

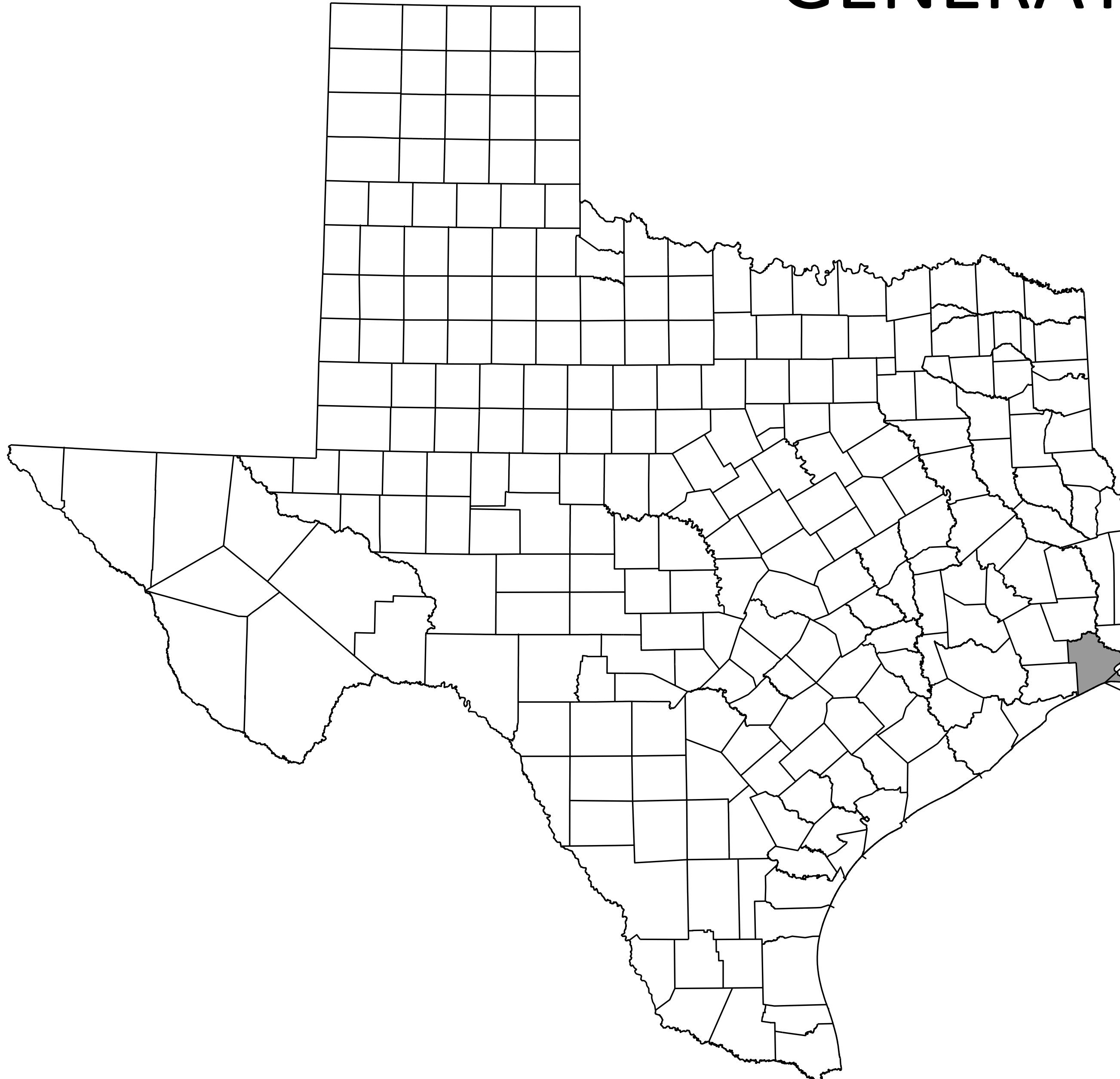
CALL BEFORE YOU DIG!



PARTICIPANTS REQUEST  
48 HOURS NOTICE BEFORE YOU DIG,  
DRILL, OR BLAST - STOP AND CALL  
811

THE LONE STAR  
NOTIFICATION COMPANY  
AT 1-800-669-8344

# CRANE BAYOU PUMP STATION GENERATORS AND BUILDING



1  
LOCATION MAP  
NOT TO SCALE

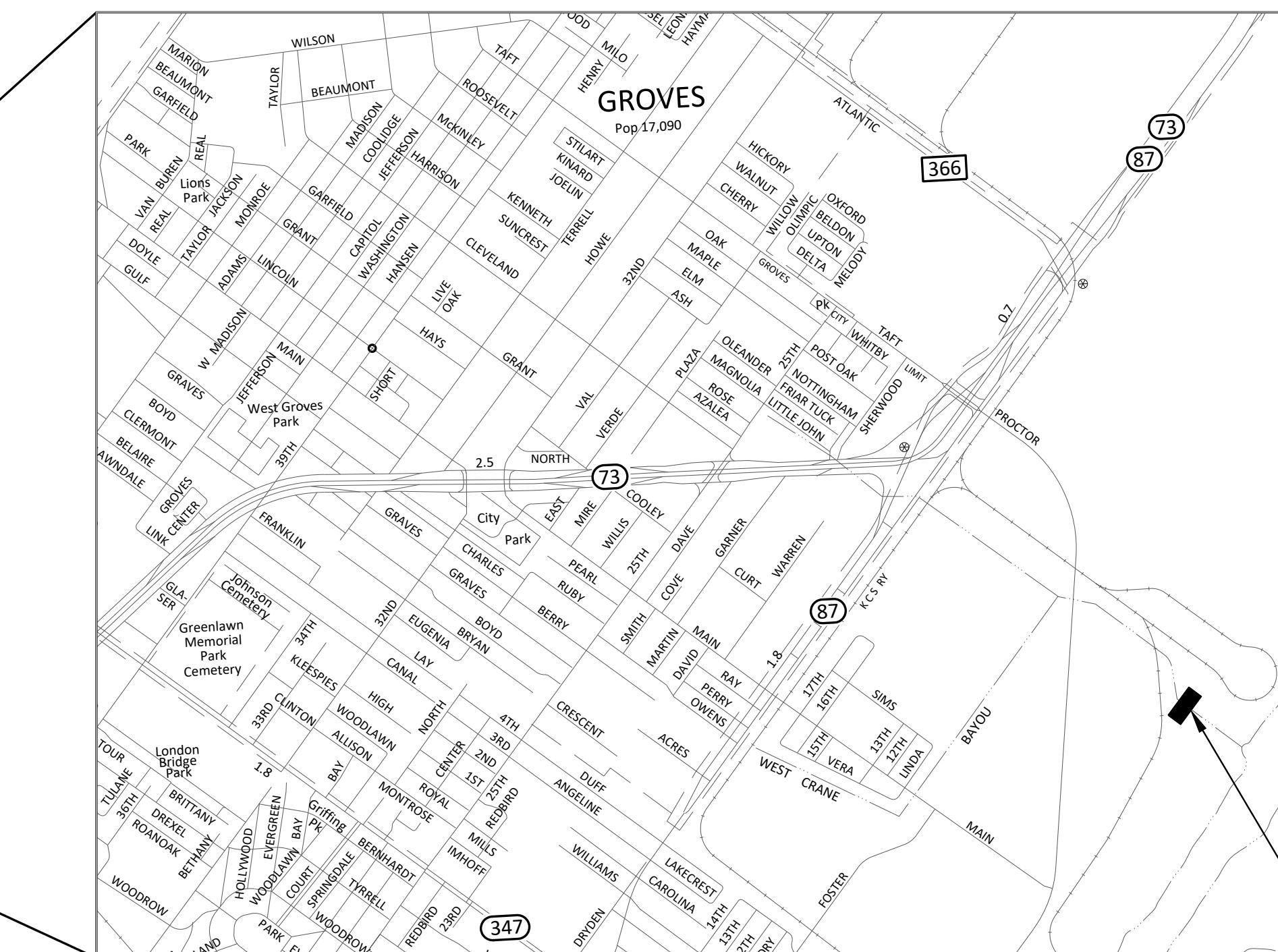


## JEFFERSON COUNTY, TX

MAY 2023

PREPARED BY:

**FREESE & NICHOLS**  
10497 Town and Country Way,  
Suite 500  
Houston, Texas 77024  
Phone - (713) 600-6800  
Web - [www.freesenichols.com](http://www.freesenichols.com)  
Engineering Firm F-2144



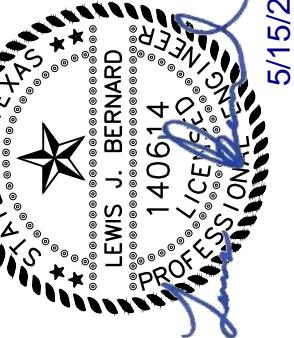
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PORT ARTHUR, TEXAS

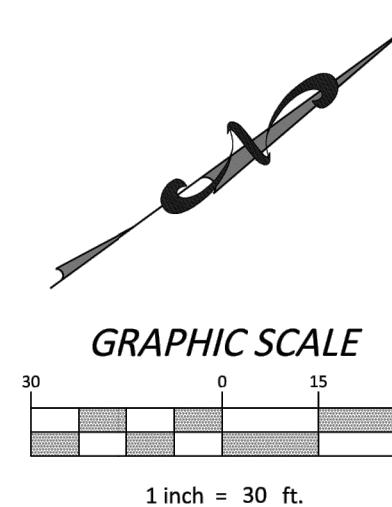
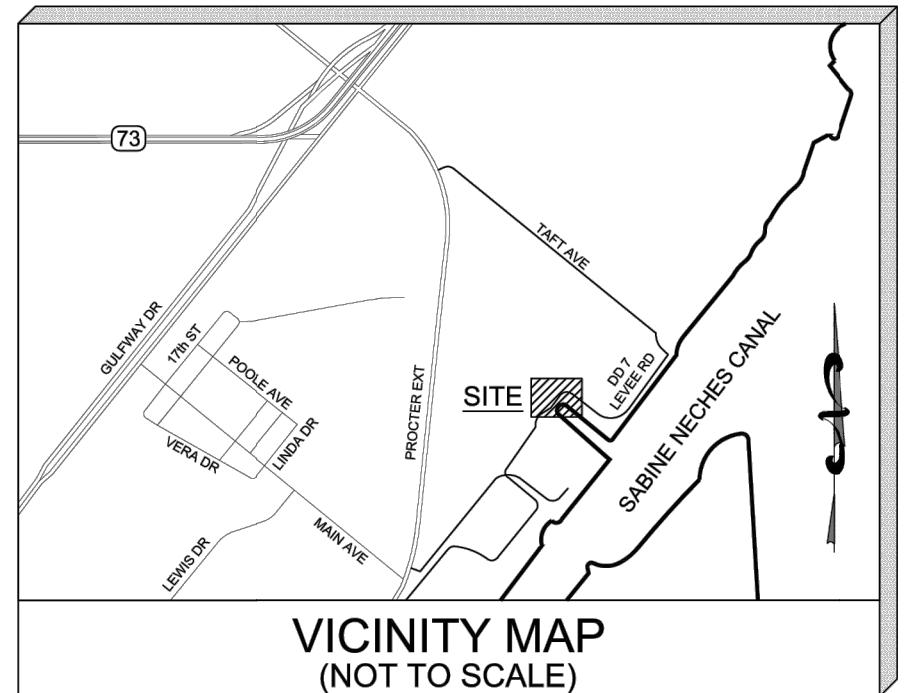
2  
VICINITY MAP  
NORTH  
G-1  
NOT TO SCALE

ISSUED FOR BID

Seq. No. Sheet No. Title

		<b>GENERAL</b>
1	G-1	COVER SHEET
2	G-2	SHEET INDEX
		<b>CIVIL</b>
3	C-1	SURVEY
4	C-2	SITE PLAN
		<b>ARCHITECTURAL</b>
5	A-1	ARCHITECTURE LIFE SAFETY PLAN & CODE REVIEW
6	A-2	ARCHITECTURE GENERAL NOTES & SYMBOLS
7	A-3	ARCHITECTURE FLOOR AND ROOF PLAN
8	A-4	ARCHITECTURE REFLECTED CEILING PLAN - LEVEL 1
9	A-5	ARCHITECTURE EXTERIOR ELEVATIONS
10	A-6	ARCHITECTURE BUILDING SECTIONS
11	A-7	ARCHITECTURE DOOR & FRAME - LEGEND
12	A-8	ARCHITECTURE DETAILS
13	A-9	ARCHITECTURE ISOMETRIC VIEWS
		<b>STRUCTURAL</b>
14	S-1	STRUCTURAL GENERAL NOTES I
15	S-2	STRUCTURAL GENERAL NOTES II
16	S-3	STRUCTURAL GENERATOR BUILDING FOUNDATION AND ROOF FRAMING PLAN
17	S-4	STRUCTURAL GENERATOR BUILDING SECTIONS AND DETAILS I
18	S-5	STRUCTURAL GENERATOR BUILDING SECTIONS AND DETAILS II
19	S-6	STRUCTURAL GENERATOR BUILDING SECTIONS AND DETAILS III
20	S-7	STRUCTURAL STANDARD SECTIONS AND DETAILS
		<b>MECHANICAL</b>
21	M-1	MECHANICAL NOTES, SYMBOLS & ABBREVIATIONS
22	M-2	MECHANICAL FLOOR PLAN
23	M-3	MECHANICAL DETAILS AND SCHEDULE
		<b>ELECTRICAL</b>
24	E-1	ELECTRICAL LEGEND I
25	E-2	ELECTRICAL LEGEND II
26	E-3	ELECTRICAL PUMP BUILDING ELECTRICAL DEMOLITION
27	E-4	ELECTRICAL GENERATOR BUILDING LIGHTING PLAN
28	E-5	ELECTRICAL GENERATOR BUILDING POWER PLANS
29	E-6	ELECTRICAL GENERATOR BUILDING ENLARGED POWER PLAN
30	E-7	ELECTRICAL DETAILS I
31	E-8	ELECTRICAL DETAILS II
32	E-9	ELECTRICAL DETAILS III
33	E-10	ELECTRICAL ONE-LINE DIAGRAM
34	E-11	ELECTRICAL PANEL SCHEDULE AND LIGHT FIXTURE SCHEDULE
35	E-12	ELECTRICAL INTERCONNECTION DIAGRAM

		Texas Registered Engineering Firm F-2144																																									
		 <b>Fruee &amp; Nichols, Inc.</b> LEWIS J. BERNARD 1-40614 PROFESSIONAL ENGINEERS 10497 Town and Country Way, Suite 500 Houston, Texas 77024 Phone - (713) 600-6800 Web - www.fruee.com																																									
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		G-2 ISSUED FOR BID SEQ. 2																																									



## BENCHMARK NOTE:

VERTICAL DATUM REFERENCED HEREON IS BASED ON NAVD88,  
GEOID18.

## TEMPORARY BENCHMARK A:

T.B.M. "A" IS A BOX CUT IN CONCRETE ON TOP OF CONCRETE STEPS.  
X=3,589,685.30; Y=13,922,095.58  
ELEVATION=13.62 FEET

## TEMPORARY BENCHMARK B:

---

T.B.M. "B" IS A BOX CUT IN CONCRETE ON TOP OF CONCRETE STEPS.  
X=3,589,792.56; Y=13,922,242.46  
ELEVATION=12.00 FEET

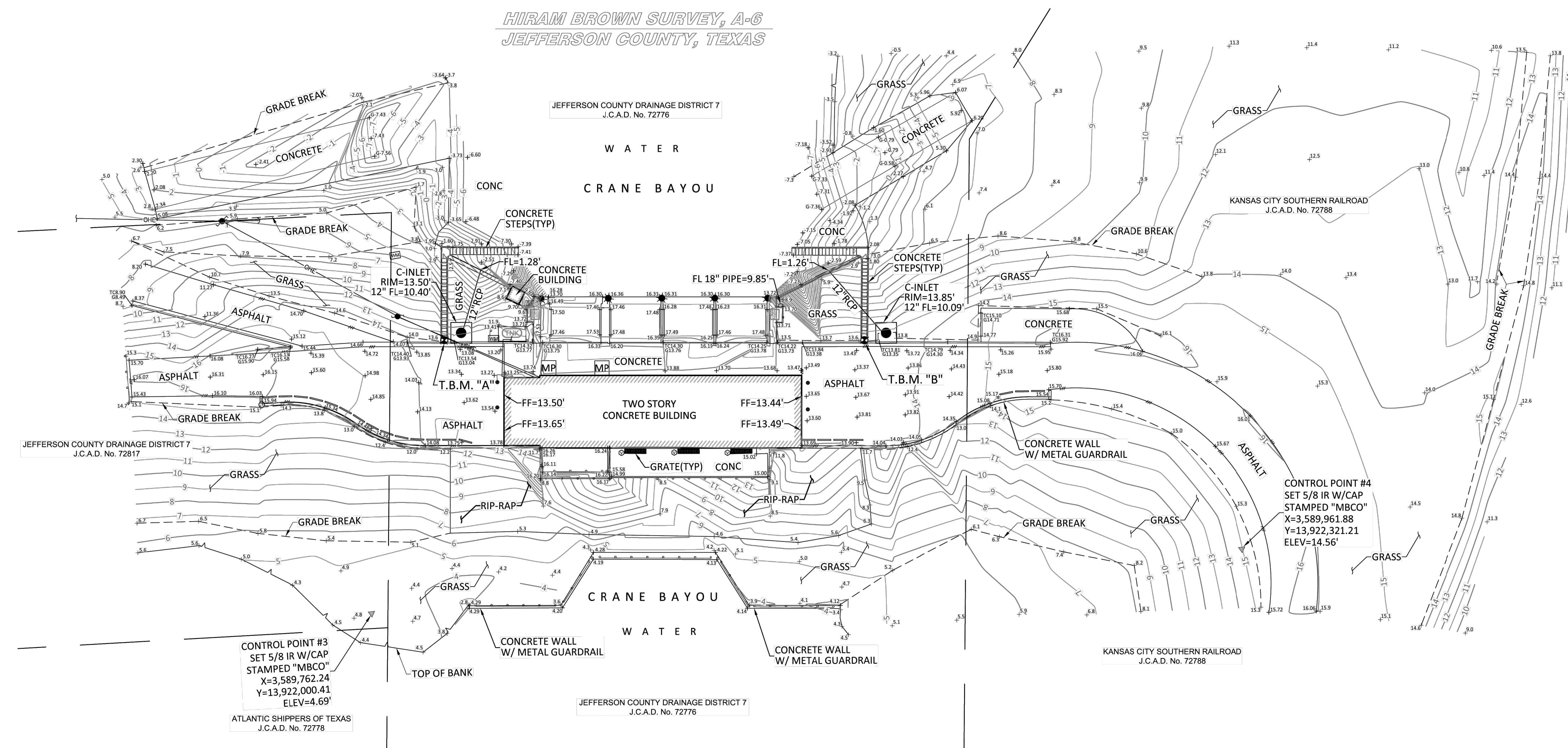
COMBINED SCALE FACTOR NOTE:

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COORDINATES REFERENCED HEREON ARE BASED ON SURFACE VALUES. TO CONVERT TO GRID VALUES, MULTIPLY BY THE COMBINED SCALE FACTOR OF 1.0000795520

# **FRESESE AND NICHOLS**

**FREE  
NICKEL**  
10497 Town and Country Way,  
Suite 500  
Houston, Texas 77024  
Phone - (713) 600-6800



## NOTES:

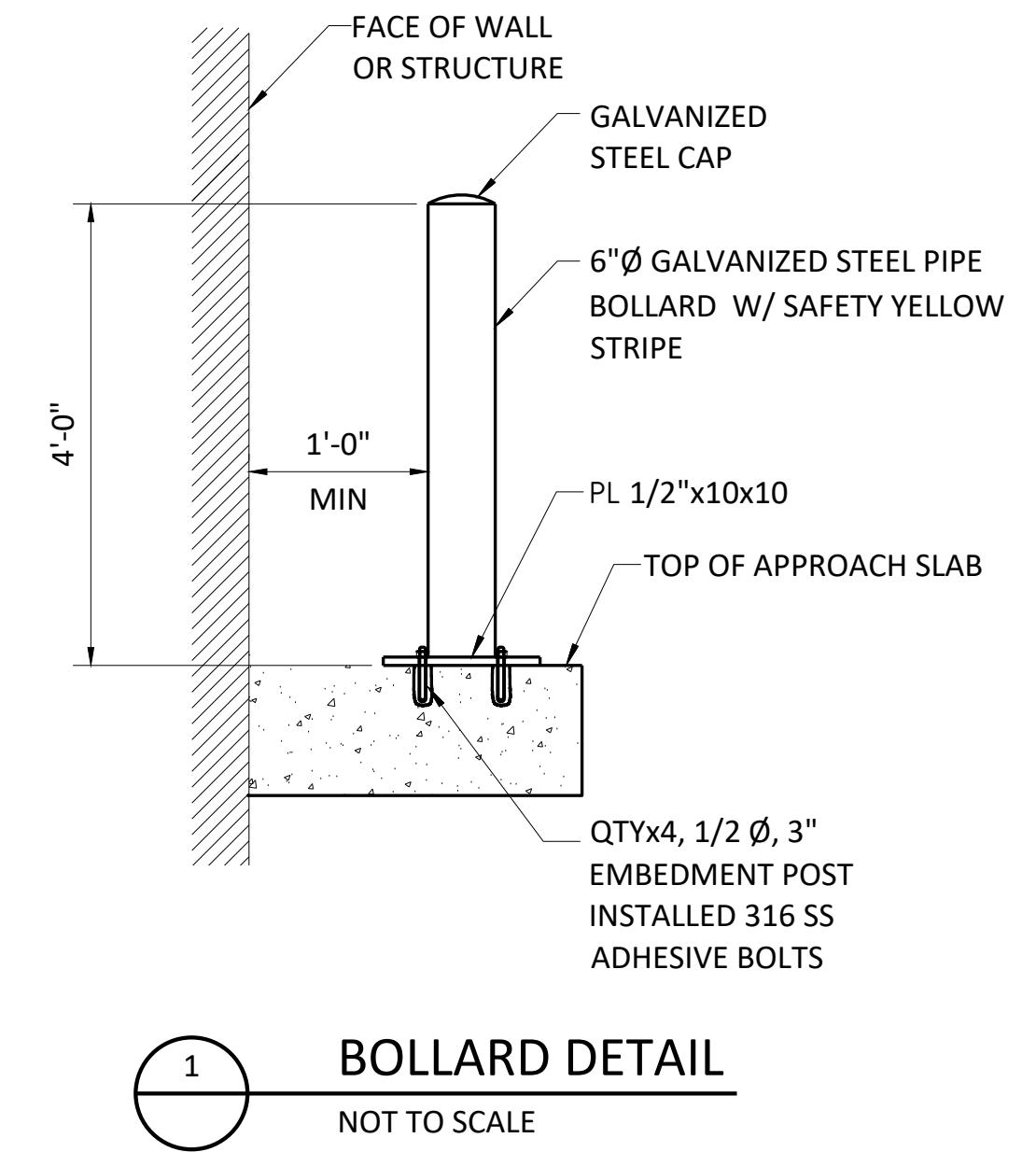
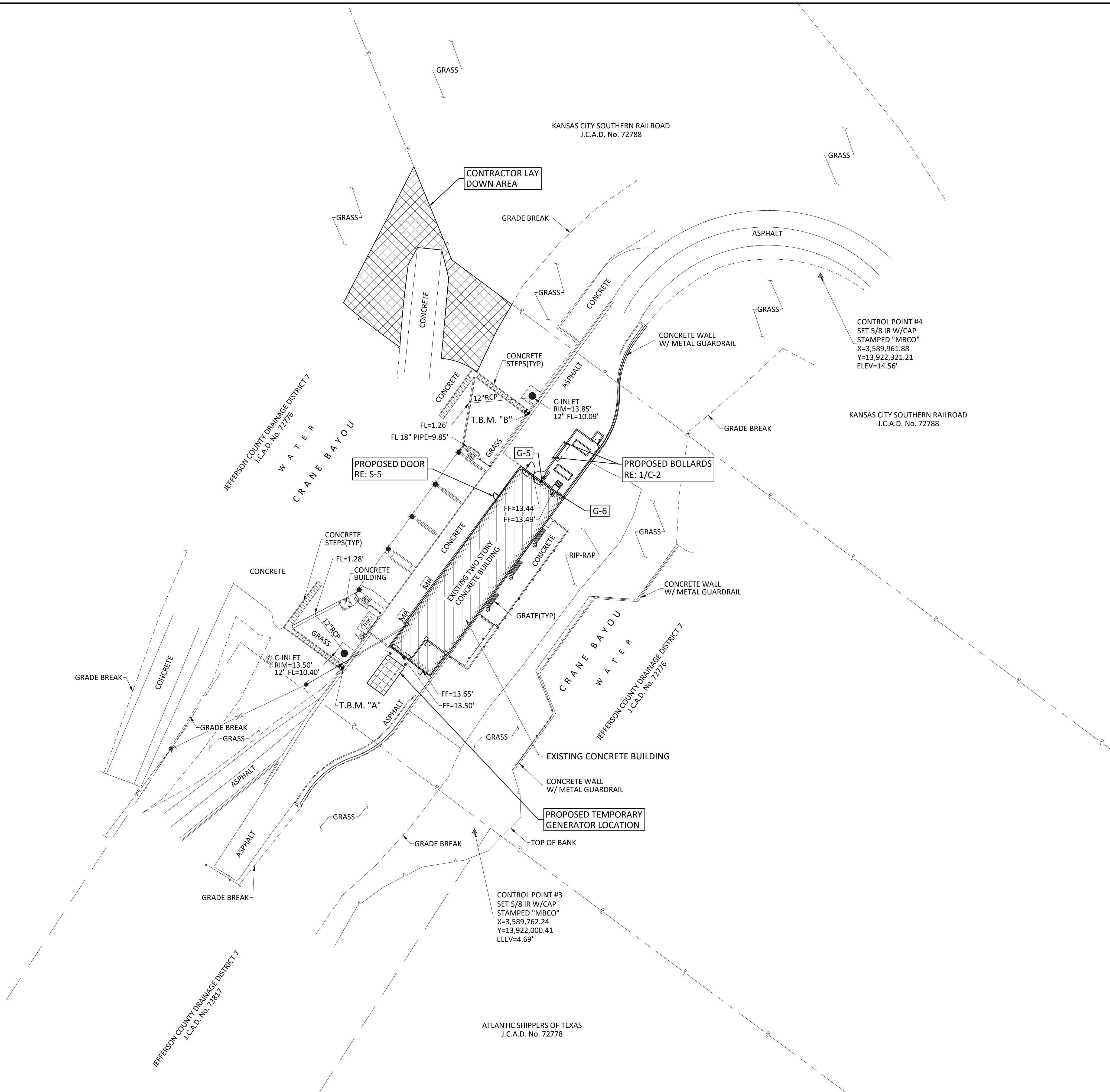
1. This survey represents a topographic survey of subject property and is not a boundary survey. Property lines referenced hereon are based on GIS line work from the appraisal district and was performed without the benefit of a title commitment. Easements and restrictions may exist which are not referenced hereon; no additional research regarding the existence of easements or restrictions of record has been performed by MBCO Engineering LLC.
2. This tract lies in Zone "A10 (EL8)" (shaded), designated as "Areas of 100 year flood; base flood elevations and flood hazard factors determined", as per the National Flood Insurance Program FIRM Community Panel Number 485499 0035 E, latest available published revision dated April 17, 1984.
3. A Zoning Report was not provided at the time of this survey; however, this tract is subject to the developmental requirements of the City of Port Arthur and Jefferson County, Texas.
4. Mineral Rights and/or Lease Rights are not survey related and therefore not a part of this survey.
5. Surface or subsurface faulting, hazardous waste or other environmental issues have not been addressed within the scope of this survey.
6. All bearings shown hereon are based on the Texas Coordinate System of

I hereby certify that this plat correctly represents a survey made on the \_\_\_\_\_ and under my supervision on April 4, 2022, and that said survey complies with the current Texas Society of Professional Surveyors Standards for Land Surveys for a Category 6, Condition II Topographic

*Marion R. Clark*  
Marion R. Clark  
Registered Professional  
Land Surveyor



<p>OTE: FERENCED HEREON IS BASED ON NAVD88,</p> <p><u>NCHMARK A:</u> IN CONCRETE ON TOP OF CONCRETE STEPS. ,095.58</p> <p><u>NCHMARK B:</u> IN CONCRETE ON TOP OF CONCRETE STEPS. ,242.46</p> <p><u>LE FACTOR NOTE:</u> ENCED HEREON ARE BASED ON SURFACE TO GRID VALUES, MULTIPLY BY THE COMBINED 00795520.</p>		<p>Freeze and Nichols, Inc. Texas Registered Engineering Firm F-2144</p> <p><b>FREESE &amp; NICHOLS</b> 10497 Town and Country Way, Suite 500 Houston, Texas 77024 Phone - (713) 600-6800 Web - <a href="http://www.freeze.com">www.freeze.com</a></p>																									
<p>881</p> <p>plat correctly represents a survey made on the ision on April 4, 2022, and that said survey ent Texas Society of Professional Surveyors s for a Category 6, Condition II Topographic</p> <p> 881</p> <p><i>R Clark</i></p> <p>ISSUED FOR BID</p>		<p>JEFFERSON COUNTY, TX CRANE BAYOU PUMP STATION GENERATORS AND BUILDING C-1 CIVIL SURVEY</p> <table border="1"> <thead> <tr> <th>SEQ.</th> <th>FILE NAME</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>CV-ALL-TOPO.dwg</td> </tr> </tbody> </table> <p>VERIFYSCALE Bar is one inch on original 1 drawing. If not one inch on this sheet, adjust scale.</p> <table border="1"> <thead> <tr> <th>SEQ.</th> <th>FILE NAME</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>JVW</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>SEQ.</th> <th>REvised</th> <th>DRAWN</th> <th>DESIGNED</th> <th>DATE</th> <th>BY</th> <th>ISSUE</th> <th>SN.O.</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>JSG</td> <td>LB</td> <td>JFF22292</td> <td>05/15/2023</td> <td></td> <td></td> <td>0</td> </tr> </tbody> </table>		SEQ.	FILE NAME	0	CV-ALL-TOPO.dwg	SEQ.	FILE NAME	0	JVW	SEQ.	REvised	DRAWN	DESIGNED	DATE	BY	ISSUE	SN.O.	0	JSG	LB	JFF22292	05/15/2023			0
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NOTES:

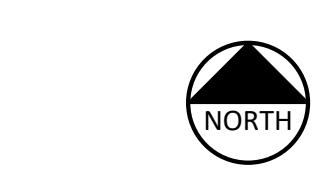
1. CONTRACTOR SHALL NOT PARK ANY VEHICLE LARGER THAN A 3/4 TON TRUCK ON TOP OF THE LEVEE OR WITHIN THE TOE (INDICATED BY A GRADE BREAK ON THIS SHEET) WITHOUT WRITTEN APPROVAL FROM THE OWNER.
2. EQUIPMENT AND VEHICLES LARGER THAN A 3/4 TON TRUCK MAY STAGE ON THE LEVEE FOR THE PURPOSES OF LOADING AND UNLOADING ONLY.
3. CONTRACTOR IS CAUTIONED THAT THE OWNER WILL BE OPERATING THE PUMP STATION THROUGHOUT CONSTRUCTION AND SHALL KEEP ROADWAYS AND ACCESS POINTS CLEAR TO ALLOW FREE MOVEMENT FOR OWNER'S OPERATIONS AND MAINTENANCE STAFF.
4. TEMPORARY GENERATOR SHALL BE TRAILER MOUNTED. CONTRACTOR SHALL COORDINATE WITH OWNER IF GENERATOR NEEDS TO BE TEMPORARILY RELOCATED TO ALLOW ACCESS TO THE SOUTHWEST ROLL UP DOOR.

BUILDING TABLE				
POINT NO.	LABEL NO.	NORTHING	EASTING	POINT DESCRIPTION
1	G-1	13922222.70	3589835.09	GENERATOR RM
2	G-2	13922233.02	3589821.17	GENERATOR RM
3	G-3	13922208.76	3589803.18	GENERATOR RM
4	G-4	13922207.59	3589804.75	GENERATOR RM
5	G-5	13922202.67	3589801.10	GENERATOR RM
6	G-6	13922193.45	3589813.40	GENERATOR RM

**CRANE BAYOU PUMP STATION GENERATORS AND BUILDING**  
CIVIL  
SITE PLAN

Freeze and Nichols, Inc. F-2144  
Texas Registered Engineering Firm F-2144  
LEWIS J. BERNARD  
1-40614  
CEP  
PROFESSIONAL  
5/15/23

**FREEZE & NICHOLS**  
10457 Town and Country Way,  
Suite 500  
Houston, Texas 77024  
Phone - (713) 600-6800  
Web - www.freeze.com

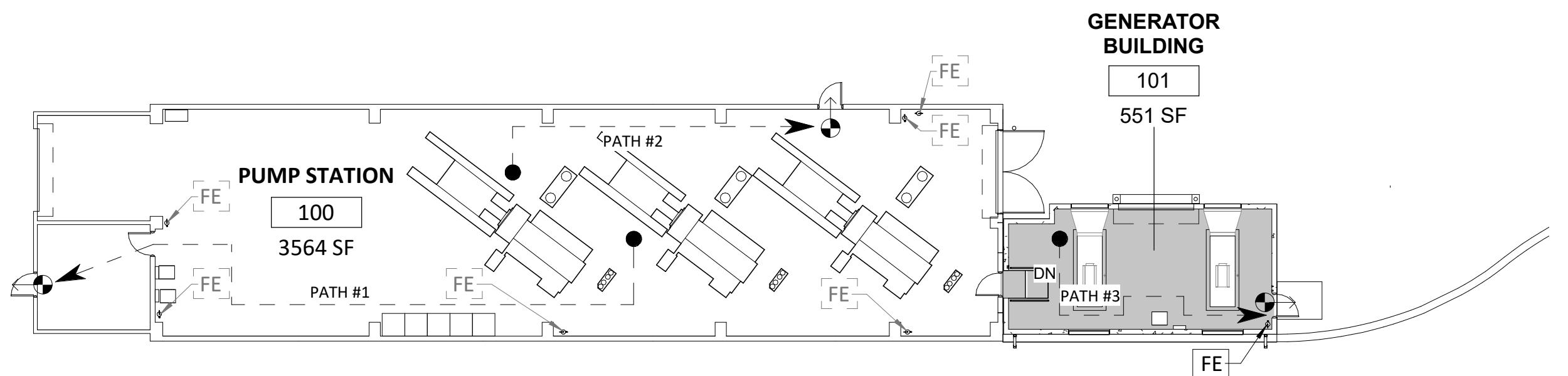


0 10' 20' 30' 60'  
SCALE IN FEET

C-2  
SEQ. 4  
ISSUED FOR BID

NO. ISSUE BY DATE F&J JOB NO. IFF2292  
1 05/15/2023  
DESIGNED LIB  
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REVISED  
CHECKED JMW  
FILE NAME CV-PROP-SITE.dwg  
VERIFY SCALE Bar is one inch on original  
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this sheet, adjust scale.

0 10' 20' 30' 60'  
SCALE IN FEET  
C-2  
SEQ. 4  
ISSUED FOR BID



### LIFE SAFETY PLAN

1/16" = 1'-0"

[FE] EXISTING TO REMAIN FIRE EXTINGUISHER & BRACKET  
 [FE] NEW FIRE EXTINGUISHER & BRACKET  
 ↗ EGRESS PATHWAY

### OCCUPANCY LEGEND

Factory-Industrial

### TRAVEL DISTANCES

Travel Path	Travel Distance
PATH #1	93' - 11"
PATH #2	46' - 2"
PATH #3	42' - 8"

### CODE REVIEW - IBC - 2015

PROJECT: CRANE BAYOU PUMP STATION GENERATORS AND BUILDING

LOCATION: PORT ARTHUR, TX

#### CODES:

2015 INTERNATIONAL BUILDING CODE AS AMENDED  
 2015 INTERNATIONAL FIRE CODE AS AMENDED  
 2015 INTERNATIONAL PLUMBING CODE AS AMENDED  
 2015 INTERNATIONAL MECHANICAL CODE AS AMENDED  
 2015 INTERNATIONAL ENERGY CONSERVATION CODE AS AMENDED  
 2014 NATIONAL ELECTRICAL CODE AS AMENDED

#### SCOPE:

ADDITION & REMOVAL OF AN EXISTING PUMP STATION.  
 REMODEL SCOPE - ADDITIONAL EXIT DOOR FOR THE PUMP STATION.  
 ADDITION SCOPE - THE ADDITION ENTAILS AN ENCLOSURE OF SIMILAR CONSTRUCTION AS THE EXISTING, HOUSING (2) FUEL FED GENERATOR SETS. THE FUEL TANKS ARE TO BE LOCATED OUTSIDE OF THE ENCLOSURE

BUILDINGS & OCCUPANCIES: S-1 MODERATE-HAZARD, STORAGE - IBC SEC 311.2 (EXISTING BUILDING)

F-1 MODERATE-HAZARD INDUSTRIAL GROUP - IBC SEC 306.2 (ADDITION)

PRIMARY OCCUPANCY: BASED ON THE MORE RESTRICTIVE VALUE FOUND IN TABLE 506.2 - F-1 PRIMARY OCCUPANCY  
 NO SEPARATION REQUIRED - IBC TABLE 508.4

TYPE OF CONSTRUCTION: II-B IBC TABLE 601

AUTOMATIC FIRE SUPPRESSION: NOT REQUIRED - IBC SEC 903.2.4, FOR F-1 OCCUPANCIES < 12,000 SF

BUILDING AREA ALLOWABLE AREA, IBC TABLE 506.2 FOR NON-SPRINKLERED BLDGS: F-1 - 15,500 SF

AND HEIGHT LIMITATIONS: ALLOWABLE HEIGHTS, IBC TABLE 504.3 & 504.4 FOR NON-SPRINKLERED BLDGS  
 F = 55 FT  
 F-1 = 2 STORIES  
 (BUILDINGS MEET REQUIREMENTS)

#### BUILDING SIZE:

GENERATOR RM	550 SF
PUMP STATION	3,793 SF
TOTAL AREA	4,343 SF

#### EGRESS (IBC TABLE 1004.1.2)

BUILDING AREAS/LOADS	LOAD FACTOR	OCCUPANTS BY USE
GENERATOR ROOM	550/300	2
PUMP STATION	4,343/500	9
TOTAL OCCUPANTS		11 PEOPLE

#### COMMON EGRESS REQUIREMENTS

NO. OF EXITS REQUIRED	USE	NO. OF EXITS (TABLE 1006.2.1 & 1006.3.2 (2))
GENERATOR ROOM	F-1	1
PUMP STATION	S-1	2

#### EXITS PROVIDED

GENERATOR ROOM	2 EXITS
PUMP STATION	2 EXITS

#### DOOR AND EGRESS KEY

1 (2) 3'-0" DOORS = 64" CLEAR

2 3'-0" DOORS = 32" CLEAR

COMMON PATH OF TRAVEL DISTANCE  
 75' - IBC TABLE 1006.2.1 FOR F USE, OCCUPANT LOAD <=30 (NON-SPRINKLERED)

EXIT ACCESS TRAVEL DISTANCE  
 200' - IBC TABLE 1017.2 FOR F-1

EGRESS WIDTHS  
 EXIT = .2" / OCCUPANT - IBC SEC 1005.3.2  
 GENERATOR ROOM = .2" X 2 = .4" REQ +/- 64" PROVIDED WITH (2) EXITS  
 PUMP STATION = .2" X 9 = 1.8" REQ +/- 64" PROVIDED WITH (2) EXITS

SIZE OF SWING DOOR 32" CLEAR MIN OR 48" CLEAR MAX OPENINGS PER SEC 1010.1.1

PANIC HARDWARE: F-1 ELECTRICAL ROOMS PER SEC 1010.1.10

SECONDARY DRAINS/SCUPPERS: REQUIRED ON FLAT ROOFS PER [P] SEC 1503.4

ROOF FIRE CLASSIFICATION: FOR TYPE IIB CONSTRUCTION TYPE CLASSIFICATION C PER TABLE 1505.1

REQUIRED INTERIOR FINISH FOR F GROUP - CLASS C, NON-SPRINKLERED PER TABLE 803.11 FLAME SPREAD INDEX, 76-200; SMOKE-DEVELOPED INDEX, 0-450 PER SEC 803.1.1

#### INTERNATIONAL ENERGY CODE COMPLIANCE INFORMATION

SITE LOCATION JEFFERSON COUNTY  
 CLIMATE ZONE 2A PER IECC TABLE C301.1

TDI WINDSTORM REQUIREMENTS: INLAND-1 CATEGORY. 158 MPH PER STRUCTURAL WIND LOAD. REF: S-1.

#### SUPPLEMENTARY ENERGY CODE INFORMATION

PER CONVERSATIONS WITH THE CITY OF PORT ARTHUR BUILDING OFFICIAL, THE GENERATOR ENCLOSURE DOES NOT REQUIRE ENERGY CODE COMPLIANCE FOR ENVELOPE AS IT IS UNOCCUPIED. THE DEFINITION OF CONDITIONED SPACE, IECC SEC C202, "A SPACE THAT IS ENCLOSED WITHIN THE BUILDING THERMAL ENVELOPE AND IS DIRECTLY OR INDIRECTLY HEATED OR COOLED" MUST BE LOOKED AT IN THE CONTEXT OF OCCUPIED SPACE.

