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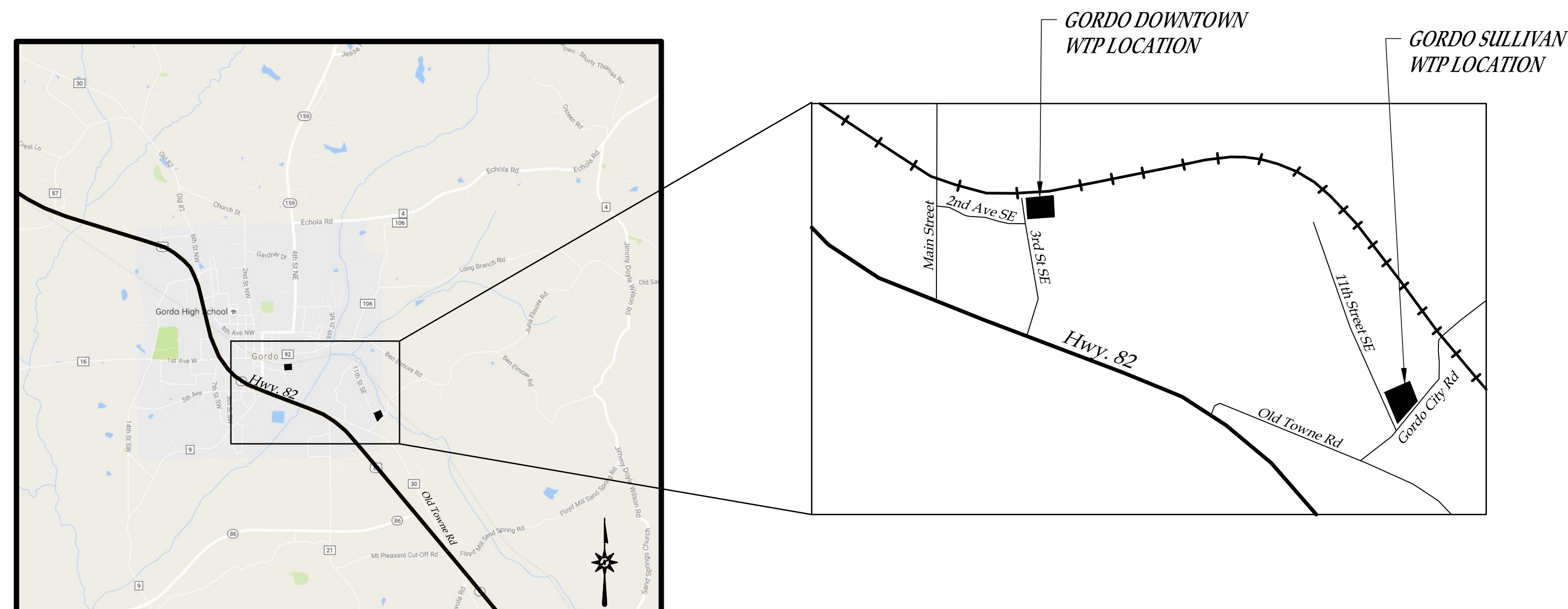
# CONSTRUCTION PLANS for GORDO WATER, GAS, AND SEWER BOARD SULLIVAN WATER TREATMENT PLANT REHABILITATION PHASE 2 - EQUIPMENT BUILDING & CLEARWELL REHAB (DWSRF #FS010412-01)

NEEL SCHAFFER, INC PROJECT #NS. 17174.001

OCTOBER 2023

GORDO, AL

SHEET INDEX	
TITLE SHEET	TS
GENERAL NOTES	G-1
SULLIVAN WTP SITE PLAN	C-1
BUILDING DEMOLITION PLAN	C-2
AERATOR DEMOLITION PLAN	C-3
CLEARWELL DEMOLITION PLAN	C-4
EQUIPMENT BUILDING - PROPOSED IMPROVEMENTS	C-5
EQUIPMENT BUILDING PROPOSED IMPROVEMENTS	C-6
AERATOR - PROPOSED IMPROVEMENTS	C-7
CLEARWELL - PROPOSED IMPROVEMENTS	C-8
HIGH SERVICE PUMP SECTION	C-9
CHLORINE AND CHEMICAL FEED SYSTEMS	C-10
DOWNTOWN WTP SITE PLAN	C-11
CIVIL STANDARD DETAILS	CD-1
STRUCTURAL NOTES	S-1
STRUCTURAL PLANS	S-2
STRUCTURAL ELEVATIONS	S-3
ELECTRICAL LEGEND	E-01
ELECTRICAL NOTES & FIXTURE SCHEDULE	E-02
SINGLE LINE DIAGRAMS	E-03
SULLIVAN WTP ELECTRICAL SCHEDULES	E-04
DOWNTOWN WTP ELECTRICAL SCHEDULES	E-05
CONTROL & INSTRUMENTATION SCHEDULE	E-06
ELEMENTARY DIAGRAMS	E-07
ELEMENTARY DIAGRAMS	E-08
SULLIVAN SITE ELECTRICAL DEMOLITION PLAN	E-10
SULLIVAN WTP SITE ELECTRICAL PLAN	E-11
SULLIVAN SITE SUPPLEMENTAL GROUNDING PLAN	E-12
SULLIVAN WTP BUILDING - ELECTRICAL PLAN	E-13
SULLIVAN WTP BUILDING - LIGHTING & RECEPT. PLAN	E-14
SULLIVAN WTP BUILDING - HVAC ELECTRICAL PLAN	E-15
SULLIVAN WTP BUILDING - GROUNDING PLAN	E-16
SULLIVAN CLEARWELL ELECTRICAL PLAN	E-17
SULLIVAN WTP AERATOR & WHEEL PUMP ELEC. PLAN	E-18
DOWNTOWN WTP ELECTRICAL PLAN	E-21
ELECTRICAL DETAILS	E-31
ELECTRICAL DETAILS	E-32
ELECTRICAL DETAILS	E-33



VICINITY MAP  
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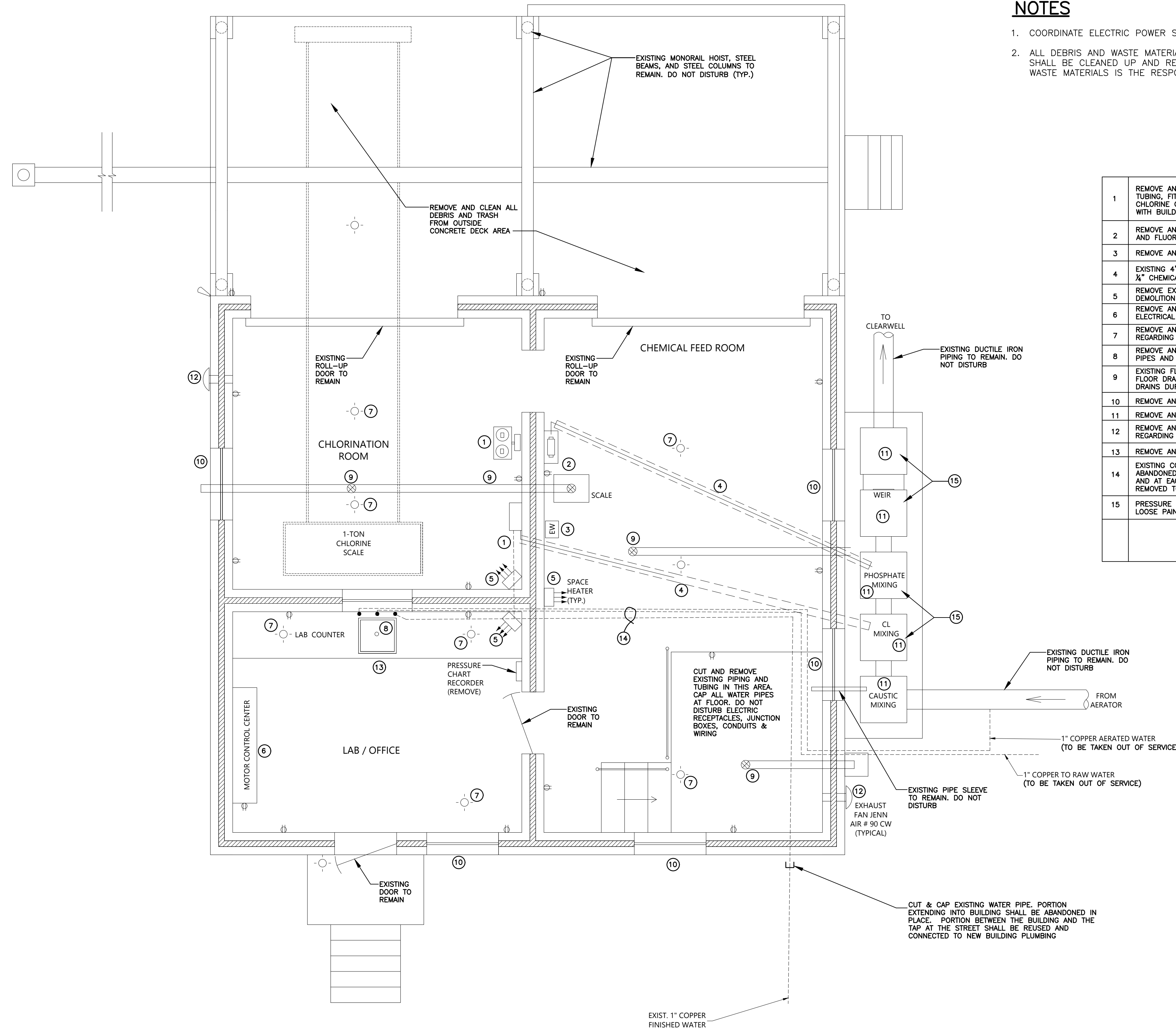
*Phillip R. Guin*  
09/28/2023

PHILLIP R. GUIN, P.E.









**PLAN**

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

**NOTES**

- COORDINATE ELECTRIC POWER SERVICE DISCONNECT WITH POWER COMPANY AS REQUIRED.
- ALL DEBRIS AND WASTE MATERIALS GENERATED BY THE CONTRACTOR DURING HIS CONSTRUCTION WORK SHALL BE CLEANED UP AND REMOVED FROM THE SITE. ALL PROPER LEGAL DISPOSAL OF DEBRIS AND WASTE MATERIALS IS THE RESPONSIBILITY OF THE CONTRACTOR.

**KEY NOTES**

1	REMOVE AND DISCARD ALL EXISTING CHLORINE EQUIPMENT INCLUDING SCALE, TUBING, FITTINGS, VENT TUBE, SOLENOID VALVE, GAS CHLORINATOR, WATER PIPING, CHLORINE GAS TUBING, ETC. CUT AND CAP ALL ABANDONED WATER PIPING FLUSH WITH BUILDING FLOOR. SWEEP AREA CLEAN AND REMOVE DIRT AND DEBRIS.
2	REMOVE AND DISCARD EXISTING FLUORIDE DRUM SCALE, FLUORIDE METERING PUMP, AND FLUORIDE TUBING. SWEEP AREA CLEAN AND REMOVE DIRT AND DEBRIS.
3	REMOVE AND DISCARD EXISTING EYE WASH FIXTURE
4	EXISTING 4" PIPE SLEEVES TO REMAIN; HOWEVER, REMOVE ALL EXISTING 3/4" AND 1/2" CHEMICAL TUBING
5	REMOVE EXISTING CEILING SPACE HEATERS. SEE ELECTRICAL DRAWINGS REGARDING DEMOLITION OF EXISTING CONDUITS AND WIRING
6	REMOVE AND DISCARD EXISTING MCC PANEL AND ELECTRICAL EQUIPMENT. SEE ELECTRICAL DRAWINGS REGARDING DEMOLITION OF EXISTING CONDUITS AND WIRING
7	REMOVE AND DISCARD EXISTING LIGHT FIXTURE. SEE ELECTRICAL DRAWINGS REGARDING DEMOLITION OF EXISTING CONDUITS AND WIRING
8	REMOVE AND DISCARD EXISTING SINK AND LAB FAUCETS. RETAIN WATER SUPPLY PIPES AND DRAIN PIPING FOR USE WITH NEW SINK AND LAB FAUCETS.
9	EXISTING FLOOR DRAINS AND DRAIN PIPING TO REMAIN. DO NOT DISTURB. COVER FLOOR DRAIN OPENINGS TO PREVENT DIRT AND DEBRIS FROM ENTERING FLOOR DRAINS DURING CONSTRUCTION.
10	REMOVE AND DISCARD EXISTING WINDOW.
11	REMOVE AND DISCARD EXISTING METAL COVER OVER THE MIXING WELLS.
12	REMOVE AND DISCARD EXISTING EXHAUST FAN. SEE ELECTRICAL DRAWINGS REGARDING DEMOLITION OF EXISTING CONDUITS AND WIRING
13	REMOVE AND DISCARD EXISTING LABORATORY COUNTERTOPS AND CABINETS
14	EXISTING COPPER WATER LINES UNDER SLAB TO BE TAKEN OUT OF SERVICE AND ABANDONED IN PLACE. CUT AND CAP EXISTING WATER LINES OUTSIDE BUILDING AND AT EACH ROOM RISER INSIDE BUILDING. EXISTING COPPER PIPE SHALL BE REMOVED TO BELOW EXISTING SLAB AND THEN CONCRETE SLAB REPAIRED.
15	PRESSURE WASH AND CLEAN MIXING WELLS. REMOVE ALL BIOLOGICAL GROWTH, LOOSE PAINTS, DIRT AND CLEAN WITH DISINFECTING AGENT.

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**EQUIPMENT BUILDING DEMOLITION PLAN**  
GORDO WATER, GAS, AND SEWER BOARD  
SULLIVAN WATER TREATMENT PLANT  
REHABILITATION, PHASE 2 - EQUIPMENT  
BUILDING & CLEARWELL REHAB  
DWSRF PROJECT #FS010412-01  
PICKENS COUNTY

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EQUIPMENT BUILDING - PROPOSED IMPROVEMENTS

GORDO WATER, GAS, AND SEWER BOARD  
SULLIVAN WATER TREATMENT PLANT  
REHABILITATION, PHASE 2 - EQUIPMENT  
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**C-5**

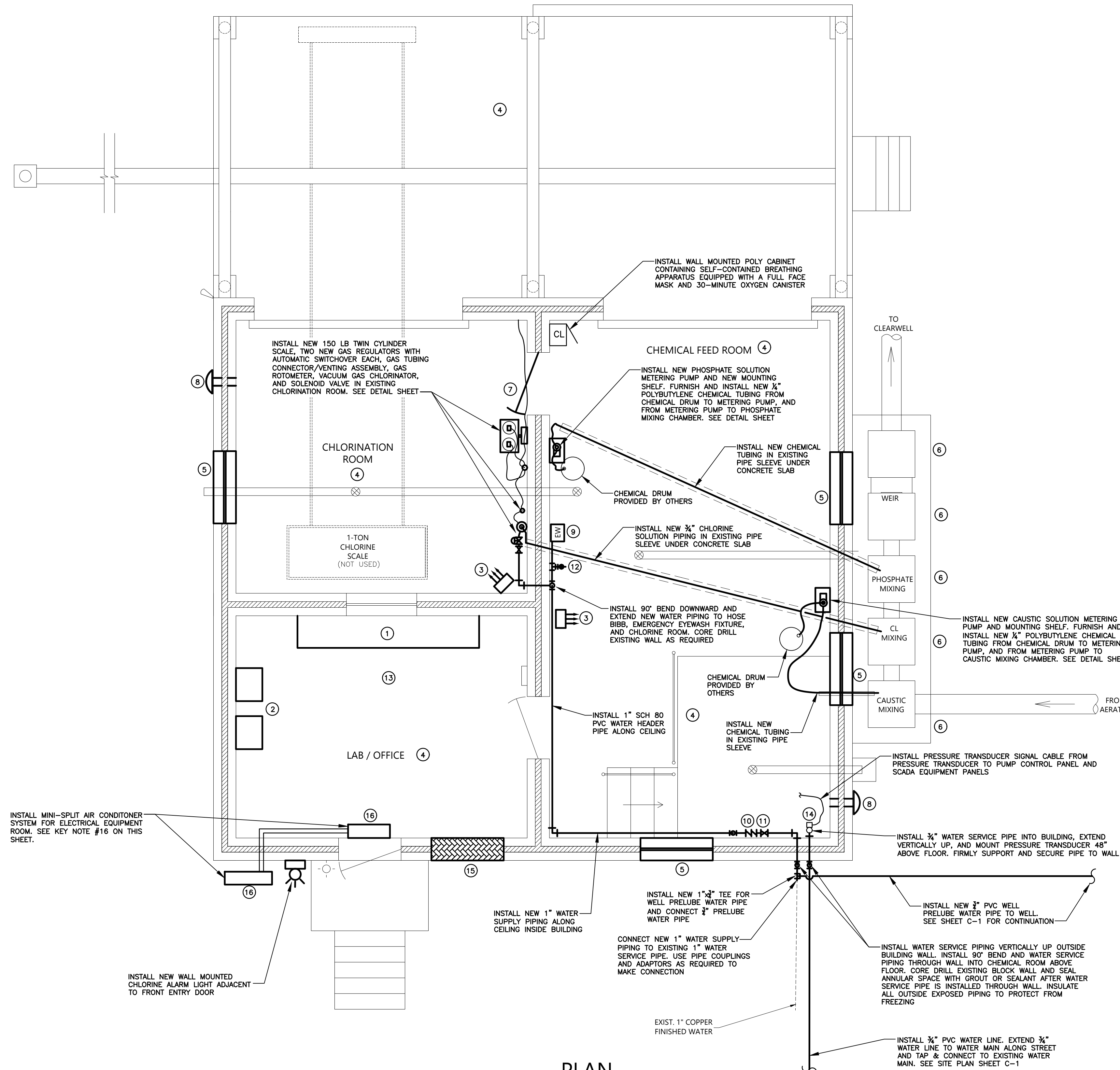
SHEET NO. 7 of 38

KEY NOTES

1	INSTALL NEW MOTOR CONTROL CENTER. SEE ELECTRICAL PLANS
2	INSTALL NEW ELECTRICAL EQUIPMENT AND ATS. SEE ELECTRICAL PLANS
3	INSTALL NEW SPACE HEATERS. MATCH EXISTING. SEE ELECTRICAL PLANS FOR CORRECT HEATER VOLTAGE.
4	INSTALL NEW CEILING MOUNTED LIGHT FIXTURES. SEE ELECTRICAL PLANS FOR DETAILS AND NEW LIGHTING PLAN
5	INSTALL NEW SINGLE HUNG DOUBLE PANE INSULATED WINDOWS
6	INSTALL NEW ALUMINUM MIXING CHAMBER COVERS. MATCH EXISTING COVERS.
7	INSTALL NEW METAL DOOR BETWEEN CHLORINATION ROOM AND CHEMICAL FEED ROOM.
8	INSTALL NEW ROOM EXHAUST FAN. MATCH EXISTING. NEW EXHAUST FANS SHALL THERMOSTAT CONTROLLED AND BE EQUIPPED WITH ADJUSTABLE THERMOSTATS. EXHAUST FANS SHALL ALSO HAVE AUXILIARY CONTACTS TO CONTROL ELECTRIC OPERATE LOUVERS.
9	INSTALL NEW EMERGENCY EYEWASH STATION AND CONNECT NEW WATER SUPPLY PIPE.
10	INSTALL NEW 1" WATER SERVICE PIPE INTO BUILDING 6" ABOVE FINISHED FLOOR AND EXTEND VERTICALLY TO CEILING. EXTEND NEW 1" WATER PIPING ALONG CEILING TO CHLORINATION EQUIPMENT AND EYEWASH STATION AS SHOWN. INSTALL TEES AND WATER PIPES FOR PRESSURE TRANSDUCERS AND HOSE BIBB AS SHOWN.
11	INSTALL 1" BALL VALVE AND 1" DOUBLE CHECK VALVE BACKFLOW PREVENTER ON 1" WATER PIPING AT POINT OF ENTRY INTO BUILDING. PROVIDE UNION FITTING BETWEEN BALL VALVE AND BACKFLOW PREVENTER TO FACILITATE ASSEMBLY AND DISASSEMBLY
12	INSTALL 1"x 1/2" TEE WITH BRANCH FACING DOWNWARD. INSTALL 90° BEND AND 1/2" HOSE BIBB 30" ABOVE FINISHED FLOOR.
13	INSTALL NEW CEILING MOUNTED LIGHT FIXTURES. ADJUST POSITION OF LIGHTS TOWARDS CENTER OF ROOM AND AWAY FROM DIRECTLY ABOVE NEW ELECTRIC EQUIPMENT. SEE ELECTRICAL PLANS FOR DETAILS.
14	INSTALL PRESSURE TRANSDUCER AND EXTEND SIGNAL WIRE TO ELECTRICAL/CONTROLS ROOM. PRESSURE TRANSDUCER TO BE AS SHOWN ON ELECTRICAL DRAWINGS AND CAPABLE OF SUPPLYING A 4-20mA OUTPUT SIGNAL
15	REMOVE EXISTING WINDOW AND PERMANENTLY CLOSE WALL OPENING USING CMU BLOCK UNITS AND BRICK TO MATCH EXISTING INSIDE AND OUTSIDE FINISHES.
16	INSTALL MINI-SPLIT AIR CONDITIONING SYSTEM FOR ELECTRICAL EQUIPMENT ROOM. SYSTEM SHALL INCLUDE OUTDOOR PAD MOUNTED UNIT AND INDOOR FAN UNIT WALL MOUNTED ABOVE ENTRY DOOR. ROUTE FREON AND SIGNAL WIRING AS NEEDED. MINI-SPLIT UNIT SHALL BE MITSUBISHI HEAT PUMP SYSTEM, OR EQUAL. CONTRACTOR IS RESPONSIBLE FOR DETERMINING NEEDED SIZE OF MINI-SPLIT UNIT FOR THE ELECTRICAL ROOM WITH NEW ELECTRICAL EQUIPMENT. MINI-SPLIT AC SYSTEM SHALL BE CAPABLE OF MAINTAINING A ROOM TEMPERATURE OF AT LEAST 75°F ON THE WARMEST SUMMER DAY.

