



City Of Carmel  
West Ground Storage Tank Booster Pump Station

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**ADDENDUM 4**

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November 22, 2024

Planholders on the City of Carmel Ground Storage Tank Booster Pump Station project are hereby notified of the following amendments to the Contract Documents. This Addendum is hereby made a part of the Contract Documents.

**GENERAL NOTES**

Just for clarity, please be aware that Addendum 3 changed the bid deadline to 9:00 AM rather than the previously listed time.

There are still several outstanding questions from bidders that I hope to issue responses to on Monday November 25. Apologies for the delay.

**DRAWINGS**

Replace the following drawings sheets with their attached counterparts.

*The changes are generally clouded for convenience. The changes are relatively inconsequential in my opinion: roof drain details, foundation insulation, louver wall penetrations, and some other corrections.*

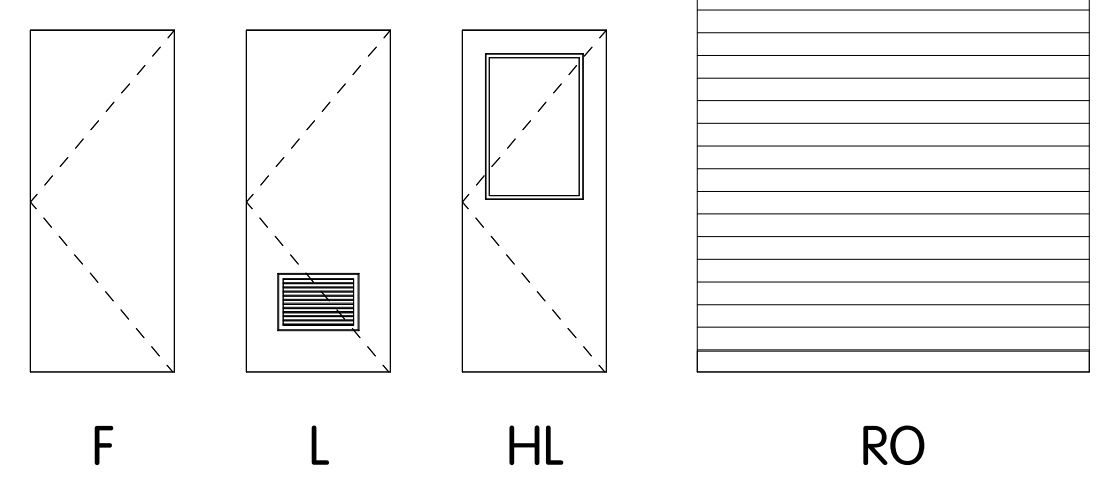
- A-0.1
- A-0.2
- A-1.1
- A-1.2
- A-1.3
- S-0.1
- S-0.2
- S-0.3
- S-0.5
- S-1.1
- S-1.2
- S-1.3
- PE-0.2
- PE-1.2
- PE-1.3
- PE-1.4
- P-0.3
- P-1.1
- P-1.2
- P-1.3
- M-0.5
- M-1.1

C:\USERS\VALUED\CUSTOMER\ONE\DRIVE - JONES & HENRY ENGINEERS, LTD\DOCUMENTS\7893001-RM\_RM\_WORLEY@JHENG.COM.RVT  
11/20/2024 7:55:02 AM

DOOR SCHEDULE													
TAG / ID	QNTY.	DOOR			DOOR TYPE	DESCRIPTION	DOOR MATERIAL	DETAILS			FRAME MATERIAL	UL LABEL	REMARKS
		WIDTH	HEIGHT	THICKNESS				HEAD	JAMB	THRESHOLD			
PUMP STATION													
D-1-1	1	6' - 0"	7' - 2"	1 3/4"	HL	DOUBLE LEAF DOOR	ALUM	H-1	J-1	T-1	ALUM	N/A	
D-1-2	1	3' - 0"	7' - 2"	1 3/4"	HL	SINGLE LEAF DOOR	ALUM	H-1	J-1	T-1	ALUM	N/A	
D-1-3	1	3' - 0"	7' - 2"	1 3/4"	HL	SINGLE LEAF DOOR	ALUM	H-1	J-1	T-1	ALUM	N/A	
D-1-4	1	8' - 0"	10' - 0"	1 1/2"	RO	ROLL UP DOOR	ALUM	H-2	J-2	T-2	GALV	N/A	
D-1-5	1	3' - 0"	7' - 2"	1 3/4"	F	SINGLE LEAF DOOR	ALUM	H-3	J-3	T-1	ALUM	N/A	
D-1-6	1	3' - 0"	7' - 2"	1 3/4"	F	SINGLE LEAF DOOR	ALUM	H-3	J-3	T-1	ALUM	N/A	
D-1-7	1	6' - 0"	7' - 2"	1 3/4"	F	DOUBLE LEAF DOOR	ALUM	H-3	J-3	T-1	ALUM	N/A	PANIC HARDWARE PER NEC
D-1-8	1	8' - 0"	10' - 0"	1 1/2"	RO	ROLL UP DOOR	ALUM	H-2	J-2	T-2	GALV	N/A	
D-1-9	1	3' - 0"	7' - 2"	1 3/4"	HL	SINGLE LEAF DOOR	ALUM	H-1	J-1	T-1	ALUM	N/A	
D-1-10	1	3' - 0"	7' - 2"	1 3/4"	F	SINGLE LEAF DOOR	ALUM	H-3	J-3	T-1	ALUM	N/A	
D-1-11	1	3' - 0"	7' - 2"	1 3/4"	HL	SINGLE LEAF DOOR	ALUM	H-3	J-3	T-1	ALUM	N/A	PANIC HARDWARE PER NEC

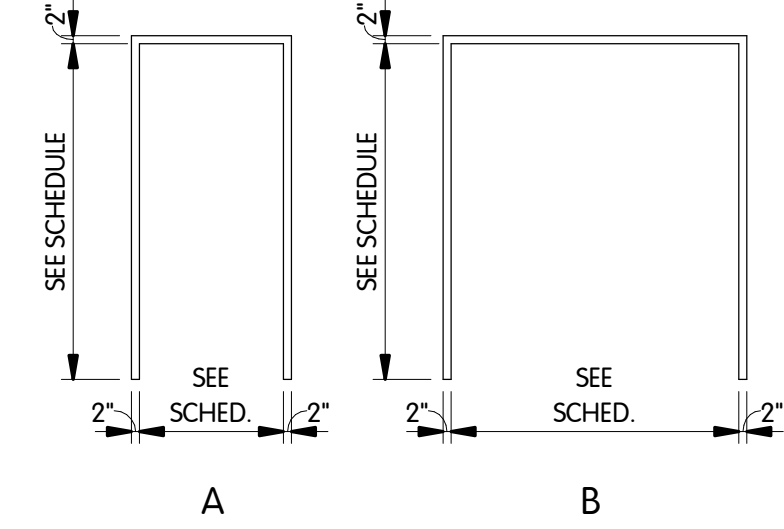
**ARCHITECTURAL ABBREVIATIONS**

ALUM	ALUMINUM
B	BOTTOM
BLDG	BUILDING
C/C	CENTER TO CENTER
CJ	CONTROL JOINT
DIA	DIAMETER
DEG	DEGREES
DIAG	DIAGONAL
ELEV	ELEVATION
EL	EMBEDMENT
EXPJT	EXPANSION JOINT
EXT	EXTERIOR
EXIST	EXISTING
FRB	FIBERGLASS
GALV	GALVANIZED STEEL
HORIZ	HORIZONTAL
INT	INTERIOR
NTS	NOT TO SCALE
O/O	OUT TO OUT
SS	STAINLESS STEEL
STD	STANDARD
T	TOP
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL



**DOOR TYPES**

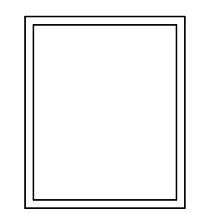
NTS



**DOOR FRAME TYPES**

1/4" = 1'-0"

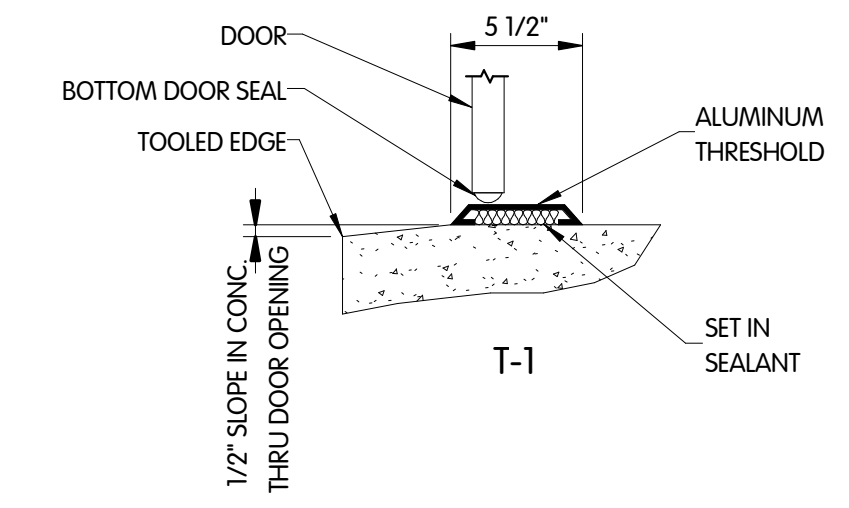
WINDOW SCHEDULE											
TAG / ID	QNTY.	WINDOW		WINDOW TYPE	DESCRIPTION	DETAILS			FRAME MATERIAL	HARDWARE SET	REMARKS
		WIDTH	HEIGHT			HEAD	JAMB	SILL			
PUMP STATION											
W-1-1	1	2' - 0"	2' - 8"	F	FIXED WINDOW	WH-1	WJ-1	WS-1	ALUM		
W-1-2	1	2' - 0"	2' - 8"	F	FIXED WINDOW	WH-1	WJ-1	WS-1	ALUM		
W-1-3	1	2' - 0"	2' - 8"	F	FIXED WINDOW	WH-1	WJ-1	WS-1	ALUM		



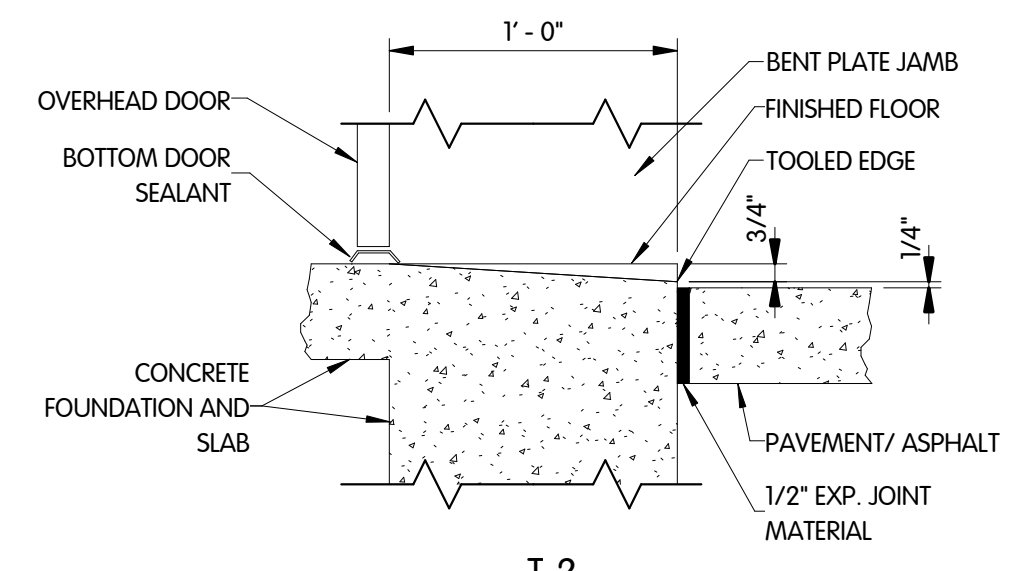
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**WINDOW TYPES**

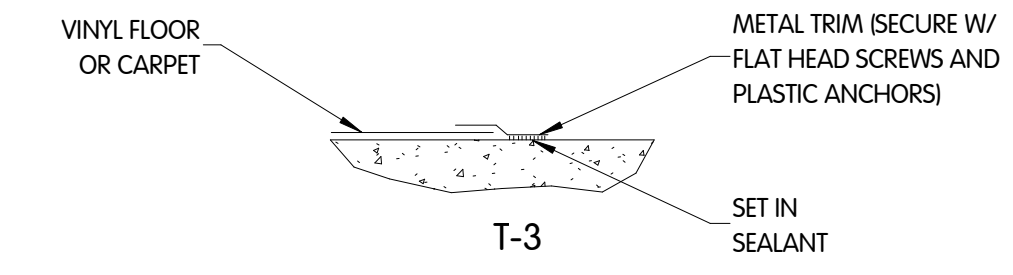
1/4" = 1'-0"



**T-1**



**T-2**



**T-3**

**THRESHOLD TYPES**

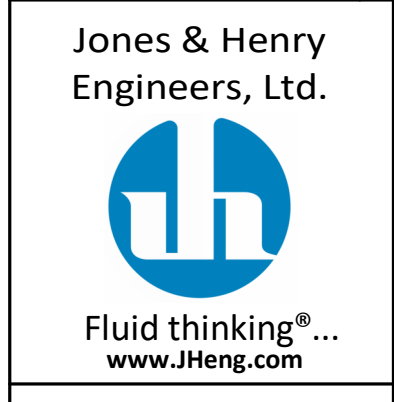
1 1/2" = 1'-0"

**NOTE:**  
SCHEDULES ARE NOT GUARANTEED TO BE COMPLETE. ALL ITEMS SHOWN ON THE DRAWINGS OR SPECIFIED SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR WHETHER OR NOT LISTED IN THE FOLLOWING SCHEDULE.



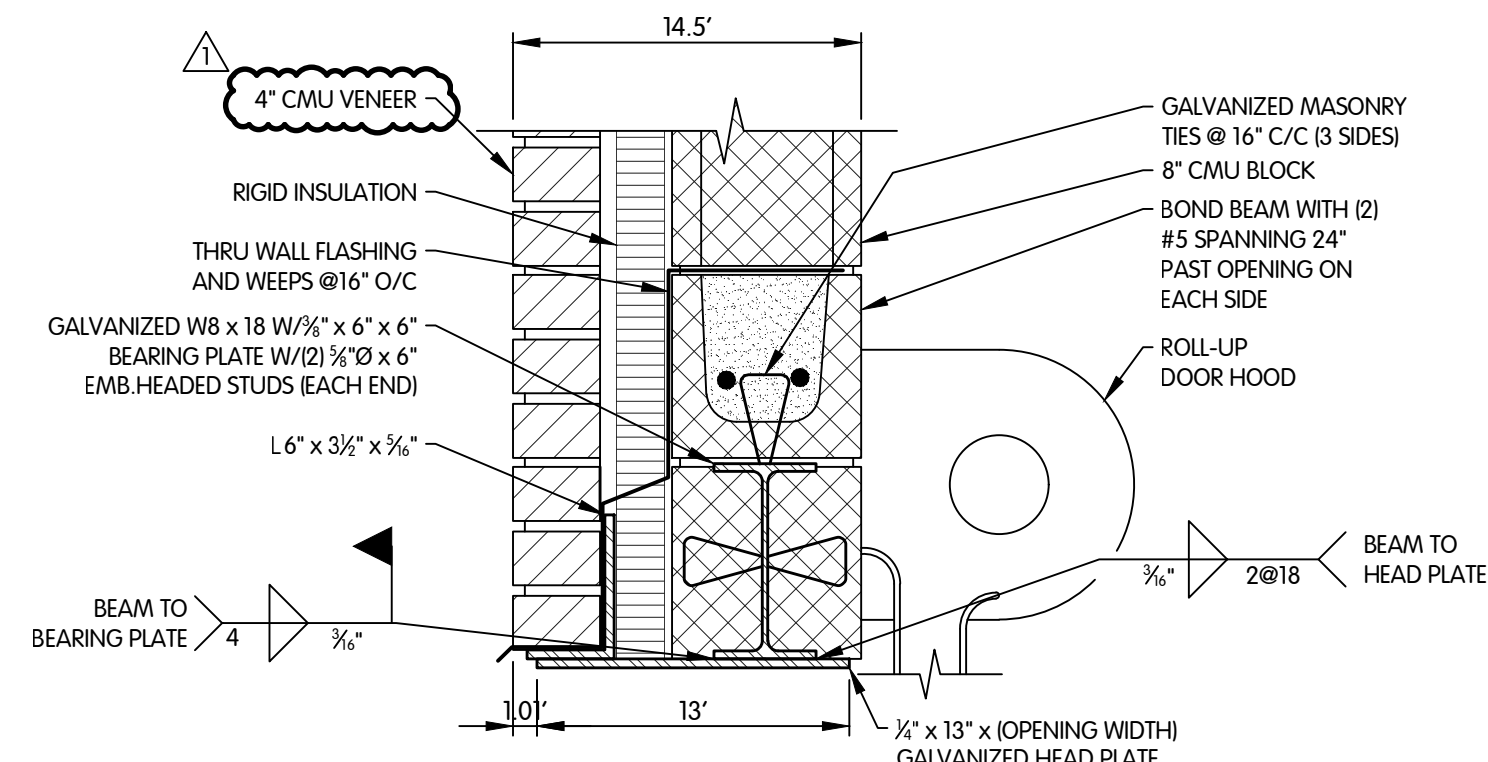
**PUMP BUILDING**  
**ARCHITECTURAL**  
**NOTES, ABBREVIATIONS, SCHEDULES AND DETAILS**  
 WEST GROUND STORAGE TANK BOOSTER PUMP STATION  
 CITY OF CARMEL, INDIANA

JOB NO.	451-7893.001
SCALE	AS INDICATED
DESIGNED	JDM
DRAWN	RGW
CHECKED	JDM
STATUS	ISSUED FOR BID
DATE	SEPTEMBER 2024

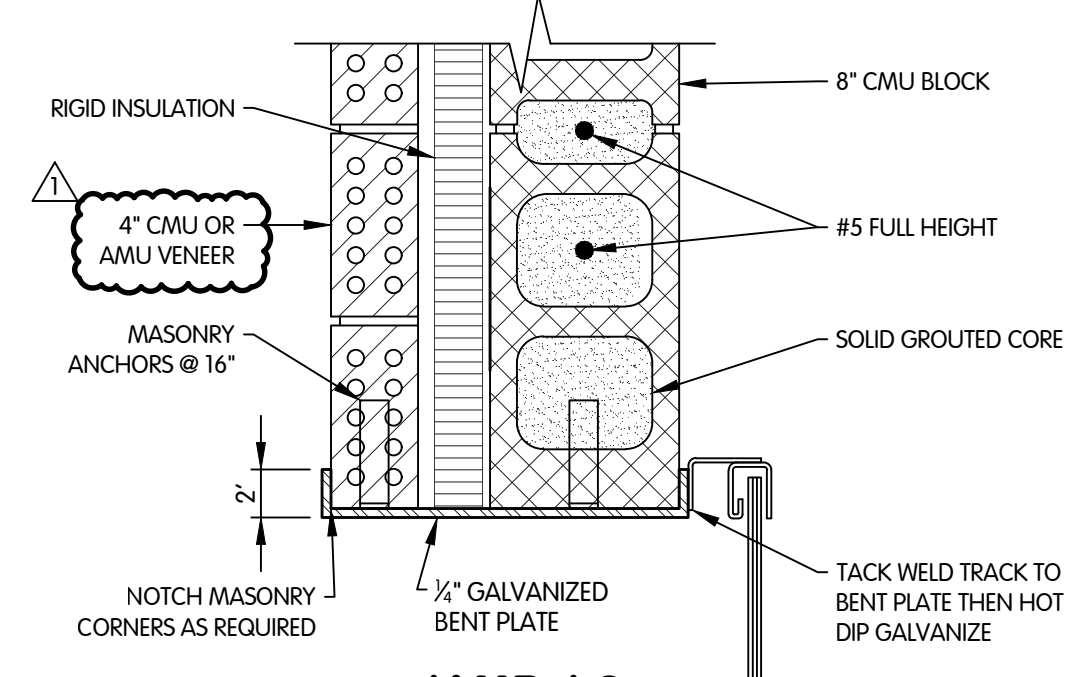


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DRAWN	RGW
CHECKED	JDM
STATUS	ISSUED FOR BID
DATE	SEPTEMBER 2024
SHEET NO.	<b>A-0.1</b>
	11 OF 50

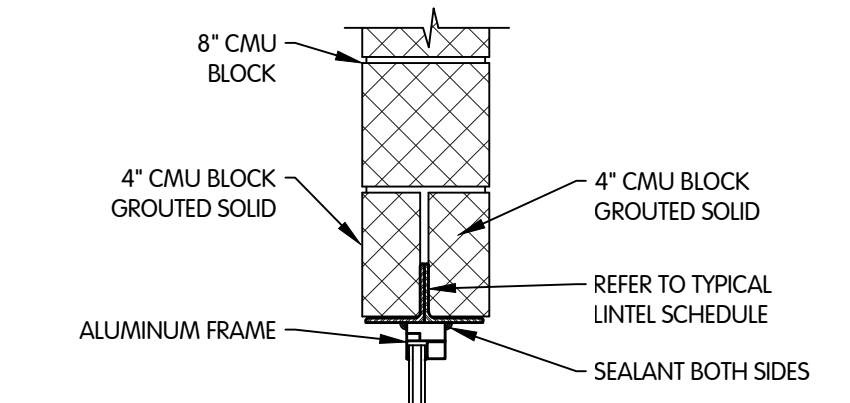




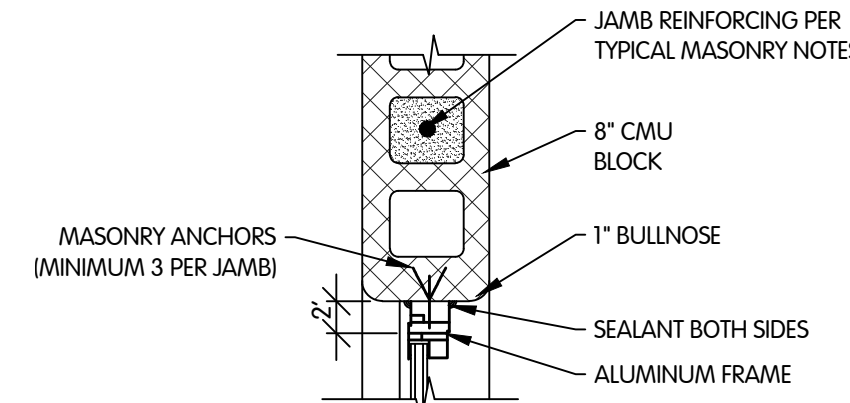
**HEAD H-2**



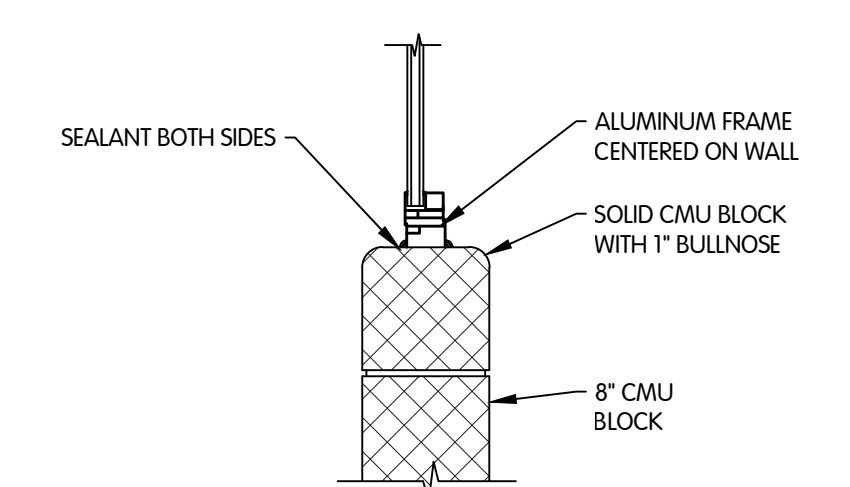
**JAMB J-2**



**HEAD H-1**

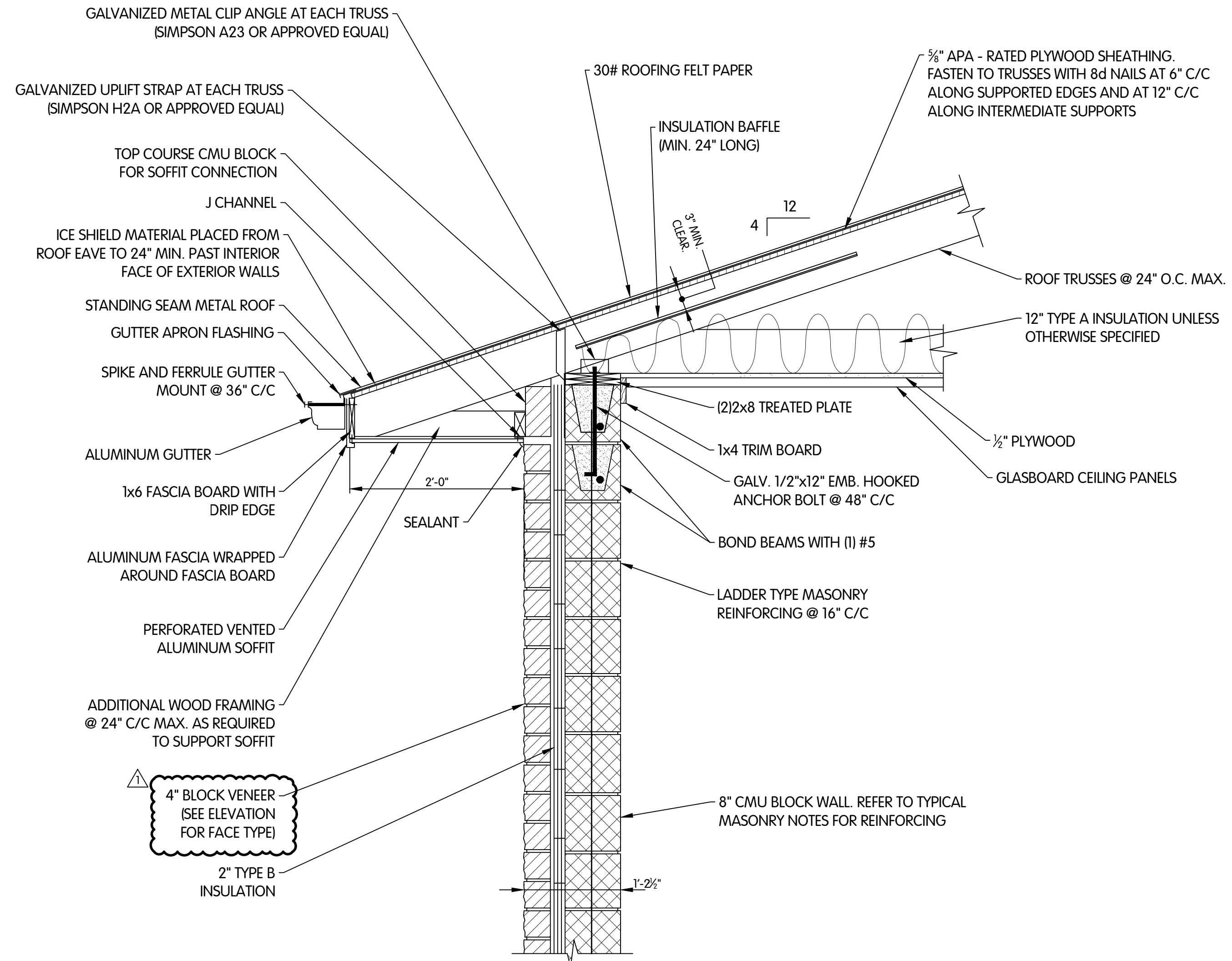


**JAMB J-1**

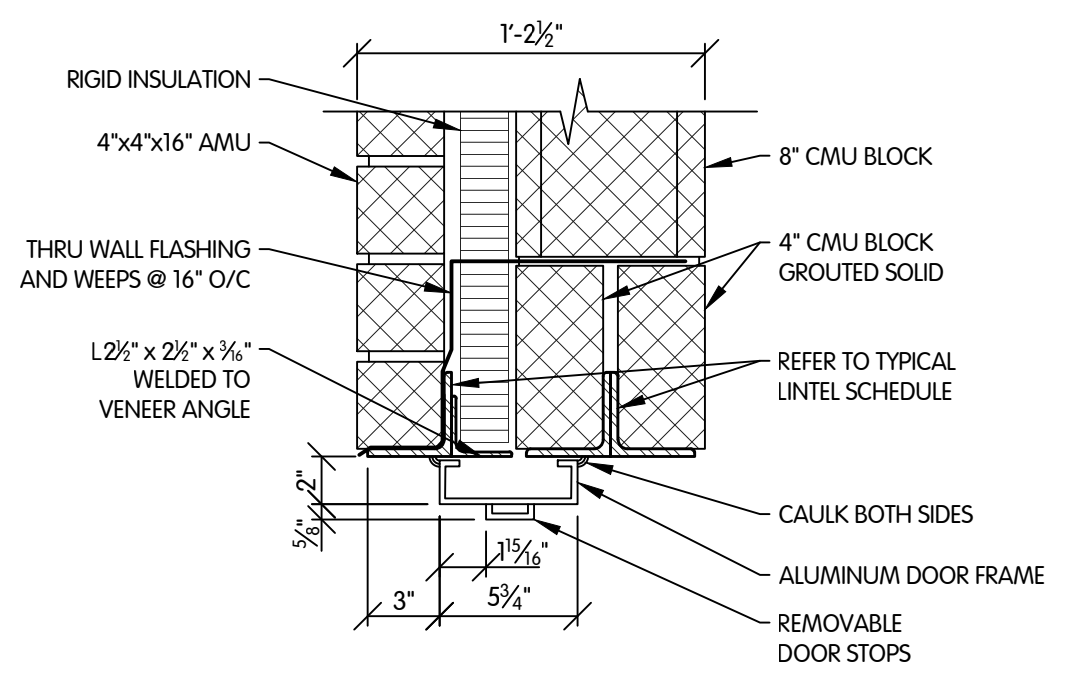


**SILL S-1**

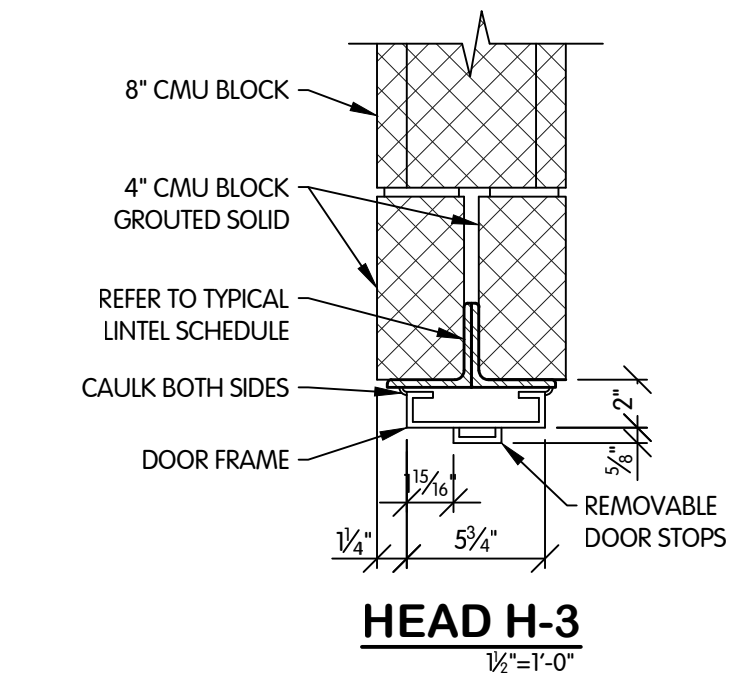
**INTERIOR WINDOW DETAILS**  
1"=1'-0"



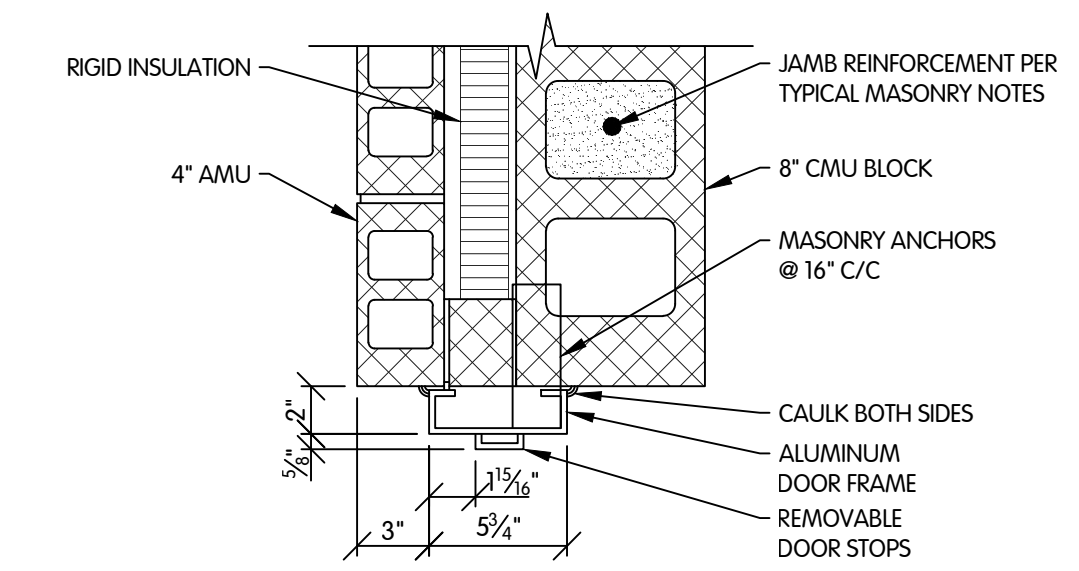
**DETAIL A**  
**S-1.3**  
3/4"=1'-0"



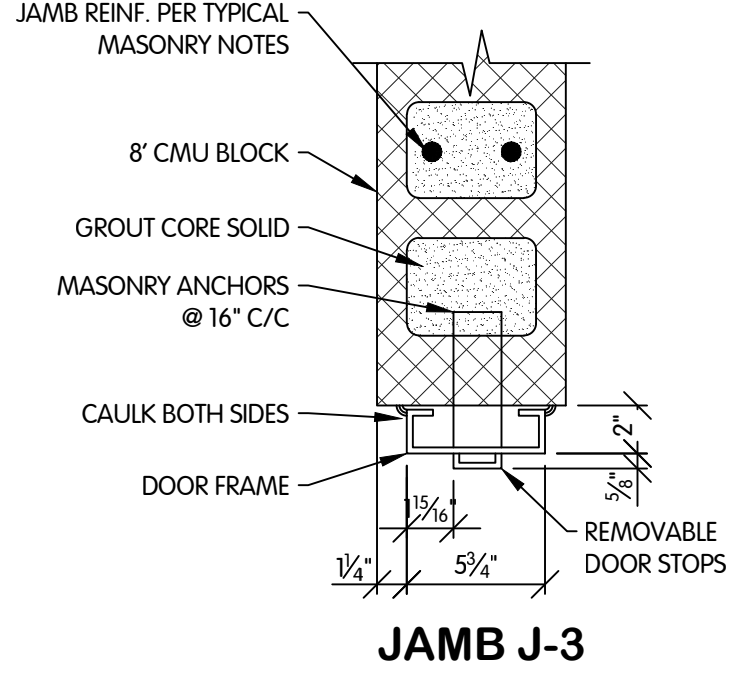
**HEAD H-1**  
1/2"=1'-0"



**HEAD H-3**  
1/2"=1'-0"

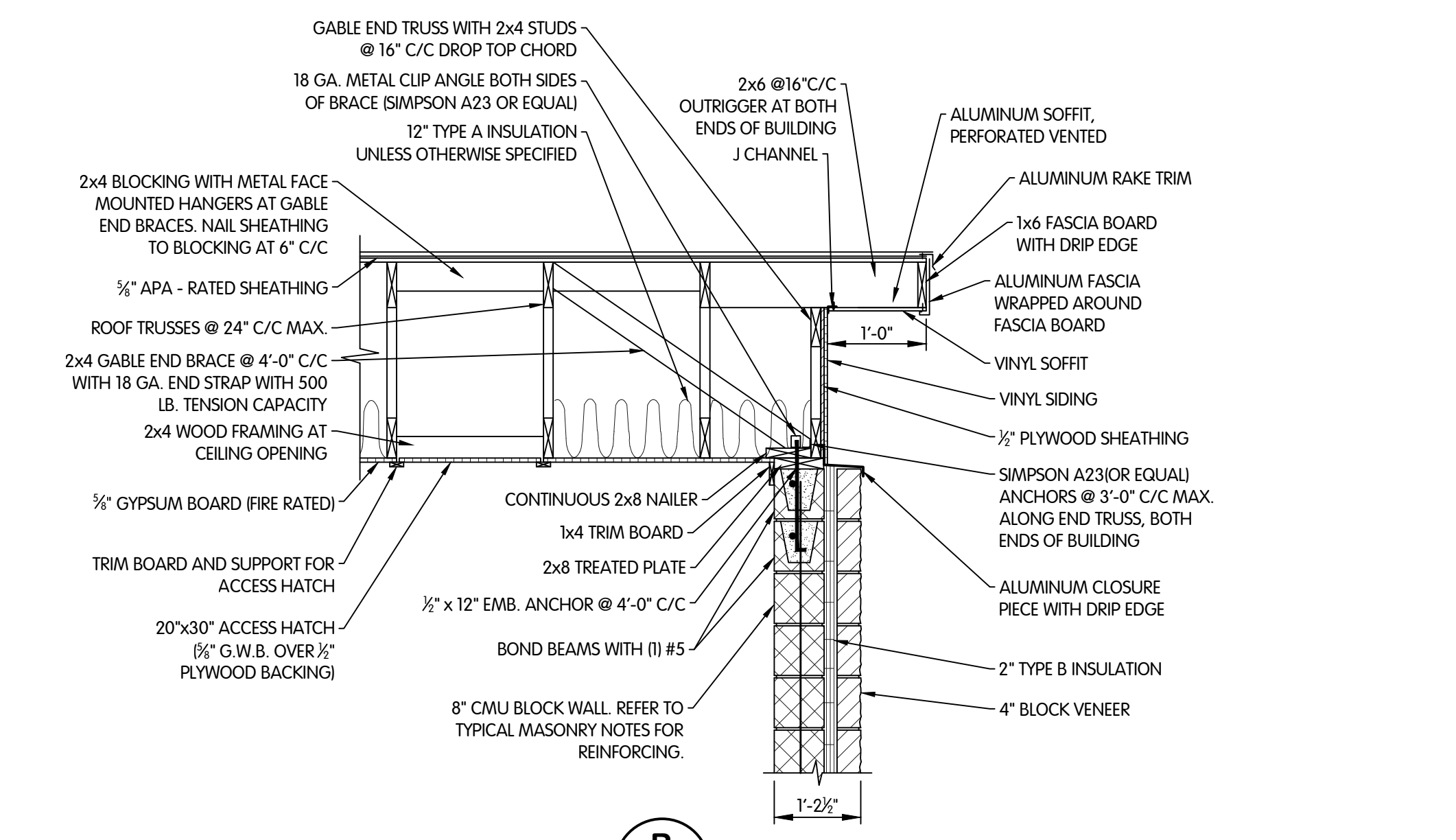


**JAMB J-1**  
1/2"=1'-0"



**JAMB J-3 (INTERIOR DOOR)**  
1/2"=1'-0"

**DOOR HEADER AND JAMB DETAILS**



**DETAIL B**  
**S-1.3**  
3/4"=1'-0"

TOL-789300A02-A-1 DOOR AND WINDOW FRAME  
11/13/2024 3:18 PM - RWORLEY  
11/20/2024 7:49 AM



**PUMP STATION  
ARCHITECTURAL  
DOOR AND WINDOW FRAME DETAILS**  
WEST GROUND STORAGE TANK BOOSTER PUMP STATION  
CITY OF CARMEL, INDIANA

DESIGNED	DRAWN	CHECKED
JDM	LKB	JDM
STATUS	ISSUED FOR BID	
DATE	SEPTEMBER 2024	
SHEET NO.		
A-0.2		
12 OF 50		

Jones & Henry  
Engineers, Ltd.

