

7/2/2021 11:38 AM N:\6005\6050 - TAUNTON WWTF\DRAWING FILES\PLANSET\PHASE 1\6050\_SG1 - PL.DWG (BETA STB B\W STB)

GENERAL STRUCTURAL NOTES:

1. STRUCTURAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE COMMONWEALTH OF MASSACHUSETTS STATE BUILDING CODE, 9TH EDITION.

2. SPECIFICATIONS ARE PART OF THE CONSTRUCTION DOCUMENTS AND MUST BE USED IN CONJUNCTION WITH THE DRAWINGS.

3. VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO BEGINNING WORK OR FABRICATING MATERIALS. NOTIFY THE ENGINEER OF DISCREPANCIES BEFORE PROCEEDING WITH ANY PHASE OF WORK.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING DIG SAFE PRIOR TO THE START OF ANY EXCAVATION OR SITE WORK.

5. DO NOT SCALE FROM THESE DRAWINGS. REFER TO LABELED DIMENSIONS ONLY.

6. 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.

7. COORDINATE THE WORK OF THESE DRAWINGS WITH OTHER TRADES. DIMENSIONS AND QUANTITIES OF RELATED WORK ARE PROVIDED FOR GENERAL GUIDANCE AND SHALL BE CONFIRMED.

8. DO NOT LOAD SLABS 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. CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL ON PROPOSED CRANE SUPPORT PLAN FOR SLABS PRIOR TO COMMENCING WORK.

9. DO NOT STORE OR STACK CONSTRUCTION MATERIALS ON POURED OR ERECTED FLOORS/WALLS/ROOFS IN EXCESS OF 80 PERCENT OF LIVE LOAD. GENERAL CONTRACTOR WILL ENSURE THAT ALL SUB-CONTRACTORS ARE INFORMED OF LOADING RESTRICTIONS. AVOID IMPACT WHEN PLACING MATERIALS ON POURED OR ERECTED FLOORS OR ROOFS.

10. 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.

11. THE CONTRACTOR SHALL SHORE, BRACE, SHEETPILE, OR OTHERWISE SUPPORT THE STRUCTURE AS REQUIRED TO MAINTAIN STRUCTURAL INTEGRITY AT ALL TIMES. SHORING DESIGN, IF REQUIRED, SHALL BE DESIGNED, ERECTED, SUPPORTED, BRACED, AND MAINTAINED BY THE CONTRACTOR TO SAFELY SUPPORT ALL DEAD LOADS CARRIED BY THE STRUCTURAL WORK BEING SHORED, AND ANY CONSTRUCTION LIVE LOADS.

12. IF TEMPORARY SHORING IS REQUIRED, NEW STRUCTURAL SYSTEMS SHALL BE COMPLETELY INSTALLED AND CAPABLE OF SUPPORTING DESIGN LOADS BEFORE SHORES ARE REMOVED. SHORES SHALL BE RELEASED GRADUALLY.

13. THE CONTRACT STRUCTURAL DOCUMENTS REPRESENT THE FINISHED STRUCTURES. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION. PROVIDE ALL MEASURES REQUIRED TO PROTECT THE STRUCTURES, WORKMEN, AND OTHER PERSONS DURING CONSTRUCTION, INCLUDING BRACING, TEMPORARY SHORING, BUILDING SHORING, 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.

14. BACKFILLING AND COMPACTING ADJACENT TO THE STRUCTURE WALLS SHALL NOT BE PERMITTED UNTIL ALL THE CONCRETE HAS REACHED THE FULL STRUCTURAL CAPACITY.

15. USE OF EXCAVATED MATERIAL SHALL NOT BE PERMITTED FOR USE OF BACKFILLING ADJACENT TO STRUCTURE. BACKFILL SHALL CONSIST OF A CLEAN GRAVEL (SEE SPECIFICATIONS).
- FOUNDATIONS:

1. ALL FOOTINGS, BASE SLABS, AND SLABS ON GRADE SHALL BEAR ON NATURALLY DEPOSITED GLACIAL OUTWASH OR COMPACTED STRUCTURAL FILL FOR AN ALLOWABLE BEARING PRESSURE OF 4000 PSF IN ACCORDANCE WITH THE GEOTECHNICAL REPORT DATED NOVEMBER 2019 BY GZA GEOENVIRONMENTAL INC.

2. SEE THE SPECIFICATIONS FOR ALL RELATED CONSTRUCTION REQUIREMENTS.

3. ALL UNSUITABLE MATERIAL WITHIN FOUNDATIONS AND SLABS SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE ENGINEER.

4. NO RESPONSIBILITY IS ASSUMED BY THE ENGINEER FOR THE VALIDITY OF THE SUBSURFACE CONDITIONS PRESENTED WITHIN THE CONTRACT DOCUMENTS. SUBSURFACE INVESTIGATIONS REFLECT THE CONDITIONS AT THE TIME THEY WERE PERFORMED. SUPPLEMENTAL INVESTIGATIONS SHALL BE PERFORMED BY THE CONTRACTOR AS REQUIRED TO COMPLETE THE WORK.

5. FOUNDATIONS MAY BE ALTERED TO SUIT EXISTING CONDITIONS AS DIRECTED BY THE ENGINEER.

6. PROVIDE TEMPORARY OR PERMANENT SUPPORTS AS REQUIRED TO PROTECT EXISTING AND NEWLY COMPLETED STRUCTURES AND UTILITIES.

7. 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.

8. ALL CONCRETE SURFACES SHALL BE FORMED. DO NOT FORM AGAINST EXCAVATIONS WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

9. NO FOUNDATION CONCRETE SHALL BE PLACED ON FROZEN SUB-GRADE MATERIAL.

10. PLACE BACKFILL BEHIND WALLS ON BOTH SIDES SIMULTANEOUSLY.

11. SLABS ON GRADE AND TANKS SHALL BE PLACED ON 12" OF COMPACTED STRUCTURAL FILL.

CONCRETE:

1. CONCRETE WORK SHALL CONFORM TO BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 350) AND SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301).

2. UNLESS NOTED OTHERWISE, CONCRETE SHALL BE AS FOLLOWS:
- FOOTINGS, BASE SLABS,  
TANK WALLS, & RETAINING WALLS:  
HOUSEKEEPING:  
SLAB-ON-GRADE:  
SUPPORT WALLS &  
GRATING SUPPORT COLUMNS:

5000 P.S.I (NORMAL WEIGHT)  
5000 P.S.I. (NORMAL WEIGHT)  
5000 P.S.I. (NORMAL WEIGHT)  
5000 P.S.I. (NORMAL WEIGHT)  
5000 P.S.I. (NORMAL WEIGHT)

MAX. WATER  
CEMENT RATIO  
0.40  
0.40  
0.40  
0.45  
0.45
3. CONCRETE EXPOSED TO THE WEATHER SHALL BE AIR ENTRAINED.

4. PROVIDE VAPOR BARRIER UNDER INTERIOR SLABS CAST ON GRADE.

5. CONSTRUCTION JOINTS SHOWN ON THE DRAWINGS ARE MANDATORY.

6. SIZE OF CONCRETE PLACEMENTS, UNLESS NOTED OTHERWISE, SHALL CONFORM TO ACI GUIDELINES AND RECOMMENDATIONS.
- REINFORCEMENT:

1. REINFORCEMENT SHALL CONFORM TO BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 350), ACI DETAILING MANUAL (SP-66), CRSI MANUAL OF STANDARD PRACTICE (MSP), AND THE STRUCTURAL WELDING CODE-REINFORCING STEEL (AWS D1).

2. STEEL REINFORCEMENT SHALL CONFORM TO ASTM A615 GRADE 60.

3. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.

4. PROVIDE SUPPLEMENTAL BARS AND ACCESSORIES AS REQUIRED TO HOLD REINFORCEMENT SECURELY IN POSITION.

5. MINIMUM CONCRETE PROTECTIVE COVER, UNLESS NOTED OTHERWISE, SHALL BE AS FOLLOWS:
- FOOTINGS & BASE SLAB - BOTTOMS:  
FOOTINGS & BASE SLAB - SIDES AND TOPS:  
WALLS:  
SLABS ON GRADE:

3 INCHES  
2 INCHES  
2 INCHES  
1 INCH TOP/1½" BOTTOM
6. ALL CONTINUOUS REINFORCEMENT SHALL BE EXTENDED AROUND CORNERS AND LAPPED AT NECESSARY SPLICES OR HOOKED AT DISCONTINUOUS ENDS.

7. LAPS SHALL BE CLASS B TENSION LAP SPLICES, UNLESS NOTED OTHERWISE.

8. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS.

9. WELDED WIRE FABRIC SHALL LAP 8" OR 1-1/2 SPACES, WHICHEVER IS LARGER, AND SHALL BE WIRED TOGETHER.

DESIGN LOADS:

- LIVE LOADS:

LIME SILO

SEE SHEET S-1.2
- PREFAB HEADWORKS BUILDING

SEE SHEET S-1.4
- HYPOCHLORITE TANK

SEE SHEET S-5.4
- BLOWER BUILDING

ROOF = 20 PSF (ROOF LIVE LOAD)  
5.0 KIP (MAX EQUIPMENT LOAD)  
SLAB ON GRADE = 250 PSF
- SNOW LOADS:

GROUND SNOW LOAD (Pg)  
FLAT ROOF SNOW LOAD (Pf)

30.0 P.S.F.  
23.1 P.S.F.
- WIND LOADS:

BASIC WIND SPEED  
RISK CATEGORY  
WIND EXPOSURE CATEGORY

145 MPH  
CATEGORY III  
CATEGORY B
- SEISMIC:

IMPORTANCE FACTOR (Ie)  
DESIGN FACTOR Ss  
DESIGN FACTOR S1  
SITE CLASSIFICATION  
SPECTRAL RESPONSE SDs  
SPECTRAL RESPONSE SD1  
SEISMIC DESIGN CATEGORY

1.25 (CATEGORY III)  
0.183  
0.062  
D  
0.195  
0.099  
B
- MASONRY SHEAR BEARING WALL:

DESIGN BASE SHEAR  
RESPONSE COEFFICIENT Cs  
RESPONSE MOD FACTOR R

80 KIP  
0.122  
2.0

STRUCTURAL STEEL:

1. WORK SHALL CONFORM TO SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, AND THE STRUCTURAL WELDING CODE.

2. STRUCTURAL STEEL SHALL BE DETAILED IN ACCORDANCE WITH "DETAILING FOR STEEL CONSTRUCTION" (AISC) AND, WHERE REQUIRED, DESIGNED IN ACCORDANCE WITH THE CITED REFERENCES.

3. STRUCTURAL STEEL SHALL BE NEW STEEL CONFORMING TO THE FOLLOWING:  
UNLESS NOTED OTHERWISE: ASTM A992 GRADE 50 (FY = 50 K.S.I.)  
CHANNELS, ANGLES, PLATES: ASTM A36 (FY = 36 K.S.I.)  
HOLLOW STRUCTURAL SECTIONS: ASTM A500 GRADE B (FY = 40 K.S.I.)  
ANCHOR BOLTS: ASTM F1554  
HIGH STRENGTH BOLTS: ASTM A325

4. BOLTED CONNECTIONS SHALL BE MADE WITH A325-N HIGH STRENGTH BOLTS, DIAMETER AS SHOWN IN RESPECTIVE DETAILS.

5. WELDED CONNECTIONS SHALL BE MADE BY APPROVED CERTIFIED WELDERS USING FILLER METAL CONFORMING TO E70XX.

6. PROVIDE STIFFENERS WHERE SHOWN ON DRAWINGS.

7. PROVIDE TEMPORARY ERECTION BRACING AND SUPPORTS TO HOLD STRUCTURAL STEEL FRAMING SECURELY IN POSITION. SUCH TEMPORARY BRACING AND SUPPORTS SHALL NOT BE REMOVED UNTIL CONCRETE HAS ATTAINED 75% OF SPECIFIED CONCRETE STRENGTH.

8. FIELD CUTTING OF STRUCTURAL STEEL OR ANY FIELD MODIFICATIONS OF STRUCTURAL STEEL SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL.

9. STRUCTURAL STEEL ENCASED IN MASONRY OR CONCRETE SHALL BE COVERED WITH MASTIC.

10. STRUCTURAL STEEL MEMBERS AND CONNECTIONS EXPOSED TO THE WEATHER SHALL BE HOT-DIPPED GALVANIZED.

MASONRY CONSTRUCTION:

1. CONCRETE MASONRY UNIT (CMU) CONSTRUCTION SHALL CONFORM TO BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530).

2. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C-90.

3. MORTAR SHALL CONFORM TO ASTM C-270, TYPE M. MASONRY CEMENT IS NOT PERMITTED FOR SHEAR WALLS.

4. GROUT SHALL CONFORM TO ASTM C-476 2,000 P.S.I.

5. PRIOR TO GROUTING CELLS, BARS AND CELLS MUST BE INSPECTED BY THE TESTING AGENCY.

6. THE BASE OF EACH CELL IN WHICH A BAR IS PLACED MUST HAVE A CLEAN OUT HOLE.

7. SUBMIT SHOP DRAWINGS SHOWING ALL UNITS, REINFORCING, LINTELS, ETC. FOR REVIEW AND APPROVAL.

8. PROVIDE AND INSTALL LINTELS FOR ALL OPENINGS AS SHOWN ON THE DRAWINGS.

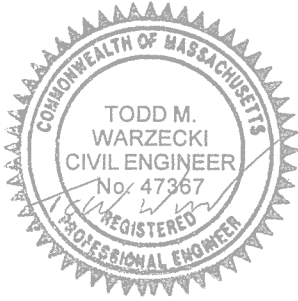
9. MASONRY BLOCK CELLS CONTAINING VERTICAL REINFORCING SHALL BE GROUTED SOLID. FILLING CELLS WITH MORTAR IS UNACCEPTABLE. DO NOT DROP MORTAR IN CELLS TO BE GROUTED.

10. REINFORCING SHALL BE SECURELY HELD IN POSITION USING "REBAR POSITIONERS".

PREPARED BY



REGISTERED PROFESSIONAL



SUBCONSULTANT

PROJECT

Taunton Wastewater Treatment Facility Improvements Phase 1

TAUNTON, MA

TITLE

Structural Notes (1 of 2)

NO.	REVISIONS	DATE
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DRAWN BY: BN

DESIGNED BY: BN

CHECKED BY: TMW

ISSUE DATE: 7/2/2021

BETA JOB NO.: 6050

SCALE

AS SHOWN

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

SHEET NO.

SG-1

7/2/2021 11:39 AM N:\000056050 - TAUNTON WWT\DRAWING FILES\PLAN\SET\PHASE 1\0600\_SC2 - P1.DWG (BETA STB B/W STB)

SUBMITTALS, TESTING, AND INSPECTIONS:

1. SUBMITTALS AND TESTING SHALL BE AS REQUIRED BY THE MASSACHUSETTS STATE BUILDING CODE AND THESE FOLLOWING REQUIREMENTS.
2. THE CONTRACTOR SHALL PROVIDE FOR AN INDEPENDENT TESTING AGENCY TO PERFORM REQUIRED TESTING.
3. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE TESTING AGENCY AND THE ENGINEERS OF RECORD ACCORDINGLY.
4. NOTIFY THE ENGINEER OF RECORD PRIOR TO FOUNDATION EXCAVATION.
5. NOTIFY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO FIRST CONCRETE PLACEMENT.
6. SUBMITTALS INCLUDE BUT NOT LIMITED TO:  
DEWATERING  
BORROW MATERIAL  
CONCRETE MIX DESIGN  
STEEL REINFORCING  
ACCESSORIES  
STRUCTURAL STEEL/COLD FORMED METAL
7. TESTS/INSPECTIONS INCLUDES BUT NOT LIMITED TO:  
EARTHWORK  
CONCRETE STRENGTH  
REINFORCING STEEL INSTALLATION  
CONCRETE PLACEMENT AND CURING  
STEEL BOLTING
8. 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 ENGINEER'S INSPECTION.
9. THE CONTRACTOR SHALL NOTIFY THE ENGINEER, IN ADVANCE, BEFORE CONCEALING ANY WORK THAT WILL REQUIRE OBSERVATION NEEDED TO PREPARE THE FINAL AFFIDAVIT.

PENETRATION SCHEDULE:

PENETRATION NUMBER	PENETRATION TYPE (SEE S-X)	PENETRATION LOCATION	CENTERLINE ELEVATION	PIPE DESCRIPTION	PIPE MATERIAL	NOMINAL SIZE (IN)
P-1.1	FLUSH FLANGE x FLUSH FLANGE WALL PIPE	HEADWORKS EFFLUENT CHANNEL	31.67	PRIMARY INFLUENT	DUCTILE IRON	24
P-1.2	FLUSH FLANGE x FLUSH FLANGE WALL PIPE	PRIMARY DISTRIBUTION BOX	31.63	PRIMARY INFLUENT	DUCTILE IRON	24
P-1.3	FLUSH FLANGE x FLUSH FLANGE WALL PIPE	PRIMARY DISTRIBUTION BOX	24.70	PRIMARY INFLUENT	DUCTILE IRON	24
P-1.4	WALL SLEEVE	PRIMARY DISTRIBUTION BOX	33.75	LIME SLURRY	PVC	2
P-2.1	FLUSH FLANGE x FLUSH FLANGE WALL PIPE	PRIMARY CLARIFIER NO. 4	18.25	PRIMARY INFLUENT	DUCTILE IRON	24
P-2.2	WALL SLEEVE	PRIMARY CLARIFIER NO. 4	28.50	PRIMARY SCUM	DUCTILE IRON	4
P-2.3	FLUSH FLANGE x FLUSH FLANGE WALL PIPE	PRIMARY CLARIFIER NO. 4	30.33	PRIMARY EFFLUENT	DUCTILE IRON	20
P-2.4	FLUSH FLANGE x FLUSH FLANGE WALL PIPE	PRIMARY CLARIFIER NO. 4	18.39	PRIMARY SLUDGE	DUCTILE IRON	8
P-2.5	WALL SLEEVE	NEW SCUM WELL	28.50	PRIMARY SCUM	DUCTILE IRON	4
P-2.6	WALL SLEEVE	NEW SCUM WELL	28.50	PRIMARY SCUM	DUCTILE IRON	4
P-2.7	WALL SLEEVE	PRIMARY SLUDGE PUMP STATION (NORTH WALL)	28.50	PRIMARY SCUM	DUCTILE IRON	4
P-2.8	FLUSH FLANGE x FLUSH FLANGE WALL PIPE	PRIMARY SLUDGE PUMP STATION (NORTH WALL)	18.00	PRIMARY SCUM	DUCTILE IRON	8
P-2.9	WALL SLEEVE	PRIMARY SLUDGE PUMP STATION (NORTH WALL)	18.00	PRIMARY SLUDGE	DUCTILE IRON	8
P-2.10	WALL SLEEVE	PRIMARY SLUDGE PUMP STATION (NORTH WALL)	27.17	PRIMARY EFFLUENT	DUCTILE IRON	20
P-2.11	WALL SLEEVE	PRIMARY SLUDGE PUMP ROOF (NORTHWEST CORNER)	33.50	PLANT WATER	GALVANIZED STEEL	2
P-5.1	WALL SLEEVE	CHLORINE CONTACT TANK (NORTH WALL)	7.67	PLANT WATER	DUCTILE IRON	16
P-5.2	WALL SLEEVE	CHLORINE CONTACT TANK (NORTH WALL)	7.67	PLANT WATER	DUCTILE IRON	16
P-5.3	WALL SLEEVE	CHLORINE CONTACT TANK (WEST WALL)	10.25	SCUM TROUGH	DUCTILE IRON	10
P-5.4	WALL SLEEVE	CHLORINE CONTACT TANK (WEST WALL)	8.95	SCUM	DUCTILE IRON	8
P-5.5	WALL SLEEVE	CHLORINE CONTACT TANK (EAST WALL)	10.25	SCUM TROUGH	DUCTILE IRON	10
P-5.6	WALL SLEEVE	CHLORINE CONTACT TANK (EAST WALL)	8.95	SCUM	DUCTILE IRON	8
P-5.7	WALL SLEEVE	CHLORINE MANHOLE	9.00	SODIUM HYPOCHLORITE	PVC	3/4
P-5.8	WALL SLEEVE	CHEMICAL HANDLING BLDG (SOUTH WALL)	7.67	PLANT WATER	DUCTILE IRON	16
P-5.9	WALL SLEEVE	CHEMICAL HANDLING BLDG (WEST WALL)	8.00	PLANT WATER	DUCTILE IRON	14
P-5.10	WALL SLEEVE	CHEMICAL HANDLING BLDG (WEST WALL)	9.50	SODIUM HYPOCHLORITE	PVC	3/4
P-5.11	WALL SLEEVE	CHEMICAL HANDLING BLDG (NORTH WALL)	15.00	SODIUM HYPOCHLORITE	PVC	1
P-5.12	WALL SLEEVE	CHEMICAL HANDLING BLDG (WEST WALL)	4.53	PLANT WATER	DUCTILE IRON	14
P-6.1*	WALL SLEEVE	BLOWER BUILDING (NORTH WALL)	37.00	AIR INTAKE	SS SCHEDULE 10S	18
P-6.2*	WALL SLEEVE	BLOWER BUILDING (NORTH WALL)	37.00	AIR INTAKE	SS SCHEDULE 10S	18
P-6.3*	WALL SLEEVE	BLOWER BUILDING (NORTH WALL)	37.00	AIR INTAKE	SS SCHEDULE 10S	18
P-6.4*	WALL SLEEVE	BLOWER BUILDING (EAST WALL)	37.00	DISCHARGE HEADER	SS SCHEDULE 10S	30

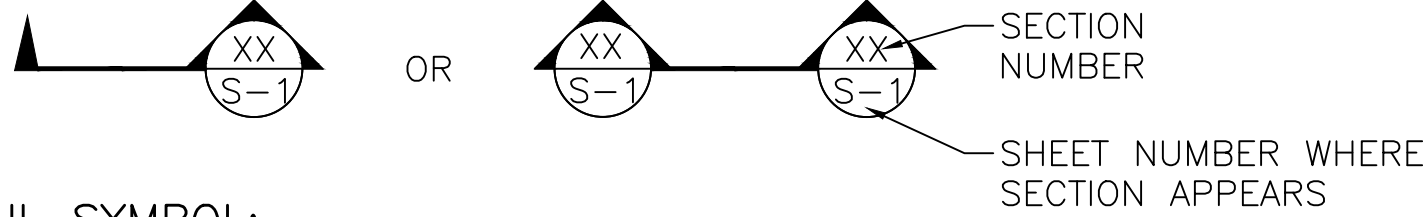
\* PENETRATIONS ASSUME BLOWER EQUIPMENT TO BE NEXTURBO GTB-T20-XY. IF ALTERNATE EQUIPMENT IS USED, SIZE AND LOCATION OF PENETRATIONS WILL VARY AND NEED TO BE COORDINATED WITH MANUFACTURER.

LIST OF ABBREVIATIONS:

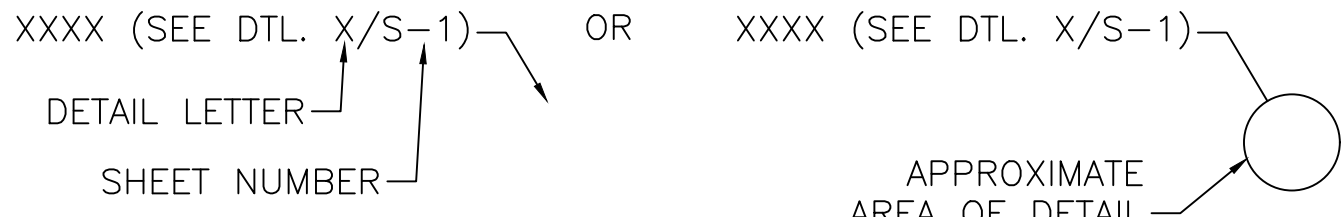
ARCH.	— ARCHITECTURAL	(LLH)	— LONG LEG HORIZONTAL
ADD'L	— ADDITIONAL	(LLV)	— LONG LEG VERTICAL
APPROX.	— APPROXIMATE	LOC.'S	— LOCATIONS
BRG.	— BEARING	MAX.	— MAXIMUM
B.O.	— BOTTOM OF	MIN.	— MINIMUM
C-C	— CENTER TO CENTER	MISC.	— MISCELLANEOUS
CL	— CENTERLINE	N.F.	— NEAR FACE
C.I.P.	— CAST IN PLACE	N.S.	— NEAR SIDE
CONC.	— CONCRETE	N.T.S.	— NOT TO SCALE
CONST.	— CONSTRUCTION	NO.	— NUMBER
CONT.	— CONTINUOUS	O.C.	— ON CENTER
C.Y.	— CUBIC YARD	O.D.	— OUTSIDE DIAMETER
d	— DEEP	O.F.	— OUTSIDE FACE
DET.	— DETAIL	PERIM.	— PERIMETER
DTL.	— DETAIL	PL	— PLATE
DIA.	— DIAMETER	PVC	— POLYVINYL CHLORIDE
DWG.	— DRAWING	P.S.F.	— POUNDS PER SQUARE FOOT
EA.	— EACH	P.S.I.	— POUNDS PER SQUARE INCH
EL.	— ELEVATION	RAD.	— RADIUS
ELEV.	— ELEVATION	REINF.	— REINFORCING
EMBED.	— EMBEDMENT	REQ'D	— REQUIRED
E.F.	— EACH FACE	SECT.	— SECTION
E.S.	— EACH SIDE	SCH.	— SCHEDULE
E.W.	— EACH WAY	S.F.	— SQUARE FOOT
EXIST.	— EXISTING	SHT.	— SHEET
EXP.	— EXPANSION	SIM.	— SIMILAR
FIN.	— FINISH	SP.	— SPACES
F.O.	— FACE OF	S.S.	— STAINLESS STEEL
FT.	— FEET/FOOT	STD.	— STANDARD
FTG.	— FOOTING	STL.	— STEEL
GA.	— GAUGE	SYM.	— SYMMETRIC
GALV.	— GALVANIZED	t	— THICK
GC	— GENERAL CONTRACTOR	T&B	— TOP AND BOTTOM
h	— HIGH	T.O.	— TOP OF
HORIZ.	— HORIZONTAL	T.O.S.	— TOP OF SLAB
H.A.	— HIGH POINT	T.O.W.	— TOP OF WALL
I.F.	— INSIDE FACE	TYP.	— TYPICAL
IN.	— INCH	U.N.O.	— UNLESS NOTED OTHERWISE
I.D.	— INSIDE DIAMETER	VERT.	— VERTICAL
INFO.	— INFORMATION	W.W.F.	— WELDED WIRE FABRIC
INV.	— INVERT	w	— WIDE
JT.	— JOINT	w/	— WITH
K.S.I.	— KIPS PER SQUARE INCH	ø	— DIAMETER
LG.	— LONG		

SECTION AND DETAIL DESIGNATIONS:

SECTION CUT SYMBOL:



DETAIL SYMBOL:



STAY-IN-PLACE FORM NOTES:

1. FOR 2" S.I.P. FORM, SET BOTTOM OF FORM 1" BELOW ELEVATION SHOWN IN DRAWINGS, FOR 3" S.I.P. FOR, SET BOTTOM OF FORM 1½" BELOW ELEVATIONS.
2. FORM ENDS SHALL BE CRIMPED CLOSED IN A TAPERED MANNER. SEPERATE END CLOSURE PIECES WILL NOT BE ALLOWED.
3. SUPPORT ANGLES SHALL BE PLACED IN THE "LEG DOWN" POSITION WHERE POSSIBE. WHERE "LEG UP" POSITION IS NECESSARY, THE UPPER MOST PORTION OF THE ANGLE SHALL NOT PROJECT MORE THAN 1" ABOVE THE TOP OF FLANGE. THE CONTRACTOR SHALL HAVE AN ASSORTMENT OF ANGLES OF VARIOUS SIZES AVAILABLE ON THE SITE TO CONFORM TO THIS REQUIREMENT.
4. ALL MAIN STEEL REINFORCEMENT IN THE LOWER MAT SHALL BE CENTERED OVER THE VALLEY OF THE S.I.P. FORM.
5. CONTRACTOR SHALL DESIGN AND DETAIL ALL ELEMENTS OF THE FORMING SYSTEM AND SHALL SUBMIT TO THE ENGINEER FOR APPROVAL.
6. IN CASES WHERE STANDARD 2" OR 3" DEEP S.I.P. FORMS DO NOT SATISFY DESIGN REQUIREMENTS AN ALTERNATIVE FORMING SYSTEM CONSISTING OF DEEPER S.I.P. FORMS OR REMOVABLE FORM SHALL BE DESIGNED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL. THE DESIGN THICKNESS OF THE SLAB SHALL NOT CHANGE.

PREPARED BY



REGISTERED PROFESSIONAL



SUBCONSULTANT

PROJECT

Taunton Wastewater Treatment Facility Improvements Phase 1

TAUNTON, MA

TITLE

Structural Notes (2 of 2)


NO.	REVISIONS	DATE
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DRAWN BY:	BN
DESIGNED BY:	BN
CHECKED BY:	TMW
ISSUE DATE:	7/2/2021
BETA JOB NO.:	6050

SCALE

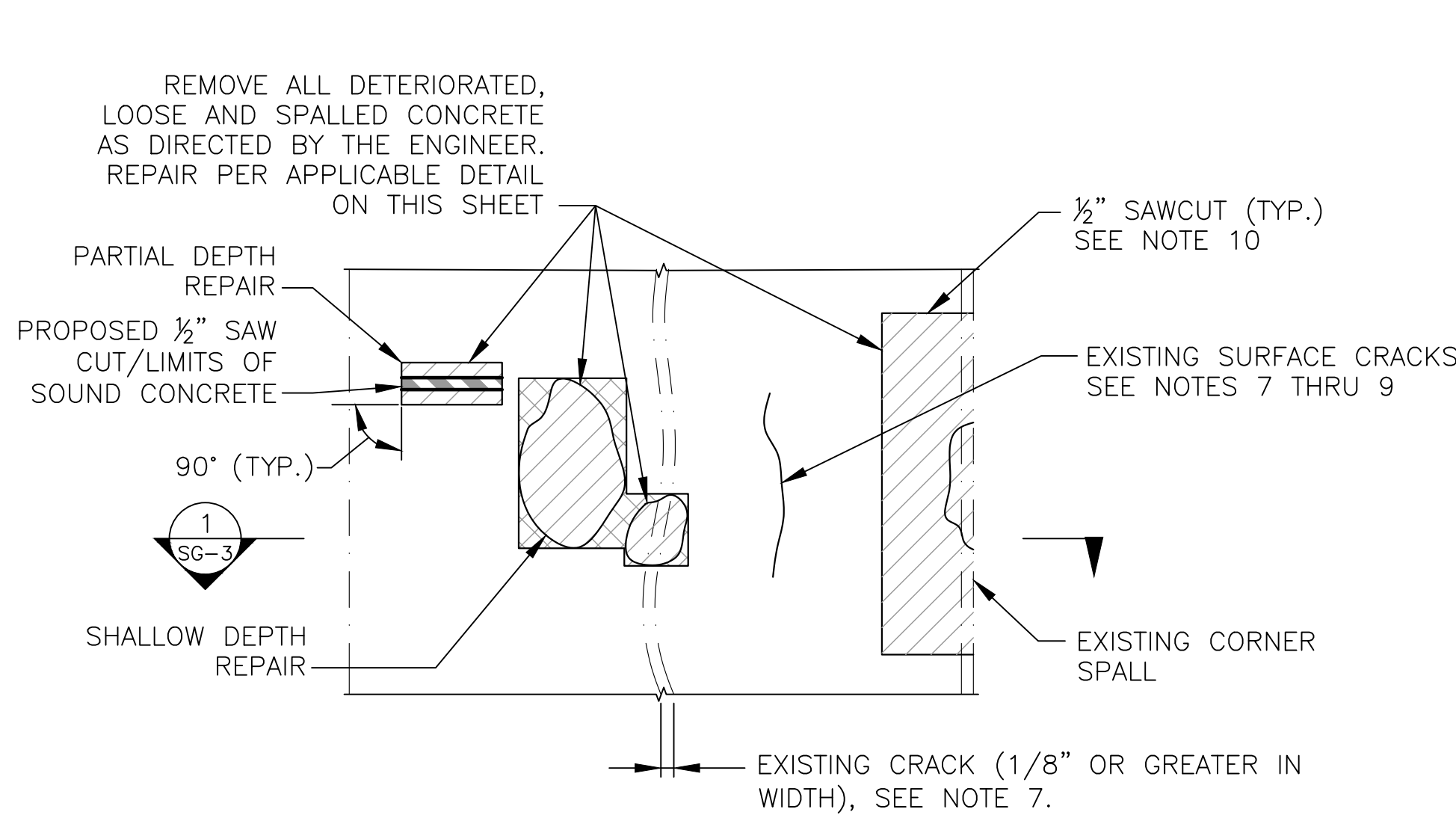
AS SHOWN

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

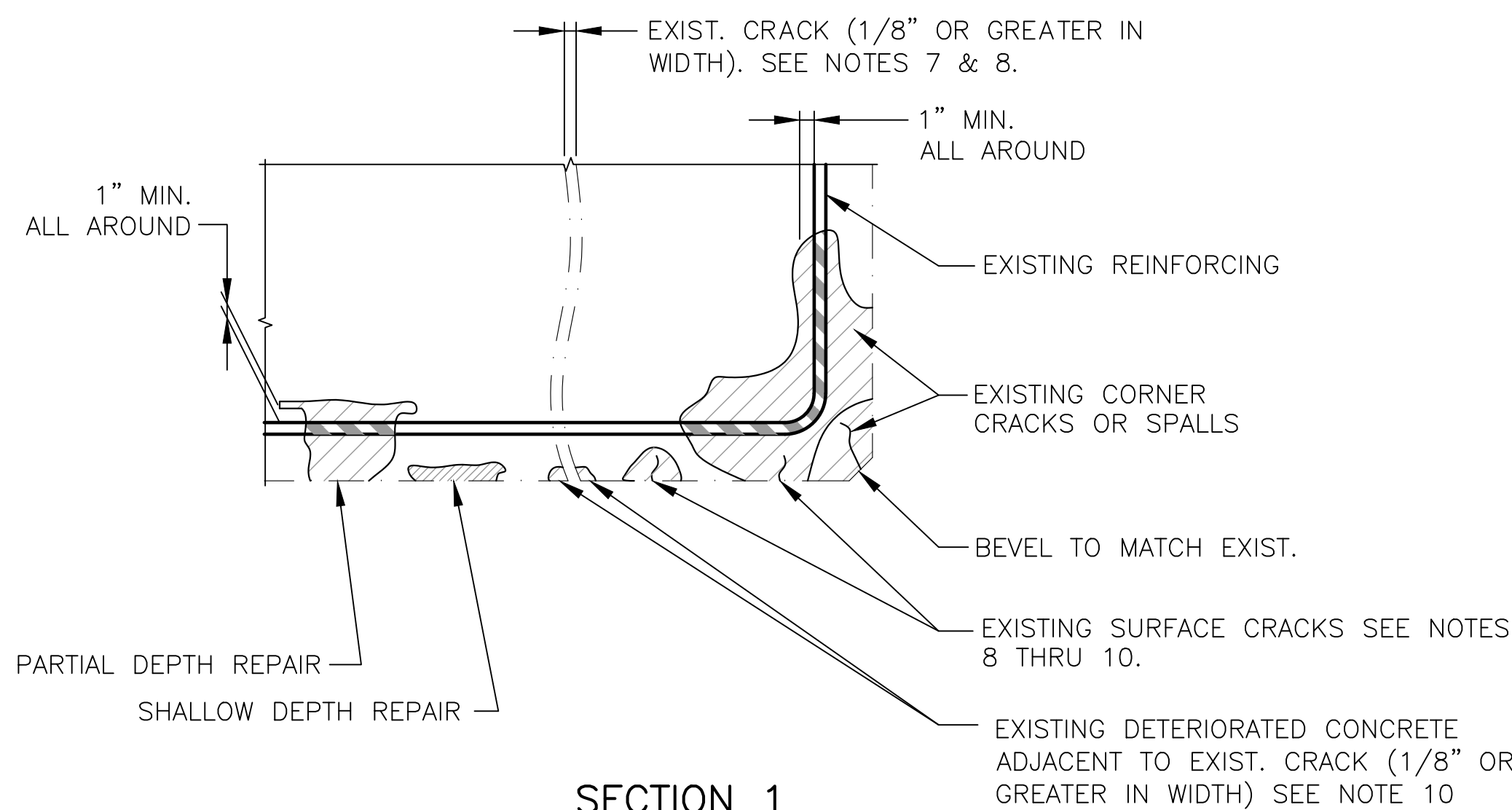
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SG-2

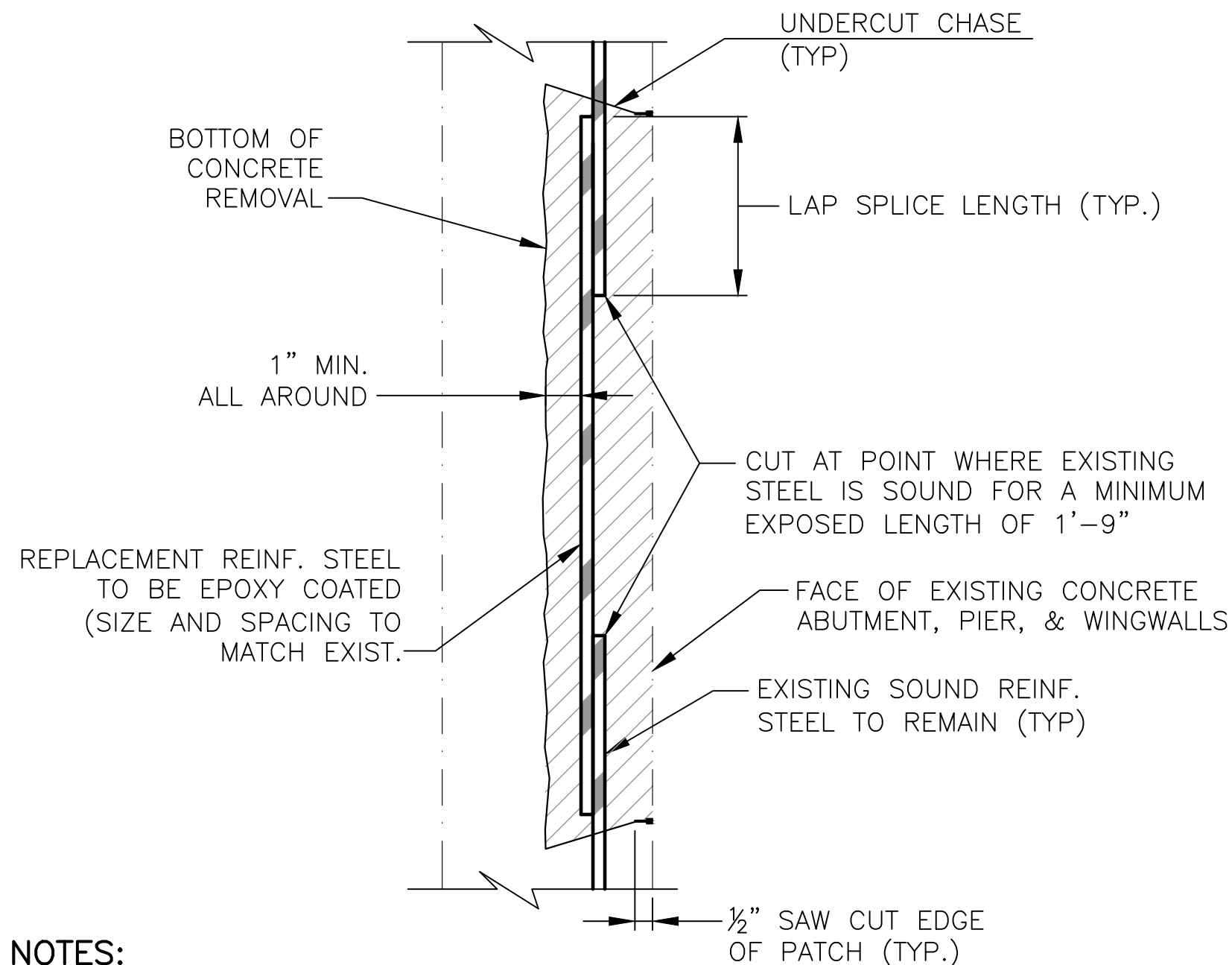
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**GENERAL ELEVATION**  
NOT TO SCALE



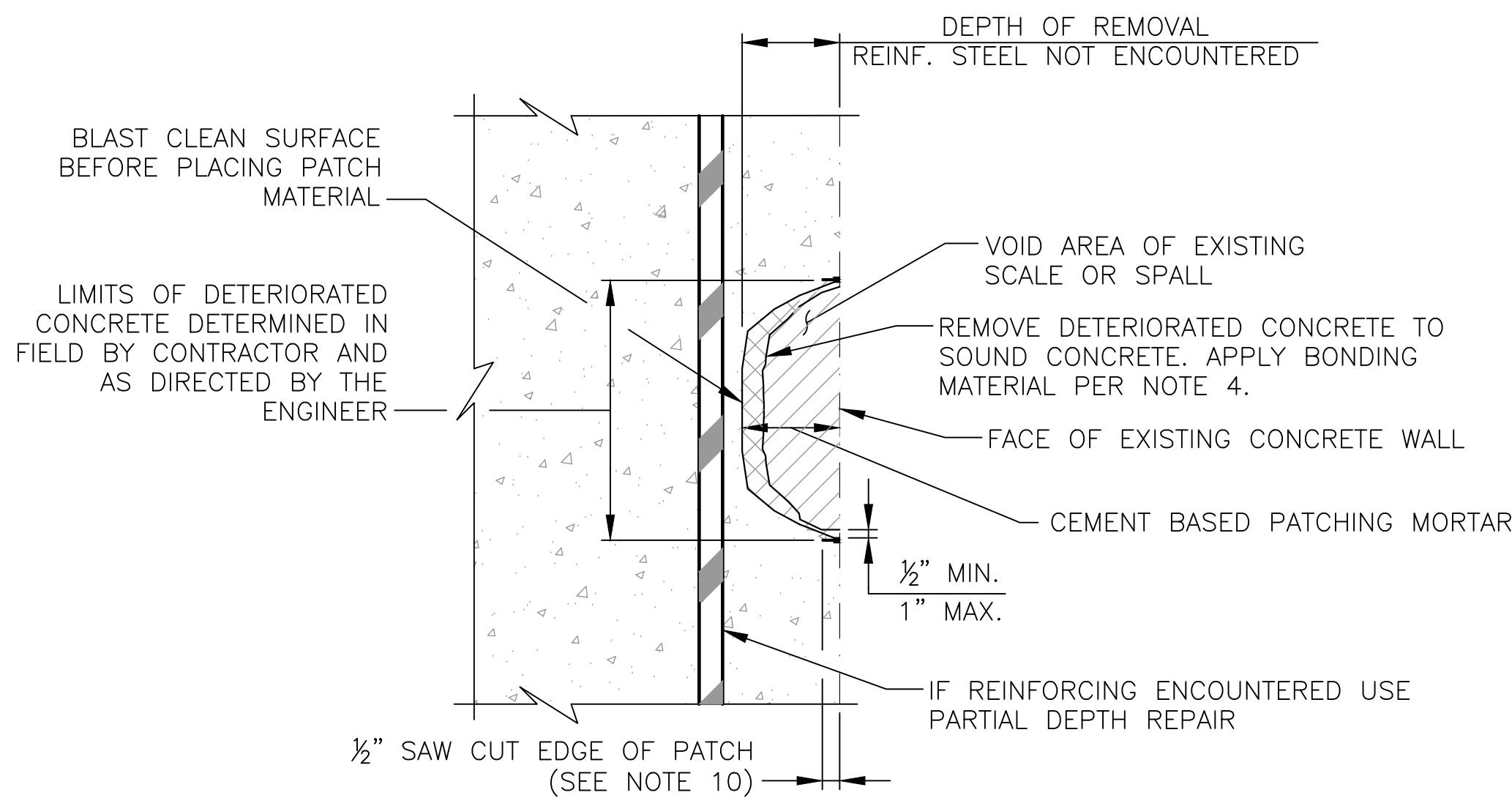
**SECTION 1**  
NOT TO SCALE



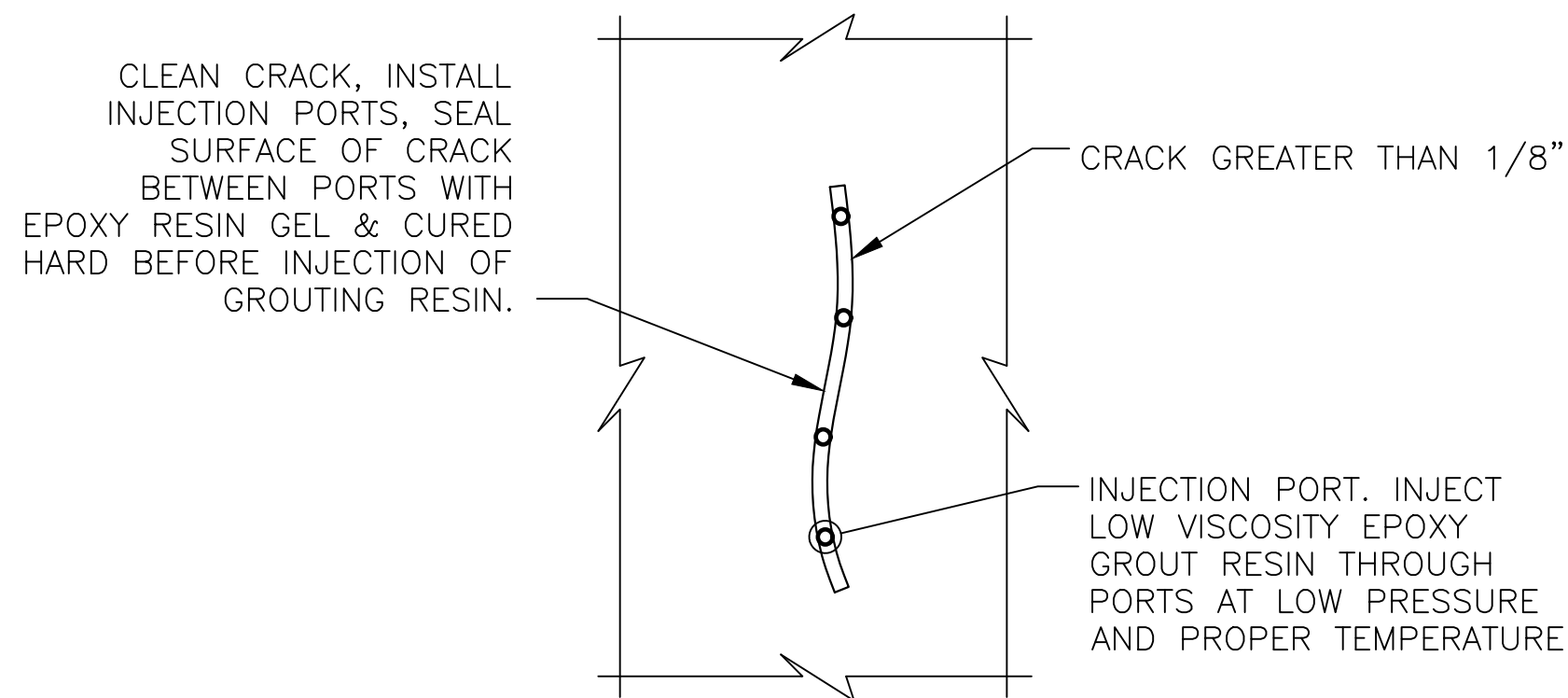
**NOTES:**

1. THIS DETAIL SHALL BE USED IF THE CONTRACTOR DAMAGES EXISTING REINFORCING TO THE EXTENT THAT THE REINFORCING REQUIRES REPLACEMENT, OR EXISTING STEEL REINFORCING EXHIBITS SECTION LOSS > 15%.

