSUE DATE: JANUARY 2020
 SHEET NO. E-7

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

LIGHTING FIXTURE SCHEDULE									
TYPE	DESCRIPTION	MANUFACTURER & CATALOG SERIES	LAMPS		VOLTS	WATTS	MOUNTING		REMARKS
			TYPE	LUMENS			TYPE	HEIGHT	
F1	48" LED ENCLOSED AND GASKETED INDUSTRIAL LIGHTING FIXTURE.	LITHONIA FEM-L48-4000LM-IMFL-MVOLT-35K-80CRI	LED 3500K	4000lm	120	31	CEILING	SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS.	-
W1	EXTERIOR BUILDING MOUNTED LED WALL PACK LIGHT FIXTURE	LITHONIA TWP-LED-20C-700-40K-T3M-MVOLT-PE-DDXB	LED 4000K	4200lm	120	45	WALL	SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND MOUNTING HEIGHTS.	INTEGRAL PHOTOCELL CONTROLLED
W2	EXTERIOR HEXAGONAL WALL MOUNT ANTIQUE BRONZE FINISH SEEDY GLASS SHADE WALL MOUNT LIGHT FIXTURE	HOLLAND 838081ST	B-10 LED 4000K	600lm	120	6	WALL	SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND MOUNTING HEIGHTS.	
	SELF CONTAINED EMERGENCY LIGHTING BATTERY UNIT NEMA 4 WITH TWO LIGHTING HEADS	REFER TO SPECIFICATIONS	LED	-	120	8W	WALL	SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND MOUNTING HEIGHTS.	INSTALL 3/4"C, 2#12, #12GND TO REMOTE HEADS
	SEALED-BEAM WEATHERPROOF REMOTE LIGHTING FIXTURE WITH TWO LIGHTING HEADS	REFER TO SPECIFICATIONS	LED	-	120	8W	WALL	SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND MOUNTING HEIGHTS.	
	EMERGENCY EXIT SIGN LED TYPE WITH BATTERY BACK-UP NEMA 4X	REFER TO SPECIFICATIONS	LED	-	120	3W	WALL	SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND MOUNTING HEIGHTS.	

LIGHTING FIXTURE SCHEDULES NOTES:

- THE CATALOG NUMBERS LISTED ARE GIVEN AS A GUIDE TO THE DESIGN AND QUALITY OF FIXTURE DESIRED. EQUIVALENT DESIGNS, MATERIALS, DIMENSIONS, COEFFICIENT OF UTILIZATIONS AND EQUAL QUALITY FIXTURES OF OTHER MANUFACTURERS WILL BE ACCEPTABLE.

PANELBOARD SCHEDULE									
NO. LP1					LOCATION: PUMP ROOM				
208/120 V, 3 PH, 4 W, 100 A MAINS					100 A SOLID NEUTRAL				
10,000 AIC AT 120 V					100 A MCB				
					SURFACE MOUNTING				
CIRCUIT	DESCRIPTION OF LOAD	LOAD (KVA)			BREAKER		CIRCUIT	DESCRIPTION OF LOAD	CIRCUIT
		Aφ	Bφ	Cφ	TRIP	POLE			
* 1	PUMP ROOM RECEPTACLES	0.60			20	1	1	INTERIOR LIGHTS	2
* 3	BOILER/STORAGE/BATHROOM RECEPTACLES	0.60			20	1	1	EXTERIOR LIGHTS	4
* 5	EXTERIOR RECEPTACLES			0.40	20	1	1	SCADA RTU CONTROL PANEL	6
7	DESK RECEPTACLES	0.80			20	1	1	SACP CONTROL PANEL	8
9	DESK RECEPTACLES		0.80		20	1	1	TRAP PRIMER	10
* 11	ROOF LIGHT & RECEPTACLE			0.30	20	1	1	FUTURE ACCESS CONTROL SYSTEM CONTROL PANEL	12
13	MWRA TELEMETRY PANEL	0.20			20	1	1	EF-1	14
15	EQUIPMENT RACK RECEPTACLE		0.50		20	1	1	SUMP PUMP	16
17	MWRA CHART RECORDER UIR-114			0.20	20	1	1	REFRIGERATOR	18
19	FRAMINGHAM CHART RECORDER UIR-105	0.20			20	1	1	SPARE	20
21	SPARE		-		20	1	1	SPARE	22
23	SPARE		-		20	1	1	SPARE	24
25	SPARE		-		20	1	1	SPARE	26
27	SPARE		-		20	1	1	SPARE	28
29	SPARE		-		20	1	1	SPARE	30
31	SPARE		-		20	1	1	SPARE	32
33	SPARE		-		20	1	1	SPARE	34
35	SPARE		-		20	1	1	SPARE	36
37	EHW-1	4.1			20	1	1	GENERATOR ALTERNATOR HEATER & BATTERY HEATER	38
39	EJECTOR PUMP CONTROL PANEL	1.95			30	2	2	GENERATOR BATTERY CHARGER	40
41	EJECTOR PUMP CONTROL PANEL		1.95		30	2	2	GENERATOR JACKET HEATER	42
SUB-TOTAL CONNECTED		5.9	3.85	2.85	1.7	2.9	4.2	SUB-TOTAL CONNECTED	
* PROVIDE GFCI BREAKER									
SUB-TOTAL CONNECTED					KVA Aφ = 7.6				
SUB-TOTAL CONNECTED					KVA Bφ = 6.75				
SUB-TOTAL CONNECTED					KVA Cφ = 7.05				
TOTAL CONNECTED					KVA = 21.4				

POWER CABLE/CONDUIT SCHEDULE			
SYMBOL	CONDUIT SIZE*	CONDUCTORS*	GND*
P1	3/4"	(2)#12	(1)#12
P2	3/4"	(3)#12	(1)#12
P3	3/4"	(2)#10	(1)#10
P4	3/4"	(3)#10	(1)#10
P5	3/4"	(3)#8	(1)#10
P6	3/4"	(4)#8	(1)#10
P7	1"	(3)#6	(1)#8
P8	1"	(4)#6	(1)#8
P9	1 1/4"	(3)#4	(1)#8
P10	1 1/4"	(4)#4	(1)#8
P11	1 1/2"	(3)#3	(1)#6
P12	1 1/2"	(4)#3	(1)#6
P13	1 1/2"	(3)#2	(1)#6
P14	1 1/2"	(4)#2	(1)#6
P15	2"	(3)#1	(1)#6
P16	2"	(4)#1	(1)#6
P17	2"	(3)#1/0	(1)#6
P18	2"	(4)#1/0	(1)#6
P19	2 1/2"	(3)#2/0	(1)#6
P20	2 1/2"	(4)#2/0	(1)#6
P21	2 1/2"	(3)#3/0	(1)#4
P22	2 1/2"	(4)#3/0	(1)#4
P23	3"	(3)#4/0	(1)#4
P24	3"	(4)#4/0	(1)#4
P25	3"	(4)350KCMIL	(1)#1

SIGNAL CABLE/CONDUIT SCHEDULE		
SYMBOL	CONDUIT SIZE	CONDUCTORS
S	1"	VENDER SPECIFIED
S1	3/4"	1-2/C#16 TSP
S13	3/4"	1-3/C#16 TSP
S14	3/4"	1-4/C#16 TSP
S2	3/4"	2-2/C#16 TSP
S23	3/4"	2-3/C#16 TSP
S3	1"	3-2/C#16 TSP
S33	1"	3-3/C#16 TSP
S4	1"	4-2/C#16 TSP
S5	1"	5-2/C#16 TSP
S6	1 1/2"	6-2/C#16 TSP
S7	1 1/2"	7-2/C#16 TSP
S8	1 1/2"	8-2/C#16 TSP
S9	1 1/2"	9-2/C#16 TSP
S10	2"	10-2/C#16 TSP
TC1	3/4"	8/C#18

TELE/DATA CABLE/CONDUIT SCHEDULE		
SYMBOL	CONDUIT SIZE	CONDUCTORS
TD1	1"	1-CAT6 CABLE
TD3	1 1/2"	3-CAT6 CABLE

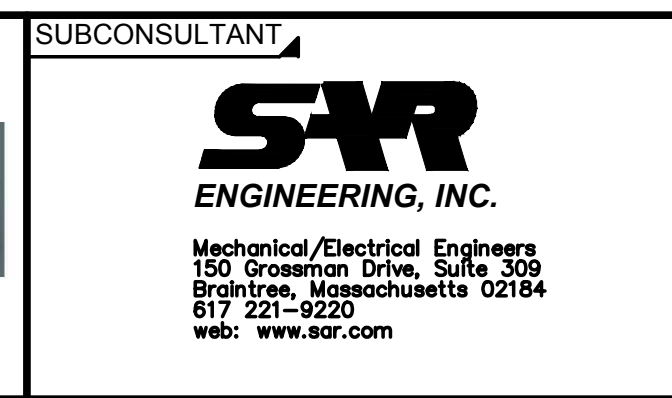
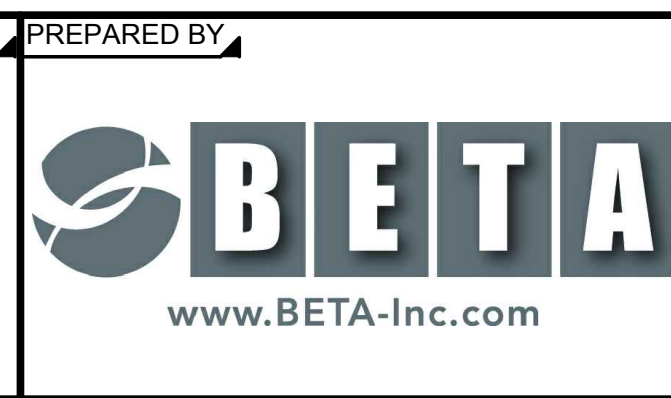
CONTROL CABLE/CONDUIT SCHEDULE		
SYMBOL	CONDUIT SIZE	CONDUCTORS
C2	3/4"	2#14
C4	3/4"	4#14
C5	3/4"	5#14
C6	3/4"	6#14
C7	3/4"	7#14
C8	3/4"	8#14
C9	3/4"	9#14
C10	3/4"	10#14
C12	3/4"	12#14
C16	1"	16#14
C20	1"	20#14
C30	1"	30#14

NOTE: CONDUIT AND CONDUCTOR SIZES ARE TO BE PER THE ABOVE SCHEDULES UNLESS OTHERWISE NOTED.

1/24/2020 10:04 AM W:\YEAR - 2018\18004.00 - FRAMINGHAM EDGEHILL WATER PUMPING STATION\ELECTRICAL DEPARTMENT\18004.00.ELEC.DWG (BETA STB.BW.STB)

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DESIGNED BY: MJC
CHECKED BY: MJC

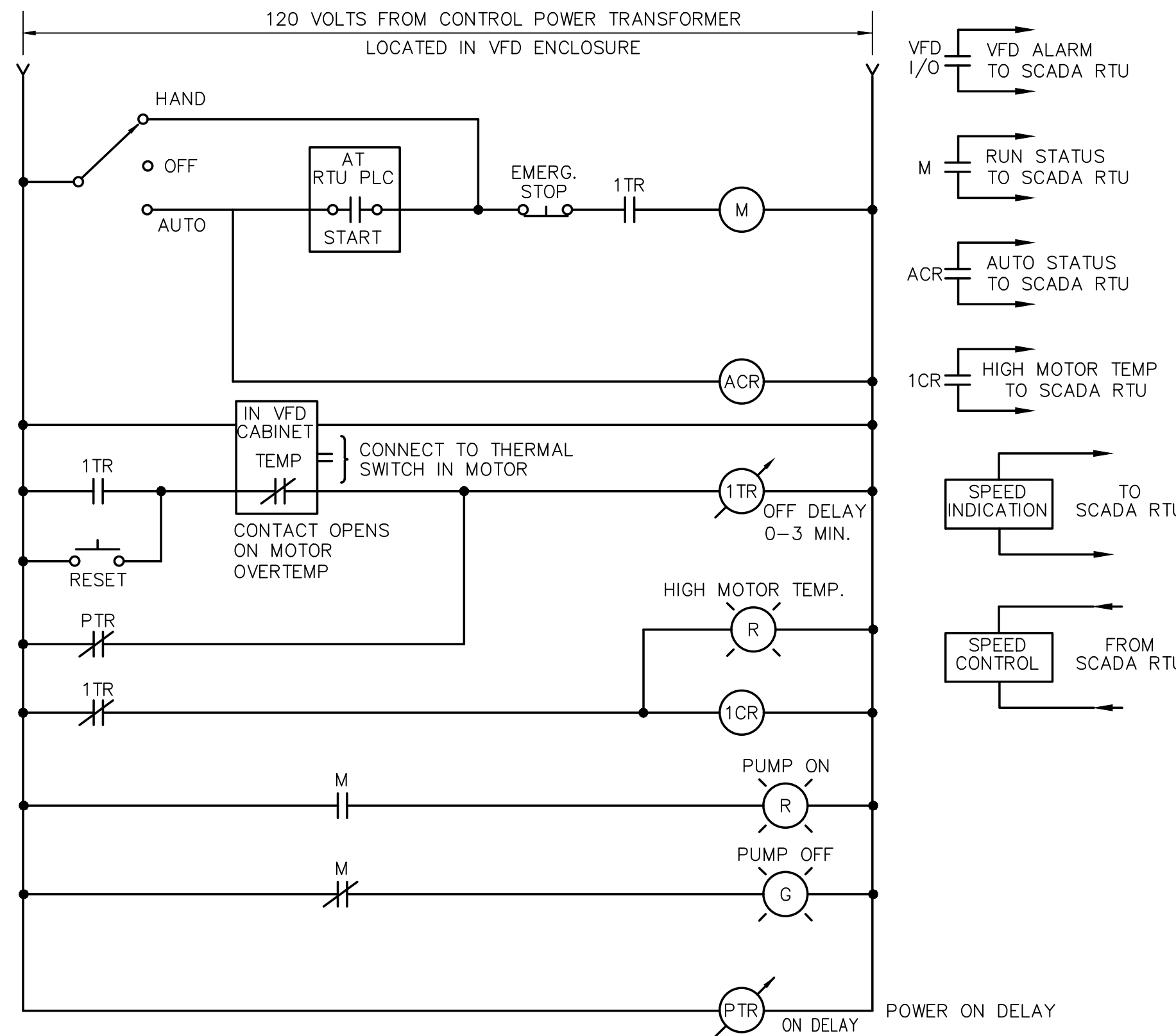


SUBCONSULTANT	SCALE	TITLE
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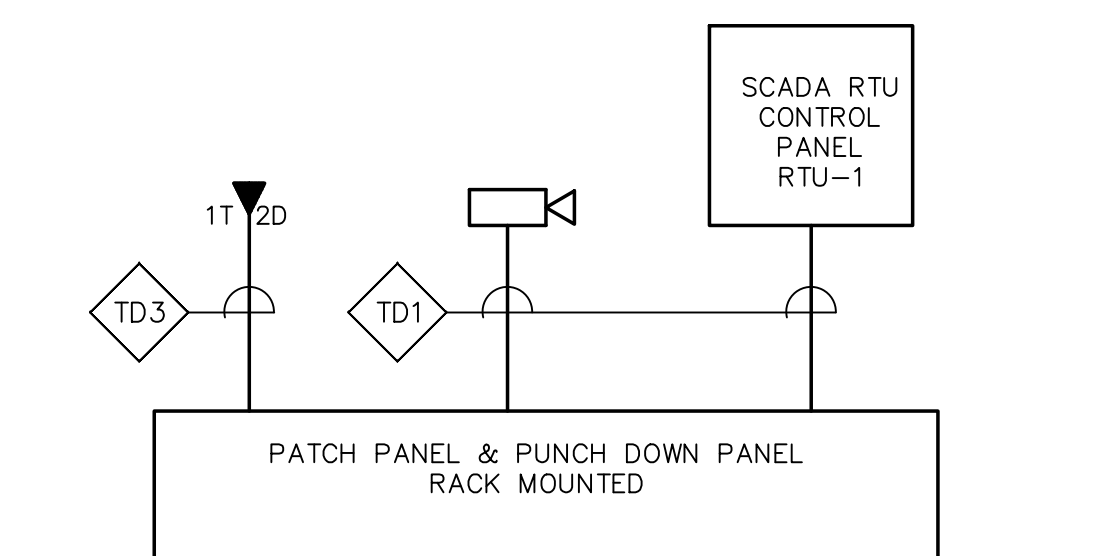
Edgell Road Water Pumping Station Replacement ELECTRICAL SCHEDULES	
BETA JOB NO. 6481	ISSUE DATE JANUARY 2020
SHEET NO. E-8	

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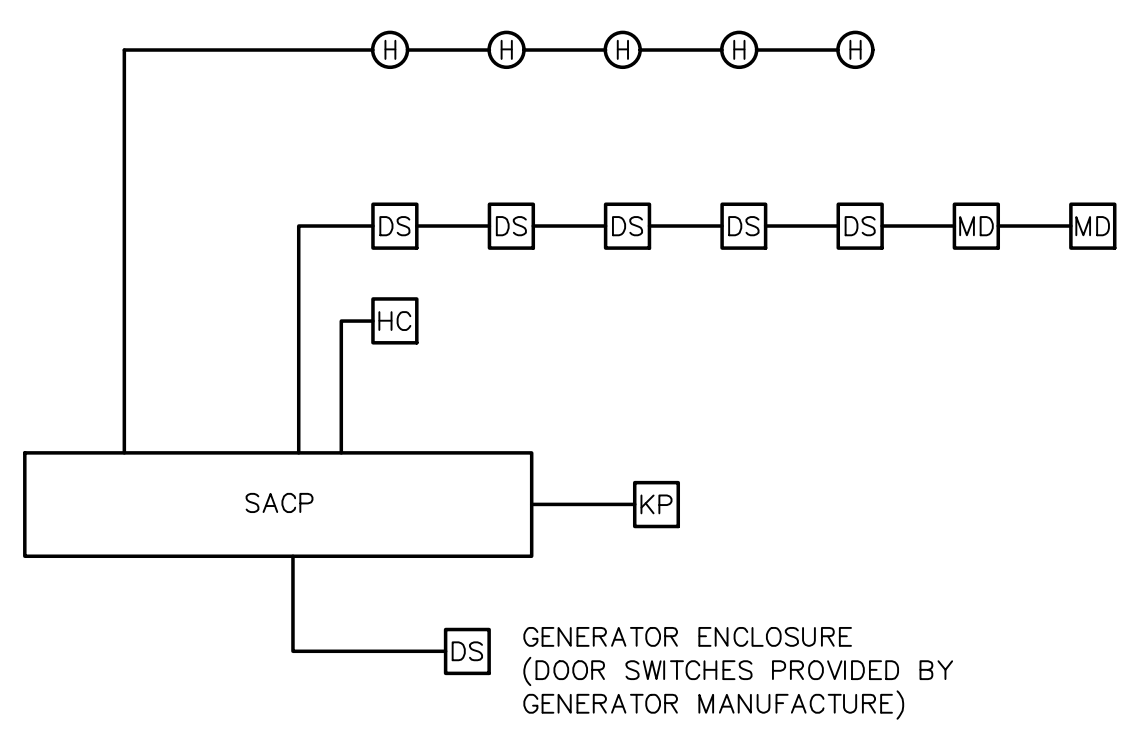