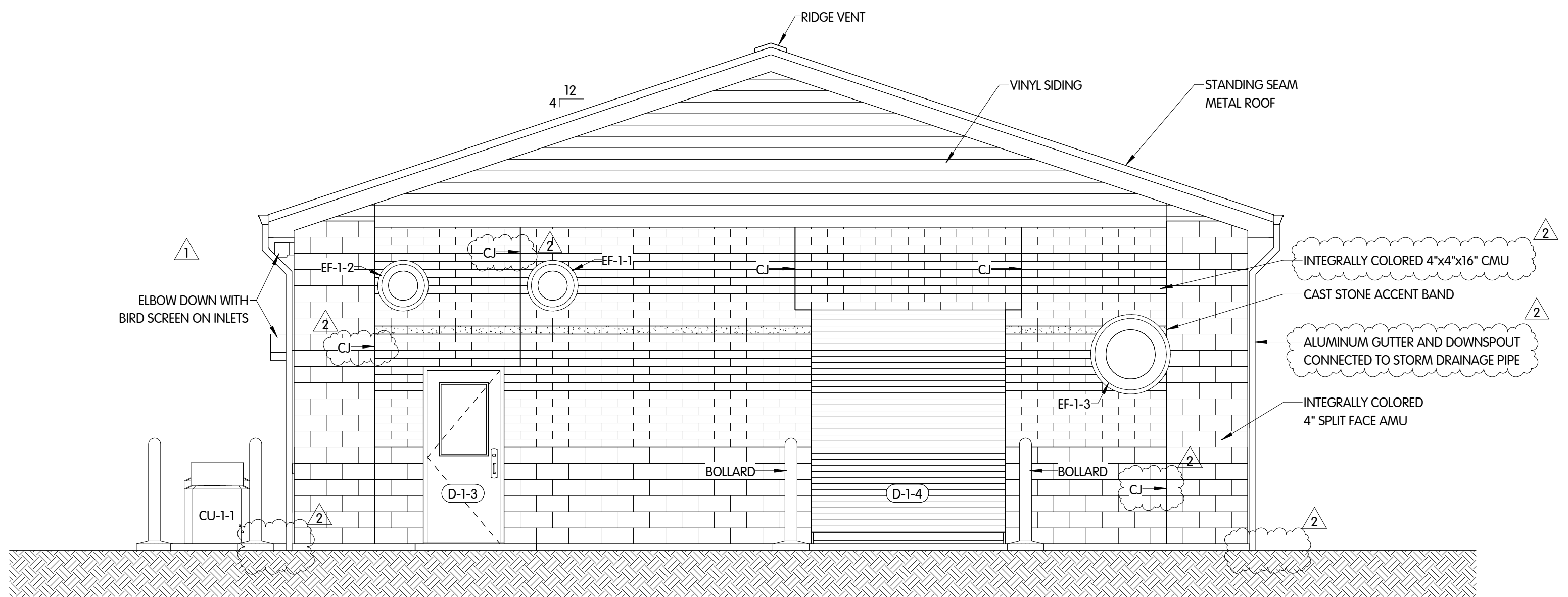
Fluid thinking®  
www.JHeng.com

JOB NO.	451-7893.001	
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THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE		
DESIGNED	DRAWN	CHECKED
JDM	LKB	JDM
STATUS	ISSUED FOR BID	
DATE	SEPTEMBER 2024	
SHEET NO.		
A-0.2		
12 OF 50		

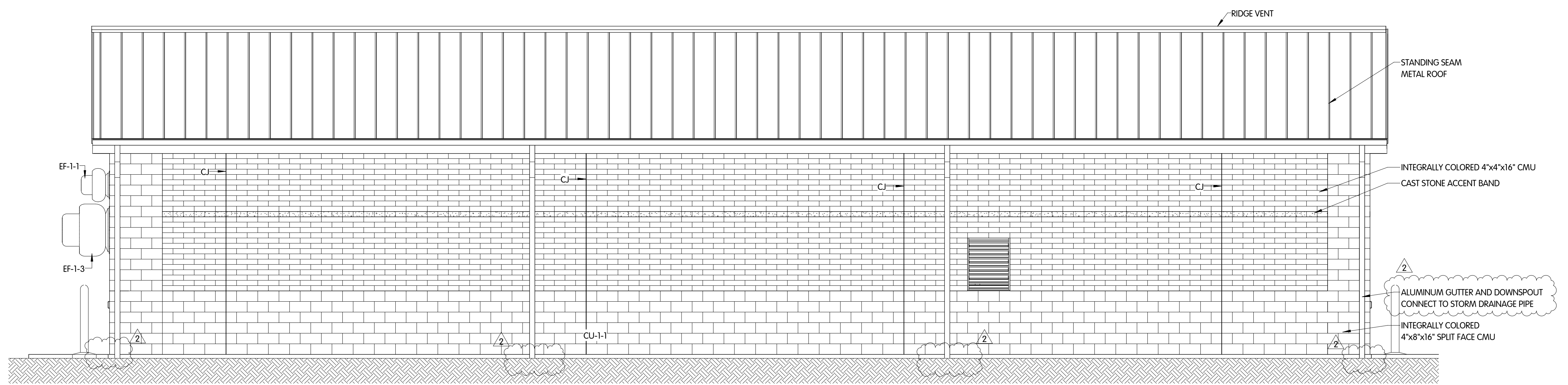


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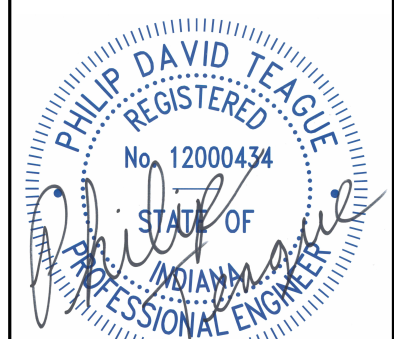
**NOTES:**  
 1. COLORS AND STYLE TO MATCH ADJACENT WATER UTILITY BUILDING. OWNER TO APPROVE COLORS.  
 2. SHEET C-3 SHOWS ALL DOWNSPOUTS CONNECTING TO A BELOW GRADE STORM WATER PIPING LOOP.



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



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



**PUMP BUILDING ARCHITECTURAL ELEVATIONS**  
 WEST GROUND STORAGE TANK BOOSTER PUMP STATION  
 CITY OF CARMEL, INDIANA

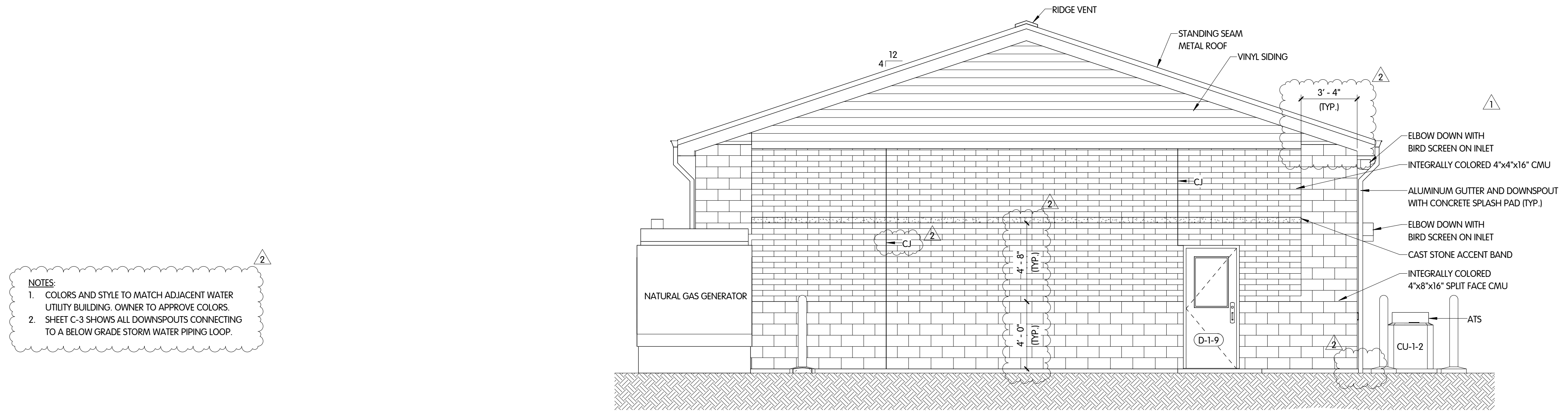
NO.	DATE	DESCRIPTION	BY	CHK
1	11/20/24	ISSUED FOR BID	JDM	JDM
2	11/20/24	REVISIONS AFTER ISSUED FOR BID		

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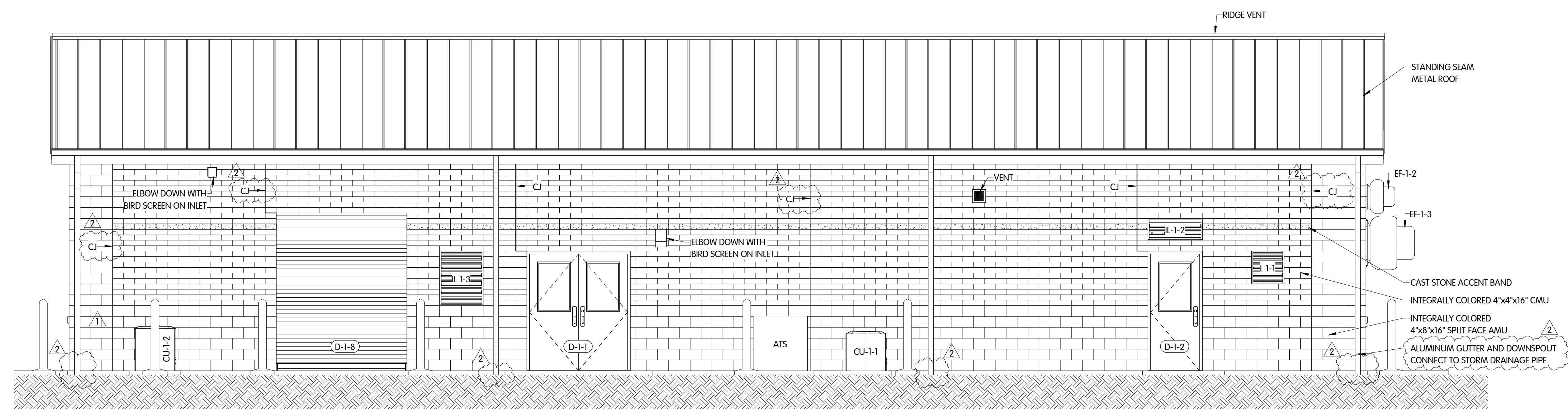
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SCALE:	1/4" = 1'-0"	
THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE		
DESIGNED	DRAWN	CHECKED
JDM	RGW	JDM
STATUS:	ISSUED FOR BID	
DATE:	SEPTEMBER 2024	
SHEET NO.:	<b>A-1.1</b>	
	13 OF 50	



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11/20/2024 7:55:04 AM



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



**EAST ELEVATION**  
1/4" = 1'-0"

**NOTES:**  
1. COLORS AND STYLE TO MATCH ADJACENT WATER UTILITY BUILDING. OWNER TO APPROVE COLORS.  
2. SHEET C-3 SHOWS ALL DOWNSPOUTS CONNECTING TO A BELOW GRADE STORM WATER PIPING LOOP.



**PUMP BUILDING ARCHITECTURAL ELEVATIONS**  
WEST GROUND STORAGE TANK BOOSTER PUMP STATION  
CITY OF CARMEL, INDIANA

NO.	DATE	DESCRIPTION	BY
1	11/20/24	ISSUED FOR BID	JDM
2	11/20/24	ADDENDUM 1	JDM
3	11/20/24	ADDENDUM 2	JDM

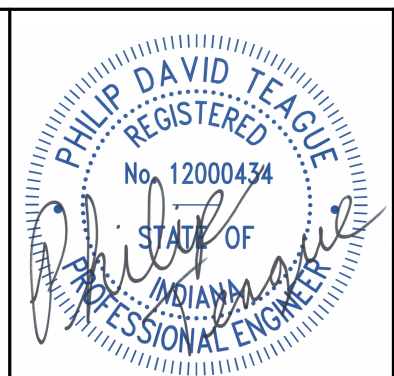
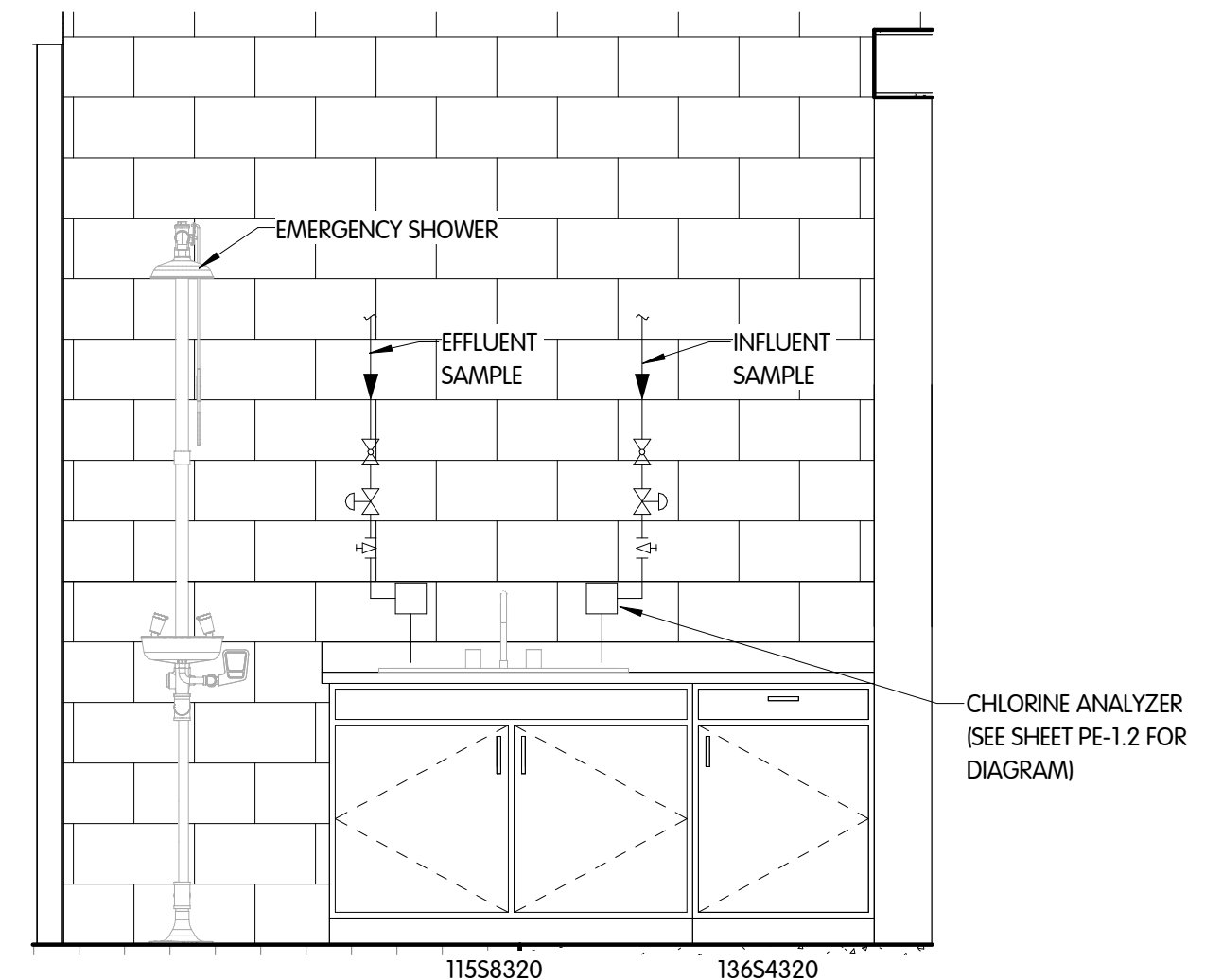
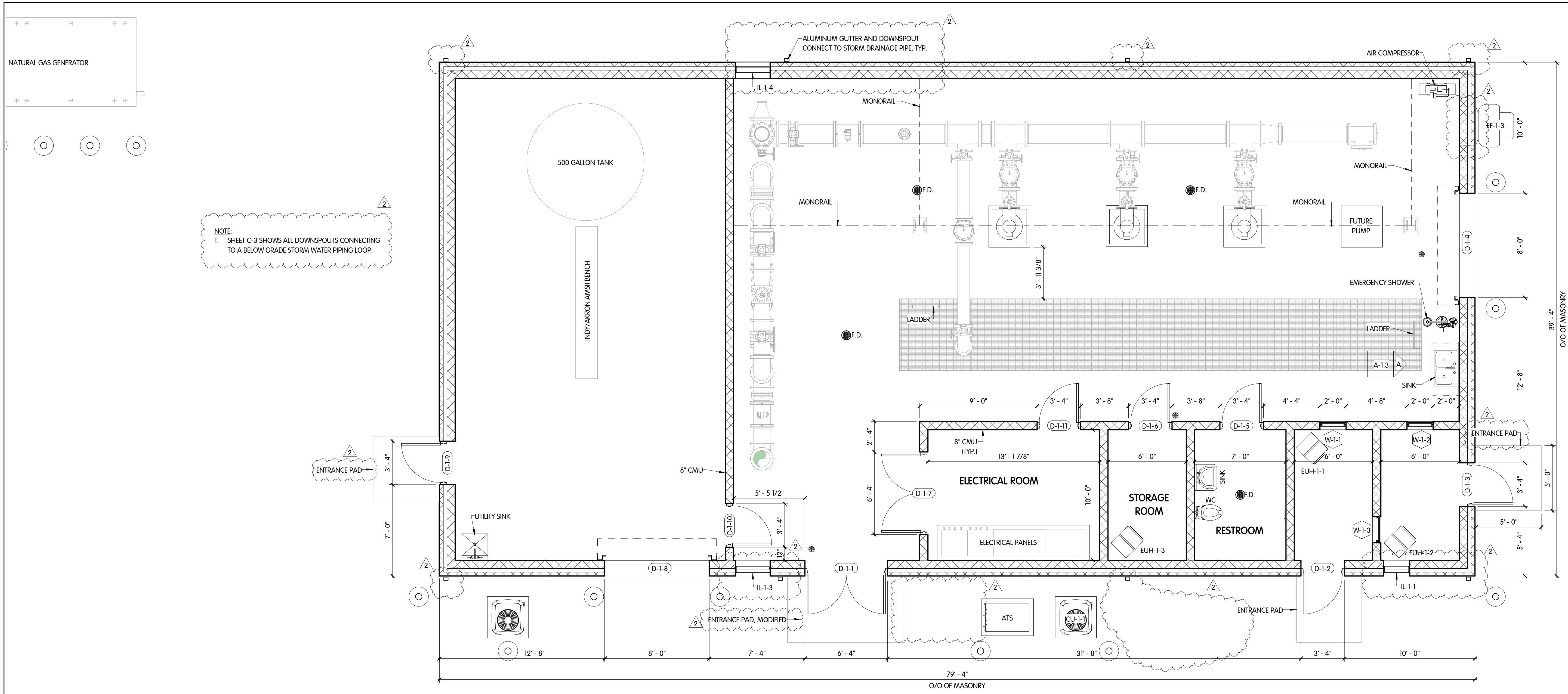
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JOB NO.: 451-7893.001  
SCALE: 1/4" = 1'-0"  
THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE

DESIGNED	DRAWN	CHECKED
JDM	RGW	JDM

STATUS: ISSUED FOR BID  
DATE: SEPTEMBER 2024  
SHEET NO.: **A-1.2**  
14 OF 50

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11/20/2024 7:55:05 AM



**PUMP BUILDING  
ARCHITECTURAL  
PLAN @ EL. 925.50 AND DETAIL**

WEST GROUND STORAGE TANK BOOSTER PUMP STATION  
CITY OF CARMEL, INDIANA

NO.	DATE	ADDENDUM	BY
1			JDM
2	11-13-24		JDM

REVISIONS AFTER ISSUED FOR BID

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JOB NO.: 451-7893.001

SCALE: AS INDICATED

THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE

DESIGNED	DRAWN	CHECKED
JDM	RGW	JDM

STATUS: ISSUED FOR BID

DATE: SEPTEMBER 2024

SHEET NO.:  
**A-1.3**  
15 OF 50



**STRUCTURAL ABBREVIATIONS**

ALUM	ALUMINUM
B	BOTTOM
BLDG	BUILDING
C/C	CENTER TO CENTER
CJ	CONTROL JOINT
CSJ	CONSTRUCTION JOINT
DBR	DOWEL BAR REPLACEMENT
DIA	DIAMETER
DEG	DEGREES
DIAG	DIAGONAL
DL	DEAD LOAD
EL	ELEVATION
EMB	EMBEDMENT
EXPJT	EXPANSION JOINT
EXT	EXTERIOR
EXIST	EXISTING
FRB	FIBERGLASS
FTG	FOOTING
GALV	GALVANIZED
HORIZ	HORIZONTAL
INT	INTERIOR
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
NTS	NOT TO SCALE
O/O	OUT TO OUT
REINF	REINFORCING
SL	SNOW LOAD
SS	STAINLESS STEEL
STD	STANDARD
T	TOP
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
WL	WIND LOAD

**TYPICAL STRUCTURAL NOTES**

- THE CONSTRUCTION SHALL CONFORM TO THE TYPICAL STRUCTURAL NOTES, DETAILS AND SCHEDULES, UNLESS NOTED OTHERWISE. TYPICAL NOTES, DETAILS AND SCHEDULES ARE PREFIXED WITH THE WORD "TYPICAL".
- THE CONTRACTOR SHALL MAINTAIN ADEQUATE SUPERVISION AND CONTROL OF DEWATERING OPERATIONS TO ENSURE THAT STABILITY OF EXCAVATED AND CONSTRUCTED SLOPES ARE NOT ADVERSELY AFFECTED BY INFLOW OF GROUNDWATER AND TO PERMIT PLACEMENT AND CURING OF CONCRETE UNDER CONTROLLED ENVIRONMENTS.
- BACKFILL SHALL NOT BE PLACED AGAINST CONCRETE TANK OR RETAINING WALLS PRIOR TO PLACEMENT OF TOP SLAB AND ADJACENT WALLS, AND SHALL NOT BE BACKFILLED PRIOR TO 28 DAYS AFTER PLACEMENT, UNLESS IT IS DEMONSTRATED THAT FIELD CURED TEST SPECIMENS HAVE REACHED THE CONCRETE DESIGN STRENGTH, OR CONTRACTOR INSTALLS ADEQUATE SHORING. SHORING SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND INSTALLED AT NO EXTRA COST TO THE OWNER.
- BACKFILL UNDERNEATH BASE SLABS AND FOOTINGS SHALL BE SPECIAL BACKFILL, UNLESS OTHERWISE APPROVED. BACKFILL SHALL BE PLACED IN ACCORDANCE WITH THE SPECIFICATION 02200 AND SHALL BE WELL COMPACTED TO NOT LESS THAN 100% MAXIMUM DRY DENSITY IN ACCORDANCE WITH THE STANDARD PROCTOR TEST ASTM D-698.
- VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS AND CONDITIONS AT THE INTERFACE BETWEEN EXISTING & NEW CONSTRUCTION PRIOR TO DETAILING STRUCTURAL STEEL OR REINFORCEMENT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES FOR RESOLUTION.
- THE CONTRACTOR SHALL ENSURE THAT FOUNDATIONS REST ON FIRM SOIL MATERIAL. THE TESTING LAB SHALL VERIFY THAT THE SOIL BEARING CAPACITY LISTED BY THE "STRUCTURAL DESIGN DATA" TABLE IS OBTAINED PRIOR TO FOUNDATION PLACEMENT. THE BEARING CAPACITY VERIFICATION IS REQUIRED AT REGULAR INTERVALS IN EACH DIRECTION. NOTIFY THE ENGINEER OF ANY UNSUITABLE SOIL ENCOUNTERED. SUCH SOIL SHALL BE REMOVED AND REPLACED PER SPECIFICATION 02200.
- DURING EXCAVATION OPERATIONS THE CONTRACTOR SHALL PREVENT THE UNDERMINING OF, AND DAMAGE TO, NEARBY NEW AND EXISTING STRUCTURES, AND UTILITIES, WITH SOIL SUPPORT METHOD SUCH AS SHEET PILING, SHAFT CONSTRUCTION, SOIL NAILING, UNDERPINNING, SOLIDER PILE & LAGGING, OR OTHER SOIL SUPPORT METHODS. THE NEARBY STRUCTURES SHALL BE MONITORED FOR SETTLEMENT WHILE THE EXCAVATION REMAINS OPEN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF SOIL SUPPORT AND UNDERPINNING METHODS. WHEN SHEET PILING OR OTHER SOIL SUPPORT STRUCTURES RETAIN MORE THAN 20 FEET OF SOIL, THE CONTRACTOR SHALL EMPLOY A PROFESSIONAL ENGINEER TO DESIGN THE SUPPORT. THE CONTRACTOR'S EMPLOYED ENGINEER SHALL SUBMIT SEALED CALCULATIONS AND DRAWINGS TO THE ENGINEER OF RECORD.
- WHEN TEMPORARY SOIL SUPPORT STRUCTURES ARE SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND SHALL EMPLOY A PROFESSIONAL ENGINEER TO DESIGN THE SUPPORT. THE TEMPORARY SUPPORT SHALL BE SHEET PILING OR OTHER TYPE OF SUPPORT STRUCTURE, AS REQUIRED TO SAFELY SUPPORT THE SOIL WHILE ACCOMMODATING THE FACILITY'S CONSTRUCTION. THE NEARBY STRUCTURES SHALL BE MONITORED FOR SETTLEMENT UNTIL THE FOUNDATION IS CONSTRUCTED AND BACKFILLED, AND THE SOIL SUPPORT IS REMOVED. THE CONTRACTOR'S EMPLOYED ENGINEER SHALL SUBMIT SEALED CALCULATIONS AND DRAWINGS TO THE ENGINEER OF RECORD.

**STRUCTURAL DESIGN DATA**

BUILDING CODE	2014 INDIANA BUILDING CODE	
RISK CATEGORY		= III
USE GROUP		= F-1
CONSTRUCTION TYPE		= 5-B
FLOOR	LIVE LOAD, UNLESS OTHERWISE NOTED	= 250 PSF
FLAT ROOF	LIVE LOAD MECHANICAL & ELECTRICAL	= 20 PSF (MIN.) = 10 PSF
TRUSS ROOF	TOP CHORD LIVE LOAD TOP CHORD DEAD LOAD BOTTOM CHORD LIVE LOAD BOTTOM CHORD DEAD LOAD	= 20 PSF (MIN.) = 15 PSF = 10 PSF = 5 PSF
SNOW	GROUND SNOW LOAD FLAT ROOF SNOW EXPOSURE FACTOR SNOW LOAD IMPORTANCE FACTOR THERMAL FACTOR	= P <sub>0</sub> = 20 PSF = P <sub>f</sub> = 22 PSF = C <sub>e</sub> = 1.0 = I <sub>s</sub> = 1.1 = C <sub>t</sub> = 1.0
WIND	BASIC WIND SPEED WIND EXPOSURE	= 120 MPH = C
SEISMIC	SEISMIC IMPORTANCE FACTOR SITE CLASS SEISMIC DESIGN CATEGORY DESIGN SPECTRAL RESPONSE ACCELERATIONS ANALYSIS PROCEDURE	= I <sub>E</sub> = 1.25 = D = B = S <sub>05</sub> = 0.178 = S <sub>01</sub> = 0.130 = EQUIVALENT LATERAL FORCE
GRATING	LIVE LOAD, UNLESS OTHERWISE NOTED	= 100 PSF
SOILS	NET DESIGN BEARING CAPACITY	= 2500 PSF
CONCRETE	DESIGN STRENGTH AT 28 DAY	= 4500 PSI
FLOOD	100 YEAR ELEVATION	= 741.00
DATUM		NAVD 1988

**PIPE PENETRATION SCHEDULE**

TAG/ID	SIZE	TYPE	CL PIPE EL (UNO)	CONNECTION	USE
PUMP STATION					
PP-1	16"	TYPE A	CL. EL. 907.00	MJ X FL	CW
PP-2	16"	TYPE A	CL. EL. 907.00	MJ X FL	CW
PP-3	16"	TYPE A	CL. EL. 907.00	MJ X FL	CW
PP-4	16"	TYPE A	CL. EL. 907.00	MJ X FL	CW
PP-5	24"	TYPE A	CL. EL. 907.00	MJ X FL	CW
PP-6	16"	TYPE D	---	N/A	CW
PP-7	14"	TYPE D	---	N/A	CW

**NOTE:**  
SCHEDULES ARE NOT GUARANTEED TO BE COMPLETE. ALL ITEMS SHOWN ON THE DRAWINGS OR SPECIFIED SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR WHETHER OR NOT LISTED IN THE FOLLOWING SCHEDULE.



**PUMP BUILDING  
STRUCTURAL  
SCHEDULES AND DETAILS**  
 WEST GROUND STORAGE TANK BOOSTER PUMP STATION  
 CITY OF CARMEL, INDIANA

NO.	DATE	REVISIONS AFTER ISSUED FOR BID	BY

**Jones & Henry  
Engineers, Ltd.**

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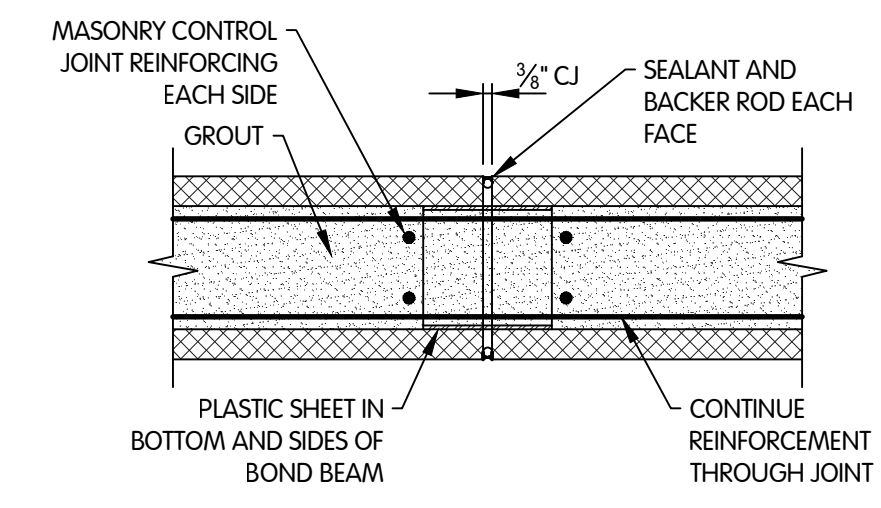
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DATE:	SEPTEMBER 2024	
SHEET NO.:	S-0.1	
16	OF	50

**TYPICAL MASONRY LINTEL SCHEDULE FOR 4", 8" & 12" UNITS**

MASONRY OPENING	ANGLE SIZE	BEARING EACH END
LESS THAN 4'-0"	L 3/8" x 3/8" x 3/8"	4"
4'-0" TO 6'-6"	L 5/8" x 3/8" x 3/8"	6"
6'-6" TO 8'-6"	L 6/8" x 3/8" x 3/8"	8"

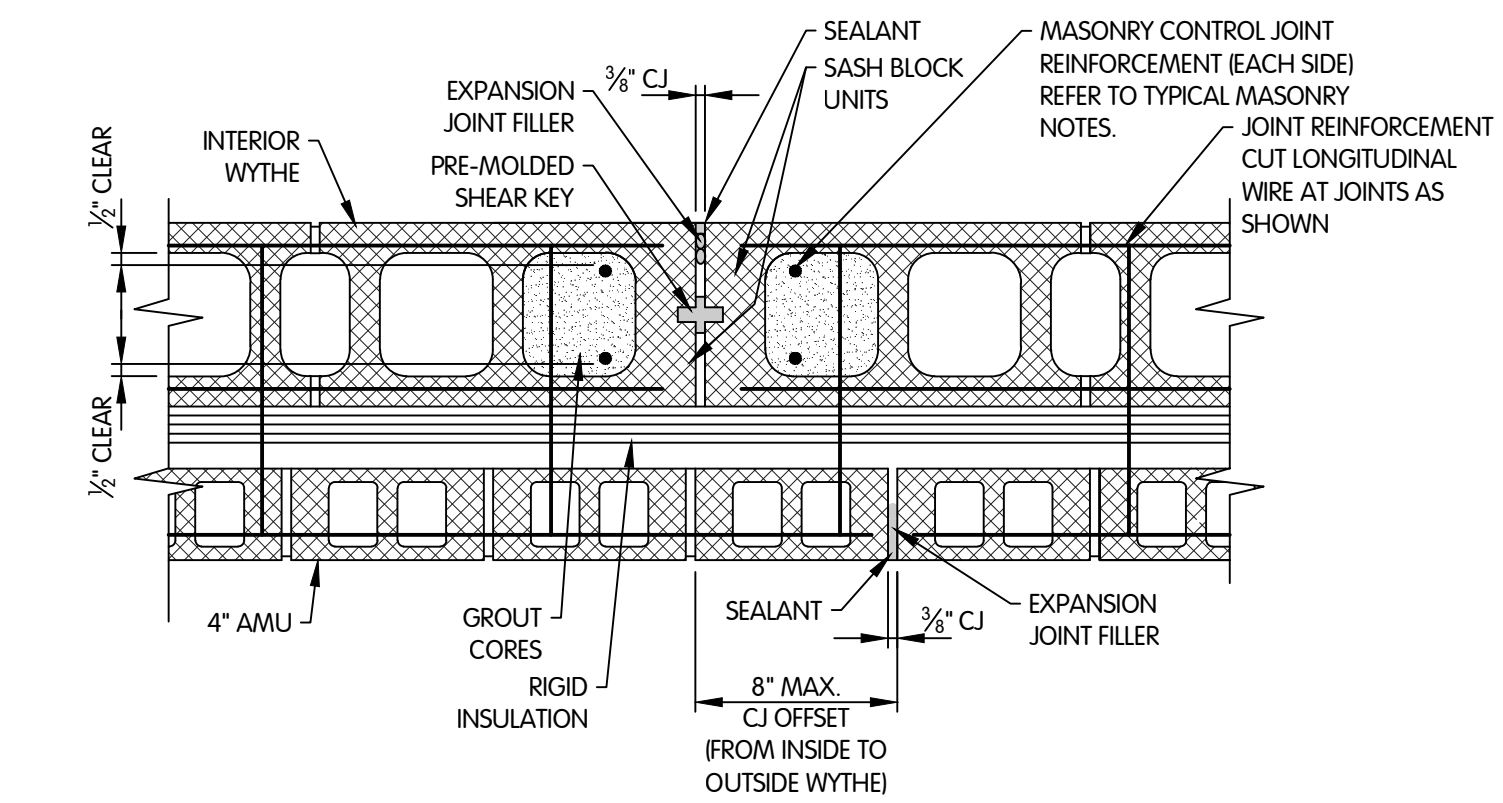
- NOTES:**
- USE THIS SCHEDULE FOR MASONRY OPENING LINTELS, UNLESS NOTED OTHERWISE.
  - UNTELS SHALL HAVE AN ANGLE FOR EACH FOUR INCHES OF WALL THICKNESS. PLACE EVERY TWO ANGLES BACK TO BACK AND WELD TOGETHER.
  - ALL EXTERIOR WALL LINTELS SHALL BE GALVANIZED, PRIMED AND PAINTED. ALL INTERIOR WALL LINTELS SHALL BE PRIMED AND PAINTED.

- STANDARD MASONRY NOTES:**
- MASONRY BLOCK WALLS SHALL BE VERTICALLY REINFORCED WITH #5@48" C/C.
  - ALL WALL CORNERS, ENDS, CONTROL JOINTS AND JAMBS OF OPENINGS GREATER THAN 2'-10" SHALL BE REINFORCED VERTICALLY FOR FULL HEIGHT OF FLOOR AS FOLLOWS: 8" WALLS SHALL BE REINFORCED WITH (1) #5, 12" WALLS SHALL BE REINFORCED WITH (2) #5.
  - ALL VERTICAL WALL REINFORCEMENT SHALL SPAN FROM FOOTING TO PARAPET IN SOLID GROUTED CELLS, WITH 48 BAR DIAMETER LAPS. DOWEL WALLS TO FOOTING WITH MATCHING REINFORCEMENT, UNLESS NOTED OTHERWISE. STRAIGHT DOWELS SHALL BE EMBEDDED 36 BAR DIAMETERS AND HOOKED DOWELS SHALL BE EMBEDDED 12 BAR DIAMETERS.
  - MASONRY BLOCK WALLS SHALL BE HORIZONTALLY REINFORCED AS SHOWN BY SECTIONS AND WITH 9 GAGE, LADDER TYPE, JOINT REINFORCING AT 16" C/C. PROVIDE CORNER BARS AT HORIZONTAL REINFORCEMENT WITH 48 BAR DIA. LAPS. RUN ROOF BEARING ELEVATION AND TOP OF WALL BOND BEAM REINFORCING THROUGH MASONRY CONTROL JOINTS, UNLESS NOTED OTHERWISE.
  - ALL MASONRY WALL OPENINGS GREATER THAN 12" REQUIRE A LINTEL. REFER TO MECHANICAL DRAWINGS FOR MECHANICAL OPENINGS. PROVIDE WINDOW LINTEL HEAD H-5, JAMB J-5 AND SILL S-5 FOR MECHANICAL OPENINGS.
  - VERTICAL MASONRY CONTROL JOINTS SHALL BE SPACED @ 20'-0" ON CENTER, MAXIMUM. THE JOINT SPACING SHALL INCLUDE THE DISTANCE MEASURED AROUND BUILDING CORNERS TO THE NEXT JOINT.