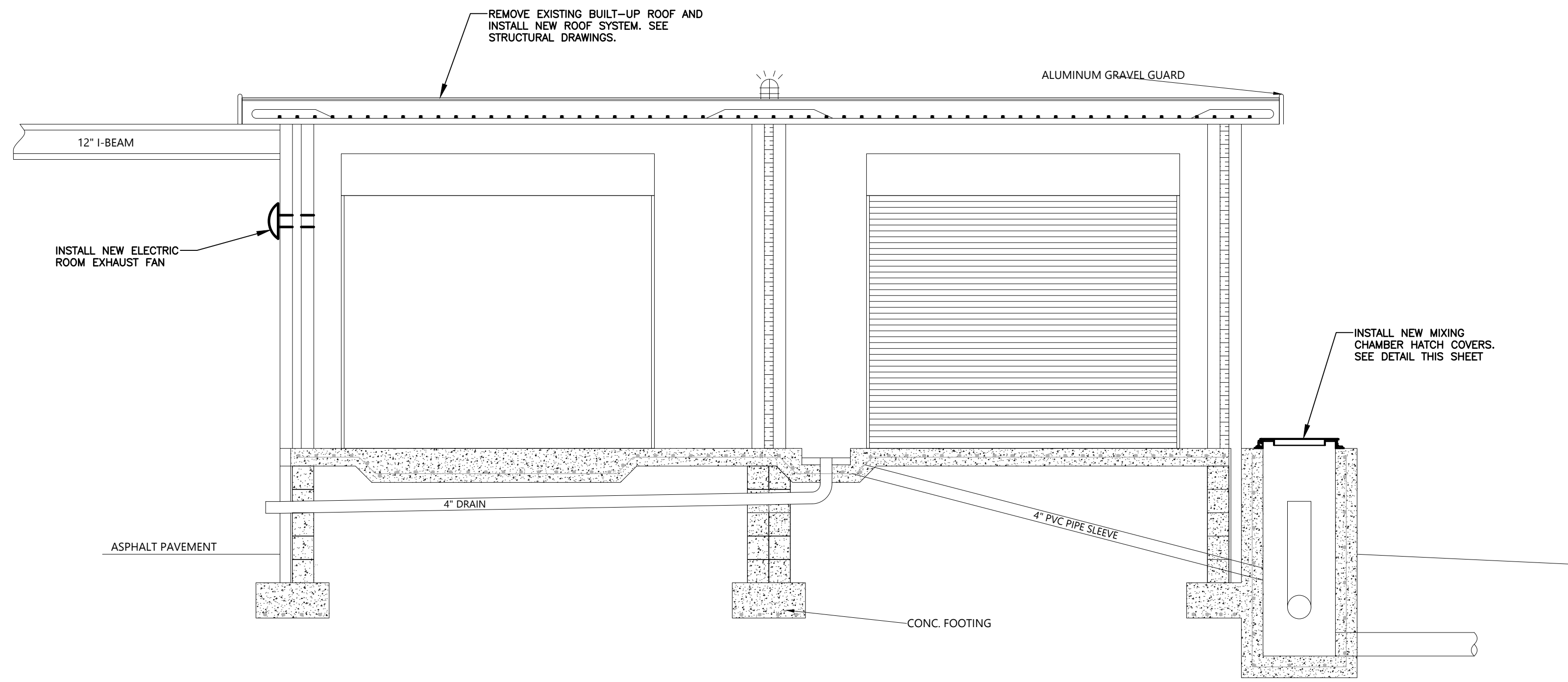
NOTES

- COORDINATE ELECTRIC POWER SERVICE DISCONNECT AND CONNECTION WITH POWER COMPANY.
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- ALL METAL DOORS AND FRAMES SHALL BE CLEANED, SCRAPED, SANDED, AND PAINTED. ALL DOOR HARDWARE SHALL BE REPLACED WITH NEW HARDWARE.
- REPAIR CEILING BOARD WHERE NECESSARY AND REPAINT CEILING THROUGHOUT BUILDING.
- ALL NEW WATER SERVICE PIPE SHALL BE SCHEDULE 80 PVC WITH EITHER SOLVENT WELD OR THREADED JOINTS. PROVIDE AT LEAST ONE UNION FITTING AT EACH FIXTURE OR VALVE TO FACILITATE ASSEMBLY AND DISASSEMBLY.
- ALL NEW WATER PIPING AND CHEMICAL PIPING SHALL BE SUPPORTED AS NEEDED AND FIRMLY ANCHORED OR STRAPPED TO WALLS OR CEILING.
- ALL DISTURBED AREAS OUTSIDE THE BUILDING SHALL BE FINISH GRADED AND RESTORED WITH SOIL.



PLAN

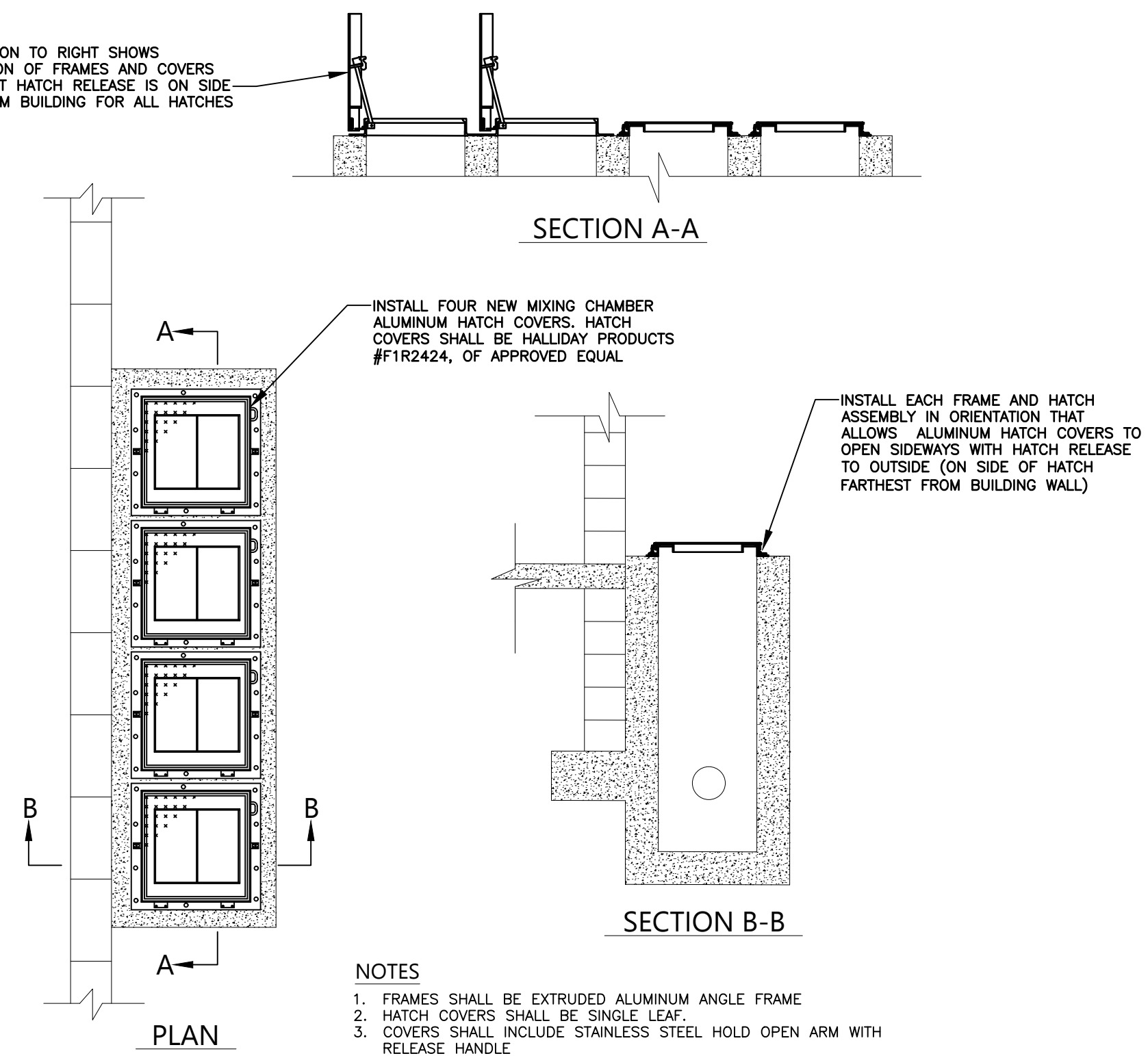
SCALE: 3/8" = 1'-0"



SECTION "A-A"

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

ILLUSTRATION TO RIGHT SHOWS ORIENTATION OF FRAMES AND COVERS SUCH THAT HATCH RELEASE IS ON SIDE AWAY FROM BUILDING FOR ALL HATCHES



SECTION A-A

SECTION B-B

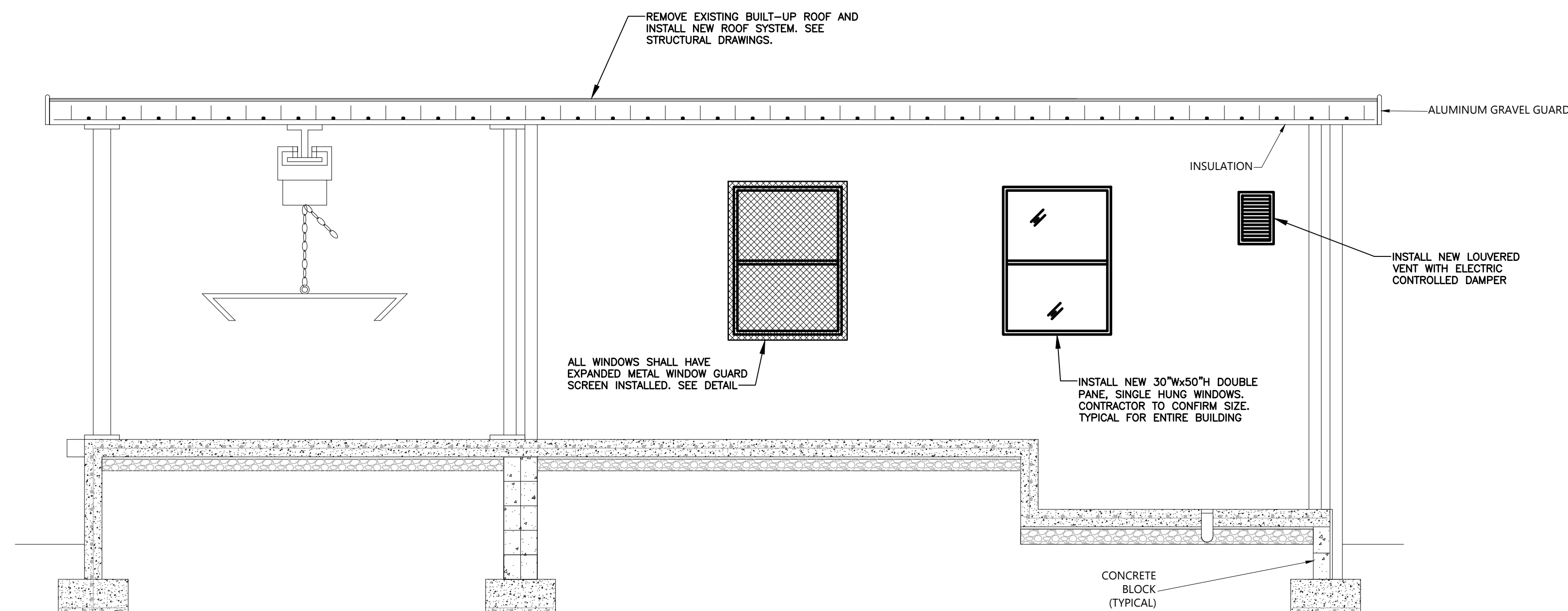
PLAN

NOTES

1. FRAMES SHALL BE EXTRUDED ALUMINUM ANGLE FRAME
2. HATCH COVERS SHALL BE SINGLE LEAF.
3. COVERS SHALL INCLUDE STAINLESS STEEL HOLD OPEN ARM WITH RELEASE HANDLE
4. HINGES AND HARDWARE SHALL BE STAINLESS STEEL
5. FRAME, HATCH COVER, AND MATCHING SURFACE TO CONCRETE SHALL BE WATER-TIGHT AND ALLOW NO WATER LEAKAGE INTO MIXING CHAMBERS, AND SHALL INCLUDE RUBBER GASKETS AS NEEDED.

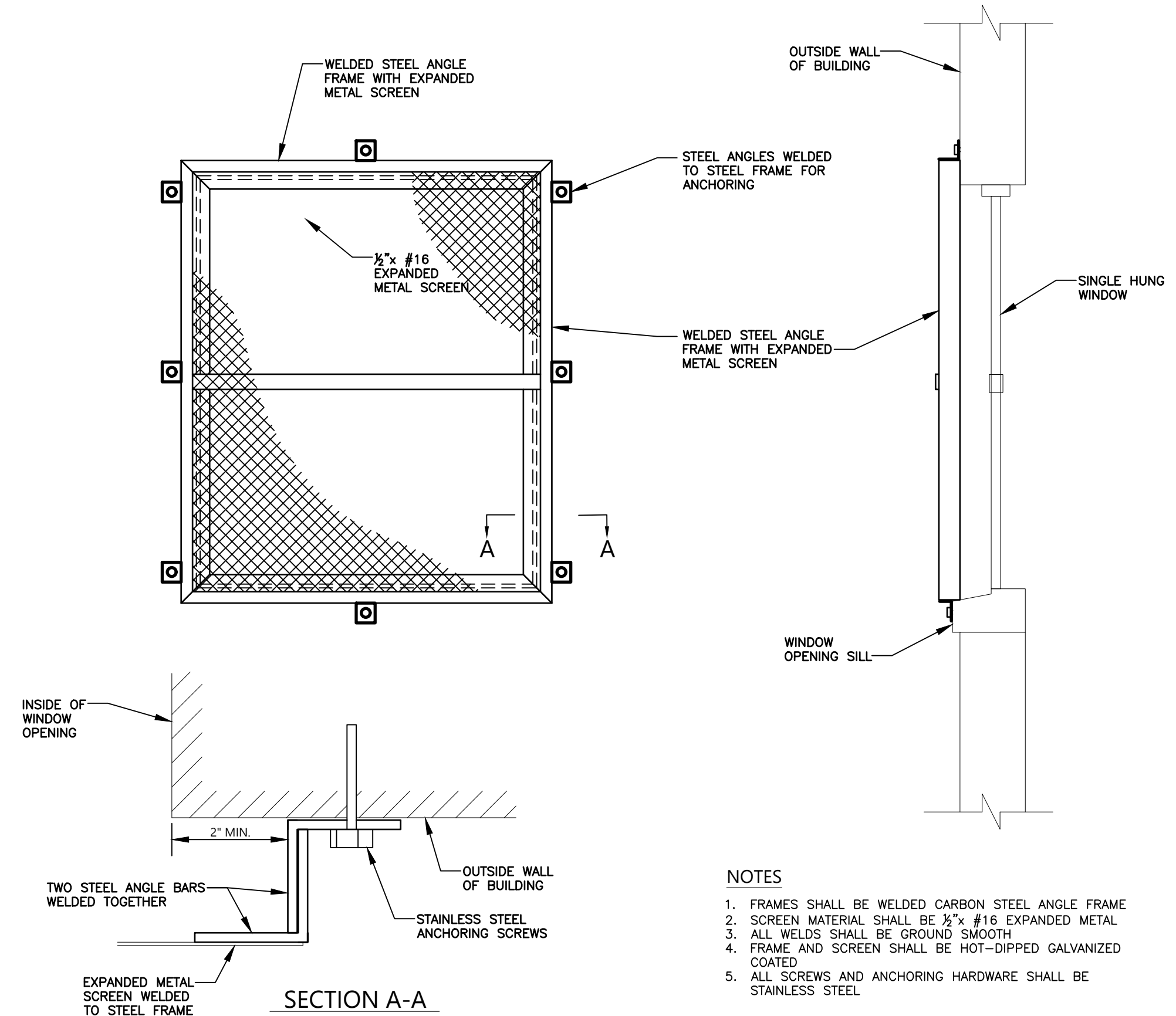
MIXING WELL COVERS

N.T.S.



SECTION "B-B"

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



NOTES

1. FRAMES SHALL BE WELDED CARBON STEEL ANGLE FRAME
2. SCREEN MATERIAL SHALL BE 1/2\"/>

WINDOW GUARDS

N.T.S.

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EQUIPMENT BUILDING - PROPOSED IMPROVEMENTS

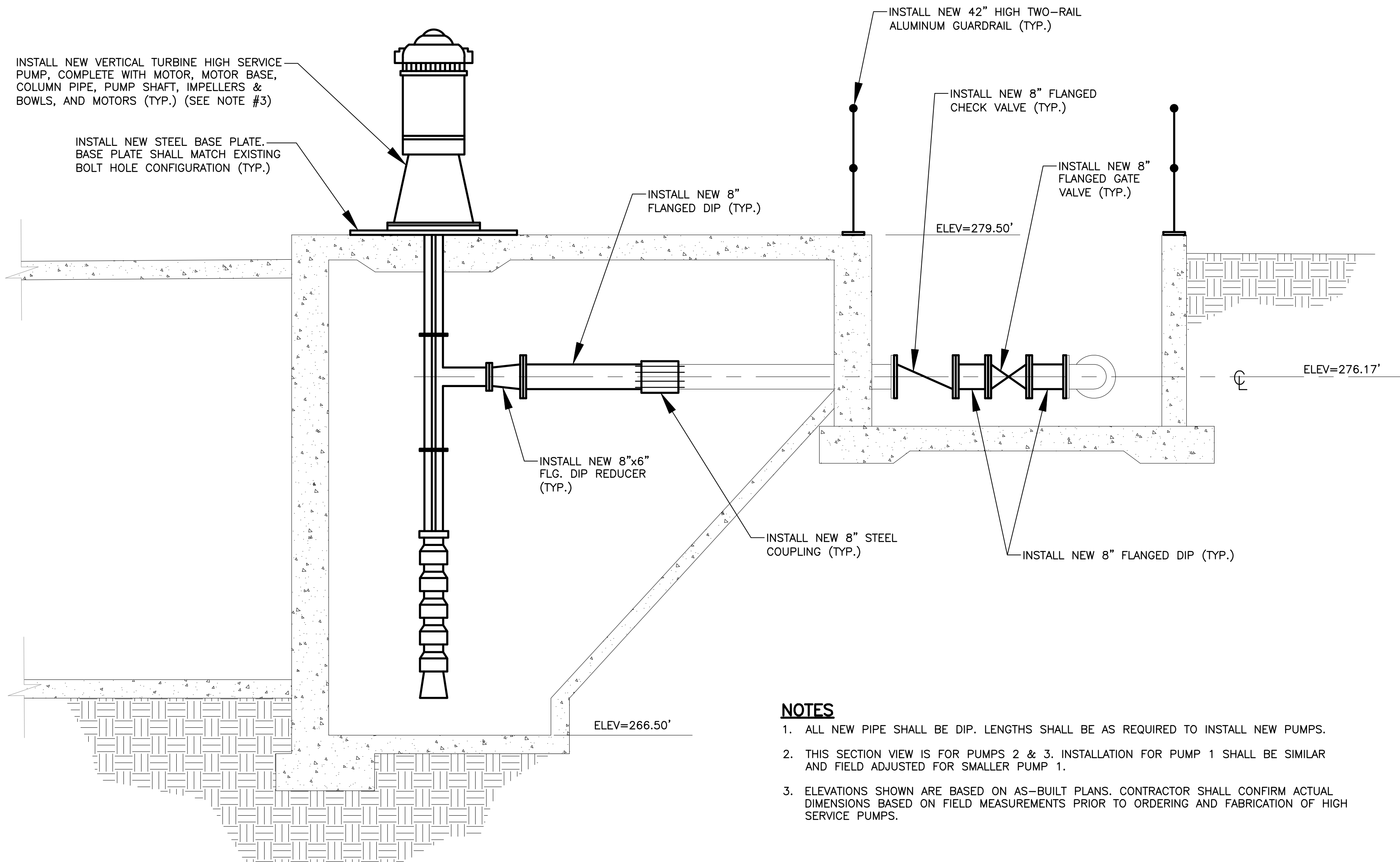
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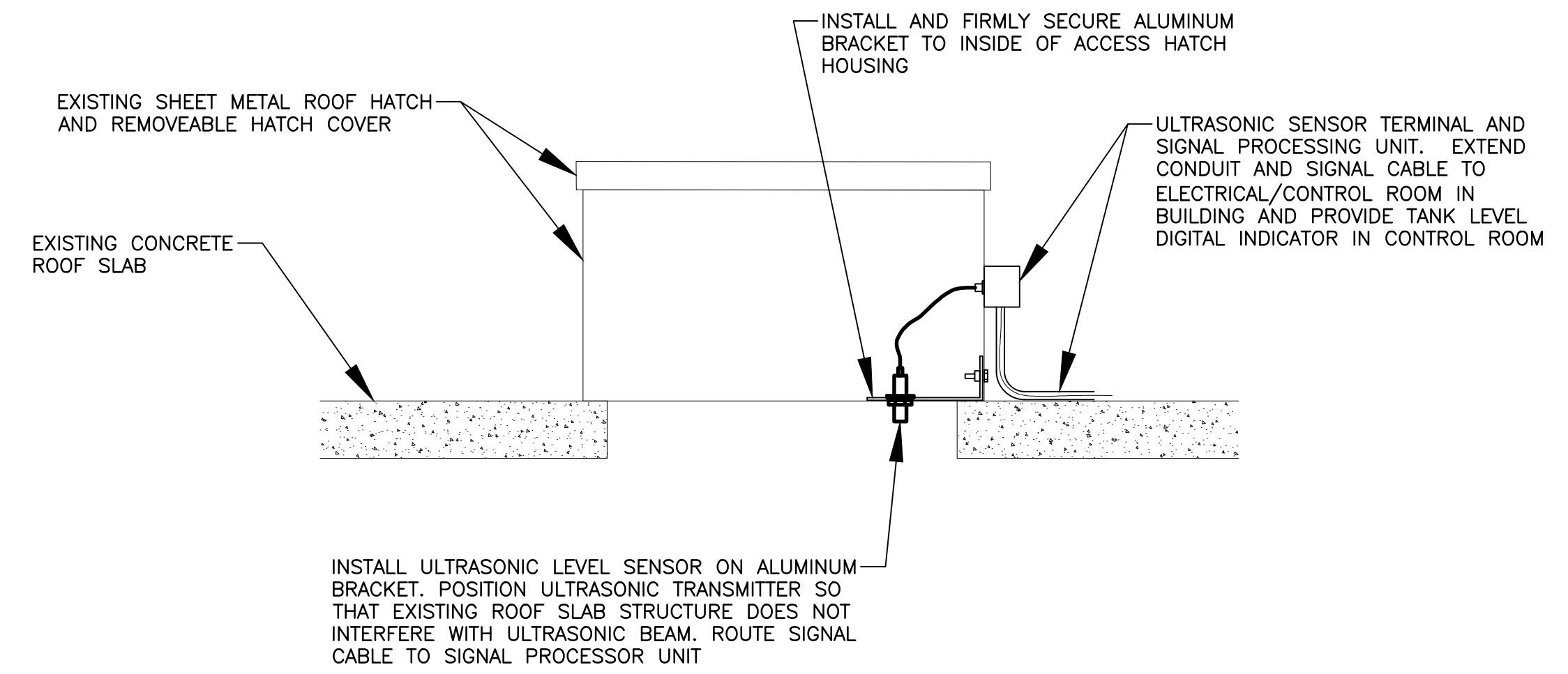
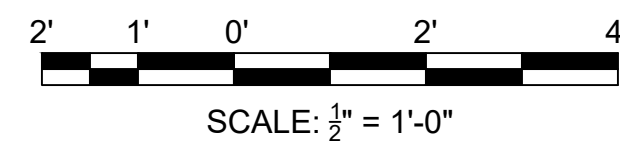






**NOTES**

1. ALL NEW PIPE SHALL BE DIP. LENGTHS SHALL BE AS REQUIRED TO INSTALL NEW PUMPS.
2. THIS SECTION VIEW IS FOR PUMPS 2 & 3. INSTALLATION FOR PUMP 1 SHALL BE SIMILAR AND FIELD ADJUSTED FOR SMALLER PUMP 1.
3. ELEVATIONS SHOWN ARE BASED ON AS-BUILT PLANS. CONTRACTOR SHALL CONFIRM ACTUAL DIMENSIONS BASED ON FIELD MEASUREMENTS PRIOR TO ORDERING AND FABRICATION OF HIGH SERVICE PUMPS.