**CONTROL WIRING DIAGRAM
BOOSTER PUMPS**
NOT TO SCALE

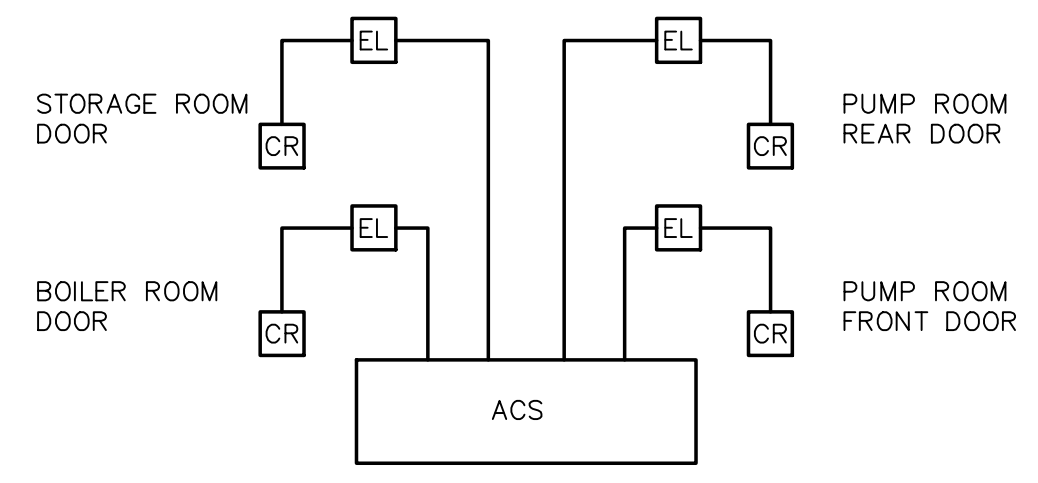


COMMUNICATIONS & CCTV RISER DIAGRAM
NOT TO SCALE

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

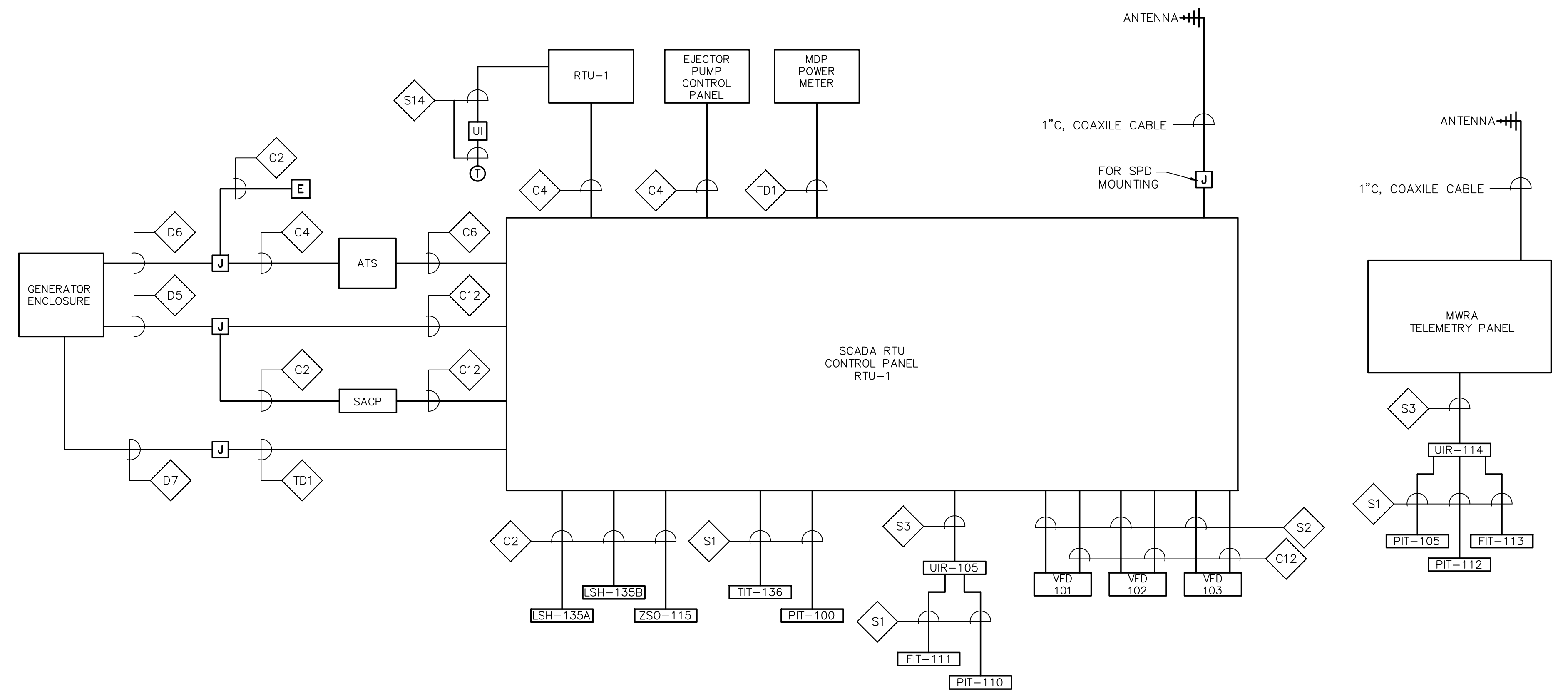


SECURITY SYSTEM RISER
NOT TO SCALE



ACCESS CONTROL SYSTEM EMPTY CONDUIT RISER
NOT TO SCALE

NOTES:
1. PROVIDE 3/4" EMPTY CONDUIT SYSTEM WITH NYLON PULL STRING BETWEEN AND EQUIPMENT AND DEVICE LOCATION. REFER TO LEGEND FOR REQUIREMENTS AT EACH LOCATION.



CONTROL BLOCK WIRING DIAGRAM
NOT TO SCALE

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RLB
DESIGNED BY:
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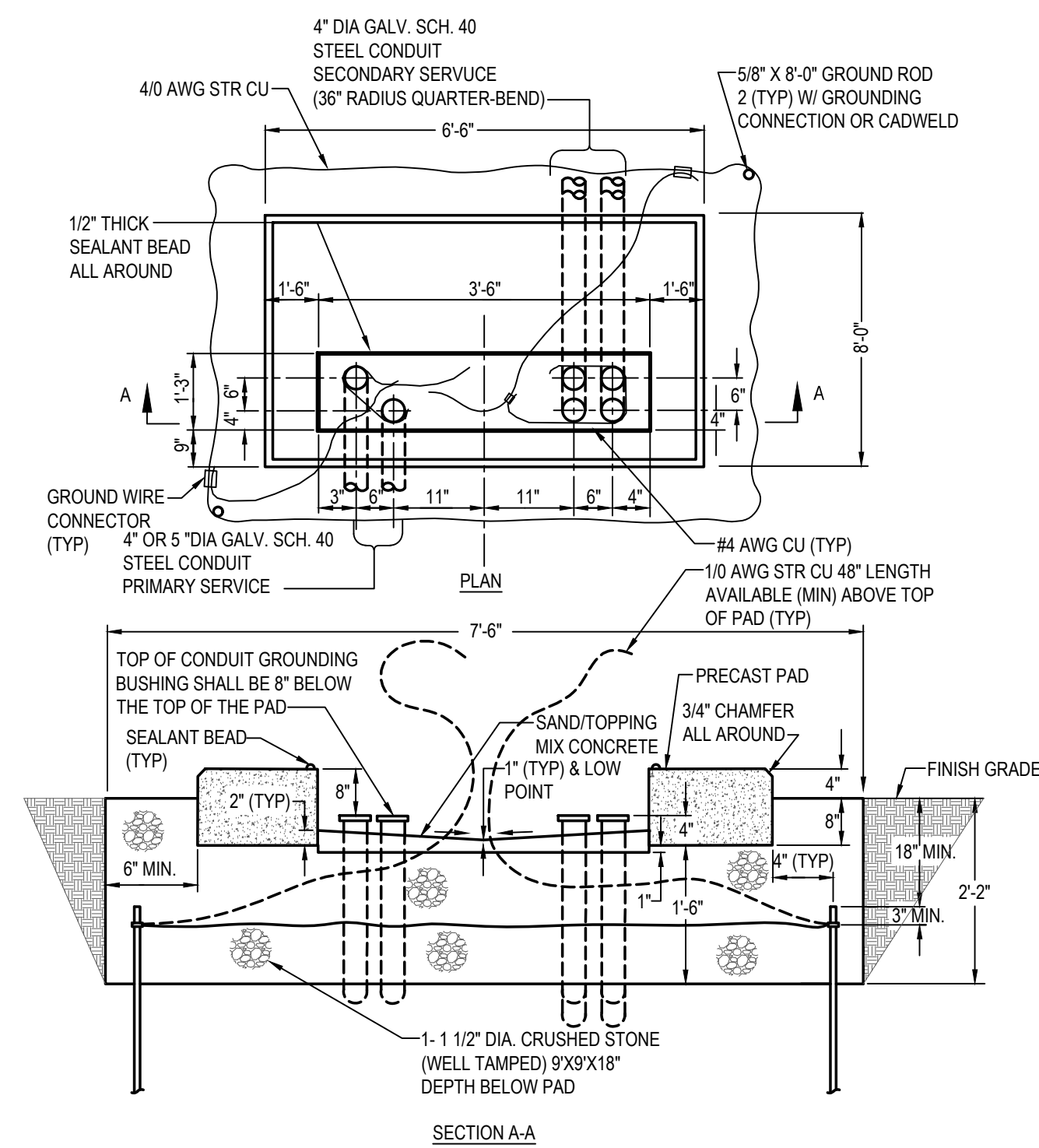
SUBCONSULTANT
SR
ENGINEERING, INC.
Mechanical/Electrical Engineers
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Braintree, Massachusetts 02184
617-221-9220
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SCALE
NONE

TITLE
**Edgell Road Water
Pumping Station Replacement
ELECTRICAL
WIRING DIAGRAMS**

BETA JOB NO. 6481
ISSUE DATE: JANUARY 2020
SHEET NO. E-9

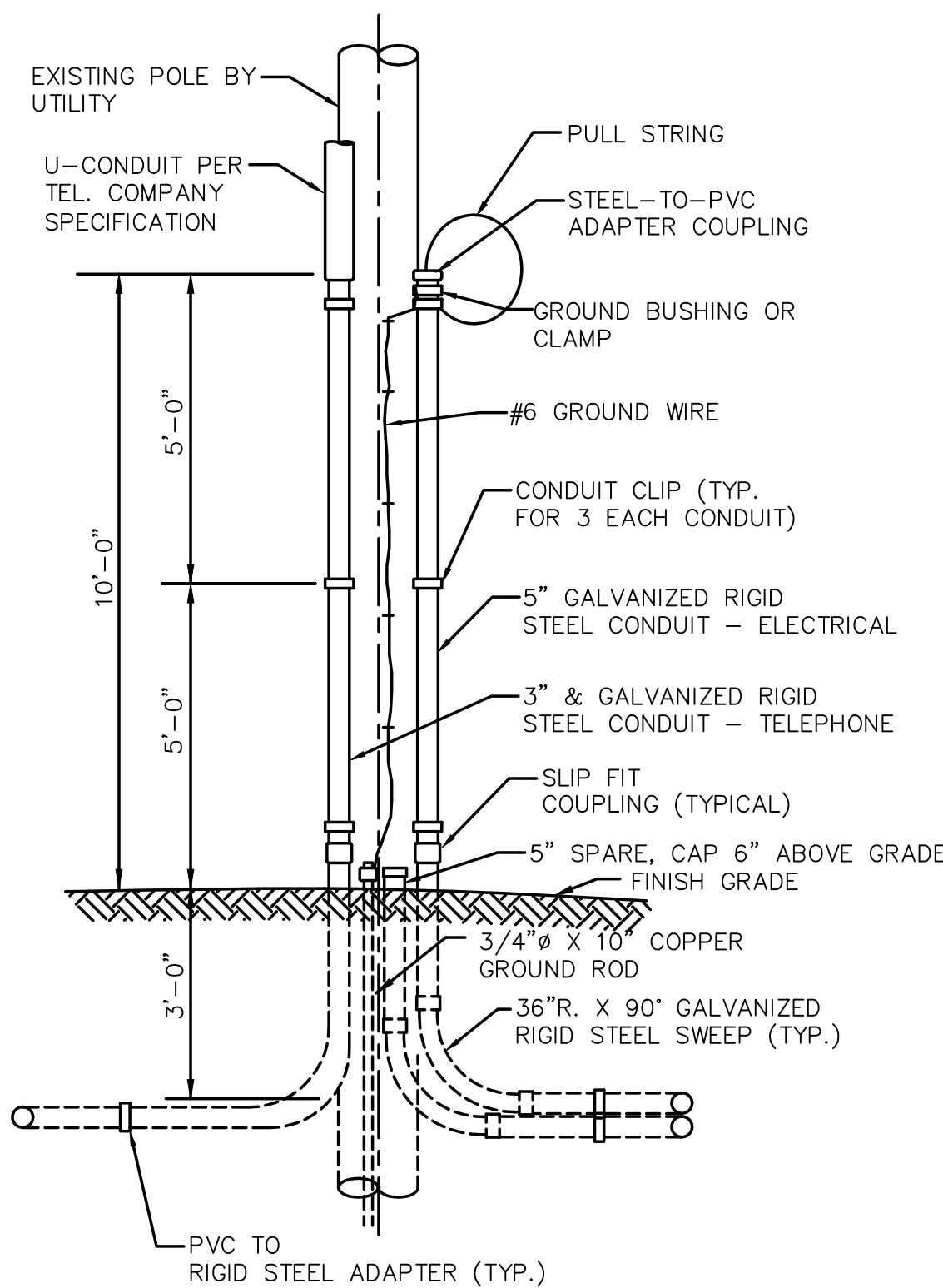
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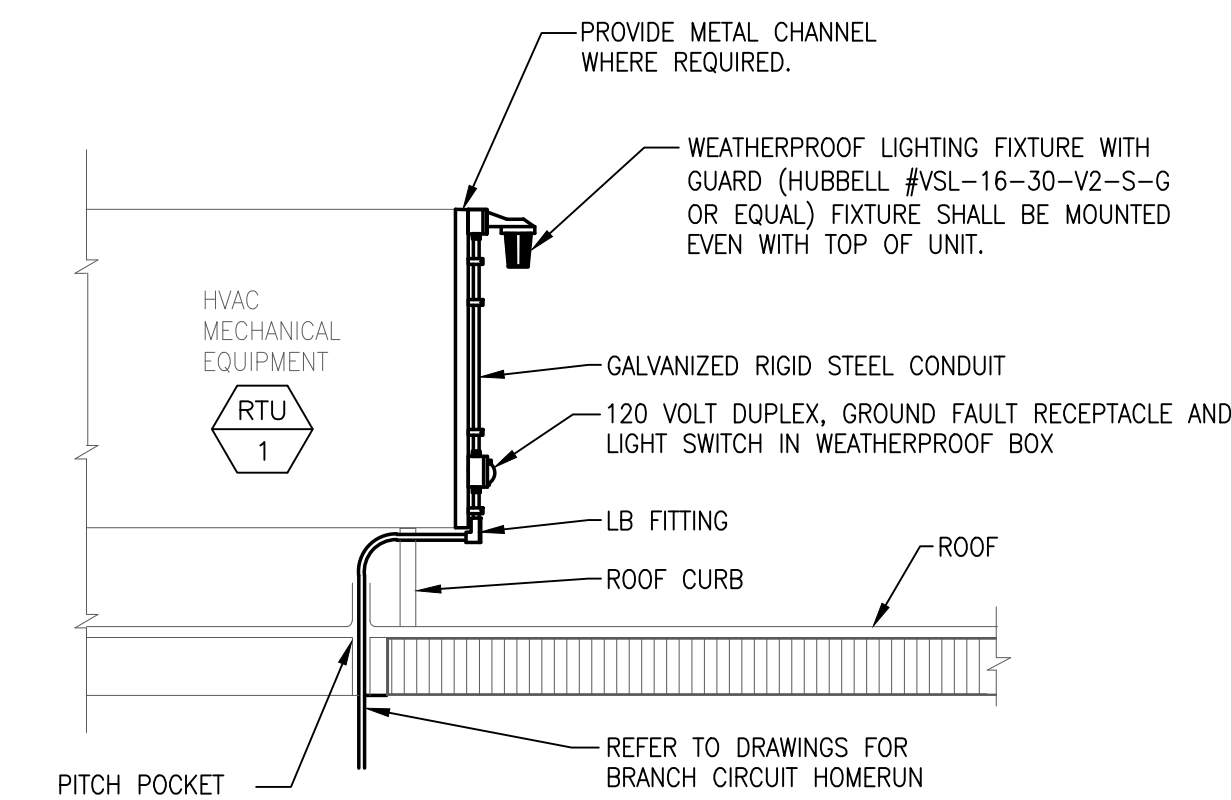
NOTES:

1. SEAL SECONDARY CONDUITS WITH EXPANDING FOAM AND GROUT PRIMARY AND SECONDARY CONDUIT OPENINGS ON PAD.

TRANSFORMER PAD
NO SCALE

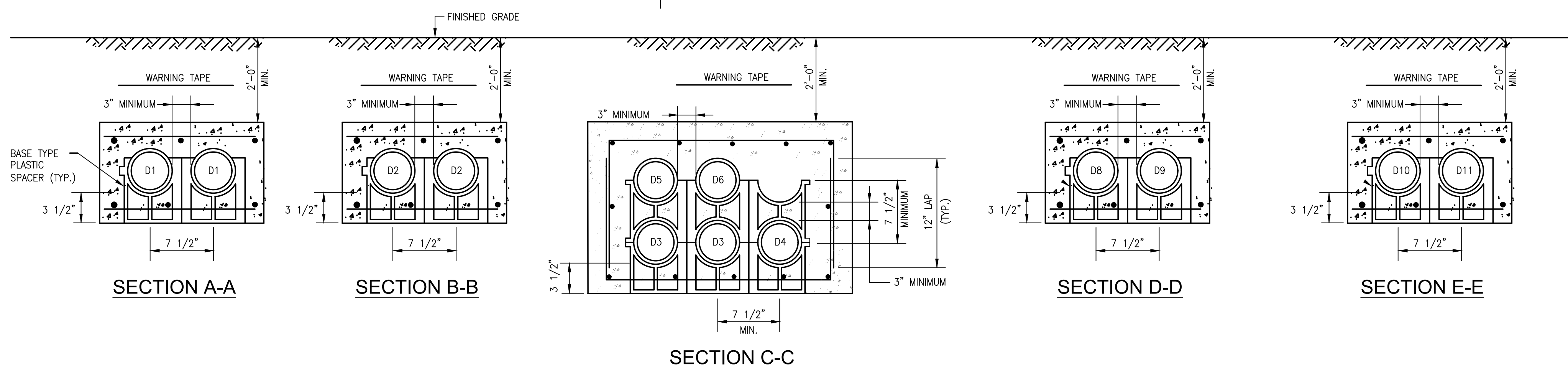


UTILITY POLE SERVICE RISER DETAIL
NOT TO SCALE



ROOFTOP LIGHT AND RECEPTACLE DETAIL
NOT TO SCALE

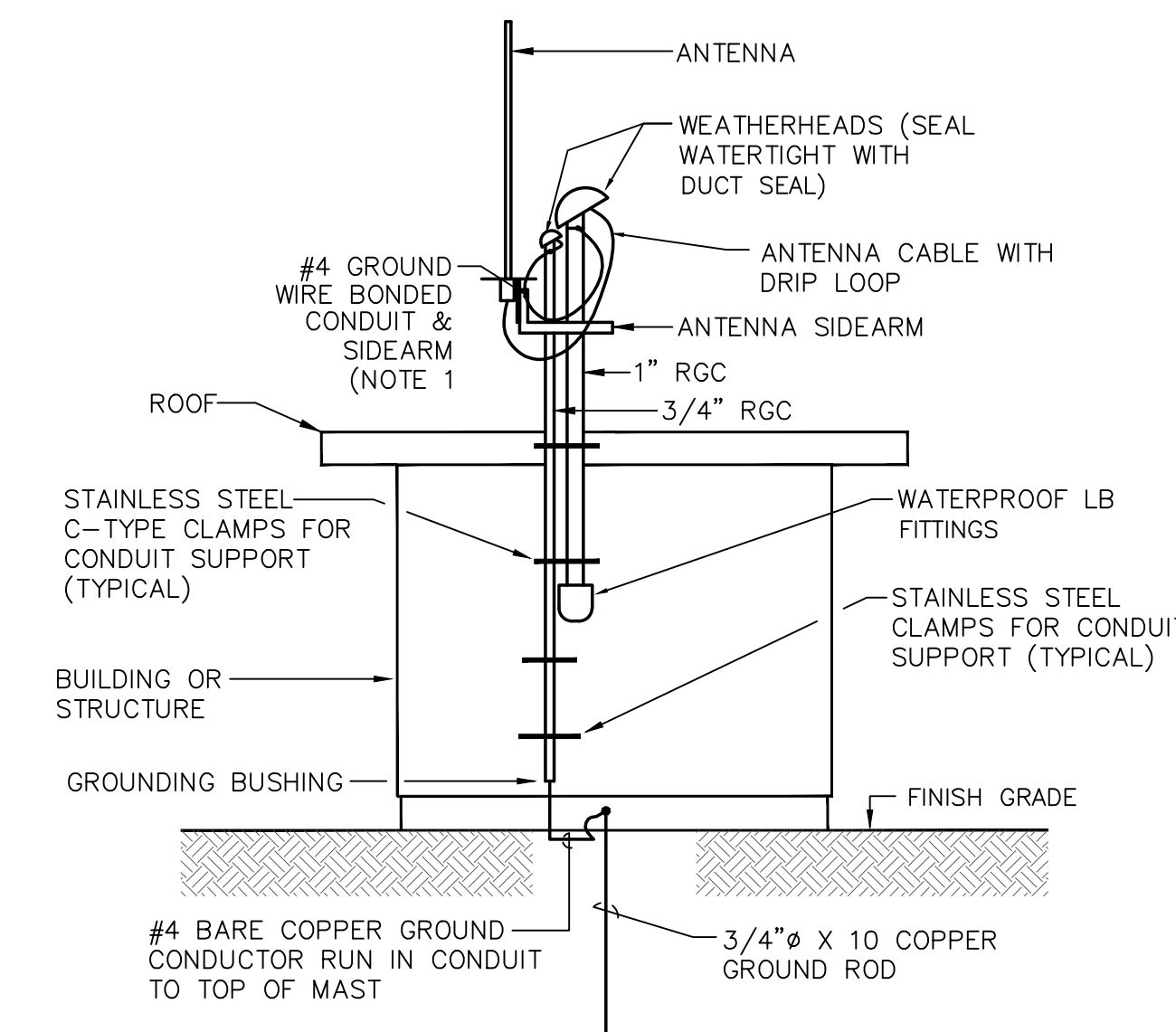
DUCT / CABLE SCHEDULE				
DUCT NO.	SIZE	CONDUCTORS	FROM	TO
D1	5"	PULL STRING FOR PRIMARY SERVICE	UTILITY POLE	UTILITY TRANSFORMER
D2	4"	(4) 350kcmil	UTILITY TRANSFORMER	MCB
D3	4"	(4) 350kcmil, #1 GND	GENERATOR	GENERATOR DISCONNECT SWITCH
D4	1"	(6) #12, #12GND	LP-1	GENERATOR AUXILIARY SYSTEMS.
D5	1"	(20) #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
D10	2"	MANUFACTURE PUMP CORD	EJECTOR PUMP CONTROL PANEL	EJECTOR PUMP
D11	1"	(2) #12, #12GND	EJECTOR PUMP CONTROL PANEL	EJECTOR PUMP MANHOLE SOLENOID



NOTES:

1. 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.
2. A MINIMUM OF 12" SEPARATION SHALL BE KEPT BETWEEN DUCT BANK SECTIONS WITHIN SAME TRENCH.

DUCTBANK SECTIONS
NO SCALE



ANTENNA BUILDING MOUNTING DETAIL
NOT TO SCALE

NOTES:

1. BOND ANTENNA MAST AND ANTENNA GROUNDING SYSTEM TO RTU AND ANTENNA CABLE AS WELL AS SERVICE FEEDER FOR COMMON GROUNDING SYSTEM POINT.

1/24/2020 10:05 AM W:\YEAR - 2018\18004.00 - FRAMINGHAM EDGEHILL WATER PUMPING STATION\ELECTRICAL DEPARTMENT\18004.00.ELEC.DWG (BETA STB.BW.STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: RLB
DESIGNED BY: MJC
CHECKED BY: MJC

REGISTERED PROFESSIONAL

 PREPARED BY

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SUBCONSULTANT

 Mechanical/Electrical Engineers
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SCALE	NONE
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TITLE
Edgell Road Water Pumping Station Replacement ELECTRICAL DETAILS

BETA JOB NO.	6481
ISSUE DATE	JANUARY 2020
SHEET NO.	E-10

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1/24/2020 10:08 AM W:\YEAR - 2018\18004.00 - FRAMINGHAM EDGEHILL WATER PUMPING STATION\HVAC DEPARTMENT\18004-HVAC.DWG (BETA STB BW STB)

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 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.
- ALL DUCT SIZES SHOWN ARE NET INSIDE CLEAR DIMENSIONS.
- PROVIDE VOLUME DAMPERS AT EVERY MAIN BRANCH TAKE-OFF AND AS INDICATED IN THE DETAILS AND IN SUCH OTHER LOCATIONS WHERE REQUIRED TO PROPERLY BALANCE THE SYSTEM. DO NOT INSTALL VOLUME DAMPERS IN NECKS OF DIFFUSERS OR AT DISCHARGE OR INLET GRILLES IN DUCTWORK.
- 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.
- EXACT LOCATION OF CEILING DIFFUSERS, GRILLES AND REGISTERS TO BE DETERMINED BY ARCHITECTURAL REFLECTED CEILING PLAN.
- 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.
- UNLESS OTHERWISE NOTED, ALL PIPING RUNOUTS SHALL BE 3/4"
- 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.
- PITCH AIR INTAKE PLENUMS AND PROVIDE DRAIN TO NEAREST FLOOR DRAIN.
- 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.
- PROVIDE FLEXIBLE CONNECTOR ON INTAKES AND DISCHARGES OF ALL AIR HANDLING UNITS.
- 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 24 VOLT.

ABBREVIATIONS

ACD	AUTOMATIC CONTROL DAMPER
AD	ACCESS DOOR
AF	ABOVE FINISHED FLOOR
AHAP	AS HIGH AS POSSIBLE
AP	ACCESS PANEL
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
ER	EXHAUST REGISTER
ESP	EXTERNAL STATIC PRESSURE
ETR	EXISTING TO REMAIN
EW	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
KE	KITCHEN EXHAUST
KW	KILOWATTS
LAT	LEAVING AIR TEMPERATURE
LD	LINEAR DIFFUSER
LF	LINEAR FEET
LWT	LEAVING WATER TEMPERATURE
MBH	THOUSANDS OF BTU'S PER HOUR
MCC	MOTOR CONTROL CENTER
NC	NORMALLY CLOSED
NI	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAT	OUTSIDE AIR TEMPERATURE
OBD	OPPOSED BLADE DAMPER
OD	OUTSIDE DIAMETER
OD	OPEN ENDED DUCT
POS	PROVIDED UNDER OTHER SECTIONS
PSI	POUNDS PER SQUARE INCH (GAUGE)
PD	PRESSURE DROP
PRV	PRESSURE REDUCING VALVE
PG	PROPYLENE GLYCOL
R	RETURN
RA	RETURN AIR
RB	REBALANCE
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
TYP	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

PIPING LEGEND

— CD — CONDENSATE DRAIN

EQUIPMENT TAG SYMBOLS & ABBREVIATIONS

EQUIPMENT NOT REQUIRING ELECTRIC SERVICE (TAG NO) → SEE SCHEDULE FOR PERFORMANCE REQUIREMENTS → EQUIPMENT REQUIRING ELECTRIC SERVICE (TAG NO)

AF	AIR FILTER
EF	EXHAUST FAN
ERU	ENERGY RECOVERY UNIT
EUH	ELECTRIC UNIT HEATER
FCU	FAN COIL UNIT
FMS	FLOW MEASURING STATION
HC	HEATING COIL
HV	HEATING AND VENTILATING UNIT
IRV	INTAKE ROOF VENT
MAU	MAKEUP AIR UNIT
REF	RETURN/EXHAUST FAN
RF	RETURN FAN
SF	SUPPLY FAN

INSTRUMENTATION

PI	LOCAL PRESSURE GAUGE W/SHUTOFF AND SNUBBER	CO2	CARBON DIOXIDE DETECTOR
DPI	DIFFERENTIAL PRESSURE GAUGE W/SHUTOFFS AND SNUBBERS	CO	CARBON MONOXIDE DETECTOR
TI	LOCAL TEMPERATURE INDICATION	OS	OCCUPANCY SENSOR
Th	HEATING ONLY THERMOSTAT	PS	PRESSURE SENSOR SWITCH
Tc	COOLING ONLY THERMOSTAT	S	OCCUPIED/UNOCCUPIED SWITCH
T	HEATING/COOLING THERMOSTAT	UI	REMOTE USER INTERFACE CONTROL PANEL
TT	TEMPERATURE TRANSMITTER		
PT	PRESSURE TRANSMITTER		
SD	SMOKE DETECTOR		
HD	HEAT DETECTOR		
FT	FLOW TRANSMITTER		
SP	STATIC PRESSURE SENSOR		
H	HUMIDITY SENSOR OR HUMIDISTAT		

DUCTWORK LEGEND/SYMBOLS

	RECTANGULAR DUCTWORK - FIRST DIMENSION IS SIDE SHOWN (IN.) FREE AREA
	ROUND DUCT DIAMETER (IN.)
	SUPPLY/OUTSIDE AIR DUCTWORK UP
	SUPPLY/OUTSIDE AIR DUCTWORK DOWN
	RETURN/EXHAUST AIR DUCTWORK UP
	RETURN/EXHAUST AIR DUCTWORK DOWN
	FLEXIBLE CONNECTION
	ACOUSTICALLY LINED DUCTWORK
	CHANGE OF ELEVATION IN DIRECTION OF AIRFLOW (R)RISE,(D)DROP
	RECTANGULAR DUCT TRANSITION
	RECTANGULAR TO SINGLE LINE TRANSITION
	RECTANGULAR TO ROUND TRANSITION
	MITERED ELBOW W/ TURNING VANES
	SUPPLY AIR DIFFUSER BELOW DUCT
	RETURN OR EXHAUST REGISTER BELOW DUCT
	ROUND DUCT UP
	SUPPLY AIR DIFFUSER (SQUARE OR RECTANGULAR)
	RETURN AIR GRILLE OR REGISTER
	MANUAL VOLUME DAMPER
	AUTOMATIC CONTROL DAMPER
	SUPPLY AIR BLOW DIRECTION
	EXHAUST / RETURN / OR INTAKE

DIFFUSER/REGISTER TAG

TT-X	TYPE-BLOW (CD-1 = CEILING DIFFUSER, 1 WAY BLOW)
0000	CFM

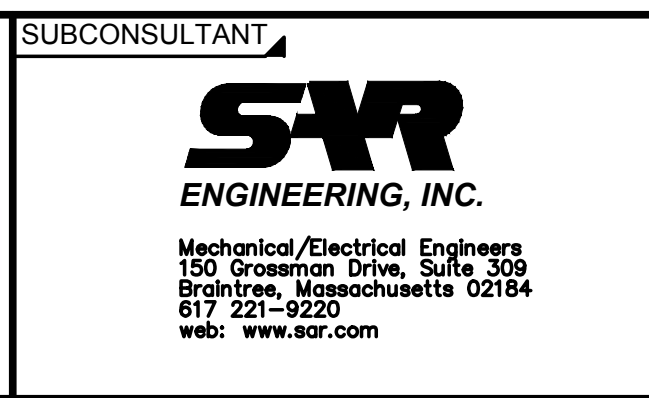
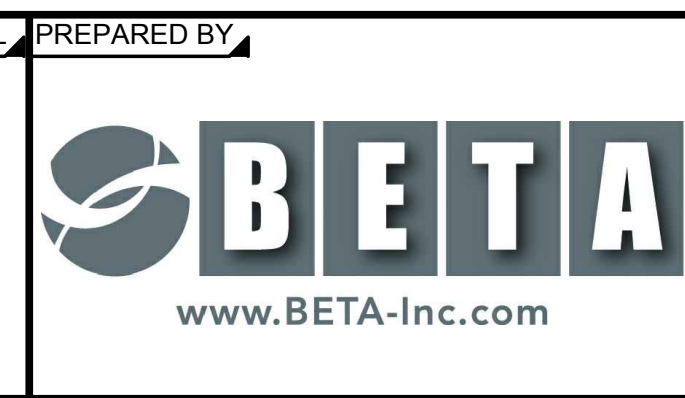
	INLINE CENTRIFUGAL FAN
	ROOF FAN OR VENT

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SCALE

NONE

TITLE

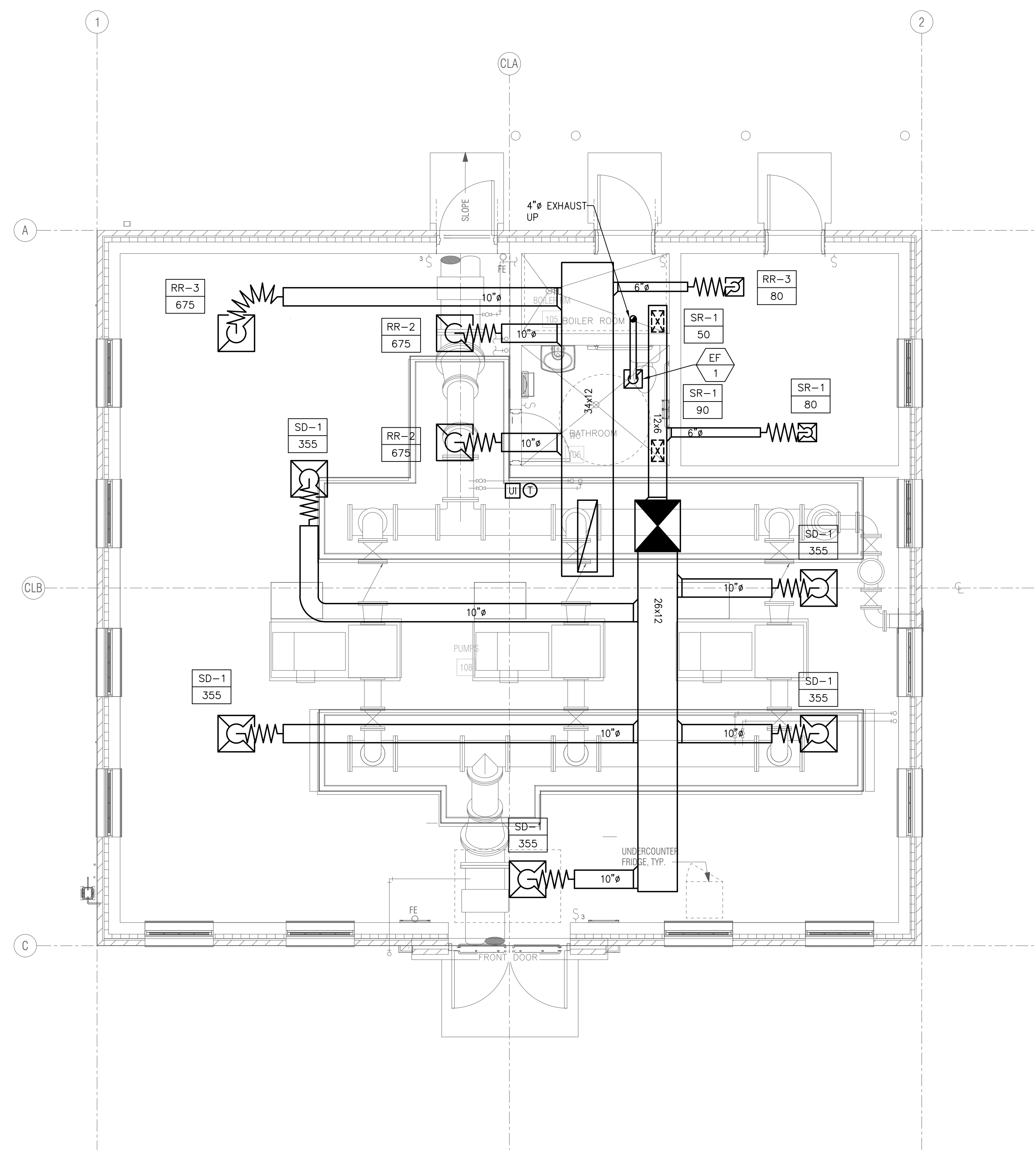
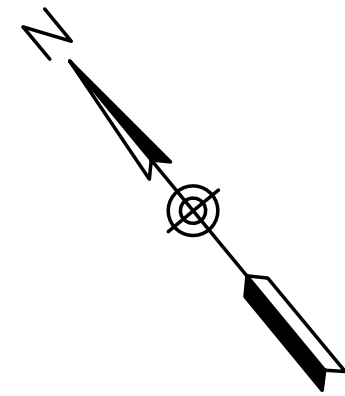
Edgell Road Water Pumping Station Replacement HVAC LEGEND AND GENERAL NOTES

BETA JOB NO. 6481

ISSUE DATE JANUARY 2020

SHEET NO. H-1

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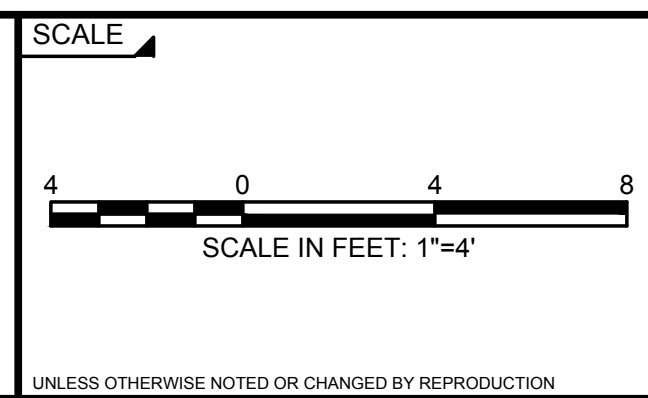
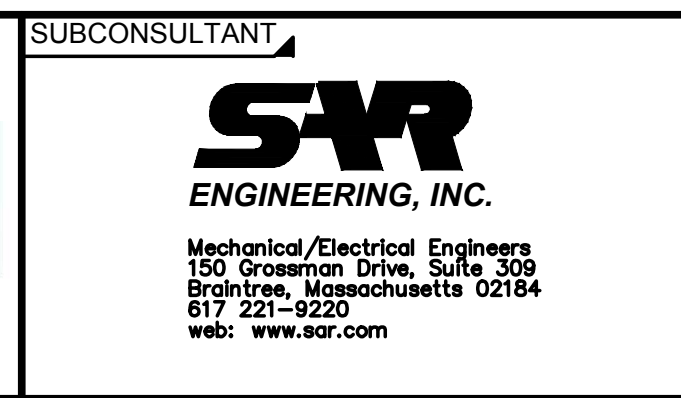
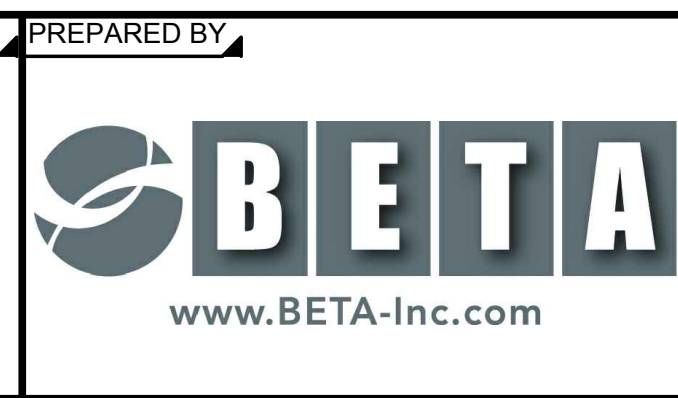