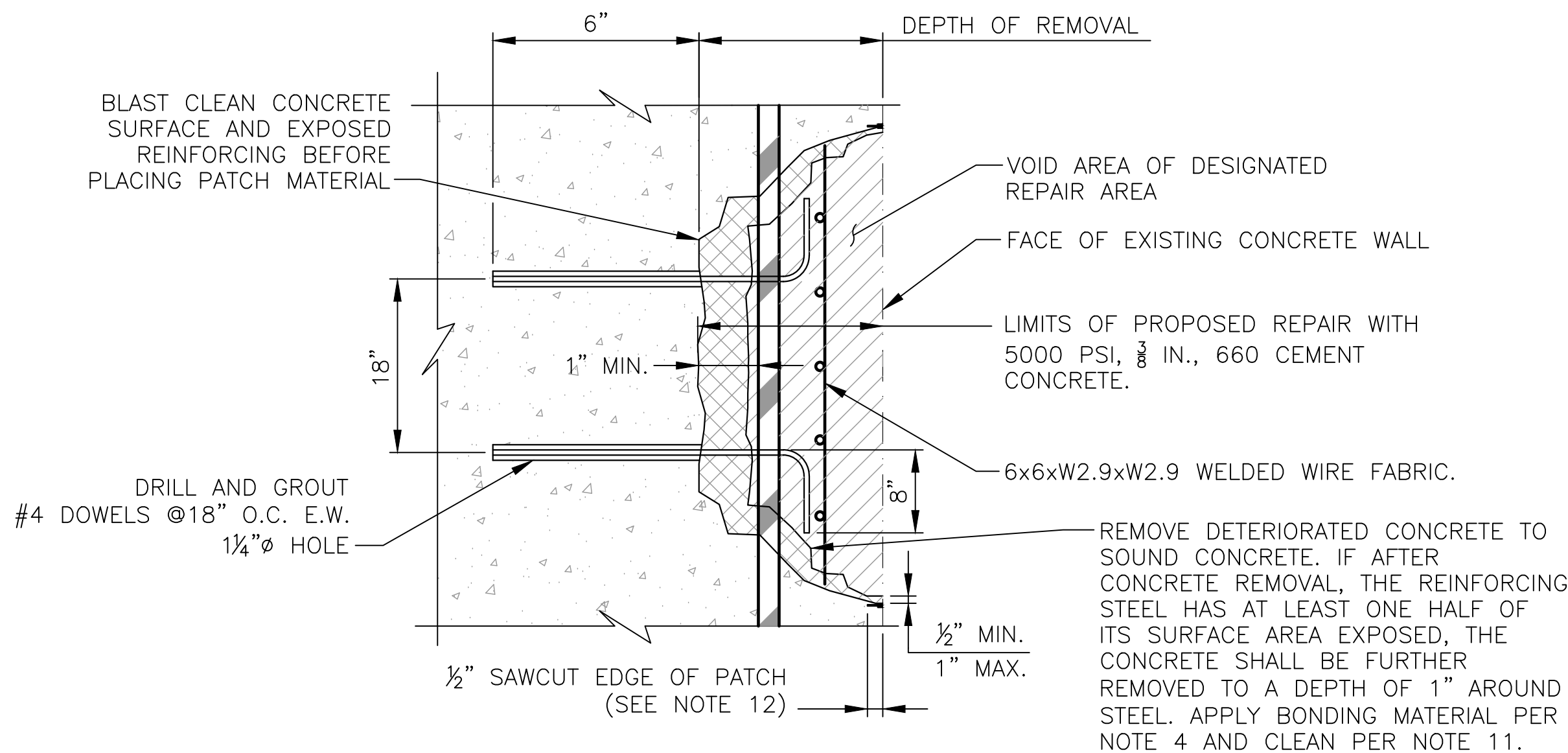
**REINFORCING REPLACEMENT DETAIL**  
NOT TO SCALE



**SHALLOW DEPTH REPAIR DETAIL**  
NOT TO SCALE



**CRACK REPAIR**  
NOT TO SCALE



**PARTIAL DEPTH REPAIR DETAIL**  
NOT TO SCALE

**CONCRETE REPAIR NOTES:**

1. THE ACTUAL LOCATIONS AND EXTENT OF VARIOUS TYPES OF CONCRETE REPAIR WILL BE DETERMINED IN THE FIELD BY THE CONTRACTOR. THE CONTRACTOR SHALL REPAIR ALL AREAS DETERMINED NECESSARY AS DIRECTED BY THE ENGINEER AFTER THE CONTRACTOR HAS SOUNDED AND MARKED OUT ALL REPAIR AREAS.
2. IF DURING REMOVAL OF DETERIORATED CONCRETE, THE CONTRACTOR DAMAGES EXISTING REINFORCEMENT TO THE EXTENT REQUIRING REPLACEMENT, ANY ADDITIONAL CONCRETE REMOVAL, PATCHING MATERIAL, CLEANING EXISTING REINFORCING STEEL, AND FURNISHING AND INSTALLING REPLACEMENT REINFORCING STEEL SHALL BE AT THE CONTRACTOR'S EXPENSE, AND INSTALLED ACCORDING TO REINFORCING REPLACEMENT DETAIL ON THIS SHEET.
3. REINFORCEMENT, INCLUDING WELDED WIRE FABRIC, USED TO REPLACE EXISTING DETERIORATED REINFORCING STEEL (SECTION LOSS OF 15% OR MORE OF THE ORIGINAL CROSS SECTION, AS CONFIRMED BY THE ENGINEER) SHALL BE EPOXY COATED. COST OF REPLACEMENT SHALL BE INCLUDED AS PART OF THE CONCRETE REPAIR WORK.
4. IMMEDIATELY PRIOR TO PLACING NEW PATCHING MORTAR AGAINST EXISTING CONCRETE, CLEAN EXISTING SURFACES BY ABRASIVE BLASTING OR HIGH PRESSURE WATER BLASTING WITH WATER CONTAINING NO DETERGENTS OR BOND INHIBITING CHEMICALS AND APPLY APPROVED BONDING COMPOUND IMMEDIATELY PRIOR TO PLACING CONCRETE.
5. ALL EXISTING SURFACES THAT WILL HAVE NEW CONCRETE CAST AGAINST IT MUST BE ROUGHENED TO A MINIMUM AMPLITUDE OF 1/4 INCH.
6. CONCRETE REPAIR WORK INCLUDES REMOVING ALL DETERIORATED, LOOSE, SPALLED, POPCORNEDED AND MAP CRACKED CONCRETE. CONCRETE WHICH HAS SPALLED OR OTHERWISE DETERIORATED ADJACENT TO SURFACE CRACK SHALL BE REPAIRED.
7. CRACKS THAT ARE 1/8" OR GREATER IN WIDTH SHALL BE REPAIRED BY EPOXY INJECTION CRACK REPAIR.
8. CRACKS THAT ARE LESS THAN 1/8" IN WIDTH SHALL NOT BE REPAIRED UNLESS DIRECTED BY THE ENGINEER.
9. WHERE PATCHING AND EPOXY INJECTION WORK ARE ADJACENT, EPOXY INJECTION SHALL BE PERFORMED BEFORE PATCHING.
10. ALL DETERIORATED AREAS SHALL BE DELINEATED BY A 1/2" SAWCUT. THE COST OF SAWCUTTING SHALL BE INCIDENTAL TO THE CONCRETE REPAIR WORK.
11. ALL EXPOSED STEEL SHALL BE THOROUGHLY BLAST CLEANED TO A WHITE METAL FINISH AND COATED WITH EPOXY IN ACCORDANCE WITH ASTM D3963. BLAST CLEANING AND EPOXY SHALL BE INCLUDED IN THE RESPECTIVE CONCRETE REPAIR ITEM.
12. ALL SURFACES SHALL BE RUBBED TO PRODUCE A SMOOTH FINISH. NO ADDITIONAL MATERIAL SHALL BE ADDED TO CONCRETE.
13. COST OF DRILLING AND GROUTING DOWELS FOR PARTIAL DEPTH REPAIRS SHALL BE CONSIDERED INCIDENTAL TO CONCRETE REHABILITATION.

**LEGEND:**

- DETERIORATED CONCRETE TO BE REMOVED.
- REINFORCING STEEL.
- ADDITIONAL CONCRETE TO BE REMOVED.

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PROJECT

**Taunton Wastewater  
Treatment Facility  
Improvements  
Phase 1**

TAUNTON, MA

TITLE

**Concrete Repair Details**

NO.	REVISIONS	DATE
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DRAWN BY: BN

DESIGNED BY: BN

CHECKED BY: TMW

ISSUE DATE: 7/2/2021

BETA JOB NO.: 6050

SCALE

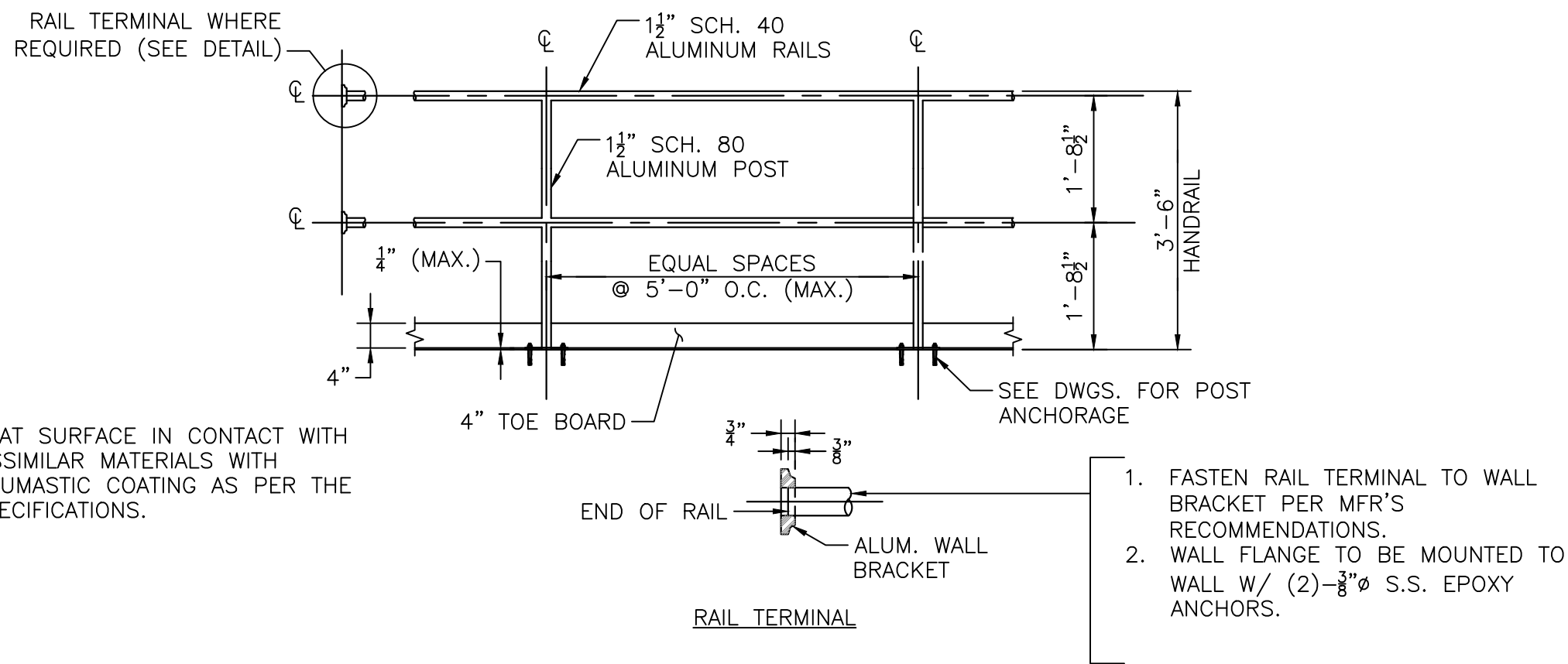
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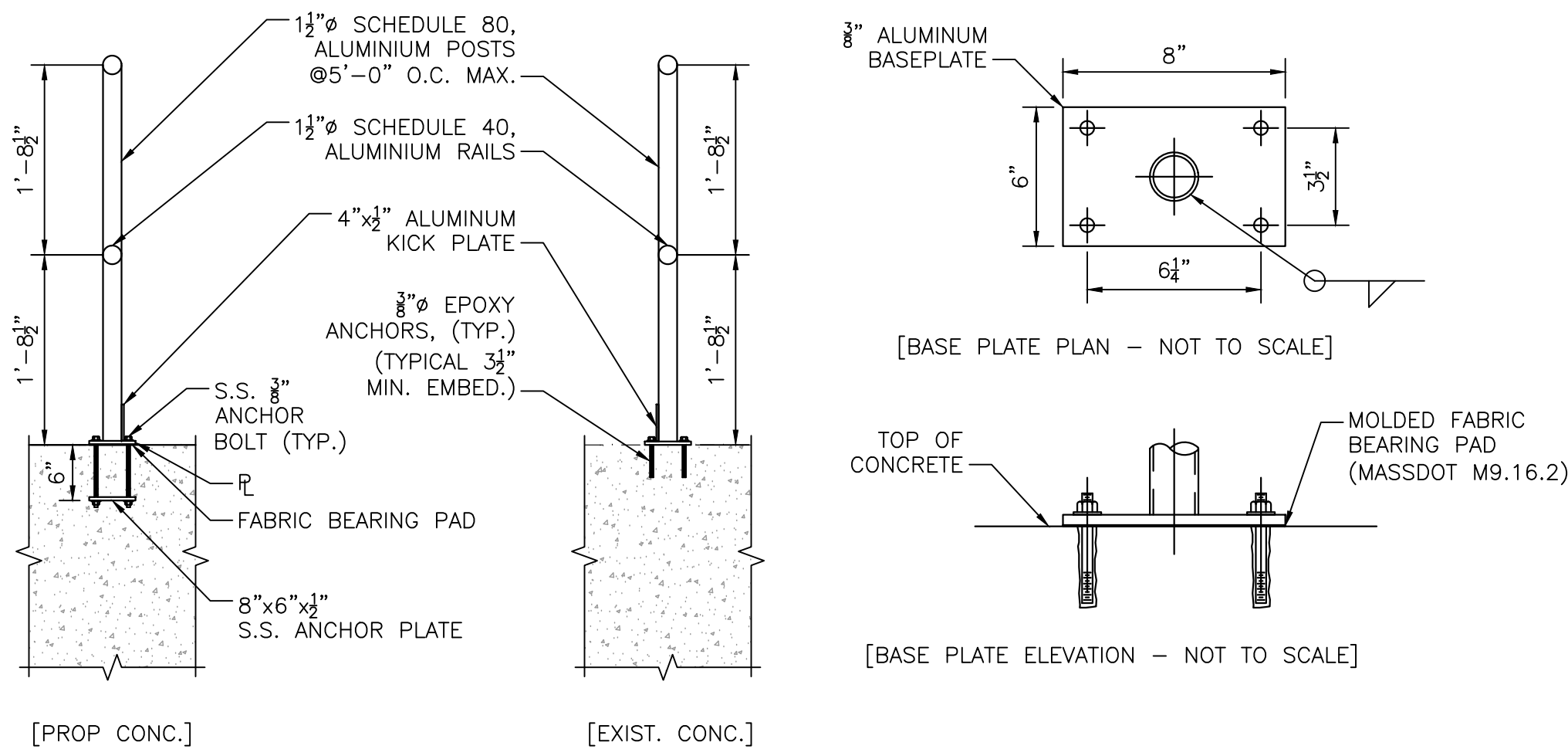
SHEET NO.

SG-3

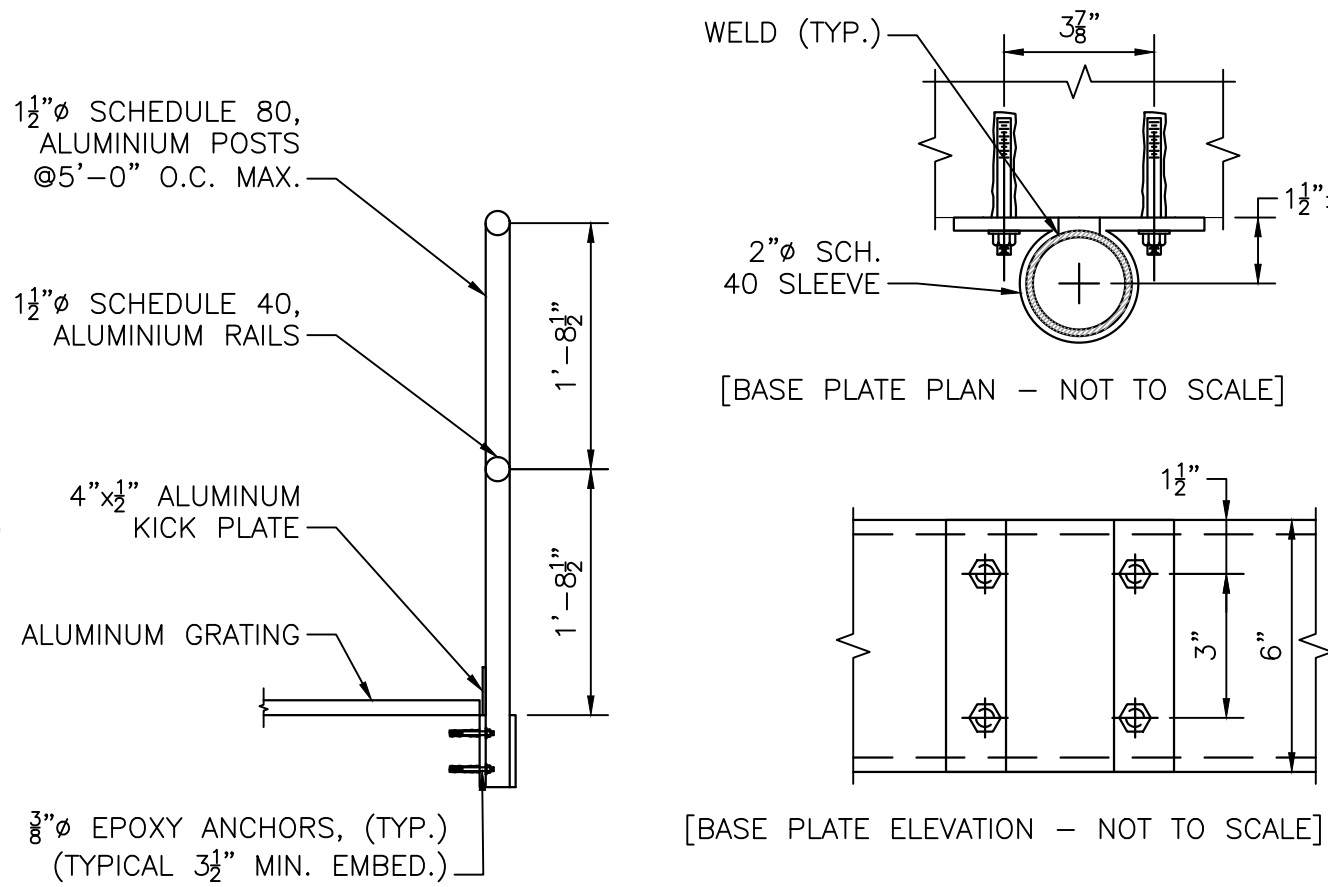
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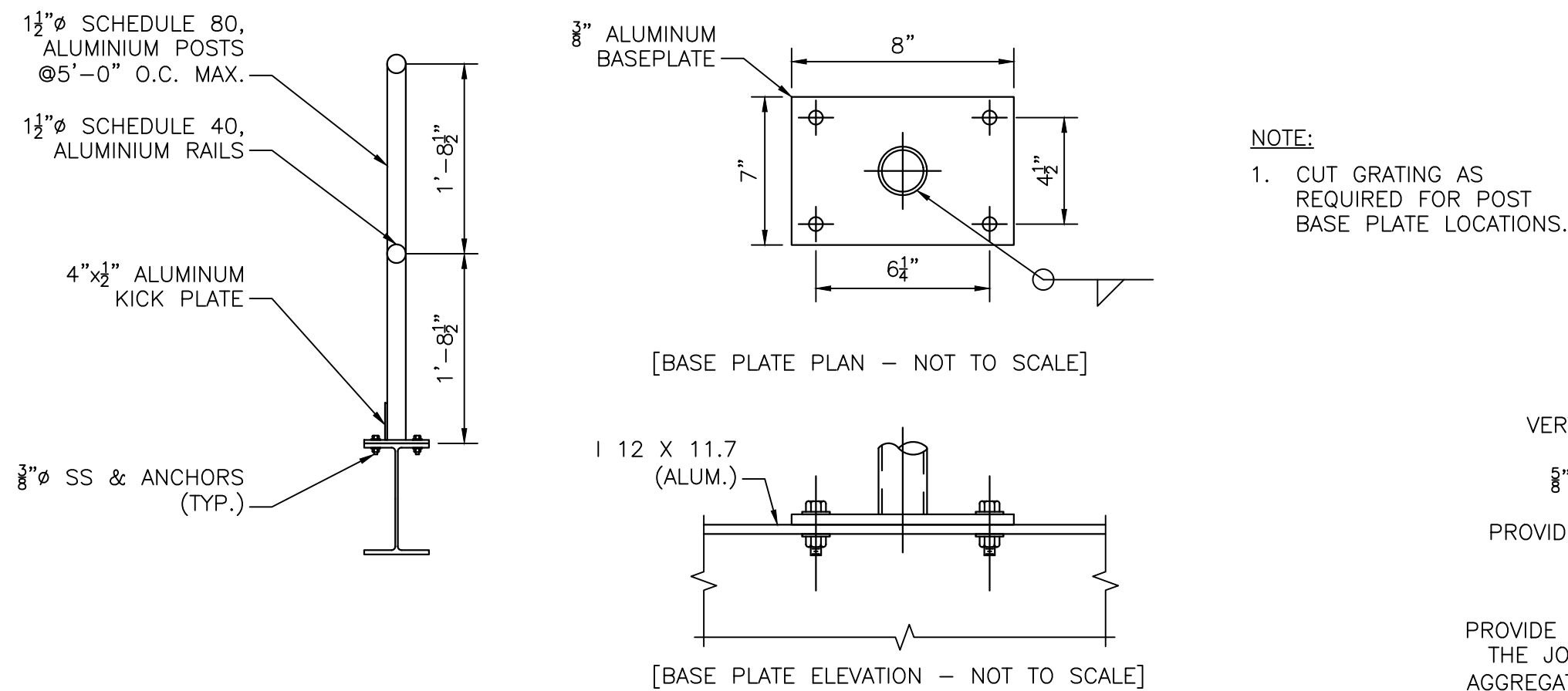
**TWO-BAR HANDRAIL**  
SCALE": 1/2" = 1'-0"



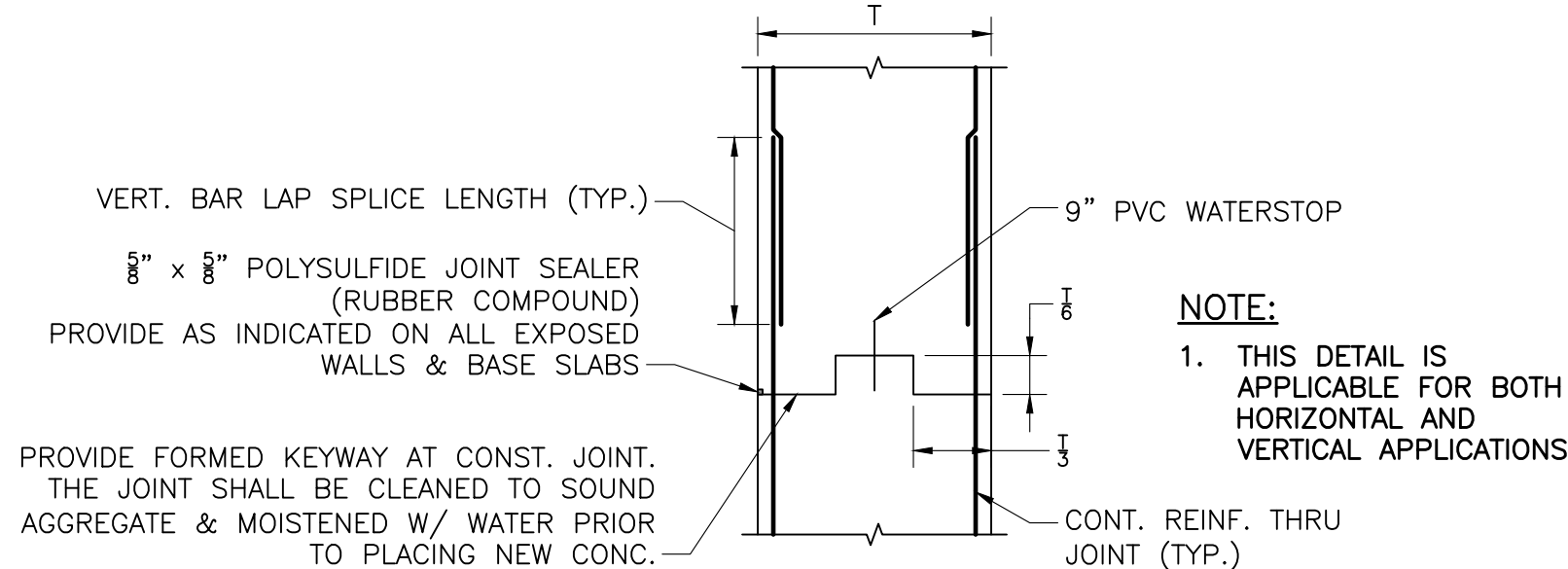
**TOP MOUNTED HANDRAIL DETAIL - CONCRETE**  
SCALE": 1/2" = 1'-0"



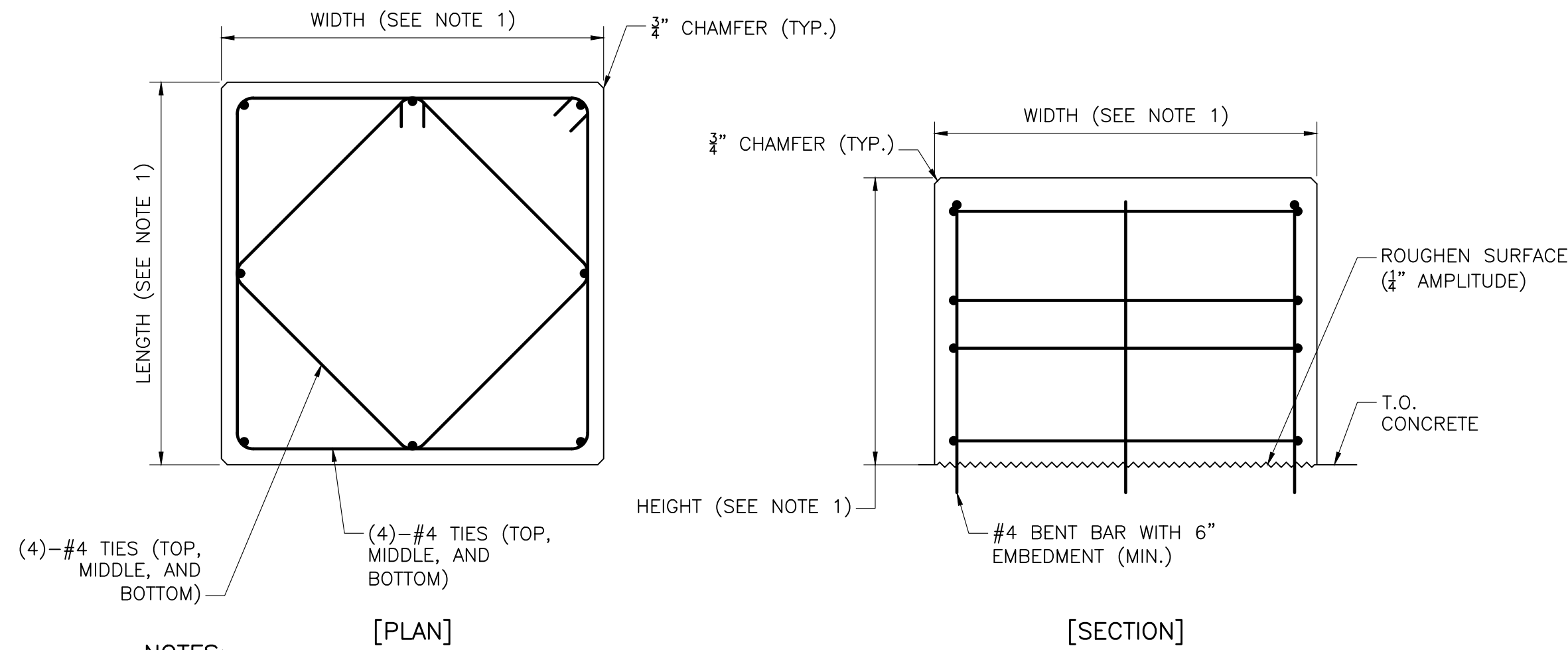
**FACE MOUNTED HANDRAIL DETAIL**  
SCALE": 1/2" = 1'-0"



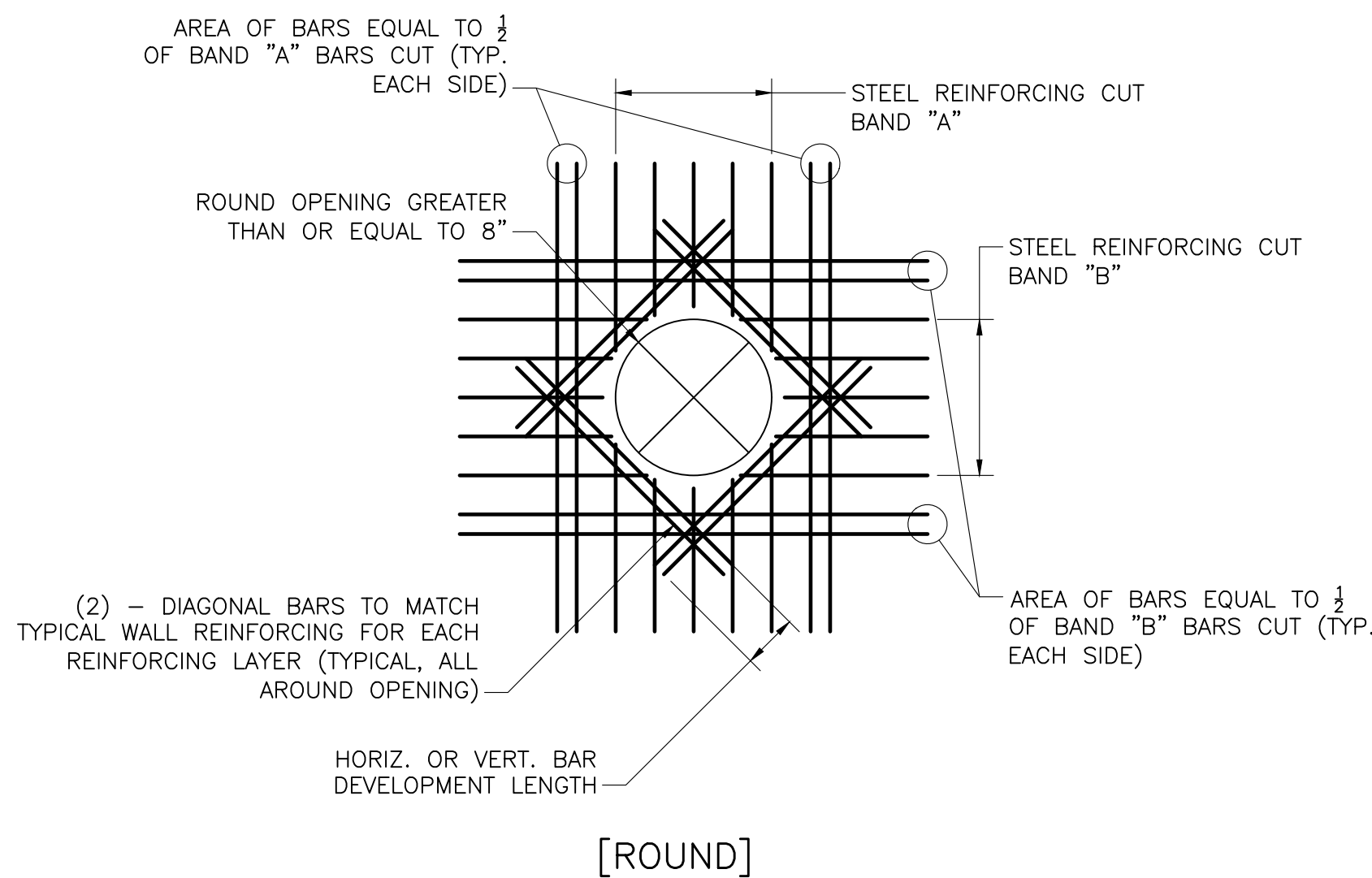
**TOP MOUNTED HANDRAIL DETAIL - I-BEAM**  
SCALE": 1/2" = 1'-0"



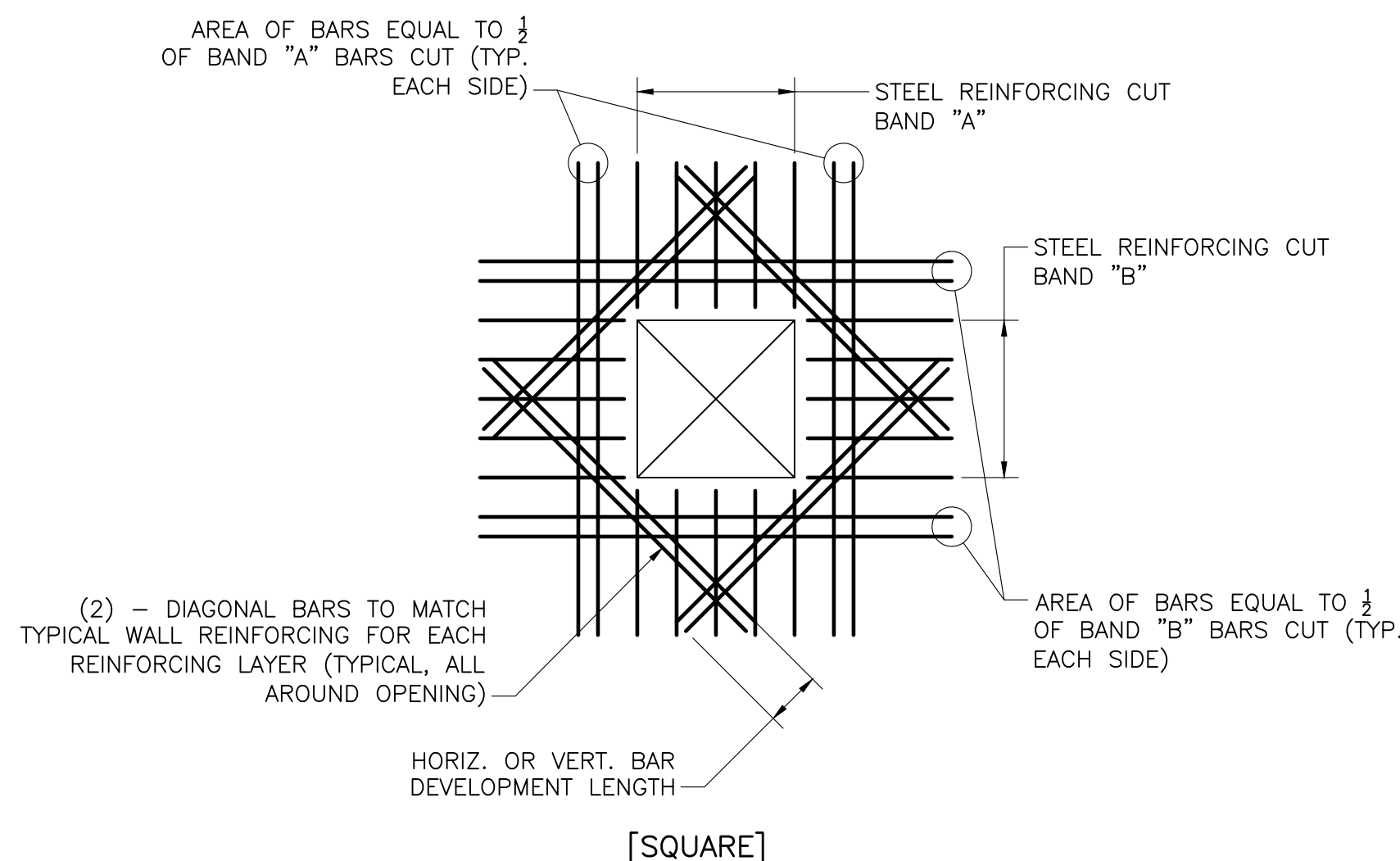
**TYPICAL CONST. JOINT / PVC WATERSTOP DETAIL**  
SCALE: 1/2" = 1'-0"



**EQUIPMENT PEDESTAL**  
NOT TO SCALE



**[ROUND]**



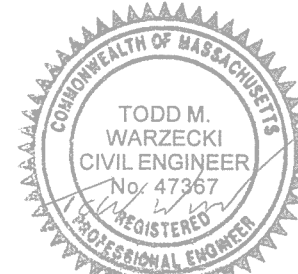
**[SQUARE]**

**TYPICAL PENETRATION DETAIL**  
NOT TO SCALE

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PROJECT

**Taunton Wastewater  
Treatment Facility  
Improvements  
Phase 1**

**TAUNTON, MA**

TITLE

**Miscellaneous Details**

NO. REVISIONS DATE

DRAWN BY: BN

DESIGNED BY: BN

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ISSUE DATE: 7/2/2021

BETA JOB NO.: 6050

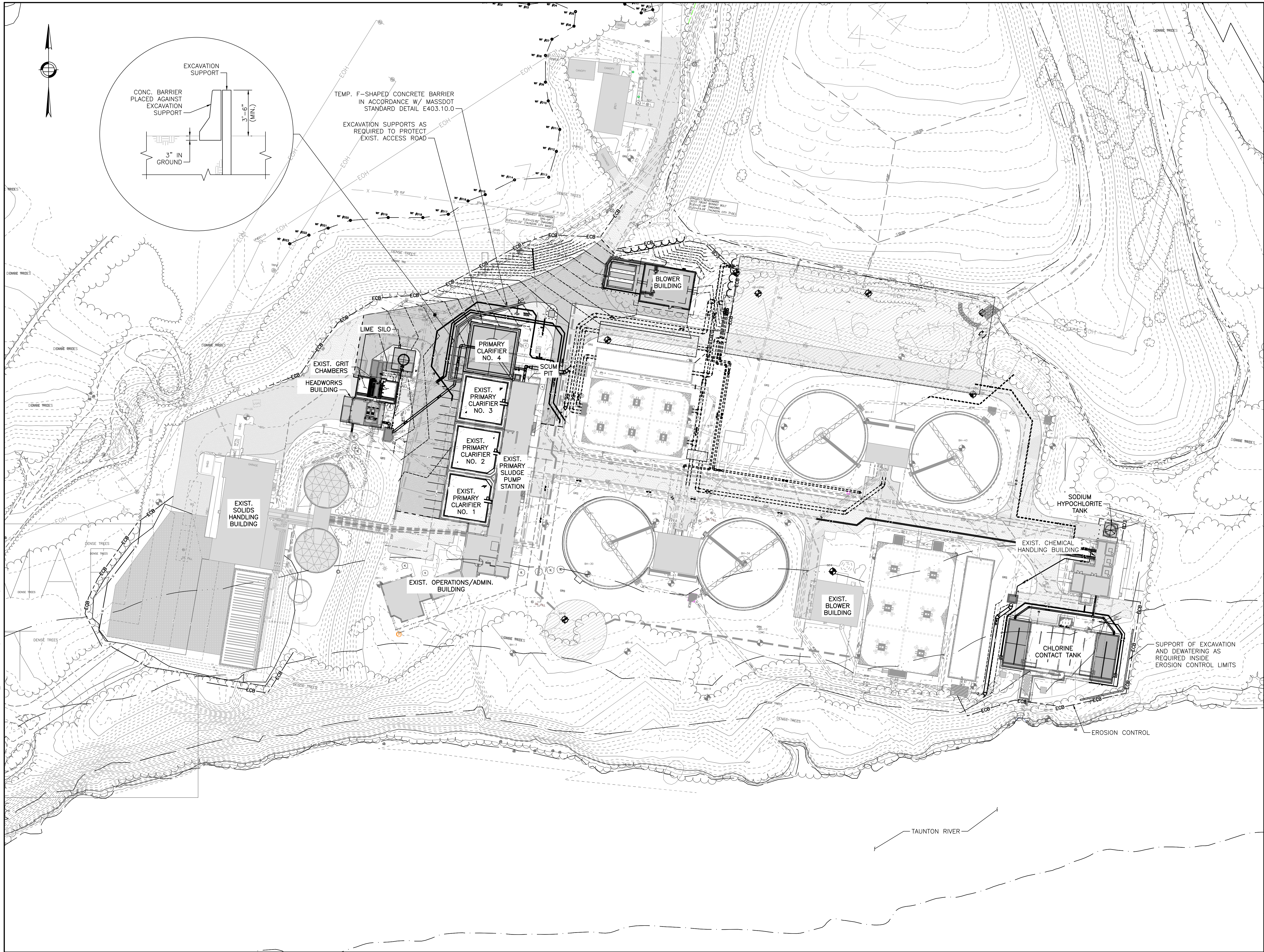
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SG-4

