

CONSTRUCTION PLANS FOR

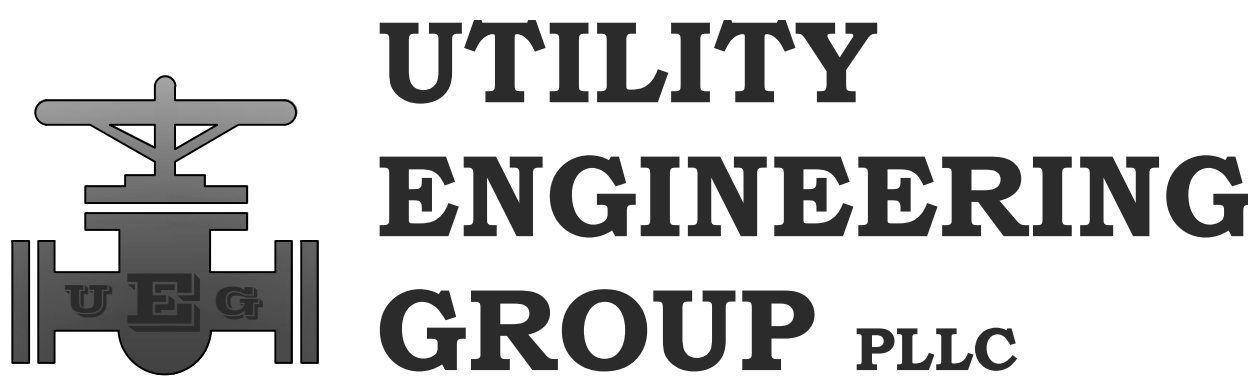
PRESA GROVE LIFT STATION & OFFSITE SEWER

100% DESIGN REVIEW PHASE

OWNER:
THREE PILLAR DEVELOPMENT, LLC
13580 LUDLAM ROAD, STUDIO 1
PINECREST, FLORIDA 33156



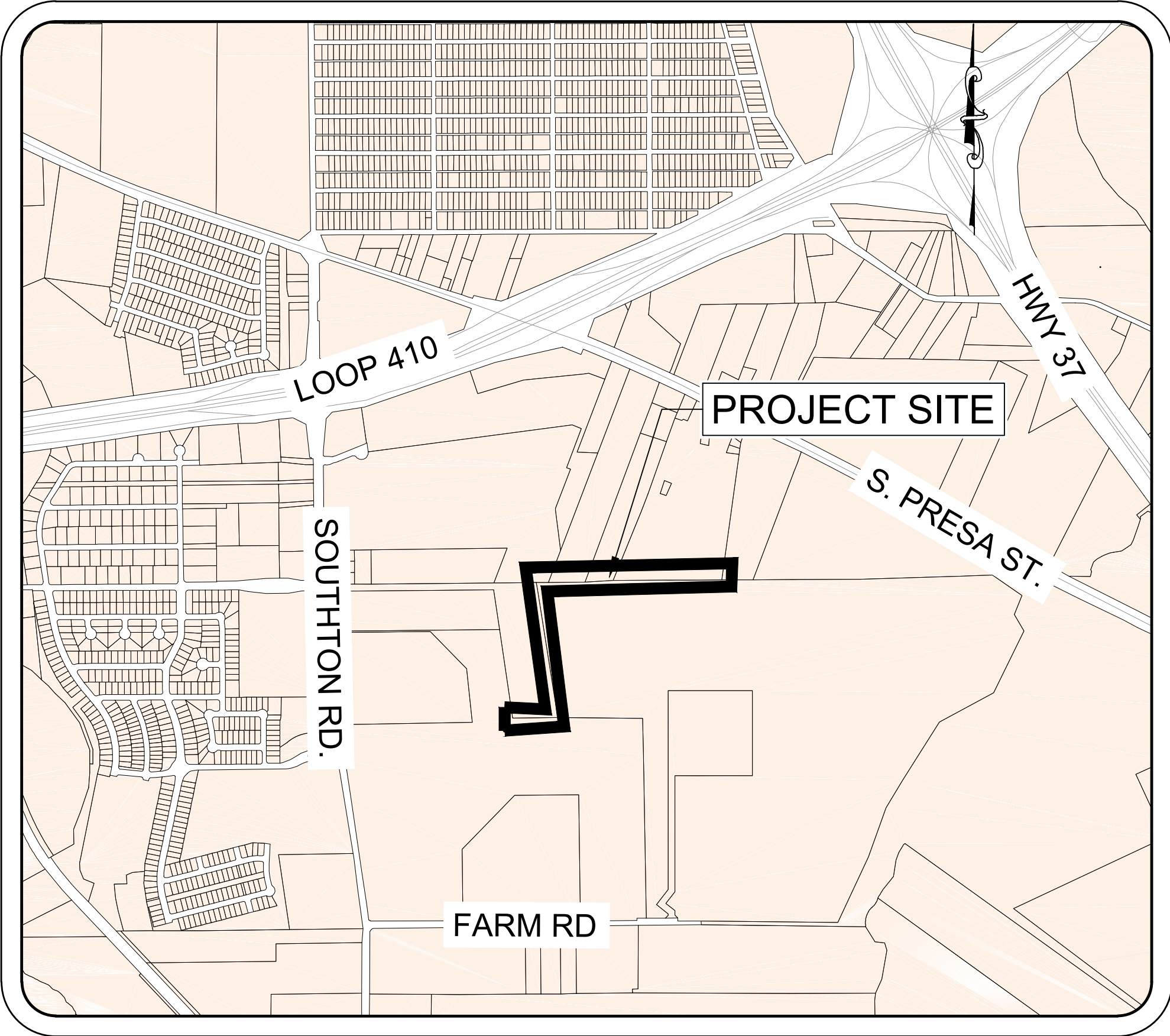
Engineering
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GENERAL CONSTRUCTION

1.

ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEM (SAWS) AND COMPLY WITH THE PLANS, SPECIFICATIONS, GENERAL CONDITIONS AND WITH THE FOLLOWING AS APPLICABLE:

A.

CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM", TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER", TAC TITLE 30 PART 1 CHAPTER 290.

B.

CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE."

C.

CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION."

D.

CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR CONSTRUCTION."

E.

CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).
2.

THE CONTRACTOR SHALL OBTAIN SAWS STANDARD DETAILS FROM SAWS WEBSITE, [HTTPS://APPS.SAWS.ORG/BUSINESS_CENTER/SPECS/CONSTSPECS/](https://apps.saws.org/business_center/specs/constspecs/) UNLESS OTHERWISE NOTED WITHIN DESIGN PLANS.
3.

THE CONTRACTOR IS TO NOTIFY AND MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 210-233-3500 (DURING REGULAR SAWS WORKING HOURS) AND PROVIDE NOTIFICATION PROCEDURES THE CONTRACTOR WILL USE TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS TWO (2) WEEKS PRIOR TO EXCAVATION. OUTSIDE OF REGULAR SAWS WORKING HOURS THE SAWS EOC SHOULD BE CONTACTED AT 210-704-7297.
4.

IF NECESSARY, CONTRACTOR WILL COORDINATE USE OF SAWS PREMISES AT NO ADDITIONAL COST TO SUCH EFFORTS INCLUDE, BUT ARE NOT LIMITED TO, OBTAINING SECURITY IDENTIFICATION BADGES REQUIRED FOR ACCESS TO SAWS FACILITIES.
5.

LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO SAWS.
6.

THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. AS-BUILTS FOR SAWS INFRASTRUCTURE CAN BE OBTAINED AT WEBSITE BELOW. CONTRACTOR SHALL COORDINATE PHYSICAL LOCATES FOR SAWS INFRASTRUCTURE THROUGH THE SAWS INSPECTOR. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES REQUESTING PIPE LOCATION MARKERS ON SAWS INFRASTRUCTURE. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:

SAN ANTONIO WATER SYSTEM:
REQUEST AS-BUILTS: [HTTPS://WWW.SAWS.ORG/SERVICE/LOCATES-SERVICE/](https://www.saws.org/service/locates-service/)
COSA DRAINAGE 210-206-8433
COSA TRAFFIC SIGNAL OPERATIONS 210-207-7720
TEXAS STATEWIDE ONE CALL LOCATOR 1-800-545-6005 OR 811
7.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING, AND STRUCTURES TO ITS ORIGINAL OR BETTER CONDITION AS A RESULT OF DAMAGES DONE BY THE PROJECT'S CONSTRUCTION.
8.

CONTRACTOR SHALL NOT MAKE USE OF DUMPSTERS OR WASTE BINS THAT ARE INTENDED TO SERVE RESIDENTS AND/OR BUSINESSES.
9.

ALL WORK IN TEXAS DEPARTMENT OF TRANSPORTATION AND BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT.
10.

THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.
11.

ALL WORK WITHIN THE 100-YEAR FLOODPLAIN SHALL BE DONE IN ACCORDANCE WITH FLOODPLAIN DEVELOPMENT PERMIT.
12.

ANY WORK COMPLETED WITHOUT PRIOR WRITTEN AUTHORIZATION WHICH IS NOT INCLUDED IN THESE PLANS AND SPECIFICATIONS WILL NOT BE COMPENSATED BY THE SAN ANTONIO WATER SYSTEM.
13.

HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS.

WEEKEND WORK: CONTRACTORS ARE REQUIRED TO SUBMIT REQUEST TO THE SAWS INSPECTION CONSTRUCTION DEPARTMENT BY 12:00PM ON THE WEDNESDAY PRIOR TO THE WEEKEND BEING REQUESTED. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.

ANY AND ALL SAWS UTILITY WORK INSTALLED WITHOUT WEEKEND APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION AT NO COST TO SAWS.
14.

PRE-CON SITE VIDEO: BEFORE THE START OF ANY CONSTRUCTION. THE SITE MUST BE VIDEO RECORDED BY THE CONTRACTOR WITH ONE COPY SUBMITTED TO SAWS INSPECTIONS. A PRE-SITE VIDEO WILL PROVIDE ACCURATE DOCUMENTATION OF THE EXISTING CONDITIONS(NSPI).
15.

POWER POLE BRACING: CONTRACTORS SHOULD BE ADVISED THAT THERE ARE EXISTING OVERHEAD UTILITY POLES ALONG THE PROJECT CORRIDOR. CONTRACTORS SHOULD FURTHER BE ADVISED THAT IF THE DISTANCE FROM THE OUTSIDE FACE OF A UTILITY TRENCH TO THE FACE OF A UTILITY POLE IS LESS THAN 5 FEET, SAID UTILITY POLE IS SUBJECT TO BRACING, BASED ON A DETERMINATION MADE BY UTILITY POLE OWNER. COSTS INCURRED BY CONTRACTOR FOR BRACING OF THESE UTILITY POLES IS SUBSIDIARY TO THAT RESPECTIVE UTILITY COMPANY'S WORK. IT IS ADVISABLE FOR THE CONTRACTOR TO REVIEW THE

CONSTRUCTION DOCUMENTS AND VISIT THE CONSTRUCTION SITE TO DETERMINE POTENTIAL IMPACTS.

16.

CONSTRUCTION SEQUENCING: IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO SCHEDULE SEQUENCING FOR REMOVAL AND INSTALLATION OF EXISTING AND PROPOSED SAWS UTILITIES IN CONJUNCTION WITH GENERAL PROJECT CONSTRUCTION. SEQUENCE OF CONSTRUCTION ACTIVITIES SHALL BE CONSIDERED IN ORDER TO MINIMIZE THE EXTENT AND DURATION OF DISTURBANCES.
17.

CONTRACTOR SHALL COMPLY WITH APPLICABLE REGULATIONS INCLUDING, BUT NOT LIMITED TO, THOSE OVERSEEN BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA). OSHA INFORMATION AND RELATED MATERIALS MAY BE OBTAINED AT [HTTPS://WWW.OSHA.GOV/](https://www.osha.gov/) OR AT THE OSHA SAN ANTONIO OFFICE LOCATED AT FOUNTAINHEAD TOWER, SUITE 605 8200 W. INTERSTATE 10 SAN ANTONIO, TX 78230 WHICH IS ALSO REACHABLE BY PHONE AT (210) 472-5040.
18.

TRENCH EXCAVATION SAFETY PROTECTION: CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREAS IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH, AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
19.

PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS INSPECTION AND/OR SAWS PRODUCTION GROUPS AT LEAST TWO WEEKS OR MORE IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY. SAWS PRODUCTION CONTROL CENTER 210-233-2016
20.

ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE WHICH IS KNOWN TO CONTAIN ASBESTOS-CONTAINING MATERIAL (ACM), MAYBE LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THIS PIPE OCCURS. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER ITEM NO. 3000, "HANDLING ASBESTOS CEMENT PIPE". AC PIPE REMOVED ON CONSTRUCTION PROJECTS FOR TIE-IN(S) SHOULD BE IN LENGTH OF 26 LINEAR FEET (LF). LENGTHS OF 13 LF SHOULD BE REMOVED WHERE AC PIPE IS BEING REMOVED AND CROSSING PIPES, CONDUITS, OR BOXES.
21.

VALVE REMOVAL: WHERE THE CONTRACTOR IS TO ABANDON A WATER MAIN, THE CONTROL VALVE LOCATED ON THE ABANDONING BRANCH WILL BE REMOVED AND REPLACED WITH A CAP/PLUG. (NSPI)
22.

DIVISION VALVES: DIVISION VALVES SHOWN ON PLANS OR NOT SHOWN ON PLANS BUT FOUND IN THE FIELD SHALL ONLY BE OPERATED BY SAWS DISTRIBUTION AND COLLECTION STAFF AND ONLY WITH PRIOR WRITTEN APPROVAL OF THE SAWS DIRECTOR OF PRODUCTION AND OPERATIONS AND PROPER COORDINATION WITH ALL SAWS DEPARTMENTS. CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO THE INSPECTOR A MINIMUM OF TWO WEEKS IN ADVANCE TO START THE COORDINATION PROCESS AND WILL BE INFORMED BY THE INSPECTOR WHEN THE DIVISION VALVE WILL BE OPERATED BY THE SAWS DISTRIBUTION AND COLLECTION STAFF. THE DIVISION VALVE CAN ONLY BE OPERATED BY SAWS DISTRIBUTION AND COLLECTION STAFF MEMBER NOT THE INSPECTOR OR THE CONTRACTOR. OPERATION OF A DIVISION VALVE WITHOUT THE EXPRESS PRIOR WRITTEN APPROVAL OF THE SAWS DISTRIBUTION AND COLLECTION STAFF WILL CONSTITUTE A MATERIAL BREACH OF ANY WRITTEN SAWS CONTRACT OR PERMIT IN ADDITION TO SUBJECTING THE CONTRACTOR TO LIABILITY FOR ANY AND ALL FINES, FEES, OR OTHER DAMAGES, DIRECT OR CONSEQUENTIAL, THAT MAY ARISE FROM OR BE CAUSED BY THE OPERATION OF THE VALVE WITHOUT PRIOR WRITTEN PERMISSION. PLEASE BE INFORMED THAT THE APPROVAL OF THE OPERATION OR OPENING OR CLOSING OF A DIVISION VALVE CAN TAKE SEVERAL WEEKS FOR APPROVAL. DIVISION VALVES WILL ALSO HAVE A VALVE LID LABELED DIVISION VALVE AND A LOCKING MECHANISM INSTALLED WITH A THE LOCK AND KEY MECHANISM WILL BE PAID FOR BY THE CONTRACTOR BUT WILL BE INSTALLED BY SAWS DISTRIBUTION AND COLLECTION STAFF.

SEWER

23.

THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO SANITARY SEWER OVERFLOW (SSO) OCCURS AS A RESULT OF THEIR WORK. ALL CONTRACTOR PERSONNEL RESPONSIBLE FOR SSO PREVENTION AND CONTROL SHALL BE TRAINED ON PROPER RESPONSE. SHOULD AN SSO OCCUR, THE CONTRACTOR SHALL:

A.

IDENTIFY THE SOURCE OF THE SSO AND NOTIFY SAWS EMERGENCY OPERATIONS CENTER IMMEDIATELY AT 210-704-SAWS (210-704-7297). PROVIDE THE ADDRESS OF THE SPILL AND AN ESTIMATED VOLUME OR FLOW.

B.

ATTEMPT TO ELIMINATE THE SOURCE OF THE SSO.

C.

CONTAIN SEWAGE FROM THE SSO TO THE EXTENT OF PREVENTING A POSSIBLE CONTAMINATION OF WATERWAYS.

D.

CLEAN UP SPILL SITE (RETURN CONTAINED SEWAGE TO THE COLLECTION SYSTEM IF POSSIBLE)AND PROPERLY DISPOSE OF CONTAMINATED SOIL/MATERIALS.

E.

CLEAN THE AFFECTED SEWER MAINS AND REMOVE ANY DEBRIS.

F.

MEET ALL POST-SSO REQUIREMENTS AS PER THE EPA CONSENT DECREE, INCLUDING LINE CLEANING AND TELEVISIONING THE AFFECTED SEWER MAINS (AT SAWS DIRECTION) WITHIN 24 HOURS.

SHOULD THE CONTRACTOR FAIL TO ADDRESS AN SSO IMMEDIATELY AND TO SAWS SATISFACTION, THEY WILL BE RESPONSIBLE FOR ALL COSTS INCURRED BY SAWS, INCLUDING ANY FINES FROM EPA. NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK. ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES SET BY THE TCEQ AND SAWS.
24.

THE CONTRACTOR SHALL PROVIDE BYPASS PUMPING OF SEWAGE AROUND EACH SEGMENT OF PIPE TO BE REPLACED, IN ACCORDANCE WITH SAWS STANDARD SPECIFICATION ITEM NO. 865, "BYPASS PUMPING SMALL DIAMETER SANITARY SEWER MAINS" AND STANDARD SPECIFICATION ITEM NO. 864, "BYPASS PUMPING LARGE DIAMETER SANITARY SEWER MAINS" AS APPLICABLE. PAYMENT FOR SUCH WORK WILL BE MADE UNDER THE APPROPRIATE BID ITEM ASSOCIATED WITH SANITARY SEWER BYPASS PUMPING IN ACCORDANCE WITH SAWS STANDARD SPECIFICATIONS 865 AND 864.

25.

PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 210-233-3500 AND/OR SAWS PRODUCTION GROUPS AT LEAST TWO WEEKS OR MORE IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.
26.

ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY:
IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALLOWANCES AND ADJUSTMENTS FOR TOP OF MANHOLES TO MATCH THE FINISHED GRADE OF THE PROJECT'S IMPROVEMENTS(NSPI).
27.

MANHOLE REMOVAL: WHERE EXISTING MANHOLES ARE TO BE REPLACED BY THE CONTRACTOR, THE EXISTING MANHOLES SHALL BE REMOVED. (NSPI)
28.

SMART MANHOLE COVERS: THE CONTRACTOR SHALL NOTIFY SAWS EOC AT 210-704-SAWS (210-233-7297) AND EITHER AMERICA ESPINOZA AT 210-233-2934 OR JOSE A. MARTINEZ AT 210-233-3071 A MINIMUM OF 72 HOURS, NOT COUNTING WEEKENDS OR SAWS HOLIDAYS, BEFORE WORKING ON THE PIPE OR MANHOLE, IN ORDER TO HAVE SAWS REMOVE THE SMART COVER. ANY DAMAGE DONE TO THE SMART COVER WILL BE CHARGED TO THE CONTRACTOR THROUGH A CHANGE ORDER.
29.

FLOW METERS IN MANHOLES: THE CONTRACTOR SHALL NOTIFY BOBBY JOHNSON AT 210-233-3493 OR ABEL BORUNDA AT 210-233-3704 A MINIMUM OF 72 HOURS, NOT COUNTING WEEKENDS OR SAWS HOLIDAYS, BEFORE WORKING ON THE PIPE OR MANHOLE, IN ORDER TO HAVE SAWS REMOVE THE FLOW METER IN THE MANHOLE. ANY DAMAGE DONE TO THE FLOW METER WILL BE CHARGED TO THE CONTRACTOR THROUGH A CHANGE ORDER

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Colliers

Engineering
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ISSUE DATE

REVISIONS

UTILITY
ENGINEERING
GROUP PLLC

PRESA GROVE LIFT STATION & OFFSITE SEWER

SAN ANTONIO, TEXAS

GENERAL NOTES

PLAT NO.

JOB NO.: 314-39-03
DATE: November 30, 2023
DRAWN: M.W. CHECKED: A.C.
SHEET NUMBER:

G-2

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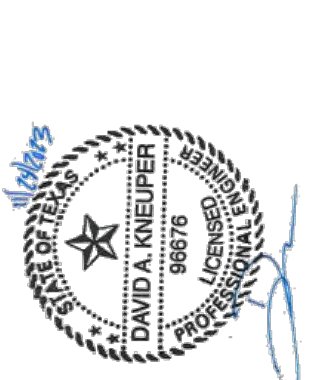
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
LIFT STATIONS AND FORCE MAINS
GENERAL CONSTRUCTION NOTES

1. THIS LIFT STATION AND/OR FORCE MAIN MUST BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S (TCEQ) EDWARDS AQUIFER RULES 30 TEXAS ADMINISTRATIVE CODE (TAC) §213.5(C), THE DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEMS 30 TAC CHAPTER 217, AND THE CITY OF SEGUIN STANDARD SPECIFICATIONS.
2. ANY MODIFICATION TO THE ACTIVITIES DESCRIBED IN THE REFERENCED LIFT STATION/FORCE MAIN SYSTEM APPLICATION FOLLOWING THE DATE OF APPROVAL MAY REQUIRE THE SUBMITTAL OF A LIFT STATION/FORCE MAIN SYSTEM APPLICATION TO MODIFY THIS APPROVAL, INCLUDING THE PAYMENT OF APPROPRIATE FEES AND ALL INFORMATION NECESSARY FOR ITS REVIEW AND APPROVAL.
3. PRIOR TO COMMENCING ANY REGULATED ACTIVITY, THE APPLICANT OR HIS AGENT MUST NOTIFY THE LOCAL REGIONAL OFFICE, IN WRITING, OF THE DATE ON WHICH THE REGULATED ACTIVITY WILL BEGIN.
4. UPON COMPLETION OF THE WET WELL EXCAVATION, A GEOLOGIST MUST CERTIFY THAT THE EXCAVATION HAS BEEN INSPECTED FOR THE PRESENCE OF SENSITIVE FEATURES AND THE CERTIFICATION MUST BE SUBMITTED TO THE APPROPRIATE REGIONAL OFFICE. FURTHER ACTIVITIES MAY NOT PROCEED UNTIL THE EXECUTIVE DIRECTOR HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT ANY SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY FROM THE LIFT STATION. CONSTRUCTION MAY CONTINUE IF THE GEOLOGIST CERTIFIES THAT NO SENSITIVE FEATURE OR FEATURES ARE PRESENT.
5. IF ANY SENSITIVE FEATURES ARE DISCOVERED DURING THE WASTEWATER LINE TRENCHING ACTIVITIES, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPLICANT MUST IMMEDIATELY NOTIFY THE APPROPRIATE REGIONAL OFFICE OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY OF THE FEATURE DISCOVERY. A GEOLOGIST'S ASSESSMENT OF THE LOCATION AND EXTENT OF THE FEATURE DISCOVERED MUST BE REPORTED TO THAT REGIONAL OFFICE IN WRITING WITHIN TWO WORKING DAYS. THE APPLICANT MUST SUBMIT A PLAN FOR ENSURING THE STRUCTURAL INTEGRITY OF THE SEWER LINE OR FOR MODIFYING THE PROPOSED COLLECTION SYSTEM ALIGNMENT AROUND THE FEATURE. THE REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL THE EXECUTIVE DIRECTOR HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY WHILE MAINTAINING THE STRUCTURAL INTEGRITY OF THE LINE.
6. LIFT STATIONS SHALL BE DESIGNED TO WITHSTAND AND OPERATE DURING A 100-YEAR FLOOD EVENT AND SHALL BE ACCESSIBLE DURING A 25-YEAR FLOOD. ALL LIFT STATIONS SHALL BE INTRUDER-RESISTANT WITH A CONTROLLED ACCESS.
7. DRY WELL SUMP PUMPS:
(A) A DRY WELL MUST USE DUAL SUMP PUMPS, EACH WITH A MINIMUM CAPACITY OF 1,000 GALLONS PER HOUR AND CAPABLE OF HANDLING THE VOLUME OF LIQUID GENERATED DURING PEAK OPERATIONS.
(B) A PUMP MUST HAVE A SUBMERSIBLE MOTOR AND WATERTIGHT WIRING.
(C) A DRY WELL FLOOR MUST SLOPE TOWARD A SUMP SIZED FOR PROPER DRAINAGE.
(D) THE MINIMUM SUMP DEPTH IS 6.0 INCHES AND MUST PREVENT STANDING WATER ON A DRY WELL FLOOR UNDER NORMAL OPERATION.
(E) A SUMP PUMP MUST OPERATE AUTOMATICALLY BY USE OF A FLOAT SWITCH OR OTHER LEVEL-DETECTING DEVICE.
(F) A SUMP PUMP MUST USE SEPARATE PIPES CAPABLE OF DISCHARGING MORE THAN THE MAXIMUM LIQUID LEVEL OF AN ASSOCIATED WET WELL.
(G) A SUMP PUMP OUTLET PIPE MUST BE AT LEAST 1.5 INCHES IN DIAMETER AND HAVE AT LEAST TWO CHECK VALVES IN SERIES.
8. PUMP CONTROLS.
(A) A LIFT STATION PUMP MUST OPERATE AUTOMATICALLY, BASED ON THE WATER LEVEL IN A WET WELL.
(B) THE LOCATION OF A WET WELL LEVEL MECHANISM MUST ENSURE THAT THE MECHANISM IS UNAFFECTED BY CURRENTS, RAGS, GREASE, OR OTHER FLOATING MATERIALS.
(C) A LEVEL MECHANISM MUST BE ACCESSIBLE WITHOUT ENTERING THE WET WELL.
(D) WET WELL CONTROLS WITH A BUBBLER SYSTEM REQUIRE DUAL AIR SUPPLY AND DUAL CONTROLS.
(E) MOTOR CONTROL CENTERS MUST BE MOUNTED AT LEAST 4.0 INCHES ABOVE GRADE TO PREVENT WATER INTRUSION AND CORROSION FROM STANDING WATER IN THE ENCLOSURE.
(F) ELECTRICAL EQUIPMENT AND ELECTRICAL CONNECTIONS IN A WET WELL OR A DRY WELL MUST MEET NATIONAL FIRE PREVENTION ASSOCIATION 70 NATIONAL ELECTRIC CODE EXPLOSION PREVENTION REQUIREMENTS, UNLESS CONTINUOUS VENTILATION IS PROVIDED.
9. WET WELLS.
(A) A WET WELL MUST BE ENCLOSED BY WATERTIGHT AND GAS TIGHT WALLS.
(B) A PENETRATION THROUGH A WALL OF A WET WELL MUST BE GAS TIGHT.
(C) A WET WELL MUST NOT CONTAIN EQUIPMENT REQUIRING REGULAR OR ROUTINE INSPECTION OR MAINTENANCE, UNLESS INSPECTION AND MAINTENANCE CAN BE DONE WITHOUT STAFF ENTERING THE WET WELL.
(D) A GRAVITY PIPE DISCHARGING TO A WET WELL MUST BE LOCATED SO THAT THE INVERT ELEVATION IS ABOVE THE LIQUID LEVEL OF A PUMP'S "ON" SETTING.
(E) GATE VALVES AND CHECK VALVES ARE PROHIBITED IN A WET WELL.
(F) GATE VALVES AND CHECK VALVES MAY BE LOCATED IN A VALVE VAULT NEXT TO A WET WELL OR IN A DRY WELL.
(G) PUMP CYCLE TIME, BASED ON PEAK FLOW, MUST EQUAL OR EXCEED THOSE IN THE FOLLOWING TABLE:
- | PUMP HORSEPOWER | MINIMUM CYCLE TIMES (MINUTES) |
|-----------------|-------------------------------|
| <50 | 6 |
| 50-100 | 10 |
| > 100 | 15 |
- (A) AN EVALUATION OF MINIMUM WET WELL VOLUME REQUIRES THE FOLLOWING FORMULA:
WHERE:
V = ACTIVE VOLUME (CUBIC FEET)
Q = PUMP CAPACITY (GALLONS PER MINUTE)
T = CYCLE TIME (MINUTES)
7.48 = CONVERSION FACTOR (GALLONS/CUBIC FOOT)
10. WET WELL SLOPES.
(A) A WET WELL FLOOR MUST HAVE A SMOOTH FINISH AND MINIMUM SLOPE OF 10% TO A PUMP INTAKE.
(B) A WET WELL DESIGN MUST PREVENT DEPOSITION OF SOLIDS UNDER NORMAL OPERATING CONDITIONS.
(C) A LIFT STATION WITH GREATER THAN 5.0 MILLION GALLONS PER DAY FIRM PUMPING CAPACITY MUST HAVE ANTI-VORTEX BAFFLING.

11. DRY WELL ACCESS.
(A) AN UNDERGROUND DRY WELL MUST BE ACCESSIBLE.
(B) A STAIRWAY IN A DRY WELL MUST USE NON-SLIP STEPS AND CONFORM TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS WITH RESPECT TO RISE AND RUN.
(C) A LADDER IN A DRY WELL MUST MADE OF NON-CONDUCTIVE MATERIAL AND RATED FOR THE LOAD NECESSARY FOR STAFF AND EQUIPMENT TO DESCEND AND ASCEND.
12. VENTILATION SHALL BE PROVIDED FOR LIFT STATIONS, INCLUDING BOTH WET AND DRY WELLS.
13. HOISTING EQUIPMENT. A LIFT STATION MUST HAVE PERMANENT HOISTING EQUIPMENT OR BE ACCESSIBLE TO PORTABLE HOISTING EQUIPMENT FOR REMOVAL OF PUMPS, MOTORS, VALVES, PIPES, AND OTHER SIMILAR EQUIPMENT.
14. A FLOOR DRAIN FROM A VALVE VAULT TO A WET WELL MUST PREVENT GAS FROM ENTERING A VALVE VAULT BY INCLUDING FLAP VALVES, "P" TRAPS, SUBMERGED OUTLETS, OR A COMBINATION OF THESE DEVICES.
15. PUMPS.
(A) GENERAL REQUIREMENTS. A RAW WASTEWATER PUMP, WITH THE EXCEPTION OF A GRINDER PUMP, MUST:
(1) BE DESIGNED TO PREVENT CLOGGING;
(2) BE CAPABLE OF PASSING A SPHERE OF 2.5 INCHES IN DIAMETER OR GREATER; AND
(3) HAVE GREATER THAN 3.0 INCH DIAMETER SUCTION AND DISCHARGE OPENINGS.
(B) SUBMERSIBLE AND NON-SUBMERSIBLE PUMPS.
(1) A NON-SUBMERSIBLE PUMP MUST HAVE INSPECTION AND CLEANOUT PLATES ON BOTH THE SUCTION AND DISCHARGE SIDES OF EACH PUMPING UNIT THAT FACILITATE LOCATING AND REMOVING BLOCKAGE-CAUSING MATERIALS, UNLESS THE PUMP DESIGN ACCOMMODATES EASY REMOVAL OF THE ROTATION ELEMENTS.
(2) A PUMP SUPPORT MUST PREVENT MOVEMENT AND VIBRATION DURING OPERATION.
(3) A SUBMERSIBLE PUMP MUST USE A RAIL-TYPE PUMP SUPPORT SYSTEM WITH MANUFACTURER-APPROVED MECHANISMS DESIGNED TO ALLOW PERSONNEL TO REMOVE AND REPLACE ANY SINGLE PUMP WITHOUT ENTERING OR DEWATERING THE WET WELL.
(4) SUBMERSIBLE PUMP RAILS AND LIFTING CHAINS MUST BE CONSTRUCTED OF A MATERIAL THAT PERFORMS TO AT LEAST THE STANDARD OF SERIES 300 STAINLESS STEEL.
(C) LIFT STATION PUMPING CAPACITY. THE FIRM PUMPING CAPACITY OF A LIFT STATION MUST HANDLE THE EXPECTED PEAK FLOW.
(D) PUMP HEAD CALCULATIONS.
(1) AN OWNER SHALL SELECT A PUMP BASED UPON ANALYSIS OF THE SYSTEM HEAD AND PUMP CAPACITY CURVES THAT DETERMINE THE PUMPING CAPACITIES ALONE AND WITH OTHER PUMPS AS THE TOTAL DYNAMIC-HEAD INCREASES DUE TO ADDITIONAL FLOWS PUMPED THROUGH A FORCE MAIN.
(2) THE PIPE HEAD LOSS CALCULATIONS, USING THE HYDRAULIC INSTITUTE STANDARDS, PERTAINING TO HEAD LOSSES THROUGH PIPES, VALVES, AND FITTINGS, MUST BE INCLUDED IN THE REPORT.
(3) THE SELECTED FRICTION COEFFICIENT (HAZEN-WILLIAMS "C" VALUE) USED IN FRICTION HEAD LOSS CALCULATIONS MUST BE BASED ON THE PIPE MATERIAL SELECTED.
(4) FOR A LIFT STATION WITH MORE THAN TWO PUMPS, A FORCE MAIN IN EXCESS OF ONE-HALF MILE, OR FIRM PUMPING CAPACITY OF 100 GALLONS PER MINUTE OR GREATER, SYSTEM CURVES MUST BE PROVIDED FOR BOTH THE NORMAL AND PEAK OPERATING CONDITIONS AT C VALUES FOR PROPOSED AND EXISTING PIPE.
(E) FLOW CONTROL.
(1) A LIFT STATION OR A TRANSFER PUMPING STATION LOCATED AT OR DISCHARGING DIRECTLY TO A WASTEWATER TREATMENT SYSTEM MUST HAVE A PEAK PUMP CAPACITY EQUAL TO OR LESS THAN THE PEAK DESIGN FLOW, UNLESS EQUALIZATION IS PROVIDED.
(2) A WASTEWATER TREATMENT SYSTEM WITH A PEAK FLOW THAT IS GREATER THAN 300,000 GALLON PER DAY MUST USE THREE OR MORE PUMPS, UNLESS DUPLEX, AUTOMATICALLY CONTROLLED, VARIABLE CAPACITY PUMPS ARE PROVIDED.
(F) SELF-PRIMING PUMPS.
(1) A SELF-PRIMING PUMP MUST BE CAPABLE OF PRIMING WITHOUT RELIANCE UPON A SEPARATE PRIMING SYSTEM, AN INTERNAL FLAP VALVE, OR ANY EXTERNAL MEANS FOR PRIMING.
(2) A SELF-PRIMING PUMP MUST USE A SUCTION PIPE VELOCITY AT LEAST 3.0 FEET PER SECOND BUT NOT MORE THAN 7.0 FEET PER SECOND, AND MUST INCORPORATE ITS OWN SUCTION PIPE.
(3) A SELF-PRIMING PUMP MUST VENT AIR BACK INTO THE WET WELL DURING PRIMING.
(G) VACUUM-PRIMING PUMPS.
(1) A VACUUM-PRIMED PUMP MUST BE CAPABLE OF PRIMING BY USING A SEPARATE POSITIVE PRIMING SYSTEM WITH A DEDICATED VACUUM PUMP FOR EACH MAIN WASTEWATER PUMP.
(2) A VACUUM-PRIMING PUMP MUST USE A SUCTION PIPE VELOCITY AT LEAST 3.0 FEET PER SECOND BUT LESS THAN 7.0 FEET PER SECOND AND MUST HAVE ITS OWN SUCTION PIPE.
(H) VERTICAL POSITIONING OF PUMPS. A RAW WASTEWATER PUMP MUST HAVE POSITIVE STATIC SUCTION HEAD DURING NORMAL ON-OFF CYCLING, EXCEPT A SUBMERSIBLE PUMP WITH "NO SUCTION" PIPES, A VACUUM-PRIMED PUMP, OR A SELF-PRIMING UNIT CAPABLE OF SATISFACTORY OPERATION UNDER ANY NEGATIVE SUCTION HEAD ANTICIPATED FOR THE LIFT STATION.
(I) INDIVIDUAL GRINDER PUMPS. A GRINDER PUMP SERVING ONLY ONE RESIDENTIAL OR COMMERCIAL STRUCTURE THAT IS PRIVATELY OWNED, MAINTAINED, AND OPERATED IS NOT SUBJECT TO THE RULES OF THIS CHAPTER.
(J) PUMP FOR LOW-FLOW LIFT STATION. A PUMP USED FOR A LIFT STATION WITH A PEAK FLOW OF LESS THAN 120 GALLONS PER MINUTE MUST BE SUBMERSIBLE AND INCLUDE A GRINDER.
16. PIPING.
(A) HORIZONTAL PUMP SUCTIONS.
(1) EACH PUMP MUST HAVE A SEPARATE SUCTION PIPE THAT USES AN ECCENTRIC REDUCER.
(2) PIPES IN A WET WELL MUST HAVE A TURNDOWN TYPE FLARED INTAKE.
(B) VALVES.
(1) THE DISCHARGE SIDE OF EACH PUMP FOLLOWED BY A FULL-CLOSING ISOLATION VALVE MUST ALSO HAVE A CHECK VALVE.
(A) A CHECK VALVE MUST BE A SWING TYPE VALVE WITH AN EXTERNAL LEVER.
(B) A VALVE MUST INCLUDE A POSITION INDICATOR TO SHOW ITS OPEN AND CLOSED POSITIONS, UNLESS A FULL-CLOSING VALVE IS A RISING-STEM GATE VALVE.
(2) A GRINDER PUMP INSTALLATION MAY USE A RUBBER-BALL CHECK VALVE OR A SWING-TYPE CHECK VALVE.
(3) A BUTTERFLY VALVE, TILTING-DISC CHECK VALVE, OR ANY OTHER VALVE USING A TILTING-DISC IN A FLOW PIPE IS PROHIBITED.
(C) PIPES.
(1) A LIFT STATION PIPE MUST HAVE FLANGED OR FLEXIBLE CONNECTIONS TO ALLOW FOR REMOVAL OF PUMPS AND VALVES WITHOUT INTERRUPTION OF THE LIFT STATION OPERATIONS.
(2) WALL PENETRATIONS MUST ALLOW FOR PIPE FLEXURE WHILE EXCLUDING EXFILTRATION OR INFILTRATION.
(3) PIPE SUCTION VELOCITIES MUST BE AT LEAST 3.0 FEET PER SECOND BUT NOT MORE THAN 7.0 FEET PER SECOND.

