NEELSCHAFFER Solutions you can build upon we Perimeter Park South, Suite 230 E irmingham, Alabama 35243 (25) 397-3800

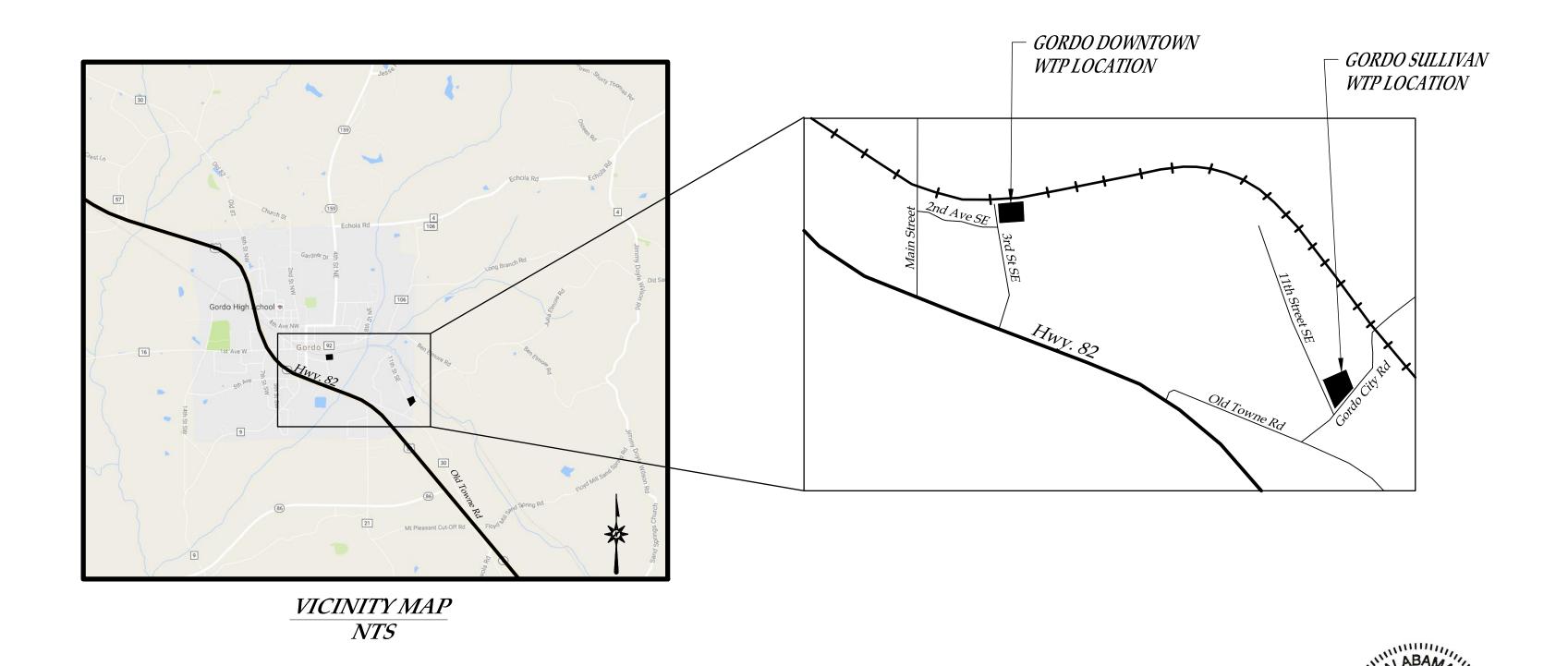
CONSTRUCTION PLANS for

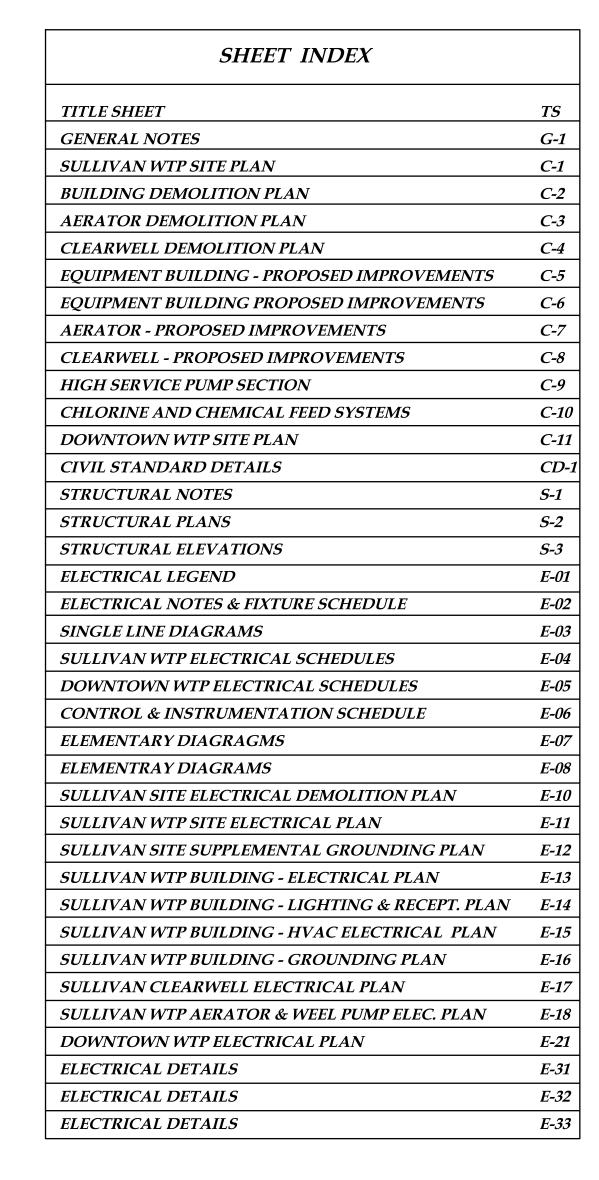
GORDO WATER, GAS, AND SEWER BOARD SULLIVAN WATER TREATMENT PLANT REHABILITATION PHASE 2 - EQUIPMENT BUILDING & CLEARWELL REHAB (DWSRF #FS010412-01)

NEEL SCHAFFER, INC PROJECT #NS. 17174.001

OCTOBER 2023

GORDO, AL





Approved by

GENERAL NOTES

PAVEMENT.

- 1. ALL SITE CIVIL CONSTRUCTION SHALL BE CONDUCTED IN ACCORDANCE WITH TOWN OF GORDO REQUIREMENTS AND AS SPECIFIED HEREIN.
- 2. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN ACCORDING TO INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS, BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES AFFECTING HIS WORK.
- 3. CONTRACTOR SHALL COORDINATE WITH UTILITY OWNERS FOR VERIFICATION OF ALL UTILITIES AND NOTIFY UTILITY OWNERS 72 HOURS PRIOR TO DIGGING IN ANY PORTION OF THE SITE.
- 4. THE CONTRACTOR SHALL CONTACT THE ENGINEER UPON FINDING ANY CONFLICTS IN THE PLANS DURING CONSTRUCTION OF ANY IMPROVEMENTS SHOWN ON THE DRAWINGS.
- CONSTRUCTION IS LIMITED TO WITHIN UTILITY EASEMENTS AND STREET RIGHT OF WAYS. ALL INGRESS, EGRESS AND TRAFFIC PATTERNS ON THE SITE SHALL BE EXISTING ROADWAYS SHOWN ON THE DRAWINGS.
- 6. FINISHED GRADE FOR GROUND ELEVATIONS ON DRAWINGS REFER TO GRADE AFTER SODDING OR OTHER SURFACE TREATMENT. FINISHED ELEVATIONS SHOWN ON DRAWINGS REFER TO ELEVATIONS AFTER CONCRETE OR ASPHALT
- 7. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL REQUIRED PERMITS FOR THIS PROJECT AND SHALL COORDINATE WITH THE TOWN OF GORDO, AS REQUIRED.
- 8. UNLESS OTHERWISE SHOWN, THE CONTRACTOR SHALL REPLACE ALL PAVING, SODDING, STABILIZED EARTH, LANDSCAPING, DRIVEWAYS, SIDEWALKS, IRRIGATION SYSTEMS, UNDERGROUND PIPING, ETC. LOCATED WITHIN AND OUTSIDE THE PROJECT LIMIT LINE DISTURBED OR DAMAGED BY THE CONSTRUCTION. THE CONTRACTOR SHALL REPLACE WITH EQUAL MATERIAL OR AS DIRECTED BY THE ENGINEER.
- 9. WHERE A CONNECTION IS TO BE MADE IN THE FIELD TO AN EXISTING PIPE, THE CONTRACTOR SHALL EXCAVATE THE AREA TO VERIFY THE TYPE OF PIPE, PIPE SIZE, AND REQUIRED CONNECTION AND FITTINGS AND OBTAIN THE OWNERS APPROVAL OF THE PROPOSED METHOD OF CONNECTION PRIOR TO INSTALLING MATERIALS.
- 10. THE CONTRACTOR SHALL COORDINATE AND VERIFY ALL DIMENSIONS OF ALL EXISTING AND PROPOSED FACILITIES PRIOR TO FABRICATION OF PIPING AND EQUIPMENT TO ENSURE PROPER ASSEMBLY OF ALL ITEMS. SOME DIMENSIONS MAY NEED TO BE VERIFIED BY THE CONTRACTOR, FROM THE MANUFACTURER.
- 11. THE CONTRACTOR IS TO FOLLOW THE CONSTRUCTION PERMITS THAT HAVE BEEN ISSUED FOR THIS PROJECT. ALL SPECIFIC OR GENERAL CONDITIONS APPLY.
- 12. ALL INSTALLATIONS AND MATERIALS FOR THE PROJECT SHALL MEET OR EXCEED THE STANDARDS OF THE TOWN OF GORDO AND THE PROJECT SPECIFICATIONS.
- 13. COMPLETE RECORD DRAWINGS, CONFORMING TO THE TOWN OF GORDO STANDARDS SHALL BE COMPILED DURING CONSTRUCTION FOR PERIODIC REVIEW. FINAL RECORD DRAWINGS, CERTIFIED BY A ALABAMA LICENSED REGISTERED LAND SURVEYOR SHALL BE SUBMITTED TO THE ENGINEER IN DIGITAL FORMAT PRIOR TO FINAL INSPECTION AND ACCEPTANCE ON ANY PART OF THE PROJECT.
- 14. LOCATIONS AND DIMENSIONS OF EXISTING RIGHTS-OF-WAY AND EASEMENTS ARE BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY THE LIMITS OF THE RIGHTS-OF-WAY AND EASEMENTS IN ORDER TO AVOID ENCROACHMENTS.
- 15. COVER OVER ALL PIPE SHALL BE 3'-0", MINIMUM, UNLESS SHOWN OTHERWISE.
- 16. THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS AT ALL INTERSECTIONS OF PROPOSED WORK AND EXISTING UTILITIES. THE EXPLORATORY EXCAVATIONS SHALL BE MADE SEVENTY-TWO (72) HOURS IN ADVANCE OF THE WORK AND 1,000 FEET IN ADVANCE OF PERFORMING THE WORK. IF THERE IS A POTENTIAL CONFLICT, THE CONTRACTOR IS TO NOTIFY THE OWNER IMMEDIATELY. INFORMATION ON THE OBSTRUCTION SHALL BE FURNISHED BY THE CONTRACTOR AND SHALL INCLUDE: LOCATION, ELEVATION, UTILITY TYPE, MATERIAL AND SIZE. CONTRACTOR SHALL RAISE OR LOWER THE INSTALLED PIPE AS NEEDED AT NO EXTRA EXPENSE TO THE OWNER.

- 17. IN AREAS WHERE CONSTRUCTION ACTIVITIES RESTRICT NORMAL ACCESS TO PROPERTIES, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALTERNATIVE ACCESS ROUTES, WHICH ARE SUBJECT TO APPROVAL BY THE ENGINEER.
- 18. PIPES SHALL NOT BE DEFLECTED MORE THAN 75% OF THE MANUFACTURER'S RECOMMENDATIONS.
- 19. ALL EXISTING AND PROPOSED VALVES SHALL BE OPERATED BY TOWN OF GORDO WATER AND WASTEWATER UTILITY SERVICES PERSONNEL.
- 20. THE CONTRACTOR SHALL NOTIFY THE OWNER 72 HOURS IN ADVANCE OF ANY WATER MAIN OR SANITARY FORCE MAIN SHUT-DOWN.
- 21. ALL EXCAVATIONS SHALL BE BACKFILLED AT THE END OF EACH WORK DAY.
- 2. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY PLUGS, BLOCKING, TAPS AND TESTING EQUIPMENT REQUIRED TO COMPLETE PRESSURE TESTING AS SPECIFIED. THE CONTRACTOR SHALL FURNISH AND INSTALL APPROVED STOPPER FOR DAILY BLOCKING PIPE ENDS.
- 23. PIPE RESTRAINING SHALL BE IN ACCORDANCE WITH THE RESTRAINED JOINT TABLES, EXCEPT WHERE NOTED ON DRAWINGS AT SPECIAL RESTRAINING SITUATIONS.
- 24. CONTRACTOR SHALL PROVIDE ALL NECESSARY PLUGS AND CAPS REQUIRED FOR ALL UTILITY PIPES TO BE ABANDONED IN PLACE REGARDLESS OF WHETHER PLUGS AND CAPS ARE SHOWN ON DRAWINGS.
- 25. ALL BURIED UTILITY PIPES TO BE ABANDONED IN PLACE SHALL BE CUT AND PLUGGED AND FILLED WITH GROUT.
- 26. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING DAMAGED CURBS, ASPHALT, LANDSCAPING, DRIVEWAYS AND ANY TEMPORARY REPAIRS OF OPEN CUTS. THESE ITEMS SHALL BE PAID UNDER GENERAL REQUIREMENTS.
- 27. ALL PVC WATER MAIN PIPE 4" AND LARGER SHALL CONFORM TO THE REQUIREMENTS OF AWWA C-900 (DR18).
 ALL PIPE LESS THAN 4" SHALL BE SCH 40 MINIMUM OR AS NOTED ON PLANS.

EROSION CONTROL/WATER QUALITY NOTES

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING AN EROSION CONTROL PLAN AT THE TIME OF PRE-CONSTRUCTION CONFERENCE. THE PROPOSED EROSION CONTROL PLAN SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CRITERIA SET FORTH IN THE ALDOT STANDARD SPECIFICATIONS FOR ROADS AND ALABAMA HANDBOOK FOR EROSION CONTROL, SEDIMENT CONTROL AND STORMWATER MANAGEMENT ON CONSTRUCTION SITES AND URBAN AREAS AND SHALL BE SUBJECT TO APPROVAL BY LOCAL GOVERNMENTS AGENCIES HAVING JURISDICTION, IF REQUIRED.
- 2. EROSION CONTROL AND SEDIMENTATION CONTROL DEVICES SHALL BE IN PLACE PRIOR TO BEGINNING ANY CONSTRUCTION. THEY SHALL BE INSTALLED, AT A MINIMUM, TO THE LIMITS SHOWN IN THE DRAWING, AS REQUIRED IN THE SPECIFICATIONS AND IN ACCORDANCE WITH ALL REGULATORY AGENCY REQUIREMENTS. THE COST TO THE CONTRACTOR FOR ALL EROSION AND SEDIMENTATION CONTROL IS INCLUDED IN THE LUMP SUM BID AND NO ADDITIONAL COMPENSATION SHALL BE MADE BY THE OWNER.
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL TEMPORARY EROSION CONTROL FEATURES.
- 4. CONTRACTOR IS TO PROVIDE EROSION/SEDIMENTATION CONTROL TO PREVENT SILTATION OF ADJACENT PROPERTY, STREETS, STORM SEWERS AND WATER WAYS. IN ADDITION, CONTRACTOR SHALL PLACE STRAW, MULCH OR OTHER SUITABLE MATERIAL ON GROUND ON AREAS WHERE CONSTRUCTION-RELATED TRAFFIC IS TO ENTER AND EXIT SITE. IF, IN THE OPINION OF THE ENGINEER AND/OR LOCAL AUTHORITIES, EXCESSIVE QUANTITIES OF EARTH ARE TRANSPORTED OFF-SITE EITHER BY NATURAL DRAINAGE OR BY VEHICULAR TRAFFIC, THE CONTRACTOR IS TO REMOVE AND CLEAN SAID EARTH TO THE SATISFACTION OF THE ENGINEER AND/OR AUTHORITIES. AN EROSION CONTROL BARRIER SHALL BE ESTABLISHED AS SITE CLEARING PROCEEDS AND MAINTAINED UNTIL SUCH TIME AS VEGETATION OR OTHER CONTROLS BECOME EFFECTIVE.
- 5. EXISTING DRAINAGE PATTERNS AND CAPACITIES ARE TO BE PROTECTED AND MAINTAINED DURING CONSTRUCTION TO ELIMINATE FLOODING AND PONDING WATER ON PRIVATE PROPERTY. CONTRACTOR TO PROVIDE TEMPORARY DRAINAGE MEASURES AS REQUIRED TO MEET THIS REQUIREMENT.

SPECIAL PROJECT NOTES

- 1. THERE IS CURRENTLY NO ELECTRIC POWER AVAILABLE ON-SITE. CONTRACTOR SHALL PROVIDE AN ENGINE DRIVEN ELECTRIC GENERATOR FOR HIS USE DURING HIS CONSTRUCTION ACTIVITIES AND TO PEFORM THE WORK.
- 2. 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.

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Approved By

ER, GAS, AND SEWER BOARD WATER TREATMENT PLANT TION, PHASE 2 - EQUIPMENT G & CLEARWELL REHAB PROJECT #FS010412-01

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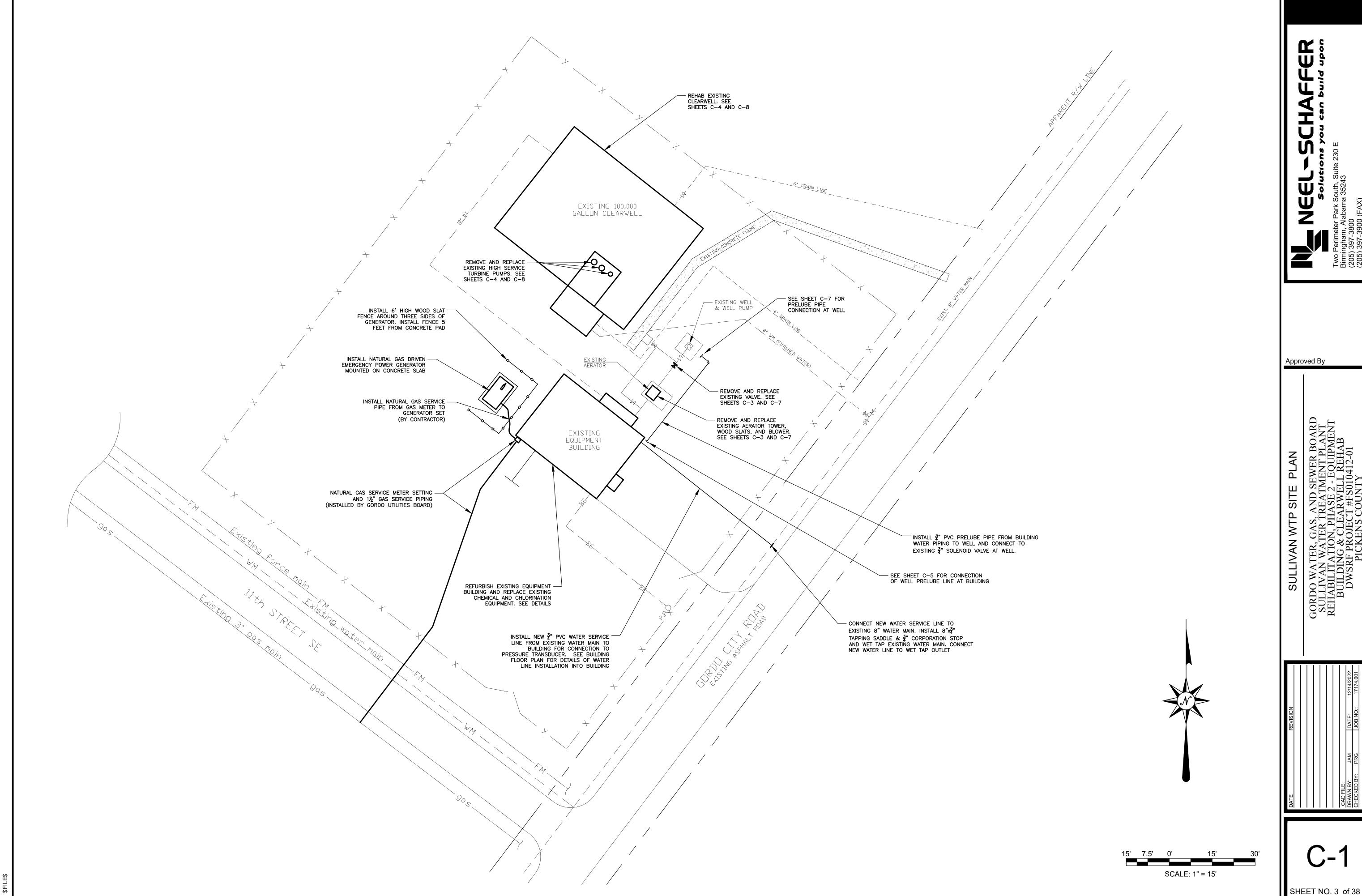
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G-1