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PROJECT

**Taunton Wastewater  
Treatment Facility  
Improvements  
Phase 1**

TAUNTON, MA

TITLE

Phase 1 Site Plan

NO.	REVISIONS	DATE
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DRAWN BY:	BN
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DESIGNED BY:	BN
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CHECKED BY:	TMW
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ISSUE DATE:	7/2/2021
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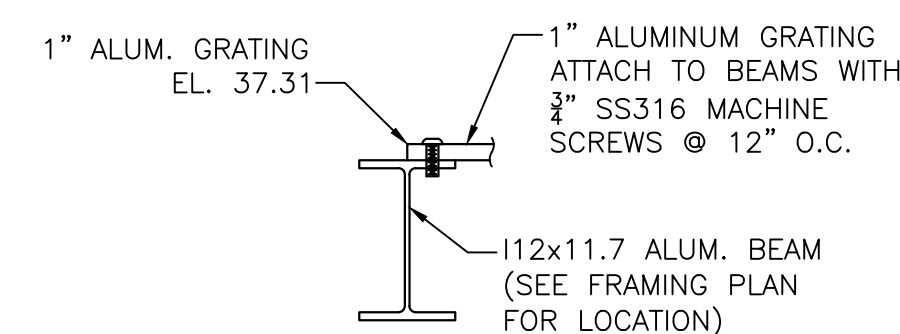
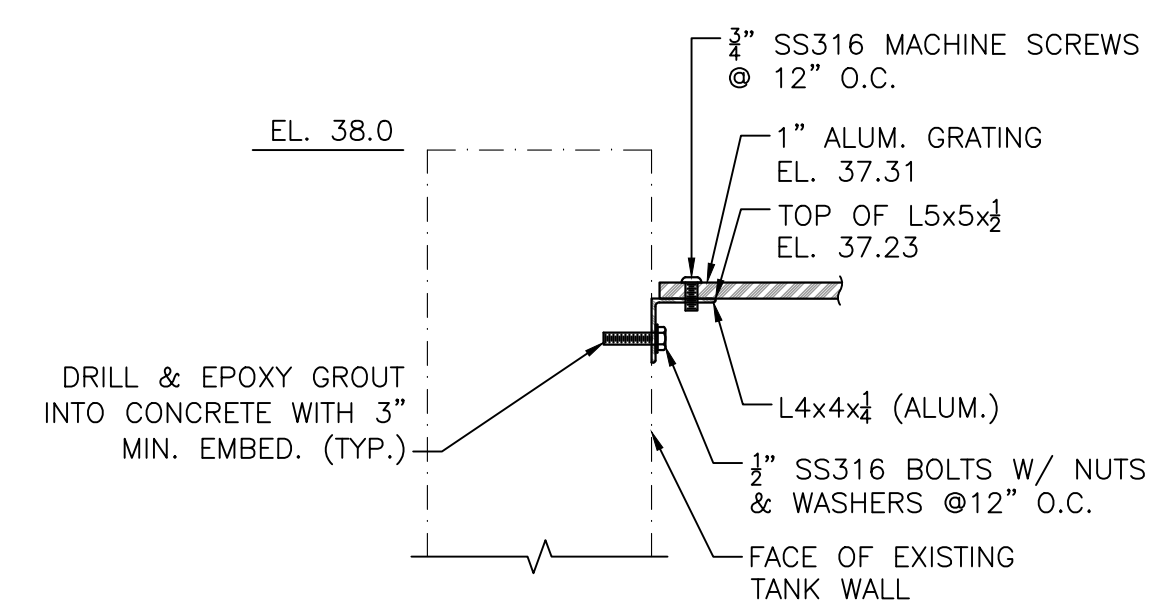
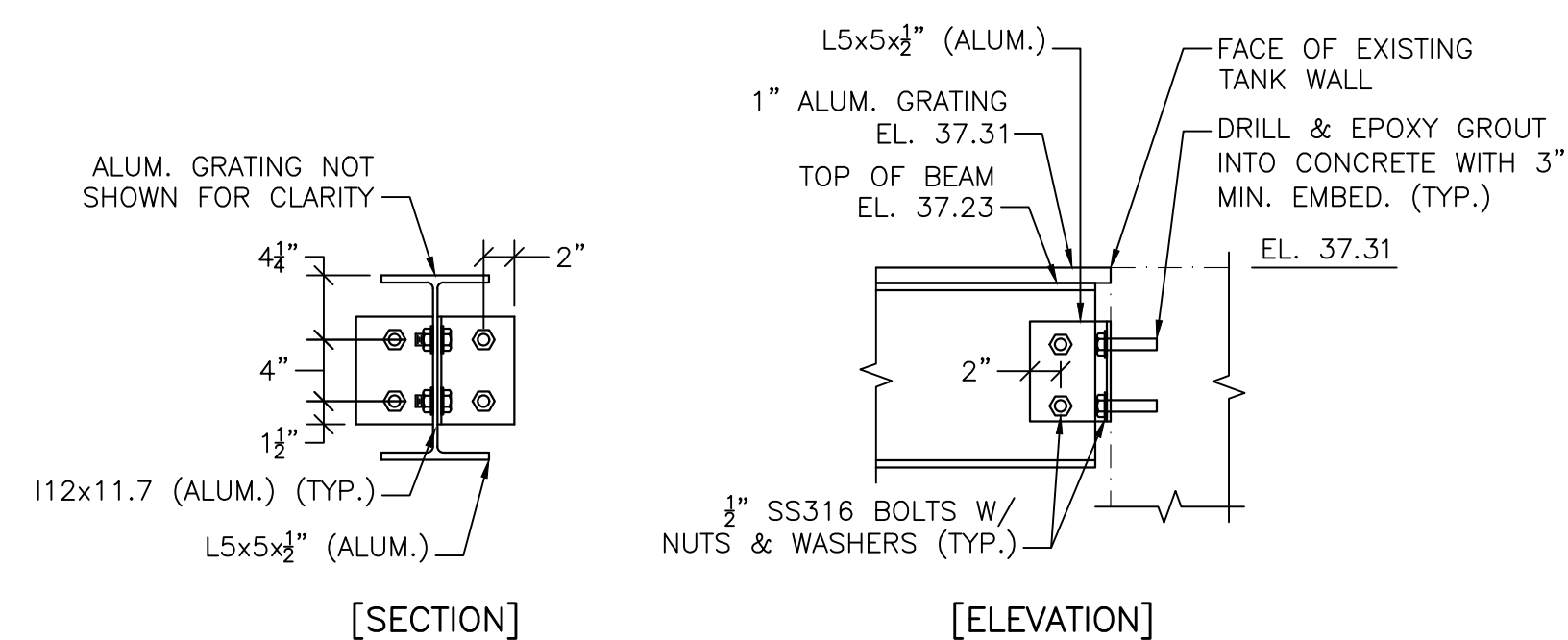
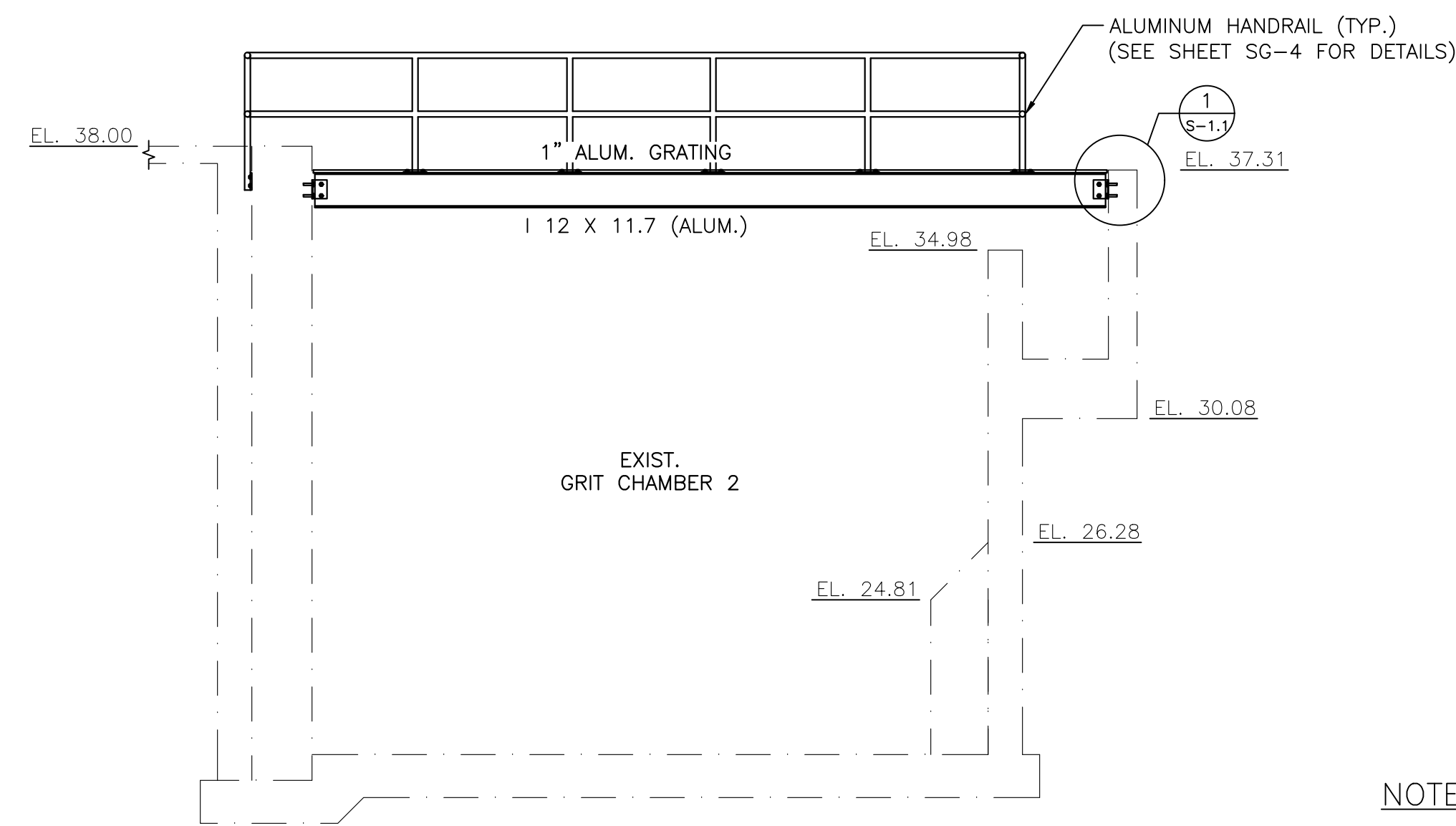
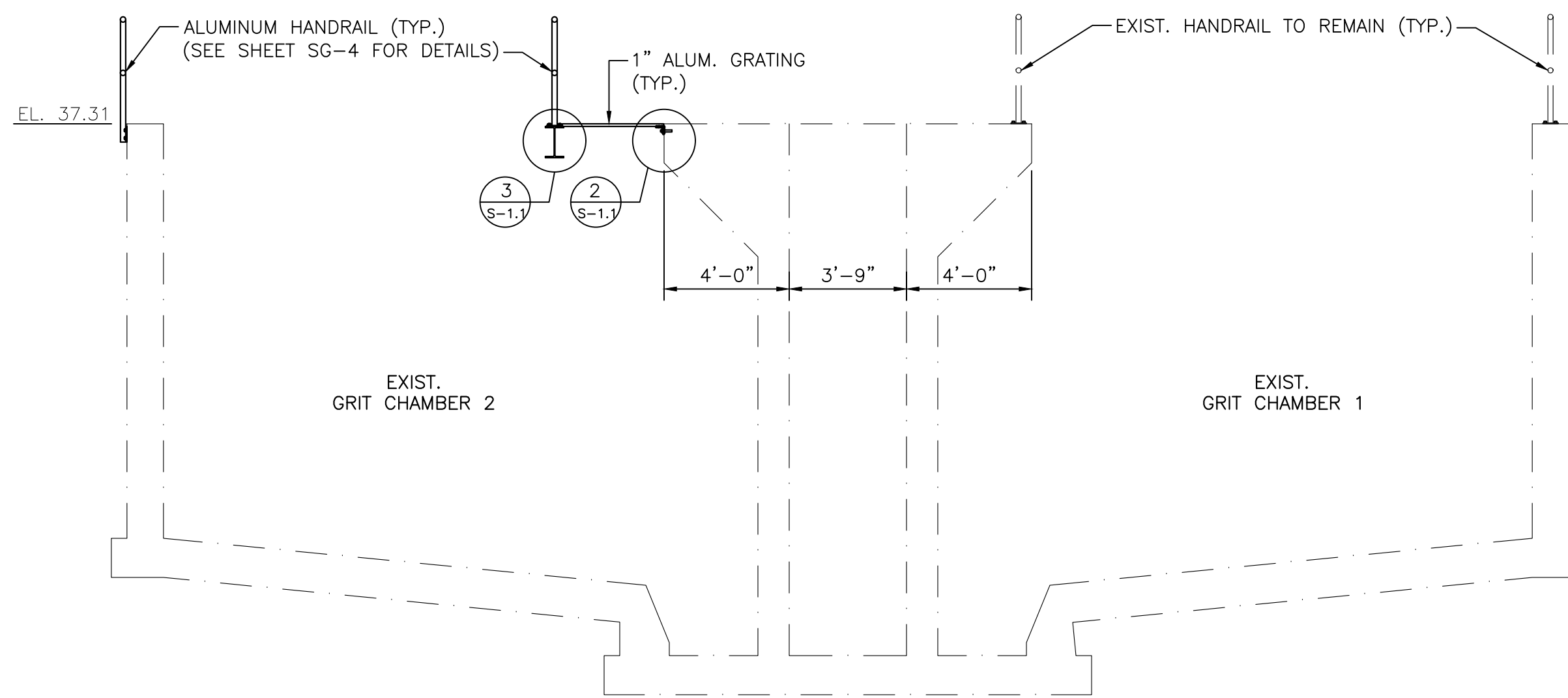
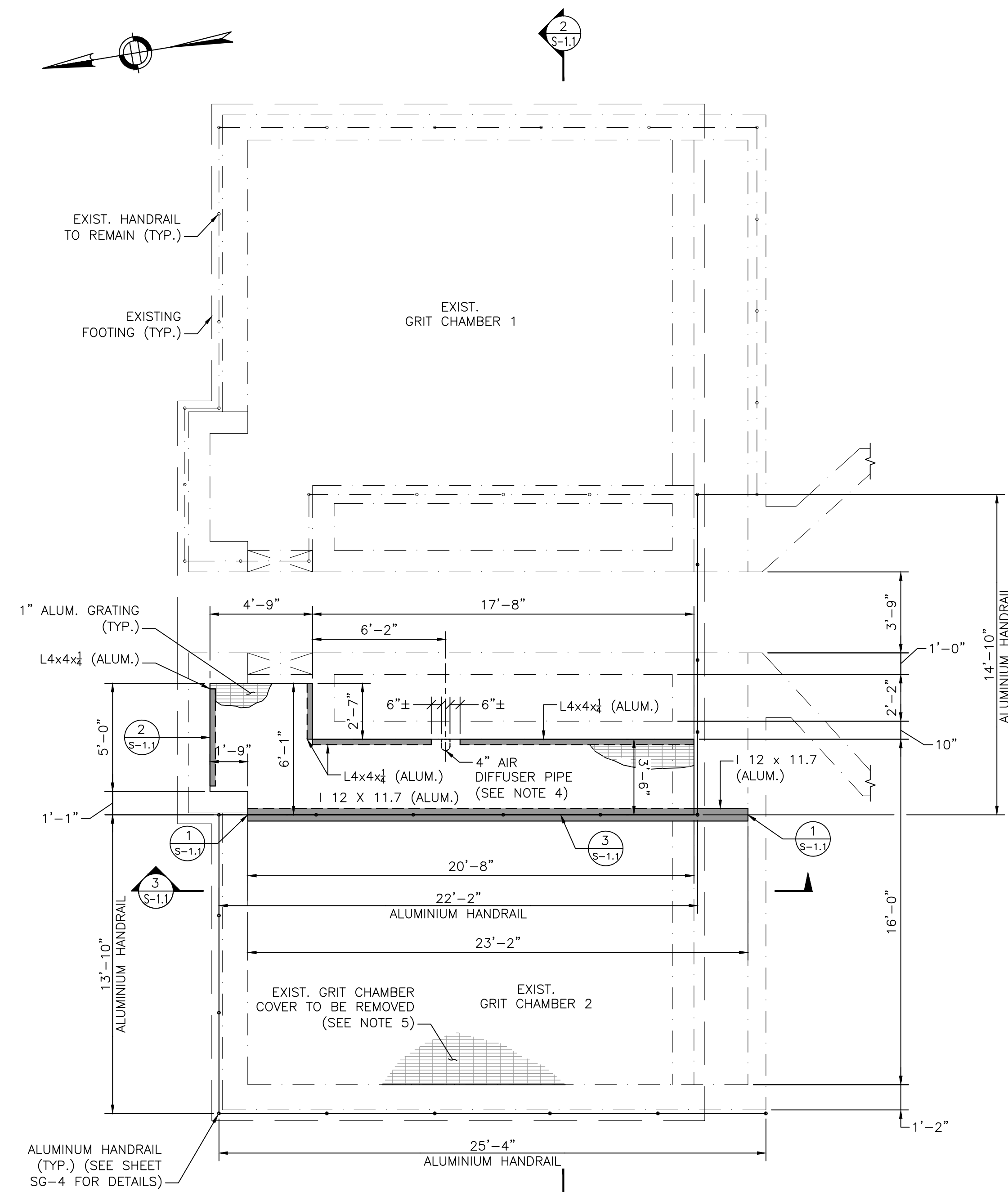
BETA JOB NO.:	6050
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SCALE

AS SHOWN

SHEET NO.

SG-5



- NOTES:

1. STRUCTURAL ALUMINUM TO CONFORM TO ALLOY 6061-T6. DETAIL AND FABRICATE IN CONFORMANCE WITH THE 2015 ALUMINUM DESIGN MANUAL.
2. PROVIDE 3/4" DIAMETER TYPE 316 STAINLESS STEEL BOLTS FOR BOLTED CONNECTIONS. PROVIDE 1/8" DIAMETER HOLES UNLESS OTHERWISE INDICATED. PROVIDE PLATE WASHERS BOTH OUTER PLIES WITH OVERSIZE OR SLOTTED HOLES WHERE INDICATED.
3. EXISTING REINFORCEMENT NOT SHOWN FOR CLARITY.
4. SEE MECHANICAL SHEETS FOR ALL PIPING DETAILS.
5. SEE MECHANICAL SHEETS FOR DETAILS ON GRIT CHAMBER COVER DEMOLITION.



# Taunton Wastewater Treatment Facility Improvements Phase 1

**TAUNTON, MA**

Grit Chamber Grating  
Support

NO.	REVISIONS	DATE

DRAWN BY: BN

DRAWN BY: BN

DESIGNED BY:	BN
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CHECKED BY: TMW

ISSUE DATE:	7/2/2021
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BETA JOB NO.:	6050
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SCALE

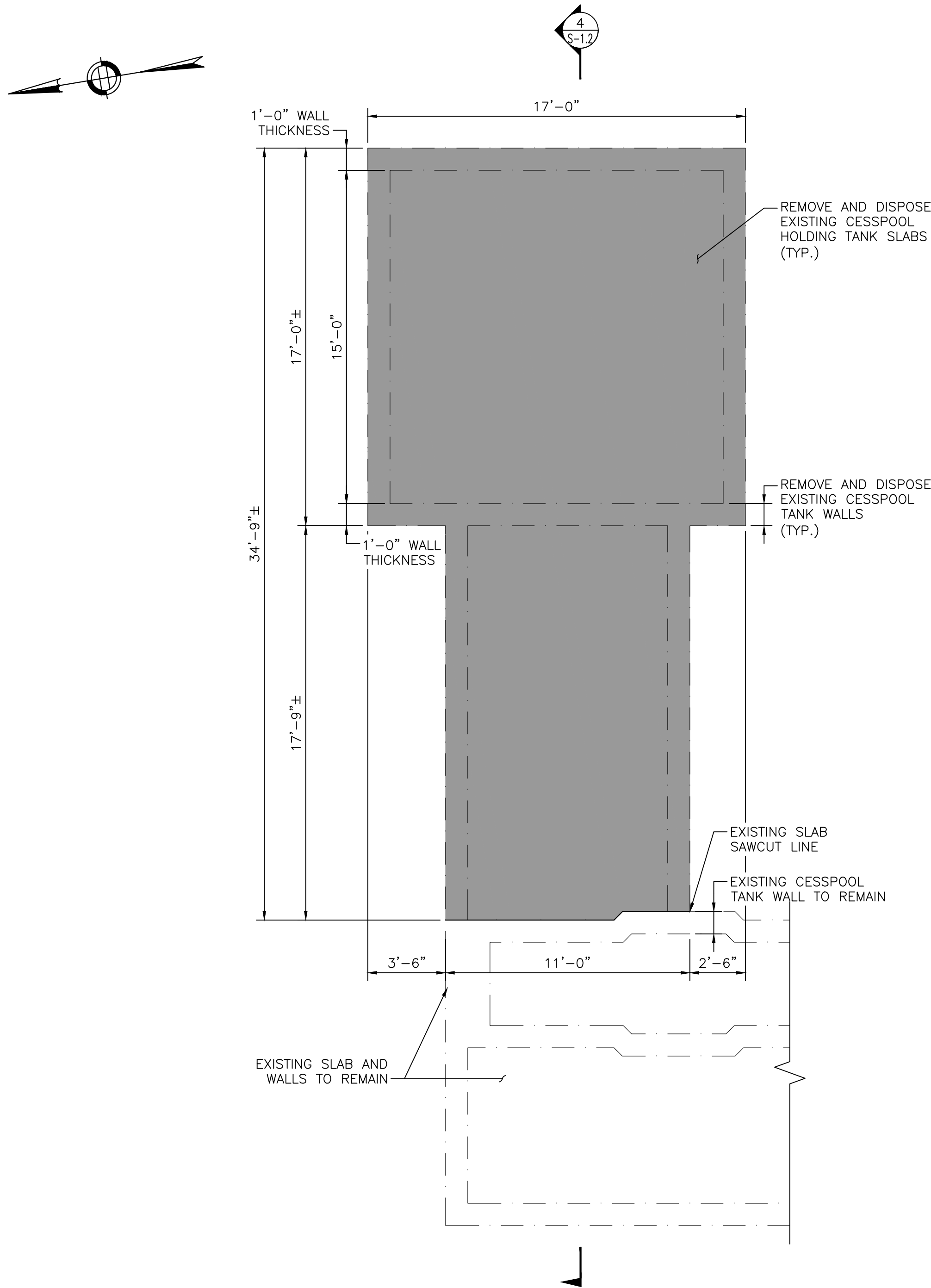
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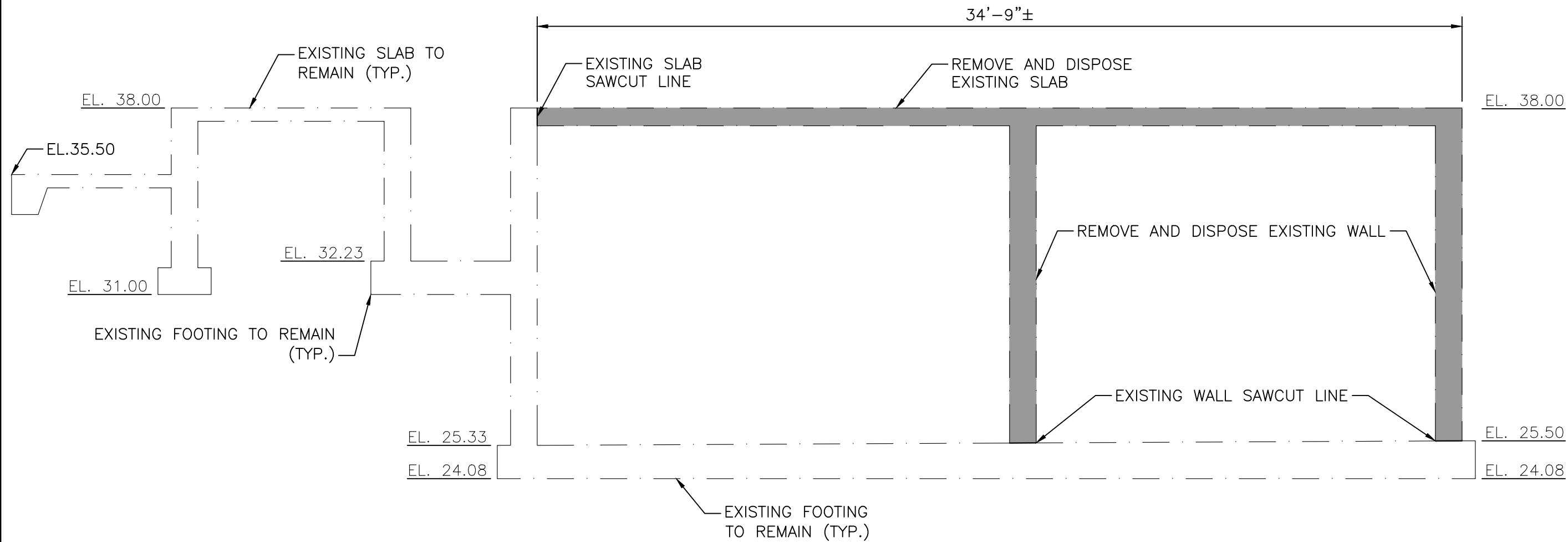
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S-1.1

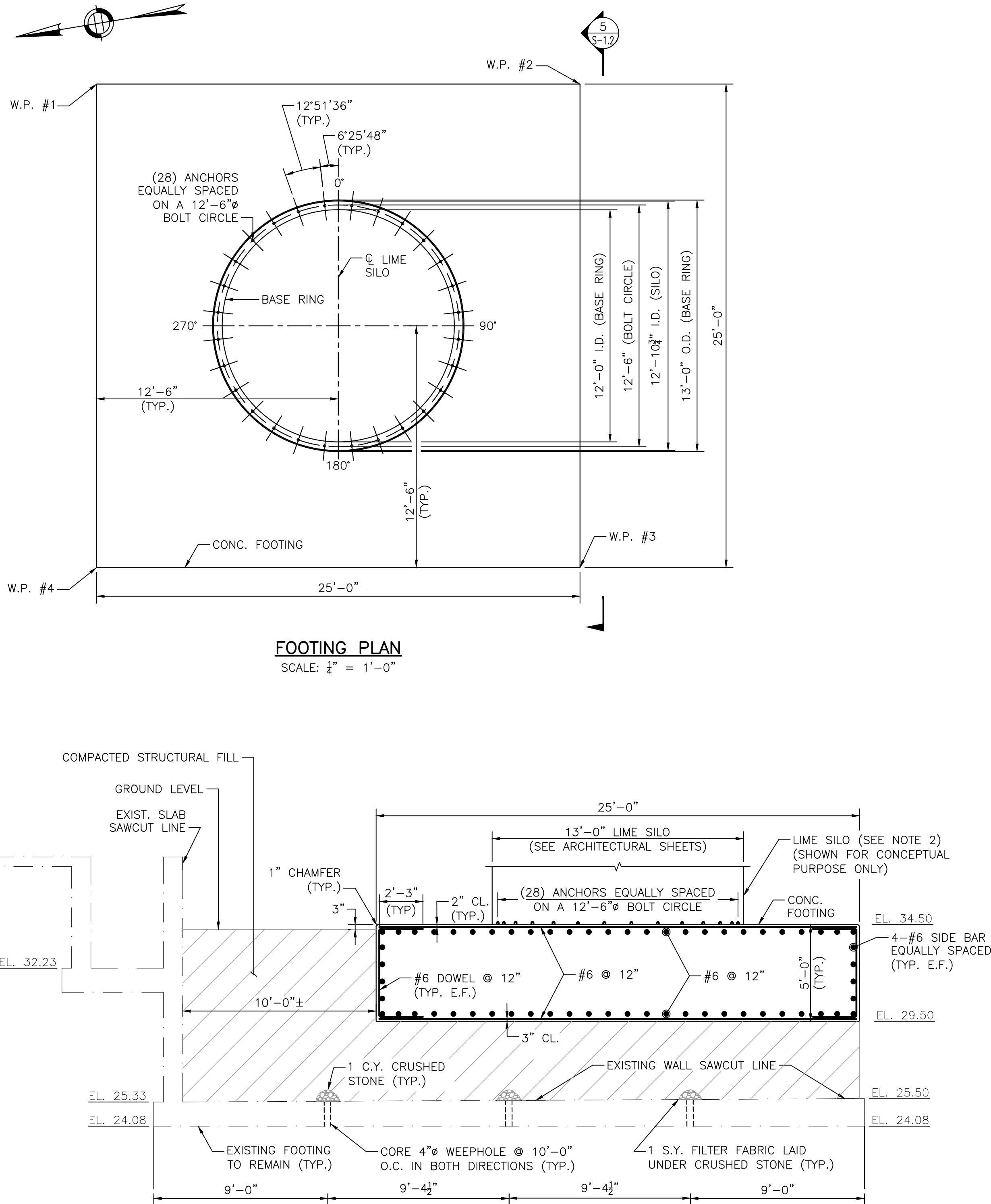
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DEMOLITION PLAN  
SCALE: 1/4" = 1'-0"



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



SECTION 5  
SCALE: 1/4" = 1'-0"

TABLE 1 - BASE REACTIONS	
DEAD LOAD:	38,000 LBS
LIVE LOAD:	314,000 LBS
WIND LOADING:	
OVERTURNING:	1,798,000 FT-LBS
SHEAR:	58,000 LBS
SEISMIC LOADING:	
OVERTURNING:	1,160,000 FT-LBS
SHEAR:	39,000 LBS
ANCHOR BOLT:	
NUMBER OF BOLTS:	28 EA
LOAD PER BOLT:	20.2 KIPS

NOTES:

1. FOOTING SHOWN IS BASED ON THE DESIGN VALUES SHOWN IN TABLE 1 AND MAY NOT REPRESENT ACTUAL LIME SILO.
2. LIME SILO TO BE PROVIDED BY THE CONTRACTOR. IF SILO LOADING IS GREATER THAN THE VALUES PROVIDED IN TABLE 1, THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING AN ALTERNATE FOOTING DESIGN PERFORMED BY A MASSACHUSETTS REGISTERED STRUCTURAL ENGINEER.
3. ■ DENOTES AREA TO BE DEMOLISHED

	NORTHING	EASTING
W.P. #1	33353122.44	9187696.25
W.P. #2	33352826.47	9187647.22
W.P. #3	33352875.51	9187351.25
W.P. #4	33353171.47	9187400.29

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PROJECT

Taunton Wastewater  
Treatment Facility  
Improvements  
Phase 1

TAUNTON, MA

TITLE

Lime Silo

NO. REVISIONS DATE

DRAWN BY: BN  
DESIGNED BY: BN  
CHECKED BY: TMW  
ISSUE DATE: 7/2/2021  
BETA JOB NO.: 6050

SCALE

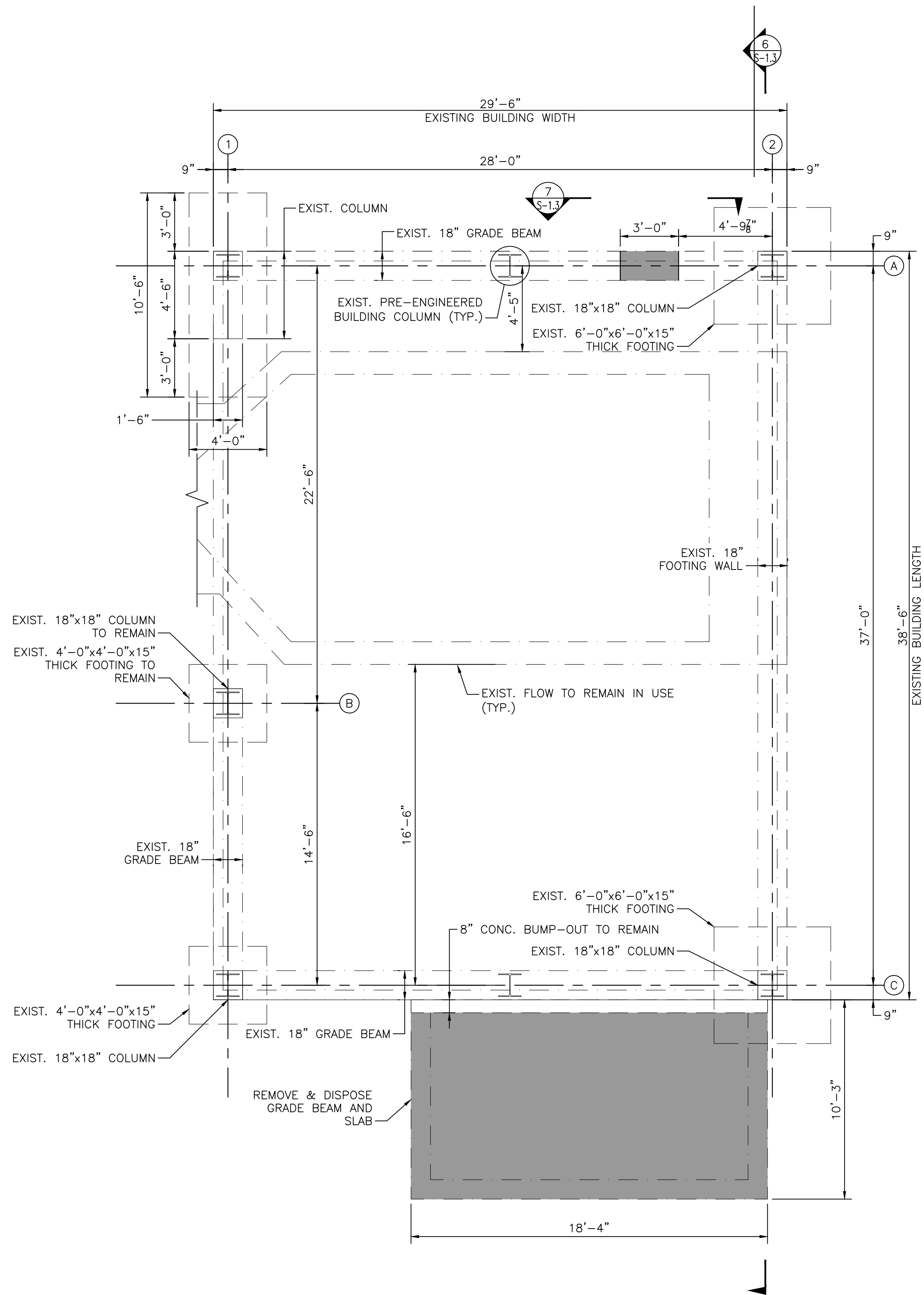
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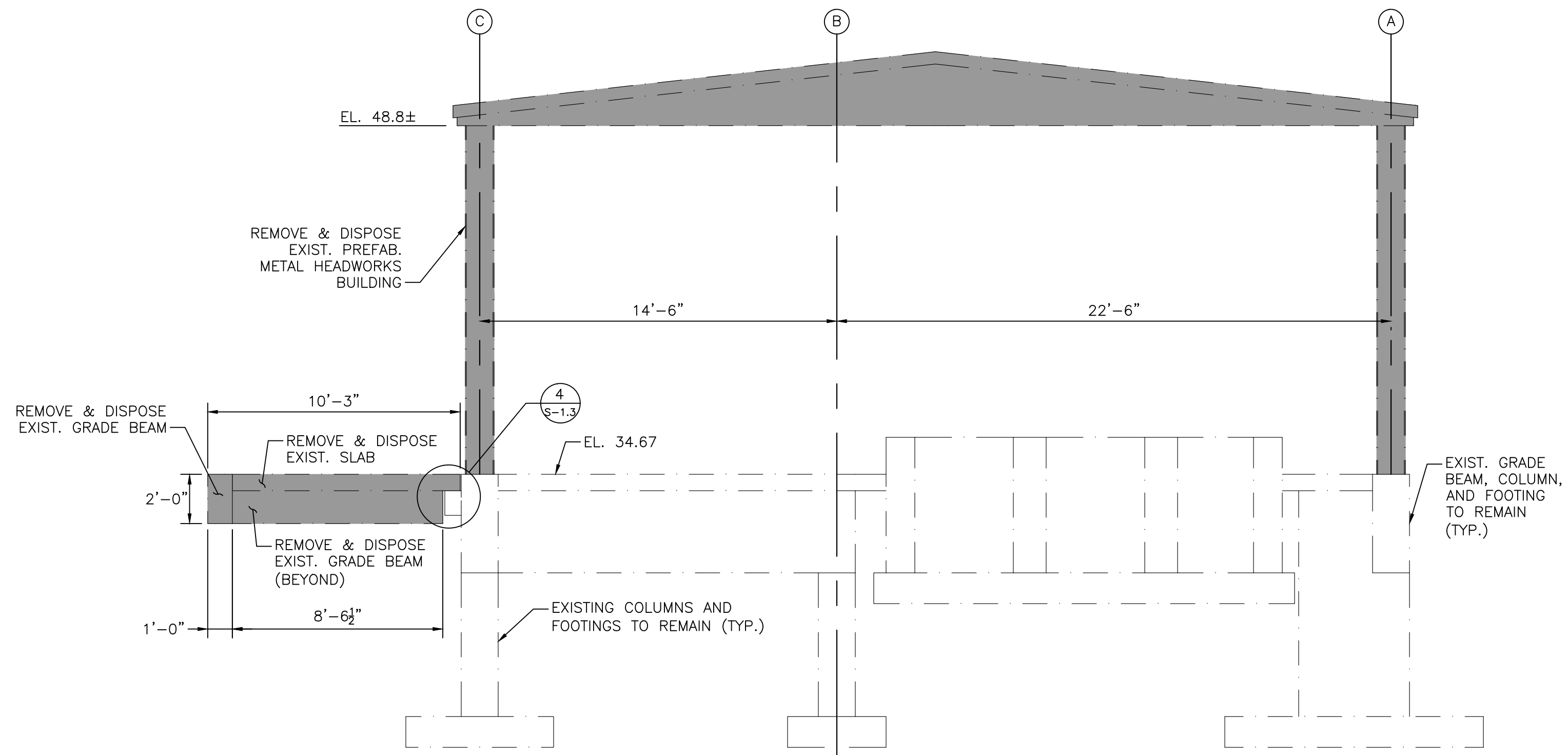
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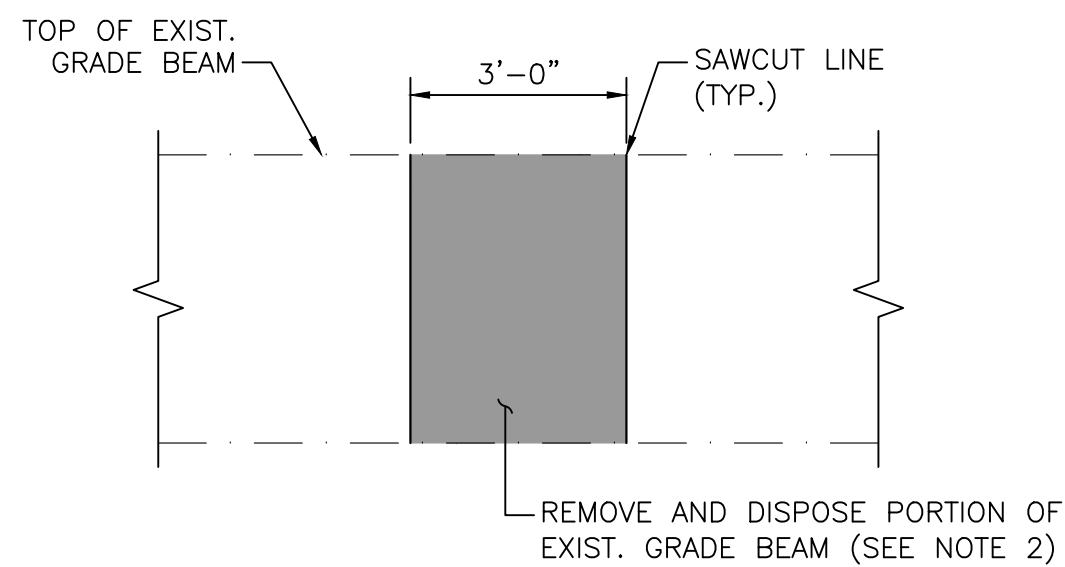
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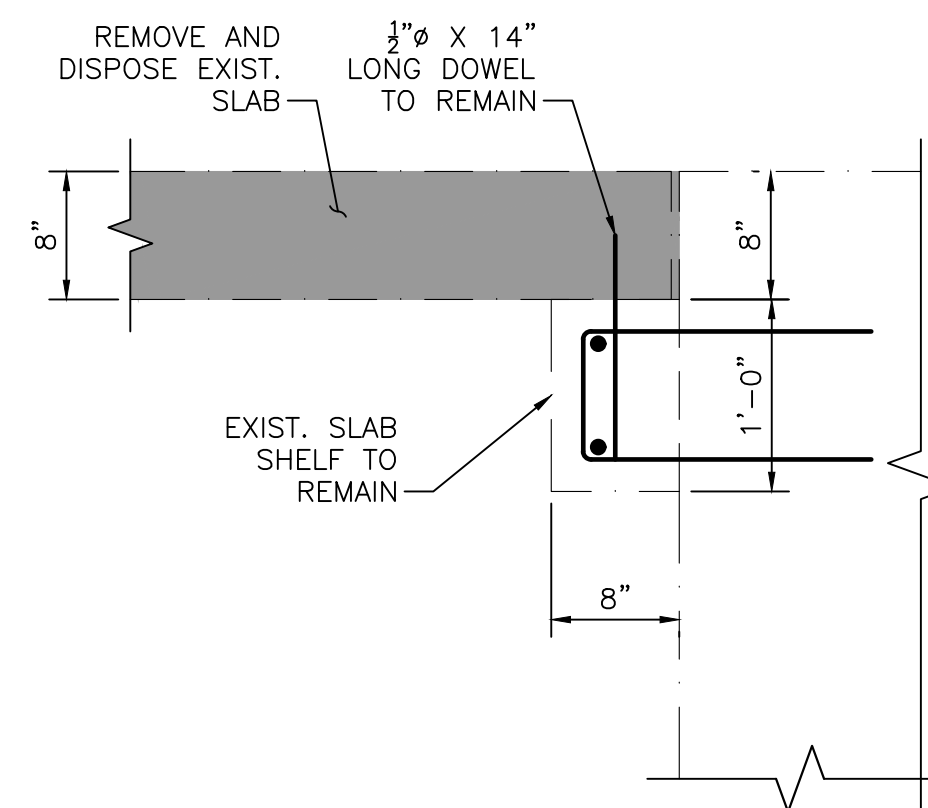
EXISTING FOUNDATION LAYOUT  
SCALE:  $\frac{1}{4}" = 1'-0"$



SECTION  
SCALE:  $\frac{1}{4}" = 1'-0"$



SECTION  
SCALE:  $\frac{1}{8}" = 1'-0"$



DETAIL  
SCALE: 1" = 1'-0"

NOTES:

1. [Shaded Box] INDICATES AREA TO BE DEMOLISHED.
2. REMOVAL OF EXISTING GRADE BEAM SHALL BE DONE WITH HAND CHIPPER, SO AS TO NOT DISTURB EXISTING COLUMNS AND FOOTINGS. ANY DAMAGE TO THE EXISTING COLUMNS AND FOOTING, DONE AS PART OF THIS DEMOLITION, SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER.