17. EMERGENCY PROVISIONS FOR LIFT STATIONS.
(A) A COLLECTION SYSTEM LIFT STATION MUST BE EQUIPPED WITH A TESTED QUICK-CONNECT MECHANISM OR A TRANSFER SWITCH PROPERLY SIZED TO CONNECT TO A PORTABLE GENERATOR, IF NOT EQUIPPED WITH AN ONSITE GENERATOR.
(B) LIFT STATIONS MUST INCLUDE AN AUDIOVISUAL ALARM SYSTEM AND THE SYSTEM MUST TRANSMIT ALL ALARM CONDITIONS THROUGH USE OF AN AUTO-DIALER SYSTEM, SUPERVISORY CONTROL AND DATA ACQUISITION SYSTEM, OR TELEMETERING SYSTEM CONNECTED TO A CONTINUOUSLY MONITORED LOCATION.
(C) AN ALARM SYSTEM MUST SELF-ACTIVATE FOR A POWER OUTAGE, PUMP FAILURE, OR A HIGH WET WELL WATER LEVEL.
(D) A LIFT STATION CONSTRUCTED TO PUMP RAW WASTEWATER MUST HAVE SERVICE RELIABILITY BASED ON:
(1) RETENTION CAPACITY.
(A) THE RETENTION CAPACITY IN A LIFT STATION'S WET WELL AND INCOMING GRAVITY PIPES MUST PREVENT DISCHARGES OF UNTREATED WASTEWATER AT THE LIFT STATION OR ANY POINT UPSTREAM FOR A PERIOD OF TIME EQUAL TO THE LONGEST ELECTRICAL OUTAGE RECORDED DURING THE PAST 24 MONTHS, BUT NOT LESS THAN 20 MINUTES.
(B) FOR CALCULATION PURPOSES, THE OUTAGE PERIOD BEGINS WHEN A LIFT STATION PUMP FINISHED ITS LAST NORMAL CYCLE, EXCLUDING A STANDBY PUMP.
(1) ON-SITE GENERATORS. A LIFT STATION MAY BE PROVIDED EMERGENCY POWER BY ON-SITE, AUTOMATIC ELECTRICAL GENERATORS SIZED TO OPERATE THE LIFT STATION AT ITS FIRM PUMPING CAPACITY OR AT THE AVERAGE DAILY FLOW, IF THE PEAK FLOW CAN BE STORED IN THE COLLECTION SYSTEM.
(2) PORTABLE GENERATORS AND PUMPS.
(A) A LIFT STATION MAY USE PORTABLE GENERATORS AND PUMPS TO GUARANTEE SERVICE IF THE REPORT INCLUDES:
(3) THE STORAGE LOCATION OF EACH GENERATOR AND PUMP;
(4) THE AMOUNT OF TIME THAT WILL BE NEEDED TO TRANSPORT EACH GENERATOR OR PUMP TO A LIFT STATION;
(5) THE NUMBER OF LIFT STATIONS FOR WHICH EACH GENERATOR OR PUMP IS DEDICATED AS A BACKUP; AND
(6) THE TYPE OF ROUTINE MAINTENANCE AND UPKEEP PLANNED FOR EACH PORTABLE GENERATOR AND PUMP TO ENSURE THAT THEY WILL BE OPERATIONAL WHEN NEEDED.
(B) AN OPERATOR THAT IS KNOWLEDGEABLE IN OPERATION OF THE PORTABLE GENERATORS AND PUMPS SHALL BE ON CALL 24 HOURS PER DAY EVERY DAY.
(C) THE SIZE OF A PORTABLE GENERATOR MUST HANDLE THE FIRM PUMPING CAPACITY OF THE LIFT STATION.
(E) SPILL CONTAINMENT STRUCTURES.
(1) THE USE OF A SPILL CONTAINMENT STRUCTURE AS A SOLE MEANS OF PROVIDING SERVICE RELIABILITY IS PROHIBITED.
(2) A LIFT STATION MAY USE A SPILL CONTAINMENT STRUCTURE IN ADDITION TO ONE OF THE SERVICE RELIABILITY OPTIONS DETAILED IN THIS IN SUBSECTION (A) OF THIS SECTION.
(3) THE REPORT MUST INCLUDE A DETAILED MANAGEMENT PLAN FOR CLEANING AND MAINTAINING EACH SPILL CONTAINMENT STRUCTURE.
(4) A SPILL CONTAINMENT STRUCTURE MUST HAVE A LOCKED GATE AND BE SURROUNDED AN INTRUDER RESISTANT FENCE THAT IS 6.0 FEET HIGH CHAIN LINK, MASONRY, OR BOARD FENCE WITH AT LEAST THREE STRANDS OF BARBED WIRE OR 8.0 FEET HIGH CHAIN LINK, MASONRY, OR BOARD FENCE WITH AT LEAST ONE STRAND OF BARBED WIRE.
(F) A LIFT STATION MUST BE FULLY ACCESSIBLE DURING A 25-YEAR 24-HOUR RAINFALL EVENT.
(G) LIFT STATION SYSTEM CONTROLS MUST PREVENT OVER-PUMPING UPON RESUMPTION OF NORMAL POWER AFTER A POWER FAILURE. BACKUP OR STANDBY UNITS MUST BE ELECTRICALLY INTERLOCKED TO PREVENT OPERATION AT THE SAME TIME THAT OTHER LIFT STATIONS PUMPS ARE OPERATING ONLY ON THE RESUMPTION OF NORMAL POWER AFTER A POWER FAILURE.

ISSUE DATE



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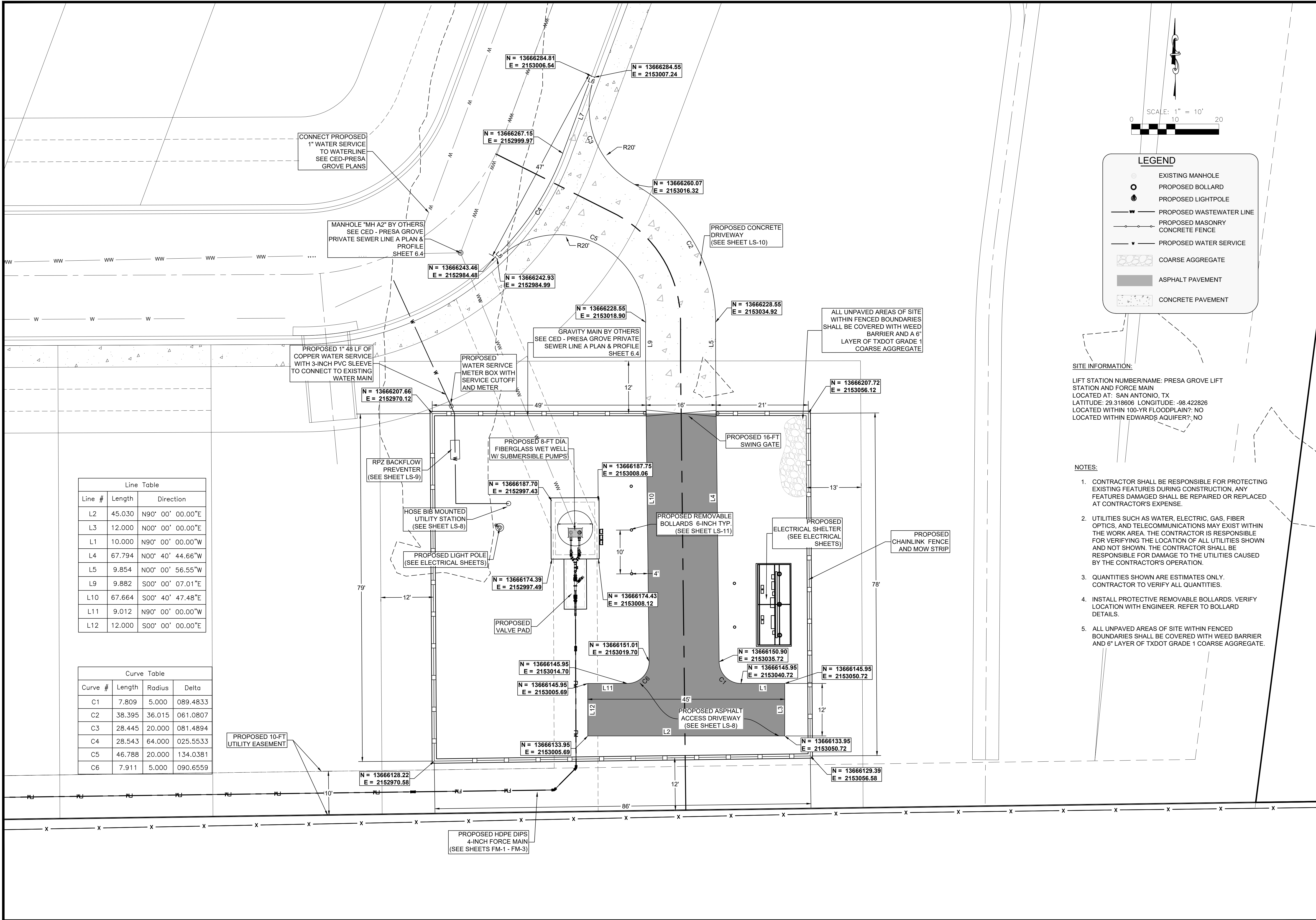


PRESA GROVE LIFT STATION & OFFSITE SEWER
SAN ANTONIO, TEXAS
TCEQ GENERAL NOTES
PLAT NO.

JOB NO.: 314-39-03
DATE: November 30, 2023
DRAWN: M.W. CHECKED: A.C.
SHEET NUMBER:

G-3

Date: Nov 30, 2023 9:13am User ID: Jleg191
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Engineering & Design

ISSUE DATE

DAVID A. KNEIPER

9876

REVISIONS

UTILITY ENGINEERING GROUP PLC

11/30/2023

PRESA GROVE LIFT STATION & OFFSITE SEWER

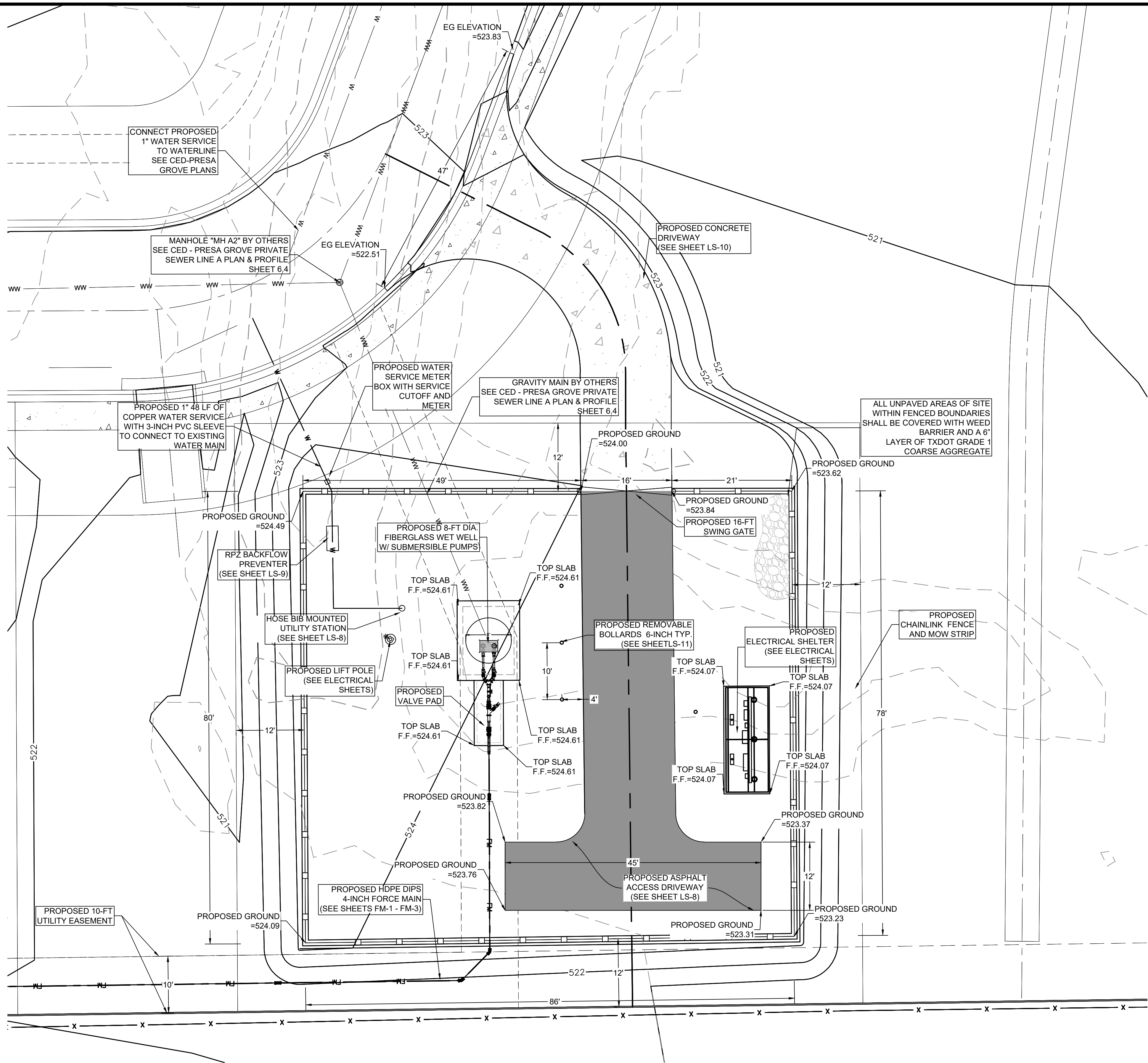
SAN ANTONIO, TEXAS

LIFT STATION SITE PLAN

PLAT NO.

JOB NO.: 314-39-03
DATE: November 30, 2023
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SHEET NUMBER:
LS-1

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SITE INFORMATION:

LIFT STATION NUMBER/NAME: PRESA GROVE LIFT
STATION AND FORCE MAIN
LOCATED AT: SAN ANTONIO, TX
LATITUDE: 29.318606 LONGITUDE: -98.422826
LOCATED WITHIN 100-YR FLOODPLAIN?: NO
LOCATED WITHIN EDWARDS AQUIFER?: NO

NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING FEATURES DURING CONSTRUCTION. ANY FEATURES DAMAGED SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE.
2. UTILITIES SUCH AS WATER, ELECTRIC, GAS, FIBER OPTICS, AND TELECOMMUNICATIONS MAY EXIST WITHIN THE WORK AREA. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UTILITIES SHOWN AND NOT SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO THE UTILITIES CAUSED BY THE CONTRACTOR'S OPERATION.
3. QUANTITIES SHOWN ARE ESTIMATES ONLY. CONTRACTOR TO VERIFY ALL QUANTITIES.
4. INSTALL PROTECTIVE REMOVABLE BOLLARDS. VERIFY LOCATION WITH ENGINEER. REFER TO BOLLARD DETAILS.
5. ALL UNPAVED AREAS OF SITE WITHIN FENCED BOUNDARIES SHALL BE COVERED WITH WEED BARRIER AND 6" LAYER OF TXDOT GRADE 1 COARSE AGGREGATE.

PRESA GROVE LIFT STATION & OFFSITE SEWER
SAN ANTONIO, TEXAS
GRADING PLAN
PLAT NO.

JOB NO.: 314-39-03
DATE: November 30, 2023
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SHEET NUMBER:

LS-2

SAN ANTONIO (KFW)
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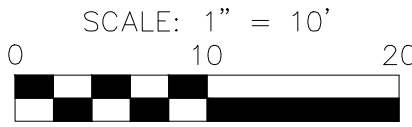
ISSUE DATE
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DAVID A. KNEPPER
98876
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

UTILITY
ENGINEERING
GROUP PLC
Texas Registered Firm #12312

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COUNTY COMMISSIONERS OF BEXAR
COUNTY
CALLED 199.767 ACRES
VOLUME 6202, PAGE 883, O.P.R.
RECORDED 09/16/1994



LEGEND

- EXISTING MANHOLE
- PROPOSED BOLLARD
- PROPOSED LIGHTPOLE
- PROPOSED WASTEWATER LINE
- PROPOSED MASONRY CONCRETE FENCE
- PROPOSED WATER SERVICE
- COARSE AGGREGATE
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT

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LOCATED WITHIN 100-YR FLOODPLAIN?: NO
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PRESA GROVE LIFT STATION & OFFSITE SEWER
SAN ANTONIO, TEXAS
EROSION & SEDIMENTATION CONTROL
PLAN SHEET 1 OF 3
PLAT NO.

JOB NO: 314-39-03
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SHEET NUMBER:

LS-3

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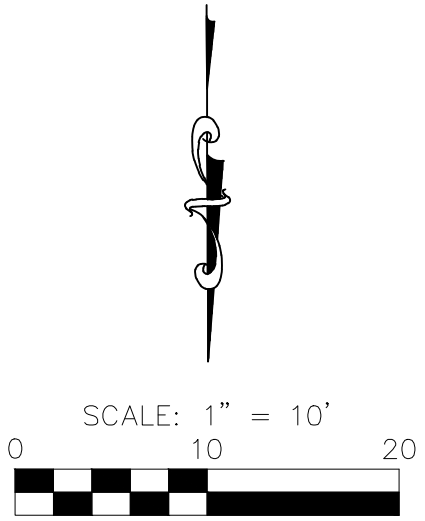
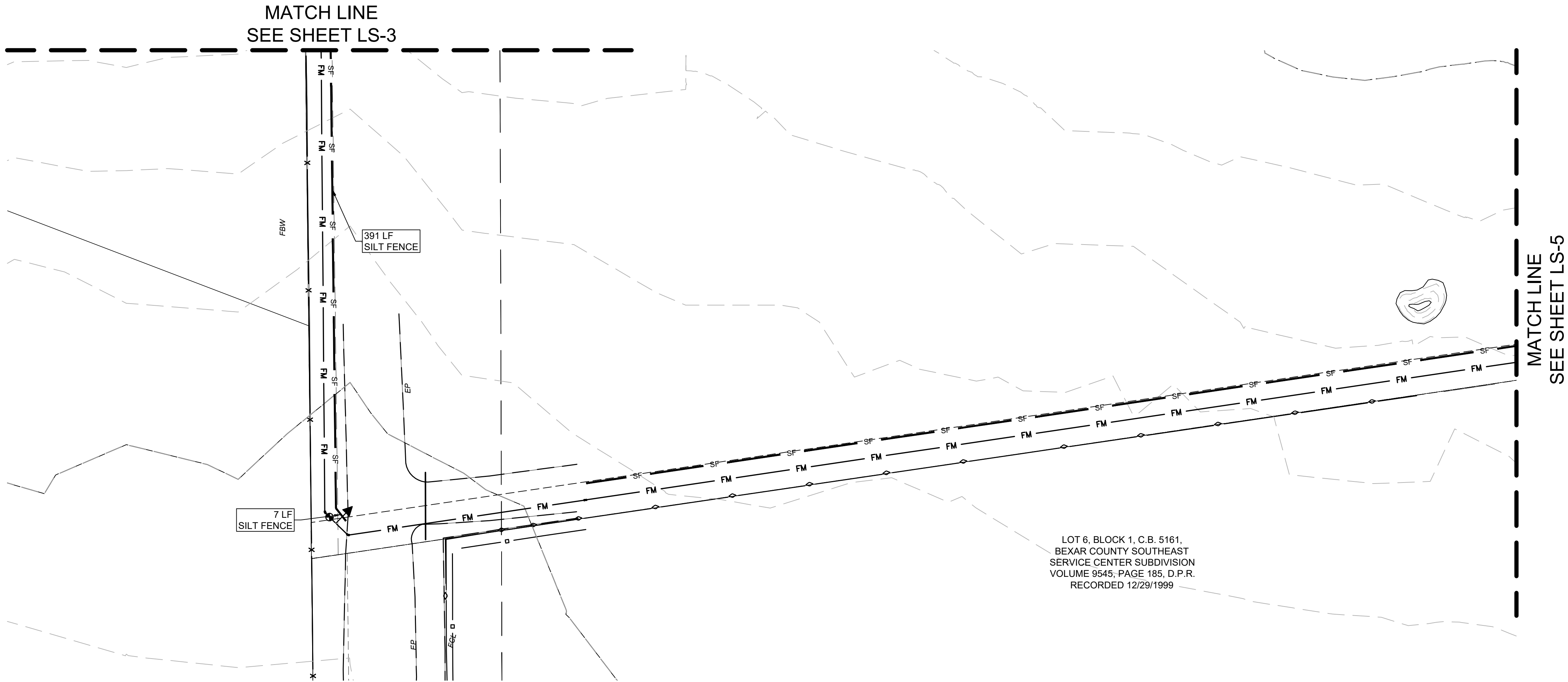


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LEGEND

- EXISTING MANHOLE
- PROPOSED BOLLARD
- PROPOSED LIGHTPOLE
- PROPOSED WASTEWATER LINE
- PROPOSED MASONRY CONCRETE FENCE
- PROPOSED WATER SERVICE
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PRESA GROVE LIFT STATION & OFFSITE SEWER
SAN ANTONIO, TEXAS
EROSION & SEDIMENTATION CONTROL
PLAN SHEET 2 OF 3

PLAT NO.

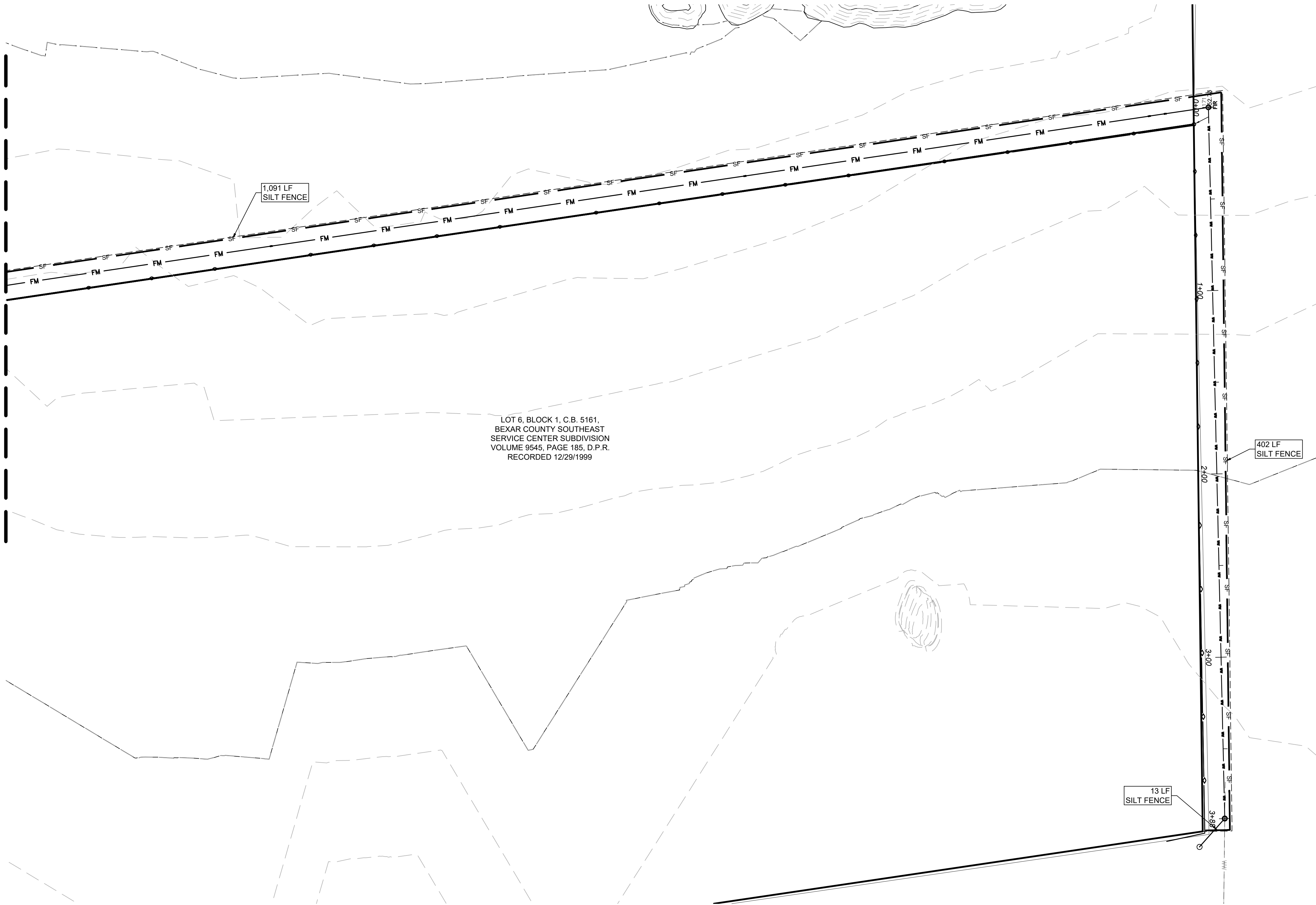
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LS-4



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MATCH LINE
SEE SHEET LS-4



SCALE: 1" = 10'

LEGEND

- EXISTING MANHOLE
- PROPOSED BOLLARD
- PROPOSED LIGHTPOLE
- PROPOSED WASTEWATER LINE
- PROPOSED MASONRY CONCRETE FENCE
- PROPOSED WATER SERVICE
- COARSE AGGREGATE
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PRESA GROVE LIFT STATION & OFFSITE SEWER
SAN ANTONIO, TEXAS
EROSION & SEDIMENTATION CONTROL
PLAN SHEET 3 OF 3

PLAT NO.

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DATE: November 30, 2023
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LS-5

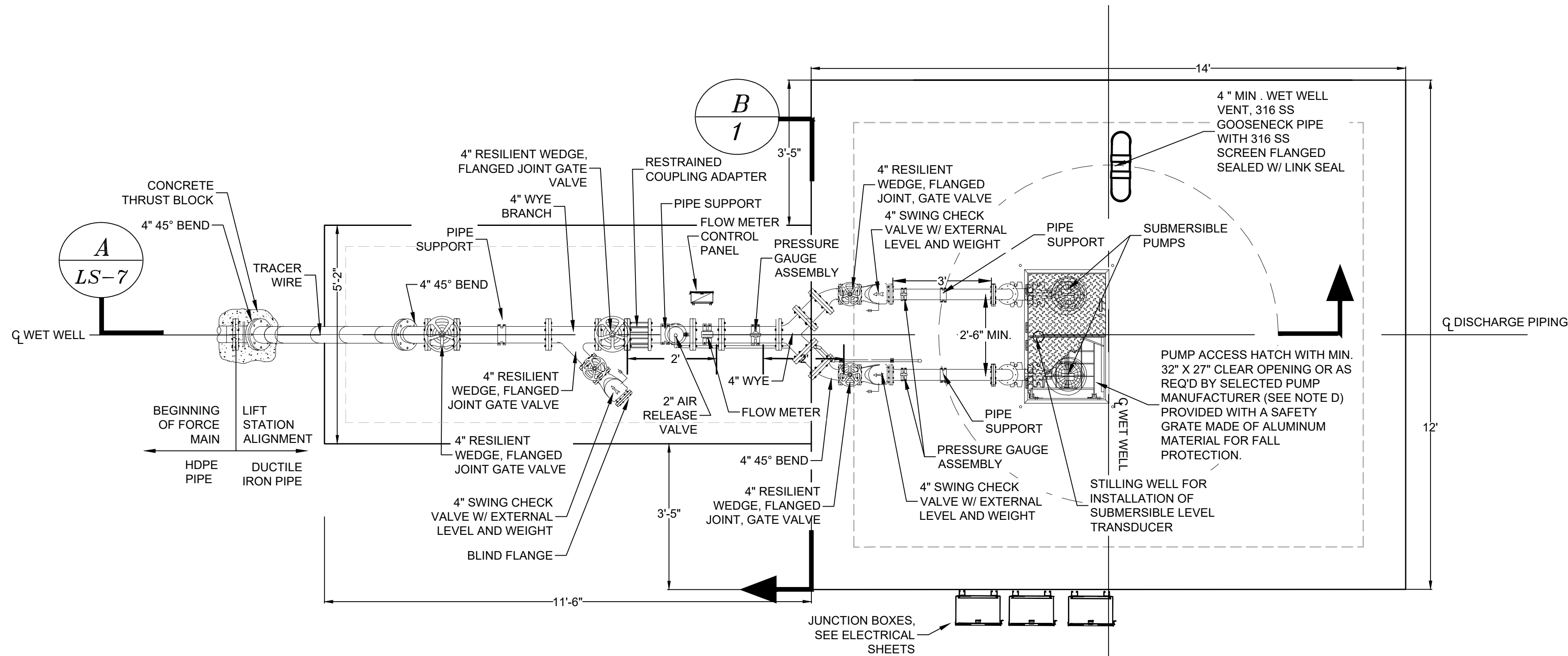
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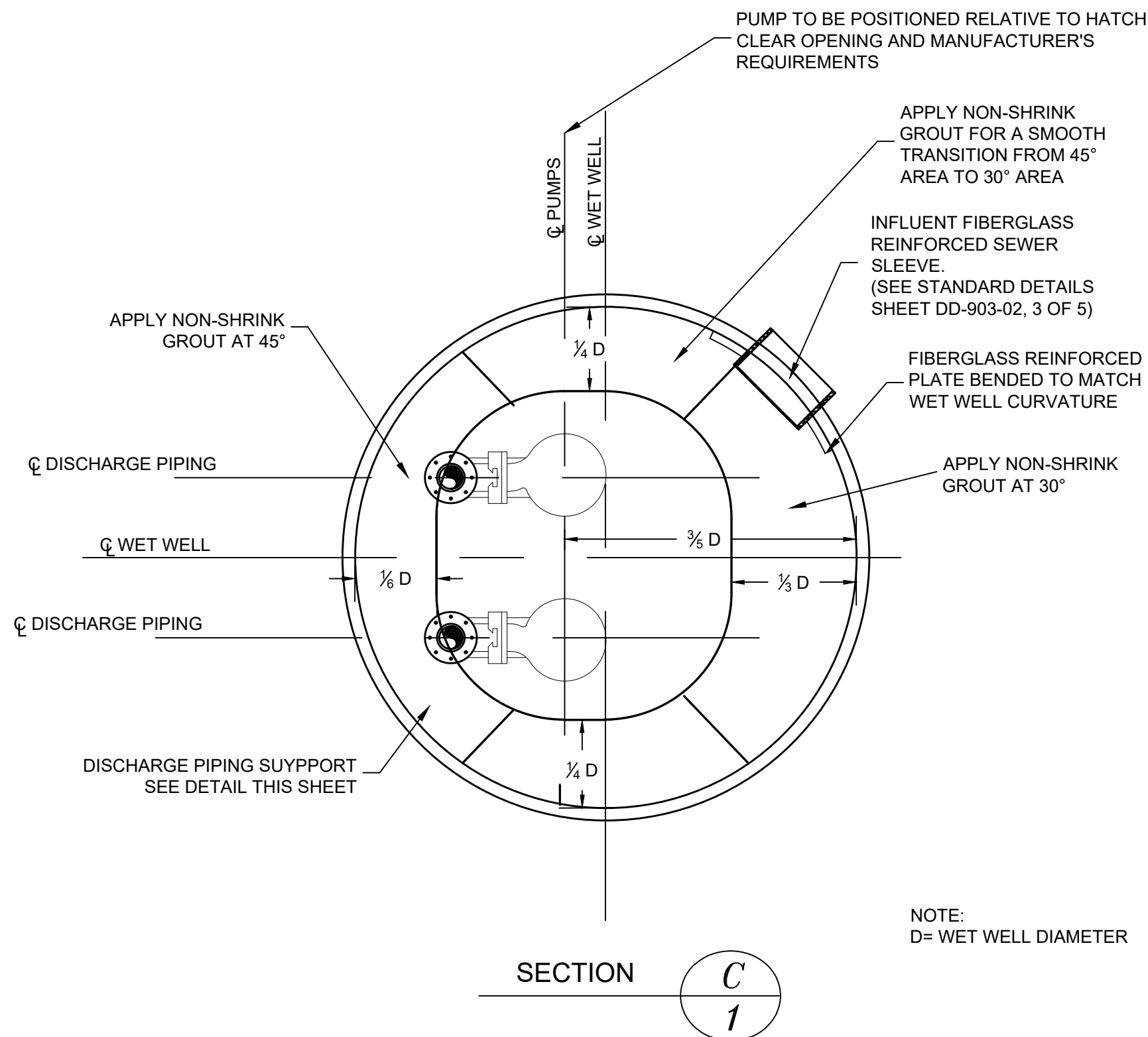
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COLLIER ENGINEERING, INC.
18015 Farm # 1019450
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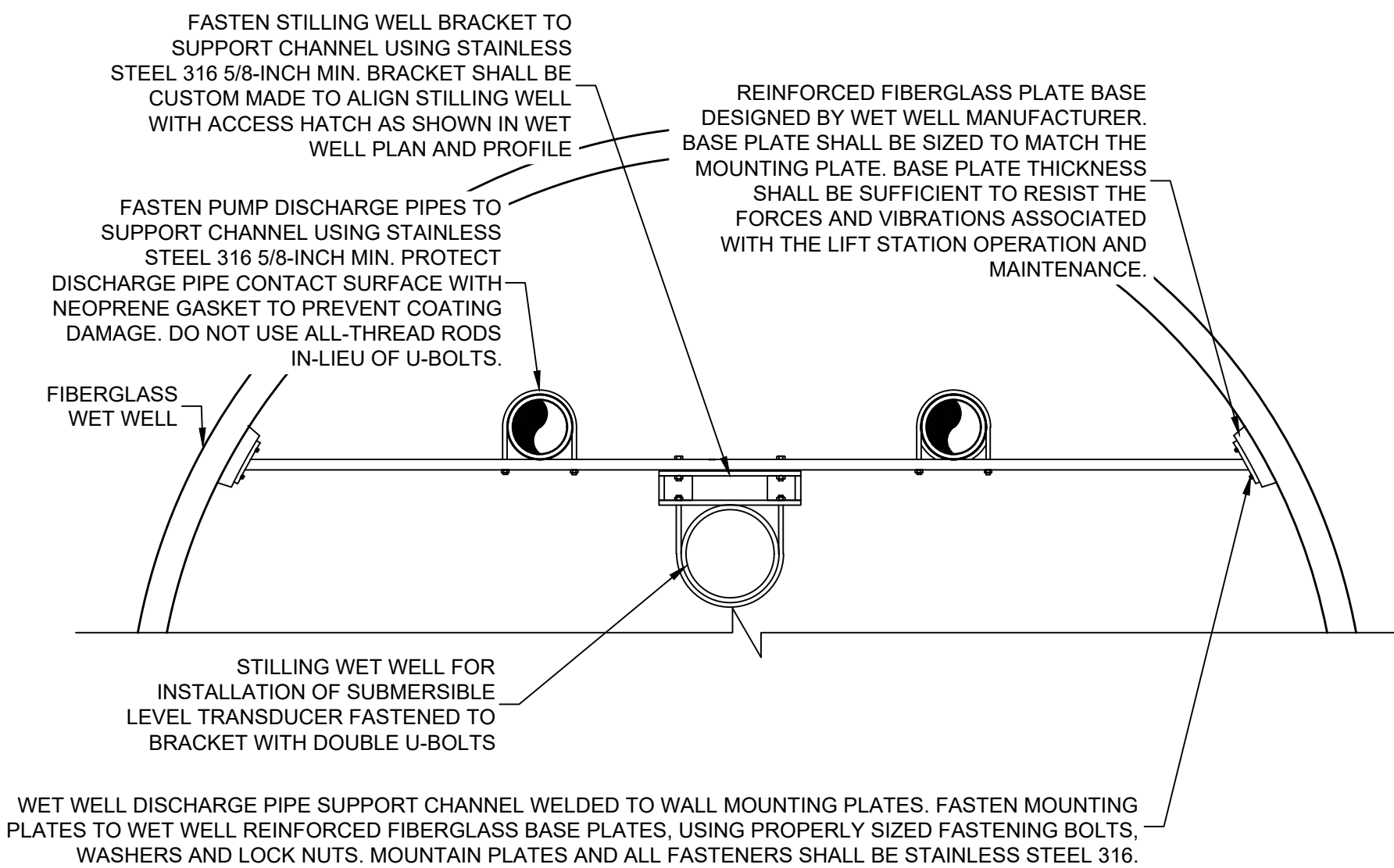
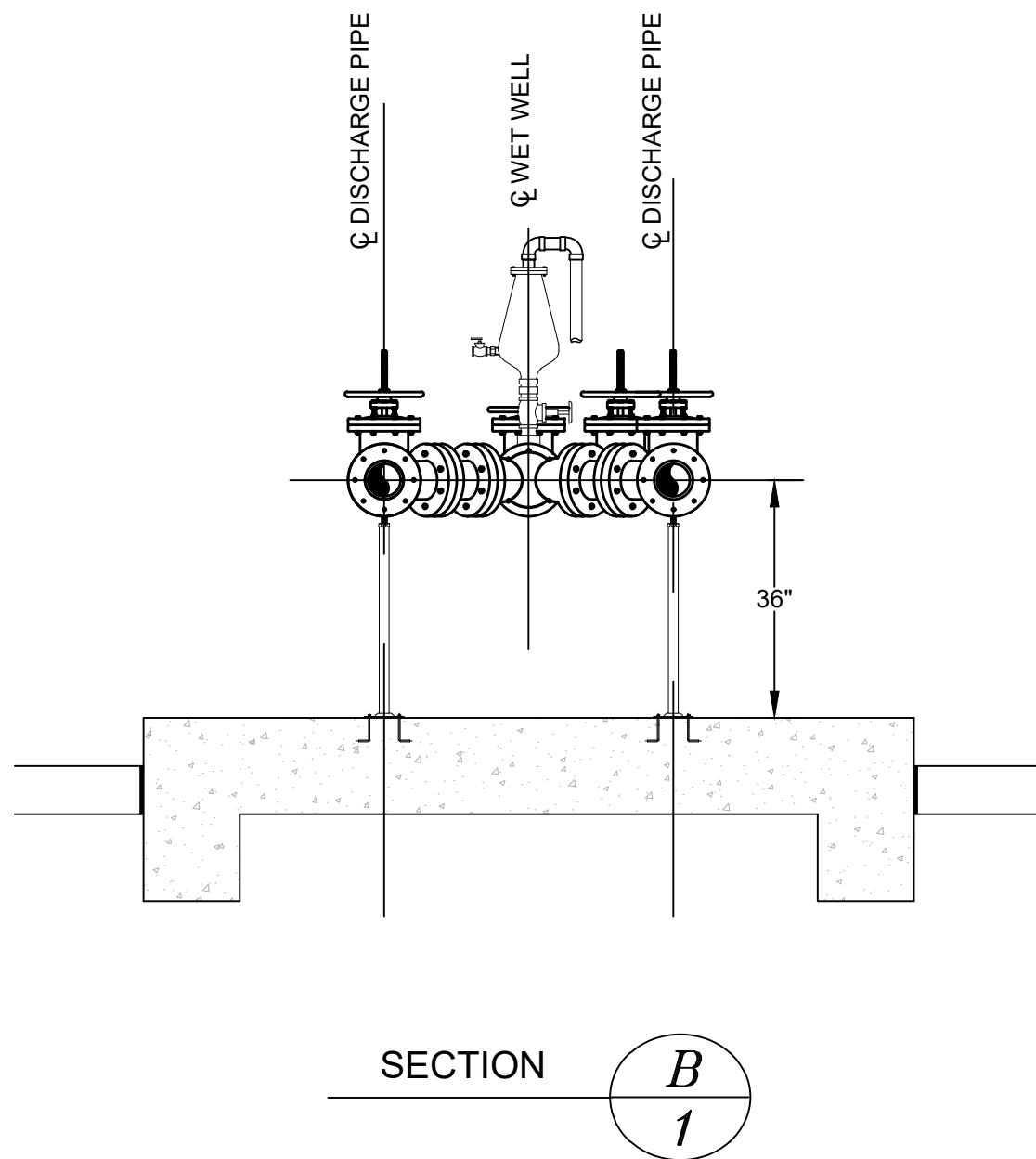
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PLAN VIEW @ GRADE
1" = 2'



NOTE:
D= WET WELL DIAMETER



WET WELL PIPING SUPPORT DETAIL

NOTES:

- FIBERGLASS REINFORCED POLYESTER WETWELLS SHALL BE MANUFACTURED FROM COMMERCIAL GRADE POLYESTER RESIN OR VINYL ESTER RESIN, WITH FIBERGLASS REINFORCEMENTS. THE RESIN SYSTEM SHALL BE SUITABLE FOR ATMOSPHERES CONTAINING HYDROGEN SULFIDE AND DILUTE SULFURIC ACID AS WELL AS OTHER GASES ASSOCIATED WITH THE WASTEWATER COLLECTION SYSTEMS. IN ACCORDANCE WITH SAWS SPECIFICATIONS.
- COAT AND PAINT PIPE AND FITTINGS INSIDE WET WELL. (SEE KEY NOTE 4 BELOW).
- INSTALL AN EMERGENCY BYPASS CONNECTION COMPLETE WITH GATE VALVE AND CHECK VALVE.
- INSTALL ACCESS HATCH WITH SAFETY GRATE OF DOUBLE DOOR. MINIMUM CLEAR OPENING AREA TO BE 32" X 27" AND SHALL OPEN TOWARDS DISCHARGE LINE. INSTALL WET WELL HATCH WITH SAFETY GRATE WITH MINIMUM CLEAR OPENING ARE TO BE 32" X 27". SAFETY GRATE SHALL NOT HAVE OPENINGS GREATER THAN 4" X 4". SAFETY GRATE SHALL BE FLUSHED WITH WET WELL TOP SLAB. REFER TO DETAILS.
- COAT AND PAINT PIPE, VALVES, AND FITTINGS (EXCEPT 316 STAINLESS STEEL AND PVC) OUTSIDE THE WET WELL.
- INSTALL 6" DIA. 316 STAINLESS STEEL GOOSE NECK VENT. WITH 316 STAINLESS STEEL SCREEN. REFER TO DETAILS.
- INSTALL PRESSURE GAUGE WITH ISOLATION BALL VALVE, MIN 4" DIAL, 5% ACCURACY. LIQUID FILLED. REFER TO DETAILS.
- INSTALL VACUUM GAUGE WITH ISOLATION BALL VALVE, MIN 4" DIAL 5:1 ACCURACY. LIQUID FILLED.
- INSTALL 2" AIR RELEASE VALVE AND PIPING ASSEMBLY. REFER TO DETAILS.
- INSTALL 316 STAINLESS STEEL JUNCTION BOX FOR SUBMERSIBLE PRESSURE LEVEL TRANSMITTER AND HIGH LEVEL FLOAT.
- PROVIDE SEAL ON SLEEVED OR CORED DISCHARGE PIPE OPENINGS (LINK SEAL OR APPROVED EQUAL) REFER TO DETAILS.