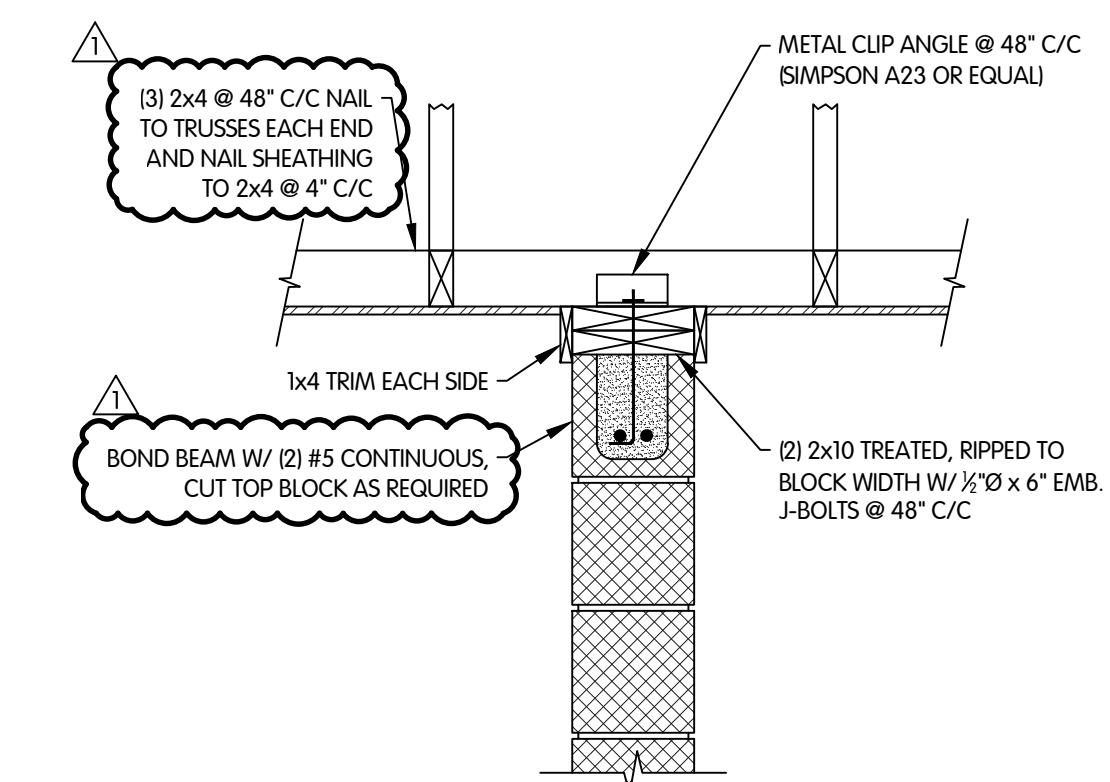


**NOTE:**  
1. THIS DETAIL ONLY APPLIES TO BOND BEAMS AT ROOF BEARING AND TOP OF WALL ELEVATIONS. REFER TO OTHER TYPICAL WALL CONTROL JOINT DETAILS FOR BOND BEAMS AT OTHER ELEVATIONS.

**TYPICAL ROOF BEARING AND TOP OF WALL BOND BEAM CONTROL JOINT DETAIL**  
1/2" = 1'-0"



**TYPICAL WALL CONTROL JOINT (CJ)**  
CAVITY WALL CONSTRUCTION  
1/2" = 1'-0"



**TYPICAL WALL CONNECTION TO PARALLEL TRUSSES DETAIL**

**MASONRY WALL DETAILS**  
NTS



**STRUCTURAL MASONRY NOTES AND DETAILS**  
**WEST GROUND STORAGE TANK BOOSTER PUMP STATION**  
**CITY OF CARMEL, INDIANA**

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5	ADDENDUM 4

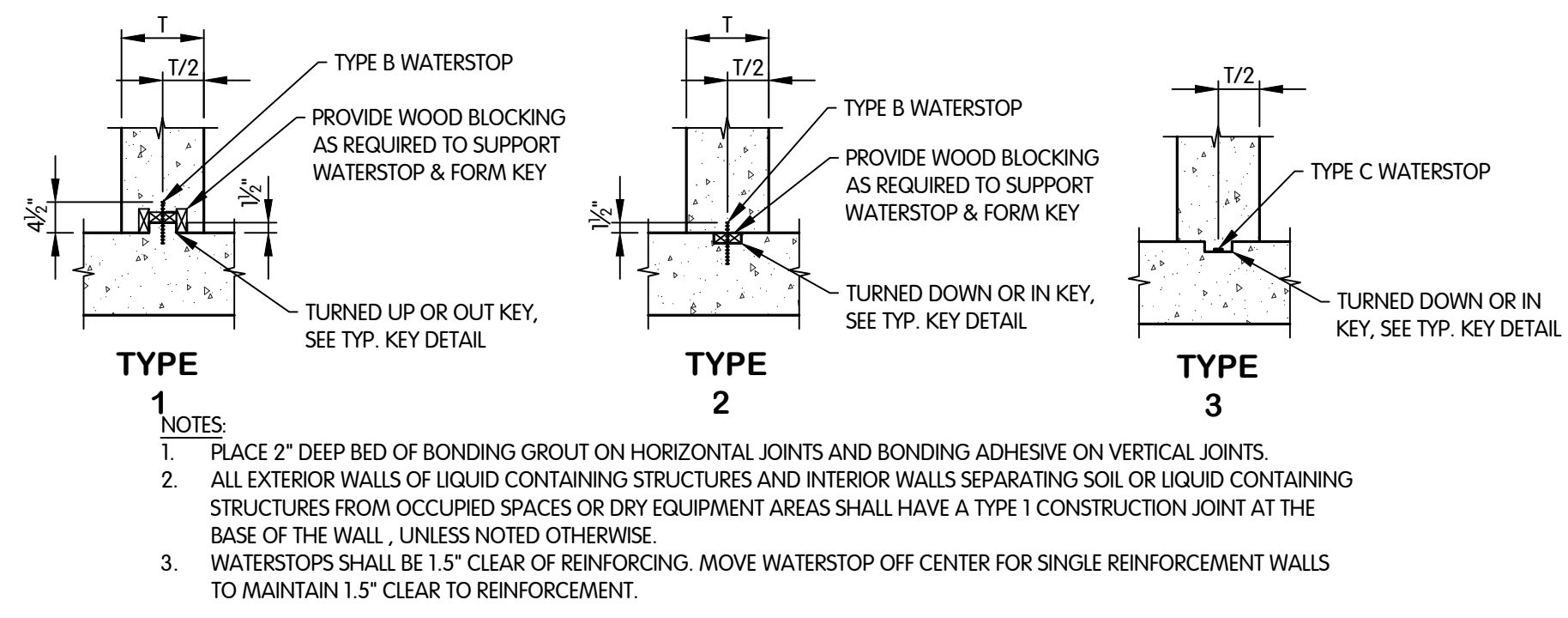
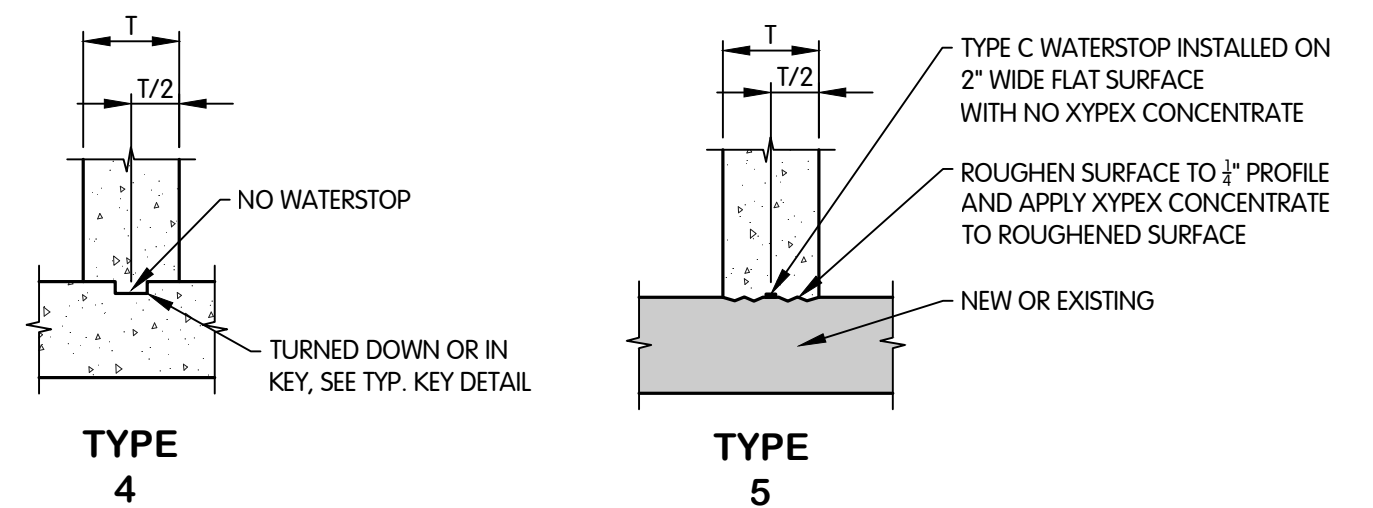
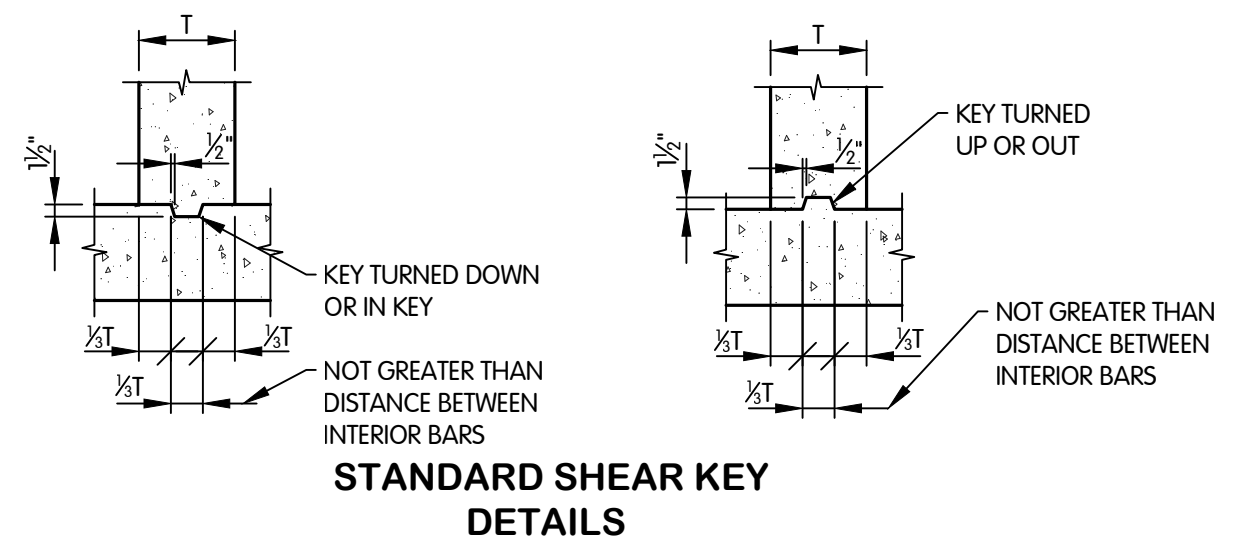
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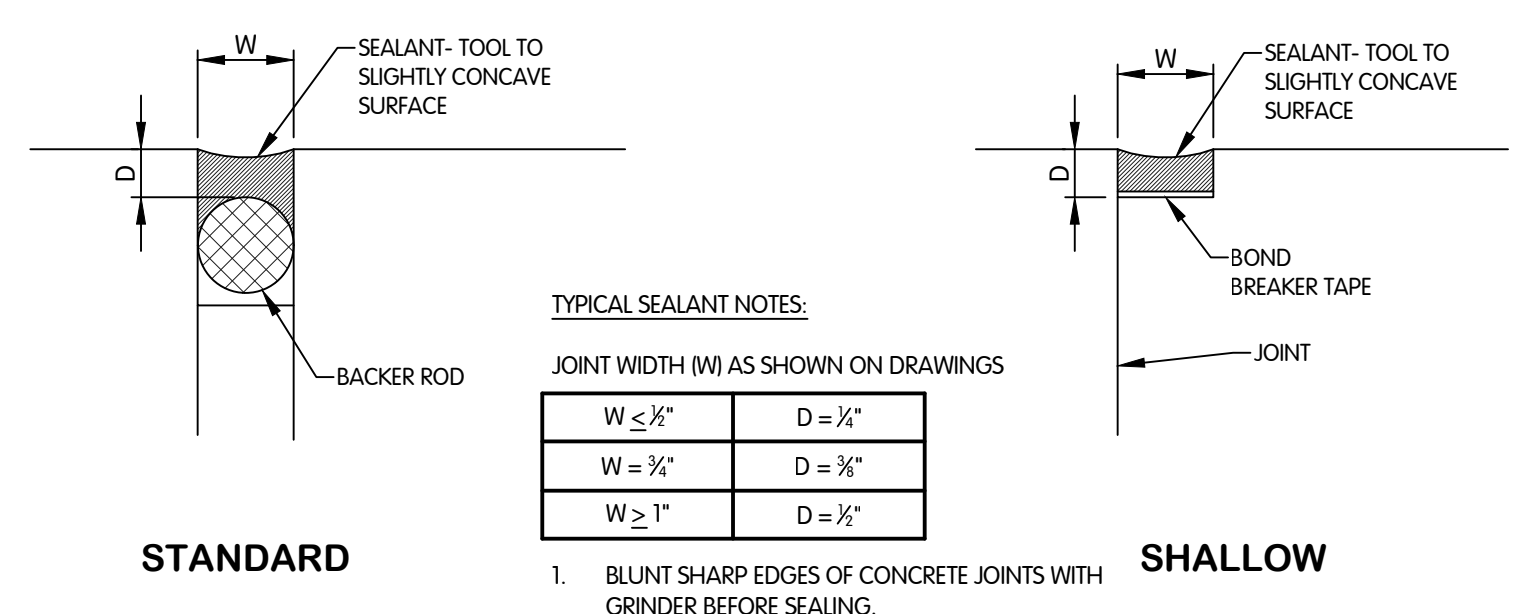
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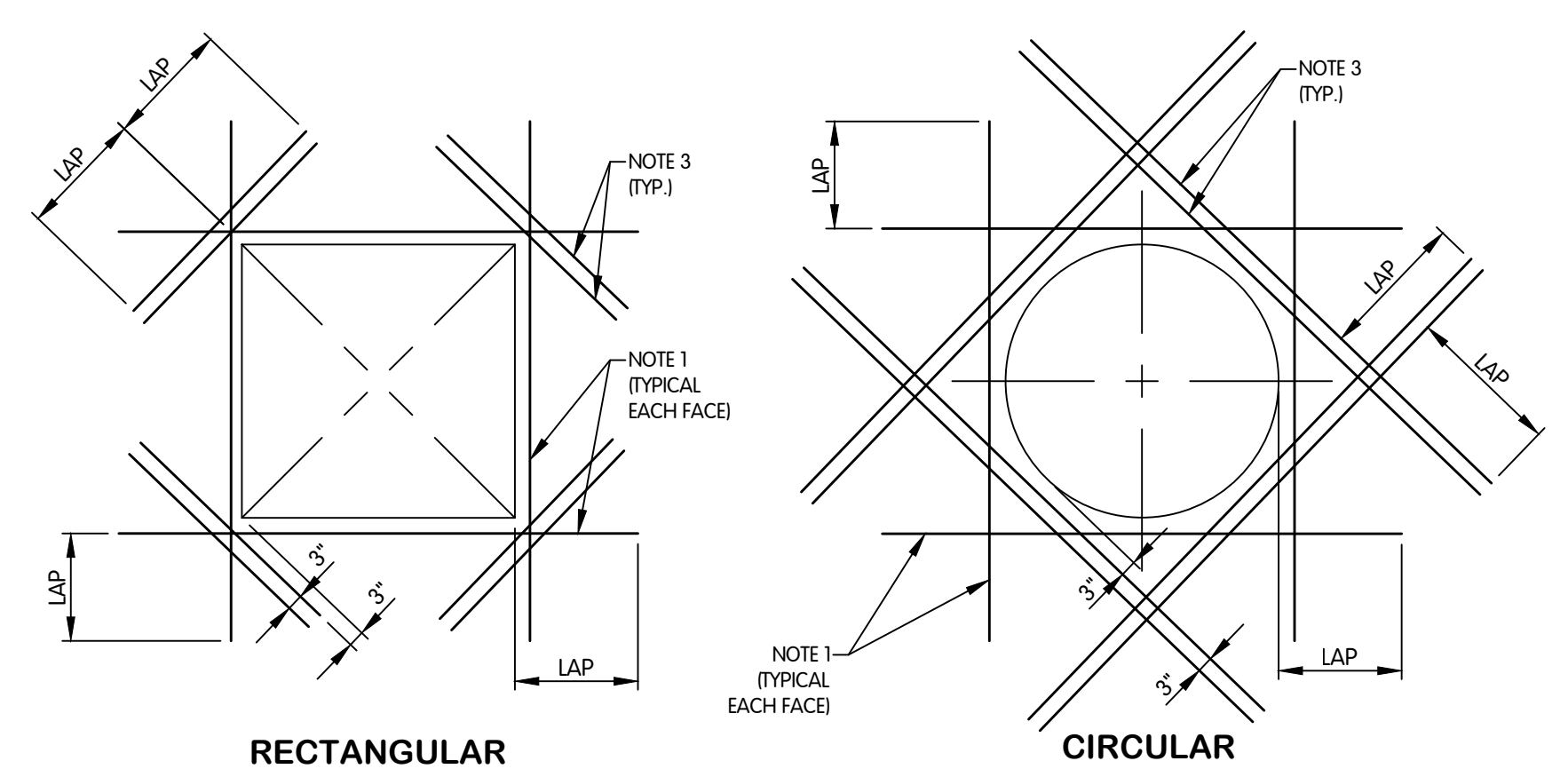




**STANDARD CONCRETE WALL CONSTRUCTION JOINT DETAILS (CSJ)**  
NTS

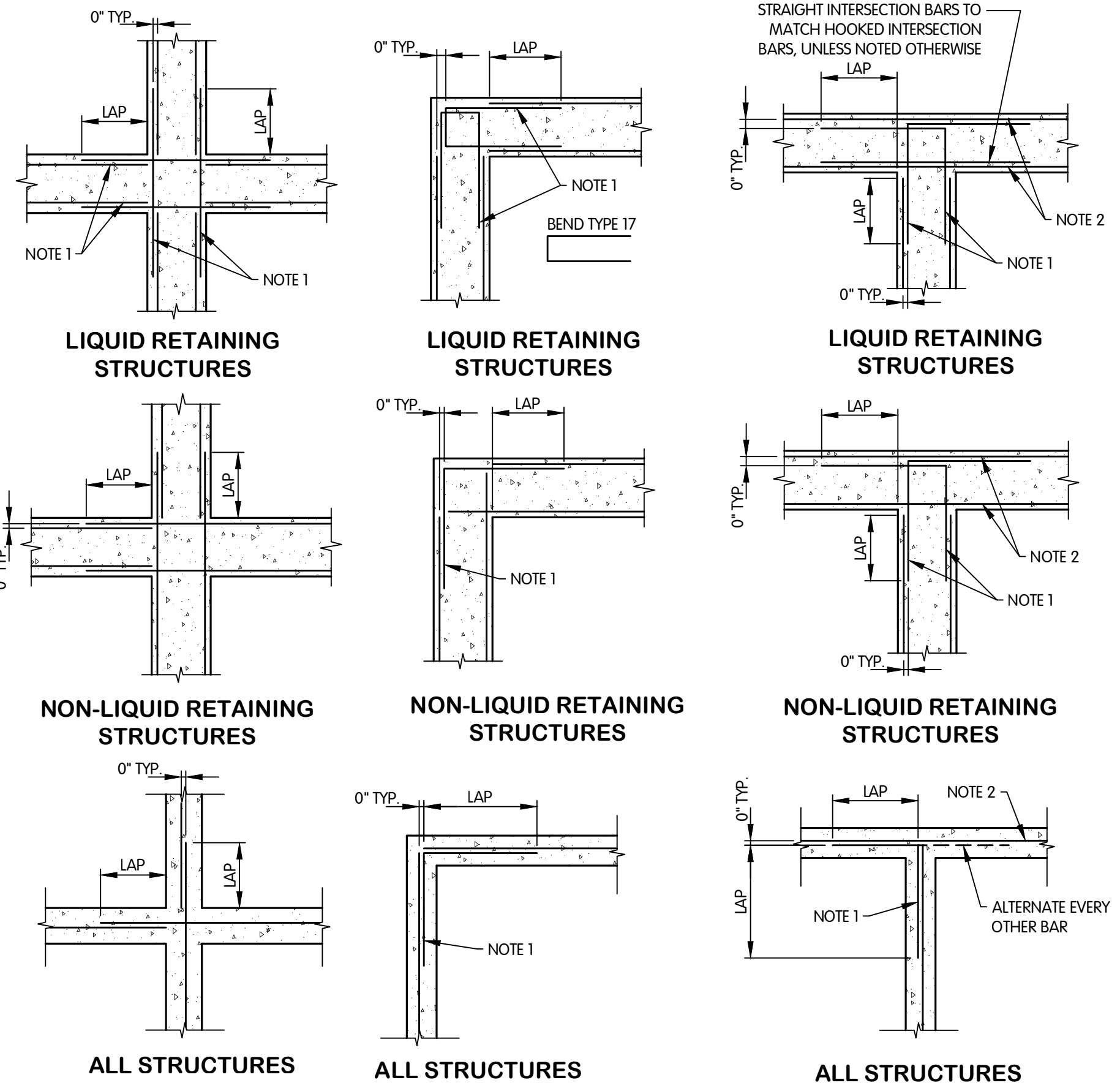


**TYPICAL SEALANT DETAILS**  
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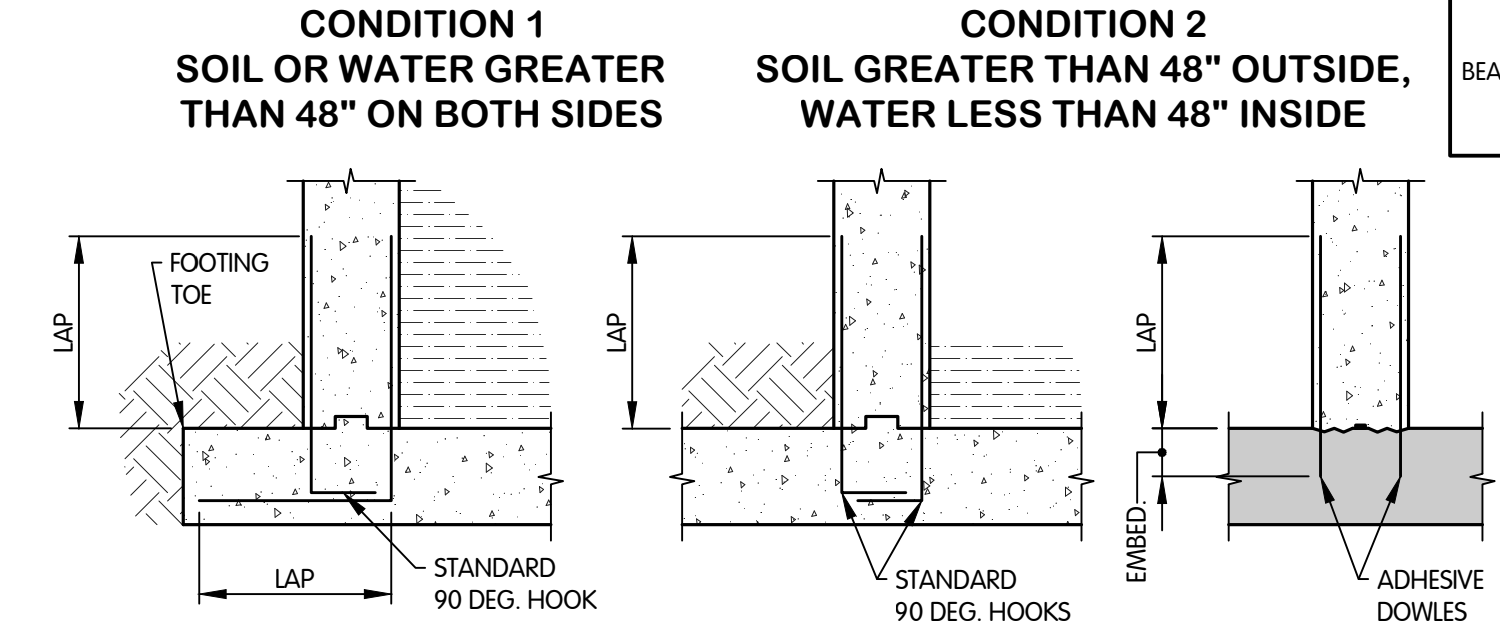
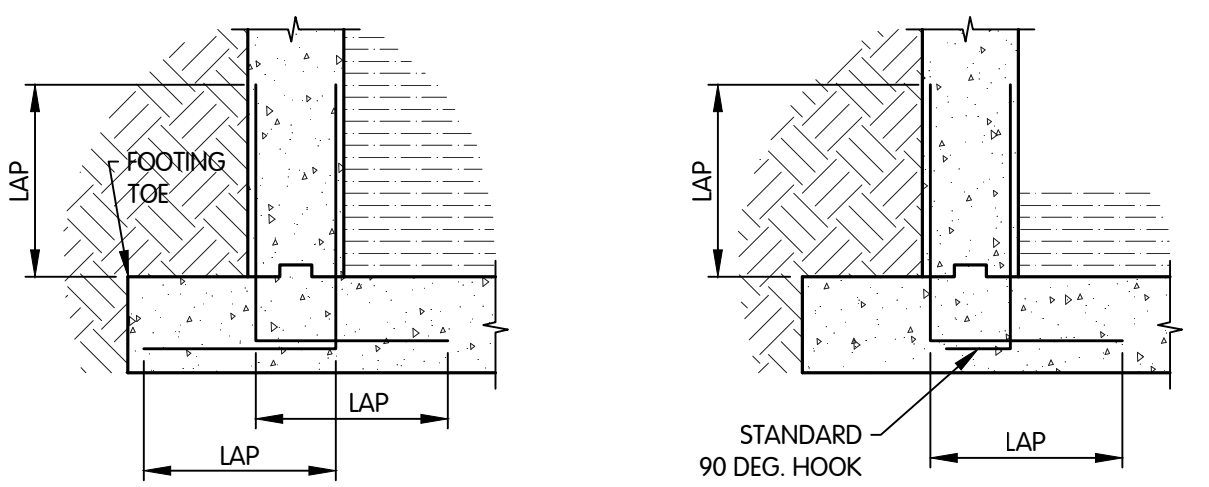
- REINFORCEMENT AT OPENING NOTES:**
- ADDITIONAL REINFORCEMENT EQUAL IN AREA TO REINFORCEMENT CUT BY OPENING.
  - PROVIDE LAP LENGTH FOR TOP BARS.
  - PROVIDE TWO DIAGONAL BARS AT EACH FACE AND AT EACH CORNER OR QUADRANT. BARS SHALL BE #5 FOR SECTIONS 18" OR LESS IN THICKNESS AND #6 FOR SECTIONS THICKER THAN 18".
  - DIAGONAL BARS NOT REQUIRED FOR OPENINGS WITH LARGEST DIMENSION LESS THAN 12".
  - ONLY DIAGONAL BARS ARE REQUIRED AT DOOR, WINDOW, OR HATCHED OPENING.

**TYPICAL ADDITIONAL REINFORCEMENT FOR OPENINGS BETWEEN 8" AND 48"**  
NTS



- NOTES:**
- ALL WALL CORNERS AND INTERSECTIONS SHALL HAVE DOWEL REINFORCEMENT THAT MATCHES THE SIZE AND SPACING OF THE WALL'S HORIZONTAL REINFORCEMENT, UNLESS NOTED OTHERWISE.
  - CONTINUE HORIZONTAL BARS ACROSS WALL INTERSECTION. LAP ON EITHER SIDE OF WALL INTERSECTION PASSED THE DOWEL BAR LAPS.

**STANDARD CONCRETE WALL CORNER AND INTERSECTION HORIZONTAL REINFORCEMENT DETAILS**  
NTS



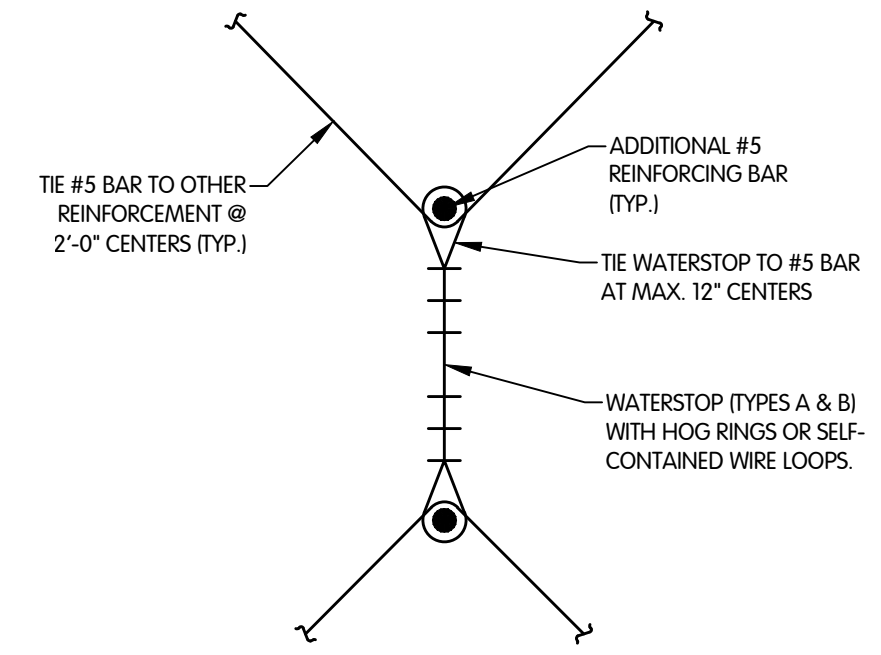
- NOTES:**
- WHERE LAP LENGTH HOOK IS INDICATED AND SLAB TOE LENGTH IS NOT LONG ENOUGH FOR LAP HOOK, REDUCE HOOK LENGTH TO TOE LENGTH MINUS 2" COVER.
  - WHERE ADHESIVE DOWELS ARE TO BE INSTALLED USE REBAR FINDER EQUIPMENT TO LOCATE EXISTING BARS AND PLACE ADHESIVE DOWELS TO MISS EXISTING BARS.

**STANDARD CONCRETE WALL REINFORCEMENT DOWELS TO BASE SLAB DETAILS**  
NTS

**STANDARD CONCRETE COVER**

CONCRETE CAST AGAINST EXPOSED EARTH	3"
SURFACE EXPOSED TO EARTH OR WEATHER	2"
SURFACE EXPOSED TO OR OVER WATER, SEWAGE, OR OTHER LIQUIDS	2"
SLABS, WALLS, JOISTS:	2"
BEAMS, COLUMNS	2 1/2"
PRIMARY REINFORCEMENT:	2"
STIRRUPS AND TIES:	1 1/2"
OTHER SURFACES	1"
SLABS, WALLS, JOISTS:	1"
BEAMS, COLUMNS	2"
PRIMARY REINFORCEMENT:	2"
STIRRUPS AND TIES:	1 1/2"

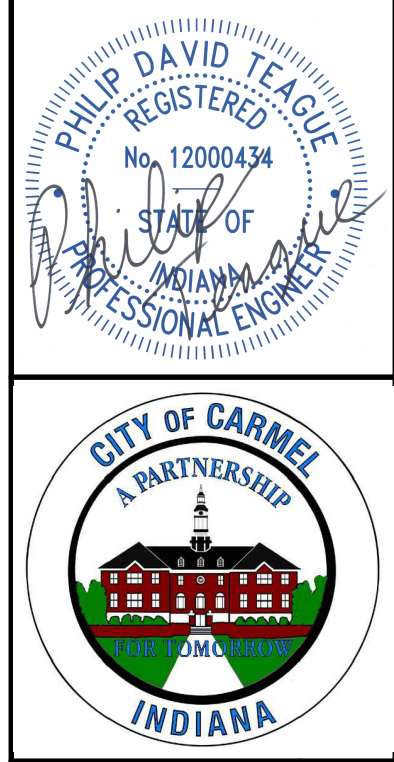
- STANDARD CONCRETE NOTES:**
- CONCRETE CONSTRUCTION JOINTS AND WATERSTOPS SHALL BE PLACED AS SHOWN BY THESE STANDARD JOINT DETAILS, UNLESS NOTED OTHERWISE.
  - ALL CONSTRUCTION JOINTS IN WALLS AND BASE SLABS OF STRUCTURES THAT CONTAIN OR CONVEY LIQUIDS, OR CONTAIN EQUIPMENT OR OCCUPANTS, THAT ARE BELOW GRADE OR 100 YEAR FLOOD, SHALL HAVE CONTINUOUS WATERSTOPS TO MAKE THE STRUCTURE WATERTIGHT. JOIN THE WATERSTOPS AT ALL INTERSECTIONS SO THAT A CONTINUOUS SEAL IS PROVIDED. WATERSTOPS SHALL BE SECURED RIGIDLY IN THEIR DETAILED LOCATIONS DURING CONCRETE PLACEMENT. VIBRATE CONCRETE TO CONSOLIDATE IT AROUND THE WATERSTOPS.
  - CHAMFER STRIPS SHALL BE PLACED IN CORNERS OF FORMS AND AT ALL EXPOSED EDGES TO PRODUCE A BEVELED EDGE ON PERMANENTLY EXPOSED SURFACES. CHAMFERS SHALL BE 3/4", UNLESS NOTED OTHERWISE. CHAMFER STRIPS SHALL BE INSTALLED TO PRODUCE UNIFORMLY SMOOTH AND STRAIGHT LINES. CHAMFER STRIPS SHALL BE MITERED AT CHANGES IN DIRECTION.



**STANDARD LAP LENGTH (IN.)**

BAR SIZE	CLEAR COVER 2" OR MORE		CLEAR COVER LESS THAN 2"	
	TOP AND HORIZONTAL REINFORCEMENT	BOTTOM AND VERTICAL REINFORCEMENT	TOP AND HORIZONTAL REINFORCEMENT	BOTTOM AND VERTICAL REINFORCEMENT
#3	18	16	18	16
#4	24	20	24	19
#5	30	24	30	23
#6	36	30	40	31
#7	54	42	54	42
#8	62	48	71	55

- NOTES:**
- REINFORCING SHALL BE LAPPED WITH THE LENGTHS FROM THIS SCHEDULE, WHERE THE WORD "LAP" IS GIVEN ON THE DRAWINGS IT REFERS TO THE LENGTHS IN THIS SCHEDULE, UNLESS NOTED OTHERWISE.
  - TOP REINFORCEMENT IS LOCATED AT THE TOP FACE AND BOTTOM REINFORCEMENT IS LOCATED AT THE BOTTOM FACE OF HORIZONTAL SECTIONS LIKE SLABS AND BEAMS. VERTICAL REINFORCEMENT IS ORIENTED VERTICALLY IN VERTICAL SECTIONS LIKE WALLS AND COLUMNS. HORIZONTAL REINFORCEMENT IS ORIENTED HORIZONTALLY IN VERTICAL SECTIONS LIKE WALLS.