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PROJECT

**Taunton Wastewater  
Treatment Facility  
Improvements  
Phase 1**

TAUNTON, MA

TITLE

**Existing Headworks  
Building Demolition**


NO.	REVISIONS	DATE

DRAWN BY:	BN
DESIGNED BY:	BN
CHECKED BY:	TMW
ISSUE DATE:	7/2/2021
BETA JOB NO.:	6050

SCALE

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S-1.3

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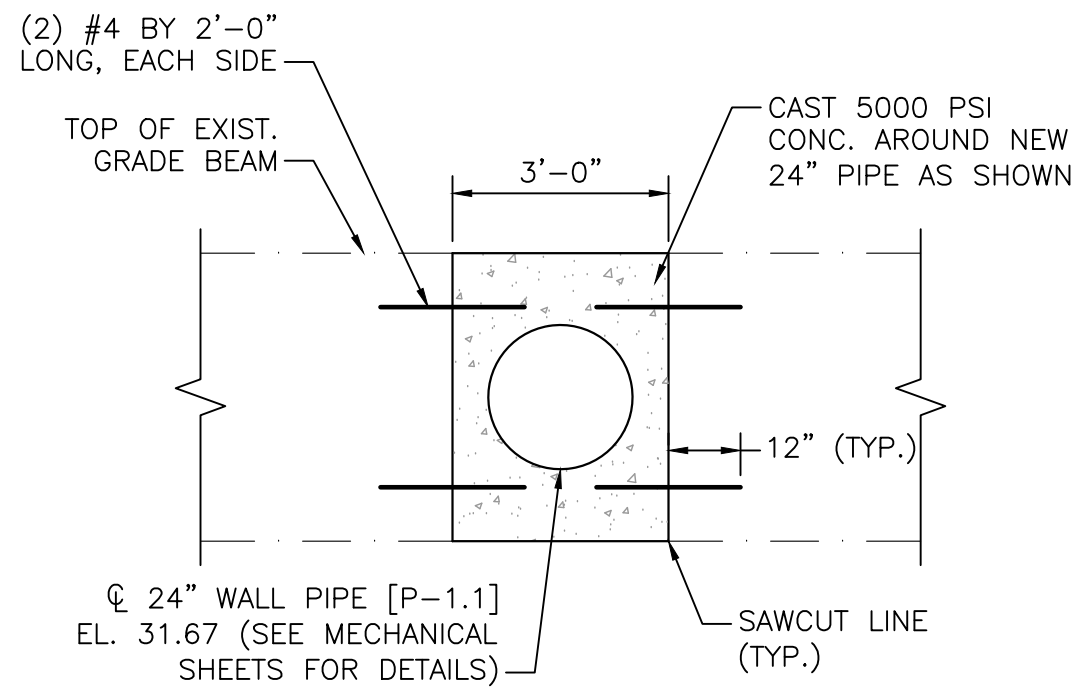
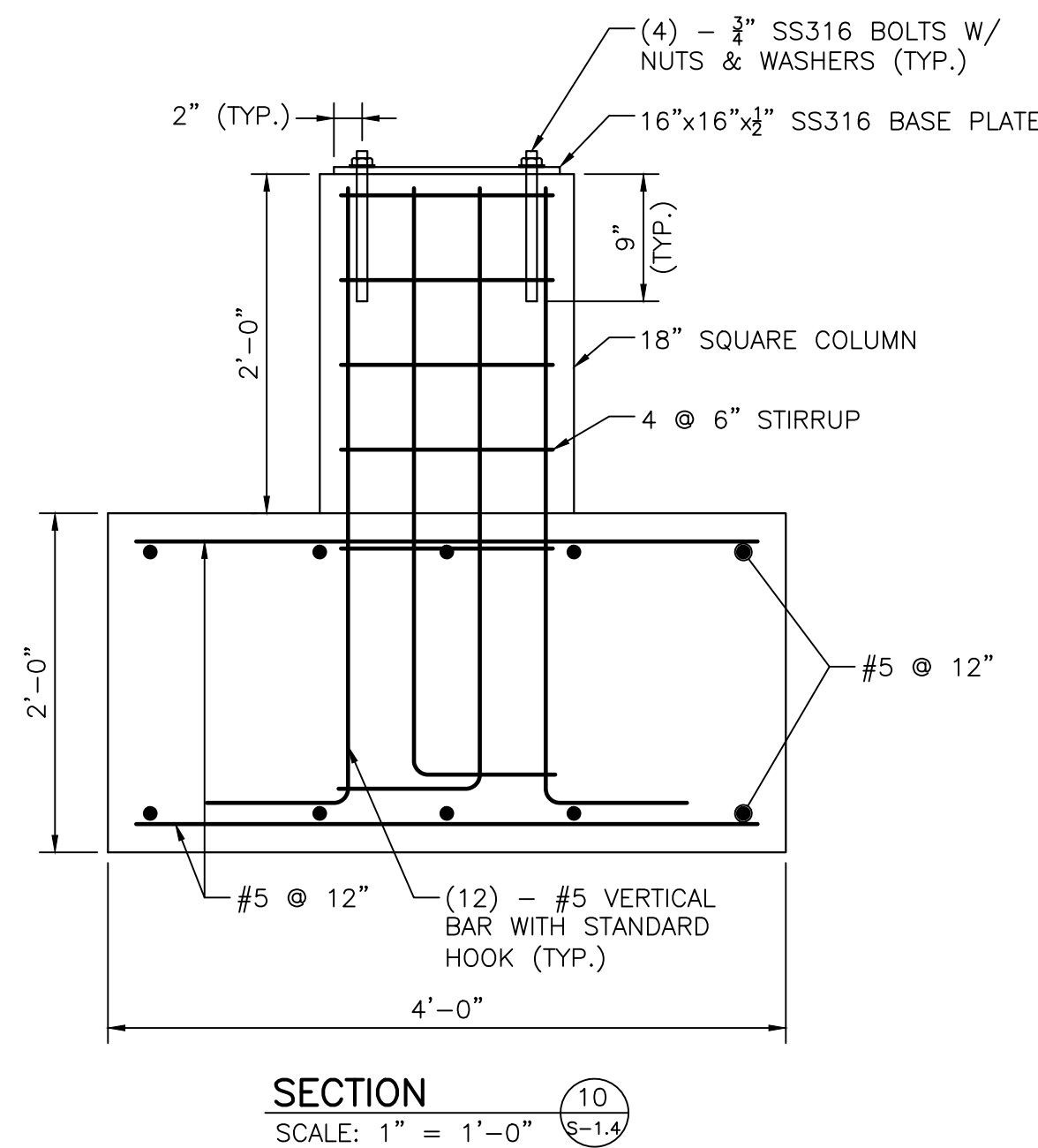
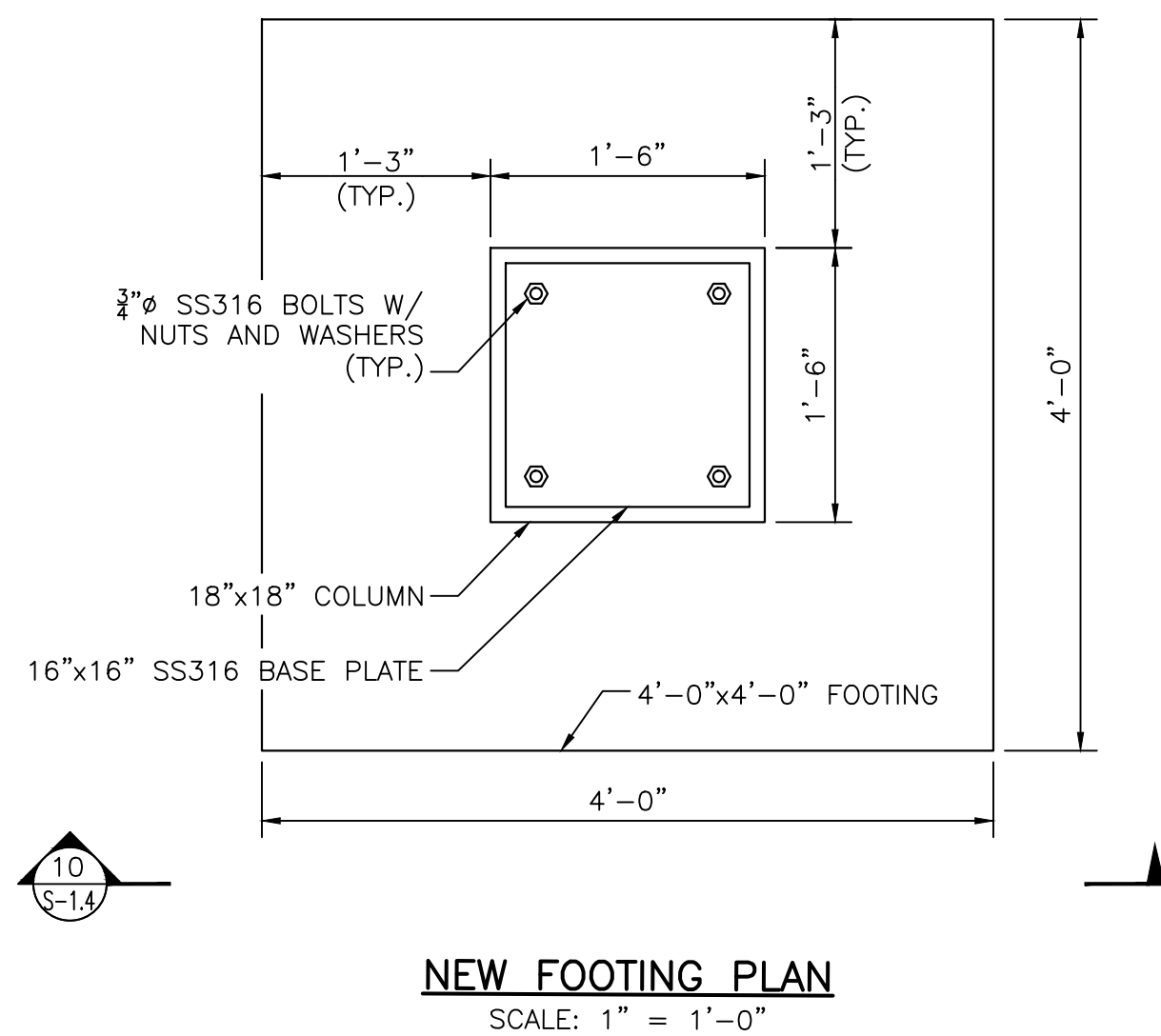
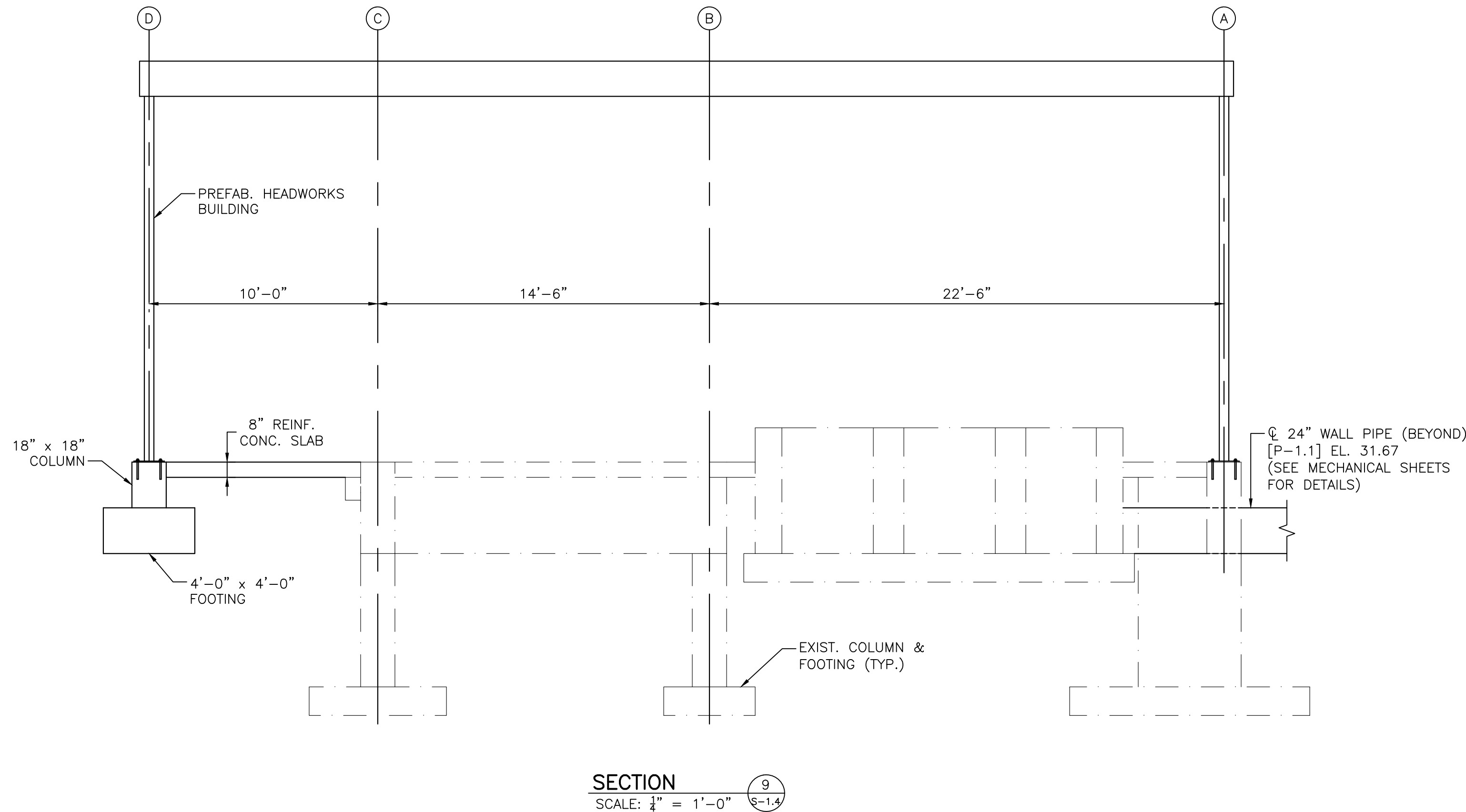
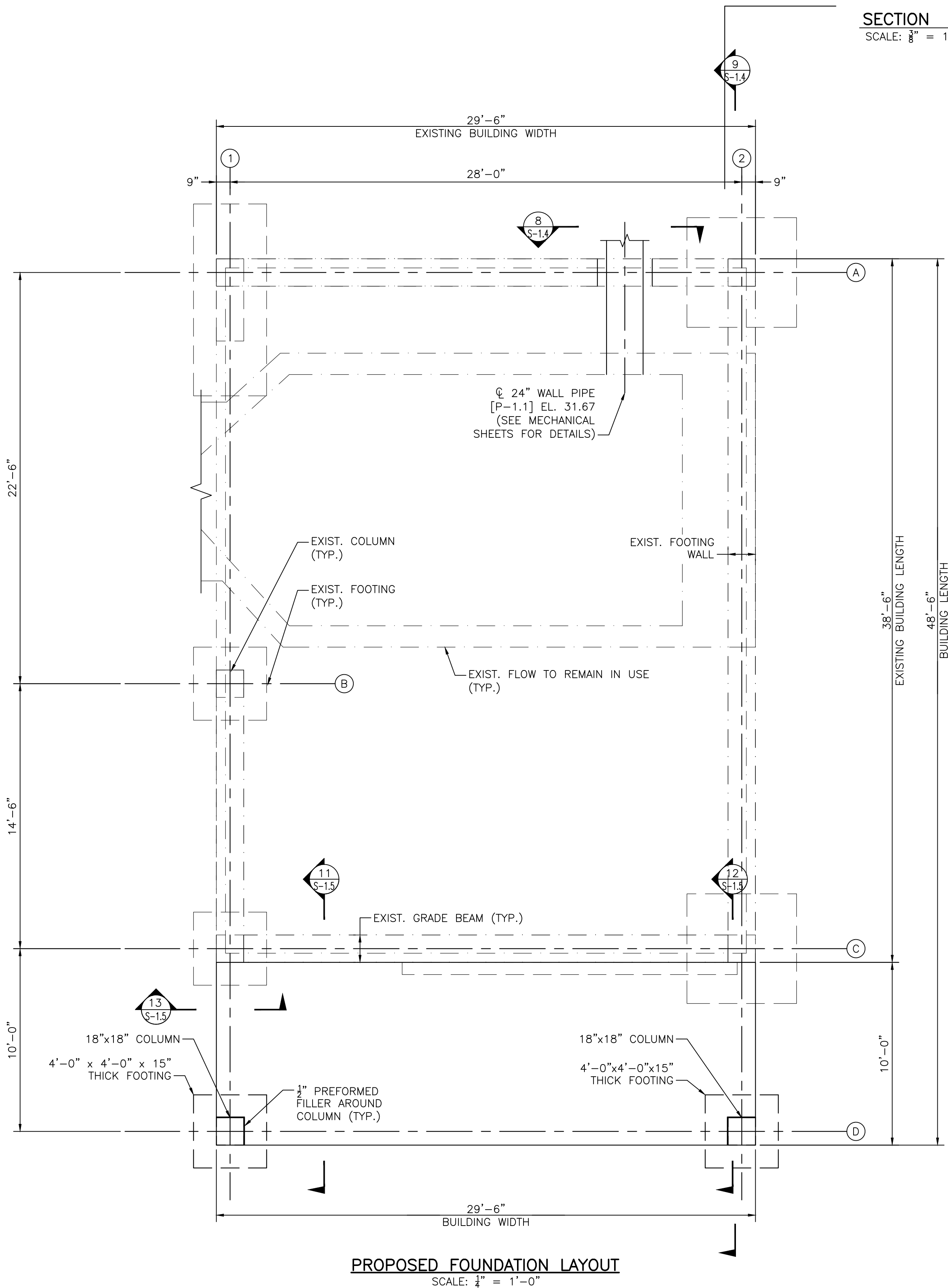


TABLE 2 - FOOTING DESIGN LOADS	
BEARING LOADS	
VERT:	6.83 K
HORIZ:	1.80 K
DESIGN LOADS	
VERT:	4.75 K ; -0.3 (UPLIFT)
HORIZ:	3.00 K ; -1.5 (LEEWARD)

NOTES:

- FOOTING SIZE IS BASED ON VALUES IN TABLE 2.
- THE CONTRACTOR IS RESPONSIBLE TO PROVIDE PREFABRICATED BUILDING. IF ACTUAL REACTIONS IN THE LAYOUT PROVIDED ARE GREATER THAN THE VALUES SHOWN IN TABLE 2, THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING AN ALTERNATE FOOTING DESIGN PERFORMED BY A MASSACHUSETTS REGISTERED STRUCTURAL ENGINEER.
- THE SURFACE OF THE PREVIOUSLY CAST CONCRETE SHALL BE BLAST CLEANED, ROUGHENED, WETTED WITH CLEAN WATER, AND THEN FLUSHED WITH A MORTAR COMPOSED OF EQUAL PARTS OF THE CEMENT AND SAND SPECIFIED FOR THE NEW CONCRETE, BEFORE NEW CONCRETE IS PLACED ADJACENT THERETO. NEW CONCRETE SHALL BE PLACED BEFORE MORTAR HAS TAKEN INITIAL SET.
- CONTRACTOR TO CONFIRM EXIST. COLUMN/SUPPORT SPACING PRIOR TO ORDERING NEW PREFAB METAL BUILDING.



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PROJECT

Taunton Wastewater Treatment Facility Improvements Phase 1

TAUNTON, MA

TITLE

Prefabricated Headworks Building

NO.	REVISIONS	DATE
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DRAWN BY:	BN
DESIGNED BY:	BN
CHECKED BY:	TMW
ISSUE DATE:	7/2/2021
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S-1.4



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PROJECT

# Taunton Wastewater Treatment Facility Improvements Phase 1

**TAUNTON, MA**

TITLE

## Prefabricated Headworks Building Details


NO.	REVISIONS	DATE
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DRAWN BY: BN

DESIGNED BY: BN

CHECKED BY: TMW

ISSUE DATE: 7/2/2021

BETA JOB NO.: 6050

SCALE

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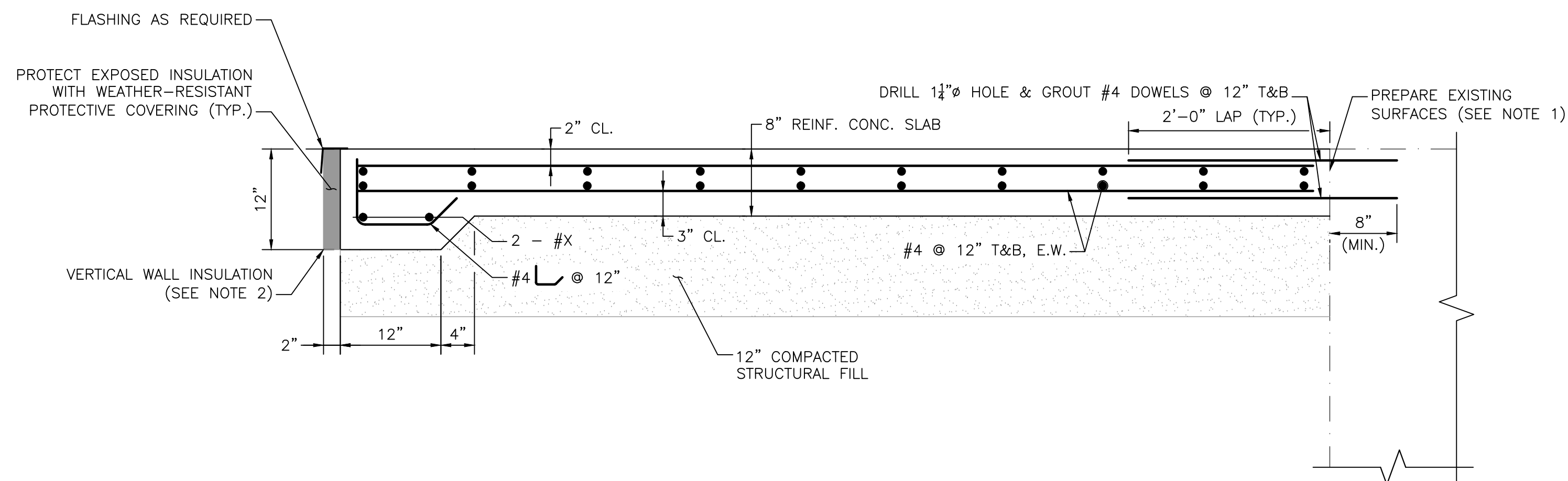
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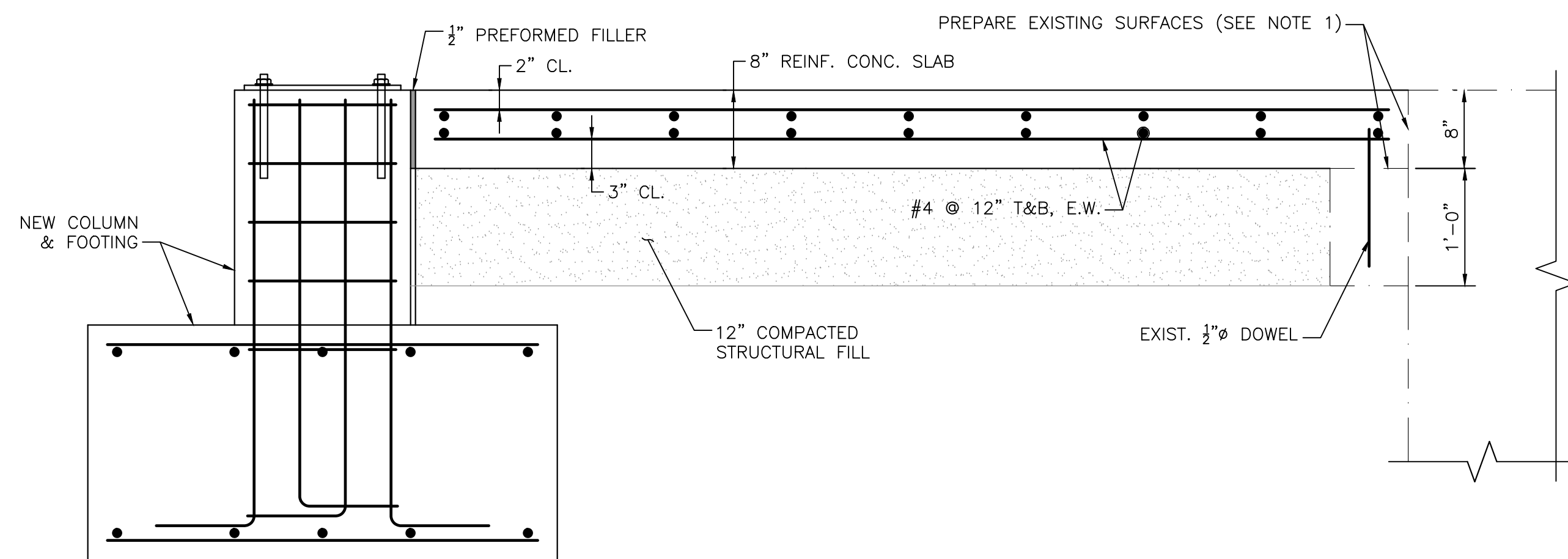
S-1.5

NOTES:

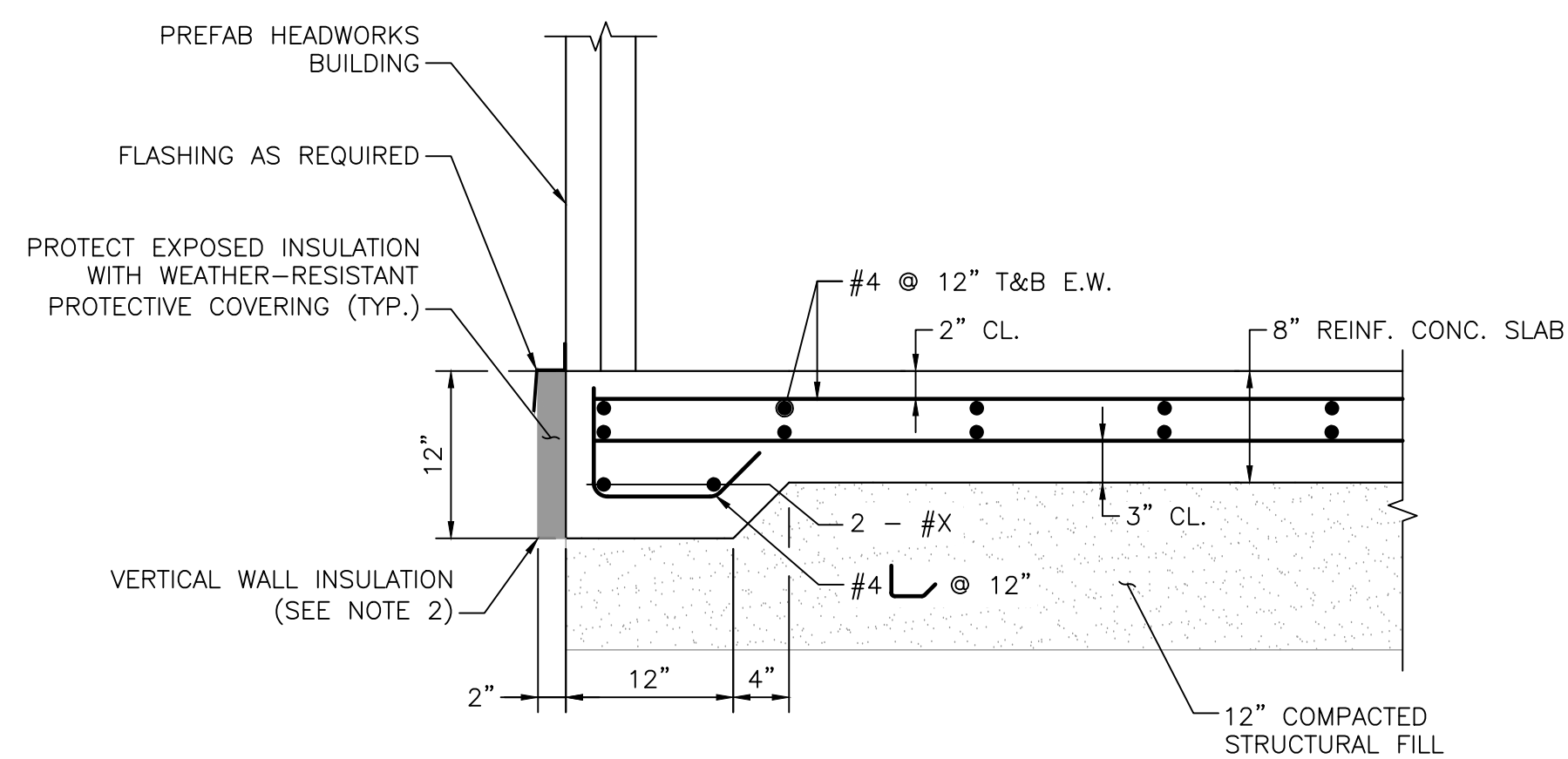
1. THE SURFACE OF THE PREVIOUSLY CAST CONCRETE SHALL BE BLAST CLEANED, ROUGHENED, WETTED WITH CLEAN WATER, AND THEN FLUSHED WITH A MORTAR COMPOSED OF EQUAL PARTS OF THE CEMENT AND SAND SPECIFIED FOR THE NEW CONCRETE, BEFORE NEW CONCRETE IS PLACED ADJACENT THERETO. NEW CONCRETE SHALL BE PLACED BEFORE MORTAR HAS TAKEN INITIAL SET.
2. VERTICAL WALL INSULATION TO HAVE A MINIMUM THICKNESS OF 2" CONFORM TO ASTM C578 TYPE II WITH MINIMUM R-VALUE OF 6.4.



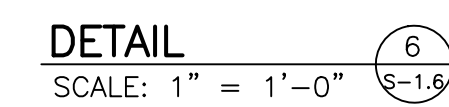
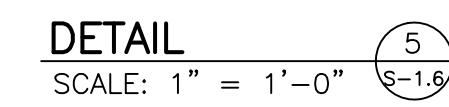
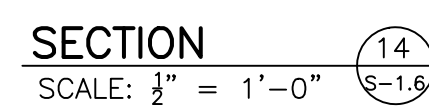
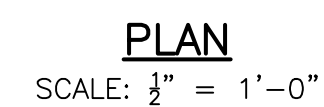
SECTION 11  
SCALE: 1" = 1'-0" S-1.4



SECTION 12  
SCALE: 1" = 1'-0" S-1.4

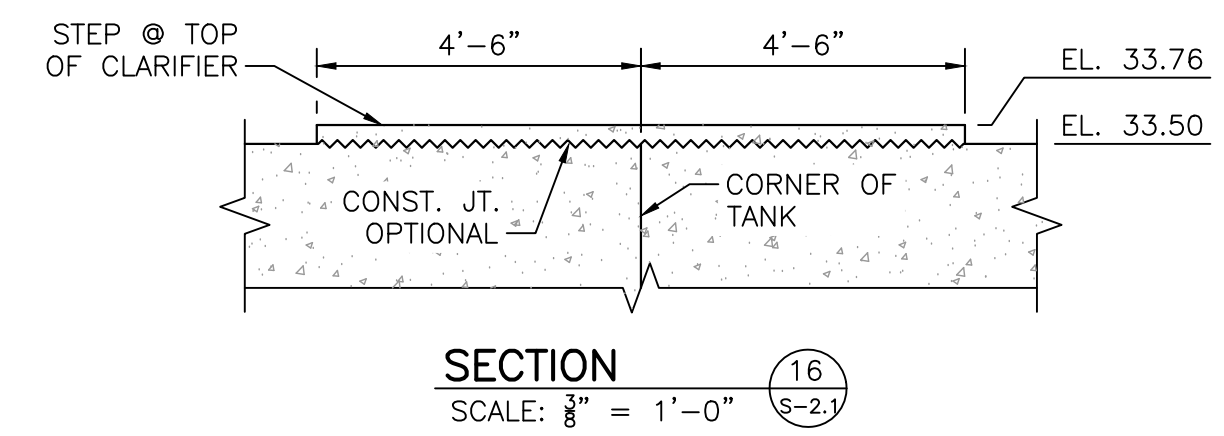
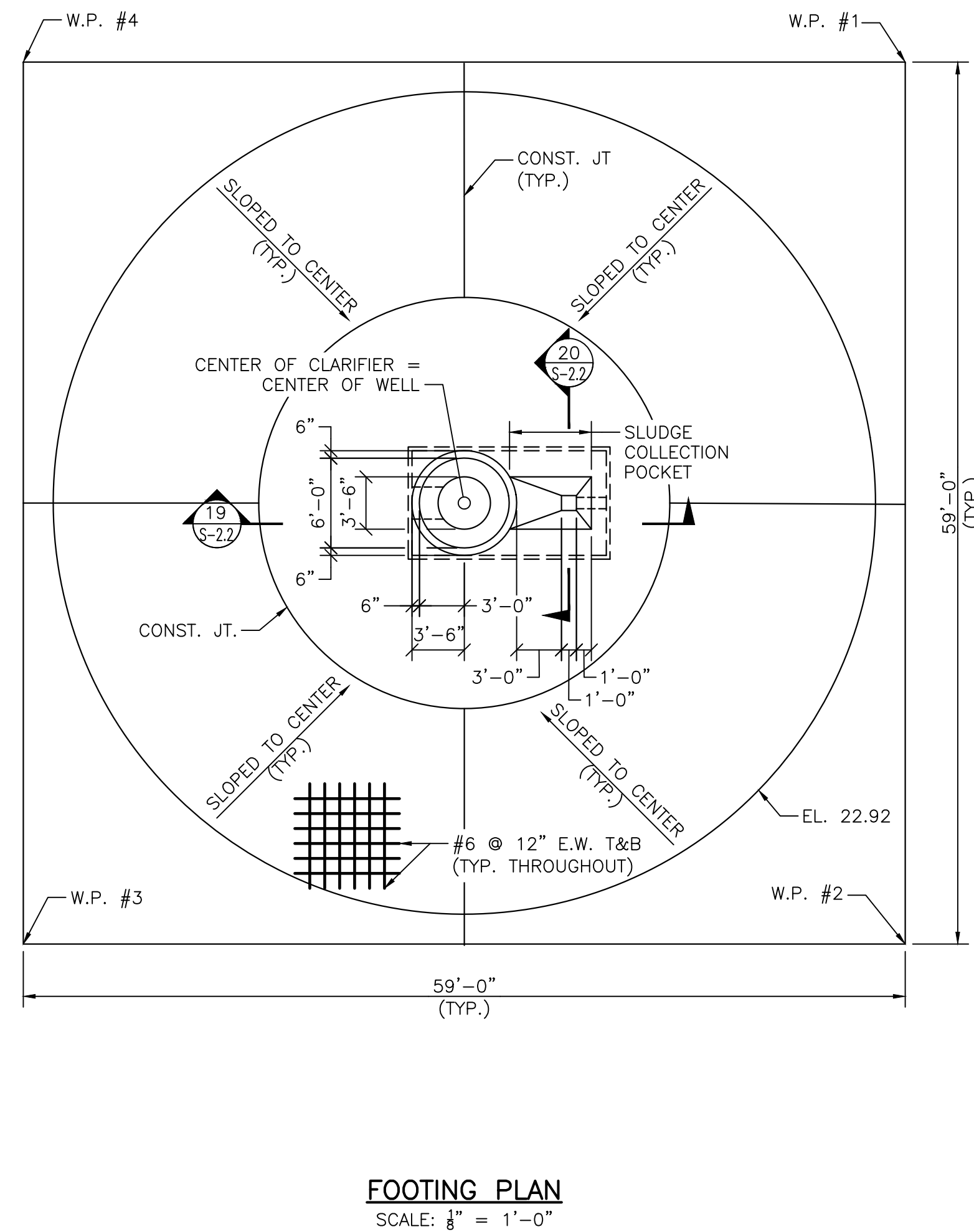
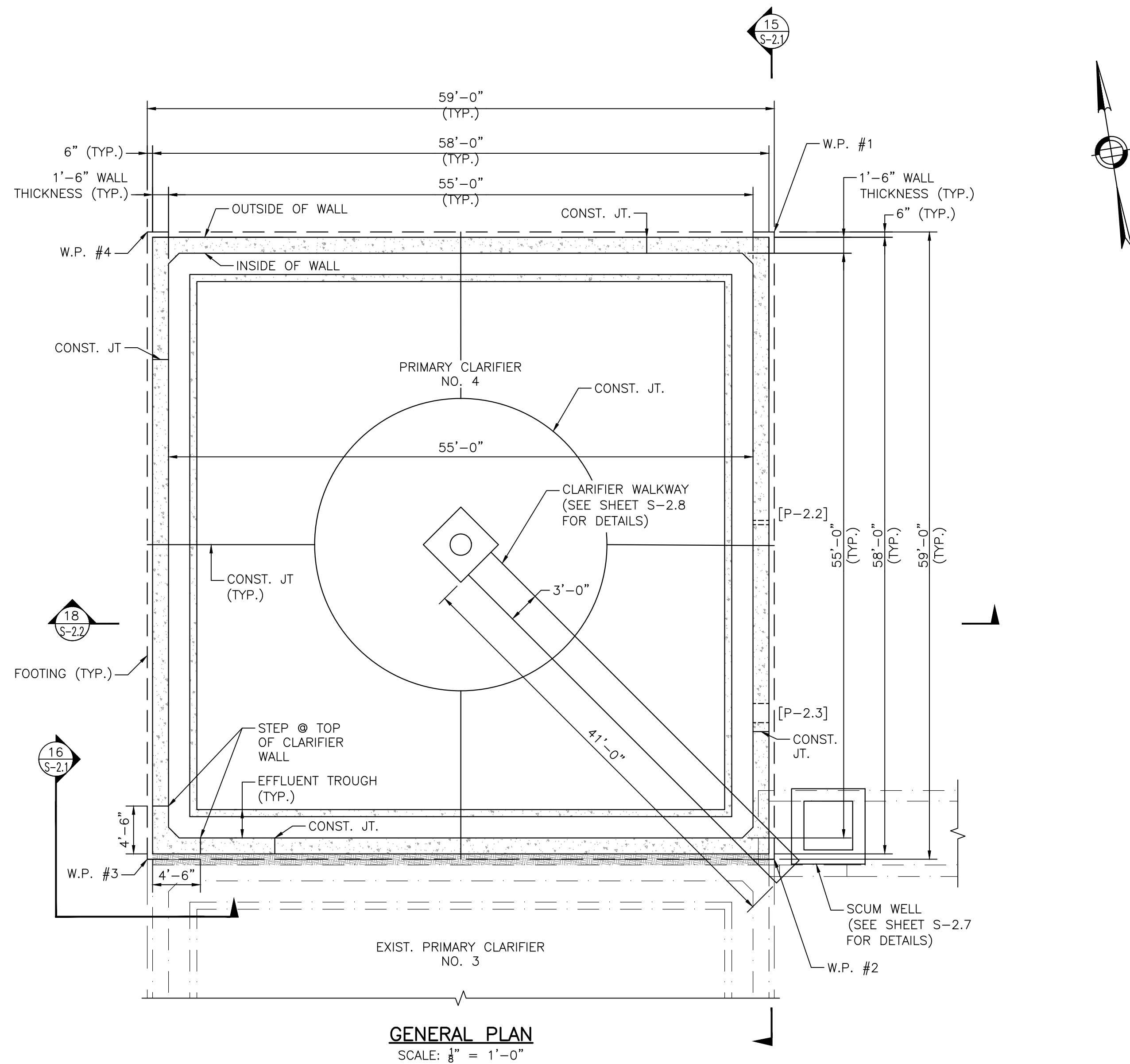


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S-1.6

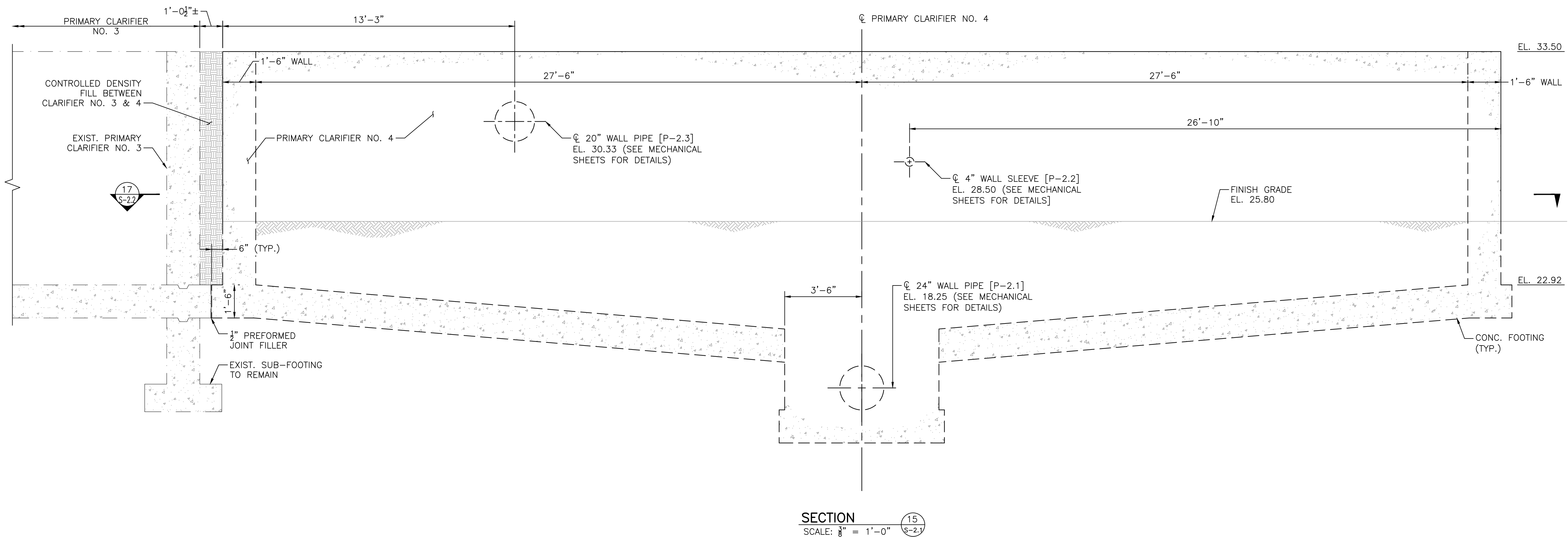
7/2/2021 11:46 AM N:\6000S\60650 - TAUNTON WWTF\DRAWING FILES\PLANSET\PHASE 1\6060\_SR2.1 - P1.DWG (BETA STB BW.STB)



NOTES:

- SEE MECHANICAL SHEETS FOR EQUIPMENT DETAILS

	NORTHING	EASTING
W.P. #1	33353424.08	9189159.93
W.P. #2	33352725.18	9189046.79
W.P. #3	33352838.31	9188347.89
W.P. #4	33353537.22	9188461.03