KEY NOTES:

- CONTRACTOR TO CONFIRM SIZE AND LOCATION OF WET WELL HATCHES PER SELECTED HATCH AND PUMP MANUFACTURERS' REQUIREMENTS (32" X 27" MIN.)
- CONTRACTOR SHALL SEAL SLEEVED OR CORED DISCHARGE PIPE OPENINGS WITH LINK SEAL OR APPROVED EQUAL REFER TO DETAILS.
- ALL PUMP DISCHARGE PIPE AND FITTINGS WITHIN WET WELL, SHALL BE FLANGED AND SHALL RECEIVE AFTER INSTALLATION A 100% SOLIDS COAL TAR EPOXY COATING SYSTEM IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS
- ALL PUMP DISCHARGE PIPE, VALVES AND FITTINGS OUTSIDE THE WET WELL, EXCEPT SS316 AND PVC, SHALL RECEIVE AFTER INSTALLATION A 100% SOLIDS EPOXY COATING SYSTEM WITH A TOP COAT OF POLYURETHANE IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS. COLOR SHALL BE GRAY PANTONE #431-U.
- ALL FASTENERS, INSTALLED BOTH INSIDE AND OUTSIDE THE WET WELL, INCLUDING BUT NOT LIMITED TO ANCHORS, BOLTS, NUTS, WASHERS, CABLE GRIPS, LIFTING CHAINS, PULLING CABLES, GUIDERAILS, SUPPORT CHANNELS, MOUNTING PLATES, BRACKETS, ETC. SHALL BE MADE OF STAINLESS STEEL 316.
- DISCHARGE PIPE SUPPORT CHANNEL SHALL BE MINIMUM 6X6-INCH, 1/4-INCH THICK CHANNEL. SUPPORT CHANNEL MOUNTING PLATE SHALL BE 12X12-INCH, 1/4-INCH THICK. ALL MATERIAL SHALL BE STAINLESS STEEL 316. THE DIMENSIONS APPLY FOR DISCHARGE LINES 14-INCH AND SMALLER. LARGER DISCHARGE LINES WILL REQUIRE LARGER SUPPORT CHANNELS AND MOUNTING PLATES.
- TOP AND INTERMEDIATE GUIDERAIL BRACKETS, SLEEVES, AND ALL FASTENERS SHALL BE MADE OF STAINLESS STEEL 316. FOR BRACKETS DIFFERENT THAN THE ONE SHOWN, THE SAME SLEEVE CONCEPT SHALL BE PROVIDED IN THE DESIGN.

SAN ANTONIO (KFW)
2421 Presa Mobile Home Park
San Antonio, TX 78231
Phone: 210.979.8444
COLLIER GROUP, INC.
1845 S. FARM # 14909
1845 S. FARM # 14950
Formerly Known as
KFW
CONSULTANTS & ENGINEERS

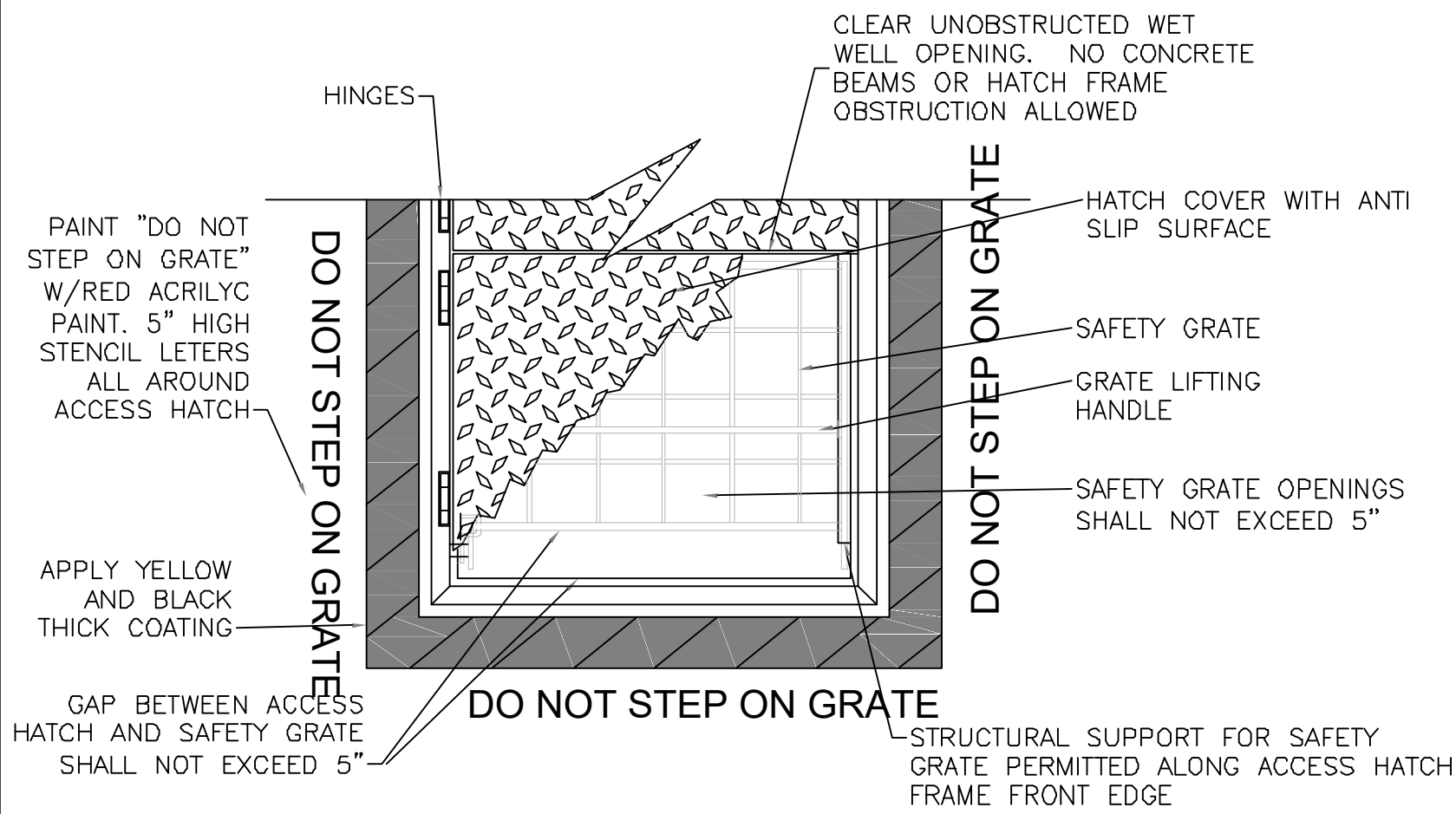


PRESA GROVE LIFT STATION & OFFSITE SEWER
SAN ANTONIO, TEXAS
LIFT STATION PLAN
PLAT NO.

JOB NO.: 314-39-03
DATE: November 30, 2023
DRAWN: M.W. CHECKED: A.C.
SHEET NUMBER:

LS-6

Date: Nov 30, 2023 9:14am User ID: Jleg191
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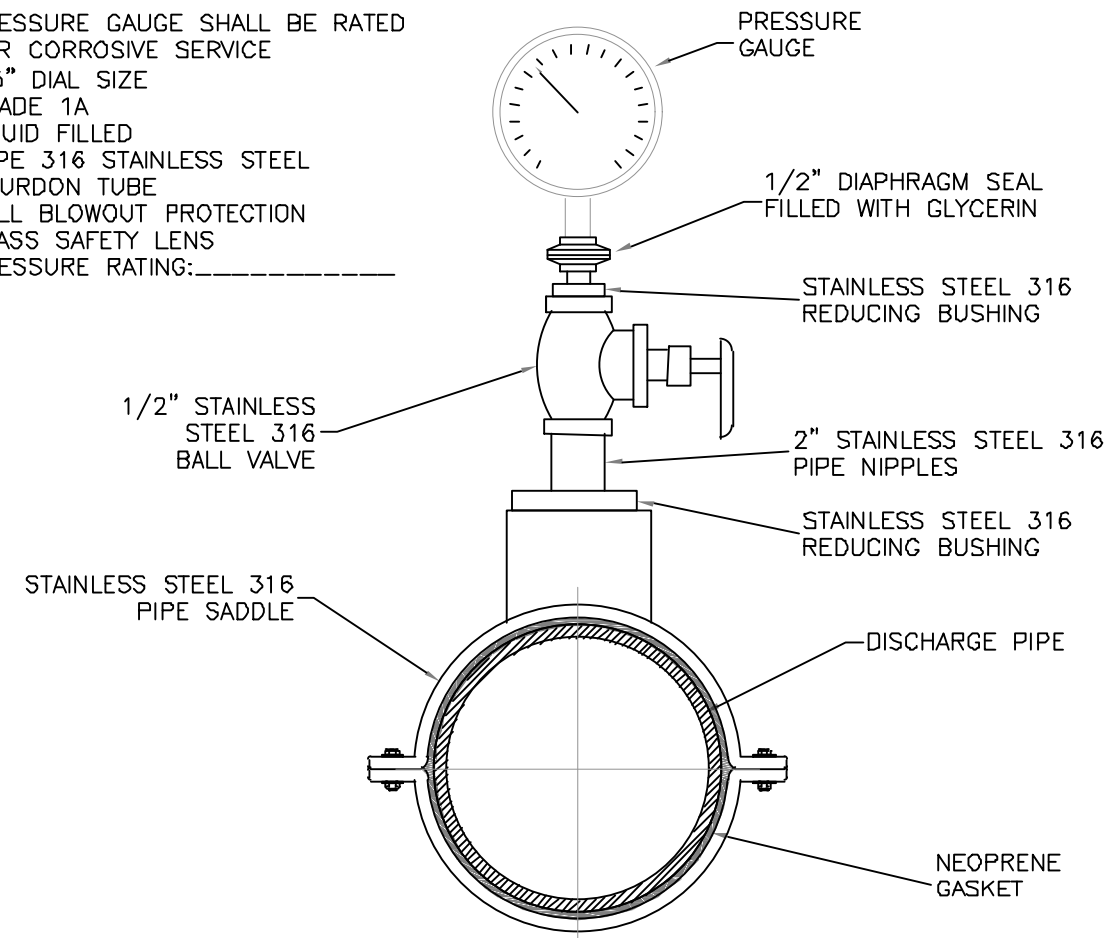
KEY NOTES:

- SAFETY GRATE SHALL BE UP TO 1/2" BELOW TOP OF CONCRETE SLAB, BUT IN NO CASE THE 1/2" DISTANCE SHALL BE EXCEEDED.
- ACCESS HATCH COVER SHALL BE PERFECTLY LEVELED WITH TOP OF CONCRETE SLAB.
- ACCESS HATCH AND SAFETY GRATE SHALL OPEN TOWARDS DISCHARGE PIPE.
- A FULL UNOBSTRUCTED WET WELL OPENING SHALL BE AVAILABLE WHEN THE ACCESS HATCH AND SAFETY GRATES ARE OPENED. OBSTRUCTIONS SUCH AS CONCRETE BEAMS OR HATCH FRAMES SHALL NOT INTERFERE WITH THE OPENING.
- SAFETY GRATE SHALL SUPPORT THE ACCESS HATCH, AND IT SHALL PROVIDE STRUCTURAL SUPPORT TO ALLOW PERSONNEL TO WALK OVER THE ACCESS HATCH AND SAFETY GRATE.
- ALL PUMP ACCESS HATCHES AND SAFETY GRATES SHALL OPEN TOWARDS THE PUMP DISCHARGE LINES. OPENING IN OTHER DIRECTIONS IS PROHIBITED.

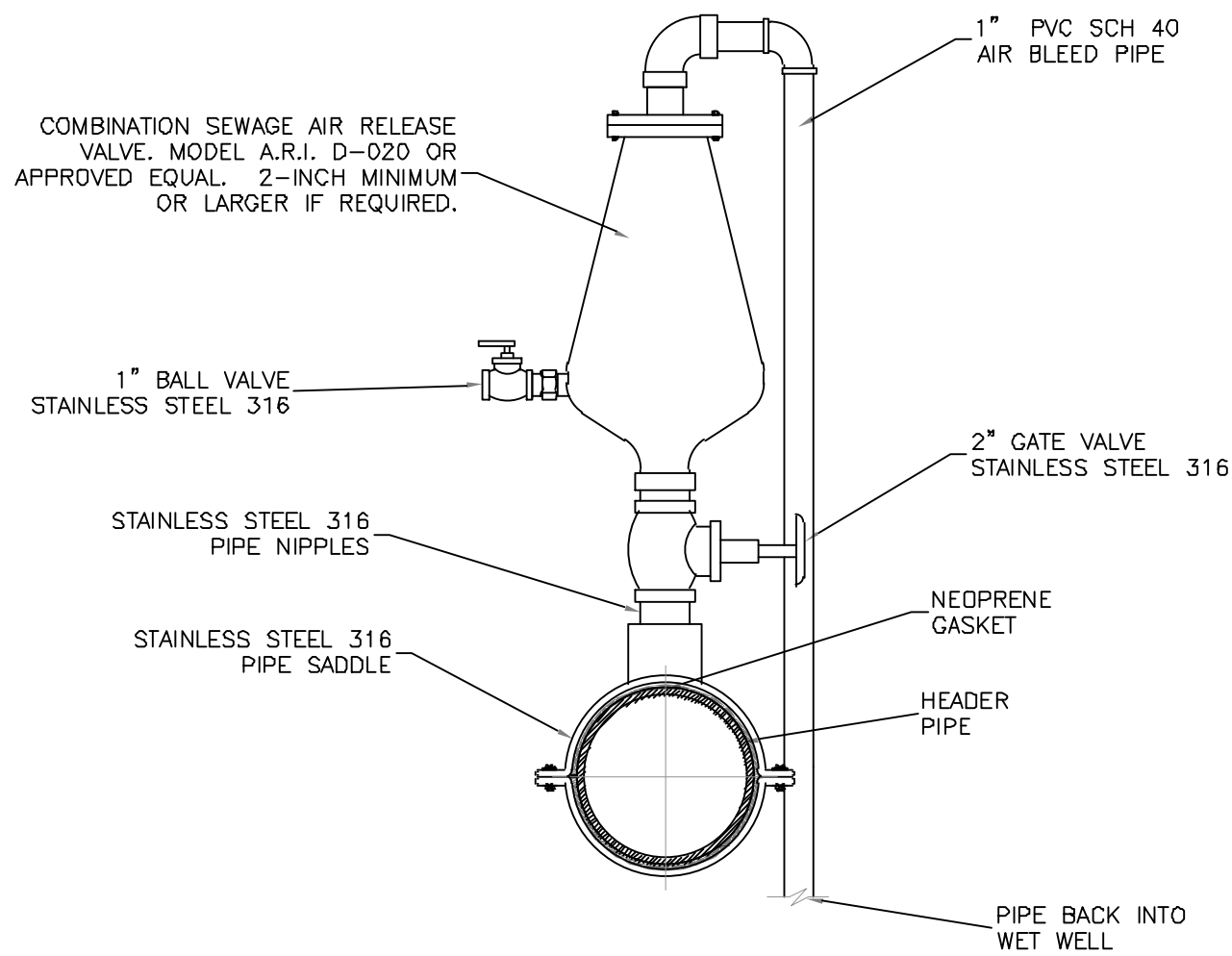
DETAIL 1:
ACCESS HATCH AND
SAFETY GRATE DETAIL

KEY NOTES:

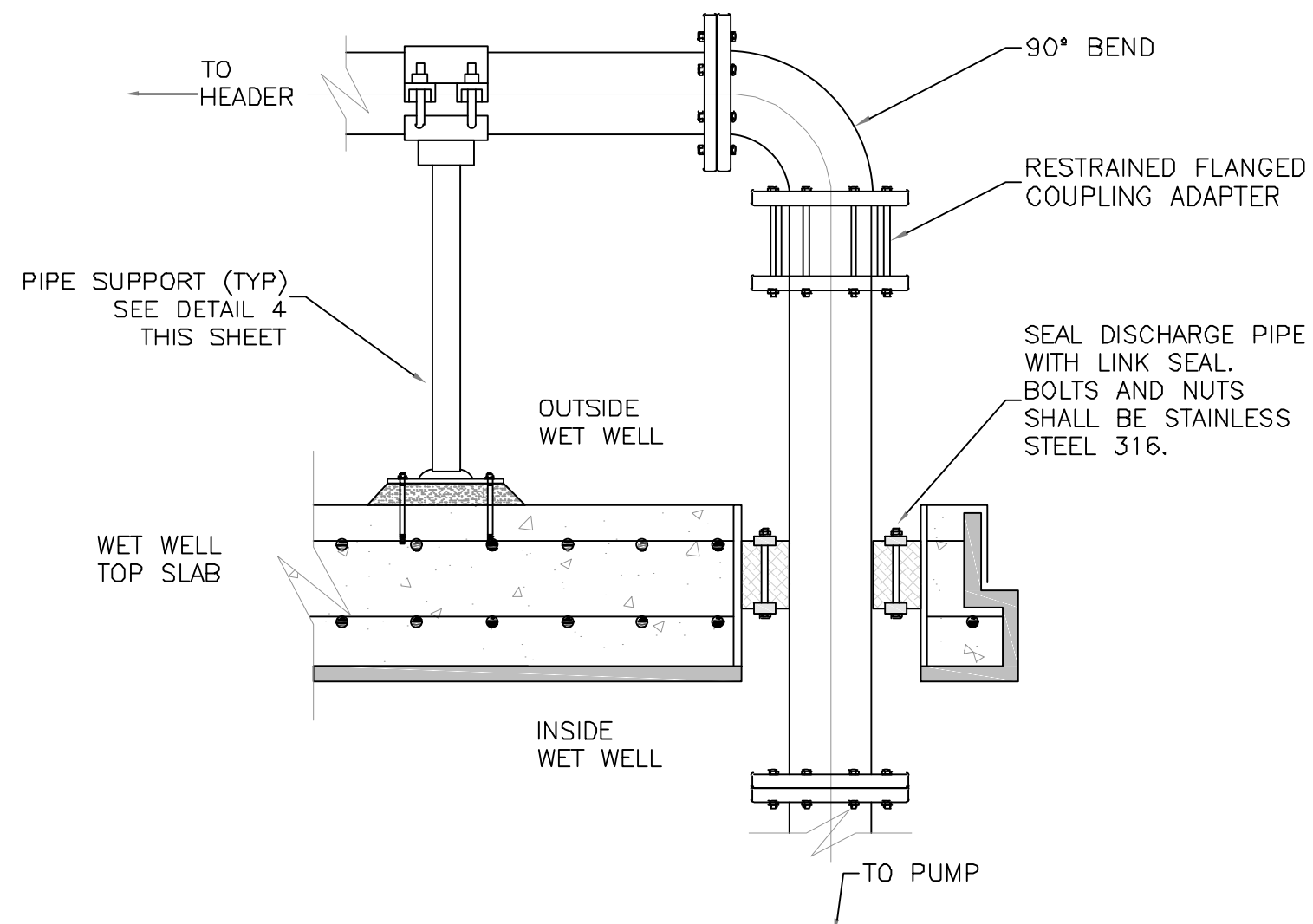
- PRESSURE GAUGE SHALL BE RATED FOR CORROSIVE SERVICE
- 2.5" DIAL SIZE
- GRADE 1A
- LIQUID FILLED
- TYPE 316 STAINLESS STEEL
- BOURDON TUBE
- FULL BLOWOUT PROTECTION
- GLASS SAFETY LENS
- PRESSURE RATING: _____



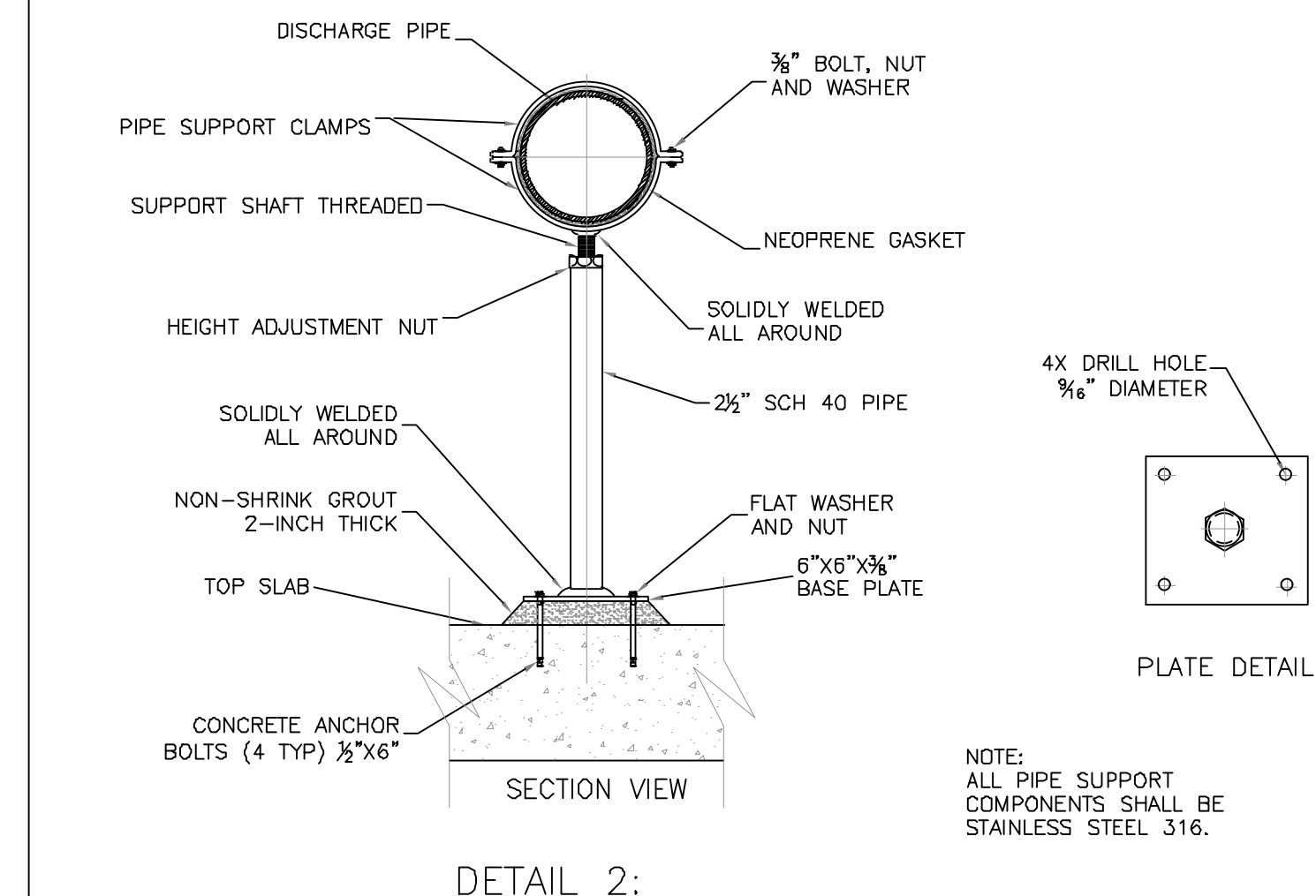
DETAIL 3:
PRESSURE GAUGE INSTALLATION DETAIL



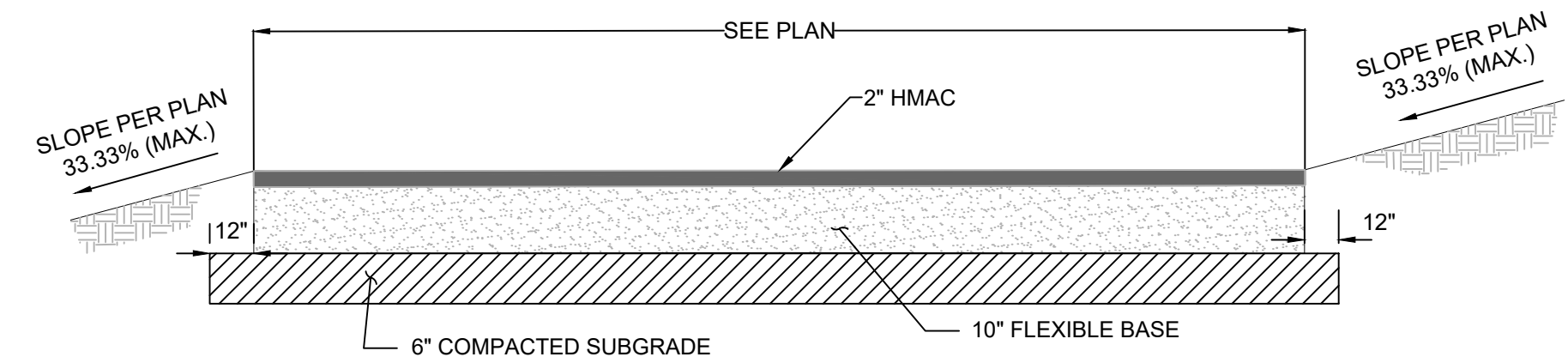
DETAIL 6:
AIR RELEASE VALVE INSTALLATION DETAIL AT HEADER



DETAIL 5:
DISCHARGE PIPE PENETRATION DETAIL



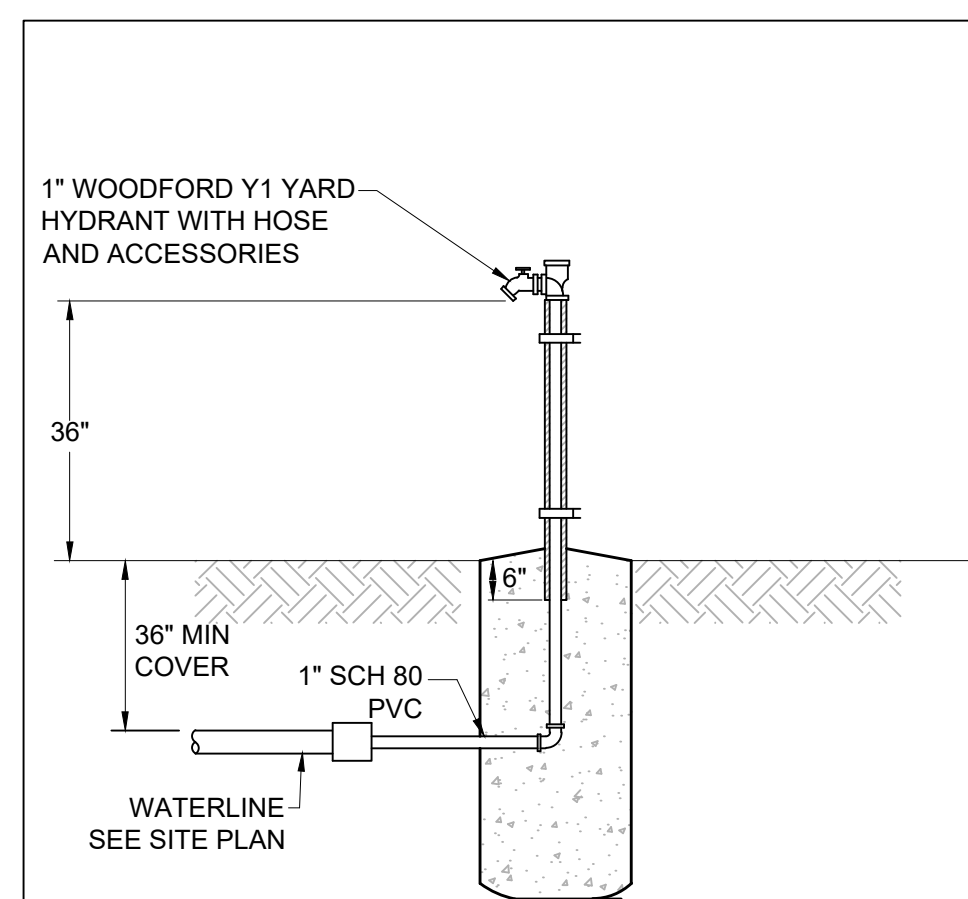
DETAIL 2:
PIPE SUPPORT DETAILS



SPECIFICATIONS:

- ASPHALT SHALL BE 2" TYPE "D".
- PAVEMENT DESIGN AND CONSTRUCTION SHALL BE PER PROJECT GEOTECHNICAL RECOMMENDATIONS (INTEC PROJECT NO. S231101-P).

DETAIL 5:
ASPHALT PAVING DETAIL



NOTE:
1" WOODFORD Y1 NON-FREEZE YARD HYDRANT WITH 50FT HEAVY DUTY RUBBER HOSE, BRASS ADJUSTABLE SPRAY NOZZLE, AND MCMASTER-CARR 53325K33 HOSE RACK

DETAIL 7:
HOSE BIB DETAIL

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Phone: 210.979.8444
COLLIER GROUP, INC.
18453 Fm 1014550
Formerly Known as
KFW
CONSULTANTS & ENGINEERS

Colliers
Engineering
& Design

ISSUE DATE
REVISIONS
DAVID A. KNEPPER
88876
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