**CITY OF CARMEL**  
A PARTNERSHIP  
INDIANA

**CONCRETE STRUCTURAL NOTES, TABLES AND DETAILS**

**WEST GROUND STORAGE TANK BOOSTER PUMP STATION**  
CITY OF CARMEL, INDIANA

JDM BY

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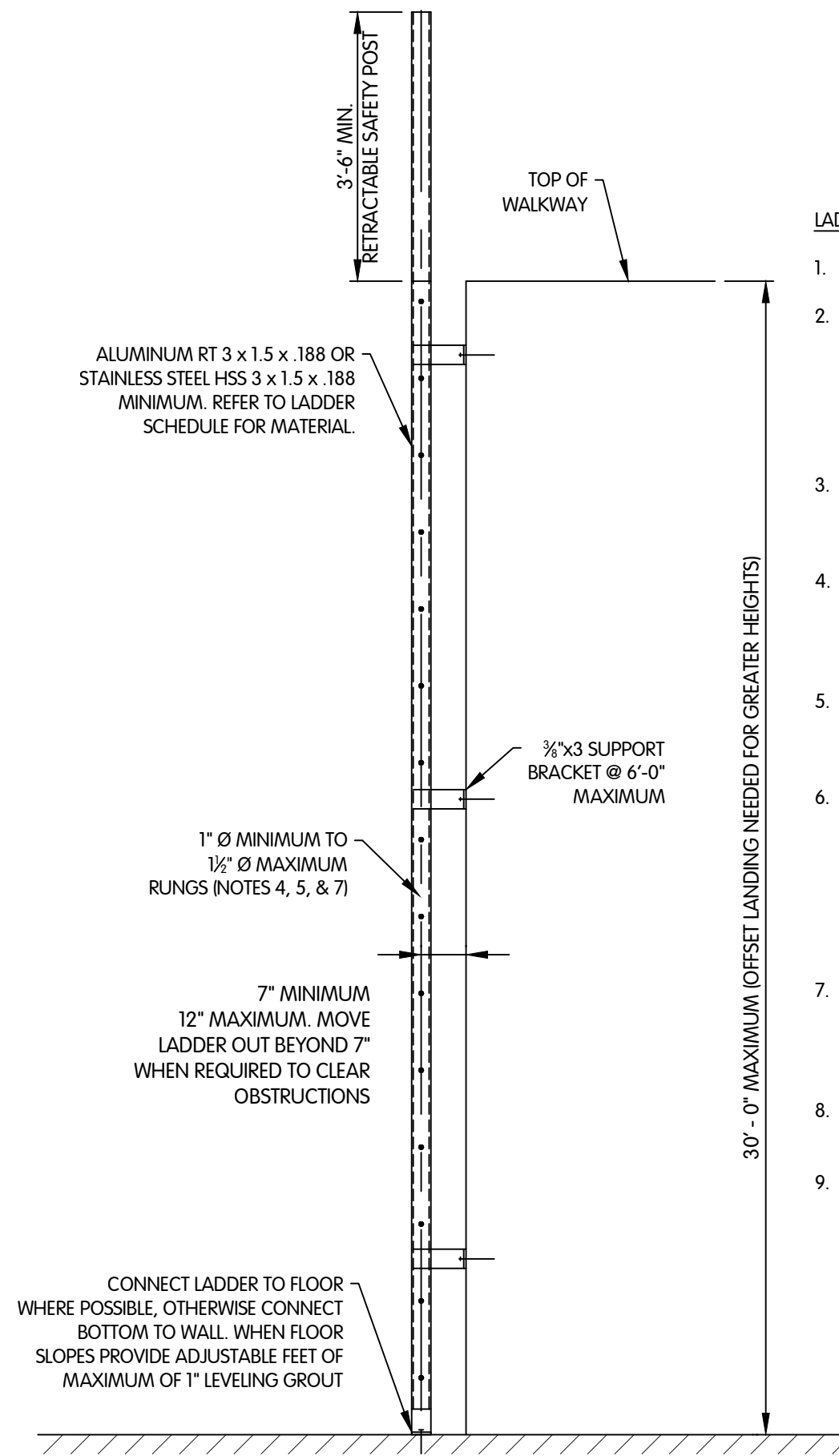
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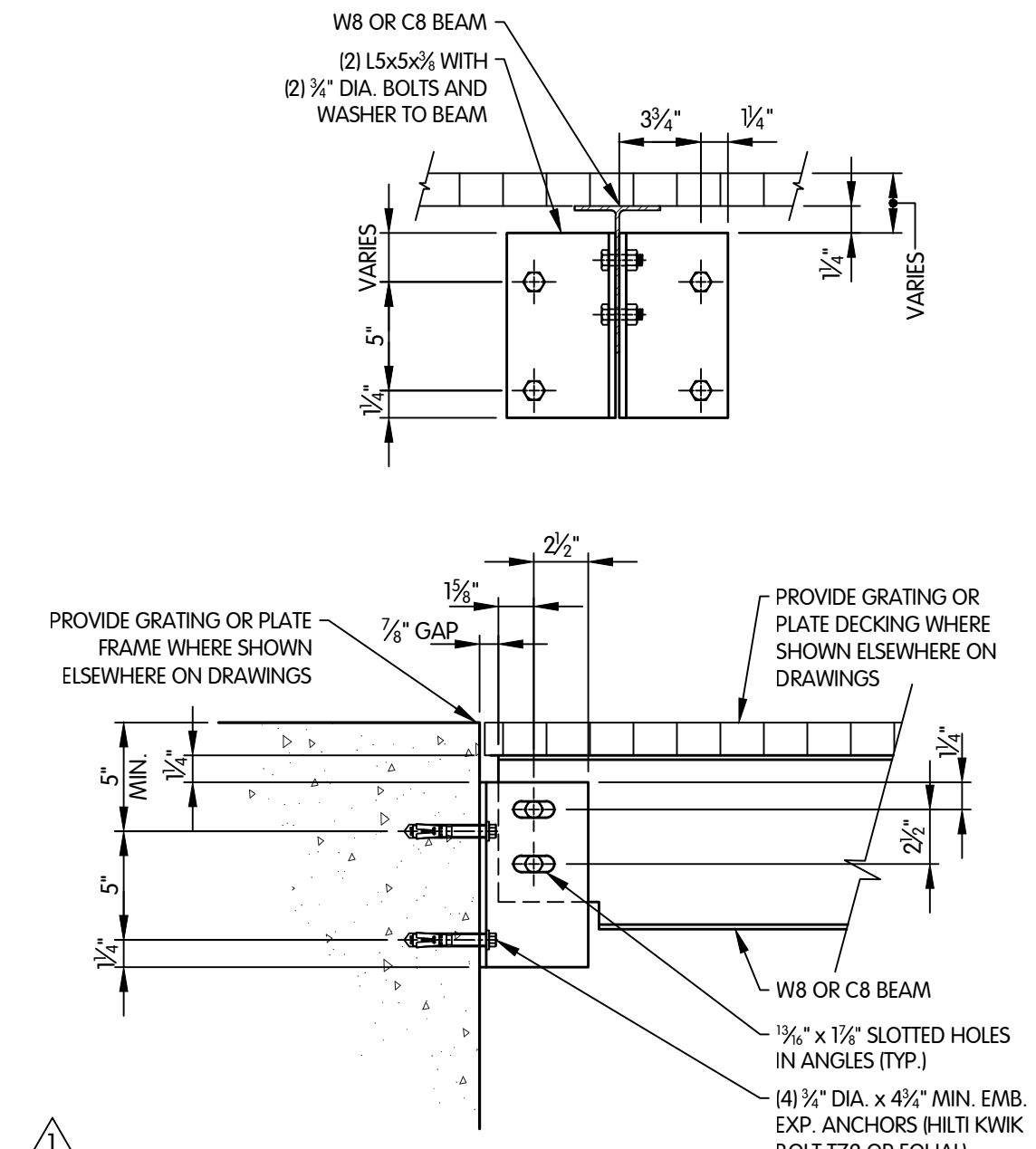
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18 OF 50



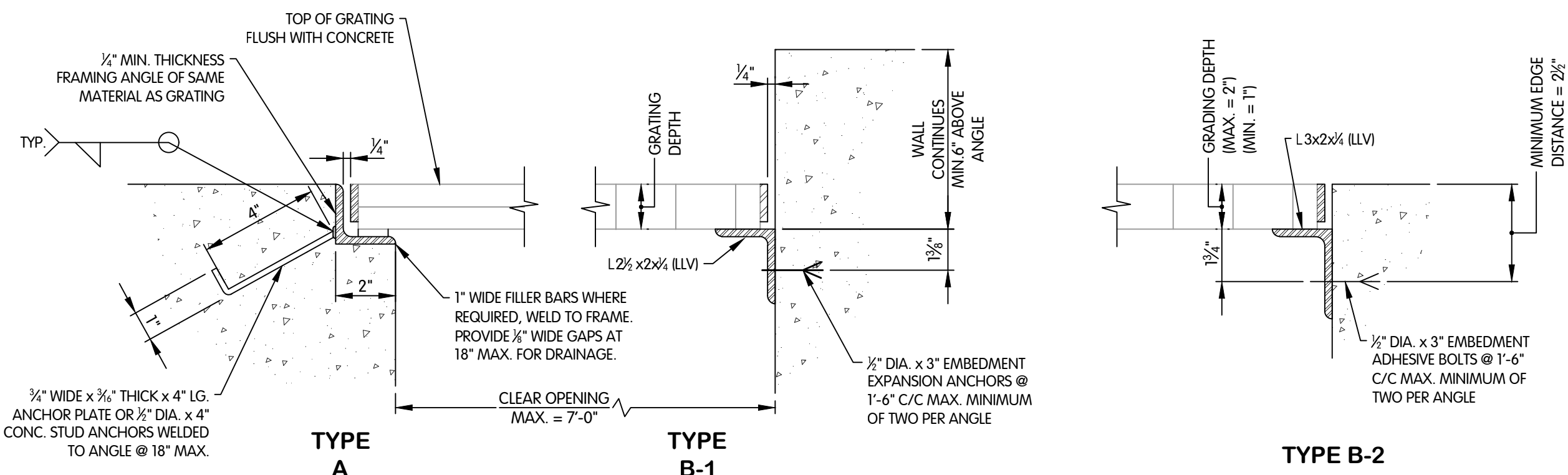


- LADDER NOTES:**
- ALL CONSTRUCTION TO BE WELDED.
  - LADDERS WITH CLIMB GREATER THAN 24' SHALL BE EQUIPPED WITH FALL PROTECTION RAIL, TROLLEY AND HARNESS. REFER TO SPECIFICATION 05500. LADDER HAVE A RETRACTABLE SAFETY POST EXTENDING 42" OVER THE TOP OF THE FINISHED FLOOR.
  - SUPPORT BRACKET FASTENER:  
A. TO CONCRETE, USE 1/2" DIAMETER X 5" EMBEDMENT EXPANSION ANCHORS.
  - EACH RUNG OR STEP SHALL BE CAPABLE OF SUPPORTING A SINGLE CONCENTRATED LOAD OF 300 LBS. APPLIED IN THE MIDDLE OF THE RUNG OR STEP.
  - RUNGS SHALL BE SPACED NOT LESS THAN 10" APART AND NOT MORE THAN 12" APART AS MEASURED BETWEEN THE CENTERS OF THE RUNGS.
  - EACH FIXED LADDER SHALL BE CAPABLE OF RESISTING AT LEAST TWO LOADS OF 300 LBS. EACH CENTERED BETWEEN ANY TWO CONSECUTIVE ATTACHMENTS PLUS ANY ANTICIPATED LOADS DUE TO ICE BUILD-UP, WINDS, AND RIGGING IMPACT LOADS RESULTING FROM THE USE OF LADDER SAFETY DEVICES IF APPLICABLE.
  - RUNGS SHALL BE CORRUGATED, KNURLED, DIMPLED, OR COATED WITH SKID RESISTANT MATERIAL OR OTHERWISE TREATED TO MINIMIZE SLIPPING. ADHESIVE GRIT TAPE IS NOT ACCEPTABLE.
  - INTERIOR STEEL LADDERS TO BE PAINTED SAFETY YELLOW.
  - LADDERS RUNGS SHALL BE 18" WIDE BETWEEN THE RAILS. LADDER EXTENSION WALK-THROUGH SHALL BE 24" WIDE BETWEEN THE RAILS.



- NOTES:**
- ALL CONNECTION COMPONENTS SHALL MATCH THE MATERIAL OF THE BEAM, EXCEPT FOR GALVANIZED BEAMS MAY HAVE ZINC PLATED WALL ANCHORS AND ALUMINUM BEAMS SHALL HAVE STAINLESS STEEL CONNECTION COMPONENTS.
  - PROVIDE PLATE WASHERS TO COVER SLOTTED HOLES.
  - W-SECTION SHOWN, C-SECTION SIMILAR.
  - FINGER TIGHTEN BEAM BOLT NUTS AND TACK WELD TO BOLT.

**TYPICAL BEAM CONNECTION TO CONCRETE WALL DETAILS**  
1/2" = 1'-0"



- GRATING NOTES:**
- APPLY BITUMINOUS PAINT TO ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE.
  - ANCHORS FOR ALUMINUM AND STAINLESS STEEL TO BE STAINLESS STEEL. ANCHORS FOR GALVANIZED STEEL TO BE ZINC-PLATED. ANCHORS SHALL BE RATED FOR USE IN CRACKED CONCRETE.
  - PROVIDE GALVANIZED STEEL ANGLE FRAMES IF GRATING IS GALVANIZED STEEL. PROVIDE ALUMINUM TYPE A FRAME OR STAINLESS STEEL TYPE B-1 OR B-2 FRAMES, IF GRATING IS ALUMINUM.
  - USE POWER WRENCH TORQUE REDUCER AS REQUIRED BY ANCHOR MANUFACTURER FOR EXPANSION ANCHORS.
  - USE EXPANSION ANCHORS FOR TYPE A AND TYPE B-1 FRAMES AND ADHESIVE ANCHORS FOR TYPE B-2 FRAMES, UNLESS NOTED OTHERWISE.

**GRATING FRAME DETAILS**  
3/8" = 1'-0"



**STEEL STRUCTURAL DETAILS**  
**WEST GROUND STORAGE TANK BOOSTER PUMP STATION**  
**CITY OF CARMEL, INDIANA**

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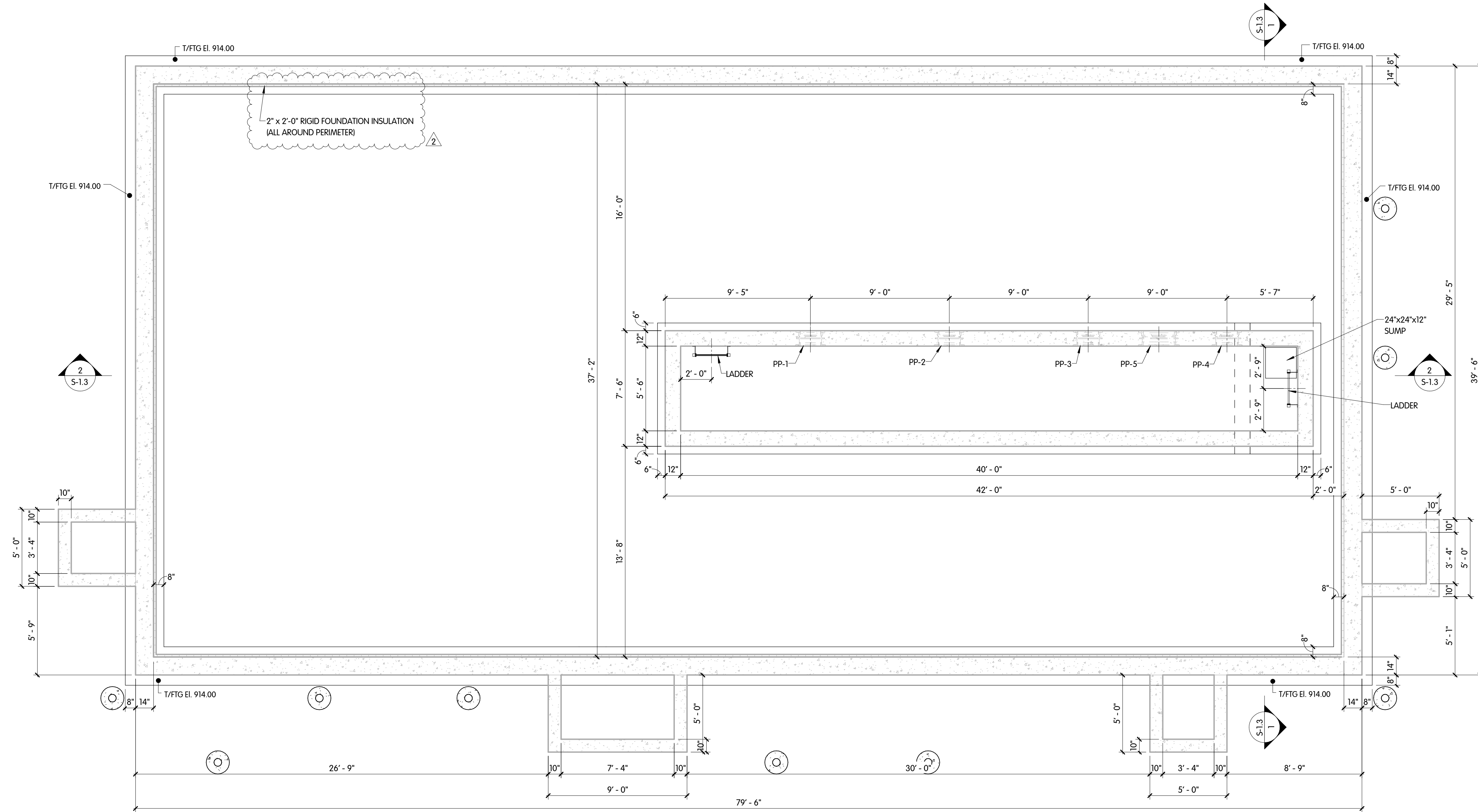
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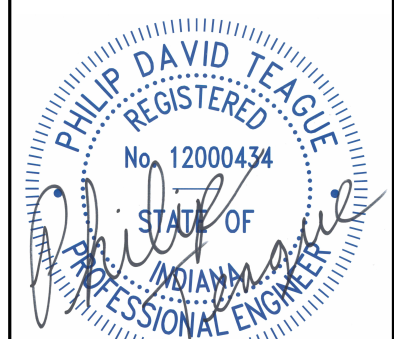
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FOUNDATION PLAN  
 1/4" = 1'-0"



PUMP BUILDING  
 STORAGE TANK BOOSTER PUMP STATION  
 STRUCTURAL  
 FOUNDATION PLAN  
 CITY OF CARMEL, INDIANA

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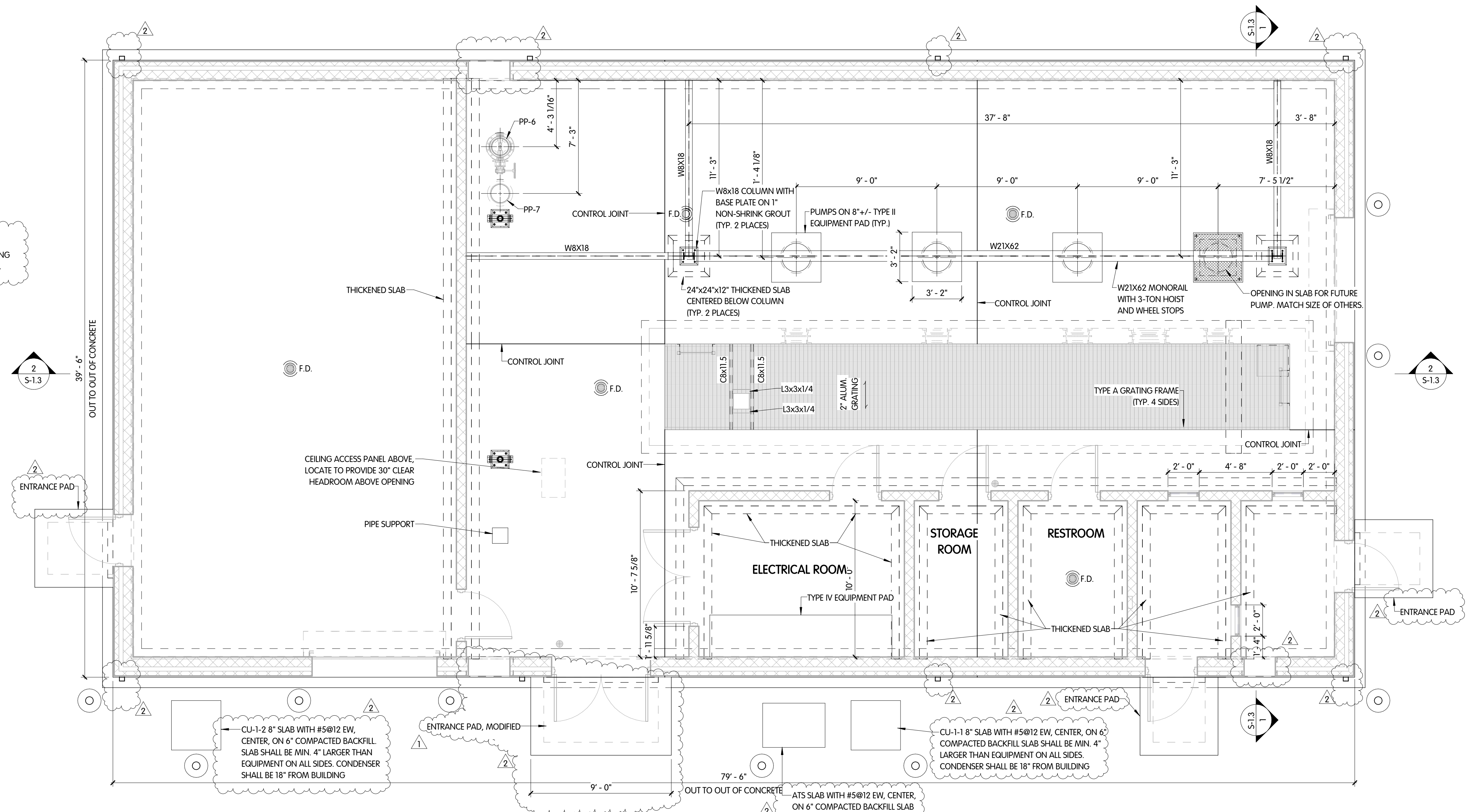
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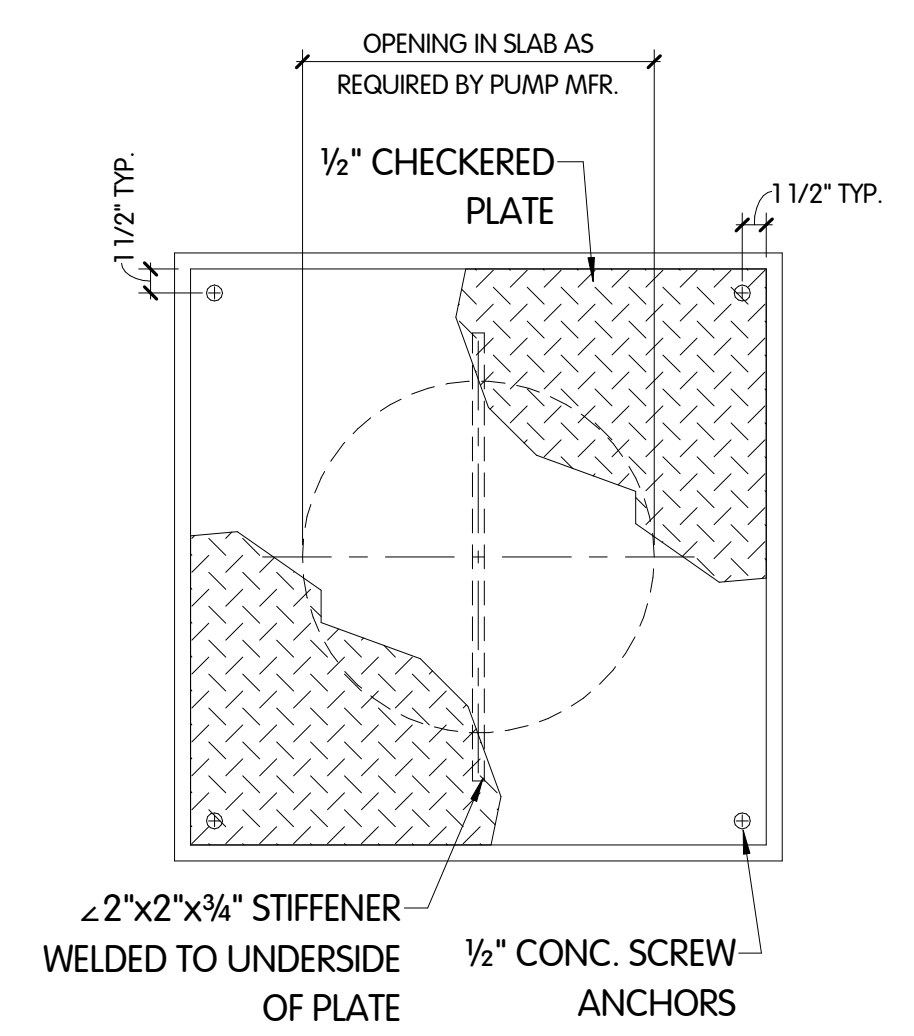
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**NOTE:**  
1. SHEET C-3 SHOWS ALL DOWNSPOUTS CONNECTING TO A BELOW GRADE STORM WATER PIPING LOOP.



**PLAN @ EL. 925.50**  
1/4" = 1'-0"



**PUMP BUILDING  
STRUCTURAL  
PLAN @ EL. 925.50 AND DETAIL**  
WEST GROUND STORAGE TANK BOOSTER PUMP STATION  
CITY OF CARMEL, INDIANA

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2	11/20/24	ADDENDUM 1

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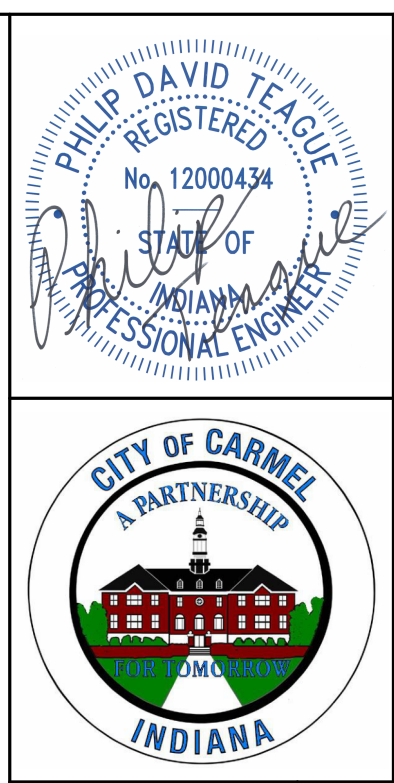
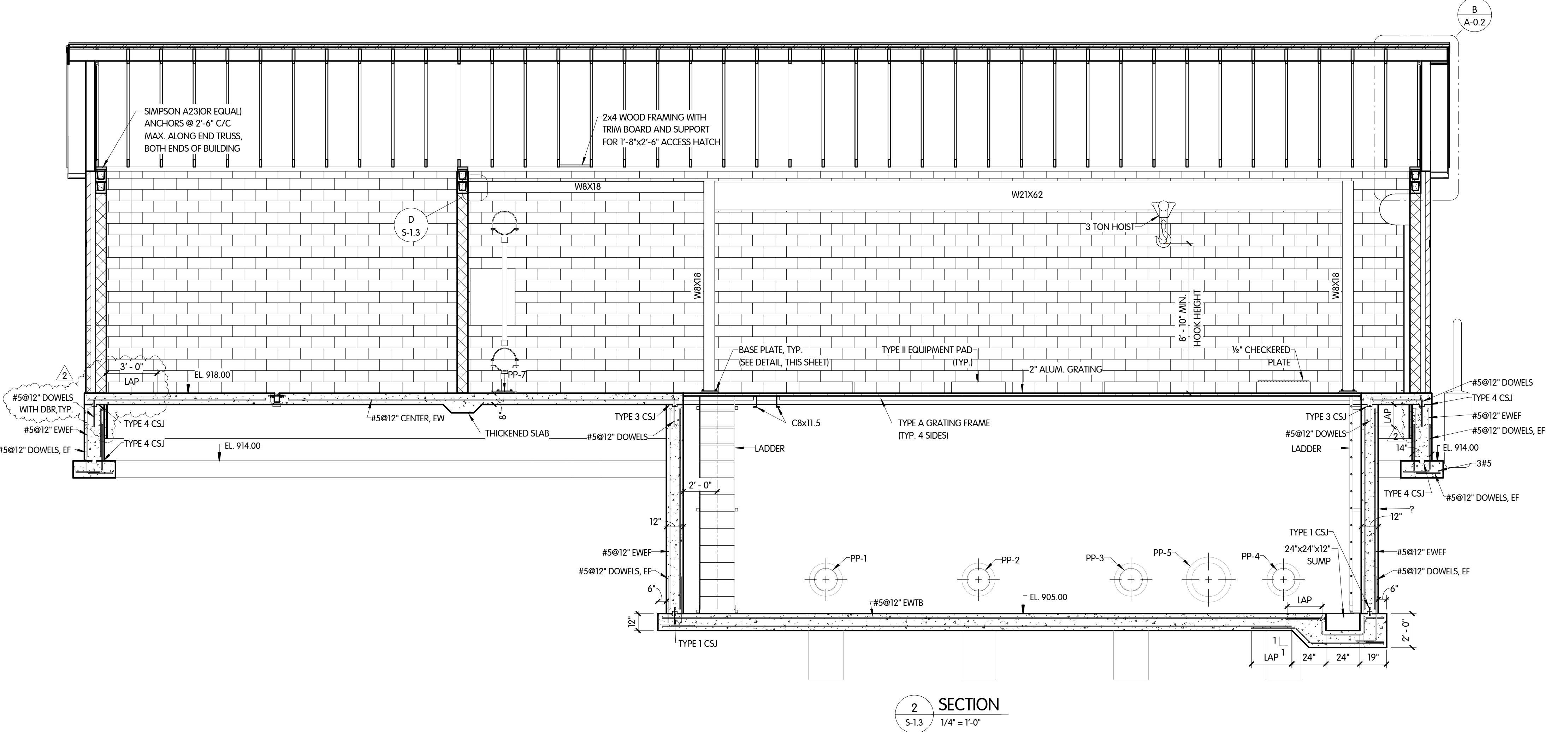
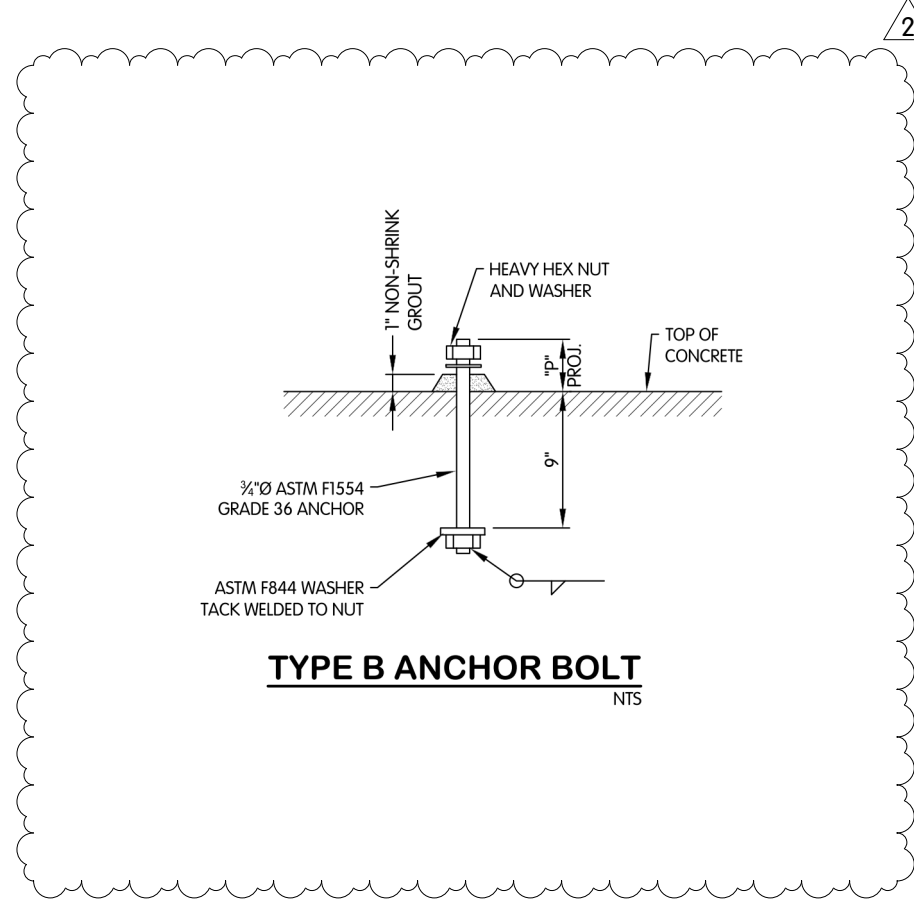
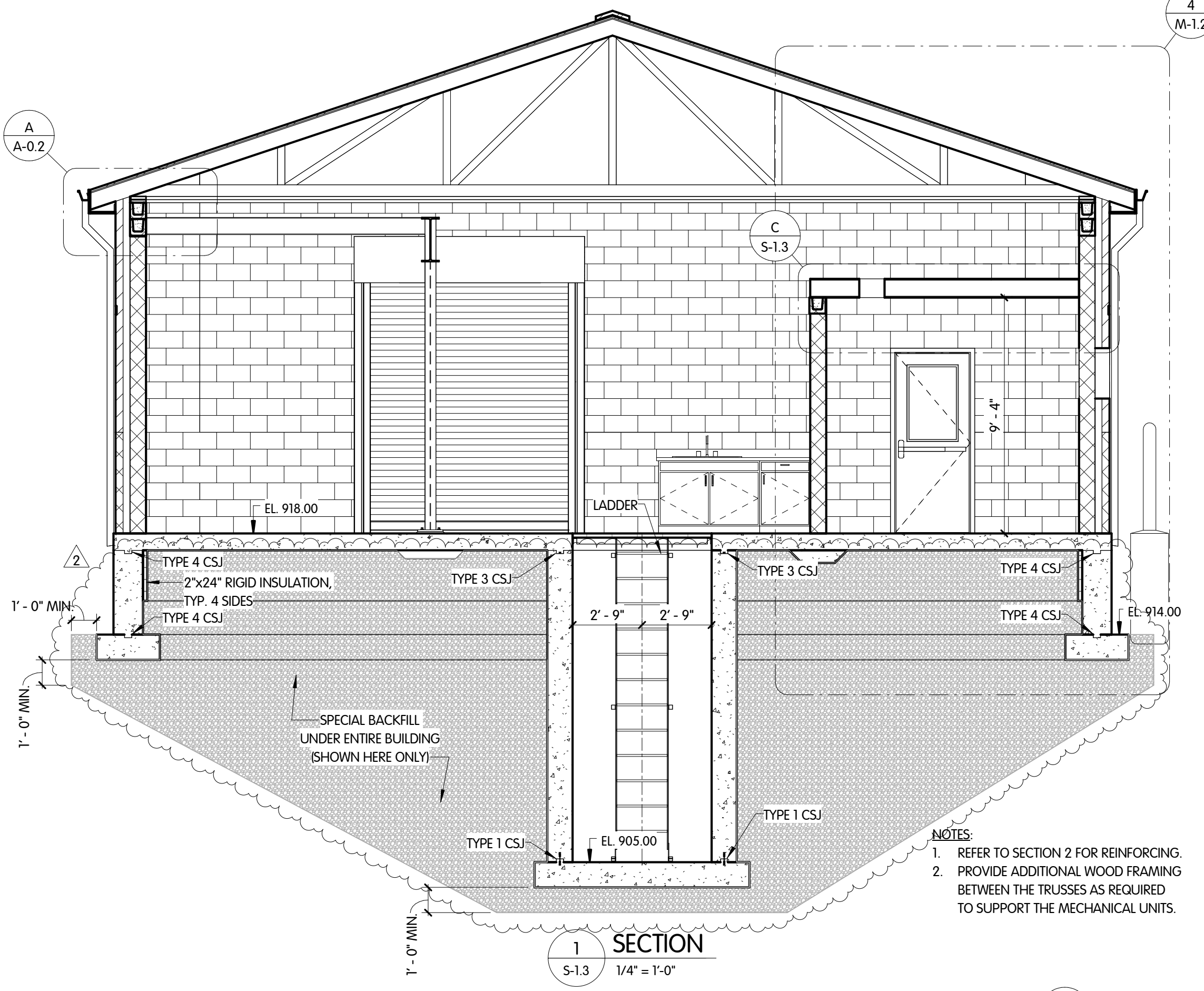
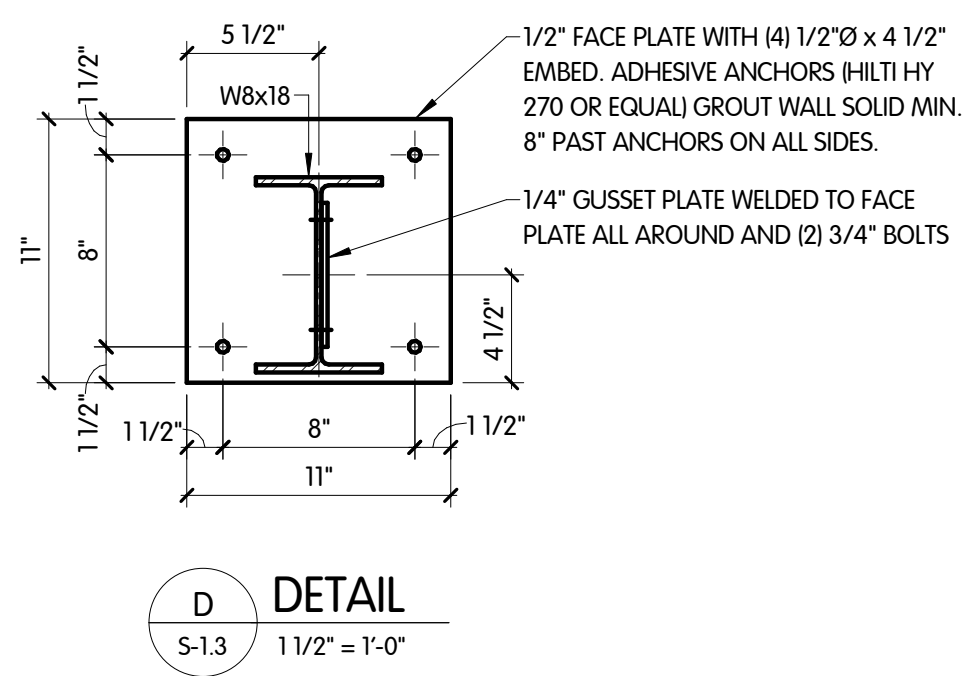
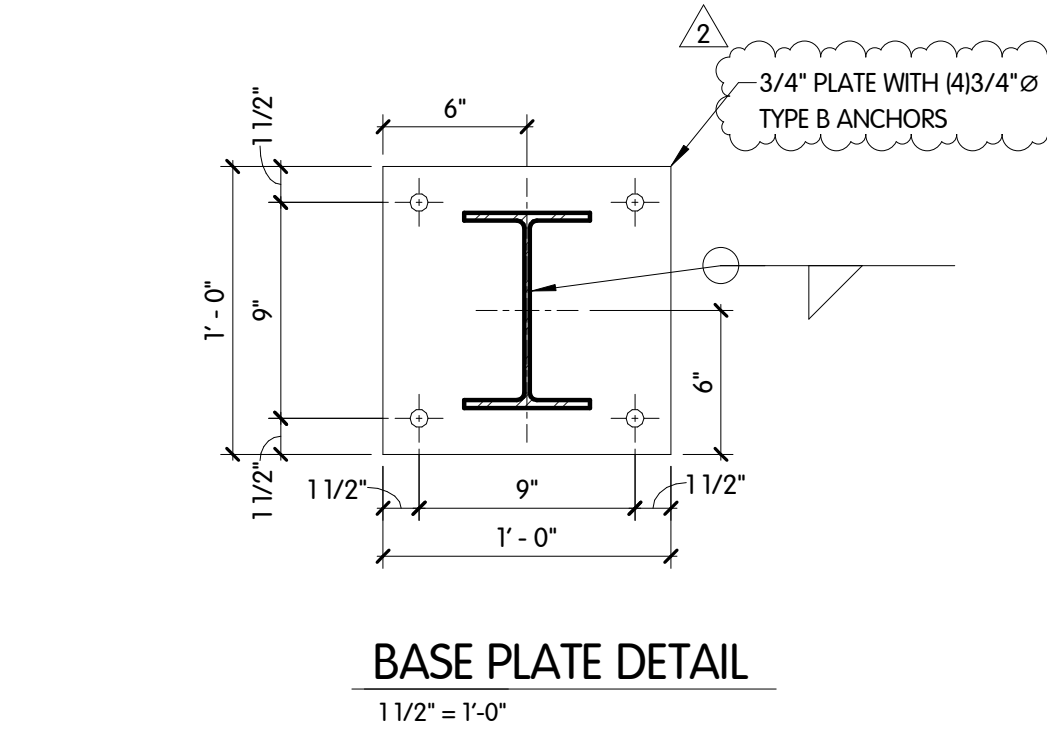
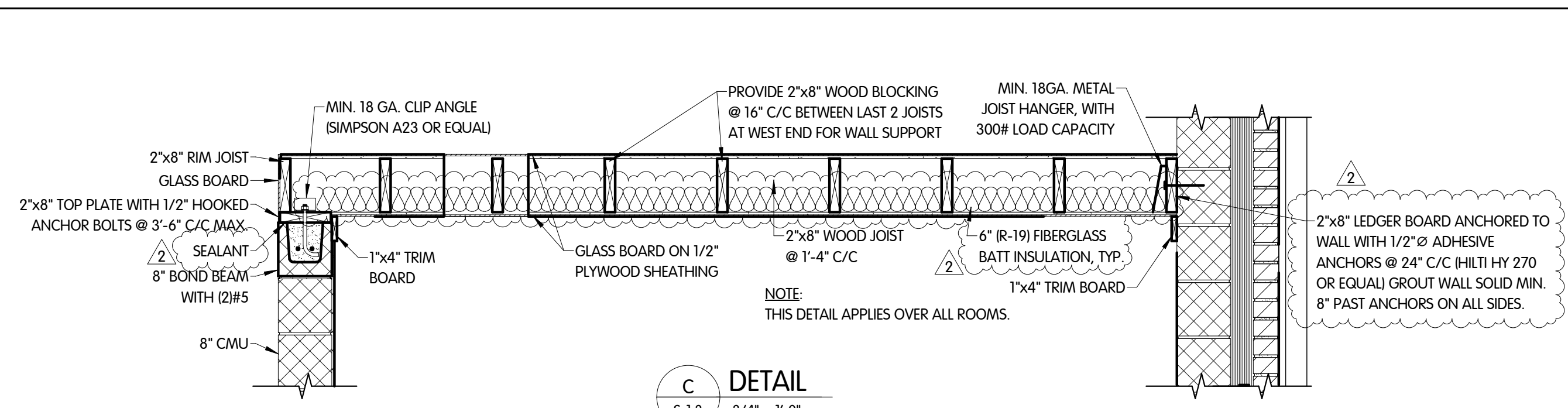
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22 OF 50