HVAC GROUND LEVEL PLAN
SCALE: 1" = 4'

2/3/2020 7:21 AM W:\YEAR - 2018\18004.00 - FRAMINGHAM EDGEHILL WATER PUMPING STATION\HVAC DEPARTMENT\18004-HVAC.DWG (BETA STB.BW.STB)

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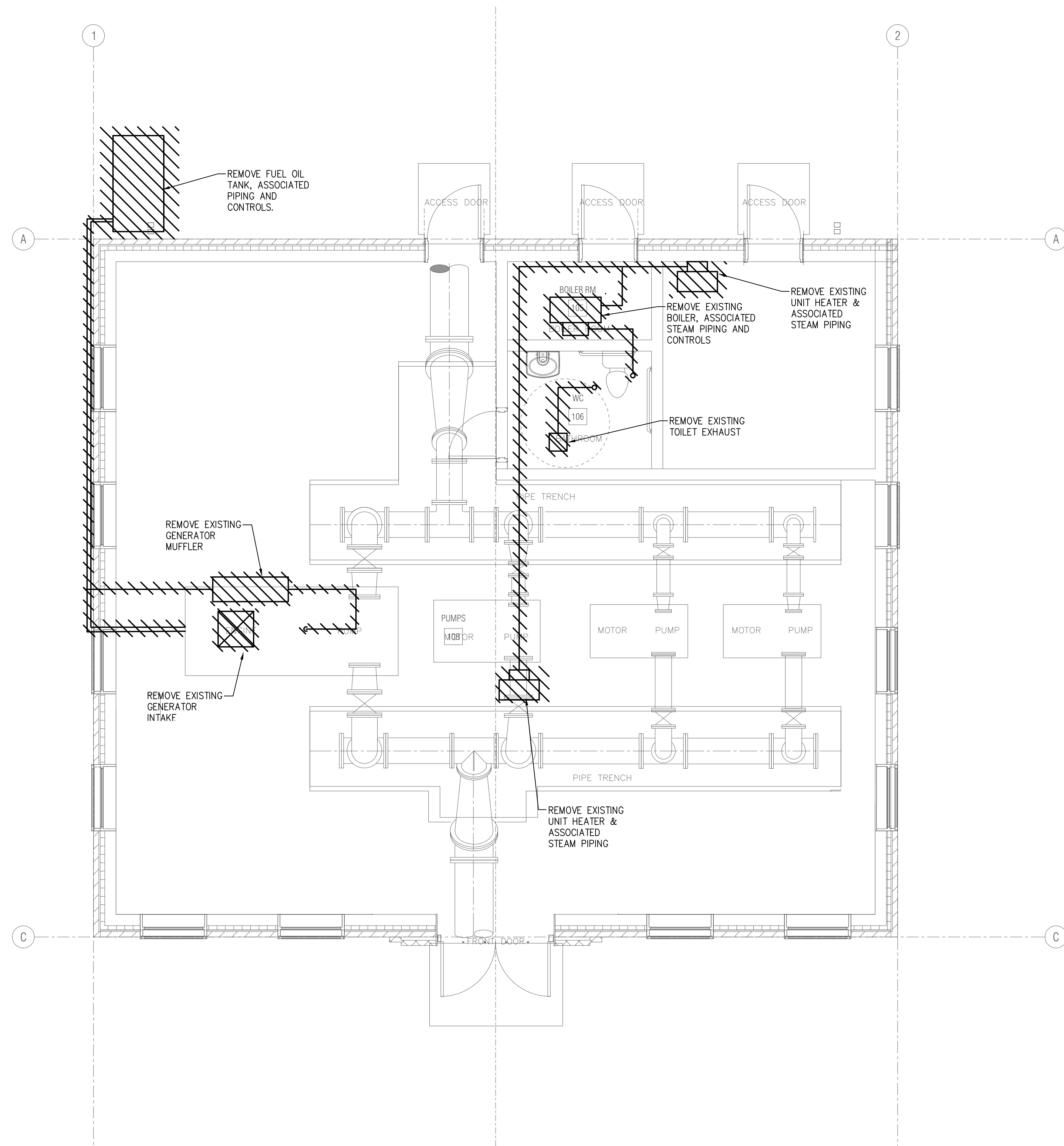
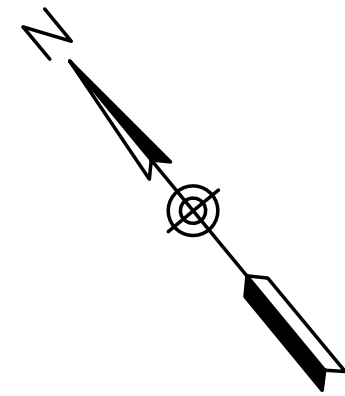
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TITLE

**Edgell Road Water
Pumping Station Replacement
HVAC
GROUND LEVEL PLAN**

BETA JOB NO. 6481
ISSUE DATE JANUARY 2020
SHEET NO. H-3

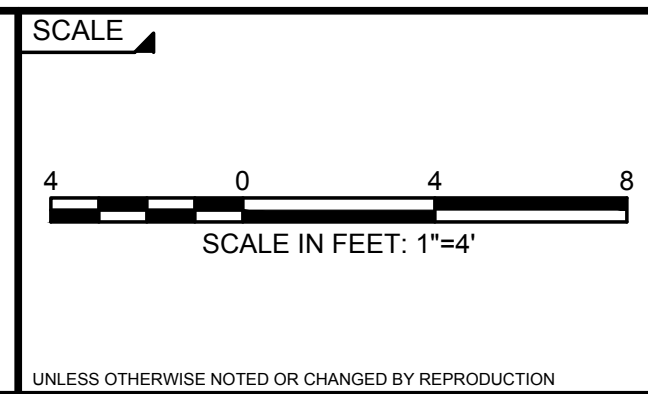
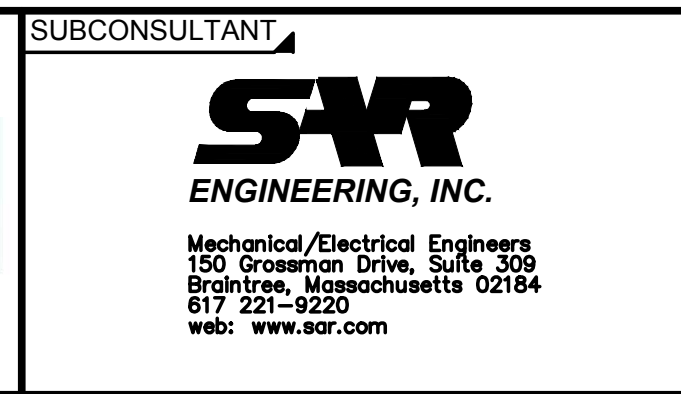


HVAC GROUND LEVEL PLAN
SCALE: 1" = 4'

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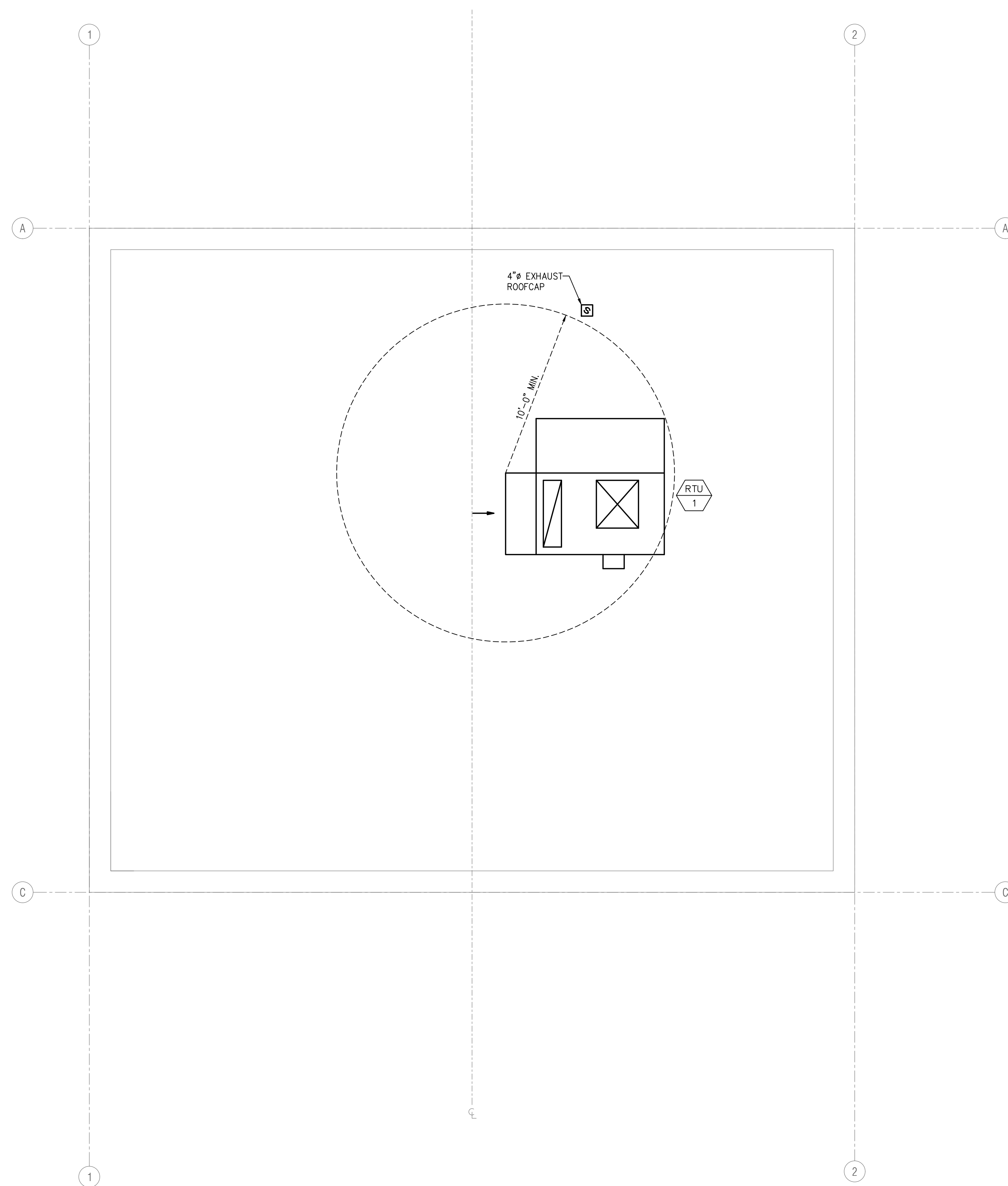
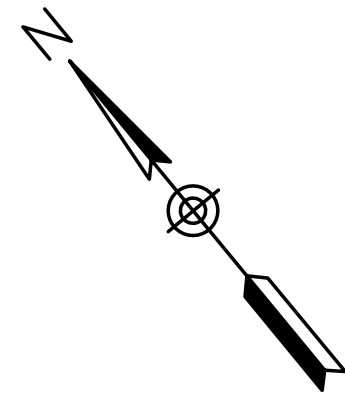
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TITLE

**Edgell Road Water
Pumping Station Replacement
HVAC
GROUND LEVEL DEMOLITION PLAN**

BETA JOB NO. 6481
ISSUE DATE JANUARY 2020
SHEET NO. H-2



HVAC ROOF PLAN
SCALE: 1" = 4'

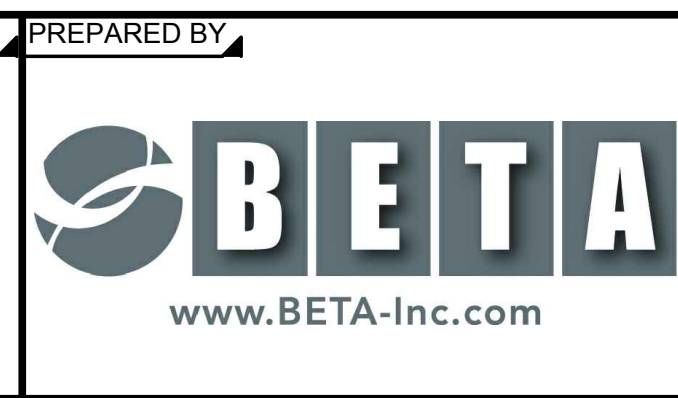
1/24/2020 10:09 AM W:\YEAR - 2018\18004.00 - FRAMINGHAM EDGEHILL WATER PUMPING STATION\HVAC DEPARTMENT\18004-HVAC.DWG (BETA STB BW STB)

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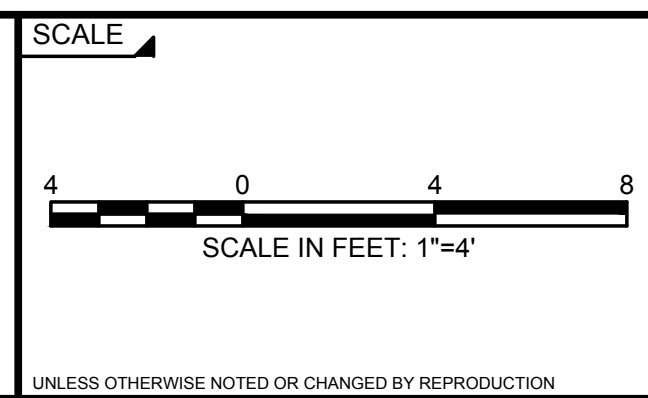
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REGISTERED PROFESSIONAL PREPARED BY

SR
ENGINEERING, INC.

Mechanical/Electrical Engineers
150 Grosvenor Drive, Suite 309
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617.221-9220
web: www.sr.com



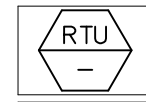
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**Edgell Road Water
Pumping Station Replacement
HVAC
ROOF PLAN**

BETA JOB NO. 6481

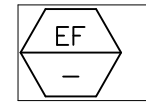
ISSUE DATE: JANUARY 2020

SHEET NO. H-4



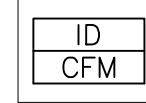
ROOFTOP UNIT SCHEDULE

TAG NO.	LOCATION	SUPPLY AIR PERFORMANCE							RETURN/EXHAUST AIR PERFORMANCE						GAS HEATER DATA				DX COOLING COIL								ELECTRICAL DATA					WEIGHT LBS	MANUFACTURER MODEL NUMBER	REMARKS	
		SUPPLY IN CFM	OA IN CFM	ESP (IN WC)	TSP (IN WC)	FAN RPM	OPERATING POWER HP	MOTOR SIZE HP	EXH./RET. OUT CFM	E.S.P. IN (W.C.)	TOTAL SP IN (W.C.)	FAN RPM	OPERATING POWER HP	MOTOR SIZE HP	GAS	PRESS. WG.	MBH INPUT	MBH OUTPUT	LAT	REFRIG TYPE	TOTAL MBH	SENSIBLE MBH	ROWS	EAT (DB °F)	EAT (WB °F)	LAT (DB °F)	LAT (WB °F)	MCA	MOCP	V	PHASE				HZ
RTU-1	ROOF	1,995	300	1.5	2.52	1993	1.45	4.0	1,995	0.5	-	2116	0.47	1.3	NAT	7"	160	128	119.1	R410A	67.7	54.7	4	77.0	63.5	51.9	51.7	14.8	20	480	3	60	1,500	DAIKIN DPS006	