PREPARED BY



REGISTERED PROFESSIONAL



SUBCONSULTANT

PROJECT

**Taunton Wastewater  
Treatment Facility  
Improvements  
Phase 1**

**TAUNTON, MA**

TITLE

**Primary Clarifier Plans and  
Elevations**

NO.	REVISIONS	DATE

DRAWN BY:	BN
DESIGNED BY:	BN
CHECKED BY:	TMW
ISSUE DATE:	7/2/2021
BETA JOB NO.:	6050

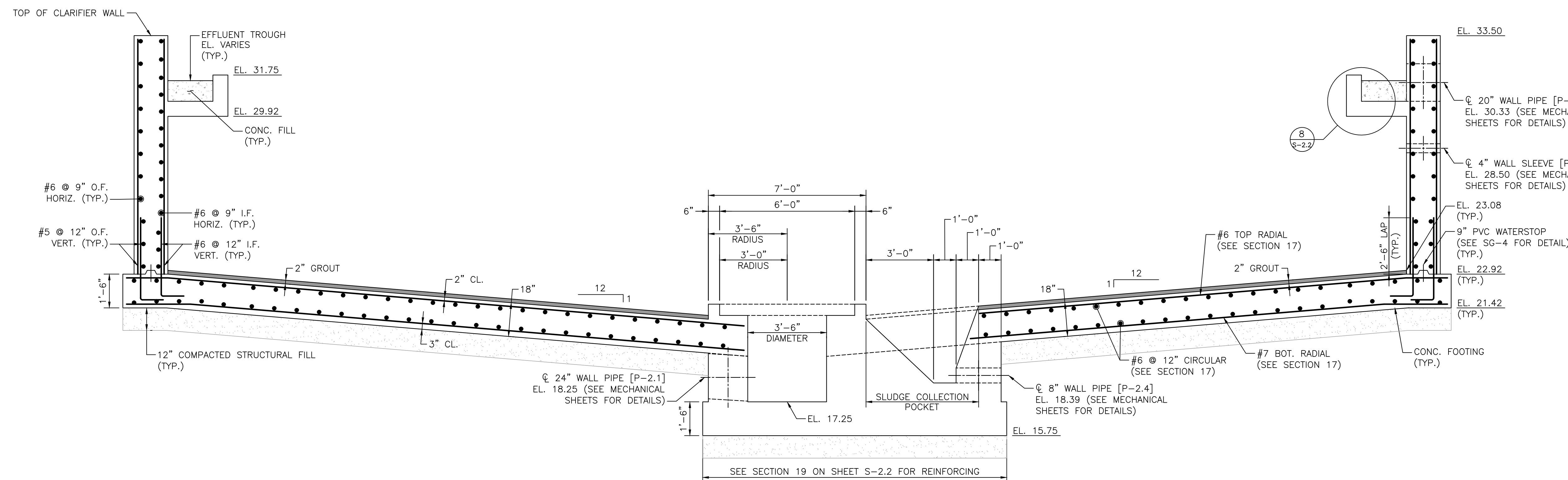
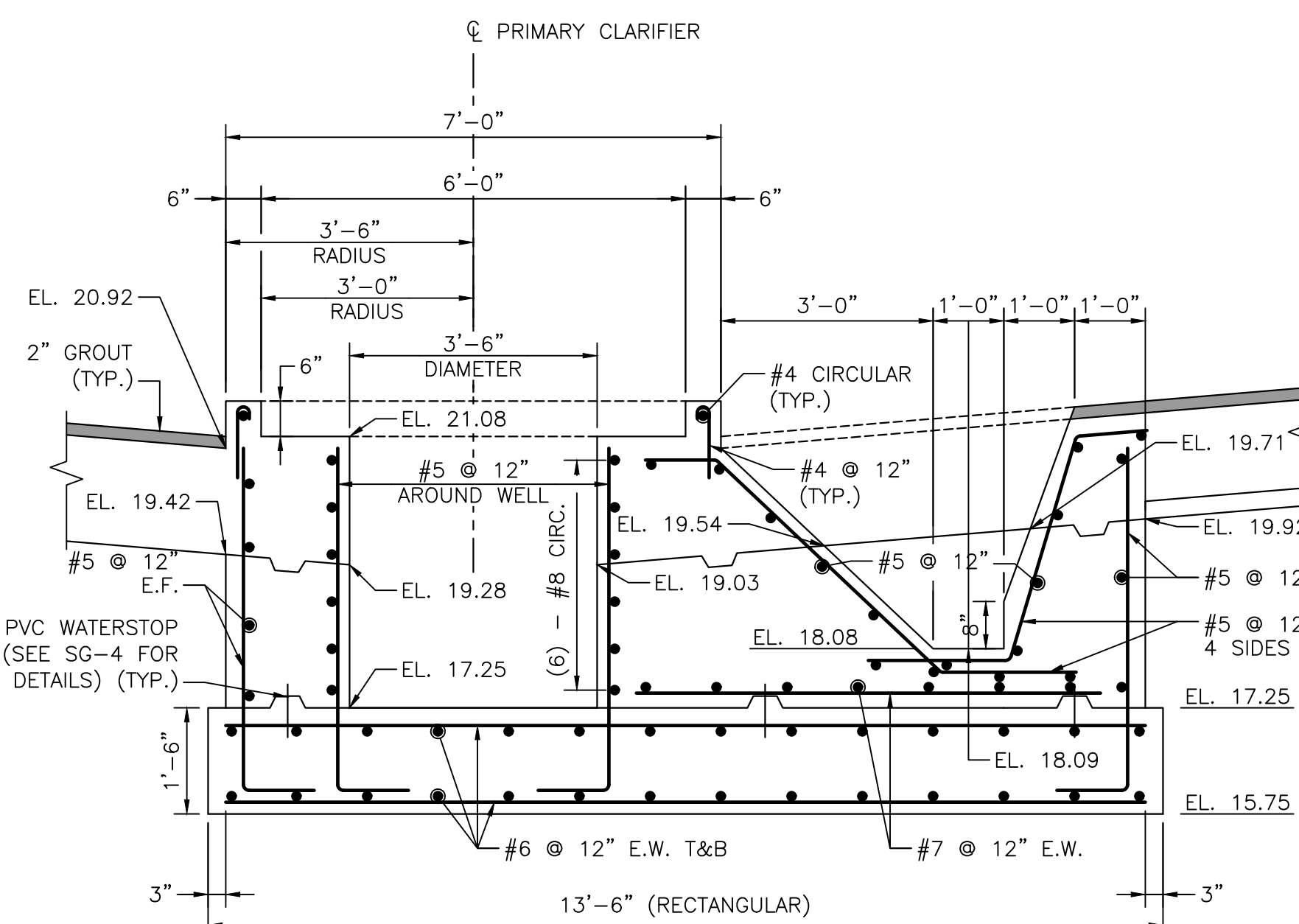
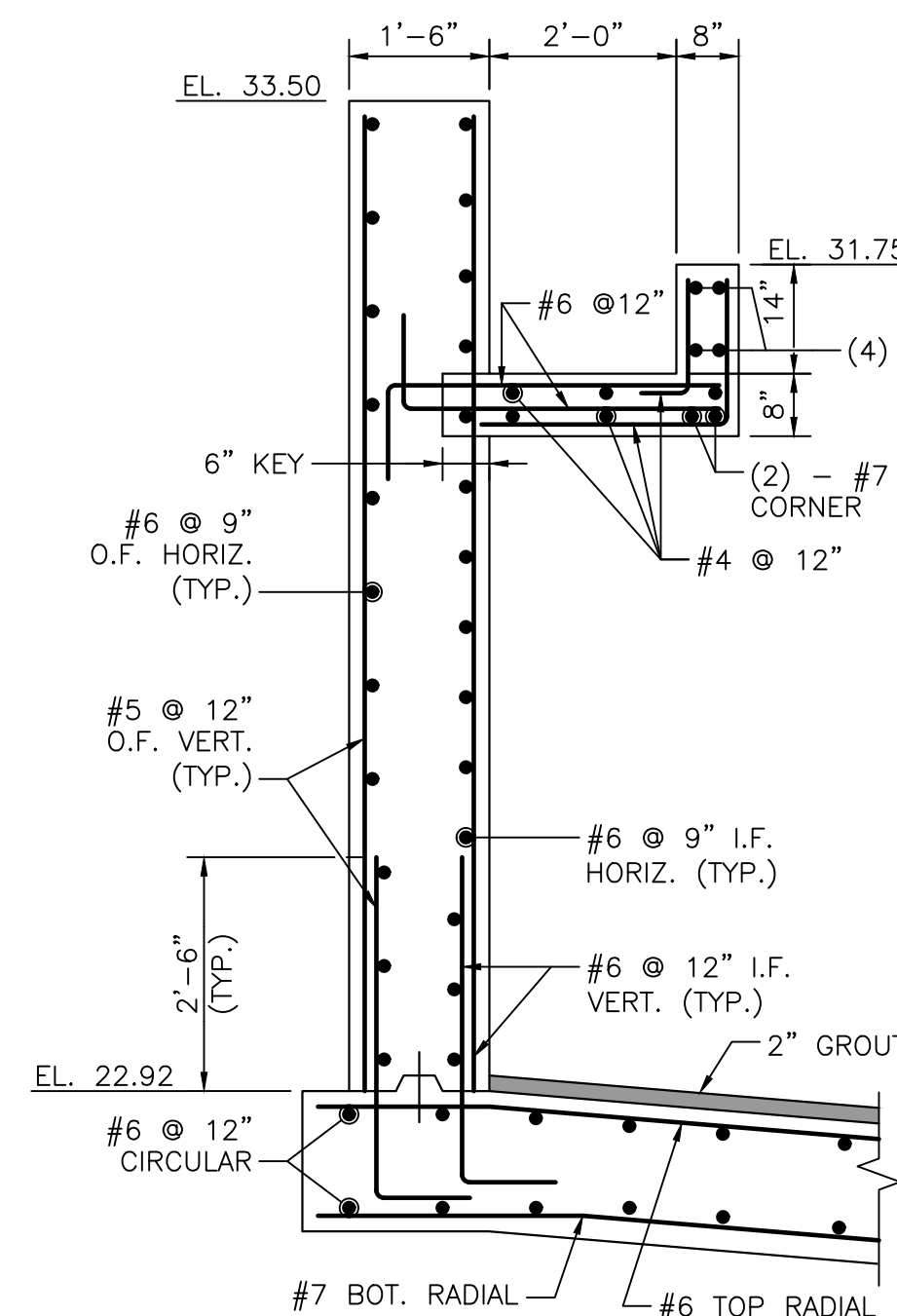
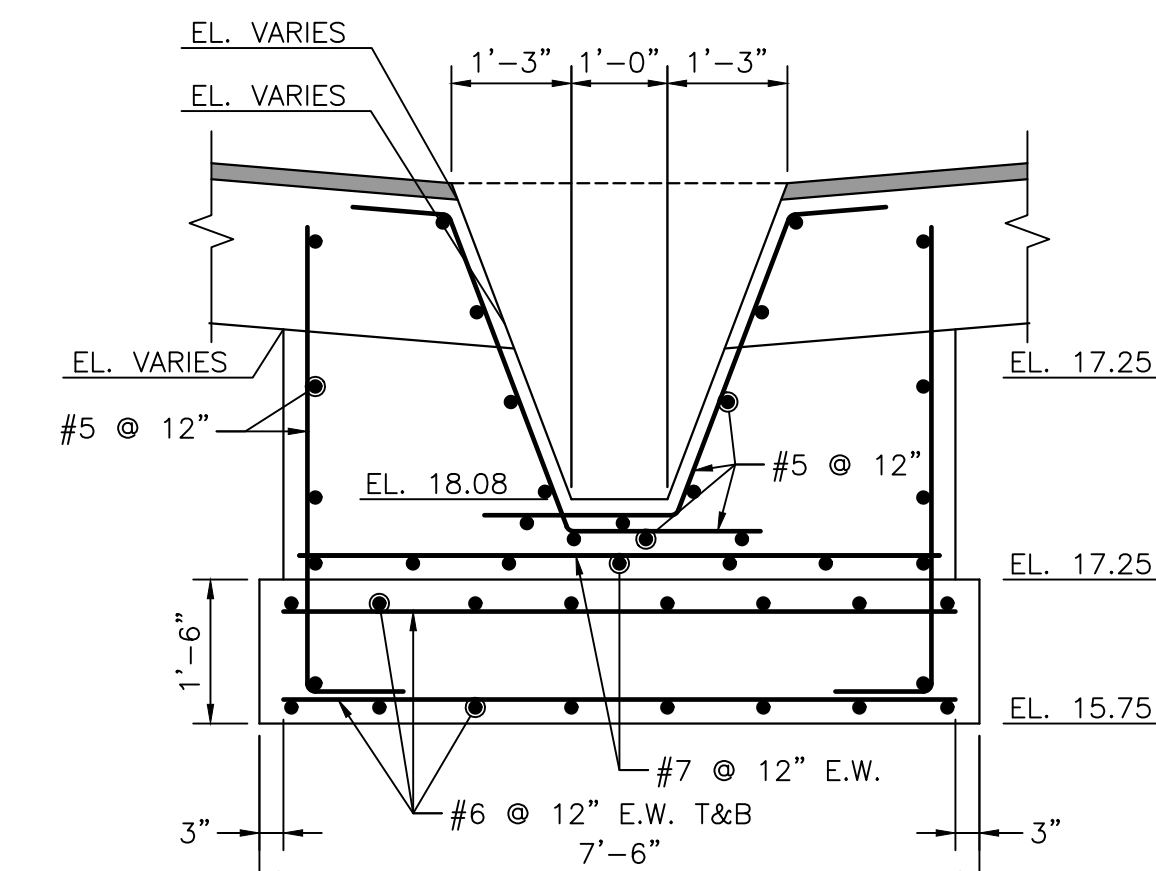
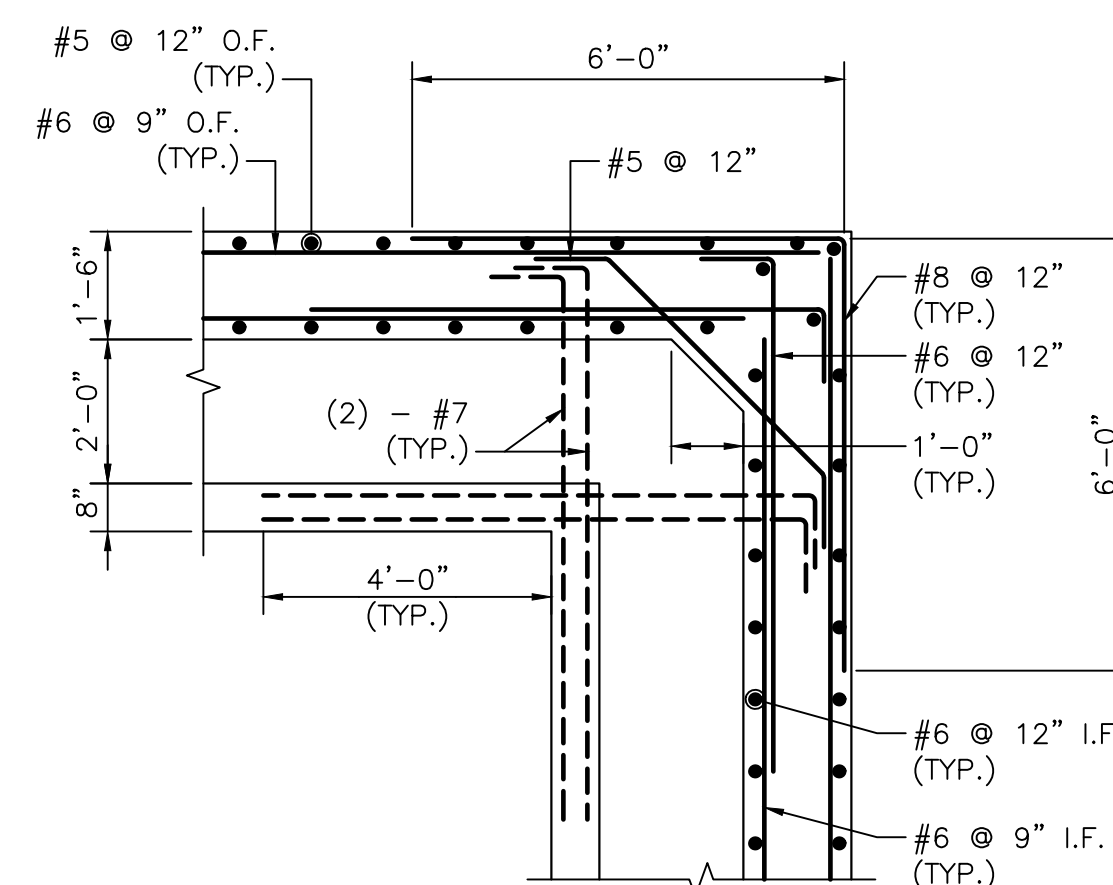
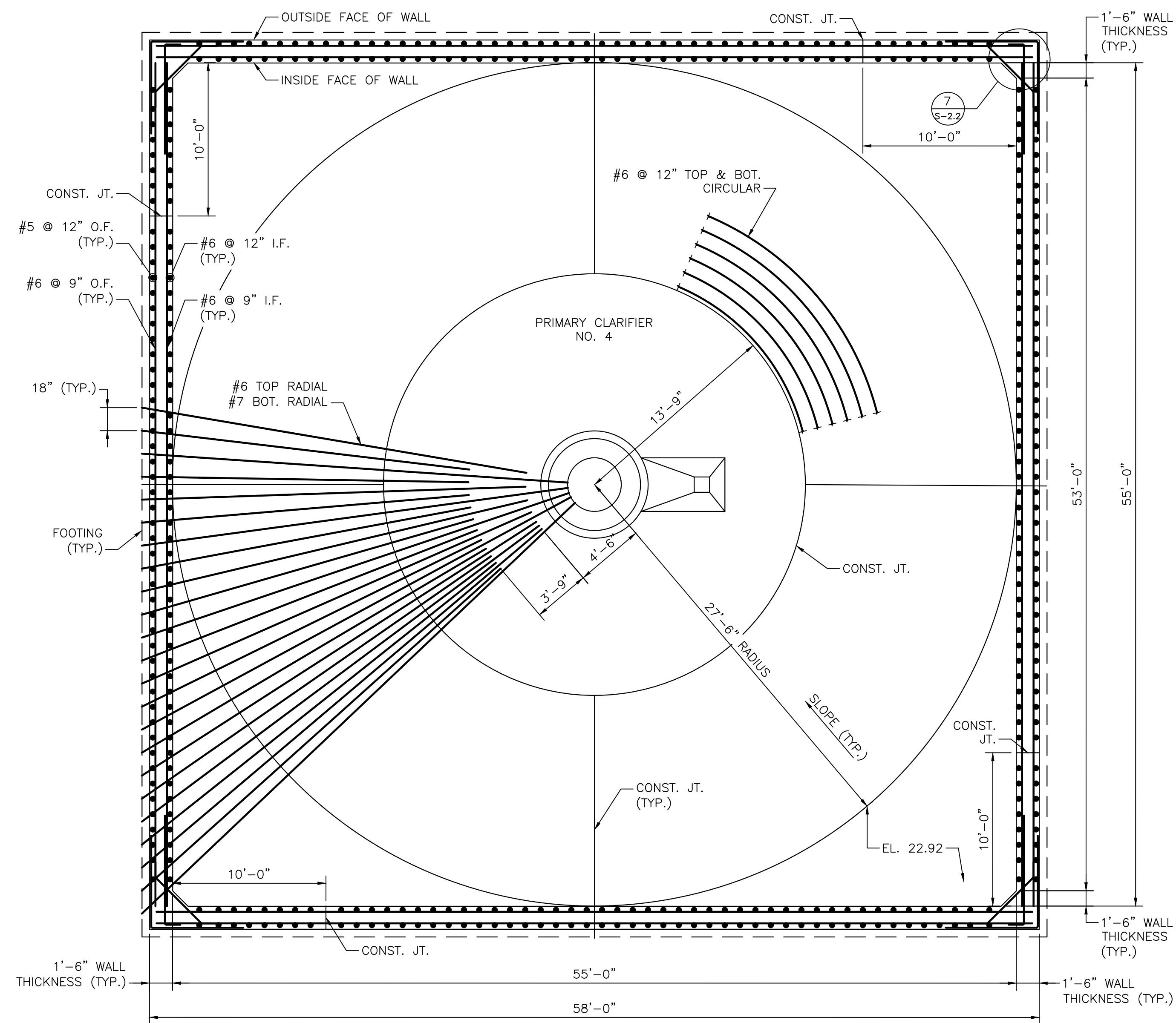
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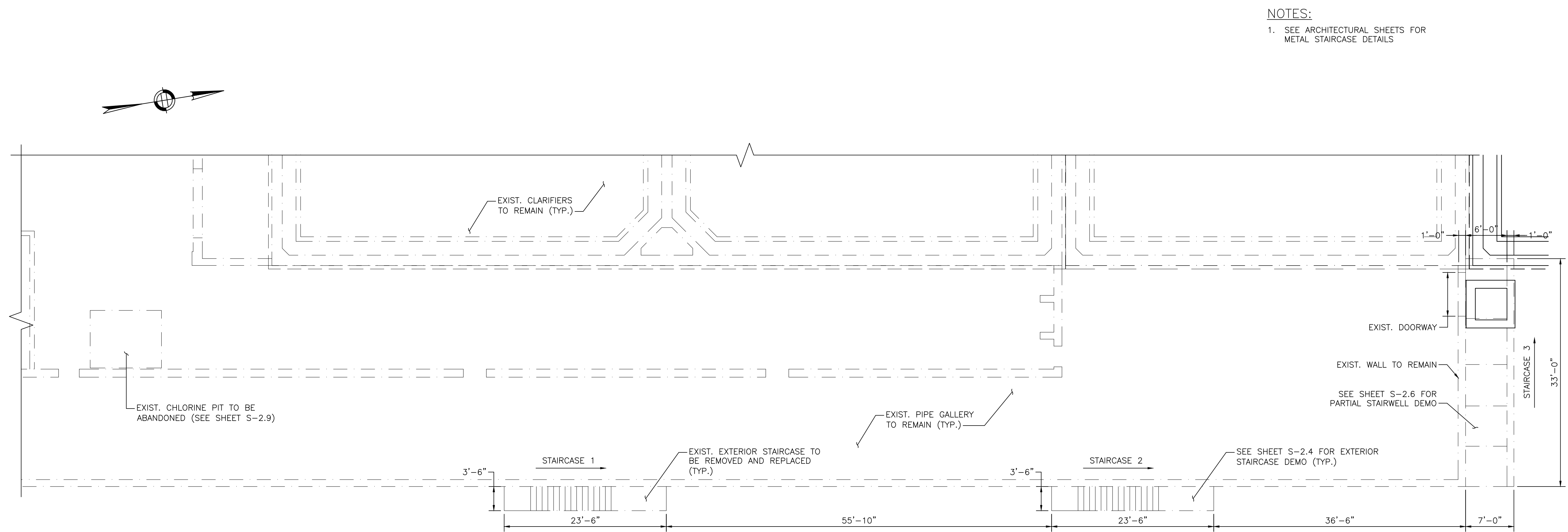
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SHEET NO.

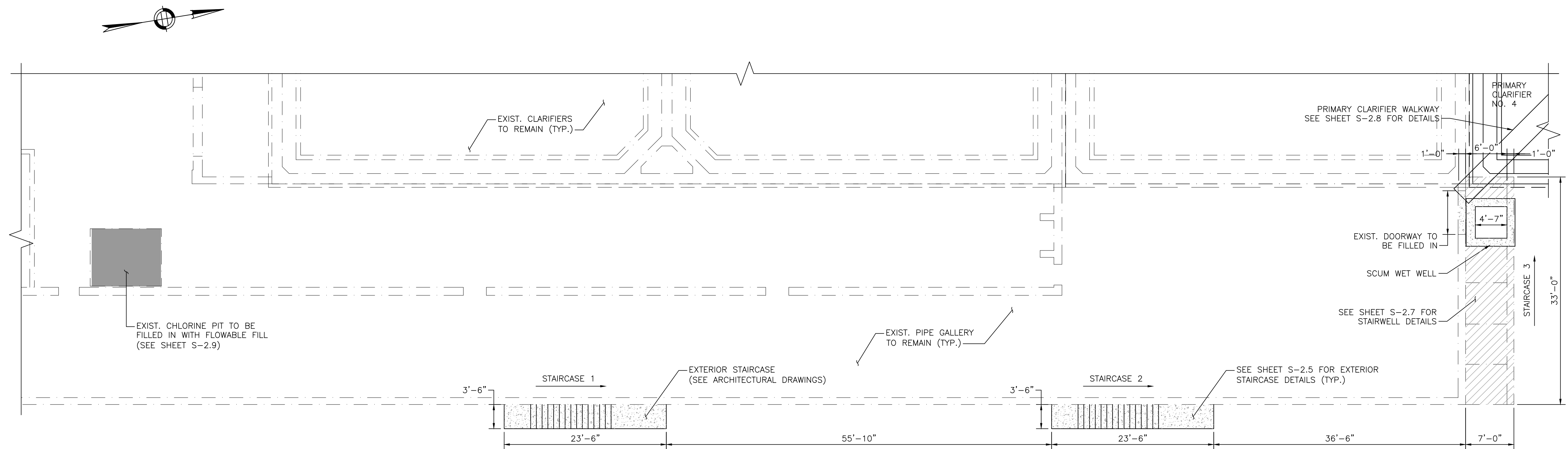
**S-2.1**



7/2/2021 11:47 AM N:\6050\6050 - TAUNTON WWT\DRAWING FILES\PLANSET\PHASE 1\6050\_SR2.3 - P1.DWG (BETA STB BW.STB)



**EXISTING PLAN**  
SCALE:  $\frac{1}{8}$ " = 1'-0"



**MODIFICATION PLAN**  
SCALE:  $\frac{1}{8}$ " = 1'-0"

NOTES:  
1. SEE ARCHITECTURAL SHEETS FOR METAL STAIRCASE DETAILS

PREPARED BY



REGISTERED PROFESSIONAL



SUBCONSULTANT

PROJECT

**Taunton Wastewater  
Treatment Facility  
Improvements  
Phase 1**

**TAUNTON, MA**

TITLE

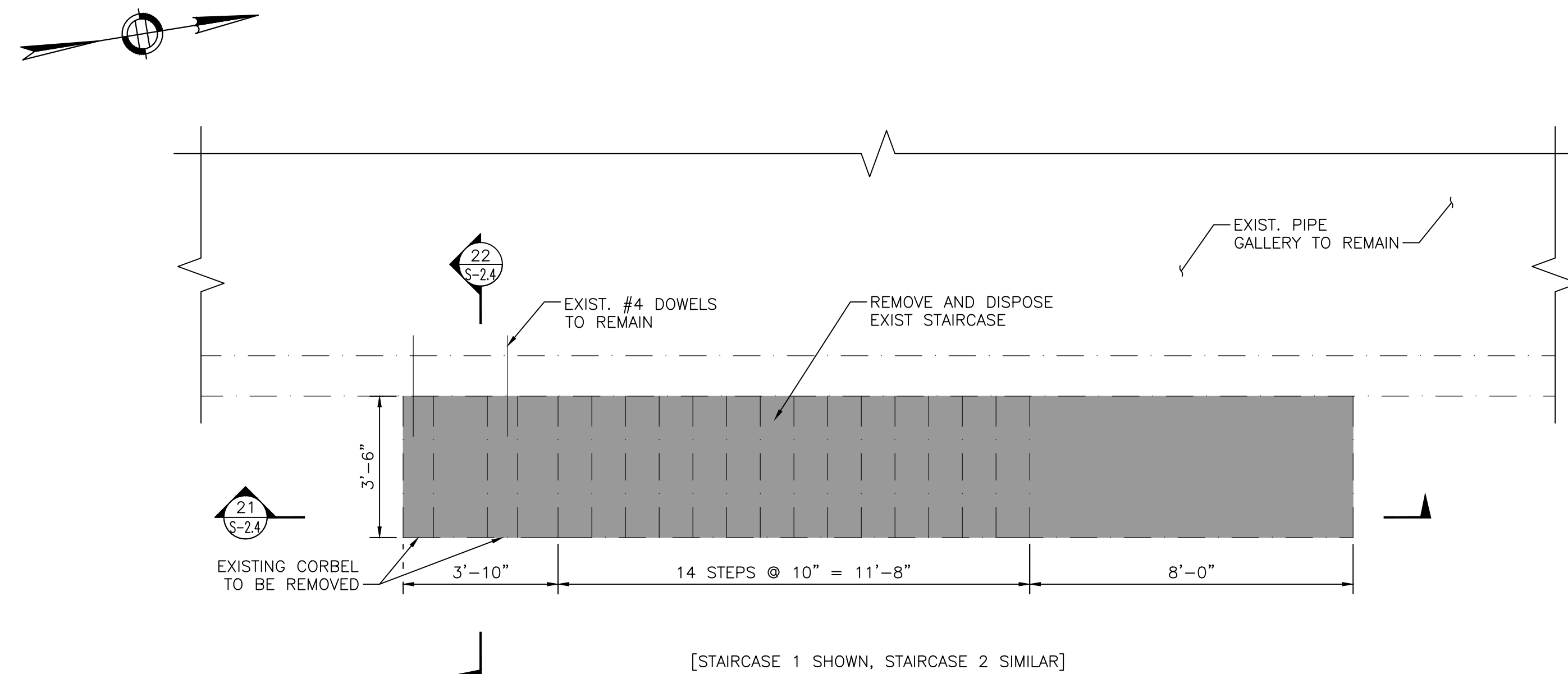
**Primary Sludge Pump  
Station Plan**


NO.	REVISIONS	DATE

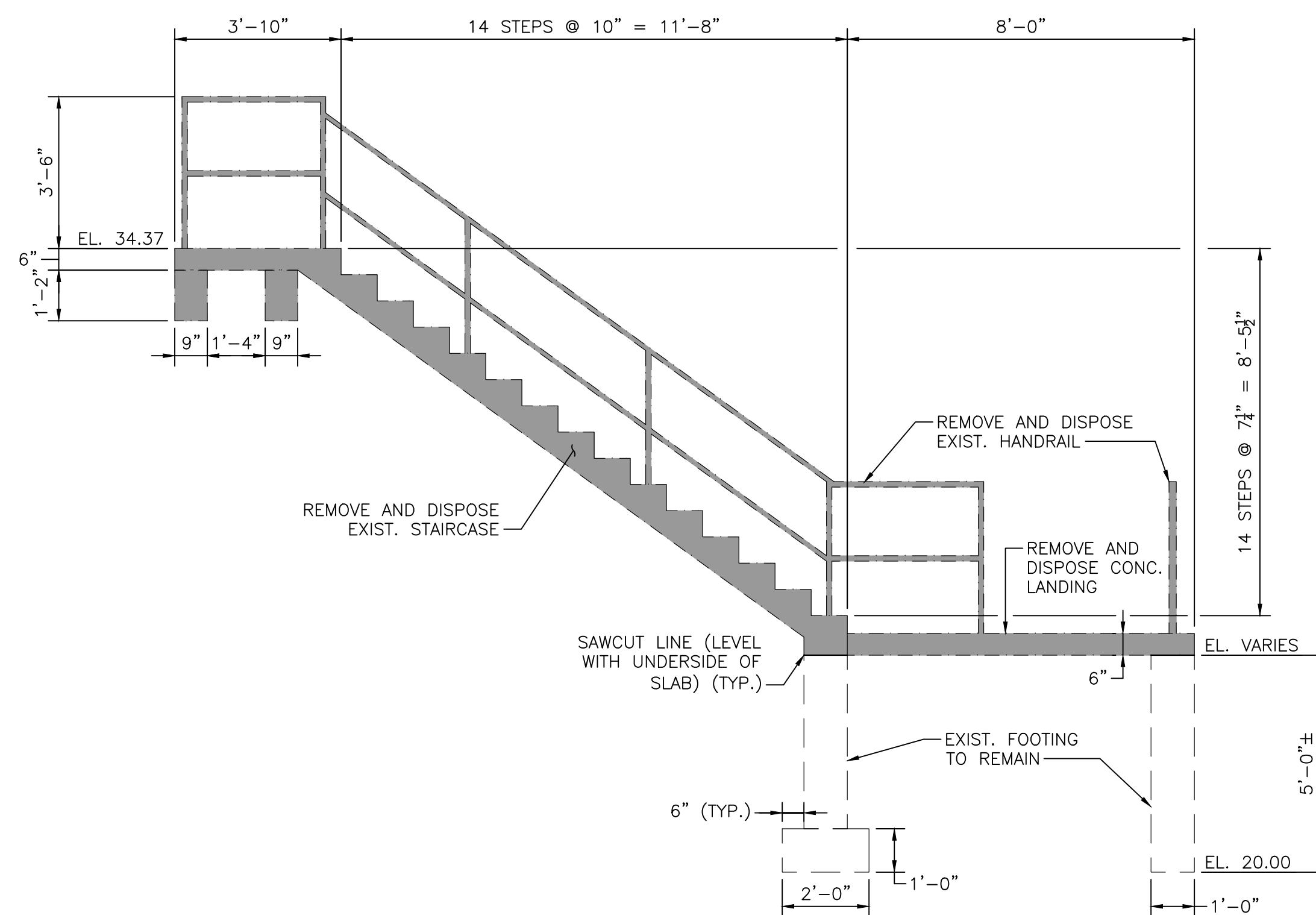
SCALE  
**AS SHOWN**

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

SHEET NO.  
**S-2.3**



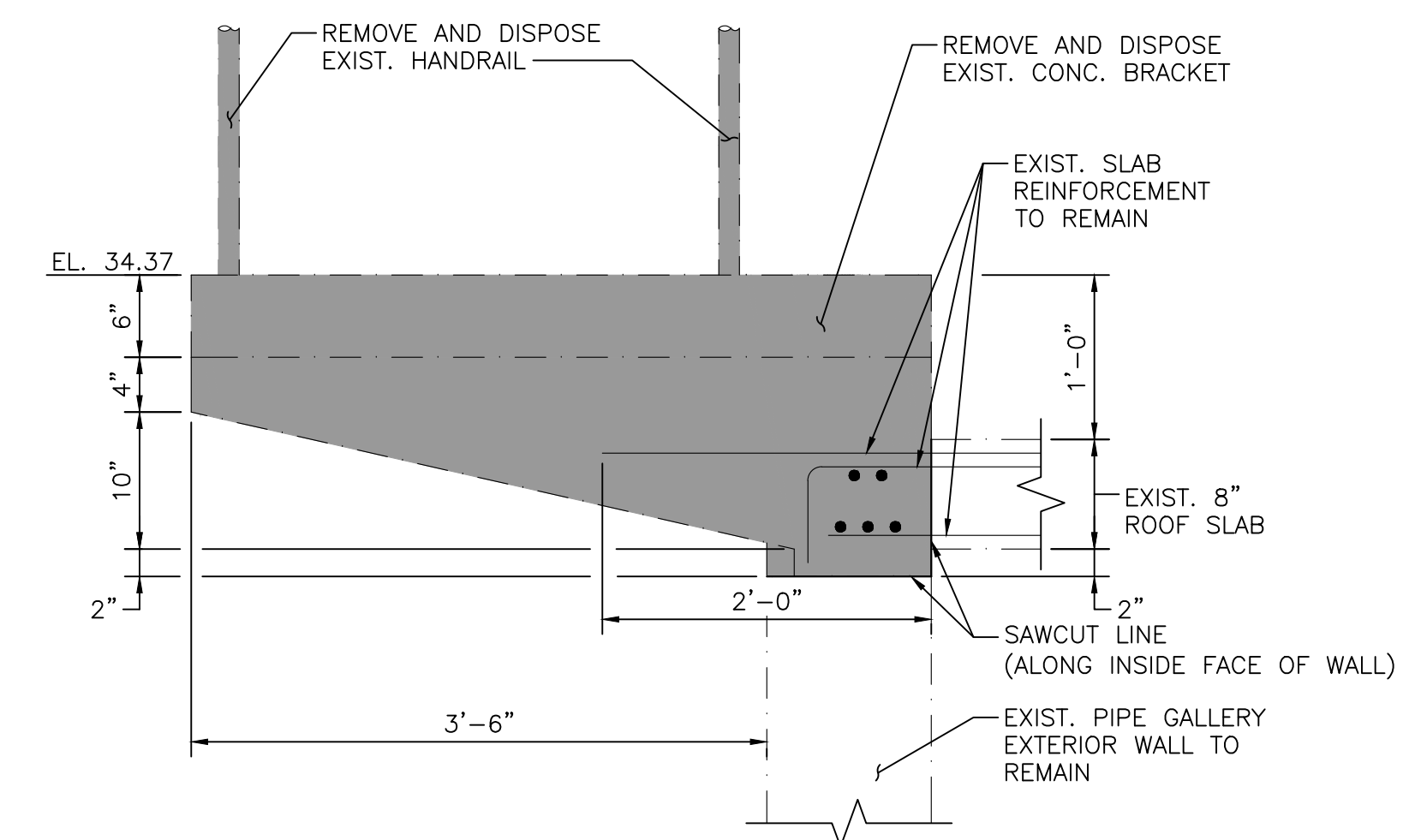
STAIRCASE 1 AND 2 DEMOLITION PLAN  
SCALE:  $\frac{3}{8}" = 1'-0"$



[STAIRCASE 1 SHOWN, STAIRCASE 2 SIMILAR]

SECTION

SCALE:  $\frac{3}{8}'' = 1'-0''$



[STAIRCASE 1 SHOWN, STAIRCASE 2 SIMILAR]

SECTION

SCALE: 1" = 1'-0"



NOTES:

1.  DENOTES AREA TO BE DEMOLISHED

PREPARED BY 1



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REGISTERED PROFESSIONAL 4



SUBCONSULTANT 4

PROJECT 1

# Taunton Wastewater Treatment Facility Improvements Phase 1

**TAUNTON, MA**

TITLE

## Primary Sludge Pump Station Exterior Staircase Demo

[illegible]

NO.	REVISIONS	DATE
DRAWN BY:	BN	
DESIGNED BY:	BN	
CHECKED BY:	TMW	
ISSUE DATE:	7/2/2021	
BETA JOB NO.:	6050	

DRAWN BY:	BN
DESIGNED BY:	BN
CHECKED BY:	TMW
ISSUE DATE:	7/2/2021
BETA JOB NO.:	6050

SCALE

AS SHOWN

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

SHEET NO. \_\_\_\_\_

S-2.4



# Taunton Wastewater Treatment Facility Improvements Phase 1

**TAUNTON, MA**

### Primary Sludge Pump Station Exterior Staircase

[illegible]

NO.	REVISIONS	DATE
-----	-----------	------

DRAWN BY: BN

DESIGNED BY: BN

CHECKED BY: TMW

ISSUE DATE: 7/2/2021

BETA JOB NO.: 6050

SCALE

AS SHOWN

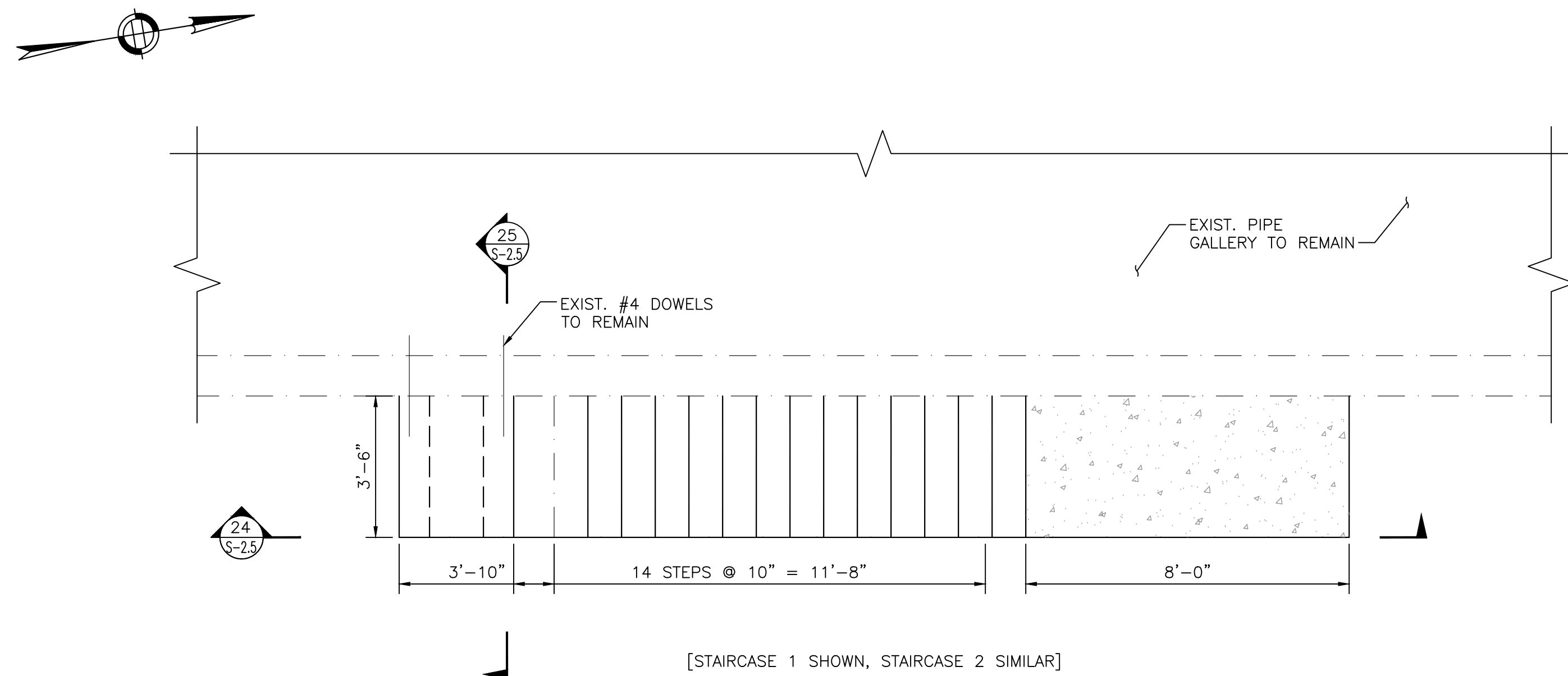
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

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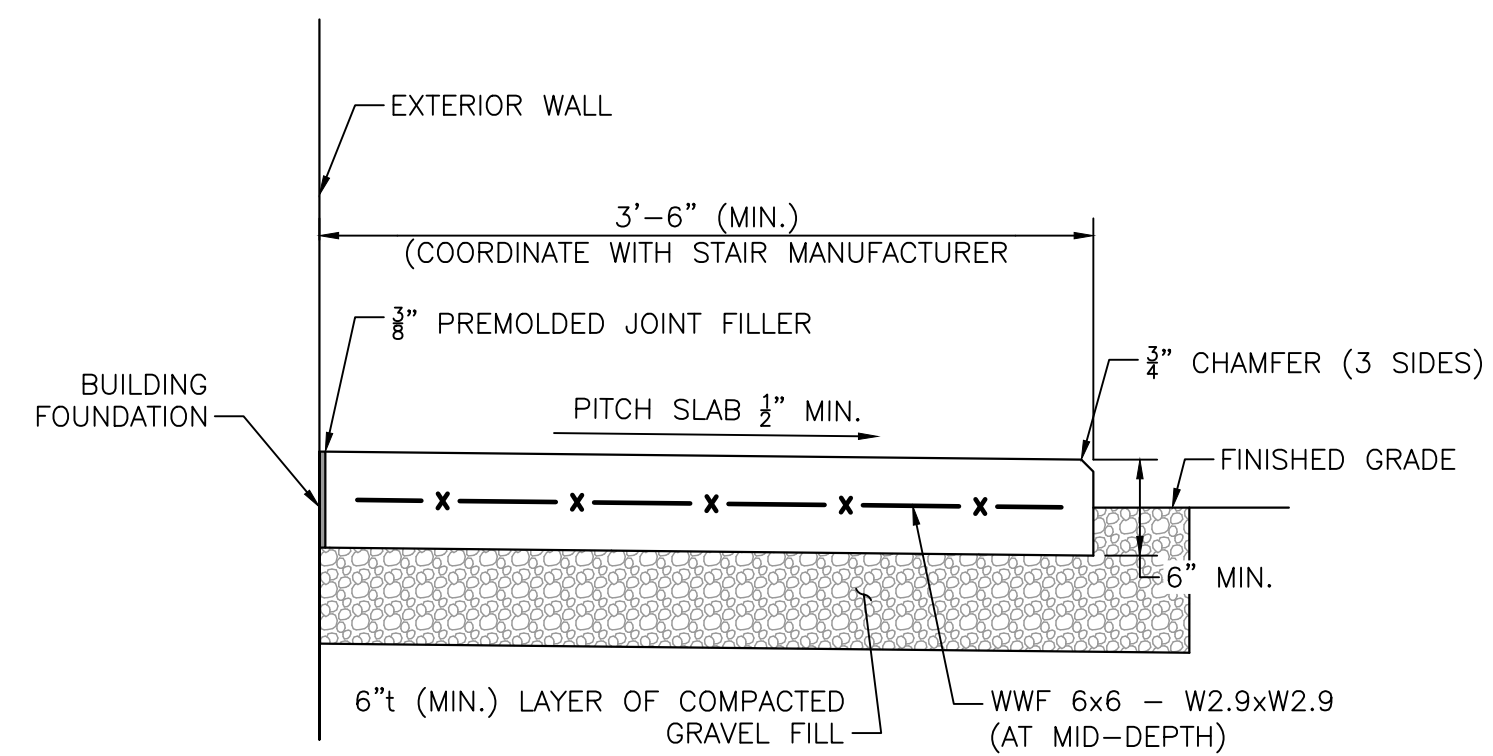
S-2.5

NOTES:

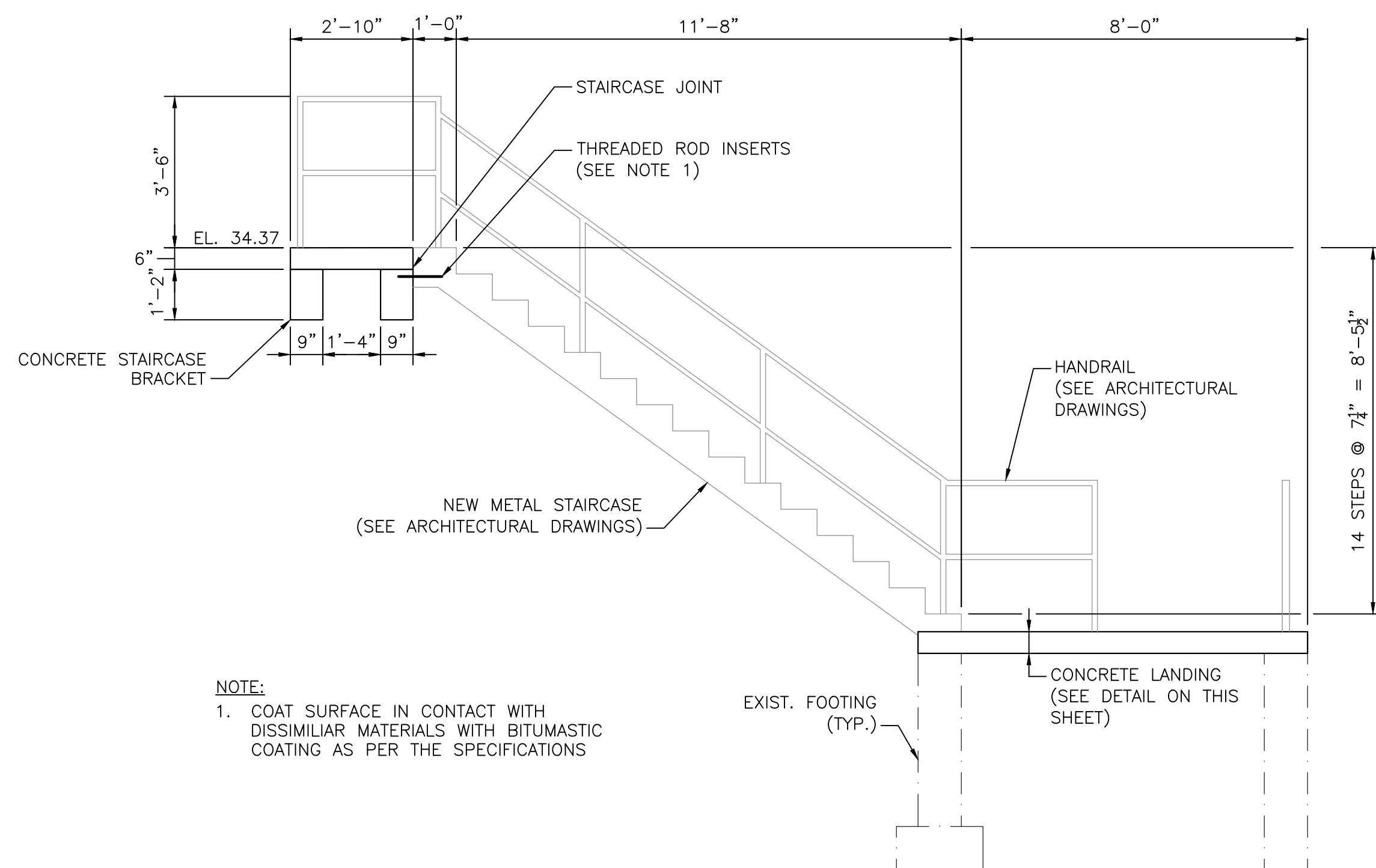
1. PROVIDE THREADED ROD INSERTS AS REQUIRED FOR STAIRCASE ANCHORAGE. SIZE, LOCATION, AND SPACING OF INSERTS SHALL BE PER STAIRCASE MANUFACTURER'S RECOMMENDATION.