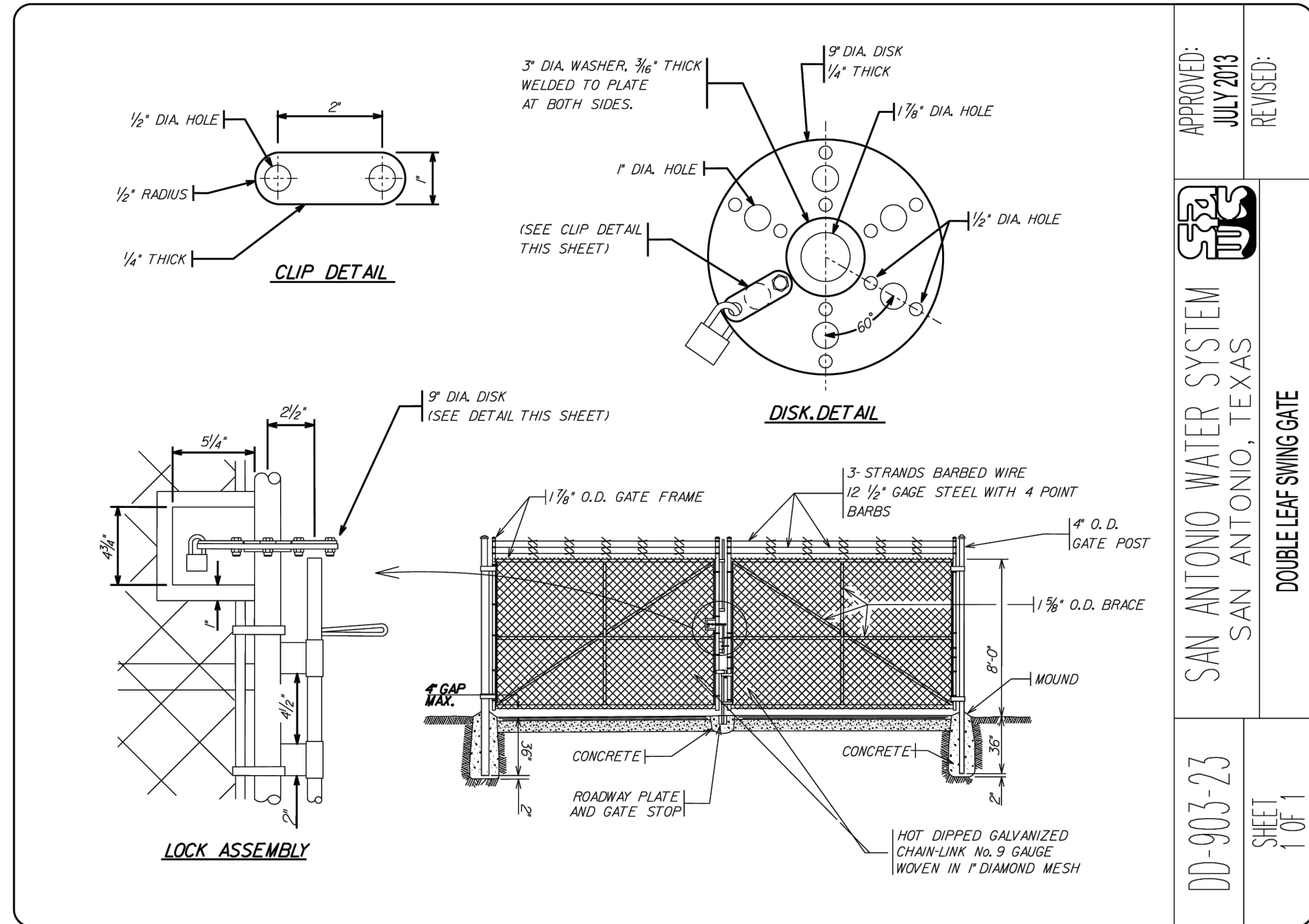
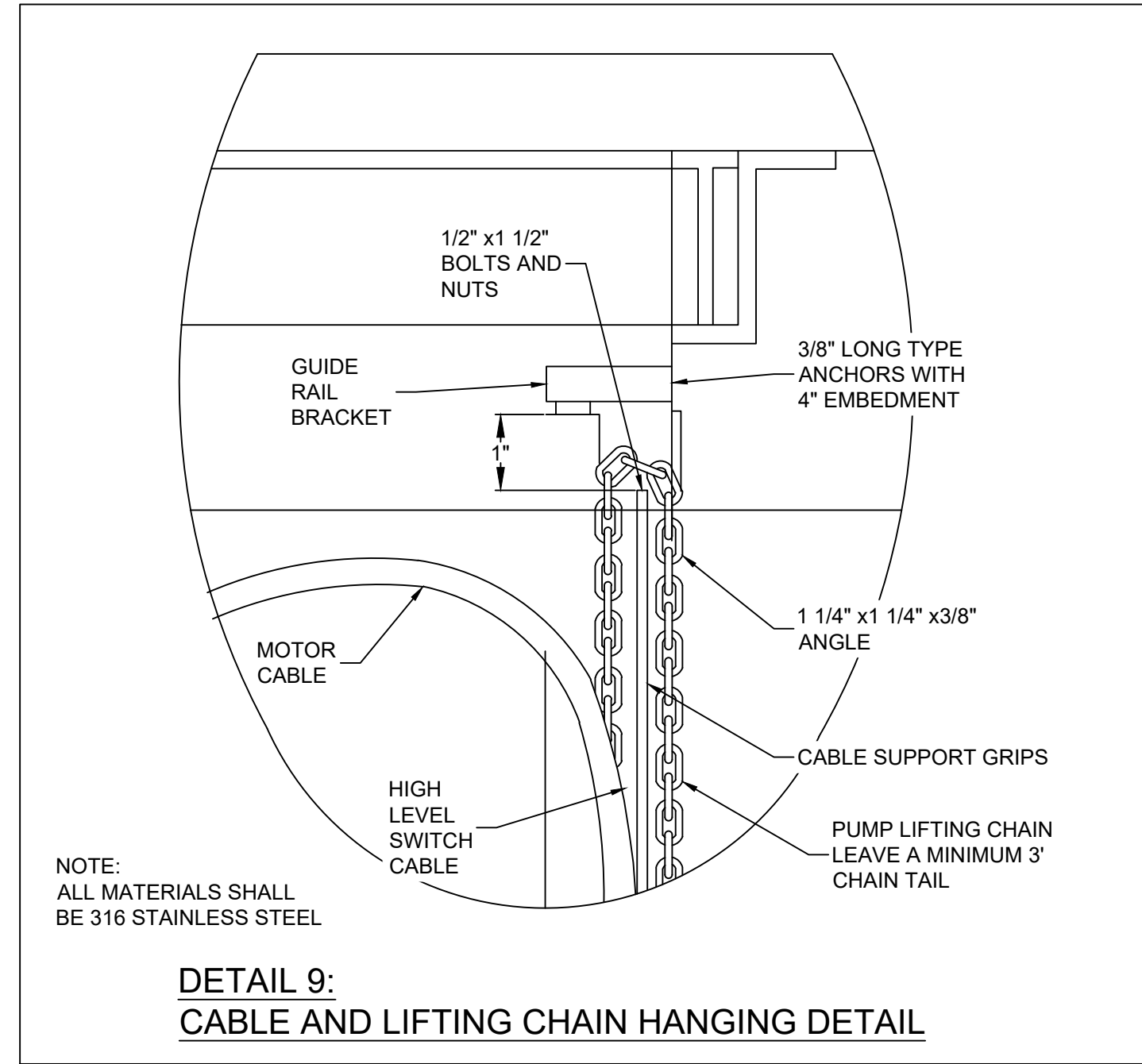
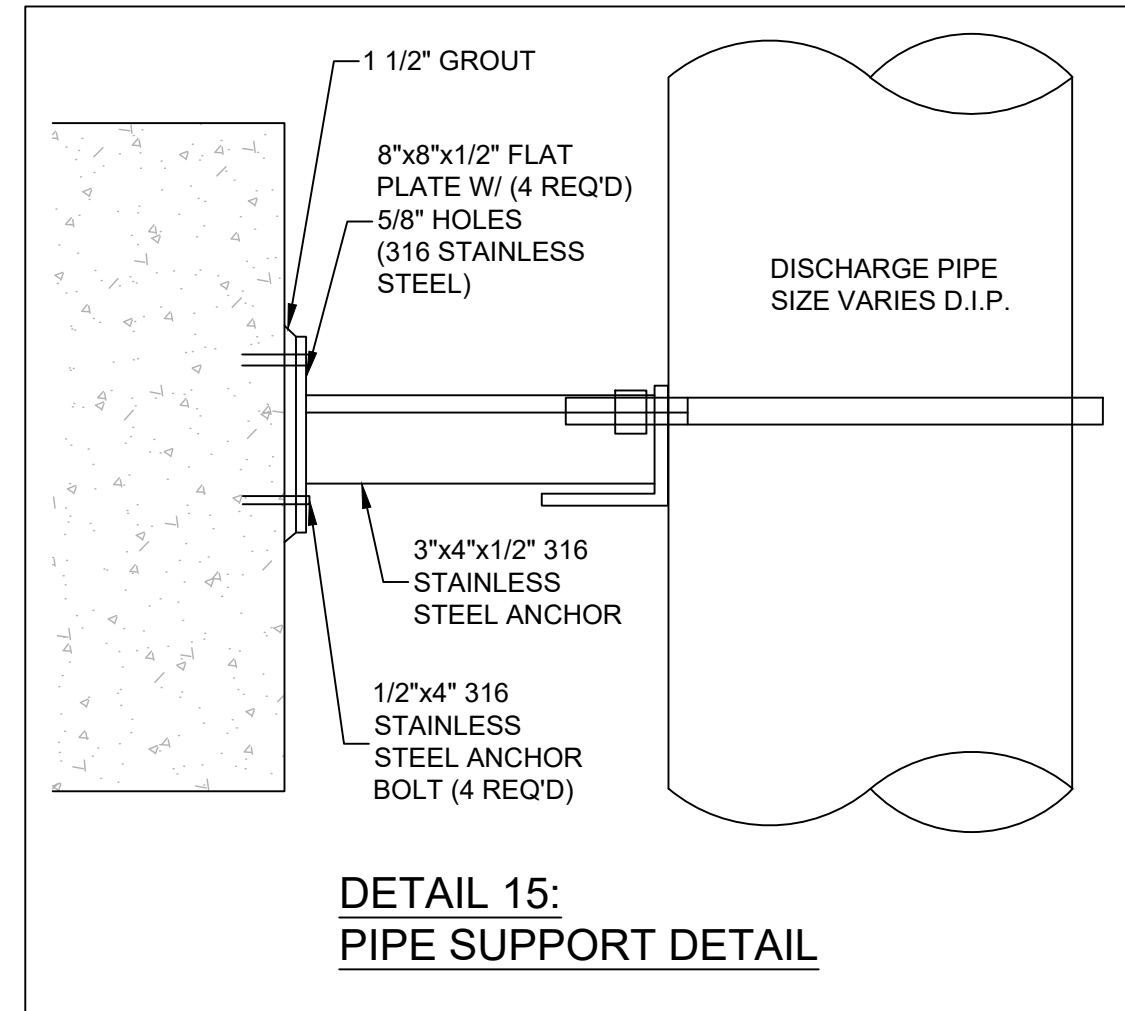
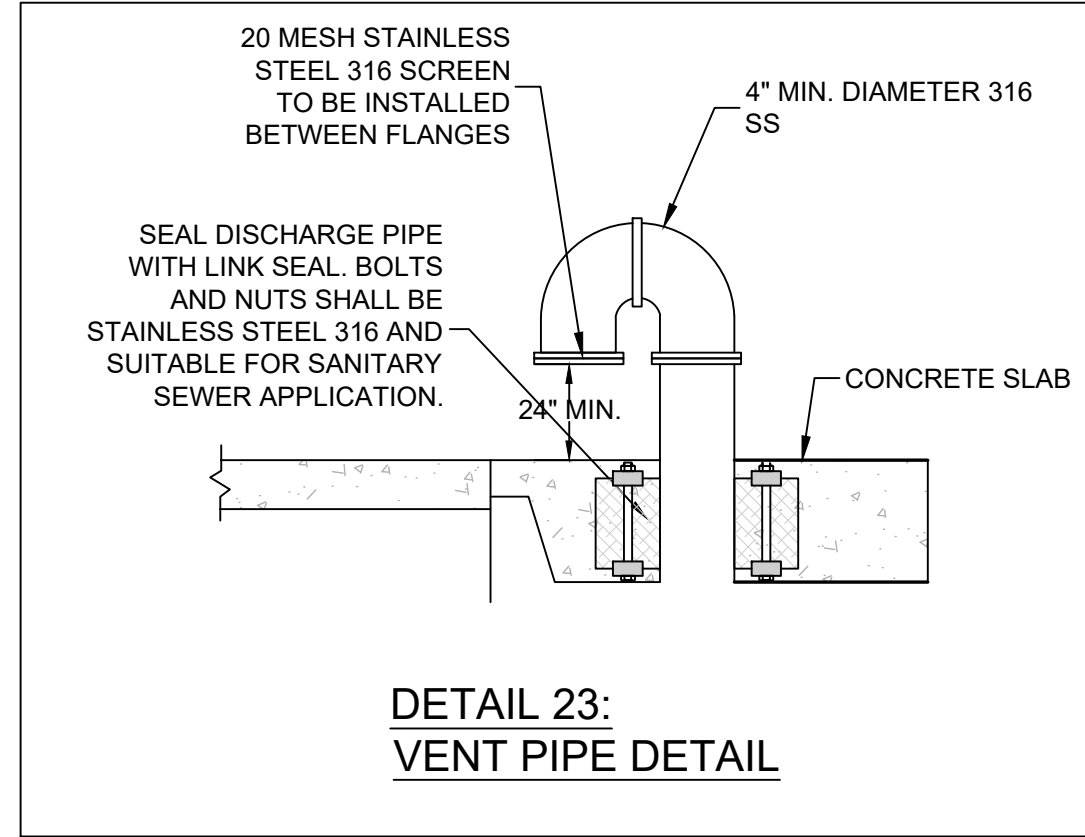
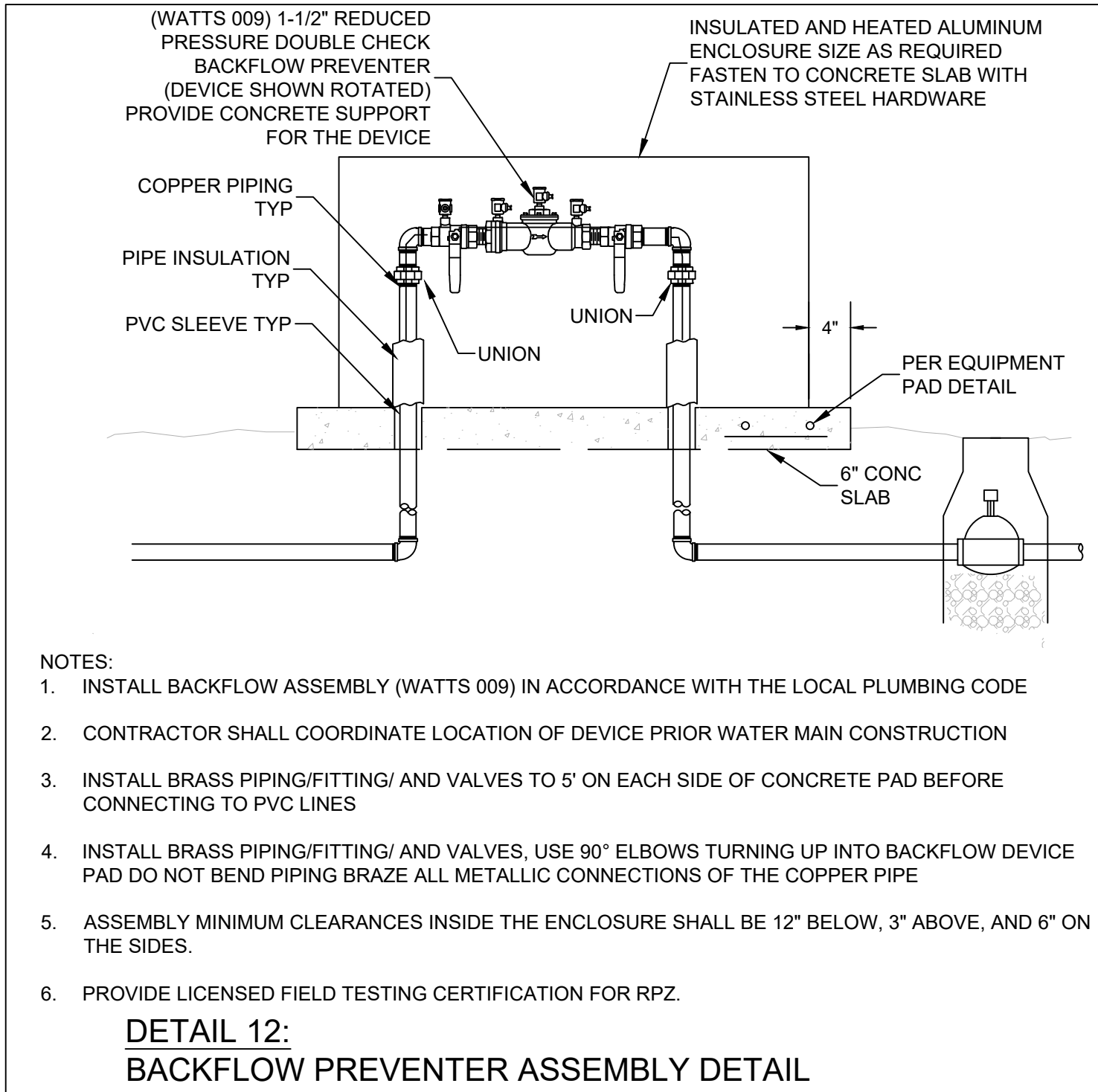
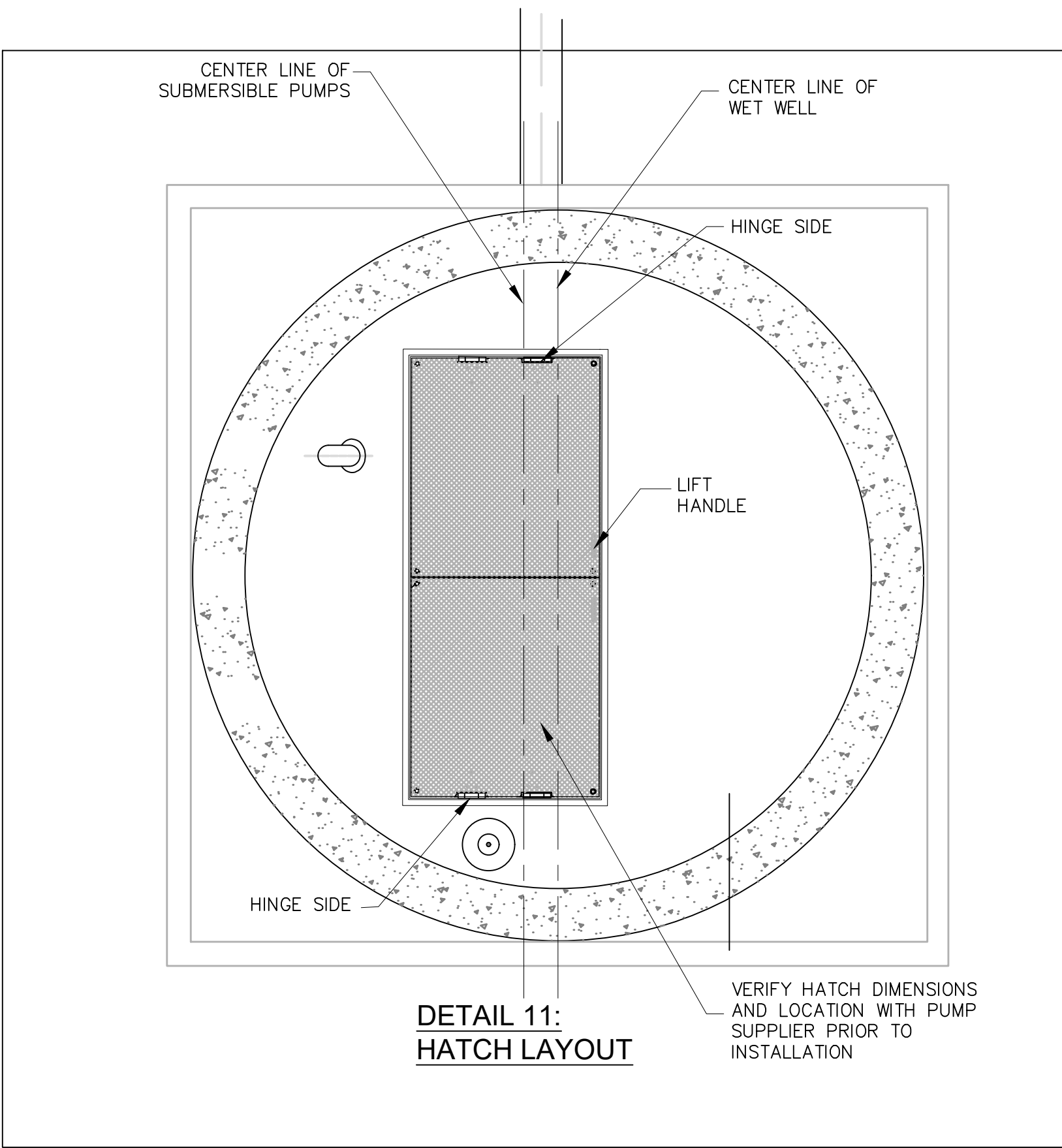
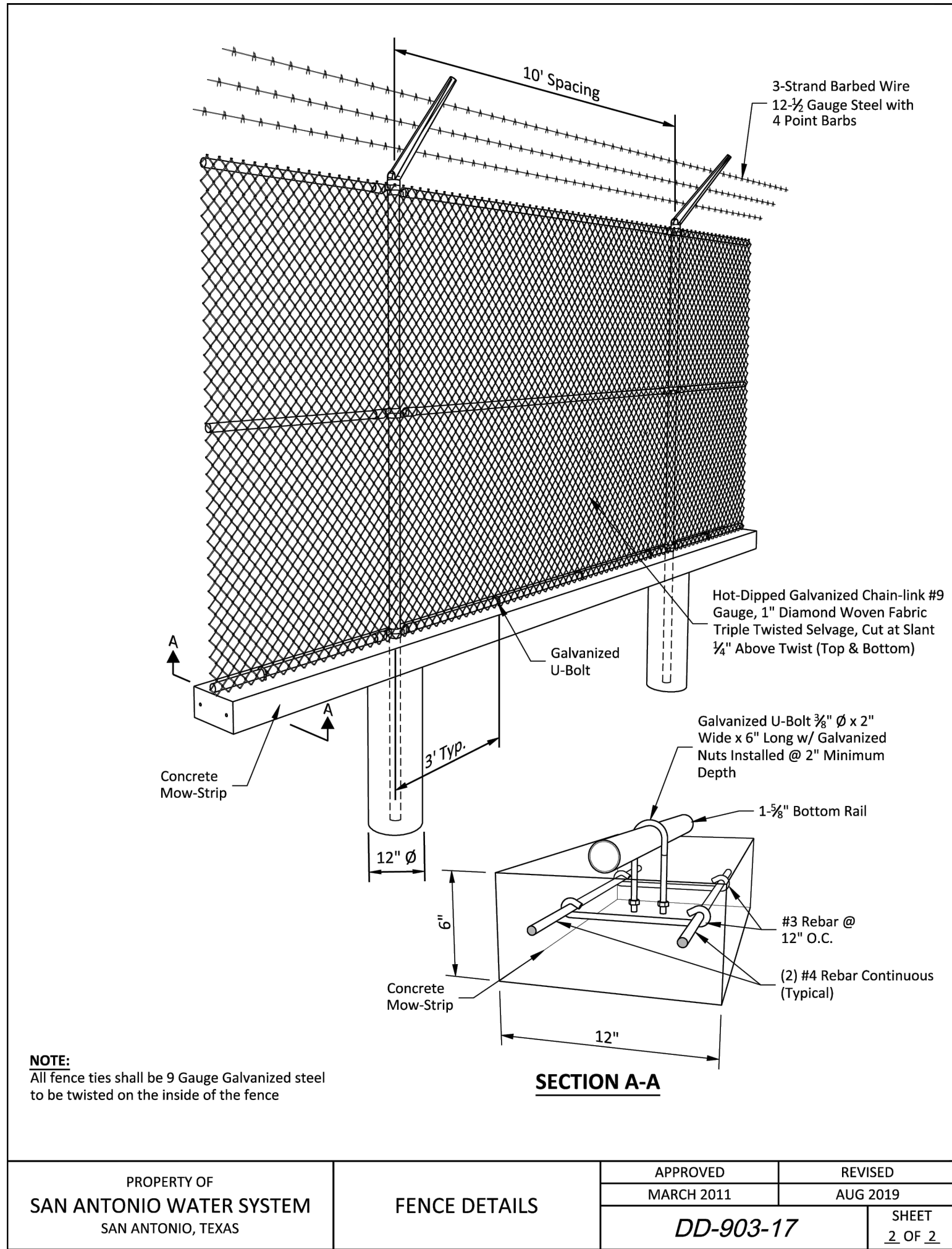
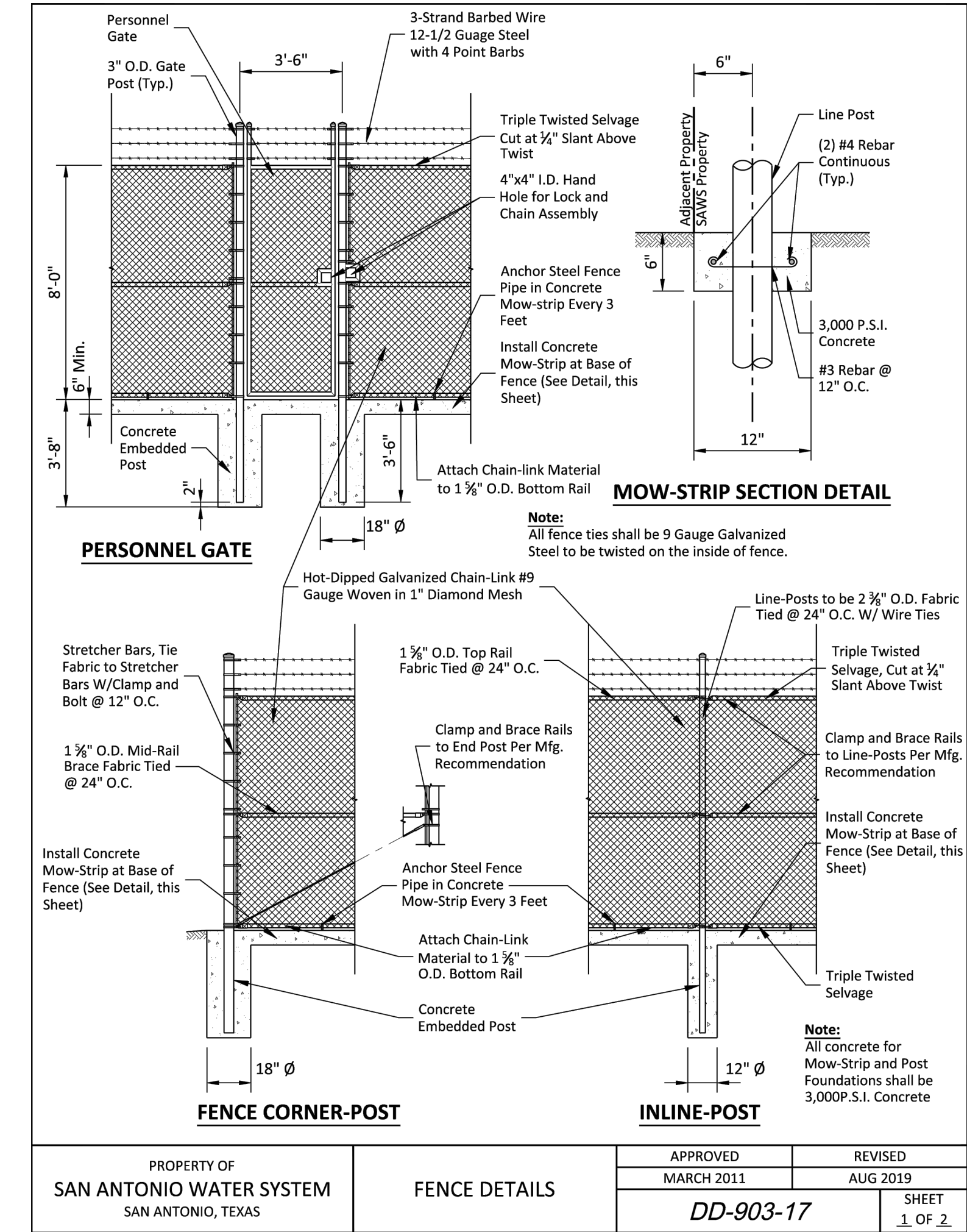
UTILITY
ENGINEERING
GROUP PLC
Texas Registered Firm #23712

PRESA GROVE LIFT STATION & OFFSITE SEWER
SAN ANTONIO, TEXAS
LS DETAILS 1 OF 4

PLAT NO.
JOB NO.: 314-39-03
DATE: November 30, 2023
DRAWN: M.W. CHECKED: A.C.
SHEET NUMBER:

LS-8

Date: Nov 30, 2023 9:15am User ID: lreg191
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SAN ANTONIO (KFW)
3421 Presa Grove Parkway
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COLLIER GROUP, INC.
1801 S. FARM # 14909
BPS License # 1019450
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CONSULTANTS & ENGINEERS

Colliers
Engineering
& Design

ISSUE DATE
11/30/23

REVISIONS
1. 11/30/23
DAVID A. KNEIPER
LICENSED PROFESSIONAL ENGINEER
NO. 98876
STATE OF TEXAS

**UTILITY
ENGINEERING
GROUP, PLLC**
1801 S. FARM # 14909
SAN ANTONIO, TEXAS 78231
Texas Registered Civil Engineer No. 142812

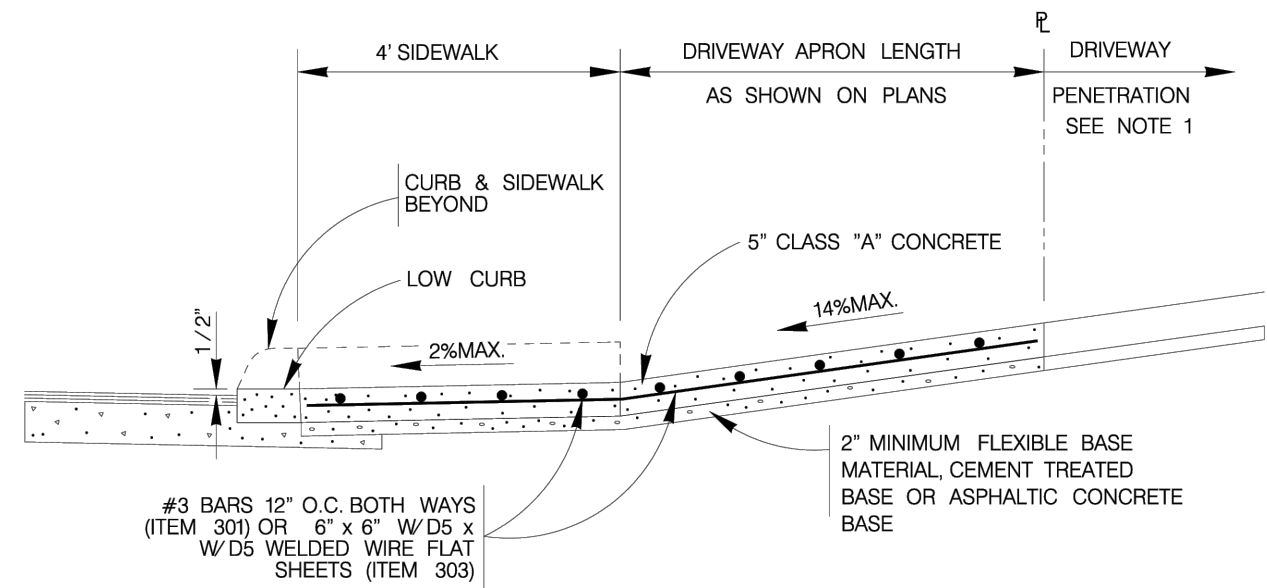
PRESA GROVE LIFT STATION & OFFSITE SEWER
SAN ANTONIO, TEXAS
LS DETAILS 2 OF 4

PLAT NO.

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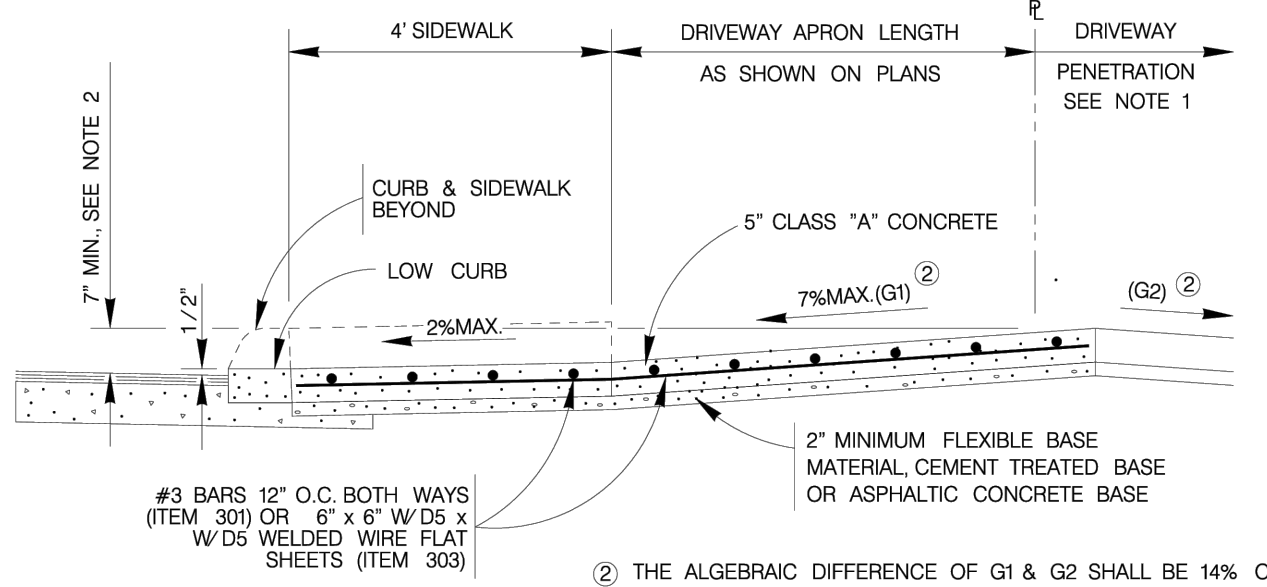
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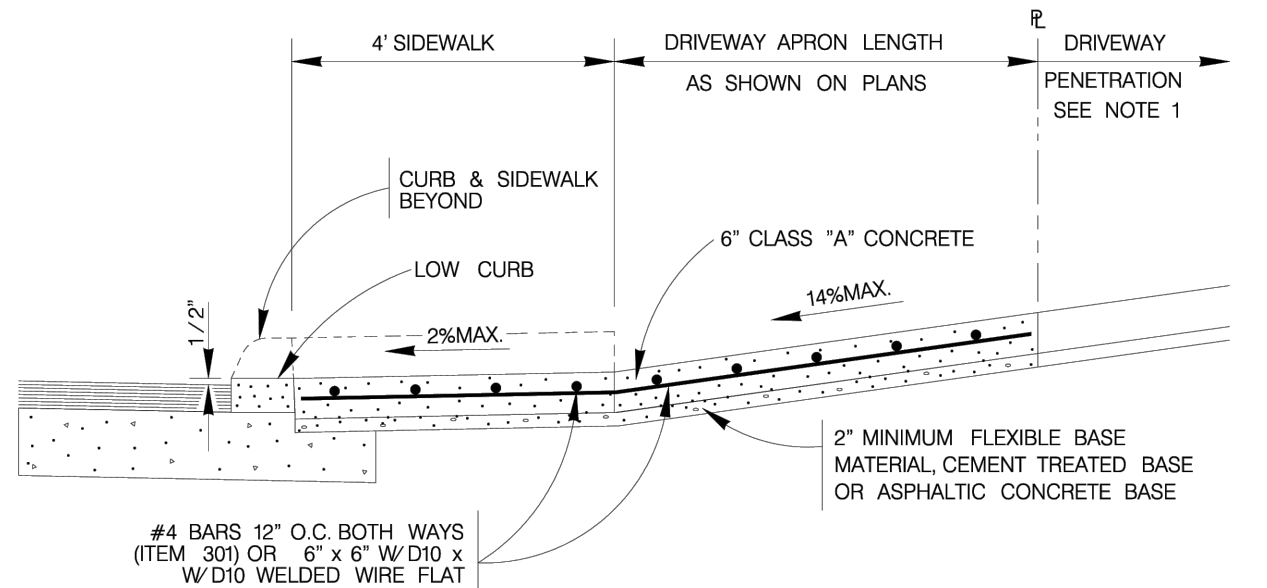
TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB
ITEM 503.1



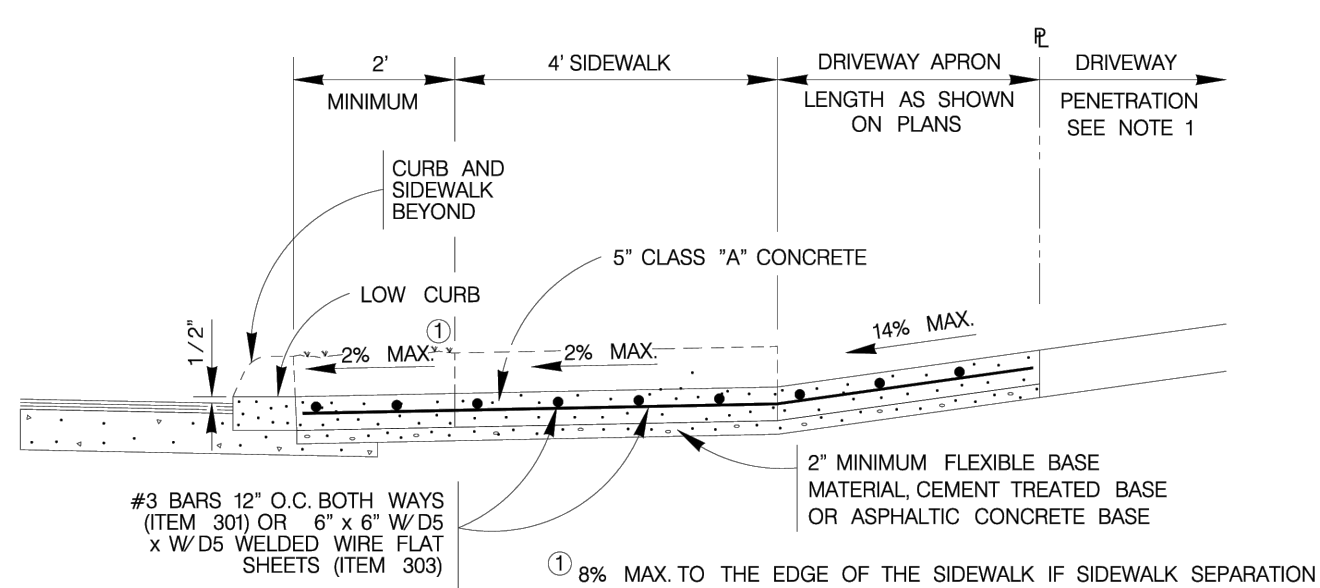
TYPICAL RESIDENTIAL DRIVEWAY SECTION

WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS ABUTTING CURB
ITEM 503.1



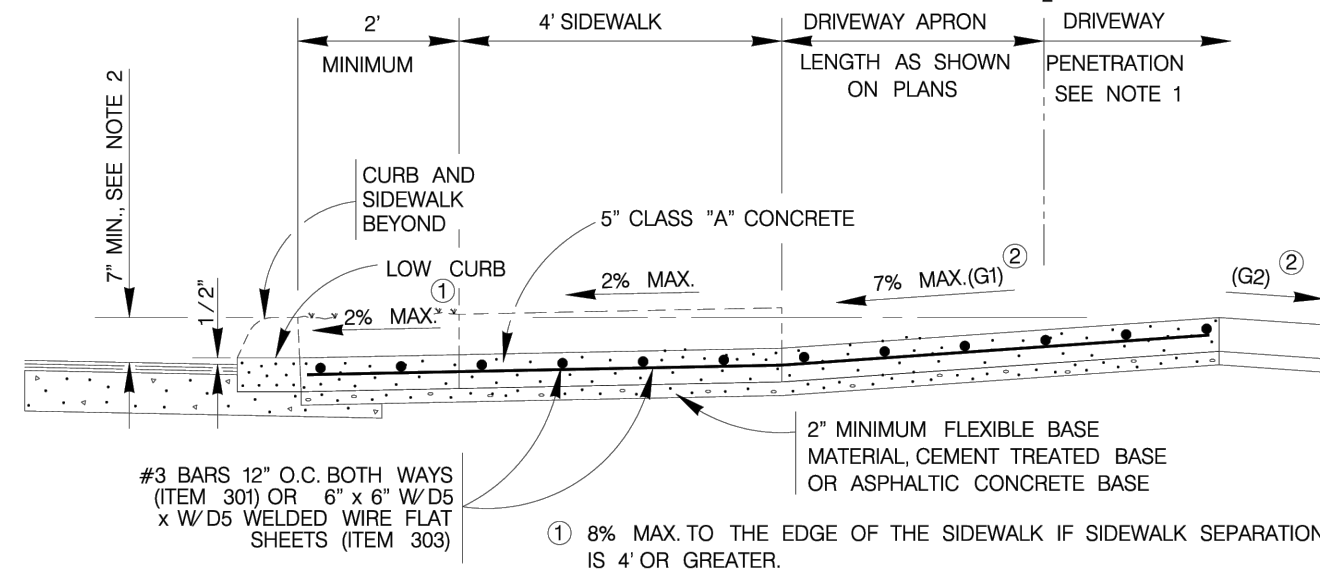
TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB
ITEM 503.2



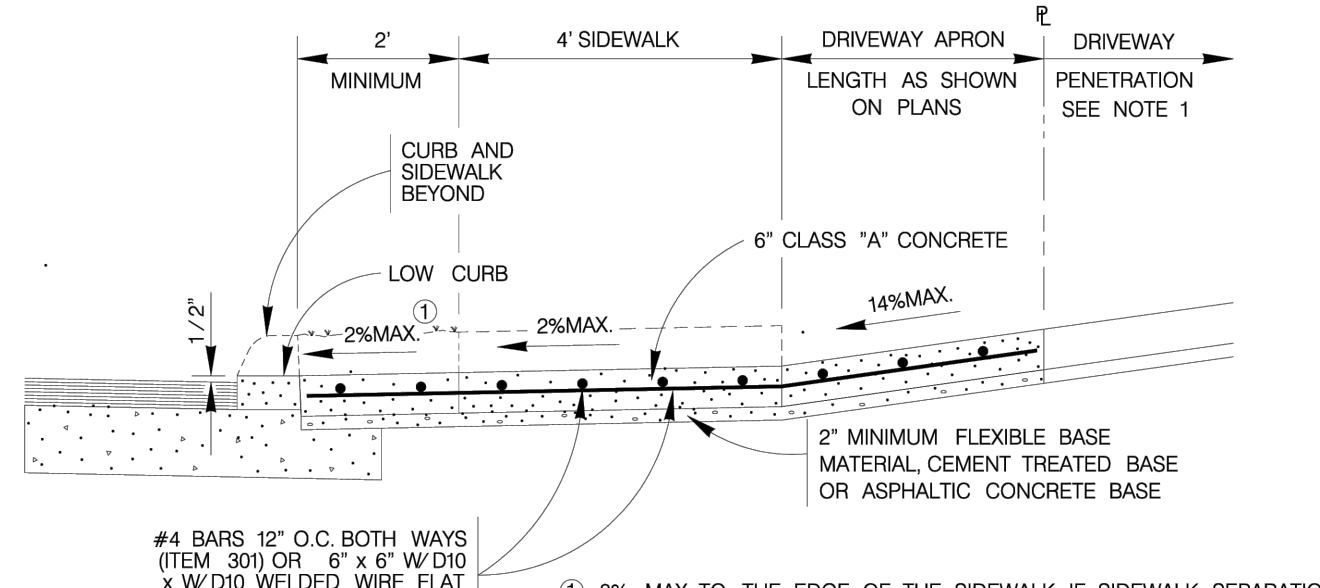
TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.1



TYPICAL RESIDENTIAL DRIVEWAY SECTION

WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS SEPARATED FROM CURB
ITEM 503.1



TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.2

- CONCRETE DRIVEWAY NOTES
- DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY:
A.) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503.1 OR 503.2
B.) ASPHALTIC CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503.4 AND SHALL INCLUDE A MINIMUM OF 1" ASPHALT TYPE 'D' & 6" FLEXIBLE BASE
C.) GRAVEL DRIVEWAY PAID FOR UNDER ITEM NO. 503.5 AND SHALL INCLUDE A MINIMUM OF 6" FLEXIBLE BASE

- 7" MINIMUM HEIGHT WILL NOT NECESSARILY OCCUR AT THE PROPERTY LINE. IT MAY OCCUR WITHIN THE RIGHT OF WAY OR WITHIN THE DRIVEWAY PENETRATION ON PRIVATE PROPERTY.

- THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE BUT UNLESS AUTHORIZED BY THE CITY TRAFFIC ENGINEER, THE WIDTH SHALL BE WITHIN THE FOLLOWING VALUES:

TYPE	MINIMUM	MAXIMUM
RESIDENTIAL	10'	20'
COMMERCIAL - ONE WAY	12'	20'
COMMERCIAL - TWO WAY	24'	30'

- FOR LOCAL TYPE "A" STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 2' FROM THE BACK OF CURB.

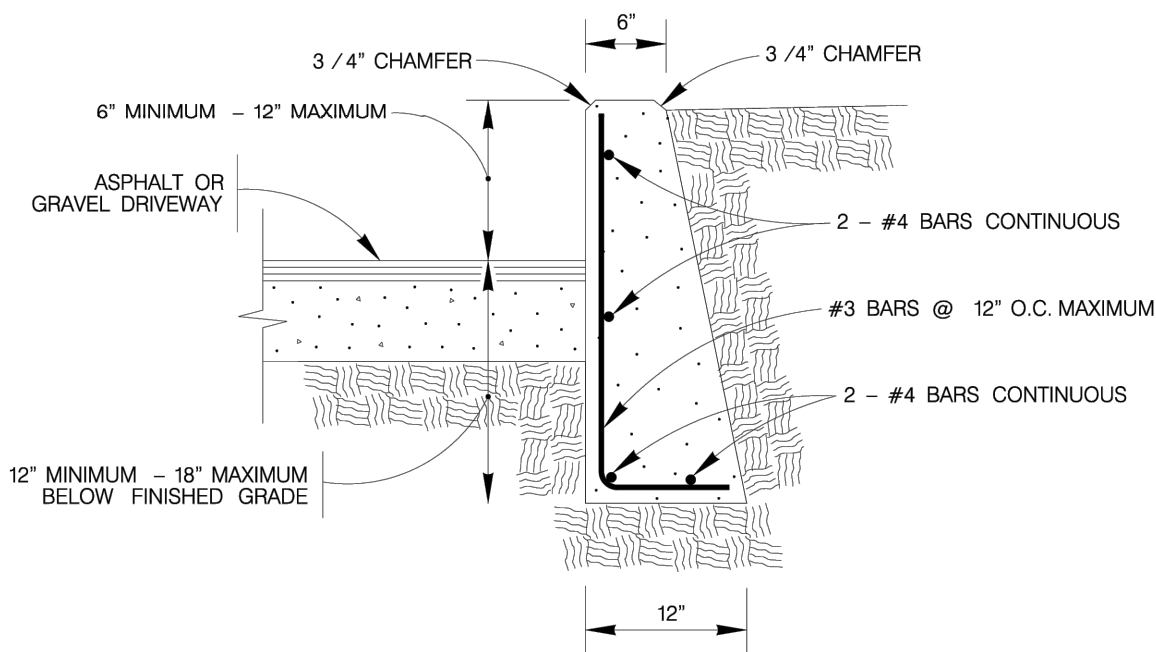
- FOR OTHER THAN LOCAL TYPE "A" STREETS, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND SEPARATED A MINIMUM OF 2' FROM THE BACK OF CURB OR, AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.

- DUMMY JOINTS PARALLEL TO THE CURB SHALL BE PLACED WHERE THE SIDEWALK MEETS THE DRIVEWAY. DUMMY JOINTS PERPENDICULAR TO THE CURB AND WITHIN THE BOUNDARIES OF THE PARALLEL DUMMY JOINTS, SHALL BE PLACED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.

- A MINIMUM OF TWO ROUND AND SMOOTH DOWEL BARS 3/8" IN DIAMETER AND 18" IN LENGTH SHALL BE SPACED 18" APART AT EACH EXPANSION JOINT.

- SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE. WHERE SIDEWALKS CROSS DRIVEWAYS, SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

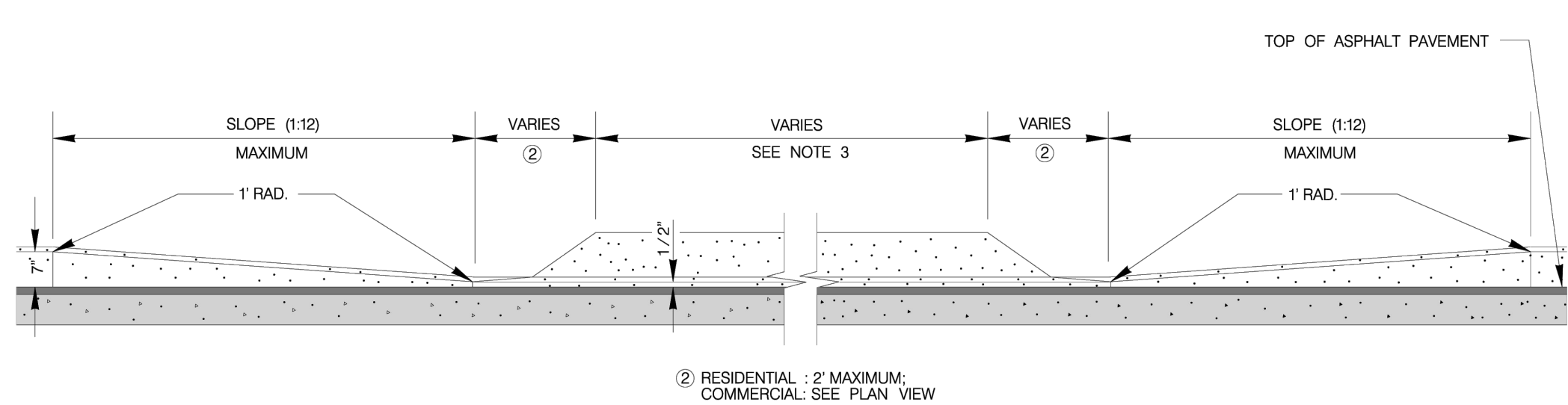
- SIDEWALK RAMP SURFACE SHALL BE BRUSH FINISHED.



- NOTE:
- COST OF REINFORCEMENT TO BE INCLUDED IN UNIT COST OF ITEM 307.1.
 - CONCRETE RETAINING WALL COMBINATION TYPE SHALL BE USED FOR CONCRETE DRIVEWAYS.

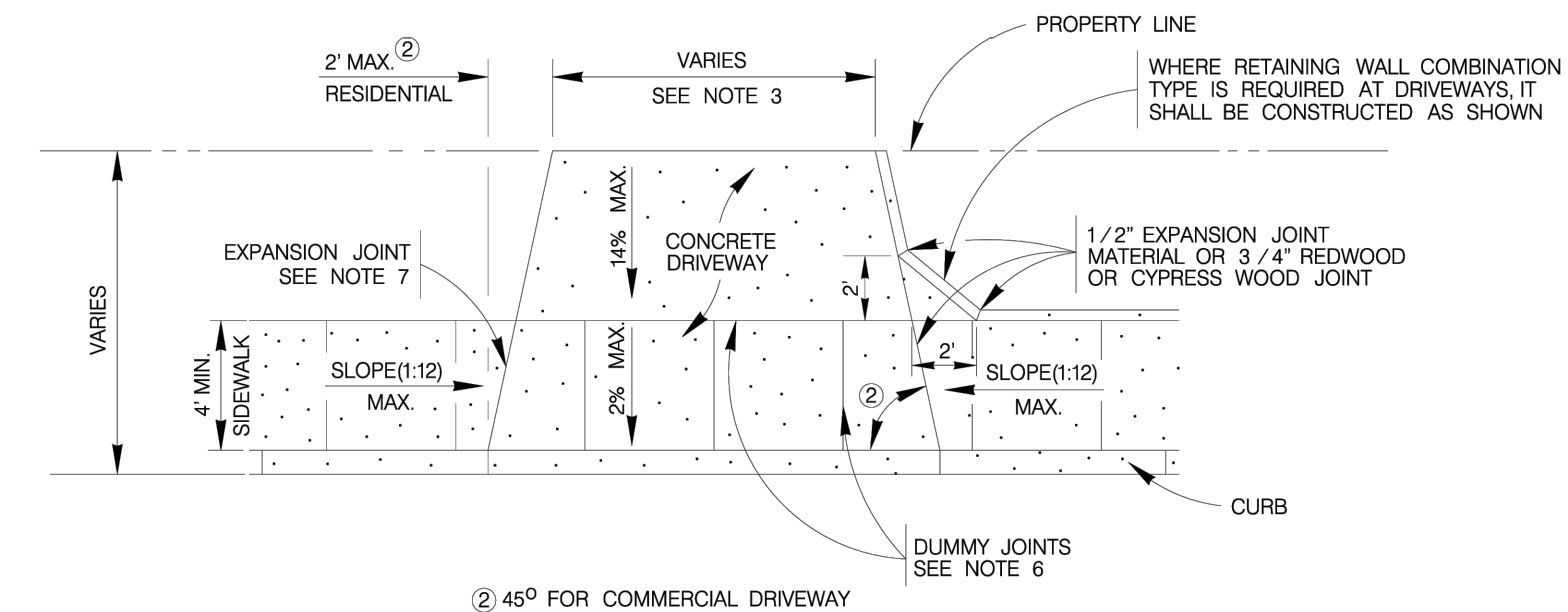
DRIVEWAY - CONCRETE RETAINING WALL

ON COMPACTED SUBGRADE
ITEM 307.1



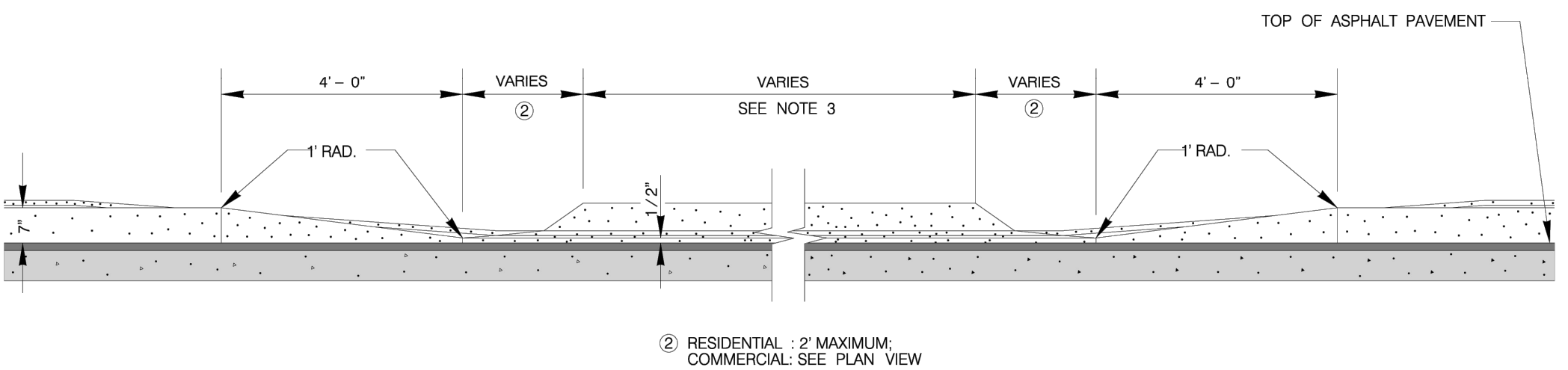
CURB PROFILE AT DRIVEWAY

WITH SIDEWALK ABUTTING CURB



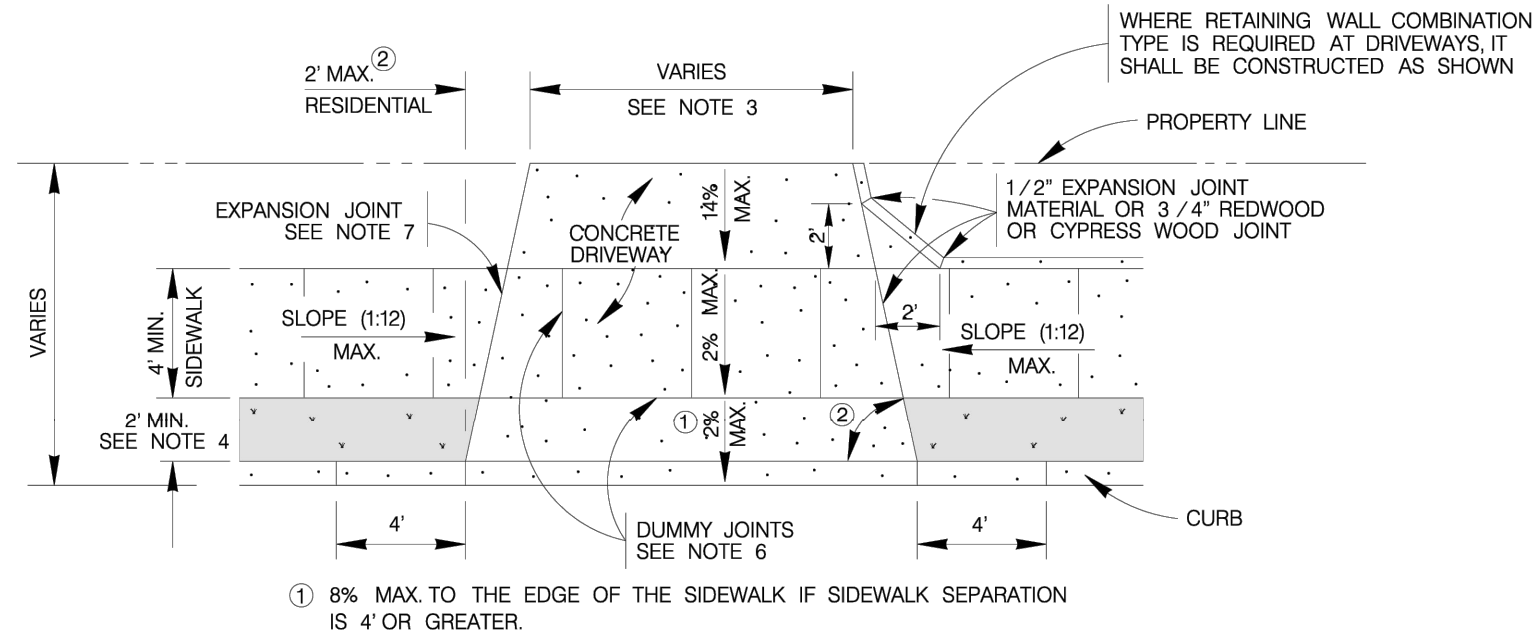
TYPICAL DRIVEWAY PLAN VIEW

WITH SIDEWALK ABUTTING CURB



CURB PROFILE AT DRIVEWAY

WITH SIDEWALK SEPARATED FROM CURB



TYPICAL DRIVEWAY PLAN VIEW

WITH SIDEWALK SEPARATED FROM CURB

MAY 2009

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

CONCRETE DRIVEWAY STANDARDS

_____% SUBMITTAL PROJECT NO.: _____ DATE: _____
DRWN. BY: V. VASQUEZ DSGN. BY: _____ CHKD. BY: R.S. HOSSEINI, P.E. SHEET NO.: _____ OF _____

SAN ANTONIO (KFW)
3421 Presa Mobile Home Park
San Antonio, TX 78231
Phone: 210.979.8444
COLLIER ENGINEERING & DESIGN, INC.
1845 Fm 1014
Bldg 1014
Formerly Known as
KFW
CONSULTANTS - SAN ANTONIO

Colliers
Engineering
& Design



UTILITY
ENGINEERING
GROUP PLC
1845 Fm 1014
Bldg 1014
San Antonio, TX 78231

PRESA GROVE LIFT STATION & OFFSITE SEWER
SAN ANTONIO, TEXAS
LS DETAILS 3 OF 4

PLAT NO.

JOB NO.: 314-39-03

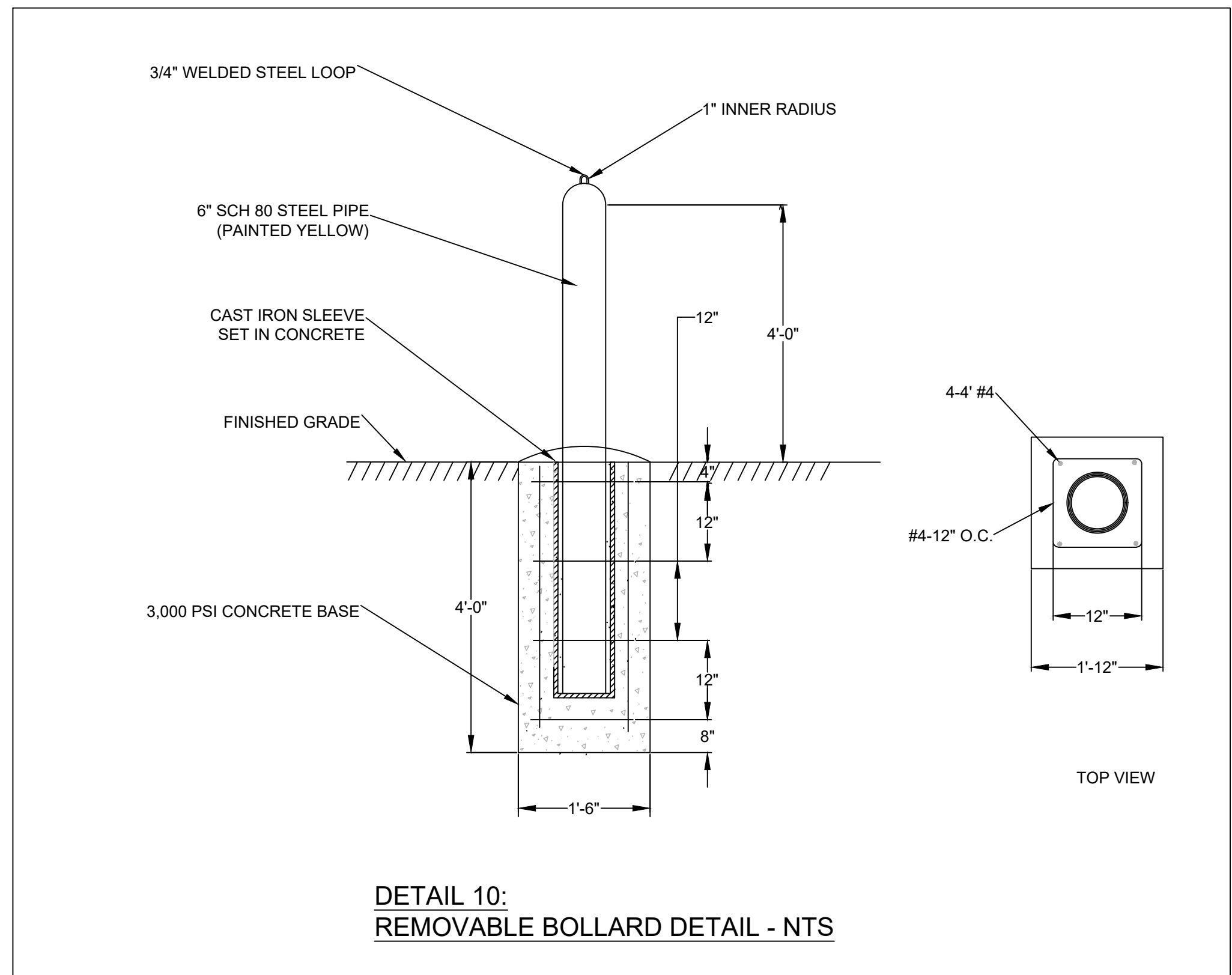
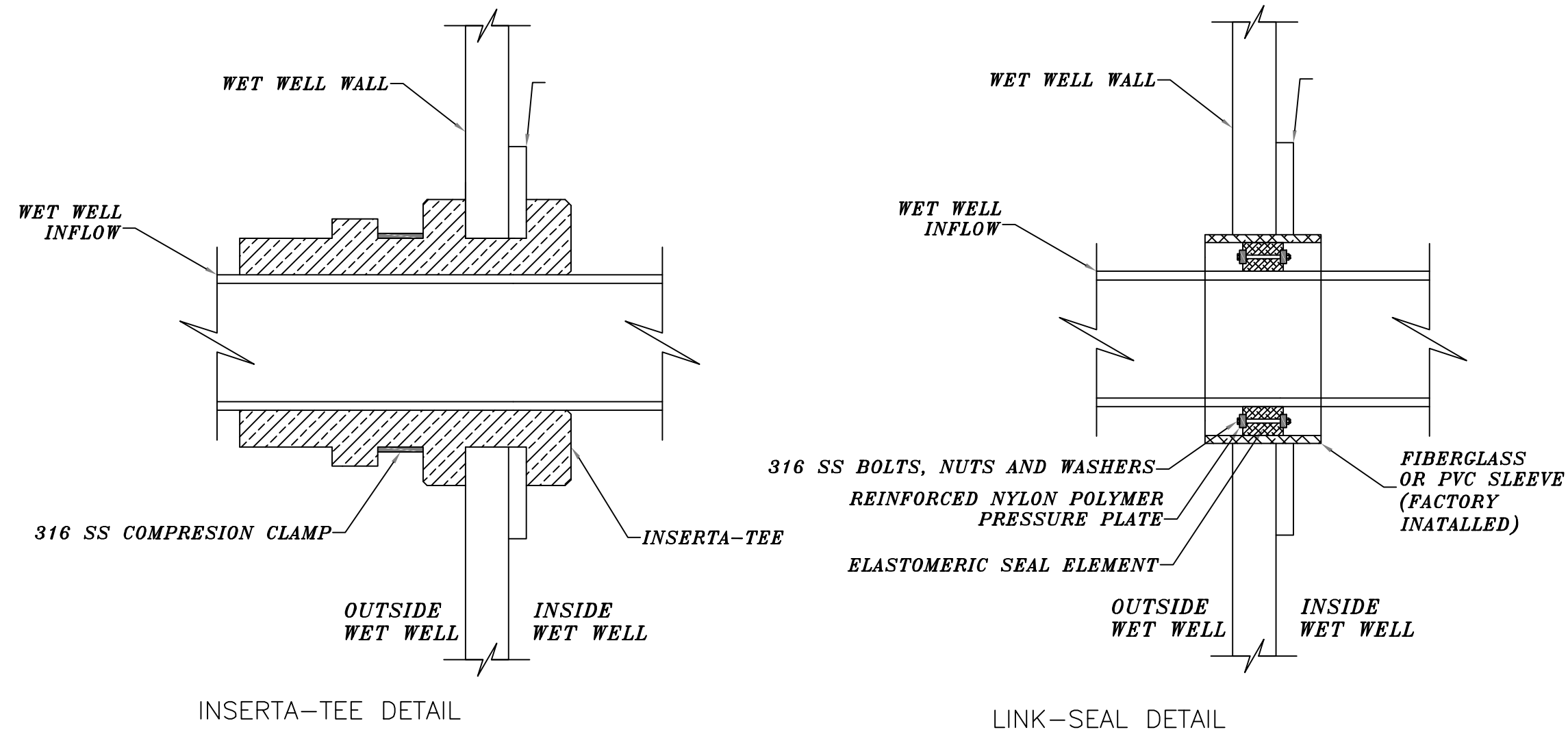
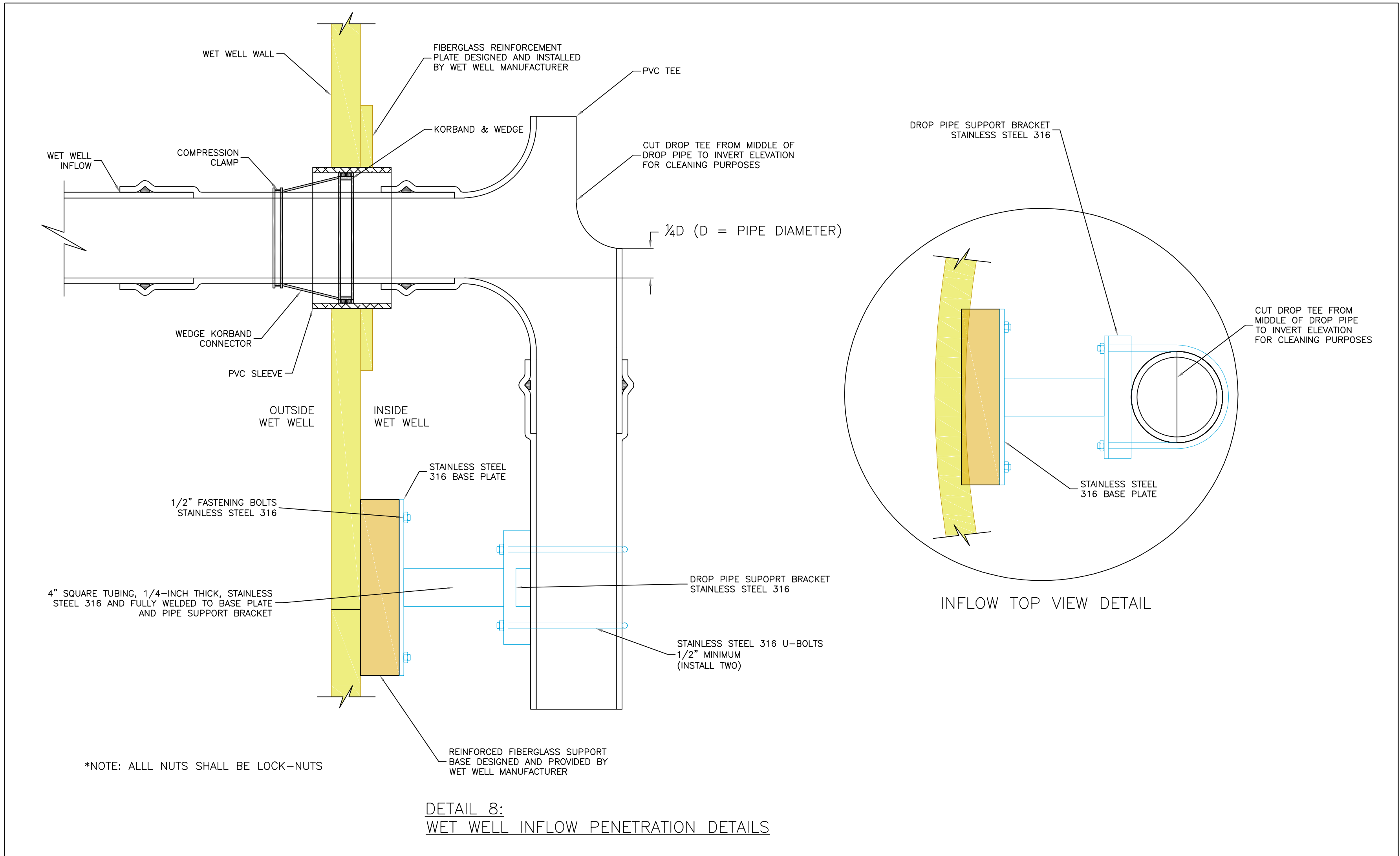
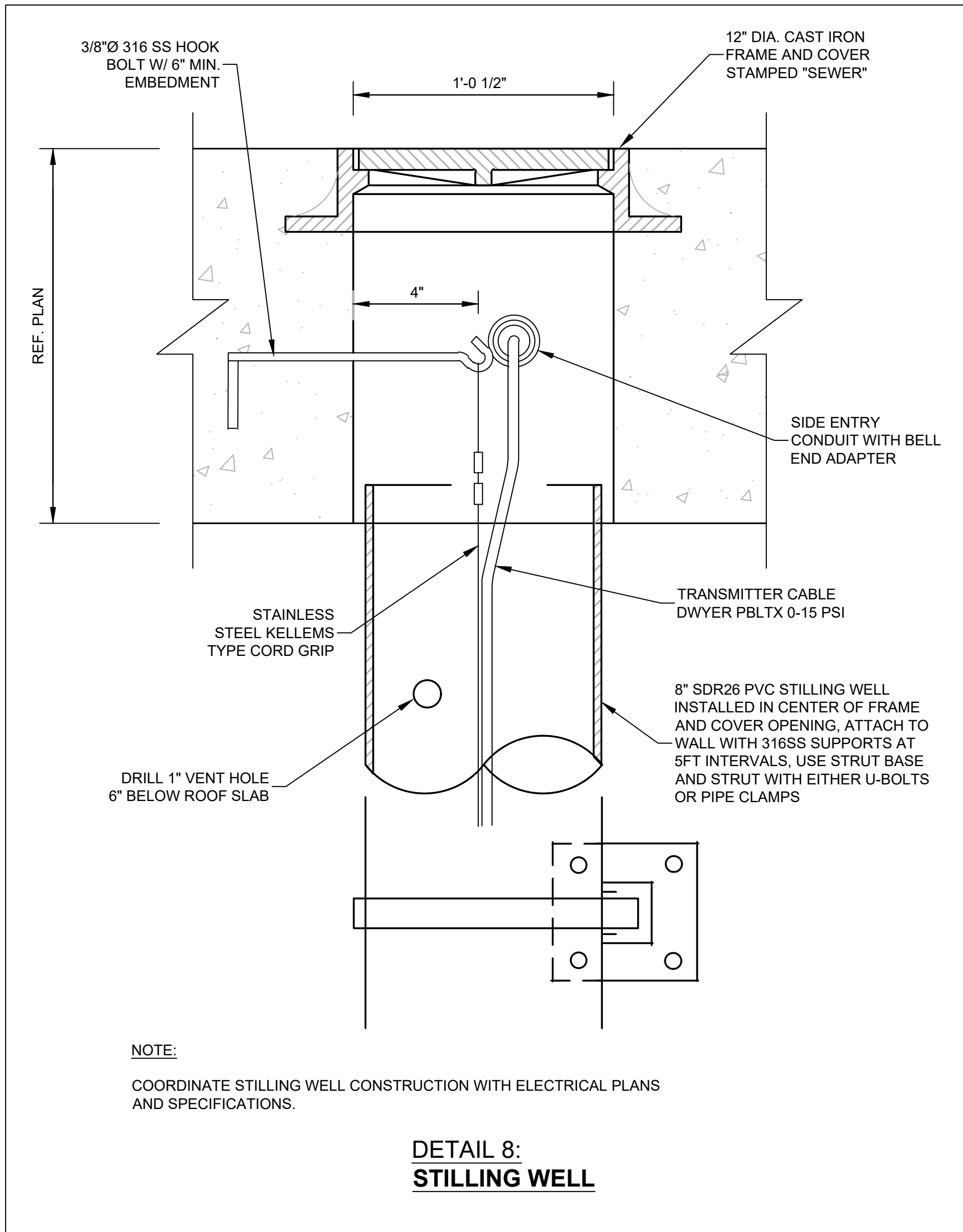
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COLLERS ENGINEERING & DESIGN	
UTILITY ENGINEERING GROUP PLC	
PRESA GROVE LIFT STATION & OFFSITE SEWER	
SAN ANTONIO, TEXAS	
LS DETAILS 4 OF 4	
PLAT NO.	
JOB NO.: 314-39-03	
DATE: November 30, 2023	
DRAWN: M.W. CHECKED: A.C.	
SHEET NUMBER:	
LS-11	

REVISIONS

ISSUE DATE

DAVID A. KNEUPER

88876

PROFESSIONAL ENGINEER

STATE OF TEXAS

SAN ANTONIO (KFW)

3421 Fountains Parkway

SAN ANTONIO, TX 78231

PHONE: 210.979.8444

COLLERA ENGINEERING, INC.

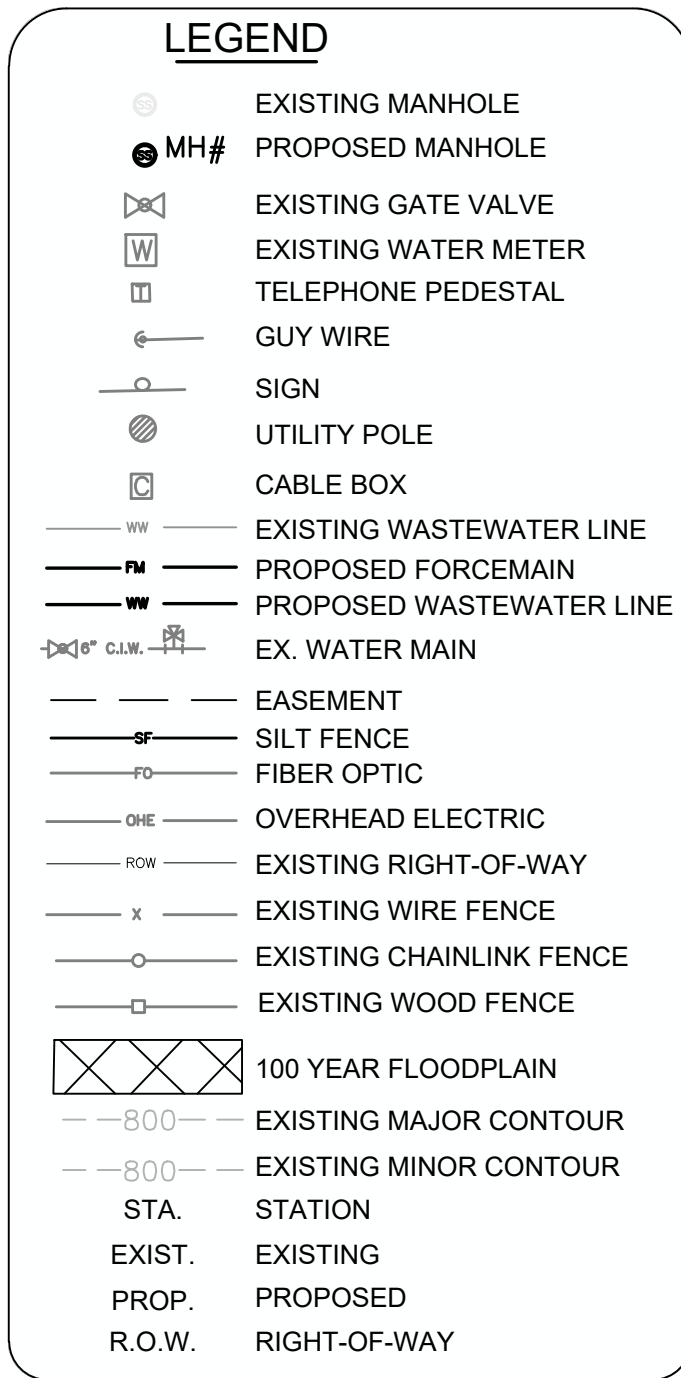
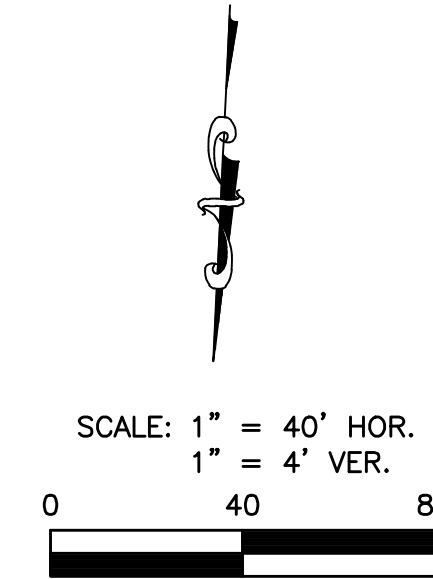
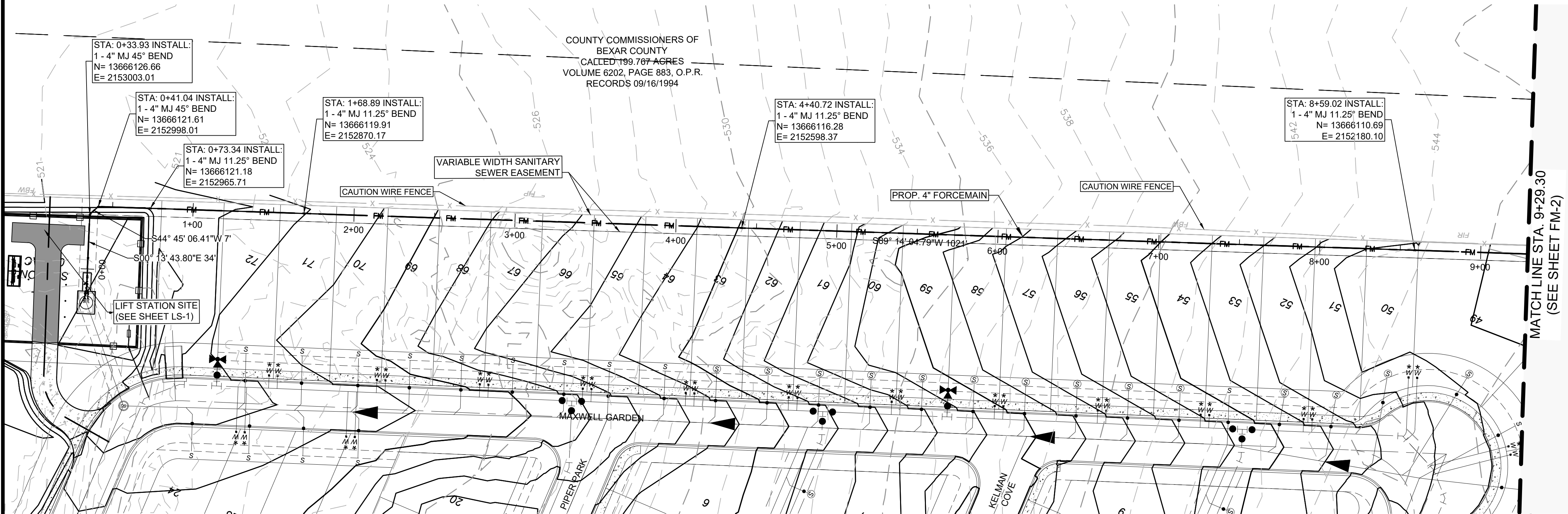
18453 Fm 10145D