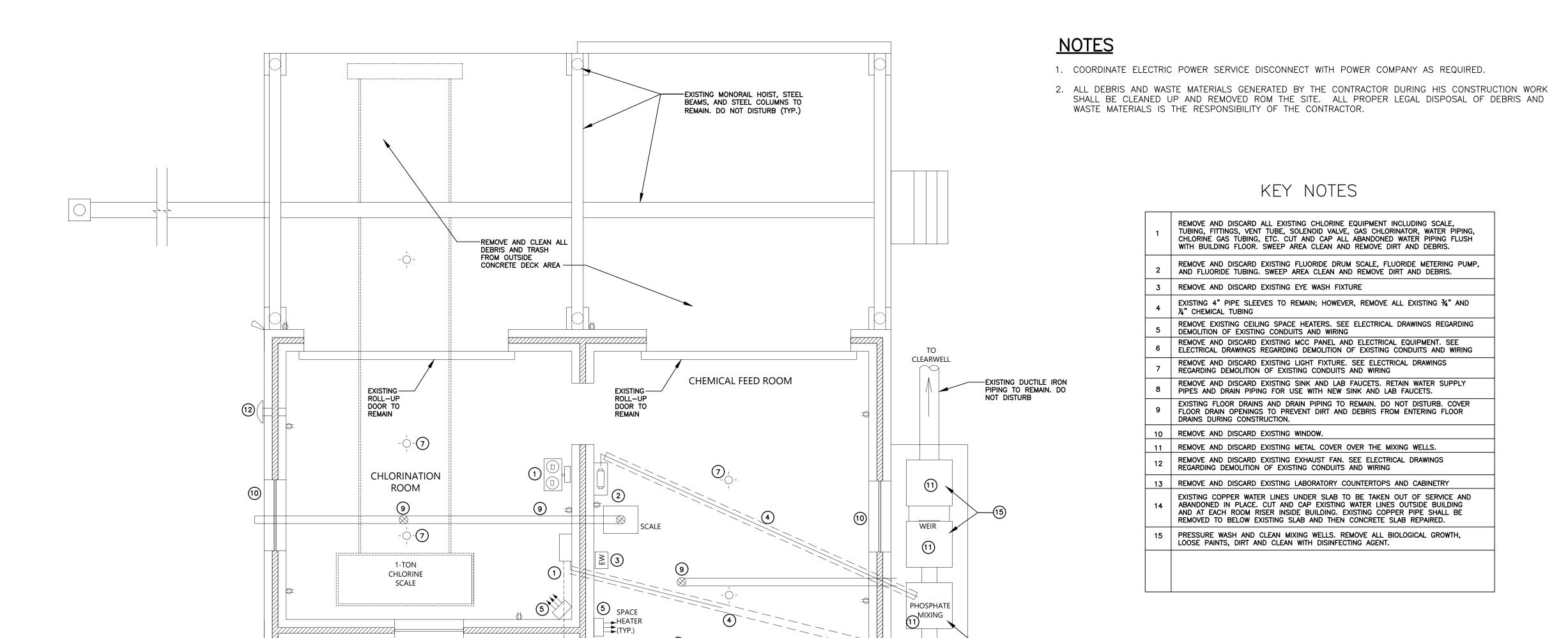
SHEET NO. 2 of 38

PLOT INFORMATION: \$DATE\$ \$TIME\$



C-2

SHEET NO. 4 of 38



CUT AND REMOVE
EXISTING PIPING AND
TUBING IN THIS AREA.
CAP ALL WATER PIPES
AT FLOOR. DO NOT
DISTURB ELECTRIC
RECEPTACLES, JUNCTION
BOXES, CONDUITS &
WIRING

10

EXIST. 1" COPPER

9

CL MIXING

11)

—EXISTING PIPE SLEEVE TO REMAIN. DO NOT DISTURB

_CUT & CAP EXISTING WATER PIPE. PORTION
EXTENDING INTO BUILDING SHALL BE ABANDONED IN
PLACE. PORTION BETWEEN THE BUILDING AND THE
TAP AT THE STREET SHALL BE REUSED AND
CONNECTED TO NEW BUILDING PLUMBING

CAUSTIC MIXING

12

FAN JENN AIR # 90 CW (TYPICAL)

10

—EXISTING DUCTILE IRON PIPING TO REMAIN. DO NOT DISTURB

-1" COPPER TO RAW WATER
(TO BE TAKEN OUT OF SERVICE)

() AERATOR

—1" COPPER AERATED WATER

(TO BE TAKEN OUT OF SERVICE)

LAB / OFFICE

O

PRESSURE —

RECORDER (REMOVE)

CHART

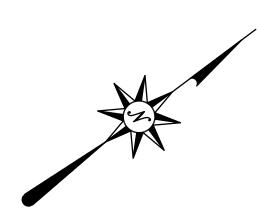
EXISTING DOOR TO

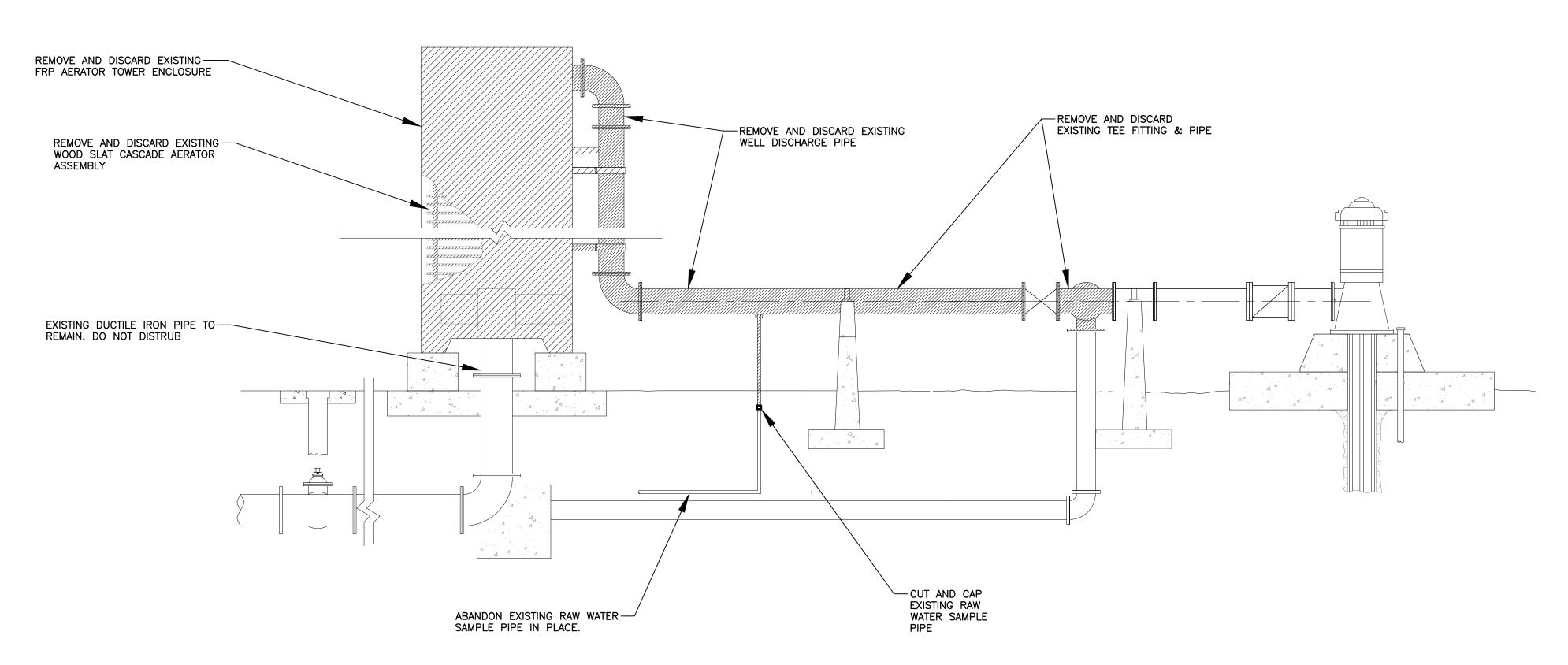
7 - LAB COUNTER

PLAN

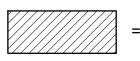
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—EXISTING DOOR TO REMAIN

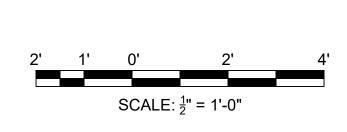




<u>SECTION</u>



= HATCHING INDICATES PORTION OF PIPE AND EQUIPMENT TO BE REMOVED



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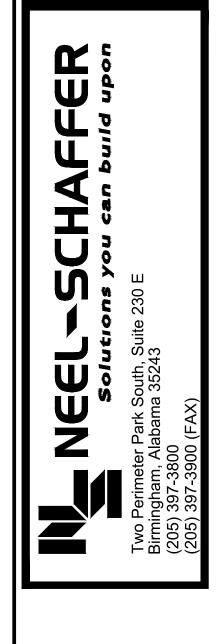
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RAWN BY: JAM DATE: 12/14/2022
HECKED BY: PRG JOB NO.: 17174.001

C-3SHEET NO. 5 of 38



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SHEET NO. 6 of 38

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

SHEET NO. 7 of 38

KEY NOTES

INSTALL NEW MOTOR CONTROL CENTER. SEE ELECTRICAL PLANS INSTALL NEW ELECTRICAL EQUIPMENT AND ATS. SEE ELECTRICAL PLANS INSTALL NEW SPACE HEATERS. MATCH EXISTING. SEE ELECTRICAL PLANS FOR CORRECT HEATER VOLTAGE. INSTALL NEW CEILING MOUNTED LIGHT FIXTURES. SEE ELECTRICAL PLANS FOR DETAILS AND NEW LIGHTING PLAN 5 INSTALL NEW SINGLE HUNG DOUBLE PANE INSULATED WINDOWS INSTALL NEW ALUMINUM MIXING CHAMBER COVERS. MATCH EXISTING COVERS. INSTALL NEW METAL DOOR BETWEEN CHLORINATION ROOM AND CHEMICAL FEED INSTALL NEW ROOM EXHAUST FAN. MATCH EXISTING. NEW EXHAUST FANS SHALL THERMOSTAT CONTROLLED AND BE EQUIPPED WITH ADJUSTABLE THERMOSTATS. EXHAUST FANS SHALL ALSO HAVE AUXILLARY CONTACTS TO CONTROL ELECTRIC OEPRATE LOUVERS. INSTALL NEW EMERGENCY EYEWASH STATION AND CONNECT NEW WATER SUPPLY 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. 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 INSTALL 1"x 1/2" TEE WITH BRANCH FACING DOWNWARD. INSTALL 90° BEND AND 1/2" HOSE BIBB 30" ABOVE FINISHED FLOOR. 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. 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 REMOVE EXISTING WINDOW AND PERMANENTLY CLOSE WALL OPENING USING CMU BLOCK UNITS AND BRICK TO MATCH EXISTING INSIDE AND OUTSIDE FINISHES. 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

-INSTALL NEW CAUSTIC SOLUTION METERING

PUMP AND MOUNTING SHELF. FURNISH AND

TUBING FROM CHEMICAL DRUM TO METERING PUMP, AND FROM METERING PUMP TO CAUSTIC MIXING CHAMBER. SEE DETAIL SHEET

FROM

AERATOR

INSTALL NEW 1/4" POLYBUTYLENE CHEMICAL

INSTALL PRESSURE TRANSDUCER SIGNAL CABLE FROM PRESSURE TRANSDUCER TO PUMP CONTROL PANEL AND

INSTALL 34" WATER SERVICE PIPE INTO BUILDING, EXTEND

VERTICALLY UP, AND MOUNT PRESSURE TRANSDUCER 48" ABOVE FLOOR. FIRMLY SUPPORT AND SECURE PIPE TO WALL

- Install New ¾" PVC Well PRELUBE WATER PIPE TO WELL. SEE SHEET C-1 FOR CONTINUATION-

- INSTALL WATER SERVICE PIPING VERTICALLY UP OUTSIDE BUILDING WALL. INSTALL 90° BEND AND WATER SERVICE

PIPING THROUGH WALL INTO CHEMICAL ROOM ABOVE

FLOOR, CORE DRILL EXISTING BLOCK WALL AND SEAL

ALL OUTSIDE EXPOSED PIPING TO PROTECT FROM FREEZING

-INSTALL ¾" PVC WATER LINE. EXTEND ¾" WATER LINE TO WATER MAIN ALONG STREET AND TAP & CONNECT TO EXISTING WATER MAIN. SEE SITE PLAN SHEET C-1

ANNULAR SPACE WITH GROUT OR SEALANT AFTER WATER SERVICE PIPE IS INSTALLED THROUGH WALL. INSULATE

SCADA EQUIPMENT PANELS

- COORDINATE ELECTRIC POWER SERVICE DISCONNECT AND CONNECTION WITH POWER COMPANY.
- 2. ALL DEBRIS AND WASTE MATERIALS GENERATED BY THE CONTRACTOR DURING HIS CONSTRUCTION WORK SHALL BE CLEANED UP AND REMOVED ROM THE SITE. ALL PROPER LEGAL DISPOSAL OF DEBRIS AND WASTE MATERIALS IS THE RESPONSIBILITY OF THE CONTRACTOR.
- 3. ALL METAL DOORS AND FRAMES SHALL BE CLEANED, SCRAPED, SANDED, AND PAINTED. ALL DOOR HARDWARE SHALL BE REPLACED WITH NEW HARDWARE.
- 4. REPAIR CEILING BOARD WHERE NECESSARY AND REPAINT CEILING THROUGHOUT BUILDING.
- 5. 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 ASSEMBLE AND DISASSEMBLY.
- 6. ALL NEW WATER PIPING AND CHEMICAL PIPING SHALL BE SUPPORTED AS NEEDED AND FIRMLY ANCHORED OR STRAPPED TO WALLS OR CEILING.
- 7. ALL DISTURBED AREAS OUTSIDE THE BUILDING SHALL BE FINISH GRADED AND RESTORED WITH SOD.

INSTALL MINI-SPLIT AIR CONDITONER-SYSTEM FOR ELECTRICAL EQUIPMENT ROOM. SEE KEY NOTE #16 ON THIS

4

INSTALL NEW 150 LB TWIN CYLINDER

CONNECTOR/VENTING ASSEMBLY, GAS

AND SOLENOID VALVE IN EXISTING

SCALE, TWO NEW GAS REGULATORS WITH

ROTOMETER, VACUUM GAS CHLORINATOR,

CHLORINATION ROOM. SEE DETAIL SHEET-

AUTOMATIC SWITCHOVER EACH, GAS TUBING

CHLORINATION

ROOM

CHLORINE SCALE (NOT USED)

13)

LAB / OFFICE (4)

INSTALL NEW WALL MOUNTED

CHLORINE ALARM LIGHT ADJACENT TO FRONT ENTRY DOOR

-INSTALL WALL MOUNTED POLY CABINET CONTAINING SELF—CONTAINED BREATHING APPARATUS EQUIPPED WITH A FULL FACE

CHEMICAL FEED ROOM 4

-INSTALL NEW PHOSPHATE SOLUTION

METERING PUMP AND NEW MOUNTING

SHELF. FURNISH AND INSTALL NEW 1/4"

POLYBUTYLENE CHEMICAL TUBING FROM CHEMICAL DRUM TO METERING PUMP, AND

FROM METERING PUMP TO PHOSPHATE MIXING CHAMBER. SEE DETAIL SHEET

INSTALL NEW ¾" CHLORINE
SOLUTION PIPING IN EXISTING PIPE SLEEVE UNDER CONCRETE SLAB

CHEMICAL DRUM-

INSTALL NEW

CHEMICAL TUBING-

IN EXISTING PIPE

PROVIDED BY OTHERS

INSTALL NEW 1"x¾" TEE FOR — WELL PRELUBE WATER PIPE

AND CONNECT ₹ PRELUBE

CONNECT NEW 1" WATER SUPPLY-

PIPING TO EXISTING 1" WATER SERVICE PIPE. USE PIPE COUPLINGS

AND ADAPTORS AS REQUIRED TO

EXIST. 1" COPPER FINISHED WATER

WATER PIPE

EXTEND NEW WATER PIPING TO HOSE

BIBB, EMERGENCY EYEWASH FIXTURE,

AND CHLORINE ROOM. CORE DRILL

EXISTING WALL AS REQUIRED

-INSTALL 1" SCH 80

PVC WATER HEADER

PIPE ALONG CEILING

-CHEMICAL DRUM

3

INSTALL NEW 1" WATER-

PLAN

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

SUPPLY PIPING ALONG CEILING INSIDE BUILDING

PROVIDED BY OTHERS

-INSTALL NEW CHEMICAL TUBING IN EXISTING

PIPE SLEEVE UNDER

CONCRETE SLAB

MASK AND 30-MINUTE OXYGEN CANISTER

CLEARWELL

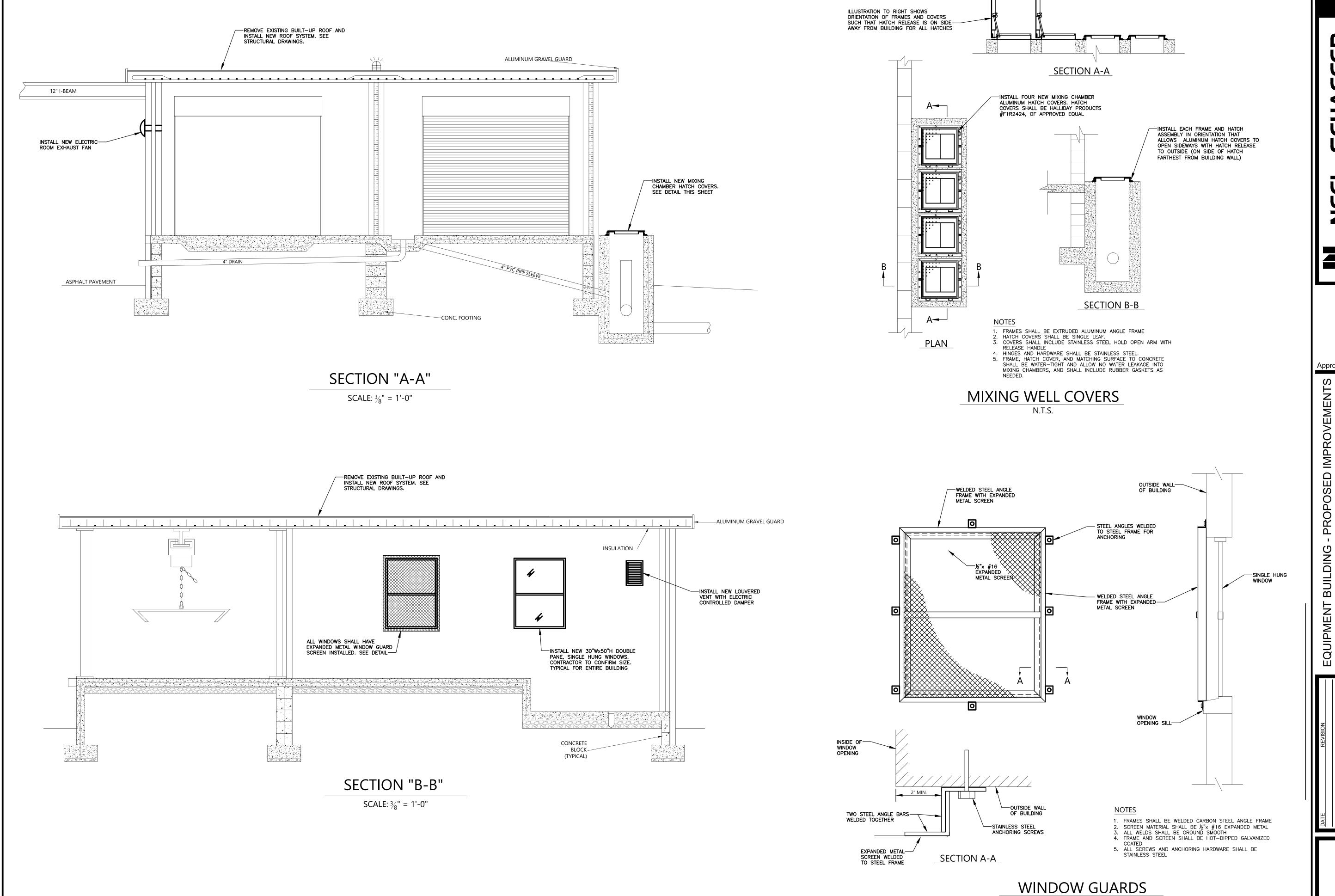
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PHOSPHATE MIXING

MIXING

CAUSTIC

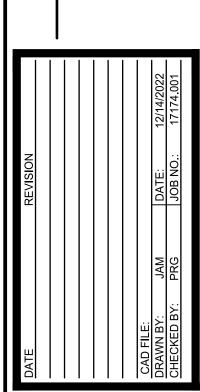
MIXING



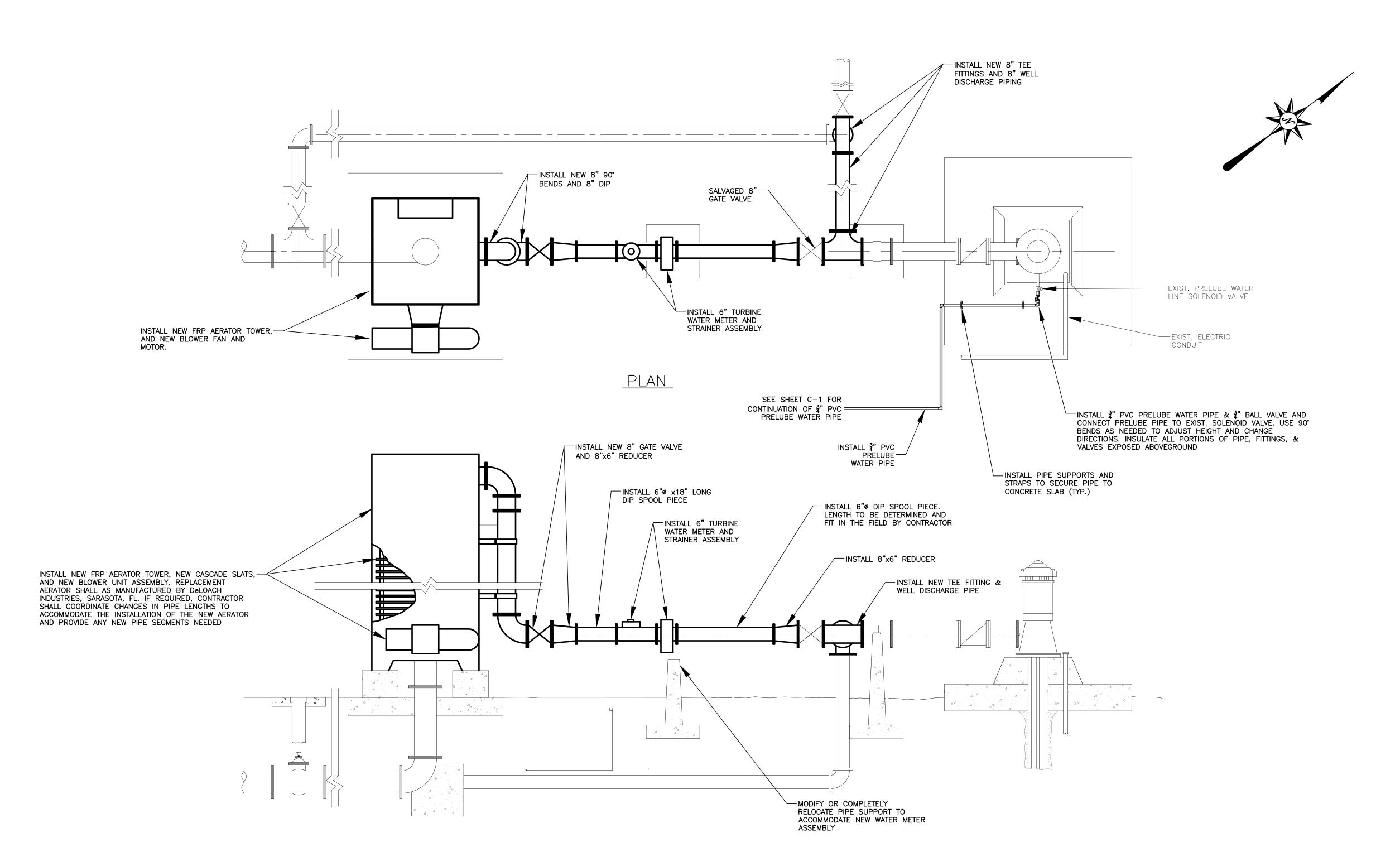
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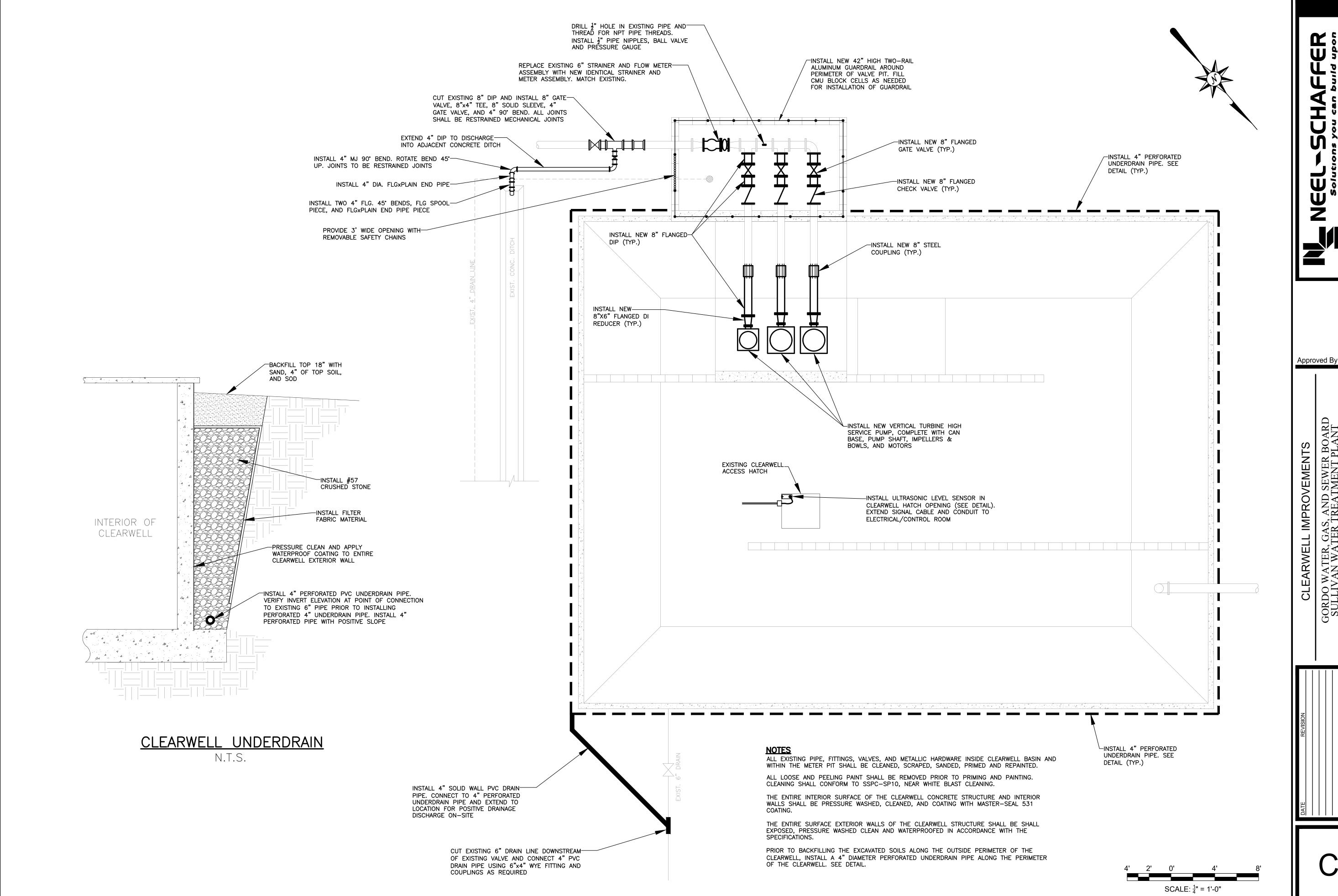
NOTES