STAIRCASE 1 AND 2 PLAN  
SCALE:  $\frac{3}{8}" = 1'-0"$



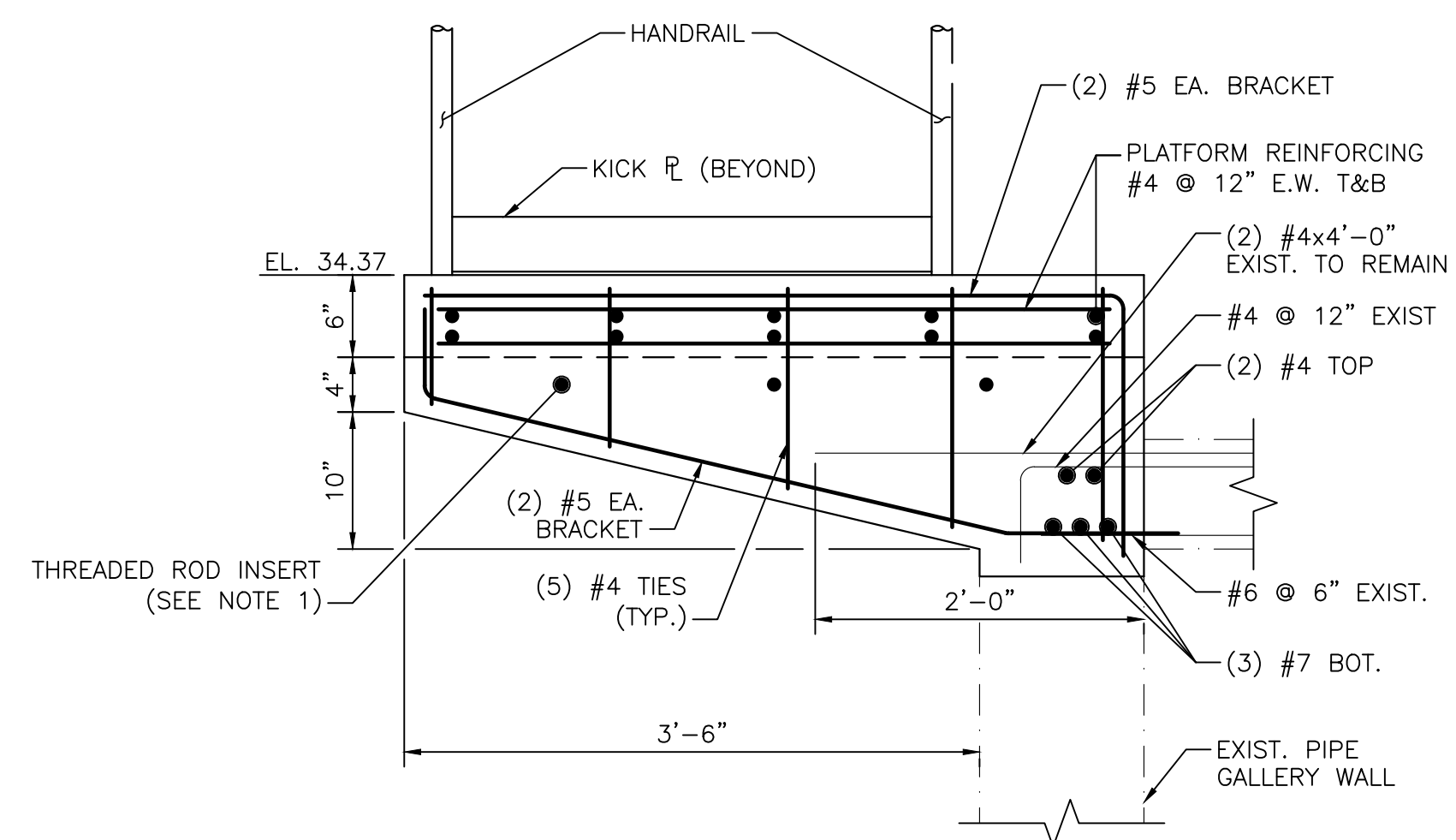
CONCRETE LANDING DETAIL  
NOT TO SCALE



[STAIRCASE 1 SHOWN, STAIRCASE 2 SIMILAR]

## SECTION

SCALE:  $\frac{3}{8}" = 1'-0"$

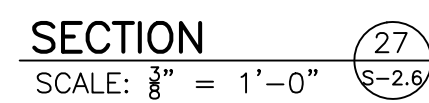
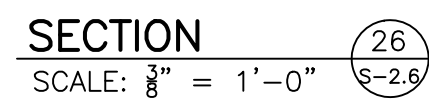
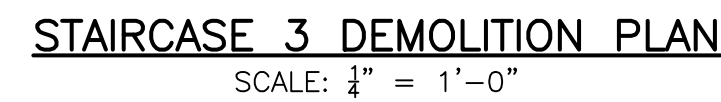


[STAIRCASE 1 SHOWN, STAIRCASE 2 SIMILAR]


## SECTION

SCALE: 1" = 1'-0"





1. WORK PERFORMED ON THIS SHEET SHALL BE PERFORMED BEFORE EXCAVATION FOR CONSTRUCTION OF PRIMARY CLARIFIER NO. 4.

2.  DENOTES AREA TO BE DEMOLISHED



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## Primary Sludge Pump Station Stairwell Demo

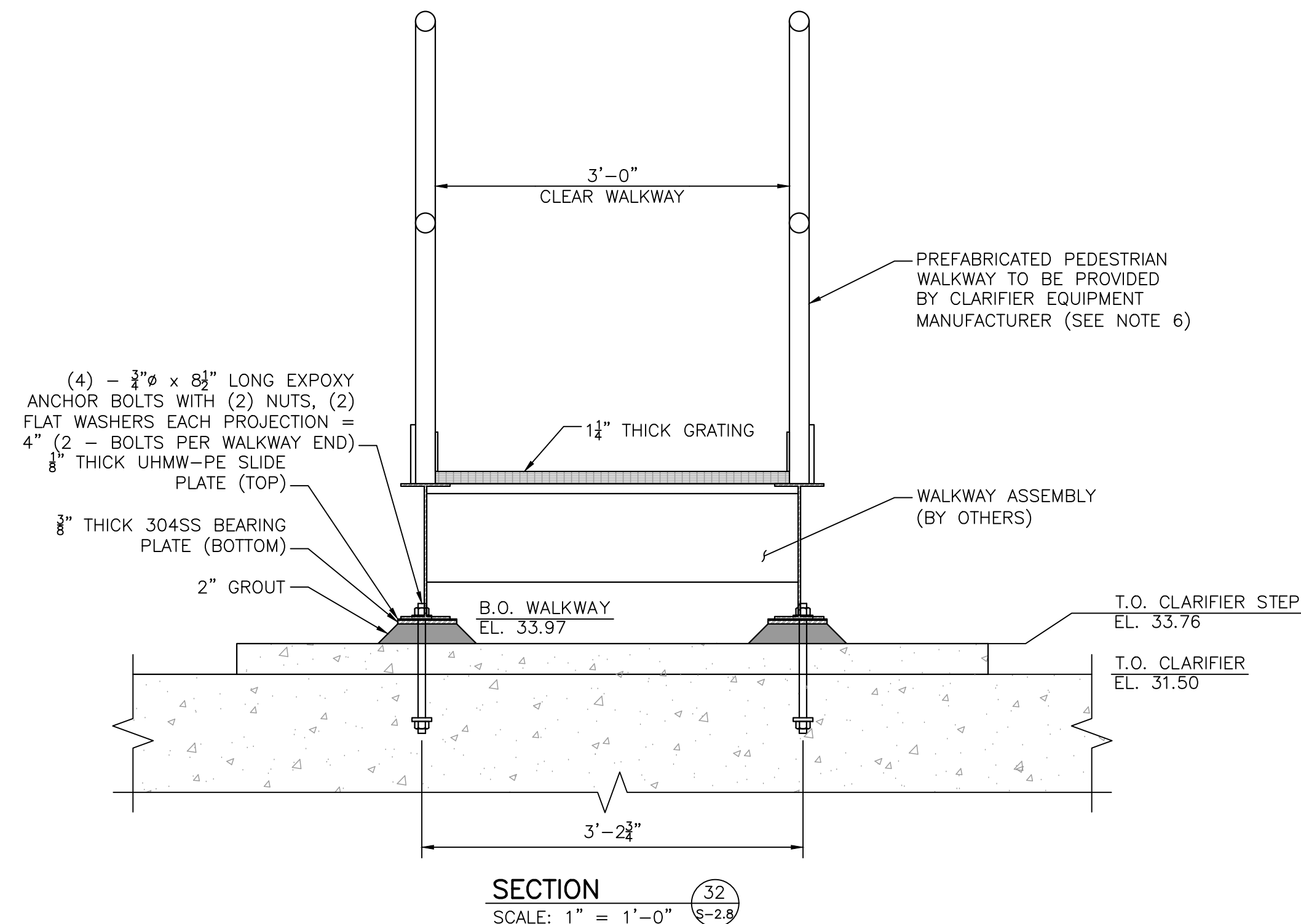
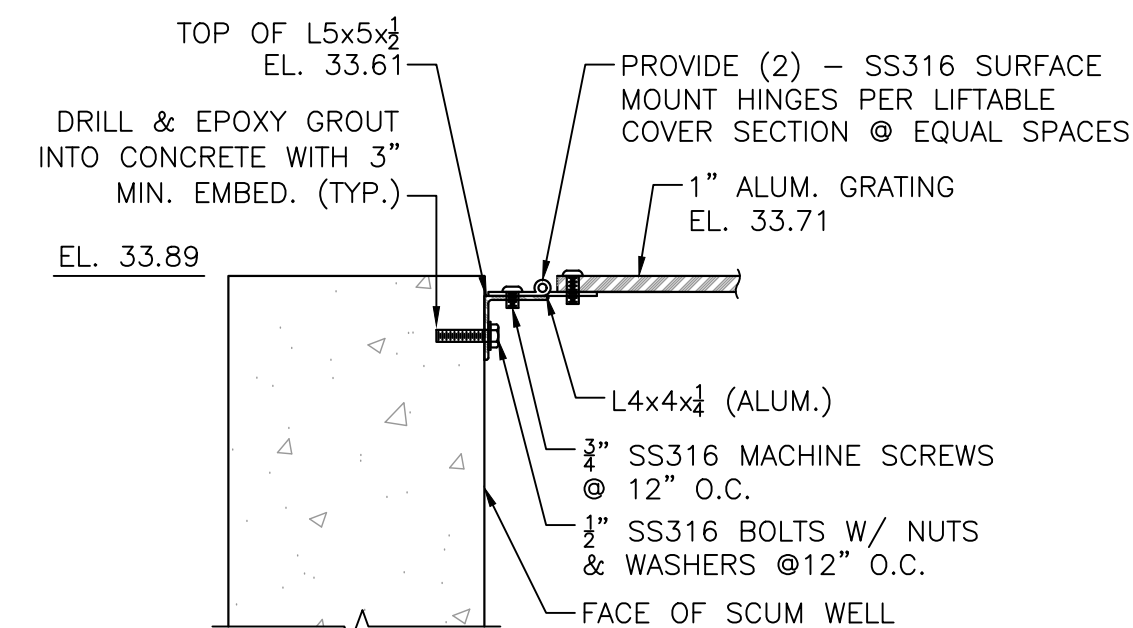
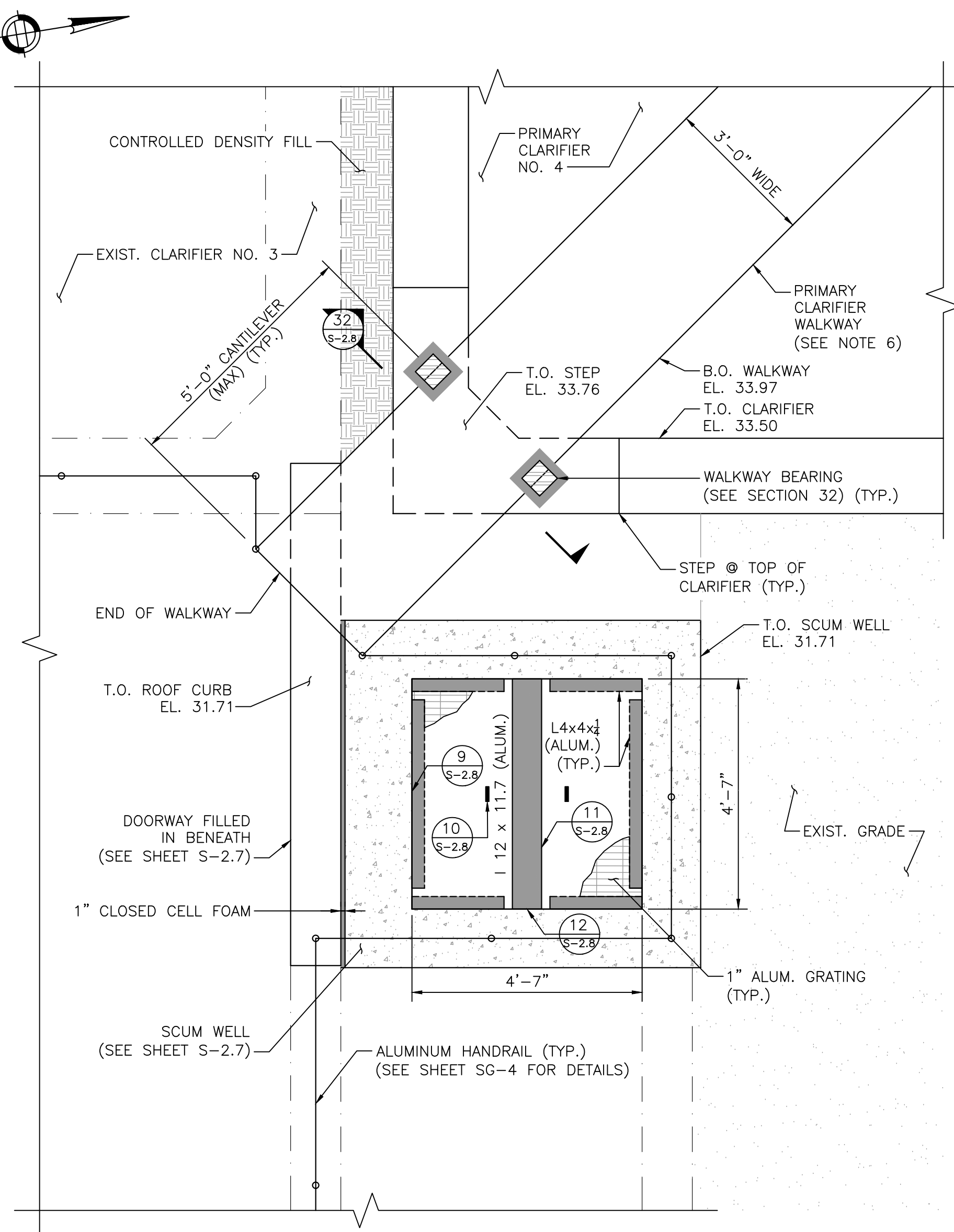
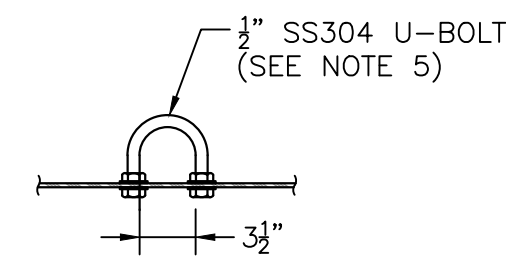
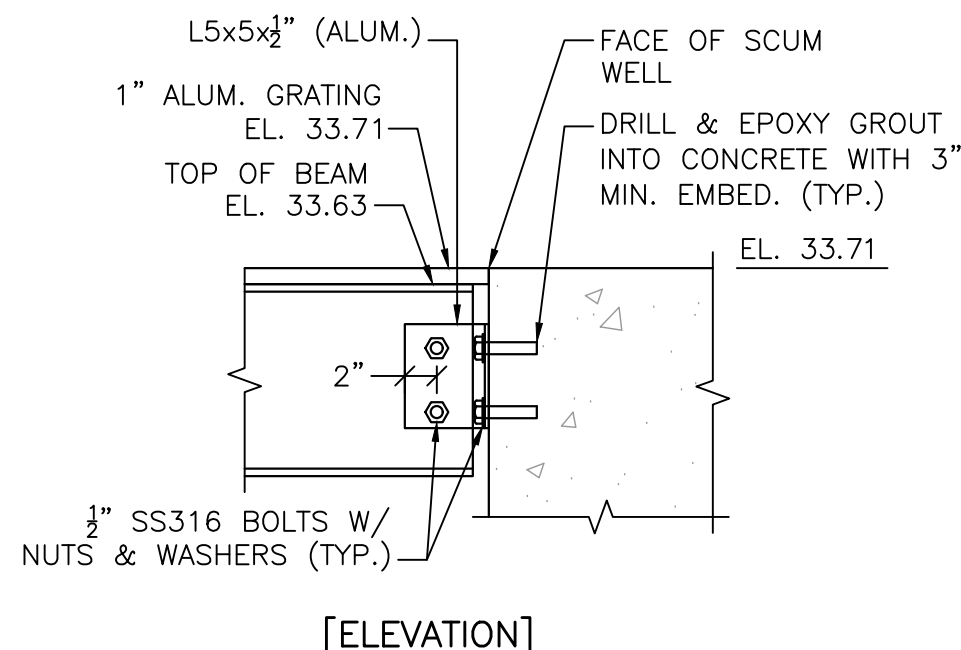
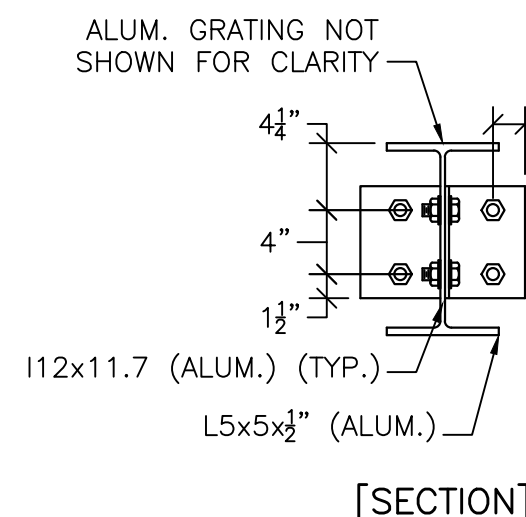
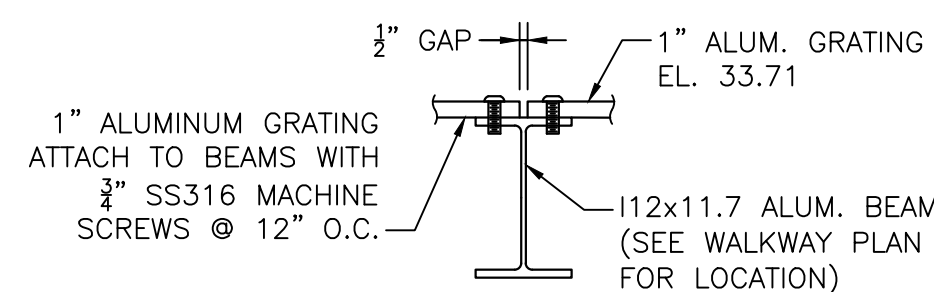
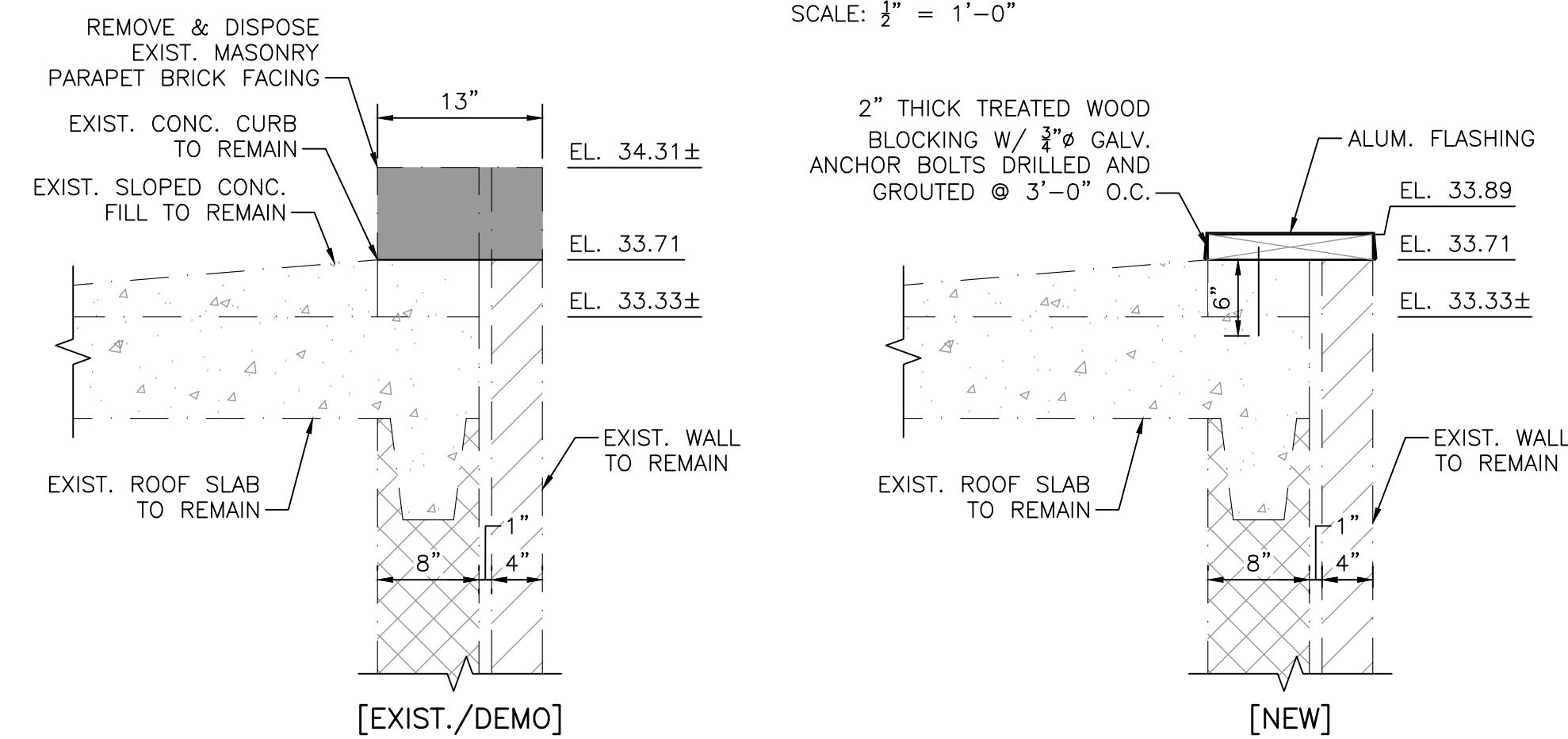
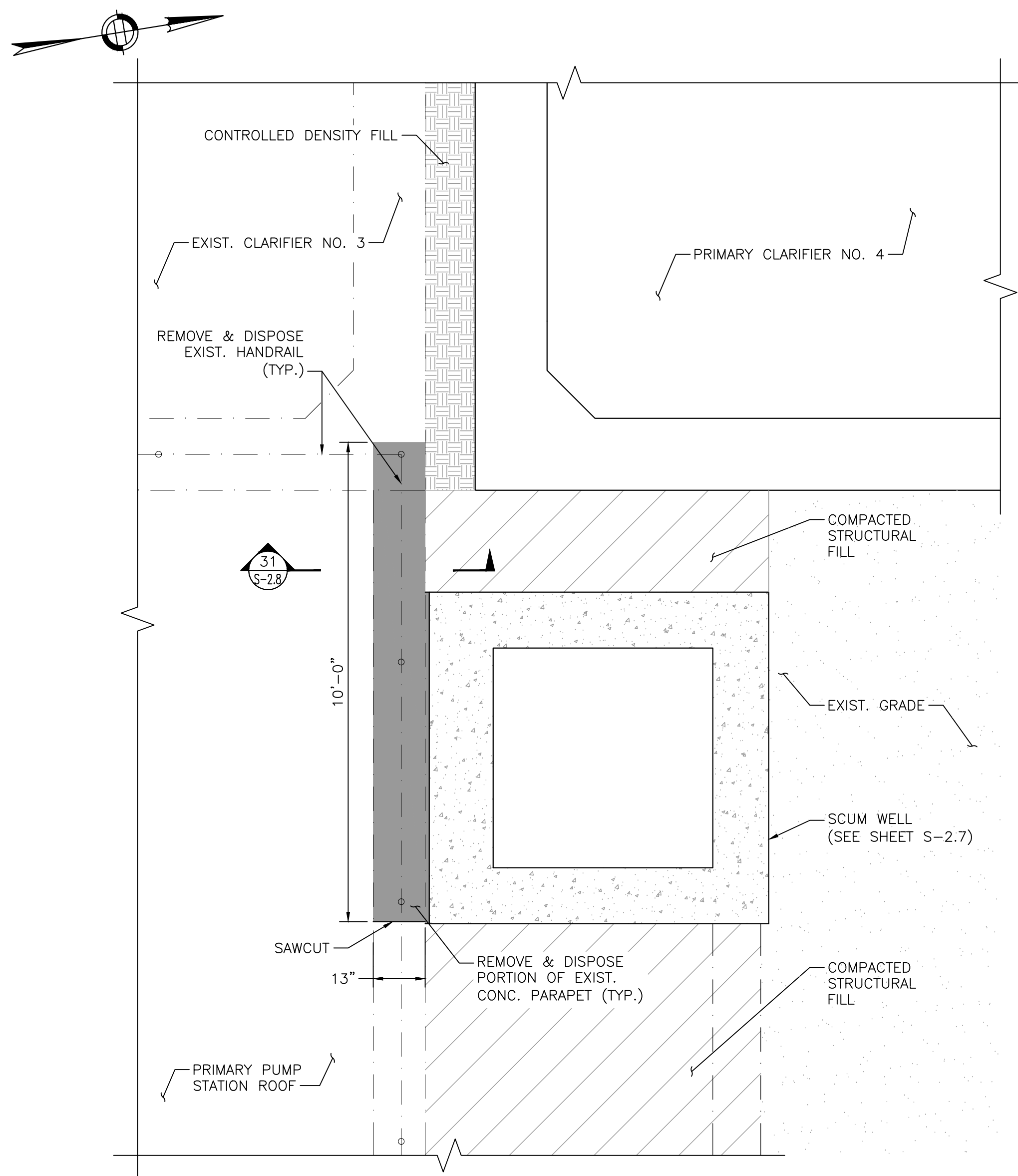

SCALE

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

### S-2.6



7/2/2021 1:51 AM N:\6050\6050 - TAUNTON WWTF\DRAWING FILES\PLAN\PHASE 1\6050\_SR2.8 - P1.DWG (BETA STB BW.STB)



#### NOTES:

- STRUCTURAL ALUMINUM TO CONFORM TO ALLOY 6061-T6. DETAIL AND FABRICATE IN CONFORMANCE WITH THE 2015 ALUMINUM DESIGN MANUAL.
- PROVIDE 1/2" DIAMETER TYPE 316 STAINLESS STEEL BOLTS FOR BOLTED CONNECTIONS. PROVIDE 3/8" DIAMETER HOLES UNLESS OTHERWISE INDICATED. PROVIDE PLATE WASHERS BOTH OUTER PLIES WITH OVERSIZE OR SLOTTED HOLES WHERE INDICATED.
- EXISTING REINFORCEMENT NOT SHOWN FOR CLARITY.
- HINGE DETAIL SHOWN IN DETAIL 10 ON SHEET S-2.8 IS SUGGESTED. CONTRACTOR MAY PROPOSE AN ALTERNATE DETAIL WHICH SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO CONSTRUCTION FOR APPROVAL.
- U-BOLT "HANDLES" SHALL BE LOCATED AT THE CENTERLINE OF PLATE, 9" FROM THE END OF PLATE.
- GROUT PAD, BEARING PLATE, SLIDE PLATE, AND ANCHOR BOLT SIZE & LOCATION TO BE COORDINATED WITH PREFABRICATED BRIDGE MANUFACTURER PRIOR TO INSTALLATION.

PREPARED BY



REGISTERED PROFESSIONAL



SUBCONSULTANT

PROJECT

### Taunton Wastewater Treatment Facility Improvements Phase 1

TAUNTON, MA

TITLE

### Primary Sludge Pump Station Walkway

NO. REVISIONS DATE

DRAWN BY: BN

DESIGNED BY: BN

CHECKED BY: TMW

ISSUE DATE: 7/2/2021

BETA JOB NO.: 6050

SCALE

AS SHOWN

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

SHEET NO.

S-2.8







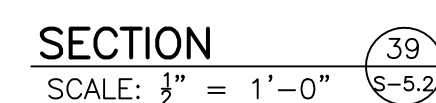


DETAIL

SCALE: 1" = 1'-0"

13

S-5.2



1. THE SURFACE OF THE EXIST CONCRETE WALL SHALL BE BLAST CLEANED, ROUGHENED, WETTED WITH CLEAN WATER, AND THEN FLUSHED WITH A MORTAR COMPOSED OF EQUAL PARTS OF THE CEMENT AND SAND SPECIFIED FOR THE NEW CONCRETE, BEFORE NEW CONCRETE IS PLACED ADJACENT THERETO. NEW CONCRETE SHALL BE PLACED BEFORE MORTAR HAS TAKEN INITIAL SET.
2. STRUCTURAL ALUMINUM TO CONFIRM TO ALLOY 6061--T6. DETAIL AND FABRICATE IN CONFORMANCE WITH THE 2015 ALUMINUM DESIGN MANUAL.
3. PROVIDE  $\frac{1}{2}$ " DIAMETER TYPE 316 STAINLESS STEEL BOLTS FOR BOLTED CONNECTIONS. PROVIDE  $\frac{3}{8}$ " DIAMETER HOLES UNLESS OTHERWISE INDICATED. PROVIDE PLATE WASHERS BOTH OUTER PLIES WITH OVERSIZE OR SLOTTED HOLES WHERE INDICATED.
4. EXISTING REINFORCEMENT NOT SHOWN FOR CLARITY.



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PROJECT
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# Taunton Wastewater Treatment Facility Improvements Phase 1

TAUNTON, MA

TITLE

### Chlorine Contact Tank Details

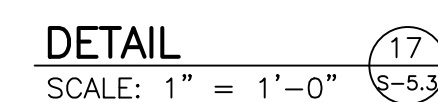
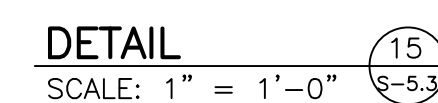
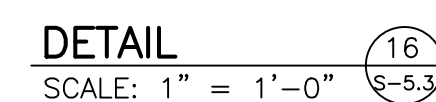
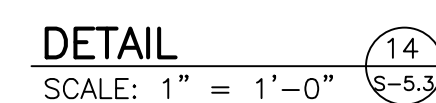
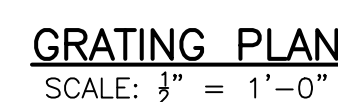
SCALE 4

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[illegible]


SHEET NO. 4

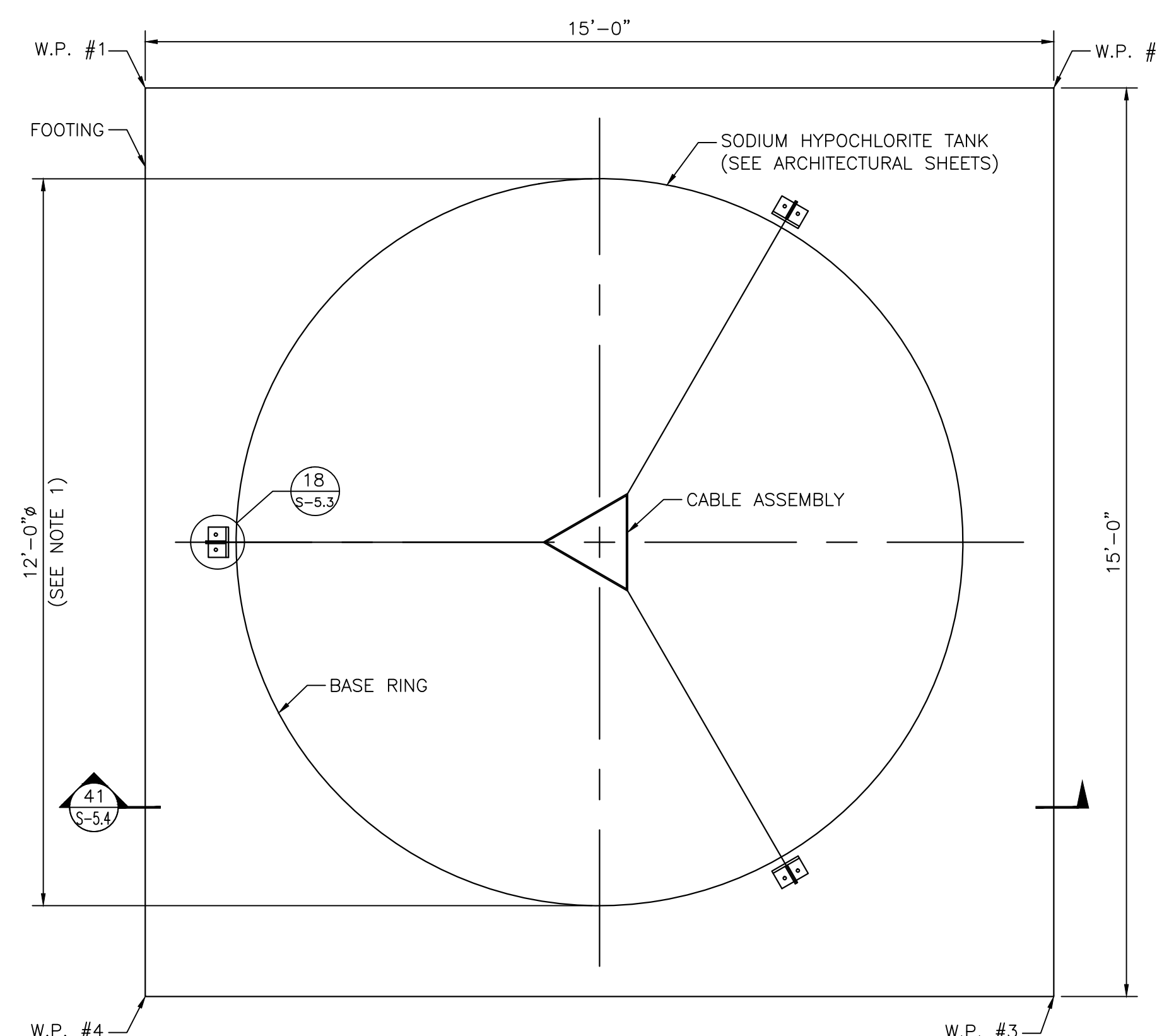
S-5.3





NOTES:

1. FOOTING SHOWN IS BASED ON THE DESIGN VALUES SHOWN IN TABLE 3 AND MAY NOT REPRESENT ACTUAL HYPOCHLORITE TANK.
2. SODIUM HYPOCHLORITE TANK TO BE PROVIDED BY THE CONTRACTOR. IF TANK LOADING IS GREATER THAN THE VALUES PROVIDED IN TABLE 1, THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING AN ALTERNATE FOOTING DESIGN PERFORMED BY A MASSACHUSETTS REGISTERED STRUCTURAL ENGINEER.
3.  DENOTES AREA TO BE DEMOLISHED



FOOTING PLAN  
SCALE:  $\frac{1}{8}" = 1'-0"$

Diagram illustrating the proposed foundation and wall construction. The structure is shown in cross-section, with dimensions and materials specified.

**Dimensions:**

- Overall width: 17'-0"±
- Overall height: 12'-0"
- Foundation width: 18'-0"±
- Foundation height: 1'-6"
- Foundation elevation: EL. 9.0
- Wall elevation: EL. 14.0
- Foundation section width: 1'-10" (TYP.)
- Foundation section spacing: 2'-0" (TYP.)
- Foundation section height: 8"±

**Materials and Construction:**

- REMOVE AND DISPOSE EXIST. CONC. PAD
- REMOVE AND DISPOSE EXIST. CONC. PAD (TYP.)
- REMOVE AND DISPOSE EXIST. CONC. FOOTING
- REMOVE AND DISPOSE EXIST. 12'-0"Ø LIME
- REMOVE AND DISPOSE COMPACTED GRAVEL

[illegible]

Diagram illustrating the elevation view of a tank head connection. The connection is shown between a tank head (top) and a tank wall (bottom). The tank head is represented by a horizontal line. The tank wall is represented by a vertical line. A gusset plate (GUSSET PL) is shown as a horizontal rectangular plate. Two anchor bolts (ANCHOR BOLTS) are shown passing through the gusset plate and the tank head. The bolts are labeled with dimensions: 1 1/2" (TYP.) for the distance between the bolts, 1 1/2" (TYP.) for the distance from the bolt center to the edge of the gusset plate, and 1 1/2" for the distance from the bolt center to the edge of the tank head. The gusset plate is labeled with dimensions: 1/2" for the thickness and 1 1/2" for the width. The tank head is labeled with dimensions: 1 1/2" for the thickness and 1 1/2" for the width. The tank wall is labeled with dimensions: 1 1/2" for the thickness and 1 1/2" for the width. The connection is labeled with dimensions: 1 1/2" for the distance between the bolts, 1 1/2" for the distance from the bolt center to the edge of the gusset plate, and 1 1/2" for the distance from the bolt center to the edge of the tank head. The connection is labeled with dimensions: 1 1/2" for the distance between the bolts, 1 1/2" for the distance from the bolt center to the edge of the gusset plate, and 1 1/2" for the distance from the bolt center to the edge of the tank head.