Formerly Known as

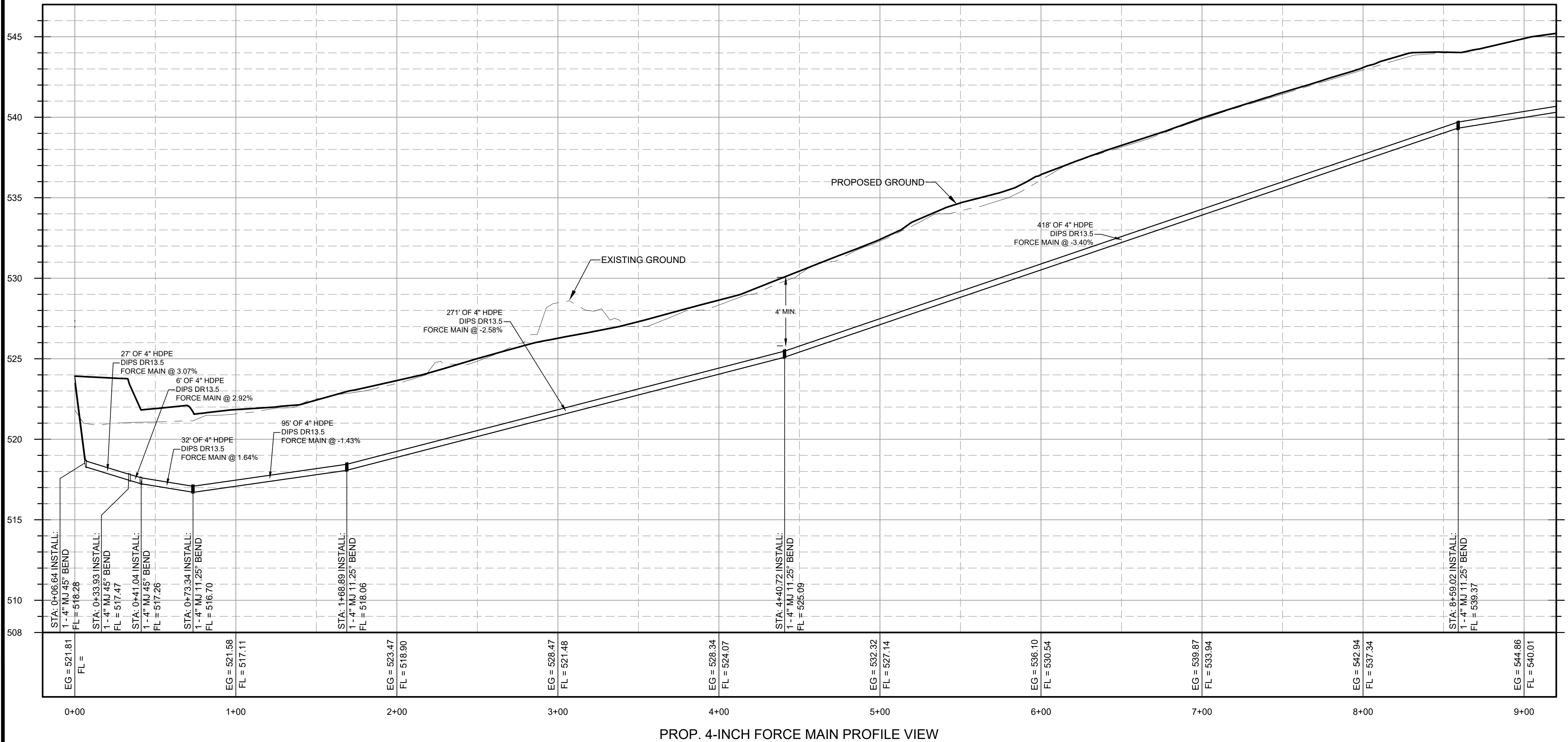
KFW

CONSULTANTS - SAN ANTONIO

Date: Nov 30, 2023 9:15am User ID: Uep191
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- NOTES:**
- OPEN CUT AND REPAIR ASPHALT & GRAVEL DRIVES PER DETAILS, MATCH EXISTING MATERIAL
 - CONTRACTOR TO FIELD VERIFY DEPTH, LOCATION, MATERIAL TYPE, AND SIZE OF EXISTING WASTEWATER LINES.
 - CONTRACTOR RESPONSIBLE FOR ALL FENCING REPAIR AND MAINTAINING LIVESTOCK WITHIN PROPERTY LIMITS.
 - ALL CONSTRUCTION ACTIVITIES TO REMAIN WITHIN THE PROPOSED EASEMENT.
 - CONTRACTOR TO INSTALL DEFLECTIONS AT BENDS PER MANUFACTURES RECOMMENDATIONS TO MAINTAIN PROFILE GRADE.
 - PLUG VALVES SHOULD HAVE A VALVE BOX PER STANDARD WATER VALVE BOX DETAIL EXCEPT LIDS.
 - SURVEY INFORMATION PROVIDED BY KFW ENGINEERS + SURVEYING



SAN ANTONIO (KFW)
3421 Presa Grove Home Park
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Phone: 210.979.8444
COLLERA GROUP, INC.
TBE Firm# F-14989
TBE Firm# F-14950
Formerly Known as
KFW
ENGINEERS + SURVEYORS

Collera
Engineering
& Design

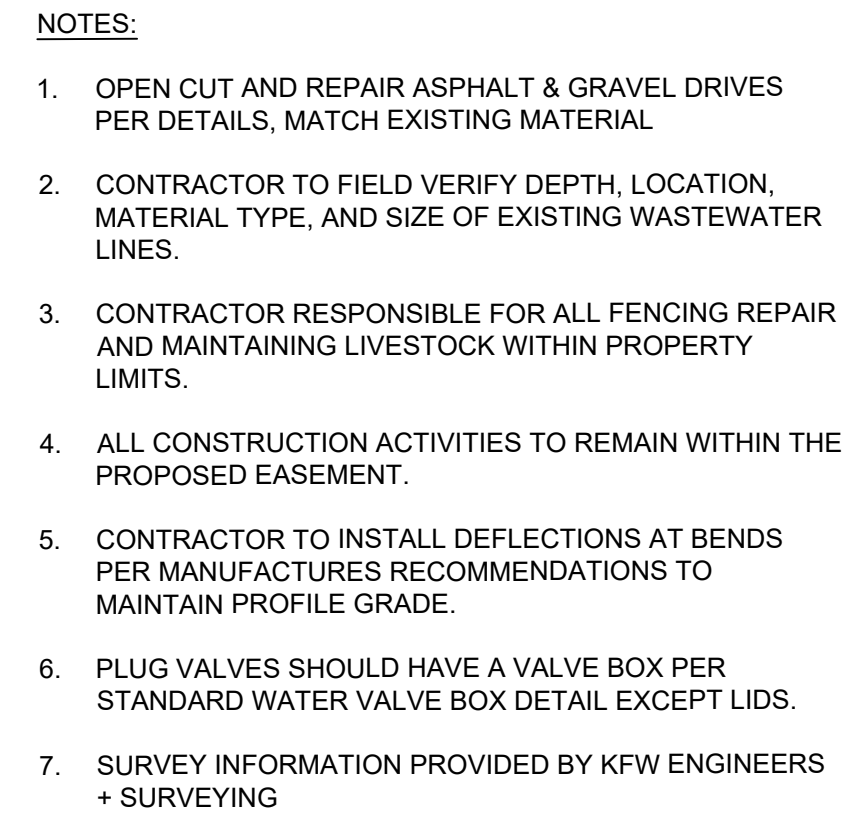
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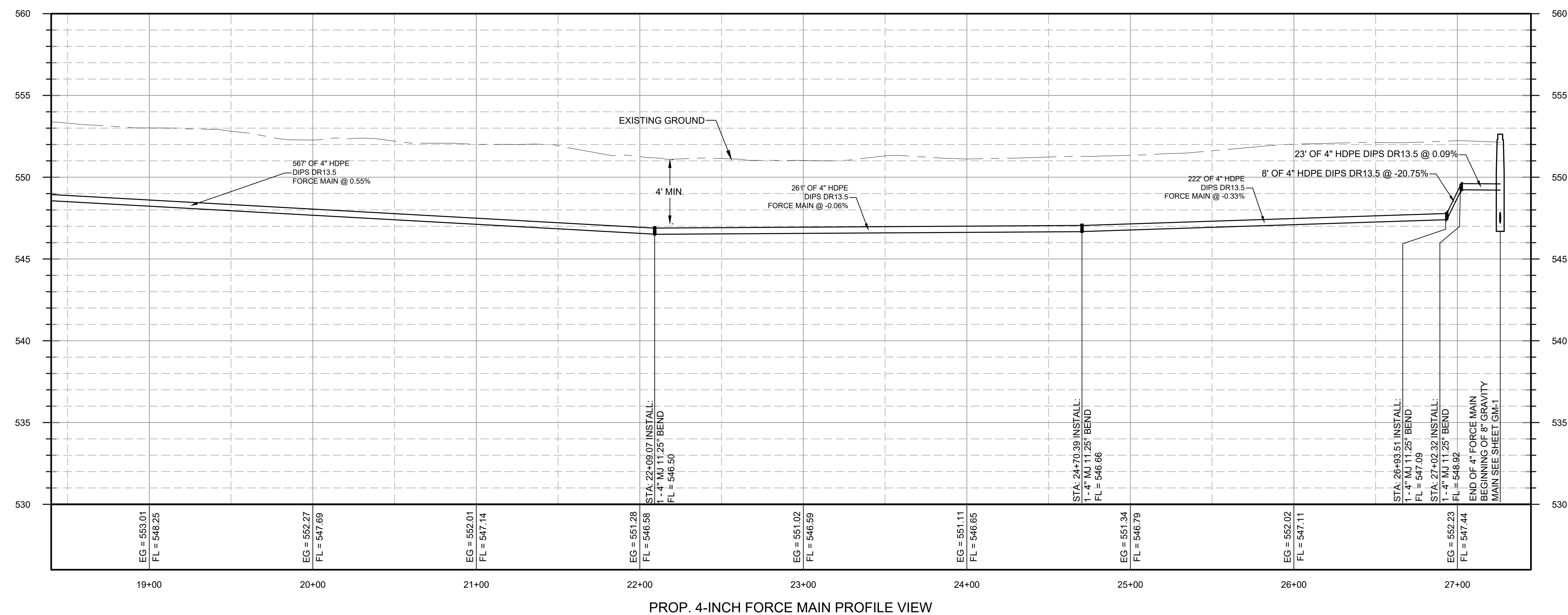
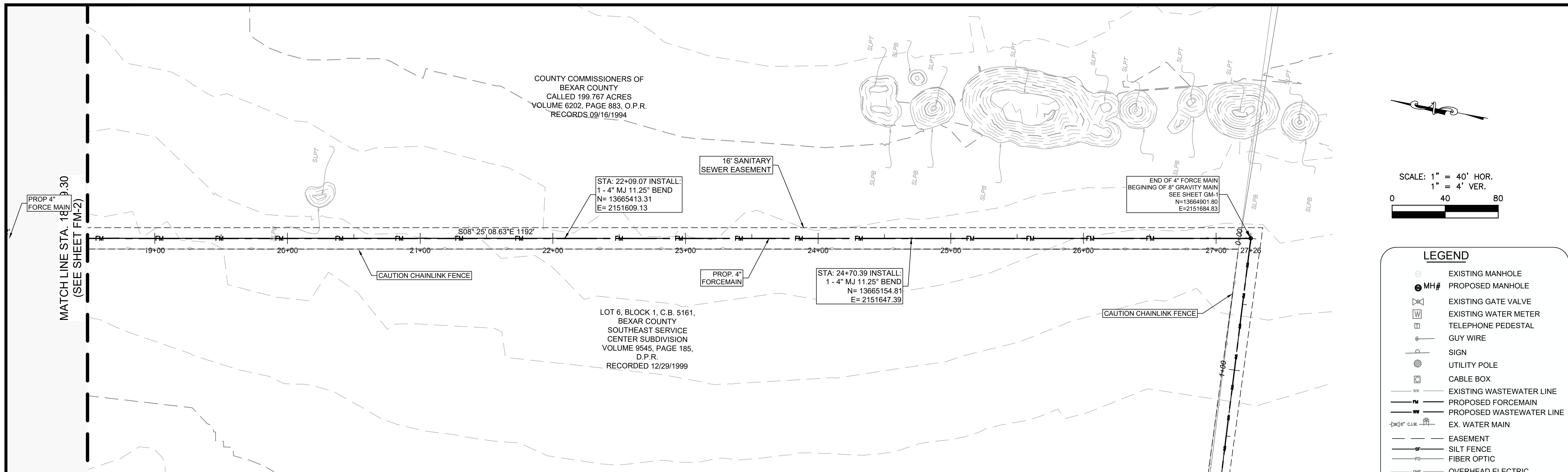
**UTILITY
ENGINEERING
GROUP PLLC**
David A. Kneiper
Professional Engineer No. 98876
Texas Registered Since 03/2012

PRESA GROVE LIFT STATION & OFFSITE SEWER
SAN ANTONIO, TEXAS
4" FORCEMAIN STA.0+00.00 - 09+29.30
PLAT NO.

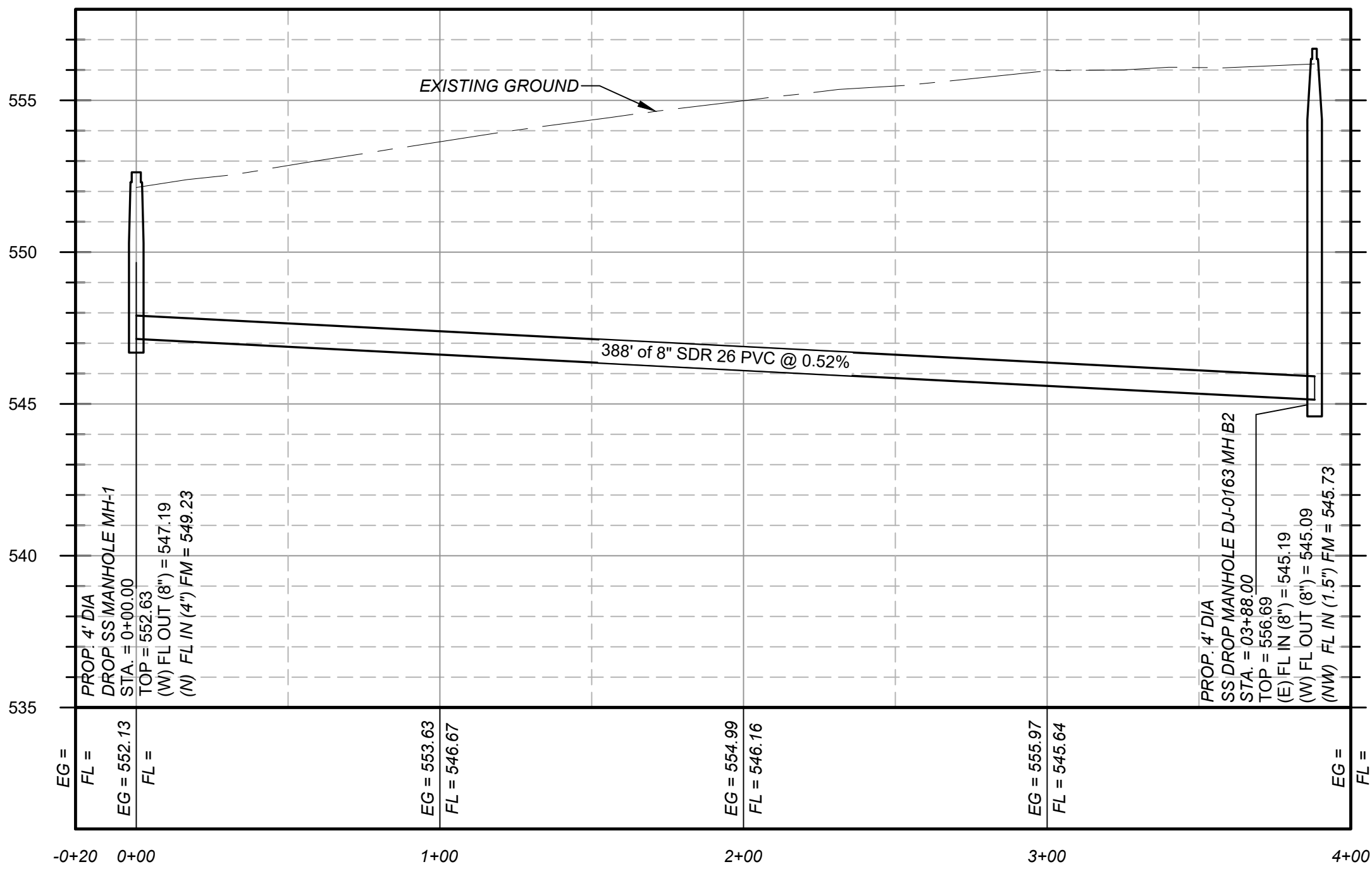
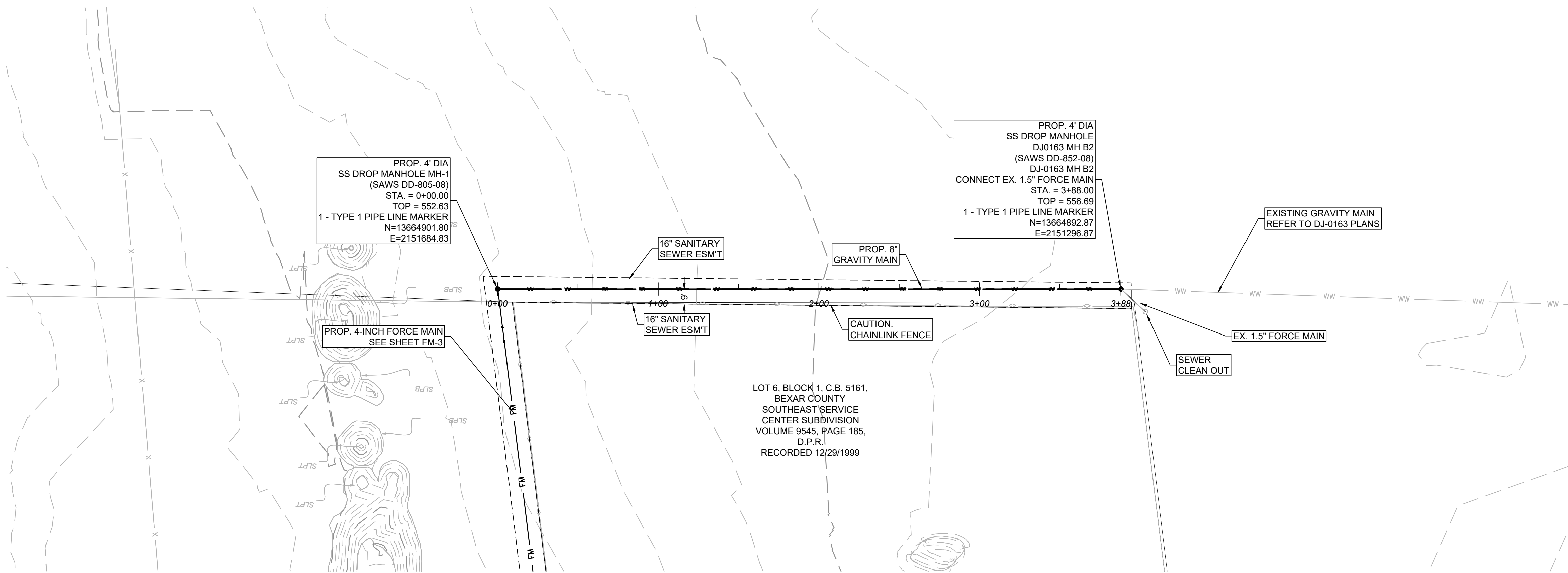
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SHEET NUMBER:
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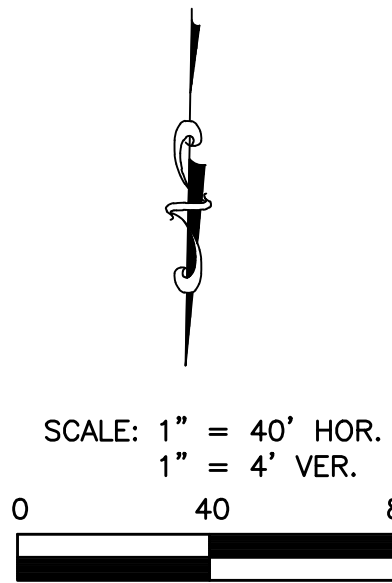


- NOTES:**
1. OPEN CUT AND REPAIR ASPHALT & GRAVEL DRIVES PER DETAILS, MATCH EXISTING MATERIAL
 2. CONTRACTOR TO FIELD VERIFY DEPTH, LOCATION, MATERIAL TYPE, AND SIZE OF EXISTING WASTEWATER LINES.
 3. CONTRACTOR RESPONSIBLE FOR ALL FENCING REPAIR AND MAINTAINING LIVESTOCK WITHIN PROPERTY LIMITS.
 4. ALL CONSTRUCTION ACTIVITIES TO REMAIN WITHIN THE PROPOSED EASEMENT.
 5. CONTRACTOR TO INSTALL DEFLECTIONS AT BENDS PER MANUFACTURES RECOMMENDATIONS TO MAINTAIN PROFILE GRADE.
 6. PLUG VALVES SHOULD HAVE A VALVE BOX PER STANDARD WATER VALVE BOX DETAIL EXCEPT LIDS.
 7. SURVEY INFORMATION PROVIDED BY KFW ENGINEERS + SURVEYING



PROP. 8" GRAVITY PROFILE VIEW

- NOTES:
1. OPEN CUT AND REPAIR ASPHALT & GRAVEL DRIVES PER DETAILS, MATCH EXISTING MATERIAL
 2. CONTRACTOR TO FIELD VERIFY DEPTH, LOCATION, MATERIAL TYPE, AND SIZE OF EXISTING WASTEWATER LINES.
 3. CONTRACTOR RESPONSIBLE FOR ALL FENCING REPAIR AND MAINTAINING LIVESTOCK WITHIN PROPERTY LIMITS.
 4. ALL CONSTRUCTION ACTIVITIES TO REMAIN WITHIN THE PROPOSED EASEMENT.
 5. CONTRACTOR TO INSTALL DEFLECTIONS AT BENDS PER MANUFACTURES RECOMMENDATIONS TO MAINTAIN PROFILE GRADE.
 6. PLUG VALVES SHOULD HAVE A VALVE BOX PER STANDARD WATER VALVE BOX DETAIL EXCEPT LIDS.
 7. SURVEY INFORMATION PROVIDED BY KFW ENGINEERS



LEGEND	
PROPOSED GATE VALVE	
EXISTING GATE VALVE	
EXISTING WATER METER	
TELEPHONE PEDESTAL	
GUY WIRE	
SIGN	
UTILITY POLE	
CABLE BOX	
EXISTING WASTEWATER LINE	
PR. WASTEWATER LINE	
PR. FORCEMAIN	
EX. WATER MAIN	
EASEMENT	
SILT FENCE	
TREE PROTECTION	
FIBER OPTIC	
OVERHEAD ELECTRIC	
EXISTING RIGHT-OF-WAY	
LIMITS OF CONSTRUCTION	
EXISTING WIRE FENCE	
EXISTING CHAINLINK FENCE	
EXISTING WOOD FENCE	
100 YEAR FLOODPLAIN	
EXISTING CONTOURS	
PROPOSED SERVICE LATERAL	
ALT. BID SERVICE LATERAL	

PRESA GROVE LIFT STATION & OFFSITE SEWER
SAN ANTONIO, TEXAS
8-INCH GRAVITY MAIN
PLAT NO.

JOB NO.: 314-39-03
DATE: November 30, 2023
DRAWN: M.W. CHECKED: A.C.
SHEET NUMBER:

GM-1

REVISIONS

ISSUE DATE




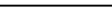

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
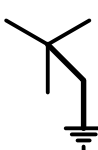



















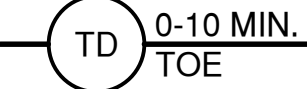

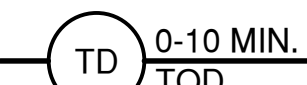

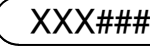
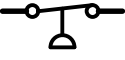



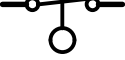
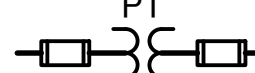

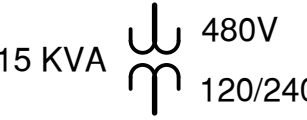








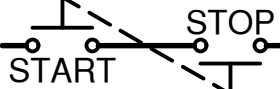

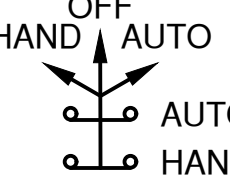
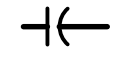



DAVID A. KNEIPER
REGISTERED PROFESSIONAL ENGINEER
NO. 98876
EXPIRATION DATE 12/31/2024



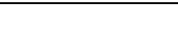






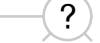

Colliers Engineering & Design

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Fax: 210.979.8444
Formerly Known as KFW ENGINEERS & DESIGN

	EQUIPMENT CONNECTION
	JUNCTION OR CONNECTION BOX
	STARTER OR LIGHTING CONTACTOR
	DISCONNECT SWITCH
	MANHOLE
	HANDHOLE
	KEYED NOTE. NUMBER MATCHES NOTE NUMBER
	TOGGLE SWITCH, WALL MOUNTED, SINGLE POLE SINGLE THROW. MOUNTED 54 IN. AFF. UNLESS OTHERWISE NOTED.
	TOGGLE SWITCH, WALL MOUNTED, FOUR WAY. MOUNTED 54 IN. AFF. UNLESS OTHERWISE NOTED.
	SWITCH MOTOR RATED WITH TERMINAL OVERLOADS
	OCCUPANCY SENSOR
	TERMINAL BOARD
	TELEPHONE OUTLET, PRIVATE. MOUNTED 12 IN. AFF.
	DATA OUTLET, SURFACED MOUNTED
	MOTOR LOAD, NUMBER INDICATES HORSEPOWER
	POLE
	TRANSFORMER , DRY TYPE, KVA RATING MAY BE DISPLAYED NEXT TO SYMBOL
	ANTENNA
	HOMERUN, LETTERS INDICATE PANELBOARD, NUMBERS INDICATE CIRCUIT NUMBER IN PANELBOARD
	CONDUIT CAPPED FOR FUTURE USE
	CONDUIT GOING DOWN
	CONDUIT GOING UP
	CONDUIT ABOVE GROUND
	CONDUIT RUN UNDERGROUND OR CONCEALED
	CONDUIT RUN BELOW CONCRETE
	LIQUID TIGHT FLEXIBLE CONDUIT
	SURFACE MOUNT
	120V RECEPTACLE FLUSH MOUNTED
	120V RECEPTACLE SURFACE MOUNTED
	120V QUAD RECEPTACLE FLUSH MOUNTED
	120V QUAD RECEPTACLE SURFACE MOUNTED
	208V RECEPTACLE FLUSH MOUNTED
	208V RECEPTACLE SURFACE MOUNTED
	WELDING OUTLET
	THERMOSTAT
	PANELBOARD FLUSH MOUNTED
	PANELBOARD SURFACE MOUNTED
	NORTH ARROW
	TORQUE SWITCH
	SOLENOID SWITCH
	LIMIT SWITCH
	AMMETER SWITCH
	VOLTMETER SWITCH
	PRESSURE SWITCH
	LIGHTING CONTACTOR
	PHOTOCELL

GROUNDING LEGEND	
	A=GROUNDING RECEPTACLE; B=GROUND TEST WELL
	BARE COPPER GROUNDING CONDUCTOR
	GROUNDING CONNECTION
	COPPER CLAD GROUND ROD
	MOISTURIZING PORT

	GROUND CONNECTION		WYE WYE TRANSFORMER CONNECTION
	NORMALLY OPEN RELAY OR CONTACTOR CONTACTS		DELTA DELTA TRANSFORMER CONNECTION
	NORMALLY CLOSED RELAY OR CONTACTOR CONTACTS		CT #### CURRENT TRANSFORMER WITH RATIO SHOWN
	CONDUCTOR CONNECTION		AIT ANALYTICAL TRANSMITTER
	CIRCUIT BREAKER, MOLDED CASE, TRIP CURRENT AND QUANTITY OF POLES (P) SHOWN NEXT TO SYMBOL		FS FLOW OR FLOAT SWITCH
	DISCONNECT SWITCH NON-FUSED, LOAD BREAK, CONTINUOUS CURRENT RATING, QUANTITY OF POLES (P) SHOWN NEXT TO SYMBOL		LT LEVEL TRANSMITTER
	DISCONNECT SWITCH FUSED, LOAD BREAK, CONTINUOUS CURRENT RATING, QUANTITY OF POLES (P), AND FUSE RATING SHOWN NEXT TO SYMBOL		PT PRESSURE TRANSMITTER
	FUSE, RATING SHOWN NEXT TO SYMBOL		SV SOLENOID VALVE
	MOTOR STARTER THERMAL OVERLOAD PROTECTOR		MOV MOTOR OPERATED VALVE
	CONTACTOR OR RELAY COIL, LETTERS AND NUMBERS MATCH CONTACTS CONTROLLED		ETM ELAPSED TIME METER
	LIMIT SWITCH NORMALLY CLOSED		TD 0-10 MIN. TOE TIME DELAY RELAY, TIMES OUT AFTER ENERGIZATION, ADJUSTABLE TIME DELAY TIME INDICATED NEXT TO SYMBOL.
	LIMIT SWITCH NORMALLY OPEN		TD 0-10 MIN. TOD TIME DELAY RELAY, TIMES OUT AFTER DE-ENERGIZATION, ADJUSTABLE TIME DELAY TIME INDICATED NEXT TO SYMBOL.
	MOTOR OPERATED VALVE GEARED LIMIT SWITCH		XXX### CONDUIT TAG
	PRESSURE SWITCH NORMALLY CLOSED OPEN ON INCREASING PRESSURE		? PILOT LIGHT. R=RED, B=BLUE, G=GREEN, A=AMBER, Y=YELLOW
	PRESSURE SWITCH NORMALLY OPEN CLOSSES ON INCREASING PRESSURE		480V 120V CONTROL POWER TRANSFORMER. PRIMARY AND SECONDARY VOLTAGE INDICATED
	LEVEL SWITCH NORMALLY CLOSED OPEN ON INCREASING LEVEL		PT CPT = CONTROLS POWER/INSTRUMENT TRANSFORMER
	LEVEL SWITCH NORMALLY OPEN CLOSSES ON INCREASING LEVEL		15 KVA 480V 120/240V PT = POWER TRANSFORMER. VOLTAGE AND KVA RATING AS SHOWN
	FLOW SWITCH NORMALLY CLOSED OPENS WITH FLOW		TV TELEVISION CAMERA
	FLOW SWITCH NORMALLY OPEN CLOSSES ON PRESENCE OF FLOW		TQ TORQUE SWITCH
	SPACEHEATER		A AMMETER
	PHASE FAILURE RELAY		V VOLTMETER
	MAINTAINED CONTACT START/STOP PUSHBUTTON		LA LIGHTING ARRESTOR
	MAINTAINED CONTACT HAND-OFF-AUTO SELECTOR SWITCH		CAP SURGE CAPACITOR
	NORMALLY CLOSED MOMENTARY CONTACT PUSHBUTTON		MCP SIZE 1 FVNR MOTOR STARTER FVNR = FULL VOLTAGE NON-REVERSING FVR = FULL VOLTAGE REVERSING MCP = MOTOR CIRCUIT PROTECTOR RVNR = REDUCED VOLTAGE NON-REVERSING RVSS = REDUCED VOLTAGE SOFT START SIZE = NEMA STARTER SIZE
	NORMALLY OPEN MOMENTARY CONTACT PUSHBUTTON		

LIGHTING FIXTURE LEGEND					
	LED STRIP LIGHT; LETTER IN OR BESIDE FIXTURE IDENTIFIES IN FIXTURE SCHEDULE		POLE MOUNTED LED LUMINAIRE. SEE SCHEDULE OR NOTES FOR FIXTURE TYPE. ORIENT FIXTURE FOR CUT-OFF TOWARDS AREA TO BE LIT. ORIENT HOUSE SHIELD TOWARDS BUILDING. SEE DETAILS FOR POLE BASE. PROVIDE POLE CASE GROUND ROD.		
	LED STRIP LIGHT WITH BATTERY BACKUP; LETTER IN OR BESIDE FIXTURE IDENTIFIES IN FIXTURE SCHEDULE				
	LED FIXTURE, SURFACE OR SUSPENDED, CEILING MOUNTED				EMERGENCY LED LIGHT FIXTURE, SELF CONTAINED, BATTERY OPERATED
	LED FIXTURE, STANCHION MOUNTED				PAR LAMP HOLDER. NUMBER OF TRIANGLES INDICATE NUMBER OF FIXTURES.
	LED FIXTURE, WALL MOUNTED				POLE MOUNTED FLOOR LIGHT. NUMBER OF TRIANGLES INDICATE NUMBER OF FIXTURES. ARROW DENOTES FLOODING AND DIRECTION POLE FOLDS DOWN.
	LED LIGHTED EXIT SIGN; LETTER IN OR BESIDE FIXTURE IDENTIFIES IN FIXTURE SCHEDULE				
	REMOTE EMERGENCY LIGHTS				

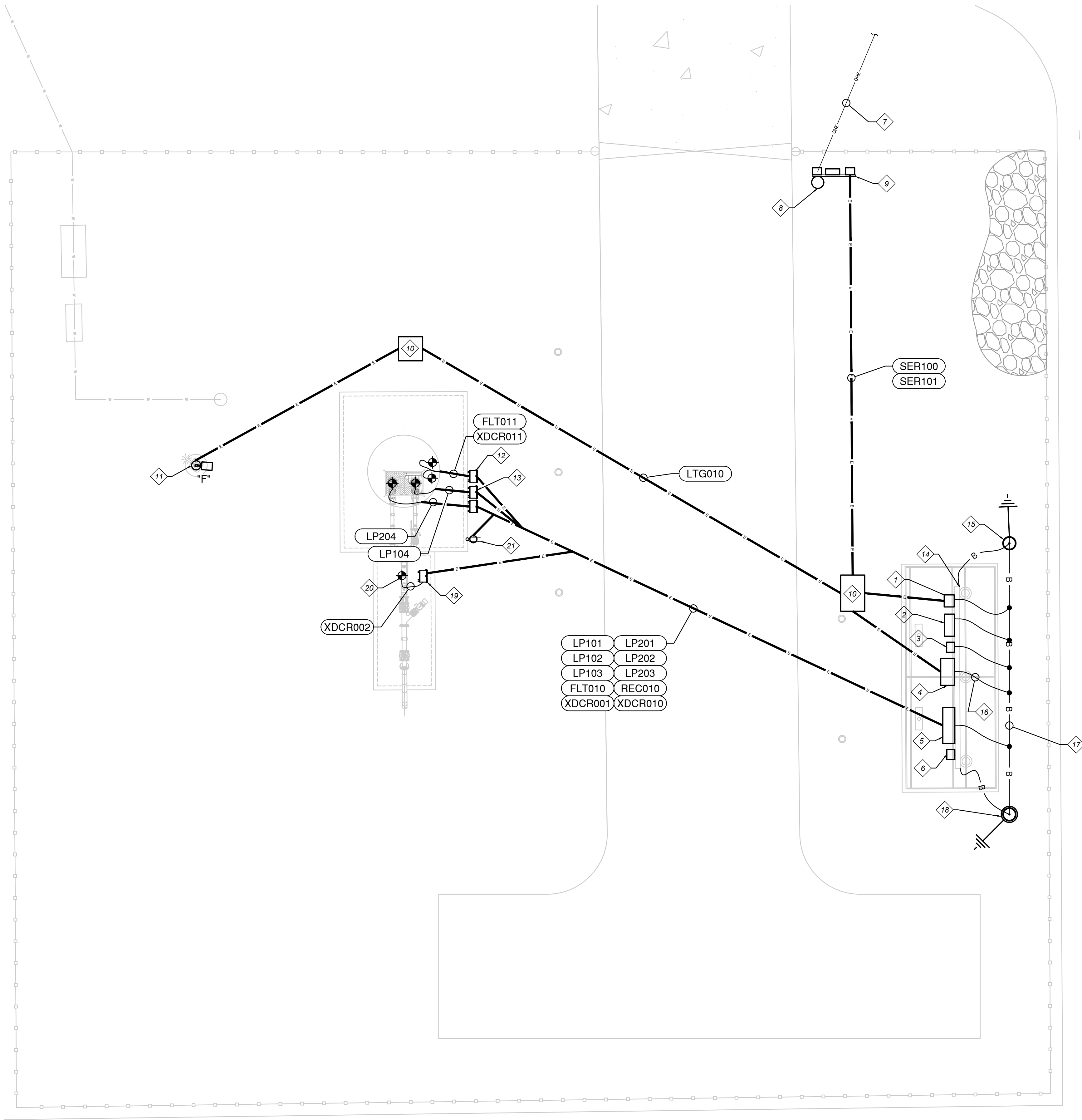
1/C	ONE CONDUCTOR	MCC	MOTOR CONTROL CENTER
3/C	THREE CONDUCTOR	MFR	MANUFACTURER
A	AMPERES OR TRIP AMPERES	MIN.	MINIMUM
AC	ALTERNATING CURRENT	MPR	MOTOR PROTECTION RELAY
A/C	AIR CONDITIONING	MTD	MOUNTED
AFF	ABOVE FINISHED FLOOR	MTG	MOUNTING
AFG	ABOVE FINISHED GRADE	MRCT	MULTI-RATIO CURRENT TRANSFORMER
AIC	SYMMETRICAL AMPERES INTERRUPTING CAPACITY	MV	MERCURY VAPOR
		N.C.	NORMALLY CLOSED
BLDG	BUILDING	NEC	NATIONAL ELECTRICAL CODE
BKR	BREAKER	NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
C	CONDUIT		
CAP	CAPACITOR	NEUT.	NEUTRAL
CKT	CIRCUIT	N.O.	NORMALLY OPEN
CONT'D	CONTINUED	N.T.S.	NOT TO SCALE
CPT	CONTROL POWER TRANSFORMER	OC	ON CENTER
CT	CURRENT TRNASFORMER	OH	OVERHEAD
CU	COPPER	P	POLE
DBL	DOUBLE	PC	PHOTOCELL
DISC SW.	DISCONNECT SWITCH	PH	PHASE
DC	DIRECT CURRENT	PNL	PANEL
EMER.	EMERGENCY	PRI	PRIMARY
EMT	ELECTRICAL METALLIC TUBING	PVC	POLYVINYL CHLORIDE
ENCL.	ENCLOSURE	REQ'D	REQUIRED
EP	EXPLOSION PROOF	SCH	SCHEDULE
EQUIP.	EQUIPMENT	SEC	SECONDARY
FS	FLOAT SWITCH	S/N	SOLID NEUTRAL
G	GROUND WIRE	SPACE	SPACE(S) ONLY - NO BREAKER OR DEVICE
GALV.	GALVANIZED		
GEN	GENERATOR	SPARE	SPARE BREAKER OR DEVICE
GFI	GROUND FAULT INTERRUPTER CIRCUIT	SPECS	SPECIFICATIONS
GND	GROUND	S.D. BARE	SOFT DRAWN BARE
HDG	HOT DIPPED GALVANIZED	SS HDWE	STAINLESS STEEL HARDWARE
HPS	HIGH PRESSURE SODIUM	SWBD	SWITCHBOARD
HT	HEIGHT	SWGR	SWITCHGEAR
HZ	HERTZ	TB	TERMINAL BLOCK
INST.	INSTRUMENT	TYP.	TYPICAL
KV	KILOVOLTS	UL	UNDERWRITERS LABORATORIES
KVA	KILOVOLTS AMPERES	V	VOLTS
KWH	KILOWATT HOURS	VA	VOLT AMPERES
LA	LIGHTNING ARRESTOR	W	WATTS
LPR	LIGHTING PROTECTION RELAY	W/	WITH
L-L	LINE TO LINE	W/O	WITHOUT
L-N	LINE TO NEUTRAL	WP	WEATHERPROOF
		XFMR	TRANSFORMER

LEGEND & GENERAL NOTES:

1. BRANCH CIRCUIT NUMBERS MAY BE SHOWN NEXT TO SYMBOLS IN MULTIWIRE CIRCUITS.
2. SYMBOL SIZE DOES NOT IMPLY EQUIPMENT SIZE UNLESS OTHERWISE NOTED.
3. LOWER CASE LETTERS NEXT TO SYMBOLS INDICATE FIXTURE(S) CONTROLLED BY THE SWITCH DISPLAYING THE SAME LETTER.
4. THIS IS A STANDARD LEGEND LIST ALL SYMBOLS MAY NOT BE USED.
5. INSTALLATION SHALL BE PER LATEST VERSION OF NATIONAL ELECTRICAL CODE, SAWS, STANDARDS, AND ALL APPLICABLE LOCAL CODES. ORDINANCES. NOT ALL CODE AND STANDARD REQUIREMENTS MAY BE SHOWN ON PLANS. CONTRACTOR SHALL ADHERE TO CODES AND STANDARDS REGARDLESS OF BEING SHOWN ON PLANS OR SPECIFICATIONS IN DETAILED FASHION.