2144  
 Freese and Nichols, Inc.



**FREESE & NICHOLS**  
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 Houston, TX 77024  
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 Web: www.freese.com

JEFFERSON COUNTY, TX  
 CRANE BAYOU PUMP STATION  
 GENERATORS AND BUILDING  
 ARCHITECTURE

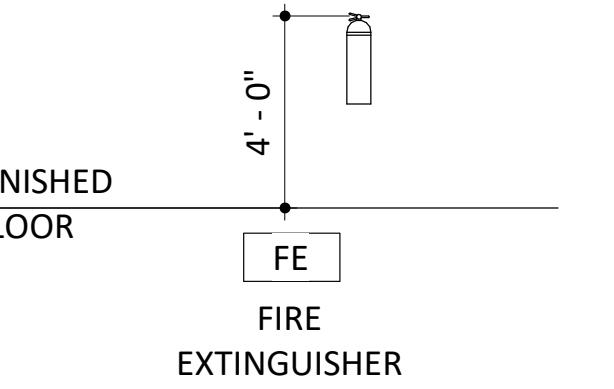
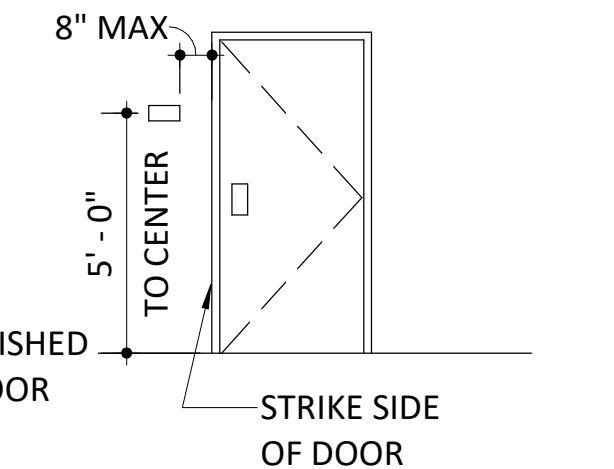
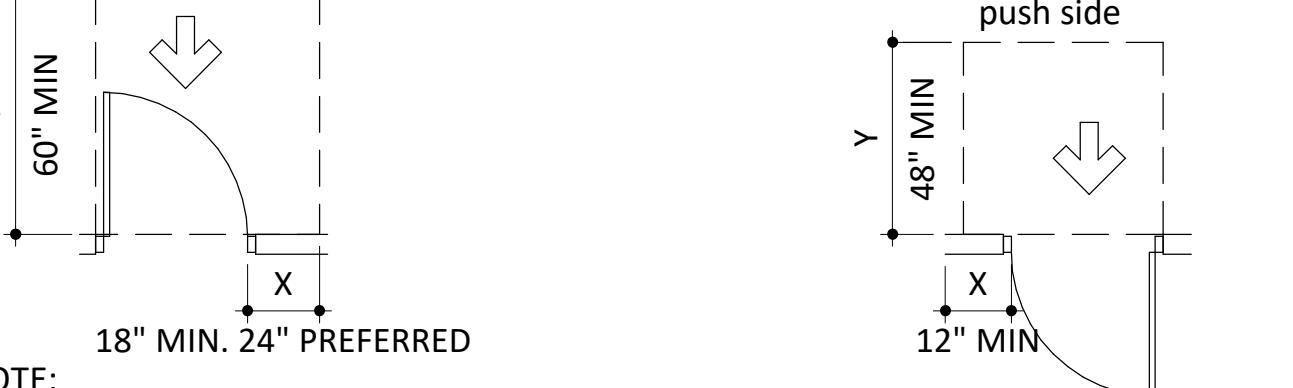
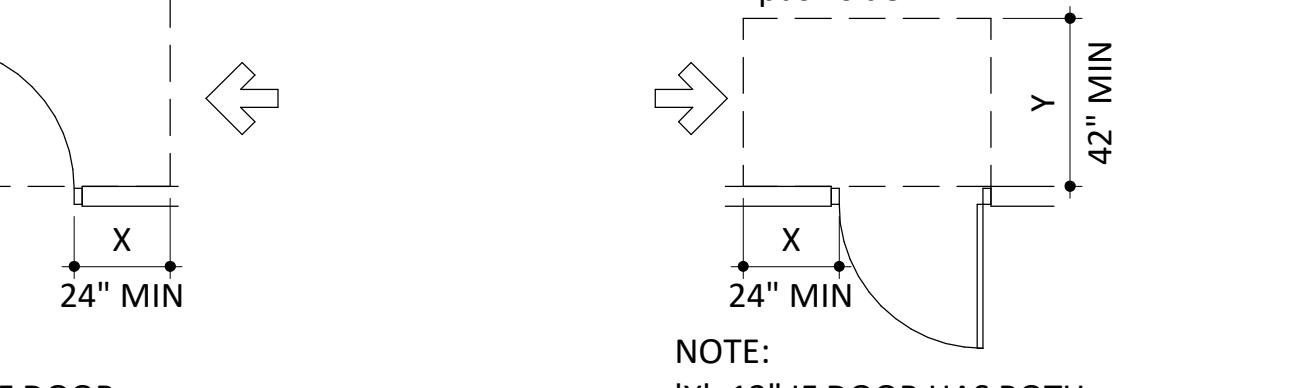
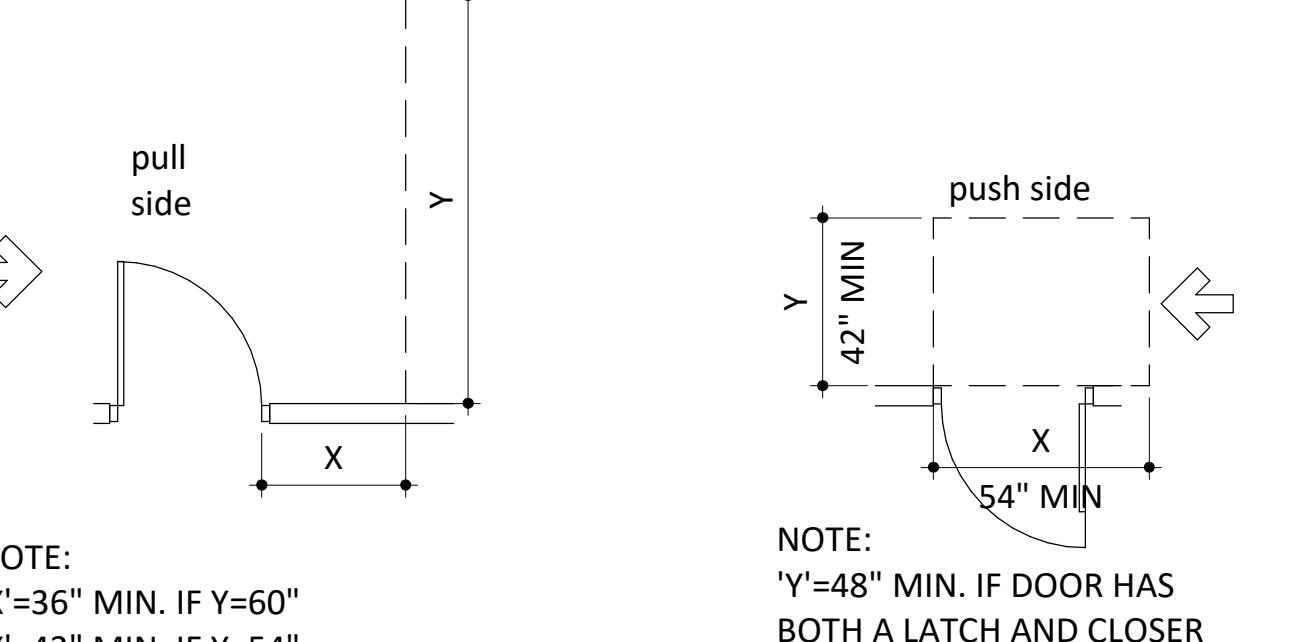
LIFE SAFETY PLAN & CODE REVIEW

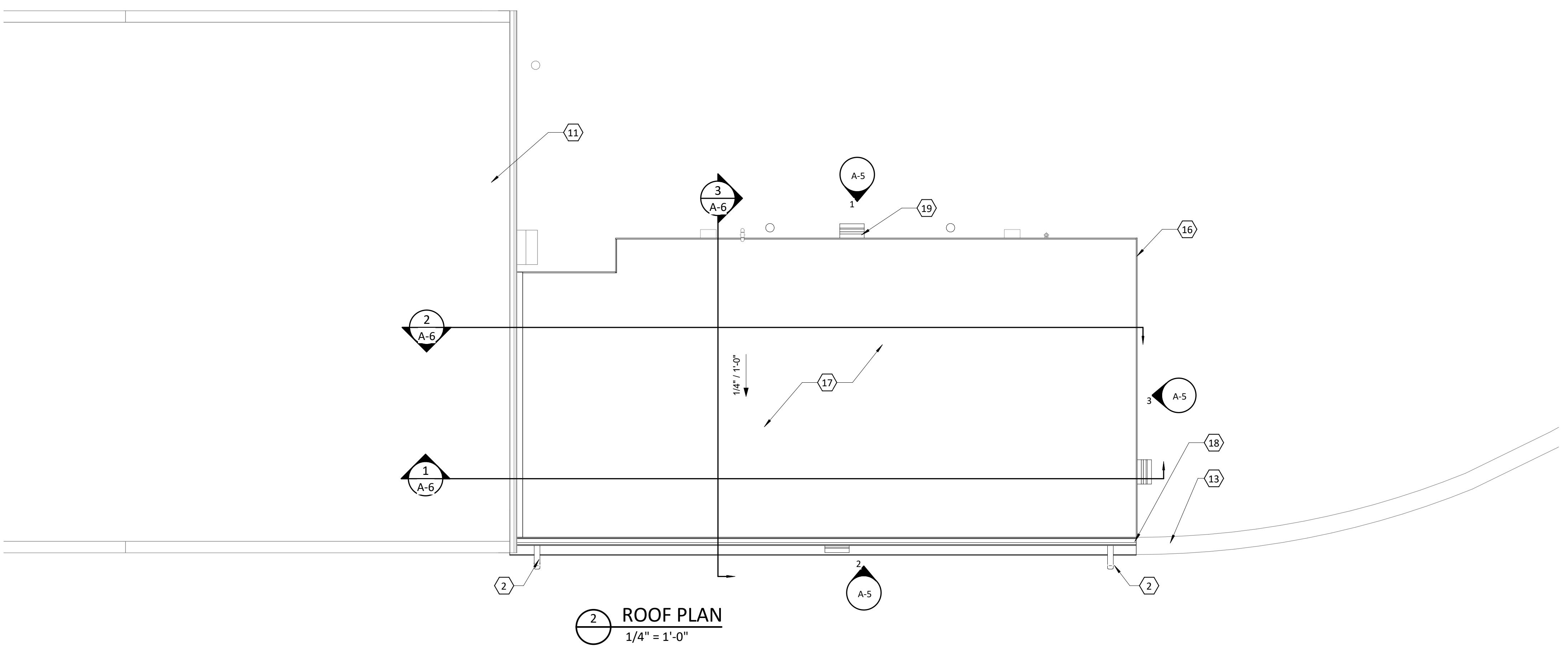
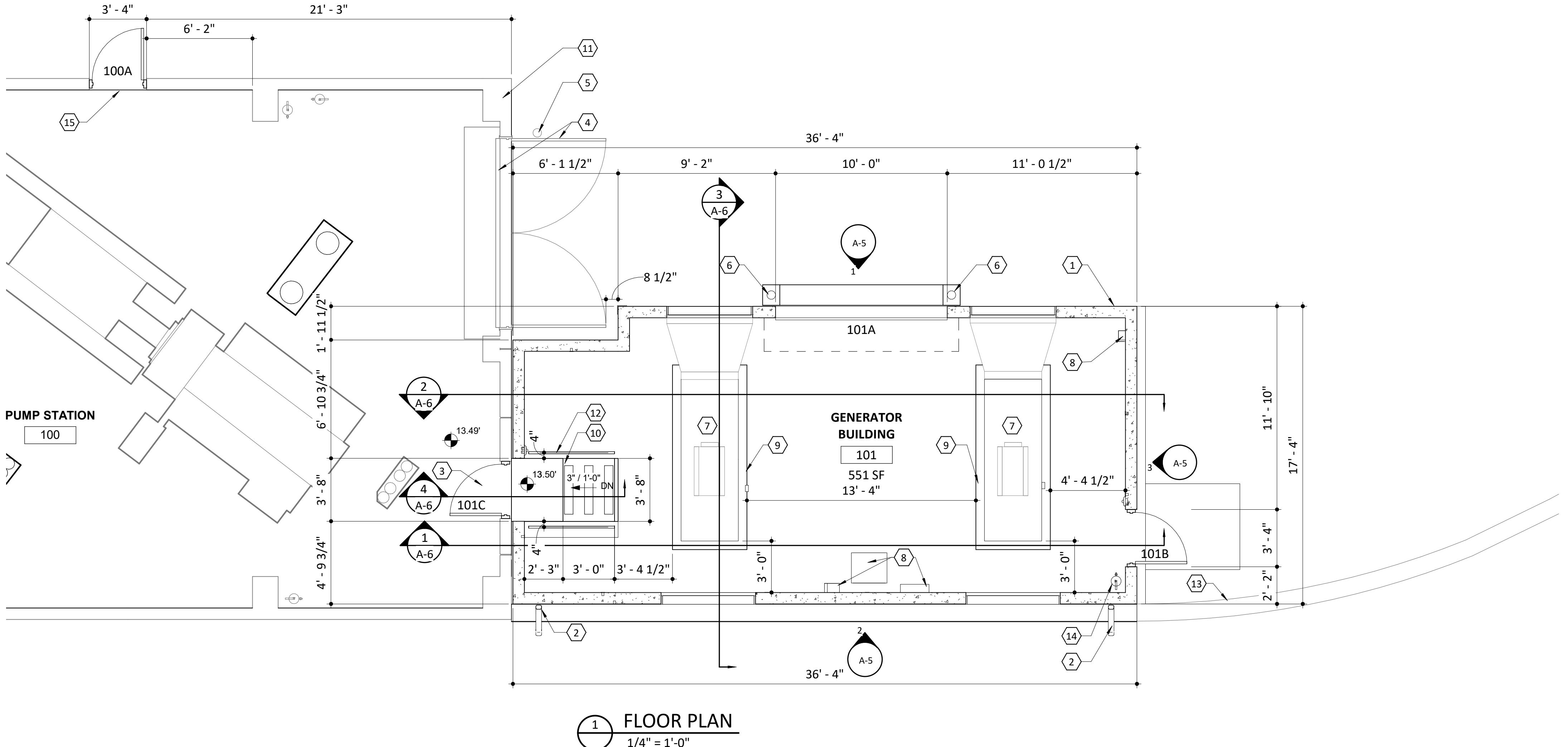
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 DATE 05/15/2023  
 DESIGNED HS  
 DRAWN KM  
 REVISED KM  
 CHECKED PJ

FILE NAME AR-JF222522-R21.RVT

VERIFY SCALE Bar is one inch on original drawing, if not one inch on this sheet, adjust scale.  
 NO. 1  
 0 8' 16' 32'  
 1/16"=1'-0"

SHEET A-1  
 SEQ. 5  
 ISSUED FOR BID

Fixture Accessories and Mounting Heights		Plan Graphics		General Notes																																																																																																																																																																																																																																																																																																																																																																																														
 <p><b>SPECIALTY MOUNTING HEIGHTS</b> 1/4"=1'-0"</p>  <p><b>TYP SIGNAGE MOUNTING LOCATION</b> 1/4"=1'-0"</p>		<p><b>REFERENCE</b></p> <p>DETAIL NUMBER → SHEET ON WHICH DETAIL IS DRAWN → 1 A-1</p> <p>DETAIL NUMBER → SHEET ON WHICH DETAIL IS REFERENCED → 1 A-2A-4</p> <p>SHEET ON WHICH DETAIL IS DRAWN → *DOUBLE DASH INDICATES SAME SHEET</p> <p><b>SYMBOLS</b></p> <p>ACCESSORY KEY → ABC</p> <p>DOOR DESIGNATION → 127</p> <p>ELEVATION REFERENCE → A-4 1</p> <p>FIRE EXTINGUISHER → FE</p> <p>NORTH ARROW → NORTH</p> <p>NOTE BY SYMBOL → 1</p> <p>PARTITION TYPE MARK → A1</p> <p>REVISION NUMBER → 1</p> <p>SIGNAGE → 101A E.3</p> <p>WINDOW TYPE MARK → A</p>		<p><b>GENERAL NOTES</b></p> <p><b>A. GENERAL NOTES:</b></p> <ol style="list-style-type: none"> <li>1. THE CONTRACTOR SHALL PROVIDE COMPLETE PROJECT SYSTEMS AND COMPONENTS AND COMPLY WITH ALL REQUIREMENTS INDICATED ON THE PROJECT DOCUMENTS.</li> <li>2. WORK WITHIN THE AREA BOUNDARIES INDICATED IN THE PROJECT DOCUMENTS AND COMPLY WITH ALL APPLICABLE BUILDING CODE, REGULATION AND ORDINANCE REQUIREMENTS. OCCUPANTS ADJACENT TO THE PROJECT AREA BOUNDARIES SHALL CONTINUE UNINTERRUPTED OCCUPANCY DURING CONSTRUCTION OF THE PROJECT.</li> <li>3. VERIFY FIELD CONDITIONS AND COORDINATION WITH THE PROJECT DOCUMENTS PRIOR TO PROCEEDING WITH THE WORK.</li> <li>4. COORDINATE THE WORK WITH ALL REQUIREMENTS INDICATED IN THE PROJECT DOCUMENTS.</li> <li>5. PERFORM THE WORK AT THE PROJECT SITE DURING NORMAL BUSINESS HOURS, UNLESS OTHERWISE NOTED.</li> <li>6. COORDINATE THE WORK WITH EQUIPMENT, FURNISHINGS, AND SYSTEMS PROVIDED BY THE OWNER.</li> <li>7. THE CONTRACTOR SHALL PROVIDE COMPLETE PROJECT SYSTEMS AND COMPONENTS AND COMPLY WITH ALL REQUIREMENTS INDICATED ON THE PROJECT DOCUMENTS.</li> </ol> <p><b>B. DEFINITIONS:</b></p> <ol style="list-style-type: none"> <li>1. "TYPICAL" OR "TYP." INDICATES IDENTICAL COMPLETE SYSTEM SHALL BE PROVIDED FOR EACH OCCURRENCE OF THE CONDITION NOTED.</li> <li>2. "SIMILAR" OR "SIM." INDICATES COMPONENTS SHALL BE PROVIDED COMPARABLE TO THE CHARACTERISTICS FOR THE CONDITION NOTED.</li> <li>3. "AS REQUIRED" INDICATES COMPONENTS REQUIRED TO COMPLETE THE NOTED SYSTEM AS INDICATED IN THE PROJECT DOCUMENTS SHALL BE PROVIDED.</li> <li>4. "ALIGN" INDICATES ACCURATELY PROVIDE FINISH FACES OF MATERIALS IN STRAIGHT, TRUE AND PLUMB RELATION TO ADJACENT MATERIALS.</li> </ol> <p><b>C. DIMENSIONS:</b></p> <ol style="list-style-type: none"> <li>1. DIMENSIONS ARE INDICATED TO THE CENTERLINE OF THE STRUCTURAL GRID, FACE OF CONCRETE WALL, NOMINAL FACE OF CMU WALL, FINISH FACE OF PARTITION TYPE AS SCHEDULED, UNLESS OTHERWISE NOTED.</li> <li>2. ALIGNMENT OF PARTITIONS AND FINISHES AS SCHEDULED SHALL BE STRAIGHT, TRUE AND PLUMB. THE PRIORITY FOR THE PROJECT DIMENSIONS SHALL BE IN THE FOLLOWING ORDER:             <ol style="list-style-type: none"> <li>MIN. DIMENSIONS FOR THE ACCESSIBILITY CLEARANCE AND BUILDING CODE REQUIREMENTS.</li> <li>LARGE SCALE DETAILS</li> <li>SMALL SCALE DETAILS</li> <li>ENLARGED VIEWS</li> <li>FLOOR PLANS AND ELEVATIONS</li> </ol> </li> <li>3. FLOOR ELEVATIONS ARE INDICATED TO THE FACE OF THE STRUCTURAL SLAB, UNLESS OTHERWISE NOTED.</li> <li>4. VERTICAL DIMENSIONS ARE INDICATED FROM THE FLOOR ELEVATION TO FACE OF FINISHED MATERIAL AT THE DIMENSION POINT, UNLESS NOTED ABOVE FINISH FLOOR - "AFF".</li> <li>5. DIMENSIONS SHOWN ON THE DRAWINGS SHALL INDICATE THE REQUIRED SIZE, CLEARANCE AND DIMENSIONAL RELATIONSHIP BETWEEN PROJECT SYSTEMS AND COMPONENTS. DIMENSIONS SHALL NOT BE DETERMINED BY SCALING THE DRAWINGS.</li> </ol> <p><b>D. DOOR &amp; FIXTURES:</b></p> <ol style="list-style-type: none"> <li>1. ALL DOOR DIMENSIONS ARE CLEAR, FROM EDGE OF DOOR STOP TO EDGE OF DOOR IN 90° OPEN POSITION.</li> </ol>																																																																																																																																																																																																																																																																																																																																																																																														
Door Clearances				Schedule of Typical Architectural Abbreviations																																																																																																																																																																																																																																																																																																																																																																																														
 <p><b>FRONT APPROACH - SWINGING DOORS</b></p> <p>NOTE: 'X'=12" IF DOOR HAS BOTH A LATCH AND CLOSER</p>  <p><b>LATCH SIDE APPROACH - SWINGING DOORS</b></p> <p>NOTE: 'Y'=54" min. if door has a closer</p>  <p><b>HINGE SIDE APPROACH - SWINGING DOORS</b></p> <p>NOTE: 'Y'=42" min. if Y=54"</p>				<p>(NOT ALL ABBREVIATIONS MAY BE USED)</p> <table border="0"> <tbody> <tr> <td><b>A</b></td> <td>ACOUSTIC</td> <td>ACOUSTICAL</td> <td><b>E</b></td> <td>EA</td> <td>EACH</td> <td><b>M</b></td> <td>MAINT</td> <td>MAINTENANCE</td> <td><b>SIM</b></td> <td>SIMILAR</td> </tr> <tr> <td>ADA</td> <td>AMERICAN DISABILITIES ACT</td> <td>E.J.</td> <td>EXPANSION JOINT</td> <td>MAX</td> <td>MAXIMUM</td> <td>SPEC</td> <td>SPECIFICATIONS</td> <td>SS</td> <td>STAINLESS STEEL</td> </tr> <tr> <td>ACT</td> <td>ACOUSTICAL CEILING TILE</td> <td>EL</td> <td>ELEVATION</td> <td>MECH</td> <td>MECHANICAL</td> <td>SSM</td> <td>SOLID SURFACE MATERIAL</td> <td>STD</td> <td>STANDARD</td> </tr> <tr> <td>ADJ</td> <td>ADJACENT OR ADJUSTABLE</td> <td>ELEC</td> <td>ELECTRIC(AL)</td> <td>MFR</td> <td>MANUFACTURER</td> <td>STL</td> <td>STEL</td> <td>STOR</td> <td>STORAGE</td> </tr> <tr> <td>AFF</td> <td>ABOVE FINISH FLOOR</td> <td>ELEV</td> <td>ELEVATOR/ELEVATION</td> <td>MH</td> <td>MANHOLE</td> <td>STRUCT</td> <td>STRUCTURAL</td> <td>SYM</td> <td>SYMMETRICAL</td> </tr> <tr> <td>ALUM</td> <td>ALUMINUM</td> <td>EMERG</td> <td>EMERGENCY</td> <td>MIN</td> <td>MINIMUM</td> <td>T</td> <td>TEXAS ACCESSIBILITY</td> <td>TAS</td> <td>STANDARDS</td> </tr> <tr> <td>ALT</td> <td>ALTERNATE</td> <td>EQ</td> <td>EQUAL</td> <td>MO</td> <td>MASONRY OPENING</td> <td>TEMP</td> <td>TEMPERATURE</td> <td>TLT</td> <td>TOILET</td> </tr> <tr> <td>APPROX</td> <td>APPROXIMATELY</td> <td>EQUIP</td> <td>EQUIPMENT</td> <td>MTL</td> <td>METAL</td> <td>TS</td> <td>TO TUBE STEEL</td> <td>T-STAT</td> <td>TISSUE</td> </tr> <tr> <td>ARCH</td> <td>ARCHITECT(URAL)</td> <td>EWC</td> <td>ELECTRIC WATER COOLER</td> <td>N</td> <td>NUMBER</td> <td>TYP</td> <td>TISSUE</td> <td>TEMP</td> <td>TISSUE</td> </tr> <tr> <td><b>B</b></td> <td>BUILDING</td> <td>EXIST</td> <td>EXISTING</td> <td>NO</td> <td>NOT IN CONTRACT</td> <td>UNO</td> <td>UNDERWRITERS</td> <td>UL</td> <td>LABORATORIES INC.</td> </tr> <tr> <td>BLDG</td> <td>BLOCKING</td> <td>EXT</td> <td>EXTERIOR</td> <td>NTS</td> <td>NOT TO SCALE</td> <td>V</td> <td>UNLESS NOTED OTHERWISE</td> <td>VCT</td> <td>VINYL COMPOSITION TILE</td> </tr> <tr> <td>BLKG</td> <td>BLOCKING</td> <td>E</td> <td>FIRE DEPT. CONNECTION</td> <td>O</td> <td>ON CENTER</td> <td>VERT</td> <td>VERTICAL</td> <td>W</td> <td>WATER CLOSET</td> </tr> <tr> <td>BIT</td> <td>BITUMEN</td> <td>FDC</td> <td>FIRE DEPT. CONNECTION</td> <td>OC</td> <td>ON CENTER</td> <td>W/</td> <td>W/</td> <td>WC</td> <td>WOOD</td> </tr> <tr> <td>BLK</td> <td>BLOCK</td> <td>FD</td> <td>FLOOR DRAIN</td> <td>OD</td> <td>OUTSIDE DIAMETER</td> <td>WDW</td> <td>WDW</td> <td>WDW</td> <td>WITHOUT</td> </tr> <tr> <td>BTWN</td> <td>BETWEEN</td> <td>FF</td> <td>FLOOR</td> <td>OPD</td> <td>OVERFLOW DRAIN</td> <td>W/O</td> <td>W/O</td> <td>W/O</td> <td>W/O</td> </tr> <tr> <td><b>C</b></td> <td>CORNER GUARD</td> <td>FL/FLR</td> <td>FEET OR FOOT</td> <td>OPNG</td> <td>OPENING</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CG</td> <td>CAST IN PLACE</td> <td>FT</td> <td>FEET OR FOOT</td> <td>OPP</td> <td>OPPOSITE</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CIP</td> <td>CONTROL JOINT</td> <td>GALV</td> <td>GALVANIZED</td> <td>OSB</td> <td>ORIENTED STRAND BOARD</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CJ</td> <td>CENTERLINE</td> <td>GWB</td> <td>GYPSUM WALLBOARD</td> <td>P</td> <td>PARTITION</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CL</td> <td>CEILING</td> <td>GYP</td> <td>GYPSUM</td> <td>PLAM</td> <td>PLASTIC LAMINATE</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CLG</td> <td>CLEAR</td> <td>H</td> <td>HOSE BIBB</td> <td>PR</td> <td>PAIR</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CMU</td> <td>CONCRETE MASONRY UNIT</td> <td>HB</td> <td>HARDWARE</td> <td>PVC</td> <td>POUNDS PER SQUARE INCH</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CO</td> <td>CLEANOUT</td> <td>HDWR</td> <td>HOLLOW METAL</td> <td>PVMT</td> <td>POLYVINYL CHLORIDE</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>COL</td> <td>COLUMN</td> <td>HM</td> <td>HORIZONTAL</td> <td>R</td> <td>PAVEMENT</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>COMP</td> <td>COMPOSITION</td> <td>HORIZ</td> <td>HOUR</td> <td>RD</td> <td>ROOF DRAIN</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CONC</td> <td>CONCRETE</td> <td>HR</td> <td>HEATING/VENTILATION/AIR CONDITIONING</td> <td>REF</td> <td>REFER TO</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CONST</td> <td>CONSTRUCTION</td> <td>HVAC</td> <td>HEATING/VENTILATION/AIR CONDITIONING</td> <td>REINF</td> <td>REFERENCE</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CONT</td> <td>CONTINUOUS</td> <td>IN</td> <td>INCH</td> <td>REQ'D</td> <td>REINFORCING (REINFORCED)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CTR</td> <td>CENTER</td> <td>INSUL</td> <td>INSULATION</td> <td>RM</td> <td>REQUIRED</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>D</b></td> <td>DOUBLE</td> <td>INT</td> <td>INTERIOR</td> <td>RO</td> <td>ROOM</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DBL</td> <td>DIA</td> <td>JAN</td> <td>JANITOR</td> <td></td> <td>ROUGH OPENING</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DIA</td> <td>DIA</td> <td>L</td> <td>LAMINATE</td> <td><b>S</b></td> <td>SCHEDULE, SCHEDULED</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DIAG</td> <td>DIAGONAL</td> <td>LAM</td> <td>LAVATORY</td> <td>SCHED</td> <td>SECTION</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DN</td> <td>DOWN</td> <td>LAV</td> <td>POUNDS</td> <td>SECT</td> <td>SQUARE FEET</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DR</td> <td>DOOR</td> <td>LBS.</td> <td>LIGHTING</td> <td>SF</td> <td>SHEET</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DS</td> <td>DOWNSPOUT</td> <td>LTG.</td> <td>LEVEL</td> <td>SHT</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DWG</td> <td>DRAWING</td> <td>LVL</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DTL</td> <td>DETAIL</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>VERIFY SCALE: Bar is one inch on original drawing. If not one inch on this sheet, adjust scale.</p> <p>0 2' 4' 8'</p> <p>1/4"=1'-0"</p> <p>0 1/4"=1'-0"</p> <p>1 1/4"=1'-0"</p> <p>2 1/4"=1'-0"</p> <p>3 1/4"=1'-0"</p> <p>4 1/4"=1'-0"</p> <p>5 1/4"=1'-0"</p> <p>6 1/4"=1'-0"</p> <p>7 1/4"=1'-0"</p> <p>8 1/4"=1'-0"</p> <p>9 1/4"=1'-0"</p> <p>10 1/4"=1'-0"</p> <p>11 1/4"=1'-0"</p> <p>12 1/4"=1'-0"</p> <p>13 1/4"=1'-0"</p> <p>14 1/4"=1'-0"</p> <p>15 1/4"=1'-0"</p> <p>16 1/4"=1'-0"</p> <p>17 1/4"=1'-0"</p> <p>18 1/4"=1'-0"</p> <p>19 1/4"=1'-0"</p> <p>20 1/4"=1'-0"</p> <p>21 1/4"=1'-0"</p> <p>22 1/4"=1'-0"</p> <p>23 1/4"=1'-0"</p> <p>24 1/4"=1'-0"</p> <p>25 1/4"=1'-0"</p> <p>26 1/4"=1'-0"</p> <p>27 1/4"=1'-0"</p> <p>28 1/4"=1'-0"</p> <p>29 1/4"=1'-0"</p> <p>30 1/4"=1'-0"</p> <p>31 1/4"=1'-0"</p> <p>32 1/4"=1'-0"</p> <p>33 1/4"=1'-0"</p> <p>34 1/4"=1'-0"</p> <p>35 1/4"=1'-0"</p> <p>36 1/4"=1'-0"</p> <p>37 1/4"=1'-0"</p> <p>38 1/4"=1'-0"</p> <p>39 1/4"=1'-0"</p> <p>40 1/4"=1'-0"</p> <p>41 1/4"=1'-0"</p> <p>42 1/4"=1'-0"</p> <p>43 1/4"=1'-0"</p> <p>44 1/4"=1'-0"</p> <p>45 1/4"=1'-0"</p> <p>46 1/4"=1'-0"</p> <p>47 1/4"=1'-0"</p> <p>48 1/4"=1'-0"</p> <p>49 1/4"=1'-0"</p> <p>50 1/4"=1'-0"</p> <p>51 1/4"=1'-0"</p> <p>52 1/4"=1'-0"</p> <p>53 1/4"=1'-0"</p> <p>54 1/4"=1'-0"</p> <p>55 1/4"=1'-0"</p> <p>56 1/4"=1'-0"</p> <p>57 1/4"=1'-0"</p> <p>58 1/4"=1'-0"</p> <p>59 1/4"=1'-0"</p> <p>60 1/4"=1'-0"</p> <p>61 1/4"=1'-0"</p> <p>62 1/4"=1'-0"</p> <p>63 1/4"=1'-0"</p> <p>64 1/4"=1'-0"</p> <p>65 1/4"=1'-0"</p> <p>66 1/4"=1'-0"</p> <p>67 1/4"=1'-0"</p> <p>68 1/4"=1'-0"</p> <p>69 1/4"=1'-0"</p> <p>70 1/4"=1'-0"</p> <p>71 1/4"=1'-0"</p> <p>72 1/4"=1'-0"</p> <p>73 1/4"=1'-0"</p> <p>74 1/4"=1'-0"</p> <p>75 1/4"=1'-0"</p> <p>76 1/4"=1'-0"</p> <p>77 1/4"=1'-0"</p> <p>78 1/4"=1'-0"</p> <p>79 1/4"=1'-0"</p> <p>80 1/4"=1'-0"</p> <p>81 1/4"=1'-0"</p> <p>82 1/4"=1'-0"</p> <p>83 1/4"=1'-0"</p> <p>84 1/4"=1'-0"</p> <p>85 1/4"=1'-0"</p> <p>86 1/4"=1'-0"</p> <p>87 1/4"=1'-0"</p> <p>88 1/4"=1'-0"</p> <p>89 1/4"=1'-0"</p> <p>90 1/4"=1'-0"</p> <p>91 1/4"=1'-0"</p> <p>92 1/4"=1'-0"</p> <p>93 1/4"=1'-0"</p> <p>94 1/4"=1'-0"</p> <p>95 1/4"=1'-0"</p> <p>96 1/4"=1'-0"</p> <p>97 1/4"=1'-0"</p> <p>98 1/4"=1'-0"</p> <p>99 1/4"=1'-0"</p> <p>100 1/4"=1'-0"</p> <p>101 1/4"=1'-0"</p> <p>102 1/4"=1'-0"</p> <p>103 1/4"=1'-0"</p> <p>104 1/4"=1'-0"</p> <p>105 1/4"=1'-0"</p> <p>106 1/4"=1'-0"</p> <p>107 1/4"=1'-0"</p> <p>108 1/4"=1'-0"</p> <p>109 1/4"=1'-0"</p> <p>110 1/4"=1'-0"</p> <p>111 1/4"=1'-0"</p> <p>112 1/4"=1'-0"</p> <p>113 1/4"=1'-0"</p> <p>114 1/4"=1'-0"</p> <p>115 1/4"=1'-0"</p> <p>116 1/4"=1'-0"</p> <p>117 1/4"=1'-0"</p> <p>118 1/4"=1'-0"</p> <p>119 1/4"=1'-0"</p> <p>120 1/4"=1'-0"</p> <p>121 1/4"=1'-0"</p> <p>122 1/4"=1'-0"</p> <p>123 1/4"=1'-0"</p> <p>124 1/4"=1'-0"</p> <p>125 1/4"=1'-0"</p> <p>126 1/4"=1'-0"</p> <p>127 1/4"=1'-0"</p> <p>128 1/4"=1'-0"</p> <p>129 1/4"=1'-0"</p> <p>130 1/4"=1'-0"</p> <p>131 1/4"=1'-0"</p> <p>132 1/4"=1'-0"</p> <p>133 1/4"=1'-0"</p> <p>134 1/4"=1'-0"</p> <p>135 1/4"=1'-0"</p> <p>136 1/4"=1'-0"</p> <p>137 1/4"=1'-0"</p> <p>138 1/4"=1'-0"</p> <p>139 1/4"=1'-0"</p> <p>140 1/4"=1'-0"</p> <p>141 1/4"=1'-0"</p> <p>142 1/4"=1'-0"</p> <p>143 1/4"=1'-0"</p> <p>144 1/4"=1'-0"</p> <p>145 1/4"=1'-0"</p> <p>146 1/4"=1'-0"</p> <p>147 1/4"=1'-0"</p> <p>148 1/4"=1'-0"</p> <p>149 1/4"=1'-0"</p> <p>150 1/4"=1'-0"</p> <p>151 1/4"=1'-0"</p> <p>152 1/4"=1'-0"</p> <p>153 1/4"=1'-0"</p> <p>154 1/4"=1'-0"</p> <p>155 1/4"=1'-0"</p> <p>156 1/4"=1'-0"</p> <p>157 1/4"=1'-0"</p> <p>158 1/4"=1'-0"</p> <p>159 1/4"=1'-0"</p> <p>160 1/4"=1'-0"</p> <p>161 1/4"=1'-0"</p> <p>162 1/4"=1'-0"</p> <p>163 1/4"=1'-0"</p> <p>164 1/4"=1'-0"</p> <p>165 1/4"=1'-0"</p> <p>166 1/4"=1'-0"</p> <p>167 1/4"=1'-0"</p> <p>168 1/4"=1'-0"</p> <p>169 1/4"=1'-0"</p> <p>170 1/4"=1'-0"</p> <p>171 1/4"=1'-0"</p> <p>172 1/4"=1'-0"</p> <p>173 1/4"=1'-0"</p> <p>174 1/4"=1'-0"</p> <p>175 1/4"=1'-0"</p> <p>176 1/4"=1'-0"</p> <p>177 1/4"=1'-0"</p> <p>178 1/4"=1'-0"</p> <p>179 1/4"=1'-0"</p> <p>180 1/4"=1'-0"</p> <p>181 1/4"=1'-0"</p> <p>182 1/4"=1'-0"</p> <p>183 1/4"=1'-0"</p> <p>184 1/4"=1'-0"</p> <p>185 1/4"=1'-0"</p> <p>186 1/4"=1'-0"</p> <p>187 1/4"=1'-0"</p> <p>188 1/4"=1'-0"</p> <p>189 1/4"=1'-0"</p> <p>190 1/4"=1'-0"</p> <p>191 1/4"=1'-0"</p> <p>192 1/4"=1'-0"</p> <p>193 1/4"=1'-0"</p> <p>194 1/4"=1'-0"</p> <p>195 1/4"=1'-0"</p> <p>196 1/4"=1'-0"</p> <p>197 1/4"=1'-0"</p> <p>198 1/4"=1'-0"</p> <p>199 1/4"=1'-0"</p> <p>200 1/4"=1'-0"</p> <p>201 1/4"=1'-0"</p> <p>202 1/4"=1'-0"</p> <p>203 1/4"=1'-0"</p> <p>204 1/4"=1'-0"</p> <p>205 1/4"=1'-0"</p> <p>206 1/4"=1'-0"</p> <p>207 1/4"=1'-0"</p> <p>208 1/4"=1'-0"</p> <p>209 1/4"=1'-0"</p> <p>210 1/4"=1'-0"</p> <p>211 1/4"=1'-0"</p> <p		<b>A</b>	ACOUSTIC	ACOUSTICAL	<b>E</b>	EA	EACH	<b>M</b>	MAINT	MAINTENANCE	<b>SIM</b>	SIMILAR	ADA	AMERICAN DISABILITIES ACT	E.J.	EXPANSION JOINT	MAX	MAXIMUM	SPEC	SPECIFICATIONS	SS	STAINLESS STEEL	ACT	ACOUSTICAL CEILING TILE	EL	ELEVATION	MECH	MECHANICAL	SSM	SOLID SURFACE MATERIAL	STD	STANDARD	ADJ	ADJACENT OR ADJUSTABLE	ELEC	ELECTRIC(AL)	MFR	MANUFACTURER	STL	STEL	STOR	STORAGE	AFF	ABOVE FINISH FLOOR	ELEV	ELEVATOR/ELEVATION	MH	MANHOLE	STRUCT	STRUCTURAL	SYM	SYMMETRICAL	ALUM	ALUMINUM	EMERG	EMERGENCY	MIN	MINIMUM	T	TEXAS ACCESSIBILITY	TAS	STANDARDS	ALT	ALTERNATE	EQ	EQUAL	MO	MASONRY OPENING	TEMP	TEMPERATURE	TLT	TOILET	APPROX	APPROXIMATELY	EQUIP	EQUIPMENT	MTL	METAL	TS	TO TUBE STEEL	T-STAT	TISSUE	ARCH	ARCHITECT(URAL)	EWC	ELECTRIC WATER COOLER	N	NUMBER	TYP	TISSUE	TEMP	TISSUE	<b>B</b>	BUILDING	EXIST	EXISTING	NO	NOT IN CONTRACT	UNO	UNDERWRITERS	UL	LABORATORIES INC.	BLDG	BLOCKING	EXT	EXTERIOR	NTS	NOT TO SCALE	V	UNLESS NOTED OTHERWISE	VCT	VINYL COMPOSITION TILE	BLKG	BLOCKING	E	FIRE DEPT. CONNECTION	O	ON CENTER	VERT	VERTICAL	W	WATER CLOSET	BIT	BITUMEN	FDC	FIRE DEPT. CONNECTION	OC	ON CENTER	W/	W/	WC	WOOD	BLK	BLOCK	FD	FLOOR DRAIN	OD	OUTSIDE DIAMETER	WDW	WDW	WDW	WITHOUT	BTWN	BETWEEN	FF	FLOOR	OPD	OVERFLOW DRAIN	W/O	W/O	W/O	W/O	<b>C</b>	CORNER GUARD	FL/FLR	FEET OR FOOT	OPNG	OPENING					CG	CAST IN PLACE	FT	FEET OR FOOT	OPP	OPPOSITE					CIP	CONTROL JOINT	GALV	GALVANIZED	OSB	ORIENTED STRAND BOARD					CJ	CENTERLINE	GWB	GYPSUM WALLBOARD	P	PARTITION					CL	CEILING	GYP	GYPSUM	PLAM	PLASTIC LAMINATE					CLG	CLEAR	H	HOSE BIBB	PR	PAIR					CMU	CONCRETE MASONRY UNIT	HB	HARDWARE	PVC	POUNDS PER SQUARE INCH					CO	CLEANOUT	HDWR	HOLLOW METAL	PVMT	POLYVINYL CHLORIDE					COL	COLUMN	HM	HORIZONTAL	R	PAVEMENT					COMP	COMPOSITION	HORIZ	HOUR	RD	ROOF DRAIN					CONC	CONCRETE	HR	HEATING/VENTILATION/AIR CONDITIONING	REF	REFER TO					CONST	CONSTRUCTION	HVAC	HEATING/VENTILATION/AIR CONDITIONING	REINF	REFERENCE					CONT	CONTINUOUS	IN	INCH	REQ'D	REINFORCING (REINFORCED)					CTR	CENTER	INSUL	INSULATION	RM	REQUIRED					<b>D</b>	DOUBLE	INT	INTERIOR	RO	ROOM					DBL	DIA	JAN	JANITOR		ROUGH OPENING					DIA	DIA	L	LAMINATE	<b>S</b>	SCHEDULE, SCHEDULED					DIAG	DIAGONAL	LAM	LAVATORY	SCHED	SECTION					DN	DOWN	LAV	POUNDS	SECT	SQUARE FEET					DR	DOOR	LBS.	LIGHTING	SF	SHEET					DS	DOWNSPOUT	LTG.	LEVEL	SHT						DWG	DRAWING	LVL								DTL	DETAIL								
<b>A</b>	ACOUSTIC	ACOUSTICAL	<b>E</b>	EA	EACH	<b>M</b>	MAINT	MAINTENANCE	<b>SIM</b>	SIMILAR																																																																																																																																																																																																																																																																																																																																																																																								
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DIA	DIA	L	LAMINATE	<b>S</b>	SCHEDULE, SCHEDULED																																																																																																																																																																																																																																																																																																																																																																																													
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#### GENERAL NOTES

1. ALL DIMENSIONS ARE GIVEN TO:  
A. FACE OF CONCRETE.  
B. CENTER LINE OF COLUMNS WHERE INDICATED.
2. REFER TO LIFE SAFETY PLAN FOR LOCATION OF FIRE EXTINGUISHERS (FE).
3. REFER TO SHEET A-2 FOR GENERAL NOTES & ABBREVIATIONS.