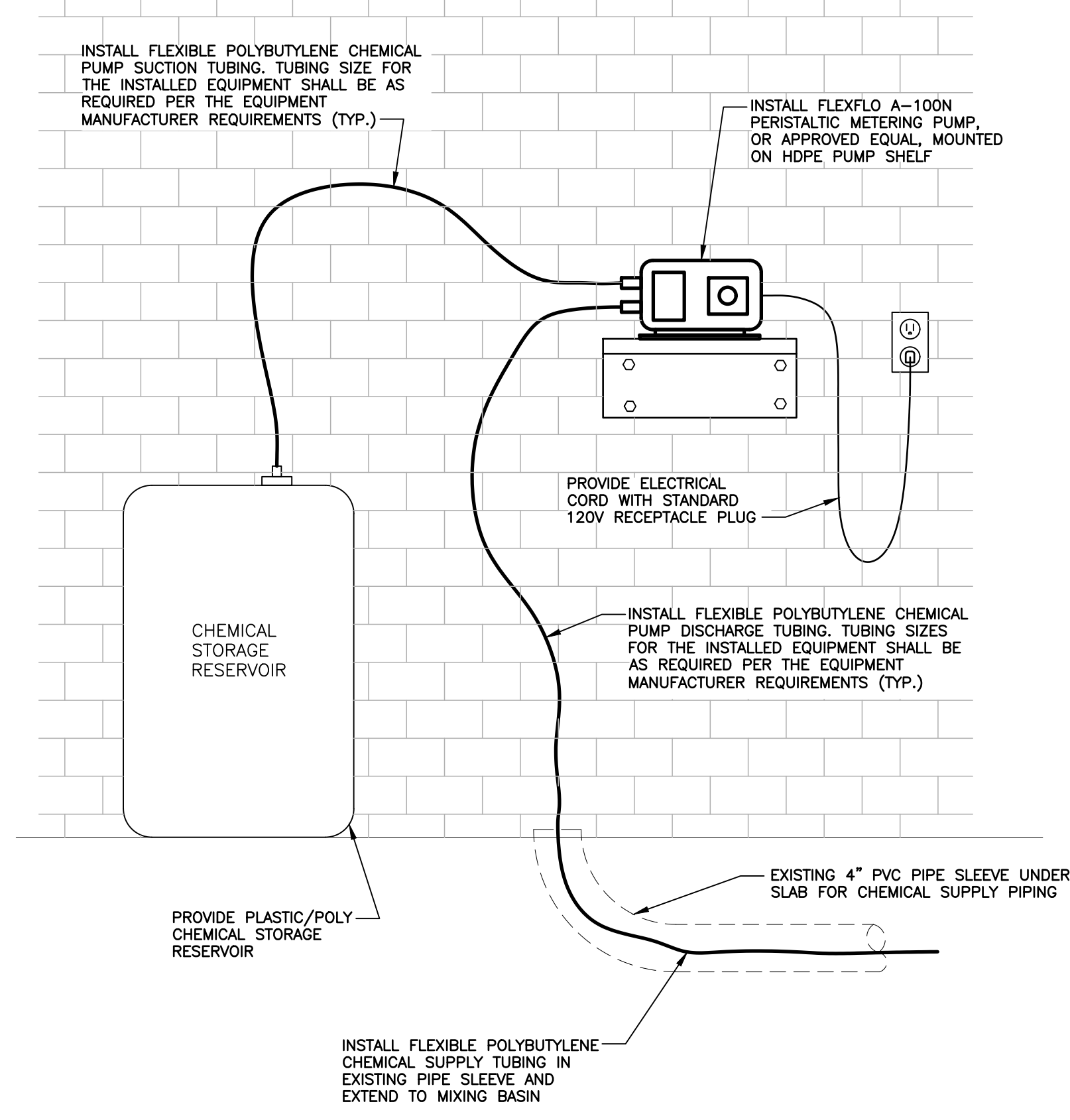
**ULTRASONIC LEVEL SENSOR DETAIL**  
N.T.S

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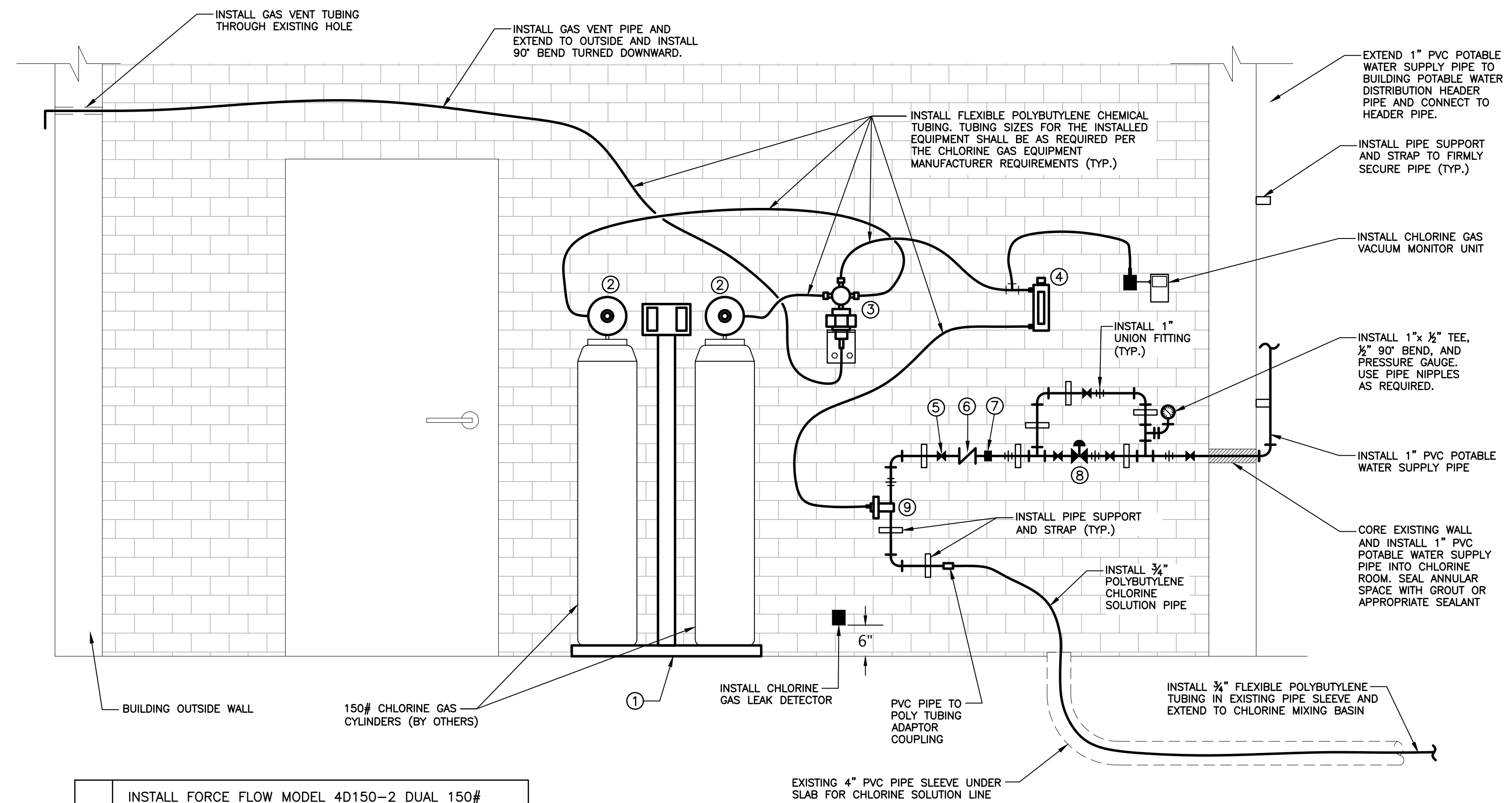
HIGH SERVICE PUMP SECTION  
GORDO WATER, GAS, AND SEWER BOARD  
SULLIVAN WATER TREATMENT PLANT  
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PLOT INFORMATION:  
SDATES  
\$TIMES  
\$FILES



**CHEMICAL METERING PUMP TYPICAL DETAIL**  
NOT TO SCALE



1	INSTALL FORCE FLOW MODEL 4D150-2 DUAL 150# CYLINDER HYDRAULIC SCALE WITH BRACKET AND CHAINS, OR EQUAL
2	INSTALL CYLINDER MOUNTED CHLORINE GAS REGULATOR WITH INTEGRATED AUTOMATIC SWITCHOVER. GAS REGULATORS SHALL BE CAPITAL CONTROLS NXT3000, OR EQUAL
3	INSTALL 4-WAY CONNECTOR WITH 2 VACUUM GAS INPUT PORTS, ONE VACUUM GAS OUTPUT PORT, AND ONE VENT PORT
4	INSTALL REMOTE CHLORINE GAS FEED METER, 100 PPD, 6" TUBE. GAS FEED METER SHALL BE CAPITAL CONTROLS #RMO10C6 OR AN APPROVED EQUAL
5	INSTALL 1" PVC BALL VALVE (TYP.)
6	INSTALL 1" BRASS CHECK VALVE
7	INSTALL 1" BRASS FINE MESH SCREEN Y-STRAINER
8	INSTALL 1" NORMALLY CLOSED SOLENOID VALVE
9	INSTALL CAPITAL CONTROLS CHLORINE GAS EJECTOR, MODEL #EJ100C1H, 100 PPD WITH #12 NOZZLE

**NOTES:**

1. CHLORINE SCHEMATIC DETAIL ABOVE ILLUSTRATES INSTALLATION REQUIREMENTS FOR CHLORINE GAS VACUUM FEED SYSTEM AND CHLORINE SOLUTION FEED PIPING. CONTRACTOR SHALL USE ABOVE DETAIL AS A GUIDE FOR INSTALLATION REQUIREMENTS. THE EXACT INSTALLED EQUIPMENT LOCATIONS AND CONFIGURATION IN THE CHLORINE ROOM SHALL BE DETERMINED BY THE CONTRACTOR AND SHALL BE AS NEEDED TO SUITE ACTUAL FIELD CONDITIONS.
2. ALL PVC PIPE FOR WATER SUPPLY SHALL BE SCHEDULE 80 PVC PIPE WITH SOLVENT WELDED OR THREADED PIPE JOINTS.
3. ALL FLEXIBLE CHEMICAL GAS TUBING OR CHLORINE SOLUTION TUBING SHALL BY POLYBUTYLENE PIPE.
4. ALL RIGID PVC PIPE SHALL BE FIRMLY SECURED AND ANCHORED TO WALL USING PIPE SUPPORTS AND STRAPS. ALL HARDWARE SHALL BE STAINLESS STEEL.
5. SOLENOID VALVE SHALL BE INTERLOCKED WITH WELL PUMP MOTOR STARTER AND SHALL OPEN UPON WELL PUMP START-UP AND CLOSE UPON WELL PUMP SHUT DOWN.
6. CHLORINE GAS LEAK DETECTOR UNIT SHALL INCLUDE CHLORINE GAS ALARM CAPABILITY WHICH IS ABLE TO ACTIVATE AN ALARM ANNUNCIATOR AND RED WARNING LIGHT AT GAS LEAK DETECTOR UNIT MOUNTED IN CHLORINE ROOM AS WELL AS AN ANNUNCIATOR HORN AND RED FLASHING LIGHT MOUNTED ON OUTSIDE OF BUILDING.
7. CHLORINE GAS VACUUM MONITORING UNIT SHALL BE EQUIPPED WITH ALARM CIRCUITRY AND SHALL BE CAPABLE OF SENDING AN ALARM SIGNAL TO A REMOTE ALARM PANEL.
8. CHLORINE GAS LEAK DETECTOR SHALL BE CAPITAL CONTROLS MODEL 1610B1C, OR APPROVED EQUAL.
9. CHLORINE GAS VACUUM MONITORING UNIT SHALL BE REIM ELECTRONICS MODEL VAC1100 HI/LO VACUUM MONITOR, OR AN APPROVED EQUAL.

**CHLORINE SUPPLY SCHEMATIC DETAIL**  
NOT TO SCALE

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CHLORINE & CHEMICAL FEED SYSTEMS

GORDO WATER, GAS, AND SEWER BOARD  
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**GENERAL:**

1. GENERAL BUILDING CODE: INTERNATIONAL BUILDING CODE, 2015 EDITION.
2. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS ARE PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL OBTAIN ALL CONTRACT DOCUMENTS AND NOTIFY THE STRUCTURAL ENGINEER AND ARCHITECT OF ANY DISCREPANCIES OR OMISSIONS.
3. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER PRIOR TO BIDDING OF ANY DISCREPANCY BETWEEN PLANS, DETAILS, AND/OR SPECIFICATIONS.
4. DESIGN LOADS:

**A. DEAD LOADS:**  
SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR THE CONSTRUCTION MATERIALS USED IN THE PROJECT. ANY CHANGES IN CONSTRUCTION MATERIALS FROM THOSE SHOWN ON THE DRAWINGS SHALL BE REPORTED TO THE STRUCTURAL ENGINEER FOR VERIFICATION OF THE CAPACITY OF THE STRUCTURE.

**B. LIVE LOADS (psf):**  
ROOF .....20  
FLOOR.....125

**C. SNOW LOADS:**  
GROUND SNOW LOAD (Pg).....5.5 psf  
FLAT ROOF SNOW LOAD (Pf).....3.5 psf  
SNOW EXPOSURE FACTOR (Ce).....0.9  
SNOW LOAD IMPORTANCE FACTOR (Is).....1.1  
THERMAL FACTOR (Ct).....1.0

**D. WIND LOADS:**  
BASIC WIND SPEED (3 SECOND GUST).....116 MPH  
BUILDING CATEGORY.....III  
EXPOSURE CATEGORY.....B  
INTERNAL PRESSURE COEFFICIENT (Gcpi).....±0.18  
DESIGN WIND PRESSURE FOR COMPONENTS & CLADDING (psf):  
SEE DETAIL 1/S-1

**E. SEISMIC LOADS:**  
EARTHQUAKE IMPORTANCE FACTOR (Ie).....1.25  
MAPPED SPECTRAL RESPONSE ACCELERATIONS: (Ss).....0.271  
(S1).....0.106  
SITE CLASS (ASSUMED).....D  
SPECTRAL RESPONSE COEFFICIENTS: (SDS).....0.286  
(SD1).....0.168  
SEISMIC DESIGN CATEGORY.....C  
BASIC SEISMIC-FORCE RESISTING SYSTEM:  
ORDINARY PLAIN MASONRY SHEAR WALL

DESIGN BASE SHEAR (kips).....22.12  
SEISMIC RESPONSE COEFFICIENT (Cs).....0.1788  
RESPONSE MODIFICATION COEFFICIENT (R).....2.0  
ANALYSIS PROCEDURE.....ELFP

5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SITE CONDITIONS PRIOR TO CONSTRUCTION AND SHALL NOTIFY ENGINEER IF ANY DISCREPANCIES ARE NOTED.
6. SPECIAL INSPECTIONS ARE REQUIRED FOR THIS PROJECT IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE. VISUAL OBSERVATIONS BY THE STRUCTURAL ENGINEER'S OFFICE DOES NOT REPLACE REQUIRED INSPECTIONS OR TESTING PERFORMED BY THE TESTING AGENCY OR SPECIAL INSPECTOR.
7. THE CONTRACTOR IS RESPONSIBLE FOR MEANS, METHODS, AND SEQUENCE OF CONSTRUCTION.
8. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT CONSTRUCTION MATERIALS ARE SPREAD OUT ON FRAMED FLOORS/ROOF SUCH THAT THE DESIGN LOADS LISTED ABOVE ARE NOT EXCEEDED.

**STRUCTURAL STEEL:**

1. STRUCTURAL STEEL DESIGN CODE: AISC STEEL CONSTRUCTION MANUAL (FOURTEENTH ED.).
2. ALL STRUCTURAL STEEL ANGLES, AND CHANNELS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36.
3. ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL, UNLESS OTHERWISE NOTED, SHALL CONFORM TO THE REQUIREMENTS OF THE AISC SPECIFICATIONS FOR BUILDINGS, LATEST EDITION.
4. UNLESS OTHERWISE NOTED, ALL SHOP CONNECTIONS SHALL BE MADE BY WELDING OR HIGH STRENGTH BOLTING. (3/4" DIA. BOLTS).
5. WELDS SHALL BE MADE WITH E-70XX ELECTRODES, MINIMUM SIZE FILLET WELD SHALL BE 3/16".
6. UNLESS OTHERWISE NOTED, ALL FIELD CONNECTIONS SHALL BE MADE WITH 3/4" DIA HIGH STRENGTH BOLTS (ASTM A-325). CONNECTIONS SHALL BE DESIGNED AS BEARING TYPE WITH THREADS IN SHEAR PLANE. ALL A-325 BOLTS SHALL BE INSTALLED USING THE "TURN OF THE NUT" METHOD AS SPECIFIED IN THE MANUAL OF STEEL CONSTRUCTION, 14TH EDITION.
7. ALL COLUMN ANCHOR BOLT HOLES TO BE OVERSIZED IN ACCORDANCE WITH RECOMMENDATIONS OF "AISC" MANUAL FOR "DETAILING FOR STEEL CONSTRUCTION".
8. CONTRACTOR TO PROVIDE ADEQUATE BRACING FOR STRUCTURE SO THAT IT WILL BE STABLE DURING ALL STAGES OF CONSTRUCTION. THE STRUCTURE AND FOUNDATIONS ARE DESIGNED FOR A COMPLETED CONDITION ONLY AND THEREFORE REQUIRE ADDITIONAL SUPPORT TO MAINTAIN STABILITY BEFORE COMPLETION.
9. GUSSET PLATES SHALL BE 3/8" THICK MINIMUM.

**METAL ROOF:**

1. ALL DIMENSIONS SHOWN ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO CONSTRUCTION AND FABRICATION.
2. COORDINATE LOCATIONS OF ALL MECHANICAL OPENINGS AND OTHER APPURTENANCES WITH MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS.
3. EXTEND ALL EXISTING PLUMBING AND EXHAUST VENTS AS REQUIRED TO MAINTAIN CLEARANCES DICTATED BY APPLICABLE CODES. NO PENETRATIONS THROUGH THE STANDING SEAMS WILL BE ALLOWED. VENTS SHALL BE OFFSET TO AVOID SEAMS.

**ROOF DEMOLITION:**

1. CONTRACTOR SHALL MAINTAIN ROOF PENETRATIONS AND RELOCATE AS NEEDED. COORDINATE WITH PLUMBING, MECHANICAL, AND ELECTRICAL.
2. REMOVE EXISTING ROOF MATERIAL DOWN TO CONCRETE ROOF STRUCTURE.

COMP. & CLADDING WIND LOADS FOR WALLS (psf)			
ZONES	EFFECTIVE WIND AREA (sq. ft.)	116 MPH WIND SPEED	
4	10	24.2	-26.3
	20	24.1	-26.1
	50	23.7	-25.8
	100	23.1	-25.1
	500	18.1	-20.1
5	10	24.2	-32.4
	20	24.1	-32.2
	50	23.7	-31.4
	100	23.1	-30.2
	500	18.1	-20.1

COMP. & CLADDING WIND LOADS FOR ROOF (psf)			
ZONES	EFFECTIVE WIND AREA (sq. ft.)	SLOPED TRUSS ROOF 116 MPH WIND SPEED	
1.0	10	9.8	-38.6
	20	9.6	-38.3
	50	8.9	-37.4
	100	7.8	-35.9
	500	7.8	-22.2
1'	10	9.8	-22.2
	20	9.6	-22.2
	50	8.9	-22.2
	100	7.8	-22.2
	500	7.8	-22.2
2.0	10	9.8	-50.9
	20	9.6	-50.5
	50	8.9	-49.4
	100	7.8	-47.5
	500	7.8	-22.2
3	10	9.8	-69.3
	20	9.6	-68.6
	50	8.9	-66.3
	100	7.8	-62.6
	500	7.8	-62.6

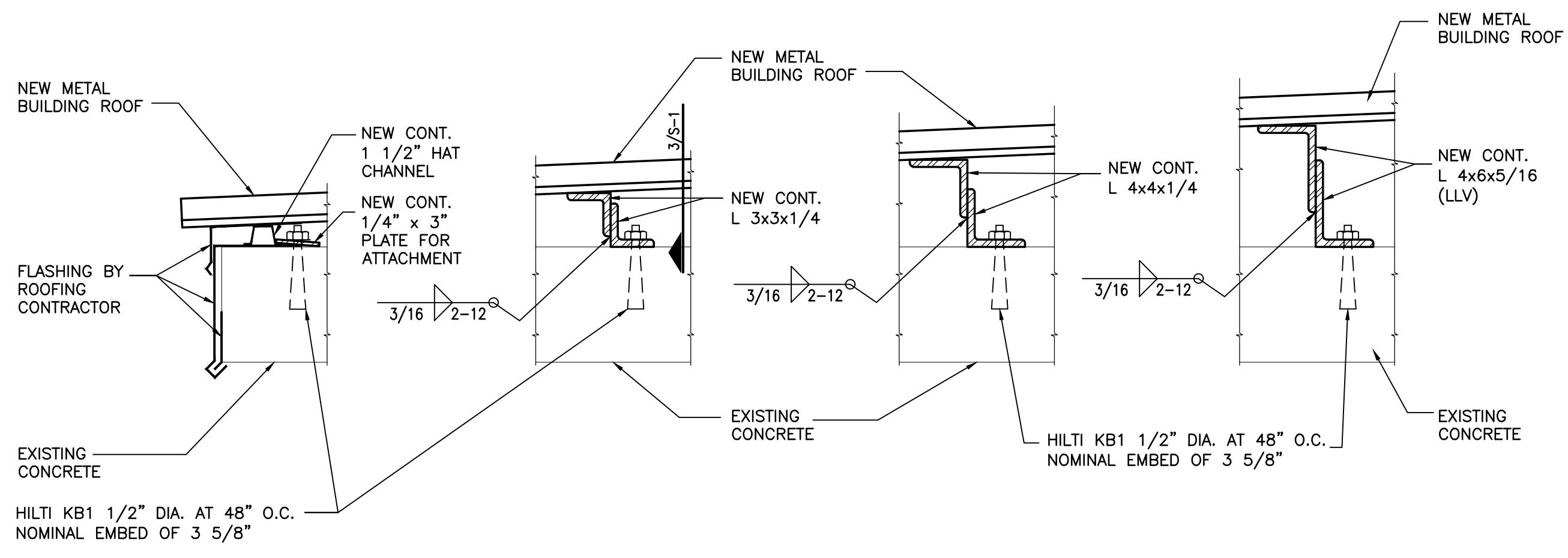
  

COMP. & CLADDING WIND LOADS FOR ROOF OVERHANG (psf)			
ZONES	EFFECTIVE WIND AREA (sq. ft.)	SLOPED TRUSS ROOF 116 MPH WIND SPEED	
1 & 1'	10	-38.6	
	20	-38.3	
	50	-37.7	
	100	-36.5	
	500	-36.5	
2	10	-50.9	
	20	-50.4	
	50	-48.9	
	100	-46.4	
	500	-46.4	
3	10	-69.3	
	20	-68.5	
	50	-65.8	
	100	-61.4	
	500	-61.4	
N/A	10	N/A	
	20	N/A	
	50	N/A	
	100	N/A	
	500	N/A	