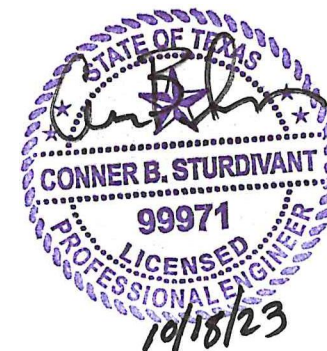
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ELECTRICAL SITE PLAN
SCALE: 1" = 5'-0"

KEYED NOTES:

- 1 600V, 100A, 3P, MANUAL TRANSFER SWITCH IN NEMA 4X STAINLESS STEEL ENCL. PROVIDE WITH COLOR CODED CAMLOCK CONNECTORS FOR PORTABLE GENERATOR CONNECTIONS.
- 2 480Y/277V, 125A, 3Ø, 4W, 22 KAIC MIN. PANELBOARD IN NEMA 4X STAINLESS STEEL ENCL.
- 3 TYPE 2 SPD.
- 4 480V, 15 KVA COMBINATION POWER PANEL/TRANSFORMER NEMA 3R, STAINLESS STEEL 316.
- 5 LIFT PUMPS CONTROL PANEL.
- 6 CELLULAR PHONE DIALER.
- 7 OVERHEAD PRIMARY BY UTILITY PROVIDER.
- 8 UTILITY POLE PER UTILITY COMPANY REQUIREMENTS.
- 9 UTILITY DISCONNECT/METER RACK. RE: ELECTRICAL SERVICE AND EQUIPMENT RACK LAYOUT DETAIL.
- 10 NEMA-SIZED PULL BOX (HANDHOLE).
- 11 AREA LIGHT FIXTURE. RE: AREA LIGHT POLE DETAIL.
- 12 LIFT STATION FLOATS/TRANSDUCER J-BOX.
- 13 LIFT PUMP MOTOR J-BOX (TYP).
- 14 #6 SOFT DRAWN, BARE COPPER TAIL MECHANICALLY-CONNECTED TO EQUIPMENT RACK (TYP).
- 15 3/4"Ø X 10' COPPER CLAD GROUND ROD (TYP.), EXOTHERMICALLY WELDED TO GROUND CABLE BURIED MIN. 30" BELOW GRADE.
- 16 #6 SOFT DRAWN, BARE COPPER TO EQUIPMENT GROUND BUS (TYP).
- 17 #4/0 SOFT DRAWN, BARE COPPER CABLE BURIED MIN. 30" BELOW GRADE. EXOTHERMICALLY WELD ALL BELOW GRADE CONNECTIONS EXCEPT AT TEST WELLS.
- 18 GROUND TEST WELL. RE: GROUND TEST WELL ARRANGEMENT DETAIL.
- 19 FORCE MAIN FLOW METER CONTROLLER.
- 20 FORCE MAIN FLOWMETER.
- 21 POST-MOUNTED, GFCI DUPLEX RECEPTACLE WITH IN-USE COVER.



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UTILITY
ENGINEERING
GROUP PLLC
Texas Engineering Firm #2372

PRESA MOBILE HOME PARK
SAN ANTONIO, TEXAS
ELECTRICAL SITE PLAN

JOB NO.: 314-39-03
DATE: October 18, 2023
DRAWN: C.S. CHECKED: J.C.
SHEET NUMBER:

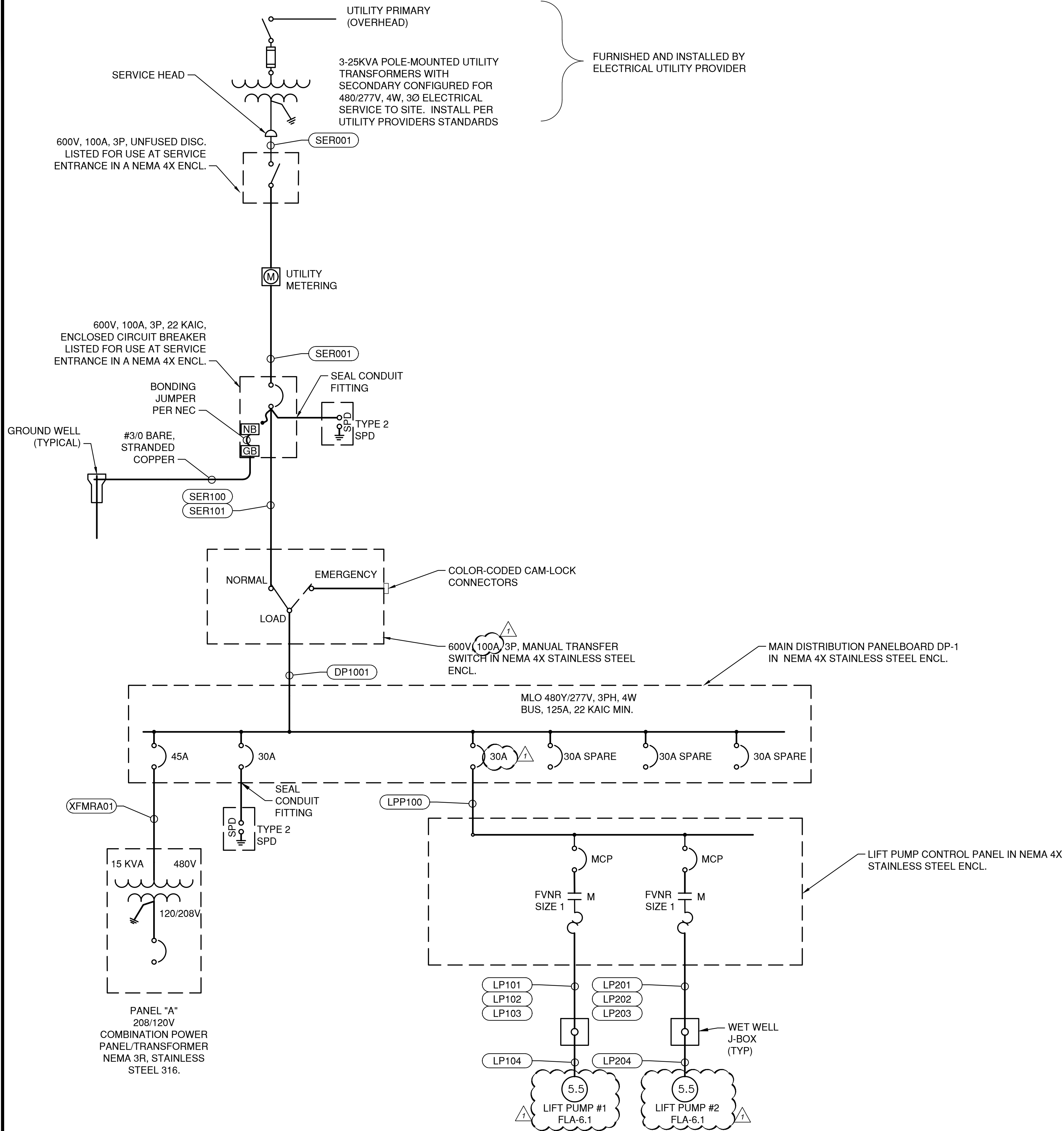
E-02

KFW
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ISSUE DATE

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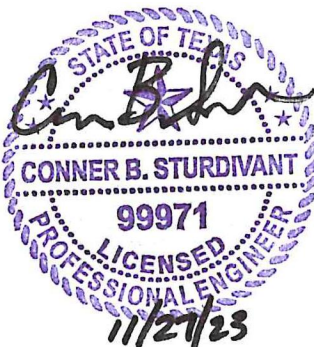


ONE-LINE DIAGRAM

ELECTRICAL LOAD ANALYSIS				
LOAD		AMPS		
		PH A	PH B	PH C
LIFT PUMP NO. 1	10 HP	6	6	6
LIFT PUMP NO. 2	10 HP	6	6	6
PANEL "A"	15 KVA	18	18	18
25% OF LARGEST MOTOR		2	2	2
TOTAL LOAD		32	32	32
SERVICE AMPACITY @ 277/480V, 3PH, 4W		100	100	100

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CABLE AND CONDUIT SCHEDULE							
CABLE/CONDUIT TAG	CONDUIT QUANTITY	CONDUIT SIZE	FROM	TO	CONDUCTOR (EACH CONDUIT)	CABLE TYPE	DESCRIPTION
AD001	1	1 & 1/2 IN.	LIFT PUMPS CONTROL PANEL	CELLULAR AUTODIALER	20#14 + 10 SPARE	XHHW-2	PHASE FAIL, HIGH LEVEL ALARM, CONTROL POWER FAIL, PUMP 1 HIGH TEMP., PUMP 1 SEAL LEAK, PUMP 1 OVERLOAD, PUMP 2 HIGH TEMP., PUMP 2 SEAL LEAK, PUMP 2 OVERLOAD, PLUS 10 SPARE.
DP1001	1	2 IN.	MANUAL TRANSFER SWITCH	PANEL "DP-1"	3-#1 + #6 GND	XHHW-2	PANEL "DP-1" FEEDER
FLT010	1	1 & 1/2 IN.	LIFT PUMPS CONTROL PANEL	FLOATS J- BOX	10-#12	XHHW-2	FLOATS
FLT011	1	1 & 1/2 IN.	FLOATS/TRANSDUCER TERMINAL BOX	WET WELL	(5) MANUFACTURER'S CABLE	-	FLOATS
LPP100	1	1 IN.	PANEL "DP-1"	LIFT PUMPS CONTROL PANEL	3-#8 + #10 GND	XHHW-2	LIFT PUMP PANEL FEEDER
LP101	1	1 IN.	LIFT PUMPS CONTROL PANEL	LIFT PUMP NO. 1 J-BOX	3-#12 + #12 GND	XHHW-2	LIFT PUMP NO. 1 FEEDER
LP102	1	1 IN.	LIFT PUMPS CONTROL PANEL	LIFT PUMP NO. 1 J-BOX	4#14	-	LIFT PUMP NO. 1 CONTROLS
LP103	1	1 IN.	LIFT PUMPS CONTROL PANEL	LIFT PUMP NO. 1 J-BOX	-	PULL STRING	SPARE
LP104	1	2 & 1/2 IN.	LIFT PUMP NO. 1 J-BOX	LIFT PUMP NO. 1	MANUFACTURER'S CABLES	-	LIFT PUMP NO. 1 CABLES
LP201	1	1 IN.	LIFT PUMPS CONTROL PANEL	LIFT PUMP NO. 2 J-BOX	3-#12 + #12 GND	XHHW-2	LIFT PUMP NO. 2 FEEDER
LP202	1	1 IN.	LIFT PUMPS CONTROL PANEL	LIFT PUMP NO. 2 J-BOX	1 PR., 16 GA. BELDEN #8760	-	LIFT PUMP NO. 2 CONTROLS
LP203	1	1 IN.	LIFT PUMPS CONTROL PANEL	LIFT PUMP NO. 2 J-BOX	-	PULL STRING	SPARE
LP204	1	2 & 1/2 IN.	LIFT PUMP NO. 2 J-BOX	LIFT PUMP NO. 2	MANUFACTURER'S CABLES	-	LIFT PUMP NO. 2 CABLES
LTG010	1	1 IN.	PANEL "A"	AREA LIGHT	2-#12 + #12 GND	XHHW-2	AREA LIGHT
REC010	1	1 IN.	PANEL "A"	WET WELL CONVENIENCE RECEPTACLE	2-#12 + #12 GND	XHHW-2	WET WELL CONVENIENCE RECEPTACLE
SER001	1	2 IN.	SERVICE ENTRANCE	SERVICE ENTRANCE DISCONNECT	4-#1	XHHW-2	SERVICE ENTRANCE
SER100	1	2 IN.	SERVICE ENTRANCE DISCONNECT	MANUAL TRANSFER SWITCH	3-#1 + #6 GND	XHHW-2	SERVICE ENTRANCE
SER101	1	2 IN.	SERVICE ENTRANCE DISCONNECT	MANUAL TRANSFER SWITCH	PULL STRING	-	SPARE
XDCR001	1	3/4 IN.	PANEL "A"	FLOW METER CONTROLLER	2-#12 + #12 GND	XHHW-2	FLOW METER CONTROLLER FEEDER
XDCR002	1	3/4 IN.	FLOW METER CONTROLLER	FLOW METER	MANUFACTURER'S CABLE	-	FLOW METER CABLES
XDCR010	1	1 & 1/2 IN.	LIFT PUMPS CONTROL PANEL	FLOATS/TRANSDUCER TERMINAL BOX	1 PR., 16 GA. BELDEN #8760	-	LEVEL TRANSMITTER TO PUMP CONTROL PANEL
XDCR011	1	1 & 1/2 IN.	FLOATS/TRANSDUCER TERMINAL BOX	STILLING WELL	MANUFACTURER'S CABLE	-	LEVEL INDICATOR PRESSURE TRANSDUCER TO LEVEL TRANSMITTER
XFMRA01	1	1 IN.	PANEL "DP-1"	PANEL "A"	3-#10 + 1 #10 GND	XHHW-2	PANEL "A" FEEDER



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LIGHTING FIXTURE SCHEDULE								
MARK	DESCRIPTION	VOLTAGE	VA	LAMP TYPE	MOUNTING	POLE DATA	MANUFACTURER	CATALOG FIXTURE NUMBER
A	VAPOR TITE	120	42	LED	SURFACE	-	LITHONIA OR APPROVED EQUAL	VAP 4000LM FST MD MVOLT 40K 80CRI
D	GENERAL ALARM LIGHT	120	11	LED	STANCHION	-	HUBBELL	VWGL-1 W/RED GLOBE
F	AREA LIGHT	120	138	LED	POLE	RE: AREA LIGHT POLE DETAIL	LITHONIA OR APPROVED EQUAL	DSX1LED-P5-40K-T2S-120-SPA-PER-SF

PANEL DP-1

PHASE BUS RATING 125A

WIRE SIZE #1

WITH:
☒ SOLID NEUTRAL & GROUND
☐ ISOLATED GROUND BUS
☐ 200% NEUTRAL

SERVICE VOLTAGE 480/277V

NEUTRAL BUS RATING 125A

NEU WIRE SIZE #1

NOTE: ADJ. CKTS. TO BAL. PNL.

MAIN BREAKER SIZE 100A

SHORT CIRCUIT RATING 22 KAIC

PHASE 3

LOCATION EQUIPMENT RACK

MOUNTING SURFACE (RACK)

CKT. DESCRIPTION	WIRE	BREAKER		VA/WATTS			CKT NO.	CKT NO.	VA/WATTS			BREAKER		WIRE	CKT. DESCRIPTION
		POLE	AMP	A	B	C			A	B	C	POLE	AMP		
SPD	#10	3	30	-			1	2	3380			3	30	#8	LIFT PUMPS CONTROL PANEL
					-		3	4	3380						
						-	5	6		3380					
PANEL "A"	#10	3	45	5000			7	8	-			-	-	-	SPARE
					5000		9	10		-					
						5000	11	12			-				
SPARE	-	3	30	-			13	14	-			-	-	-	SPARE
					-		15	16		-					
						-	17	18			-				
SPACE	-	-	-	-			19	20	-			-	-	-	SPACE
					-		21	22		-					
						-	23	24			-				
SPACE	-	-	-	-			25	26	-			-	-	-	SPACE
					-		27	28		-					
						-	29	30			-				
SPACE	-	-	-	-			31	32	-			-	-	-	SPACE
					-		33	34		-					
						-	35	36			-				
TOTAL PHASE A: 8380 VOLT-AMPS TOTAL PHASE B: 8380 VOLT-AMPS TOTAL PHASE C: 8380 VOLT-AMPS				TOTAL PHASE A CURRENT: 30 AMPS TOTAL PHASE B CURRENT: 30 AMPS TOTAL PHASE C CURRENT: 30 AMPS				TOTAL CONNECTED LOAD: 25140 VA							

PANEL A

PHASE BUS RATING -

WIRE SIZE #10

WITH:
☒ SOLID NEUTRAL & GROUND
☐ ISOLATED GROUND BUS
☐ 200% NEUTRAL

PRIMARY VOLTAGE 480V

NEUTRAL BUS RATING -

NEU WIRE SIZE -

NOTE: ADJ. CKTS. TO BAL. PNL.

SECONDARY VOLTAGE 208/120V

SHORT CIRCUIT RATING 18 KAIC

PHASE 3

LOCATION EQUIPMENT RACK

MOUNTING SURFACE(RACK)

CKT. DESCRIPTION	WIRE	BREAKER		VA/WATTS			CKT NO.	CKT NO.	VA/WATTS			BREAKER		WIRE	CKT. DESCRIPTION
		POLE	AMP	A	B	C			A	B	C	POLE	AMP		
CONV. RECEPTACLE	10	1	20	180			1	2	138			1	20	10	AREA LIGHT
LIFT PUMPS CONTROL CABINET	12	1	20		800		3	4		180		1	20	10	POST-MOUNTED RECEPTACLE
CANOPY LIGHTS	12	1	20			84	5	6			500	1	20	12	FLOW METER CONTROLLER
SPARE	-	1	20	-			7	8	-			1	20	-	SPARE
SPARE	-	1	20		-		9	10		-		1	20	-	SPARE
CELLULAR AUTODIALER	12	1	20			500	11	12			-	-	-	-	SPACE
SPARE	-	1	20	-			13	14	-			-	-	-	SPACE
SPACE	-	-	-		-		15	16		-		-	-	-	SPACE
SPACE	-	-	-			-	17	18			-	-	-	-	SPACE
SPACE	-	-	-	-			19	20	-			-	-	-	SPACE
SPACE	-	-	-		-		21	22		-		-	-	-	SPACE
SPACE	-	-	-			-	23	24			-	-	-	-	SPACE
TOTAL PHASE A: 318 VOLT-AMPS TOTAL PHASE B: 980 VOLT-AMPS TOTAL PHASE C: 1084 VOLT-AMPS				TOTAL PHASE A CURRENT: 3 AMPS TOTAL PHASE B CURRENT: 8 AMPS TOTAL PHASE C CURRENT: 9 AMPS				TOTAL CONNECTED LOAD: 2382 VA							

PANEL "A" IS A 15 KVA COMBINATION TRANSFORMER/PANELBOARD.



CLEARY
ZIMMERMANN

ENGINEERS

Firm No. F-9357 | ClearyZimmermann.com



JOB NO.: 314-39-03
DATE: November 27, 2023
DRAWN: C.S. CHECKED: J.C.
SHEET NUMBER:

E-05

UTILITY
ENGINEERING
GROUP PLLC

Professional Engineer
Conner B. Sturdivant
License No. 99971
State of Texas

Professional Engineer
J.D. Corniers
License No. 114501
State of Texas

REVISIONS
PUMP HP REVISIONS 11/27/23

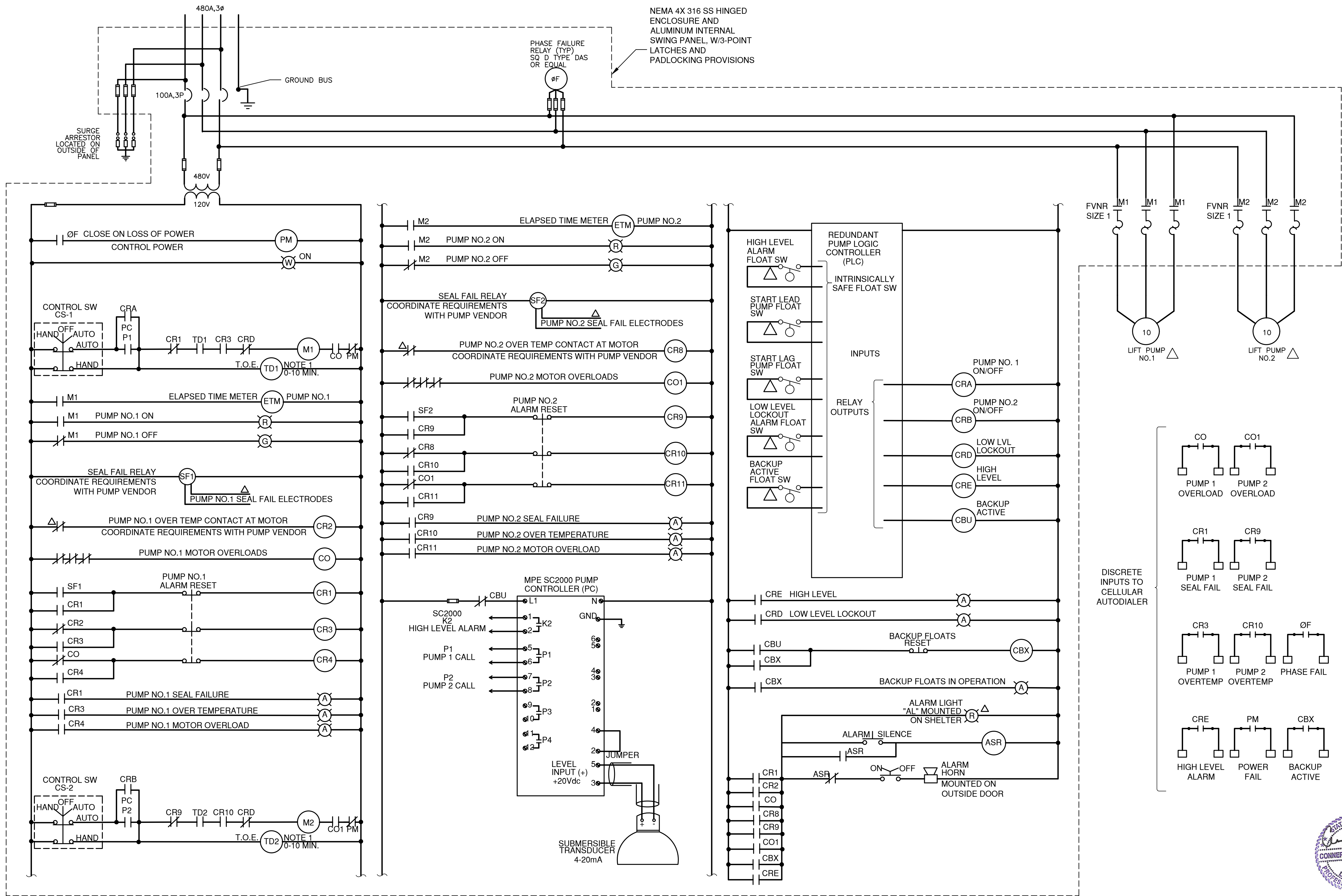
ISSUE DATE

KZ

ENGINEERS + SURVEYING

3421 Passanes Pkwy, Suite 200, San Antonio, TX 78231
Phone #: (210) 979-8444 • Fax #: (210) 979-8441
TBPE Firm #: 9513 • TBPLS Firm #: 1012300

Date: Oct 18, 2023 9:27am User: D. Conners
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LIFT PUMP CONTROL PANEL SCHEMATIC

NOTES:

△ - DENOTES EQUIPMENT/DEVICE IS REMOTE FROM PANEL



PRESA MOBILE HOME PARK
SAN ANTONIO, TEXAS
PUMP CONTROLS
SCHEMATIC DIAGRAM

JOB NO.: 314-39-03
DATE: October 18, 2023
DRAWN: C.S. CHECKED: J.C.
SHEET NUMBER:

E-06



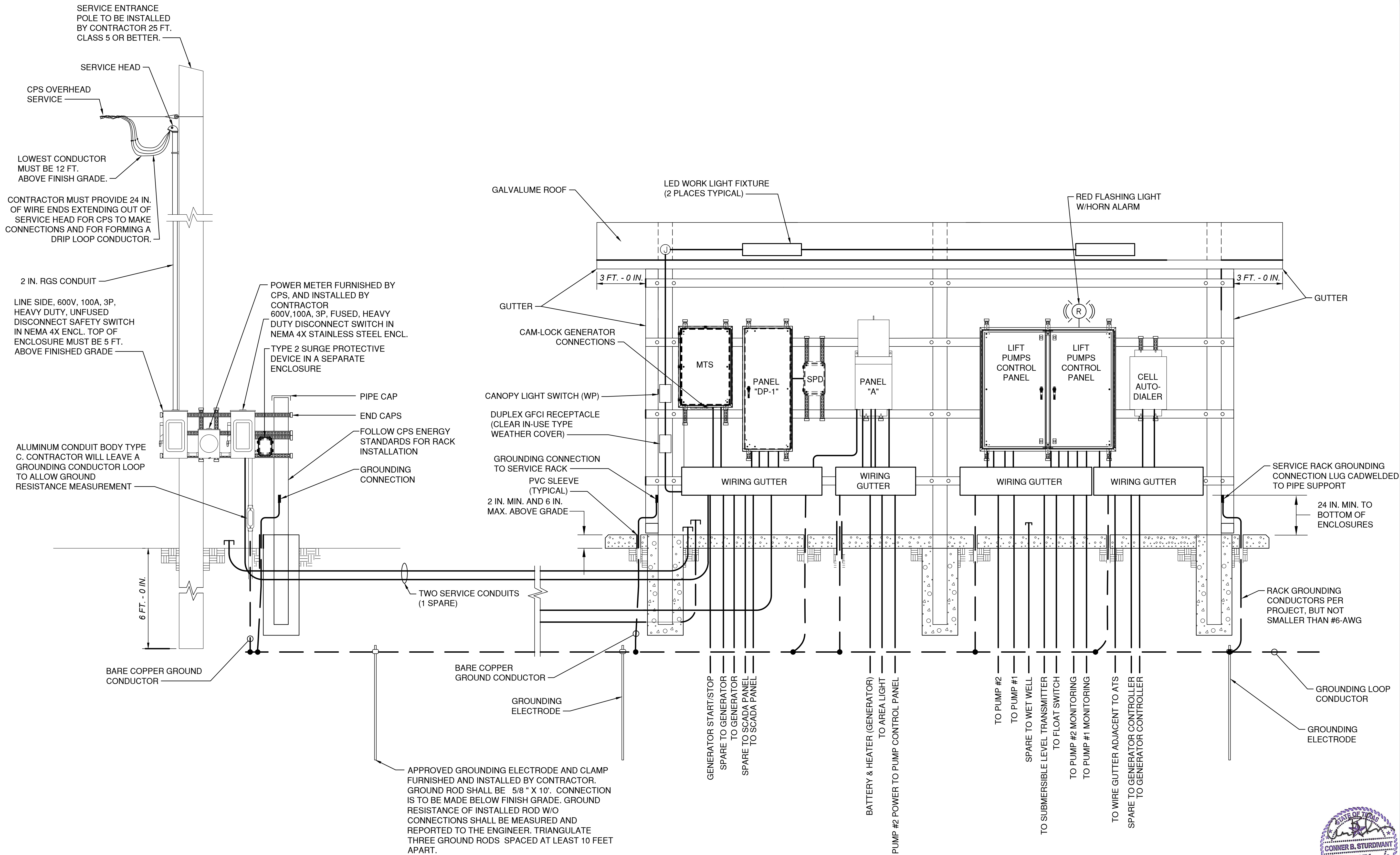
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ISSUE DATE

KFW
ENGINEERS + SURVEYING
3421 Passanes Pkwy, Suite 200, San Antonio, TX 78231
Phone #: (210) 979-8444 • Fax #: (210) 979-8441
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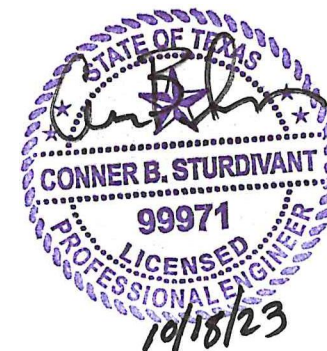
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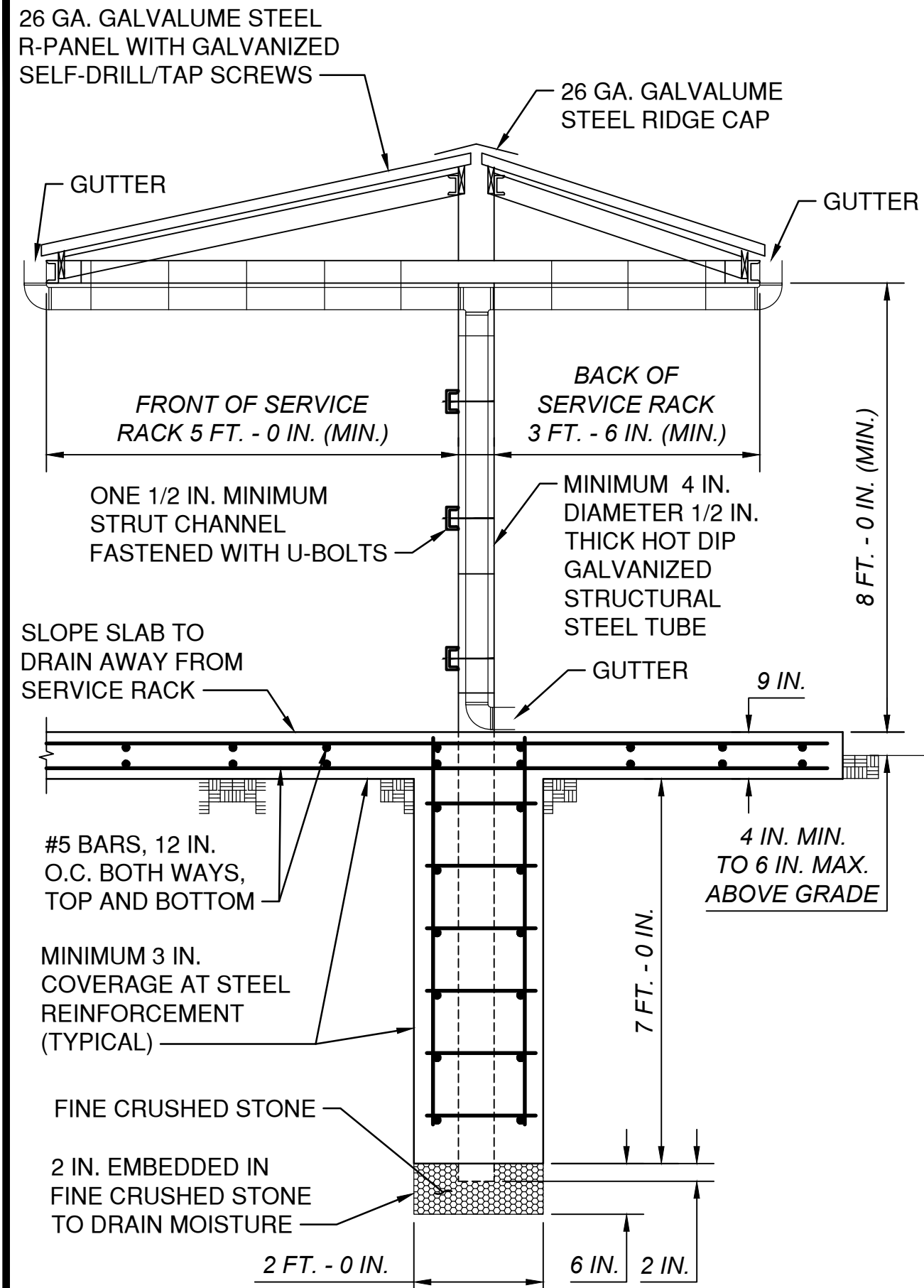
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ELECTRICAL SERVICE AND EQUIPMENT RACK LAYOUT DETAIL

N.T.S.

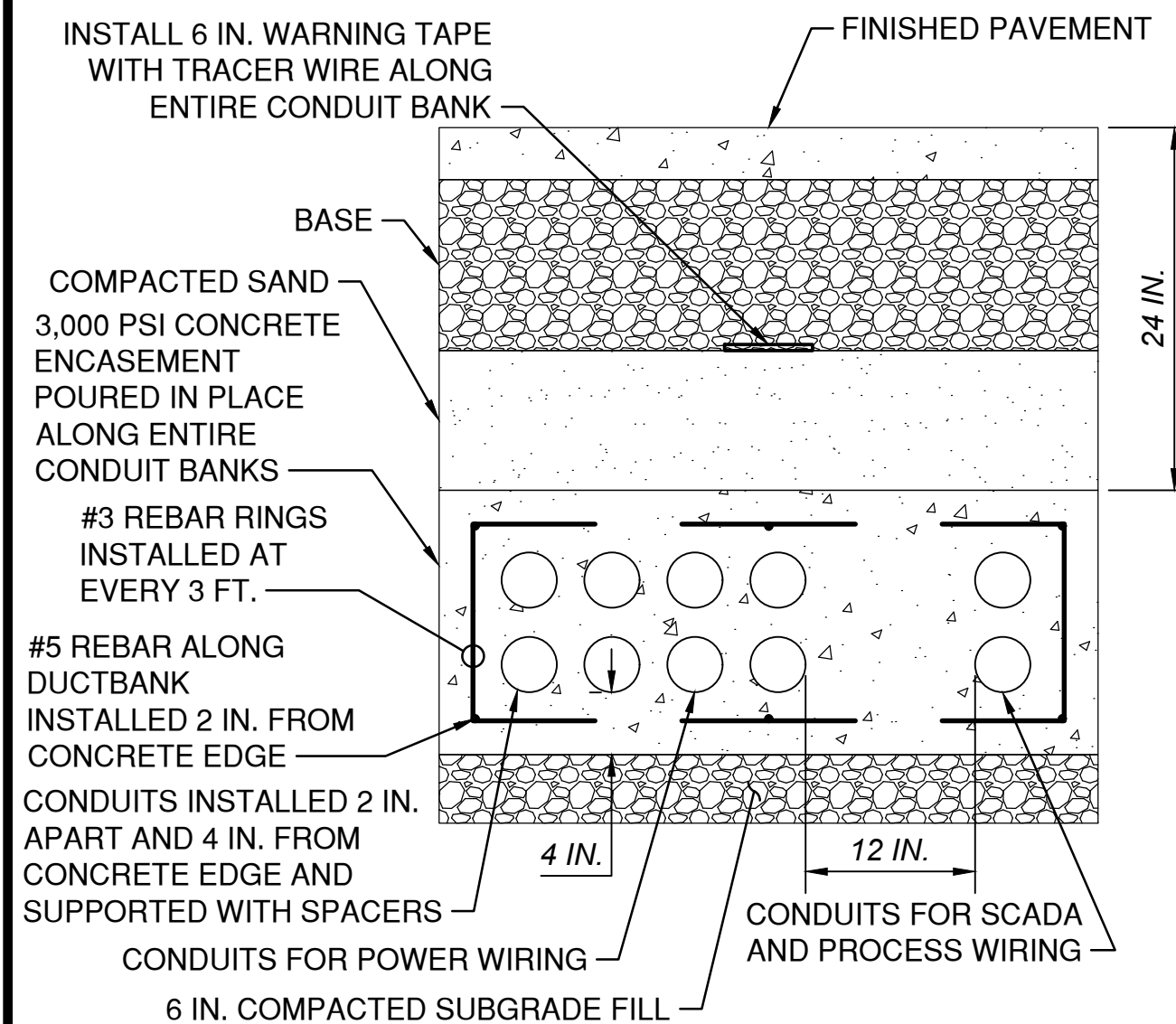




- NOTES:
- DESIGN ENGINEER TO VERIFY SOIL PROPERTIES IN ORDER TO DESIGN FOUNDATION OF CANOPY PROPERLY.
 - ALL STRUCTURAL MEMBERS OF CANOPY SHALL BE SOLIDLY WELDED.
 - INSTALL GUTTERS TO DRAIN STORM WATER.
 - SERVICE RACK STRUT CHANNEL AND ALL FASTENERS SHALL BE STAINLESS STEEL 316.

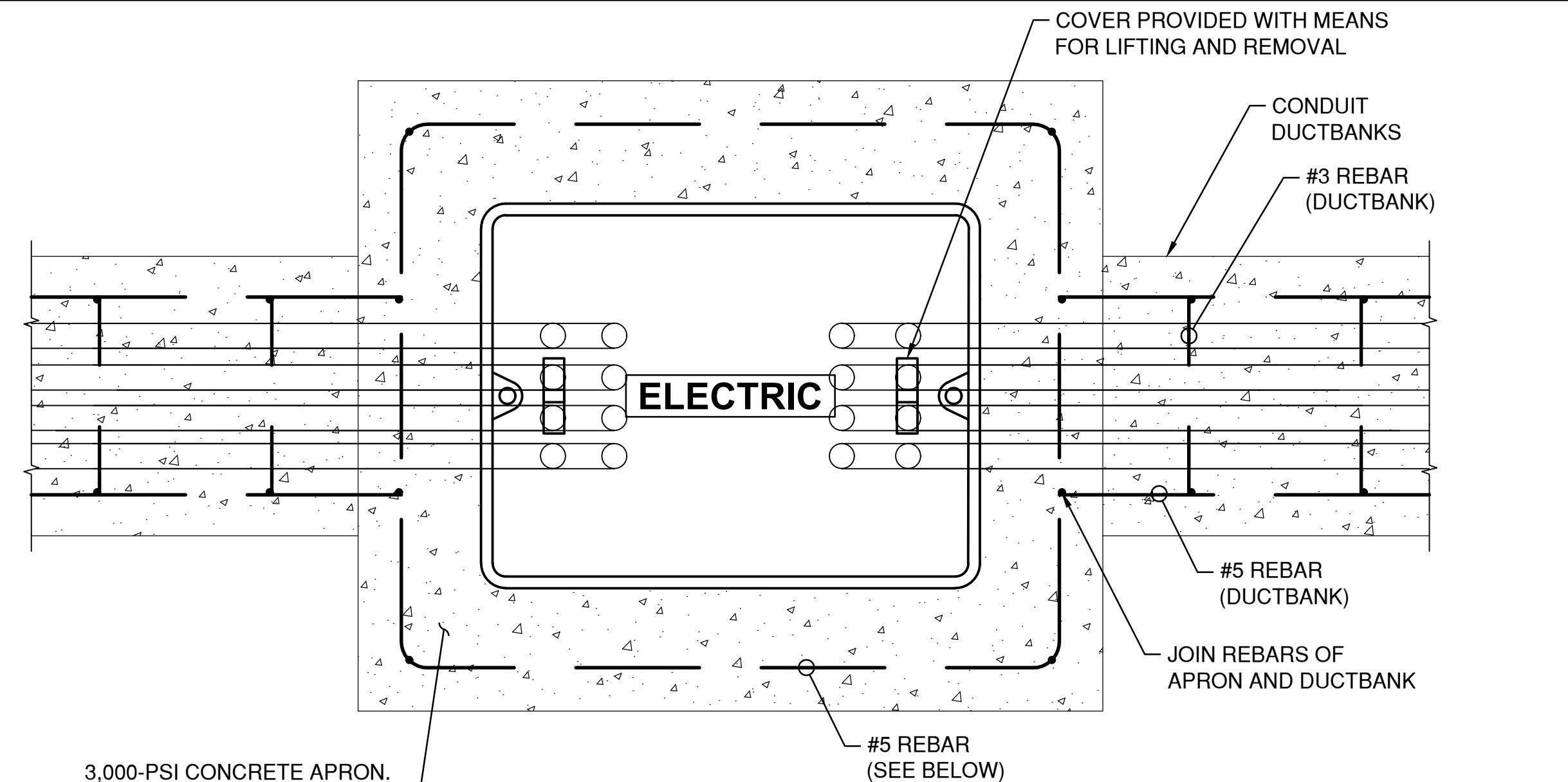
TYPICAL ELECTRICAL SERVICE RACK SIDE VIEW DETAIL

N.T.S.