#### FLOOR PLAN NOTES

##### BY SYMBOL "X"

- 1 8" CAST-IN-PLACE CONCRETE PANELS
- 2 4" PREFINISHED METAL DOWNSPOUT
- 3 DEMO EXISTING DOOR AND FRAME. CUT EXISTING CONCRETE WALL PANEL AS REQUIRED TO INSTALL NEW HOLLOW METAL DOOR AND FRAME
- 4 EXISTING OVERHEAD COILING DOOR WITH STORM DOORS
- 5 EXISTING BOLLARD
- 6 BOLLARD. RE: SHEET C-2
- 7 DUAL WALL TANK WITH STACKED GENERATOR. RE: ELECTRICAL 1/E-5
- 8 EQUIPMENT, RE: ELECTRICAL SHEET E-5
- 9 EQUIPMENT PADS; RE: STRUCTURAL SHEET S-7
- 10 RAMP AND LANDING. RAMP TO HAVE OSHA COMPLIANT ANTI-SLIP CLEATS, SPACED AS SHOWN
- 11 EXISTING PUMP STATION BUILDING
- 12 REMOVABLE HANDRAIL WITH FLANGE-MOUNTED RAILING BASE FLANGE. RE: EASYFIT.COM PART # EF12G-40
- 13 EXISTING RETAINING WALL
- 14 FIRE EXTINGUISHER
- 15 NEW DOOR AND FRAME AT PUMP STATION WALL. CUT EXISTING CONCRETE WALL PANEL AS REQUIRED TO INSTALL. RE: STRUCTURAL SHEET S-5
- 16 PREFINISHED METAL FASCIA
- 17 TDI WINDSTORM PRODUCT MEMBRANE ROOFING SYSTEM OVER 2" TOPPING SLAB AND 8" PRECAST CONCRETE ROOF PANELS
- 18 5" X 5" PREFINISHED METAL GUTTER
- 19 LIGHT FIXTURE, RE: ELECTRICAL SHEET E-4 & E-11

**FREESE NICHOLS**  
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Phone - (713) 600-6800  
Web - www.freese.com

JEFFERSON COUNTY, TX  
CRANE BAYOU PUMP STATION  
GENERATORS AND BUILDING  
ARCHITECTURE

FLOOR AND ROOF PLAN

FAN JOB NO. JF222522

DATE 05/15/2023

DESIGNED HS

DRAWN KM

REVISED KM

CHECKED PJ

FILE NAME AR-JF222522-R21.RVT

NO. 1

ISSUE Bar is one inch on original drawing, if not one inch on this sheet, adjust scale.

1

VERIFY SCALE

1

FILE NAME AR-JF222522-R21.RVT

1

0

1/4" = 1'-0"

8'

0

2'

4'

6'

8'

10'

12'

14'

16'

18'

20'

22'

24'

26'

28'

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32'

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272'

274'

276'

278'

280'

282'

284'

286'

288'

290'

292'

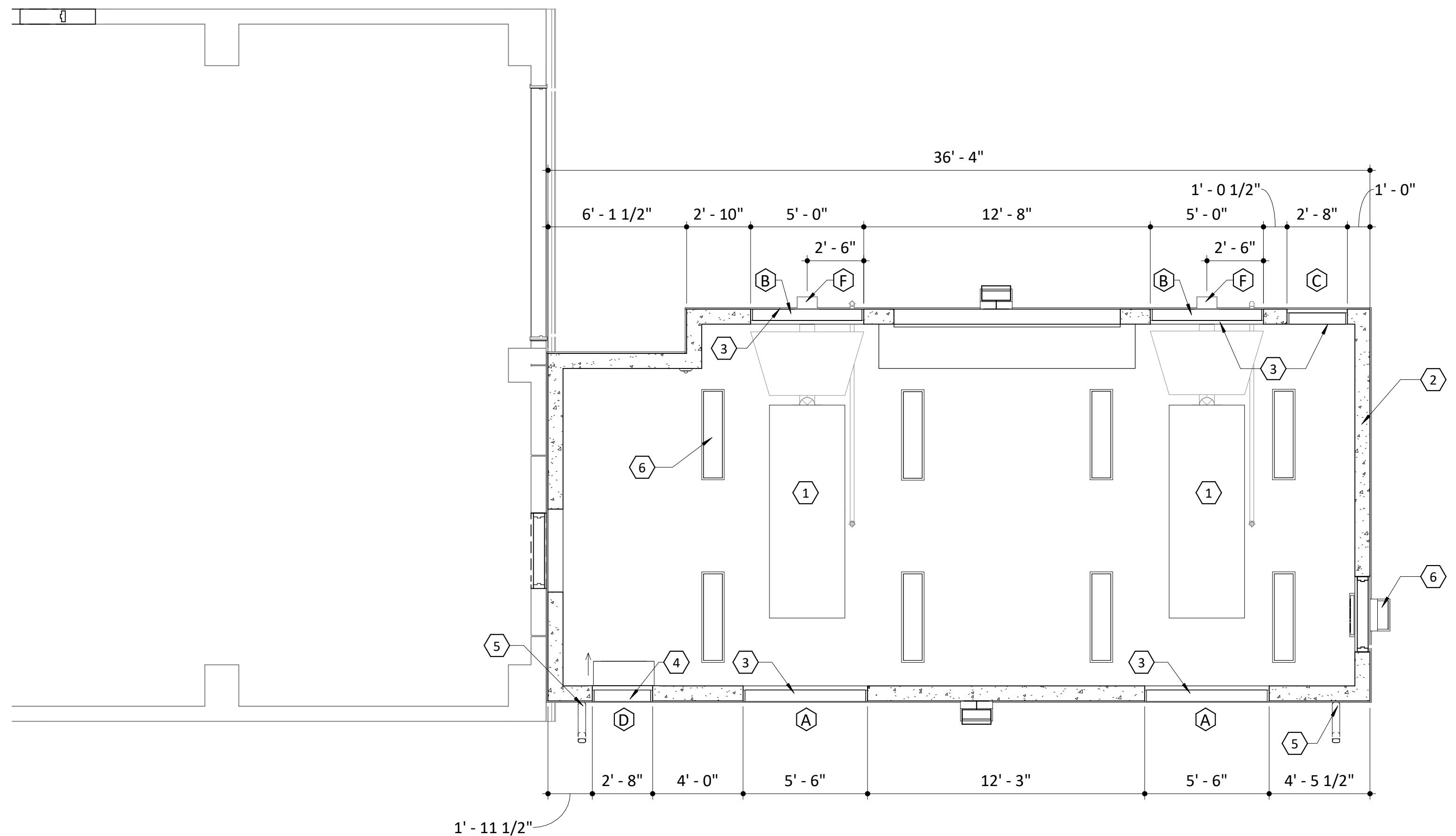
294'

296'

298'

300'

302'



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

**GENERAL NOTES**

1. REFER TO SHEET A-2 FOR GENERAL NOTES & ABBREVIATIONS.
2. REFER TO BUILDING SECTIONS (SHEET A-6) FOR EXPOSED STRUCTURE AND DECK HEIGHTS ABOVE FINISH FLOOR (NO CEILINGS).
3. NOT ALL LIGHTING FIXTURES AND DEVICES ARE SHOWN ON THIS PLAN. REFER TO LIGHTING SHEET E-4.
4. REFER TO ELECTRICAL PLAN, SHEET E-6, FOR MORE INFORMATION.
5. REFER TO SHEET A-7 FOR DOOR SCHEDULE.

**NOTES BY SYMBOL "○"**

- 1 GENERATOR WITH UL 142 BELLY TANK BELOW.
- 2 8" CAST-IN-PLACE CONCRETE PANELS.
- 3 LOUVER, RE: MECHANICAL SHEET M-3
- 4 SUPPLY FAN LOUVER, RE: MECHANICAL SHEET M-3.
- 5 4" PREFINISHED METAL DOWNSPOUT.
- 6 LIGHT FIXTURE, RE: ELECTRICAL SHEET E-4 & E-11

F&N JOB NO.		DATE 05/15/2023		DESIGNED HS		DRAWN KM		REVISED KM		CHECKED PJ	

VERIFICATION: Bar is one inch on original drawing, if not one inch on this sheet, adjust scale.

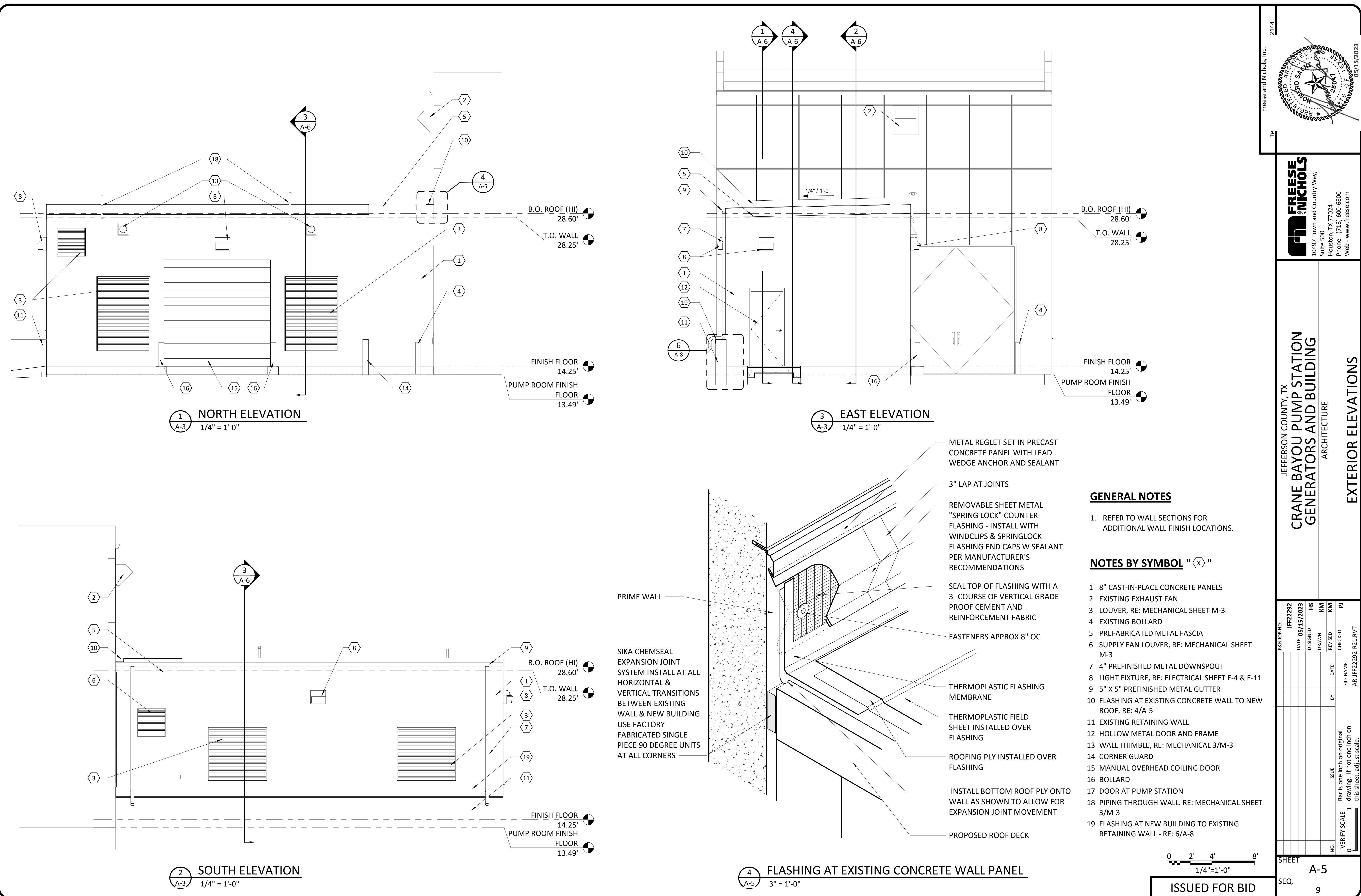
0 2' 4' 8'  
1/4"=1'-0"  
SHEET A-4  
SEQ. 8

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CRANE BAYOU PUMP STATION  
GENERATORS AND BUILDING  
ARCHITECTURE

REFLECTED CEILING PLAN - LEVEL 1

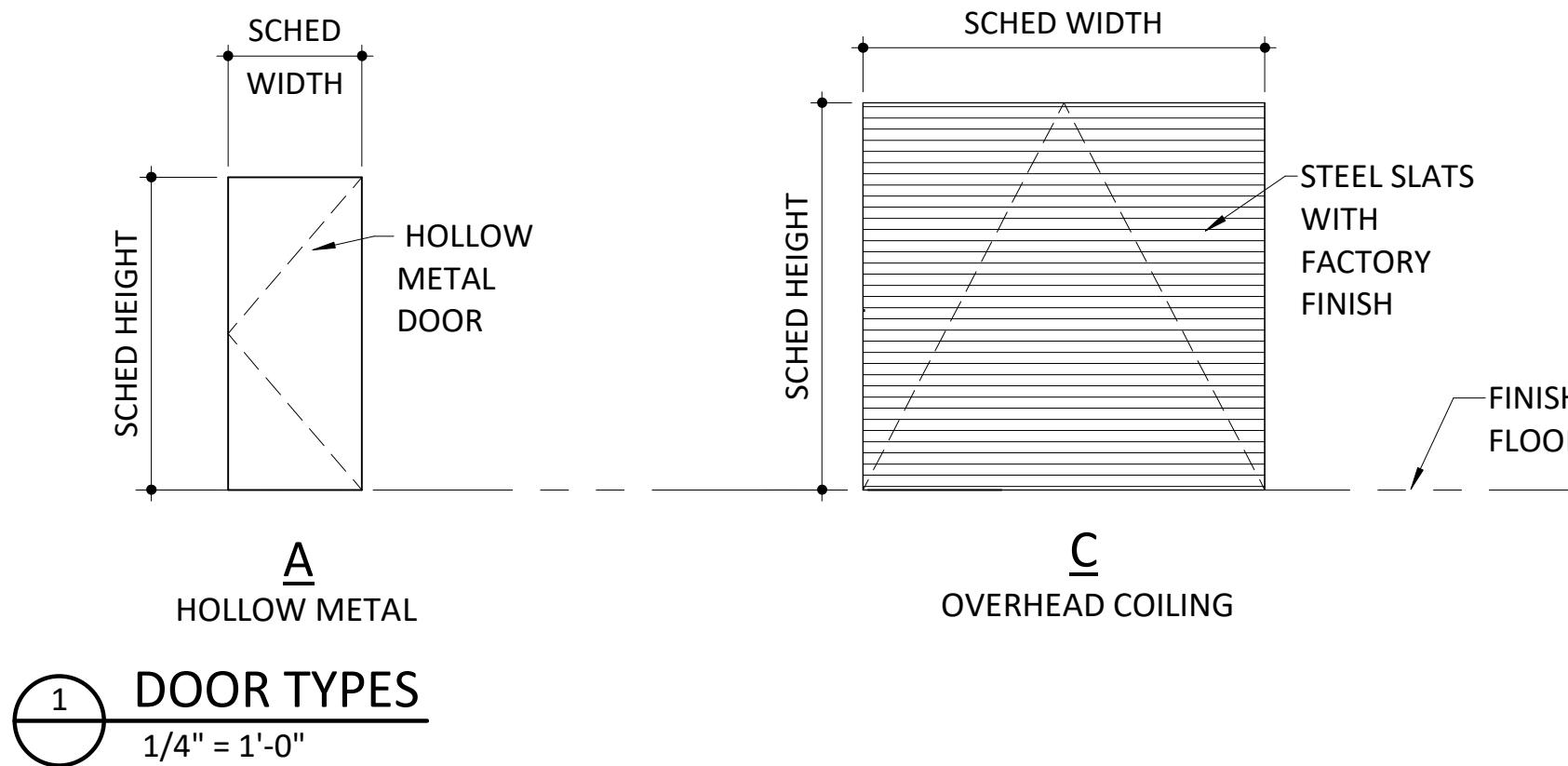
2144  
Freeze and Nichols, Inc.  
2024  
05/15/2023  
HAROLD S. ARCE, P.E.  
SALVADOR S. ARCE, P.E.  
TOMAS F. TIEBER, P.E.  
TOMAS F. TIEBER, P.E.



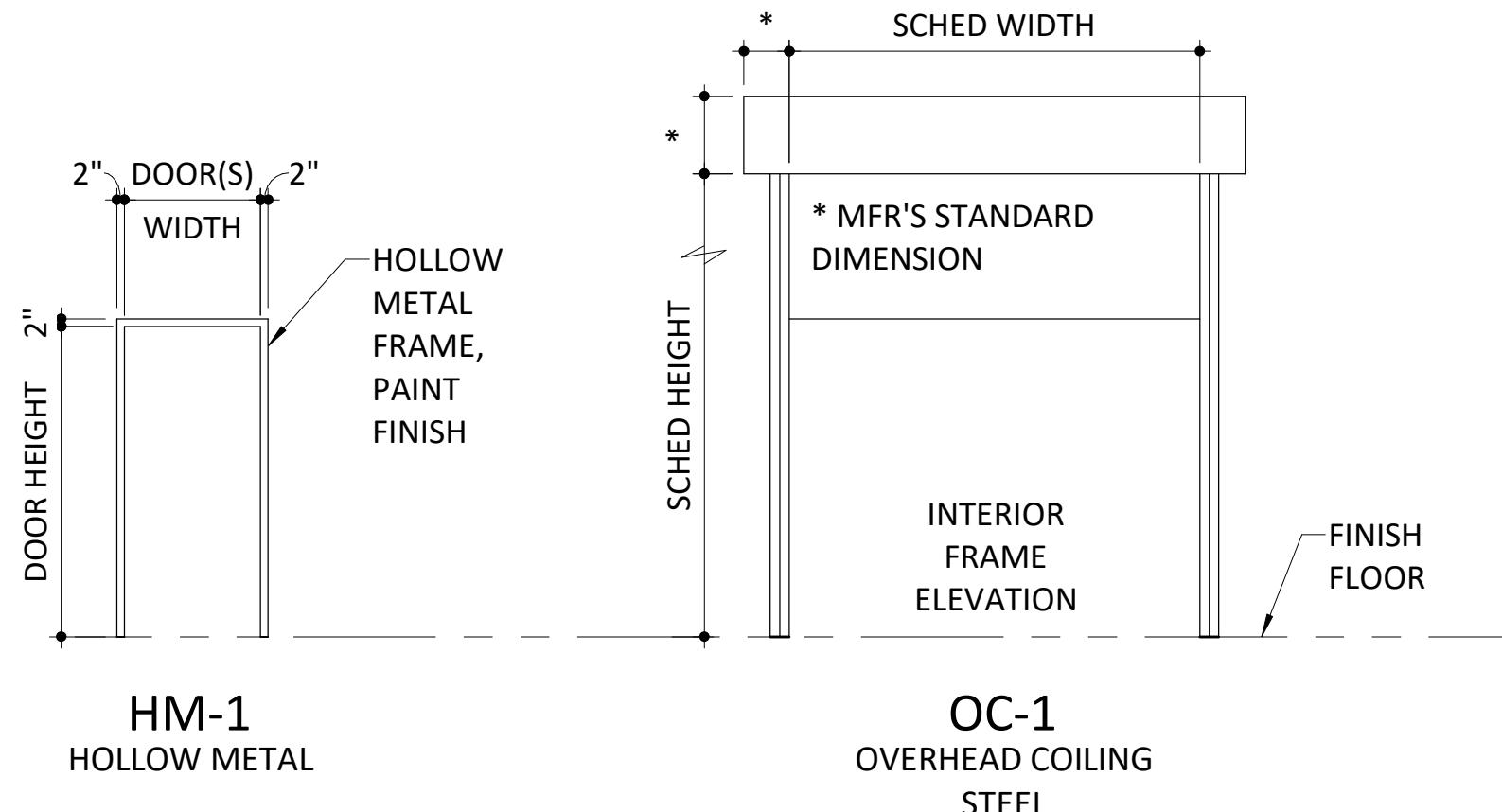


DOOR & FRAME SCHEDULE - GEN SET BUILDING														
DOOR NO.	SIGN TYPE	DOOR DESCRIPTION			FRAME DESCRIPTION					FIRE RATING	COMMENTS			
		WIDTH	HEIGHT	THICKNESS	MAT	DOOR TYPE	MAT	FRAME TYPE	HEAD	JAMB	JAMB	SILL		
101A		10' - 0"	10' - 0"	1 1/2"	STL	C	STL	OC-1	7/A-7	8/A-7	8/A-7	9/A-7	NA	TDI WINDSTORM PRODUCT
101B		3' - 0"	7' - 0"	1 3/4"	HM	A	HM	HM-1	4/A-7	5/A-7	5/A-7	6/A-7	NA	TDI WINDSTORM PRODUCT
101C		3' - 0"	7' - 0"	1 3/4"	HM	A	HM	HM-1	4/A-7	5/A-7	5/A-7	-	NA	

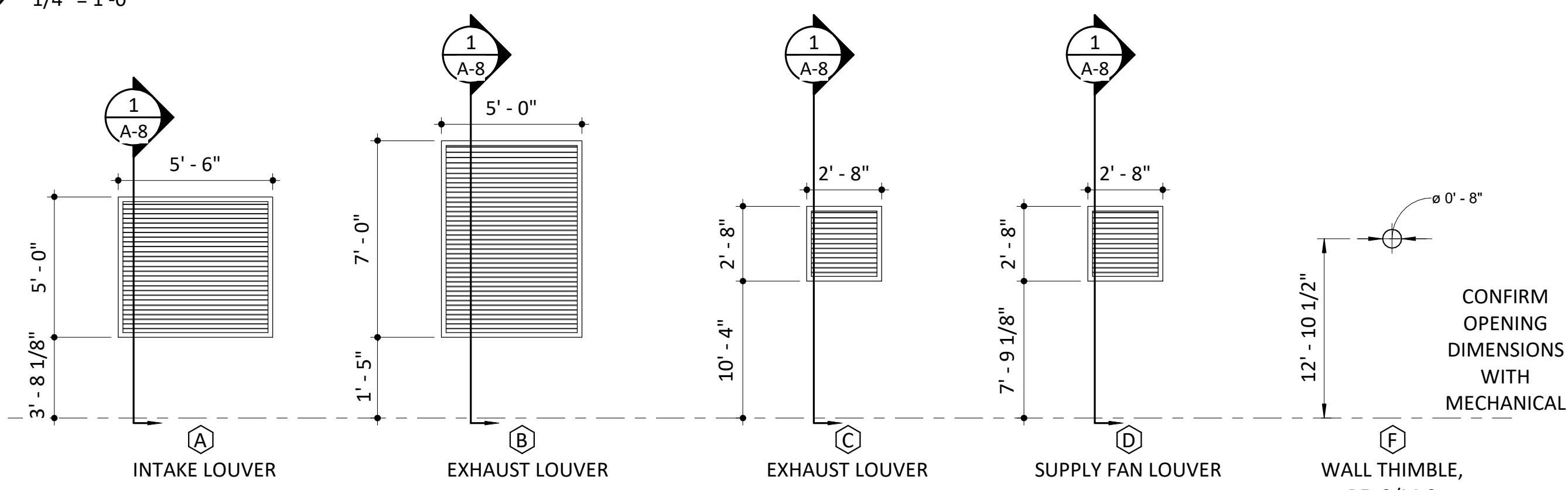
DOOR & FRAME SCHEDULE - PUMP STATION														
DOOR NO.	SIGN TYPE	DOOR DESCRIPTION			FRAME DESCRIPTION					FIRE RATING	COMMENTS			
		WIDTH	HEIGHT	THICKNESS	MAT	DOOR TYPE	MAT	FRAME TYPE	HEAD	JAMB	JAMB	SILL		
100A		3' - 0"	7' - 0"	1 3/4"	HM	A	HM	HM-1	4/A-7	5/A-7	5/A-7	6/A-7	NA	TDI WINDSTORM PRODUCT



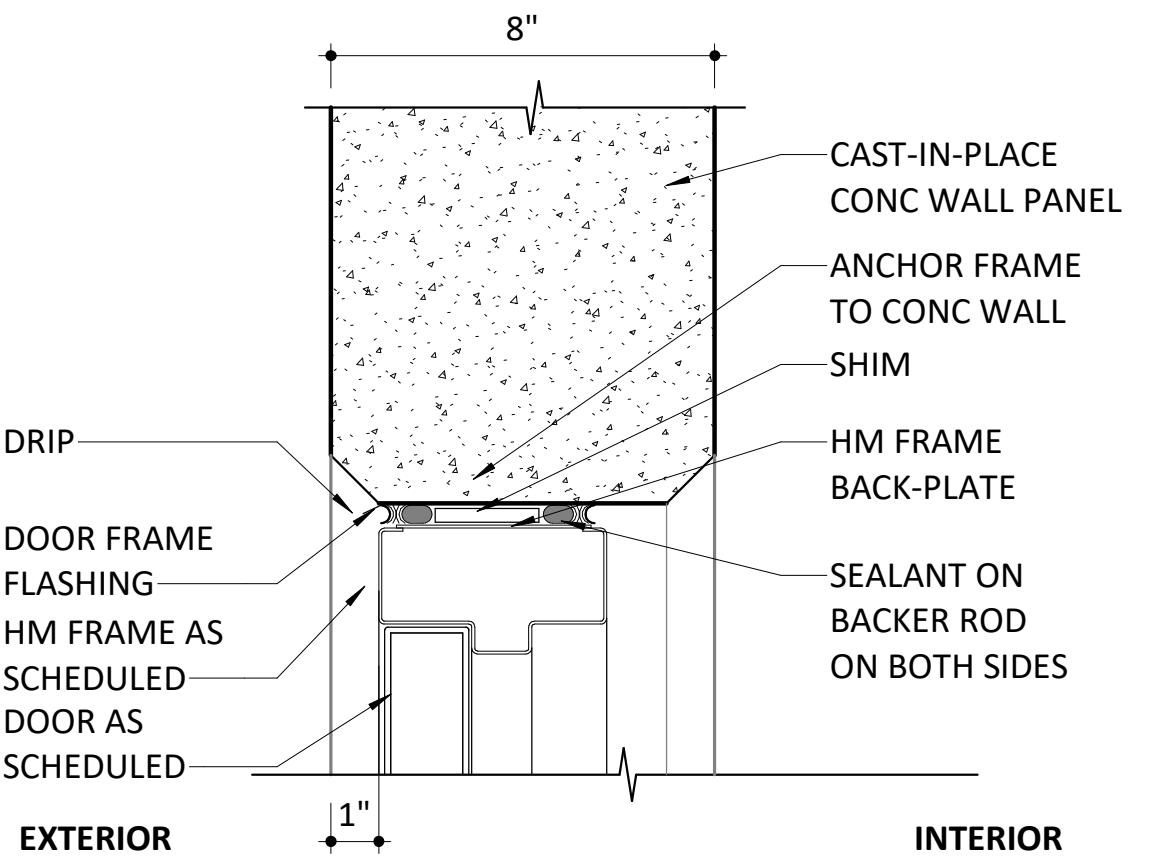
1 DOOR TYPES  
1/4" = 1'-0"



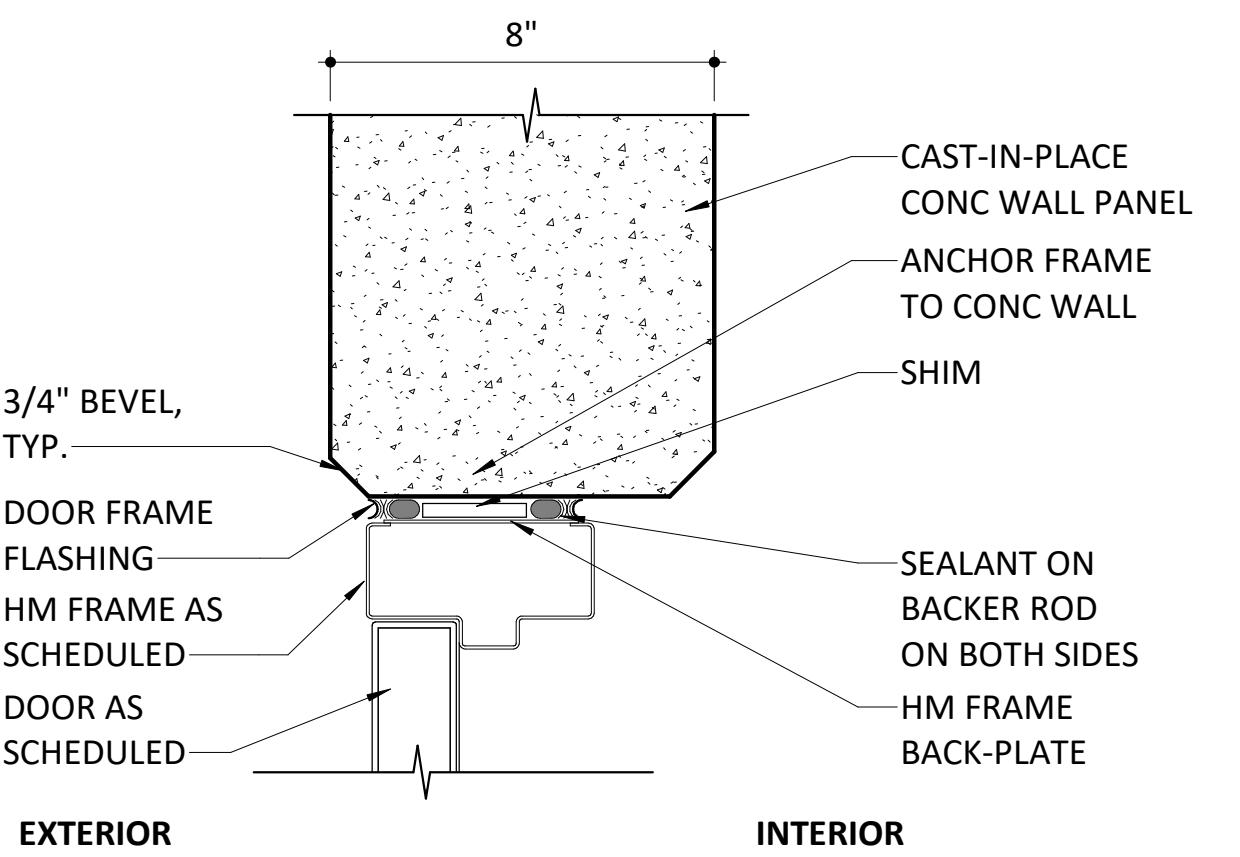
2 FRAME TYPES  
1/4" = 1'-0"



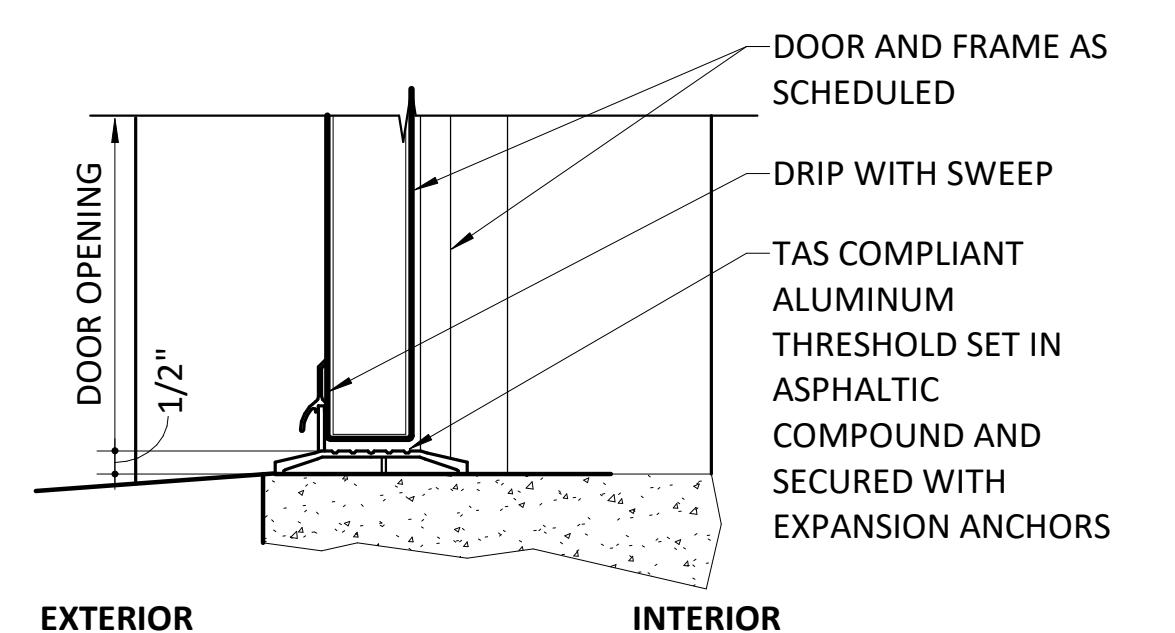
3 WINDOW & OPENING TYPES  
NTS



4 DOOR HEAD DETAIL  
3" = 1'-0"



5 DOOR JAMB DETAIL  
3" = 1'-0"



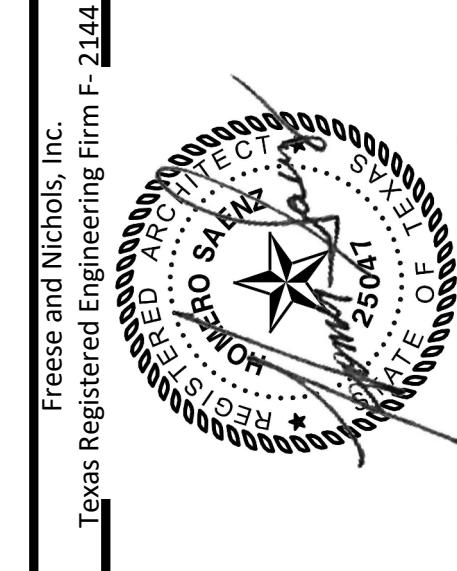
6 DOOR SILL DETAIL  
3" = 1'-0"

CONFIRM OPENING DIMENSIONS WITH MECHANICAL

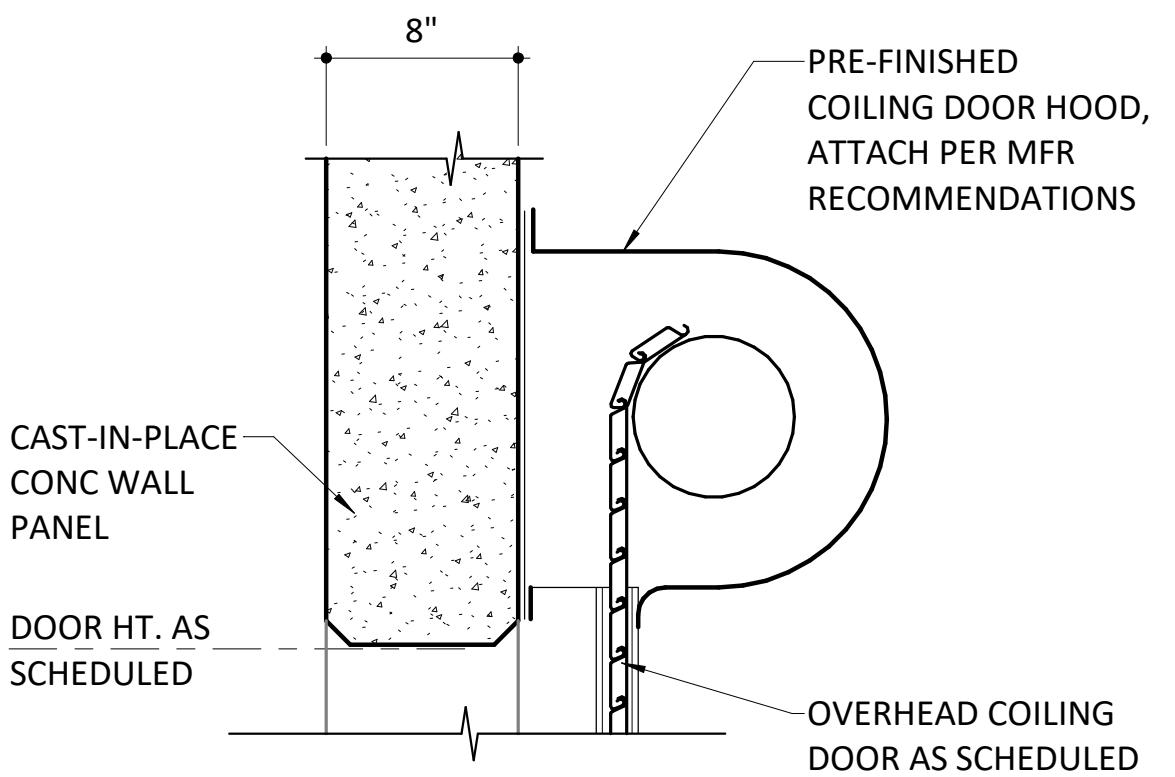
WALL THIMBLE, RE: 3/M-3

## GENERAL NOTES

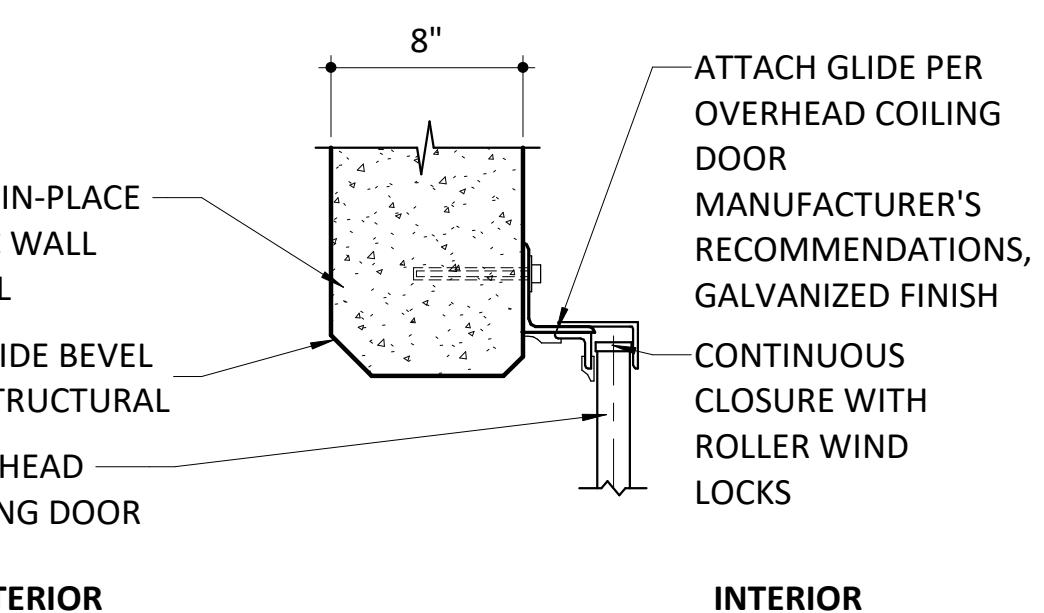
- PANIC HARDWARE TO MATCH DOOR FRAME.
- ALL FRAMES TO BE HOLLOW METAL U.N.O.
- ALL MOUNTING DIMENSIONS SHALL COMPLY WITH REQUIREMENTS OF TAS (ADA). CONTRACTOR MUST VERIFY EACH SUCH DIMENSION.
- ALL DOOR DIMENSIONS ARE CLEAR, FROM EDGE OF DOOR STOP TO EDGE OF DOOR IN 90° OPEN POSITION.