**PUMP BUILDING  
STRUCTURAL  
SECTIONS AND DETAILS**

WEST GROUND STORAGE TANK BOOSTER PUMP STATION  
CITY OF CARMEL, INDIANA

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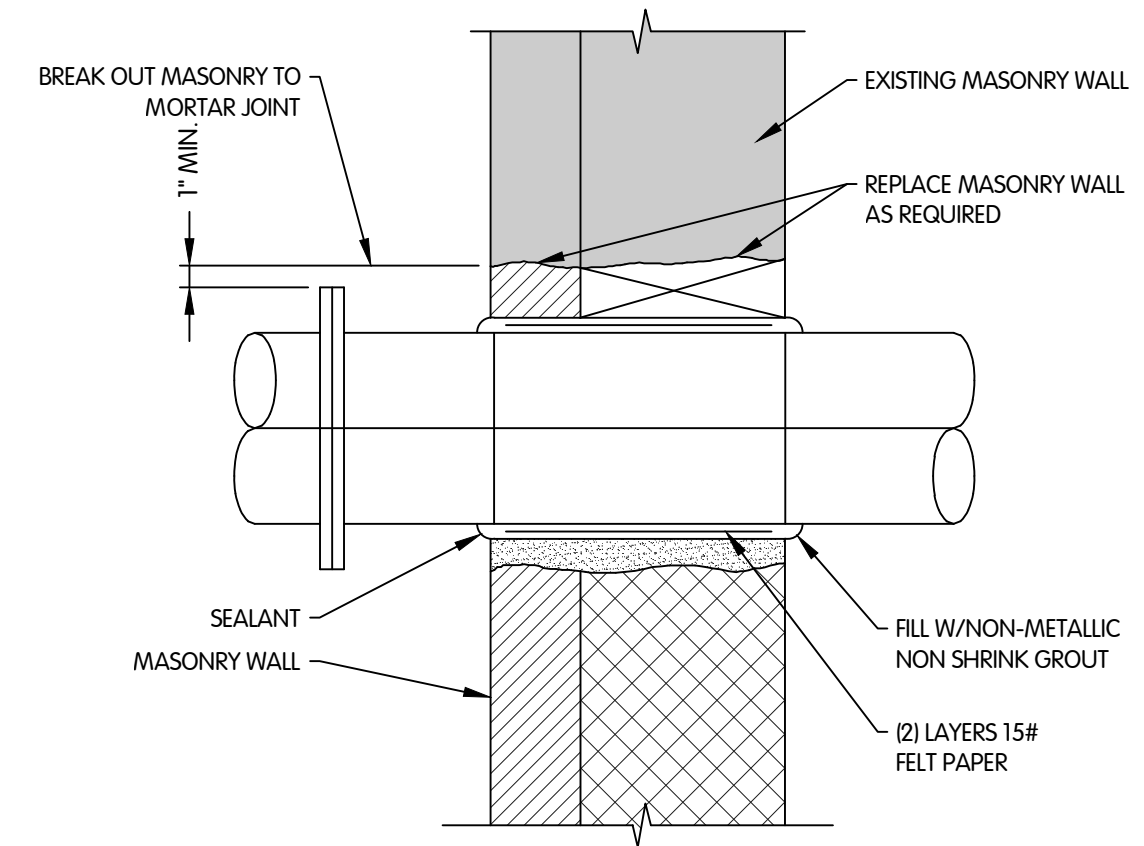
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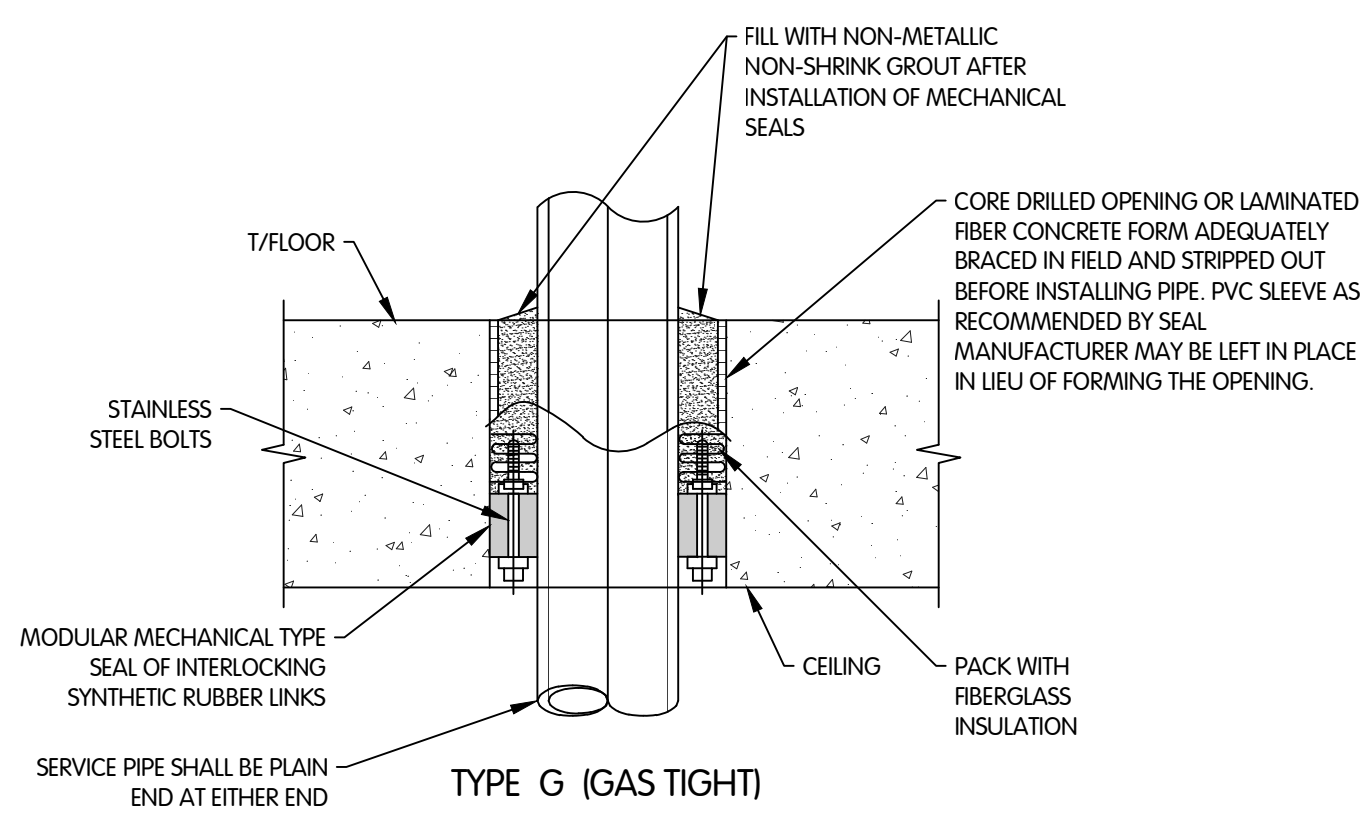
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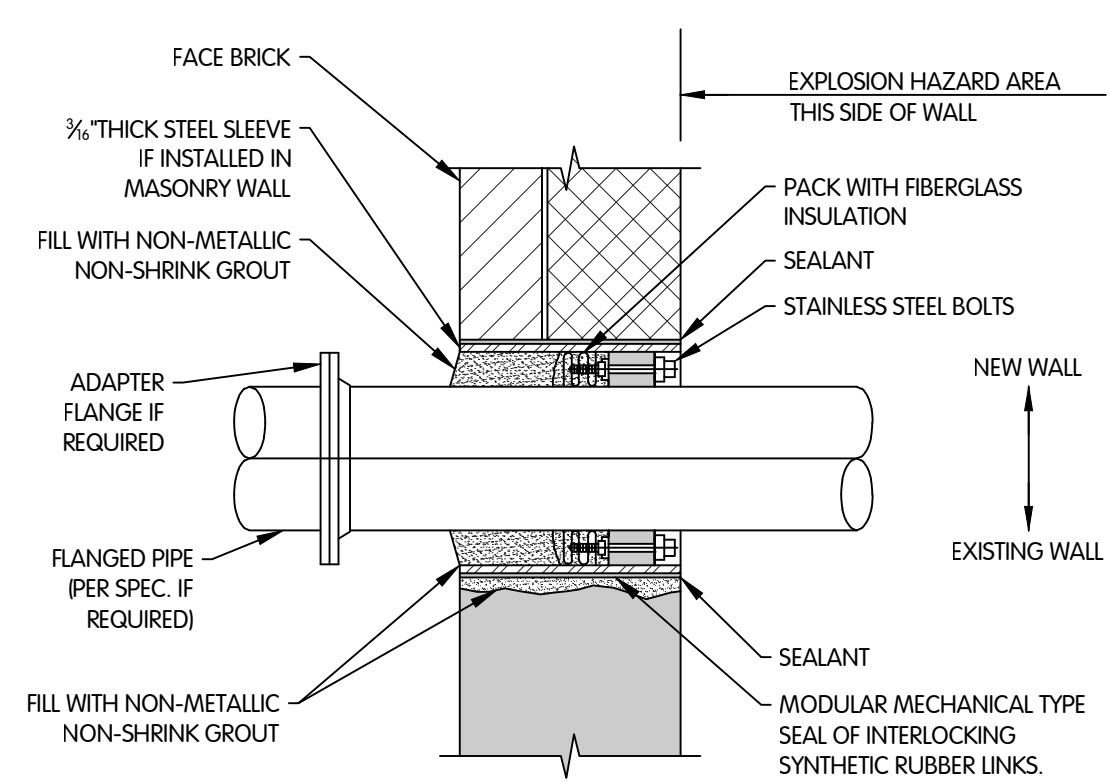
NOTE:  
FOR EXTERIOR WALLS, FACE COURSES TO BE MASONRY AND MIDDLE COURSE TO BE FILLED WITH FIBERGLASS INSULATION.

**PIPE SLEEVE THRU EXISTING OR NEW MASONRY WALL**  
NTS

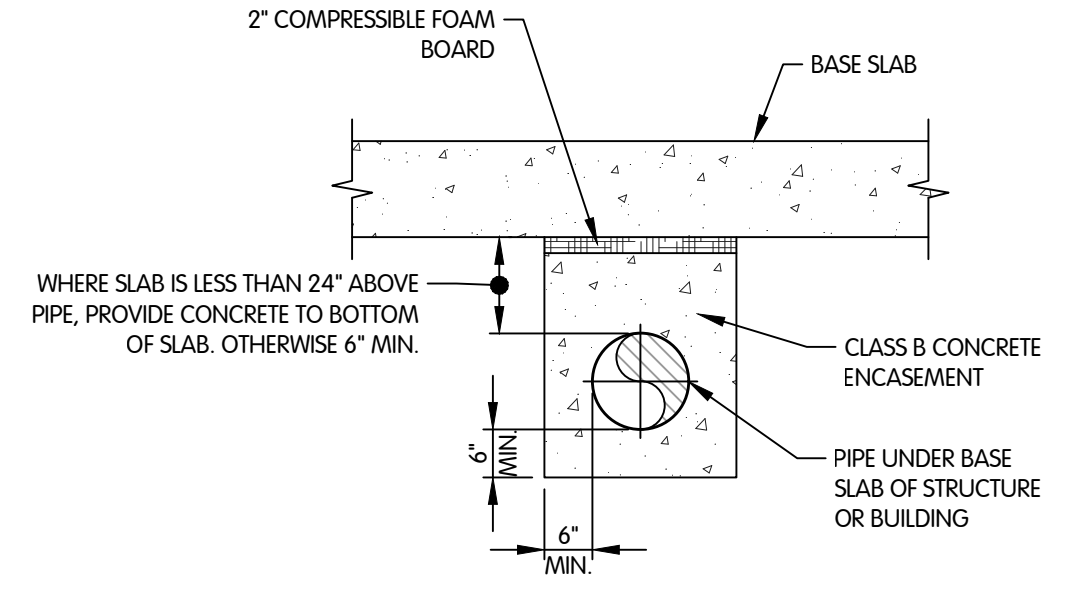


NOTE:  
CONCRETE SHALL BE WORKED IN AND VIBRATED TO ELIMINATE ALL VOIDS IN CONCRETE - IF VOIDS DO REMAIN, FILL WITH GROUT BEFORE INSTALLING PIPE AND RUBBER SEALS.

**FLOOR SLEEVE**  
NTS

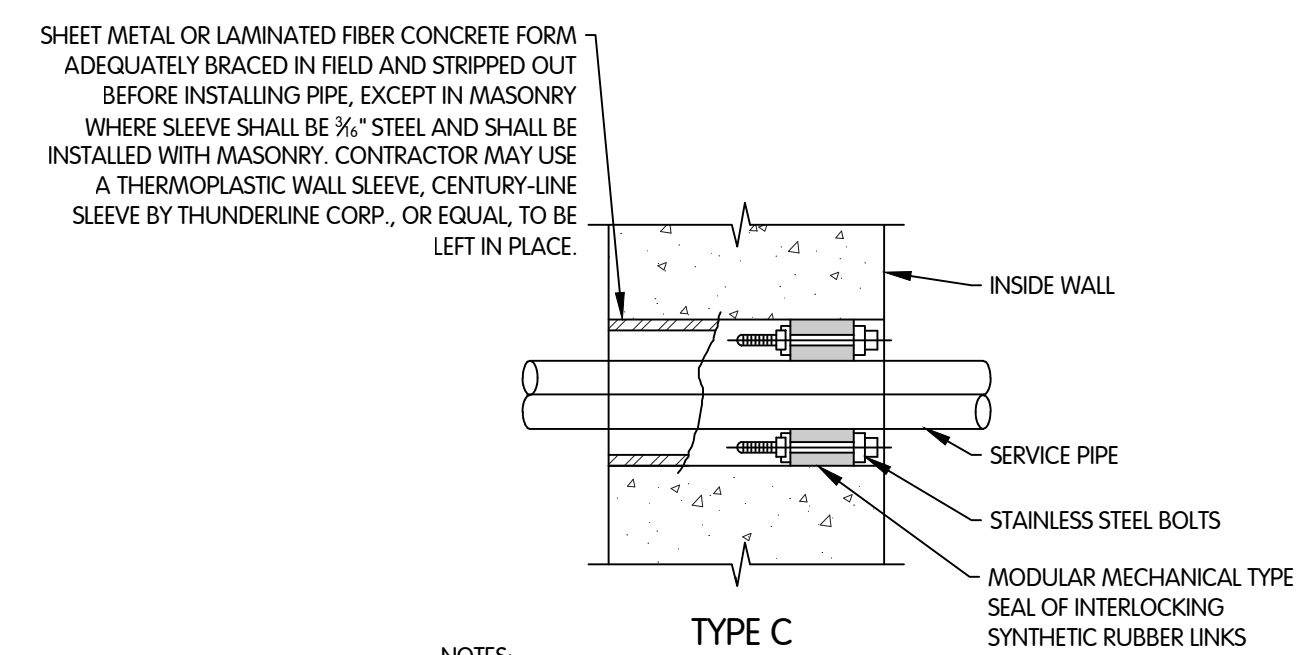


**MASONRY WALL SLEEVE**  
NTS



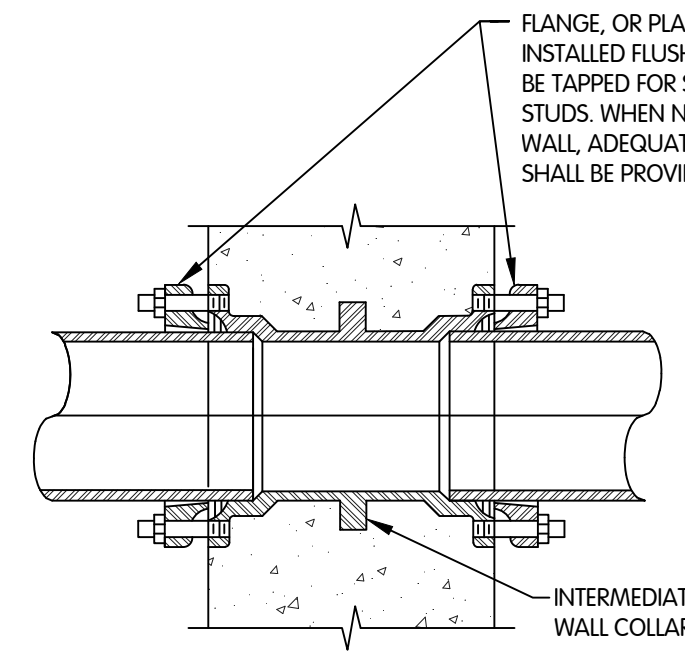
NOTE:  
ENCASE ALL PIPES UNDER BASE SLABS, UNLESS NOTED OTHERWISE.

**CONCRETE PIPE ENCASEMENT DETAIL**  
1/2\"/>



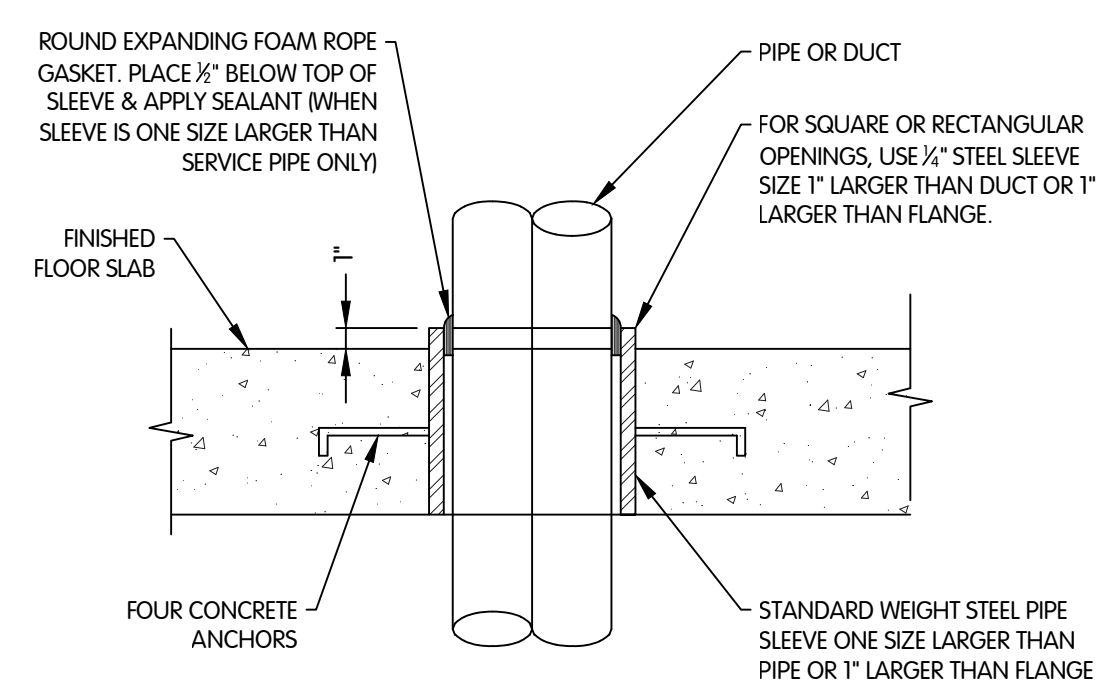
NOTES:  
1. EXISTING WALLS SHALL BE CORE DRILLED.  
2. CONCRETE SHALL BE WORKED IN AND VIBRATED TO ELIMINATE ALL VOIDS IN CONCRETE - IF VOIDS DO REMAIN, FILL WITH GROUT BEFORE INSTALLING PIPE AND RUBBER SEALS.  
3. UNLESS OTHERWISE SHOWN ON THE DRAWINGS ALL INTERIOR WALL PENETRATIONS SHALL USE TYPE C PIPE SLEEVE.

**PIPE SLEEVE**  
NTS



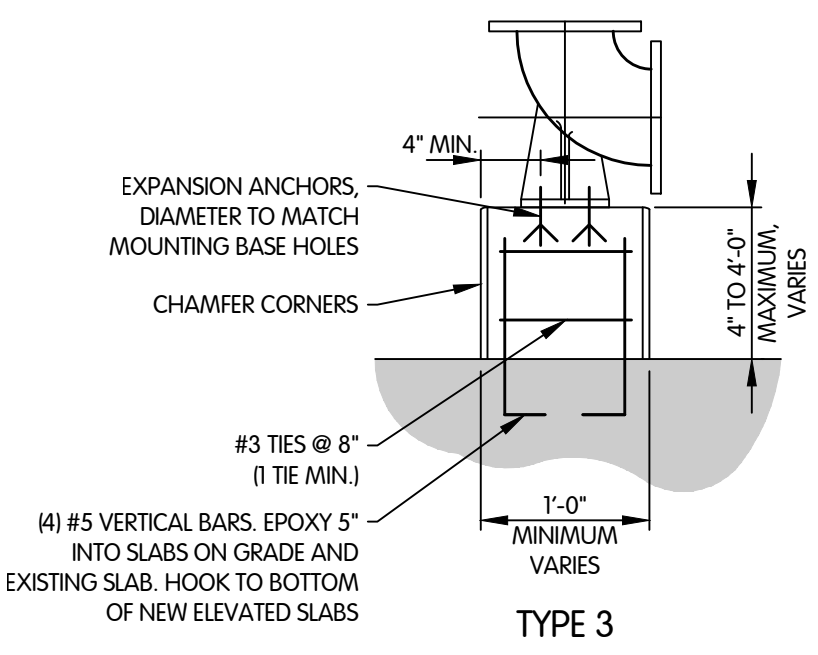
NOTE:  
UNLESS SHOWN OTHERWISE, CAST IRON OR DUCTILE IRON WALL PIPES SHALL BE USED FOR 4\"/>

**WALL PIPE**  
NTS



NOTE:  
THRU EXISTING FLOORS WHERE TYPE \"D\" FLOOR SLEEVES ARE CALLED OUT, THE CONTRACTOR SHALL CORE FLOOR AND CAULK AS SHOWN, ELIMINATING THE STEEL SLEEVE.

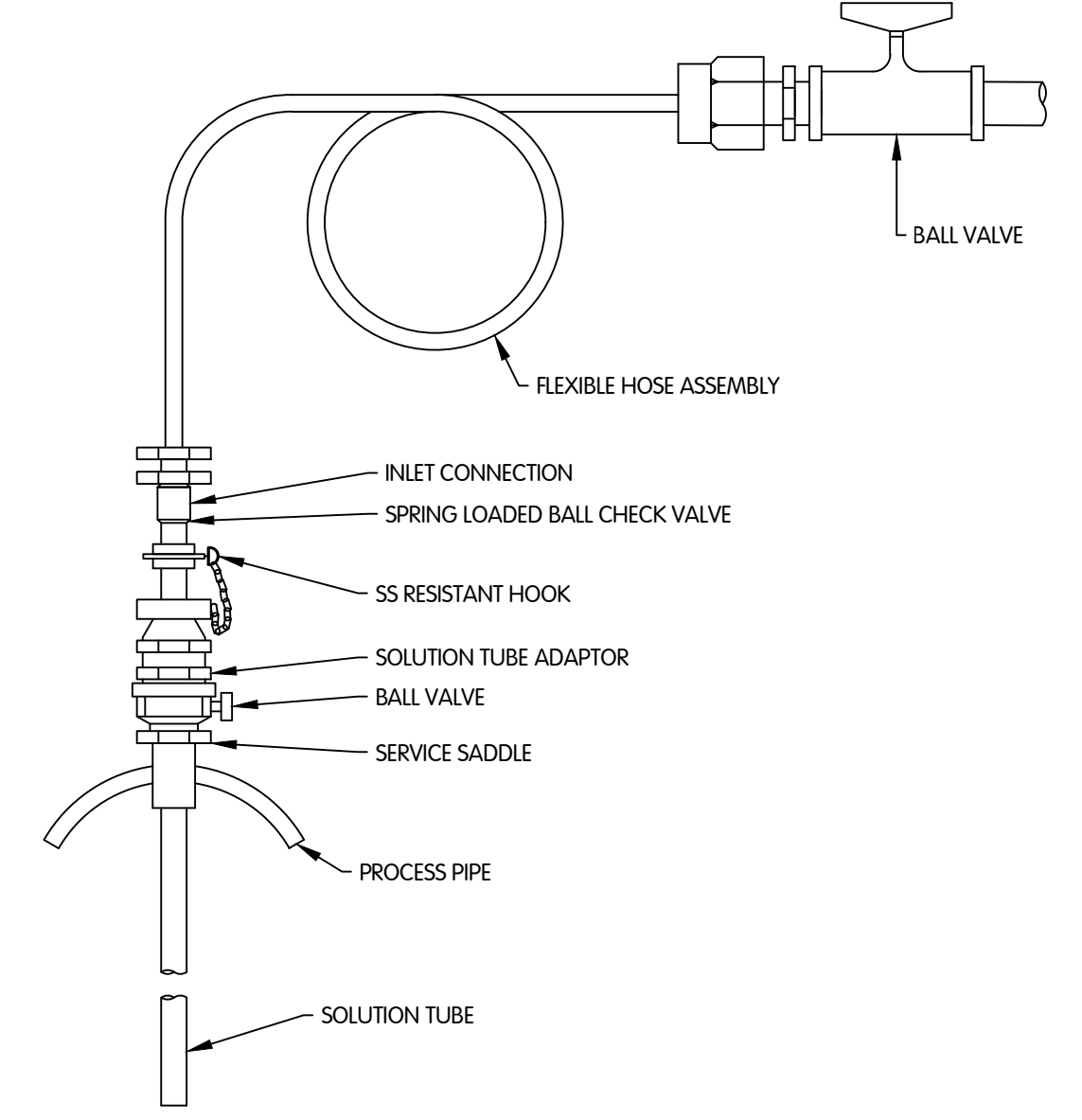
**FLOOR SLEEVE**  
NTS



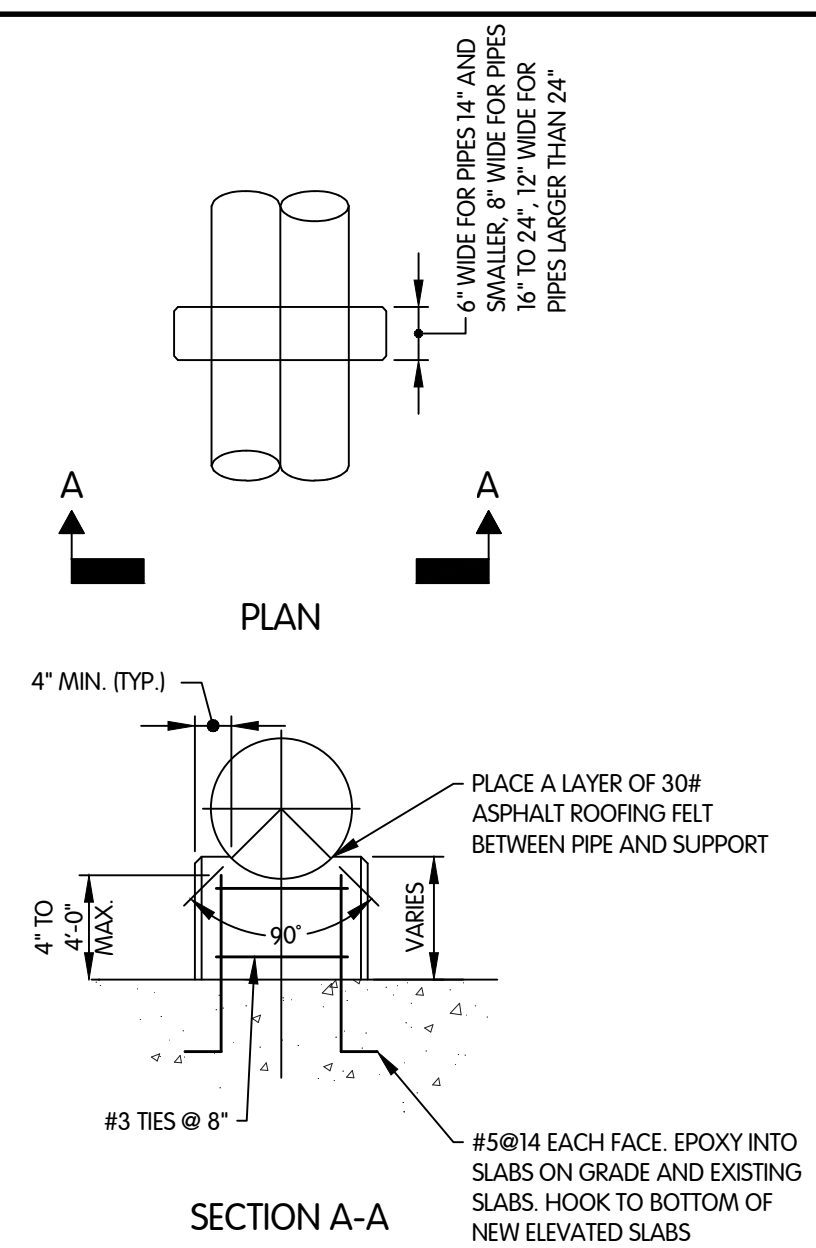
NOTES:  
1. FOR HEIGHTS LESS THAN 4\"/>

**CONCRETE PIPE SUPPORT**  
NTS

GRATING NOTES:  
1. APPLY BITUMINOUS PAINT TO ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE.  
2. ANCHORS FOR ALUMINUM AND STAINLESS STEEL TO BE STAINLESS STEEL. ANCHORS FOR GALVANIZED CARBON STEEL TO BE ZINC-PLATED.  
3. PROVIDE GALVANIZED STEEL ANGLE FRAMES WITH GALVANIZED STEEL GRATING. FOR ALUMINUM GRATING, PROVIDE ALUMINUM TYPE A FRAME OR STAINLESS STEEL TYPE B-1 OR B-2 FRAMES. FOR FRP GRATING, PROVIDE STAINLESS STEEL FRAMES.  
4. FOR B-2 FRAMES USE POWER WRENCH TORQUE REDUCER AS REQUIRED BY ANCHOR MANUFACTURER.

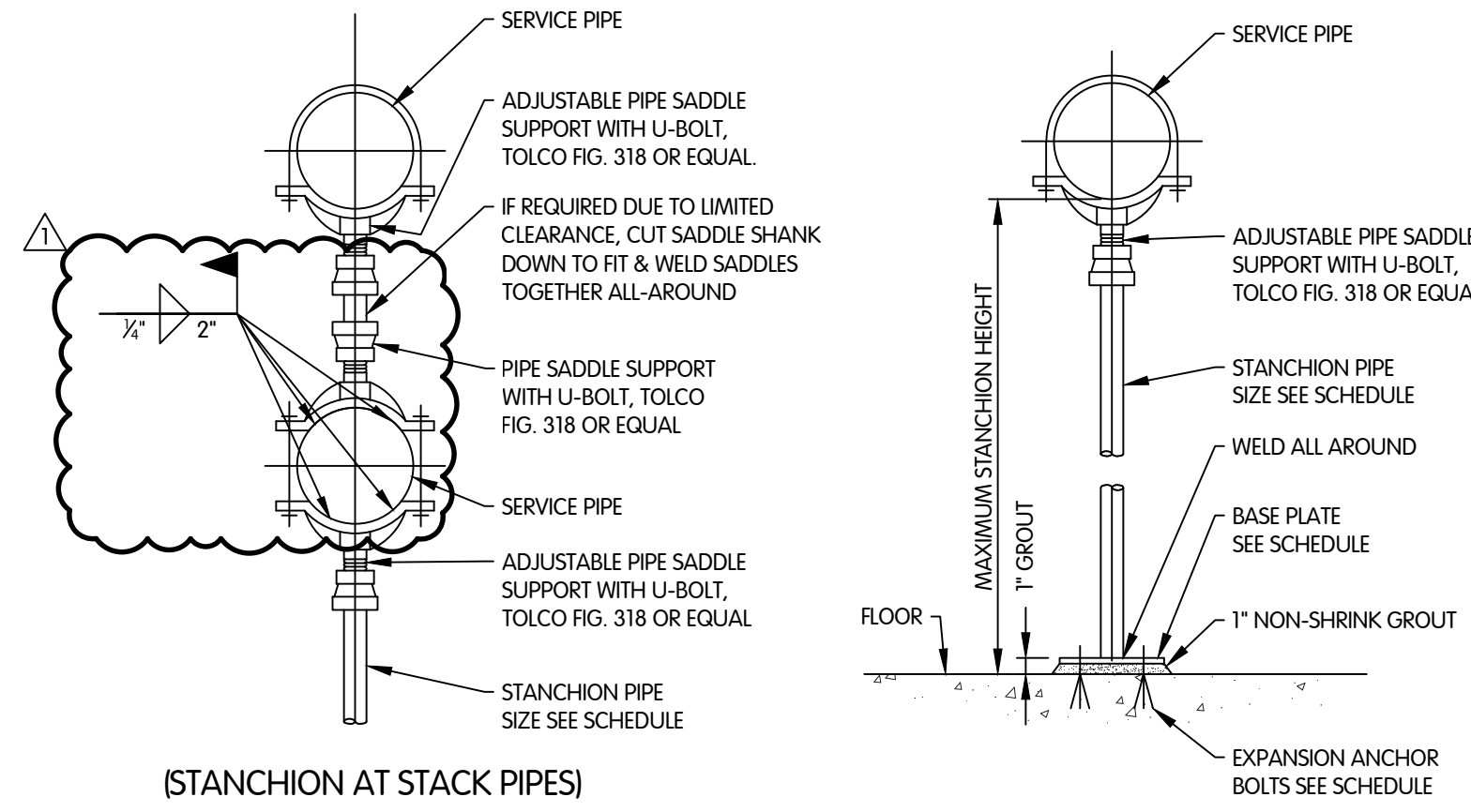


**CHEMICAL INJECTOR DETAIL**  
NTS



NOTE:  
1. CONCRETE SUPPORTS SHALL BE SPACED NOT MORE THAN 12'-0\"/>

**CONCRETE SADDLE SUPPORT**  
NTS

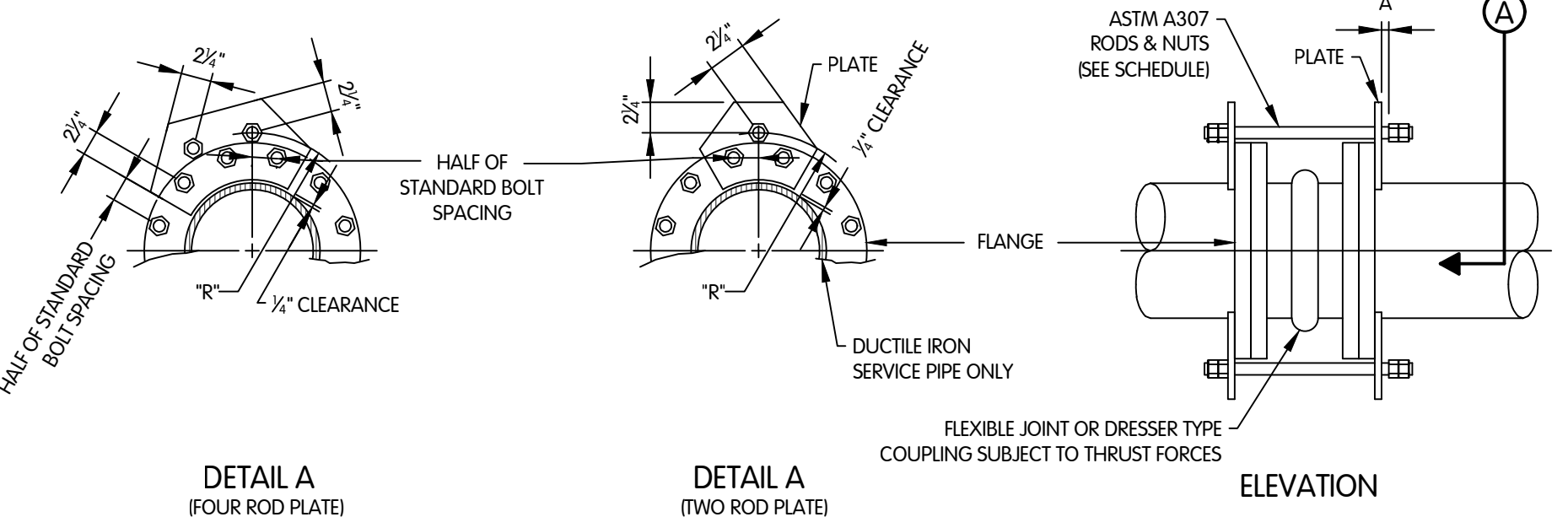


NOTES:  
1. HOT DIP GALVANIZE EXTERIOR STANCHIONS AFTER FABRICATION. PRIME PAINT AND FINISH PAINT INTERIOR STANCHIONS.  
2. FOR STANCHION PIPES AT BASE ELBOWS, SUBSTITUTE A MOUNTING PLATE FOR THE SADDLE SUPPORT WITH U-BOLT THAT IS SHOWN IN THE ABOVE DETAIL. MOUNTING PLATE SHALL BE DRILLED TO MATCH BOLT HOLE PATTERN PROVIDED IN BASE ELBOW.  
3. MOUNTING PLATE SHALL BE A MINIMUM OF 1/2\"/>

SERVICE PIPE SIZE	STANCHION PIPE SIZE	MAXIMUM DISTANCE BETWEEN STANCHIONS	MAXIMUM STANCHION HEIGHT	BASE PLATE SIZE	ANCHOR BOLT SIZE
2 1/2\"/>					