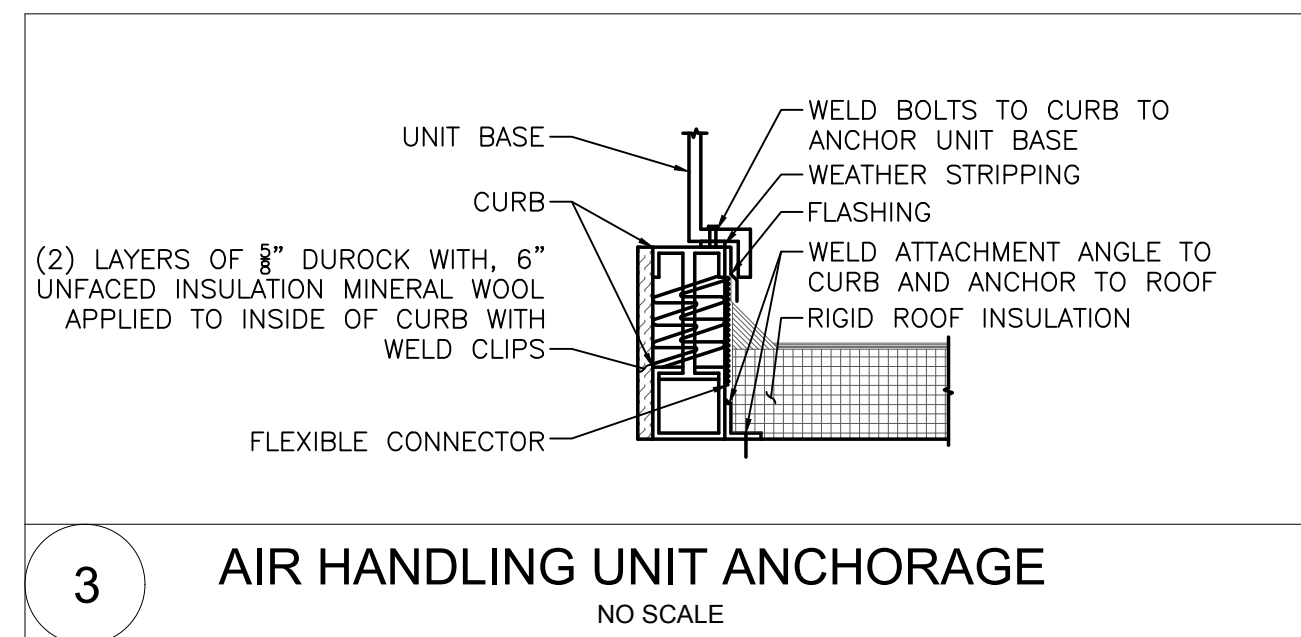
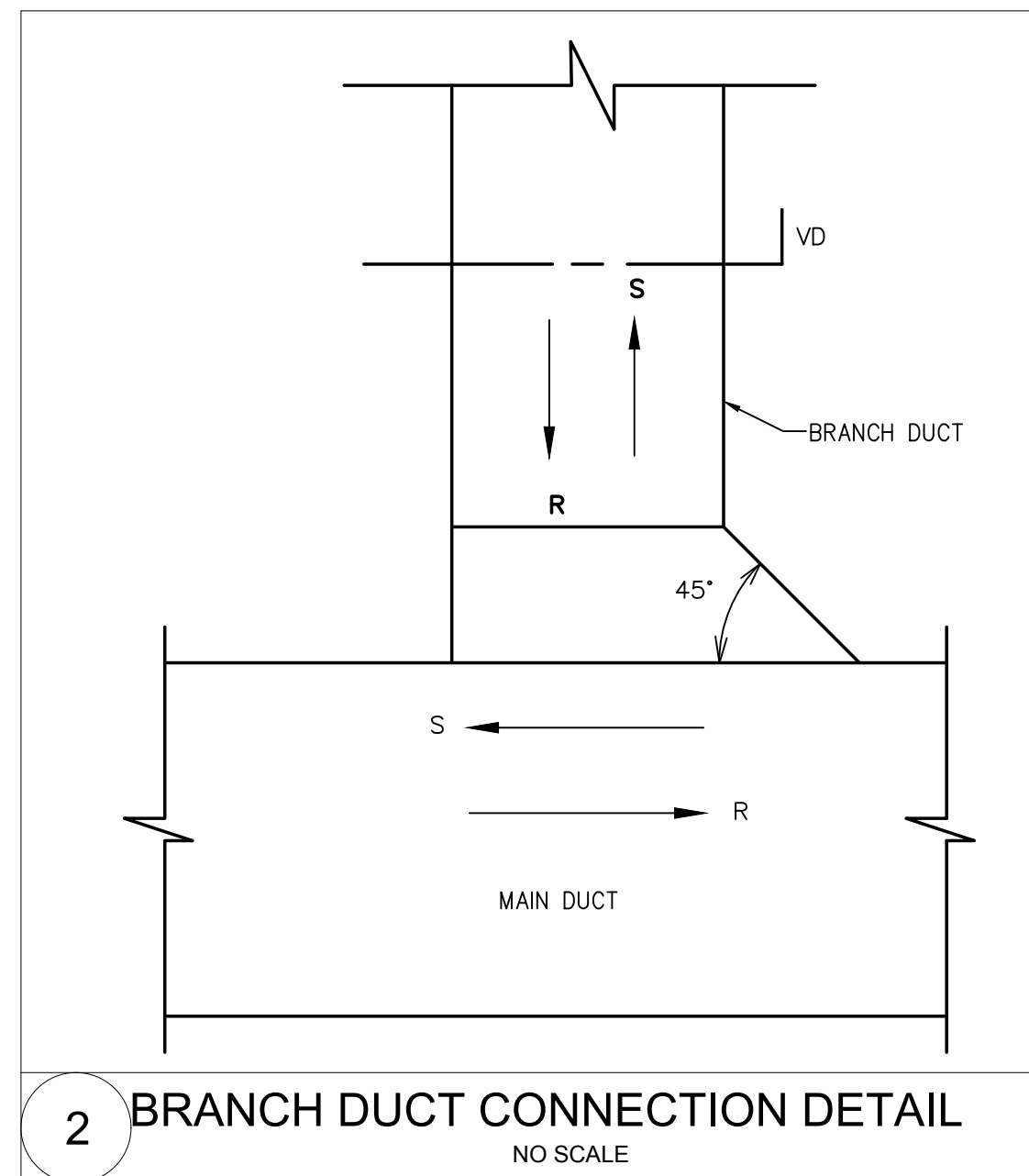
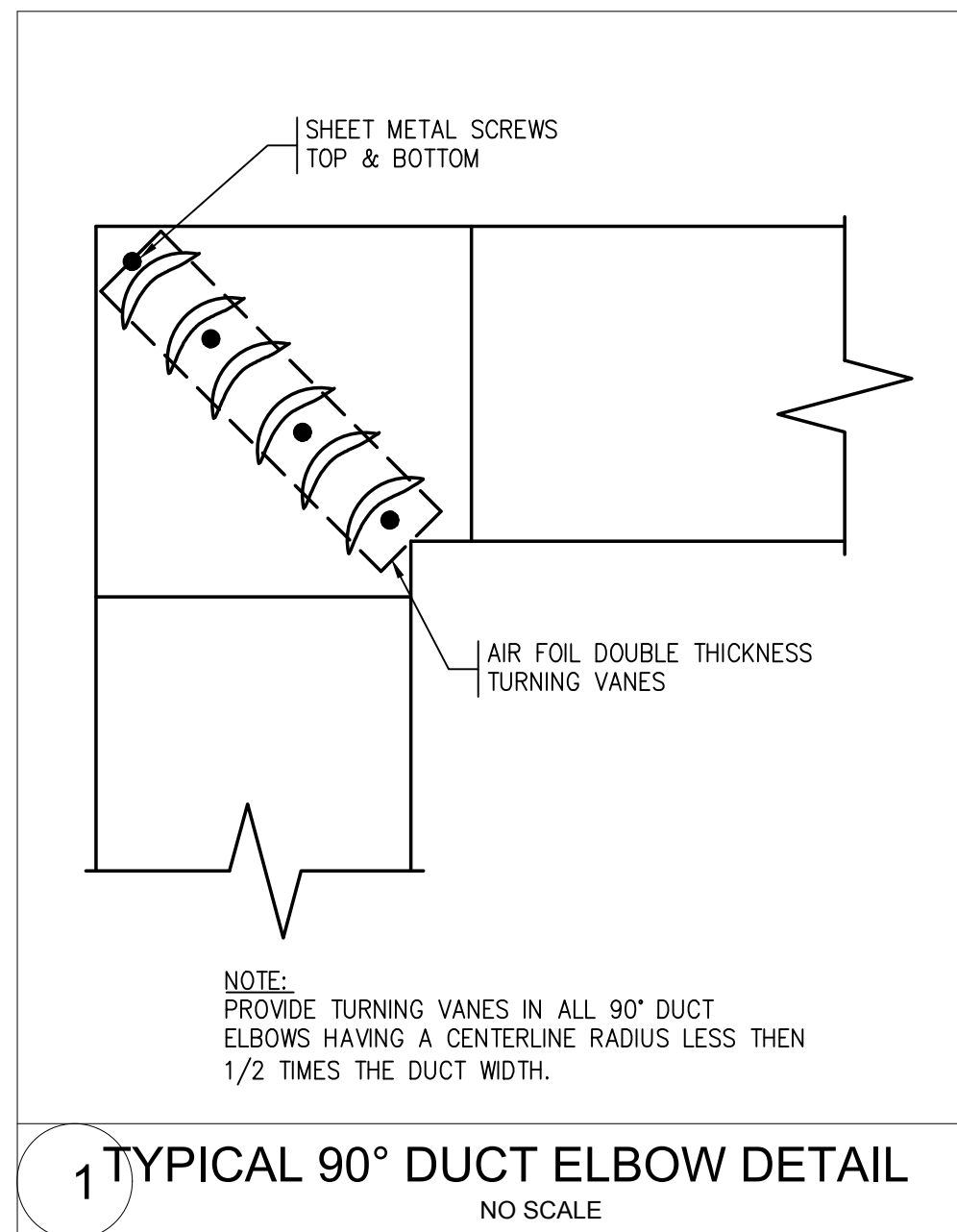
EXHAUST FAN SCHEDULE

TAG NO.	SERVICE	CFM	ESP (IN WC)	SPEED (RPM)		DRIVE	ELECTRICAL DATA				MANUFACTURER & MODEL #	REMARKS
				FAN	MOTOR		AMPS	V	PH	HZ		
EF-1	TOILET	110	0.25	1268	1725	DIRECT	0.16	120	1	60	PANASONIC FV-0511VK2	



DIFFUSER, REGISTER & GRILLE SCHEDULE

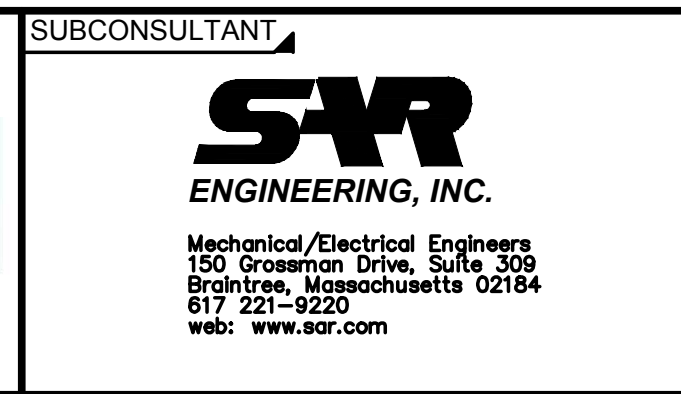
TAG NO.	MODULE SIZE (IN)	NECK SIZE (IN)	SERVICE	MANUFACTURER MODEL NUMBER	REMARKS
SR-1	14X8	12X6	SUPPLY	NAILOR 6145H	
SD-1	24X24	10"ø	SUPPLY	NAILOR 6250	
RR-1	26X12	24X10	RETURN	NAILOR 6145H	
RR-2	38X12	36X10	RETURN	NAILOR 6145H	
RR-3	14X8	12X6	RETURN	NAILOR 6145H	



1/24/2020 10:09 AM W:\YEAR - 2018\18004-00 - FRAMINGHAM EDGEHILL WATER PUMPING STATION\HVAC DEPARTMENT\18004-HVAC.DWG (BETA STB BW STB)

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DESIGNED BY: RLB
CHECKED BY: RHB



SUBCONSULTANT	SCALE	TITLE
	NONE	

Edgell Road Water Pumping Station Replacement HVAC SCHEDULES	
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BETA JOB NO. 6481
ISSUE DATE JANUARY 2020
SHEET NO. H-5

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

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ABBREVIATIONS	
AM	AUTO-MANUAL
CP	CONTROL PANEL
FR	FORWARD-REVERS
HI	HIGH
HOA	HAND-OFF-AUTO
LR	LOCAL-REMOTE
MC	MOTOR CONTROLLER (STARTER)
OC	OPEN-CLOSE
OIT	OPERATOR INTERFACE TERMINAL
OS	OPERATOR STATION
PRESS	PRESSURE
SS	START-STOP
TEMP	TEMPERATURE
VFD	VARIABLE FREQUENCY DRIVE

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	
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		

	<p>FIRST LETTER</p> <p>SUCCEEDING LETTER(S)</p> <p>CLARIFYING ABBREVIATION</p>
--	--

LINE LEGEND	
	NEW PROCESS PIPING
	EXISTING PROCESS PIPING
	DIGITAL SIGNAL
	ANALOG SIGNAL
	ELECTRICAL POWER OR CONTROL
	FIELD INSTRUMENTATION
	PLC INTERFACE
	OIT DISPLAY AND OR CONTROL
	INDEPENDENT CONTROL CIRCUIT
	DRAWING AND OR PROCESS REFERENCE

SYMBOL LEGEND	
	ACTUATOR - MOTORIZED
	ACTUATOR - SOLENOID
	AIR REGULATOR/SEPERATOR
	ANALYZER
	RADIO ANTENNA
	CALIBRATION COLUMN
	DRAIN
	EDUCATOR
	ELECTRIC MOTOR
	FLEX CONNECTION
	FLOW METER - MAGNETIC
	FLOW METER - ULTRASONIC STRAP ON
	FLOW METER - DIFFERENTIAL PRESSURE
	FLOW METER - ROTAMETER
	HOSE
	LEVEL SWITCH - FLOAT SWITCH
	LEVEL TRANSMITTER - SUBMERSIBLE PRESSURE
	LEVEL TRANSMITTER - ULTRASONIC
	LEVEL TRANSMITTER - RADAR
	MIXER
	PUMP - CENTRIFUGAL
	PUMP - PROGRESSING
	PUMP - RECIPROCATING/METERING
	PUMP - ROTARY LUBE
	SLIDE OR SLUICE GATE
	STATIC MIXER
	VALVE - BALL
	VALVE - BUTTERFLY
	VALVE - CHECK
	VALVE - GATE
	VALVE - GLOBE
	VALVE - PINCH
	VALVE - PLUG
	VALVE - PRESSURE REGULATING
	VALVE - PRESSURE RELIEF
	VIBRATOR

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

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REGISTERED PROFESSIONAL

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SCALE	NONE
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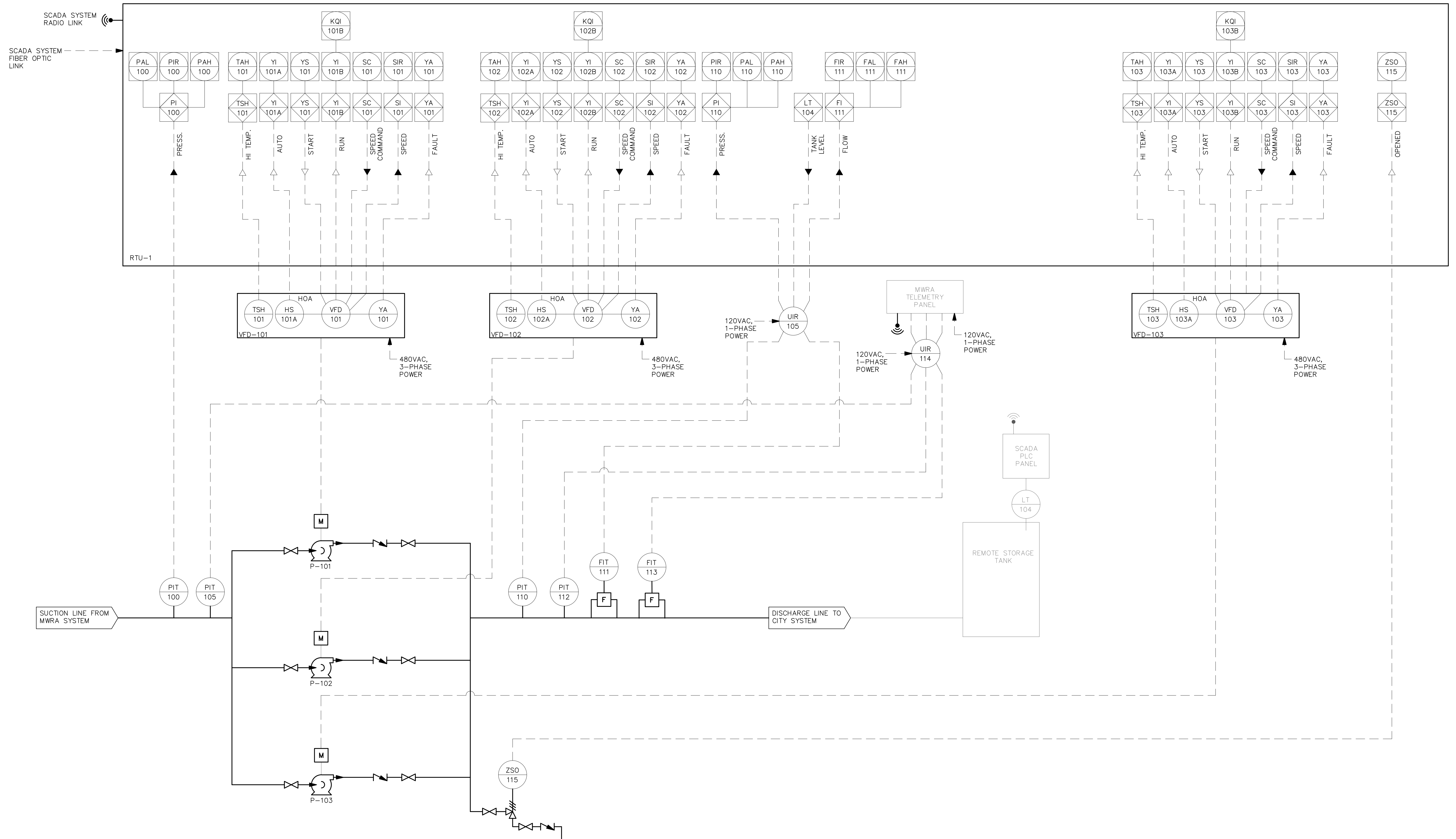
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**Edgell Road Water
Pumping Station Replacement
INSTRUMENTATION & CONTROLS
LEGEND AND ABBREVIATIONS**

BETA JOB NO.	6481
ISSUE DATE	JANUARY 2020
SHEET NO.	I-1

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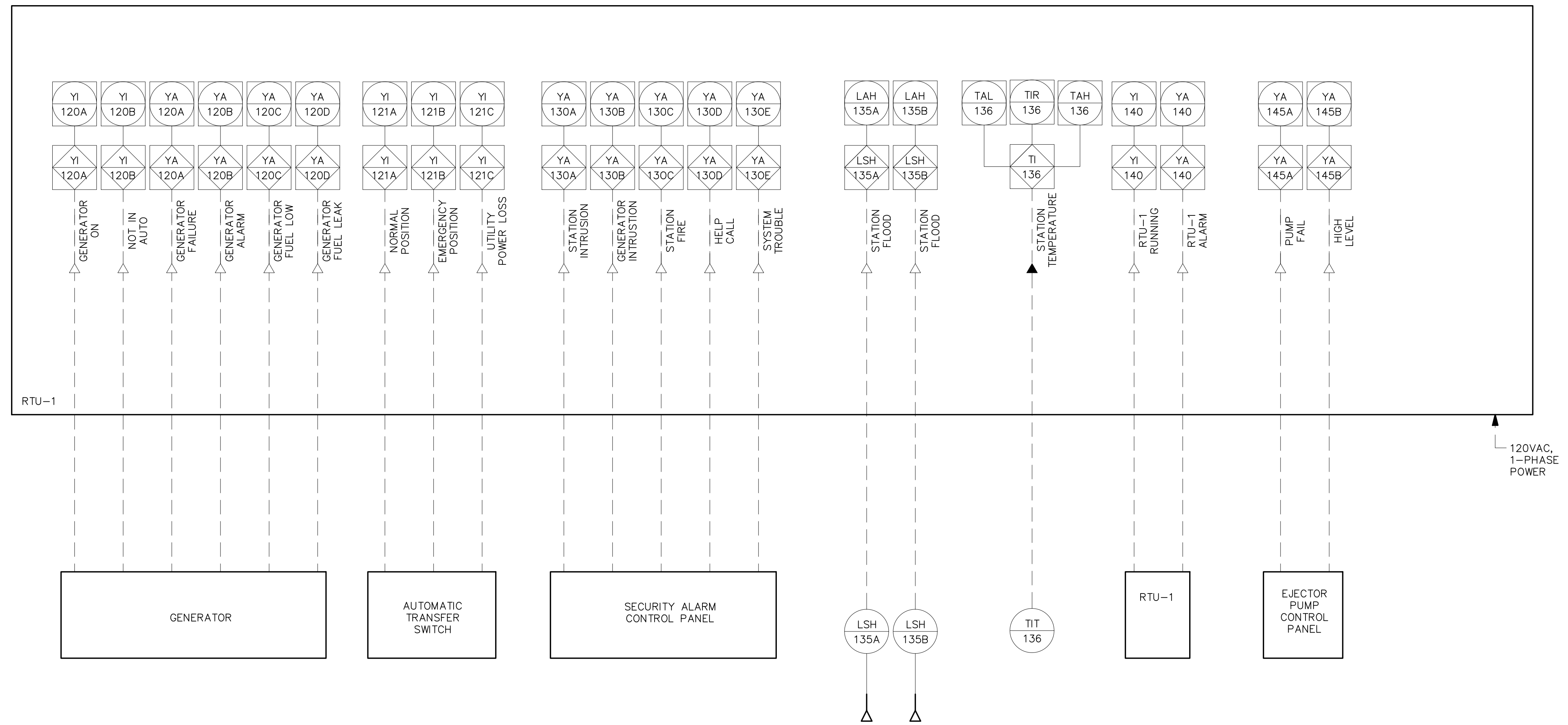
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TITLE
Edgell Road Water Pumping Station Replacement INSTRUMENTATION & CONTROLS WATER BOOSTER PUMPS

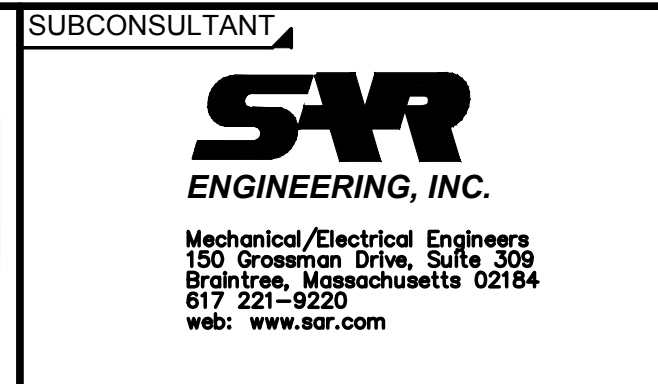
BETA JOB NO. 6481
ISSUE DATE JANUARY 2020
SHEET NO. 1-2

1/24/2020 1:50 PM W:\YEAR - 2018\18004.00 - FRAMINGHAM EDGEHILL WATER PUMPING STATION\ELECTRICAL DEPARTMENT\18004.00.I&C.DWG (BETA STB BW.STB)



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MJC



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TITLE
Edgell Road Water Pumping Station Replacement INSTRUMENTATION & CONTROLS STATION MONITORING

BETA JOB NO. 6481
ISSUE DATE JANUARY 2020
SHEET NO. 1-3

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

PLUMBING FIXTURE SCHEDULE

DESIGNATION	FIXTURE DESCRIPTION	CONNECTION SIZE				REMARKS
		CW	HW	S/W	V	
P-1	WATER CLOSET - FLOOR MOUNTED	1"	-	4"	2"	-
P-2	LAVATORY	1/2"	1/2"	2"	2"	-

NOTES:
 2. ALL EXPOSED VALVES, PIPING AND FITTINGS SHALL BE CHROME PLATED.
 3. PLUMBING CONTRACTOR SHALL PROVIDE EACH CONNECTION TO EACH SINK OR PIECE OF EQUIPMENT ITS OWN INDIVIDUAL SHUTOFF VALVE.
 4. PLUMBING CONTRACTOR SHALL PROVIDE FULL SIZE TRAP AND EXTENSION. PLUMBING CONTRACTOR SHALL ASSEMBLE AND INSTALL ALL PLUMBING RELATED ITEMS INCLUDING TRIM, FAUCETS, SINK WASTE, TAIL PIECES, TRAPS AND EXTENSIONS.