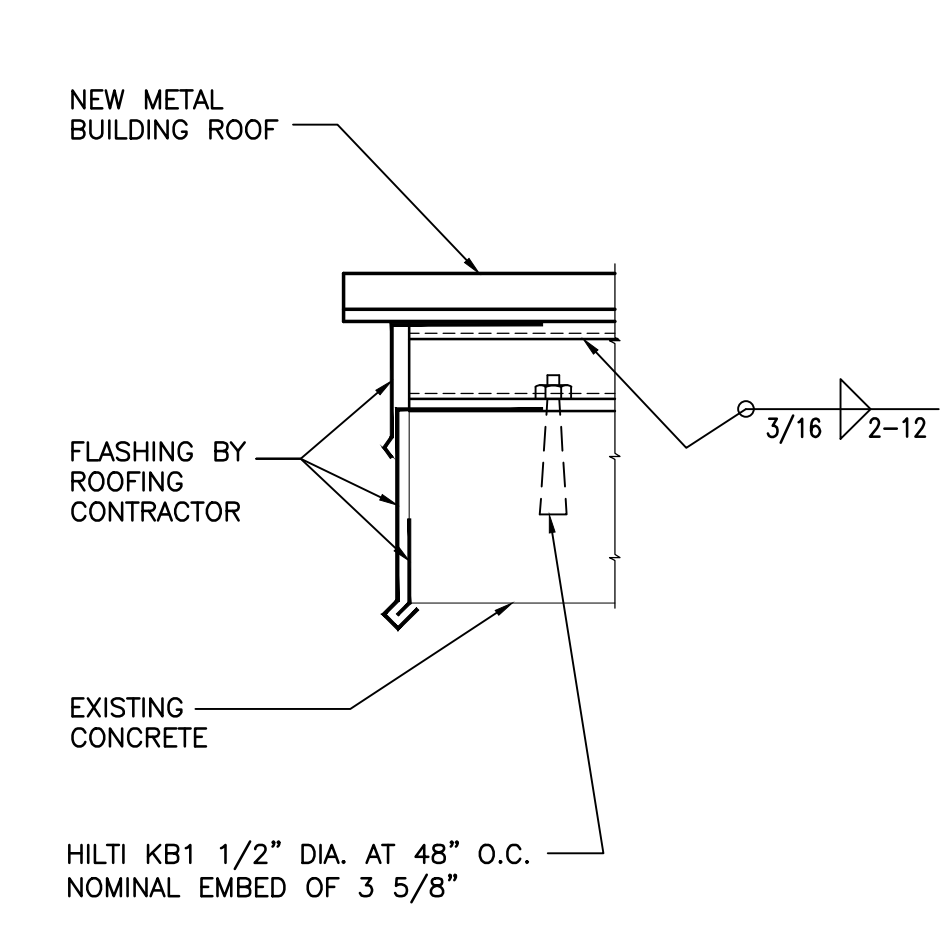
**NOTES:**  
1. WIDTH OF EDGE STRIP a = 3 feet.  
2. VALUES SHOWN ABOVE HAVE BEEN ADJUSTED FOR BUILDING HEIGHT AND EXPOSURE ACCORDING TO THE INTERNATIONAL BUILDING CODE. THE LOADS PROVIDED ARE FACTORED.  
3. PLUS AND MINUS SIGNS SIGNIFY PRESSURES ACTING TOWARD AND AWAY FROM THE BUILDING SURFACES.  
4. EFFECTIVE WIND AREA IS THE SPAN LENGTH MULTIPLIED BY AN EFFECTIVE WIDTH THAT NEED NOT BE LESS THAN ONE-THIRD THE SPAN LENGTH.  
5. CONSIDER 3 PSF MINIMUM DEAD LOAD FOR UPLIFT CALCULATIONS FOR ROOF FRAMING AND 0 PSF MINIMUM DEAD LOAD FOR UPLIFT CALCULATIONS FOR OVERHANGS.



**1 WIND LOAD TABLES**  
S-1 SCALE: N.T.S.



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



**3 SECTION**  
S-1 SCALE: 1 1/2"=1'-0"

**PRELIMINARY NOT FOR CONSTRUCTION**

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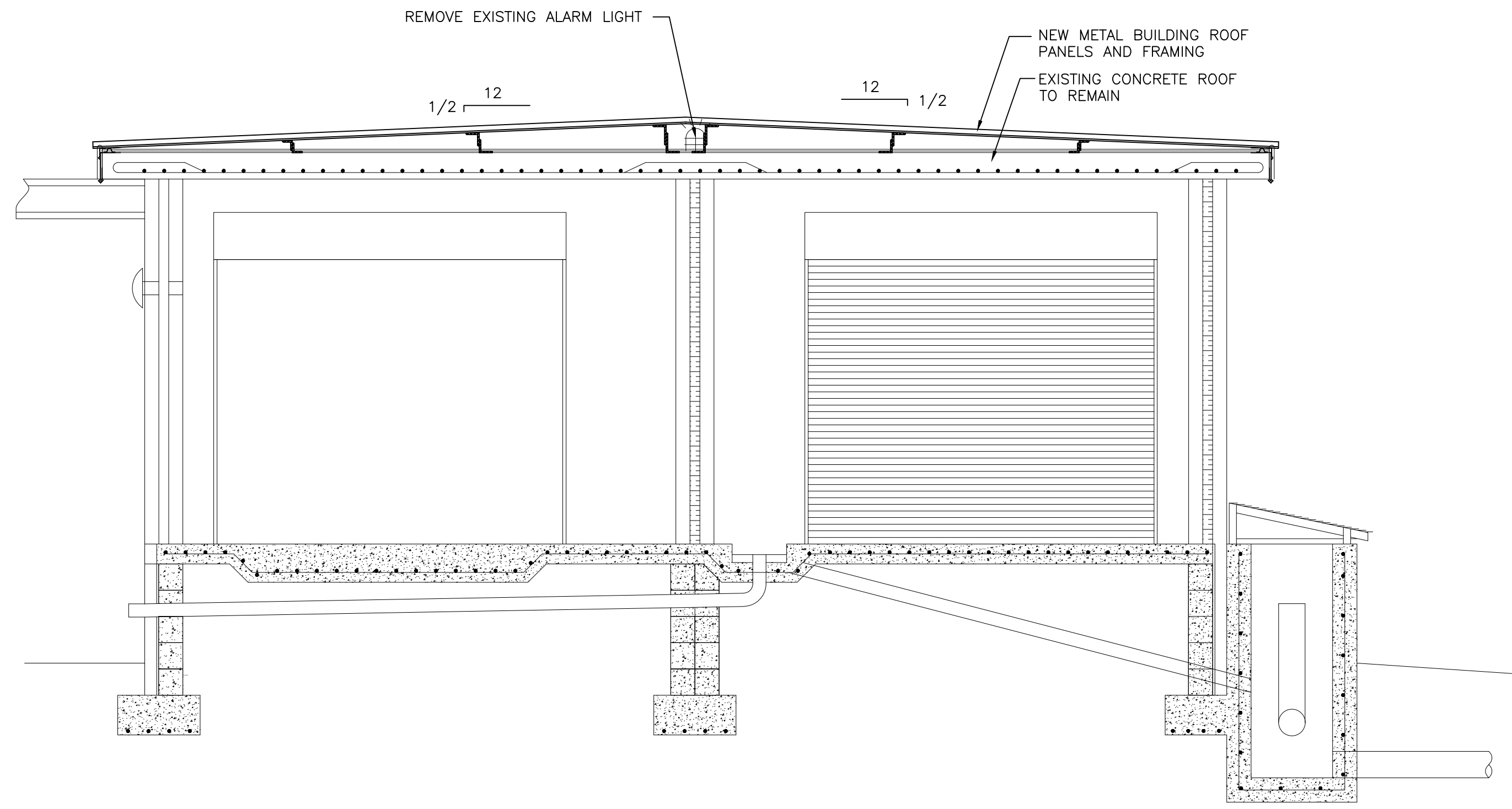
**STRUCTURAL NOTES**

GORDO WATER, GAS, AND SEWER BOARD  
SULLIVAN WATER TREATMENT PLANT  
REHABILITATION, PHASE 2 - EQUIPMENT  
BUILDING & CLEARWELL REHAB  
DW/SRF PROJECT #F010412-01  
PICKENS COUNTY

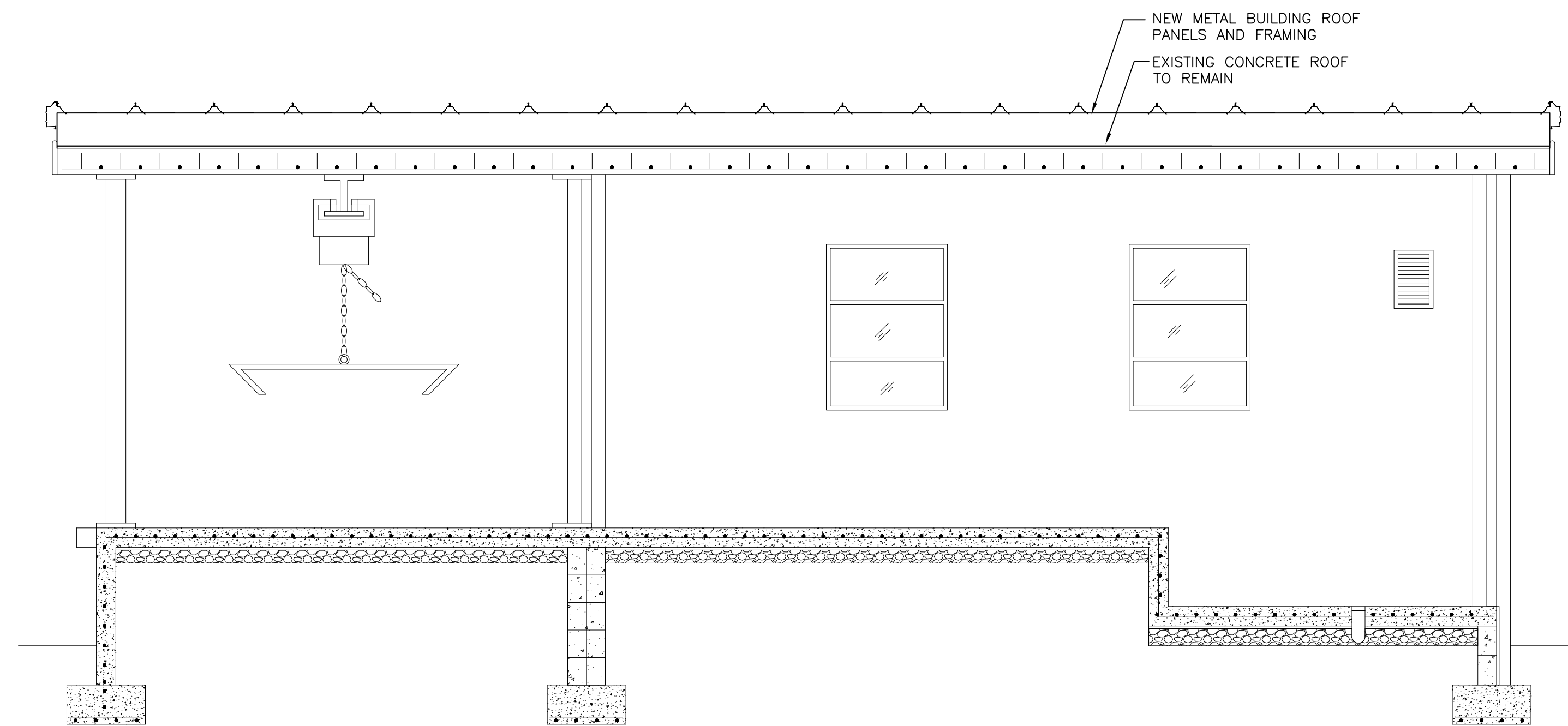
DATE	REVISION	T.M.	DATE	JOB NO.
		M.K.	12/14/2022	17774.001







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



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

PLAN LEGEND	
	EXISTING BUILDING STRUCTURE

PLAN NOTES	
1.	REFERENCE STRUCTURAL NOTE SHEET S-1 FOR DEMOLITION NOTES FOR THE EXISTING ROOF.
2.	REFERENCE STRUCTURAL NOTE SHEET S-1 FOR METAL ROOF NOTES.

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STRUCTURAL ROOF FRAMING PLAN

GORDO WATER, GAS, AND SEWER BOARD  
SULLIVAN WATER TREATMENT PLANT  
REHABILITATION, PHASE 2 - EQUIPMENT  
BUILDING & CLEARWELL REHAB  
DWSRF PROJECT #FS010412-01  
PICKENS COUNTY

DATE	REVISION	DRAWN BY:	T.M.	DATE:	12/14/2022
		CHECKED BY:	M.K.	JOB NO.:	17774.001

**S-3**

SHEET NO. 17 of 38



GENERAL ELECTRICAL NOTES

- SPECIAL ATTENTION IS CALLED TO THE FACT THAT THE REQUIRED WORK IS AT OPERATING FACILITIES, AND AS SUCH, NO UNNECESSARY SHUTDOWNS WILL BE ALLOWED. ANY NECESSARY SHUTDOWNS SHALL BE APPROVED IN WRITING BY THE PLANT MANAGER A MINIMUM OF TWO (2) WEEKS IN ADVANCE. TEMPORARY/PORTABLE PUMPING PROVISIONS (AND OTHER TEMPORARY PROVISIONS AS REQUIRED FOR OPERATION OF THE EXISTING SYSTEMS) SHALL BE PROVIDED BY THE CONTRACTOR IF OWNER-MANDATED MAXIMUM SHUTDOWN PERIODS ARE ANTICIPATED OR ARE POSSIBLE.
- ELECTRICAL PLANS & DETAILS INDICATE TYPICAL WIRING REQUIREMENTS FOR PROCESS EQUIPMENT. VERIFY EXACT WIRING REQUIREMENTS & ALL DEVICE LOCATIONS WITH APPROVED MANUFACTURERS SHOP DRAWINGS PRIOR TO ROUGH-IN. NO ADDITIONAL COMPENSATION WILL BE PAID FOR MINOR CIRCUITRY ADJUSTMENTS REQUIRED TO COMPLY WITH MANUFACTURERS INSTALLATION DETAILS.
- THIS CONTRACTOR SHALL VERIFY EXACT REQUIREMENTS FOR ALL MECHANICAL EQUIPMENT FROM MANUFACTURER'S RECOMMENDATIONS PRIOR TO ROUGHING IN CONDUIT AND SHALL ADJUST CONDUIT SIZE, WIRE SIZE AND CIRCUIT PROTECTION SIZE ACCORDINGLY. IF REQUIREMENTS ARE LARGER THAN CALLED FOR ON ELECTRICAL PLANS NOTIFY ENGINEER IMMEDIATELY.
- CONTRACTOR SHALL VISIT THE SITE(S) OF THE WORK PRIOR TO SUBMITTING BID TO EXAMINE CAREFULLY LOCAL CONDITIONS AND DIFFICULTIES TO BE ENCOUNTERED. ANY DISCREPANCY BETWEEN PLANS AND EXISTING CONDITIONS SHALL IMMEDIATELY BE CALLED TO THE ATTENTION OF THE ENGINEER.
- ALL EQUIPMENT SHALL BE GROUNDED AND BONDED IN ACCORDANCE WITH NEC.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND MOUNTING OF ALL INSTRUMENTATION DEVICES (EXCLUDING THOSE PRE-INSTALLED ON SKIDS BY THE MANUFACTURER). SEE INSTALLATION DETAILS ON CIVIL & ELECTRICAL DRAWINGS AND PROVIDED BY SUPPLIERS. COORDINATE ALL REQUIREMENTS WITH SUPPLIERS PRIOR TO ROUGH-IN.
- ALL HVAC CIRCUITRY (INCLUDING CONTROL CIRCUITRY NOT SHOWN ON THESE PLANS) SHALL BE INSTALLED TO MEET DIVISION 26 SPECIFICATIONS. COORDINATE ALL HVAC CONTROLS CIRCUITRY REQUIRED WITH HVAC CONTRACTOR PRIOR TO BID.
- REMOVE ALL EXISTING ELECTRICAL EQUIPMENT AND WIRING MADE OBSOLETE BY THIS RENOVATION AND DISPOSE OF AS DIRECTED BY THE ENGINEER.
- THIS CONTRACTOR SHALL FURNISH ALL MATERIALS AND LABOR NECESSARY TO EXTEND CIRCUITS AND MAKE RECONNECTIONS TO ANY ACTIVE ELECTRICAL DEVICES ON WHICH THE BRANCH CIRCUIT IS INTERRUPTED BY THIS ALTERATION. CARE SHALL BE TAKEN TO INSURE THAT EXISTING PANEL AND FEEDER RATINGS ARE NOT EXCEEDED.
- WET OR PROCESS AREAS (FOR USE IN DETERMINING TYPES OF MATERIALS REQUIRED PER ELECTRICAL SPECIFICATIONS) SHALL BE DEFINED AS ALL AREAS WITHIN THE PROJECT SCOPE EXCEPT THE FOLLOWING:
  - OFFICES, STORAGE ROOMS, ELECTRICAL ROOMS AND OTHER SIMILAR NON-PROCESS, CONDITIONED SPACES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING 120V AND ANALOG SURGE PROTECTION DEVICES AT ALL INSTRUMENTS LOCATED IN EXTERIOR ENVIRONMENTS (OR IN SEPARATE BUILDINGS FROM THE SCADA/CONTROL PANEL TO WHICH THEY CONNECT) (INCLUDING INSTRUMENTS FURNISHED BY OTHERS). CONTRACTOR SHALL COORDINATE WITH INSTRUMENT SUPPLIER(S) PRIOR TO SUBMITTAL OF SHOP DRAWINGS.
  - SURGE PROTECTION DEVICES AT 2-WIRE INSTRUMENTS SHALL BE DEHN DEHNPIPE SERIES (IP67 STAINLESS STEEL DEVICE WITH 10KA TOTAL NOMINAL DISCHARGE CURRENT PER LINE) OR EQUAL BY MTL TECHNOLOGIES.
  - SURGE PROTECTION DEVICES AT 4-WIRE INSTRUMENTS SHALL BE EDOO SLAC SERIES (NEMA 4X DEVICE WITH VIEWING WINDOW, 10KA DISCHARGE CURRENT PER LINE FOR ANALOG, 15KA DISCHARGE CURRENT PER LINE FOR 120V POWER) OR EQUAL BY DEHN.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING IDENTIFICATION/LABELING FOR ALL INSTRUMENTS, UTILIZATION EQUIPMENT (PUMPS, BLOWERS, ETC.), CONTROL DEVICES, CONTROL PANELS, STARTERS, POWER PANELS, ETC. (REGARDLESS OF WHICH ENTITY PROVIDES THE EQUIPMENT) PER DETAILED REQUIREMENTS OF SPECIFICATION SECTION 16075.
- WITHIN DESIGNATED HIGHLY CORROSIVE AREAS (SUCH AS THE CHLORINE ROOM AT SULLIVAN WELL), ALL EQUIPMENT/CONDUIT/ETC. SHALL BE OF NON-METALLIC CONSTRUCTION OR BE PVC-COATED. PROVIDE SCHEDULE 80 PVC CONDUIT & CORROSION RESISTANT NON-METALLIC OR PVC-COATED FIXTURES, RECEPTACLES, BOXES, ETC. DISCONNECT SWITCHES SHALL BE NEMA 4X KRYDON. PROVIDE CONDUIT SEALS AT ALL CONDUITS ENTERING/EXITING AREA. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- CONTRACTOR SHALL VERIFY ALL REQUIREMENTS FOR POWER SERVICES WITH RESPECTIVE UTILITY COMPANY PRIOR TO SUBMITTING BID. IF THEIR REQUIREMENTS ARE AT A VARIANCE WITH THOSE SHOWN ON PLANS THE CONTRACTOR SHALL INFORM ENGINEER IMMEDIATELY. ALL COSTS INCURRED WITH UTILITY COMPANIES FOR SERVICES SHALL BE INCLUDED IN BID PRICE. IF SUCH COSTS ARE NOT AVAILABLE AT BID TIME CONTRACTOR SHALL INCLUDE WITH BID A LETTER FROM A RESPONSIBLE PARTY WITH THE UTILITY COMPANY STATING SUCH, AND COSTS WILL THEN BE EXCLUDED FROM THE BID PRICE.

LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER	CATALOG NUMBER	VOLTAGE	LAMPS			MOUNTING HEIGHT	MOUNTING TYPE	REMARKS
				WATTS	LUMENS	TYPE			
A	LITHONIA COLUMBIA DAY-BRITE	FEM-L48-3000LM-IMAFD-MD-80CRI-40K-STSL	120	20	3,258	LED	CEILING	SURFACE OR CONDUIT STEM	
AE	LITHONIA COLUMBIA DAY-BRITE	FEM-L48-3000LM-IMAFD-MD-80CRI-40K-E10WMCP-STSL	120	20	3,258	LED	CEILING	SURFACE OR CONDUIT STEM	EM
B	LITHONIA COLUMBIA DAY-BRITE	FEM-L48-3000LM-IMAFD-MD-80CRI-40K	120	20	3,258	LED	CEILING	SURFACE OR CONDUIT STEM	
BE	LITHONIA COLUMBIA DAY-BRITE	FEM-L48-3000LM-IMAFD-MD-80CRI-40K-E10WMCP	120	20	3,258	LED	CEILING	SURFACE OR CONDUIT STEM	EM
C	LITHONIA COLUMBIA DAY-BRITE	ZL1D-L48-5000LM-FST-120-40K-80CRI	120	41	5,541	LED	CEILING	SURFACE OR CONDUIT STEM	
CE	LITHONIA COLUMBIA DAY-BRITE	ZL1D-L48-5000LM-FST-120-40K-80CRI-E10WLCP	120	41	5,541	LED	CEILING	SURFACE OR CONDUIT STEM	EM
Y1	LITHONIA COLUMBIA DAY-BRITE	DSX1-LED-P6-40K-T4M-RPA-DOBXD	120	163	18,635	LED	MOUNT TO 25" ROUND, STRAIGHT DARK BRONZE ALUMINUM POLE - SEE DETAIL "E-LP1"		FSCE
W	LITHONIA COLUMBIA DAY-BRITE	DSXW1-LED-10C-530-T3M	120	20	2,159	LED	ABOVE DOOR	OUTLET BOX	FSCE
WE	LITHONIA COLUMBIA DAY-BRITE	DSXW1-LED-10C-530-T3M-ELCW	120	20	2,159	LED	ABOVE DOOR	OUTLET BOX	EM, FSCE

**LIGHTING FIXTURE SCHEDULE GENERAL NOTES:**

- ALL LAMPS SHALL BE 4000K WITH A MINIMUM CRI OF 80 UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL COORDINATE ALL FIXTURE MOUNTING PROVISIONS WITH THE ASSOCIATED CEILING TYPE(S) PRIOR TO ORDERING FIXTURES.
- ALL FIXTURES AND BALLASTS/DRIVERS SHALL BE RATED FOR OPERATION IN AMBIENT TEMPERATURES UP TO 55 DEGREES CELSIUS.
- TO ENSURE PROPER COORDINATION AND LONG TERM SUPPORT FOR THE OWNER, ALL LIGHTING FIXTURES SHALL BE PURCHASED THROUGH MANUFACTURER'S REPRESENTATIVES AND DISTRIBUTORS LOCATED WITHIN ONE HUNDRED & FIFTY (150) MILES OF THE PROJECT SITE. SUBMITTALS RECEIVED THAT DO NOT COMPLY WITH THIS REQUIREMENT WILL BE REJECTED WITHOUT REVIEW. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DELAYS CAUSED BY NON-COMPLIANCE WITH THIS REQUIREMENT.