**STANCHION PIPE SUPPORT DETAIL**  
NTS

PIPE SIZE	ROD SIZE	R\"/>
4\"/>		



**HARNESS JOINT DETAIL**  
NTS

TOL-789300PE01-PE-01 PIPING DETAILS  
11/13/2024 3:19 PM - RMD/LEY  
11/20/2024 7:50 AM



PIPING AND EQUIPEMNT DETAILS  
WEST GROUND STORAGE TANK BOOSTER PUMP STATION  
CITY OF CARMEL, INDIANA

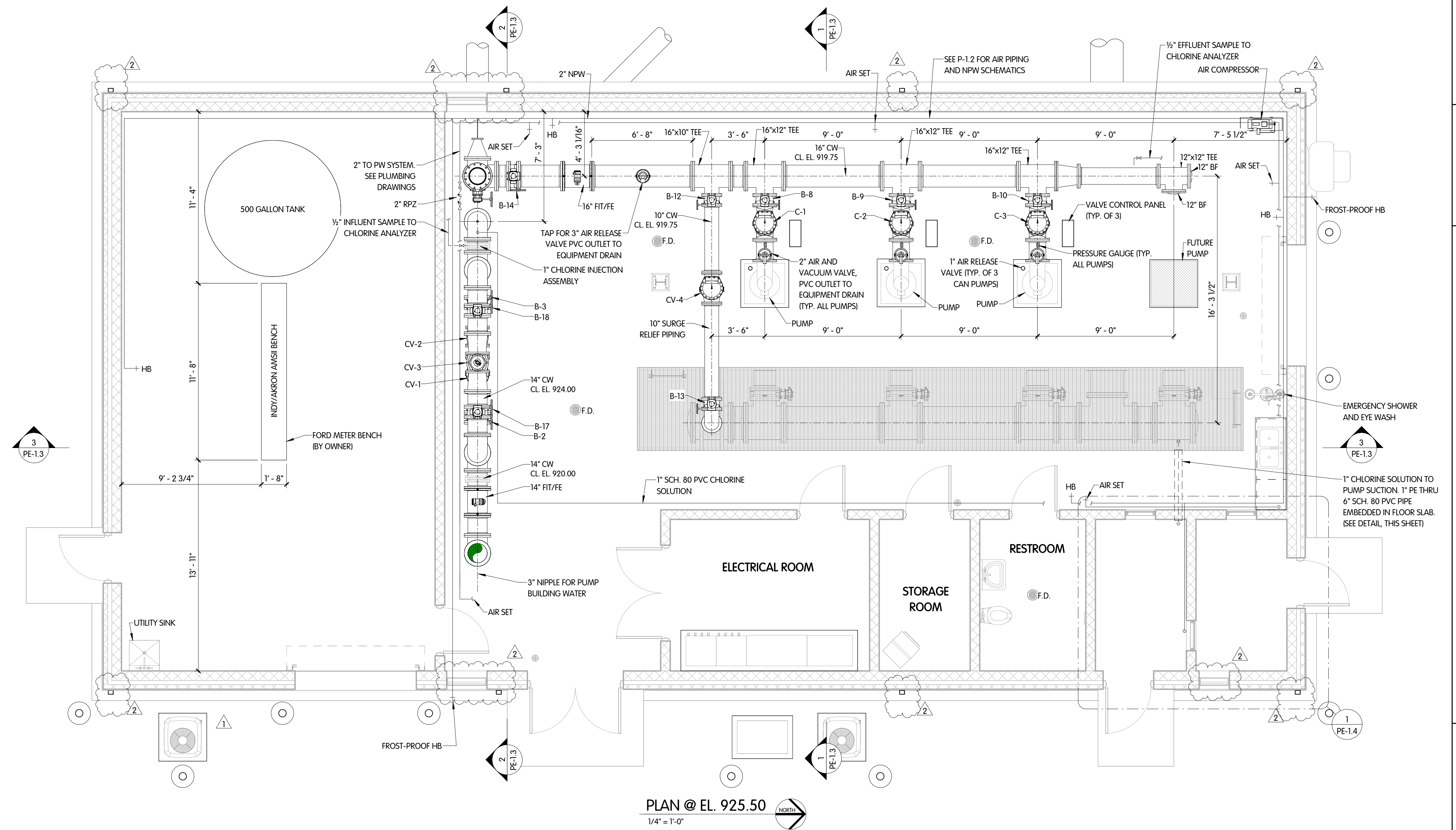
JDM BY  
REVISIONS AFTER ISSUED FOR BID  
NO. 1  
DATE 11-12-24 ADDRESS 4

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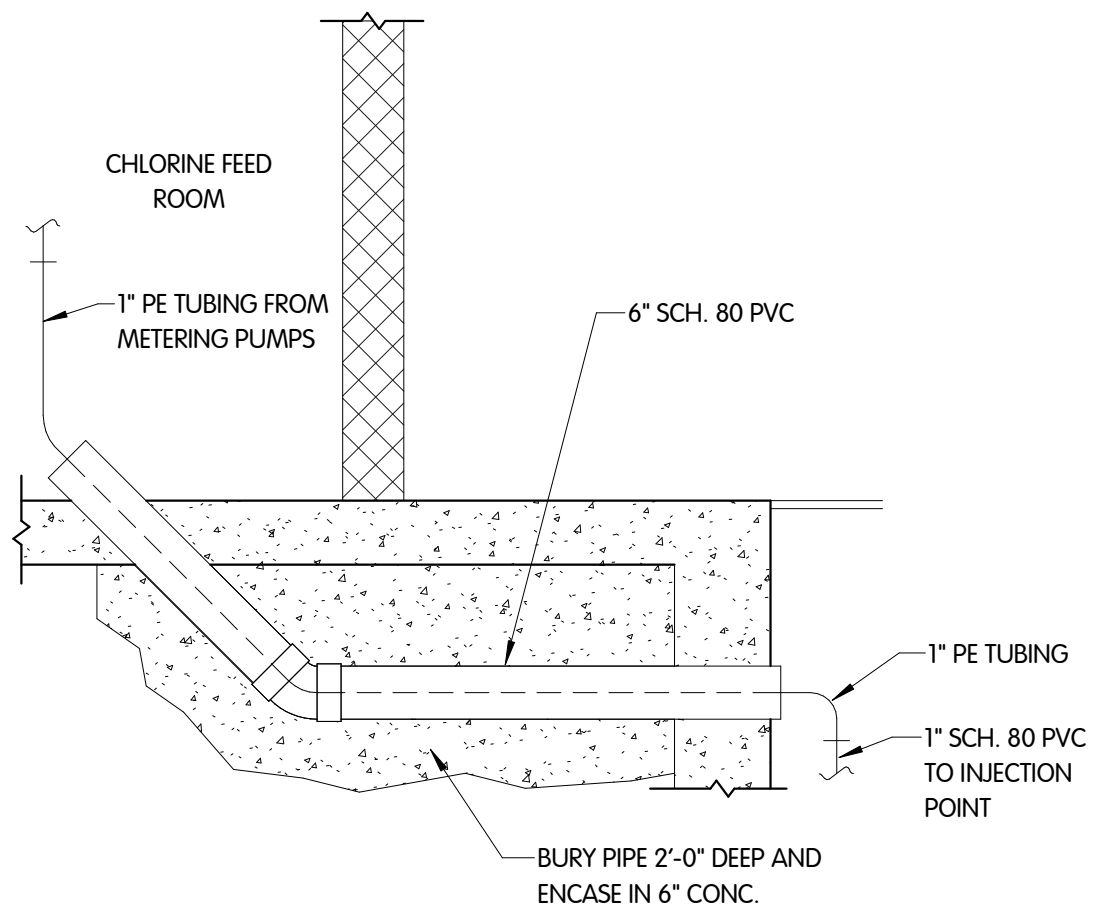
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SCALE AS NOTED  
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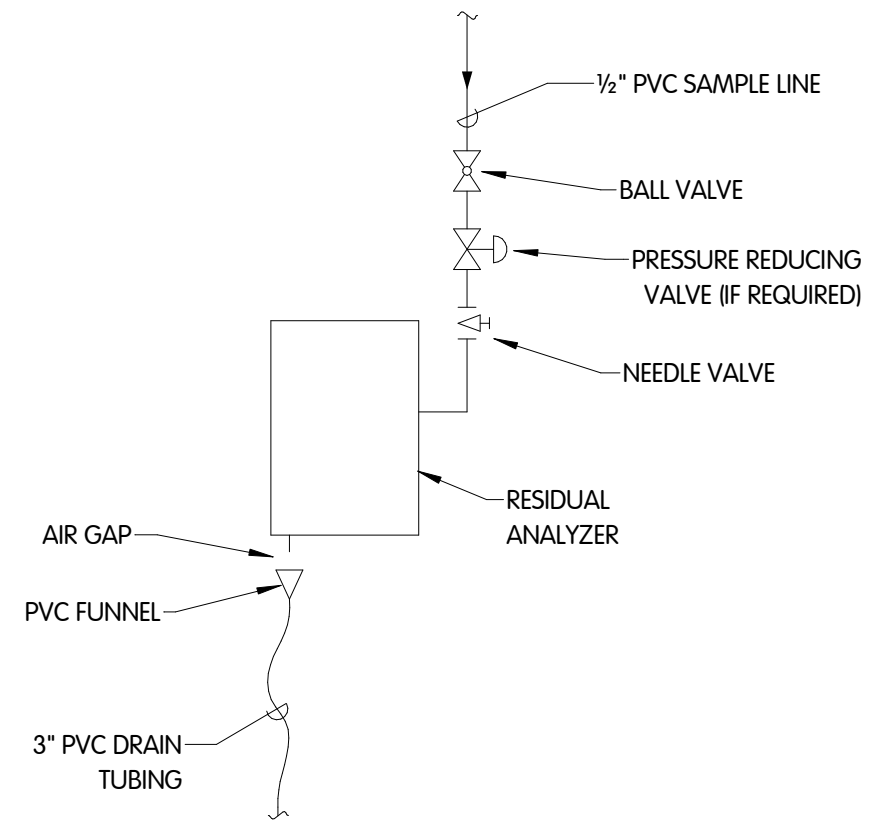
C:\USERS\VALUED\CUSTOMER\ONE\DRIVE - JONES & HENRY ENGINEERS, LTD\DOCUMENTS\7893001-RM\_RM\_WORLEY@JHENG.COM.RVT  
 11/20/2024 7:55:15 AM



PLAN @ EL. 925.50  
 1/4" = 1'-0"



PUMP SUCTION CHLORINE PIPE DETAIL  
 1/2" = 1'-0"



TYP. RESIDUAL ANALYZER DIAGRAM  
 NTS

NOTE:  
 ALL ABOVE GRADE PIPING, FITTINGS, AND VALVES SHALL RECEIVE INSULATION IN ACCORDANCE WITH SPEC SECTION 15080



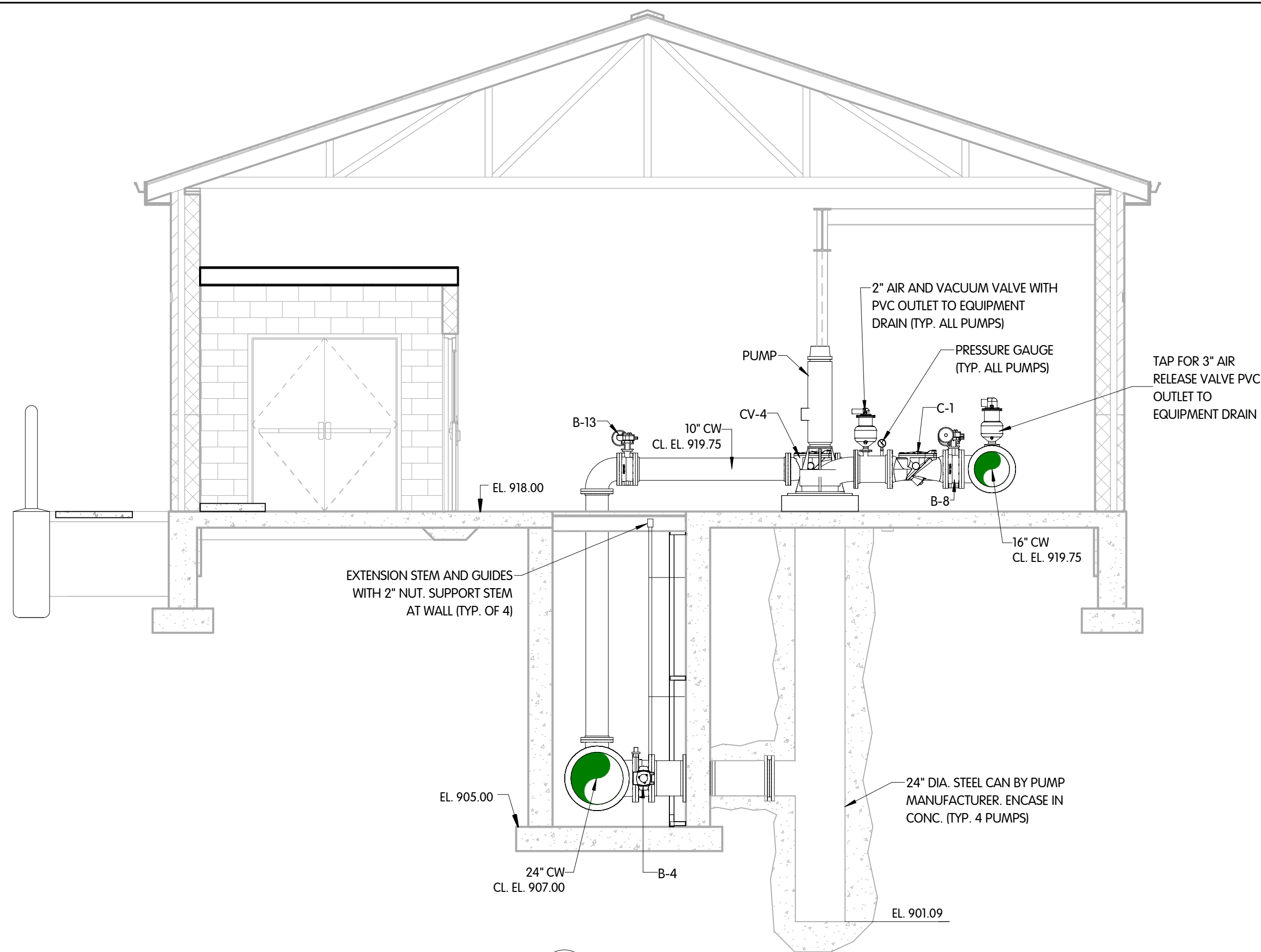
PUMP BUILDING  
 PIPING & EQUIPMENT  
 PLAN @ EL. 925.50 AND DETAILS  
 WEST GROUND STORAGE TANK BOOSTER PUMP STATION  
 CITY OF CARMEL, INDIANA

NO.	DATE	REVISIONS AFTER ISSUED FOR BID
1	11/20/24	ADDENDUM 1
2	11/20/24	ADDENDUM 1

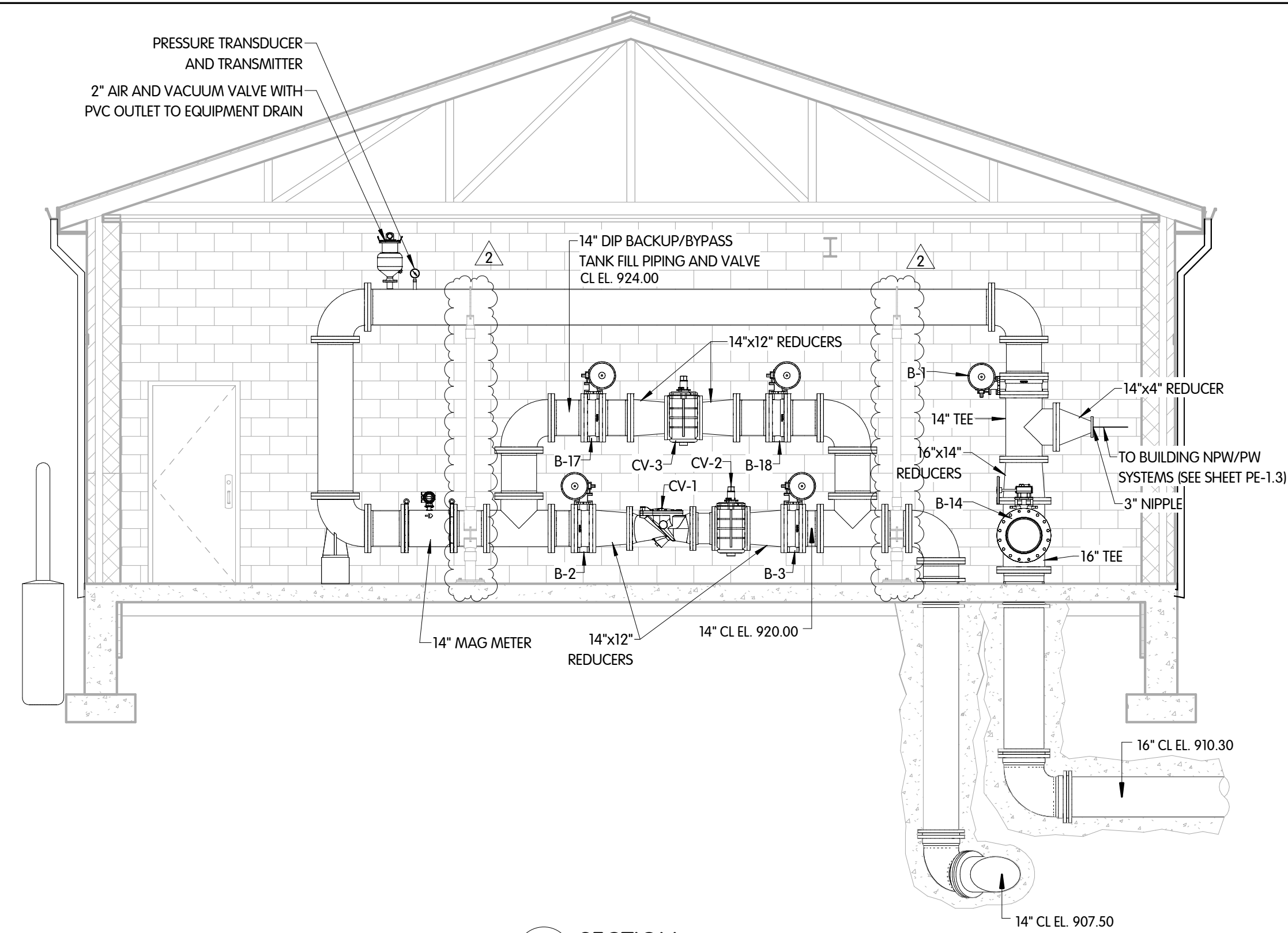
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JOB NO.	451-7893.001	
SCALE	AS INDICATED	
THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE		
DESIGNED	DRAWN	CHECKED
JDM	RGW	JDM
STATUS	ISSUED FOR BID	
DATE	SEPTEMBER 2024	
SHEET NO.		

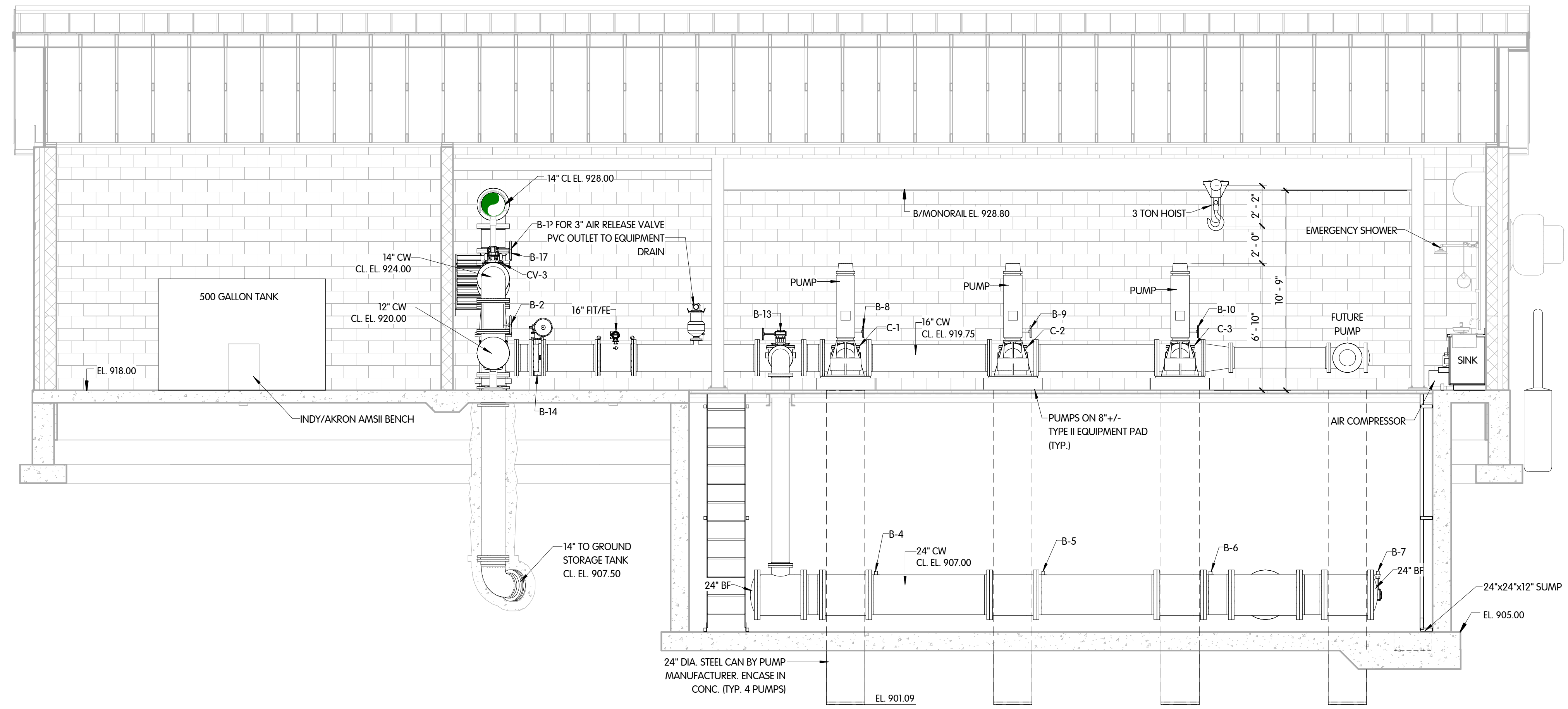




1 SECTION  
1/4" = 1'-0"



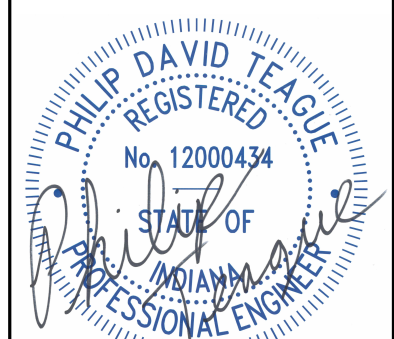
2 SECTION  
1/4" = 1'-0"



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

NOTE:  
ALL ABOVE GRADE PIPING, FITTINGS, AND VALVES SHALL RECEIVE INSULATION IN ACCORDANCE WITH SPEC SECTION 15080

C:\USERS\VALUED CUSTOMER\ONE\DRIVE - JONES & HENRY ENGINEERS, LTD\DOCUMENTS\17893001-RM\_RM\WORKLET@JHENG.COM.RVT  
11/20/2024 7:55:17 AM



PUMP BUILDING  
PIPING & EQUIPMENT  
SECTIONS  
WEST GROUND STORAGE TANK BOOSTER PUMP STATION  
CITY OF CARMEL, INDIANA

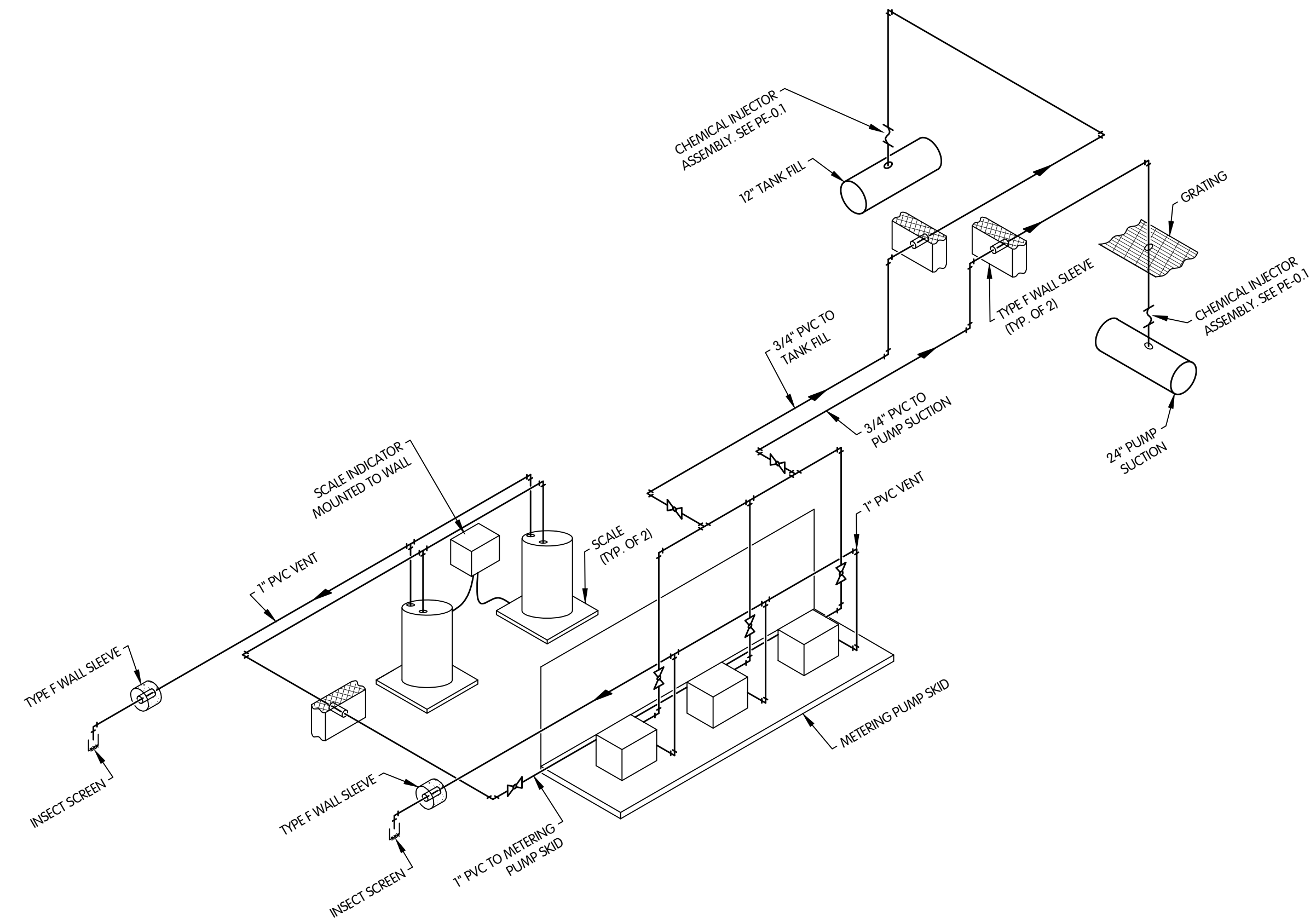
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JDM	LKB	
STATUS: ISSUED FOR BID		
DATE: SEPTEMBER 2024		
SHEET NO.		

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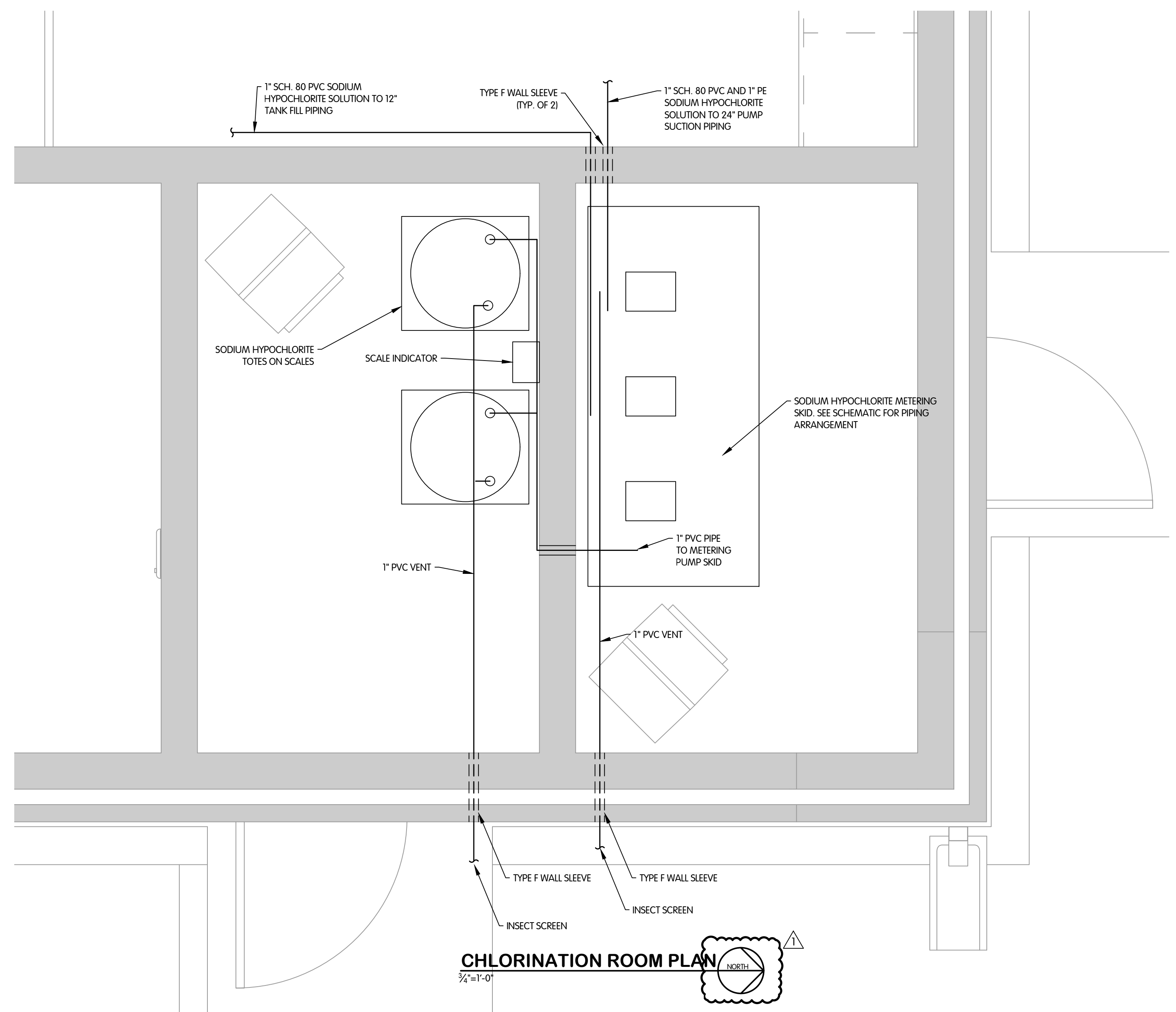
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DESIGNED	CHECKED
JDM	LKB
STATUS: ISSUED FOR BID	
DATE: SEPTEMBER 2024	
SHEET NO.	
PE-1.3	
28 OF 50	



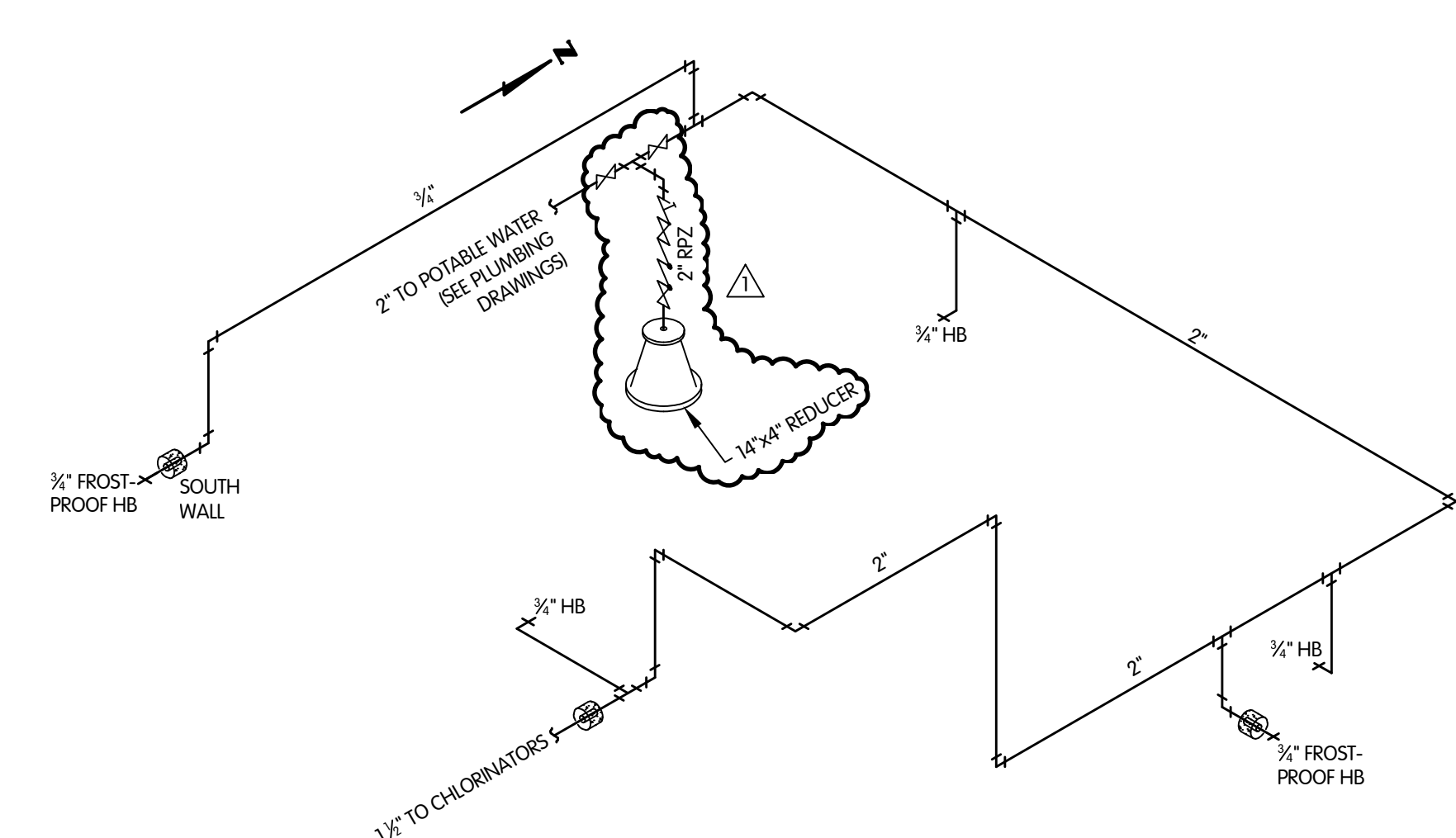
TOL-7893001PE14-CHLORINATOR RM PLAN & ISO  
 11/20/2024 6:21 AM - RWORLEY  
 11/20/2024 7:50 AM



**PROPOSED SODIUM HYPOCHLORITE PIPING ISOMETRIC**  
 NTS



**CHLORINATION ROOM PLAN**  
 3/4"=1'-0"



**POTABLE WATER ISOMETRIC**  
 NTS

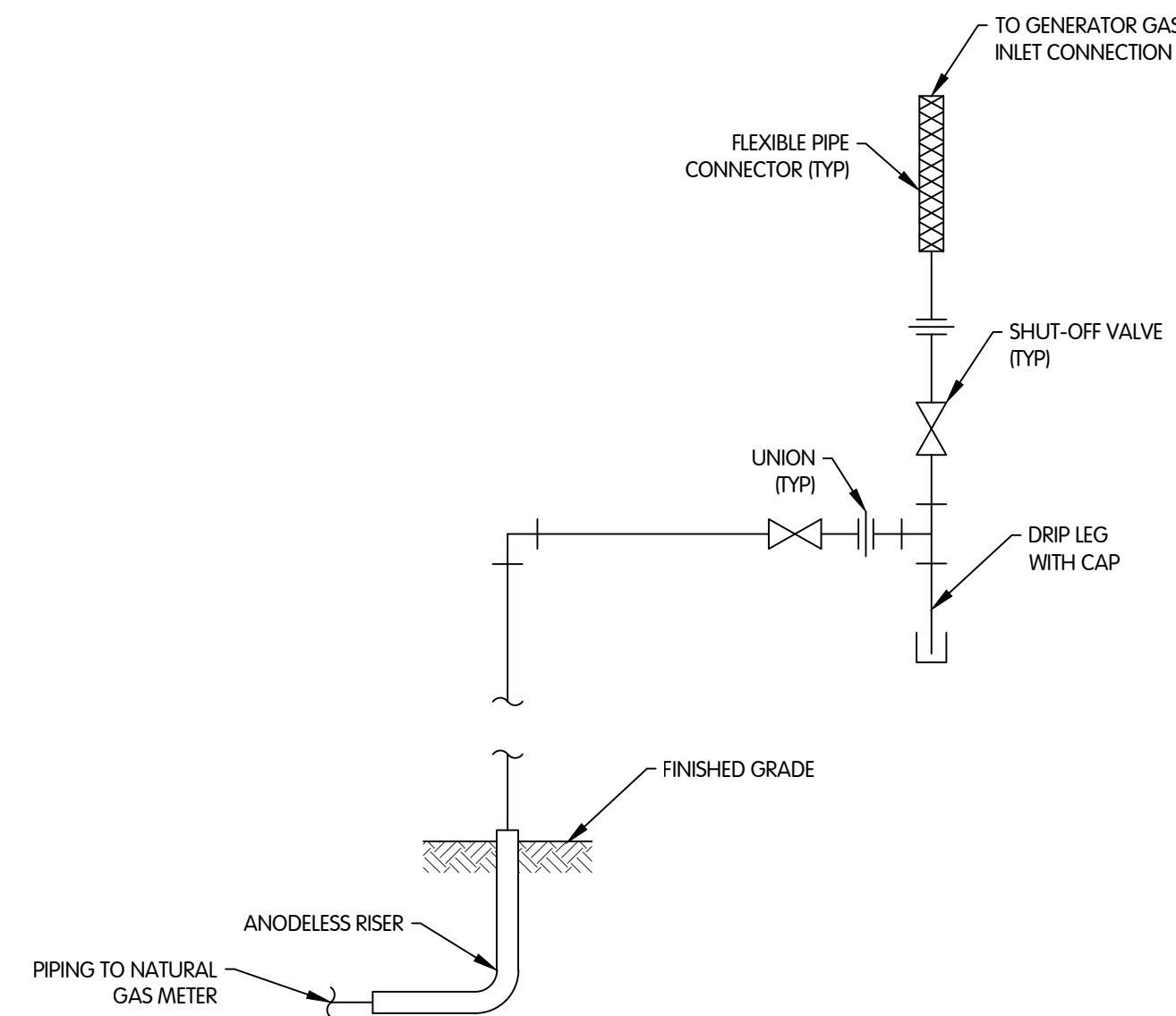


**PUMP BUILDING  
 PIPING AND EQUIPMENT  
 CHLORINATOR ROOM PLAN AND ISOMETRICS**  
 WEST GROUND STORAGE TANK BOOSTER PUMP STATION  
 CITY OF CARMEL, INDIANA

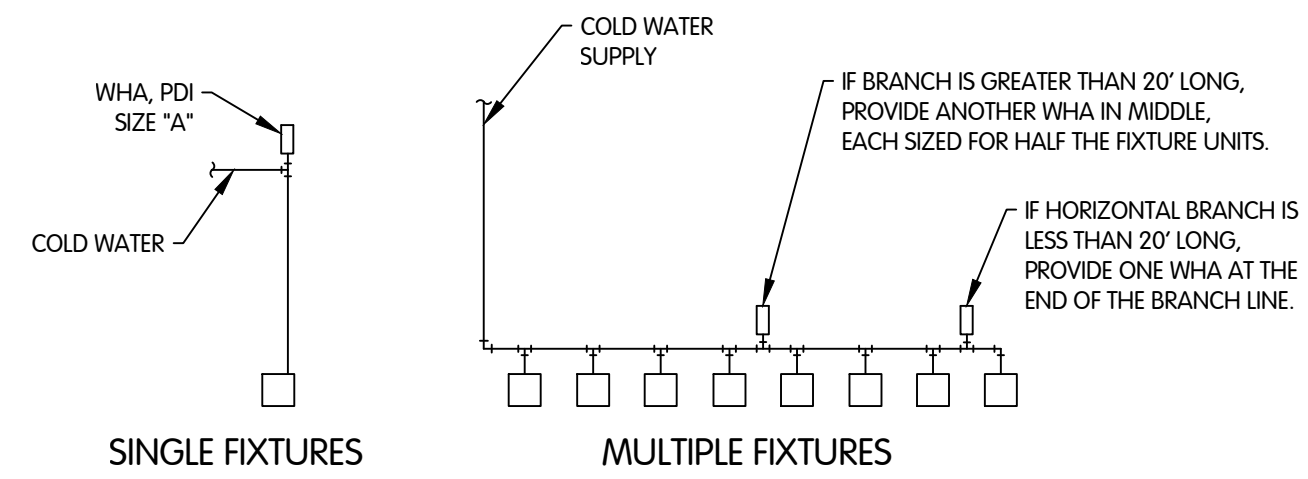
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JDM	LKB	JDM
STATUS: ISSUED FOR BID		
DATE: SEPTEMBER 2024		
SHEET NO.		
PE-1.4		
29 OF 50		

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JOB NO.	451-7893.001	
SCALE	3/4"=1'-0"	
THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE		
DESIGNED	DRAWN	CHECKED
JDM	LKB	JDM
STATUS: ISSUED FOR BID		
DATE: SEPTEMBER 2024		
SHEET NO.		
PE-1.4		
29 OF 50		



**NATURAL GAS PIPING GENERATOR CONNECTION DETAIL**  
NTS

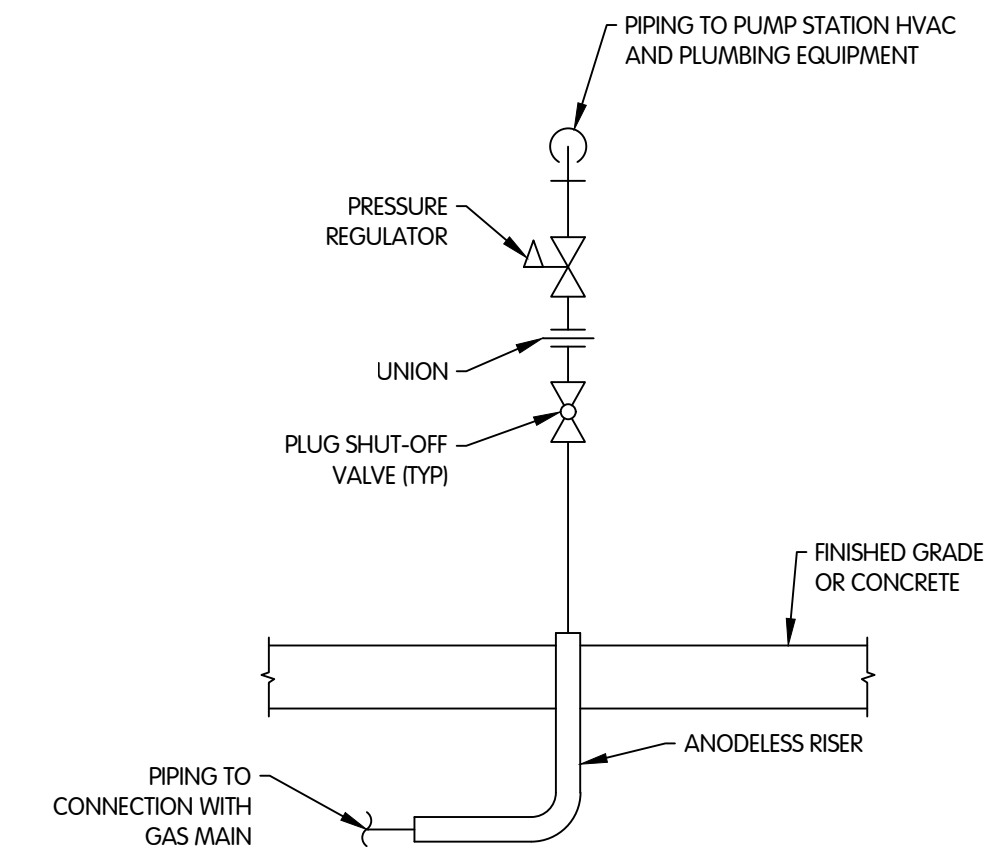


P.D.I. SIZE	PIPE SIZE (IN.)	FIXTURE UNITS (FU)
AA	1/2	1-3
A	1/2	1-11
B	3/4	12-32
C	1	33-60
D	1-1/4	61-113
E	1-1/2	114-154
F	2	155-330

FIXTURE	COLD	HOT
WATER CLOSET FLUSH VALVE	10	---
WATER CLOSET FLUSH TANK	5	---
URINAL FLUSH VALVE	5	---
SHOWER HEAD	3	3
SERVICE SINK/MOP SINK	2.25	2.25
LAVATORY	1.5	1.5
KITCHEN SINK	1	1
HOSE BIBB/WALL FAUCET	3	---
DRINKING FOUNTAIN	0.25	---

**NOTE:**  
DO NOT PROVIDE AIR CHAMBERS. PROVIDE WATER HAMMER ARRESTERS BY PRECISION PLUMBING PRODUCTS, SIOUX CHIEF, WATTS, OR EQUAL, WITH PISTON AND O-RING CONSTRUCTION HAVING PDI #WH-201, ASSE #1010, AND ANSI #AT12.26.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, NEVER IN THE UPSIDE DOWN POSITION. INSTALL IN LINE WITH WATER FLOW DIRECTION IF POSSIBLE. SIZE THE UNITS AS SHOWN ON THE DRAWINGS AND/OR PER TABLES SHOWN ABOVE. INSTALL PER PDI STANDARDS AND MANUFACTURER'S INSTRUCTIONS.