ALL EXISTING ABOVEGROUND PIPE, FITTINGS, VALVES, AND METALLIC HARDWARE SHALL BE CLEANED, SCRAPED, SANDED, PRIMED AND REPAINTED. ALL DIRT AND LOOSE & PEELING PAINT SHALL BE REMOVED IN ACCORDANCE WITH SSPC-SP10, NEAR WHITE BLAST CLEANING, PRIOR TO PRIMING AND PAINTING.

SEE PROJECT SPECIFICATIONS FOR PAINTING REQUIREMENTS.

<u>SECTION</u>

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

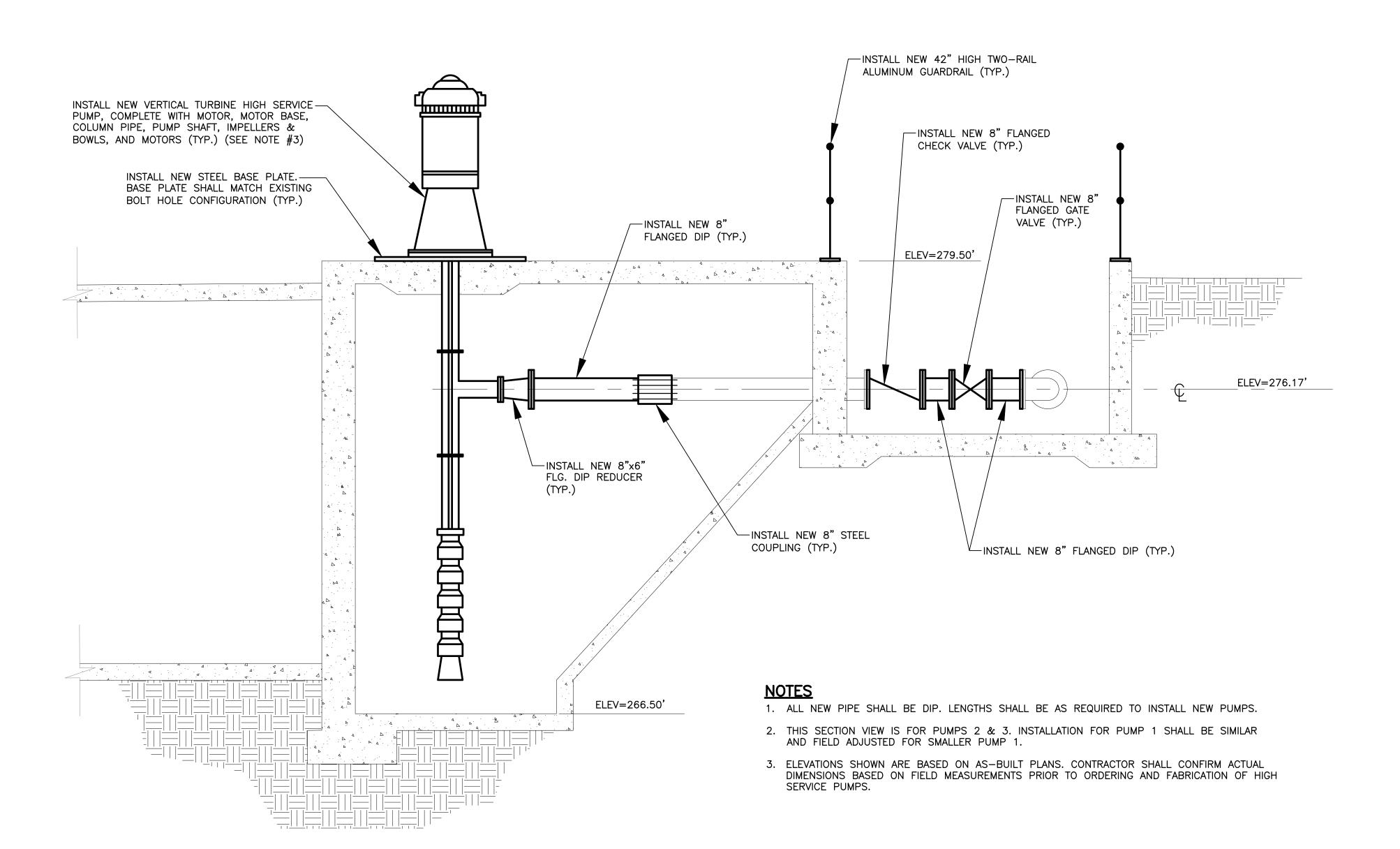


PLOT INFORMATION: \$DATE\$ \$TIME\$ DATE: 12/14/2022

C-8

SHEET NO. 10 of 38

ULTRASONIC LEVEL SENSOR DETAIL N.T.S



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SHEET NO. 11 of 38

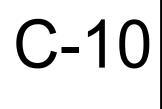
-EXTEND 1" PVC POTABLE WATER SUPPLY PIPE TO BUILDING POTABLE WATER DISTRIBUTION HEADER

EED

CHEMIC

∞

CHLORINE



SHEET NO. 12 of 38

PIPE AND CONNECT TO INSTALL FLEXIBLE POLYBUTYLENE CHEMICAL HEADER PIPE. TUBING. TUBING SIZES FOR THE INSTALLED EQUIPMENT SHALL BE AS REQUIRED PER -INSTALL PIPE SUPPORT THE CHLORINE GAS EQUIPMENT AND STRAP TO FIRMLY MANUFACTURER REQUIREMENTS (TYP.) SECURE PIPE (TYP.) -INSTALL CHLORINE GAS VACUUM MONITOR UNIT (o) -INSTALL 1" UNION FITTING -INSTALL 1"x ½" TEE, ½" 90° BEND, AND TYP.) PRESSURE GAUGE. USE PIPE NIPPLES AS REQUIRED. -INSTALL 1" PVC POTABLE WATER SUPPLY PIPE -INSTALL PIPE SUPPORT AND STRAP (TYP.) - CORE EXISTING WALL AND INSTALL 1" PVC POTABLE WATER SUPPLY PIPE INTO CHLORINE ROOM. SEAL ANNULAR POLYBUTYLENE SPACE WITH GROUT OR CHLORINE APPROPRIATE SEALANT SOLUTION PIPE INSTALL 34" FLEXIBLE POLYBUTYLENE -INSTALL CHLORINE — TUBING IN EXISTING PIPE SLEEVE AND EXTEND TO CHLORINE MIXING BASIN GAS LEAK DETECTOR PVC PIPE TO -150# CHLORINE GAS ---— BUILDING OUTSIDE WALL POLY TUBING CYLINDERS (BY OTHERS) ADAPTOR COUPLING EXISTING 4" PVC PIPE SLEEVE UNDER -INSTALL FORCE FLOW MODEL 4D150-2 DUAL 150# CYLINDER HYDRAULIC SCALE WITH BRACKET AND SLAB FOR CHLORINE SOLUTION LINE NOTES:

1. CHLORINE SCHEMATIC DETAIL ABOVE ILLUSTRATES INSTALLATION REQUIREMENTS FOR CHLORINE GAS VACUUM FEED

2. ALL PVC PIPE FOR WATER SUPPLY SHALL BE SCHEDULE 80 PVC PIPE WITH SOLVENT WELDED OR THREADED PIPE

4. ALL RIGID PVC PIPE SHALL BE FIRMLY SECURED AND ANCHORED TO WALL USING PIPE SUPPORTS AND STRAPS. ALL

5. SOLENOID VALVE SHALL BE INTERLOCKED WITH WELL PUMP MOTOR STARTER AND SHALL OPEN UPON WELL PUMP

6. CHLORINE GAS LEAK DETECTOR UNIT SHALL INCLUDE CHLORINE GAS ALARM CAPABILITY WHICH IS ABLE TO ACTIVATE

7. CHLORINE GAS VACUUM MONITORING UNIT SHALL BE EQUIPPED WITH ALARM CIRCUITRY AND SHALL BE CAPABLE OF

9. CHLORINE GAS VACUUM MONITORING UNIT SHALL BE REIM ELECTRONICS MODEL VAC1100 HI/LO VACUUM MONITOR,

AN ALARM ANNUNCIATOR AND RED WARNING LIGHT AT GAS LEAK DETECTOR UNIT MOUNTED IN CHLORINE ROOM AS

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.

SYSTEM AND CHLORINE SOLUTION FEED PIPING. CONTRACTOR SHALL USE ABOVE DETAIL AS A GUIDE FOR

3. ALL FLEXIBLE CHEMICAL GAS TUBING OR CHLORINE SOLUTION TUBING SHALL BY POLYBUTYLENE PIPE.

WELL AS AN ANNUNCIATOR HORN AND RED FLASHING LIGHT MOUNTED ON OUTSIDE OF BUILDING.

8. CHLORINE GAS LEAK DETECTOR SHALL BE CAPITAL CONTROLS MODEL 1610B1C, OR APPROVED EQUAL.

-INSTALL GAS VENT PIPE AND EXTEND TO OUTSIDE AND INSTALL 90° BEND TURNED DOWNWARD.

CHAINS, OR EQUAL INSTALL CYLINDER MOUNTED CHLORINE GAS

INSTALL GAS VENT TUBING THROUGH EXISTING HOLE

REGULATOR WITH INTEGRATED AUTOMATIC SWITCHOVER. GAS REGULATORS SHALL BE CAPITAL CONTROLS NXT3000. OR EQUAL

INSTALL 4-WAY CONNECTOR WITH 2 VACUUM GAS INPUT PORTS, ONE VACUUM GAS OUTPUT PORT, AND ONE VENT PORT

INSTALL REMOTE CHLORINE GAS FEED METER, 100 PPD, 6" TUBE. GAS FEED METER SHALL BE CAPITAL

INSTALL 1" PVC BALL VALVE (TYP.)

Y-STRAINER

MODEL #EJ100C1H, 100 PPD WITH #12 NOZZLE

CONTROLS #RM010C6 OR AN APPROVED EQUAL

INSTALL 1" BRASS CHECK VALVE

INSTALL 1" BRASS FINE MESH SCREEN

INSTALL 1" NORMALLY CLOSED SOLENOID VALVE

INSTALL CAPITAL CONTROLS CHLORINE GAS EJECTOR,

- INSTALL FLEXFLO A-100N

ON HDPE PUMP SHELF

-INSTALL FLEXIBLE POLYBUTYLENE CHEMICAL

PUMP DISCHARGE TUBING. TUBING SIZES

FOR THE INSTALLED EQUIPMENT SHALL BE

- EXISTING 4" PVC PIPE SLEEVE UNDER

SLAB FOR CHEMICAL SUPPLY PIPING

AS REQUIRED PER THE EQUIPMENT

MANUFACTURER REQUIREMENTS (TYP.)

0

CORD WITH STANDARD

120V RECEPTACLE PLUG -

PERISTALTIC METERING PUMP,

OR APPROVED EQUAL, MOUNTED

CHLORINE SUPPLY SCHEMATIC DETAIL

OR AN APPROVED EQUAL.

HARDWARE SHALL BE STAINLESS STEEL.

START-UP AND CLOSE UPON WELL PUMP SHUT DOWN.

SENDING AN ALARM SIGNAL TO A REMOTE ALARM PANEL.

JOINTS.

INSTALL FLEXIBLE POLYBUTYLENE CHEMICAL PUMP SUCTION TUBING. TUBING SIZE FOR THE INSTALLED EQUIPMENT SHALL BE AS

MANUFACTURER REQUIREMENTS (TYP.) -

CHEMICAL

STORAGE

RESERVOIR

PROVIDE PLASTIC/POLY—

INSTALL FLEXIBLE POLYBUTYLENE -CHEMICAL SUPPLY TUBING IN

CHEMICAL METERING PUMP TYPICAL DETAIL

EXISTING PIPE SLEEVE AND EXTEND TO MIXING BASIN

CHEMICAL STORAGE

RESERVOIR

REQUIRED PER THE EQUIPMENT

NECLSCHAFFER
Solutions you can build upon
Two Perimeter Park South, Suite 230 E
Birmingham, Alabama 35243
(205) 397-3800
(205) 397-3900 (FAX)

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ORDO WATER, GAS, AND SEWER BOAK SULLIVAN WATER TREATMENT PLANT EHABILITATION, PHASE 2 - EQUIPMEN BUILDING & CLEARWELL REHAB

CAD FILE:

DRAWN BY: JAM | DATE: 12/14/2022

CHECKED BY: PRG | JOB NO.: 17174.001

C-11

SHEET NO. 13 of 38

THRUST BLOCK NOTES WRAP ALL FITTINGS WITH POLYETHYLENE FILM BEFORE POURING THRUST BLOCK, MAKING CERTAIN TO KEEP CONCRETE AWAY FROM ALL BOLTS, GLANDS AND FLANGES. THRUST BLOCKS TO BE POURED AGAINST UNDISTURBED EARTH. REQUIRED VOLUMES OF BEARING AREAS TO BE AS SHOWN IN CHART. ADJUSTMENTS, IF NEEDED, WILL BE ALLOWED TO CONFORM TO TEST PRESSURE AND ALLOWABLE SOIL BEARING STRESS AS SHOWN IN SPECIFICATIONS. BEARING AREA FOR TRANSIT BLOCKS ON HORIZONTAL BENDS IS BASED ON A TEST PRESSURE OF 150 P.S.I. AND SOIL BEARING STRESS OF 2,000 P.S.F. THE DEPTH TO THE THRUST BLOCK BASE

TO BE EQUAL TO OR GREATER THAN TWICE THE HEIGHT. (EXAMPLE: IF BLOCK IS 2 FT. THICK, THE BASE IS TO BE NO GREATER THAN 4 FT. BELOW GRADE.)

MINIMUM BEARING AREA (SQ. FT.)

8"

3-3/4

THE FIGURES IN THIS TABLE REPRESENT AREA OF CONCRETE BLOCKING AGAINST THE

VERTICAL TRENCH WALL OF UNDISTURBED EARTH IN SQUARE FEET AT 2,000 P.S.F. SOIL

BEARING CAPACITY.

PIPE SIZE

10"

7-1/4

5-1/2

16"

18

13-3/4

20"

27-1/2

21

12"

10-1/4

8

| 11-1/4 | 14-1/2 | 25-1/4 |

BEARING AREA OF THRUST BLOCKS TO BE NOT LESS THAN ONE SQUARE FOOT.

1-1/2

3/4

2-3/4

2-1/4

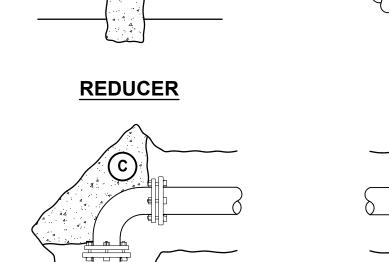
VERTICAL BEND THRUST BLOCKS TO BE THE SAME AS

HORIZONTAL BENDS.

LETTER

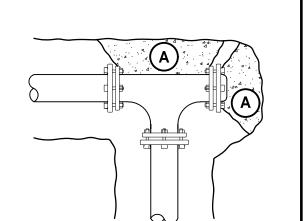
B (22-1/2°)

B (45°)



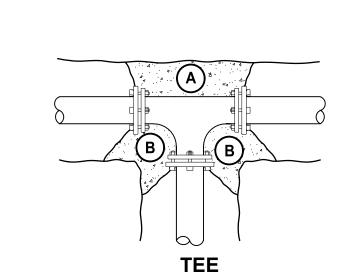


CROSS & PLUG



BEND

TEE & PLUG





- 1. PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER PIPE HAUNCHES.
- TRENCH SHALL BE DRY DURING PLACEMENT.
- 3. BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGE ROCK, MUCK, STICKS, ROOTS AND OTHER DEBRIS.
- 4. ALL BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 95% OF AASHTO T-180 MODIFIED
- PROCTOR WHEN LOCATED GREATER THAN 4 FEET FROM EDGE OF PAVEMENT OR BACK

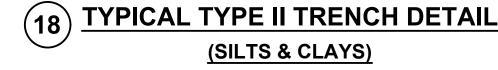
MATCH EXISTING GROUND.

UNDISTURBED EARTH

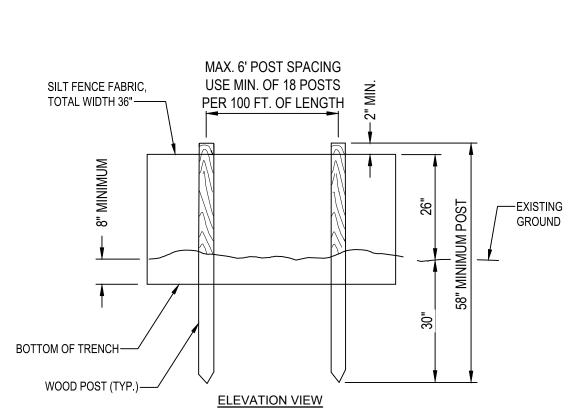
-REMAINING BACKFILL

GRANULAR BEDDING

5. ALL BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 98% OF AASHTO T-180 MODIFIED PROCTOR WHEN LOCATED LESS THAN 4 FEET FROM THE EDGE OF PAVEMENT OR BACK OF CURB.