ELECTRIC WATER HEATER SCHEDULE

I.D.	MANUFACTURER	MODEL	DEL		WATTS	VOLTS	PHASE	HZ	REMARKS
			MIN. G.P.M.	Δ TEMP.					
EW-1	EEMAX	4208	0.3	56	4,100	208	1	60	NEMA 4 ENCLOSURE

DRAIN SCHEDULE*

SYMBOL	TYPE	MANUFACTURER	MODEL	OUTLET	STRAINER	REMARKS
A	FD	J.R. SMITH	2005-A-P	CAULK	NICK-BRZ	FINISHED AREAS
B	FD	J.R. SMITH	2130-U-PB-P	CAULK	CAST IRON	DUCTILE IRON GRATE - MECH RMS

* ALL FLOOR DRAINS SHALL BE PROVIDED WITH A CONNECTION FROM THE ELECTRONIC TRAP PRIMER. REFER TO DETAIL FOR PIPING ARRANGEMENT.

PLUMBING NOTES

- 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.
- ALL PLUMBING EQUIPMENT, MATERIALS, LABOR AND TESTING PERFORMED 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.
- ANY AND ALL PERMITS REQUIRED FOR INSTALLATION OF ANY MATERIAL SHALL BE OBTAINED AS PART OF THE WORK, INCLUDING ALL FEES OR EXPENSES INCURRED.
- 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.
- 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.
- UNLESS OTHERWISE NOTED, ALL HORIZONTAL DRAINAGE PIPING WHICH IS 3" OR LESS IN DIAMETER SHALL HAVE PITCH OF NOT LESS THAN 1/4" PER FOOT AND ALL HORIZONTAL DRAINAGE PIPING WHICH IS 4" OR LARGER IN DIAMETER SHALL HAVE PITCH OF NOT LESS THAN 1/8" PER FOOT.
- PROVIDE ALL FLOOR CLEANOUTS WITH HUB AND SPIGOT FROM CLEANOUT TO AND INCLUDING CONNECTION TO SANITARY DRAIN.
- REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND HEIGHT OF ALL PLUMBING FIXTURES.
- MISCELLANEOUS DISCREPANCIES OR OMISSIONS WHICH MIGHT APPEAR ON THE PLANS OR SPECIFICATIONS WILL NOT RELIEVE THE CONTRACTOR OF CODE COMPLIANCE.
- ALL FLOOR DRAINS SHALL BE PROVIDED WITH A TRAP PRIMER CONNECTION. CONTRACTOR SHALL PROVIDE ALL ASSOCIATED EQUIPMENT NECESSARY TO PROVIDE A COMPLETE SYSTEM INCLUDING AN ELECTRONICALLY OPERATED PRIMING MANIFOLD AND ALL ASSOCIATED PIPING REQUIRED.
- PROVIDE CLEANOUTS AT ALL CHANGE OF DIRECTIONS FOR SANITARY/WASTE PIPING.
- PROVIDE WALL CLEANOUTS WITH ACCESS PANELS AT ALL SANITARY/WASTE PIPING WITHIN PIPE CHASES OR WALLS.
- HANDICAPPED ACCESSIBLE FIXTURES SHALL BE IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES AND THE RULES AND REGULATIONS OF THE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD. WHERE THE TWO STANDARDS DIFFER, THE MORE STRINGENT SHALL APPLY.
- ALL 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.

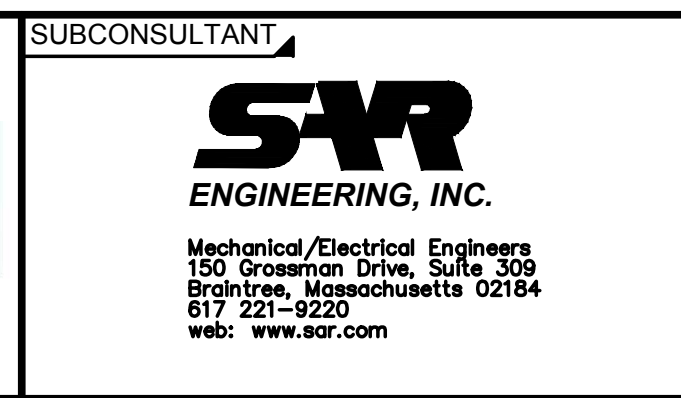
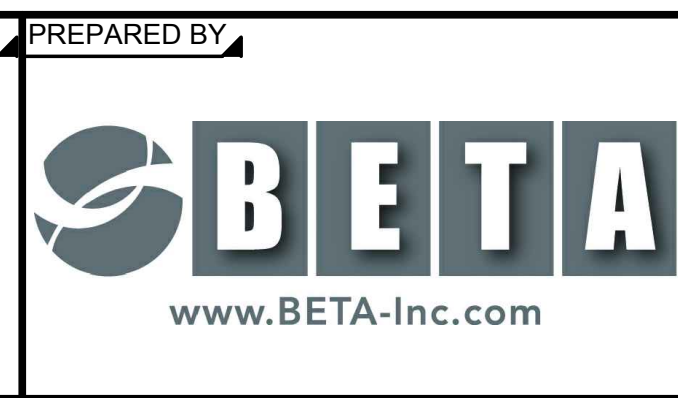
PLUMBING LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
		BELOW FLOOR PIPING (INDICATED AS DOUBLE LINework)
	CW	COLD WATER
	HW	HOT WATER
	NPCW	NON-POTABLE COLD WATER
	S or W	SOIL OR WASTE
	V	VENT
	G	NATURAL GAS
	CONT	CONTINUATION
	UP	PIPE RISE OR UP
	DN	PIPE DROP OR DOWN
	TEE	PIPE TEE
	SOV	SHUT-OFF VALVE
	PRV	PRESSURE REDUCING VALVE
	VIV	VALVE IN VERTICAL
	CV	CHECK VALVE
	W & T	WASTE & TRAP
	CO	CLEANOUT PLUG
	FCO	FLUSH FLOOR CLEANOUT
		ARROW INDICATES DIRECTION OF FLOW
		ARROW INDICATES DIRECTION OF SLOPE
		UNION
	WTS	WATERTIGHT SLEEVE
	HB	HOSE BIBB
	WH	WALL HYDRANT
	FD "A"	FLOOR DRAIN & TYPE
	RPZ	REDUCED PRESSURE ZONE ASSEMBLY
	WM	WATER METER
	T	THERMOMETER
	PG	PRESSURE GAUGE WITH PETCOCK
	T&P	TEMPERATURE AND PRESSURE RELIEF VALVE
	SA	SHOCK ABSORBER
		VACUUM RELIEF VALVE
	POC	POINT OF CONNECTION
	WH-1	WATER HEATER & NUMBER
	SS	SOIL STACK
	VS	VENT STACK
	VTR	VENT THRU ROOF
	INV	INVERT
	TYP	TYPICAL
	NTS	NOT TO SCALE
	AFF	ABOVE FINISHED FLOOR
	LPP	LIMIT OF PLUMBING PERMIT
	S=.01	SLOPE = 1/8" PER FOOT
	S=.02	SLOPE = 1/4" PER FOOT
	F.F.E.	FINISHED FLOOR ELEVATION
	PD	PUMPED DISCHARGE
	ETP	ELECTRONIC TRAP PRIMER

1/24/2020 10:12 AM W:\YEAR - 2018\18004.00 - FRAMINGHAM EDGEHILL WATER PUMPING STATION\PLUMBING DEPARTMENT\18004-PLUMBING.DWG (BETA STB B.V.S.TB)

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RLB
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JL

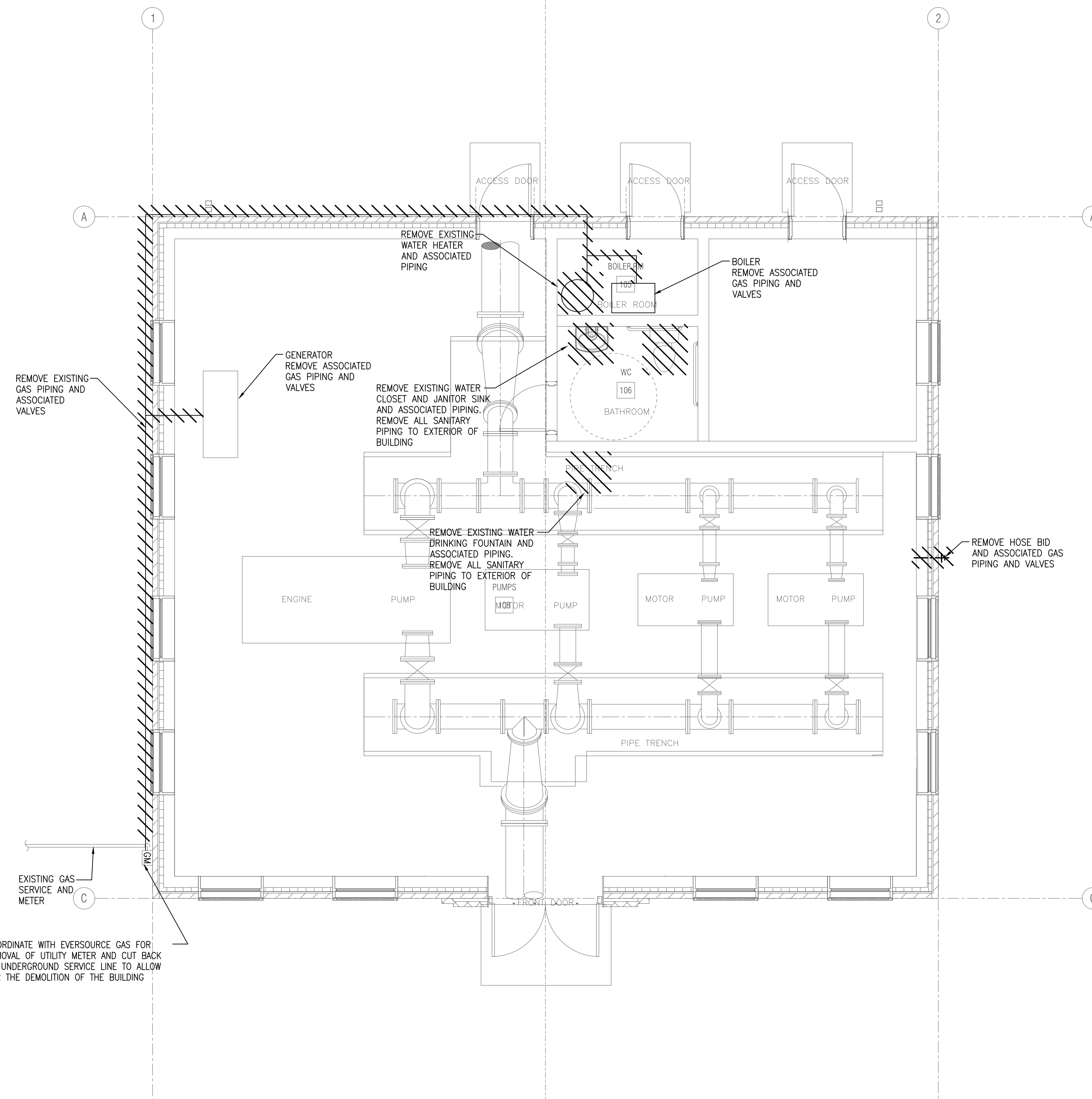
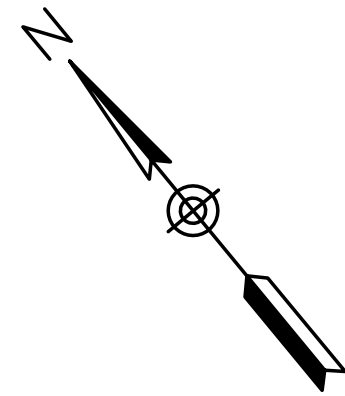


SUBCONSULTANT
 SCALE
 NONE

TITLE
Edgell Road Water Pumping Station Replacement PLUMBING LEGEND, NOTES AND SCHEDULES

BETA JOB NO. 6481
 ISSUE DATE JANUARY 2020
 SHEET NO. P-1

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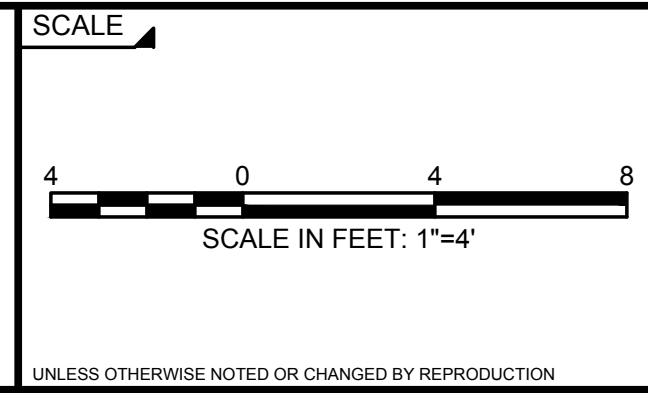
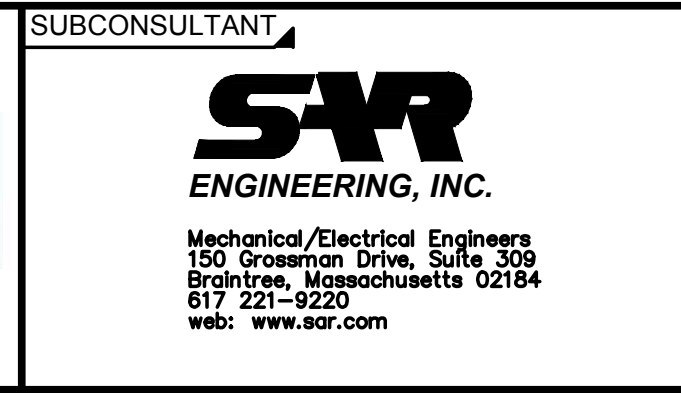
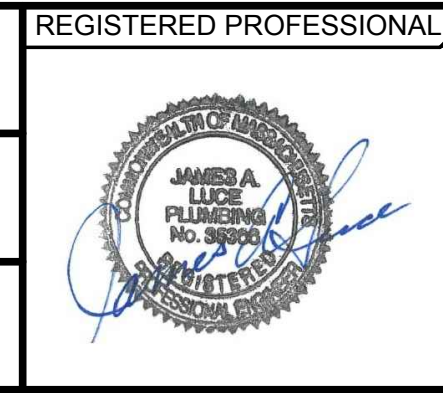


PLUMBING GROUND LEVEL DEMOLITION PLAN
SCALE: 1" = 4'

2/3/2020 7:15 AM W:\YEAR - 2018\18004.00 - FRAMINGHAM EDGEHILL WATER PUMPING STATION\PLUMBING DEPARTMENT\18004-PLUMBING.DWG (BETA STB BW\STB)

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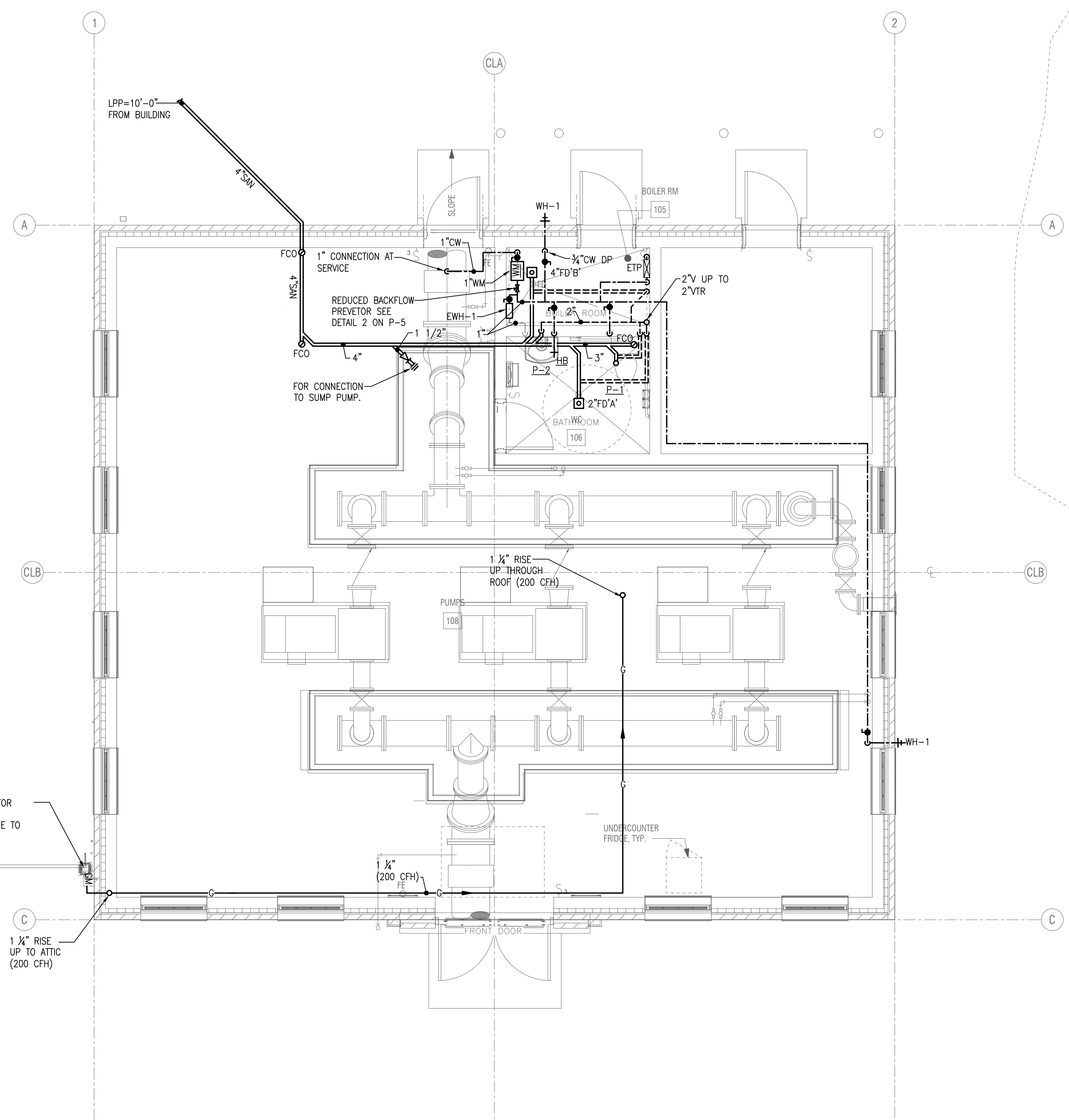
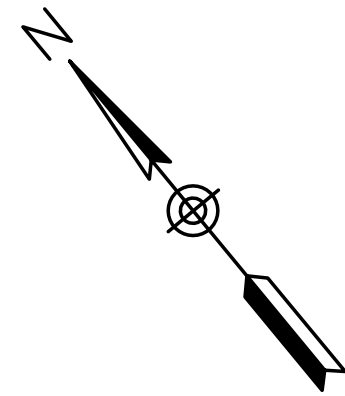
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TITLE