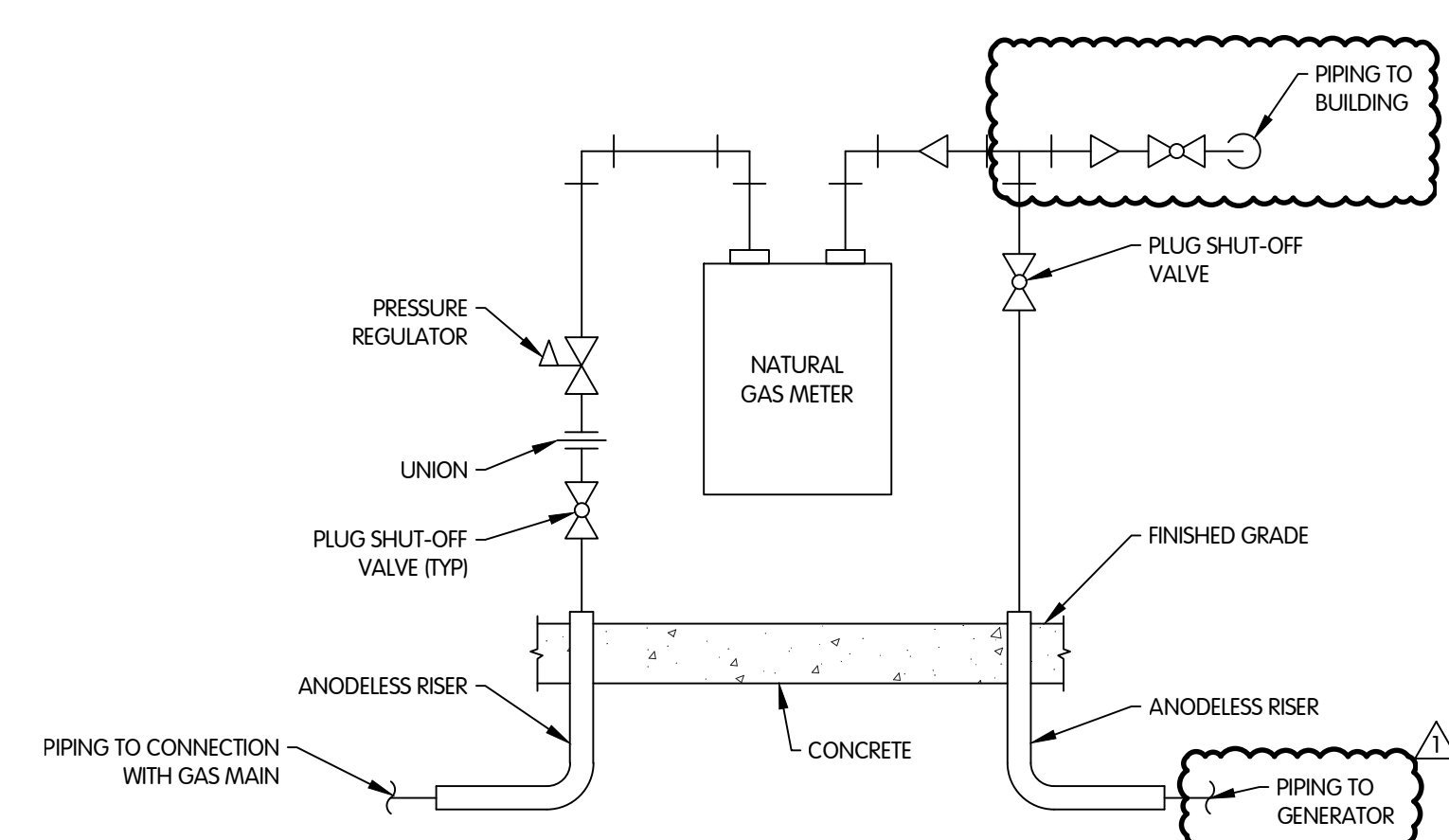
**WATER HAMMER ARRESTER DETAIL**  
NTS



**NOTES:**

1. NATURAL GAS PRESSURE REGULATOR, PIPING, AND APPURTENANCES TO BE FURNISHED AND INSTALLED BY CONTRACTOR.
2. NATURAL GAS PIPING SHALL BE INSTALLED PER NFPA 54 AND LOCAL AND STATE CODES.
3. ALL BURIED NATURAL GAS PIPING SHALL BE PE 4710 HDPE IPS SDR-11. ALL ABOVE GRADE OR EXPOSED PIPING SHALL BE SCHEDULE 40 BLACK STEEL.

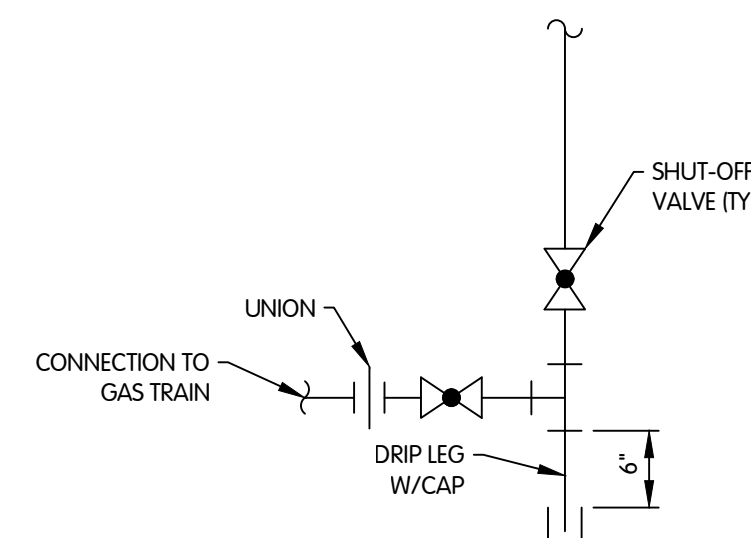
**NATURAL GAS INTO BUILDING DETAIL**  
NTS



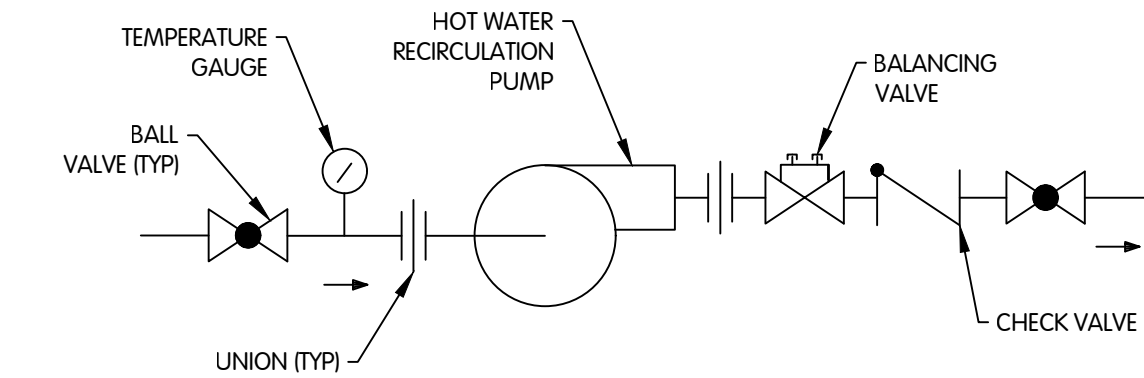
SERVICE OR BUILDING	FLOW (CFH)	DELIVERY PRESSURE (INCHES W.C.)
GUH-1-1	45	14
GUH-1-2	45	14
GUH-1-3	45	14
GENERATOR	6454	14
FC-1-2	40	14

- NOTES:**
1. NATURAL GAS METER AND PRESSURE REGULATOR SET ASSEMBLY TO BE FURNISHED AND INSTALLED BY CENTERPOINT ENERGY.
  2. NATURAL GAS MAIN EXTENSION AND THE FURNISHING, SIZING, AND INSTALLATION OF SERVICE PIPING SHALL BE THE RESPONSIBILITY OF CENTERPOINT ENERGY.
  3. NATURAL GAS METER AND PRESSURE REGULATOR SET ASSEMBLY SHALL BE PROTECTED PER THE REQUIREMENTS OF CENTERPOINT ENERGY.
  4. ALL BURIED NATURAL GAS PIPING SHALL BE POLYETHYLENE SDR-11. ALL ABOVE GRADE OR EXPOSED PIPING SHALL BE SCHEDULE 40 BLACK STEEL.
  5. INSTALL BOLLARDS AROUND NATURAL GAS METER AND PIPING FOR PROTECTION. SEE BOLLARD DETAIL.

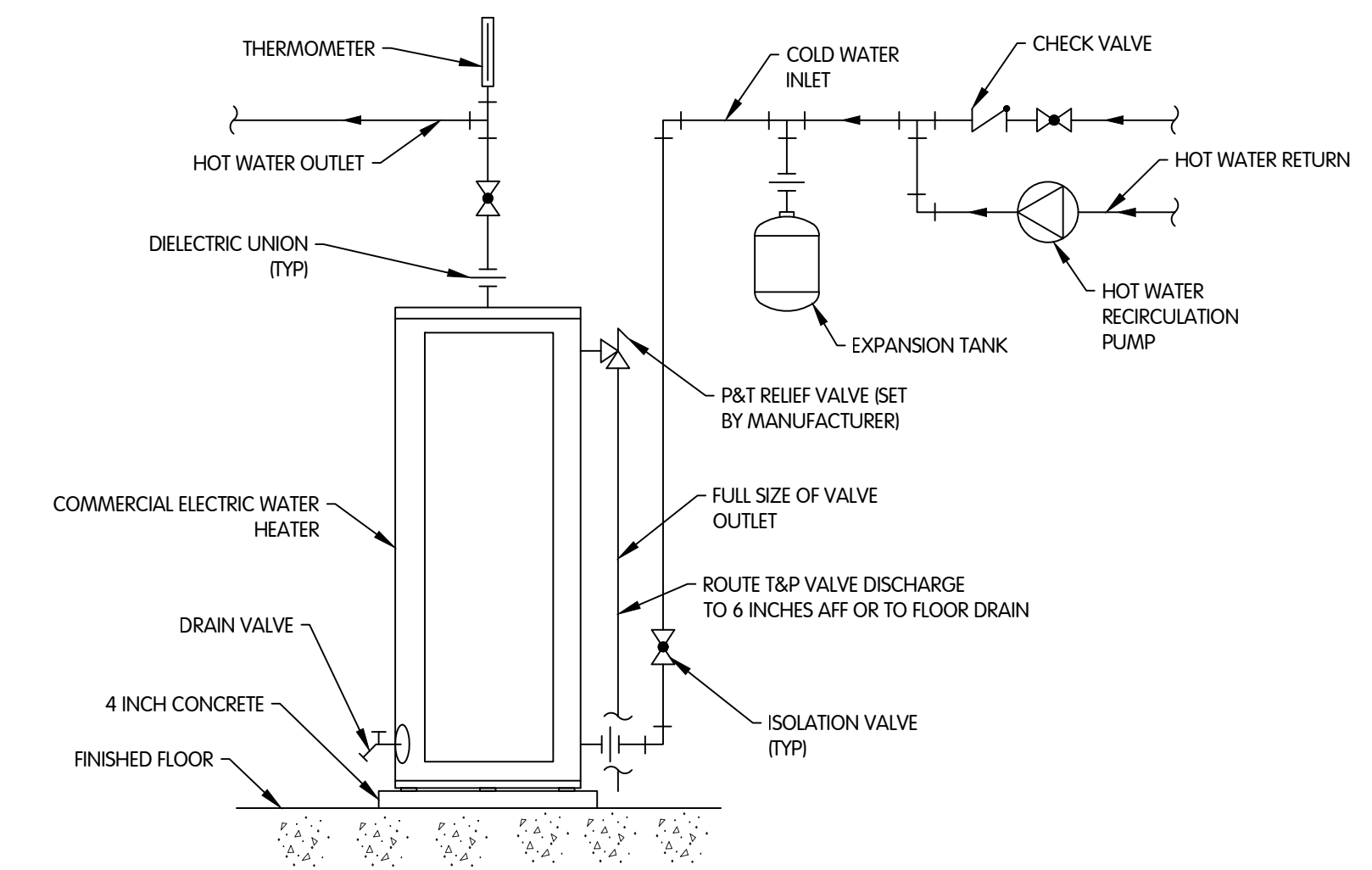
**NATURAL GAS METER AND PRESSURE REGULATOR SET ASSEMBLY DETAIL**  
NTS



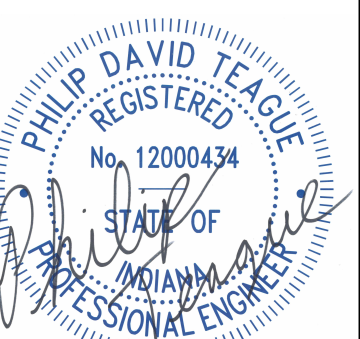
**GAS PIPING EQUIPMENT CONNECTION DETAIL**  
NTS



**HOT WATER RECIRCULATION PUMP DETAIL**  
NTS

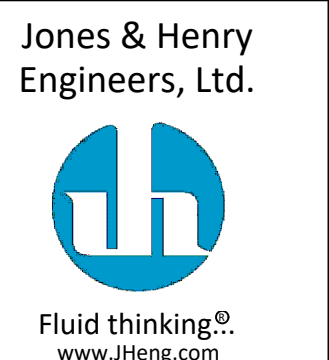


**COMMERCIAL ELECTRIC WATER HEATER DETAIL**  
NTS



**PLUMBING DETAILS**  
**WEST GROUND STORAGE TANK BOOSTER PUMP STATION**  
**CITY OF CARMEL, INDIANA**

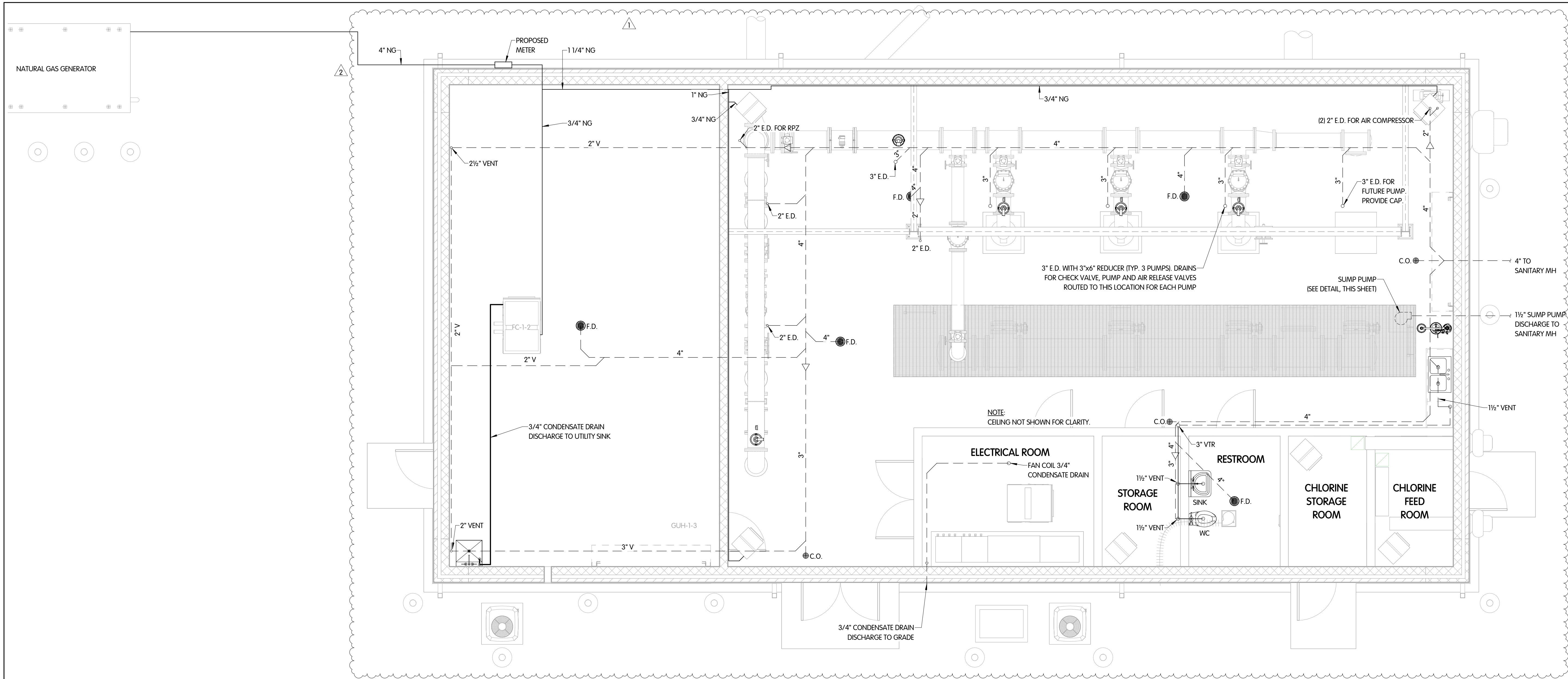
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 DESIGNED JDM DRAWN RGW CHECKED JDM  
 STATUS ISSUED FOR BID  
 DATE SEPTEMBER 2024  
 SHEET NO. P-0.3  
 32 OF 50



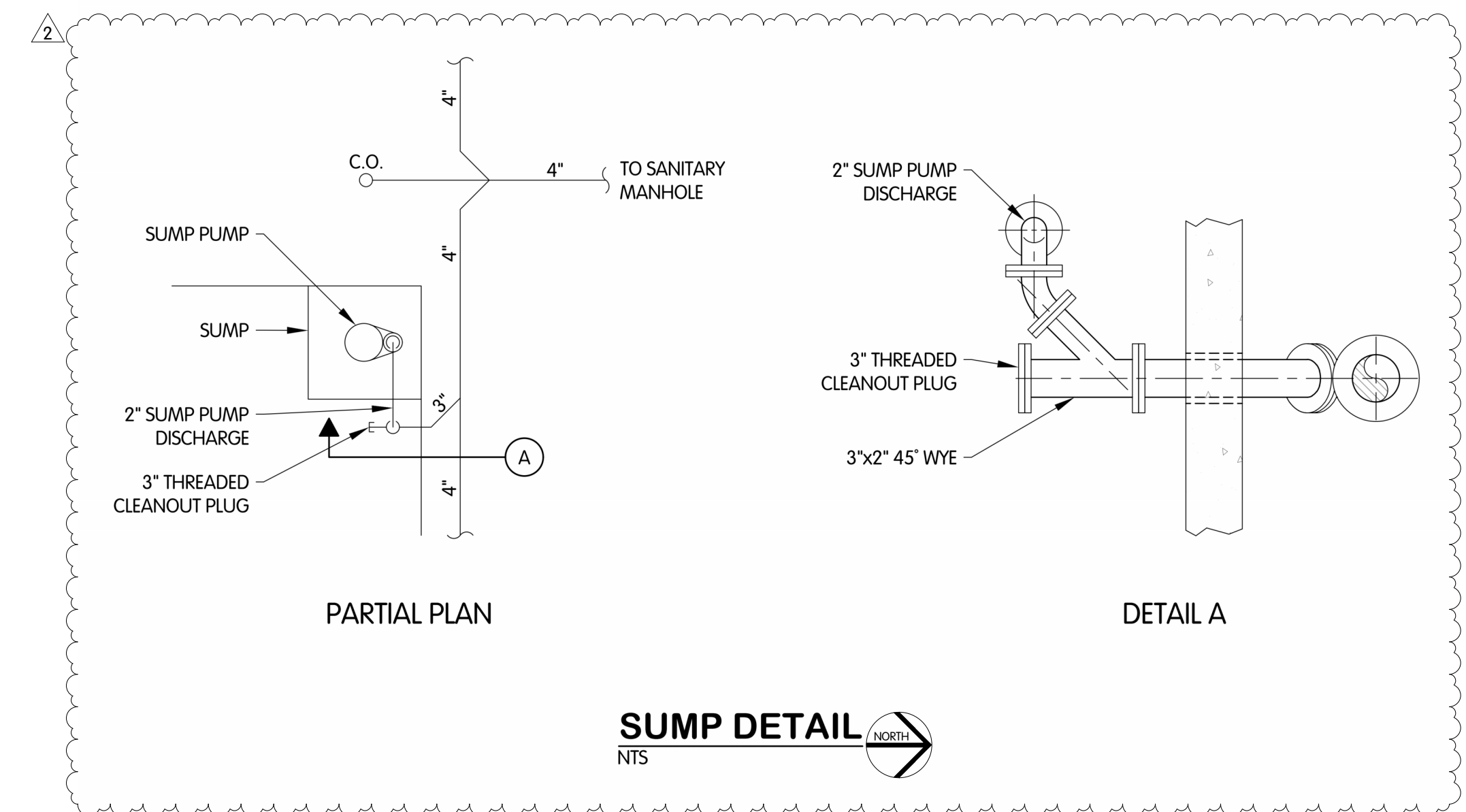
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 SCALE AS NOTED  
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 DESIGNED JDM DRAWN RGW CHECKED JDM  
 STATUS ISSUED FOR BID  
 DATE SEPTEMBER 2024  
 SHEET NO. P-0.3  
 32 OF 50



C:\USERS\VALUED CUSTOMER\ONE\DRIVE - JONES & HENRY ENGINEERS, LTD\DOCUMENTS\17893001-RM\_RWORLEY@JHENG.COM.RVT  
11/20/2024 7:55:13 AM



PLAN @ EL. 930.00  
1/4" = 1'-0"




SUMP DETAIL  
NTS



PUMP BUILDING  
PLUMBING  
PLAN @ EL. 930.00  
WEST GROUND STORAGE TANK BOOSTER PUMP STATION  
CITY OF CARMEL, INDIANA

NO.	DATE	REVISIONS AFTER ISSUED FOR BID
1	11/20/24	ADDENDUM 1
2	12/24/24	ADDENDUM 1

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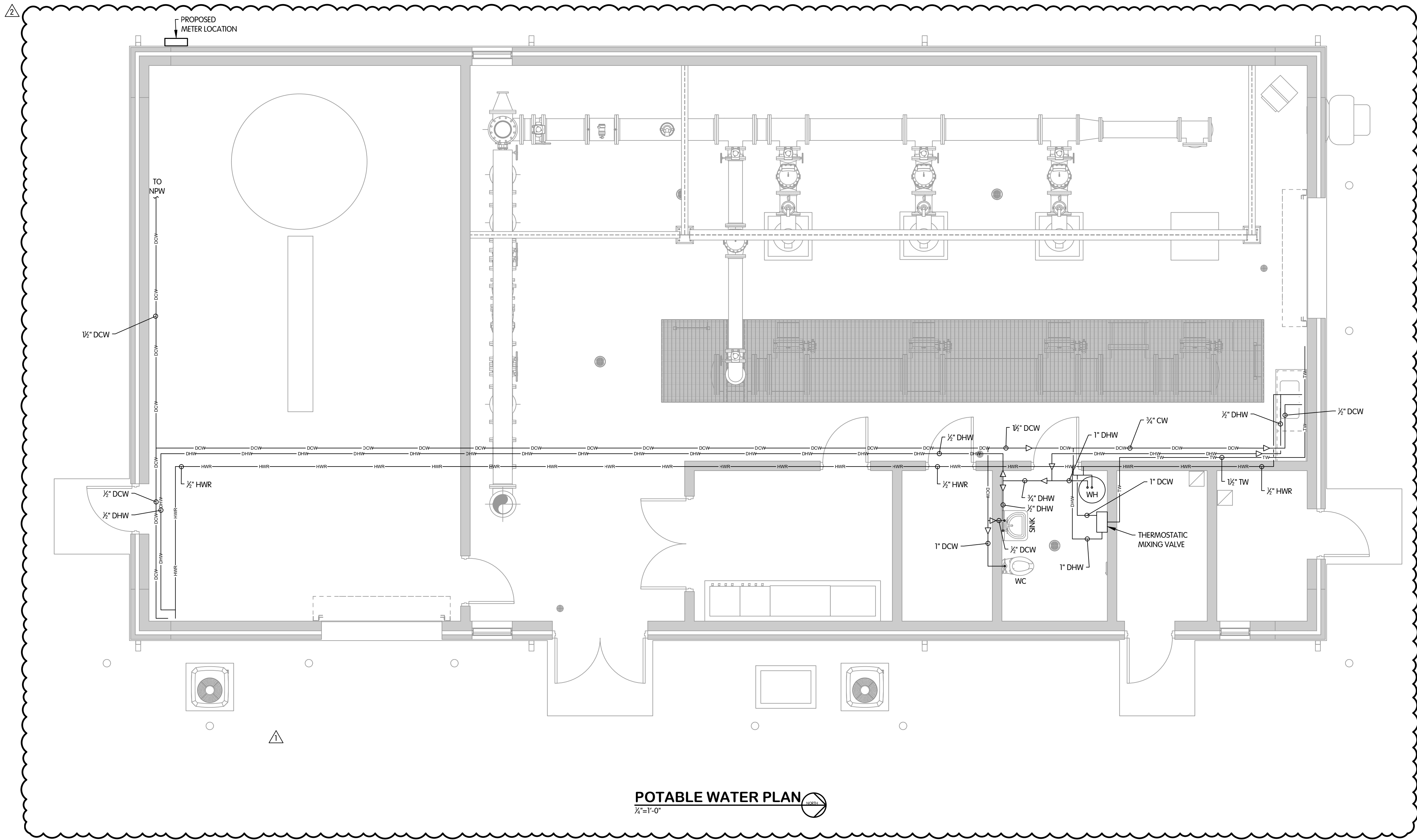
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DESIGNED	DRAWN	CHECKED
JDM	RGW	JDM

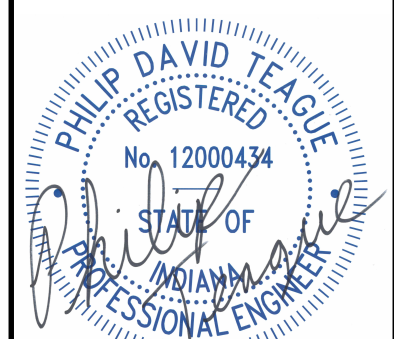
STATUS: ISSUED FOR BID  
DATE: SEPTEMBER 2024  
SHEET NO.:  
**P-1.1**  
33 OF 50

TOL-7893001P2-POTABLE WATER PLAN  
 11/17/2024 9:06 AM - RWORLEY  
 11/20/2024 7:50 AM

NATURAL GAS GENERATOR

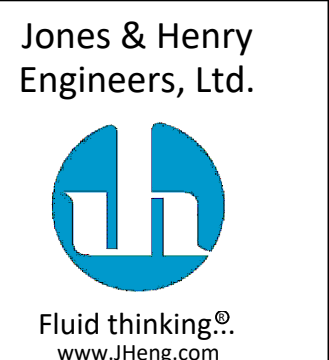


**POTABLE WATER PLAN**  
 1/4"=1'-0"



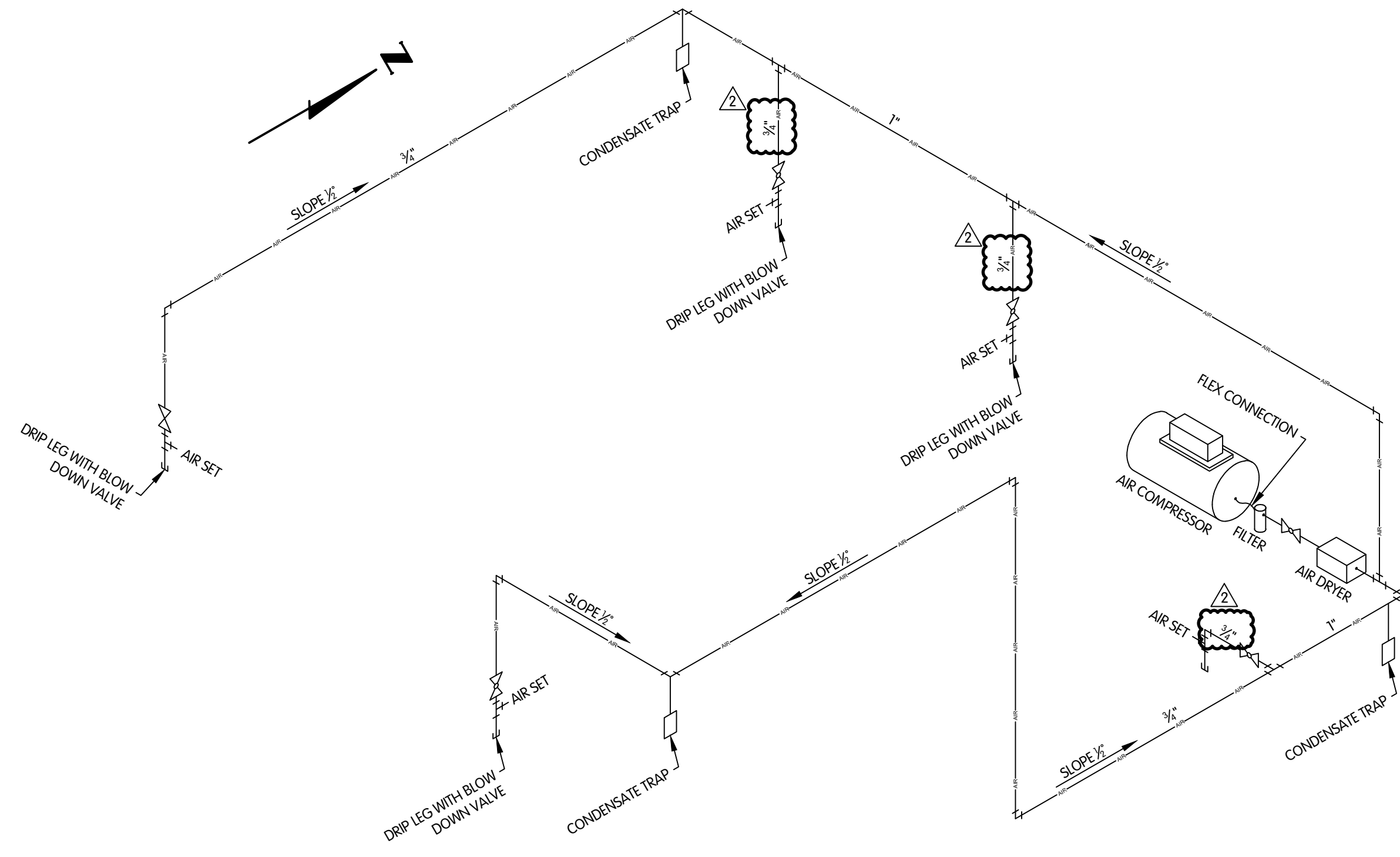
**PUMP STATION  
 PLUMBING  
 POTABLE WATER PLAN  
 WEST GROUND STORAGE TANK BOOSTER PUMP STATION  
 CITY OF CARMEL, INDIANA**

NO.	DATE	REVISIONS AFTER ISSUED FOR BID	BY
1	10-24-24	ADDENDUM 1	JDM
2	11-22-24	ADDENDUM 4	JDM

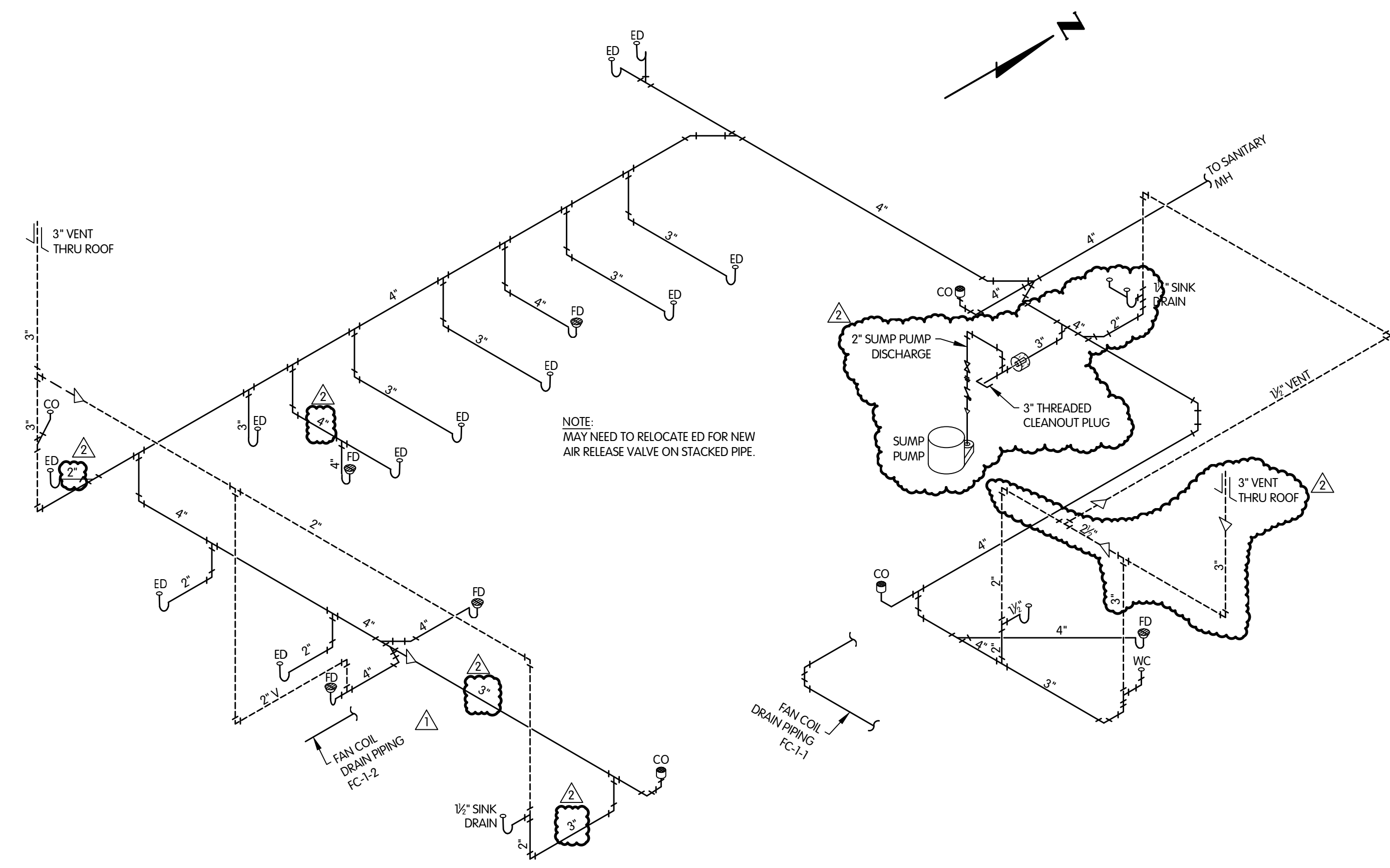


JOB NO.	451-7893.001	
SCALE	1/4"=1'-0"	
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DESIGNED	DRAWN	CHECKED
JDM	LKB	JDM
STATUS	ISSUED FOR BID	
DATE	SEPTEMBER 2024	
SHEET NO.		
P-1.2		
34 OF 50		