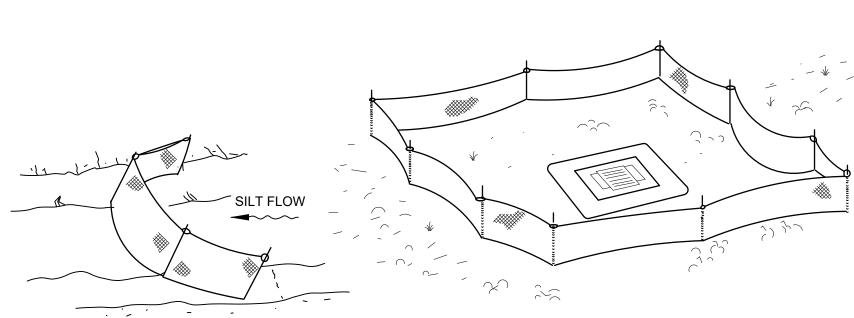
(16) THRUST BLOCK DETAIL



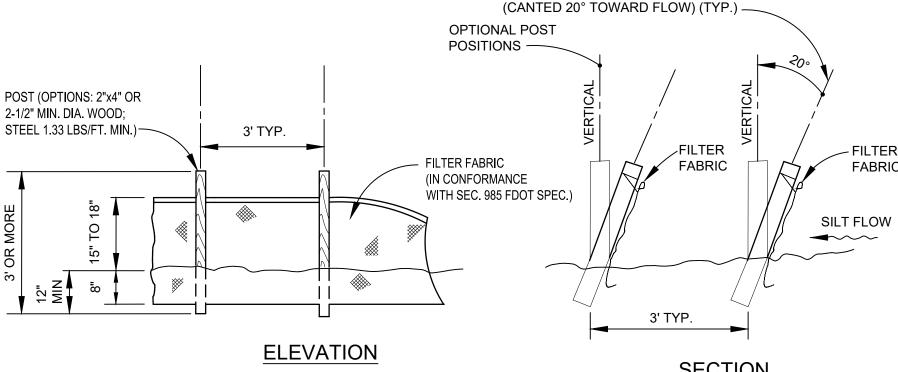
ACTUAL) (3.06 SQ. IN.) HARDWOOD POST (OAK OR HICKORY) OR POSITION POST/FABRIC MIN. 1.25 LB/FT STEEL POST (STD. "T" OR "U" SECTION) - LENGTH 58" ASSEMBLY AT VERTICAL TO A MAX. 5° FROM TIEBACK BETWEEN FENCE VERTICAL (ANGLED POST AND ANCHOR STAKE TOWARD FLOW)-TO BE NO. 8 (0.25") HOLLOW BRAIDED POLYPROPYLENE ROPE WITH MIN. TENSILE STRENGTH OF 1,200 POUNDS——, SILT FENCE FABRIC—— —SECURE TO POST BY WRAPPING BACKFILL WITH COMPACTED SOIL--SILT FENCE ANCHOR STAKE **EXISTING** MIN. 18" LONG GROUND-TO BE PLACED **EXISTING** 12" INTO GROUND----ANCHOR SILT FENCE GROUND FABRIC 6" DEEP WITH SILT FENCE TIEBACK FOR 4" RUN-OUT LENGTH----STEEL POSTS OR WOOD POSTS (WHEN REQUIRED BY THE ENGINEER OR NOTED IN THE PLANS. COST TO BE INCLUDED IN THE ITEMS FOR SILT FENCE)

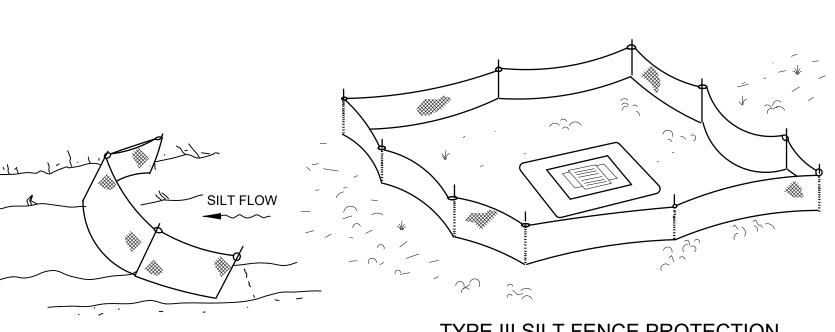
SINGLE SILT FENCE DETAIL

SECTIONAL VIEW

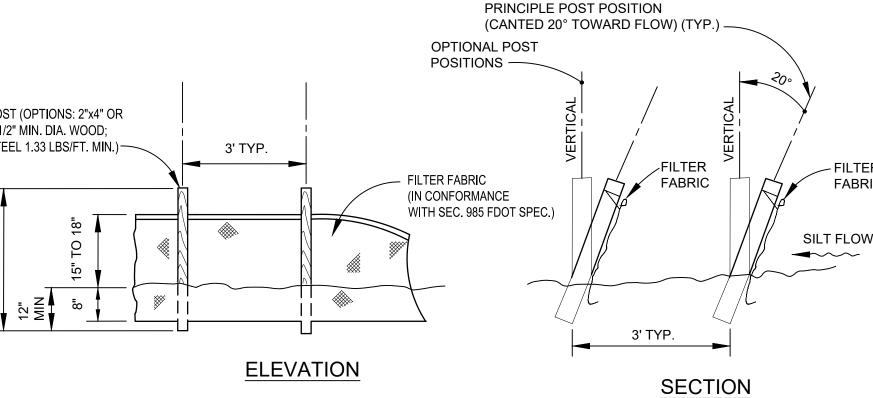


TYPE III SILT FENCE (2ND. SILT FENCE NOT SHOWN) AROUND DITCH BOTTOM INLETS (2ND. SILT FENCE NOT SHOWN)

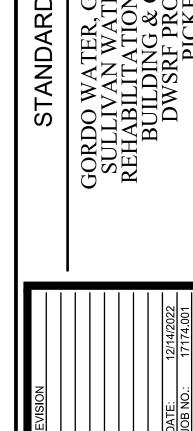




TYPE III SILT FENCE PROTECTION



TYPICAL DOUBLE SILT FENCE DETAIL



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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	<u>20</u>	
FLOOR	<u>125</u>	<u> </u>
C. SNOW LOADS: GROUND SNOW LOAD (Pg)	5.5	nef
FLAT ROOF SNOW LOAD (Pf)	<u>3.5</u>	psf
SNOW EXPOSURE FACTOR (Ce)	<u>0.9</u>	
SNOW LOAD IMPORTANCE FACTOR (Is) THERMAL FACTOR (Ct)	<u>1.1</u> <u>1.0</u>	
D. WIND LOADS:		
BASIC WIND SPEED (3 SECOND GUST)	<u>116</u>	MP
BUILDING CATEGORY:	<u>Ш</u>	

BASIC WIND SPEED (3 SECOND GUST)	<u>116</u>	MP
BUILDING CATEGORY:	<u> </u>	
EXPOSURE CATEGORY:	<u>B</u>	
INTERNAL PRESSURE COEFFICIENT (GCpi):	<u>±0.18</u>	<u>3</u>
DESIGN WIND PRESSURE FOR COMPONENTS & CLADDING	G (psf):	
SEE DETAIL 1/S-	-1	
·		
E. SEISMIC LOADS:		

E. SEISMIC LUADS:
EARTHQUAKE IMPORTANCE FACTOR (le): <u>1.25</u>
MAPPED SPECTRAL RESPONSE ACCELERATIONS: (Ss)0.271
(S1) <u>0.106</u>
SITE CLASS (ASSUMED): <u>D</u>
SPECTRAL RESPONSE COEFFICIENTS: (SDS)
(SD1) <u>0.168</u>
SEISMIC DESIGN CATEGORY:
BASIC SEISMIC-FORCE RESISTING SYSTEM:
ORDINARY PLAIN MASONRY SHEAR WALL

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

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) EFFECTIVE WIND AREA SPEE

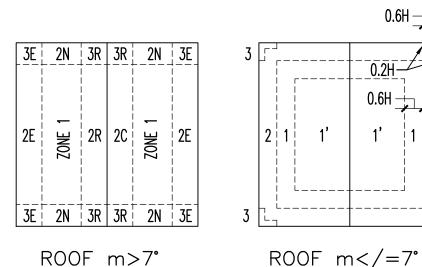
ZONES	EFFECTIVE WIND AREA (sq. ft.)	116 MP SPE	
	10	24.2	-26.3
	20	24.1	-26.1
4	50	23.7	-25.8
	100	23.1	-25.1
	500	18.1	-20.1
	10	24.2	-32.4
	20	24.1	-32.2
5	50	23.7	-31.4
	100	23.1	-30.2
	500	18.1	-20.1

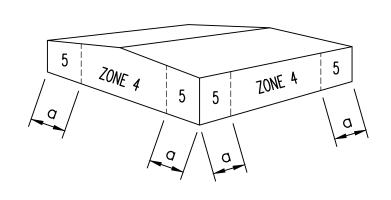
C	OMP. & CLAE LOADS FOR		D
ZONES	EFFECTIVE WIND AREA (sq. ft.)	SLOPED ROOF 116 SPE	
	10	9.8	-38.6
1.0	20	9.6	-38.3
1.0	50	8.9	-37.4
	100	7.8	-35.9
	10	9.8	-22.2
1'	20	9.6	-22.2
'	50	8.9	-22.2
	100	7.8	-22.2
	10	9.8	-50.9
2.0	20	9.6	-50.5
2.0	50	8.9	-49.4
	100	7.8	-47.5
	10	9.8	-69.3
3	20	9.6	-68.6
	50	8.9	-66.3
	100	7.8	-62.6

	k CLADDING ' ROOF OVERH	WIND LOADS ANG (psf)			
ZONES	EFFECTIVE WIND AREA (sq. ft.)	SLOPED TRUSS ROOF116 MPH WIND SPEED			
	10	-38.6			
1 & 1'	20	-38.3			
1 4	50	-37.7			
	100	-36.5			
	10	-50.9			
2	20	-50.4			
_	50	-48.9			
	100	-46.4			
	10	-69.3			
3	20	-68.5			
, and the second	50	-65.8			
	100	-61.4			
	10	N/A			
N/A	20	N/A			
1 11/1	50	N/A			
	100	N/A			

NOTES:

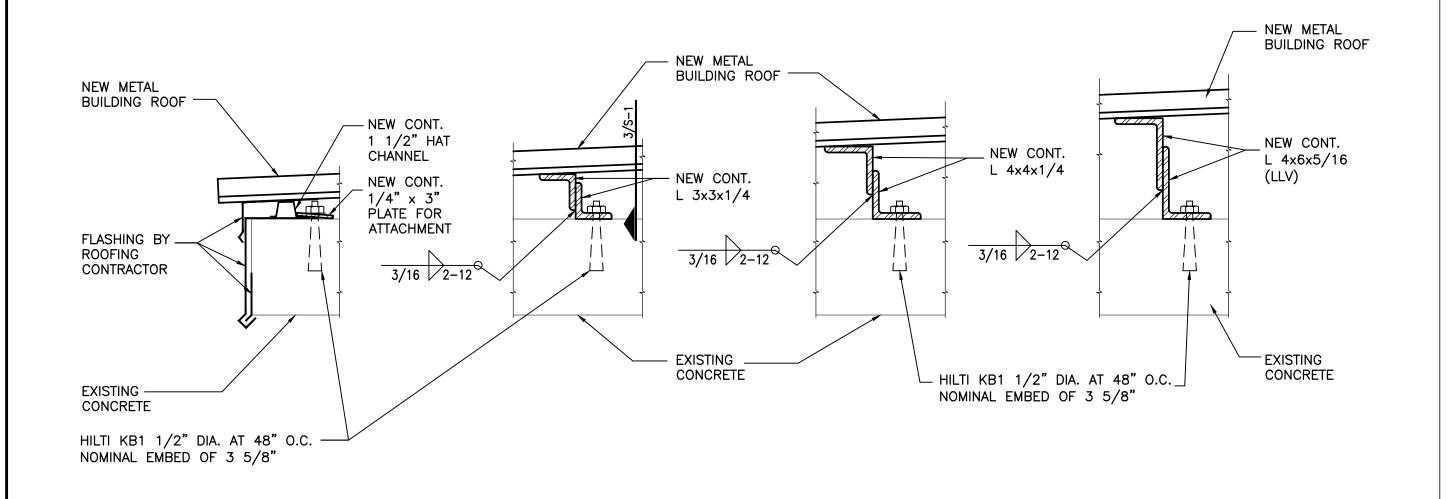
- 1. WIDTH OF EDGE STRIP a = 3 feet.
- 2. VALUES SHOWN ABOVE HAVE BEEN ADJUSTED FOR BUILDING HEIGHT AND EXPOSURE ACCORDING TO THE INTERNATIONAL BUILDING CODE. THE LOADS PROVIDED ARE FACTORED.
- 3. PLUS AND MINUS SIGNS SIGNIFY PRESSURES ACTING TOWARD AND AWAY FROM THE BUILDING SURFACES.
- 4. EFFECTIVE 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.



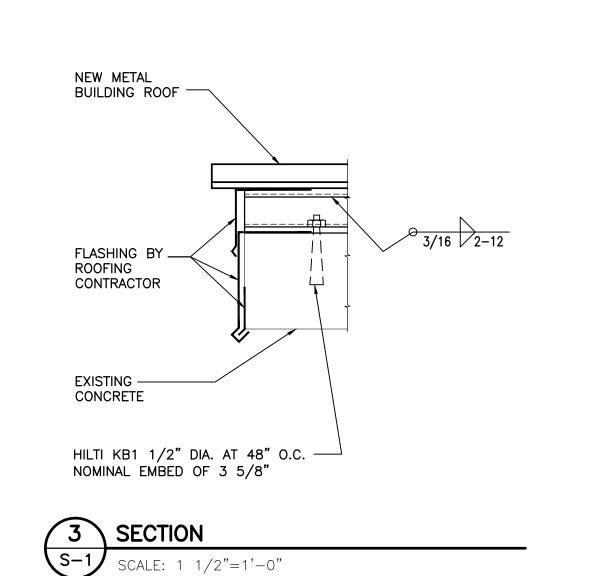


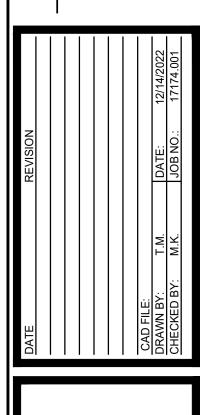
WALLS





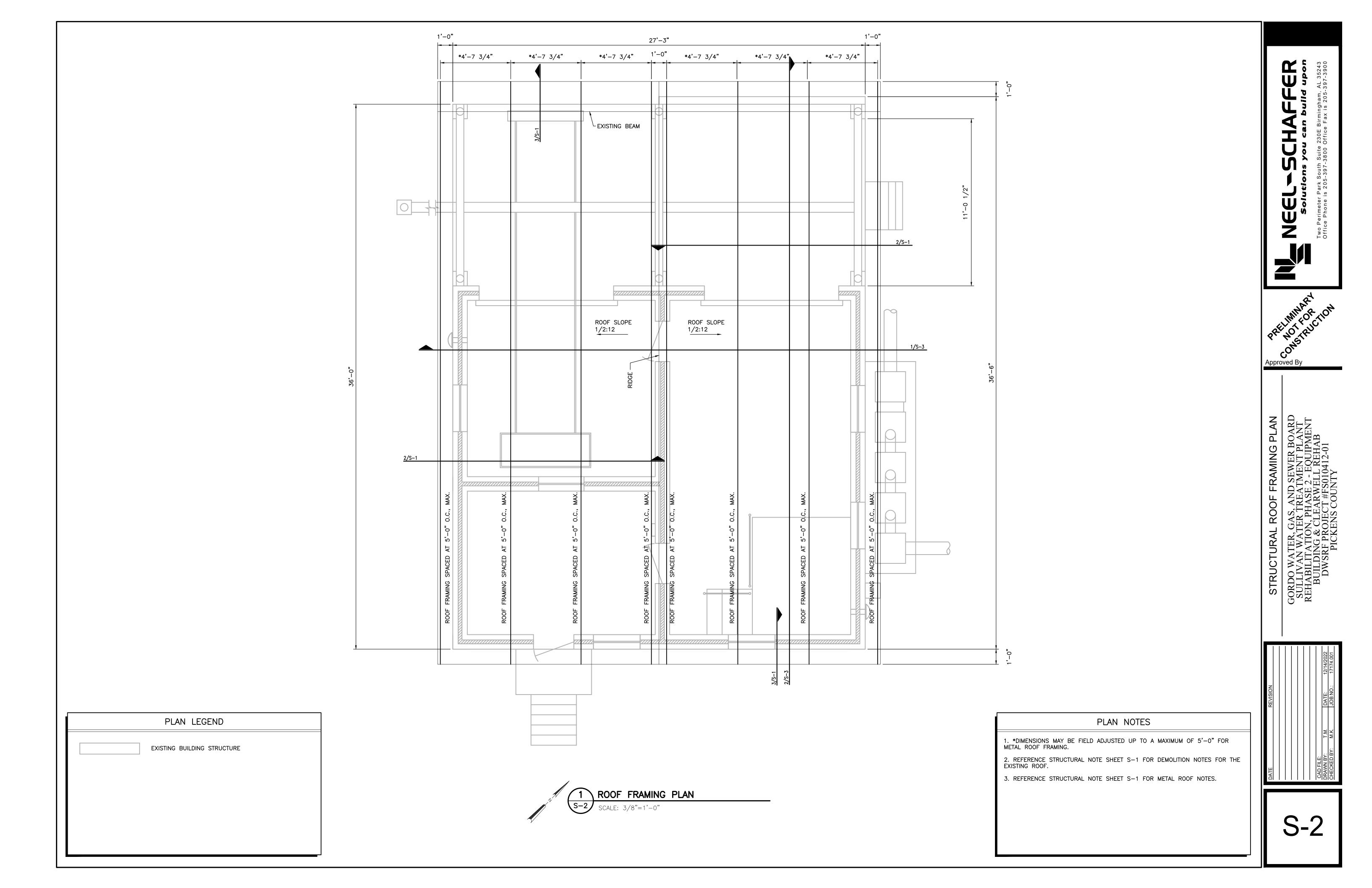
SECTION

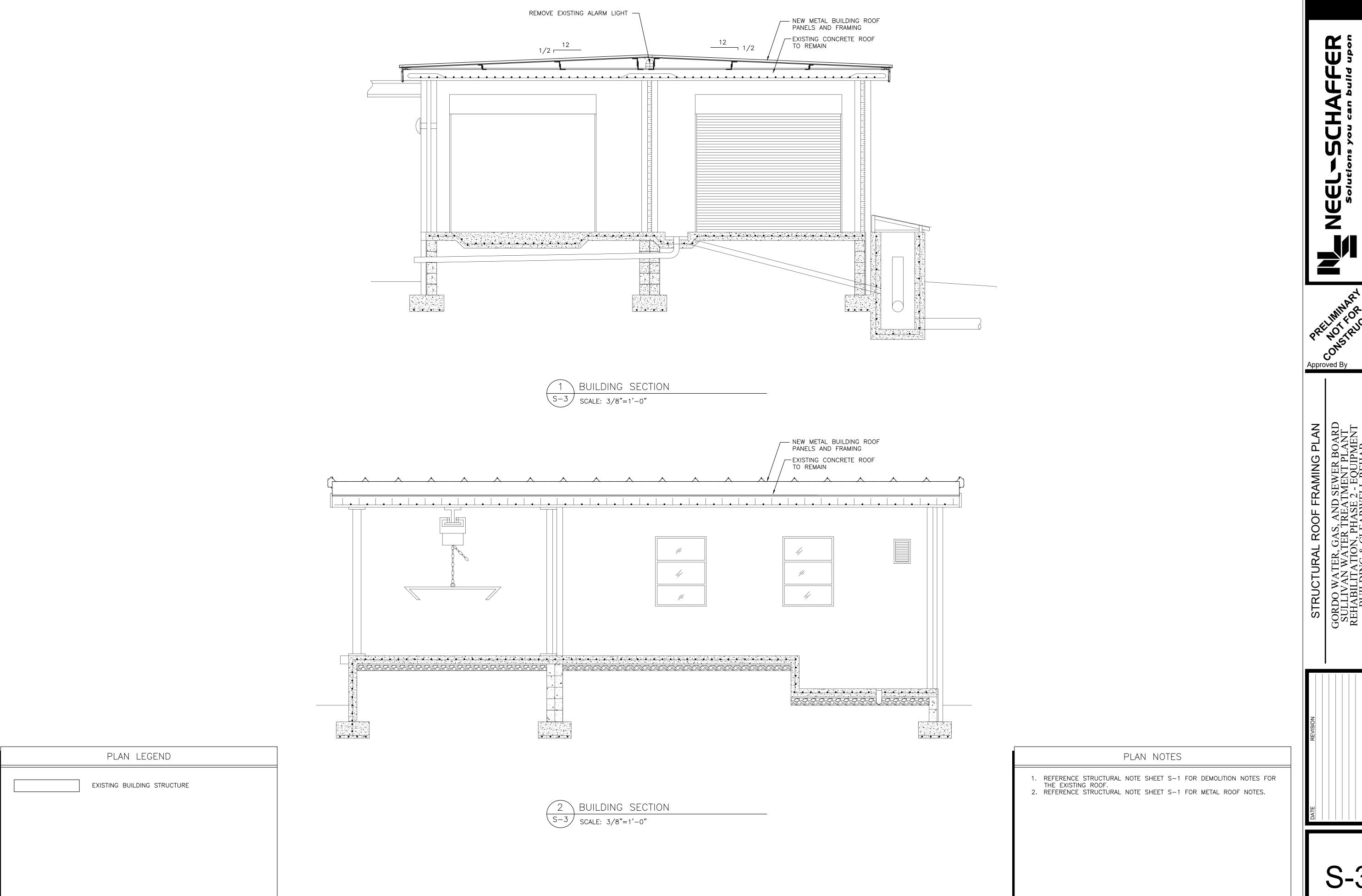




Approved By

S-1





BRANCH/FEEDER CIRCUIT - CONCEALED IN WALLS OR CEILING.

BRANCH/FEEDER CIRCUIT — EXPOSED ON WALLS OR CEILING.

BRANCH/FEEDER CIRCUIT MODIFIERS:

BRANCH/FEEDER CIRCUIT - CONCEALED IN FLOOR SLAB OR DIRT FILL.

SIZE CONDUIT PER N.E.C. UNLESS INDICATED OTHERWISE.

BRANCH/FEEDER CIRCUIT - HOMERUN - CAN BE USED WITH OTHER BRANCH/FEEDER TYPES.

_____10 ____ : 2#10 & 1#10G UNLESS NOTED OTHERWISE (NUMBER INDICATES WIRE AWG).

CONDUCTOR QUANTITY NOT INCLUDING GROUND WIRE).

: 2#12 & 1#12G UNLESS NOTED OTHERWISE.

WEIGHT SENSOR.

ANALOG INDICATING TRANSMITTER.

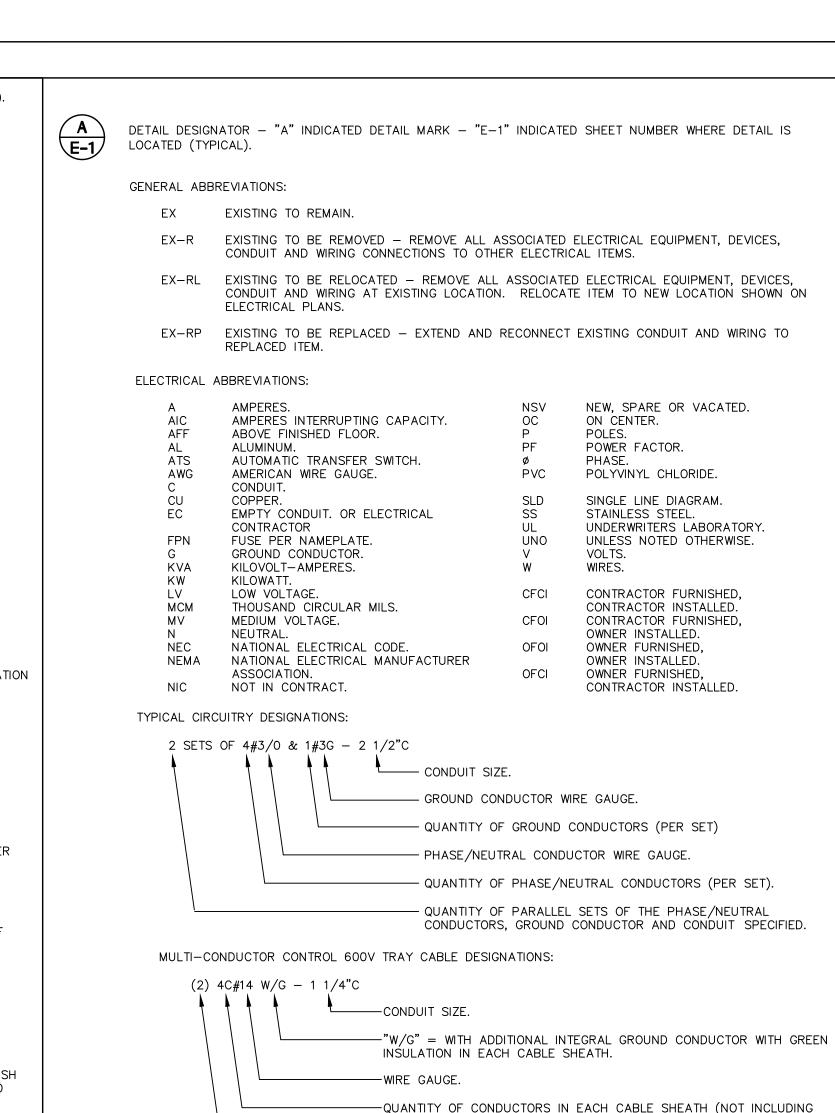
FLOW INDICATING TRANSMITTER.