**LIGHTING FIXTURE SCHEDULE KEYED NOTES:**

EM EMERGENCY FIXTURE. PROVIDE EMERGENCY BATTERY PACK RATED FOR AT LEAST 500 LUMENS.

FSCE PROVIDE FINISH AS SELECTED BY CIVIL ENGINEER.

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PROFESSIONAL  
PHIL BLACK  
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ELECTRICAL NOTES & FIXTURE SCHEDULE

GORDO WATER, GAS, AND SEWER BOARD  
SULLIVAN WATER TREATMENT PLANT  
REHABILITATION, PHASE 2 - EQUIPMENT  
BUILDING & CLEARWELL REHAB  
DWSRF PROJECT #FS010412-01  
PICKENS COUNTY

DATE	REVISION	CAD FILE	DRAWN BY	RGN	PPB	DATE	09/20/23	CHECKED BY	17174.001



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E-02

SHEET NO. 19 OF 38



MAIN BREAKER SCHEDULE - MB-1											
PANEL TYPE: SQUARE 'D' ENCLOSED MOLDED CASE CIRCUIT BREAKER						AIC RATING: 30KAIC (MINIMUM)					
VOLTAGE: 277/480V-3P-4W						MOUNTING: SURFACE					
AMPS & TYPE: 250/3 MAIN BKR						LOCATION: SULLIVAN WELL					
FED FROM: UTILITY						FEEDER: 4-250MCM-3°C					
CIR. NO.	DESCRIPTION	VOLTS	P	HP	KW OR KVA	AMPS	BKR SIZE	LOCAL SAFETY SW. RATING	WIRE AND COND. SIZE	REMARKS	
1	ATS-1 (N)	277/480	3		94.1		250/3	-	4-250MCM & 1#4G-3°C		
TOTAL CONNECTED LOAD:						122.7 KVA	NOTES:				
						153.4 AMPS	1. MAIN BREAKER SHALL BE SERVICE-ENTRANCE RATED.				
TOTAL DEMAND LOAD:						90.7 KVA	2. PROVIDE EXTERNAL HANDLE/DISCONNECT.				
						113.4 AMPS					
TOTAL COMPUTED LOAD:						94.1 KVA					
						117.6 AMPS					

AUTOMATIC TRANSFER SWITCH SCHEDULE - ATS-1											
KAIC / WCR RATING: 30KAIC (MINIMUM)						NORMAL FED FROM: MB-1					
VOLTAGE: 277/480V-3P-4W						NORMAL FEEDER: SEE MAIN BREAKER SCHEDULE - MB-1					
AMP RATING: 250 AMP						EMERGENCY FED FROM: GEN-1					
LOCATION: SULLIVAN WELL						EMERGENCY FEEDER: SEE GENERATOR SCHEDULE - GEN-1					
LOAD SIDE FEEDER DESCRIPTION	VOLTS	P	HP	KW OR KVA	AMPS	WIRE AND COND. SIZE	NOTES:				
MCC-1	277/480	3		94.1		4-250MCM & 1#4G-3°C					
EMERGENCY						NORMAL					
122.7 KVA						TOTAL CONNECTED LOAD: 122.7 KVA					
153.4 AMPS						153.4 AMPS					
90.7 KVA						TOTAL DEMAND LOAD: 90.7 KVA					
113.4 AMPS						113.4 AMPS					
94.1 KVA						TOTAL COMPUTED LOAD: 94.1 KVA					
117.6 AMPS						117.6 AMPS					

GENERATOR SCHEDULE - GEN-1											
KW RATING: 125KW (MINIMUM) (SEE NOTE 1)						SKVA RATING (AT 35%V. DIP):					
VOLTAGE: 277/480V-3P-4W						SOUND ATTENUATION: CRITICAL SILENCER					
FUEL TYPE: NATURAL GAS						LOCATION: SULLIVAN WELL					
CIR. NO.	DESCRIPTION	VOLTS	P	HP	KW OR KVA	AMPS	BKR SIZE	SWITCH SIZE	WIRE AND COND. SIZE	REMARKS	
1	ATS-1 (E)	277/480	3		94.1		250/3		4-250MCM & 1#4G-3°C		
TOTAL CONNECTED LOAD:						122.7 KVA	NOTES:				
						153.4 AMPS	1. REFER TO 'SULLIVAN WTP GENERATOR MINIMUM SIZING REQUIREMENTS' SUMMARY FOR ADDITIONAL REQUIREMENTS.				
TOTAL DEMAND LOAD:						90.7 KVA	2. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING REQUIREMENTS AND AVAILABILITY OF NATURAL GAS FUEL SERVICE (PER SPECIFICATION REQUIREMENTS) FOR THE GENERATOR PRIOR TO SUBMITTING SHOP DRAWINGS.				
						113.4 AMPS					
TOTAL COMPUTED LOAD:						94.1 KVA					
						117.6 AMPS					

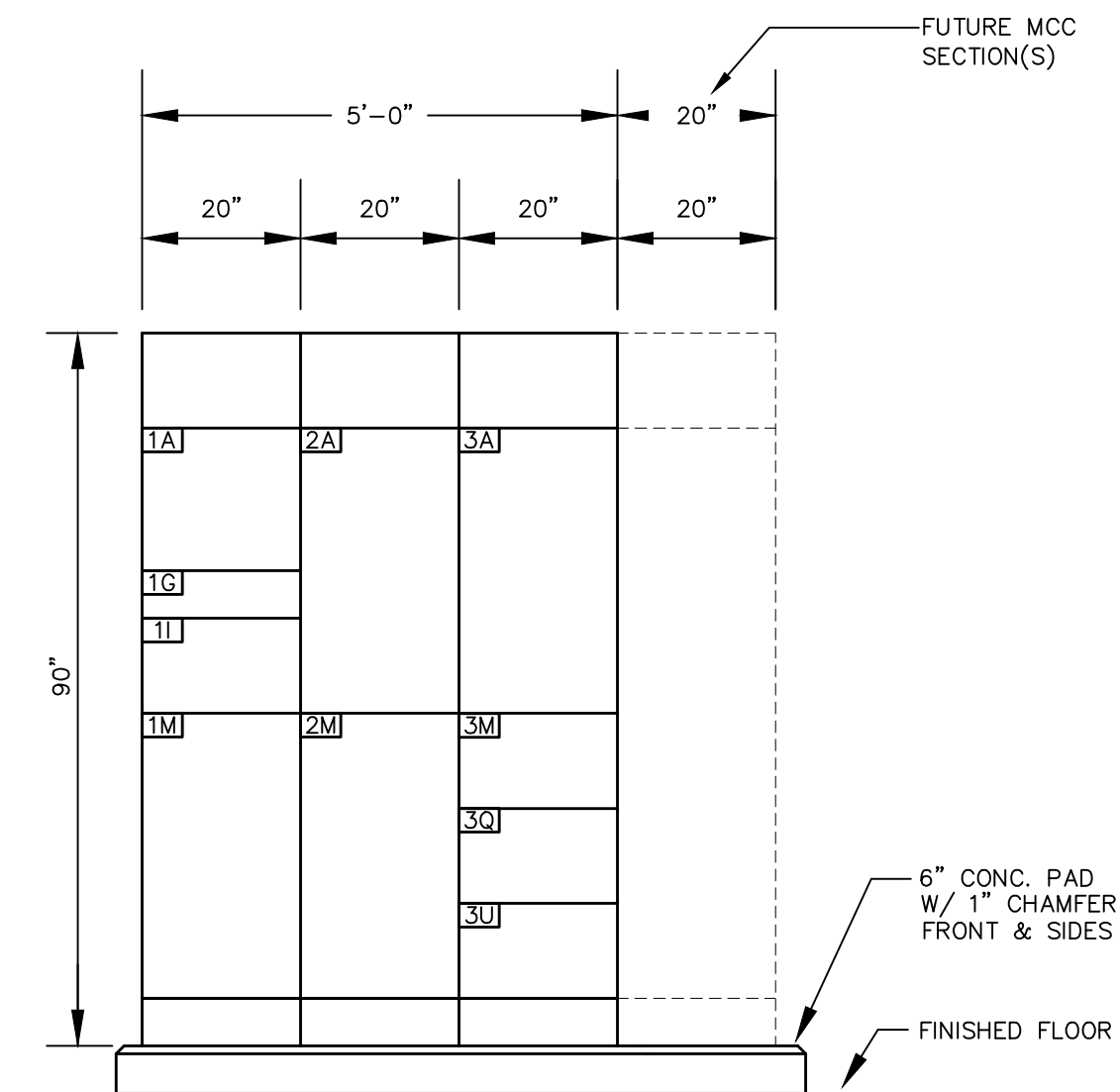
SULLIVAN WTP GENERATOR MINIMUM SIZING REQUIREMENTS	
<b>GENERAL REQUIREMENTS:</b>	
MINIMUM KW:	125KW
MAXIMUM VOLTAGE DIP:	20%
MAXIMUM FREQ. DIP:	10%
ALTITUDE:	400FT
AMBIENT TEMP:	120°F
<b>STEP LOADS:</b>	
STEP #1:	25KVA 3PHASE LINEAR MISC. LOAD & (1) 1 1/2HP-3PHASE PUMP MOTOR - ACROSS THE LINE STARTER
STEP #2:	(1) 15HP-3PHASE PUMP MOTOR - REDUCED VOLTAGE SOLID STATE - STARTING WITH 400% CURRENT LIMIT
STEP #3:	(1) 15HP-3PHASE PUMP MOTOR - REDUCED VOLTAGE SOLID STATE - STARTING WITH 400% CURRENT LIMIT
STEP #4:	(1) 30HP-3PHASE PUMP MOTOR - REDUCED VOLTAGE SOLID STATE - STARTING WITH 400% CURRENT LIMIT
<b>NOTES:</b>	
1. GENERATOR SHALL BE SIZED TO ACCOMMODATE THE STEP LOADS WHILE MEETING THE GENERAL REQUIREMENTS LISTED.	
2. SUBMITTALS SHALL INCLUDE SIZING REPORT SHOWING COMPLIANCE WITH THESE GENERATOR SIZING REQUIREMENTS.	

PANELBOARD SCHEDULE - RP-1											
PANEL TYPE: SQUARE 'D' TYPE NQ						AIC RATING: 10KAIC (MINIMUM)					
VOLTAGE: 120/208V-3P-4W						MOUNTING: SURFACE					
AMPS & TYPE: 150/3 MAIN BKR						LOCATION: SULLIVAN WELL					
FED FROM: MCC-1						FEEDER: 4#1/0 & 1#6G-2°C					
CKT. NO.	NOTES	BKR	DESCRIPTION	WATTS	PHASE	WATTS	DESCRIPTION	BKR	NOTES	CKT. NO.	
1	-	20/1	EXTERIOR LIGHTING	400	A	2,210	ELEC. ROOM HVAC MINI-SPLIT	30/2	VC	22	
2	-	20/1	INTERIOR LIGHTING	360	B	2,210				23	
3	VC	20/1	HOIST	1,000	C	800	EXHAUST FAN	20/1	VC	24	
4	-	20/1	EXTERIOR RECEPTACLES	800	A	800	EXHAUST FAN	20/1	VC	25	
5	-	20/1	INTERIOR RECEPTACLES	800	B	1,250	CHLORINE ROOM HEATER	20/2	VC	26	
6	-	20/1	INTERIOR RECEPTACLES	600	C	1,250				27	
7	GFI	20/1	INTERIOR RECEPTACLES	600	A	1,666	CHEMICAL FEED ROOM HEATER	20/2	VC	28	
8	LON	20/1	CLEARWELL LOW LVL CUTOFF C.P.	100	B	1,666				29	
9	GFI	20/1	AERATOR HEATER	1,000	C	1,250	GEN-1 BLOCK HEATER	20/2	-	30	
10	-	20/1	PHOSPHATE CHEMICAL FEED PUMP	100	A	1,250				31	
11	-	20/1	CAUSTIC CHEMICAL FEED PUMP	100	B	500	GEN-1 BATTERY CHARGER	20/1	-	32	
12	-	20/1	SPARE		C	500	HEAT TRACING	20/1	GFI	33	
13	LON	20/1	CHLORINE LEAK ALARM DETECTOR	200	A		SPARE	20/1	-	34	
14	LON	20/1	CL2 VAC ALARM DETECTOR	200	B		SPARE	20/1	-	35	
15	LON	20/1	SCADARTU	500	C		SPARE	20/1	-	36	
16	-	20/1	CLEARWELL ULTRASONIC LVL XMTR	200	A			20/1	-	37	
17	-	20/1	CLEARWELL RECEP	200	B			20/1	-	38	
18	-	20/1	CL2 CYLINDER WEIGHT (LVL) XMTR	200	C			20/1	-	39	
19	-	20/1	SPARE		A			20/1	-	40	
20	-	20/1	SPARE		B			20/1	-	41	
21	-	20/1	SPARE		C			20/1	-	42	
NOTES:				PH. A:	PH. B:	PH. C:	TOTAL CONNECTED LOAD:				
1. PROVIDE INTEGRAL 100KA (PER PHASE) SURGE PROTECTION DEVICE.				8,226	7,386	7,100	22.7 KVA				
							63.1 AMPS				
							TOTAL DEMAND LOAD:				
							22.7 KVA				
							63.1 AMPS				
							TOTAL COMPUTED LOAD:				
							26.1 KVA				
							72.5 AMPS				

TRANSFORMER SCHEDULE							
MARK	SIZE (KVA)	DESCRIPTION	PRIMARY VOLTAGE & PHASE	SECONDARY VOLTAGE & PHASE	PANEL FED	GROUND SIZE	REMARKS
T-1	45	DRY-TYPE	480V-3P-3W	120/208V-3P-4W	RP-1	6" CONCRETE PAD	#6
<b>TRANSFORMER SCHEDULE NOTES:</b>							
1. EXACT TRANSFORMER LOCATIONS SHALL BE FIELD COORDINATED TO PROVIDE CODE-REQUIRED CLEARANCES AND WORKING SPACES AROUND TRANSFORMERS AND ADJACENT EQUIPMENT (SUCH AS PANELBOARDS).							
2. ALL TRANSFORMERS SHALL BE MOUNTED ON VIBRATION ISOLATORS PER SPECIFICATION REQUIREMENTS.							

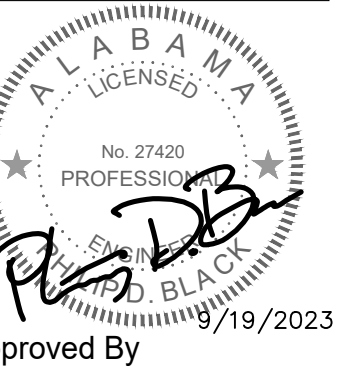
PANELBOARD/EQUIPMENT SCHEDULE(S) KEYED NOTES LEGEND	
KEYED NOTE	DESCRIPTION
GFI	INDICATED BREAKER SHALL BE TYPE GFI.
GFI	INDICATED BREAKER SHALL BE TYPE GFI-EPD TYPE (30mA TRIP).
LON	INDICATED BREAKER SHALL BE PROVIDED WITH LOCK-ON HARDWARE.
VC	CONTRACTOR SHALL VERIFY REQUIRED BREAKER & CIRCUITRY REQUIREMENTS OF INDICATED CIRCUIT WITH EQUIPMENT SUPPLIER PRIOR TO SUBMITTING SHOP DRAWINGS OR ROUGHING IN CONDUITS.

MOTOR CONTROL CENTER SCHEDULE - MCC-1													
MCC TYPE: SQUARE 'D' MODEL 6 MCC						AIC RATING: 30KAIC (MINIMUM)							
VOLTAGE: 277/480V-3P-4W						LOCATION: SULLIVAN WELL WTP							
MAIN AMPS: 600 AMP - MLO						REMARKS:							
FED FROM: ATS-1						FEEDER: SEE AUTOMATIC TRANSFER SWITCH SCHEDULE - ATS-1							
UNIT NO.	NAMEPLATE DESCRIPTION	MCC UNIT TYPE	ELECT. EQUIP. CHARACTERISTICS					STARTER NEMA OR AMPERAGE RATING	CIR. BKR. OR MCP	ELEM. DIAG. NO.	LOCAL SAFETY SWITCH RATING	WIRE AND COND. SIZE	REMARKS
			V	P	HP	KW OR KVA	AMPS						
1 A	MAIN LUGS	SEE ABOVE	277/480	3							-	SEE AUTOMATIC TRANSFER SWITCH SCHEDULE - ATS-1	
1 G	MCC SURGE PROTECTION DEVICE	240KA (PER PHASE) SURGE PROTECTION DEVICE	277/480	3							-		
1 I	MCC POWER METER	SQUARE D #PM563 WITH DOOR-MOUNTED DISPLAY AND ETHERNET COMMUNICATION CARD	277/480	3							-		
1 M	WELL PUMP	COMBINATION REDUCED VOLTAGE SOFT STARTER (RVSS) WITH MCP & FVNR BYPASS STARTER	480	3	15			27 AMPS	MCP PER MANUF.	1	-	3#8 & 1#10G-1°C	
2 A	HIGH SERVICE PUMP NO. 1	COMBINATION REDUCED VOLTAGE SOFT STARTER (RVSS) WITH MCP	480	3	15			27 AMPS	MCP PER MANUF.	2	-	3#8 & 1#10G-1°C	
2 M	HIGH SERVICE PUMP NO. 2	COMBINATION REDUCED VOLTAGE SOFT STARTER (RVSS) WITH MCP	480	3	30			52 AMPS	MCP PER MANUF.	2	-	3#4 & 1#6G-1 1/4°C	
3 A	HIGH SERVICE PUMP NO. 3	COMBINATION REDUCED VOLTAGE SOFT STARTER (RVSS) WITH MCP	480	3	30			52 AMPS	MCP PER MANUF.	2	-	3#4 & 1#6G-1 1/4°C	
3 M	AERATOR BLOWER	COMBINATION FVNR STARTER WITH MCP	480	3	1 1/2				NEMA 1	MCP PER MANUF.	3	3#12 & 1#12G-3/4°C	
3 Q	RP-1 (45 KVA X-FORMER)	80/3 BREAKER	480	3		26.1					-	3#4 & 1#6G-1 1/4°C	
3 U	SPACE	PROVISIONS FOR FUTURE PLUG-IN UNITS	277/480	3							-/3		
TOTAL CONNECTED LOAD:							122.7 KVA	NOTES:					
							153.4 AMPS						
TOTAL DEMAND LOAD:							90.7 KVA						
							113.4 AMPS						
TOTAL COMPUTED LOAD:							94.1 KVA						
							117.6 AMPS						



**MCC-1 ELEVATION**  
SCALE : 1/2" = 1'-0"

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Solutions you can build upon  
Two Perimeter Park South, Suite 230 E  
Birmingham, Alabama 35243  
(205) 397-3800  
(205) 397-3800 (FAX)



Approved By

SULLIVAN WTP ELECTRICAL SCHEDULES  
GORDO WATER, GAS, AND SEWER BOARD  
SULLIVAN WATER TREATMENT PLANT  
REHABILITATION, PHASE 2 - EQUIPMENT  
BUILDING & CLEARWELL REHAB  
DWSRF PROJECT #FS010412-01  
PICKENS COUNTY

REVISION	DATE	BY	DATE	BY
			09/20/23	PHIL BLACK
			11/14/01	PHIL BLACK

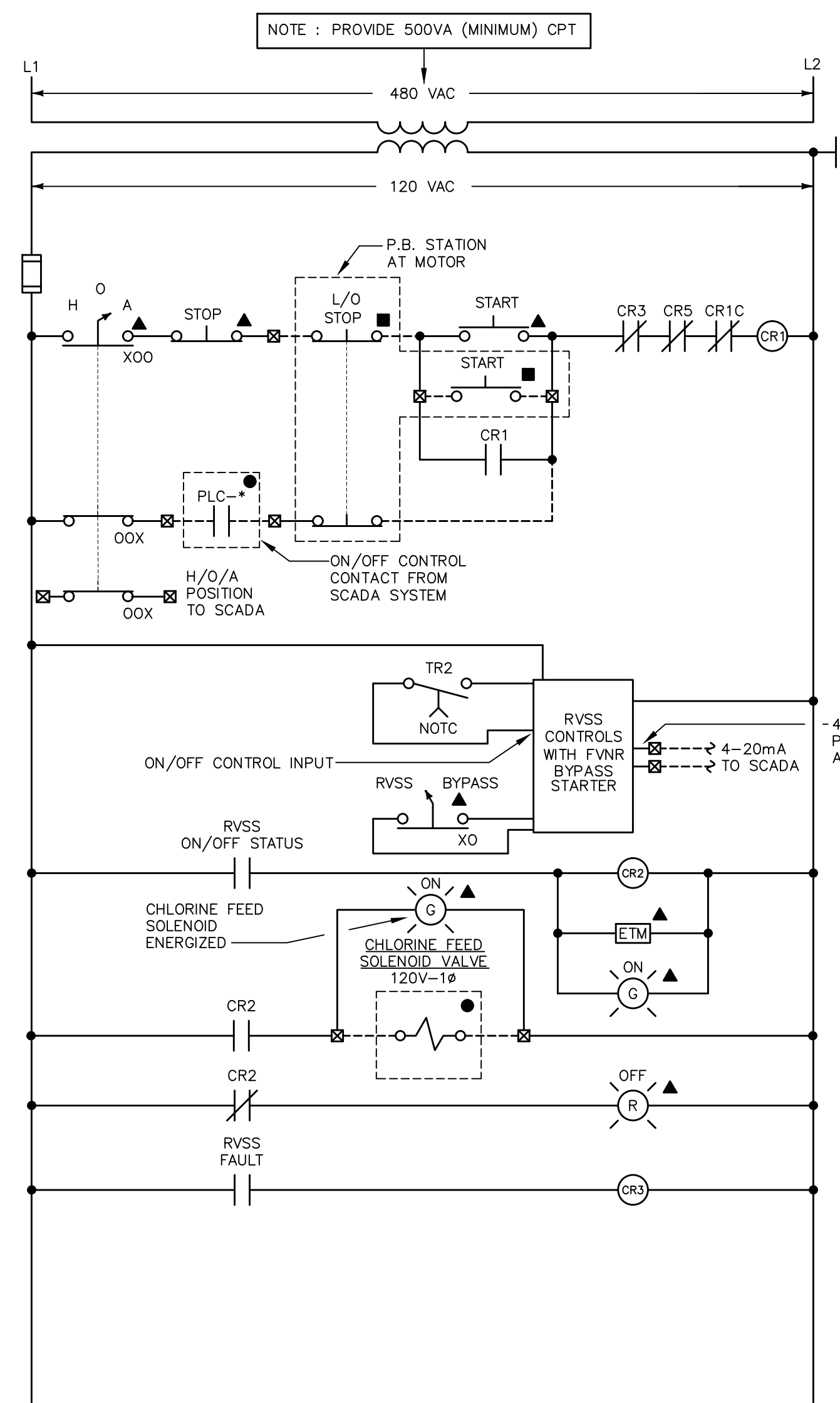
**E-04**  
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SHEET NO. 21 OF 38