[illegible]

CLIP DETAIL  
SCALE: 3" = 1'-0"



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PROJECT

TAUNTON, MA

## Sodium Hypochlorite Tank

[illegible]

NO.	REVISIONS	DATE
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DRAWN BY: BN

DESIGNED BY:	BN
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CHECKED BY: TMW

ISSUE DATE: 7/2/202

BETA JOB NO.: 6050

SCALE

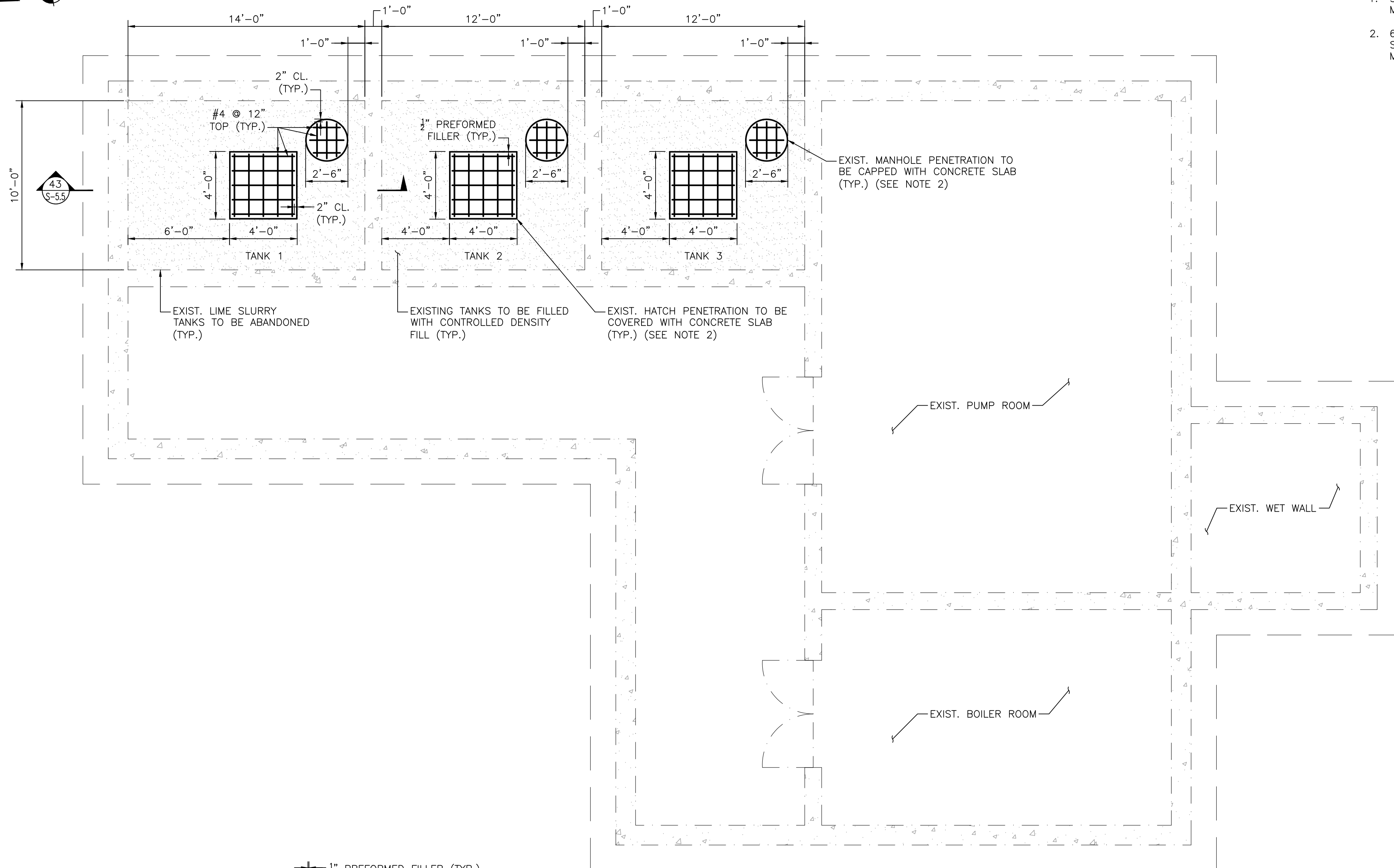
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SHEET NO

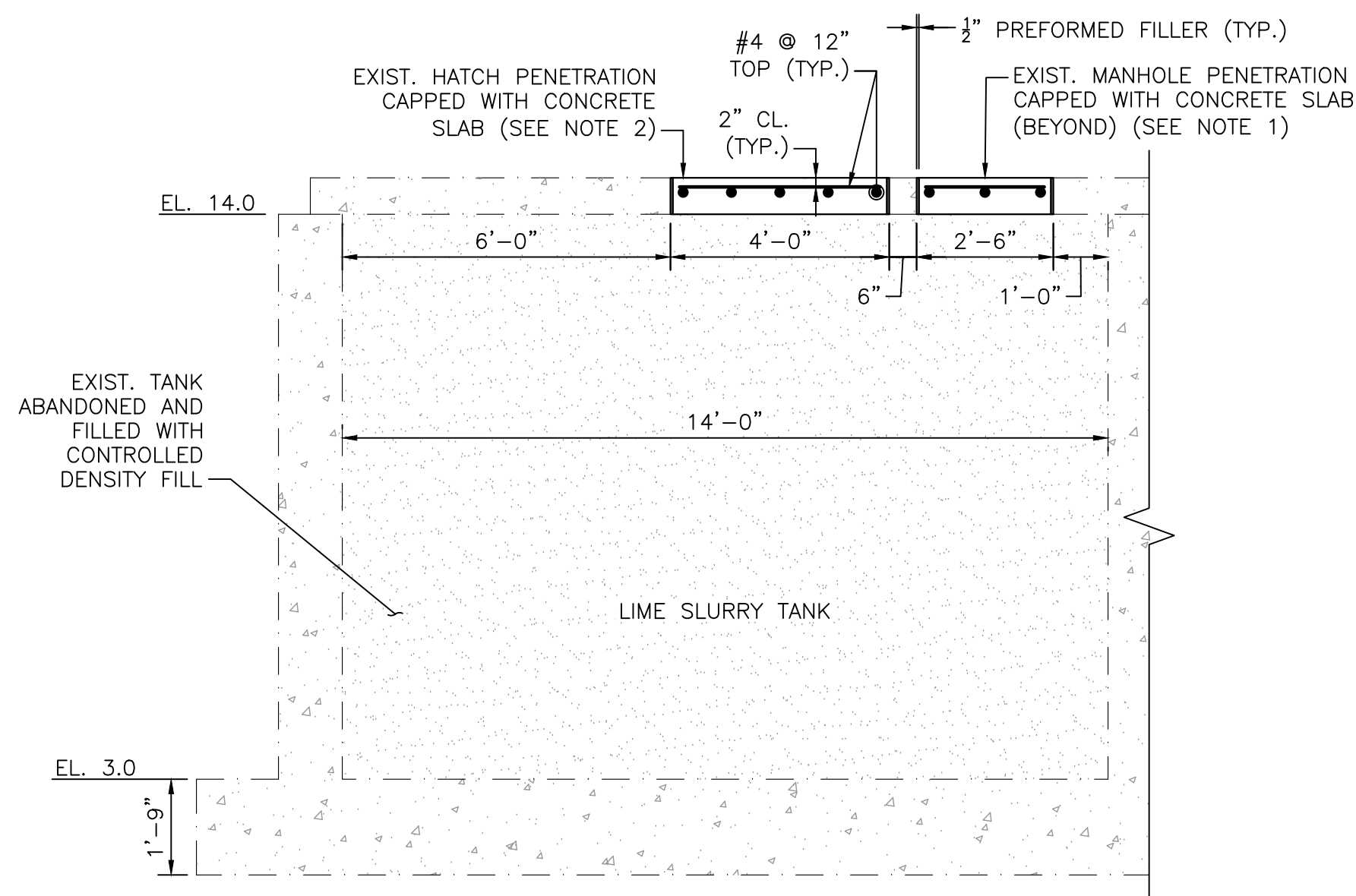
S-5.4

7/2/2021 1:156 AM N:\6050\6050 - TAUNTON WWT\DRAWING FILES\PLAN\SET\PHASE 1\6050\_SR5.5 - P1.DWG (BETA STB BW.STB)



CHEMICAL BUILDING PLAN

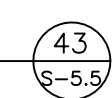
SCALE:  $\frac{1}{4}$ " = 1'-0"



[TANK 1 SHOWN, TANKS 2 & 3 SIMILAR]

SECTION

SCALE:  $\frac{1}{8}$ " = 1'-0"



NOTES:

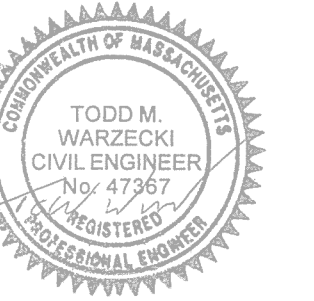
- SEE SPECIFICATIONS FOR CONTROL DENSITY FILL MATERIAL REQUIREMENTS.
- 6" TOP SLAB TO BE 5000 PSI CONCRETE, AND SHALL RECEIVE A TOP SURFACE FINISH TO MATCH THE ADJACENT FLOOR SLAB.

PREPARED BY



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SUBCONSULTANT

PROJECT

**Taunton Wastewater  
Treatment Facility  
Improvements  
Phase 1**

**TAUNTON, MA**

TITLE

**Chemical Handling  
Building**


NO.	REVISIONS	DATE

SCALE

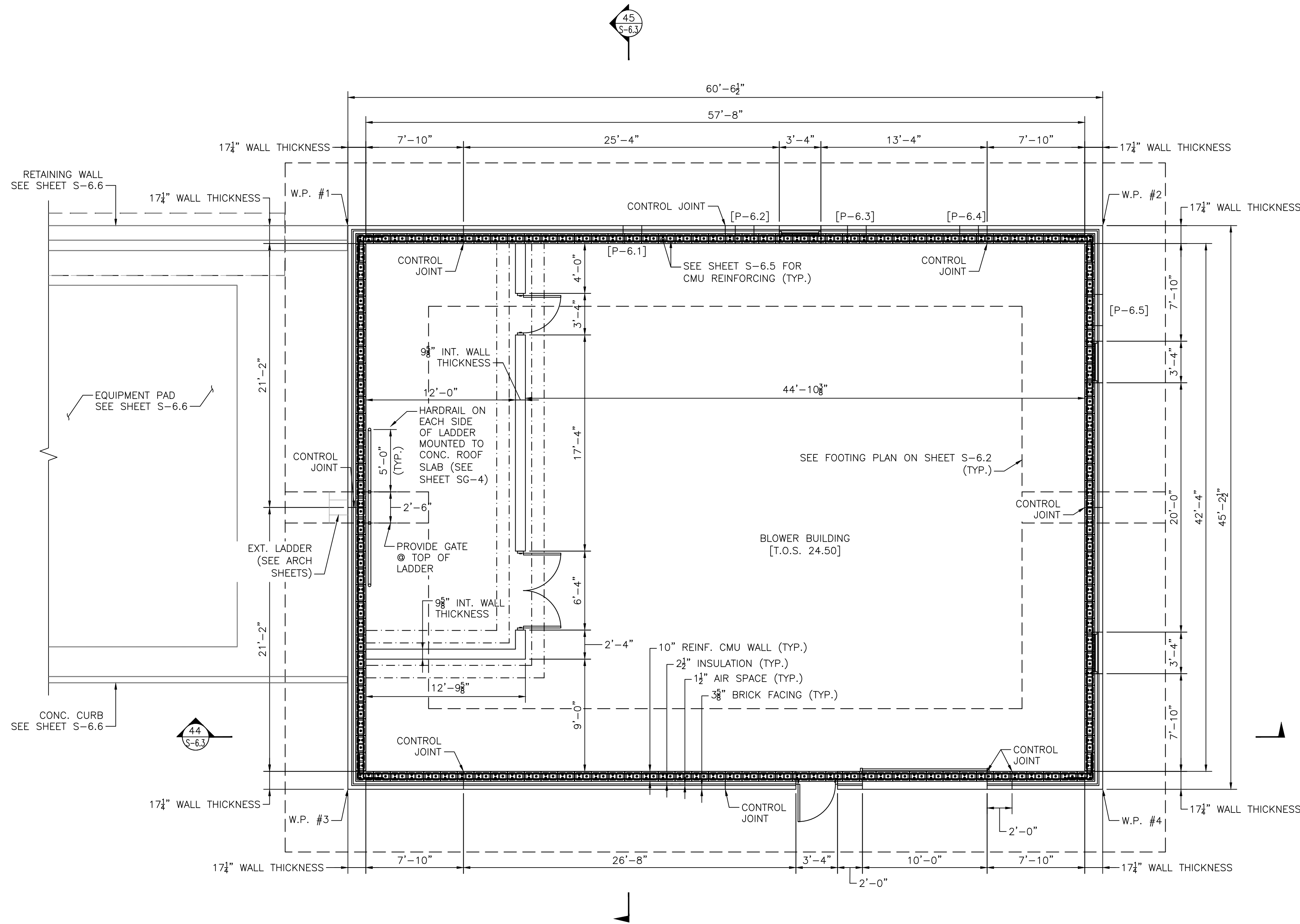
AS SHOWN

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SHEET NO.

**S-5.5**

7/2/2021 1:57 AM N:\6000S\6050 - TAUNTON WWT\DRAWING FILES\PLAN\SET\PHASE 1\6050\_SR6.1 - P1.DWG (BETA STB BW.STB)



**GENERAL BUILDING PLAN**  
SCALE:  $\frac{1}{16}$ " = 1'-0"

	NORTHING	EASTING
W.P. #1	33354347.86	9190888.52
W.P. #2	33354225.11	9191604.57
W.P. #3	33353813.16	9190796.86
W.P. #4	33353690.41	9191512.92

**NOTES:**

- SEE MECHANICAL SHEETS FOR EQUIPMENT LOCATIONS.
- SEE ARCHITECTURAL DRAWINGS FOR DOOR AND WINDOW OPENINGS.
- SEE ARCHITECTURAL DRAWINGS FOR EXTERIOR LADDER ACCESS LOCATION.
- LOCATION OF CMU CONTROL JOINTS SHOWN IS RECOMMENDED. CONTROL JOINTS SHALL BE IN ACCORDANCE WITH NCMA TEK 10-2C-CONTROL JOINTS FOR MASONRY WALLS.
- CMU CONTROL JOINTS SHALL BE COORDINATED WITH MASON AND BRICK CONTROL JOINTS. ADEQUATE SPACING SHALL BE PROVIDED BETWEEN CMU AND BRICK CONTROL JOINTS.
- CMU CONTROL JOINTS SHALL HAVE A MAX SPACING OF 25'-0".

PREPARED BY



REGISTERED PROFESSIONAL



SUBCONSULTANT

PROJECT

**Taunton Wastewater  
Treatment Facility  
Improvements  
Phase 1**

**TAUNTON, MA**

TITLE

**Blower Building General  
Plan**

NO.	REVISIONS	DATE
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DRAWN BY: BN

DESIGNED BY: BN

CHECKED BY: TMW

ISSUE DATE: 7/2/2021

BETA JOB NO.: 6050

SCALE

AS SHOWN

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

SHEET NO.

S-6.1

	NORTHING	EASTING
W.P. #5	33354417.56	9190839.21
W.P. #6	33354274.42	9191674.28
W.P. #7	33353763.85	9190727.15
W.P. #8	33353620.70	9191562.22

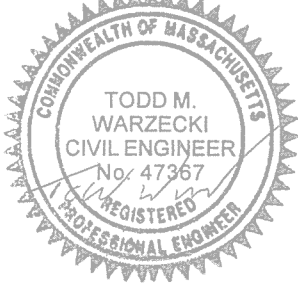
NOTES:

1. ALL CONCRETE SHALL BE  $f'_c = 4000$  P.S.I.
2. ALL STEEL REINFORCEMENT SHALL CONFORM TO ASTM A615 GRADE 60.
3. INTERIOR AND EXTERIOR WALLS ARE SHOWN AS A VISUAL AID IN LOCATING FOUNDATION STEM WALLS AND SLAB HAUNCHES.

PREPARED BY



REGISTERED PROFESSIONAL



SUBCONSULTANT

PROJECT

# Taunton Wastewater Treatment Facility Improvements Phase 1

**TAUNTON, MA**

TITLE

# Blower Building Foundation Plan

NO.	REVISIONS	DATE

DRAWN BY: BN

DESIGNED BY: BN

CHECKED BY: TMW

ISSUE DATE: 7/2/202

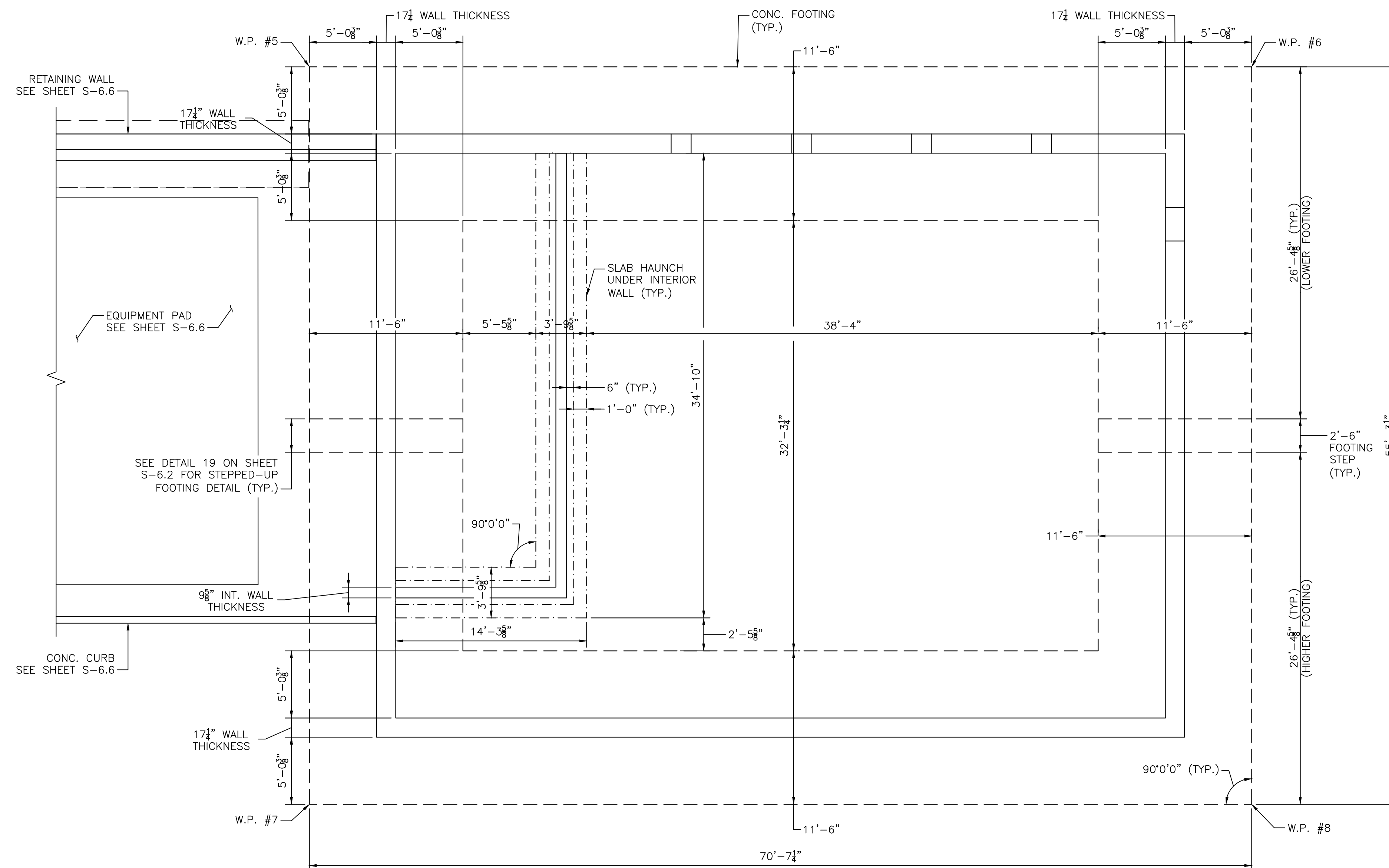
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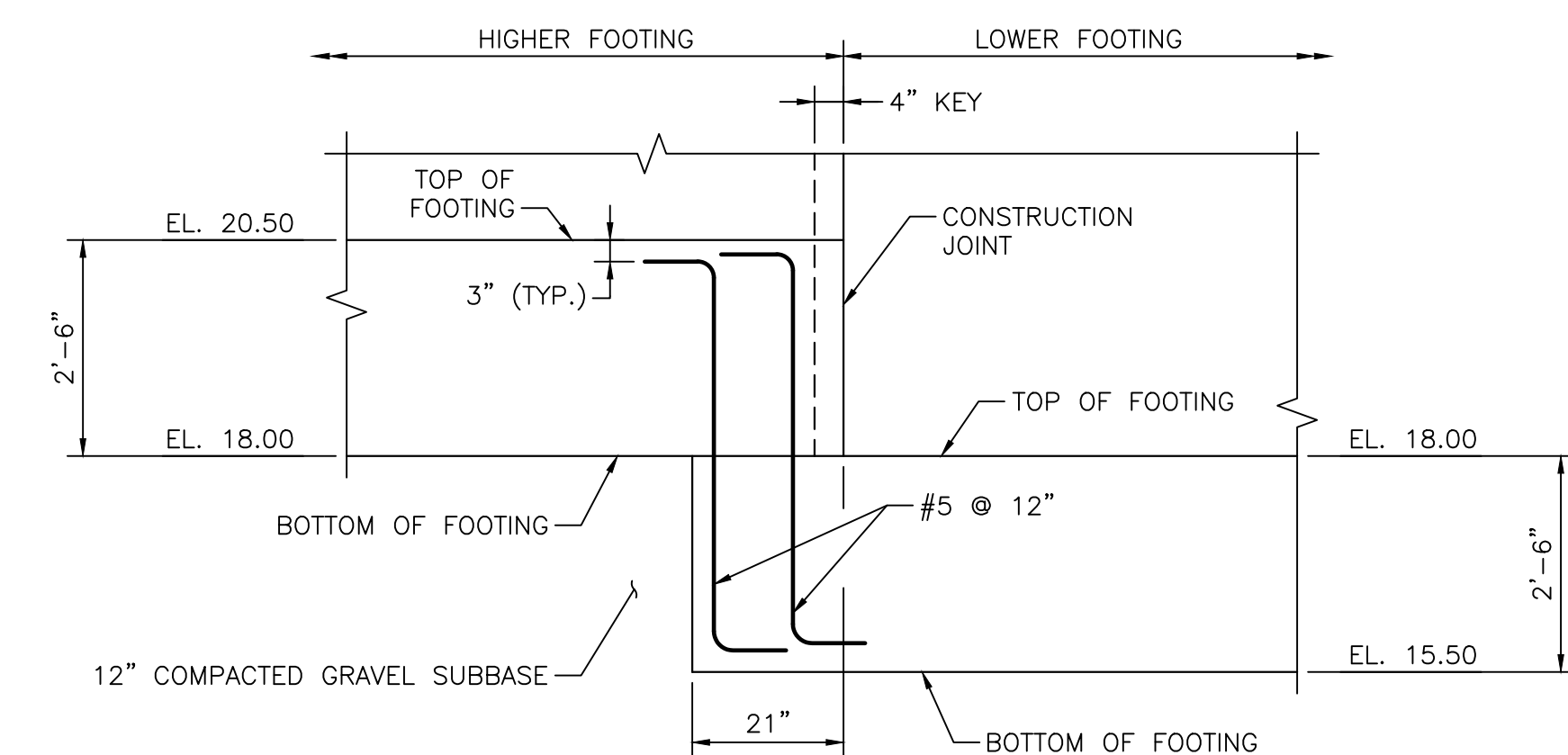
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SHEET NO.

S-6.2



FOUNDATION PLAN  
SCALE:  $\frac{3}{16}'' = 1'-0''$

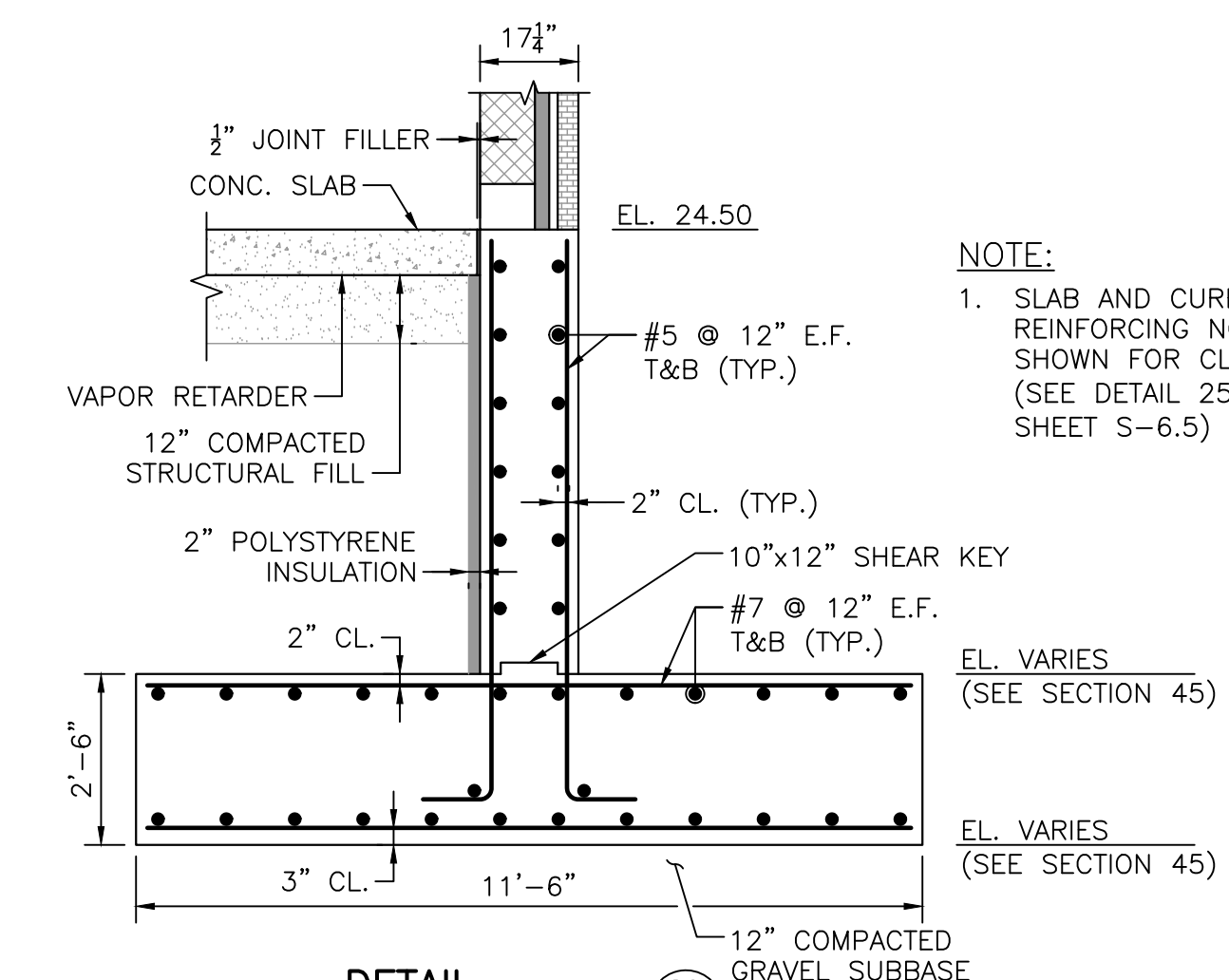


DETAIL

---

SCALE:  $\frac{1}{8}'' = 1'-0''$

19  
S-6.2



DETAIL

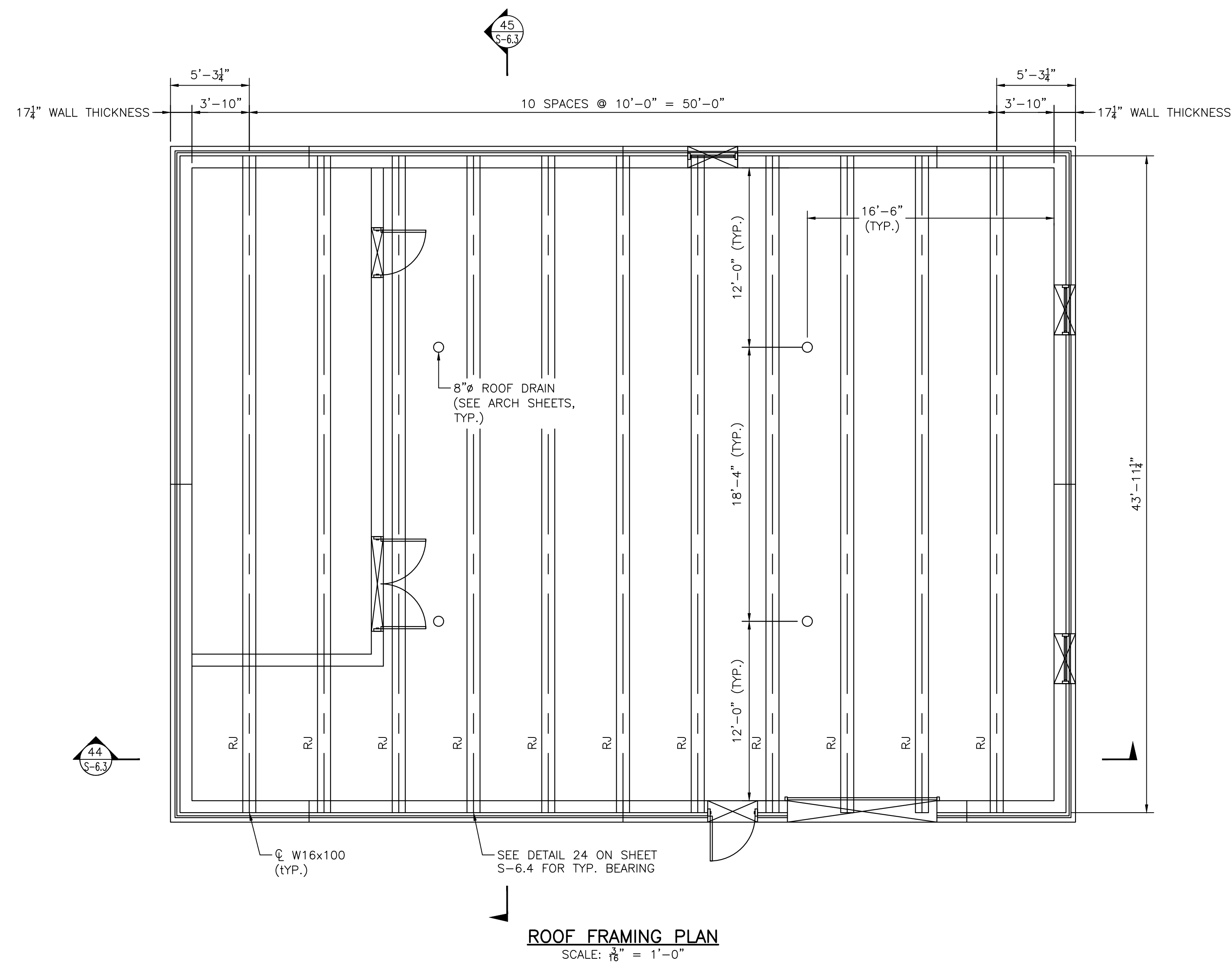
SCALE:  $\frac{3}{8}'' = 1'-0''$

20  
S-6.4

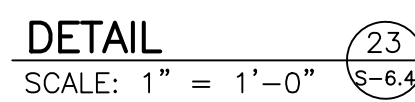
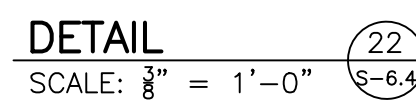
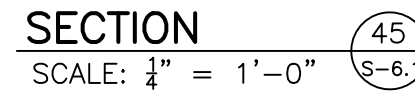
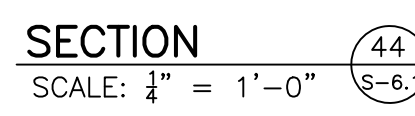
NOTE

1. SLAB AND CURB  
REINFORCING NOT  
SHOWN FOR CLARITY  
(SEE DETAIL 25 ON  
SHEET S-6.5)

1. RJ = W16x100 (ROOF JOIST)

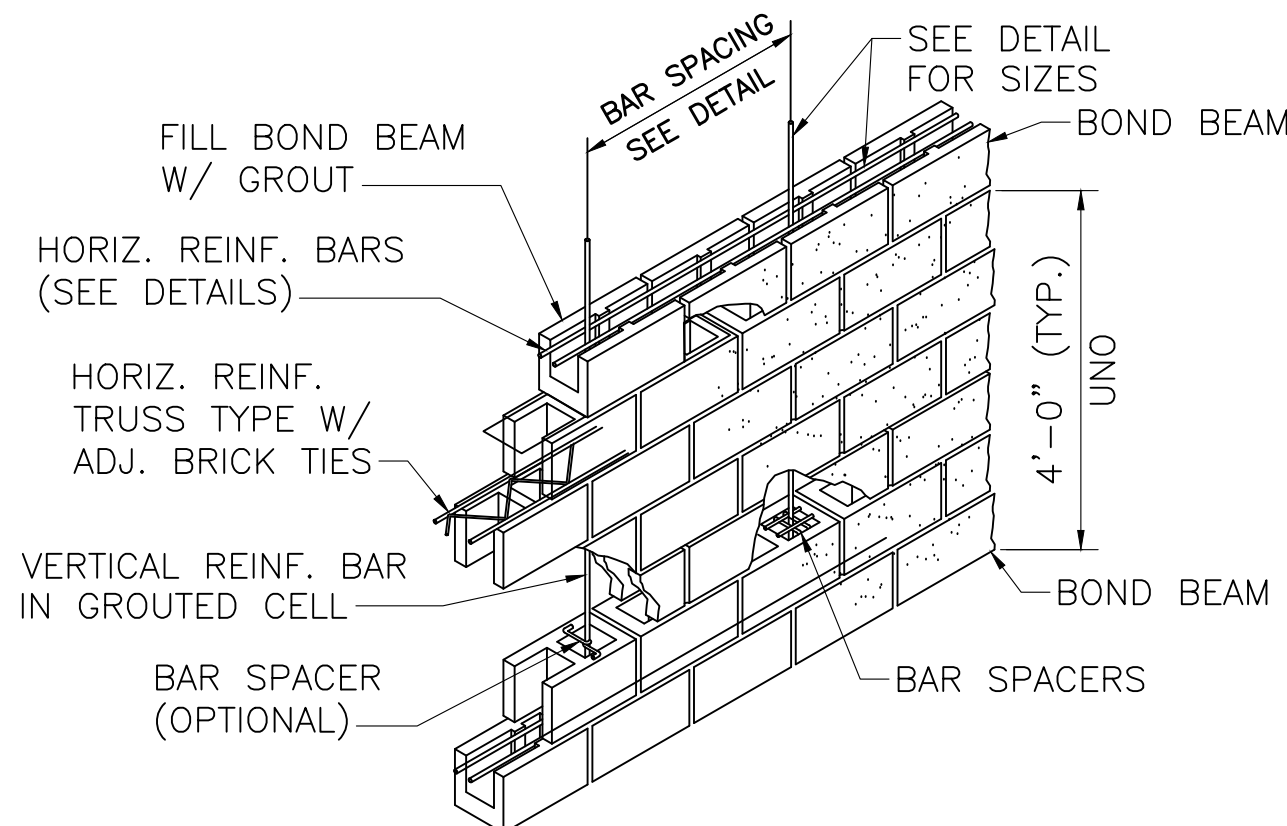


S-6.3

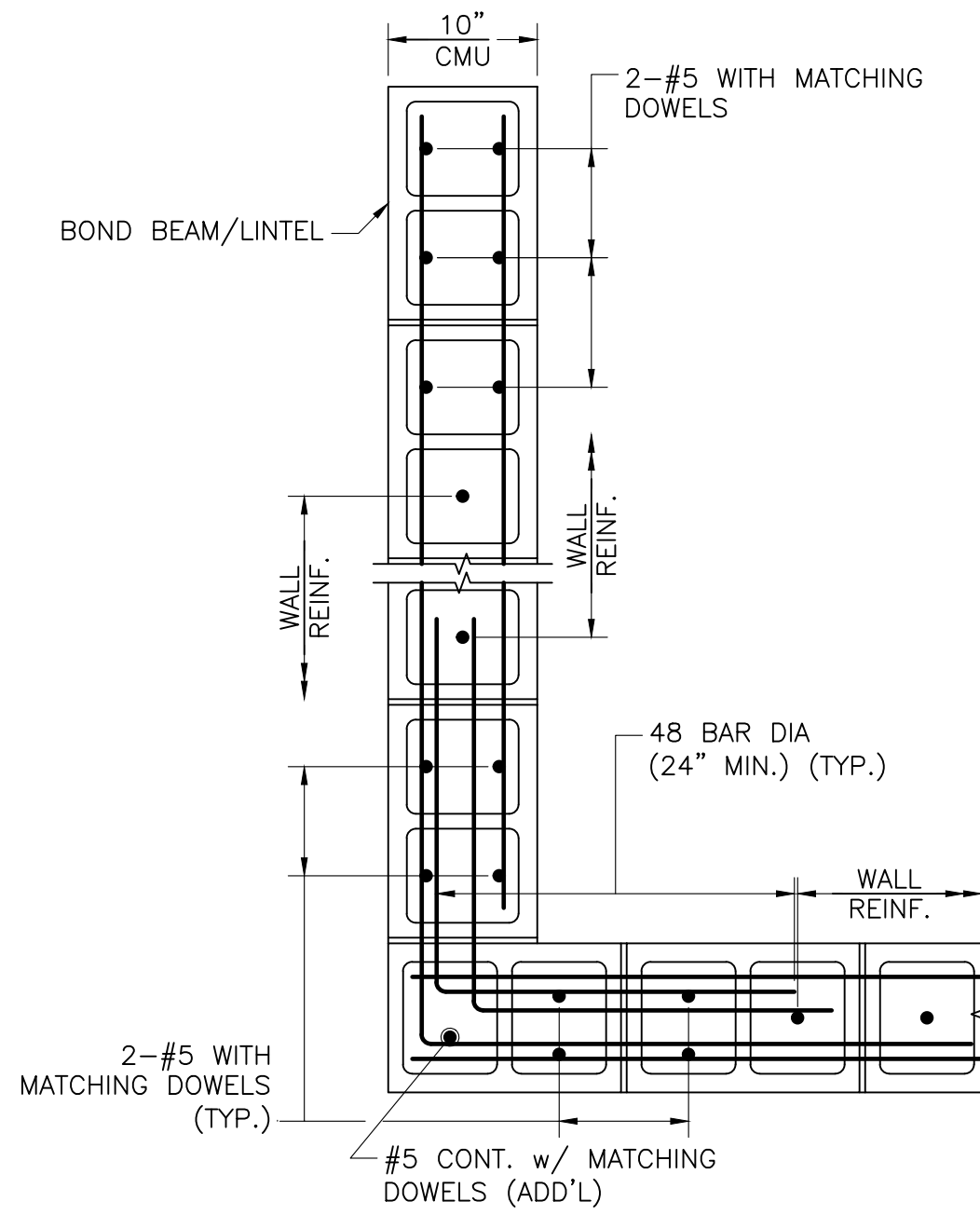


S-6.4

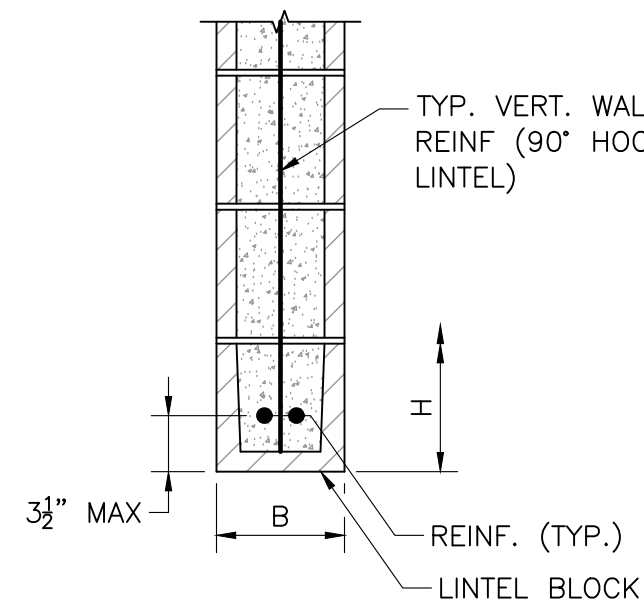
7/2/2021 11:59 AM N:\6050\6050 - TAUNTON WWTF\DRAWING FILES\PLAN\SET\PHASE 1\6050\_SR6.5 - P1.DWG (BETA STB BW.STB)



**CMU WALL CONSTRUCTION**  
SCALE: NOT TO SCALE



**TYPICAL CMU WALL CORNER AND AT END**  
NOT TO SCALE

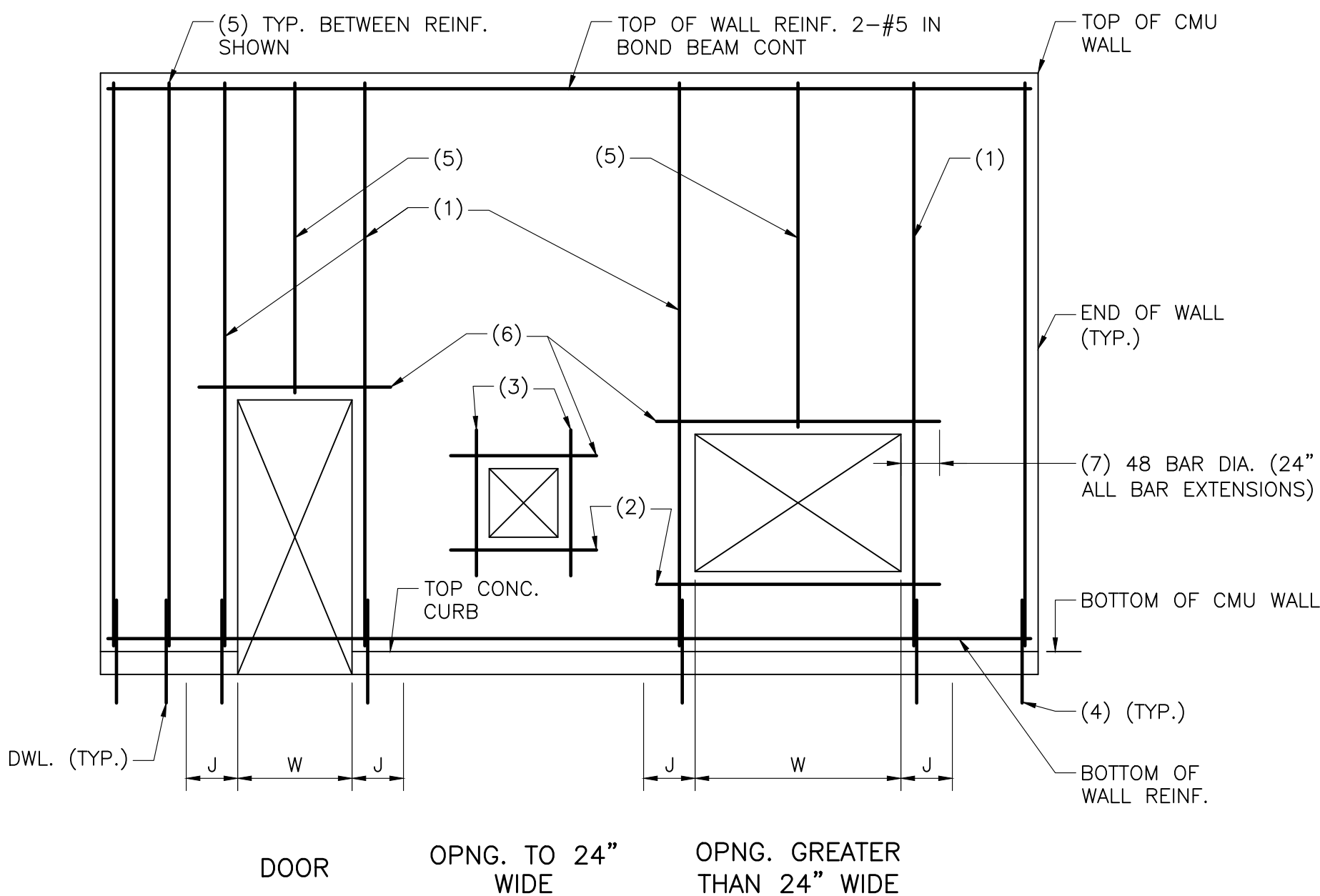


**TYPICAL CMU LINTEL**  
NOT TO SCALE

MARK/LOCATION	W	B	H	REINF.
L1	< 3'-0"	WIDTH OF CMU WALL	8"	2-#5 BOT.
L2	> 3'-0" BUT < 10'-0"	WIDTH OF CMU WALL	16"	2-#5 BOT.

**NOTES:**

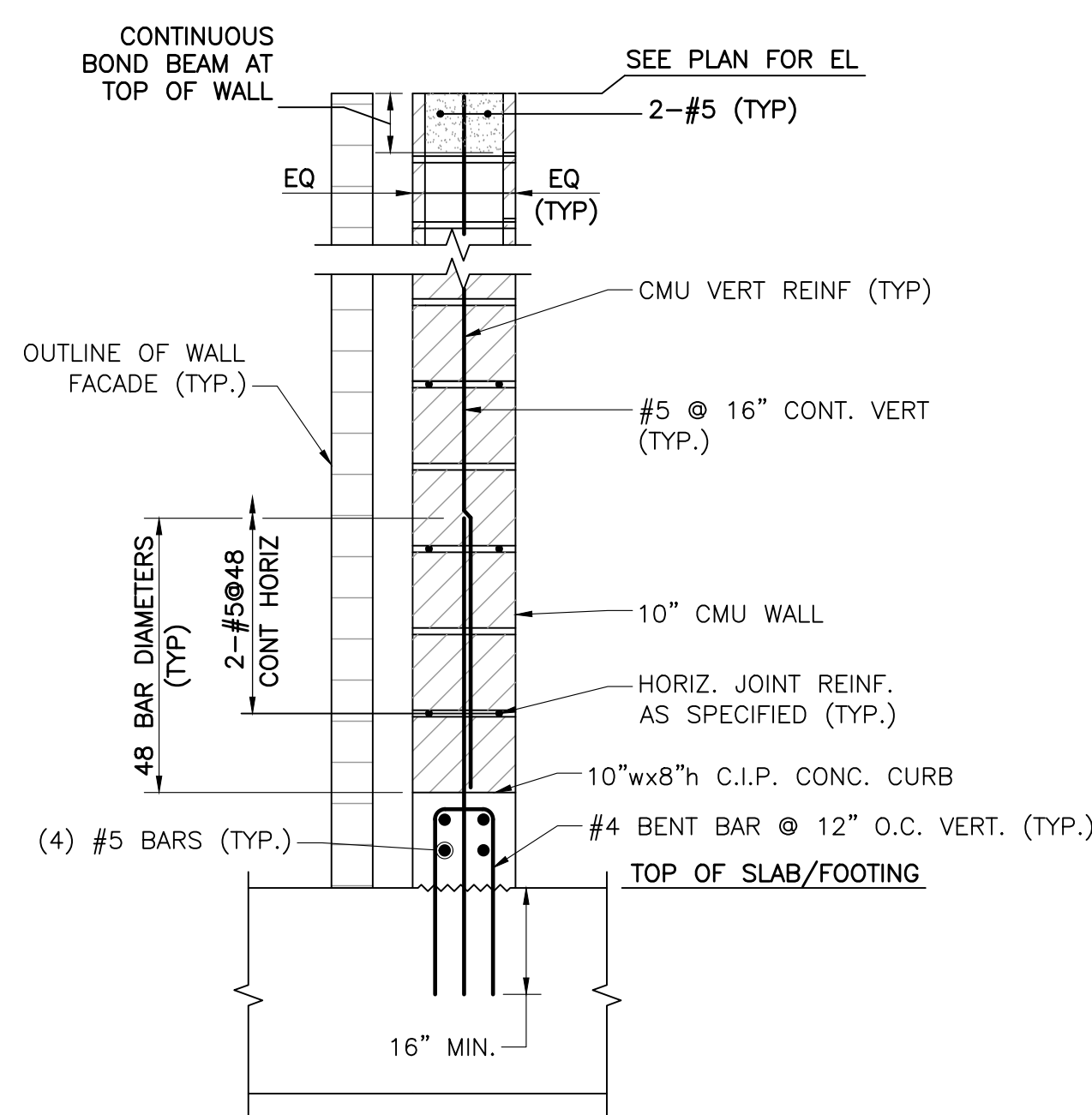
1. PROVIDE 8" MINIMUM BEARING AT EACH SIDE OF CLEAR SPAN.
2. FULLY GROUT CMU OVER DEPTH "H" TO ENDS OF BEARING.
3. MAY CONSIST OF FULLY GROUTED H=16" CMU LINTEL BLOCK OR H = 8" CMU LINTEL BLOCK PLUS 8" CMU BLOCK(S), FULLY GROUTED.