LEVEL INDICATING TRANSMITTER.

PRESSURE INDICATING TRANSMITTER.

CHLORINE LEAK ALARM — FEDERAL SIGNAL MODEL SLM100 — WITH WALL—MOUNT HARDWARE — 120VAC — RED LENS COLOR — IP66 RATED — MOUNT AT EXACT LOCATION AS DIRECTED BY CIVIL ENGINEER — INTERCONNECT TO LEAK DETECTOR AS REQUIRED TO ILLUMINATE DURING ALARM CONDITION — PROVIDE RED

ENGRAVED NAMEPLATE WITH 3/8" WHITE TEXT TO READ "CHLORINE LEAK ALARM".



GROUND).

WITHIN THE SPECIFIED CONDUIT.

-QUANTITY OF MULTI-CONDUCTOR CABLES OF THE TYPE SPECIFIED



E-01

SHEET NO. 18 OF 38

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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.
- 5. 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.
- 3. 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.
- O. 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:
- A. 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.
- A. 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 EDCO 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.
- 12. 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.
- 3. 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.
- 14. 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.

		LIGH	ITING F	IXTURE	SCHED	ULE			
MARK	MANUFACTURER	CATALOG	LAMPS		MOUNTING	MOUNTING	REMARKS		
		NUMBER		WATTS	LUMENS	TYPE	HEIGHT	TYPE	
	LITHONIA	FEM-L48-3000LM-IMAFD-MD-80CRI-	120	20	3,258	LED	CEILING	SURFACE OR	
Α	COLUMBIA	40K-STSL						CONDUIT	
	DAY-BRITE							STEM	
	LITHONIA	FEM-L48-3000LM-IMAFD-MD-80CRI-	120	20	3,258	LED	CEILING	SURFACE OR	EM
Æ	COLUMBIA	40K-E10WMCP-STSL						CONDUIT	
	DAY-BRITE							STEM	
	LITHONIA	FEM-L48-3000LM-IMAFD-MD-80CRI-	120	20	3,258	LED	CEILING	SURFACE OR	
В	COLUMBIA	40K						CONDUIT	
	DAY-BRITE							STEM	
	LITHONIA	FEM-L48-3000LM-IMAFD-MD-80CRI-	120	20	3,258	LED	CEILING	SURFACE OR	EM
BE	COLUMBIA	40K-E10WMCP						CONDUIT	
	DAY-BRITE							STEM	
	LITHONIA	ZL1D-L48-5000LM-FST-120-40K-	120	41	5,541	LED	CEILING	SURFACE OR	
С	COLUMBIA	80CRI						CONDUIT	
	DAY-BRITE							STEM	
	LITHONIA	ZL1D-L48-5000LM-FST-120-40K-	120	41	5,541	LED	CEILING	SURFACE OR	EM
CE	COLUMBIA	80CRI-E10WLCP						CONDUIT	
	DAY-BRITE							STEM	
	LITHONIA	DSX1-LED-P6-40K-T4M-RPA-	120	163	18,635	LED	MOUNT TO 25' ROU	ND, STRAIGHT	FSCE
Y1	COLUMBIA	DDBXD					DARK BRONZE ALU	IMINUM POLE -	
	DAY-BRITE						SEE DETAIL	"E-LP1"	
	LITHONIA	DSXW1-LED-10C-530-T3M	120	20	2,159	LED	ABOVE DOOR	OUTLET BOX	FSCE
W	COLUMBIA								
	DAY-BRITE								
	LITHONIA	DSXW1-LED-10C-530-T3M-ELCW	120	20	2,159	LED	ABOVE DOOR	OUTLET BOX	EM, FSCE
WE	COLUMBIA								
	DAY-BRITE								

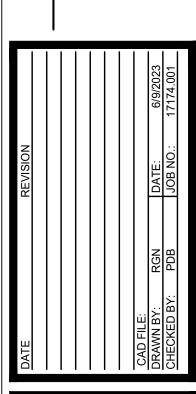
LIGHTING FIXTURE SCHEDULE GENERAL NOTES:

- 1. ALL LAMPS SHALL BE 4000K WITH A MINIMUM CRI OF 80 UNLESS NOTED OTHERWISE.
- 2. 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.
- 4. 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.

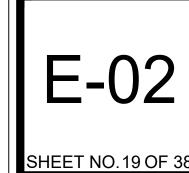
LIGHTING FIXTURE SCHEDULE KEYED NOTES:

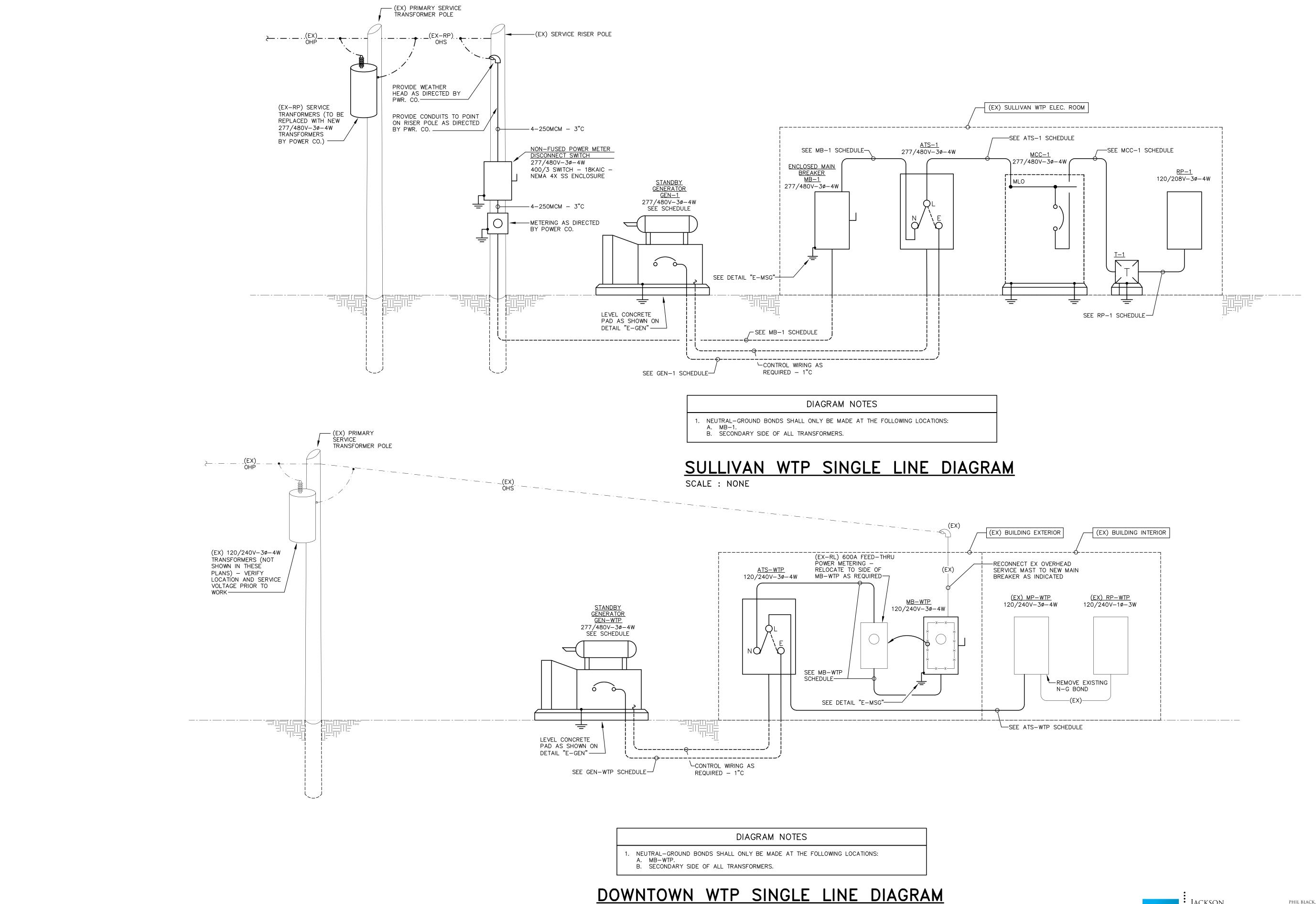
- EM EMERGENCY FIXTURE. PROVIDE EMERGENCY BATTERY PACK RATED FOR AT LEAST 500 LUMENS.
- FSCE PROVIDE FINISH AS SELECTED BY CIVIL ENGINEER.











SCALE : NONE

PHIL BLACK, PE phil@jraee.com (D) 205.536.7120 Renfro (P) 205.995.1078 JRA JOB NO. 222217 & ASSOCIATES, INC. JRAJOB NO. 222217 ELECTRICAL ENGINEERING & DESIGN 31 INVERNESS CENTER PKWY • SUITE 301 BIRMINGHAM, ALABAMA • 35242 SHEET NO.20 OF 38

Approved By

	MAIN BREAKER SCHEDULE - MB-1												
PANE	L TYPE:	SQUARE 'D' ENCLOSED	MOLDED (CASE C	IRCUIT BI	REAKER		AIC RAT					
VOLT						MOUNTI	NG:	SURFACE					
AMPS & TYPE: 250/3 MAIN BKR							LOCATIO	ON:	SULLIVAN WELL				
FED FROM: UTILITY							FEEDER	? :	4-250MCM - 3"C				
CIR.	DESCRIPTION	I	VOLTS	Р	HP	KW	AMPS	BKR	LOCAL	WIRE AND COND. SIZE	REMARKS		
NO.						OR		SIZE	SAFETY SW.				
						KVA			RATING				
1	ATS-1 (N)		277/480	3		94.1		250/3	-	4-250MCM & 1#4G - 3"C			
			Т	OTAL (CONNECT	ED LOAD:	122.7	KVA	NOTES:				
							153.4	AMPS	1. MAIN BF	EAKER SHALL BE SERVICE-ENTRANCE RATED.			
				TO	TAL DE M A	ND LOAD:	90.7	KVA	2. PROVID	E EXTERNAL HANDLE/DISCONNECT.			
							113.4	AMPS					
	_			TOTAL	. COMPUT	ED LOAD:	94.1	KVA					
							117.6	AMPS					

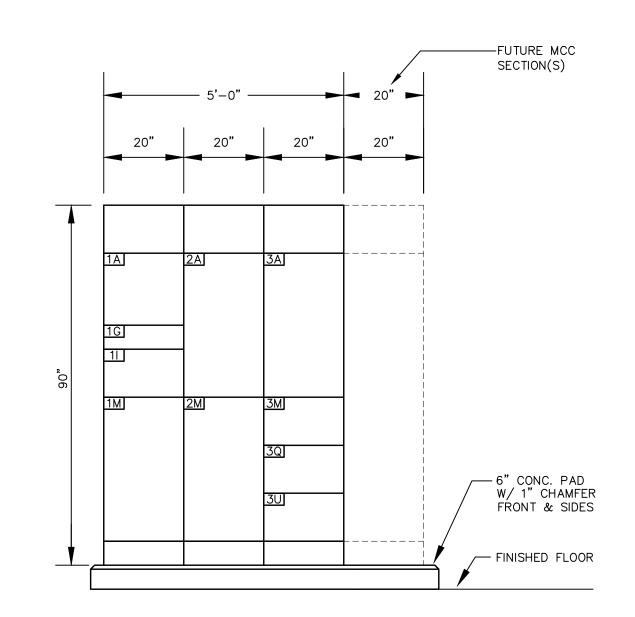
	AUTOMATIC TRANSFER SWITCH SCHEDULE - ATS-1										
KAIC / WCR RATING:	30KAIC (MINIML)			NORMAL FED FROM:						
VOLTAGE:	277/480V-3P-4V	80V-3P-4W			NORMAL FEEDER:			SEE MAIN	BREAKER SCHEDULE - MB-1		
AMP RATING:	250 AMP				EMERG	SENCY FE	D FROM:	GEN-1			
LOCATION:	TION: SULLIVAN WELL				EMEGE	NCY FEE	DER:	SEE GENE	RATOR SCHEDULE - GEN-1		
LOAD SIDE FEEDER D	LOAD SIDE FEEDER DESCRIPTION		VOLTS	Р	HP	KW	AMPS	WIRE AN	ND COND. SIZE		
						OR					
						KVA					
MCC-1			277/480	3		94.1		4-250MC	CM & 1#4G - 3"C		
		EMER	GENCY				NORMAL		NOTES:		
		122.7	KVA	TOTAL	CONNEC	CONNECTED LOAD		KVA			
		153.4	AMPS	1			153.4	AMPS	1		
		90.7	KVA	TOT	AL DE M AN	ID LOAD:	90.7	KVA	1		
		113.4	AMPS	1			113.4	AMPS	1		
		94.1	KVA	TOTAL	COMPUT	ED LOAD:	94.1	KVA	1		
		117.6	AMPS				117.6	AMPS			

			GI	ENERA	ATOR S	SCHE	DULE -	GEN-1		
KWR	ATING: 125KW (MINIMUI	(SEE NOTI	∃ 1)	SKVAF	RATING (AT	35%V. D	IP):			
VOLT.	AGE: 277/480V-3P-4W			SOUNE	ATTENU,	ATION:	CRITICAL S	SILENCER		
FUEL	TYPE: NATURAL GAS			LOCAT	ION:		SULLIVAN	WELL		
CIR.	DESCRIPTION	VOLTS	Р	HP	KW	AMPS	BKR	SWITCH	H SIZE	WIRE AND COND. SIZE
NO.	NO.				OR		SIZE	SWITCH	F-TRON	
					KVA			AMPS	AMPS	
1	ATS-1 (E)	277/480	3		94.1		250/3			4-250MCM & 1#4G - 3"C
		TO	OTAL (CONNECT	ED LOAD:	122.7	122.7 KVA NOTES:			
						153.4	AMPS	1. REFEF	R TO "SULL	IVAN WTP GENERATOR MINIMUM SIZING
			TO	TAL DEMA	ND LOAD:	90.7	KVA	REQUI	REMENTS	"SUMMARY FOR ADDITIONAL REQUIREMENTS.
					113.4 AMPS 2.			2. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING		
			TOTAL	. COMPUT	ED LOAD:	94.1	KVA	REQUI	REMENTS	AND AVAILABILITY OF NATURAL GAS FUEL
						117.6	AMPS	SERVI	CE (PER SF	PECIFICATION REQUIREMENTS) FOR THE
F								GENER	RATOR PRI	OR TO SUBMITTING SHOP DRAWINGS.

PAN	EL TYPE:		SQUARE 'D' TYPE NQ		AIC R	ATING:	10KAIC (MINIMUM)				
VOL.	TAGE		120/208V-3P-4W	MOUNTING:			SURFACE				
AMP	AMPS & TYPE: 150/3 MAIN BKR				LOCA	TION:	SULLIVAN WELL				
FED	FROM:		MCC-1		FEED	ER:	4#1/0 & 1#6G - 2"C				
CKT.	NOTES	BKR	DESCRIPTION		PHASE	WATTS	DESCRIPTION	BKR	NOTES	CK	
NO.										NO	
1	-	20/1	EXTERIOR LIGHTING	400	Α	2,210	ELEC. ROOM HVAC MINI-SPLIT	30/2	VC	22	
2	-	20/1	INTERIOR LIGHTING	360	В	2,210	1		1	23	
3	VC	20/1	HOIST	1,000	С	800	EXHAUST FAN	20/1	VC	24	
4	-	20/1	EXTERIOR RECEPTACLES	800	Α	800	EXHAUST FAN	20/1	VC	25	
5	-	20/1	INTERIOR RECEPTACLES	800	В	1,250	CHLORINE ROOM HEATER	20/2	VC	26	
6	-	20/1	INTERIOR RECEPTACLES	600	С	1,250			1	27	
7	GFI	20/1	INTERIOR RECEPTACLES	600	Α	1,666	CHEMICAL FEED ROOM HEATER	20/2	VC	28	
8	LON	20/1	CLEARWELL LOW LVL CUTOFF C.P.	100	В	1,666	I		I	29	
9	GFI	20/1	AERATOR HEATER	1,000	С	1,250	GEN-1 BLOCK HEATER	20/2	-	30	
10	-	20/1	PHOSPHATE CHEMICAL FEED PUMP	100	Α	1,250	I		-	31	
11	-	20/1	CAUSTIC CHEMICAL FEED PUMP	100	В	500	GEN-1 BATTERY CHARGER	20/1	-	32	
12	-	20/1	SPARE		С	500	HEAT TRACING	20/1	GFIE	33	
13	LON	20/1	CHLORINE LEAK ALARM DETECTOR	200	Α		SPARE	20/1	-	34	
14	LON	20/1	CL2 VAC ALARM DETECTOR	200	В		SPARE	20/1	-	35	
15	LON	20/1	SCADA RTU	500	С		SPARE	20/1	-	36	
16	-	20/1	CLEARWELL ULTRASONIC LVL XMTR	200	Α			20/1	-	37	
17	-	20/1	CLEARWELL RECEP	200	В			20/1	-	38	
18	-	20/1	CL2 CYLINDER WEIGHT (LVL) XMTR	200	С			20/1	-	39	
19	-	20/1	SPARE		Α			20/1	-	40	
20	-	20/1	SPARE		В			20/1	-	41	
21	-	20/1	SPARE		С			20/1	-	42	
NOT	ES:			PH. A:	PH. B:	PH. C:	TOTAL CONNECTED	LOAD:	22.7	KVA	
1. P	ROVIDE	NTEGR	RAL 160KA (PER PHASE) SURGE	8,226	7,386	7,100			63.1	AMP	
Ы	ROTECTI	ON DE'	MCE.				TOTAL DEMAND	LOAD:	22.7	KVA	
									63.1	AMP	
						ļ	TOTAL COMPUTED	LOAD:	26.1	KVA	
									72.5	AMF	

			MC	ОТО	R CO	NTROL	CENT	ER SCH	EDULE -	- MCC	-1			
MCC TYPE:	SQUARE 'D' MODEL 6 MCC				AIC RAT	ING:	30KAIC (M	INIMUM)						
VOLTAGE:	277/480V-3P-4W				LOCATION	LOCATION: SULLIVAN WELL WTP								
MAIN AMPS:	600 AMP - MLO				REMARI	REMARKS:								
FED FROM:	ATS-1				FEEDEF	₹:	SEE AUTO	MATIC TRANS	SFER SWITC	H SCHEE	ULE - ATS-1			
			ELEC	CT. EQ	UIP. CHA	RACTERIS	STICS	STARTER		ELEM.	LOCAL			
UNIT NO.	NAMEPLATE DESCRIPTION	MCC UNIT TYPE	V	Р	HP	KW OR KVA	AMPS	NEMA OR AMPERAGE RATING	CIR. BKR. OR MCP	DIAG. NO.	SAFETY SWITCH RATING	WIRE AND COND. SIZE	REMARKS	
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 #PM5563 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			80/3		-	3#4 & 1#8G - 1 1/4"C		
3 U	SPACE	PROVISIONS FOR FUTURE PLUG-IN UNITS	277/480	3					-/3		-			
		1	TC	TAL C	ONNECT	ED LOAD:	122.7	' KVA	NOTES:			•	I	
					153.4 AMPS TAL DEMAND LOAD: 90.7 KVA									
				TOT				' KVA						
							113.4	AMPS						
			T	OTAL	COMPUTED LOAD:			KVA						
							117.6	AMPS						

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



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

	TRANSFORMER SCHEDULE										
MARK	SIZE (KVA)	DESCRIPTION	PRIMARY VOLTAGE & PHASE	SECONDARY VOLTAGE & PHASE	PANEL FED	MOUNTING	GROUND SIZE	REMARKS			
T-1	45	DRY-TYPE	480V-3P-3W	120/208V-3P-4W	RP-1	6" CONCRETE PAD	#6				
RANSFORM	MER SCHEDUL	LE NOTES:									

EXACT TRANSFORMER LOCATIONS SHALL BE FIELD COORDINATED TO PROVIDE CODE-REQUIRED CLEARANCES AND WORKING SPACES AROUND TRANSFORMERS AND
ADJACENT EQUIPMENT (SUCH AS PANELBOARDS).
 ALL TRANSFORMERS SHALL BE MOUNTED ON VIBRATION ISOLATORS PER SPECIFICATION REQUIREMENTS.

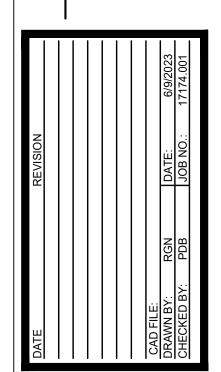
PANE	LBOARD/EQUIPMENT SCHEDULE(S) KEYED NOTES LEGEND
<u>KEYED</u> <u>NOTE</u>	<u>DESCRIPTION</u>
GFI	INDICATED BREAKER SHALL BE TYPE GFI.
GFIE	INDICATED BREAKER SHALL BE TYPE GFI-EPD TYPE (30mA TRIP).
LON	INDICATED BREAKER SHALL BE PROVIDED WITH LOCK-ON HARDWARE.
VC	CONTRACTOR SHALL VERIFY REQUIRED BREAKER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







SULLIVAN WTP ELECTRICAL SCHEDUL
GORDO WATER, GAS, AND SEWER BOAF
SULLIVAN WATER TREATMENT PLANT
REHABILITATION, PHASE 2 - EQUIPMEN
BUILDING & CLEARWELL REHAB
DWSRF PROJECT #FS010412-01





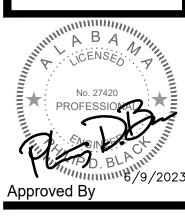
	AUTOMATIC TRANSFER SWITCH SCHEDULE - ATS-WTP										
KAIC / WCR RATING:	KAIC / WCR RATING: 30KAIC (MINIMUM)				NORMAL FED FROM:			MB-WTP			
VOLTAGE:	E: 120/240V-3P-4W				NORMA	NORMAL FEEDER:			BREAKER SCHEDULE - MB-WTP		
AMP RATING:	600 AMP				EMERGENCY FED FROM:			GEN-WTP			
LOCATION:	DOWNTOWN W	ЛΡ			EMEGE	NCY FEE	DER:	SEE GENE	RATOR SCHEDULE - GEN-WTP		
LOAD SIDE FEEDER D	DESCRIPTION		VOLTS	Р	HP KW		AMPS	WIRE AN	ID COND. SIZE		
						OR					
					KVA						
MP-WTP			120/240	3		112.2		2 SETS (DF 4-350MCM & 1#1G - 3"C		
		EMER	GENCY				NC	RMAL	NOTES:		
		107.6	KVA	TOTAL	CONNEC	TED LOAD	107.6	KVA	1. ENCLOSURE SHALL BE NEMA 4X		
		269.0	AMPS				269.0	AMPS	STAINLESS STEEL.		
		107.6	KVA	TOT	AL DEMAN	D LOAD:	107.6	KVA]		
	269.						269.0	AMPS	1		
	11			TOTAL	L COMPUTED LOAD:		112.2	KVA]		
		280.6	AMPS				280.6	AMPS			

	GENERATOR SCHEDULE - GE										
KW RATING: 150KW (MINIMUM) (SEE NOTE 1) SKVA RATING (AT 35% V. DIP):											
VOLT	AGE: 120/240V-3P-4W			SOUNE	ATTENU	ATION:	CRITICAL	SILENCER			
FUEL	TYPE: NATURAL GAS			LOCAT	ION:		DOWNTO	WN WTP			
CIR.	DESCRIPTION	VOLTS	Р	HP	KW	AMPS	BKR	SWITCI	H SIZE	WIRE AND COND. SIZE	
NO.					OR		SIZE	SWITCH	F-TRON		
					KVA			AMPS	AMPS		
1	ATS-WTP (E)	120/240	3		112.2		600/3			2 SETS OF 4-350MCM & 1#1G - 3"C	
		ТС	TOTAL CONNECTED LOAD:			107.6 KVA		NOTES:			
						269.0	AMPS	1. REFEF	R TO "DOW	NTOWN WTP GENERATOR MINIMUM SIZING	
			TO	TAL DEMA	ND LOAD:	107.6	KVA	REQUI	REMENTS"	SUMMARY FOR ADDITIONAL REQUIREMENTS.	
						269.0	AMPS	2. CONTI	RACTOR SH	HALL BE RESPONSIBLE FOR COORDINATING	
TOTAL C					ED LOAD:	112.2	! KVA	REQUI	REMENTS	AND AVAILABILITY OF NATURAL GAS FUEL	
280.6 AMPS					SERVICE (PER SPECIFICATION REQUIREMENTS) FOR THE						
		•				•		GENERATOR PRIOR TO SUBMITTING SHOP DRAWINGS.			