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					09/20/23		17174.001

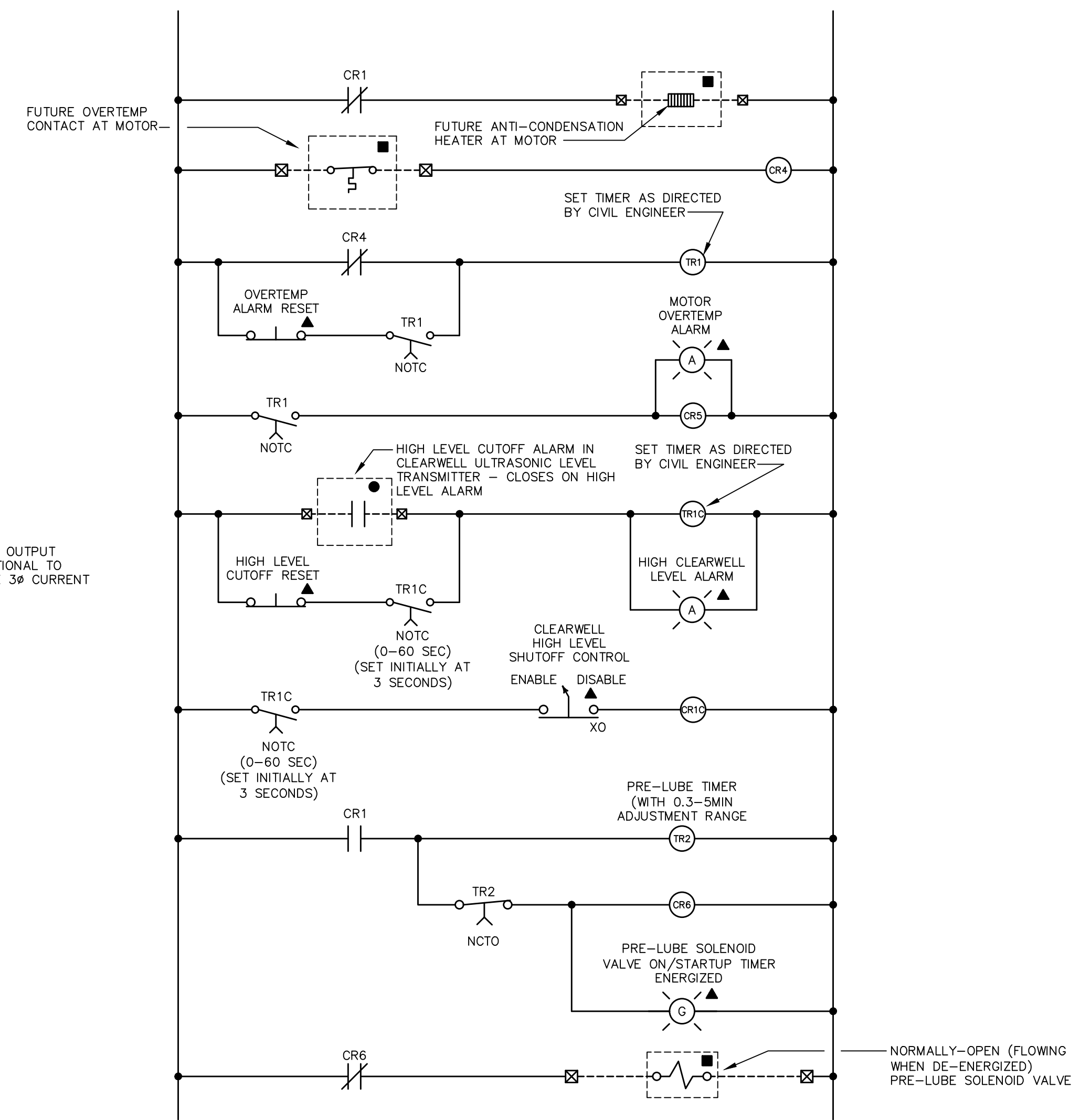
ELEMENTARY DIAGRAM LEGEND	
	PUSHBUTTON - START - NORMALLY OPEN - MOMENTARY CONTACT.
	PUSHBUTTON - STOP - NORMALLY CLOSED - MOMENTARY CONTACT.
	PUSHBUTTON - EMERGENCY STOP - NORMALLY CLOSED - MAINTAINED CONTACT - MUSHROOM HEAD.
	SELECTOR SWITCH - HAND-OFF-AUTOMATIC - MAINTAINED CONTACT - "XOO" INDICATES THAT CONTACT IS ONLY CLOSED IN THE FIRST (HAND) POSITION (MAY BE USED WITH OTHER COMBINATIONS OF "X" & "O").
	SELECTOR SWITCH - ON-OFF - MAINTAINED CONTACT - "XO" INDICATES THAT CONTACT IS ONLY CLOSED IN THE FIRST (ON) POSITION (MAY BE USED WITH OTHER COMBINATIONS OF "X" & "O").
	MOTOR STARTER COIL.
	BYPASS MOTOR STARTER COIL.
	OVERLOAD RELAY CONTACT.
	CONTROL RELAY COIL.
	CONTROL CONTACT - NORMALLY OPEN.
	CONTROL CONTACT - NORMALLY CLOSED.
	INDICATOR LIGHT - COLOR AS SHOWN.
	CONTROL TRANSFORMER.
	ELAPSED TIME METER.
	DEVICE LOCATED ON STARTER DOOR.
	DEVICE LOCATED ADJACENT TO MOTOR.
	DEVICE LOCATED REMOTE - SEE PLAN.
	TERMINAL BLOCK WITHIN STARTER UNIT.
	FLOAT SWITCH - CLOSING ON RISING LEVEL.
	FLOAT SWITCH - CLOSING ON FALLING LEVEL.
	PRESSURE SWITCH - CLOSING ON INCREASE PRESSURE.
	PRESSURE SWITCH - CLOSING ON DECREASE PRESSURE.
	LIMIT SWITCH - NORMALLY OPEN - HELD CLOSED.
	LIMIT SWITCH - NORMALLY CLOSED - HELD OPEN.
	TIME DELAY RELAY COIL.
	TIME DELAY RELAY CONTACT - NORMALLY CLOSED, TIME OPEN.
	TIME DELAY RELAY CONTACT - NORMALLY OPEN, TIME CLOSED.
	TIME DELAY RELAY CONTACT - NORMALLY OPEN, TIME OPEN.
	TIME DELAY RELAY CONTACT - NORMALLY CLOSED, TIME CLOSED.
	SOLENOID VALVE.
	THERMOSTAT - NORMALLY CLOSED, OPENS ON HIGH TEMP.
	THERMOSTAT - NORMALLY OPEN, CLOSING ON HIGH TEMP.
	ALARM HORN.



	CR2 RVSS ON/OFF STATUS TO SCADA		CR3 RVSS ALARM STATUS TO SCADA		CR2 AERATOR ON/OFF CONTROL CONTACT		CR2 CAUSTIC METERING PUMP ON/OFF CONTROL CONTACT
	CR2 SPARE ON/OFF STATUS		CR5 MOTOR OVERTEMP ALARM STATUS TO SCADA		CR2 PHOSPHATE METERING PUMP ON/OFF CONTROL CONTACT		TR1C HIGH CLEARWELL LEVEL ALARM TO SCADA

**ELEMENTARY DIAGRAM NO. 1**

WELL PUMP RVSS STARTER: MCC-1



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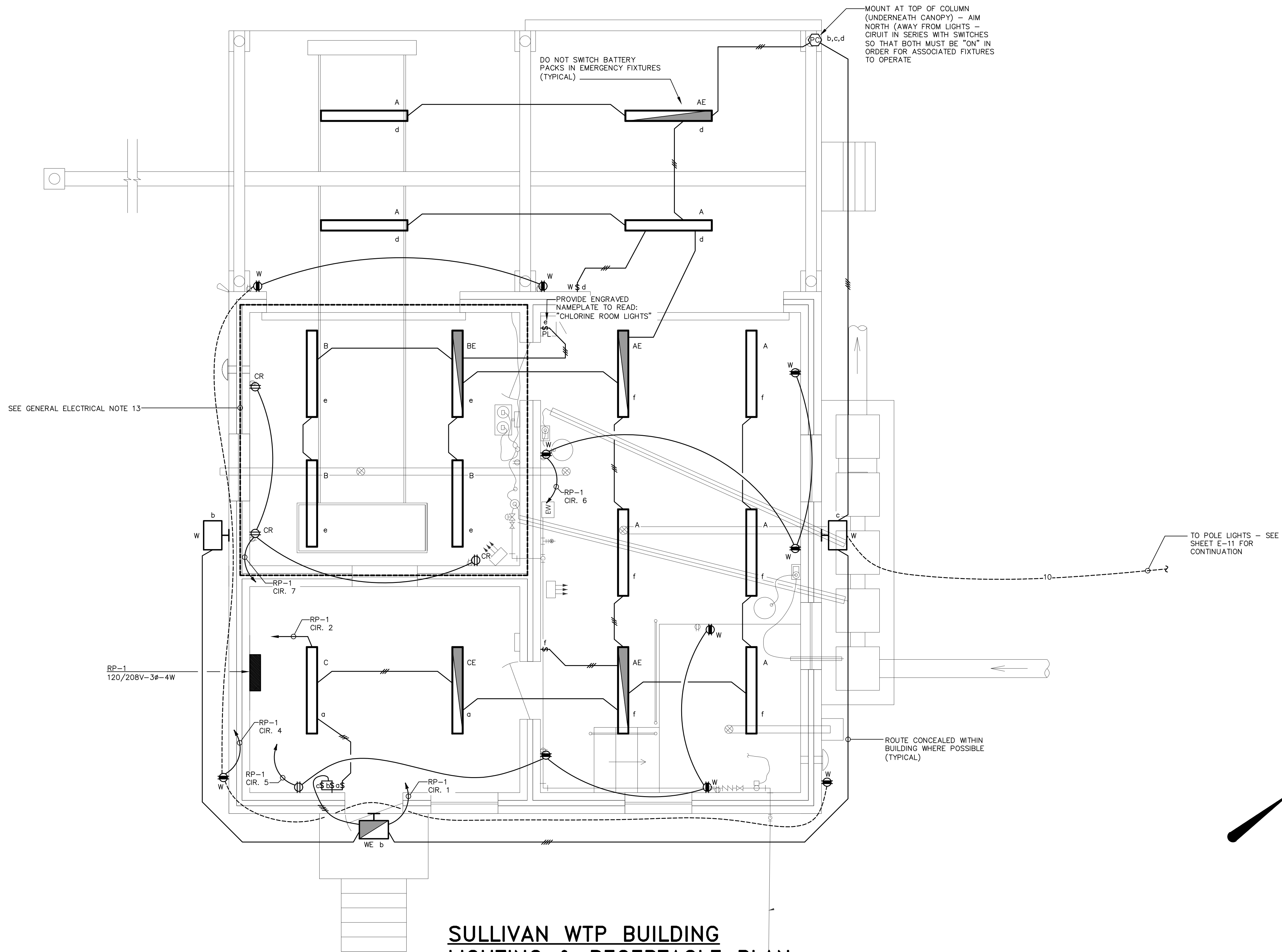












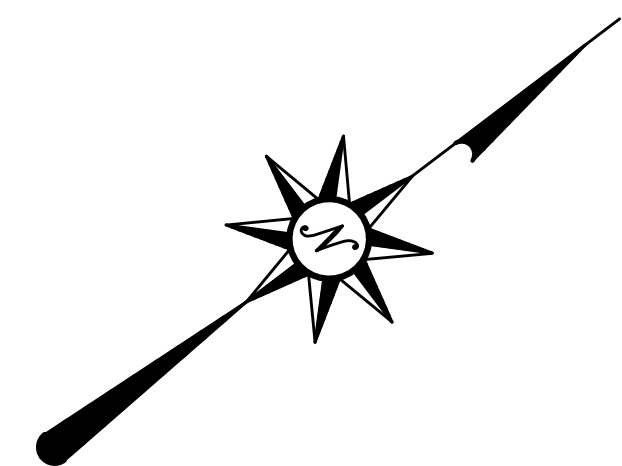
SEE GENERAL ELECTRICAL NOTE 13

RP-1  
120/208V-3ø-4W

**SULLIVAN WTP BUILDING  
LIGHTING & RECEPTACLE PLAN**  
SCALE : 3/8" = 1'-0"

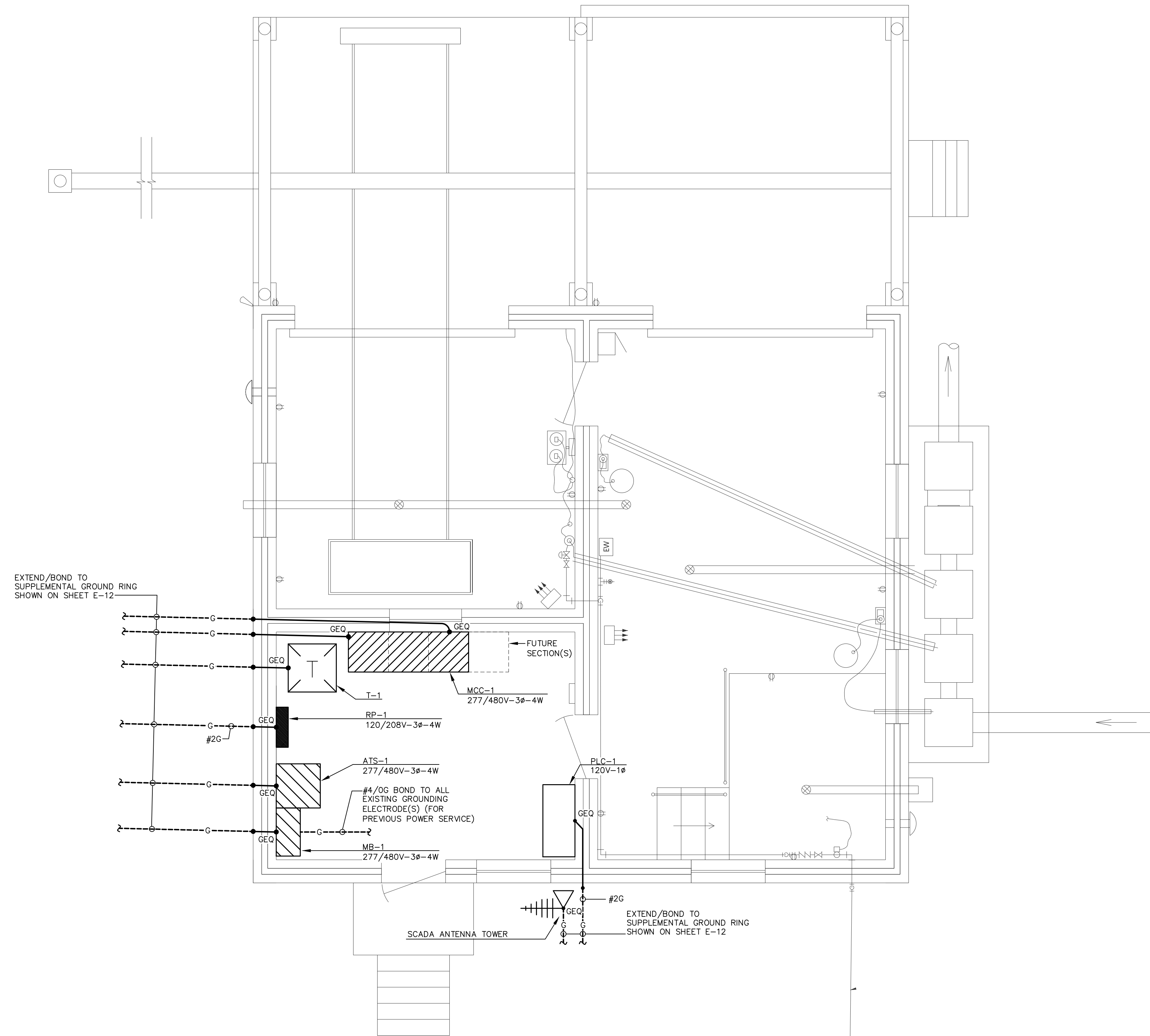
NOTES THIS SHEET ONLY

- CONTRACTOR MAY, AT HIS SOLE DISCRETION, REUSE EXISTING CONCEALED/IN-WALL RECEPTACLE CIRCUIT CONDUITS AS LONG AS THE CONDUIT IS IN SATISFACTORY CONDITION AND MEETS THE SPECIFICATION REQUIREMENTS LAID OUT IN THE CONTRACTING DOCUMENTS FOR THE PROJECT. ALL RECEPTACLE WIRING & CONDUITS THAT ARE EXPOSED ON THE WALLS SHALL BE ROUTED IN A WAY THAT IS AS VISUALLY DISCRETE AS POSSIBLE.

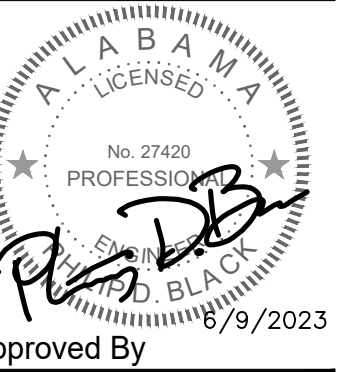
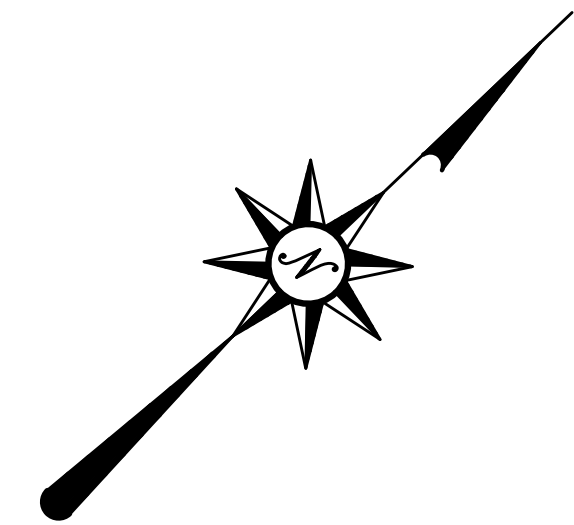


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**SULLIVAN WTP BUILDING  
SUPPLEMENTAL GROUNDING PLAN**  
SCALE : 3/8" = 1'-0"

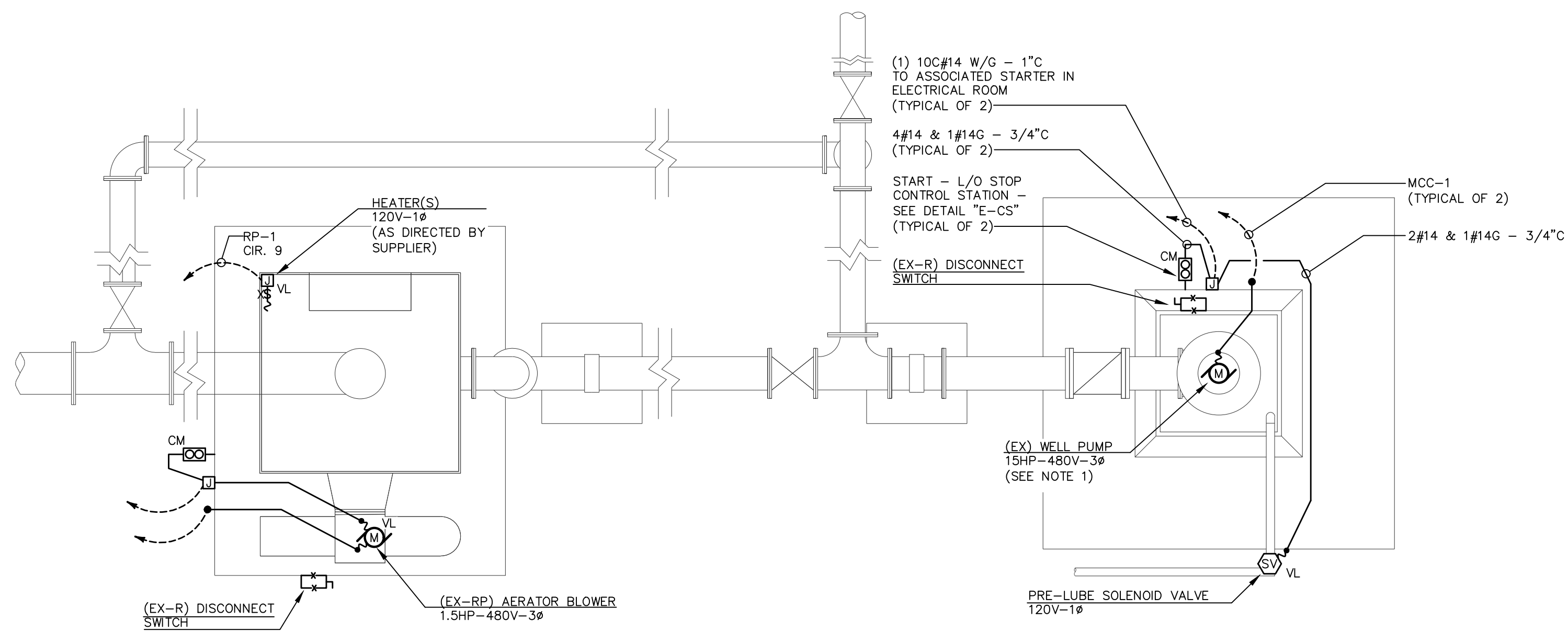


SULLIVAN WTP BUILDING GROUNDING PLAN  
GORDO WATER, GAS, AND SEWER BOARD  
SULLIVAN WATER TREATMENT PLANT  
REHABILITATION, PHASE 2 - EQUIPMENT  
BUILDING & CLEARWELL REHAB  
DWSRF PROJECT #FS010412-01  
PICKENS COUNTY

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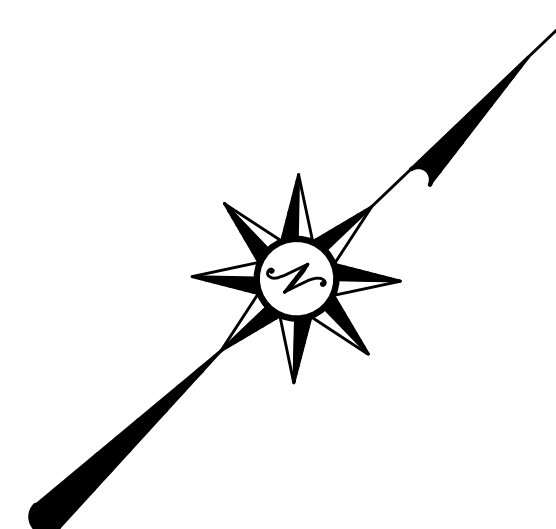




**SULLIVAN WTP AERATOR &  
WELL PUMP ELECTRICAL PLAN**  
SCALE : 1/2" = 1'-0"

NOTES THIS SHEET ONLY

1. CONTRACTOR SHALL VERIFY EXISTING MOTOR HP/V/Ø RATINGS PRIOR TO SUBMITTING MCC SHOP DRAWINGS OR ROUGH-IN, AND SHALL NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES FOUND WITH THESE PLANS.