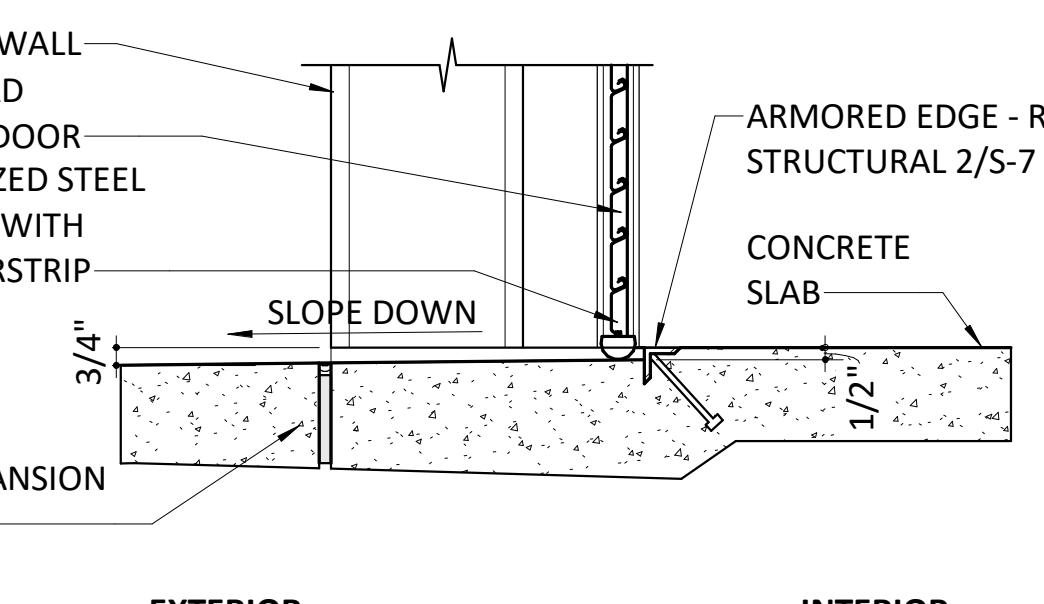
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Houston, TX 77024  
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7 OH COILING DOOR HEAD DETAIL  
1 1/2" = 1'-0"

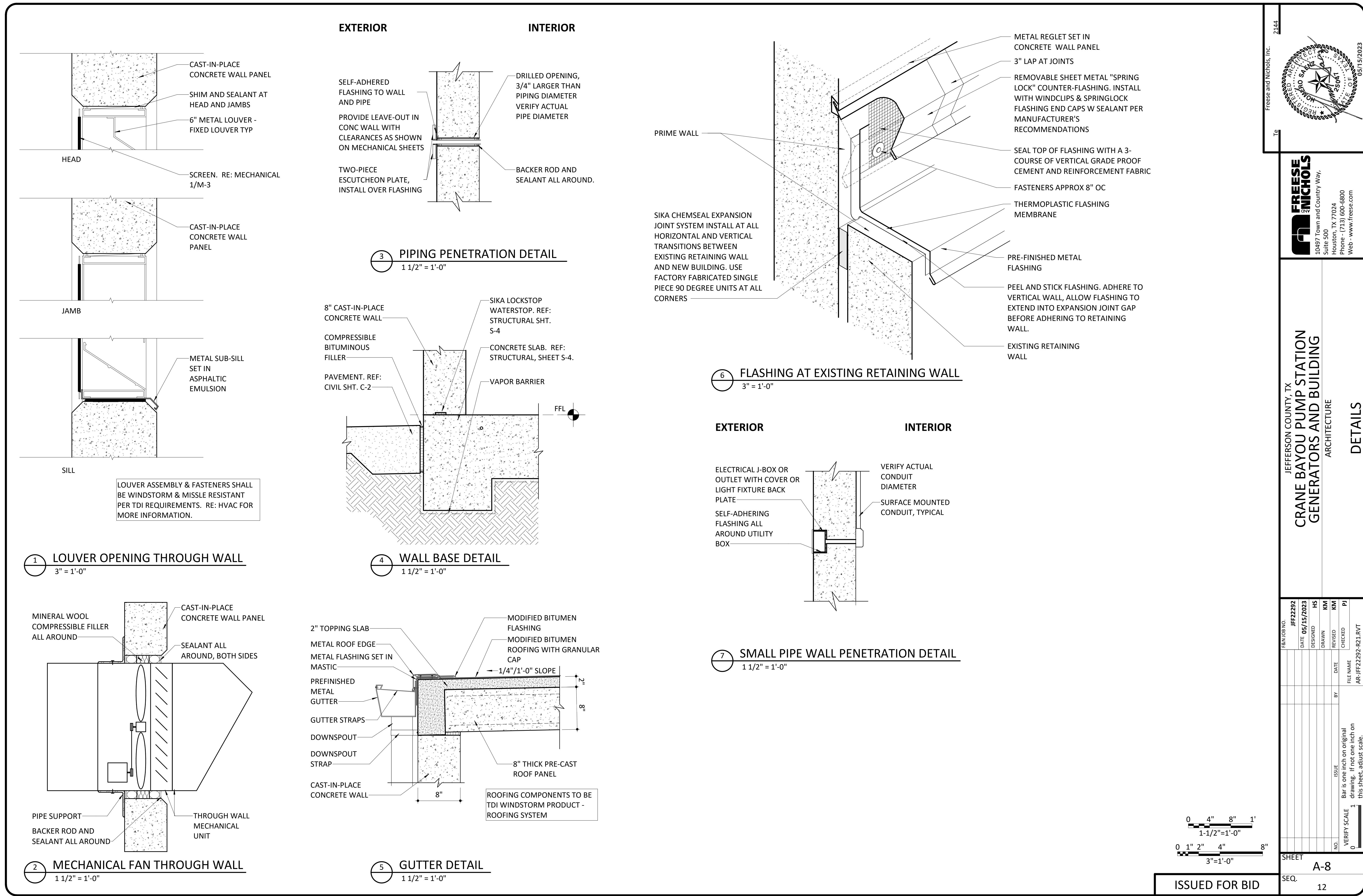


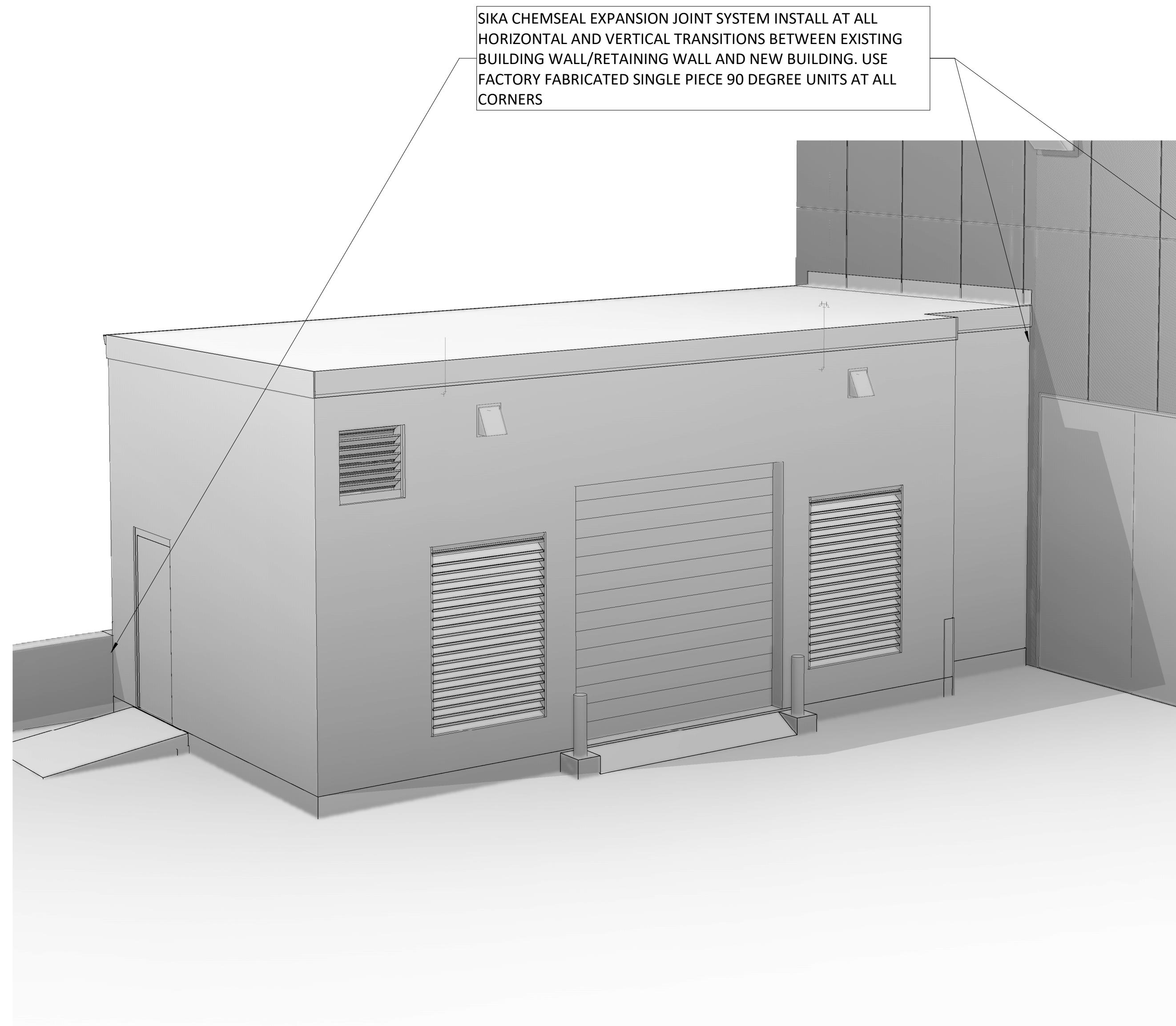
8 OH COILING DOOR JAMB DETAIL  
1 1/2" = 1'-0"



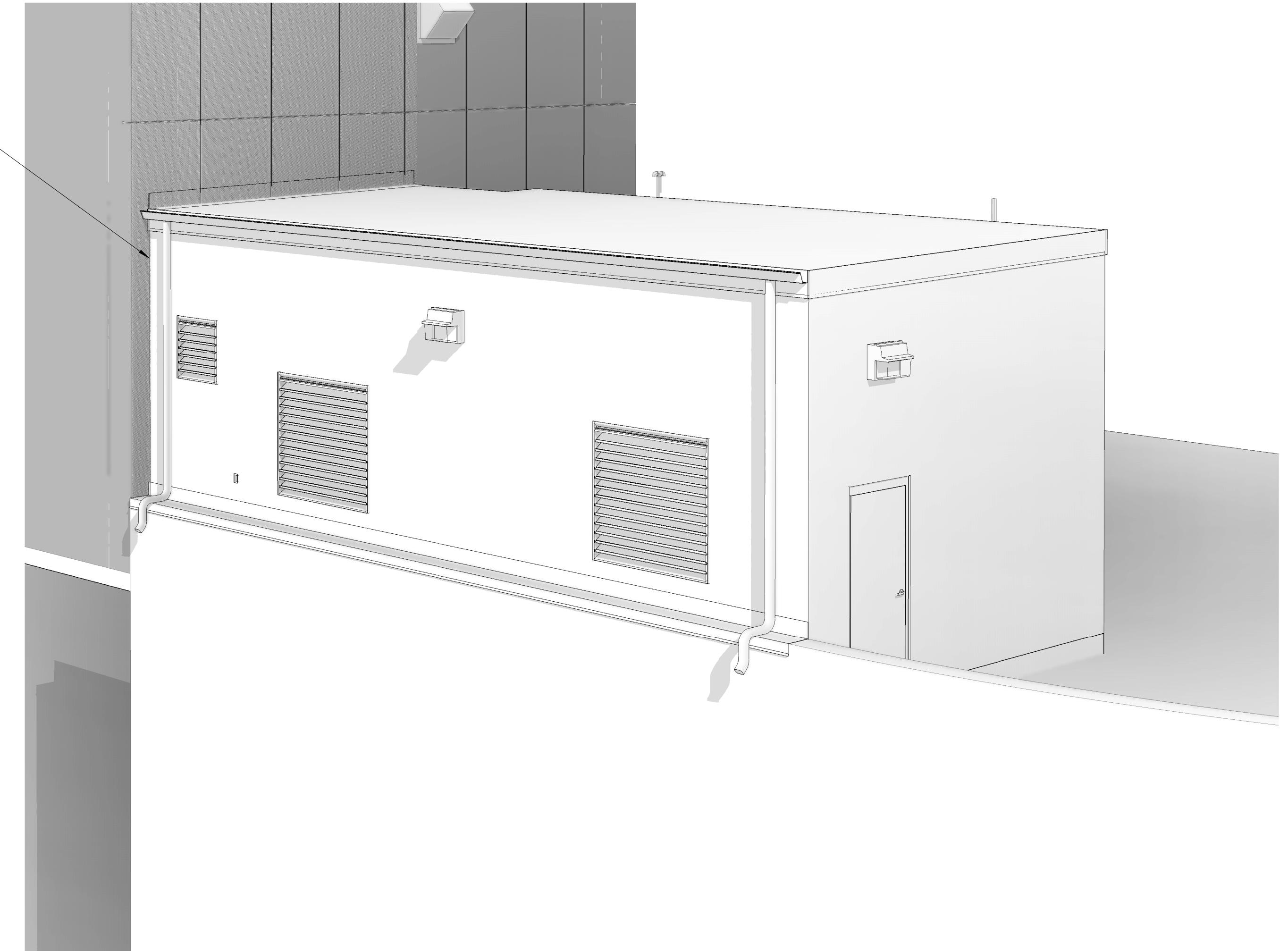
9 OH COILING DOOR SILL DETAIL  
1 1/2" = 1'-0"

F&N JOB NO.	JFF22252	DATE	05/15/2023
DESIGNED BY	HS	DRAWN BY	KM
REVISED BY		CHECKED BY	PL
FILE NAME	AR-JFF22252-R21.RVT		
NO.		ISSUE	
VERIFY SCALE	1 drawing, if not one inch on this sheet, adjust scale.		
SHEET		SEQ.	
A-7			
11			





1 VIEW LOOKING SOUTHEAST



2 VIEW LOOKING NORTHWEST

JEFFERSON COUNTY, TX  
CRANE BAYOU PUMP STATION  
GENERATORS AND BUILDING

ARCHITECTURE

ISOMETRIC VIEWS

Freeze and Nichols, Inc.  
Texas Registered Engineering Firm F-2144  
2001 TOWN & COUNTRY WAY  
SUITE 500  
HOUSTON, TX 77024  
PHONE - (713) 600-6800  
WEB - [www.freeze.com](http://www.freeze.com)



F&N JOB NO.		DATE		DESIGNED		DRAWN		REVISED		CHECKED	
JFF22252		05/15/2023		HS		KM		KM		PJ	
NO.	ISSUE	BY	DATE								
VERIFY SCALE	Bar is one inch on original drawing, if not one inch on this sheet, adjust scale.										
0	AR-JFF22252-R21.RVT										

SHEET A-9  
SEQ. 13

ISSUED FOR BID

**GENERAL NOTES:**

1. DESIGN IS IN ACCORDANCE WITH 2015 INTERNATIONAL BUILDING CODE, LOCAL AMENDMENTS, AND APPLICABLE CODE REFERENCED STANDARDS.
2. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH APPLICABLE OSHA, STATE, AND LOCAL REGULATIONS. THIS DESIGN IS NOT INTENDED TO CONFLICT WITH SAFETY OR APPLICABLE REGULATIONS OR TO RELIEVE THE CONTRACTOR OF COMPLIANCE WITH THESE REQUIREMENTS. IN CASE OF CONFLICT WITH SAFETY OR APPLICABLE REGULATIONS, CONTACT THE ENGINEER FOR GUIDANCE BEFORE PROCEEDING WITH FABRICATION OR CONSTRUCTION.
3. PRIOR TO FABRICATION OR CONSTRUCTION:
  - A. REVIEW OTHER DISCIPLINE DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS, DEPRESSIONS, OFFSETS, SLEEVES, CURBS, PADS, INSERTS, EQUIPMENT REQUIREMENTS, ETCETERA, WHICH ARE NOT SHOWN ON STRUCTURAL DRAWINGS.
  - B. VERIFY DIMENSIONS AND LOCATIONS OF ALL OPENINGS, DEPRESSIONS, OFFSETS, SLEEVES, CURBS, PADS, INSERTS, EQUIPMENT REQUIREMENTS, ETCETERA.
  - C. FIELD VERIFY ALL EXISTING CONDITIONS, INCLUDING LOCATION AND DIMENSIONS OF ALL EXISTING CONSTRUCTION AND UTILITIES.
  - D. NOTIFY OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES BETWEEN DISCIPLINES, CONSTRUCTABILITY ISSUES, OR EXISTING CONDITIONS.
4. REMOVE ALL ABANDONED FOUNDATIONS, UTILITIES, PIPELINES, ETCETERA THAT INTERFERE WITH PROPOSED CONSTRUCTION.
5. PROVIDE EXCAVATION SHORING TO PROTECT AND SUPPORT FOUNDATION SOILS UNDER EXISTING STRUCTURES.
6. THE STRUCTURE IS DESIGNED FOR STABILITY IN THE FINAL CONDITION ONLY. PROVIDE TEMPORARY BRACING AND SHORING AS REQUIRED FOR STABILITY DURING CONSTRUCTION.
7. PLANS, SECTIONS, AND DETAILS ARE NOT TO BE SCALED FOR DETERMINATION OF QUANTITIES, LENGTHS, OR FIT OF MATERIALS.
8. THE GENERAL NOTES AND TYPICAL DETAILS ARE GENERAL AND APPLY TO THE ENTIRE PROJECT EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY.

**LOADS**

1. SUPERIMPOSED DEAD LOADS (NOT INCLUDING STRUCTURAL FRAMING SELF-WEIGHT):
  - A. ROOF (COLLATERAL LOAD): 20 PSF
  - B. FLOORS: 8 PSF
2. FLOOR LIVE LOADS:
  - A. MECH, ELECT, AND EQUIP ROOMS: 150 PSF
3. ROOF LIVE LOAD:
  - A. ROOF: 20 PSF
4. GROUND SNOW LOAD: Pg = 5 PSF
5. LATERAL LOADS:
  - A. RISK CATEGORY IV
  - B. WIND LOAD:
    1. BASIC WIND SPEED: V = 158 MPH
    2. WIND EXPOSURE: C
    3. INTERNAL PRESSURE COEFFICIENT: GCpi = +/-0.18
    4. COMPONENTS AND CLADDING PRESSURES PER ASCE-7, FOR VARIOUS ZONES USING AN EFFECTIVE WIND AREA OF 10 FT<sup>2</sup> ARE AS FOLLOWS:

LRFD DESIGN WIND PRESSURE FOR COMPONENTS AND CLADDING (PSF)		
ZONE	POSITIVE PRESSURE	NEGATIVE PRESSURE
1	+18	-68
2	+18	-90
3	+18	-107
4	+43	-47
5	+43	-52

PRESURES SHOWN HAVE BEEN MULTIPLIED BY A 1.0 LOAD FACTOR

**C. SEISMIC LOAD:**

1. SEISMIC IMPORTANCE FACTOR: I = 1.5
2. MAPPED SPECTRAL ACCELERATIONS: S<sub>s</sub> = 0.075, S<sub>1</sub> = 0.044
3. SITE CLASS: C
4. SPECTRAL RESPONSE COEFFICIENT: SD<sub>s</sub> = 0.065, SD<sub>1</sub> = 0.044
5. SEISMIC DESIGN CATEGORY: A
6. BASIC SEISMIC FORCE-RESISTING SYSTEM:
  1. ORDINARY REINFORCED CONCRETE SHEAR WALLS
7. DESIGN BASE SHEAR V = 0.01W

**FOUNDATION**

1. FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT "GEOTECHNICAL ENGINEERING REPORT; EMERGENCY GENERATOR BUILDING CRANE BAYOU PUMPING STATION; JEFFERSON COUNTY DRAINAGE DISTRICT NO. 7; PORT ARTHUR, TEXAS", DATED MAY 13, 2022, PREPARED BY TOLUNAY-WONG ENGINEERS, INC. (REPORT NO. 129545). THE GEOTECHNICAL REPORT IS NOT PART OF THE CONTRACT DOCUMENTS.
2. EXCAVATION DESIGN AND SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. ANY SLOPES SHOWN ARE A MAXIMUM AND SHALL BE DECREASED AS REQUIRED FOR SAFETY OR TO MEET OSHA REQUIREMENTS.
3. AT THE LOCATIONS WHERE UTILITY TRENCHES CROSS THE BUILDING LINE, 5'-0" OF EACH TRENCH CENTERED ON THE BUILDING LINE SHALL BE BACKFILLED AS FOLLOWS: OUTSIDE THE BUILDING LINE BACKFILL ABOVE THE UTILITY WITH A COMPACTED, LOW-PERMEABILITY CLAY; INSIDE THE BUILDING LINE BACKFILL ABOVE THE UTILITY WITH SPECIFIED STRUCTURAL FILL; EMBEDMENT MATERIAL BELOW AND AROUND THE UTILITY SHALL BE FLOWABLE FILL.
4. BACKFILL SHALL BE ON-SITE NATIVE SOILS.
5. EXTERIOR SLABS SHALL SLOPE AWAY FROM THE STRUCTURE A MINIMUM OF 1/4" PER FOOT UNLESS NOTED OTHERWISE. GRADING AROUND STRUCTURES SHALL BE SUCH AS TO DRAIN ALL WATER AWAY FROM BUILDINGS.
6. ALL FOUNDATIONS SHALL BEAR ON SOUND, UNDISTURBED, LEVEL EXCAVATIONS. REMOVE ANY AND ALL LOOSE DEBRIS FROM EXPOSED BEARING SURFACE. SUITABLE BEARING MATERIAL SHALL BE VERIFIED BY A GEOTECHNICAL PROFESSIONAL ENGINEER
7. MOISTURE CONTENT IN FOOTING EXCAVATIONS SHALL BE MAINTAINED UNTIL FOOTING IS PLACED. FOOTINGS SHALL BE PLACED AS SOON AS PRACTICAL AFTER EXCAVATIONS ARE COMPLETED.

**CONCRETE**

1. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI.
2. ALL REINFORCING SHALL BE IN ACCORDANCE WITH ASTM A615, GRADE 60, DEFORMED.
3. CONCRETE CLEAR COVER OVER REINFORCING SHALL BE AS LISTED BELOW, UNLESS NOTED OTHERWISE.
  - A. CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3"
  - B. EXPOSED TO EARTH, WATER, OR WEATHER:
    1. SLABS
      1. #6 AND LARGER: 2-1/2"
      2. #5 AND SMALLER: 2"
    2. BEAMS AND COLUMNS: 2-1/2"
    3. WALLS
      1. ALL OTHERS: 2"
4. FORMED CONCRETE SURFACES NOT PERMANENTLY EXPOSED TO WEATHER NOR IN CONTACT WITH GROUND:
  1. BEAMS AND COLUMNS: 2"
  2. SLABS AND WALLS: 1-1/2"
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4" INSIDE FORMS OR TOOLED TO 3/4" RADIUS ON SLABS UNLESS NOTED OTHERWISE.
6. PENETRATIONS OTHER THAN SHOWN SHALL NOT BE ALLOWED WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

7. IN CASES WHERE REINFORCING BARS CANNOT BE EXTENDED AS FAR AS REQUIRED DUE TO THE LIMITED EXTENT OF THE ADJACENT CONCRETE STRUCTURE, THE BARS SHALL EXTEND AS FAR AS POSSIBLE AND END IN STANDARD HOOKS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ALL FORMING, TEMPORARY BRACING AND SHORING.
9. CONDUITS AND PIPING EMBEDDED IN CONCRETE SHALL BE SPACED A MINIMUM OF FOUR DIAMETERS AND THE OUTSIDE DIAMETER SHALL BE LESS THAN 30% OF THE MEMBER THICKNESS PLACED BETWEEN LAYERS OF REINFORCING.
10. UNLESS NOTED OTHERWISE, HOOKS SHOWN ON DRAWINGS SHALL BE ASSUMED TO BE STANDARD HOOKS PER ACI 318.

11. ALL REINFORCING SHALL BE CONTINUOUS. CONTINUOUS BARS SHALL LAP 48 BAR DIAMETERS OF SMALLER BAR LAPPED, UNLESS NOTED OTHERWISE. ALL REBAR EMBEDMENT LENGTHS SHALL BE 36 BAR DIAMETERS, UNLESS NOTED OTHERWISE.

**POST-INSTALLED ANCHORS (ADHESIVE)**

1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII), BUT NOT LESS THAN THAT INDICATED BELOW.
2. INSTRUCTIONS BELOW ARE NOT INTENDED TO CONFLICT WITH APPLICABLE SAFETY OR OSHA REGULATIONS OR TO RELIEVE CONTRACTOR OF COMPLIANCE WITH ALL APPLICABLE SAFETY AND OSHA REGULATIONS. IN CASE OF CONFLICT WITH SAFETY OR OSHA REGULATIONS, CONTACT THE ENGINEER FOR GUIDANCE BEFORE PROCEEDING WITH FABRICATION OR CONSTRUCTION.
3. ADHESIVE ANCHORS SHALL ONLY BE INSTALLED BY CONSTRUCTION PERSONNEL CERTIFIED UNDER ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM OR APPROVED EQUAL. SUBMIT CERTIFICATIONS AS RECORD DATA PRIOR TO ANCHOR INSTALLATION.
4. ANCHOR DIAMETER AND EMBEDMENT SHALL BE AS INDICATED.
5. HOLES SHALL BE DRILLED USING ROTARY HAMMER DRILLS WITH ANSI MATCHED TOLERANCE CARBIDE-TIPPED DRILL BITS. DRILL BIT DIAMETER SHALL MATCH DIAMETER RECOMMENDED BY MANUFACTURER. DRILL HOLES USING HILTI SAFESET TECHNOLOGY OR APPROVED EQUAL.
6. USE CARE AND CAUTION WHEN INSTALLING TO AVOID CUTTING OR DAMAGING EXISTING REINFORCING STEEL. FIELD VERIFY EXISTING REINFORCING LOCATIONS PRIOR TO FABRICATION OR CONSTRUCTION, AND THEN COORDINATE REBAR LOCATIONS WITH SHOP DRAWINGS.
7. ADHESIVE ANCHORS SHALL BE DEFORMED REINFORCING BARS (ASTM A615, GR 60) OR GALVANIZED THREADED ROD (ASTM F1554 GRADE 36) UNLESS NOTED OTHERWISE, AND AS NOTED BELOW:
  - A. ADHESIVE SHALL BE HILTI HIT-RE 500 V3 OR AN APPROVED EQUAL. SUBMIT PUBLISHED COMPARISONS BETWEEN EACH SPECIFIED AND EACH ALTERNATE ANCHOR.
  - B. PRIOR TO INSTALLATION: ALL DEFORMED BARS AND THREADED ROD SHALL BE CLEAN, FREE OF OIL, GREASE, OR OTHER RESIDUE, IN ACCORDANCE WITH MPII.
  - C. VERIFY HOLE IS CLEAR OF DUST AND DEBRIS.
  - D. INSTALL ADHESIVE STARTING AT BACK OF HOLE. AS REQUIRED BY MPII, USE MANUFACTURER SUPPLIED PISTON PLUG INJECTION SYSTEM FOR ALL HORIZONTAL AND VERTICALLY INCLINED HOLES.
  - E. INSTALL ANCHOR BY SIMULTANEOUSLY TWISTING AND INSERTING INTO HOLE.
  - F. ALLOW ANCHOR TO SET REQUIRED TIME. DO NOT DISTURB.
  - G. TIGHTEN NUT. DO NOT OVER-TORQUE.
  - H. MINIMUM CONCRETE AGE AT TIME OF INSTALLATION: 28 DAYS
  - I. CONCRETE TEMPERATURE RANGE AT TIME OF INSTALLATION SHALL BE: 41DEG F TO 104DEG F.
  - J. CONCRETE MOISTURE CONDITION AT TIME OF INSTALLATION: DRY.

**PRECAST HOLLOW CORE**

1. 8" PRECAST CONCRETE HOLLOWCORE MEMBERS SHALL SPAN FROM CONCRETE BEARING WALLS AS INDICATED IN DRAWINGS
2. PRECAST CONCRETE HOLLOWCORE SLAB MANUFACTURER SHALL DETERMINE FINAL ROOF SLAB LAYOUT AND SUBMIT FOR APPROVAL.
3. CONTRACTOR SHALL AVOID PRESTRESS TENDONS IN PRECAST CONCRETE HOLLOW CORE SLABS WHEN DRILLING FOR ANCHOR PLACEMENT. CONTRACTOR SHALL COORDINATE ANCHOR LOCATIONS WITH PRECAST CONCRETE HOLLOWCORE SLAB MANUFACTURER. THE PRECAST MANUFACTURER MAY PROPOSE ALTERNATE ANCHOR DETAIL FOR APPROVAL.
4. PRECAST CONCRETE HOLLOW CORE SLABS SHALL BE NORMAL WEIGHT CONCRETE AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI.
5. A STANDARD FINISH SHALL BE PROVIDED ON THE HOLLOW CORE ROOF SLABS.

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CRANE BAYOU PUMP STATION  
GENERATORS AND BUILDING

STRUCTURAL

GENERAL NOTES I

FILE NO.	SEQ.	VERIFICATION	NO.	1
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 SHEET S-1  
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 SEQ. 14

**STRUCTURAL MODIFICATIONS**

- REFER TO OTHER DISCIPLINE DRAWINGS FOR RELOCATION AND DEMOLITION OF PIPING, CONDUITS, FIXTURES, INSTRUMENTS, ETC. ASSOCIATED WITH STRUCTURES SHOWN TO BE DEMOLISHED.
- ALL DEMOLITION, REMOVAL AND CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED WITH CONSIDERATION FOR EXISTING FACILITIES STRUCTURES, EQUIPMENT, ETC. ANY DAMAGE WHICH MAY OCCUR BEYOND DESCRIBED DEMOLITION AND CONSTRUCTION SHALL BE REMEDIED AT CONTRACTOR'S EXPENSE AND OWNER/ENGINEER NOTIFIED.
- CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL DEMOLISHED CONCRETE AND OTHER MATERIALS FROM THE EXISTING STRUCTURES OFF SITE PRIOR TO THE PROPOSED CONSTRUCTION.
- UNLESS NOTED OTHERWISE ON PLANS, CUTTING EMBEDDED REBARS DUE TO PIPING, CONDUITS OR ANY OTHER PENETRATION THROUGH EXISTING CONCRETE STRUCTURE IS PROHIBITED. CONTRACTOR SHALL DETECT THE EXISTING REBAR LOCATIONS BY NONDESTRUCTIVE TESTING METHODS AND KEEP PENETRATION AWAY FROM THE EMBEDDED REBARS.
- WHERE REMOVING EXISTING CONCRETE BUT RETAINING REBARS IS INDICATED ON DRAWINGS, SAWCUT EXISTING CONCRETE TO THE LIMITS SHOWN ON PLANS BUT NOT MORE THAN 3/4" DEEP TO AVOID DAMAGING OR NICKING THE REINFORCING.
- WHERE DEMOLITION OF EXISTING CONCRETE WILL LEAVE EMBEDDED REBARS EXPOSED, AN ADDITIONAL 1 1/2" CONCRETE AND REINFORCEMENT BEYOND LIMITS OF THE DEMOLITION SHALL BE REMOVED. THE 1 1/2" AREAS BEING REMOVED SHALL THEN BE PLACED BACK WITH CONCRETE STRUCTURAL REPAIR MATERIAL AS SPECIFIED TO PROVIDE CORROSION PROTECTION FOR THE EXPOSED EXISTING REBARS, UNLESS NOTED OTHERWISE ON PLAN.
- ROUGHEN THE EXISTING CONCRETE SURFACES THAT WILL ENCOUNTER NEW CONCRETE. "ROUGHENED SURFACE" SHALL HAVE A UNIFORMLY ROUGHENED CONCRETE SURFACE TO A FULL AMPLITUDE (DISTANCE BETWEEN HIGH AND LOW POINTS OR SIDE TO SIDE) OF APPROXIMATELY 1/4" WITH SUITABLE TOOLS TO EXPOSE A FRESH FACE. APPLY BONDING AGENT TO THE EXISTING CONCRETE SURFACES PRIOR TO THE PLACEMENT OF NEW CONCRETE PER MANUFACTURER'S INSTRUCTIONS.
- ALL EXPOSED EXISTING REBARS SHALL BE CLEANED BY ABRASIVE BLASTING AND COATED WITH AN EPOXY RESIN/PORTLAND CEMENT ADHESIVE BONDING AGENT TO PROVIDE CORROSION PROTECTION.

**DEFERRED SUBMITTALS**

- FORWARD THE FOLLOWING DEFERRED COMPONENT SUBMITTALS TO THE BUILDING OFFICIAL FOR APPROVAL AFTER RECEIPT OF APPROVAL FROM THE OWNER'S REPRESENTATIVE. DO NOT FABRICATE OR INSTALL DEFERRED SUBMITTAL ITEMS UNTIL APPROVED BY THE BUILDING OFFICIAL.
- THE FOLLOWING IS A LIST OF DEFERRED SUBMITTALS:
  - PRECAST CONCRETE HOLLOW CORE ROOF SYSTEMS: SPECIFICATION 03 41 00
  - OTHER SUBMITTALS AS INDICATED IN THE SPECIFICATIONS.

**IBC CHAPTER 17 SPECIAL INSPECTION REQUIREMENTS**

- THE OWNER OR THE OWNER'S REPRESENTATIVE IS REQUIRED TO PERFORM SPECIAL INSPECTIONS IN ACCORDANCE WITH IBC 2015 AND AS OUTLINED IN THE STATEMENT OF SPECIAL INSPECTION.
- THE CONTRACTOR IS REQUIRED TO ACCOMMODATE THE ABOVE INSPECTIONS AND PROVIDE ACCESS TO THE ELEMENTS REQUIRING INSPECTION. IN ADDITION, THE CONTRACTOR SHALL PROVIDE 48 HOURS ADVANCED NOTICE TO THE OWNER OR THE OWNER'S REPRESENTATIVE REGARDING ALL CONSTRUCTION ACTIVITIES RELATED TO AND/OR AFFECTING THE REQUIRED SPECIAL INSPECTIONS.

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STRUCTURAL

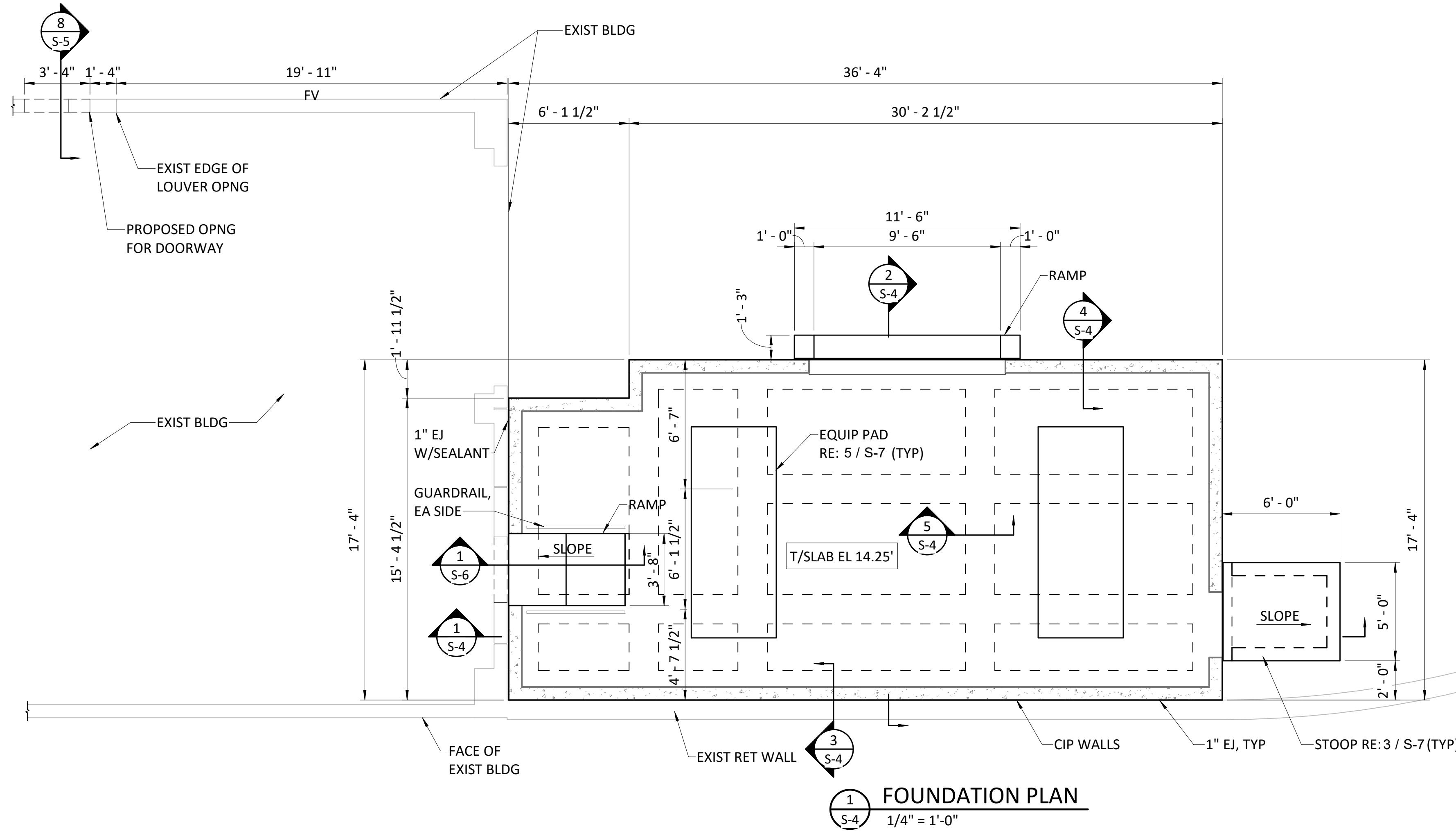
JEFFERSON COUNTY, TX  
CRANE BAYOU PUMP STATION  
GENERATORS AND BUILDING

GENERAL NOTES II

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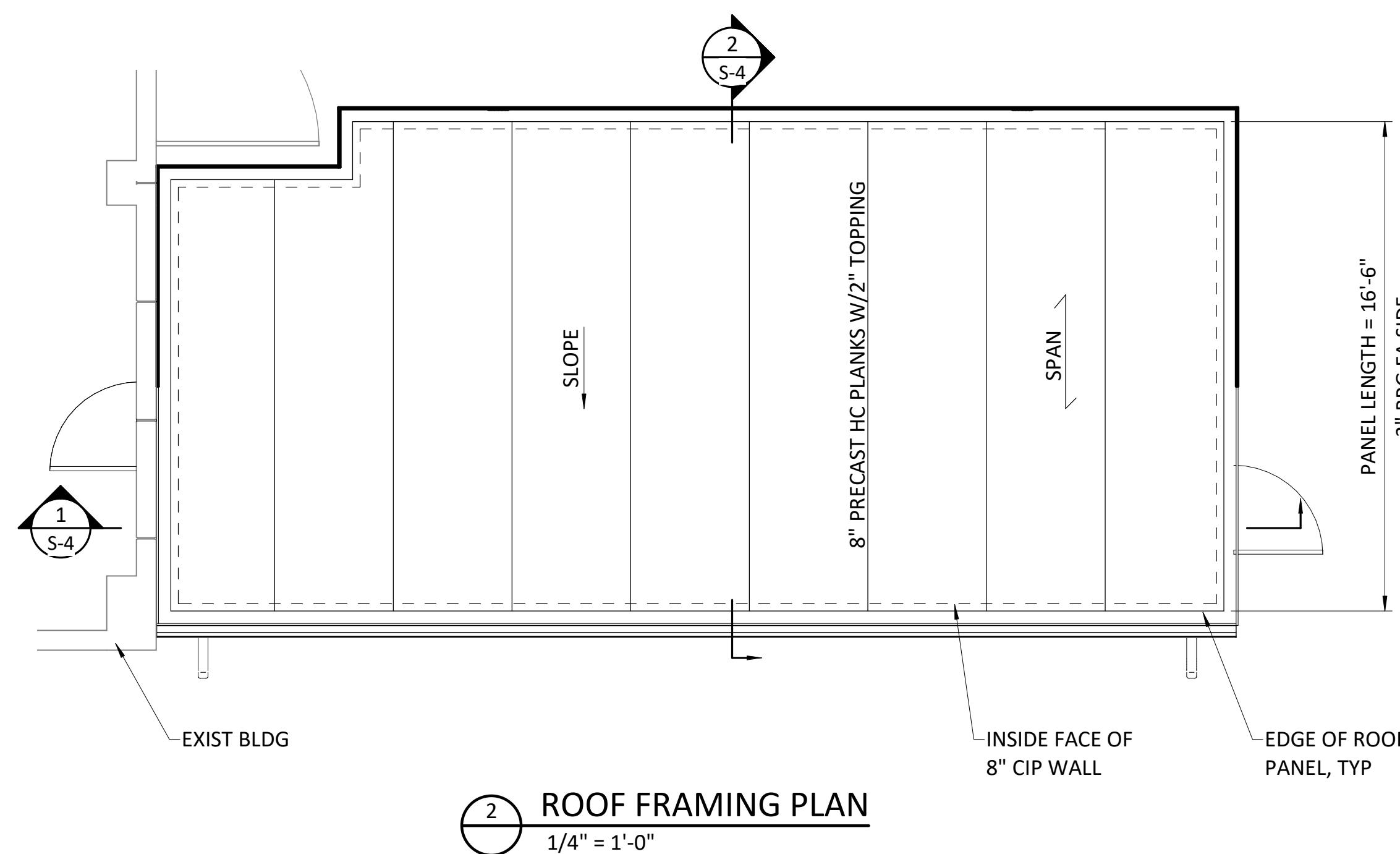
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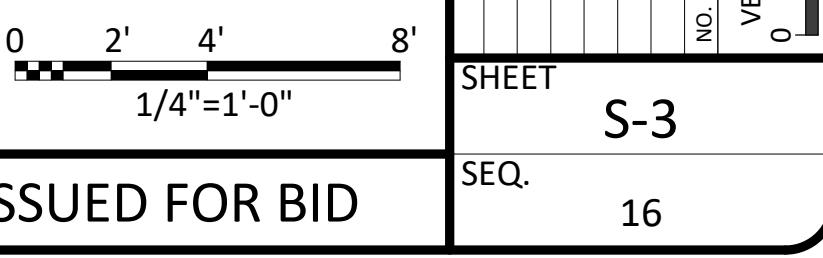
**FOUNDATION PLAN NOTES:**

1. REFER TO S-1 AND S-2 FOR GENERAL NOTES.
2. FINISH FLOOR ELEVATION INDICATED: T/SLAB EL XXX.XX'
3. FIELD VERIFY ALL EXISTING DIMENSIONS PRIOR TO FABRICATION OR CONSTRUCTION.
4. REFER TO CIVIL OR ARCHITECTURAL DRAWINGS PAVING, UNLESS NOTED OTHERWISE.
5. PROVIDE 1-INCH EXPANSION JOINT WITH SEALANT BETWEEN ALL SITE PAVING AND BUILDING FOUNDATIONS, UNLESS NOTED OTHERWISE.
6. COORDINATE LEDGE LOCATIONS AND CONFIGURATIONS WITH ARCHITECTURAL DRAWINGS.
7. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR LANDING AND RAMP DIMENSIONS AND LOCATIONS.
8. PROVIDE ADDITIONAL REINFORCING WHEN SLAB REINFORCING IS INTERRUPTED BY CONDUITS. DO NOT CORE SLAB, REFER TO S-7. NOT ALL CONDUIT PENETRATIONS SHOWN. COORDINATE WITH ELECTRICAL, MECHANICAL, AND PLUMBING DRAWINGS FOR EXACT LOCATIONS, QUANTITIES, AND SIZES. SEE SHEETS M-2, AND E-5.