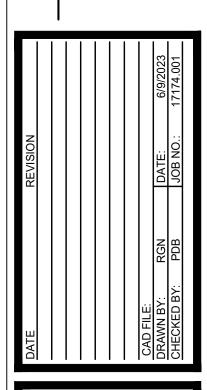
DOWNTOWN WTP								
GENERATOR MINIMUM SIZING REQUIREMENTS								
GENERAL REQUIREMENTS:								
MINIMUM KW:	150KW							
MAXIMUM VOLTAGE DIP:	20%							
MAXIMUM FREQ. DIP:	10%							
ALTITUDE:	400FT							
AMBIENT TEMP:	120°F							
STEP LOADS:	•							
	30KVA 1PHASE LINEAR MISC. LOAD &							
STEP #1:	(1) 1HP-3PHASE PUMP MOTOR - ACROSS THE LINE STARTER							
STEP #2:	(1) 15HP-3PHASE PUMP MOTOR - ACROSS THE LINE STARTER							
STEP #3:	(1) 20HP-3PHASE PUMP MOTOR - ACROSS THE LINE STARTER							
STEP #4:	(1) 30HP-3PHASE PUMP MOTOR - ACROSS THE LINE STARTER							
NOTES:								
1. GENERATOR SHALL BE	SIZED TO ACCOMMODATE THE STEP LOADS							
WHILE MEETING THE O	GENERAL REQUIREMENTS LISTED.							
2. SUBMITTALS SHALL INCLUDE SIZING REPORT SHOWING COMPLIANCE								
WITH THESE GENERATOR SIZING REQUIREMENTS.								







GORDO WATER, GAS, AND SEWER BOARD SULLIVAN WATER TREATMENT PLANT REHABILITATION, PHASE 2 - EQUIPMENT BUILDING & CLEARWELL REHAB



MARK

ID NO. EQUIPMENT DESCRIPTION

ATS-940 DOWNTOWN WATER TREATMENT PLANT ATS-WTP

1. THIS SCHEDULE ONLY SHOWS NEW SCADA I/O POINTS. MODIFY EXISTING PLC AS REQUIRED TO INCORPORATE NEW I/O. INCLUDE COSTS OF ALL MODIFICATION(S) IN BID.

NORMAL/EMERGENCY SWITCH POSITION STATUS

NORMAL POWER AVAILABLE INDICATION

EMERGENCY POWER AVAILABLE STATUS

PARAMETER

MAJOR ALARM

DOWNTOWN WTP EXISTING PLC - SCADA POINT LIST AND CONTROL & INSTRUMENTATION WIRING SCHEDULE

POINT TYPE

TAG

GEN-930-YAH

DI GEN-930-YAHH

DI ATS-940-JEI

DI ATS-940-ZI:NE

GEN-930-YI (1) 6C#14 - 3/4"C

ATS-940-JNI (1) 6C#14 - 3/4"C

	SEPARATELY ENCLOSED CONTROL PANELS SCHEDULE												
"FED FROM" EQUIPMENT	NAMEPLATE DESCRIPTION	UNIT DESCRIPTION	MOUNTING/ENCLOSURE	LOCATION	ASSOCIATED SPECIFICATION SECTIONS	ASSOCIATED ELEM. DIAG.	FURNISHED BY	MINIMUM KAIC RATING					
PANEL "RP-1" CIR. 8	CLEARWELL LOW LEVEL CUT-OFF CONTROL PANEL	120V CONTROL PANEL	SEPARATE NEMA 12 ENCLOSURE	SULLIVAN ELECTRICAL	16480	4	CONTRACTOR	10KAIC					
PANEL "RP-1" CIR. 15	SULLIVAN WTP SCADA PLC-1	120V CONTROL PANEL	SEPARATE NEMA 12 ENCLOSURE	SULLIVAN ELECTRICAL	16480	N/A	OWNER	10KAIC					

1. SEE SPECIFICATIONS SECTION 26 29 00 ("MANUFACTURED CONTROL PANELS") FOR ADDITIONAL REQUIREMENTS FOR ALL CONTROL PANELS.

2. THIS SCHEDULE IS NOT INTENDED TO IDENTIFY ALL CONTROL PANELS REQUIRED FOR PROJECT (SUCH AS HVAC PANELS, ETC.), BUT IDENTIFIES MAJOR PANELS ONLY. REFER TO PLANS & SPECIFICATIONS FOR ADDITIONAL CONTROL PANEL REQUIREMENTS.

HOMERUN		EQUIP.							
MARK	то	ID NO.	EQUIPMENT DESCRIPTION	PARAMETER	POINT TYPE	TAG	WIRING	SHEET	REMARKS
SC-P-110	PLC-1	P-110	WELL PUMP STARTER	ON/OFF CONTROL	DO	P-110-YC	(4) 10C#14 & (1) 4C#14 - 2 1/2"C &	E-13	
				ON/OFF STATUS	DI	P-110-YI	(4) #16TSP- 1 1/4"C		
				H/O/A SWITCH POSITION INDICATION	DI	P-110-HS]		
				HIGH CLEARWELL LEVEL ALARM	DI	P-110-LAH:CW			
				TEMPERATURE ALARM - HIGH	DI	P-110-TAH]		
				CURRENT (AMPERAGE) INDICATION - 3 PHASE AVG.	Al	P-110-II]		
		A-120	A ERATOR BLOWER STARTER	ON/OFF STATUS	DI	A-120-YI	1		
				STARTER ALARM	DI	A-120-YA:ST]		
		P-301	HIGH SERVICE PUMP NO. 1 RVSS	ON/OFF CONTROL	DO	P-301-YC	1		
				ON/OFF STATUS	DI	P-301-YI]		
				H/O/A SWITCH POSITION INDICATION	DI	P-301-HS			
				STARTER ALARM	DI	P-301-YA:ST]		
				TEMPERATURE A LA RM - HIGH	DI	P-301-TAH]		
				CURRENT (AMPERAGE) INDICATION - 3 PHASE AVG.	Al	P-301-II]		
		P-302	HIGH SERVICE PUMP NO. 2 RVSS	ON/OFF CONTROL	DO	P-302-YC	1		
				ON/OFF STATUS	DI	P-302-Y1			
				H/O/A SWITCH POSITION INDICATION	DI	P-302-HS]		
				STARTER ALARM	DI	P-302-YA:ST			
				TEMPERATURE A LA RM - HIGH	DI	P-302-TAH	1		
				CURRENT (AMPERAGE) INDICATION - 3 PHASE AVG.	AI	P-302-II			
		P-303	HIGH SERVICE PUMP NO. 3 RVSS	ON/OFF CONTROL	DO	P-303-YC			
				ON/OFF STATUS	DI	P-303-Y1			
				H/O/A SWITCH POSITION INDICATION	DI	P-303-HS			
				STARTER ALARM	DI	P-303-YA:ST	1		
				TEMPERATURE A LA RM - HIGH	DI	P-303-TAH	1		
				CURRENT (AMPERAGE) INDICATION - 3 PHASE AVG.	Al	P-303-II			
SC-LIT-310	PLC-1	LIT-310	CLEARWELL LEVEL TRANSMITTER	LEVEL INDICATION	Al	LIT-310-LI	(1) #16TSP - 3/4"C	E-17	
SC-CP-320	PLC-1	CP-320	CLEARWELL LOW LEVEL CUT-OFF CONTROL PANEL	SYSTEM DISABLED ALARM	DI	CP-320-YA:DS	(1) 4C#14 - 3/4"C	E-13	
				LEVEL ALARM - LOW	DI	CP-320-LAL	1		
SC-PIT-390	PLC-1	PIT-390	HIGH SERVICE PRESSURE TRANSMITTER	PRESSURE INDICATION	AI	PIT-390-PI	(1) #16TSP & 1#14G - 1"C	E-13	
SC-P-410	PLC-1	P-410	CAUSTIC CHEMICAL METERING PUMP	ON/OFF STATUS	DI	P-410-YI	(1) 4C#14 - 3/4"C	E-13	
				ALARM	DI	P-410-YA	1		
SC-P-420	PLC-1	P-420	PHOSPHATE CHEMICAL METERING PUMP	ON/OFF STATUS	DI	P-420-YI	(1) 4C#14 - 3/4"C	E-13	
				ALARM	DI	P-420-YA	1		
SC-AIT-510	PLC-1	AIT-510	CHLORINE LEAK ALARM DETECTOR	LEAKALARM	DI	AIT-510-YA:LK	(1) 2C#14 - 3/4"C	E-13	
SC-AIT-520		AIT-520	CHLORINE GAS VACUUM ALARM DETECTOR	LOW VACUUM ALARM	DI		(1) 4C#14 - 3/4"C	E-13	
				HIGH VACUUM ALARM	DI	AIT-520-YA:HV	1 ' '		
SC-GEN-910	PLC-1	GEN-910	GENERATOR GEN-1	ON/OFF STATUS	DI	GEN-910-YI	(1) 6C#14 - 3/4"C	E-11	
				MINOR ALARM	DI	GEN-910-YAH	1` ´		
				MAJOR ALARM	DI	GEN-910-YAHH	1		
SC-ATS-920	PLC-1	ATS-920	AUTOMATIC TRANSFER SWITCH ATS-1	NORMAL POWER AVAILABLE INDICATION	DI		(1) 6C#14 - 3/4"C	E-13	
				EMERGENCY POWER AVAILABLE STATUS	DI	ATS-920-JEI	 `´		
				NORMAL/EMERGENCY SWITCH POSITION STATUS	DI	ATS-920-ZI:NE	1		
_	-	PLC-995	PLC-1	LOSS OF POWER ALARM	DI		N/A - INTEGRAL	E-13	
		1.20.000		UPS BATTERY LOW ALARM	DI	PLC-995-JUA		[
	1	1			Β,	1 5 5 5 5 5 5 7 1	1	I	I

PLC-1 SCADA POINT LIST AND CONTROL & INSTRUMENTATION WIRING SCHEDULE

	INSTRUMENT SCHEDULE									
INSTRUMENT NAME	EQUIPMENT ID NO.	INSTRUMENT TYPE	SHEET	ASSOCIATED SPECIFICATION SECTION	FURNISHED BY	PROVIDE 2-WIRE SURGE PROTECTION DEVICE(S)	PROVIDE 4-WIRE SURGE PROTECTION DEVICE(S)	PROVIDE SUN/RAIN SHIELD(S)	NOTES	
CHLORINE CYLINDERS WEIGHT (LEVEL) SCALE	-	DUAL-CYLINDER WEIGHT TRANSDUCERS WITH DUAL TRANSMITTER	E-13	SEE CIVIL PLANS	CHLORINATION SYSTEM SUPPLIER					
CHLORINE LEAK ALARM DETECTOR	AIT-510	CHLORINE LEAK SENSOR WITH REMOTE ALARM PANEL	E-13	SEE CIVIL PLANS	CHEMICAL FEED SYSTEM SUPPLIER					
CHLORINE GAS VACUUM ALARM DETECTOR	AIT-520	CHLORINE VACUUM SENSOR WITH REMOTE ALARM PANEL	E-13	SEE CIVIL PLANS	CHEMICAL FEED SYSTEM SUPPLIER					
HIGH SERVICE PRESSURE TRANSMITTER	PIT-390	2-WIRE GUAGE PRESSURE TRANSMITTER	E-13	16905	INSTRUMENT INTEGRATOR					
CLEARWELL LEVEL TRANSMITTER	LIT-310	ULTRASONIC LEVEL TRANSDUCER WITH REMOTE TRANSMITTER	E-17	16905	INSTRUMENT INTEGRATOR		Х	Х	(WITH 4-20mA OUTPUT AND HI & LO LEVEL ALARM DRY CONTACTS)	

- ${\tt 1. \, SEE \, INSTRUMENTATION \, SPECIFICATIONS \, FOR \, ADDITIONAL \, REQUIREMENTS.}\\$
- 2. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL EQUIPMENT MOUNTING HARDWARE REQUIREMENTS WITH INSTRUMENT MANUFACTURERS.
- 3. SEE PLANS FOR ADDITIONAL REQUIREMENTS.
- 4. RANGES AND/OR MOUNTING HEIGHTS OF ALL INSTRUMENTS/DEVICES LISTED ABOVE SHALL BE AS DIRECTED BY CIVIL ENGINEER.

CONTROL & INSTRUMENTATION WIRING SCHEDULES LEGEND & NOTES

- "DI" DISCRETE INPUT POINT
- "DO" DISCRETE OUTPUT POINT
- "AI" ANALOG INPUT POINT "AO" - ANALOG OUTPUT POINT

- I. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS & INFORMATION.
- 2. ALL CONTROL CABLING (IDENTIFIED WITH "*C#14" OR SIMILAR DESIGNATIONS) SHALL BE 600V MULTI-CONDUCTOR TRAY CABLE PER SPECIFICATION REQUIREMENTS.
- 3. ALL INSTRUMENTATION CABLING (IDENTIFIED WITH "TSP" OR "SHD" DESIGNATIONS) SHALL BE 300V TWISTED, OVERALL-SHIELDED TRAY CABLE

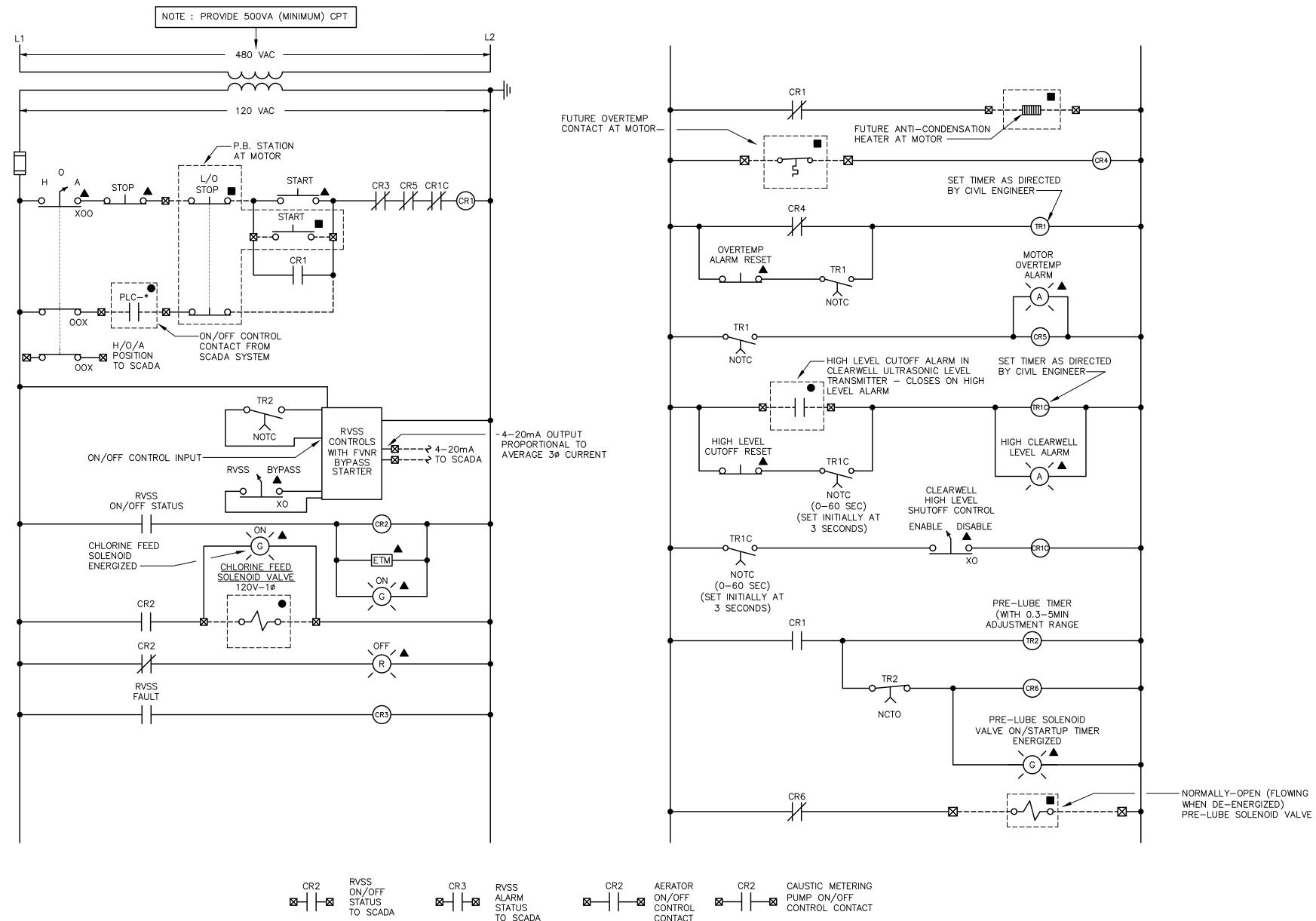


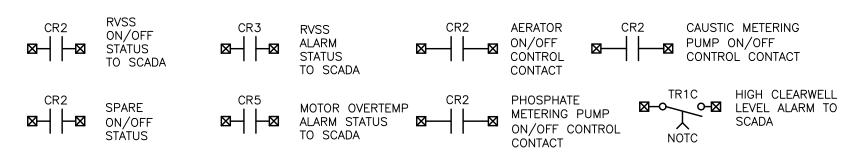


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CONTROL & INSTRUMENTATION SCHEDULES

SHEET NO.23 OF 38





ELEMENTARY DIAGRAM NO. 1

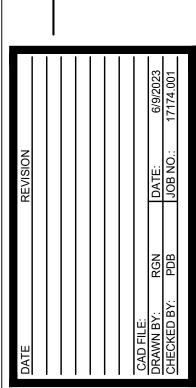
WELL PUMP RVSS STARTER: MCC-1



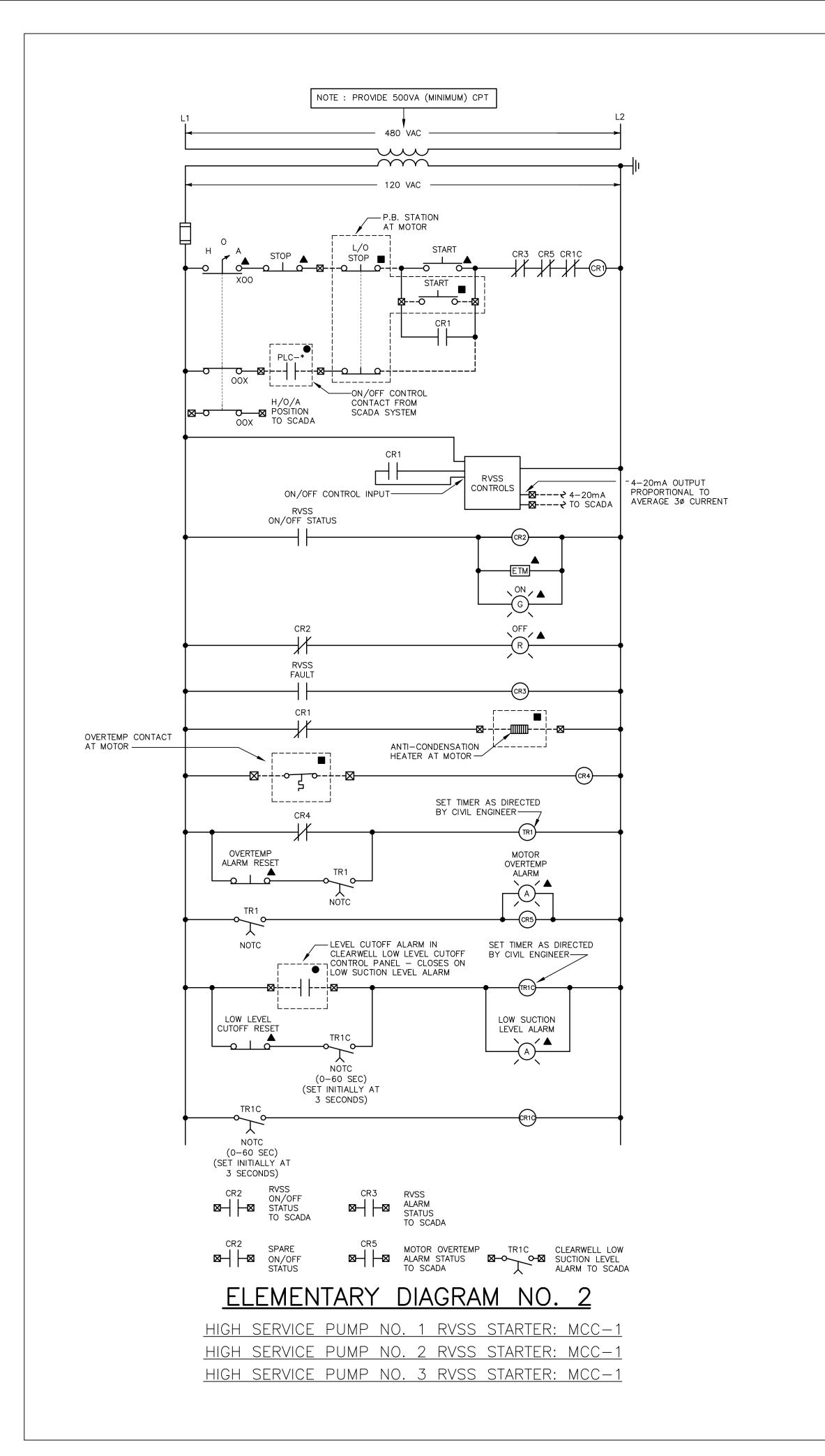


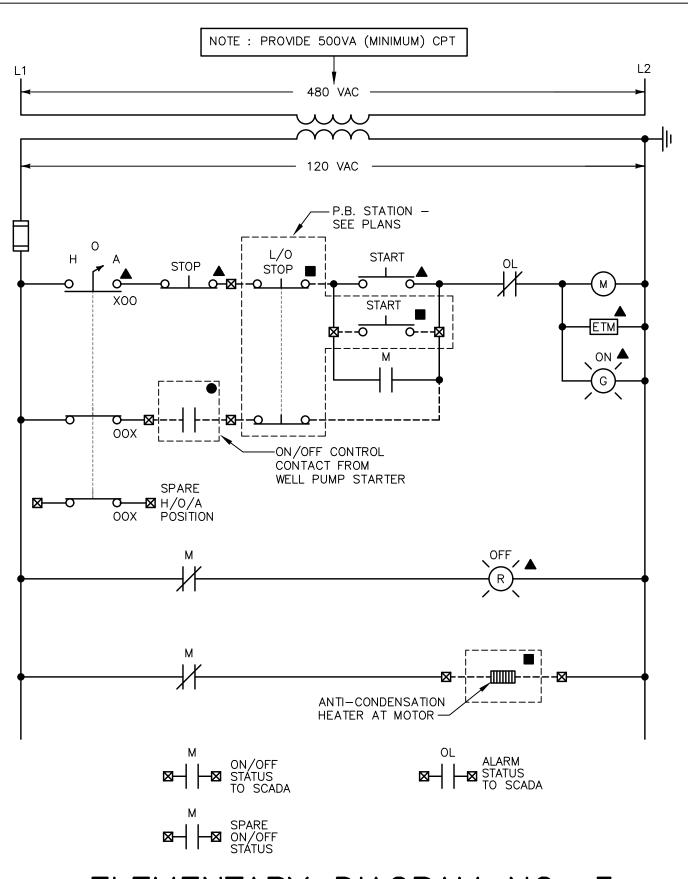


GORDO WATER, GAS, AND SEWER BO SULLIVAN WATER TREATMENT PLA REHABILITATION, PHASE 2 - EQUIPMI BUILDING & CLEARWELL REHAB DWSRF PROJECT #FS010412-01 PICKENS COUNTY