**TYPICAL CMU WALL ELEVATION**  
NOT TO SCALE

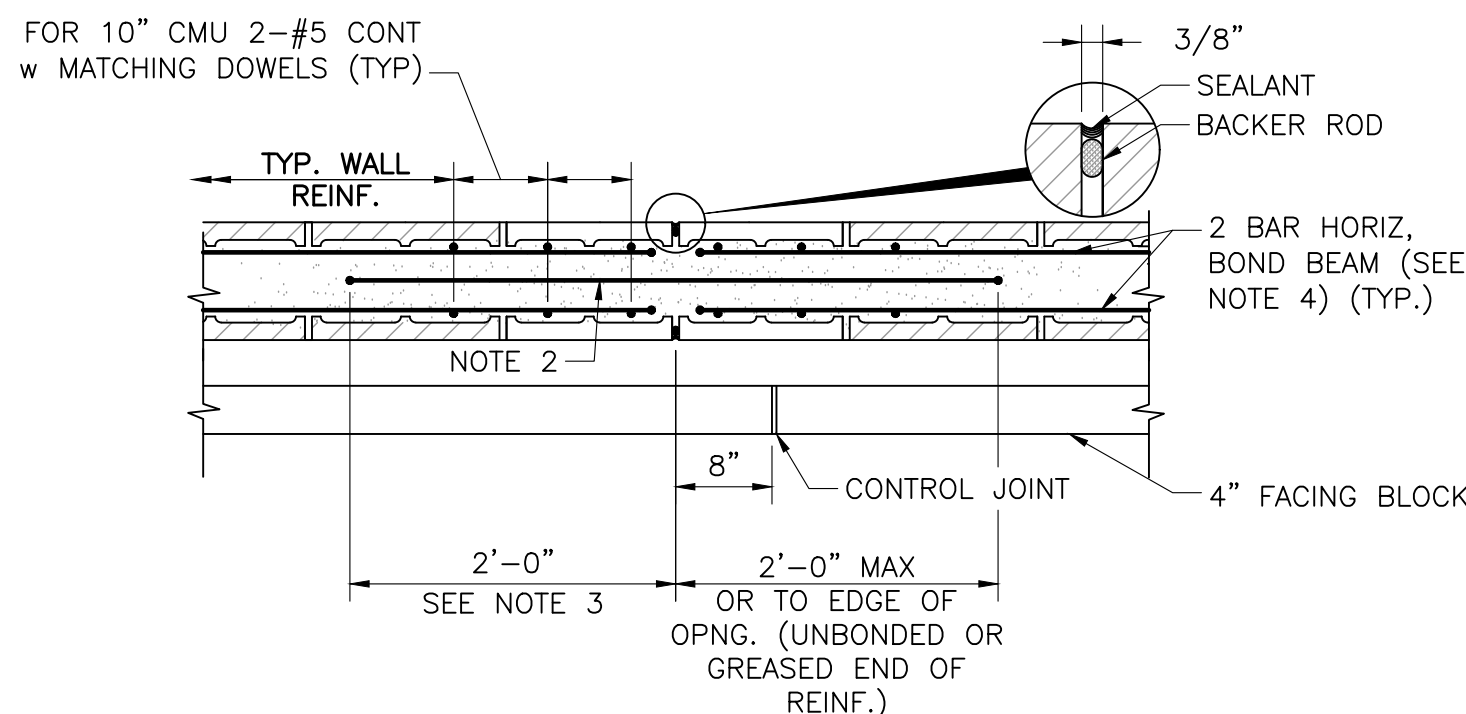
**LEGEND**

- (1) SEE TYPICAL CMU WALL OPENING DETAIL THIS SHEET.
- (2) SILL BARS, 2-#5 IN BOND BEAM.
- (3) 1-#5 EACH SIDE.
- (4) SEE TYPICAL CMU WALL CORNER AND END DETAIL 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 ARCHITECTURAL DRAWINGS.
- (7) IF FULL LENGTH IS NOT AVAILABLE, EXTEND AS FAR AS POSSIBLE, HOOK 90°, THEN EXTEND, BEYOND BEND, REMAINDER OF LENGTH REQUIRED (BUT NOT LESS THAN 12")



**NOTE:**  
CMU EXTERIOR CONDITION SHOWN,  
CMU INTERIOR CONDITION SIMILAR

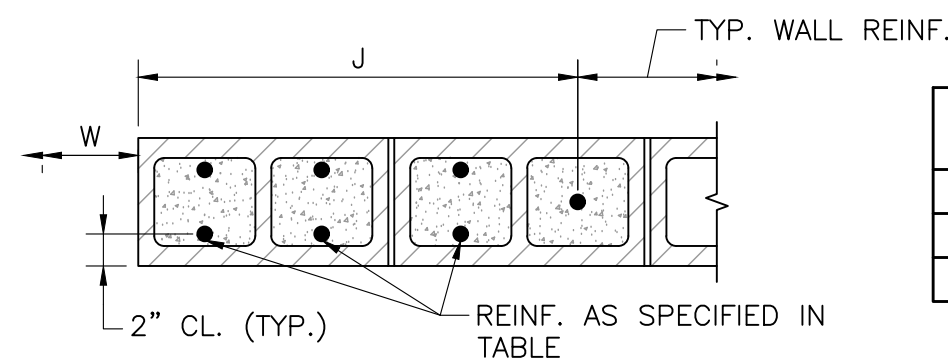
**TYPICAL CMU WALL REINFORCING**  
SCALE: 3/4" = 1'-0"



**NOTES:**

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

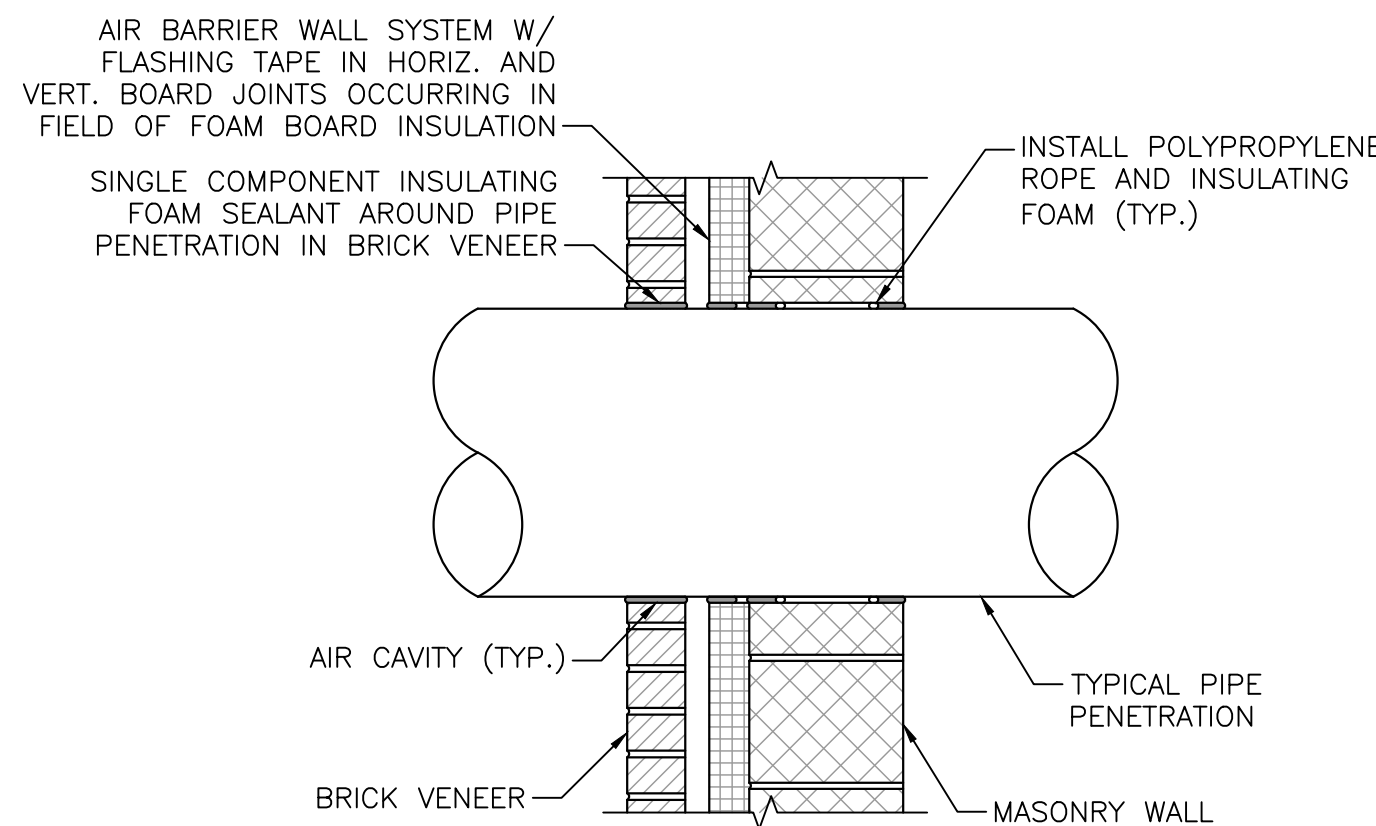
**MASONRY CONTROL JOINT (MCJ)**  
SCALE: 3/4" = 1'-0"



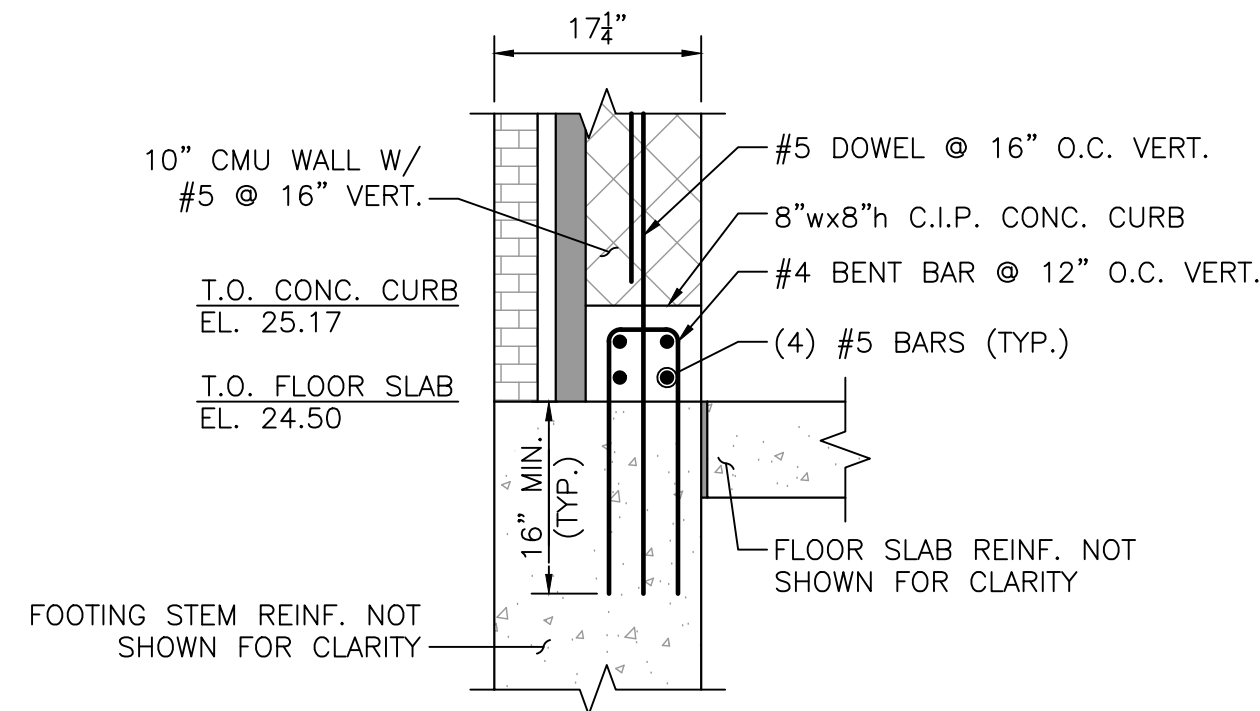
**TYPICAL CMU WALL OPENING**  
NOT TO SCALE

**CMU MASONRY NOTES:**

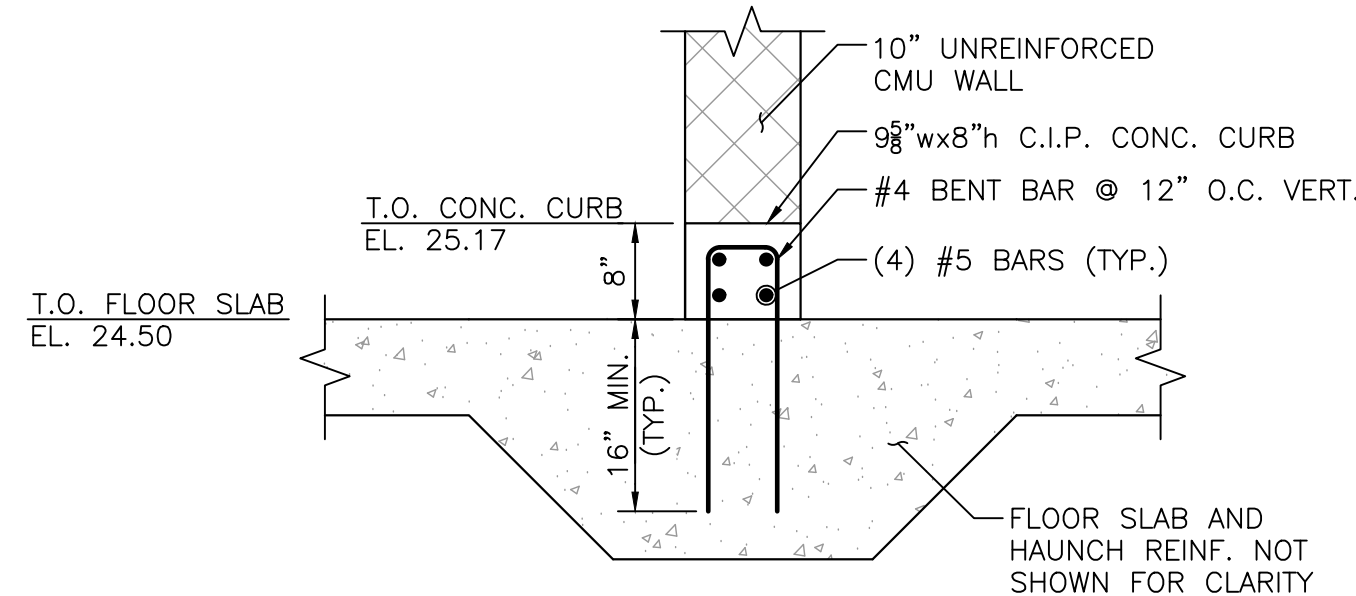
1. f'm = 2000 P.S.I. (MIN.)
2. CMU MASONRY DETAILS, ELEVATIONS AND NOTES ON THIS SHEET APPLY TO ALL CMU EXTERIOR AND INTERIOR WALLS U.N.O. (WALLS CONSIST OF A SINGLE CMU WYTHE AND ONE BRICK WYTHE)
3. FULLY GROUT ALL CELLS AND COURSES WITH VERTICAL OR HORIZONTAL REINFORCING. PROVIDE 2" MINIMUM CLEAR COVER TO THE REINFORCING (U.N.O.).
4. ALL HORIZONTAL REINFORCING, EXCEPT IN THE LINTELS, SHALL BE PLACED IN A CMU BOND BEAM BLOCK. PROVIDE GALVANIZED METAL LATH IN THE HORIZONTAL JOINT BELOW THE BLOCK TO RETAIN THE GROUT.
5. PROVIDE A CONTINUOUS BOND BEAM WITH 2-#5 CONTINUOUS HORIZONTAL BARS AT THE TOP OF ALL WALLS.
6. REINFORCING LAP SPLICE LENGTH = 48 BAR DIAMETERS (24" MINIMUM).
7. PROVIDE HORIZONTAL JOINT REINFORCING AS NEEDED.
8. REINFORCING BARS TO EXTEND 12 BAR DIAMETERS BUT NOT LESS THAN 12" BEYOND BEND U.N.O.
9. FOR PLAN LOCATION OF MASONRY WALLS AND OTHER MASONRY DETAILS, SEE ARCHITECTURAL DRAWINGS.
10. FOR LOCATION AND SIZE OF MASONRY WALL OPENINGS, SEE ARCHITECTURAL DRAWINGS.



**MASONRY PENETRATION DETAIL**  
SCALE: 1" = 1'-0"



**DETAIL**  
SCALE: 3/4" = 1'-0" (25) S-6.4



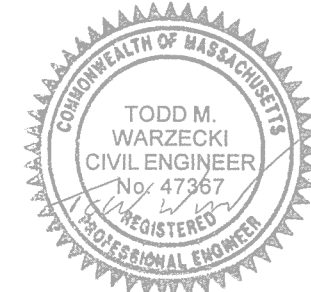
**DETAIL**  
SCALE: 3/4" = 1'-0" (26) S-6.4

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.

PREPARED BY



REGISTERED PROFESSIONAL



SUBCONSULTANT

PROJECT

**Taunton Wastewater  
Treatment Facility  
Improvements  
Phase 1**

TAUNTON, MA

TITLE

**Masonry Details**

NO. REVISIONS DATE

DRAWN BY: BN

DESIGNED BY: BN

CHECKED BY: TMW

ISSUE DATE: 7/2/2021

BETA JOB NO.: 6050

SCALE

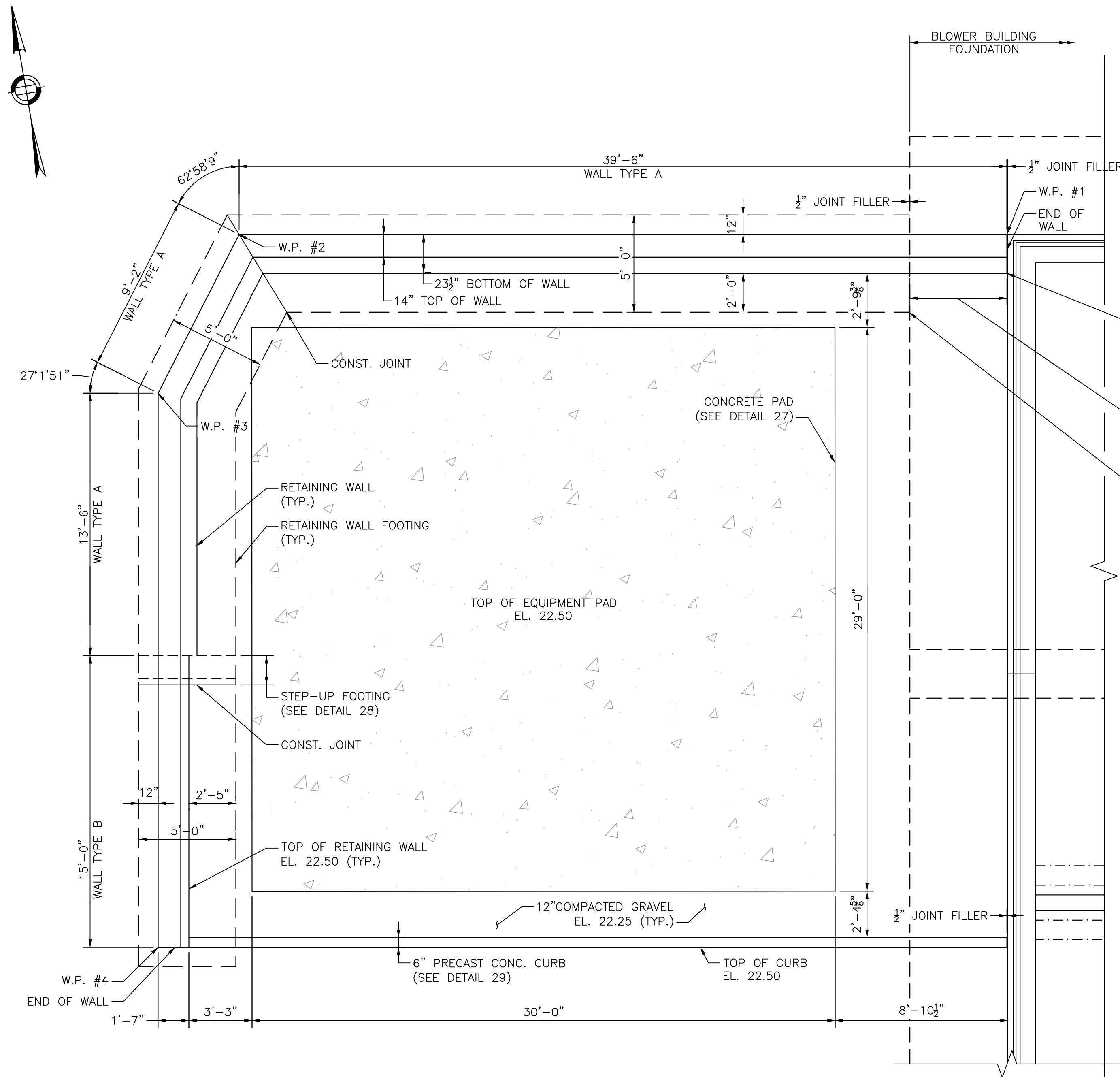
AS SHOWN

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

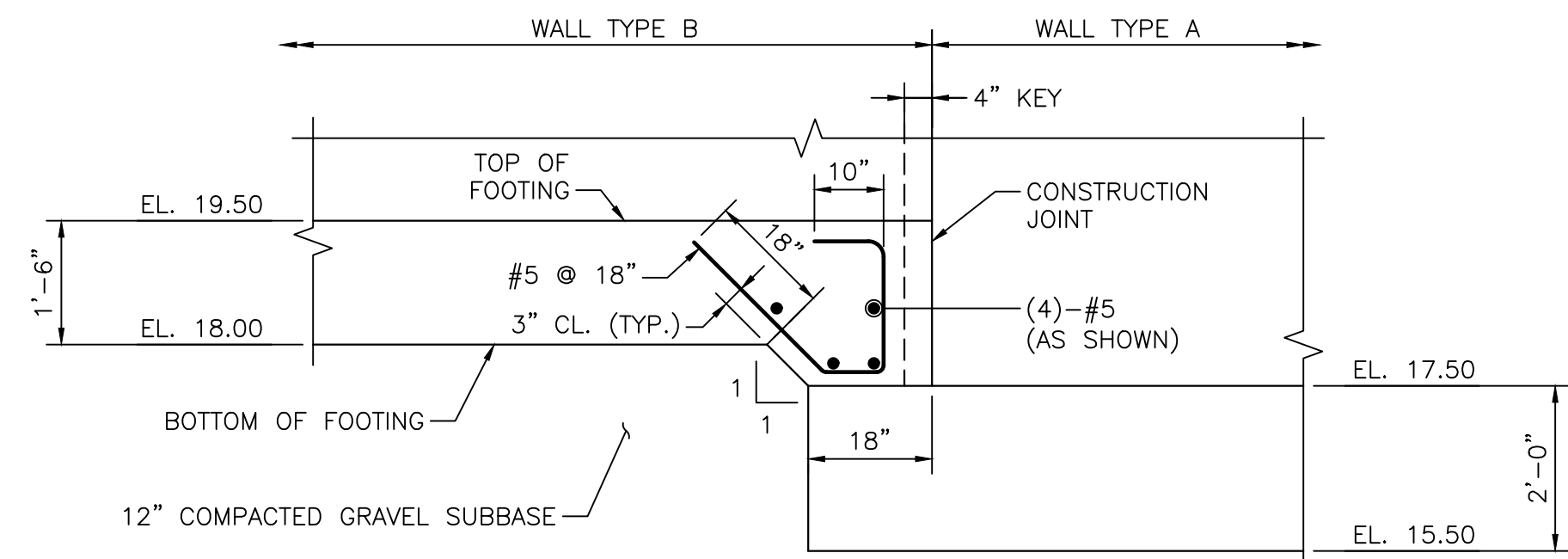
SHEET NO.

S-6.5

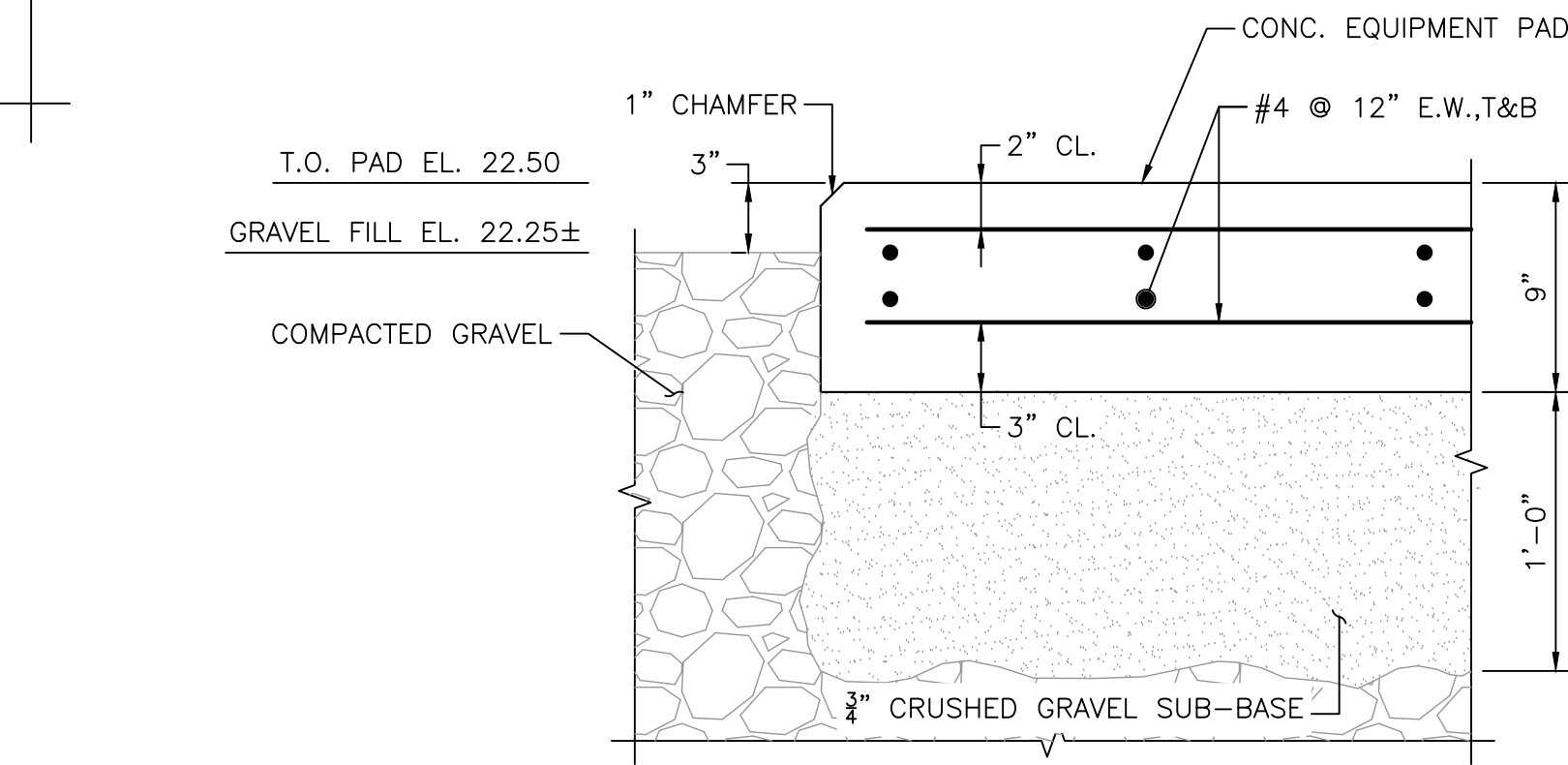
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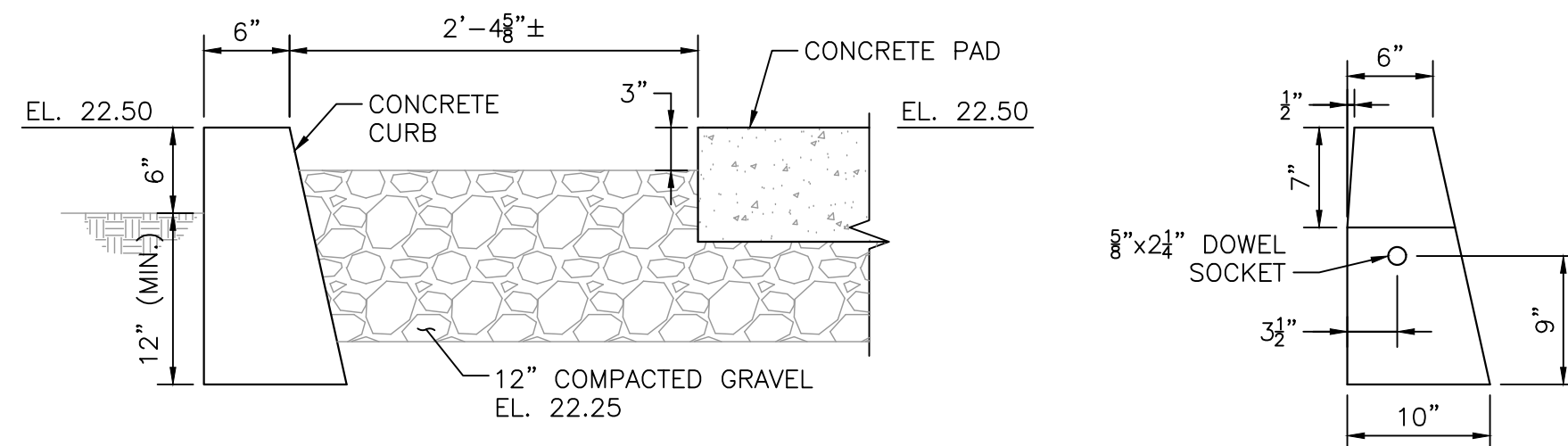
RETAINING WALL PLAN  
SCALE:  $\frac{1}{4}'' = 1'-0''$



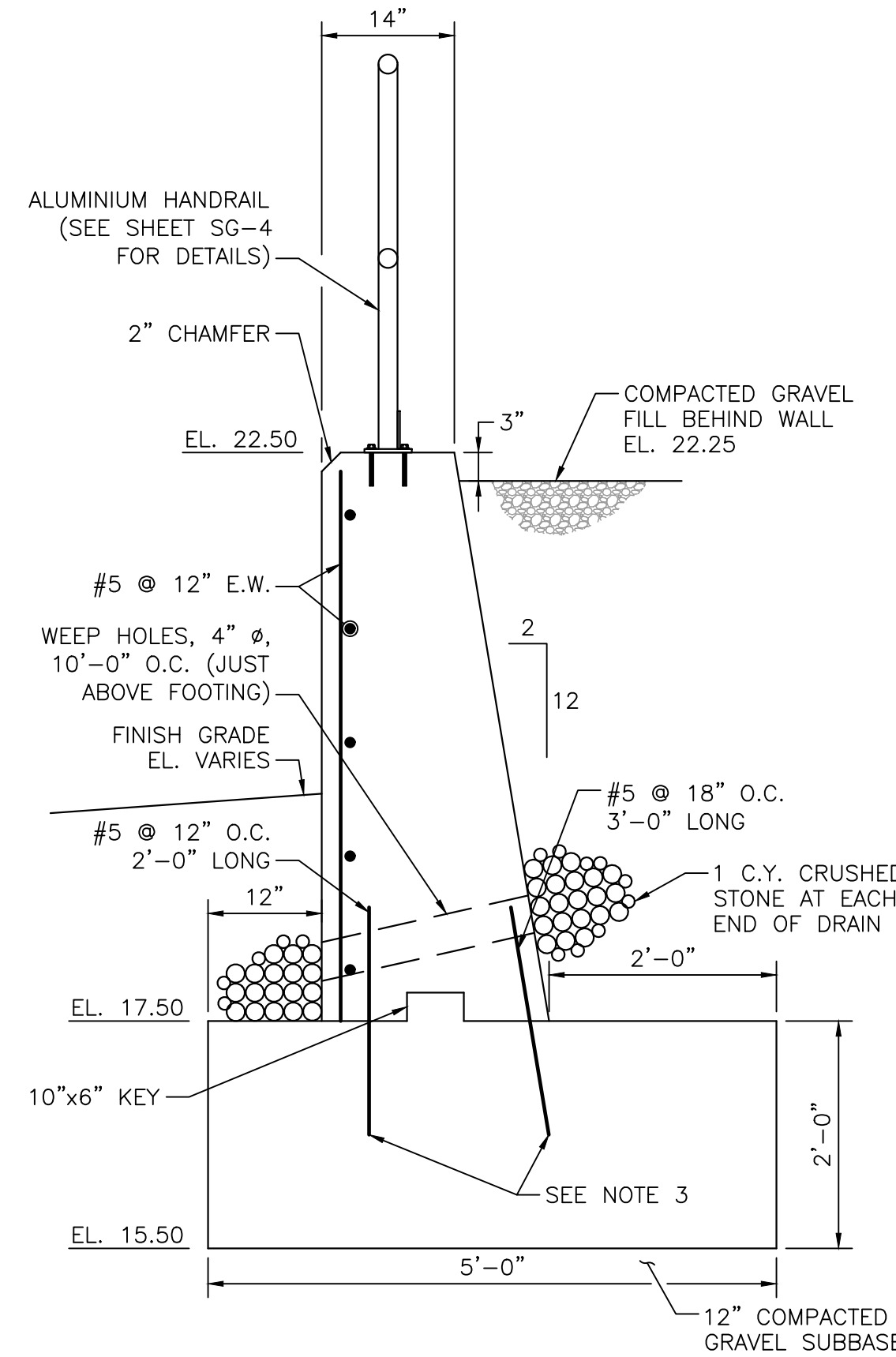
DETAIL 28  
SCALE:  $\frac{1}{2}'' = 1'-0''$



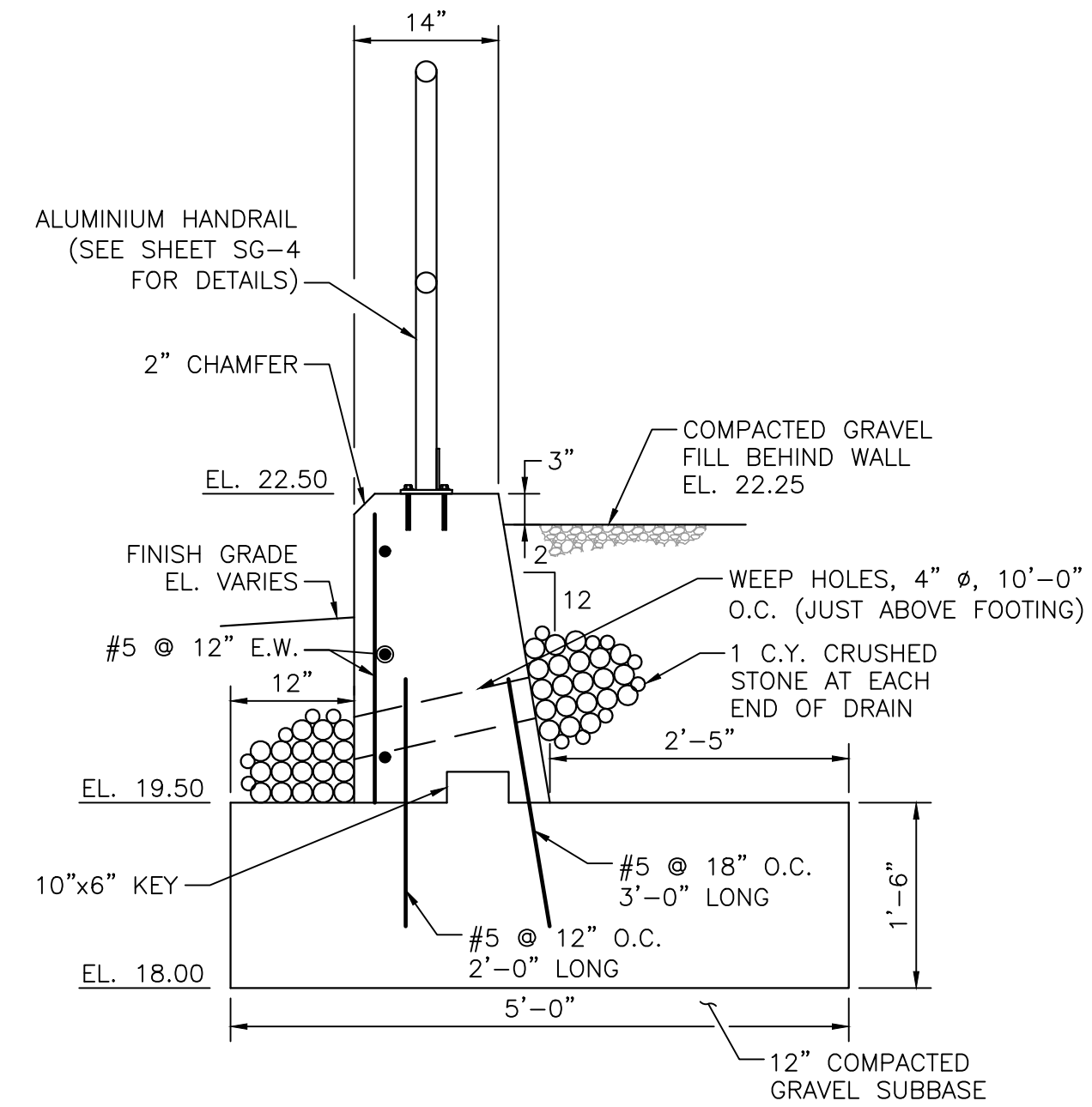
DETAIL 27  
SCALE:  $\frac{1}{2}'' = 1'-0''$



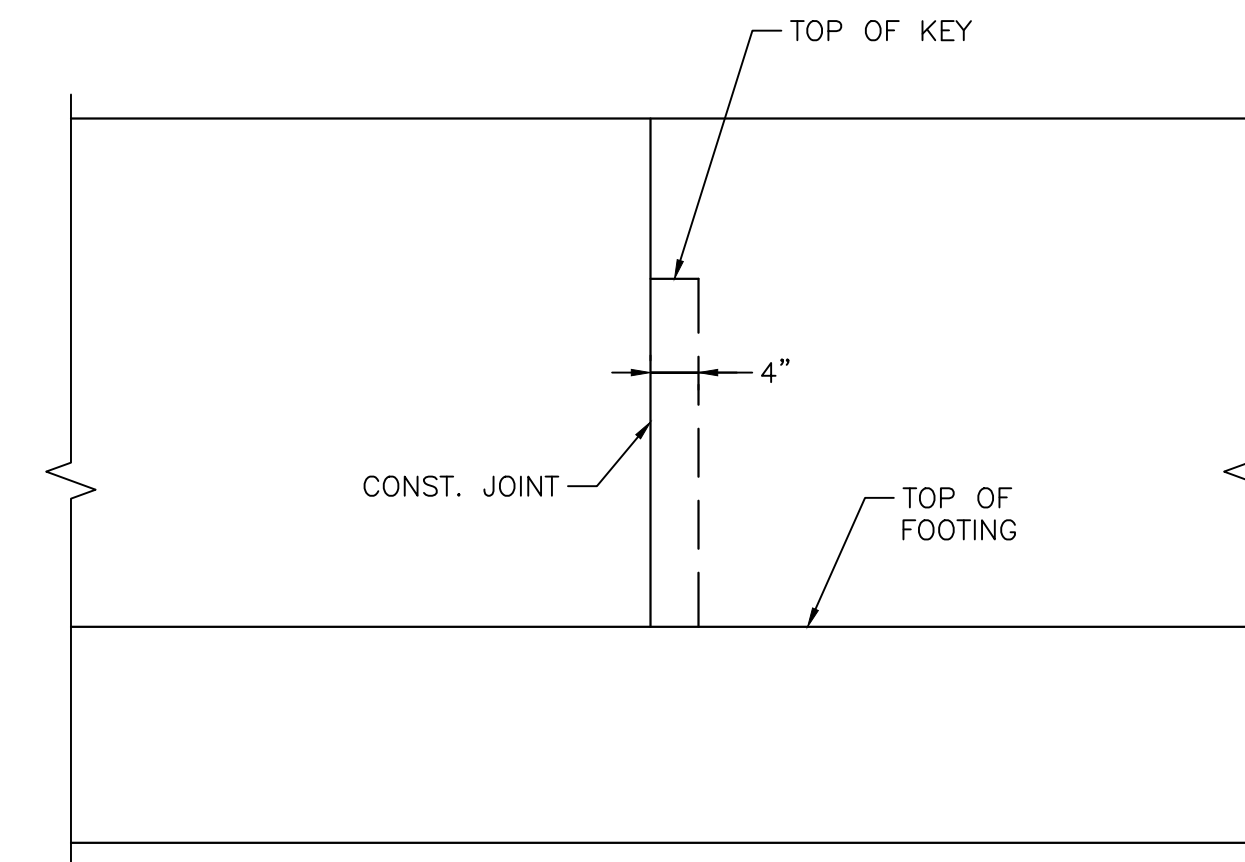
DETAIL 29  
SCALE:  $1'' = 1'-0''$



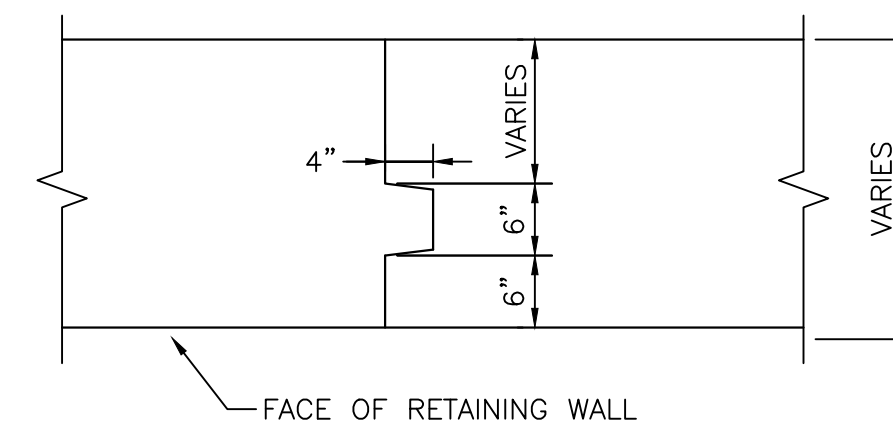
TYPICAL SECTION - WALL TYPE A  
SCALE:  $\frac{3}{4}'' = 1'-0''$



TYPICAL SECTION - WALL TYPE B  
SCALE:  $\frac{3}{4}'' = 1'-0''$



ELEVATION



SECTION

CONSTRUCTION JOINT DETAIL  
SCALE:  $\frac{3}{4}'' = 1'-0''$

	NORTHING	EASTING
W.P. #1	33354347.94	9190888.03
W.P. #2	33354428.03	9190420.84
W.P. #3	33354339.88	9190355.00
W.P. #4	33354002.80	9190297.22

#### NOTES:

- ALL STEEL REINFORCEMENT SHALL CONFORM TO ASTM A615 GRADE 60.
- SEE MECHANICAL SHEETS FOR EQUIPMENT LOCATIONS.
- OMIT VERTICAL #5 x 2'-0" LONG AND #5 x 3'-0" LONG OVER BUILDING FOUNDATION FOOTING.

PREPARED BY



REGISTERED PROFESSIONAL



SUBCONSULTANT

PROJECT

### Taunton Wastewater Treatment Facility Improvements Phase 1

TAUNTON, MA

TITLE

### Retaining Wall and Equipment Pad

NO. REVISIONS DATE

DRAWN BY: BN

DESIGNED BY: BN

CHECKED BY: TMW

ISSUE DATE: 7/2/2021

BETA JOB NO.: 6050

SCALE

AS SHOWN

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

SHEET NO.

S-6.6