**ROOF PLAN NOTES:**

1. 8" PRECAST HOLLOWCORE (HC) SLABS WITH 2" CONCRETE TOPPING SLAB TO BE DESIGNED BY MANUFACTURER (MFR). HC SLABS SHALL BE DESIGNED TO SUPPORT THE UNIFORM AND CONCENTRATED LOADS PROVIDED IN ACCORDANCE WITH ALL APPLICABLE CODES AND SPECIFICATIONS.
2. ROOF DESIGN LOADS
  - UNIFORM LOADS: (RE: GENERAL NOTES AND S-5)
  - LATERAL LOADS: (RE: 1/S-5 AND 4/S-5)
3. PRECAST HC SLAB MFG SHALL DETERMINE FINAL PLANK LAYOUT AND SUBMIT FOR APPROVAL.
4. CONTRACTOR SHALL COORDINATE WITH PRECAST HC SLAB MFG TO AVOID PRESTRESS TENDONS IN PRECAST HC SLAB WHEN DRILLING FOR ANCHORS. THE PRECAST HC SLAB MFG MAY PROPOSE ALTERNATE ANCHOR DETAILS FOR APPROVAL.



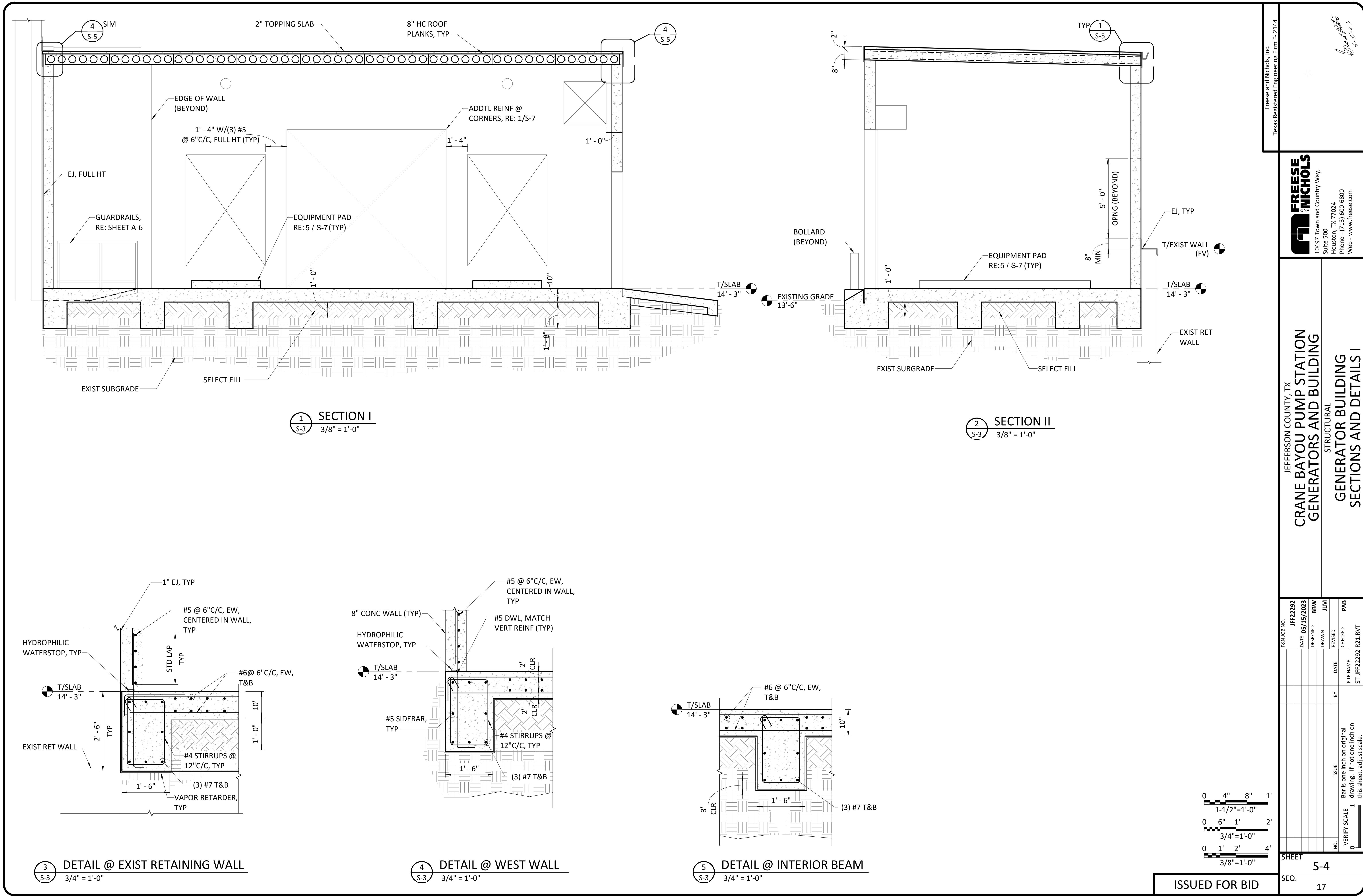
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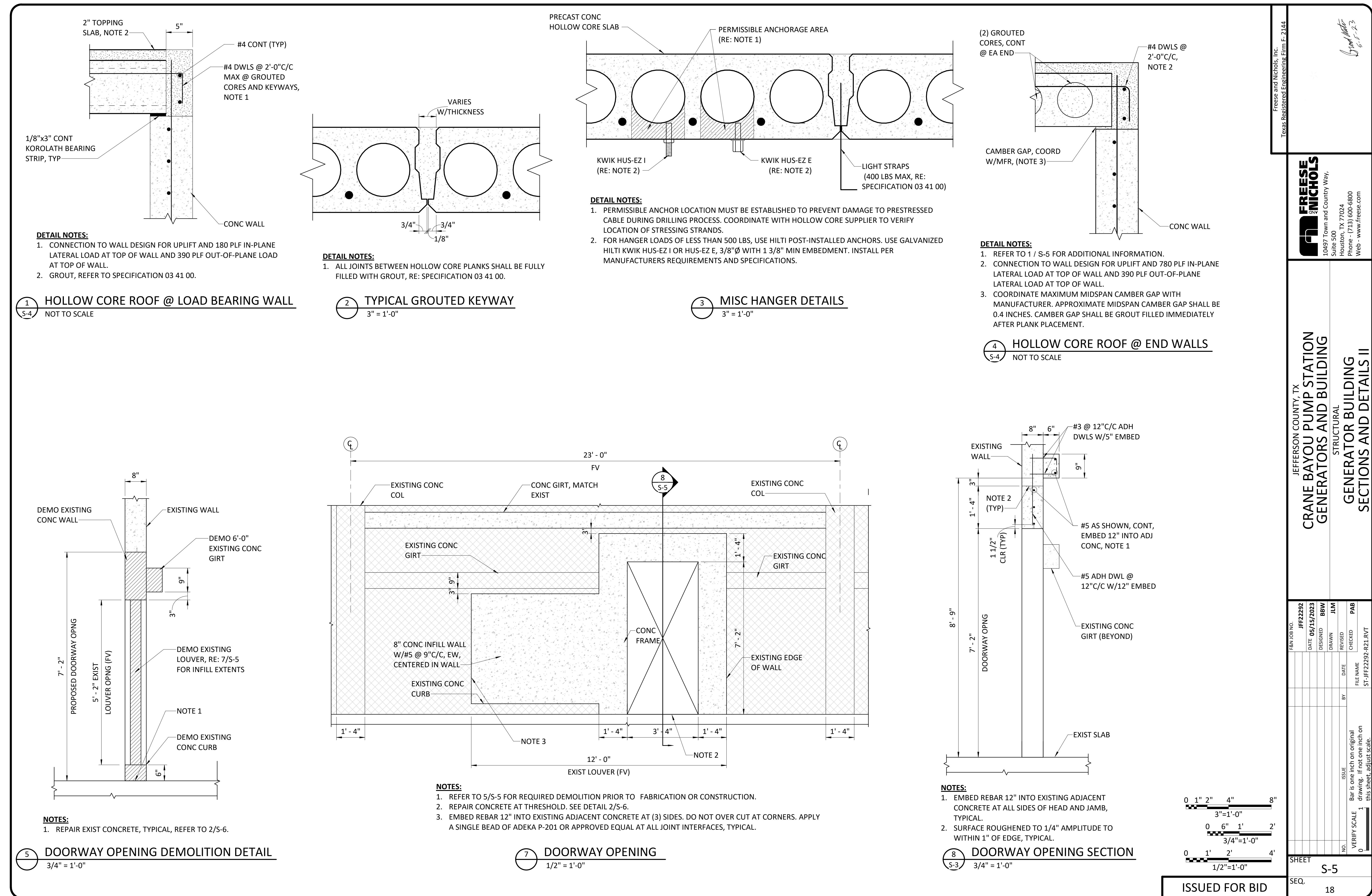
**FREEZE & NICHOLS**  
10497 Town and Country Way,  
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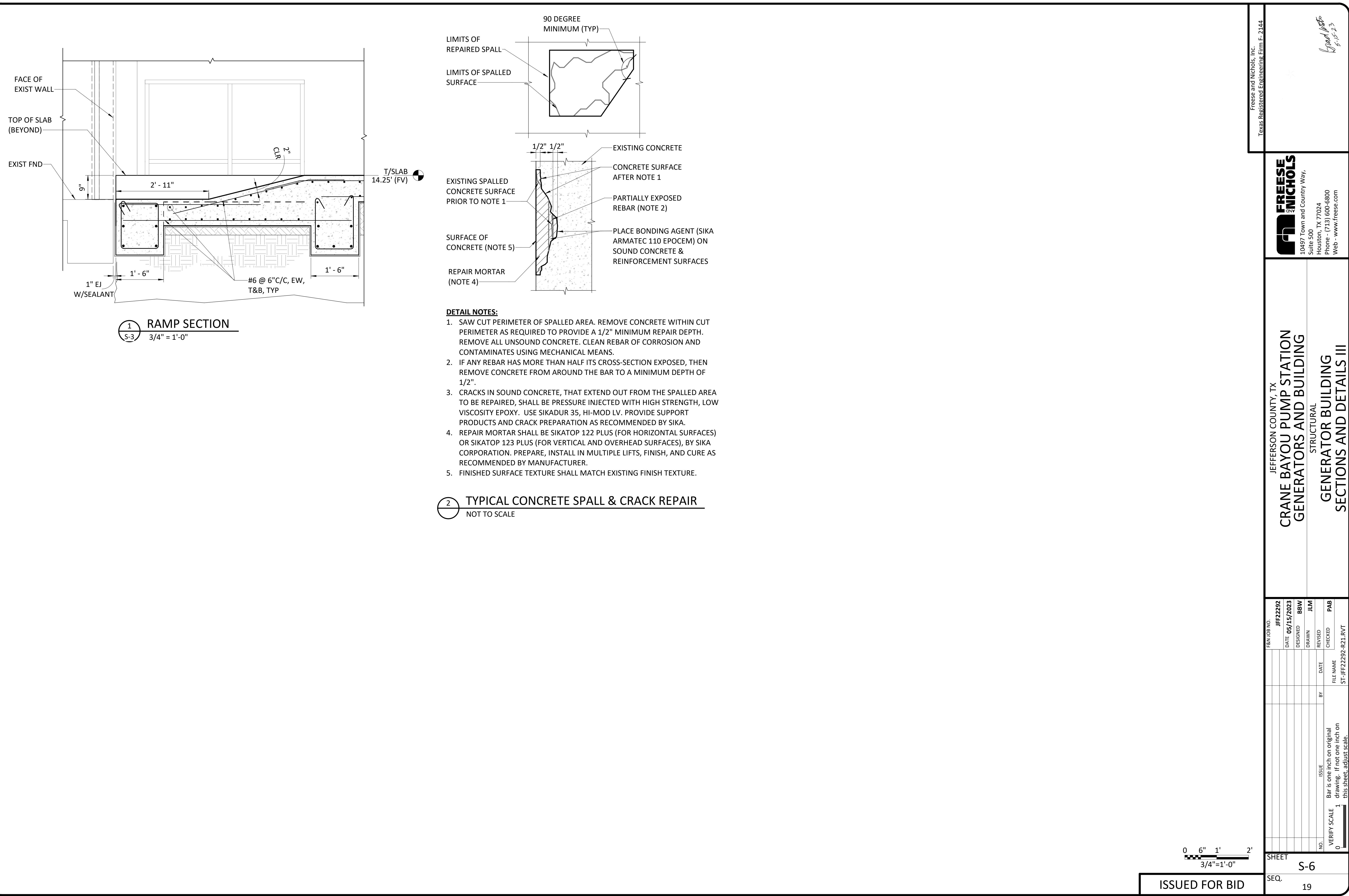
**JEFFERSON COUNTY, TX**  
**CRANE BAYOU PUMP STATION**  
**GENERATORS AND BUILDING**  
**STRUCTURAL**  
**GENERATOR BUILDING**  
**FOUNDATION AND ROOF FRAMING PLAN**

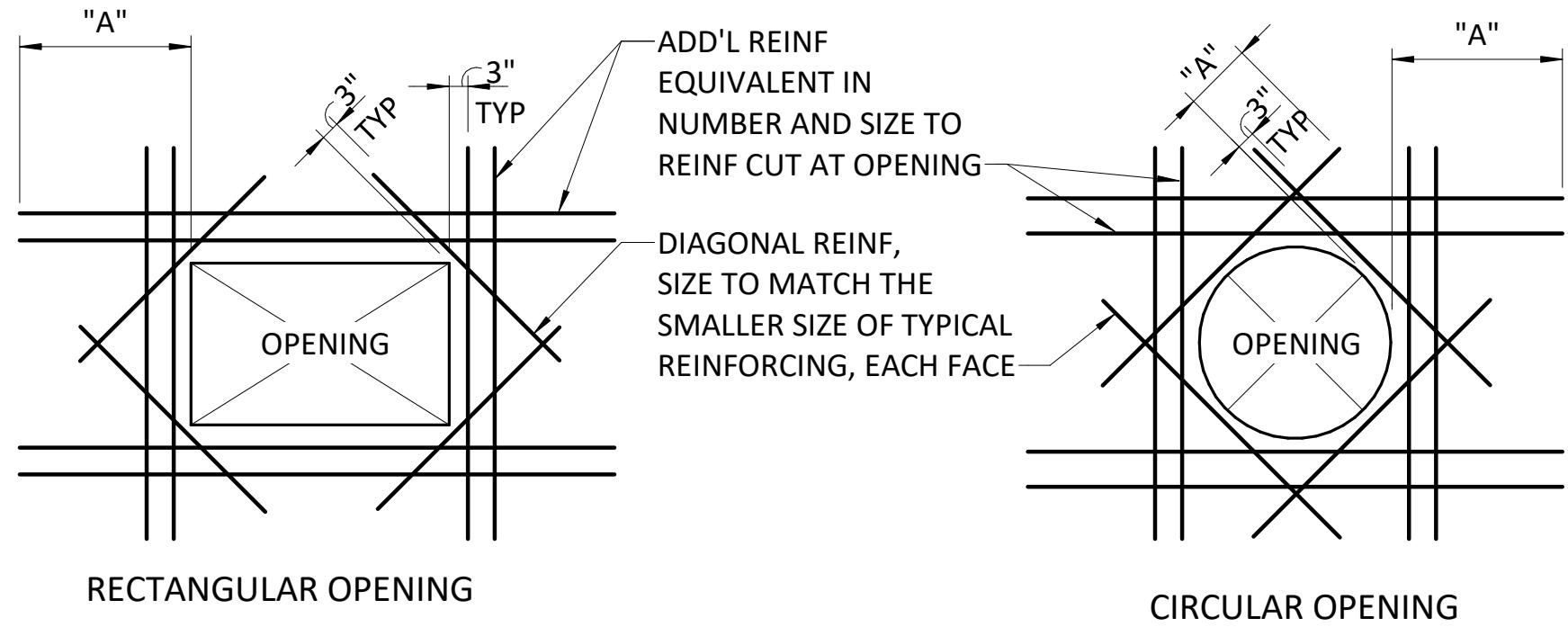
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0	2'
0	4'
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SHEET	S-3
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RECTANGULAR OPENING

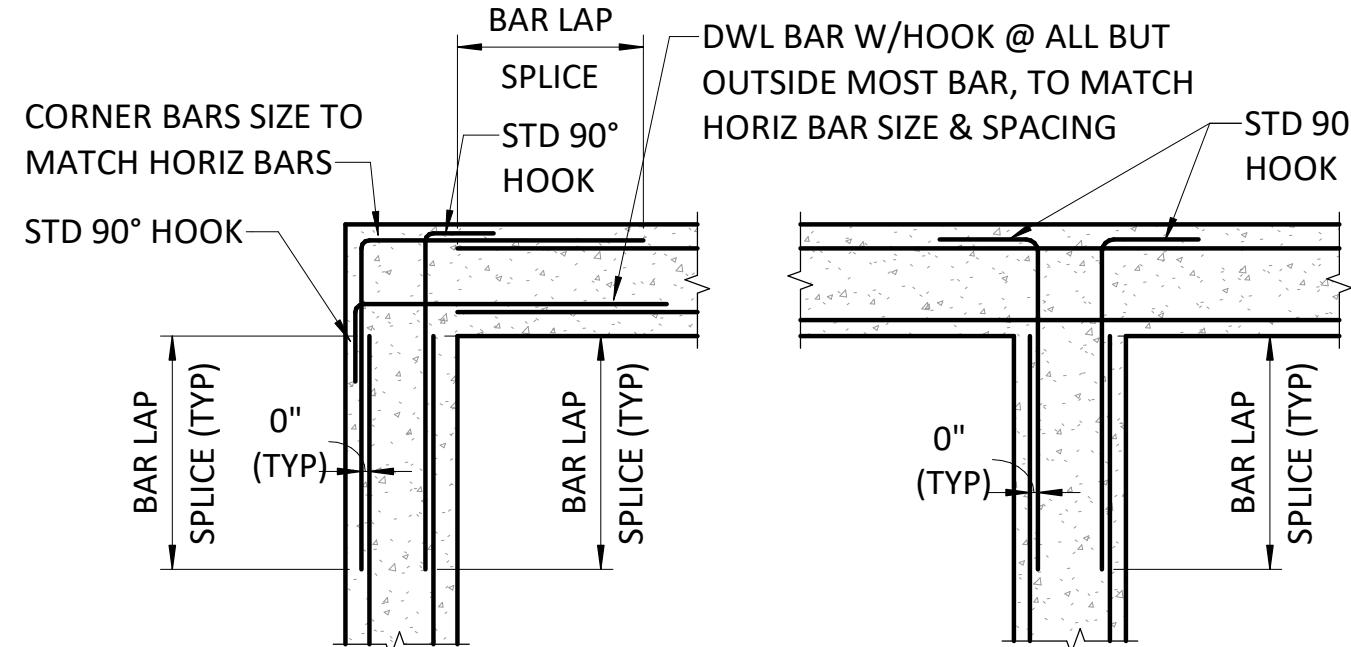
CIRCULAR OPENING

**DETAIL NOTES:**

- CUT TYPICAL REINFORCING TO PROVIDE 3 INCHES CLEAR ON ALL SIDES OF OPENING.
- REFER TO DRAWINGS FOR POSSIBLE EXCEPTIONS TO THIS TYPICAL DETAIL.
- PLACE ADDITIONAL REINFORCING IN SAME ORIENTATION AND POSITION AS REINFORCING CUT BY OPENING, HALF ON EACH SIDE OF OPENING. PROVIDE ONE SET OF REINFORCING FOR EACH LAYER OF REINFORCING CUT.
- ADDITIONAL REINFORCING SHALL BE INTERSPERSED WITH TYPICAL REINFORCING FOR A MINIMUM CENTER-TO-CENTER SPACING OF 3 INCHES. CLEAR SPACING BETWEEN REINFORCING SHALL NOT BE LESS THAN 2 INCHES.
- "A" = 48 BAR DIAMETER LENGTH BEYOND OPENING.
- REINFORCING IS TO EXTEND ACROSS ALL ADJACENT CONSTRUCTION JOINTS. PROVIDE STANDARD HOOK IF FULL EMBEDMENT LENGTH IS NOT POSSIBLE.
- SEE OTHER DISCIPLINES' DRAWINGS FOR OPENINGS NOT SHOWN ON STRUCTURAL DRAWINGS.
- ADDITIONAL AND DIAGONAL REINFORCING MAY BE OMITTED WHEN OPENING IS FRAMED BY BEAMS, WALLS, OR SLABS.
- ADDITIONAL REINFORCING IS NOT REQUIRED WHEN SPECIFIED REINFORCING IS NOT CUT. DIAGONAL REINFORCING IS REQUIRED REGARDLESS IF ADDITIONAL REINFORCING IS NOT CUT.

**TYPICAL WALL OR SLAB OPENING ADDITIONAL REINFORCEMENT**

NOT TO SCALE

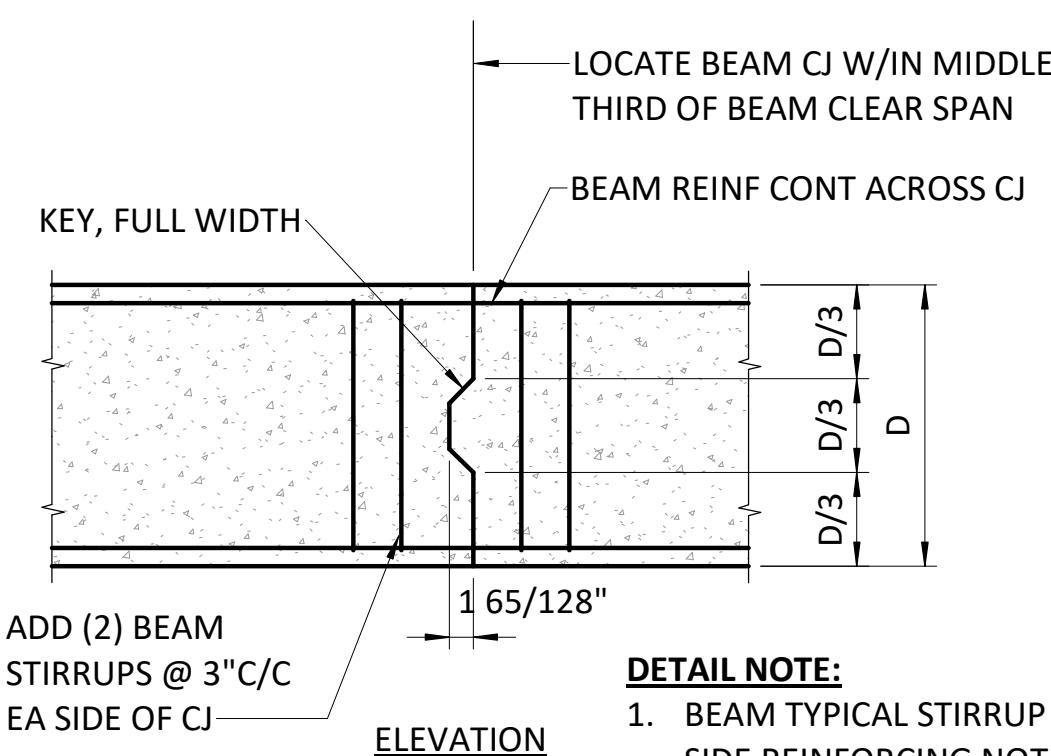


**DETAIL NOTES:**

- REINFORCING SHOWN APPLIES TO ALL TOP, BOTTOM AND SIDE BARS. ALL REQUIRED BARS ARE NOT SHOWN IN DETAIL.
- AT CONTRACTOR'S OPTION, UNLESS NOTED OTHERWISE, ELIMINATE DOWELS AND CORNER BAR AND TERMINATE HORIZONTAL BARS WITH STANDARD HOOKS.

**CORNER @ INTERSECTION REINFORCING**

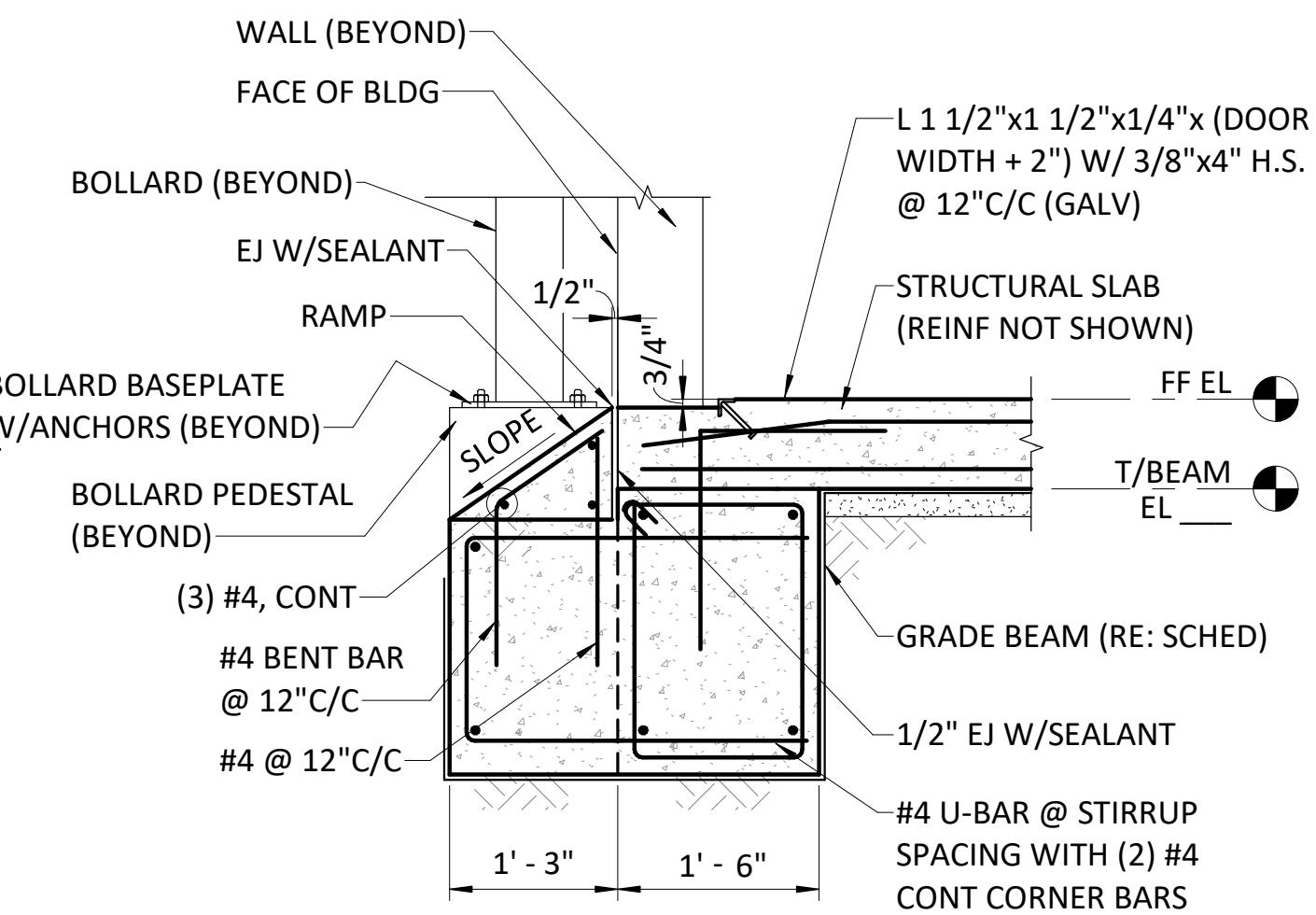
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**DETAIL NOTE:**  
1. BEAM TYPICAL STIRRUP AND SIDE REINFORCING NOT SHOWN.

**TYPICAL GRADE BEAM CONSTRUCTION JOINT**

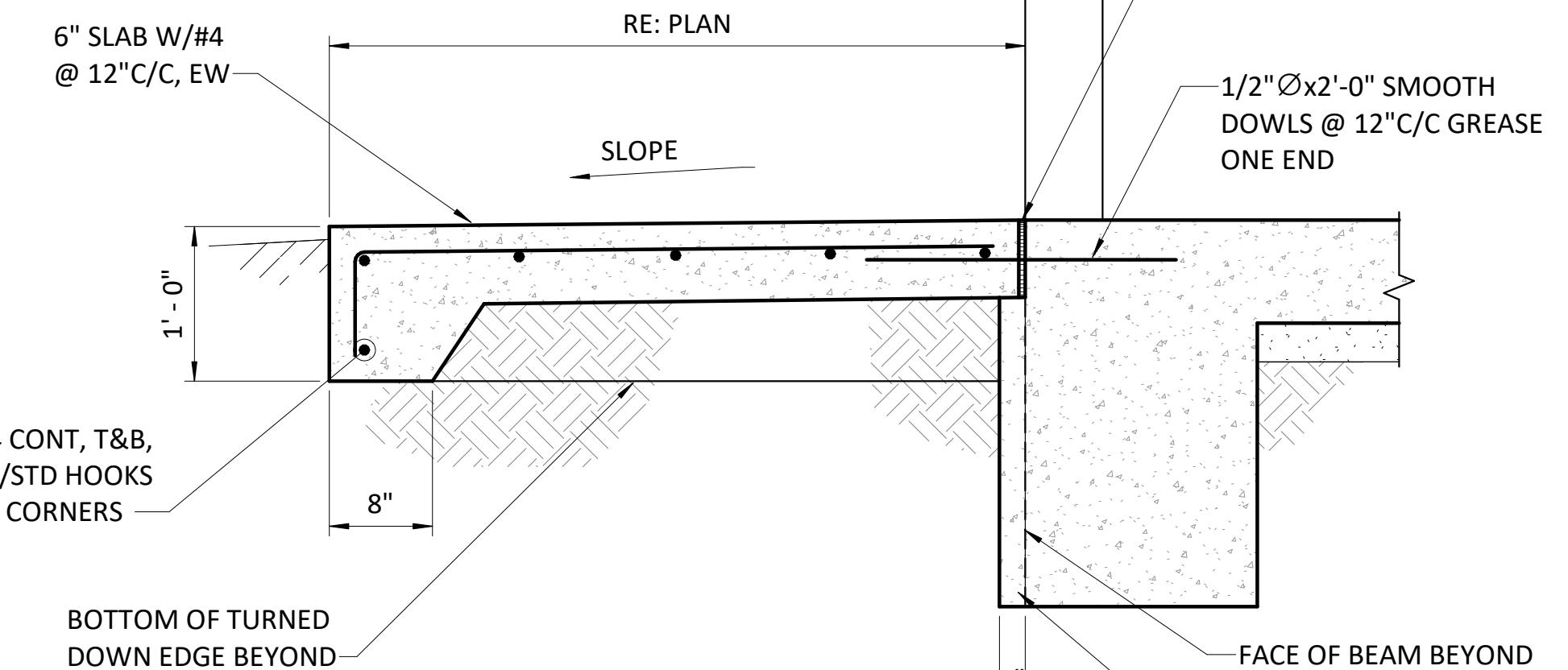
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**DETAIL NOTES:**

- REFER TO S-4 FOR ADDITIONAL INFORMATION.
- REFER TO ARCH FOR ADDITIONAL INFORMATION AT OVERHEAD DOOR.

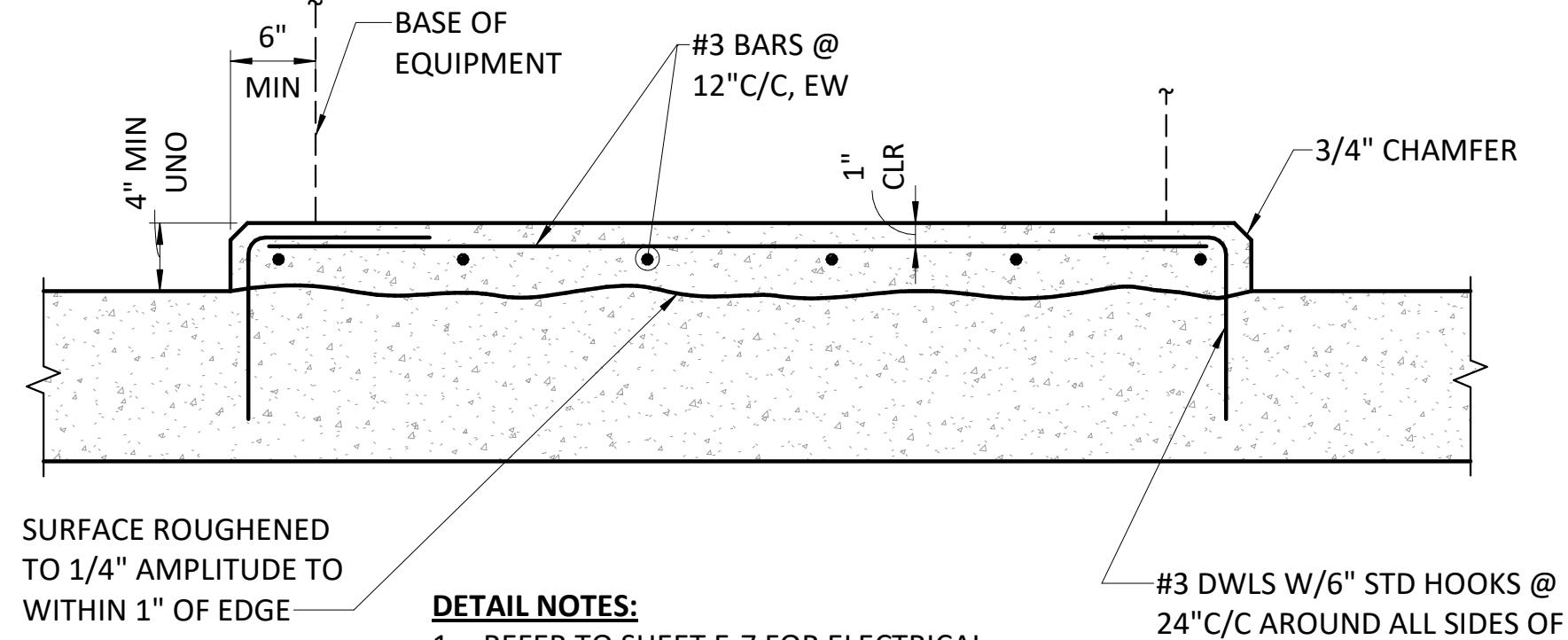
**RAMP SECTION**  
NOT TO SCALE



**DETAIL NOTES:**

- REFER TO 4/S-4 FOR ADDITIONAL INFORMATION.

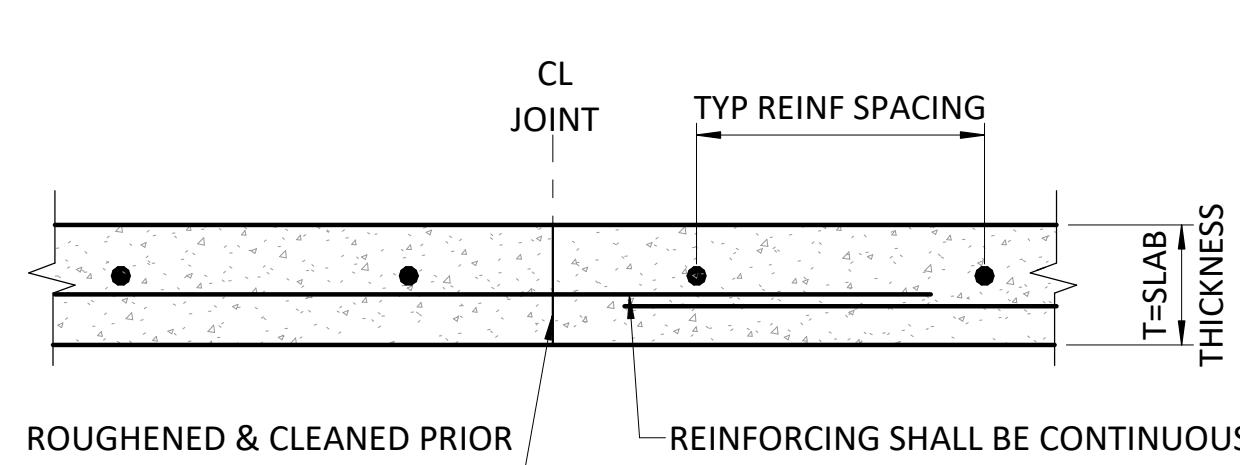
**STOOP SECTION**  
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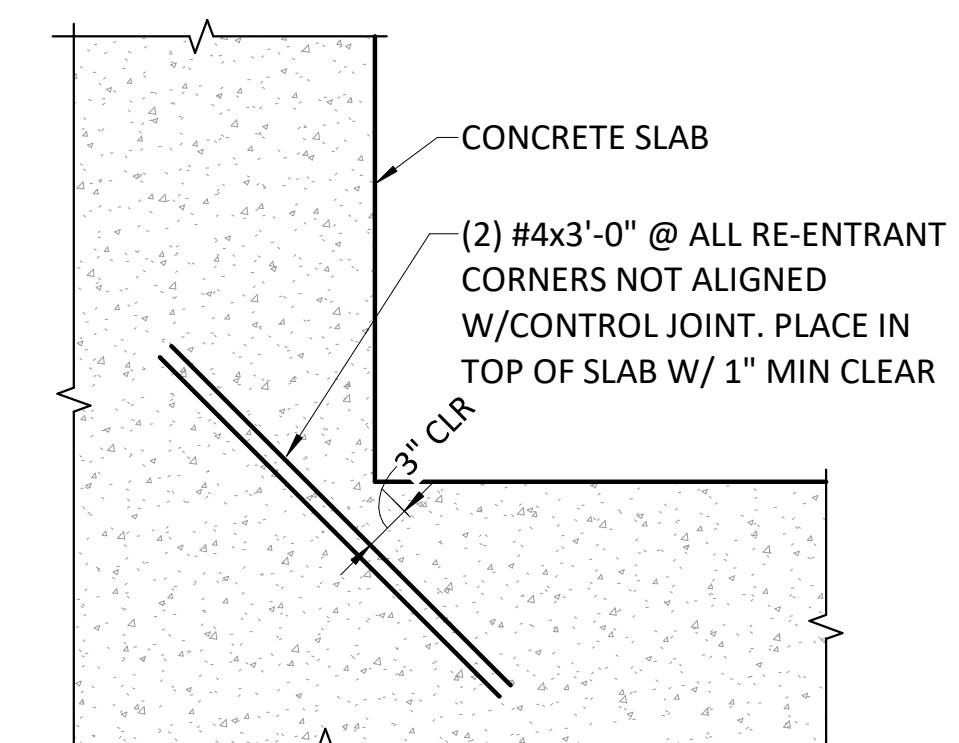
**DETAIL NOTES:**

- REFER TO SHEET E-7 FOR ELECTRICAL EQUIPMENT ATTACHMENTS TO CONCRETE PAD. ANCHOR INTO SLAB W/ADHESIVE ANCHOR SYSTEM W/5" EMBED.