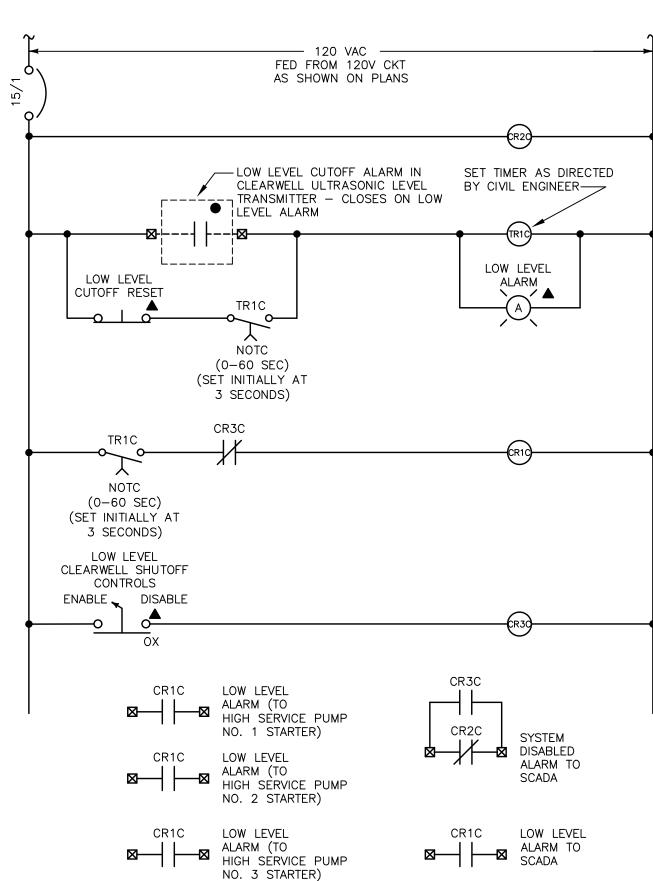






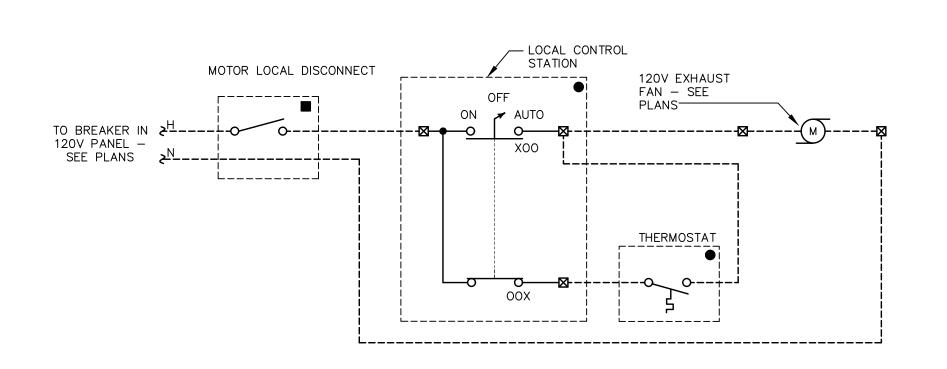
ELEMENTARY DIAGRAM NO. 3

AERATOR BLOWER STARTER: MCC-1



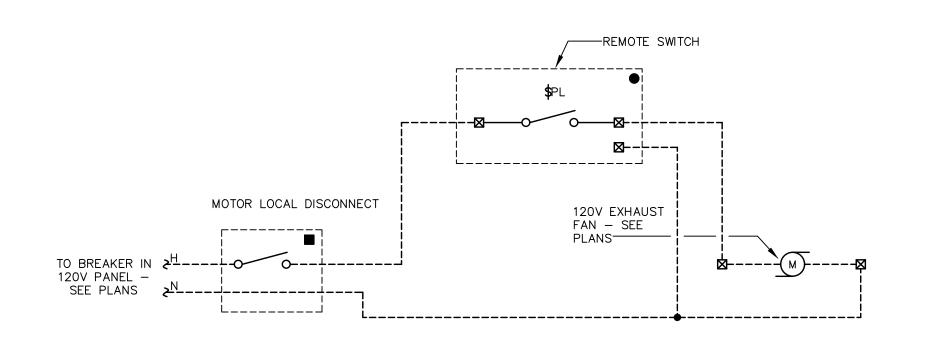
ELEMENTARY DIAGRAM NO. 4

CLEARWELL LOW LEVEL CUTOFF CONTROL PANEL (SEPARATELY-ENCLOSED CONTROL PANEL)



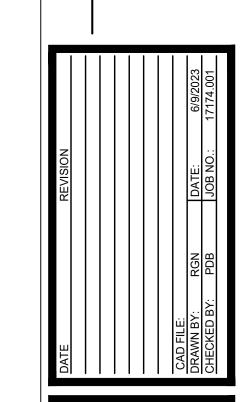
ELEMENTARY DIAGRAM NO. 5

CHEMICAL FEED ROOM 120V EXHAUST FAN CONTROL WIRING

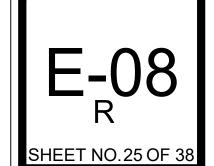


ELEMENTARY DIAGRAM NO. 6

CHLORINE ROOM 120V EXHAUST FAN CONTROL WIRING



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No. 27420
PROFESSIONAL

NO. 27

GORDO WATER, GAS, AND SEWER BOARD SULLIVAN WATER TREATMENT PLANT REHABILITATION, PHASE 2 - EQUIPMENT BUILDING & CLEARWELL REHAB

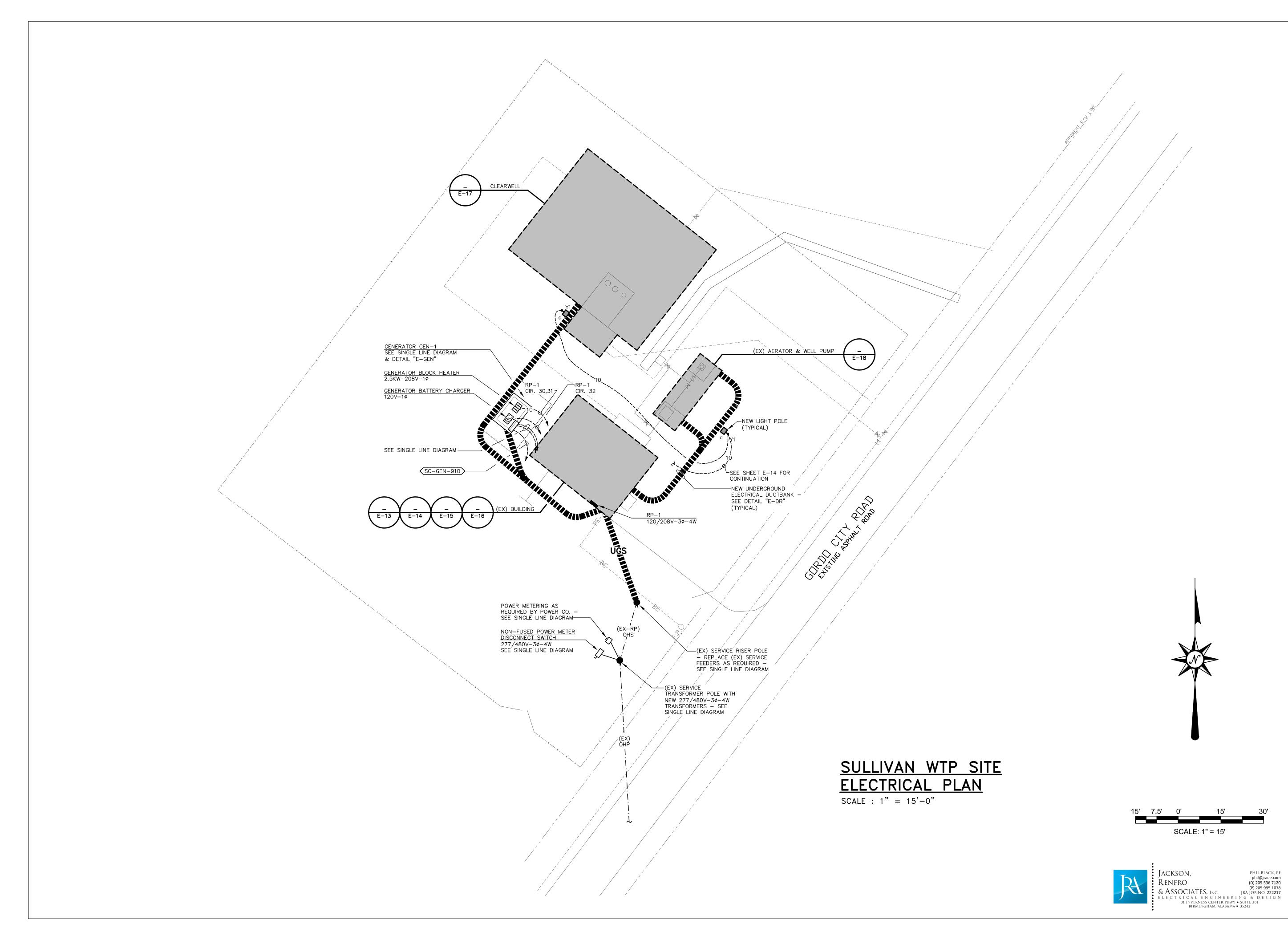
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AWN BY: RGN | DATE: 6/9/2023

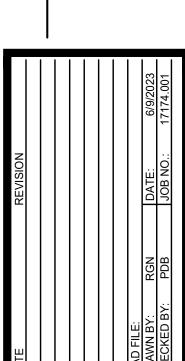
ECKED BY: PDB | JOB NO.: 17174.001

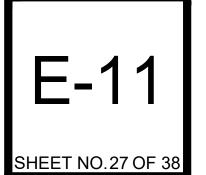
E-10
SHEET NO.26 OF 38

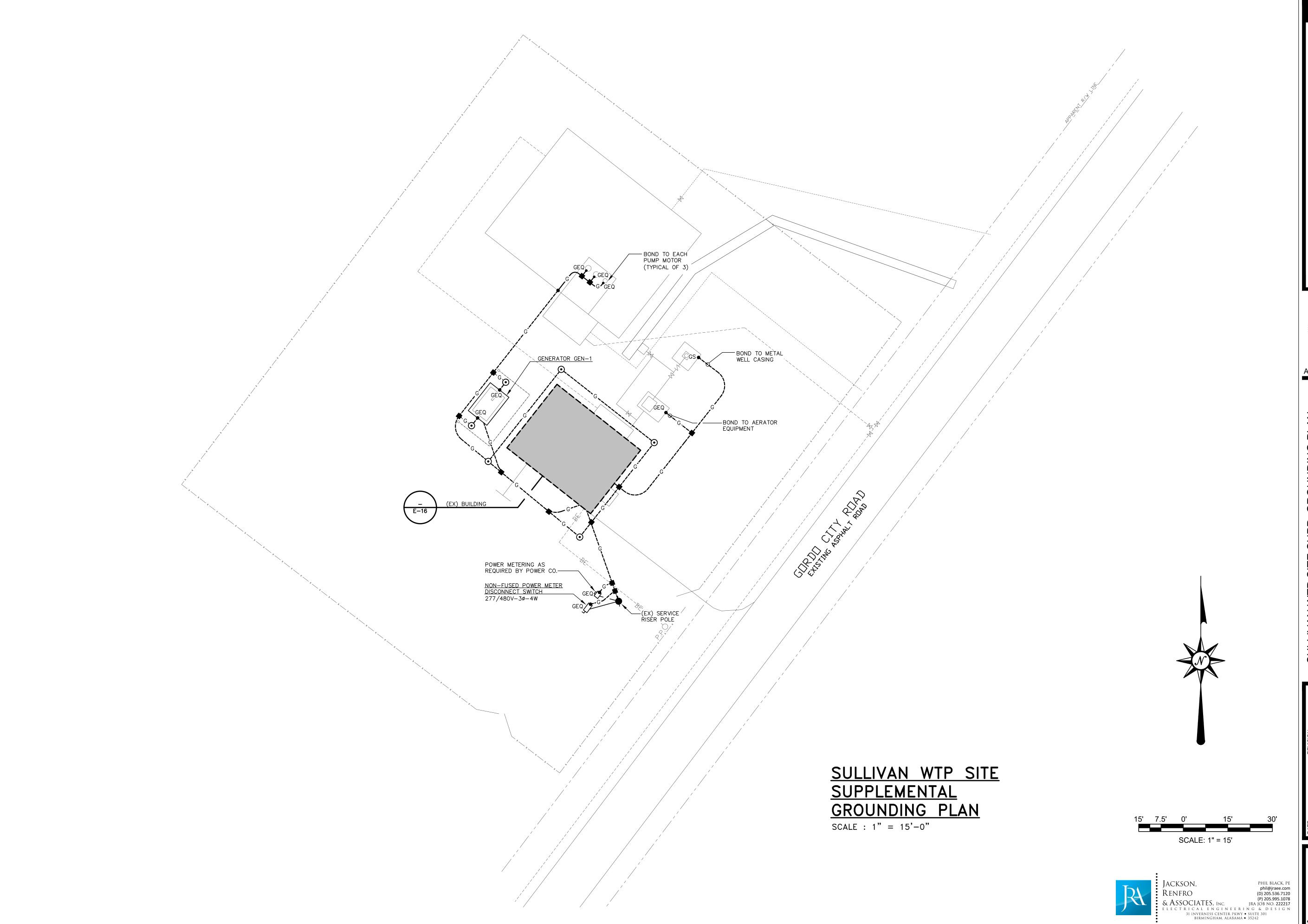




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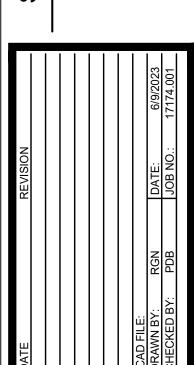
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Birmingham, Alabama 35243
(205) 397-3800

No. 27420
PROFESSION ACTION

No. 27420
PROFESSION

NO. 27420
PROFE

SULLIVAN WTP SITE SUPP. GROUNDING PLAN
GORDO WATER, GAS, AND SEWER BOARD
SULLIVAN WATER TREATMENT PLANT
REHABILITATION, PHASE 2 - EQUIPMENT
BUILDING & CLEARWELL REHAB



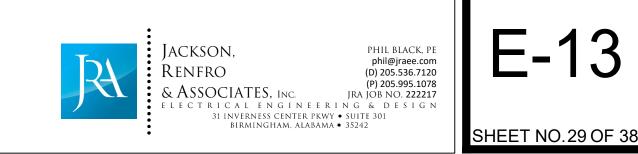
E-12

SHEET NO.28 OF 38



SULLIVAN WTP BUILDING PROCESS ELECTRICAL PLAN

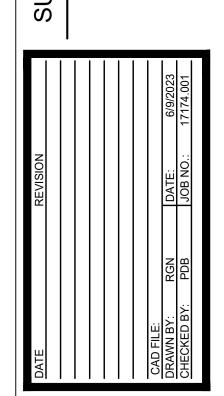
SCALE : 3/8" = 1'-0"



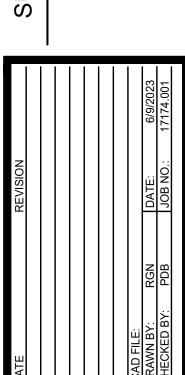


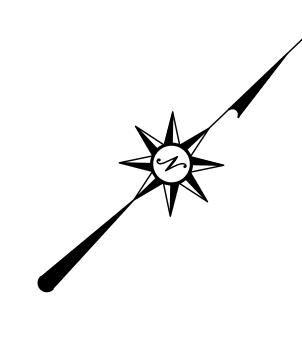
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SULLIVAN WTP BUILDING







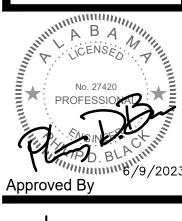


SULLIVAN WTP BUILDING HVAC ELECTRICAL PLAN

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







SULLIVAN WTP BUILDING HVAC ELEC. PLAI
GORDO WATER, GAS, AND SEWER BOARD
SULLIVAN WATER TREATMENT PLANT
REHABILITATION, PHASE 2 - EQUIPMENT
BUILDING & CLEARWELL REHAB
DWSRF PROJECT #FS010412-01

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 6/9/2023

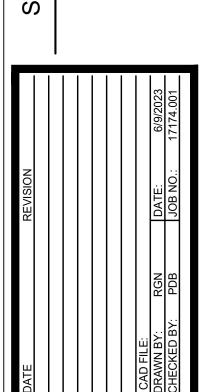
 CHECKED BY:
 PDB
 JOB NO:
 17174.001

E-15
SHEET NO.31 OF 38





GORDO WATER, GAS, AND SEWER BOARD
SULLIVAN WATER TREATMENT PLANT
DEHA DIT ITATION DHASE 2 FOLIDMENT



JACKSON,

RENFRO
(D) 205.536.7120
(P) 205.995.1078

& ASSOCIATES, INC.
IRA JOB NO. 222217
ELECTRICAL ENGINEERING & DESIGN
31 INVERNESS CENTER PKWY • SUITE 301
BIRMINGHAM. ALABAMA • 35242

SHEET NO. 32 OF 38

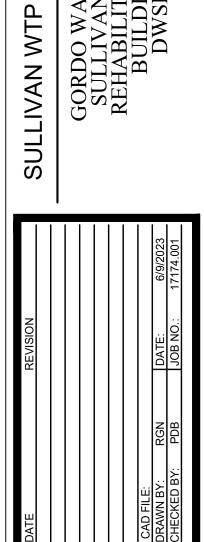
SULLIVAN WTP CLEARWELL ELECTRICAL PLAN

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

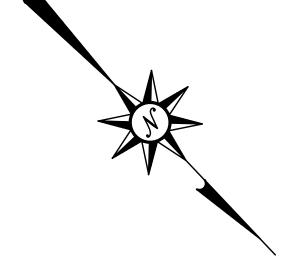




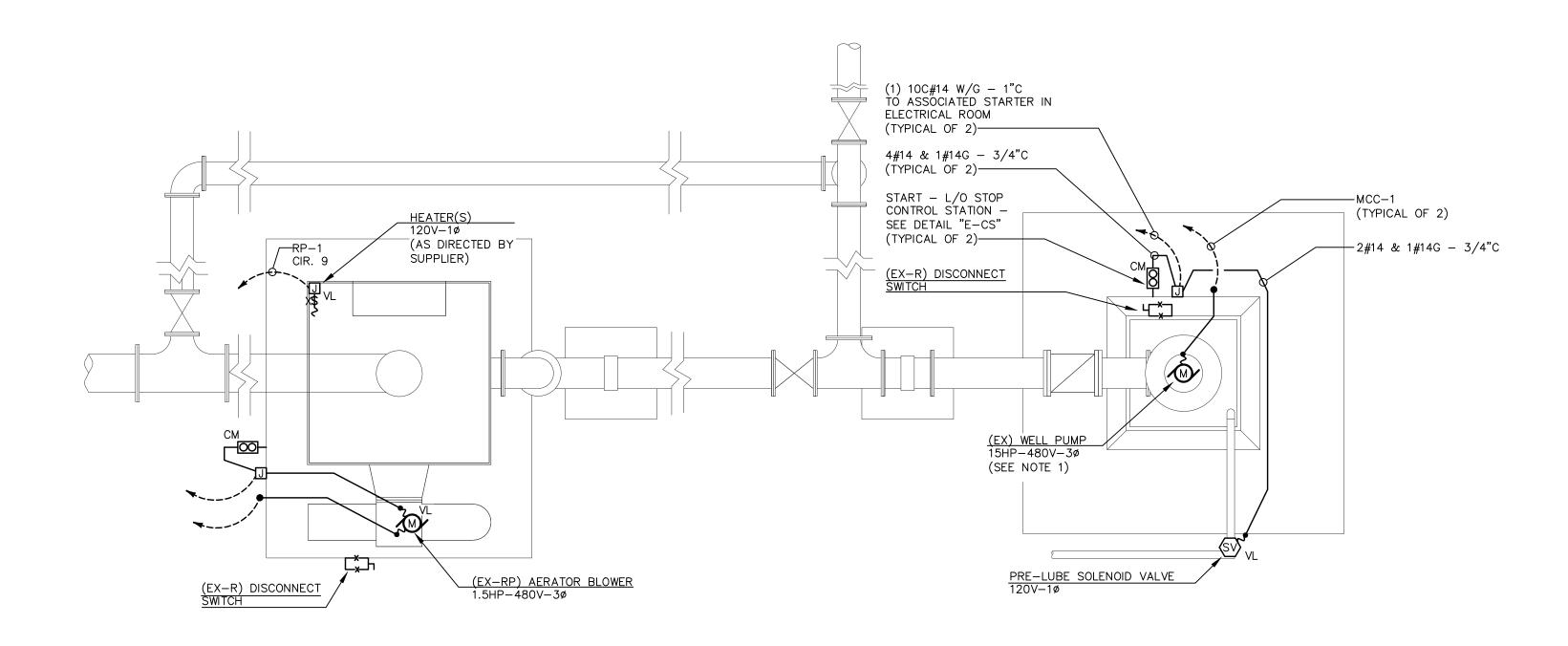
GORDO WATER, GAS, AND SEWER BOARD SULLIVAN WATER TREATMENT PLANT REHABILITATION, PHASE 2 - EQUIPMENT BUILDING & CLEARWELL REHAB









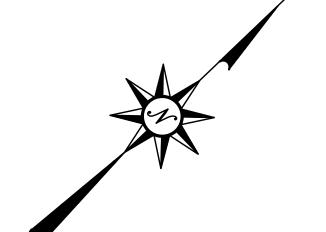


SULLIVAN WTP AERATOR & WELL PUMP ELECTRICAL PLAN

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

NOTES THIS SHEET ONLY

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.