**Edgell Road Water
Pumping Station Replacement
PLUMBING
DEMOLITION PLAN**

BETA JOB NO. 6481
ISSUE DATE JANUARY 2020
SHEET NO. P-2



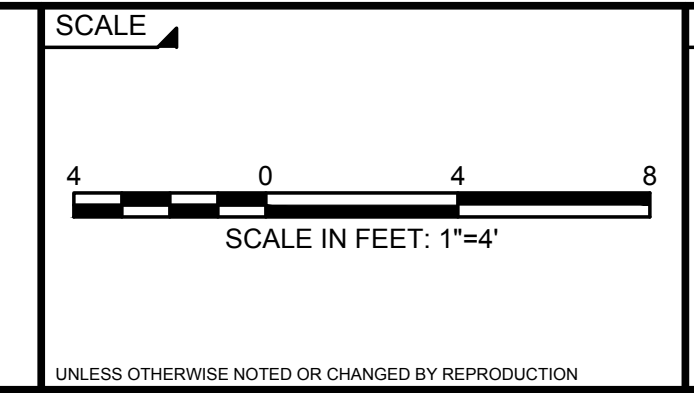
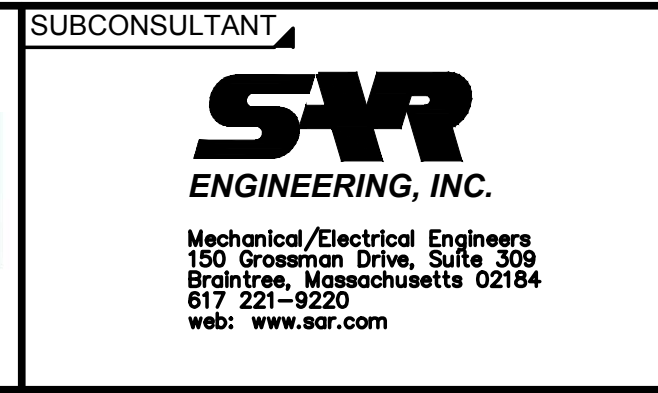
COORDINATE WITH EVERSOURCE GAS FOR
INSTALLATION OF UTILITY METER ANY
REQUIRED UNDERGROUND SERVICE LINE TO
FOR THE UPGRADED THE BUILDING

PLUMBING GROUND LEVEL NEW WORK PLAN
SCALE: 1" = 4'

2/3/2020 7:19 AM W:\YEAR - 2018\18004.00 - FRAMINGHAM EDGEHILL WATER PUMPING STATION\PLUMBING DEPARTMENT\18004-PLUMBING.DWG (BETA STB BW\STB)

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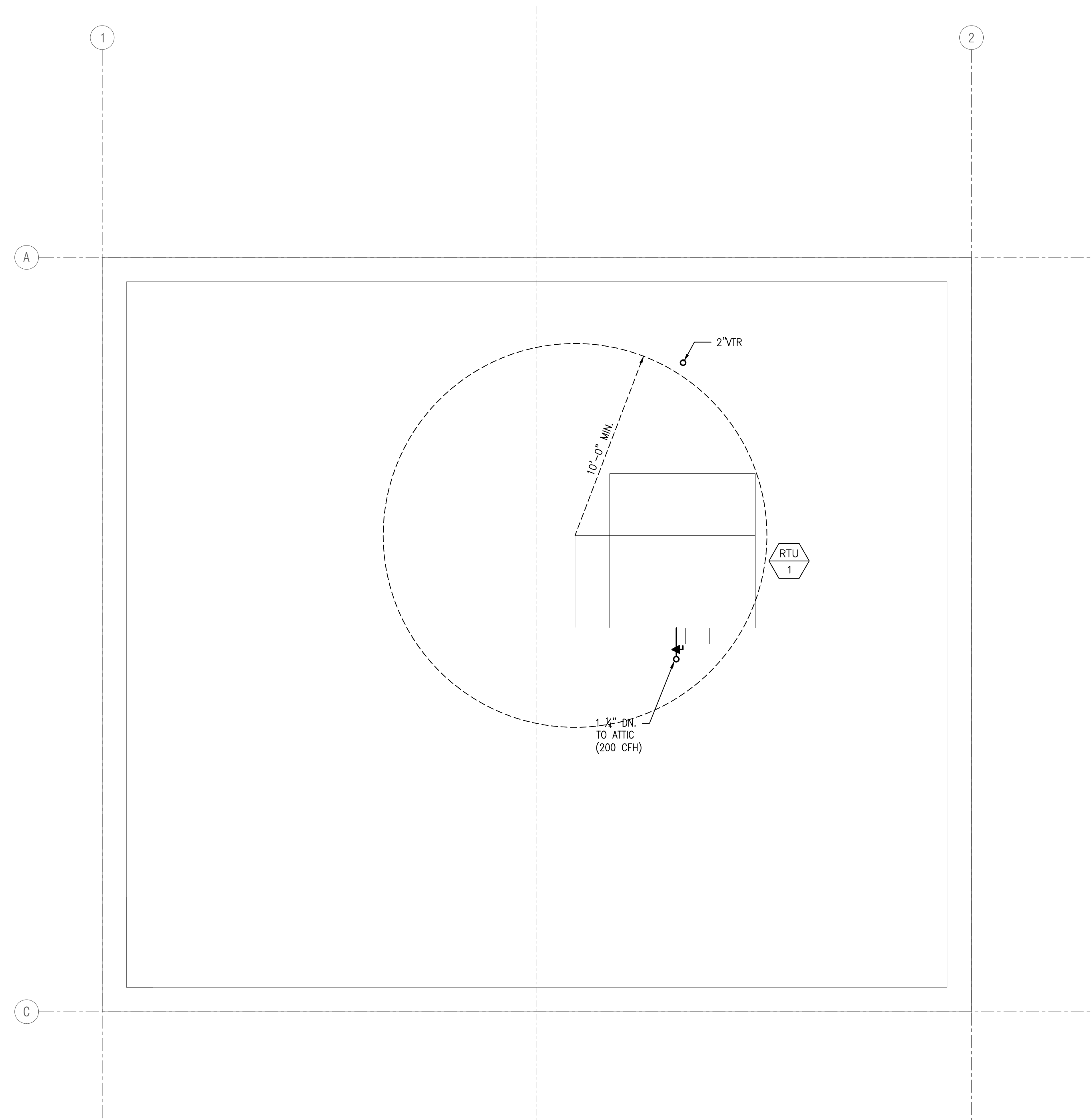
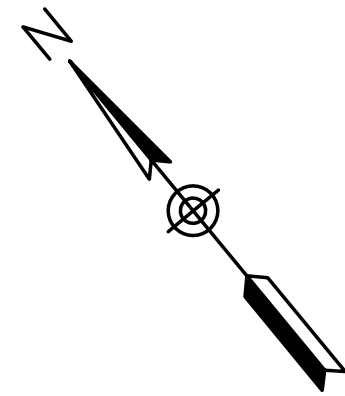
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TITLE

**Edgell Road Water
Pumping Station Replacement
PLUMBING
GROUND LEVEL PLAN**

BETA JOB NO. 6481
ISSUE DATE JANUARY 2020
SHEET NO. P-3



PLUMBING ROOF PLAN
SCALE: 1" = 4'

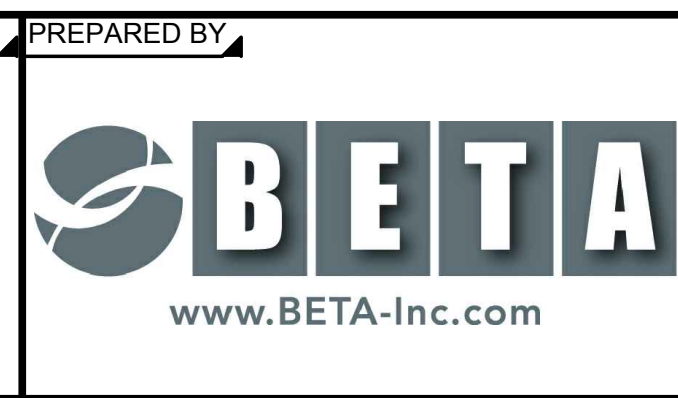
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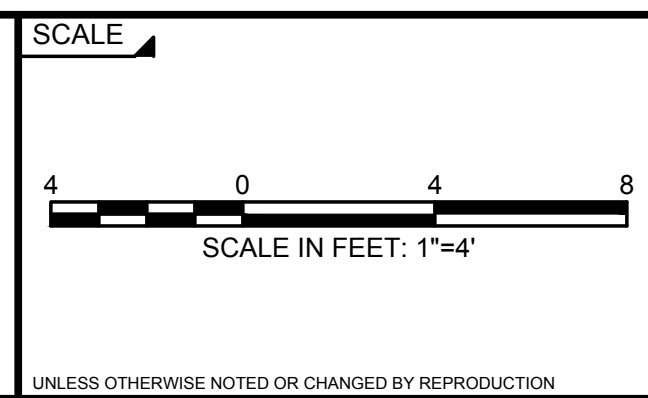
CHECKED BY:
JL



SUBCONSULTANT

SR
ENGINEERING, INC.

Mechanical/Electrical Engineers
150 Grosvenor Drive, Suite 309
Brightree, Massachusetts 02184
617.221-9220
web: www.sr.com



TITLE

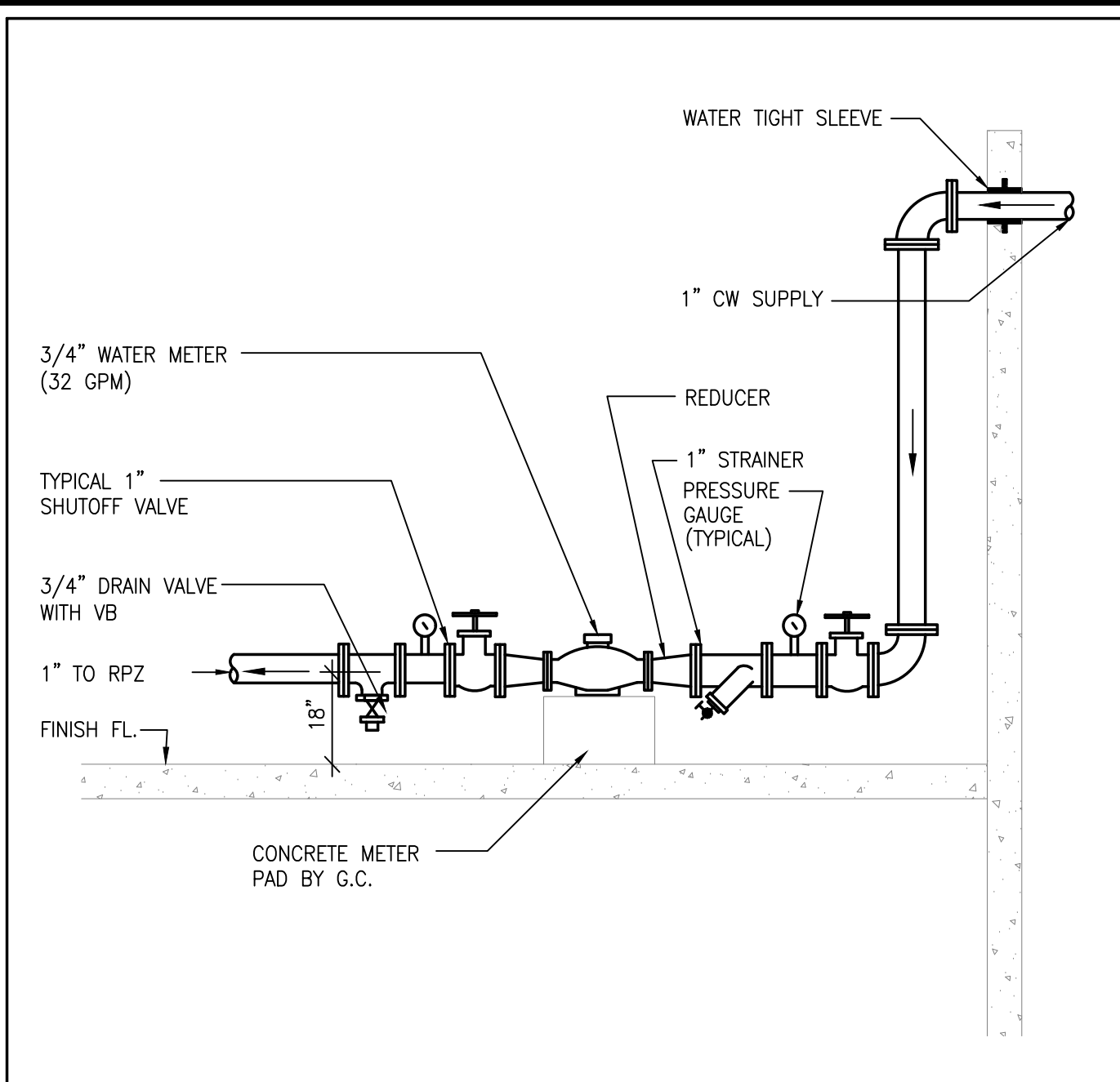
**Edgell Road Water
Pumping Station Replacement
PLUMBING
ROOF PLAN**

BETA JOB NO. 6481

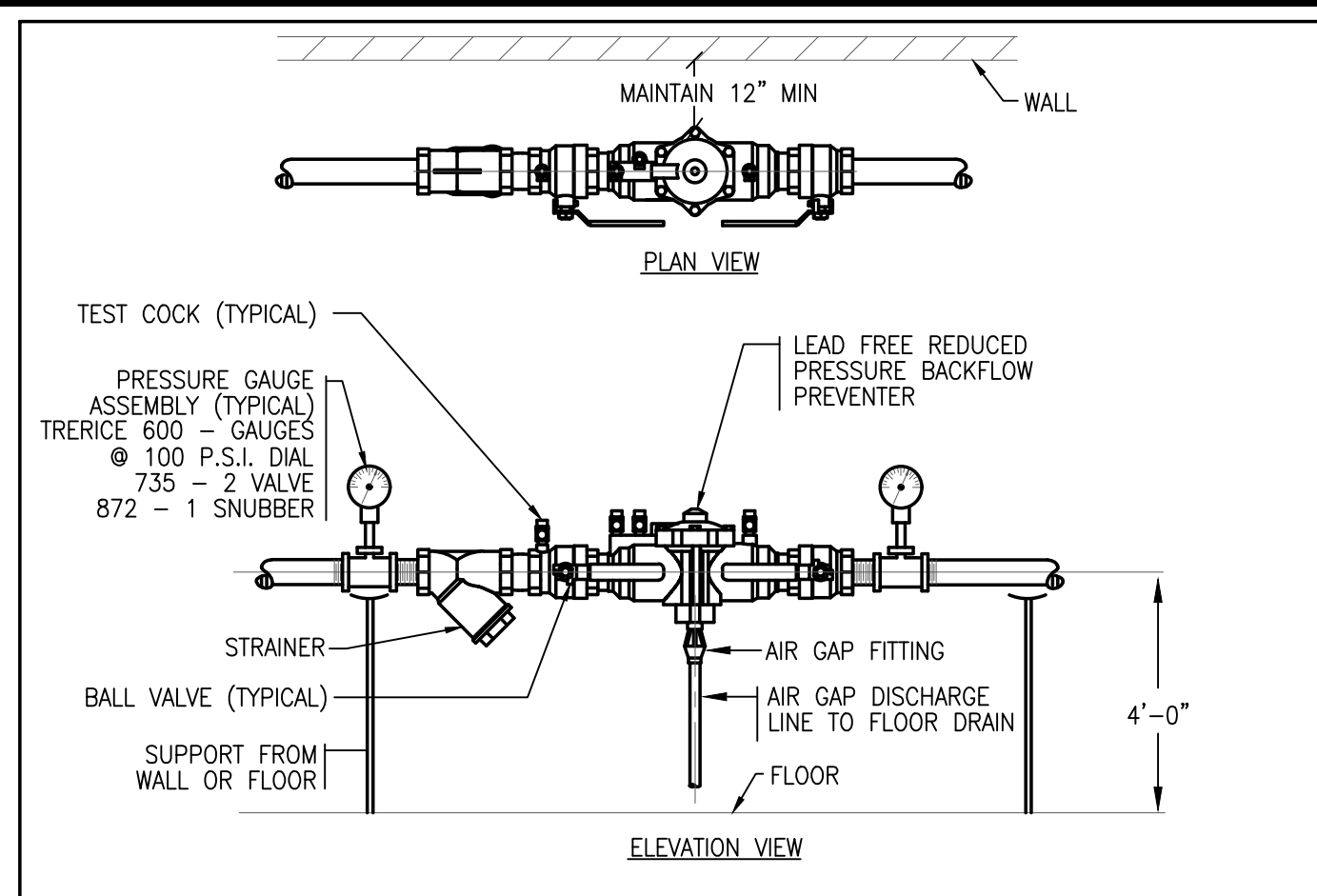
ISSUE DATE: JANUARY 2020

SHEET NO. P-4

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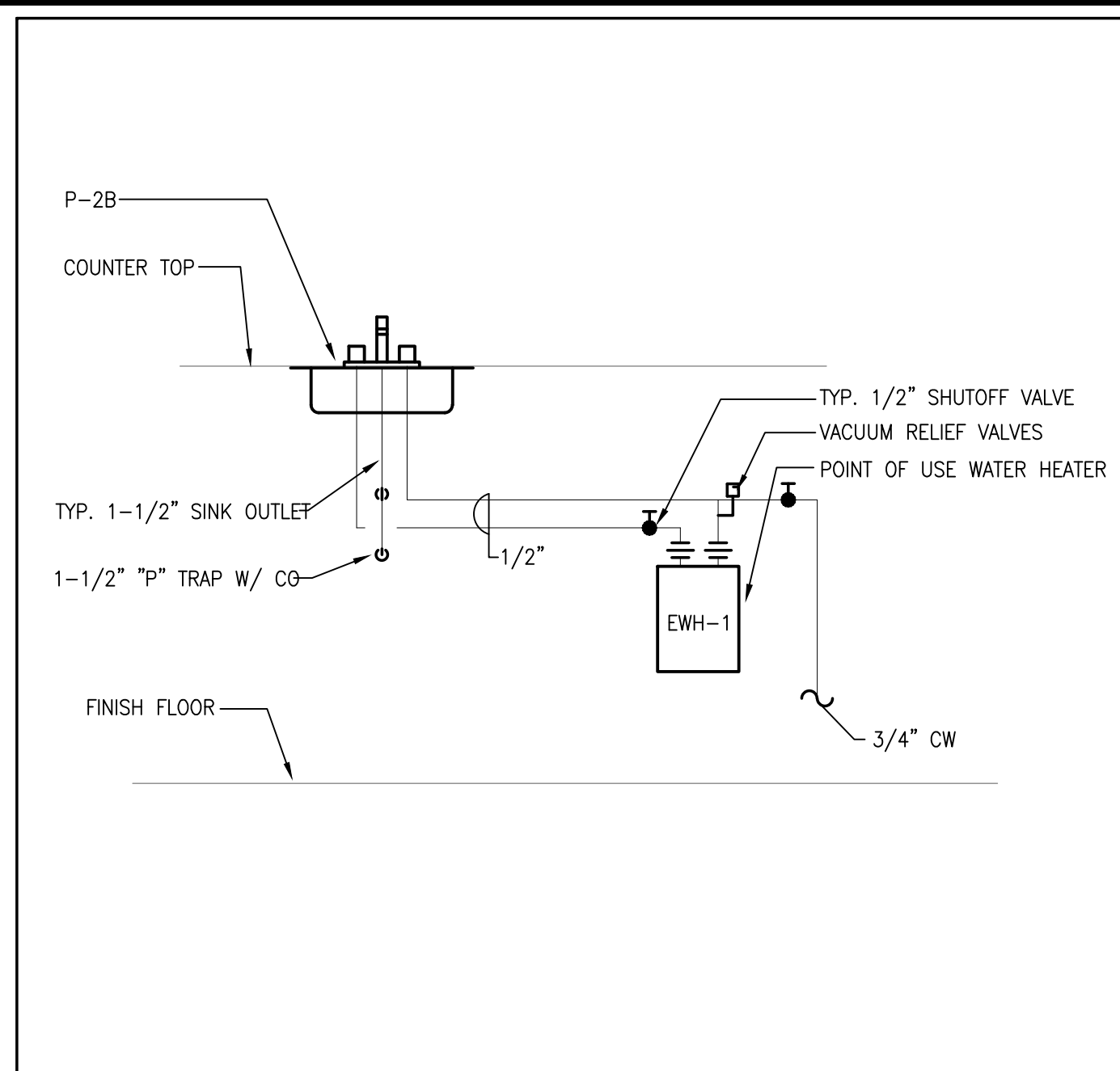