**INTERIOR EQUIPMENT PAD**  
NOT TO SCALE



**DETAIL NOTE:**  
1. ROUGHENED & CLEANED PRIOR TO PLACING FRESH CONCRETE.



**RE-ENTRANT CORNER REINFORCING DETAIL**

NOT TO SCALE

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S-7  
SEQ. 20

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## HVAC SYMBOLS

(ALL SYMBOLS SHOWN ARE NOT NECESSARILY USED ON THE DRAWINGS)

ABBREVIATIONS			
A/C	AIR CONDITIONING	HP	HORSEPOWER
AFF	ABOVE FINISHED FLOOR	HTG	HEATING
AI	ANALOG INPUT	IN	INCHES
AO	ANALOG OUTPUT	KW	KILOWATT
APPROX	APPROXIMATELY	LAT	LEAVING AIR TEMPERATURE
ARCH	ARCHITECTURE/ARCHITECTURAL	LWT	LEAVING WATER TEMPERATURE
AV	ANALOG VALUE	MAX	MAXIMUM
BI	BINARY INPUT	MECH	MECHANICAL
BHP	BRAKE HORSEPOWER	MCA	MINIMUM CIRCUIT AMPACITY
BO	BINARY OUTPUT	MBH	THOUSANDS BTU's PER HOUR
BOD	BOTTOM OF DUCT	MIN	MINIMUM
BTUH	BRITISH THERMAL UNIT PER HOUR	MOCP	MAXIMUM OVERCURRENT PROTECTION
BV	BINARY VALUE	NFPA	NATIONAL FIRE PROTECTION ASSOC.
C	CELSIUS	NC	NOISE CRITERIA
CC	COOLING COIL	NOM	NOMINAL
CFM	CUBIC FEET PER MINUTE	NTS	NOT TO SCALE
CD	CONDENSATE DRAIN	NO	NUMBER
CONN	CONNECTION	N.C.	NORMALLY CLOSED
dB	DECIBELS	N.O.	NORMALLY OPEN
DI	DIGITAL INPUT	OA	OUTSIDE AIR
DIA	DIAMETER	P/PH	PHASE
DB	DRY BULB	PLBG	PLUMBING
DDC	DIRECT DIGITAL CONTROL	PSI	POUNDS PER SQUARE INCH
DEG	DEGREE	RE	REFER/REFERENCE
DO	DIGITAL OUTPUT	RA	RETURN AIR
DX	DIRECT EXPANSION	RPM	REVOLUTIONS PER MINUTE
DWGS	DRAWINGS	SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOC.
ELEC	ELECTRIC/ELECTRICAL	SQ FT	SQUARE FEET
EAT	ENTERING AIR TEMPERATURE	SP	STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE	SA	SUPPLY AIR
EFF	EFFICIENCY	TEMP	TEMPERATURE
EL	ELEVATION	T-STAT	THERMOSTAT
EMCS	ENERGY MONITORING AND CONTROL SYSTEM	TYP	TYPICAL
EXH	EXHAUST	VAV	VARIABLE AIR VOLUME
F	FAHRENHEIT	VFD	VARIABLE FREQUENCY DRIVE
FLEX	FLEXIBLE	VD	VOLUME DAMPER
FPM	FEET PER MINUTE	WT	WATTS
FT	FEET, FOOT	WTR	WATER
GPM	GALLONS PER MINUTE	WC	WATER COLUMN
HC	HEATING COIL	WG	WATER GAUGE
HVAC	HEATING, VENTILATION AND AIR CONDITIONING	WB	WET BULB
HZ	HERTZ		

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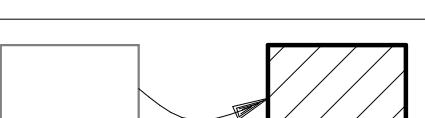
## ABBREVIATIONS

## NETWORK SYMBOLS

DUCTWORK SYMBOLS		
	SUPPLY AIR DIFFUSER - ARROWS INDICATE PATTERN. NO ARROWS SHOWN EQUALS 4-WAY.	
	RETURN/TRANSFER AIR GRILLE	
	EXHAUST GRILLE	
	SUPPLY AIR PLENUM SLOT DIFFUSER	
	ROUND DUCTWORK	
	RECTANGULAR DUCTWORK. SIZE INDICATED IN INCHES, FIRST NUMBER IS SIDE SHOWN	
	FLEXIBLE DUCT	
	RADIUS DUCTWORK ELBOW ROUND OR RECTANGULAR	
	RECTANGULAR DUCTWORK BRANCH TAKE-OFF W/DAMPER AND 45 DEGREE BRANCH INLET	
	ROUND DUCT BRANCH TAKE-OFF FROM RECTANGULAR OR FLAT OVAL MAIN WITH CONICAL TAP. PROVIDE BALANCE DAMPER FOR LOW PRESSURE DUCTWORK ONLY	
	DUCTWORK SIZE TRANSITION.	

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PLAN SYMBOLS

PLAN SYMBOLS	
NEW PLANS	DOUBLE LINE
DUCTWORK	EXISTING TO REMAIN
	DEMOLITION
	NEW
PIPING	EXISTING TO REMAIN
	DEMOLITION
	NEW
XISTING EQUIPMENT (FANS, R DEVICES, PUMPS, ETC.) O BE RELOCATED.	
NEW EQUIPMENT	

#### EQUIPMENT DESIGNATIONS

**LOUVER  
SUPPLY FAN**

MISCELLANEOUS

MISCELLANEOUS					
A200	DIFFUSER/GRILLE/REGISTER LABEL: "A" - TYPE/DESIGNATION "200" - AIRFLOW (CFM)	(P)	PRESSURE SENSOR		DRAWING NOTE REFERENCE
T	THERMOSTAT (LOCAL CONTROL "X" INDICATES ZONE)	(C)	CO2 SENSOR		DIAMETER/PHASE
T	TEMPERATURE SENSOR	(SP)	DUCT MOUNTED STATIC PRESSURE SENSOR		POINT OF NEW CONNECTION BETWEEN NEW AND EXISTING WORK
H	HUMIDITY SENSOR	(S)	DUCT SMOKE DETECTOR		SENSOR WITH LOCKING PROTECTIVE GUARD

1. THIS PROJECT IS DESIGNED BASED ON THE FOLLOWING CODES: INTERNATIONAL MECHANICAL CODE 2015, INTERNATIONAL ENERGY CONSERVATION CODE 2015, ASHRAE 62.1.
2. ALL INFORMATION REQUIRED FOR DESIGN MAY NOT BE COVERED IN THE DRAWINGS. REFER TO DIVISION 23 TECHNICAL SPECIFICATIONS AND OTHER RELATED SECTIONS FOR ADDITIONAL INFORMATION.
3. ALL DUCT SIZES SHOWN ON THE DRAWINGS ARE NET INSIDE CLEAR DIMENSIONS.
4. UTILIZE LONG RADIUS ELBOWS WHERE SPACE PERMITS UNLESS OTHERWISE NOTED. ALL RECTANGULAR ELBOWS SHALL CONTAIN TURNING VANES.
5. COORDINATE WITH OTHER UTILITIES TO AVOID INTERFERENCES WHEN INSTALLING DUCTWORK, PIPING AND EQUIPMENT.
6. FURNISH AND INSTALL ALL EQUIPMENT AS PER MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS. PROVIDE MODIFICATIONS AND ACCESSORIES AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER TO ASSURE PROPER OPERATION OF THE EQUIPMENT.
7. VERIFY DIMENSIONS, LOCATIONS, ELEVATIONS AND CONFIGURATION OF ALL ITEMS ASSOCIATED WITH THE INSTALLATION OF DUCTWORK AND EQUIPMENT.
8. EQUIPMENT, DUCTWORK AND PIPING SHALL NOT BE SUPPORTED OR SECURED TO OTHER EQUIPMENT, DUCTWORK, PIPING OR OTHER UTILITIES.
9. PAINT ALL EQUIPMENT VISIBLE THROUGH AIR DEVICES MATT BLACK.
10. PROVIDE MANUAL VOLUME DAMPERS IN ALL DUCTWORK AT ALL DUCT SPLITS, BRANCH RUNOUTS AND DUCT COLLARS FOR REGISTERS. ALL MANUAL DAMPERS MAY NOT BE SHOWN ON DRAWINGS.
11. ALL DUCTWORK SHALL BE CONSTRUCTED, SEALED AND INSTALLED IN CONFORMANCE TO SMACNA DUCT CONSTRUCTION STANDARDS.
12. TO RESOLVE FIELD PROBLEMS IN ROUTING DUCTWORK THE CONTRACTOR SHALL USE THE SAME CIRCULAR EQUIVALENT DIAMETER TO TRANSFORM DUCT SIZE FROM THAT SPECIFIED ON THE DRAWINGS.

$$DE = \frac{1.30 (AB)^{0.625}}{(A + B)^{0.250}}$$

E = CIRCULAR EQUIVALENT OF RECTANGULAR DUCT  
IN INCHES

= LENGTH OF ONE SIDE OF DUCT IN INCHES  
= LENGTH OF OTHER SIDE OF DUCT IN INCHES

13. PROVIDE FIRE DAMPERS IN DUCTWORK AT ALL FIRE BARRIER PENETRATIONS. PROVIDE ACCESS DOORS IN DUCTWORK TO VIEW AND SERVICE FIRE DAMPERS PER SMACNA AND APPLICABLE LOCAL CODES.
14. PROVIDE FIRE RESISTANT FLEXIBLE CONNECTION WHENEVER DUCTWORK IS CONNECTED TO MOTORIZED EQUIPMENT.
15. DUCT MATERIAL SHALL BE ZINC-COATED STEEL WITH METAL AND GALVANIZING THICKNESS AS PER SMACNA CONSTRUCTION STANDARDS.
16. PROVIDE OSHA-REQUIRED CLEARANCES AROUND ALL HVAC EQUIPMENT AND COMPONENTS FOR PERSONNEL ACCESS AND MAINTENANCE.
17. ALL PIPE HANGERS AND SUPPORTS SHALL COMPLY WITH MANUFACTURER'S STANDARDIZATION SOCIETY (MSS) STANDARDS. VERTICAL PIPES MUST BE SUPPORTED AT EACH FLOOR WITH PIPE CLAMPS.
18. INSULATE BACKS AND PLENUMS OF SUPPLY AIR DEVICES WITH MINIMUM 1" MINERAL FIBER.
19. ALL AIR MOVING EQUIPMENT CONTAINING PARTICULATE FILTERS SHALL NOT BE OPERATED WITHOUT PARTICULATE FILTERS IN PLACE.
20. ADD DIELECTRIC CONNECTIONS BETWEEN PIPES OF DIFFERENT METALS.
21. MAINTAIN A VERTICAL SLOPE OF 1/8" PER FOOT IN THE DIRECTION OF FLOW FOR ALL HORIZONTAL CONDENSATE PIPING. ROUTE CONDENSATE DRAIN ALONG WALL TO TERMINATE OPEN-SITE AT MOP SINK.
22. INSTALL ALL PIPING PARALLEL TO BUILDING LINES UNLESS STATED OTHERWISE IN DRAWINGS

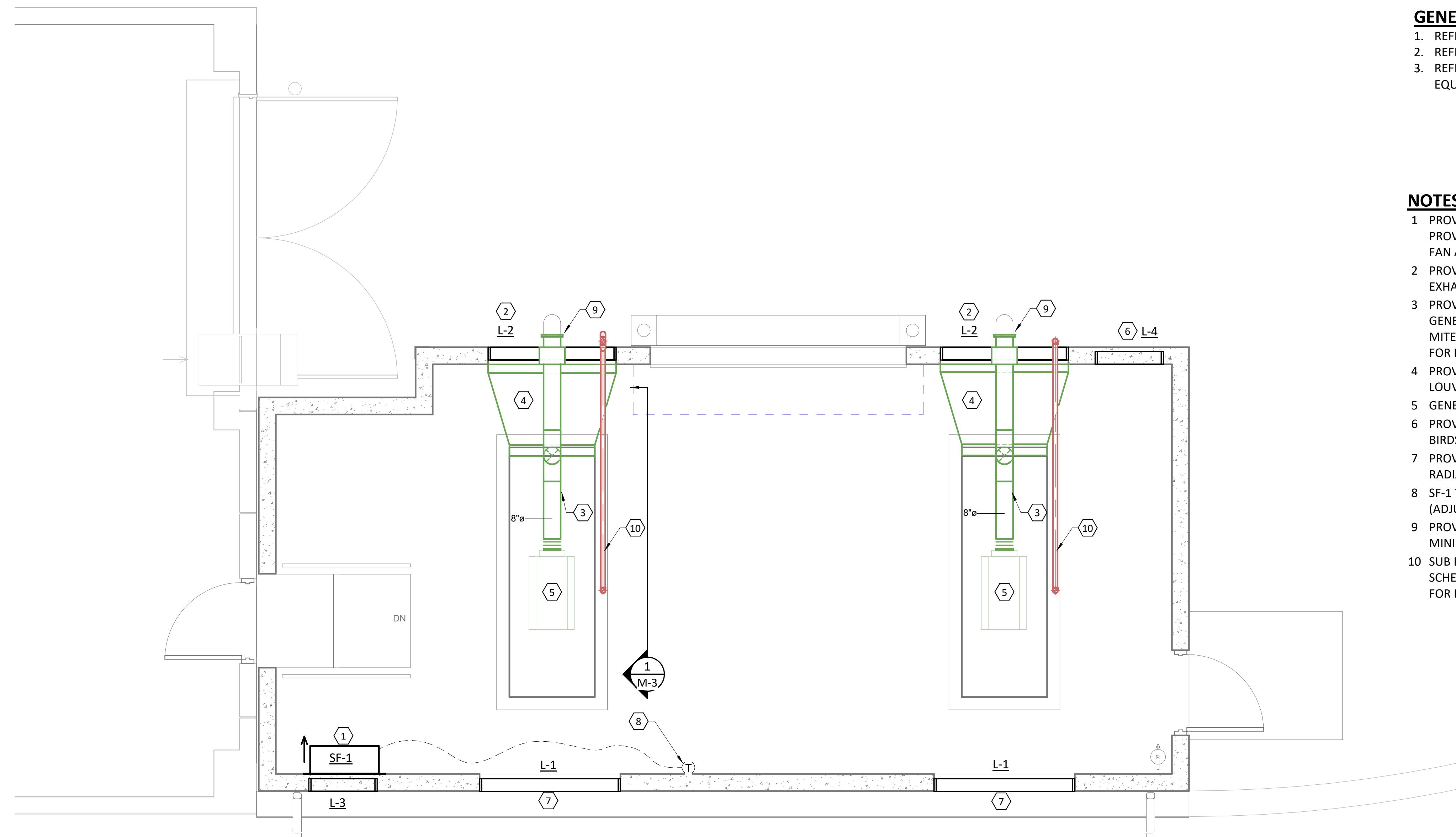
F&N JOB NO.		JFF22292		DATE 05/15/2023	
DESIGNED		MRB		DRAWN	
DRAWN		MRB		MRB	
NO.	ISSUE	BY	DATE	REVISED	MECHANICAL
VERYSACE		Bar is one inch on original drawing. If not one inch on this sheet, adjust scale.		WAY	
SHEET				FILE NAME	
SEQ.				HV-JFF22292-R21.RVT	
<p><b>FREESE</b> <b>NICHOLS</b></p> <p>JEFFERSON COUNTY, TX CRANE BAYOU PUMP STATION GENERATORS AND BUILDING</p> <p>10497 Town and Country Way, Suite 500 Houston, TX 77024 Phone - (713) 600-6800 Web - <a href="http://www.freese.com">www.freese.com</a></p> <p>AI SEXTON 143595 PROFESSIONAL LICENSED</p> <p>05/12/2023</p>					
<p><b>NOTES, SYMBOLS &amp; ABBREVIATIONS</b></p>					

JEFFERSON COUNTY, TX  
**CRANE BAYOU PUMP STATION  
GENERATORS AND BUILDING**  
MECHANICAL

## NOTES, SYMBOLS & ABBREVIATIONS

SHEET M-1  
SEQ.

## ISSUED FOR BID



1 HVAC FLOOR PLAN  
3/8" = 1'-0"

#### GENERAL NOTES

1. REFER TO M-1 FOR LEGEND, GENERAL NOTES AND ABBREVIATIONS.
2. REFER TO DIVISION 23 FOR TECHNICAL SPECIFICATIONS.
3. REFER TO SHEET E-6 FOR POWER ROUTING/CONNECTION TO MECHANICAL EQUIPMENT.

#### NOTES BY SYMBOL "L"

- 1 PROVIDE WALL MOUNTED SUPPLY FAN AND 32" X 32" INTAKE HURRICANE LOUVER. PROVIDE WITH BIRDS SCREEN ON THE INSIDE OF THE LOUVER. MOUNT WITH BOTTOM OF FAN AT 8'-0" AFF. COORDINATE TO MAINTAIN A MINIMUM OF 1' CLEARANCE.
- 2 PROVIDE 84" X 60" EXHAUST HURRICANE LOUVER FOR GENERATOR AIRFLOW. CONNECT EXHAUST DUCT TO LOUVER. PROVIDE WITH BIRDS SCREEN ON THE INSIDE OF THE LOUVER.
- 3 PROVIDE 8" ROUND EXHAUST PIPE WITH CALCIUM SILICATE INSULATION FOR GENERATOR EXHAUST. PROVIDE WITH REMOVABLE FLANGED OUTLET WITH 45 DEGREE MITER. PROVIDE WITH MANUFACTURERS' BIRDS SCREEN. FIELD VERIFY AND COORDINATE FOR EXACT LOCATIONS.
- 4 PROVIDE 2-HOUR RATED DUCT AND CONNECT FROM GENERATOR EXHAUST OPENING TO LOUVER. PROVIDE FLEXIBLE CONNECTOR AT EXHAUST CONNECTION.
- 5 GENERATOR EXHAUST MUFFLER PROVIDED BY OTHERS.
- 6 PROVIDE 32" X 32" EXHAUST HURRICANE LOUVER FOR ROOM AIRFLOW. PROVIDE WITH BIRDS SCREEN ON THE INSIDE OF THE LOUVER.
- 7 PROVIDE 66" X 60" INTAKE HURRICANE LOUVER FOR GENERATOR COMBUSTION AND RADIATOR AIRFLOW. PROVIDE WITH BIRDS SCREEN ON THE INSIDE OF THE LOUVER.
- 8 SF-1 THERMOSTAT MOUNTED AT 4'-0" AFF. SETPOINT TEMPERATURE AT 90 DEGREES F (ADJUSTABLE).
- 9 PROVIDE COWL AND BIRDS SCREEN WITH A VENTILATED STAINLESS STEEL WALL THIMBLE. MINIMUM OF 9" DIAMETER LARGER THAN THE EXHAUST PIPE.
- 10 SUB BASE FUEL TANK 2" VENT TO EXTERIOR. PIPE TO BE ASTM A 53/A 53M, BLACK STEEL, SCHEDULE 40, TYPE E OR S, GRADE B. STEEL WELDING FITTINGS: ASTM A 234/A 234M, FOR BUTT AND SOCKET WELDING.

JEFFERSON COUNTY, TX  
CRANE BAYOU PUMP STATION  
GENERATORS AND BUILDING

MECHANICAL

FLOOR PLAN

Freeze and Nichols, Inc.  
Texas Registered Engineering Firm F-2144  
14395  
10497 Town and Country Way  
Suite 500  
Houston, TX 77024  
Phone - (713) 600-6800  
Web - www.freeze.com



05/12/2023

F&N JOB NO.		DATE		DESIGNED		DRAWN		REVISED		CHECKED		WAY	
JFF22292		05/15/2023		MRB		MRB							
NO.	ISSUE	BY	DATE	FILE NAME									
				HV-JFF22292-R21.RVT									

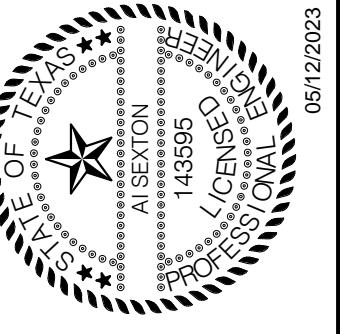
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3/8"=1'-0"

SHEET  
M-2

SEQ.

22

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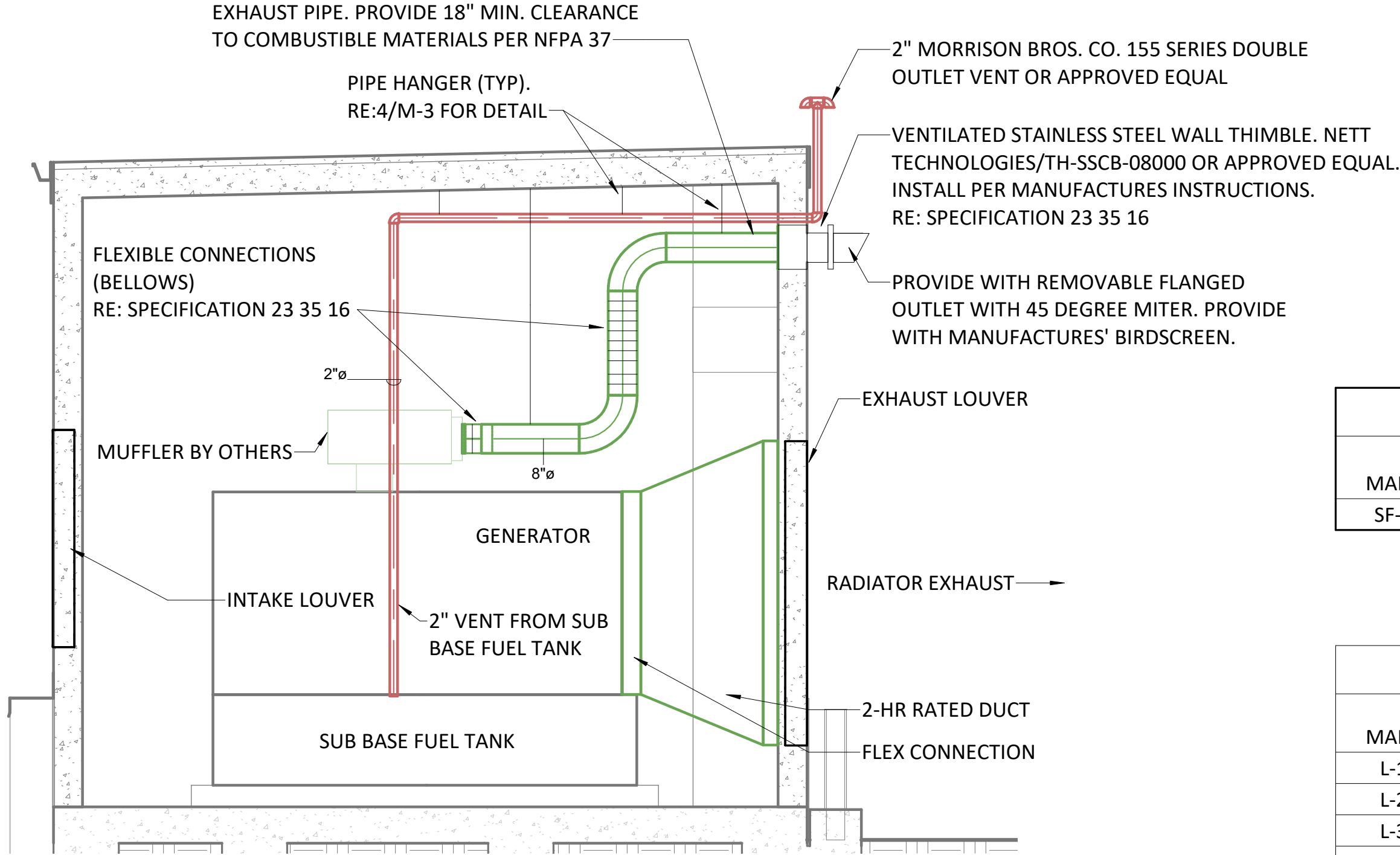


Freese and Nichols, Inc.  
Texas Registered Engineering Firm F- 214

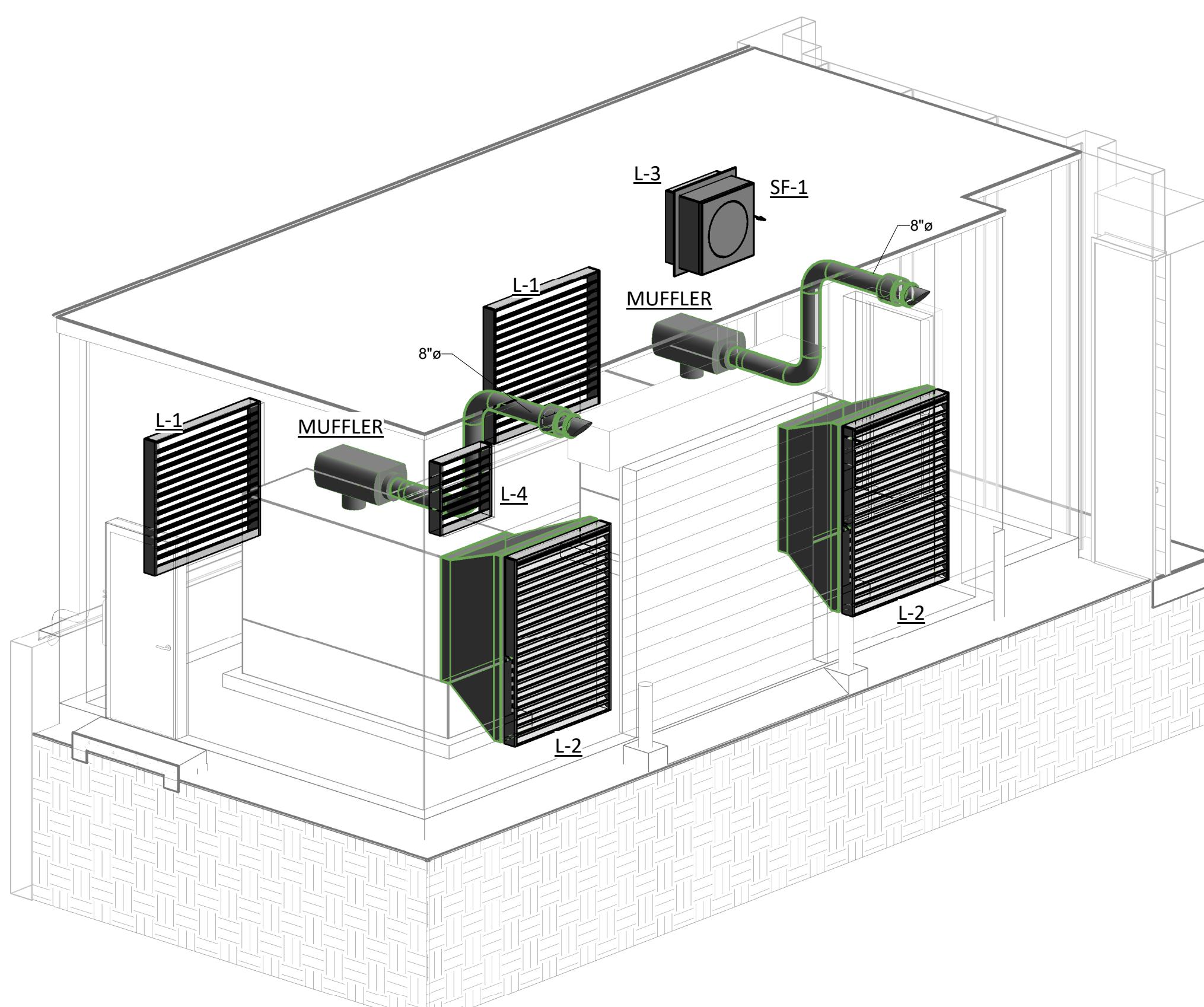
The logo for Freese and Nichols, featuring the company name in a bold, sans-serif font with 'AND' in a smaller font between 'FREESE' and 'NICHOLS'. Below the name is a stylized 'fn' monogram. To the right of the logo is the address '10497 Town and Country Way, Suite 500'.

Suite 500  
Houston, TX 77024  
Phone - (713) 600-6800  
Web - [www.freese.com](http://www.freese.com)

5/12/2023



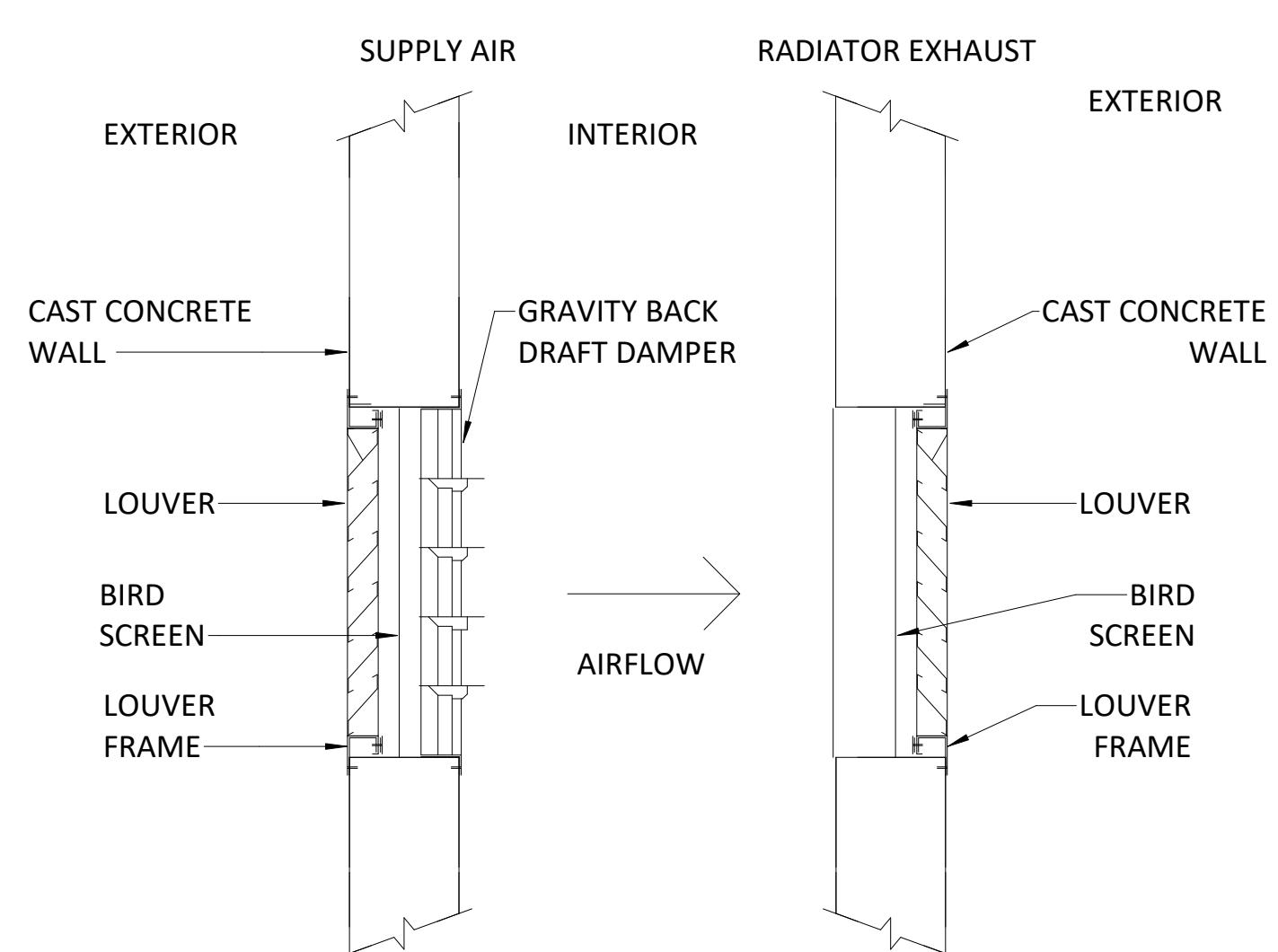
**SECTION VIEW**



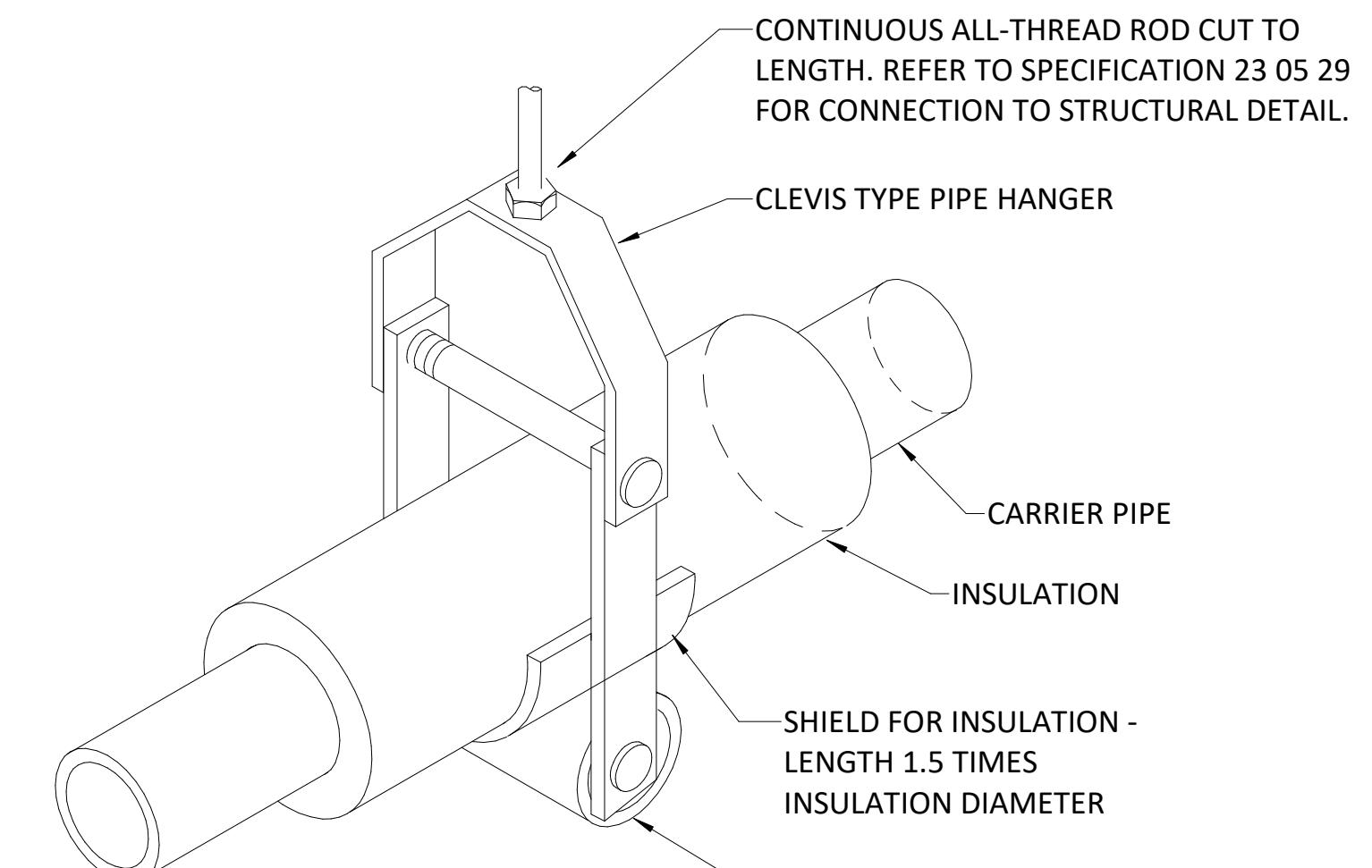
# 2 HVAC ISOMETRIC

SUPPLY FAN SCHEDULE										
MARK	TYPE	SERVICE	CFM	ESP (IN W.G)	MAX. SONES	UNIT ELECTRICAL				MANUFACTURER/MODEL
						HP	RPM	VOLTAGE	PHASE	
SF-1	SUPPLY	GENERATOR ROOM	1,000	0.50	16.3	0.25	1160	110	1	GREENHECK/AER-24-03-0603

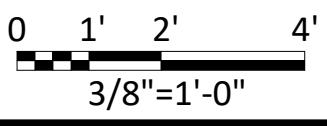
LOUVER SCHEDULE									
MARK	COUNT	TYPE	AREA SERVED	CFM	ESP (IN W.G)	WIDTH	HEIGHT	FREE AREA (SQFT)	MANUFACTURER/MODEL
L-1	2	INTAKE	GENERATOR ROOM	12,800	0.09	66	60	16.6	GRRENHECK ESD-635X-66X60
L-2	2	EXHAUST	GENERATOR ROOM	10,800	0.03	60	84	22	GRRENHECK ESD-635X-60X84
L-3	1	INTAKE	GENERATOR ROOM	900	0.01	32	32	3.8	GRRENHECK ESD-635X-32X32
L-4	1	EXHAUST	GENERATOR ROOM	900	0.01	32	32	3.8	GRRENHECK ESD-635X-32X32



3 LOUVER DETAIL  
NOT TO SCALE



4 ROLLER CLEVIS TYPE PIPE/DUCT HANGER  
NOT TO SCALE



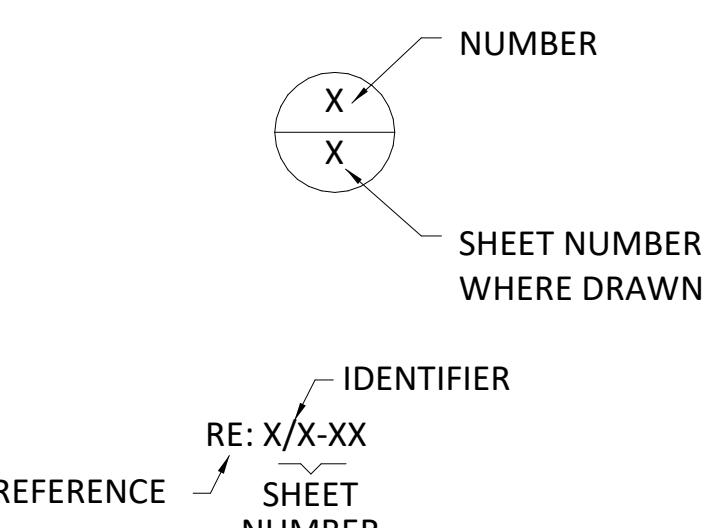
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SEQ. 23

ABBREVIATIONS	
AC	ALTERNATING CURRENT
AF	AMP FRAME
AFD	ADJUSTABLE FREQUENCY DRIVE
AFF	ABOVE FINISHED FLOOR OR GRADE
AG	ABOVE GRADE
AGSB	ABOVE GROUND SPLICE BOX
AIC	AMPERES INTERRUPTING CAPACITY
AL OR ALUM	ALUMINUM
AMP OR A	AMPERE
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
C.	CONDUIT
CB	CIRCUIT BREAKER
C/C	CENTER TO CENTER
CHH	COMMUNICATION HANDHOLE
CKT	CIRCUIT
CLF	CURRENT LIMITING FUSE
CMH	COMMUNICATION MANHOLE
CONT.	CONTINUATION
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CS	CONTROL SWITCH OR COMBINATION STARTER
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DIRECT CURRENT
DI	DOOR INTERLOCK
DN	DOWN
DP	DIFFERENTIAL PRESSURE
DWG	DRAWING
EMH	ELECTRICAL MANHOLE
EC	EMPTY CONDUIT
ELEC	ELECTRICAL
ELEV	ELEVATION
EM	EMERGENCY
EHH	ELECTRICAL MANHOLE
EO	ELECTRICALLY OPERATED
ETM	ELAPSED TIME METER
EUC	ELECTRIC UTILITY CO.
EXIST.	EXISTING
FBO	FURNISHED BY OTHERS
FO	FIBER OPTIC
FRP	FIBERGLASS REINFORCED POLYESTER
FT	FEET
FU	FUSE
G. OR GRD	GROUND
GA.	GAUGE
GCP	GENERATOR CONTROL PANEL
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
GFS	GROUND FAULT SENSING
GO	GATE OPERATOR
GRS	GALVANIZED RIGID STEEL
HH	HANDHOLE
HP	HORSEPOWER
HT	HEIGHT
HTP	HEAT TRACE PANEL
HTR	HEATER
HZ	HERTZ
ID	INTERNAL DIAMETER
IMH	INSTRUMENT MANHOLE
INST	INSTRUMENT
IRP	INTERPOSING RELAY PANEL
JB	JUNCTION BOX
KVA	KILOVOLT-AMPERE
KW	KILOWATT
LA	LIGHTNING ARRESTER
LC	LIGHTNING CONTACTOR
LED	LIGHT EMITTING DIODE
LGTS ON LTG	LIGHTS/LIGHTING
LP	LIGHTING PANEL
LSIG	LONG, SHORT, INSTANTANEOUS, GROUND
MBFV	MOTOR OPERATED BUTTERFLY VALVE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MFR	MANUFACTURER
MFR'S	MANUFACTURER'S
MH	MANHOLE
ML	MULTILIN
MM	MULTIMODE
MOV	MOTOR OPERATED VALVE
MLO	MAIN LUGS ONLY
MPR	MOTOR PROTECTION RELAY
MR	MULTIRATIO
MTD	MOUNTED

ABBREVIATIONS	
MTG	MOUNTING
MTS	MANUAL TRANSFER SWITCH
NC or N.C.	NORMALLY CLOSED
NF	NON-FUSED
NO or N.O.	NORMALLY OPEN OR NUMBER
NO.	NUMBER
OD	OUTSIDE DIAMETER
OHE	OVERHEAD ELECTRIC
OL	OVERLOAD
OLX	OVERLOAD CONTROL RELAY
P	POLE
PB	PULL BOX OR PUSH BUTTON
PC	PHOTOCELL
PCC	PUMP CONTROL CONSOLE
PFR	PHASE FAILURE RELAY
PH	PHASE
PL.	PLATE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PPR	PHASE PROTECTIVE RELAY
PR.	PAIR OR PAIR CABLE
PT.	POTENTIAL TRANSFORMER
PTT	PUSH TO TEST TYPE
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RC	REMOTE CONTROL
RCP	RELAY CONTROL PANEL
REC.	CIRCUIT RECLOSURE
RECP	RECEPTACLES
REQD.	REQUIRED
RTD	RESISTANCE TEMPERATURE DETECTOR
RTU	REMOTE TERMINAL UNIT
RVAT	REDUCED VOLTAGE AUTO-TRANSFORMER
SC	SURGE CAPACITOR
SCH	SCHEMATIC
SCTB	SHORT CIRCUIT TERMINAL BLOCK
SEC	SECONDS OR SECONDARY
SHLD. OR SH	SHIELD OR SHIELDED
SHT	SHEET
SM	SINGLE-MODE
SN OR S/N	SOLID NEUTRAL
SPD	SURGE PROTECTION DEVICES
SSRVs	SOLID-STATE REDUCED VOLTAGE STARTER
SS	STAINLESS STEEL
ST	STARTER
STA.	STATION
STC	SIGNAL TERMINATION CABINET
SV	SOLENOID VALVE
SW	SWITCH
SWGR	SWITCHGEAR
TC	TERMINATION CABINET OR TRAY CABLE
TEL	TELEPHONE
TO	TIME DELAY ON OPENING
TPR	TRANSFORMER PROTECTION RELAY
TR	TRIAD
TS	TEMPERATURE SWITCH
TW	TWISTED
Typ	TYPICAL
UG	UNDERGROUND
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR CABLE
V	VOLTS
VAR.	VARIABLE
VFD	VARIABLE FREQUENCY DRIVE
VFI	VACUUM FAULT INTERRUPTER
VO	VALVE OPERATOR
W	WITH, WIRE OR WATT
WP	WEATHERPROOF
WR	WEATHER RESISTANT
XFMR	TRANSFORMER
XMTR	TRANSMITTER
XP	EXPLOSION PROOF

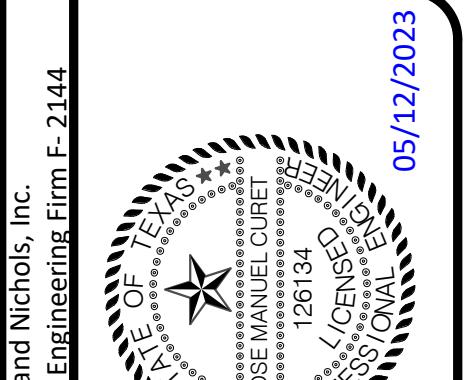
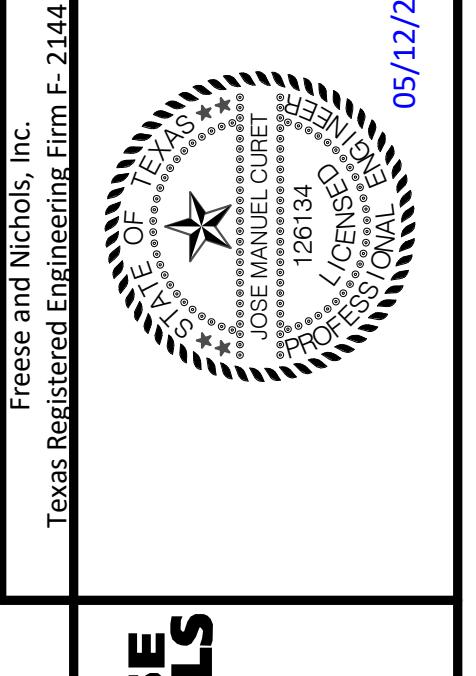
NOTE:  
THIS IS A STANDARD LEGEND. THEREFORE NOT ALL OF  
THIS INFORMATION MAY BE USED ON THIS PROJECT.