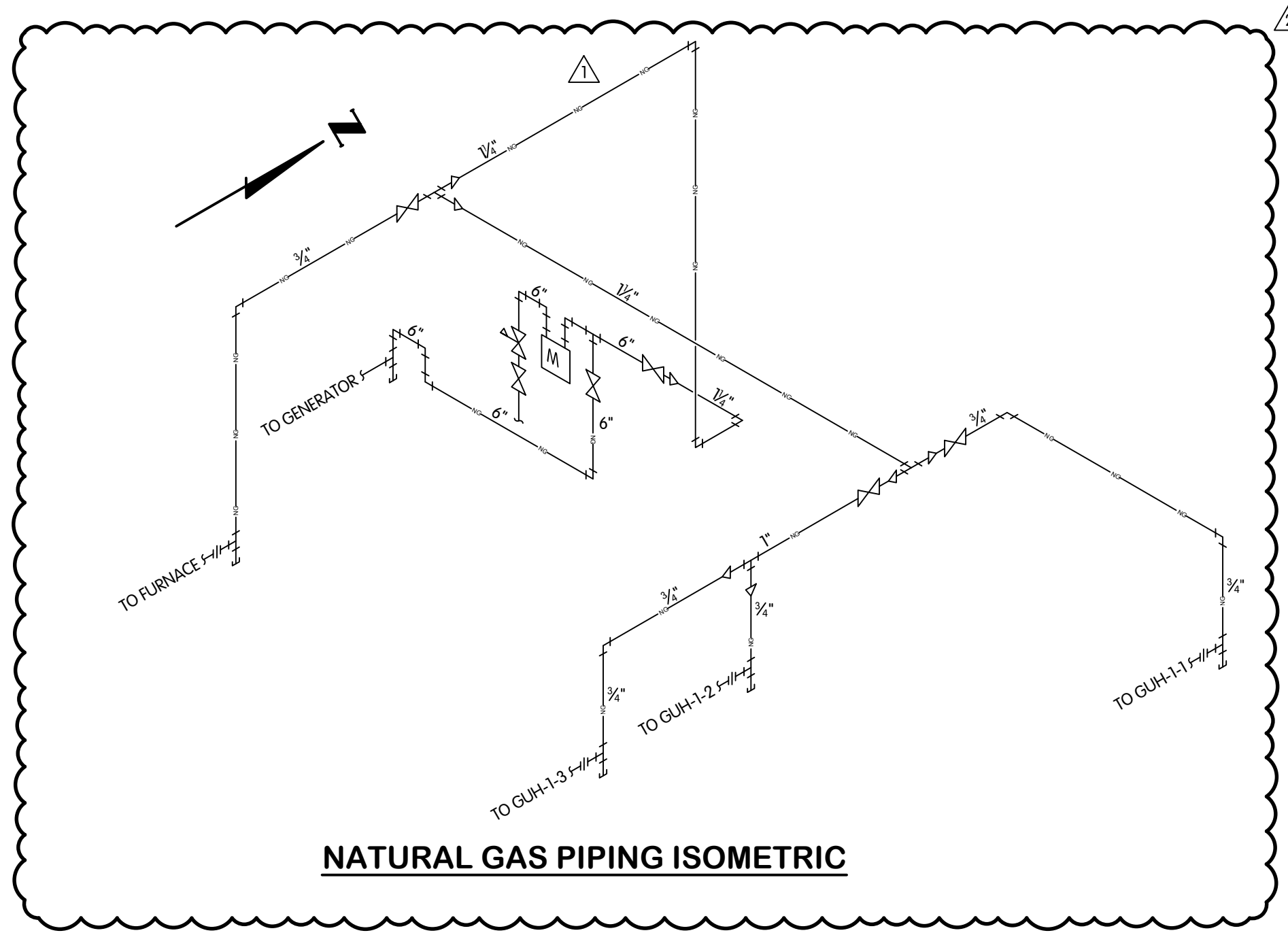




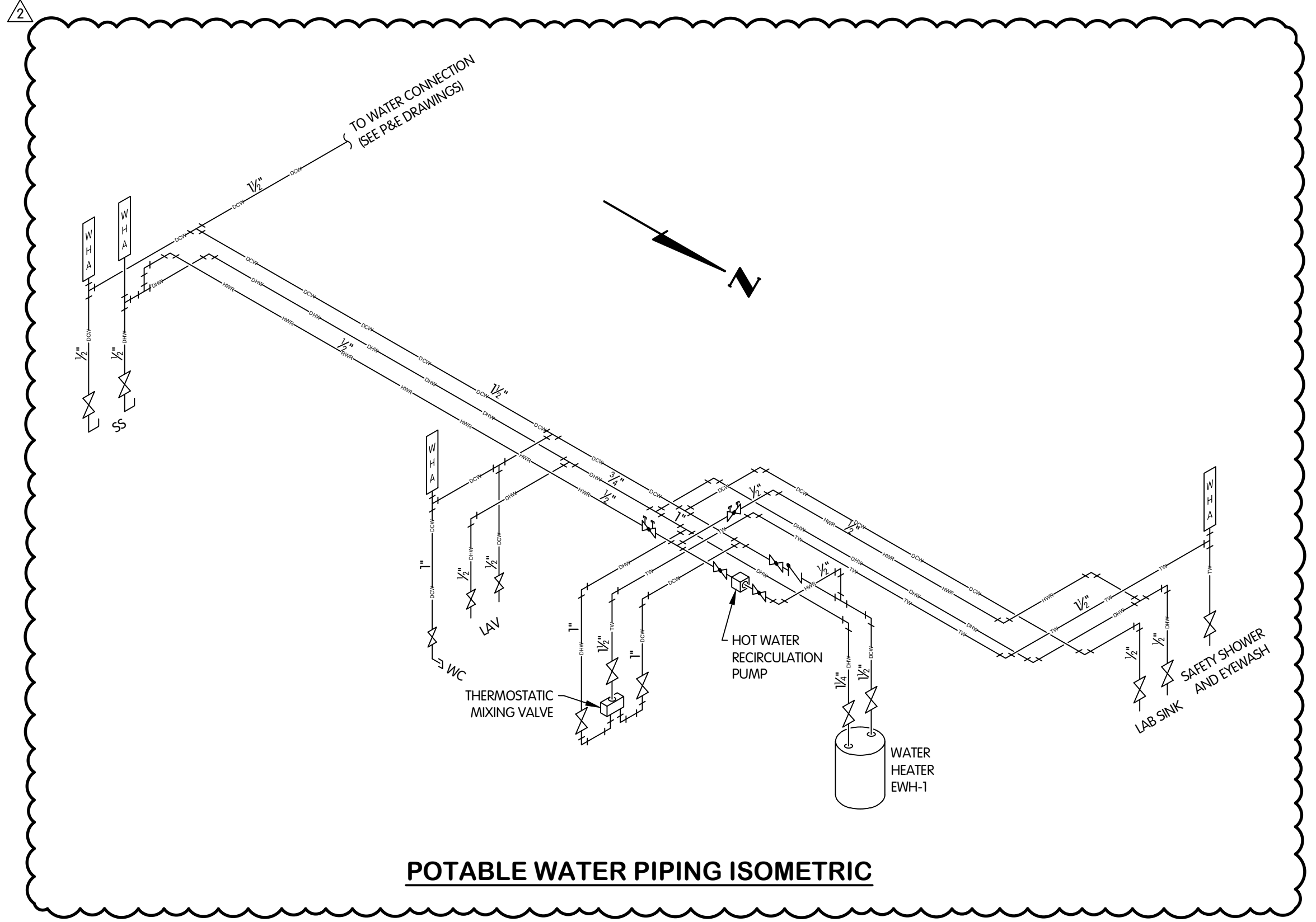
**COMPRESSED AIR ISOMETRIC**



**PUMP BUILDING SANITARY AND VENT PIPING ISOMETRIC**



**NATURAL GAS PIPING ISOMETRIC**



**POTABLE WATER PIPING ISOMETRIC**



**PUMP STATION  
PLUMBING  
ISOMETRICS**  
 WEST GROUND STORAGE TANK BOOSTER PUMP STATION  
 CITY OF CARMEL, INDIANA

DESIGNED	DRAWN	CHECKED
JDM	LKB	JDM
STATUS: ISSUED FOR BID		
DATE: SEPTEMBER 2024		
SHEET NO.		
P-1.3		
35 OF 50		

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JOB NO.	451-7893.001	
SCALE	NONE	
THIS LINE SCALES IF WHEN PLOTTED TO NOTED SCALE		
DESIGNED	DRAWN	CHECKED
JDM	LKB	JDM
STATUS: ISSUED FOR BID		
DATE: SEPTEMBER 2024		
SHEET NO.		
P-1.3		
35 OF 50		

TOL-7893001R13-49 PLUMBING DETAILS  
 11/20/2024, 7:48 AM - RWORLEY  
 11/20/2024, 7:50 AM



SPLIT SYSTEM FAN COIL UNIT/CONDENSING UNIT SCHEDULE																							
TAG	LOCATION	TYPE	SUPPLY AIRFLOW (CFM)	OUTSIDE AIRFLOW (CFM)	SUPPLY FAN			HEATING OUTPUT CAPACITY	COOLING CAPACITY		AHU				FILTER		CU				NOTES		
					E.S.P. (IN. W.C.)	HP	BLOWER TYPE		TOTAL (MBH)	SENSIBLE (MBH)	MAKE	MODEL	V/PH/HZ	MCA	MFS	TYPE	MERV	MAKE	MODEL	V/PH/HZ		MCA	MFS
FC-1-1/CU-1-1	ELECTRICAL ROOM	SPLIT SYSTEM/DX COIL	2,000	200	0.60	1-1/2	CENTRIFUGAL	5 KW	84	54	TRANE	BCHE072	480/3/60	11.65	15.0	2" PLEATED	8	TRANE	TTA09044AAA	480/3/60	17.0	30.0	1,2,3,4,5,6,7,8,9
FC-1-2/CU-1-2	METER ROOM	FURNACE/DX COIL	1,100	200	0.60	0.5	CENTRIFUGAL	38.8 MBH	34	25	TRANE	4TXCB004DS3 + S9X2B040U3P5B	120/1/60	9.40	15.0	2" PLEATED	8	TRANE	4TTR4036	480/3/60	18.0	30.0	1,2,3,4,5,6,7,8,9

- NOTES:
1. INSTALL PER MANUFACTURERS INSTRUCTIONS.
  2. PROVIDE AIR HANDLING UNIT WITH SPRING VIBRATION ISOLATORS FOR HORIZONTAL INSTALLATION.
  3. PROVIDE EVAPORATOR COIL WITH REMOVABLE COMPOSITE DRAIN PAN.
  4. EVAPORATOR COIL ENTERING AIR DRY BULB/WET BULB TEMPERATURES: 80/67 DEGREES F.
  5. CONDENSING UNIT ENTERING AIR DRY BULB TEMPERATURE: 95 DEGREES F.
  6. PROVIDE PRE-CHARGED LINE SETS FOR INSTALLTION OF REFRIGERANT PIPING, REFRIGERNT R-410A.
  7. PROVIDE 24 VOLT TWO STAGE HEATING, TWO STAGE COOLING THERMOSTAT WITH AUTOMATIC CHANGEOVER.
  8. PROVIDE CONDENSING UNIT WITH LOW AMBIENT CONTROL FOR COOLING OPERATION TO OUTDOOR AMBIENT OF 0 DEGREES F.
  9. HARD WIRED REMOTE CONTROLLER WITH MODE, FAN SPEED, AND TEMPERATURE SELECTION.

AIR OUTLETS AND INLETS SCHEDULE									
TAG	SERVICE	TYPE	STATIC P.D. (IN. W.C.)	PATTERN	MATERIAL	FINISH	MAKE	MODEL	NOTES
SR	SUPPLY	REGISTER	0.08	DOUBLE DEFLECTION	ALUMINUM	CLEAR ANODIZED	TITUS	272FS	1,2,3,4
EG	EXHAUST	GRILLE	0.08	EGGCRATE	ALUMINUM	CLEAR ANODIZED	TITUS	50F	1,2,3,4

NOTES:

1. INSTALL PER MANUFACTURERS INSTRUCTIONS.
2. SEE DRAWING FOR SIZES, AIRFLOW, AND QUANTITY.
3. INTEGRAL BALANCING DAMPER.
4. DUCT MOUNTING.
5. LAY-IN T-BAR CEILING GRID MOUNTING.

GAS FIRED UNIT HEATER SCHEDULE													
TAG	LOCATION	TYPE	AIRFLOW DISCHARGE	HEATING SECTION		AIRFLOW (CFM)	TEMPERATURE RISE (°F)	THROW (FT.)	ELECTRICAL		MAKE	MODEL	NOTES
				INPUT (BTUH)	OUTPUT (BTUH)				HP	V/PH/HZ			
GUH-1-1	PUMP ROOM	PROPELLER	HORIZONTAL	45,000	37,350	629	55	37	0.03	120/1/60	REZNR	UD245	1,2,3,4
GUH-1-2	PUMP ROOM	PROPELLER	HORIZONTAL	45000	37350	629	55	37	0.03	120/1/60	REZNR	UD245	1,2,3,4
GUH-1-3	PUMP ROOM	PROPELLER	HORIZONTAL	45000	37350	629	55	37	0.03	120/1/60	REZNR	UD245	1,2,3,4

NOTES:

1. INSTALL PER MANUFACTURERS INSTRUCTIONS.
2. UNITS SHALL BE UL LISTED.
3. UL LISTED, NEMA 7 RATED, DISCONNECT SWITCH.
4. 24 VOLT, SINGLE STAGE, WALL MOUNTED THERMOSTAT.

ELECTRIC UNIT HEATER SCHEDULE											
TAG	LOCATION	AIRFLOW DISCHARGE	OUTPUT CAPACITY (KW)	AIRFLOW (CFM)	THROW (FT)	AIR VELOCITY (FPM)	ELECTRICAL		MAKE	MODEL	NOTES
							FAN (HP)	V/PH/HZ			
EUH-1-1	CHLORINATOR ROOM	HORIZONTAL	5	405	12	430	1/15 HP	480/3/60	CHROMALOX	HD3D-500	1,2,6,7,9
EUH-1-2	CHLORINATOR ROOM	HORIZONTAL	5	405	12	430	1/15 HP	480/3/60	CHROMALOX	HD3D-500	1,2,6,7,9
EUH-1-3	STORAGE ROOM	HORIZONTAL	2	410	12	880	1/40 HP	208/1/60	CHROMALOX	LUH-02-21-34	1,2,3,4,5
EW-1-1	REST ROOM	HORIZONTAL	2	-	-	-	-	208/1/60	QMARK	CWH1208DSAF	1,2,10,11

NOTES:

1. INSTALL PER MANUFACTURERS INSTRUCTIONS.
2. UNITS SHALL BE UL LISTED.
3. PROVIDE WITH WALL MOUNT SWIVEL BRACKET FOR UNIT MOUNTING.
4. PROVIDE WITH A UL LISTED DISCONNECT SWITCH.
5. PROVIDE 120 VOLT, SINGLE STAGE, WALL MOUNTED THERMOSTAT, CHROMALOX TYPE WR-80, OR EQUAL.
6. PROVIDE NEMA 4X, HORIZONTAL BLOWER HOSEDOWN TYPE, EPOXY COATED, STAINLESS STEEL CONSTRUCTION UNIT WITH UL LISTED DISCONNECT SWITCH NEMA 4X RATED.
7. PROVIDE WITH A STAINLESS STEEL, EPOXY COATED, WALL MOUNT SWIVEL BRACKET FOR UNIT MOUNTING.
8. PROVIDE WITH A STAINLESS STEEL, WALL MOUNT SWIVEL BRACKET FOR UNIT MOUNTING.
9. PROVIDE 120 VOLT, SINGLE STAGE, WALL MOUNTED THERMOSTAT, NEMA 4X, INDEECO #1004328, CHROMALOX WCRT-100, OR EQUAL.
10. PROVIDE WITH A SURFACE MOUNTING FRAME.
11. INTEGRAL ADJUSTABLE THERMOSTAT WITH 40-90 DEGREES F TEMPERATURE RANGE.

FAN SCHEDULE										
TAG	LOCATION	TYPE	AIRFLOW (CFM)	STATIC PRESSURE (INCH W.C.)	DRIVE	POWER (HP)	ELECTRICAL (V/PH/HZ)	MAKE	MODEL	NOTES
EF-1-2	CHLORINATOR ROOM	CENTRIFUGAL BLOWER	760	0.50	BELT	1/4	480/3/60	LOREN COOK	ACWB 100W3B	1,3,4,5,7,8,9,11,12,19
EF-1-3	REST ROOM	CENTRIFUGAL ROOF UPBLAST	84	0.25	BELT	30.3 W	120/1/60	LOREN COOK	GC-146	1,2,7,17,26
EF-1-4	PUMP ROOM	CENTRIFUGAL WALL UPBLAST	4,400	0.25	BELT	1 1/2	120/1/60	LOREN COOK	ACWB 180W8B	1,2,12,13,14,15,19

NOTES:

1. INSTALL PER MANUFACTURERS INSTRUCTIONS.
2. INTEGRAL PRE-WIRED, NEMA 3R RATED DISCONNECT SWITCH.
3. INTEGRAL PRE-WIRED, EXPLOSION PROOF, NEMA 7 RATED DISCONNECT SWITCH.
4. EXPLOSION PROOF, NEMA 7 RATED MOTOR.
5. SPARKPROOF ALUMINUM CONSTRUCTION.
6. 12 INCH HIGH ROOF CURB OF ALUMINUM CONSTRUCTION.
7. GRAVITY TYPE BACKDRAFT DAMPER.
8. INLET AND OUTLET FLEXIBLE DUCT CONNECTIONS.
9. VIBRATION ISOLATORS.
10. BELT GUARD.
11. WEATHERPROOF MOTOR AND BELT GUARD COVER.
12. SPARE BELT SET.
13. SQUARE WALL MOUNT GRAVITY TYPE BACKDRAFT DAMPER.
14. SQUARE WALL GRILLE OF ALUMINUM CONSTRUCTION WITH WHITE ENAMEL FINISH.
15. ALUMINUM BIRDSCREEN.
16. STANDARD FINISH.
17. UNIT MOUNTED, INTEGRAL, PRE-WIRED, SOLID STATE SPEED CONTROLLER.
18. PACKAGED WALL SLEEVE, INLET GUARD, AND MOTORIZED BACKDRAFT DAMPER.
19. FINISH PROVEN CORROSION RESISTANT WITH HYDROGEN SULFIDE FUMES.
20. FRP CONSTRUCTION WITH STAINLESS STEEL BIRDSCREEN.
21. GRAVITY TYPE BACKDRAFT DAMPER OF FRP CONSTRUCTION.
23. INTEGRAL PRE-WIRED, NEMA 4X RATED DISCONNECT SWITCH.
24. PHENOLIC EPOXY WITH UV FINISH.
25. WEATHERHOOD WITH BIRDSCREEN.
26. WALL CAP WITH DAMPER.
27. TWO SPEED CONTROL.

CONTROL DAMPER SCHEDULE							
TAG	TYPE	BLADES	MATERIAL	DUCT TYPE	MAKE	MODEL	NOTES
BD	BALANCING	OPPOSED	ALUMINUM	RECTANGULAR	RUSKIN	CD51	1,2,3,4
MD	MOTORIZED	PARALLEL	ALUMINUM	RECTANGULAR	RUSKIN	CD51	1,2,3,4
BDD	BACKDRAFT	PARALLEL	ALUMINUM	RECTANGULAR	RUSKIN	BD2A2	1,2,3,4

NOTES:

1. INSTALL PER MANUFACTURERS INSTRUCTIONS.
2. SEE DRAWINGS FOR SIZES, AIRFLOW, AND QUANTITY.
4. PROVIDE WITH LOCKING QUADRANT.
- PROVIDE 120V/1/60 DAMPER MOTOR OPERATOR.

LOUVER SCHEDULE											
TAG	LOCATION	SERVICE	TYPE	MODULAR OPENING SIZE		DEPTH (IN.)	AIRFLOW (CFM)	FREE AREA (SQ. FT.)	MAKE	MODEL	NOTES
				WIDTH (INCHES)	HEIGHT (INCHES)						
IL-1-1	CHLORINATOR ROOM	INTAKE	COMBINATION	24	24	6	760	1.09	RUSKIN	ELC03750A-X	1,2,4,5,6,7,8,11
IL-1-2	CHLORINATOR ROOM	INTAKE	COMBINATION	40	16	6	760	1.09	RUSKIN	ELC03750A-X	1,2,4,5,6,7,8,11
IL-1-3	PUMP ROOM	INTAKE	COMBINATION	32	40	6	2200	3.15	RUSKIN	ELC03750A-X	1,2,4,5,6,7,8,9
IL-1-4	PUMP ROOM	INTAKE	COMBINATION	32	40	6	2200	3.15	RUSKIN	ELC03750A-X	1,2,4,5,6,7,8,9

NOTES:

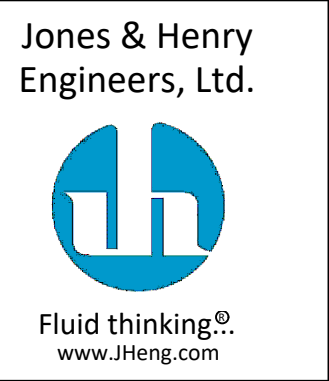
1. INSTALL PER MANUFACTURERS INSTRUCTIONS.
- FRONT STATIONARY DRAINABLE BLADE WITH INTEGRAL BACKDRAFT DAMPER.
- STATIONARY DRAINABLE BLADE.
- COMBINATION DRAINABLE BLADE.
- 6063T6 EXTRUDED ALUMINUM CONSTRUCTION.
- BIRDSCREEN MOUNTED ON EXTERIOR.
- INSECT SCREEN MOUNTED ON INTERIOR.
- KYNAR OR FLUOROPOLYMER FINISH ON ENTIRE LOUVER AND BIRDSCREEN. COLOR TO BE SELECTED BY OWNER.
- TWO POSITION, SPRING RETURN, 120V/1/60 BACKDRAFT DAMPER MOTOR ACTUATOR.
- TWO POSITION, SPRING RETURN, EXPLOSION PROOF NEMA 12 RATED, DAMPER MOTOR ACTUATOR FOR CLASS 1, DIVISION 1, GROUP D AREAS.
- TWO POSITION, SPRING RETURN, 120V/1/60, NEMA 4X, BACKDRAFT DAMPER MOTOR ACTUATOR.

TOL-789300M05-MECHANICAL SCHEDULES  
11/12/2024 11:12 AM - RWORLEY  
11/20/2024 7:50 AM



MECHANICAL SCHEDULES  
WEST GROUND STORAGE TANK BOOSTER PUMP STATION  
CITY OF CARMEL, INDIANA

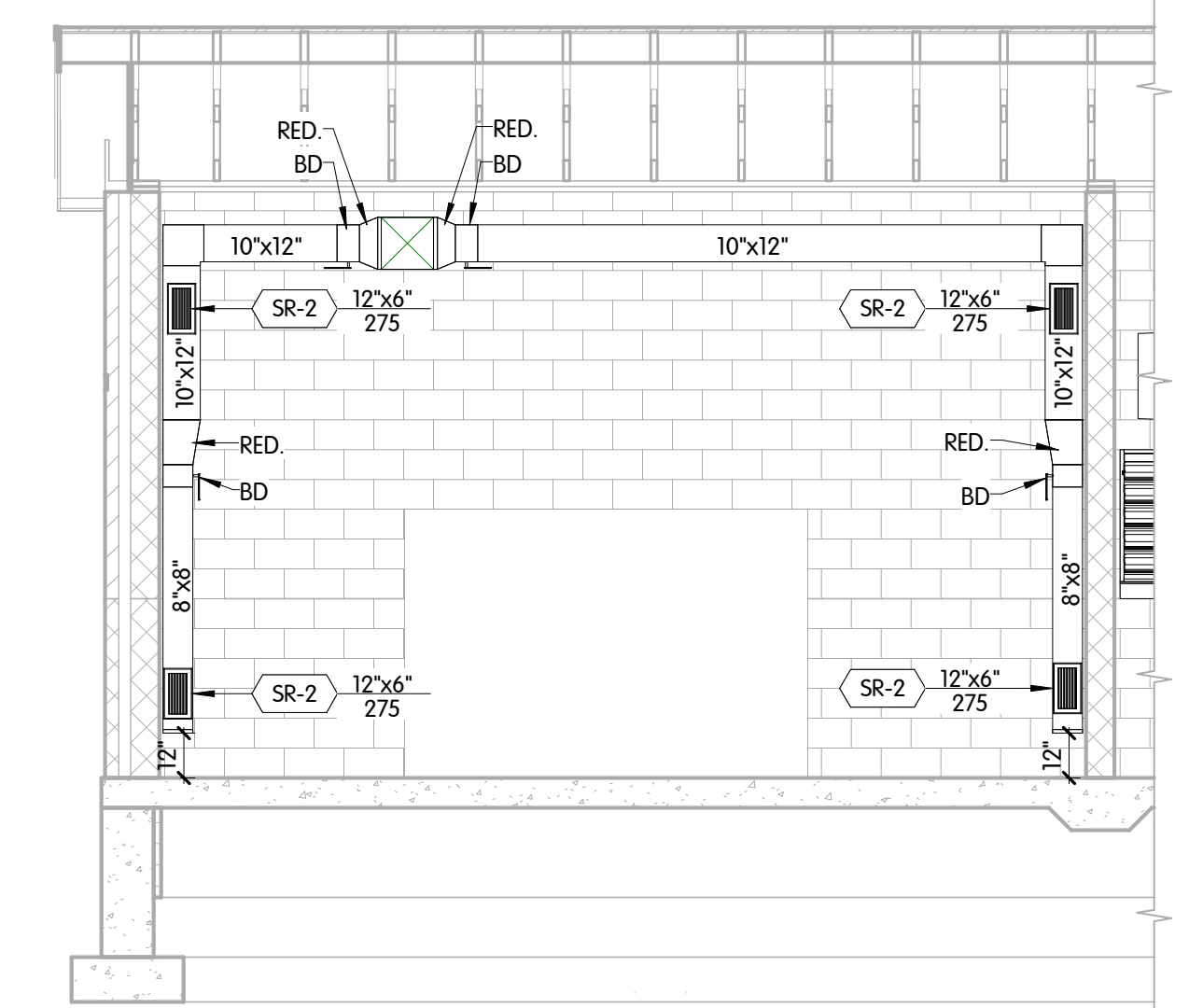
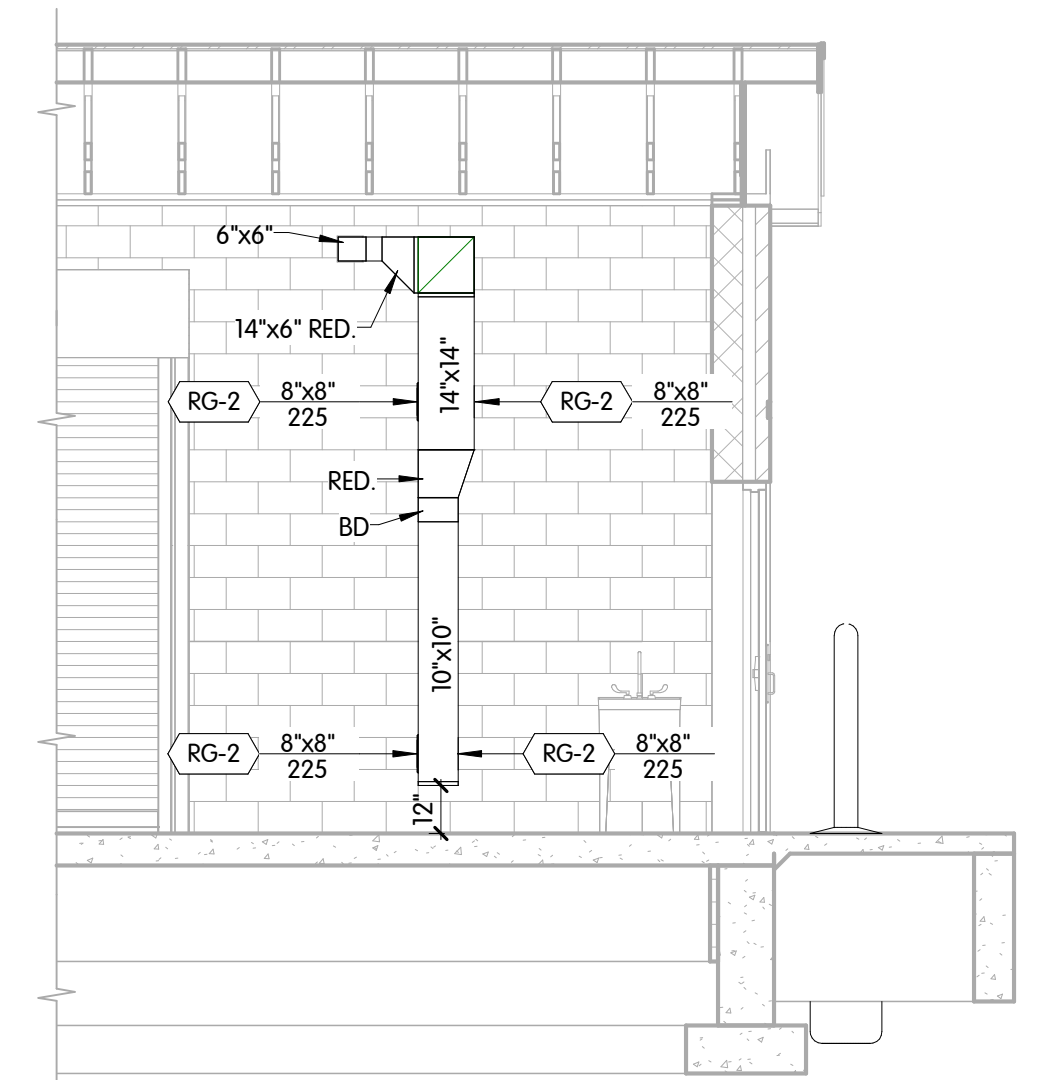
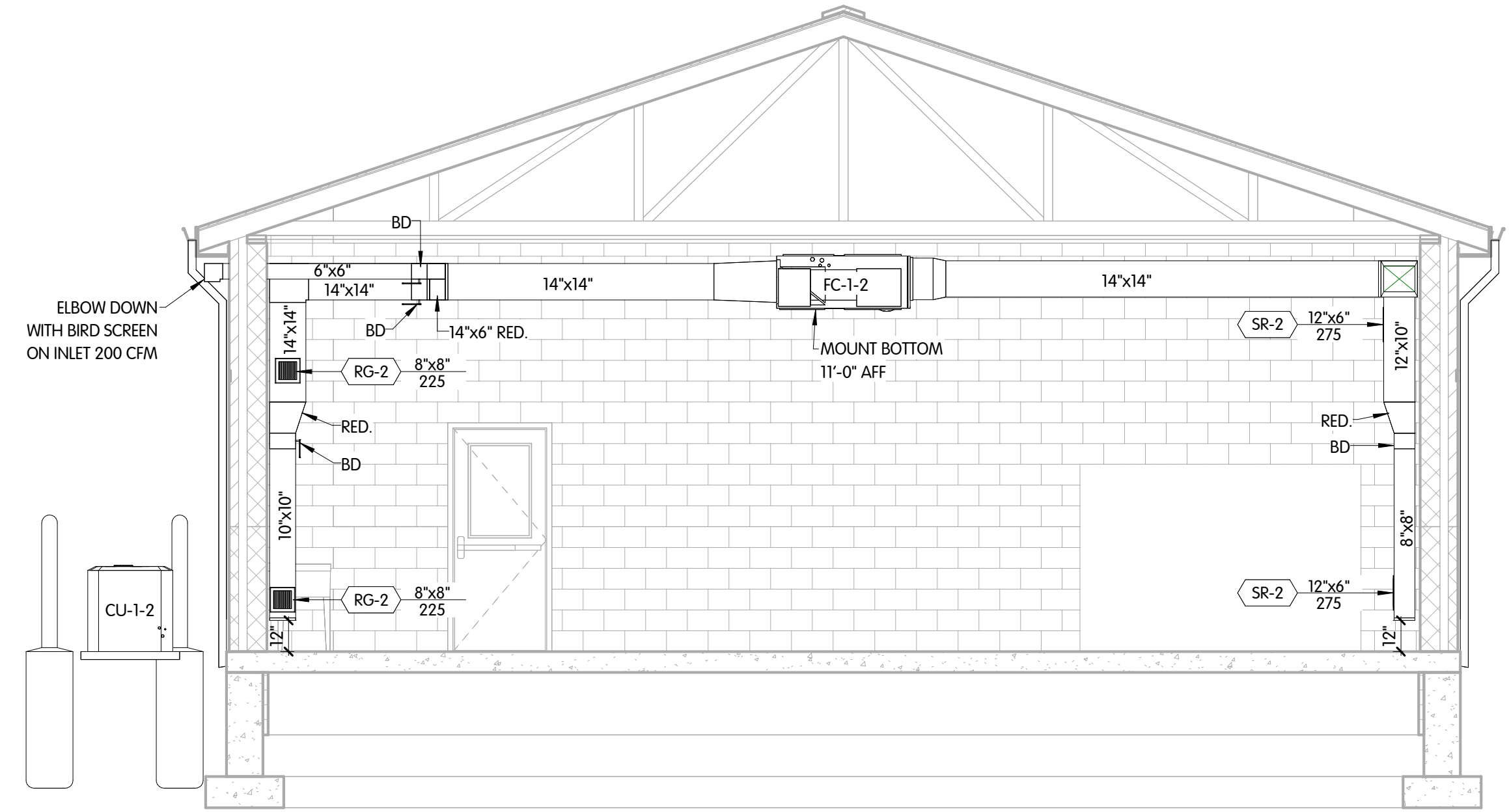
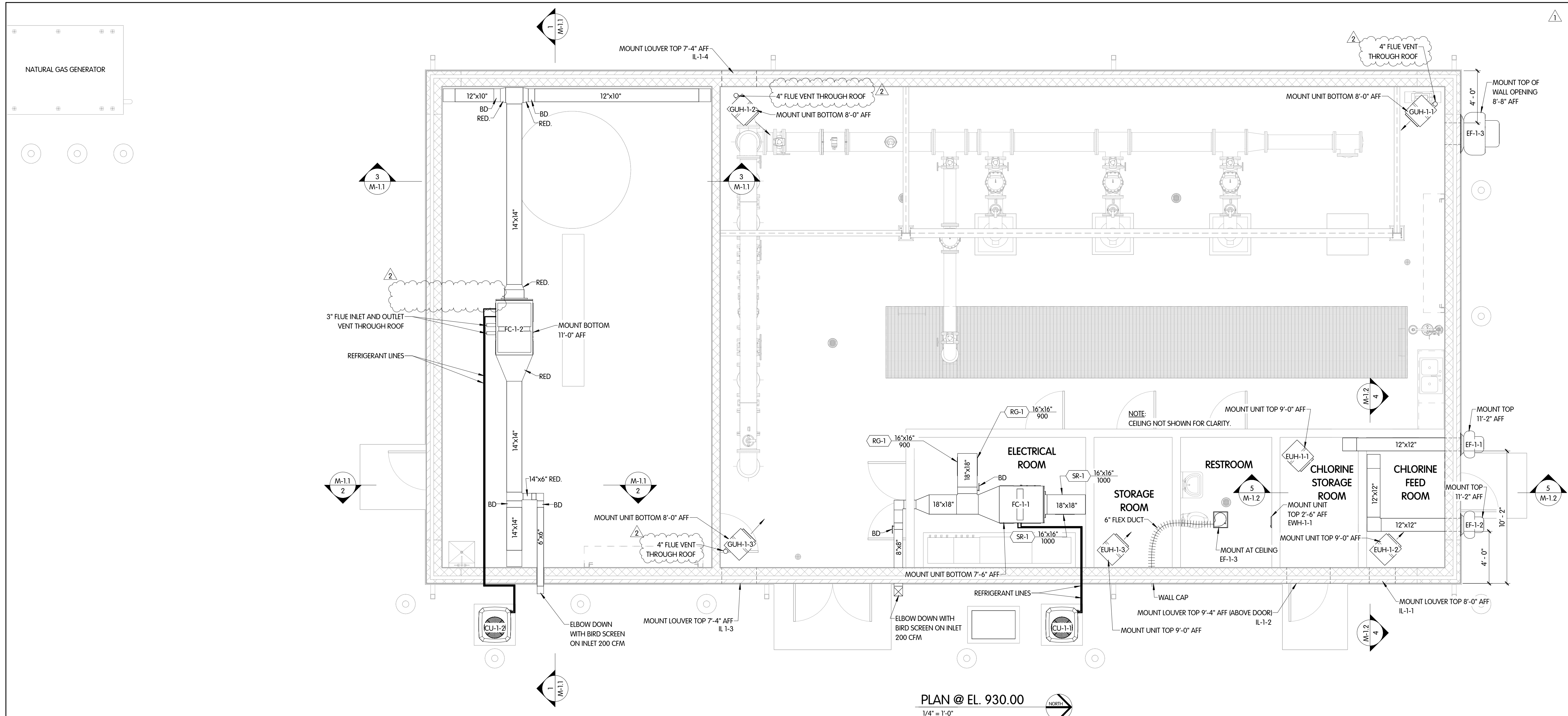
JOB NO. JDM  
BY JDM  
REVISIONS AFTER ISSUED FOR BID  
NO. DATE  
1 10-24-24 ADDENDUM 4  
2 11-12-24



JOB NO.	451-7893.001
SCALE	NONE
DESIGNED	JDM
DRAWN	RGW
CHECKED	JDM
STATUS	ISSUED FOR BID
DATE	SEPTEMBER 2024
SHEET NO.	M-0.5 40 OF 50



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 11/20/2024 7:55:08 AM



**PUMP BUILDING  
 MECHANICAL  
 PLAN @ EL. 930.00 AND SECTIONS**  
 WEST GROUND STORAGE TANK BOOSTER PUMP STATION  
 CITY OF CARMEL, INDIANA

DESIGNED	DRAWN	CHECKED
JDM	RGW	JDM
STATUS: ISSUED FOR BID		
DATE: SEPTEMBER 2024		
SHEET NO.		



JOB NO.: 451-7893.001  
 SCALE: 1/4" = 1'-0"  
 THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE  
 SHEET NO.: **M-1.1**  
 41 OF 50