Approved By

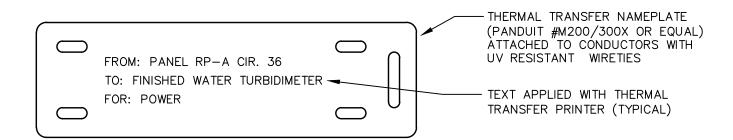
DOWNTOWN WTP

PHIL BLACK, PE phil@jraee.com (D) 205.536.7120 (P) 205.995.1078 JRA JOB NO. 222217 SHEET NO.35 OF 38

& ASSOCIATES, INC. JRA JOB NO. 222217

ELECTRICAL ENGINEERING & DESIGN

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BIRMINGHAM, ALABAMA • 35242



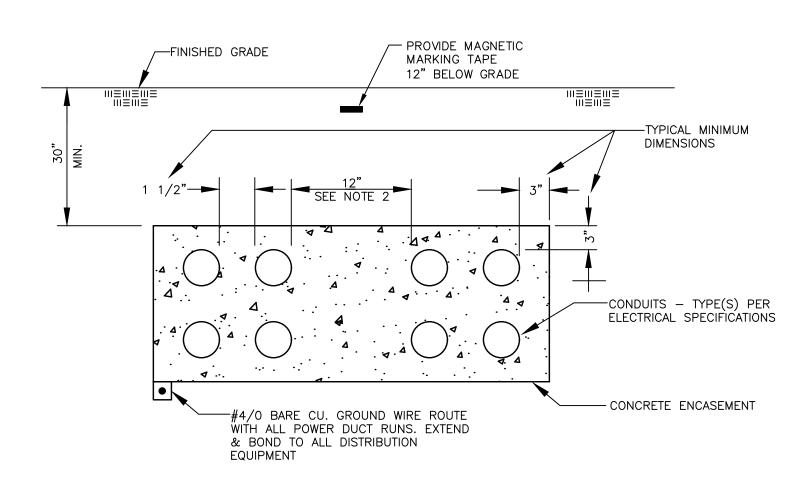
<u>DETAIL "E-CL"</u> TYPICAL CIRCUIT LABEL

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.

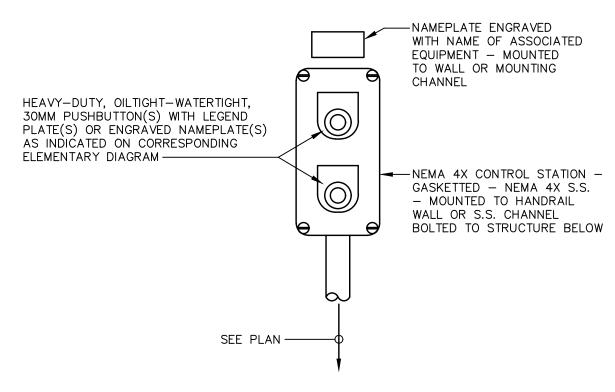
- 2. CIRCUIT NUMBERS SHALL BE IDENTIFIED FOR ALL CIRCUITS FED FROM LIGHTING OR POWER PANELBOARDS.
- 7. "FROM", "TO" & "FOR" TEXT SHOWN ABOVE ARE FOR EXAMPLE PURPOSES ONLY. NAMES/NUMBERS SHALL BE ADJUSTED TO MATCH ASSOCIATED CIRCUITS/CABLES.
- 4. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.



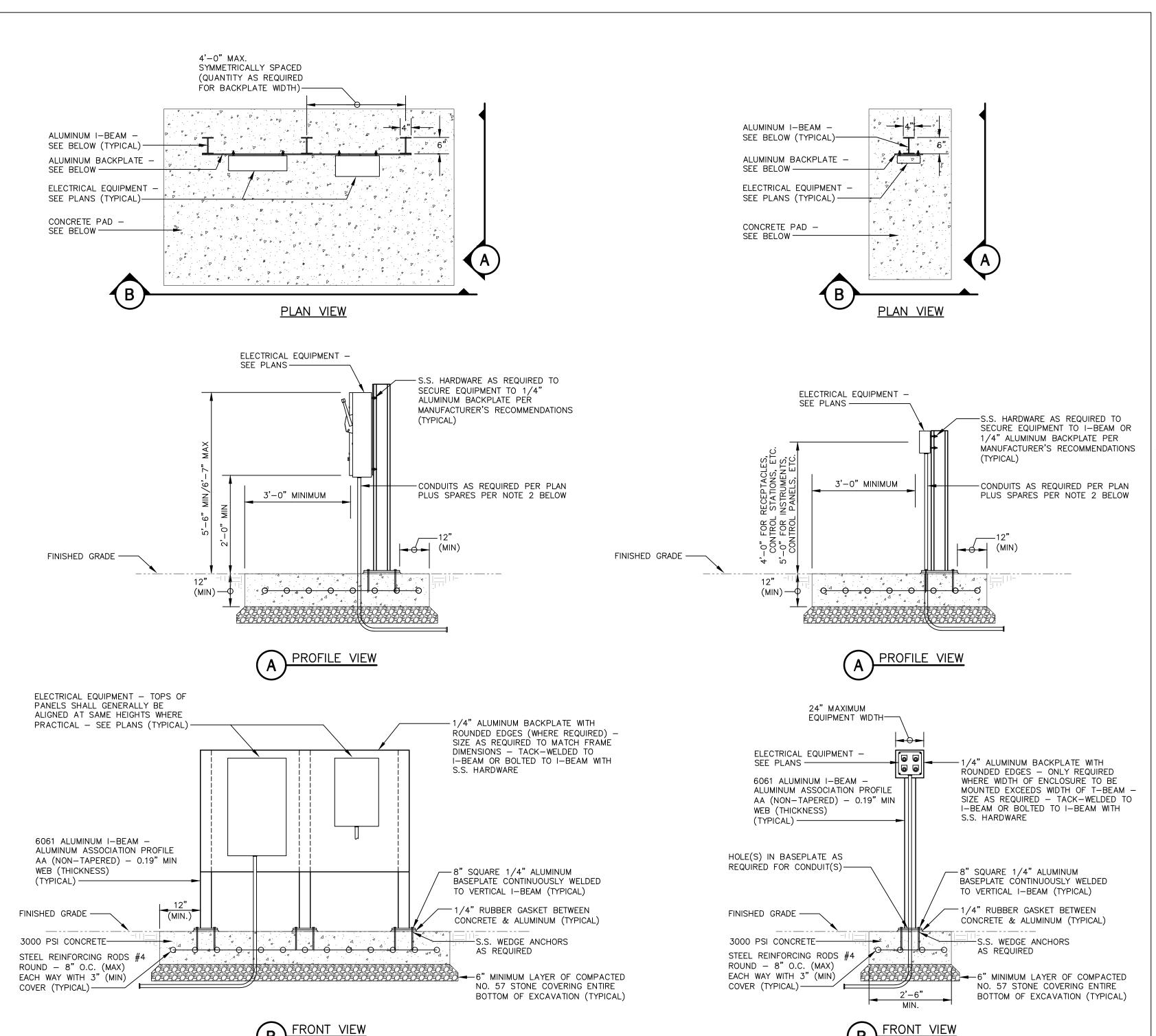
DETAIL "E-DR" TYPICAL DUCT RUN SECTION

DETAIL NOTES

- 1. PVC SPACERS SHALL BE INSTALLED AT RECOMMENDED INTERVALS TO SUPPORT AND MAINTAIN SPACING FOR CONDUITS.
- 2. 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.

2. 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).



NECL-SCHAFFEF

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

ILE:
N BY: RGN DATE: 6/9/2023
CED BY: PDB JOB NO: 17174.001

E-31

SHEET NO.36 OF 38

O NAME: RP-A

RATING: 120/208V-3ø-4W

FED FROM: PP-A CIR. 4

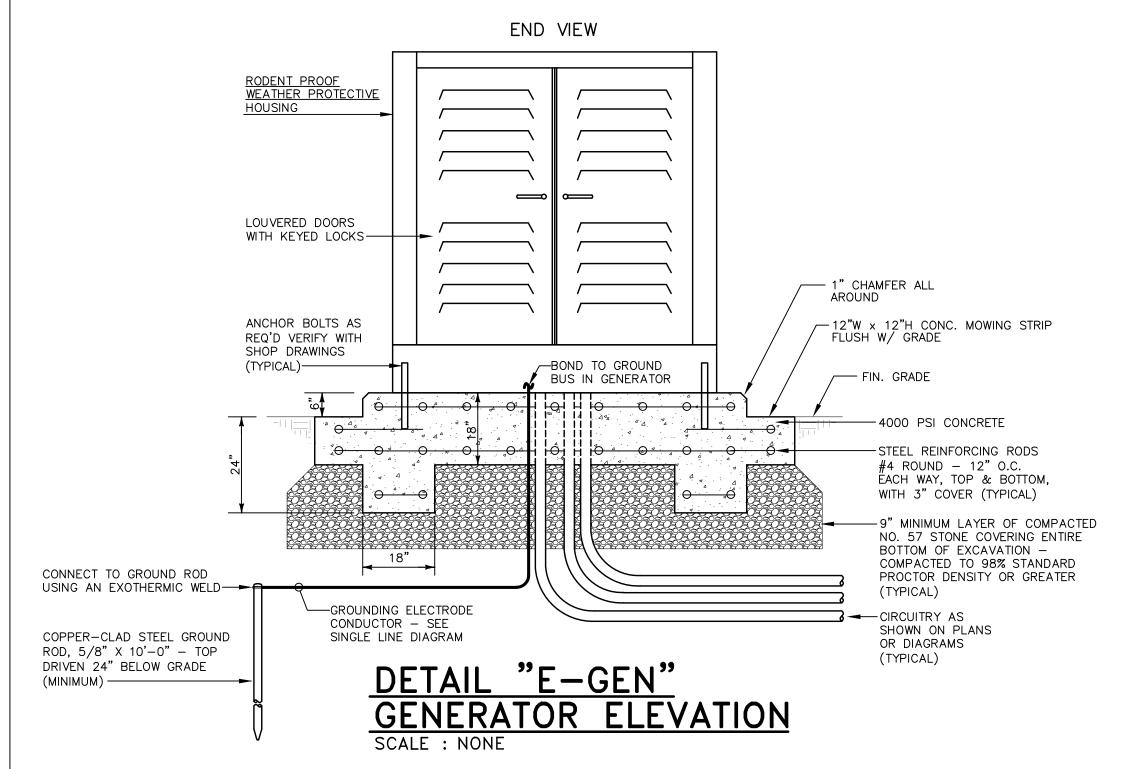
(IN MAIN ELEC. ROOM)

DETAIL "E-EDL" ELECTRICAL DISTRIBUTION EQUIPMENT LABEL

SCALE : NONE

DETAIL NOTES

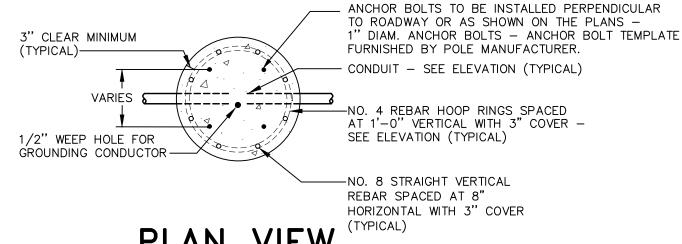
- 1. PANEL NAMES & RATINGS LISTED ABOVE ARE FOR EXAMPLE PURPOSES ONLY. NAMES & RATINGS SHALL BE ADJUSTED TO MATCH ASSOCIATED EQUIPMENT.
- 2. THE INTENT OF THIS DETAIL IS TO DEMONSTRATE GENERAL ELECTRICAL IDENTIFICATION REQUIREMENTS FOR ELECTRICAL DISTRIBUTION AND UTILIZATION EQUIPMENT. REFER TO SPECIFICATIONS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



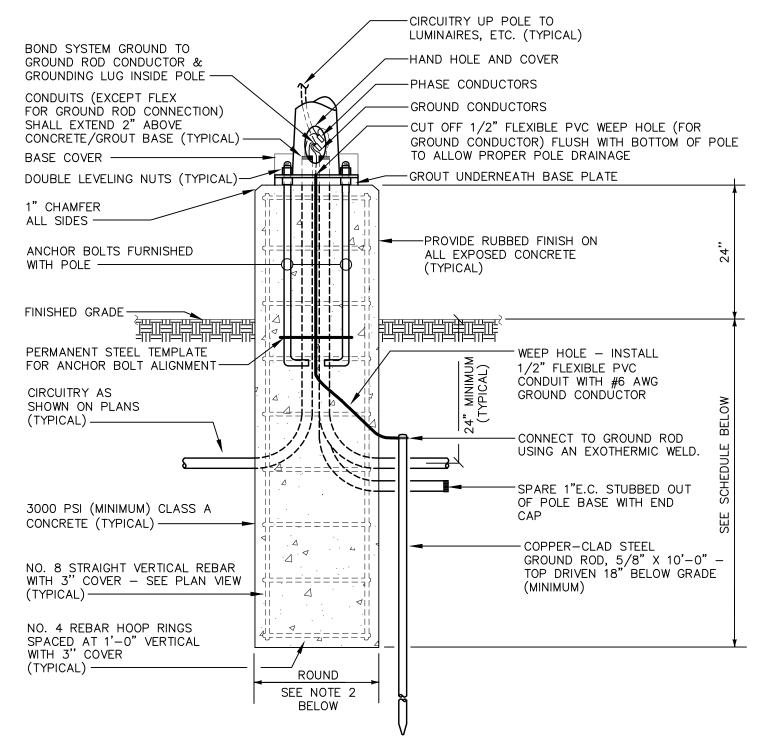
DETAIL NOTES

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.



PLAN VIEW



ELEVATION

DETAIL "E-LP1" EXPOSED LIGHT POLE BASE

DETAIL NOTES

- 1. 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 (LICENCED 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:

 A. ANCHOR BOLT CIRCLE DIAMETER PLUS 8" (TO PROVIDE MINIMUM 4" COVER OVER

 ALL ANCHOR BOLTS).

 B. 20" DIAMETER.
- C. DIAMETER AS REQUIRED BY SOIL CONDITIONS OR BY POLE SUPPLIER.
- 3. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES OR OBSTRUCTIONS TO AVOID CONFLICTS PRIOR TO INSTALLATION OF LIGHT POLE BASE(S).
- 4. 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	MININ (BASE DIAMETER							
	CLAYEY SOILS (CL, ML, CH, MH)	SANDY SOILS (SW, SP, SM, SC, GM, GC)	GRAVELY SOILS (GW, GP)						
0 - 15 FT. 16 - 20 FT. 21 - 25 FT. 26 - 30 FT. 31 - 35 FT. 36 - 40 FT. 41 - 45 FT. 46 - 50 FT.	6'-0'' 7'-0'' 8'-0'' 8'-6'' 9'-0'' 10'-0'' 11'-0''	5'-0'' 5'-6'' 6'-0'' 7'-0'' 7'-6'' 8'-0'' 8'-6'' 9'-0''	4'-6" 5'-0" 5'-6" 6'-6" 7'-0" 7'-6" 8'-0" 8'-6"	SEE NOTE 2 ABOVE					







ORDO WATER, GAS, AND SEWER BO SULLIVAN WATER TREATMENT PLA EHABILITATION, PHASE 2 - EQUIPMI BUILDING & CLEARWELL REHAB DWSRF PROJECT #FS010412-01

 DATE
 REVISION

 CAD FILE:
 6/9/2023

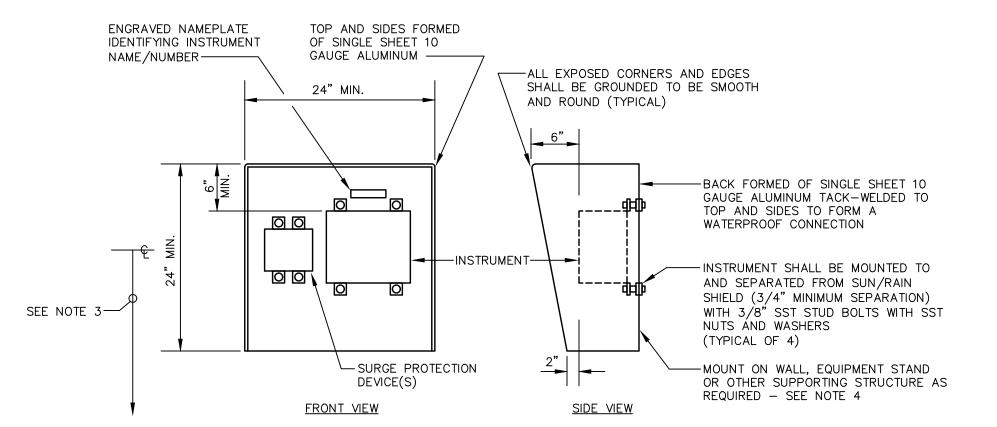
 CHECKED BY:
 PDB
 JOB NO:: 17174.001

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DETAIL "E-MSG" MAIN SERVICE GROUNDING SCALE : NONE

DETAIL NOTES

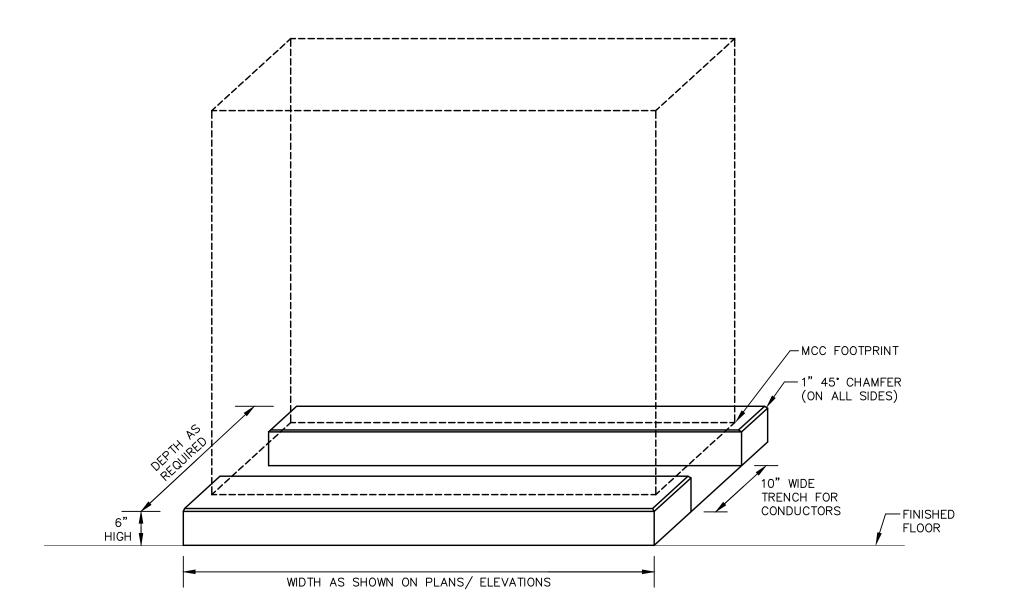
- UNLESS OTHERWISE NOTED, MAIN BONDING JUMPER SHALL BE SIZED IN ACCORDANCE WITH NEC TABLE 250.102(C)(1) AND ALL GROUNDING ELECTRODE CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH NEC TABLE 250.66. ALL CONDUCTORS SHALL BE INSULATED COPPER.
- . THE INTERSYSTEM BONDING JUMPER SHALL BE INSULATED COPPER, SIZED TO MATCH THE GROUNDING ELECTRODE CONDUCTOR OR #6AWG, WHICHEVER IS GREATER.
- ADDITIONAL GROUND RODS SHALL BE INSTALLED A MINIMUM OF SIX (6) FEET APART AND CONNECTED BY GROUNDING ELECTRODE CONDUCTORS UNTIL THE GROUND RESISTANCE DOES NOT EXCEED FIVE (5) OHMS.
- . ALL GROUNDING CONDUCTORS SHALL BE INSTALLED IN CONDUIT (TYPE PER SPECIFICATION REQUIREMENTS) UNLESS SPECIFICALLY NOTED OTHERWISE. METAL CONDUITS SHALL BE GROUNDED PER NEC REQUIREMENTS.
- REFER TO "GROUNDING" SPECIFICATIONS SECTION FOR ADDITIONAL GROUNDING REQUIREMENTS.



DETAIL "E-SRS" INSTRUMENT SUN/RAIN SHIELD INSTALLATION DETAIL

DETAIL NOTES

- SUN/RAIN SHIELDS SHALL BE FURNISHED FOR ALL ELECTRONIC INSTRUMENTS THAT WILL BE EXPOSED TO SUN OR RAIN (OR WHERE OTHERWISE SPECIFICALLY NOTED).
- DIMENSIONS SHOWN ABOVE ARE MINIMUM. SUN/RAIN SHIELDS SHALL BE SUFFICIENTLY SIZED TO ACCOMODATE INSTRUMENT PLUS ASSOCIATED SURGE PROTECTION DEVICE(S), POWER SUPPLIES, AND OTHER SIMILAR DEVICES.
- CENTERLINE OF INSTRUMENT SHALL BE LOCATED AT APPROXIMATELY 60" ABOVE GRADE/FLOOR LEVEL.



- CONCRETE PAD SHALL BE EITHER POURED WITH SLAB BELOW OR SECURELY ANCHORED WITH EPOXIED DOWELS TO SLAB BELOW. ALL PAD REQUIREMENTS SHALL BE COORDINATED WITH EQUIPMENT SUPPLIER TO ASSURE PROPER SUPPORT OF EQUIPMENT AND ACCESS FOR CABLES.
- TRENCH SHALL BE COVERED WITH EITHER MCC SECTIONS OR CUSTOM-FIT CHECKERPLATE COVERPLATE (BOLTED TO PAD).

DETAIL "E-MCC"

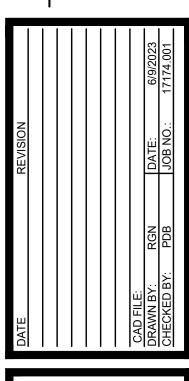
MOTOR CONTROL CENTER

HOUSEKEEPING PAD









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