PLAN SYMBOL	DESCRIPTION
b A	LIGHTING FIXTURE "A" - FIXTURE TYPE "b" - SWITCH NUMBER
A	EMERGENCY BATTERY PACK LIGHT FIXTURE "A" - FIXTURE TYPE
X A	CEILING MOUNTED EXIT SIGN "X" - FIXTURE TYPE
X	WALL MOUNTED EXIT SIGN ARROW INDICATES DIRECTION OF EGRESS "X" - FIXTURE TYPE
FACP	FIRE ALARM CONTROL PANEL
F	MANUAL PULL STATION
OS	OCCUPANCY SENSOR
PC	PHOTOCELL
PW	PREWIRED
MH	MANHOLE
M	UTILITY METER
M	MOTORIZED LOUVER
DAMP	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 12 CONSTRUCTION UNLESS OTHERWISE NOTED
WET	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 4 CONSTRUCTION UNLESS OTHERWISE NOTED
CORROSIVE	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 4X CONSTRUCTION UNLESS OTHERWISE NOTED
CLASS I, DIV.1, GROUP D	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL CONFORM TO N.E.C. REQUIREMENTS FOR THE HAZARDOUS AREA CLASSIFICATION SHOWN
ONE-LINE OR CONTROL DIAGRAM	PLAN
T	— OR ■ PANEL
5	■ MOTOR, NUMBER DESIGNATES HORSEPOWER
VM *	- VOLTMETER (WITH SWITCH IF 3-PHASE)
AM *	- AMMETER (WITH SWITCH IF 3-PHASE)
	<p><b>METER</b></p> <p>WM - WATTMETER WHM - WATTHOUR METER WHDM - WATTHOUR DEMAND METER WHDR - WATTHOUR DEMAND RECORDER PF - POWER FACTOR METER ETM - ELAPSED TIME METER</p> <p>TRANSDUCER</p> <p>AX - CURRENT TRANSDUCER WX - WATT TRANSDUCER</p>
	<p>RELAY, NO. AS INDICATED</p> <p>25 - SYNCHRONISM CHECK RELAY 27 - UNDER VOLTAGE RELAY 38 - BEARING PROTECTIVE DEVICE 40 - LOSS OF EXCITATION RELAY 42 - RUNNING CONTACTOR/PILOT RELAY 46 - REVERSE PHASE/PHASE BALANCE/CURRENT RELAY 47 - PHASE SEQUENCE VOLTAGE RELAY 48 - MACHINE OR TRANSFORMER THERMAL RELAY</p> <p>50 - INSTANTANEOUS OVERCURRENT RELAY</p> <p>50G - INSTANTANEOUS GROUND</p> <p>51 - TIME OVER CURRENT RELAY, GROUNDING RESISTOR TYPE</p> <p>51N - TIME OVERCURRENT RELAY, RESIDUAL TYPE</p> <p>51V - TIME OVERCURRENT RELAY WITH VOLTAGE RESTRAINT</p> <p>59 - OVER VOLTAGE RELAY</p> <p>60 - NEGATIVE SEQUENCE VOLTAGE RELAY</p> <p>62 - TIME DELAY RELAY</p> <p>63 - OVER PRESSURE RELAY</p> <p>67 - AC DIRECTIONAL OVERCURRENT RELAY</p> <p>83 - AUTOMATIC SELECTIVE CONTROL OR TRANSFER RELAY</p> <p>86 - LOCKING-OUT RELAY</p> <p>87 - DIFFERENTIAL PROTECTIVE RELAY</p> <p>B - SUFFIX INDICATES "BUS"</p> <p>G - SUFFIX INDICATES "GENERATOR"</p> <p>GF - GROUND FAULT</p> <p>IR - INTERPOSING RELAY</p> <p>PFR - PHASE FAILURE, PHASE REVERSAL, UNDERVOLTAGE, OVERVOLTAGE RELAY</p> <p>ST - SHUNT TRIP</p> <p>T - SUFFIX INDICATES "TRANSFORMER"</p> <p>TRP CAP - CAPACITOR TRIP</p> <p>X - SUFFIX INDICATES "AUXILIARY"</p>

PLAN SYMBOL	DESCRIPTION
J J	JUNCTION BOX
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TC	TERMINAL CABINET
OS	OCCUPANCY SENSOR
PC	PHOTOCELL
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F&N JOB NO.	JFF2222	DATE	05/15/2023	DESIGNED	MCD	DRAWN	GTN	REVIEWED	JMC	CHECKED
ISSUE	BY	DATE		FILE NAME	EL-JFF2222-R21.RVT					
VERIFICATION	Bar is one inch on original drawing, if not one inch on this sheet, adjust scale.	0	1	NO.	1	1	1	1	1	1
SHEET	E-1	SEQ.	24	1	1	1	1	1	1	1
ISSUED FOR BID										



ONE-LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION																
	-	AC INDUSTRIAL CONTROL RELAY COIL, # - NUMBER AS INDICATED																
	-	MOTOR STARTER COIL, # - NUMBER AS INDICATED																
	-	SPECIAL CAPACITOR * SC - SURGE CAPACITOR PF - POWER FACTOR CORRECTION CAPACITOR																
	-	PUSH BUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY CLOSED																
	-	PUSH BUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY OPEN																
	-	EMERGENCY STOP PUSH BUTTON WITH RED MUSHROOM HEAD OPERATOR (MAINTAINED CONTACT)																
	-	OFF/ON SELECTOR SWITCH																
	-	3 POSITION SELECTOR SWITCH, MAINTAINED CONTACT O-OPEN X-CLOSED <table border="1"><thead><tr><th>POSITION</th><th>TOP CONTACT</th><th>MIDDLE CONTACT</th><th>BOTTOM CONTACT</th></tr></thead><tbody><tr><td>A</td><td>X</td><td>O</td><td>O</td></tr><tr><td>B</td><td>O</td><td>O</td><td>O</td></tr><tr><td>C</td><td>O</td><td>O</td><td>X</td></tr></tbody></table> (A/B/C) HOA - HAND/OFF/AUTO HOR - HAND/OFF/REMOTE LOR - LOCAL/OFF/REMOTE OCS - OPEN/CLOSE/STOP OOA - ON/OFF/AUTO  NOTE: 2 POSITION MULTI-CONTACT SWITCH FOLLOWS SAME CONVENTION	POSITION	TOP CONTACT	MIDDLE CONTACT	BOTTOM CONTACT	A	X	O	O	B	O	O	O	C	O	O	X
POSITION	TOP CONTACT	MIDDLE CONTACT	BOTTOM CONTACT															
A	X	O	O															
B	O	O	O															
C	O	O	X															
	-	INDICATING LAMP, COLOR INDICATED * R - RED G - GREEN B - BLUE W - WHITE A - AMBER O - ORANGE PTT - PUSH TO TEST																
	-	MEDIUM VOLTAGE DRAWOUT TYPE POWER CIRCUIT BREAKER																
	CB	LOW VOLTAGE CIRCUIT BREAKER, 3 POLE UNLESS OTHERWISE NOTED A - AMP TRIP, P - POLES																
		MOTOR CIRCUIT PROTECTOR																
		COMBINATION MOTOR CIRCUIT PROTECTOR AND MAGNETIC MOTOR STARTER * FULL VOLTAGE NON-REVERSING UNLESS OTHERWISE NOTED: FVR - FULL VOLTAGE REVERSING FVNR - FULL VOLTAGE, NON REVERSING RVNR - REDUCED VOLTAGE NON-REVERSING 2S1V - TWO SPEED, ONE WINDING 2S2W - TWO SPEED, TWO WINDING Sz# - NEMA SIZE OF STARTER																
		NON-FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE * AMPERE RATING NOTED																
		FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE, AMPERE RATING AND FUSE SIZE AS NOTED * AMPERE RATING NOTED * FUSE RATING																
	-	DRAWOUT TYPE EQUIPMENT OR DEVICE																
	-	MEDIUM VOLTAGE CABLE TERMINATION																
	-	MEDIUM VOLTAGE AIR INTERRUPTER SWITCH																
	-	MEDIUM VOLTAGE FUSED MOTOR CONTROLLER FUSED CONTACTOR DRAWOUT TYPE																
	-	VACUUM CONTACTOR																
	-	SPEED POTENTIOMETER																

ONE-LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION
	-	TIMING RELAY RANGE AS NOTED, SET POINT AS NOTED # - NUMBER AS INDICATED TDD - TIME DELAY AFTER DE-ENERGIZATION-OFF DELAY TDE - TIME DELAY AFTER ENERGIZATION-ON DELAY NOTC - NORMALLY OPEN, TIMED CLOSING WHEN ENERGIZED NCTO - NORMALLY CLOSED, TIMED OPENING WHEN ENERGIZED NOTO - NORMALLY OPEN, TIMED OPENING WHEN DE-ENERGIZED NCTC - NORMALLY CLOSED, TIMED CLOSING WHEN DE-ENERGIZED
	(*) -##	FIELD INSTRUMENT, TAG NO. OR LOOP NO. AS INDICATED * - INDICATES INSTRUMENT TYPE DEFINED ON LOOP SHEETS ## - INDICATES LOOP NO.
	OR	LIQUID LEVEL (FLOAT) SWITCH NORMALLY CLOSED, OPENS ON FALLING LEVEL NORMALLY OPEN, CLOSES ON FALLING LEVEL NORMALLY CLOSED, OPENS ON RISING LEVEL NORMALLY OPEN, CLOSES ON RISING LEVEL
	PS	PRESSURE OR VACUUM SWITCH NORMALLY OPEN, CLOSES ON RISING PRESSURE NORMALLY CLOSED, OPENS ON RISING PRESSURE NORMALLY OPEN, CLOSES ON DROPPING PRESSURE NORMALLY CLOSED, OPENS ON DROPPING PRESSURE
	T OR TS	TEMPERATURE SWITCH OR THERMOSTAT NORMALLY OPEN, CLOSES ON RISING TEMPERATURE NORMALLY OPEN, CLOSES ON DROPPING TEMPERATURE NORMALLY CLOSED, OPENS ON RISING TEMPERATURE NORMALLY CLOSED, OPENS ON DROPPING TEMPERATURE
	FS	FLOW SWITCH (AIR, WATER, ETC.) NORMALLY OPEN, CLOSES ON INCREASED FLOW NORMALLY CLOSED, OPENS ON INCREASED FLOW
	ZS	POSITION (LIMIT) SWITCH NORMALLY OPEN NORMALLY OPEN - HELD CLOSED NORMALLY CLOSED NORMALLY CLOSED - HELD OPEN
	TQ	TORQUE SWITCH NORMALLY CLOSED, OPENS ON HIGH TORQUE
	T	TRANSFORMER, RATINGS AND CONNECTIONS AS NOTED
	#CT'S A	CURRENT TRANSFORMER # - QUANTITY A - RATIO
	#PT'S	POTENTIAL TRANSFORMER # - QUANTITY
	#CT'S A	GROUND CURRENT SENSOR TRANSFORMER # - QUANTITY A - RATIO
		CONTROL TRANSFORMER
		CONTROL POWER TRANSFORMER
	G	GENERATOR, RATINGS AND CONNECTIONS AS NOTED
	#A ATS-1 N S	TRANSFER SWITCH ATS - AUTOMATIC TRANSFER SWITCH MTS - MANUAL TRANSFER SWITCH "N" INDICATES NORMAL SOURCE "S" INDICATES STANDBY SOURCE #A INDICATES CONTINUOUS CURRENT RATING
		MOTOR OVERLOAD OVERLOAD RELAY HEATER

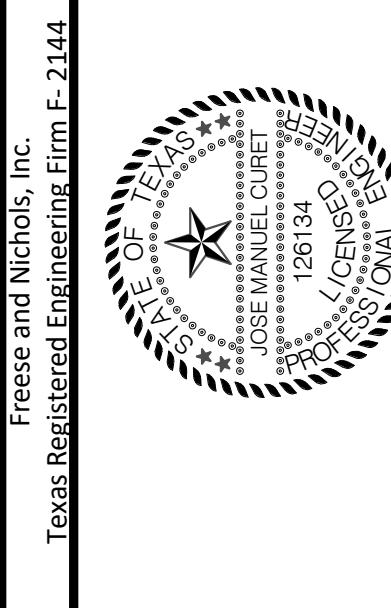
SYMBOL	DESCRIPTION
▽	DATA
▼	TELEPHONE
▼	COMBINATION TELEPHONE/DATA
▼	FLOOR MOUNTED DATA OUTLET
○	FLOOR MOUNTED TELEPHONE OUTLET
○	POKE-THRU DEVICE COMBINATION POWER/DATA/VOICE OUTLET
○	FLOOR COMBINATION POWER/DATA/VOICE OUTLET
□	CATV
□	SECURITY CAMERA * F - FIXED Z - PAN/TILT/ZOOM
##	SECURITY DEVICE SEC - SECURITY PANEL MAG - MAGNETIC LOCK CR - CARD READERS DR - REMOTE DOOR RELEASE MD - MOTION DETECTOR SK - SECURITY KEYPAD ES - ELECTRIC STRIKE DS - DOOR SWITCH IC - INTERCOM STATION SB - SECURITY PANIC BUTTON

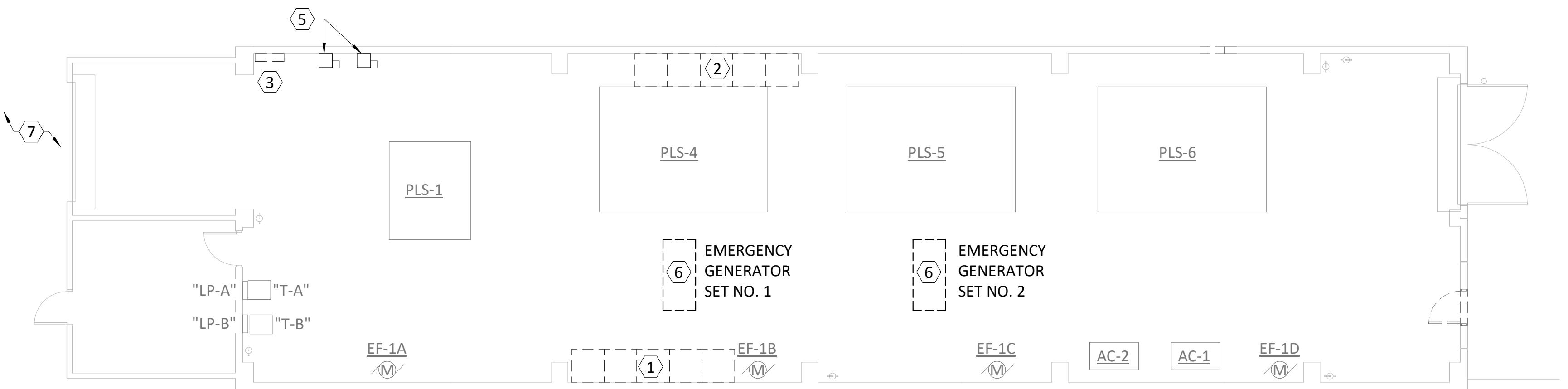
NOTE:  
THIS IS A STANDARD LEGEND.  
THEREFORE NOT ALL OF THIS  
INFORMATION MAY BE USED ON  
THIS PROJECT.

JEFFERSON COUNTY, TX  
CRANE BAYOU PUMP STATION  
GENERATORS AND BUILDING  
ELECTRICAL  
LEGEND II

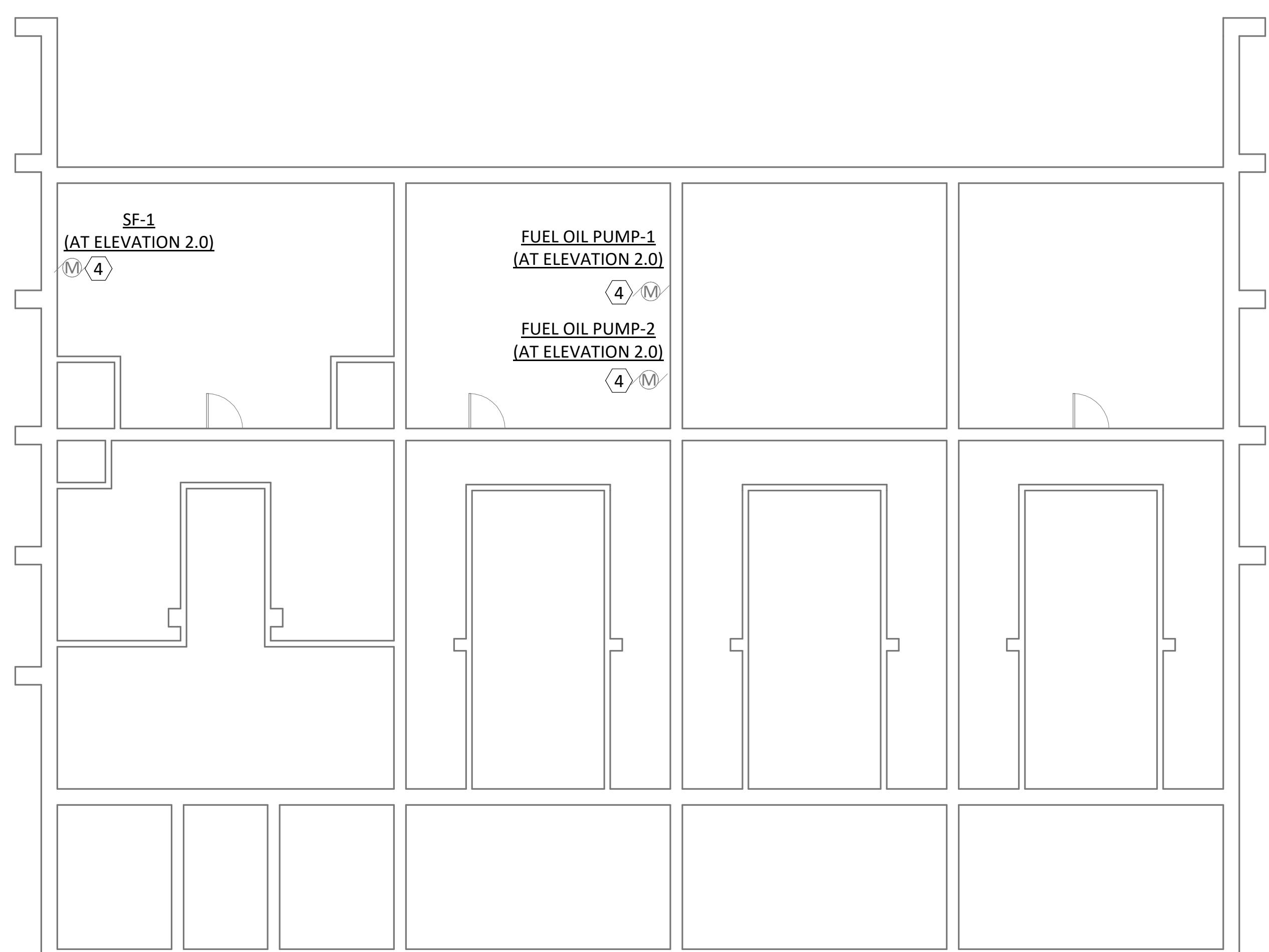
F&I JOB NO.	JFF22232	DATE	05/15/2023	DESIGNED	MCD	DRAWN	GTN	REVISED	JMC
ISSUE	BY	DATE							
NO.	VERIFICATION	FILE NAME	EL-JFF22232-R21.RVT	1	Bar is one inch on original drawing, if not one inch on this sheet, adjust scale.				
SHEET	E-2	SEQ.	25						

ISSUED FOR BID





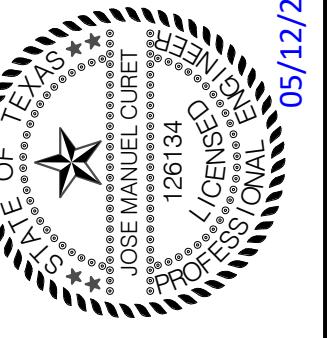
# DEMOLITION PUMP BUILDING - FLOOR PLAN AT ELEVATION 13.5



# EXISTING PUMP BUILDING - GRADE LEVEL PLAN AT ELEVATION 4.5

## **NOTES BY SYMBOL "hexagon" "**

1. EXISTING MCC TO BE REMOVED PER THE DEMOLITION ORDER OF SEQUENCE NOTES.
2. PROPOSED LOCATION OF TEMPORARY 'MCC' WITH MTS, FINAL LOCATION TO BE DETERMINED BY CONTRACTOR WITH THE OWNER'S APPROVAL. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PLACEMENT.
3. EXISTING 'MDP' TO BE REMOVED.
4. LOCATION OF EXISTING EQUIPMENT TO RECONNECT TO PROPOSED MCC. RE: E-10
5. DISCONNECT AND REMOVE EXISTING DISCONNECT SWITCHES FEEDING SUMP PUMPS 1 AND 2. REMOVE EXISTING WIRE AND CONDUIT BACK TO SOURCE. FIELD VERIFY EXISTING CONDITIONS PRIOR TO START OF DEMOLITION WORK.
6. DISCONNECT AND REMOVE EXISTING GENERATOR SETS 1 AND 2. SALVAGE AND RETURN GENERATOR SETS BACK TO OWNER UNLESS OWNER INDICATES TO RECYCLE. CONTRACTOR MUST HAVE APPROVAL FROM THE OWNER PRIOR TO DEMOLISHING THE EMERGENCY GENERATOR SETS.
7. PROVIDE A TEMPORARY 200KW PORTABLE STANDBY EMERGENCY GENERATOR SET TO CONNECT TEMPORARY MTS AND MCC. LOCATION TO BE DETERMINED AND COORDINATED WITH DD7. FIELD VERIFY EXISTING CONDITIONS PRIOR TO MAKING FINAL CONNECTION.
8. ELECTRICAL DEMOLITION DRAWING DOES NOT SHOW ALL EQUIPMENT FED FROM THE EXISTING MCC TO BE TRANSFERRED TO THE TEMPORARY MCC. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL THE EQUIPMENT FED FROM THE EXISTING MCC TO ESTABLISH THE BEST ROUTE TO TRANSFER THE LOAD TO THE TEMPORARY MCC.



Texas Registered Engineering Firm F- 2144

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ND NICHOLS**

6uite 500  
Houston, TX 77024  
Phone - (713) 600-6800  
Web - [www.freese.com](http://www.freese.com)

## DEMOLITION NOTES:

1. THE CONTRACTOR SHALL INSTALL A TEMPORARY 'MCC' INSIDE THE PUMPS STATION JUST ACROSS THE ROOM FROM THE EXISTING 'MCC'. EXACT LOCATION AND CONDUIT ROUTE SHOULD BE COORDINATED WITH THE ENGINEER.
2. THE CONTRACTOR SHALL NOT LEAVE THE PUMP STATION OUT OF OPERATION WHILE TRANSFERRING THE LOAD TO/FROM THE TEMPORARY 'MCC' FROM THE MAIN PANEL LOCATED INSIDE THE PUMP STATION. THIS INCLUDES A NEW TEMPORARY 300A BREAKER.
3. CONTRACTOR SHALL COORDINATE WITH OWNER THE ORDER OF THE LOAD TO BE TRANSFERRED TO THE TEMPORARY 'MCC'. SPECIAL CONSIDERATION SHALL BE GIVEN TO THE LOAD THAT HAS REDUNDANCY.
4. UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER, A SUGGESTED LOAD RELOCATION SHALL BE IN THE FOLLOWING ORDER FROM THE EXISTING 'MCC' TO THE TEMPORARY 'MCC':
  - AIR COMPRESSOR #1(APPROXIMATE LOCATION REFER TO DETAIL 1 THIS SHEET)
  - OIL PUMP #1(REFER TO DETAIL 2 AND CONTRACTOR TO FIELD VERIFY EXACT LOCATION)
  - LP-A (30KVA TRANSFORMER)(APPROXIMATE LOCATION REFER TO DETAIL 1 THIS SHEET)
  - LP-B (30KVA TRANSFORMER)(APPROXIMATE LOCATION REFER TO DETAIL 1 THIS SHEET)
  - RAKE FEED #1(LOCATED OUTSIDE OF THE BAR SCREENS)
  - MOV#1(CONTRACTOR TO FIELD VERIFY EXACT LOCATION)
  - MOV#2(CONTRACTOR TO FIELD VERIFY EXACT LOCATION)
  - MOV#3(CONTRACTOR TO FIELD VERIFY EXACT LOCATION)
  - EXHAUST FAN 1A(APPROXIMATE LOCATION REFER TO DETAIL 1 THIS SHEET)
  - EXHAUST FAN 1B(APPROXIMATE LOCATION REFER TO DETAIL 1 THIS SHEET)
  - EXHAUST FAN 1C(APPROXIMATE LOCATION REFER TO DETAIL 1 THIS SHEET)
  - SUPPLY FAN 1A(APPROXIMATE LOCATION REFER TO DETAIL 1 THIS SHEET)
  - AIR COMPRESSOR #2(APPROXIMATE LOCATION REFER TO DETAIL 1 THIS SHEET)
  - OIL PUMP #2(REFER TO DETAIL 2 AND CONTRACTOR TO FIELD VERIFY EXACT LOCATION)
  - RAKE FEED #2(LOCATED OUTSIDE OF THE BAR SCREENS)
5. THE TWO SUMP PUMP (60HP) COULD CONTINUE TO BE FED FROM THEIR ACTUAL SOURCE, EXISTING 'MDP', WHILE THE OLD 'MCC ' IS BEING REPLACED.
6. CONTRACTOR TO COORDINATE WITH OWNER ON DOWNTIME TIMEFRAME AND PROVIDE 2 WEEKS OF WRITTEN NOTICE TO THE OWNER PRIOR TO START OF DEMOLITION WORK . AFTER RECEIVING THE OWNER'S AUTHORIZATION TO START WORK , IT IS REQUIRED THAT THE CONTRACTOR PROVIDE A DETAILED STEP PLAN OF THE PROCEDURE TO REPLACE THE EXISTING 'MCC' THAT INCLUDES, BUT WITHOUT LIMITATION, THE SAFETY PROCEDURES (INCLUDING THE LOCKOUT- TAGOUT), THE RISK AND THE MITIGATION ACTION FOR EVERY STEP. CONTRACTOR TO GIVE THE OWNER 48 HOURS NOTICE PRIOR TO A SHUTDOWN, DUE TO WEATHER THE OWNER HAS A RIGHT TO REFUSAL.
7. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE A PRE-WORK WALK TO GO THROUGH THE DETAILED STEP PLAN FOR APPROVAL BY OWNER

F&N JOB NO.		JFF	
		DATE 05/15	
		DESIGNED	
		DRAWN	
		REVISED	
		CHECKED	
VERIFY SCALE	1	FILE NAME	
	0	EL-JFF222292-R21.RVT	
NO.	ISSUE	BY	DATE
Bar is one inch on original drawing. If not one inch on this sheet, adjust scale.			

A scale bar with markings at 0, 4', 8', and 16'. Below the bar is the text "1/8\" data-bbox="111 100 300 140" data-label="Text"> $\text{--} = 1'-0"$

ISSUED FOR BID

## **GENERAL NOTES**

1. ALL EQUIPMENT SHOWN BOLD TO BE PROVIDED UNDER THIS CONTRACT.
2. ALL RECEPTACLE, LIGHTING, AND MISCELLANEOUS EQUIPMENT WIRING LESS THAN 150'-0" IN LENGTH WILL BE 2 #12, #12G., #3/4"C. MINIMUM. ALL RECEPTACLE, LIGHTING, & MISCELLANEOUS EQUIPMENT WIRING OVER 150'-0" IN LENGTH WILL BE 2 #10, #10G., 1"C. MINIMUM UNLESS SPECIFIED OTHERWISE.
3. PROVIDE AN UNSWITCHED "HOT" CONNECTION TO THE CHARGING CIRCUIT OF ALL FIXTURES THAT ARE BEING PROVIDED WITH INTEGRAL BATTERY PACKS.

## **NOTES BY SYMBOL "**

1. MOUNT LIGHT FIXTURE TYPE "A" SURFACE MOUNTED AT 14'-0" AFF.
2. MOUNT LIGHT FIXTURE AT 11'-6" AFF.
3. EXIT SIGN SHALL NOT BE FED THROUGH A SWITCH. IT SHALL REMAIN ON. MOUNT EXIT SIGN AT 1'-0" ABOVE DOORWAY.

A circular seal for a professional engineer. The outer ring contains the text "TEXAS REGISTERED ENGINEERING FIRM F-2144" at the top and "05/12/2023" at the bottom. The inner circle features a five-pointed star at the top, the name "JOSE MANUEL CURET" in the center, the number "126134" below it, and the words "LICENSED PROFESSIONAL ENGINEER" around the bottom. The entire seal is set against a background of a grid of small stars.

**FREES  
E NICHOLS**  
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Suite 500  
Houston, TX 77024  
Phone - (713) 600-6800  
Web - [www.freese.com](http://www.freese.com)

LANE BAYOU PUMP STATION  
GENERATORS AND BUILDING  
ELECTRICAL  
GENERATOR BUILDING  
LIGHTING PLAN

VERIFY SCALE	1	Bar is one inch on original drawing. If not one inch on this sheet, adjust scale.	FILE NAME	EL-JFF22292-R21.RVT
ISSUE	BY	DATE	REVISED	CHECKED
O.O.				
			DESIGNED	DATE 05/1
			DRAWN	JF

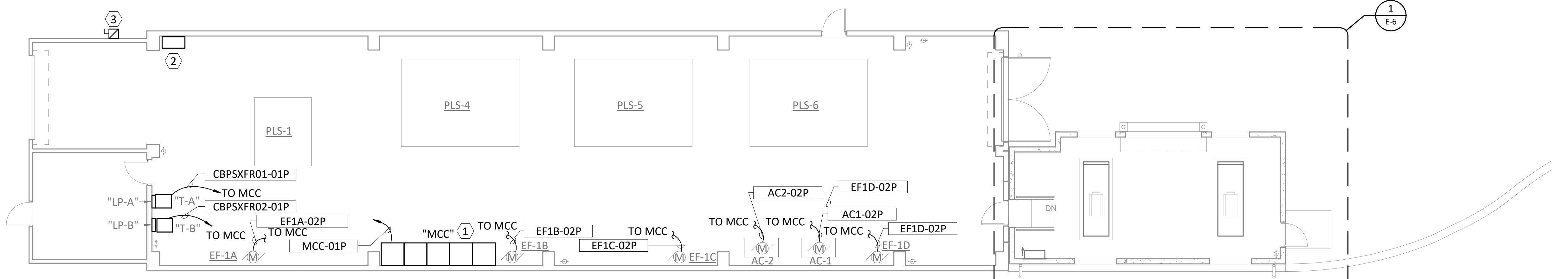
This schematic diagram illustrates a piping system with the following components and flow paths:

- WP 2 LP-G-4** (Water Pump 2) is located at the top center, connected to a horizontal pipe.
- WP 2** (Water Pump 2) is located at the bottom center, connected to a horizontal pipe.
- WPE** (Water Pump Element) is located on the right side, connected to a vertical pipe labeled **X**.
- LP-G-4** (Liquid Pump 4) is located at the top center and bottom center, connected to a horizontal pipe.
- LP-G-11** (Liquid Pump 11) is located in the center, connected to a vertical pipe.
- DN** (Diameter) is indicated on the left side of the diagram.
- 3a** and **3b** are labels for specific sections of piping.
- AE** (Air Eliminator) is indicated on several vertical pipes.
- (TYP) 1** is a label for a typical component, with a callout pointing to a vertical pipe section.
- a** and **b** are labels for specific sections of vertical pipes, often indicating different flow paths or valve positions.
- 3** is a label for a valve or component located on the right side.

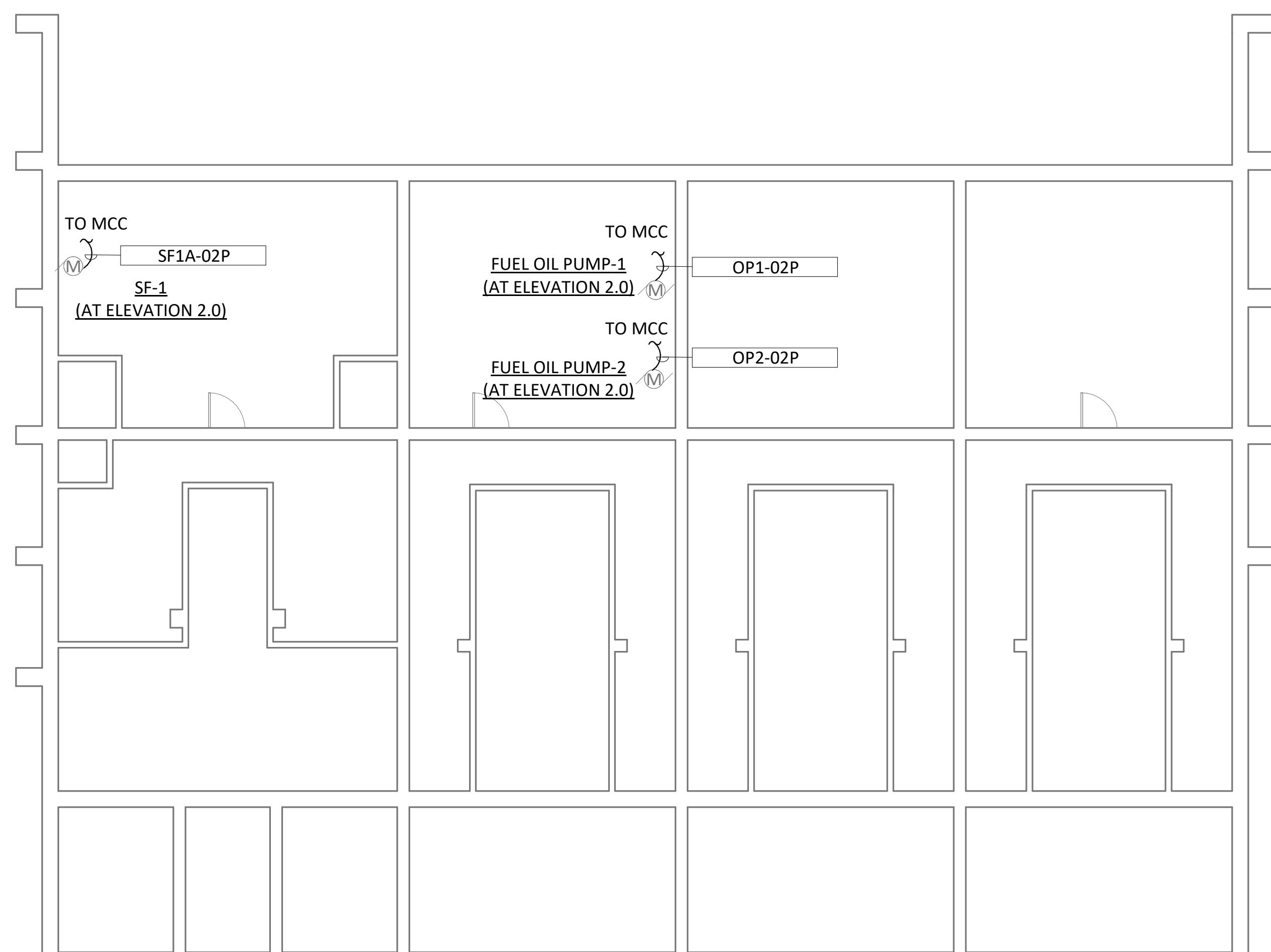
 **LIGHTING PLAN**  
1/2" = 1'-0"

A horizontal scale bar representing 4' (feet). It features a black and white checkered pattern on the left side. A shorter black bar is overlaid on the scale, with markings for 1' and 2' on its left side, and 4' on its right side. Below the scale bar, the text "1' 2' 4'" is printed.

E-4



1 POWER PLAN PUMP ROOM AT 13.5 ELEVATION  
1/8" = 1'-0"

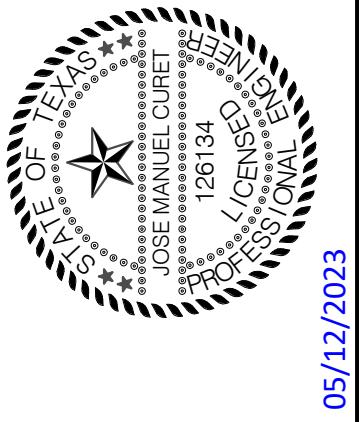


2 EXISTING PUMP BUILDING - GRADE LEVEL POWER  
PLAN AT 4.5 ELEVATION  
1/8" = 1'-0"

0 4' 8' 16'  
1/8" = 1'-0"

SHEET E-5  
SEQ. 28

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JEFFERSON COUNTY, TX  
CRANE BAYOU PUMP STATION  
GENERATORS AND BUILDING  
ELECTRICAL  
GENERATOR BUILDING  
POWER PLANS

F&I JOB NO.		DATE 05/15/2023		DESIGNED MCD		DRAWN GTN		REVISED		CHECKED JMC	
NO.	ISSUE	BY	DATE	FILE NAME							
				EL-JFF2229-R21.RVT							

## GENERAL NOTES:

1. ALL EQUIPMENT SHOWN BOLD TO BE PROVIDED UNDER THIS CONTRACT.
2. THE CONTRACTOR WILL BE RESPONSIBLE FOR SIZING AND PROVIDING ALL PULL BOXES AND JUNCTION BOXES AS REQUIRED BY THE NATIONAL ELECTRICAL CODE.
3. REFER TO ONE-LINE DIAGRAM FOR FINAL DESTINATIONS OF CABLES AND CONDUITS. ALL CIRCUITS AND FEEDERS SHALL BE ROUTED IN SEPARATE CONDUITS PER ONE-LINE DIAGRAMS UNLESS NOTED OTHERWISE.
4. POWER, DISCRETE, ANALOG SIGNAL AND COMMUNICATION CONDUCTORS SHALL BE ROUTED IN SEPARATE CONDUITS.
5. ALL RECEPTACLE, LIGHTING, AND MISCELLANEOUS EQUIPMENT WIRING LESS THAN 150'-0" IN LENGTH WILL BE 2 #12, #12G, #3/4"C. MINIMUM. ALL RECEPTACLE, LIGHTING, & MISCELLANEOUS EQUIPMENT WIRING OVER 150'-0" IN LENGTH WILL BE 2 #10, #10G., 1"C. MINIMUM UNLESS SPECIFIED OTHERWISE.
6. STUB AND CAP ALL SPARE CONDUITS AT THE FLOOR WITH A PULL STRING.
7. PROVIDE A LOCAL FIRE ALARM ON THE OUTSIDE OF THE BUILDING FOR EMERGENCY SHUTDOWN.
8. ALL ANALOG (4-20mA) SIGNALS, AND COMMUNICATION SIGNALS (CAT 6) WILL BE ROUTED IN PVC COATED RIGID STEEL CONDUIT FOR ALL UNDERGROUND APPLICATIONS. RE: E-12
9. CONTRACTOR WILL PROVIDE ALL MATERIALS AS REQUIRED FOR A COMPLETE GROUNDING SYSTEM. THE GROUNDING PLAN DOES NOT SHOW ALL GROUNDING AS REQUIRED BY CODES, STANDARDS, AND THE SPECIFICATIONS. THE CONTRACTOR WILL GROUND ALL EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND SPECIFICATION SECTION 26 06 26, GROUNDING AND BONDING FOR ELECTRICAL SYSTEM.
10. THE GROUNDING RING CONDUCTOR WILL BE #4/0 BARE TINNED COPPER.
11. PROVIDE ALL REQUIRED MONITOR MODULES, RELAYS, WIRING AND CONDUITS FOR COMPLETE OPERATIONAL SYSTEM.
12. A/V DEVICE LAYOUT INDICATED IS BASED ON 75cd MINIMUM STROBES. STROBE INTENSITY SHALL FIELD SELECTABLE TO ACHIEVE THE REQUIRED COVERAGE THROUGHOUT THE SPACE IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 72 AND THE SPECIFICATIONS.
13. DEVICES SHALL BE SUITABLE FOR THE ENVIRONMENT AND APPLICATION OF ASSOCIATED SPARE/AREA.
14. A LICENSED FIRE PROTECTION ENGINEER SHALL REVIEW AND STAMP/SEAL THE FINAL ALARM SYSTEM DESIGN. DEVICES ON THESE PLANS ARE BASED ON PRESCRIPTION BASED REQUIREMENTS.