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ALABAMA  
No. 27420  
PROFESSIONAL  
PHIL BLACK  
ELECTRICAL ENGINEER  
Approved By 9/19/2023

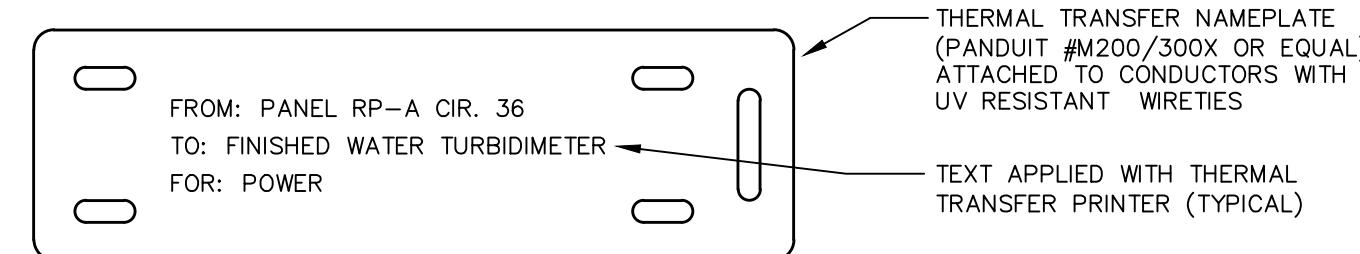
SULLIVAN WTP AER. & WELL PUMP ELEC. PLAN  
GORDO WATER, GAS, AND SEWER BOARD  
SULLIVAN WATER TREATMENT PLANT  
REHABILITATION, PHASE 2 - EQUIPMENT  
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JRA JOB NO. 222217

**E-18**  
R  
SHEET NO. 34 OF 38

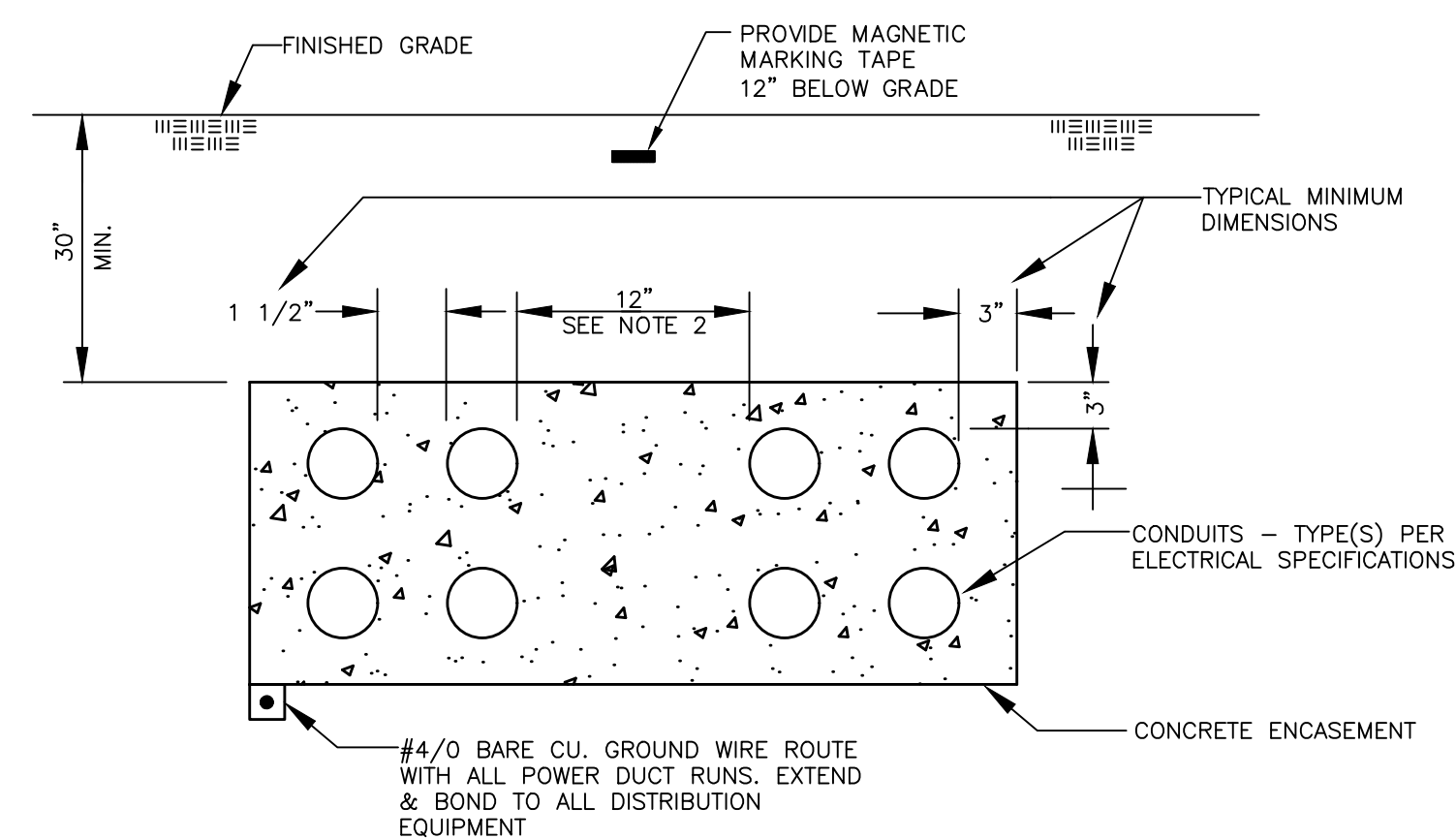




### DETAIL "E-CL" TYPICAL CIRCUIT LABEL

SCALE : NONE

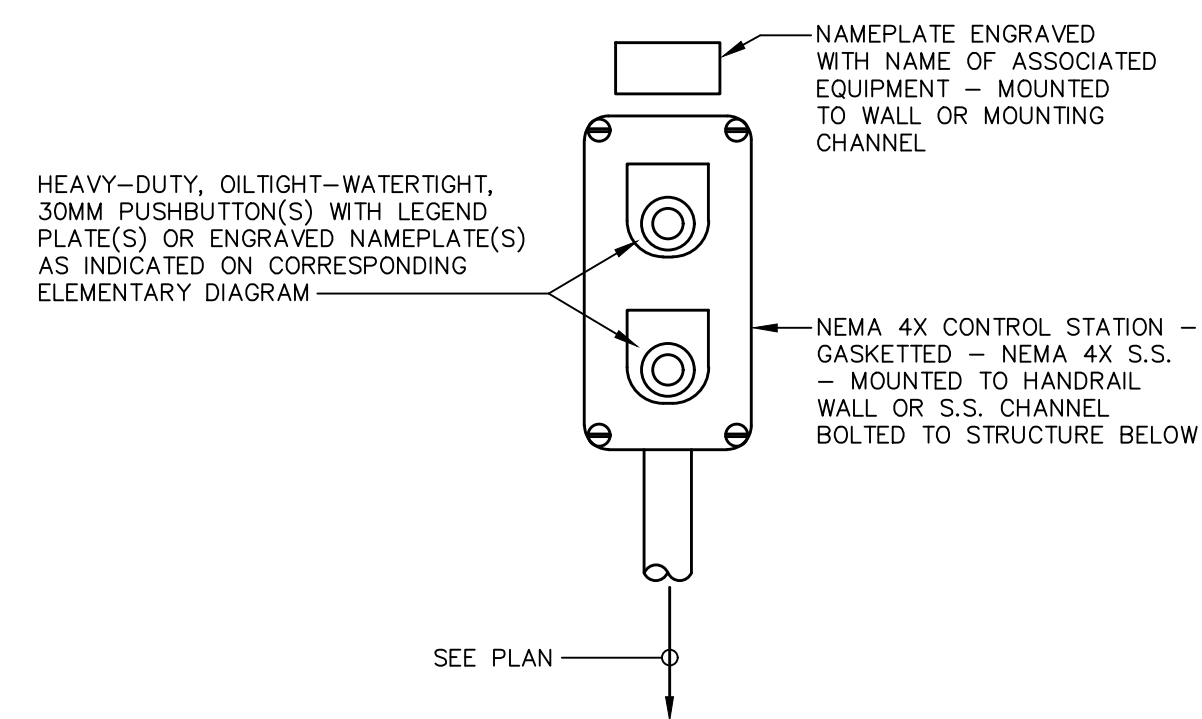
- NOTES THIS DETAIL ONLY
- CIRCUIT LABEL TYPES SHOWN ABOVE SHALL BE USED TO IDENTIFY ALL CIRCUITS WITHIN PULLBOXES, HANDHOLES, VAULTS JUNCTION BOXES LARGER THAN 4-11/16", APPROXIMATELY EVERY 50 FEET WITHIN CABLE TRAYS (INCLUDING AT MAJOR CABLE TRAY JUNCTIONS AND BREAKOUT LOCATIONS) AND AT OTHER SIMILAR LOCATIONS. SEE SPECIFICATIONS FOR LABELING REQUIREMENTS IN OTHER AREAS.
  - CIRCUIT NUMBERS SHALL BE IDENTIFIED FOR ALL CIRCUITS FED FROM LIGHTING OR POWER PANELBOARDS.
  - "FROM", "TO" & "FOR" TEXT SHOWN ABOVE ARE FOR EXAMPLE PURPOSES ONLY. NAMES/NUMBERS SHALL BE ADJUSTED TO MATCH ASSOCIATED CIRCUITS/CABLES.
  - SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.



### DETAIL "E-DR" TYPICAL DUCT RUN SECTION

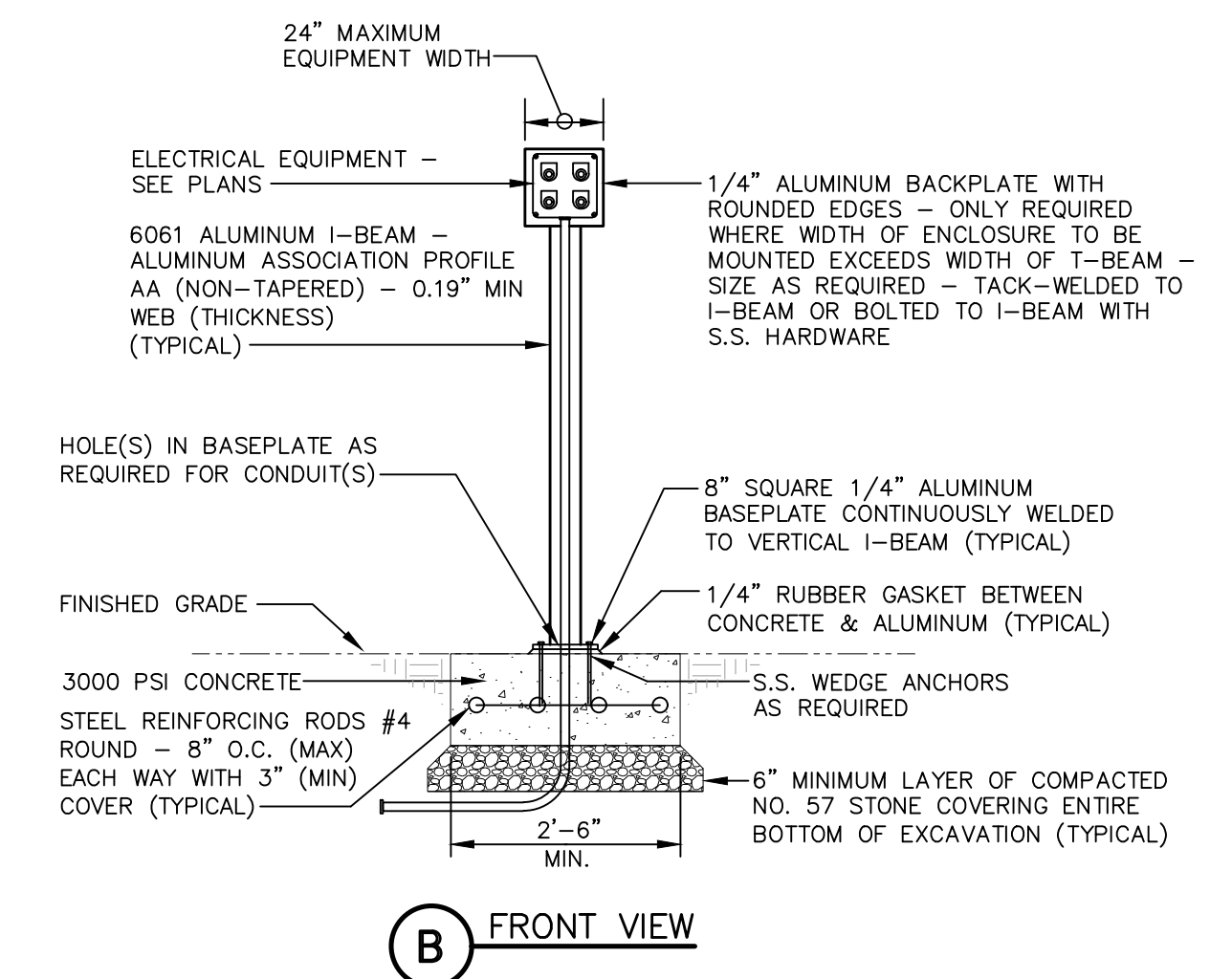
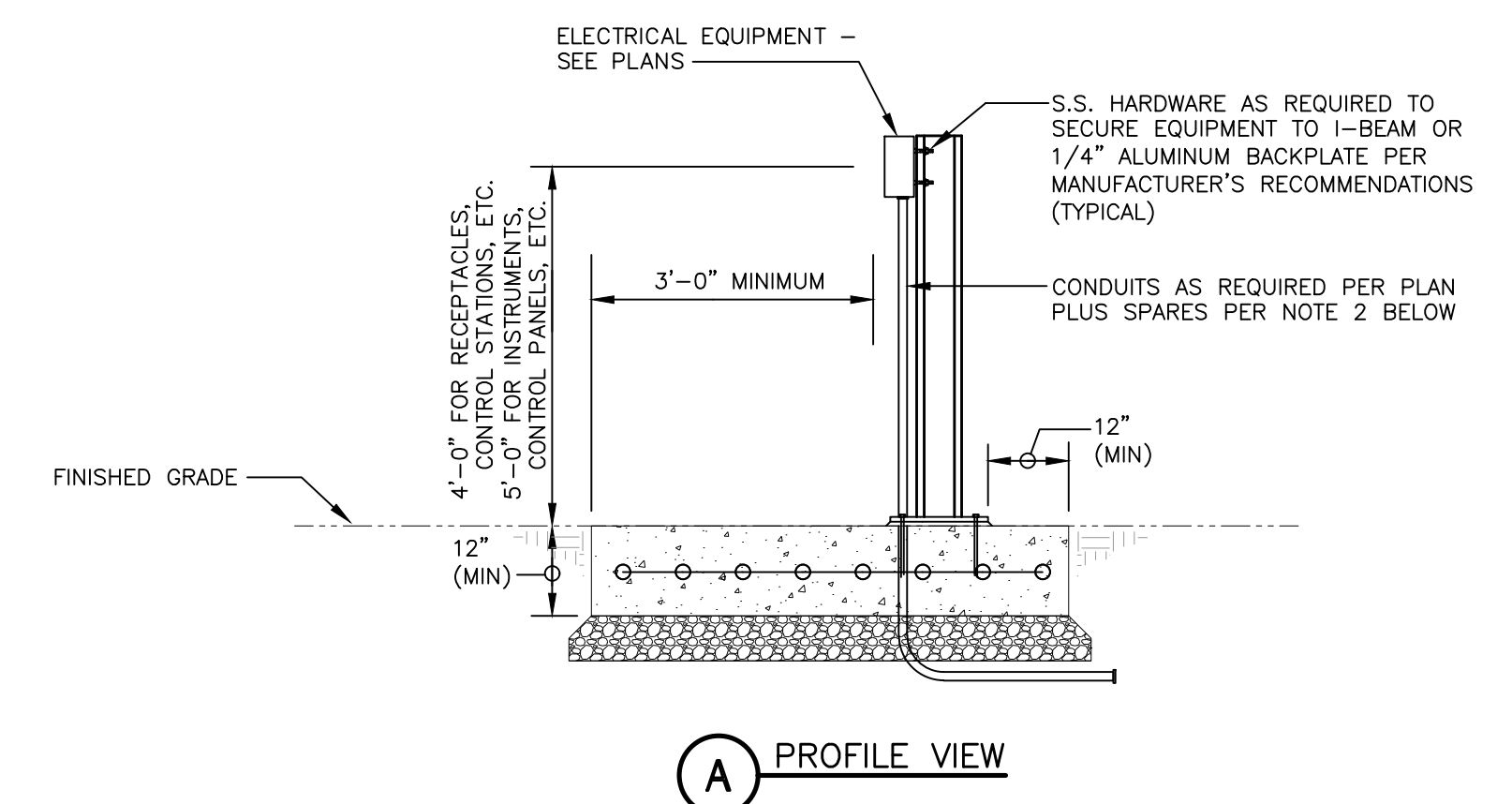
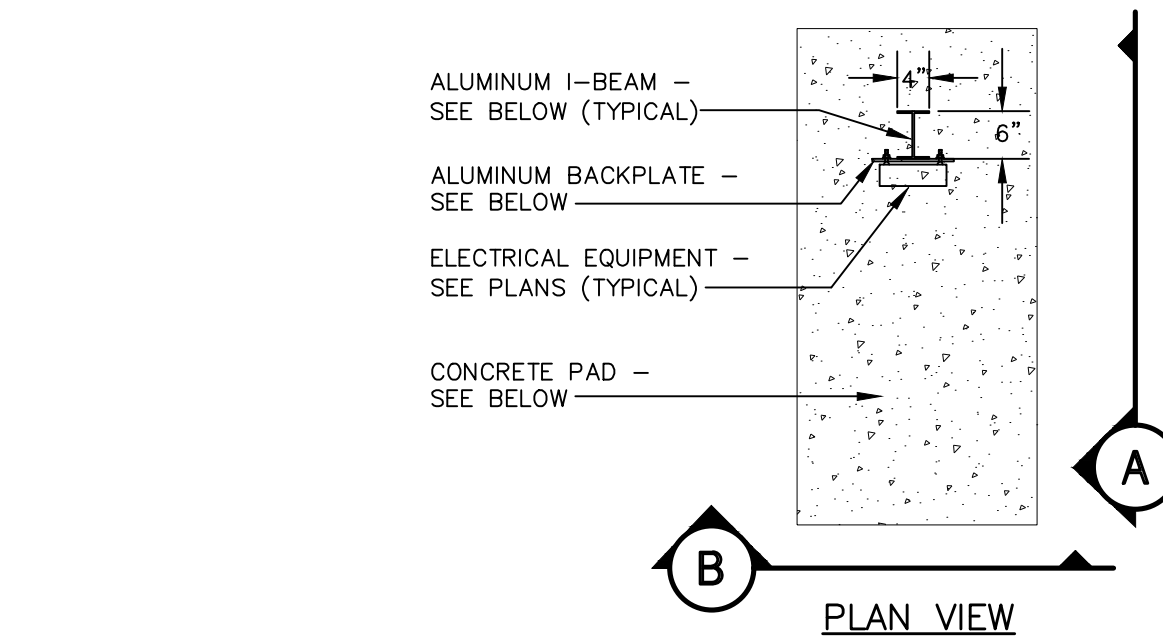
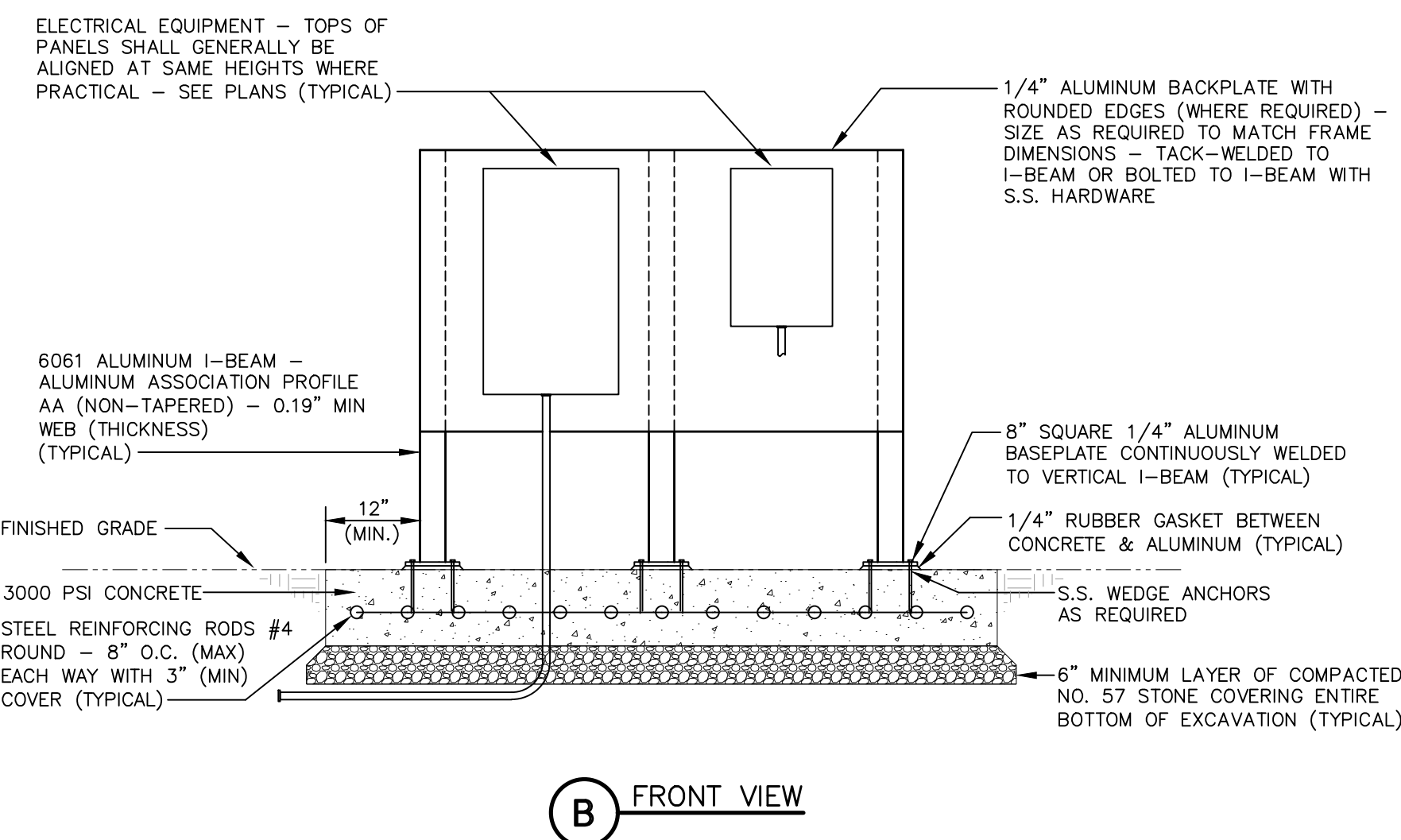
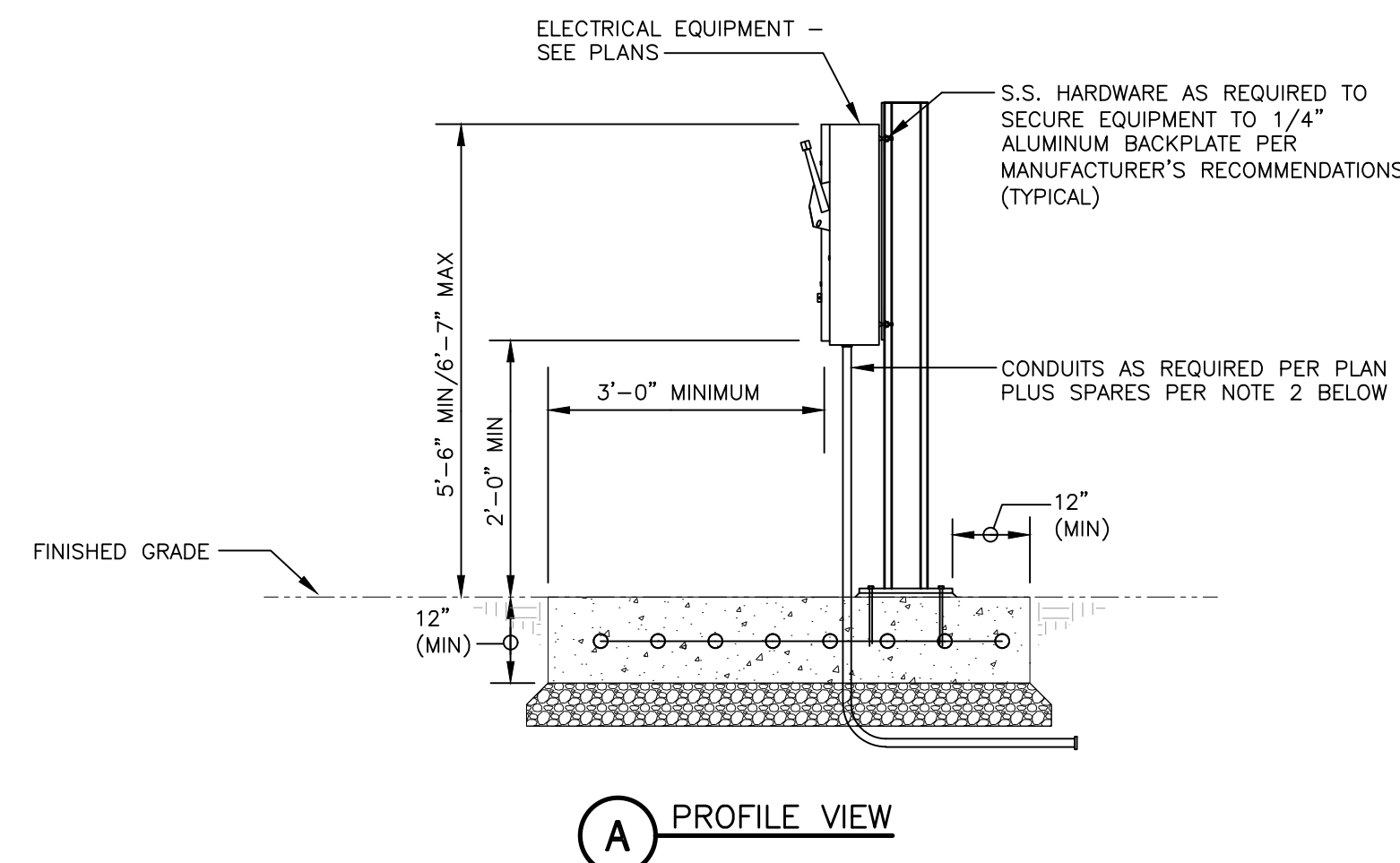
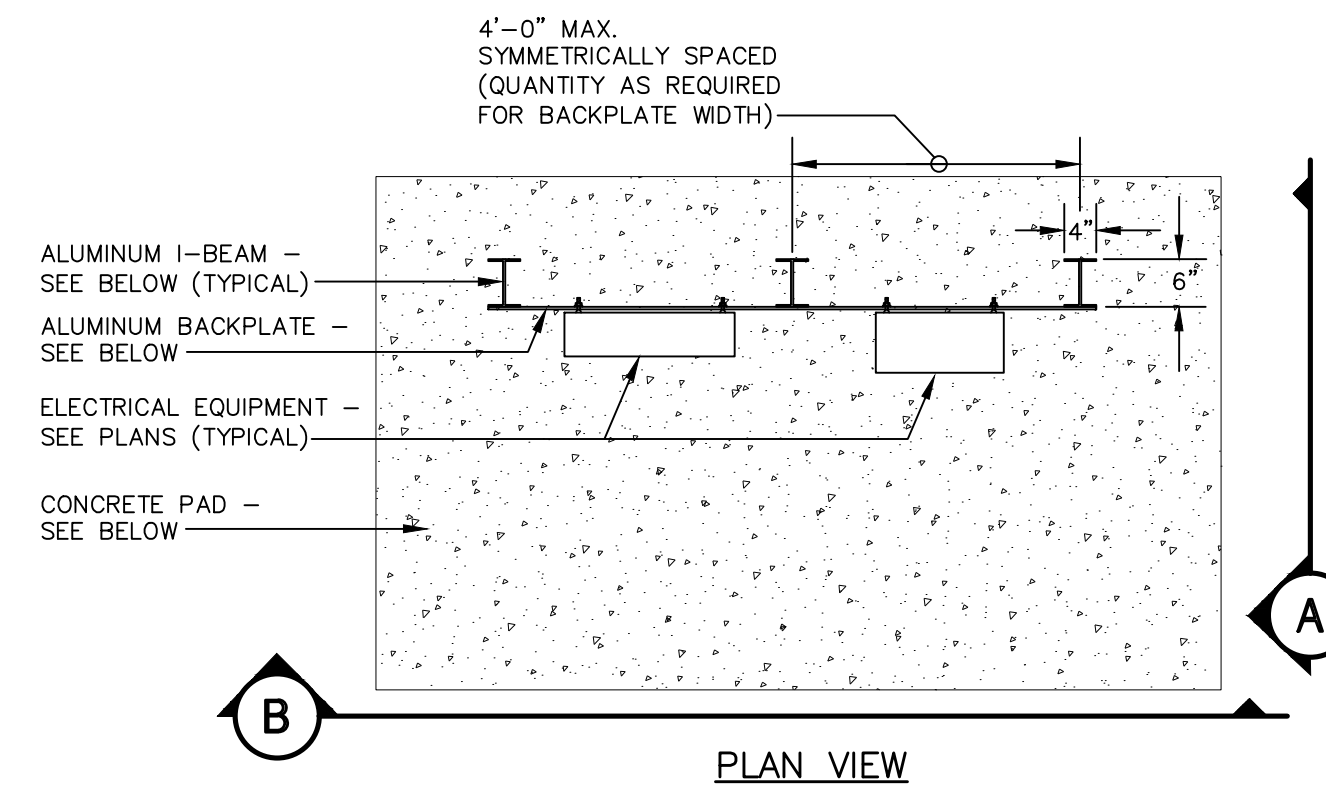
SCALE : NONE