1 DOMESTIC WATER METER DETAIL NTS

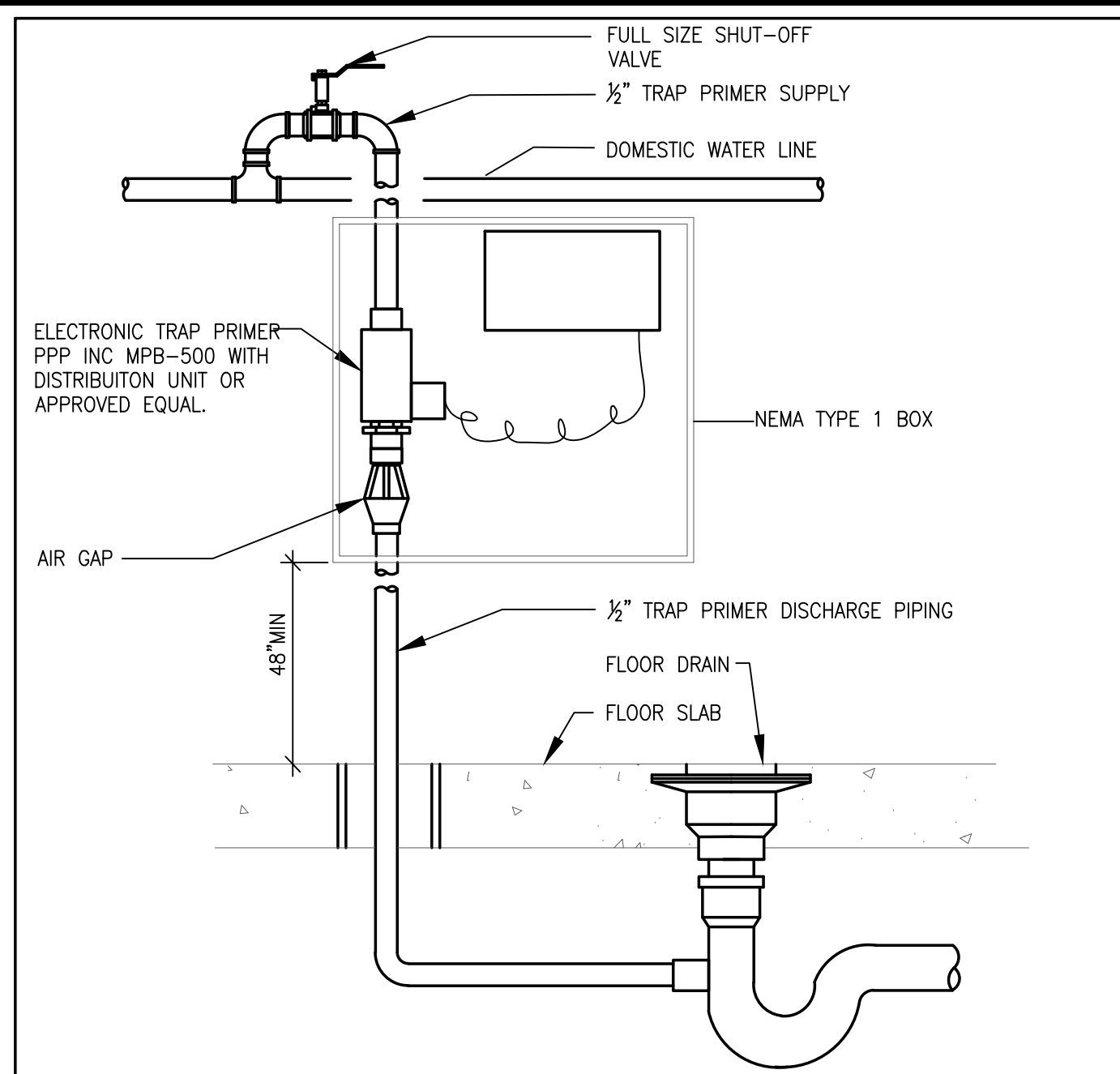


2 REDUCED PRESSURE BACKFLOW DETAIL NTS

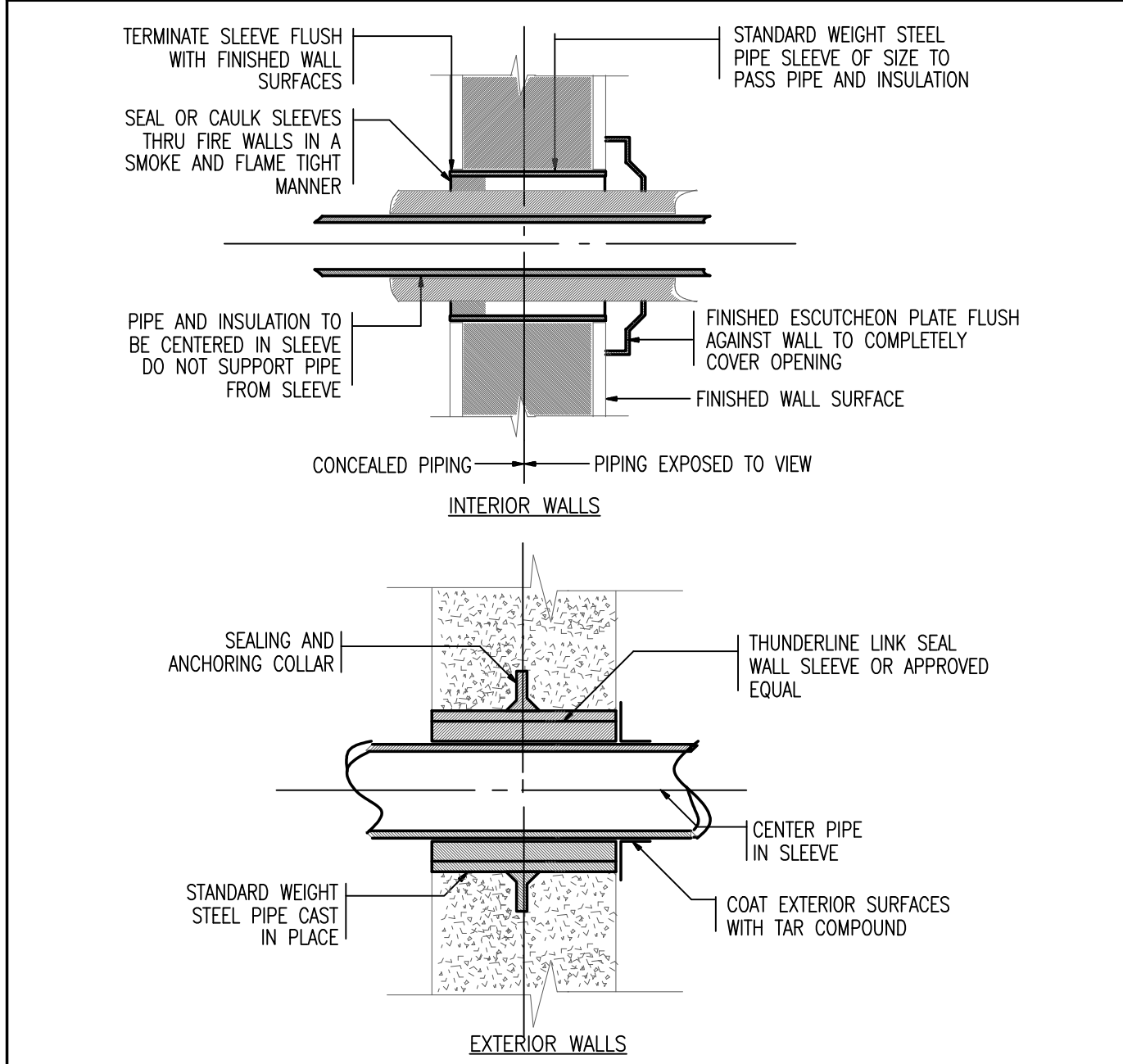
NOTES:
 1. REDUCED PRESSURE BACKFLOW PREVENTER SHALL BE APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AGENCY.
 2. BACKFLOW PREVENTER SHALL BE IN COMPLETE ACCORDANCE WITH AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL SUBMIT PLANS AND DEVICE INFORMATION FOR APPROVAL PRIOR TO INSTALLATION.
 3. FURNISH TO OWNER ONE TEST KIT AND SPARE PARTS KIT FOR EACH DEVICE.
 4. THE CONTRACTOR SHALL ACT AS THE OWNERS AGENT IN SEEKING APPROVAL FROM ALL LOCAL AND STATE AUTHORITIES. THE CONTRACTOR SHALL SUBMIT ALL PLANS, SPECS. AND APPLICATIONS REQUIRED FOR APPROVAL AND PAY ALL FEES.
 5. SEE FLOOR PLANS FOR SIZES.
 6. MAINTAIN 1'-0" CLEARANCE FROM WALL.



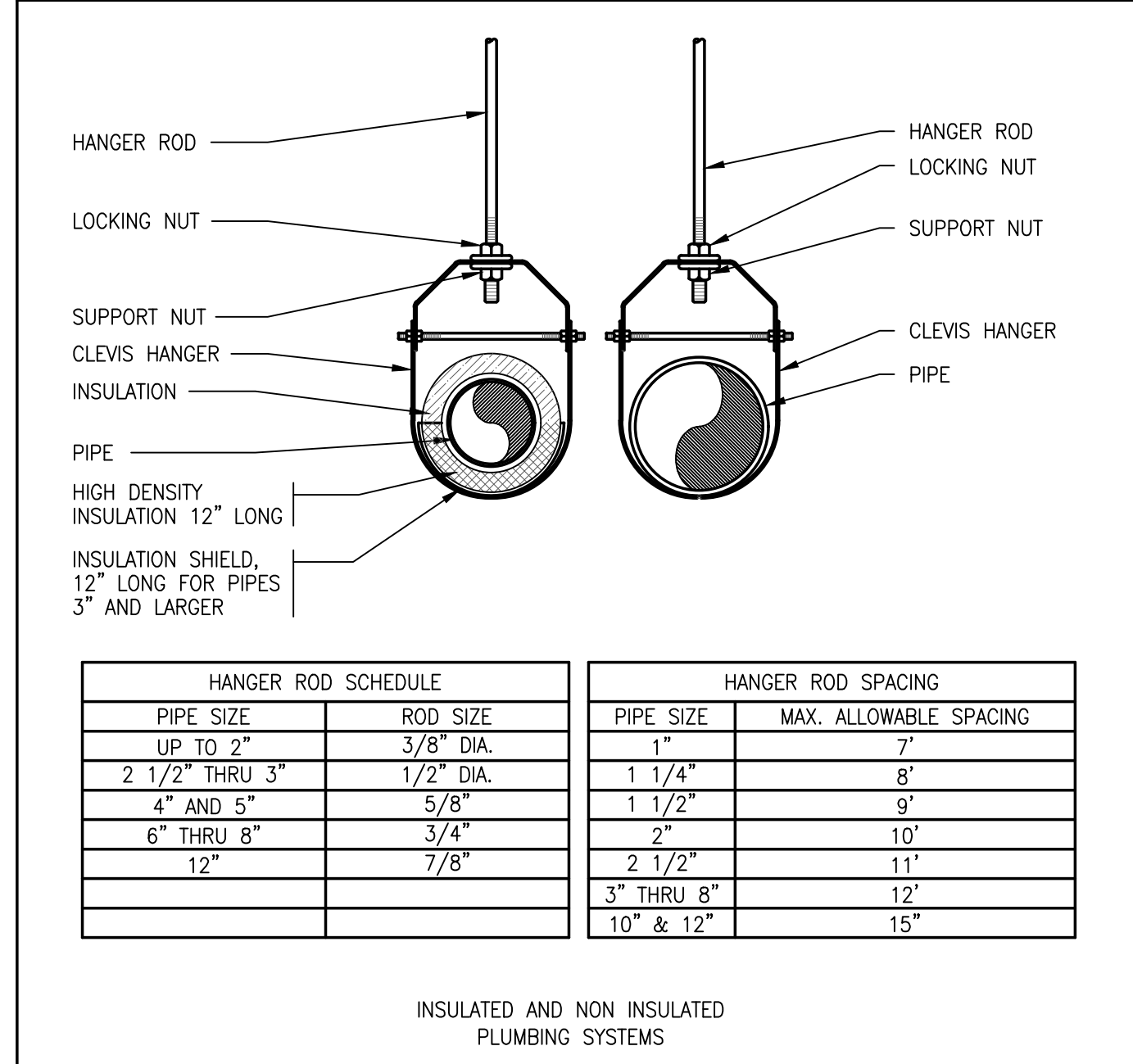
3 POINT-OF-USE WATER HEATER DETAIL NTS



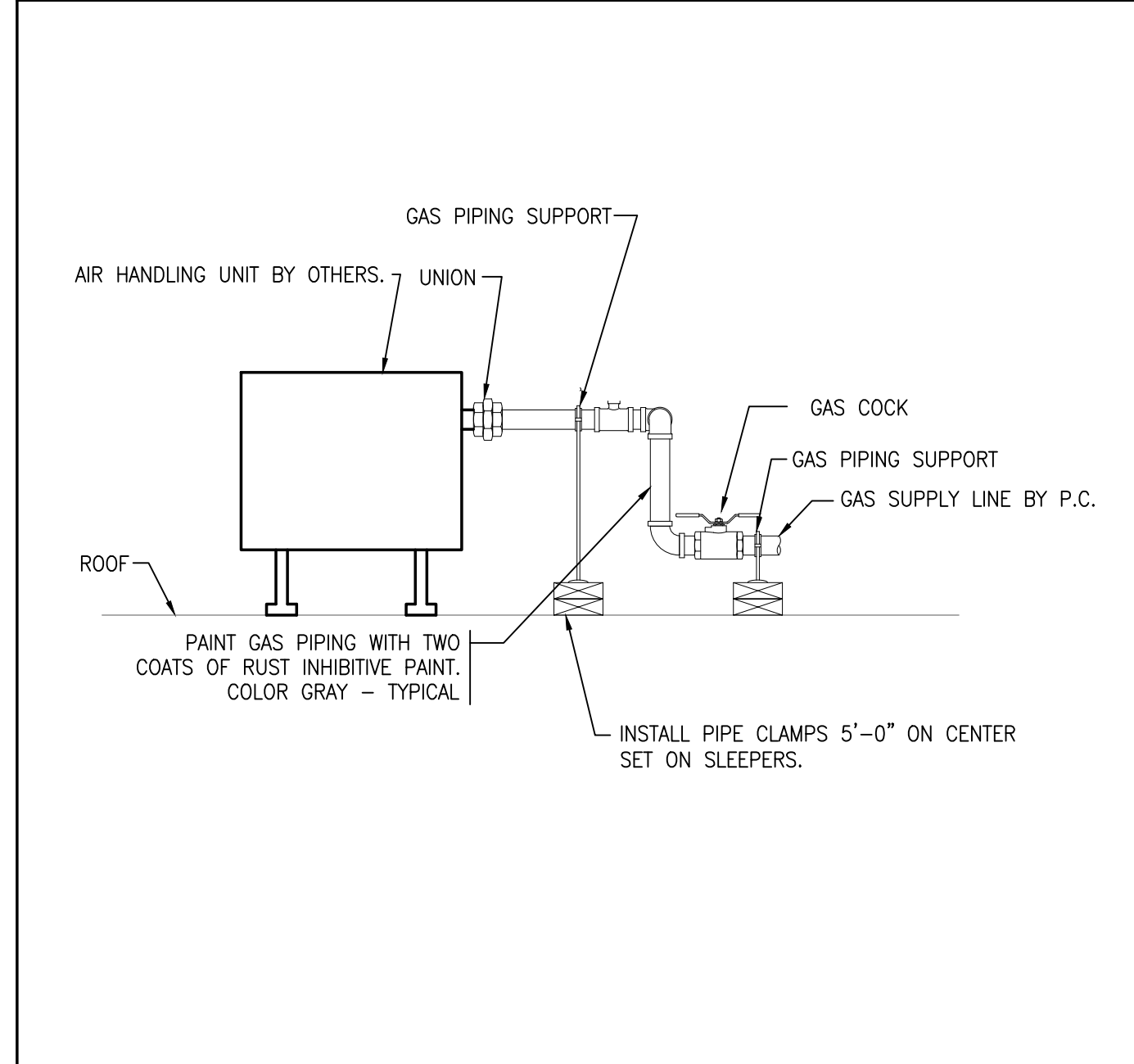
4 TRAP PRIMER DETAIL NTS



5 PIPING SLEEVE DETAIL NTS



6 CLEVIS PIPE HANGER DETAIL NTS



7 ROOFTOP UNIT GAS PIPING DETAIL NTS

1/24/2020 10:13 AM W:\YEAR - 2018\18004.00 - FRAMINGHAM EDGEHILL WATER PUMPING STATION\PLUMBING DEPARTMENT\18004-PLUMBING.DWG (BETA STB BV) (STB)

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SUBCONSULTANT
SCR
 ENGINEERING, INC.
 Mechanical/Electrical Engineers
 150 Crossman Drive, Suite 306
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 617 221-9220
 web: www.scr.com

SCALE
 NONE

TITLE
Edgell Road Water Pumping Station Replacement PLUMBING DETAILS

BETA JOB NO. 6481
 ISSUE DATE JANUARY 2020
 SHEET NO. P-5

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