111

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ND NICHOLS**

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CRANE BAYOU PUMP STATION  
GENERATORS AND BUILDING

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ELECTRICAL  
GENERATOR BUILDING  
ENLARGED POWER PLAN

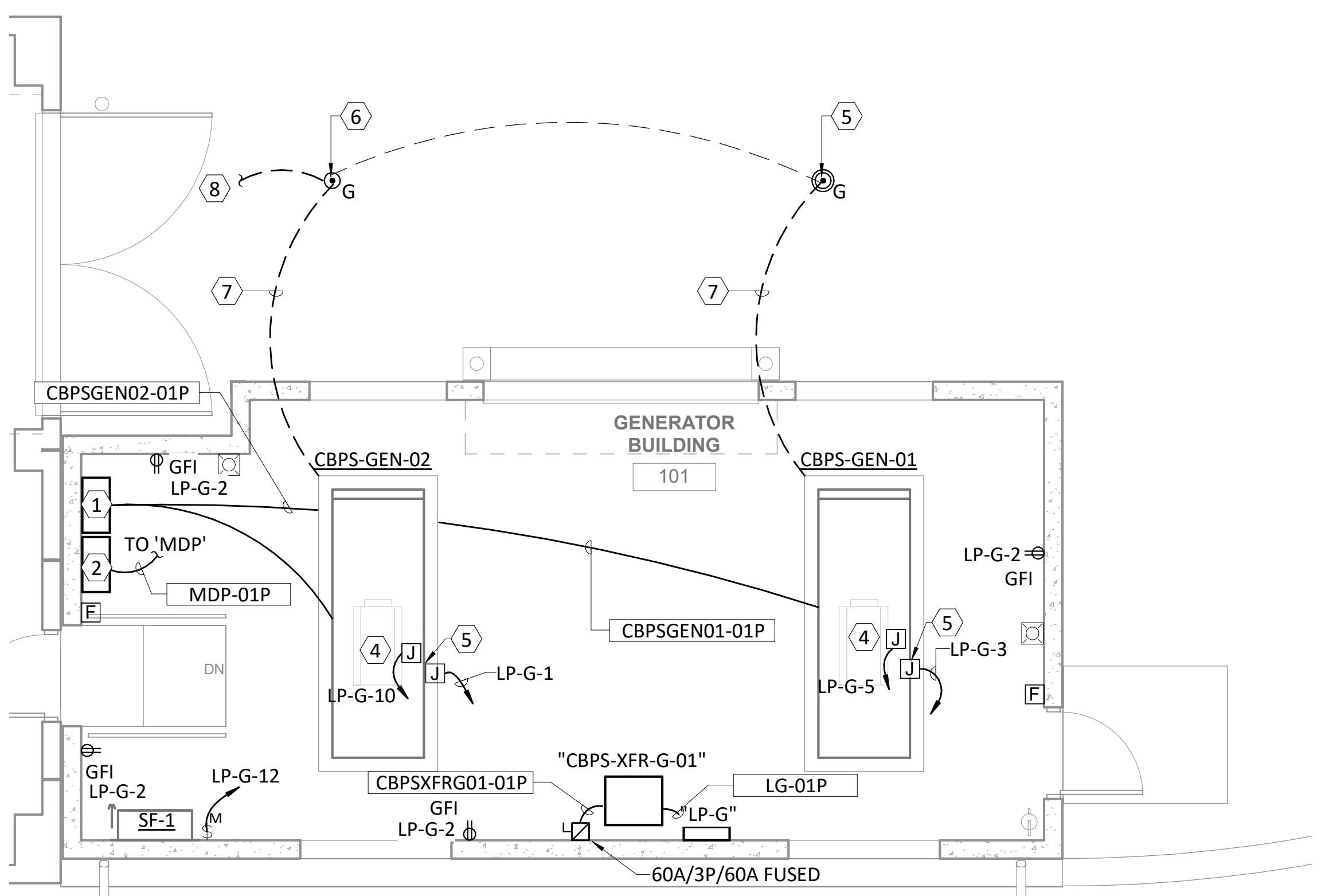
# YOU PURCHASE MOTORS AND GENERATORS

## ELECTRICAL

### GENERATOR BU RGED POW

## **NOTES BY SYMBOL "hexagon"**

1. 400A GENERATOR SELECTOR SWITCH. RE: E-10
2. 400A 'ATS'. RE: E-10
3. GENERATOR BATTERY CHARGER.
4. GENERATOR BLOCK HEATER.
5. GROUND ROD TEST WELL.
6. 3/4" X 10' COPPER CLAD GROUND ROD.
7. GENERATOR GROUND CONNECTION. COORDINATE WITH THE GENERATOR MANUFACTURER FOR EXACT LOCATION OF GROUND CONNECTION.
8. CONNECT GROUNDING ELECTRODE CONDUCTOR TO EXISTING BUILDING GROUND SYSTEM. FIELD VERIFY LOCATION OF EXISTING GROUND PRIOR TO START OF WORK.



# POWER, GROUNDING AND FA PLAN GENERATOR BUILDING

1  
E-5      BUILDING  
1/4" = 1'-0"

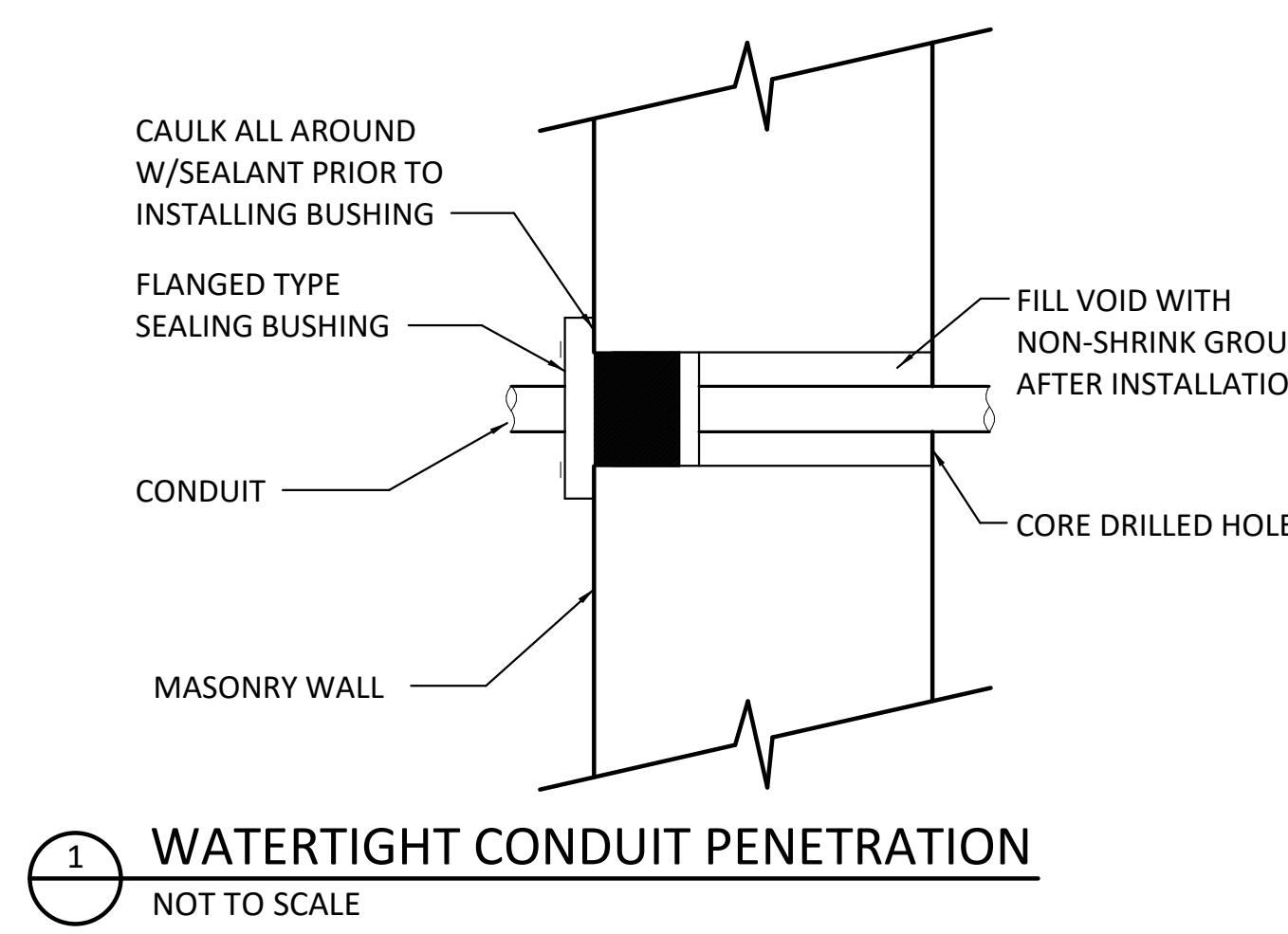
1/4" = 1'-0"

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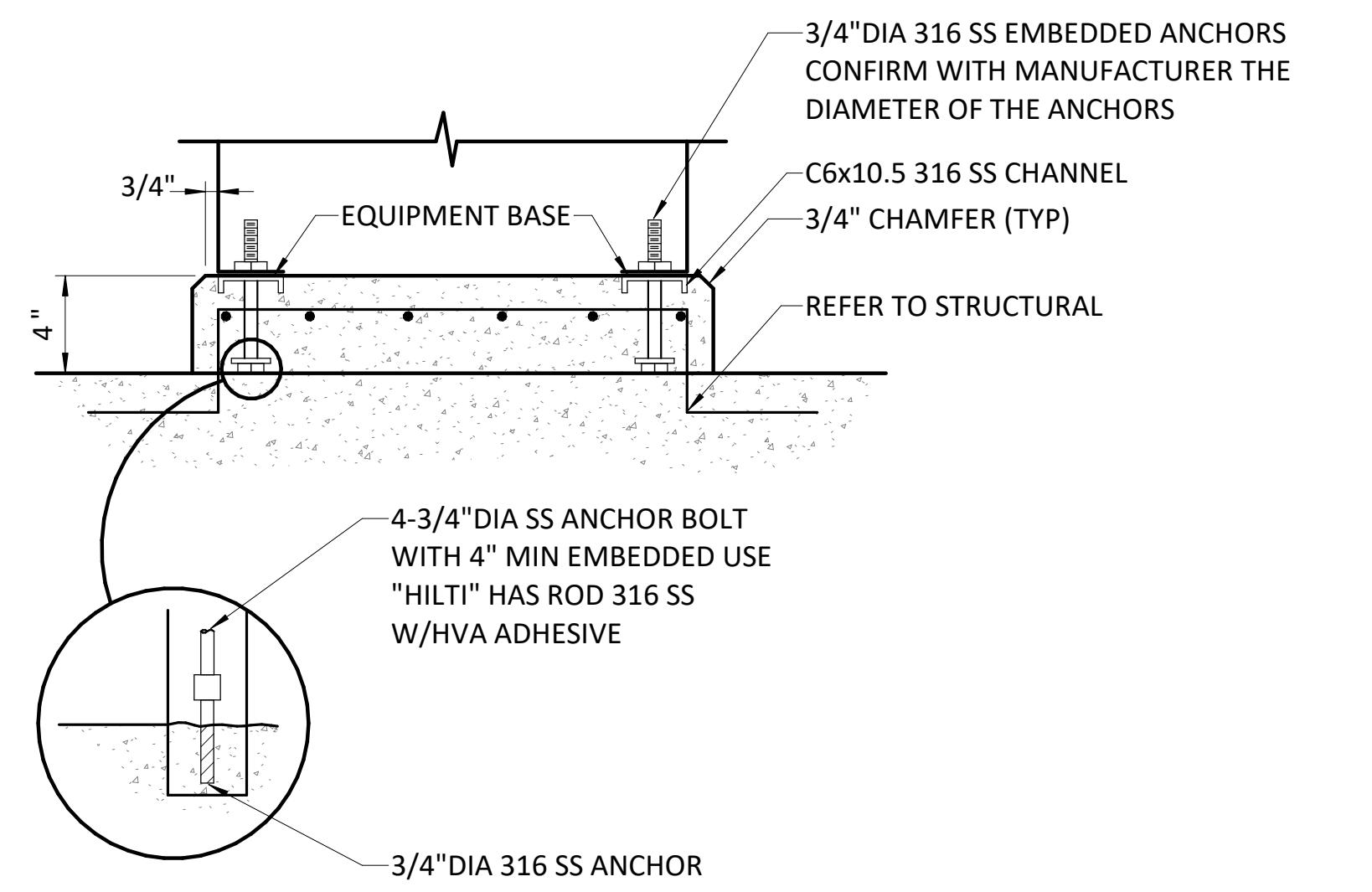
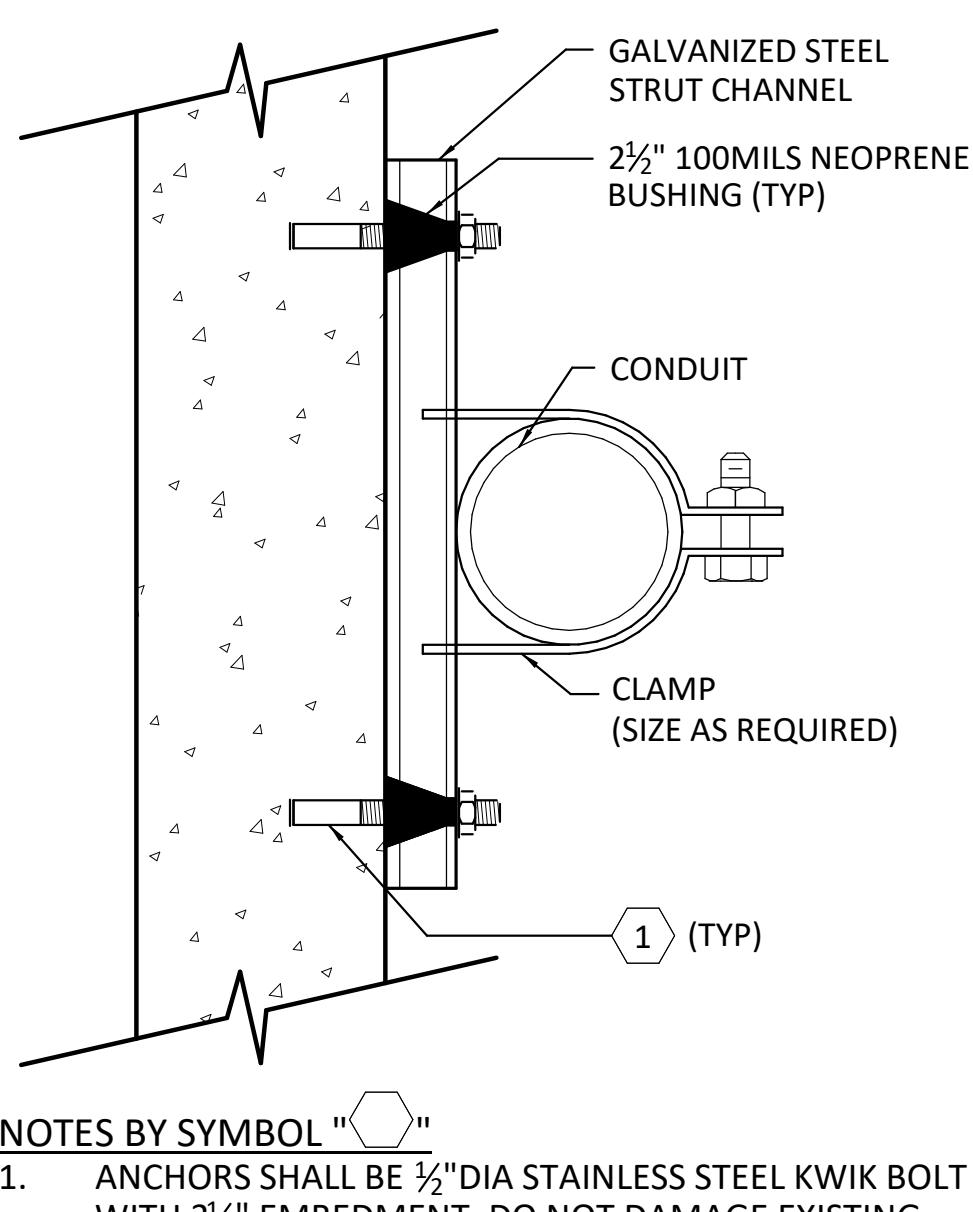
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				REVISED
				DATE 05/15
				JFF

EEET  
E-6  
Q.  
29

## ISSUED FOR BID



2 CEILING OR WALL EXPOSED CONDUIT  
INSTALLATION  
NOT TO SCALE



JEFFERSON COUNTY, TX  
CRANE BAYOU PUMP STATION  
GENERATORS AND BUILDING  
ELECTRICAL  
DETAILS I

F&N JOB NO.		DATE 05/15/2023		DESIGNED MCD		DRAWN GTN		REVISED		CHECKED JMC	
NO.	ISSUE	BY	DATE	NO.	ISSUE	BY	DATE	NO.	ISSUE	BY	DATE
0	Bar is one inch on original drawing, if not one inch on this sheet, adjust scale.			1	Bar is one inch on original drawing, if not one inch on this sheet, adjust scale.			1	Bar is one inch on original drawing, if not one inch on this sheet, adjust scale.		

SHEET E-7  
SEQ. 30

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Freeze and Nichols, Inc.  
Texas Registered Engineering Firm F-2144  
CO-REGISTRATION  
126134  
LICENSED  
PROFESSIONAL  
CIVIL  
05/12/2023

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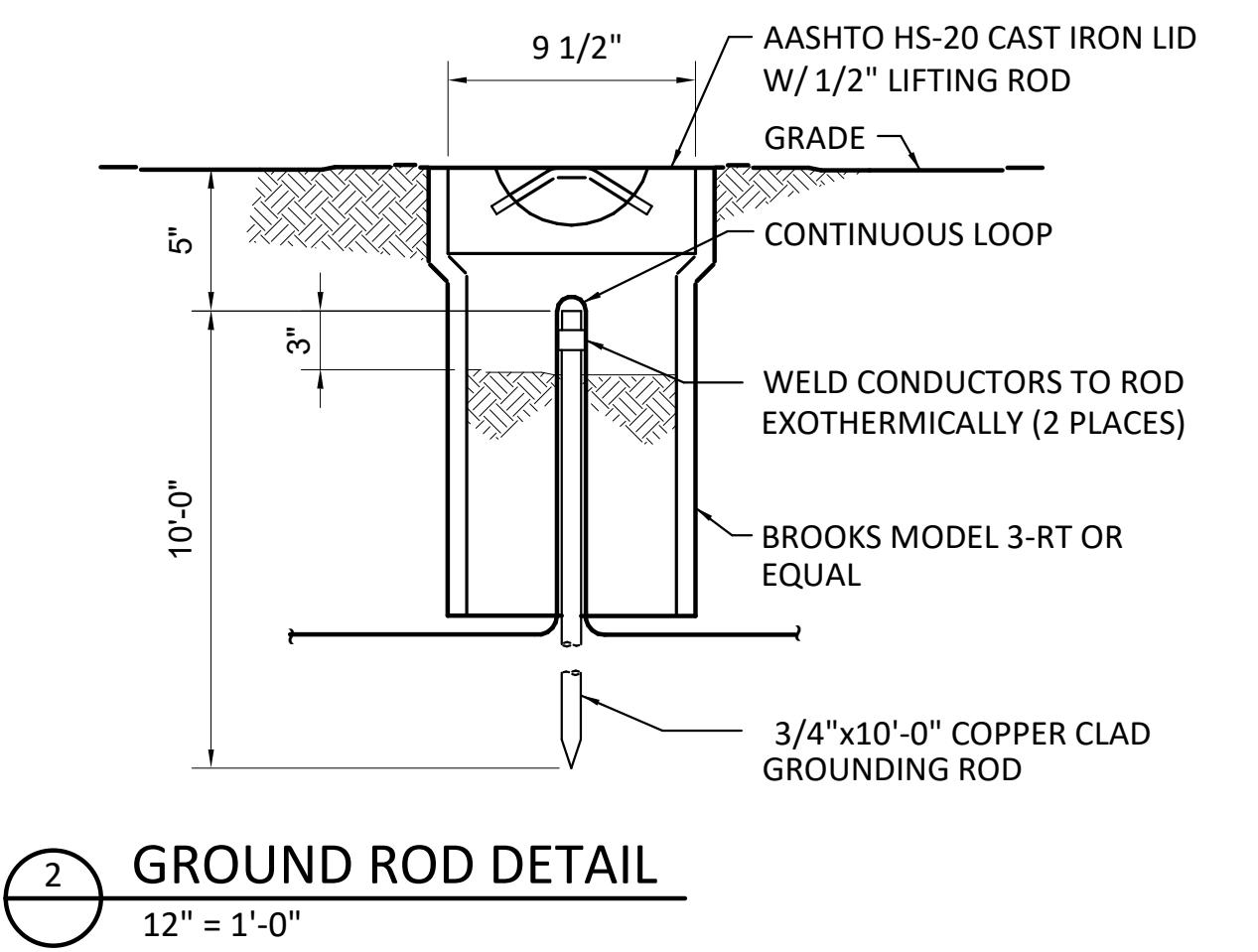
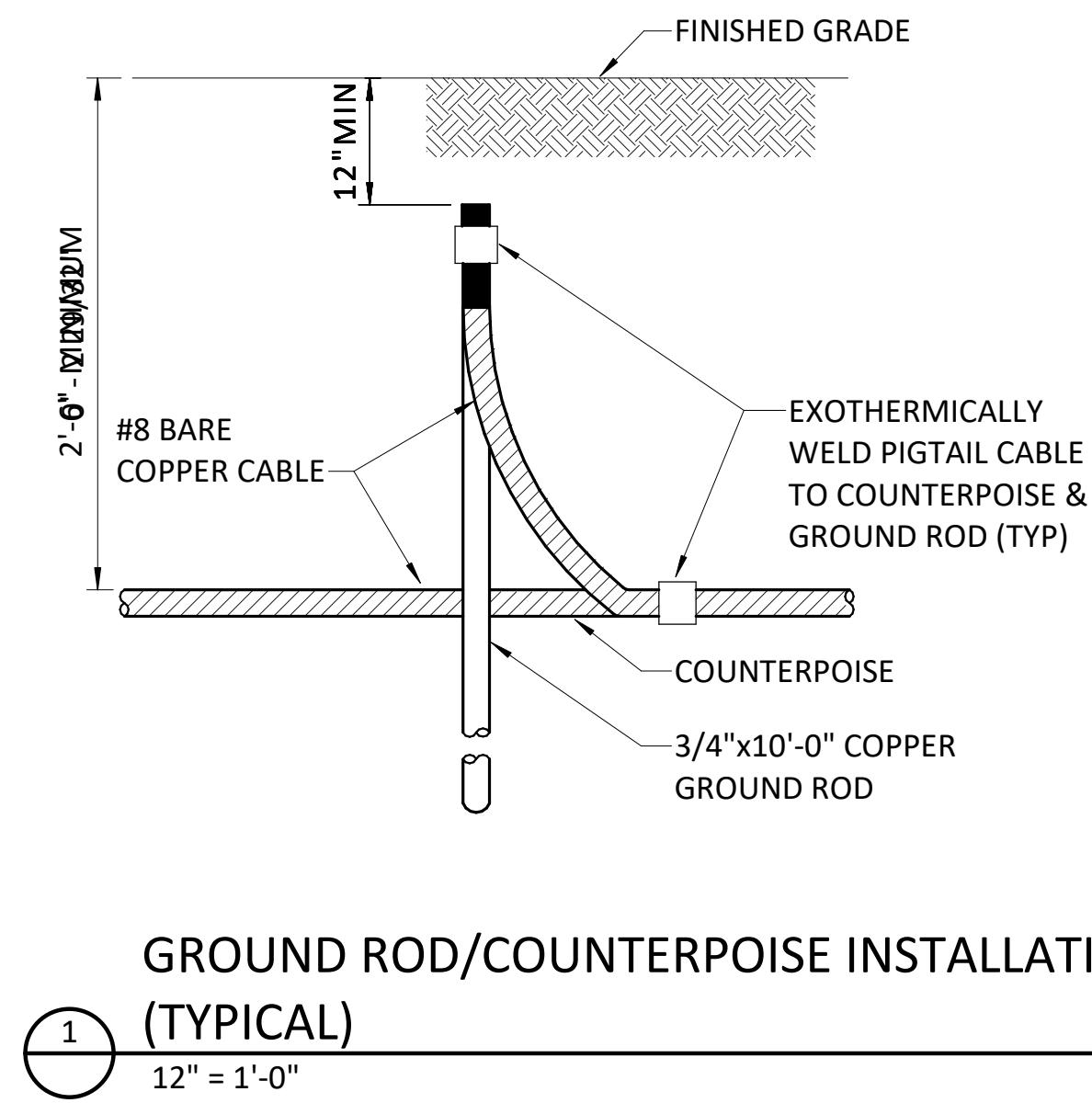
JEFFERSON COUNTY, TX  
CRANE BAYOU PUMP STATION  
GENERATORS AND BUILDING  
ELECTRICAL

DETAILS II

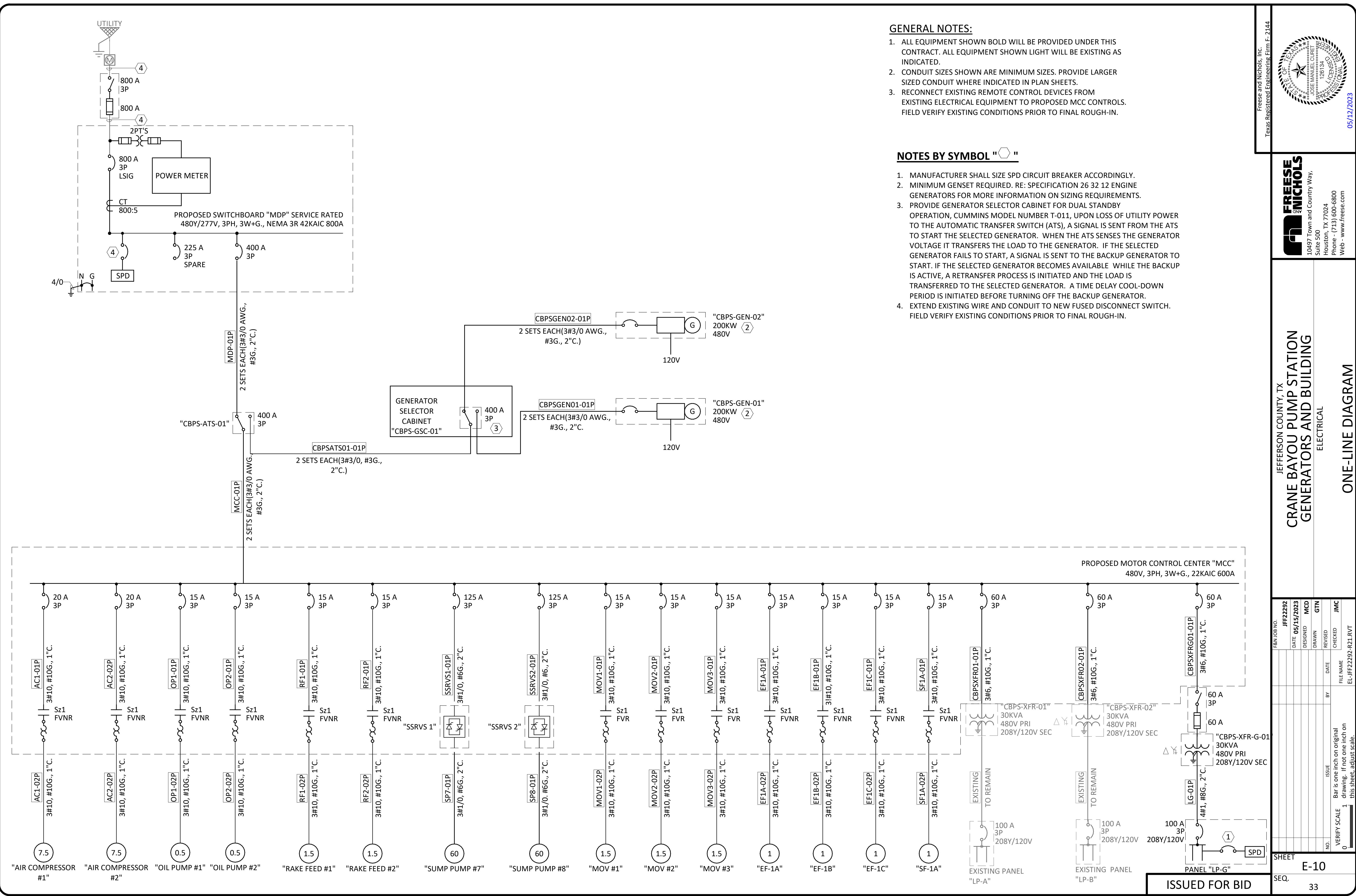
F&N JOB NO.	JFF2222	DATE	05/15/2023
DESIGNED	MCD	DRAWN	MCD
REvised	-	CHECKED	JMC
NO.	ISSUE	BY	DATE
VERIFICATION	Bar is one inch on original drawing, if not one inch on this sheet, adjust scale.	FILE NAME	EL-JFF2222-R21.RVT

SHEET  
E-8  
SEQ.  
31

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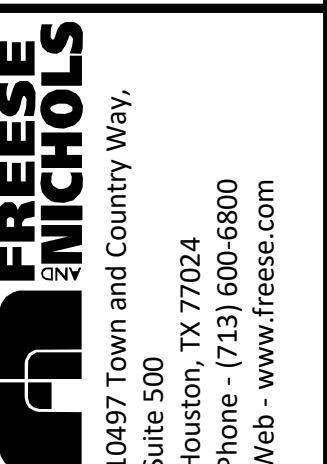
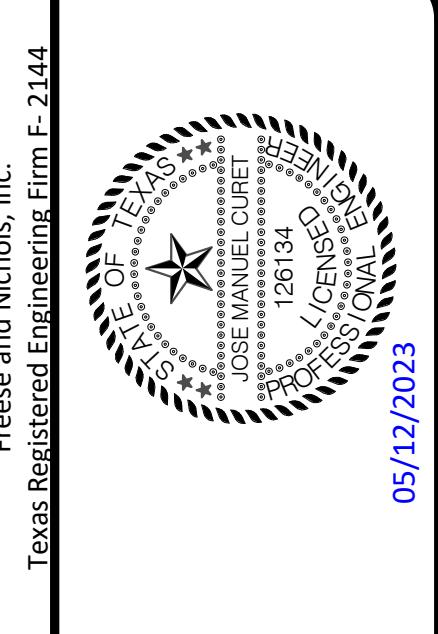
PANEL NO. LP-G		MCB RATING 100 A						LOCATION GENERATOR BUILDING 101					
SERVICE VOLTAGE 208Y/120V		BUS RATING 100 A						FEED FROM					
A.I.C. 22,000		NEUTRAL BUS 100%						SECTIONS 1					
CKT NO.	DESCRIPTION	POLE	TRIP	A	B	C	TRIP	POLE	DESCRIPTION	CKT NO.			
1	GENERATOR BLOCK HEATER - GENERATOR	1	20 A	1500	720				20 A	1	RECEPTACLES - GENERATOR BUILDING	2	
3	GENERATOR BLOCK HEATER - GENERATOR	1	20 A		1500	141			20 A	1	EXTERIOR LIGHTING	4	
5	GENERATOR BATTERY CHARGER -	1	20 A			1800	0	20 A	1	SPARE	6		
7	SPARE	1	20 A	0	0				20 A	1	SPARE	8	
9	SPARE	1	20 A		0	1800			20 A	1	GENERATOR BATTERY CHARGER -	10	
11	LIGHTING	1	20 A			538	696	20 A	1	SF-1	12		
13	SPARE	1	20 A	0	0				20 A	1	SPARE	14	
15	SPARE	1	20 A		0	0			20 A	1	SPARE	16	
17	SPARE	1	20 A			0	0	20 A	1	SPARE	18		
19	SPARE	1	20 A	0	0				20 A	1	SPARE	20	
21	SPARE	1	20 A		0	0			20 A	1	SPARE	22	
23	SPARE	1	20 A			0	0		20 A	1	SPARE	24	
25	SPARE	1	20 A	0	0				20 A	1	SPARE	26	
27	SPARE	1	20 A		0	0			20 A	1	SPARE	28	
29	SPARE	1	20 A			0	0	20 A	1	SPARE	30		
31	PREPARED SPACE	1	--	--			--	1	PREPARED SPACE	32			
33	PREPARED SPACE	1	--		--		--	1	PREPARED SPACE	34			
35	PREPARED SPACE	1	--			--	--	1	PREPARED SPACE	36			
37	PREPARED SPACE	1	--	--			--	1	PREPARED SPACE	38			
39	PREPARED SPACE	1	--		--		--	1	PREPARED SPACE	40			
41	PREPARED SPACE	1	--			--	--	1	PREPARED SPACE	42			
PHASE TOTALS			2220 VA	3434 VA	3012 VA								
			19 A	30 A	26 A								
PANEL UNBALANCE			23 %										

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
Lighting	679 VA	125.00%	849 VA	TOTAL CONNECTED LOAD: 8664 VA
Other	696 VA	100.00%	696 VA	TOTAL CONNECTED AMPS: 24 A
Receptacle	720 VA	100.00%	720 VA	NON COINCIDENT LOAD: 0 VA
Other Equipment/Apparatus	6600 VA	100.00%	6600 VA	NON COINCIDENT AMPS: 0 A
				TOTAL DEMAND LOAD: 8826 VA
				TOTAL DEMAND LOAD AMPS: 24 A

NOTES:



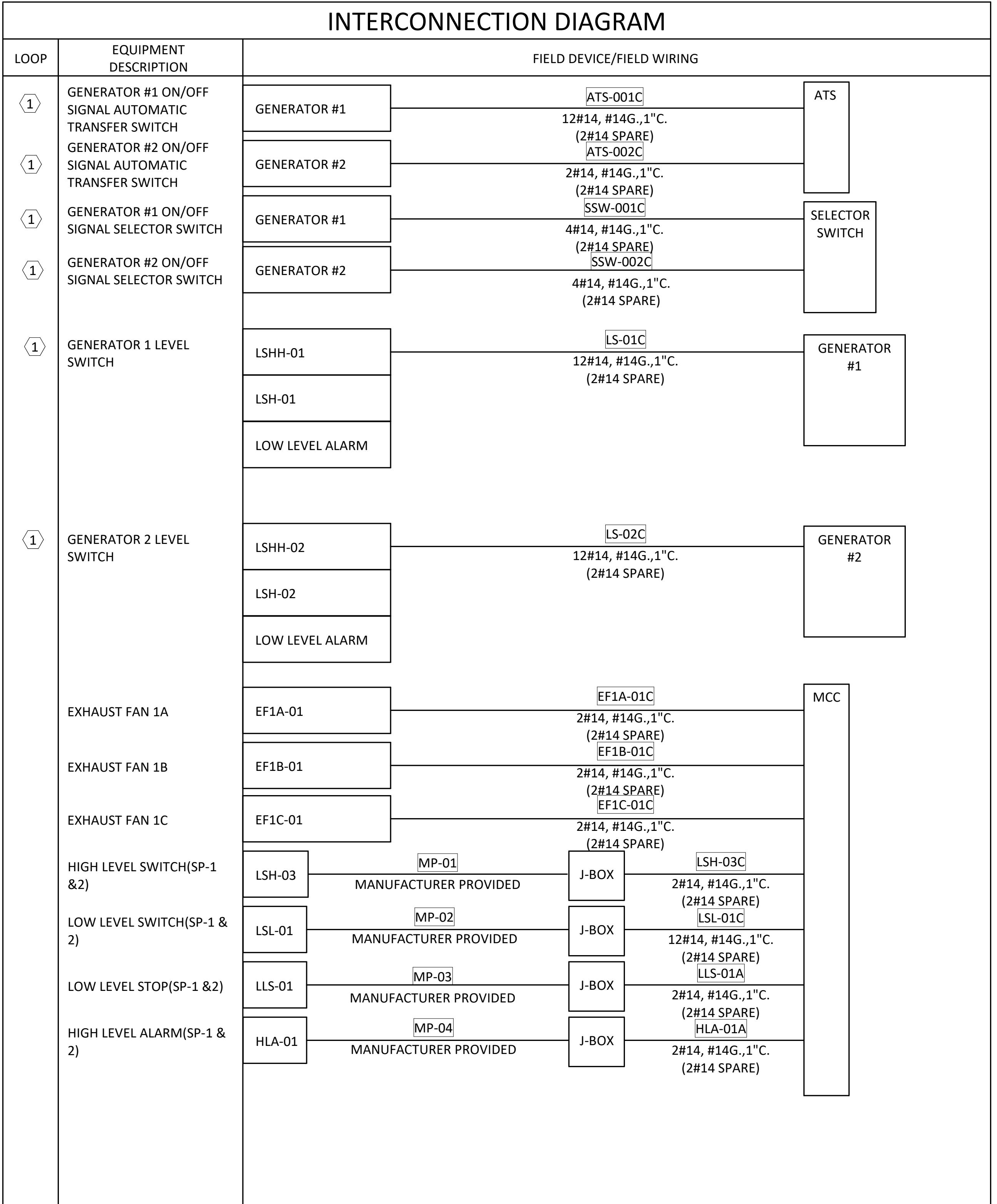
JEFFERSON COUNTY, TX  
CRANE BAYOU PUMP STATION  
GENERATORS AND BUILDING  
ELECTRICAL

PANEL SCHEDULE AND LIGHT FIXTURE SCHEDULE

LIGHTING FIXTURE SCHEDULE						
TYPE	MANUFACTURER	CATALOG NO.	DESCRIPTION	LAMPS	VOLT.	WATTS
A	HOLOPHANE	EMX-L48-10000LM-FGCL-MD-40K-90CRI-DGXD	LED ENCLOSED AND GASKETED 4' 4000K 10,000 LUMENS RIBBED FROSTED ACRYLIC 0-10V DIMMING 120-277V	LED	120 V	67 VA
AE	HOLOPHANE	EMX-L48-10000LM-FGCL-MD-40K-90CRI-DGXD-E10WLCP	SAME AS LIGHT FIXTURE 'A', EXCEPT WITH EMERGENCY BATTERY PACK	LED	120 V	67 VA
WP	HOLOPHANE	HLWPC2-P20-40K-AS-T3M-BKSDP-MASL	LED EXTERIOR WALLPACK WITH FULL CUTOFF, MOTION SENSOR AND PHOTOCELL	LED	120 V	47 VA
WPE	HOLOPHANE	HLWPC2-P20-40K-AS-T3M-BKSDP-MASL-EM	SAME AS LIGHT FIXTURE 'WP', EXCEPT WITH EMERGENCY BATTERY PACK	LED	120 V	47 VA
X	LITHONIA	LQC W 1 R ELN	DIE CAST ALUMINUM LED EXIT SIGN WITH 120VAC INPUT AND NICKEL-CADMIUM BATTERY BACK-UP	LED	120 V	2 VA

FILE NO.	ISSUE DATE	BY	FILE NAME
0	1	Bar is one inch on original drawing, if not one inch on this sheet, adjust scale.	EL-JFF2229-R21.RVT

SHEET E-11  
SEQ. 34  
ISSUED FOR BID



**NOTES BY SYMBOL "○"**

1. LOCATION TO BE VERIFIED WITH GENERATOR MANUFACTURER.

																																											
<b>FREEZE NICHOLS</b> 10497 Town and Country Way Suite 500 Houston, TX 77024 Phone - (713) 600-6800 Web - www.freeze.com																																											
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<b>INTERCONNECTION DIAGRAM</b>																																											
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">F&amp;N JOB NO.</td> <td style="width: 10%;">DATE</td> <td style="width: 10%;">ISSUE</td> <td style="width: 10%;">BY</td> <td style="width: 10%;">DATE</td> <td style="width: 10%;">FILE NAME</td> </tr> <tr> <td>JFF22292</td> <td>05/15/2023</td> <td></td> <td></td> <td></td> <td>EL-JFF22292-R21.RVT</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DESIGNED</td> <td>MCD</td> <td>DRAWN</td> <td>GTM</td> <td>REVISED</td> <td>JMC</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NO.</td> <td>VERIFICATION</td> <td>SCALE</td> <td>NO.</td> <td>VERIFICATION</td> <td>SCALE</td> </tr> <tr> <td>0</td> <td>Bar is one inch on original drawing, if not one inch on this sheet, adjust scale.</td> <td></td> <td>1</td> <td>Bar is one inch on original drawing, if not one inch on this sheet, adjust scale.</td> <td></td> </tr> </table>		F&N JOB NO.	DATE	ISSUE	BY	DATE	FILE NAME	JFF22292	05/15/2023				EL-JFF22292-R21.RVT							DESIGNED	MCD	DRAWN	GTM	REVISED	JMC							NO.	VERIFICATION	SCALE	NO.	VERIFICATION	SCALE	0	Bar is one inch on original drawing, if not one inch on this sheet, adjust scale.		1	Bar is one inch on original drawing, if not one inch on this sheet, adjust scale.	
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<b>SHEET</b> <b>E-12</b> <b>SEQ.</b> <b>35</b>																																											