- DETAIL NOTES
- PVC SPACERS SHALL BE INSTALLED AT RECOMMENDED INTERVALS TO SUPPORT AND MAINTAIN SPACING FOR CONDUITS.
  - INSTRUMENTATION CONDUITS SHALL BE SEPARATED FROM POWER/CONTROL CONDUITS BY A MINIMUM OF 12" THROUGHOUT ANY DUCT RUNS.



### DETAIL "E-CS" TYPICAL CONTROL STATION

SCALE : NONE



### DETAIL "E-ES" EQUIPMENT SUPPORT

SCALE : NONE

- DETAIL NOTES
- ALL DIMENSIONS SHOWN ARE TYPICAL.
  - PROVIDE TWO (2) 1"E.C. FROM ALL DISTRIBUTION PANELS, LIGHTING PANELS, PLC'S AND CONTROL PANELS ROUTED BELOW CONCRETE PAD TO NEAREST PULLBOX OR ACCESSIBLE STUB OUT LOCATION (NOT UNDERNEATH CONCRETE/ROCK/STRUCTURE/ETC).

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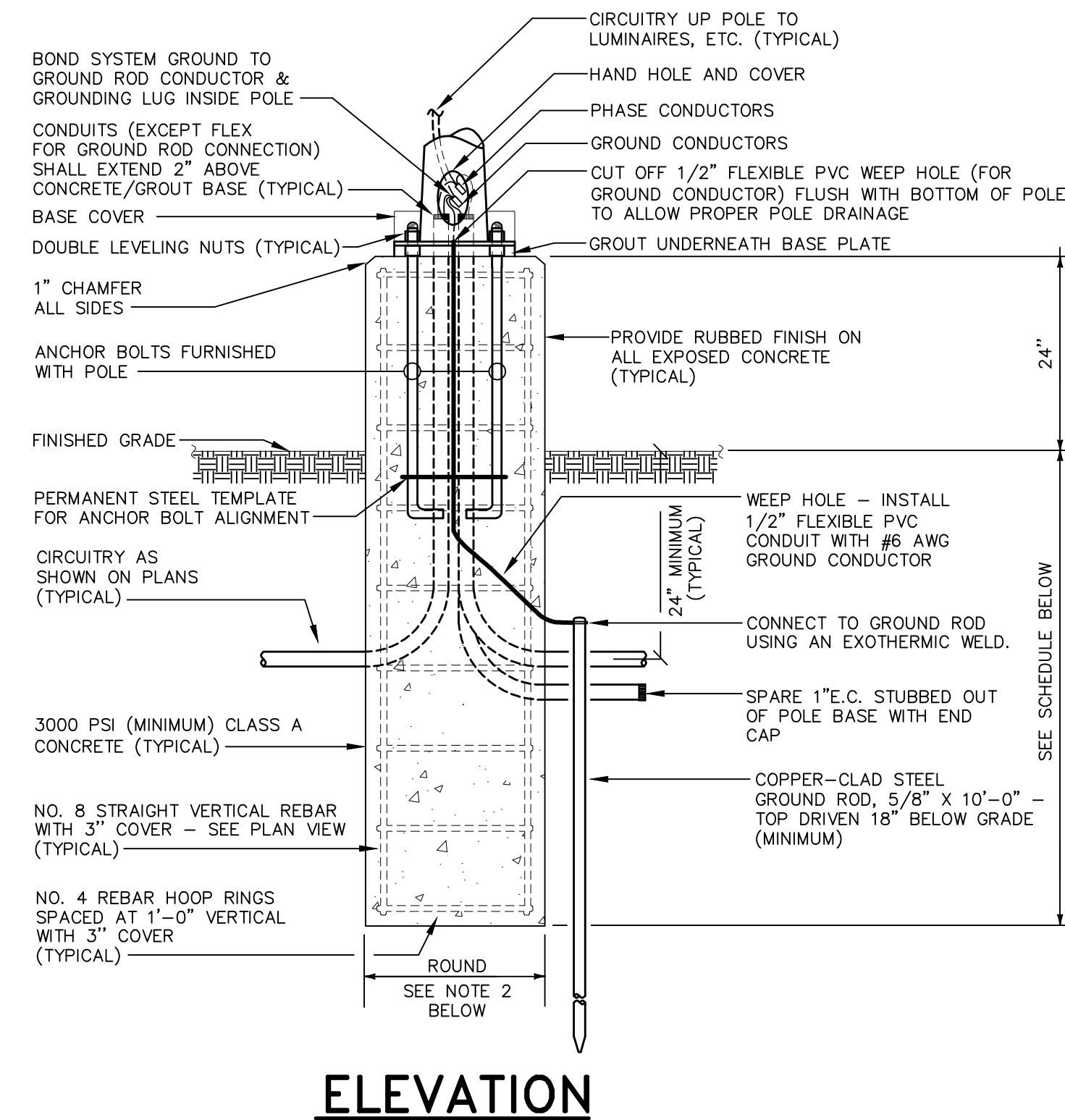
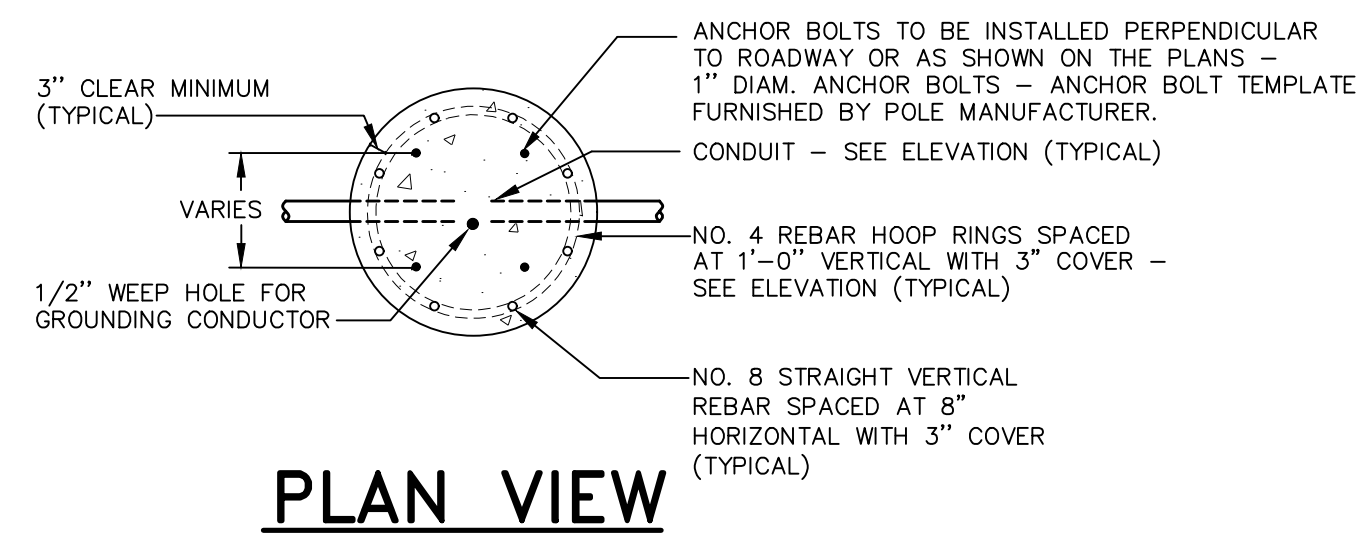
NAME:	RP-A
RATING:	120/208V-3Ø-4W
FED FROM:	PP-A CIR. 4 (IN MAIN ELEC. ROOM)

## DETAIL "E-EDL" ELECTRICAL DISTRIBUTION EQUIPMENT LABEL

SCALE : NONE

### DETAIL NOTES

- PANEL NAMES & RATINGS LISTED ABOVE ARE FOR EXAMPLE PURPOSES ONLY. NAMES & RATINGS SHALL BE ADJUSTED TO MATCH ASSOCIATED EQUIPMENT.
- THE INTENT OF THIS DETAIL IS TO DEMONSTRATE GENERAL ELECTRICAL IDENTIFICATION REQUIREMENTS FOR ELECTRICAL DISTRIBUTION AND UTILIZATION EQUIPMENT. REFER TO SPECIFICATIONS FOR SPECIFIC REQUIREMENTS REGARDING LOCATIONS, CONTENT, MATERIALS, ETC..



## DETAIL "E-LP1" EXPOSED LIGHT POLE BASE

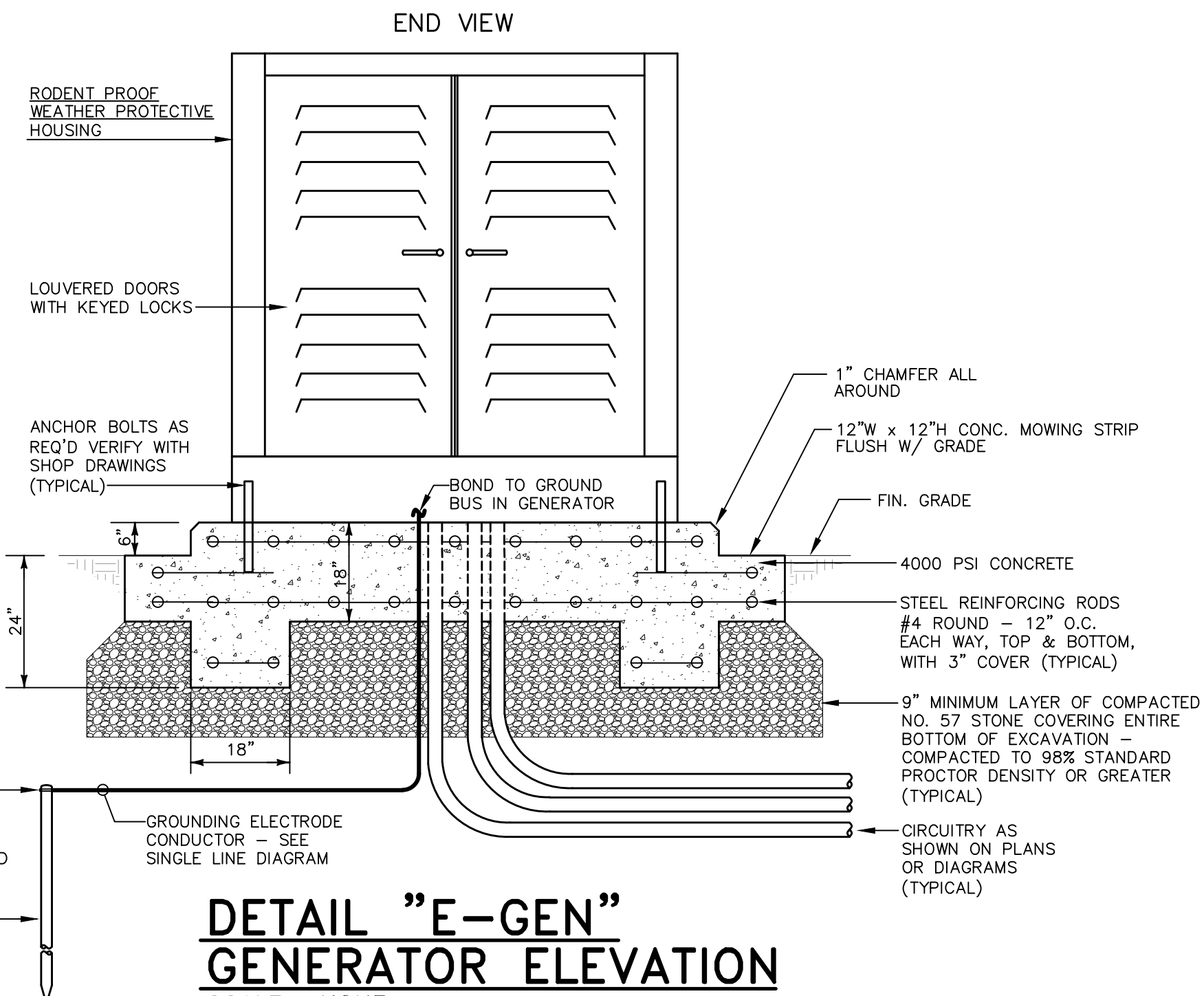
SCALE : NONE

### DETAIL NOTES

- THIS CONTRACTOR SHALL CONFIRM SOIL CONDITIONS PRIOR TO BID OR INSTALLATION. IF SOIL CONDITIONS/TYPES ARE DIFFERENT THAN THE SPECIFIC TYPES INDICATED BELOW, OR THE POLE HEIGHTS ARE IN EXCESS OF THOSE LISTED BELOW, OR THE BASIC WIND SPEED FOR THE PROPOSED POLE LOCATION (PER ASCE 7 BASIC WIND SPEED MAPS) IS IN EXCESS OF 100MP, OR THE COMBINED E.P.A. OF ALL LUMINAIRES/ARMS/ACCESSORIES INSTALLED ON A POLE IS IN EXCESS OF 5.5 S.F., THE CONTRACTOR SHALL RETAIN A QUALIFIED STRUCTURAL ENGINEER (LICENSED IN THE STATE OF THE PROJECT) TO PROVIDE A PROJECT-SPECIFIC STRUCTURAL DESIGN FOR THE PROPOSED POLE BASE(S), AND SHALL INCLUDE ALL COSTS (FOR THE DESIGN AND THE REQUIRED POLE BASES) IN THE BID.
- MINIMUM POLE BASE DIAMETER SHALL BE THE GREATER OF THE FOLLOWING:
  - ANCHOR BOLT CIRCLE DIAMETER PLUS 8" (TO PROVIDE MINIMUM 4" COVER OVER ALL ANCHOR BOLTS).
  - 20" DIAMETER.
  - DIAMETER AS REQUIRED BY SOIL CONDITIONS OR BY POLE SUPPLIER.
- CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES OR OBSTRUCTIONS TO AVOID CONFLICTS PRIOR TO INSTALLATION OF LIGHT POLE BASE(S).
- POLE SHALL BE RATED TO WITHSTAND THE WIND SPEED SPECIFIED FOR THE SPECIFIC PROJECT SITE LOCATION PER LATEST VERSION OF ASCE 7 BASIC WIND SPEED MAPS OR APPLICABLE LOCAL BUILDING CODE REQUIREMENTS (WHICHEVER IS MORE STRINGENT), WITH 1.3 GUST FACTOR WITH ALL LUMINAIRES & ACCESSORIES INSTALLED.

### POLE BASE DIMENSIONS

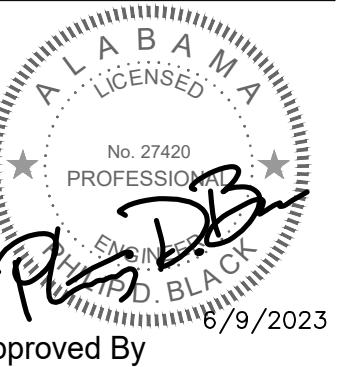
POLE HEIGHT	MINIMUM BASE DEPTH (BELOW GRADE) (SEE NOTE 1 ABOVE)			BASE DIAMETER
	CLAYEY SOILS (CL, ML, CH, MH)	SANDY SOILS (SW, SP, SM, SC, GM, GC)	GRAVELLY SOILS (GW, GP)	
0 - 15 FT.	6'-0"	5'-0"	4'-6"	SEE NOTE 2 ABOVE
16 - 20 FT.	7'-0"	5'-6"	5'-0"	SEE NOTE 2 ABOVE
21 - 25 FT.	8'-0"	6'-0"	5'-6"	SEE NOTE 2 ABOVE
26 - 30 FT.	8'-6"	7'-0"	6'-6"	SEE NOTE 2 ABOVE
31 - 35 FT.	9'-0"	7'-6"	7'-0"	SEE NOTE 2 ABOVE
36 - 40 FT.	10'-0"	8'-0"	7'-6"	SEE NOTE 2 ABOVE
41 - 45 FT.	10'-6"	8'-6"	8'-0"	SEE NOTE 2 ABOVE
46 - 50 FT.	11'-0"	9'-0"	8'-6"	SEE NOTE 2 ABOVE



### DETAIL NOTES

- ALL DIMENSIONS SHOWN ARE TYPICAL AND MINIMUM. ADDITIONALLY, CONTRACTOR SHALL SIZE CONCRETE PAD SUCH THAT THE TOTAL PAD WEIGHT (AT AN ASSUMED CONCRETE DENSITY OF 150 LBS/CUBIC FOOT) IS A MINIMUM OF 1.5 TIMES THE TOTAL GENERATOR SET WEIGHT (INCLUDING ENCLOSURE(S), ACCESSORIES, FUEL, OIL, ETC.).
- PROVIDE VIBRATION ISOLATORS, SPRING & PAD TYPE, QUANTITY AS RECOMMENDED BY THE GENERATOR SET MANUFACTURER TO MOUNT GENERATOR SET. ISOLATORS SHALL INCLUDE SEISMIC RESTRAINTS IF REQUIRED BY SITE LOCATION.

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ELECTRICAL DETAILS  
GORDON WATER, GAS, AND SEWER BOARD  
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PICKENS COUNTY

DATE	REVISION	CAD FILE	DATE	DATE
		RGJ	09/20/23	17/174.001
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**E-32**

SHEET NO. 37 OF 38