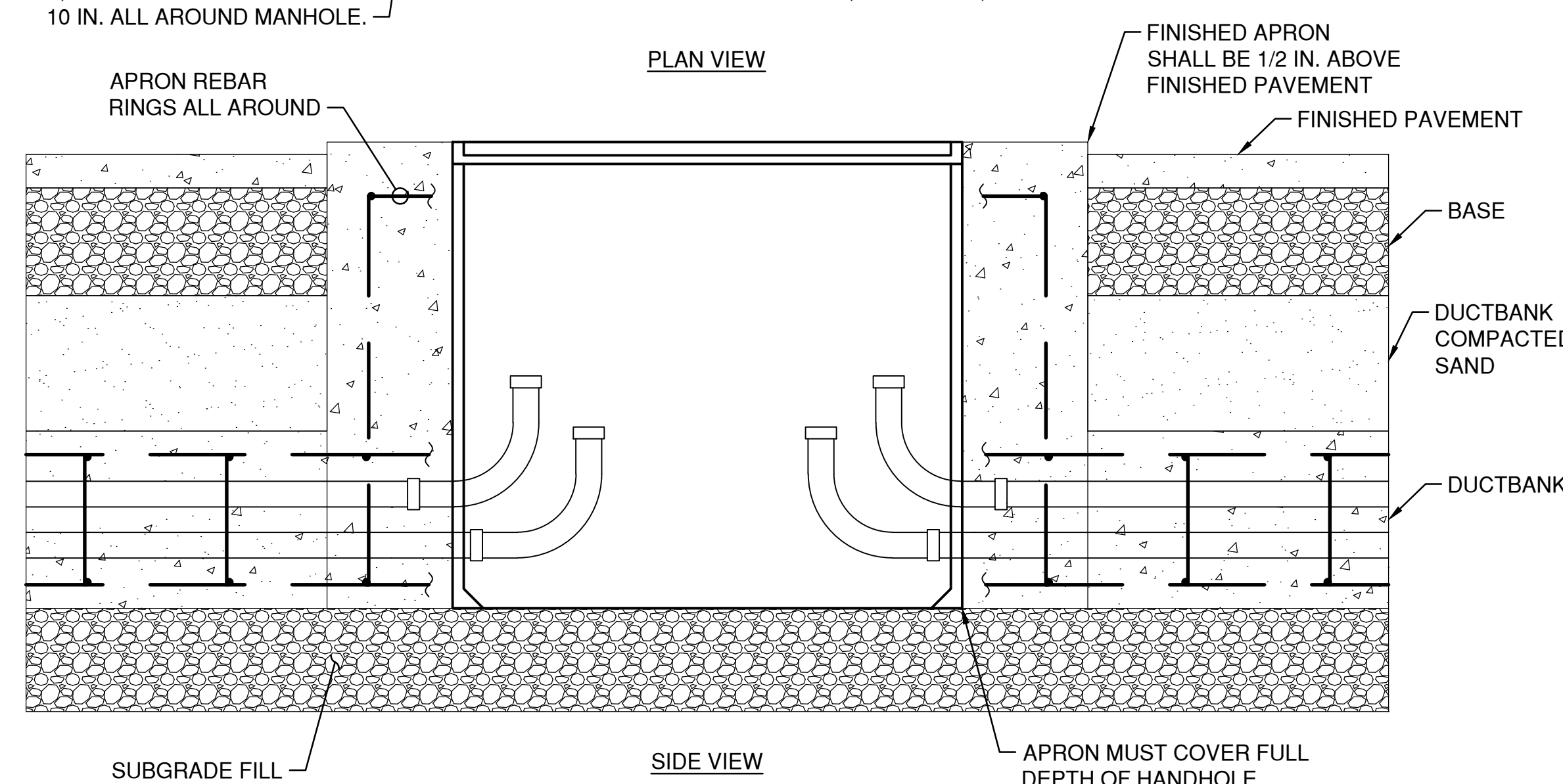


CONDUIT DUCTBANK DETAIL

N.T.S.



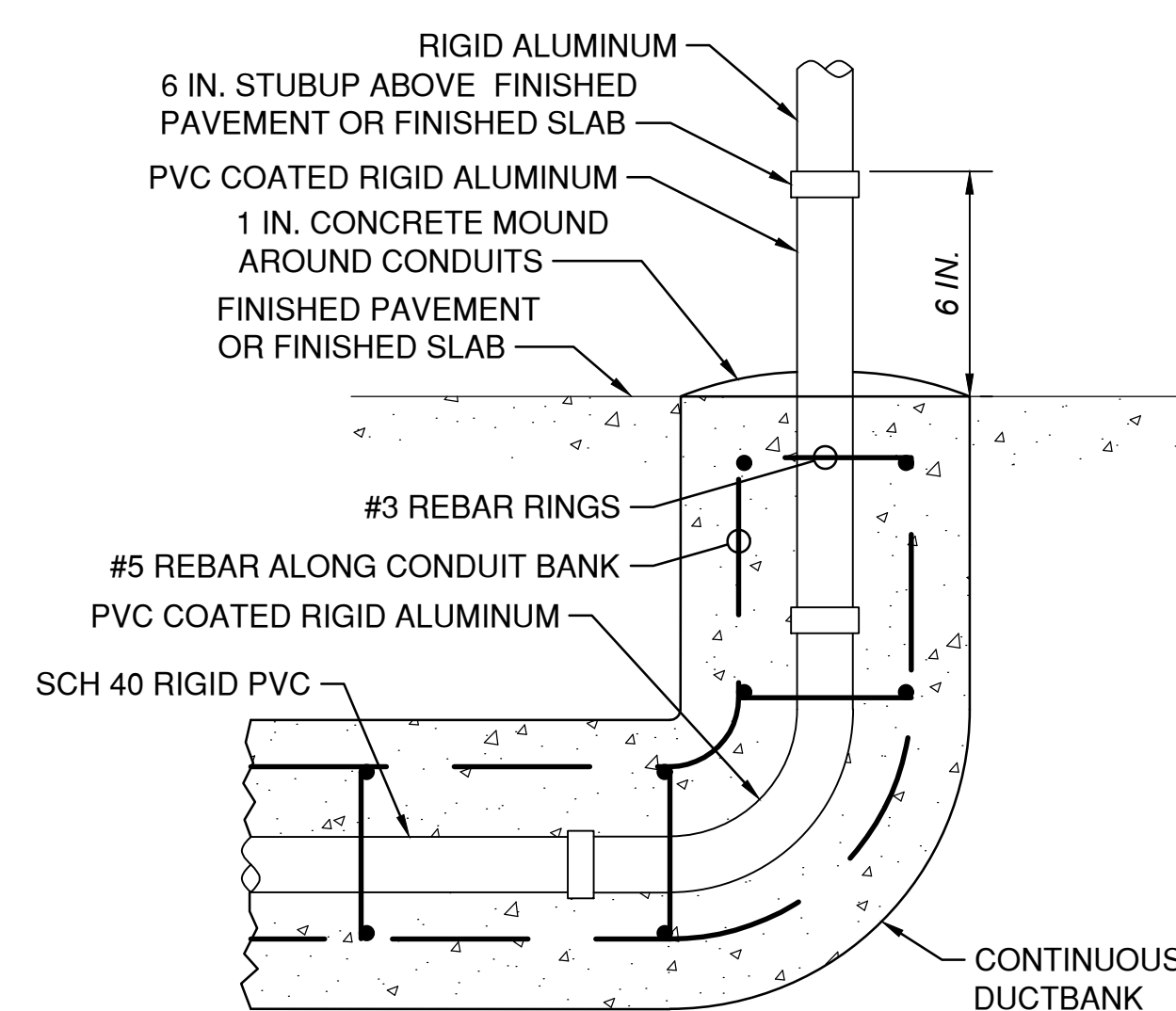
PLAN VIEW



SIDE VIEW

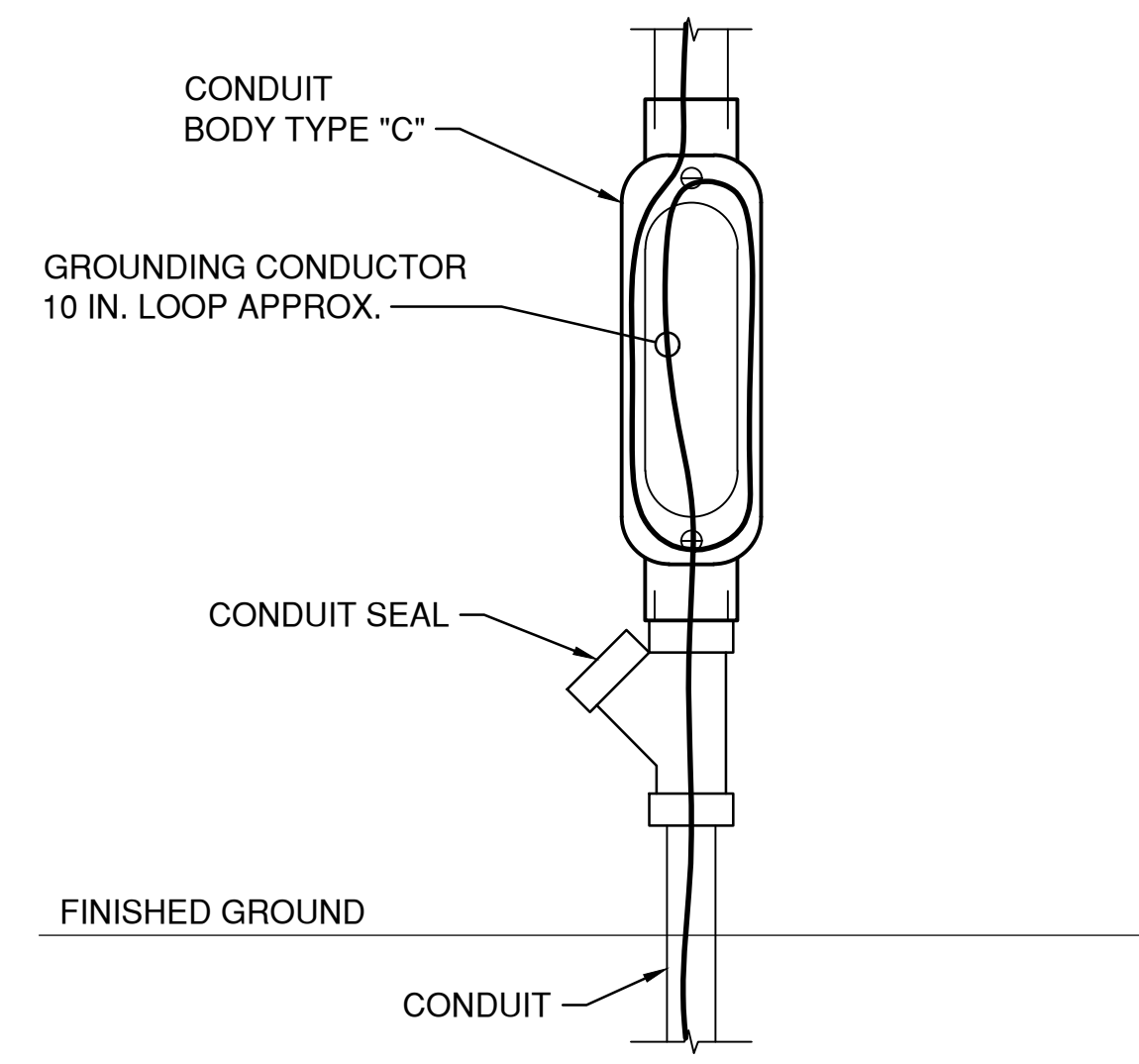
HANDHOLE INSTALLATION DETAIL

N.T.S.



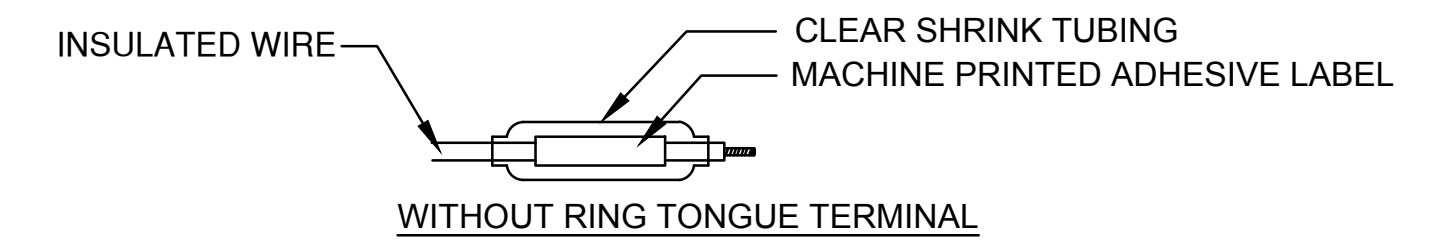
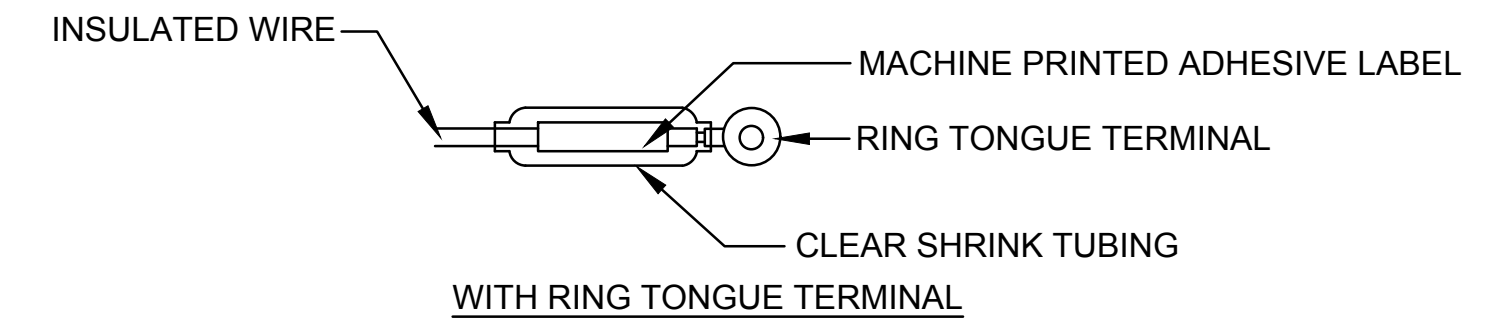
CONDUIT STUB-UP DETAIL

N.T.S.



CONDUIT BODY FOR GROUND RESISTANCE TEST DETAIL

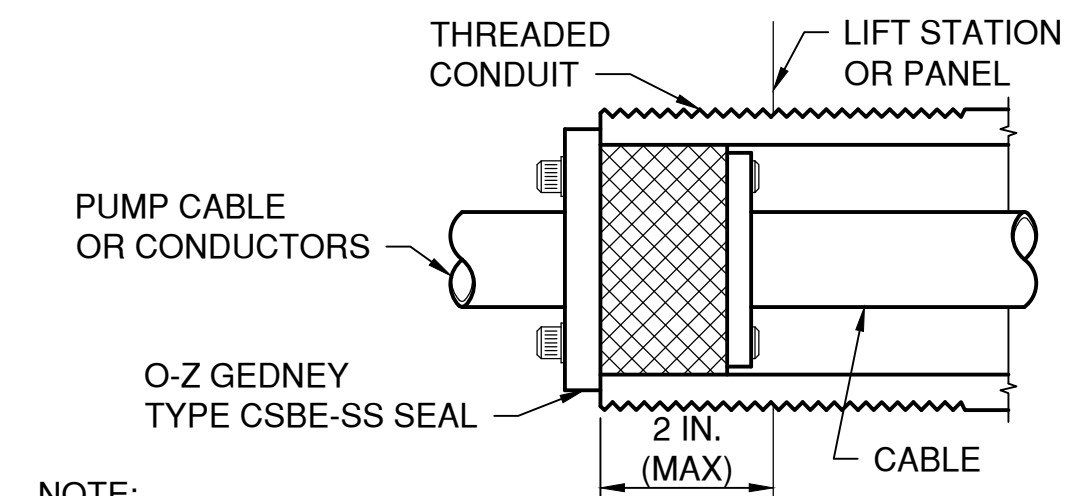
N.T.S.



WHERE POSSIBLE RING TERMINALS SHALL BE USED. ONE OF THE ABOVE METHODS MUST BE USED ON ALL WIRE #8 AWG & SMALLER. THE SAME MUST ALSO BE USED ON LARGER WIRE UNLESS AN ALTERNATE METHOD IS SUBMITTED & APPROVED.

WIRE TERMINATION AND MARKING DETAIL

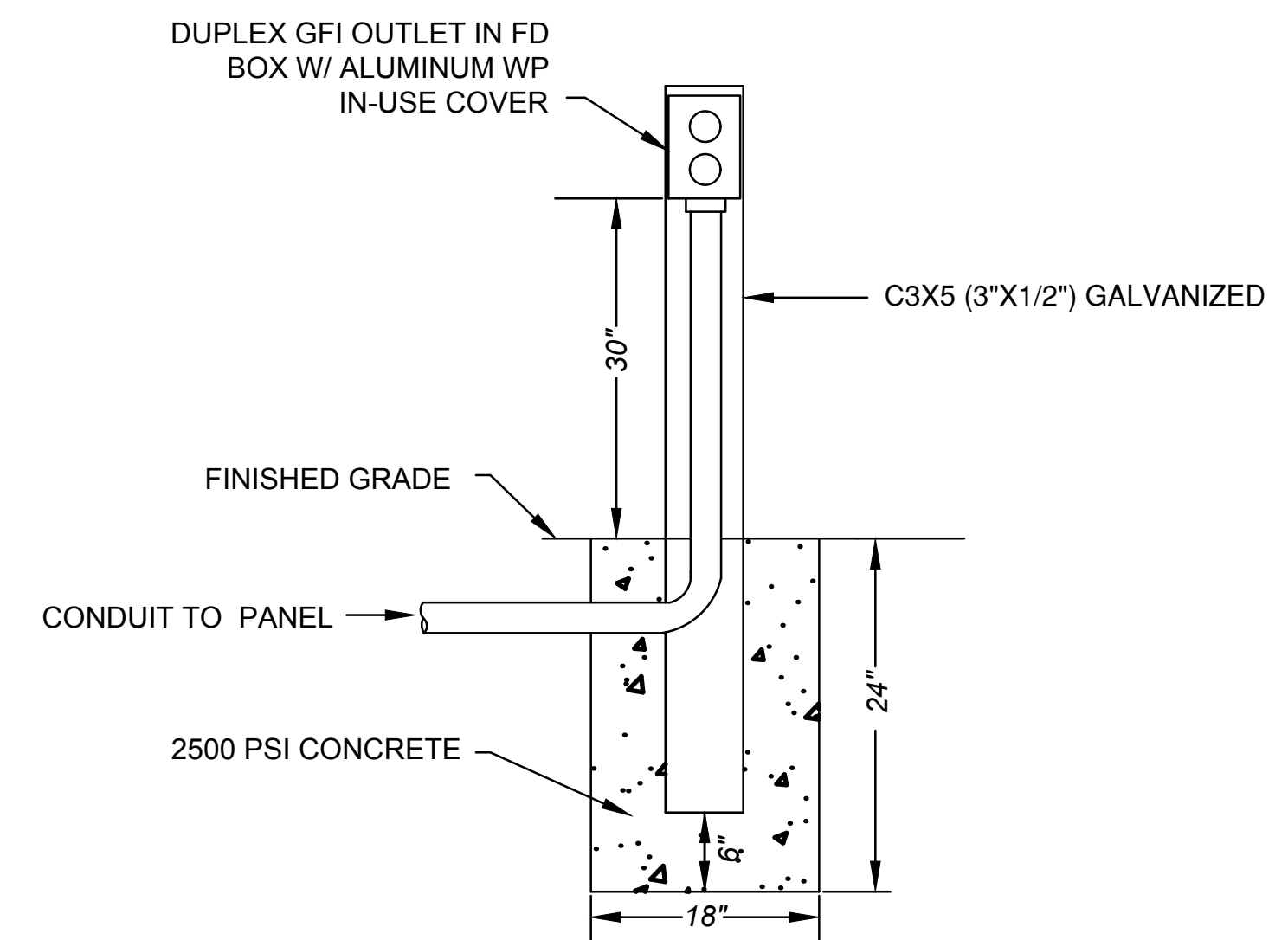
N.T.S.



NOTE:
1. USE CSBE SEALS IN ALL CONDUITS 1 1/2 IN. AND GREATER AND USE EYS SEALS FOR LESS THAN 1 1/2 IN. EXCEPT WHERE SHOWN OTHERWISE.

CONDUIT SEAL DETAIL

N.T.S. (TYPICAL)

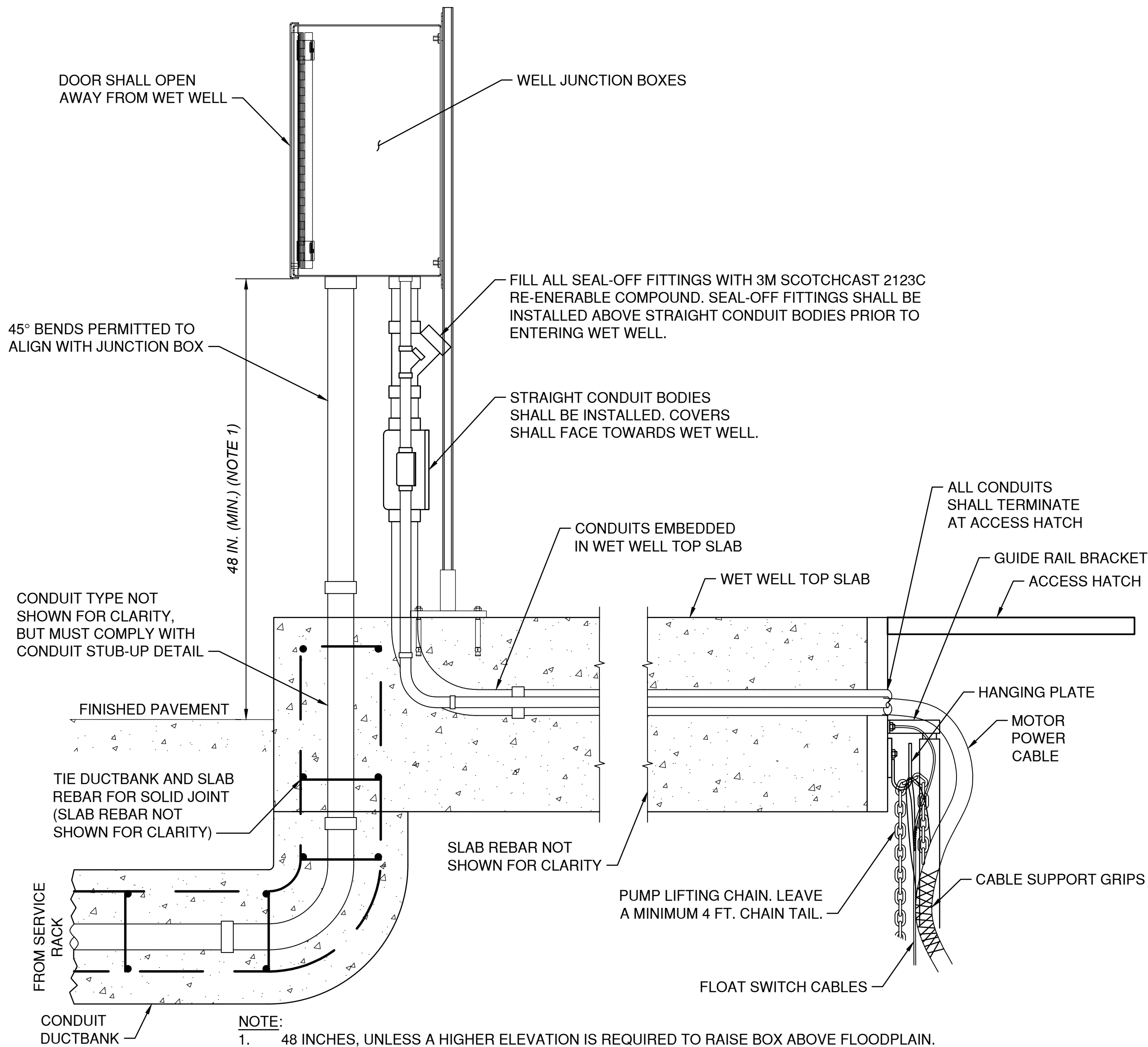


POST MOUNTED RECEPTACLE INSTALLATION DETAIL

N.T.S.

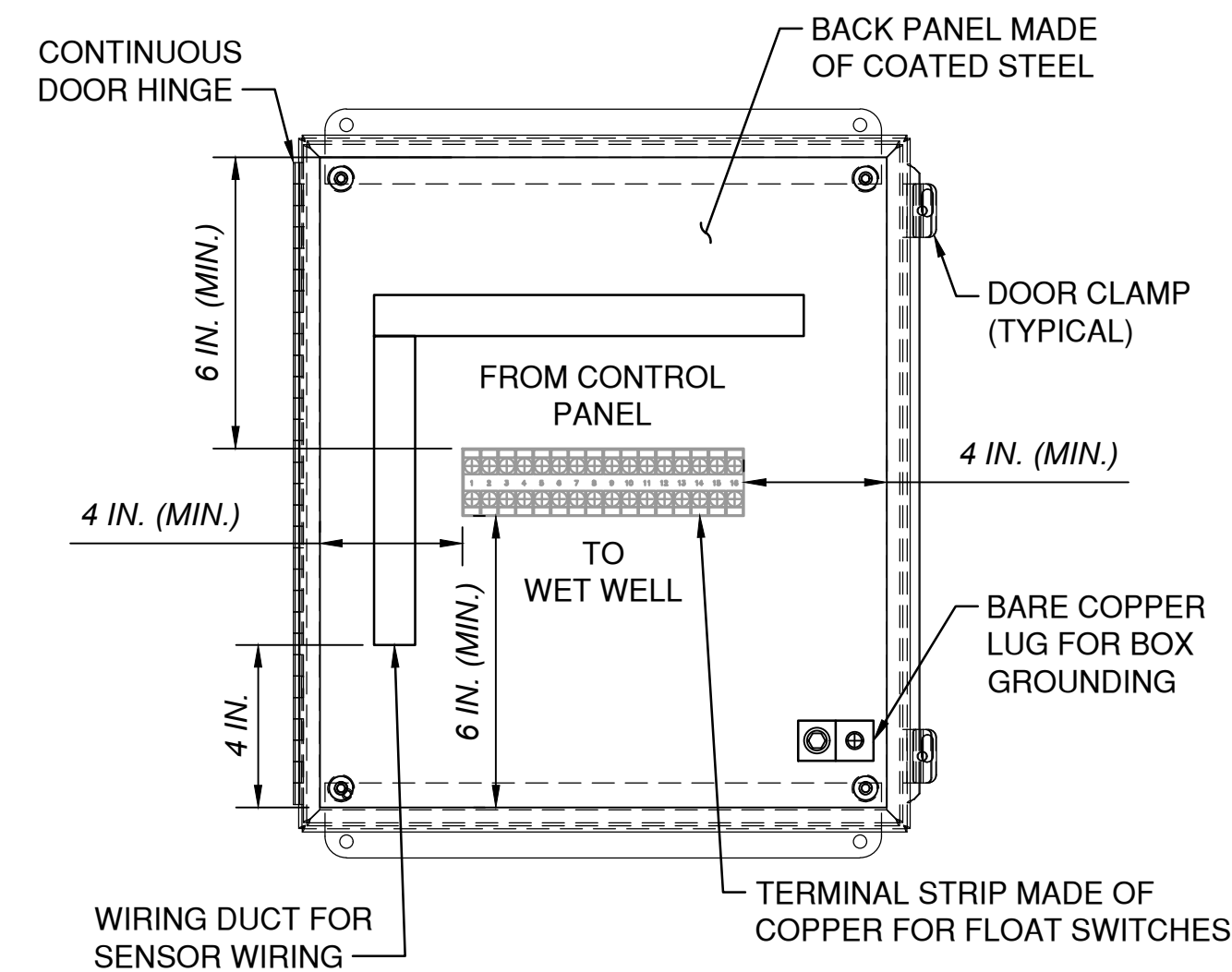


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WET WELL JUNCTION BOX DETAIL

N.T.S.



INSTRUMENTATION AND CONTROL JUNCTION BOX INTERNAL DETAIL

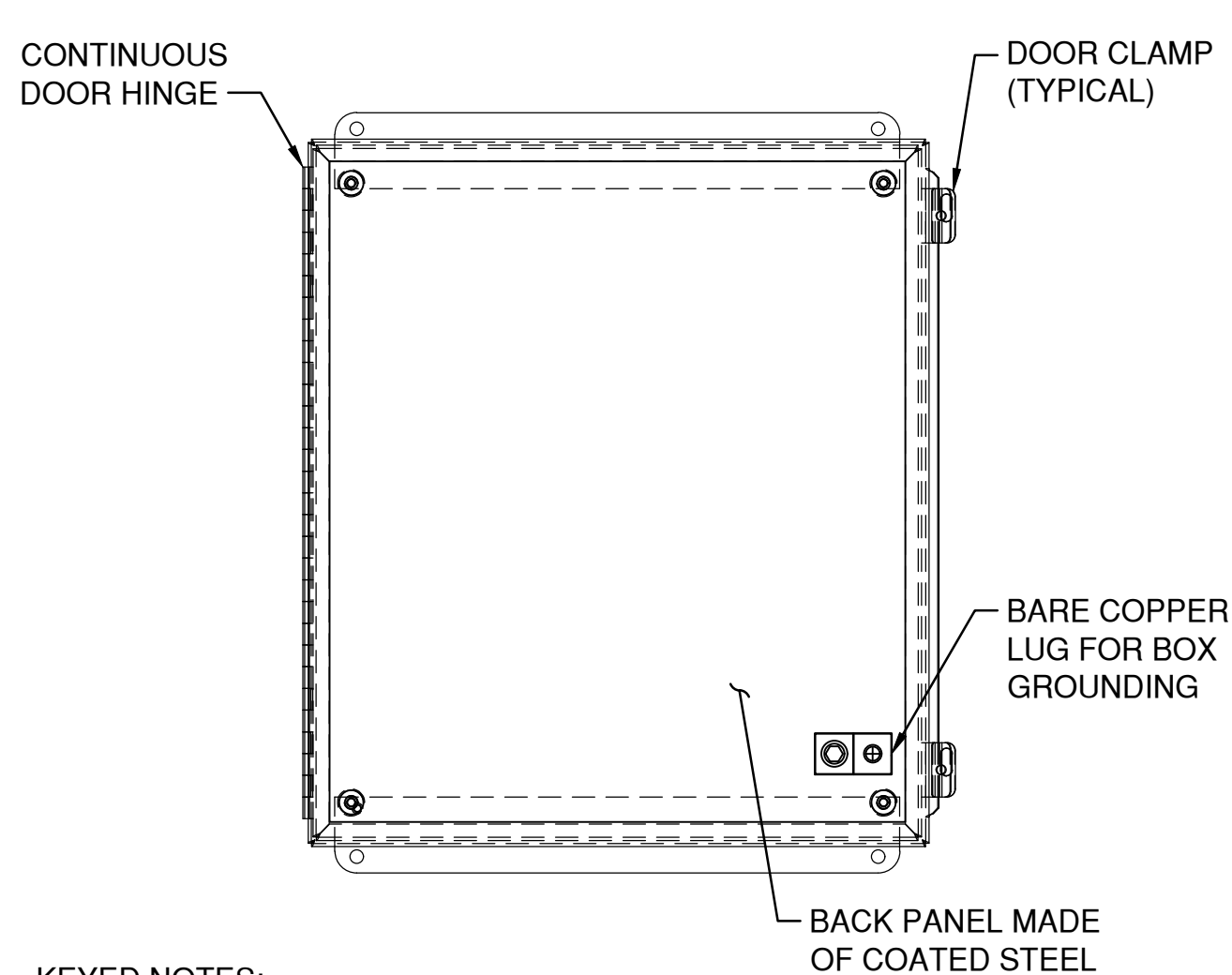
N.T.S.

KEYED NOTES:

WIRING DUCT.

NOTES:

- THIS JUNCTION BOX DETAIL APPLIES TO ALL JUNCTION BOXES INSTALLED TO CONNECT FLOAT SWITCHES, OR ANY INSTRUMENTATION AND CONTROL DEVICE THAT IS INSTALLED BUT NOT SHOWN ON THESE STANDARD DRAWINGS, IN WHICH THE WIRING CONSIST OF DISCRETE SIGNALS THAT OPERATE AT 120-VAC, OR ANY OTHER VOLTAGE SYSTEM, PROVIDED EACH VOLTAGE SYSTEM HAS ITS OWN DEDICATED JUNCTION BOX.
- INSTRUMENT WIRING SUCH AS FLOAT SWITCH CABLES SHALL TERMINATE AT THE TERMINAL STRIP.
- JUNCTION BOXES SHALL BE SIZED TO MEET THE INTERNAL DIMENSIONS, BASED ON THE REQUIRED SIZE AND NUMBER OF TERMINAL STRIPS, AND THE SIZE AND NUMBER OF WIRING DUCTS, BUT IN NO CASE SHALL THE INSTRUMENTATION AND CONTROL JUNCTION BOXES BE SMALLER THAN 16(H)x12(W)x8(D)-INCHES.
- SHOWN INTERNAL DIMENSIONS SHALL BE MEASURED FROM EDGE OF BACK PANEL AND NOT FROM THE ENCLOSURE BODY.
- ALL ALUMINUM CONDUITS SHALL BE PROVIDED WITH GROUNDING BUSHINGS AND SHALL BE GROUNDED.



KEYED NOTES:

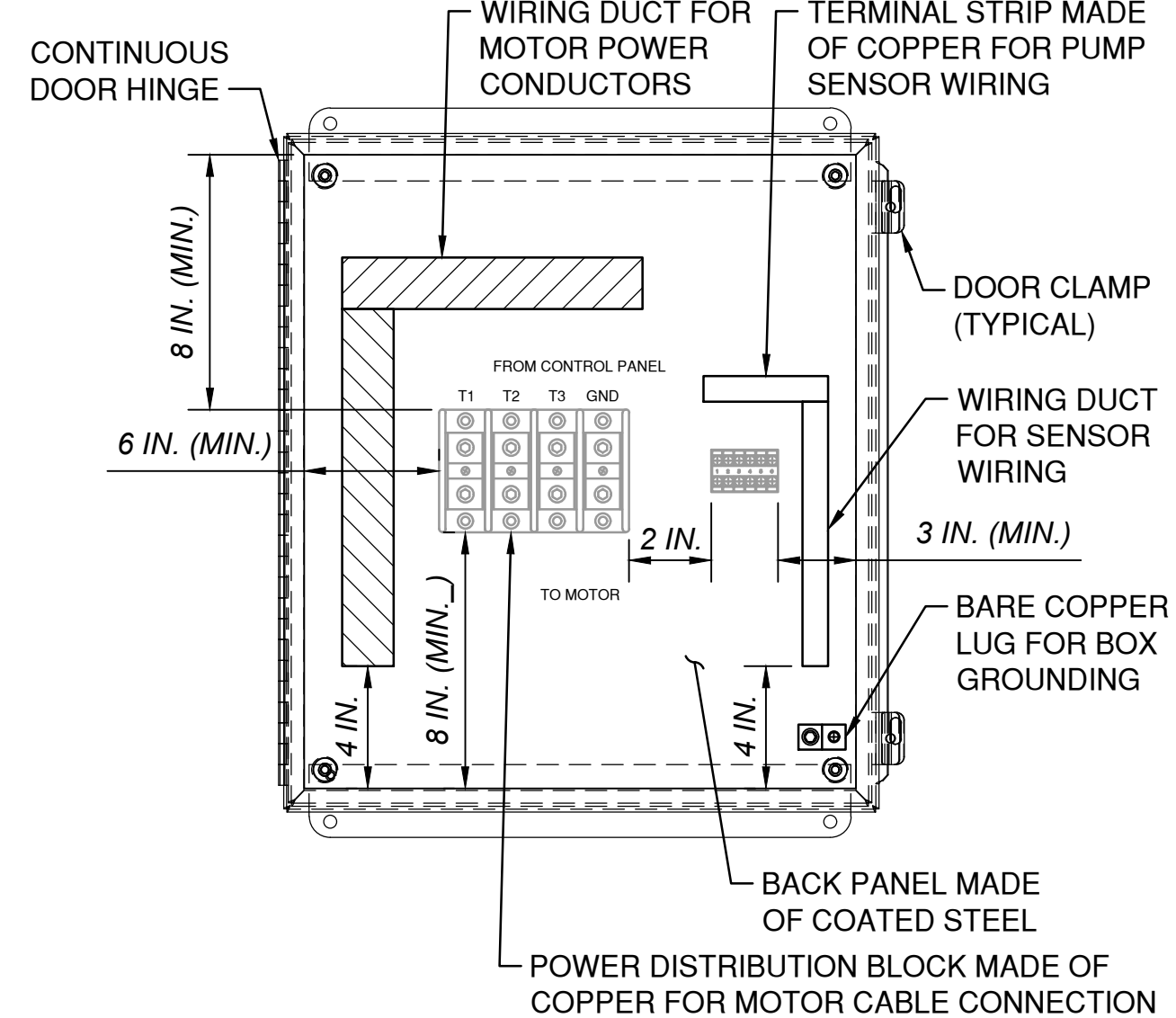
WIRING DUCT FOR PUMP SENSOR WIRING.

NOTES:

- THIS JUNCTION BOX DETAIL APPLIES TO ALL JUNCTION BOXES INSTALLED FOR ANALOG SIGNAL WIRING FOR INSTRUMENTATION AND CONTROL DEVICES SUCH AS SUBMERSIBLE LEVEL TRANSMITTERS, DISCHARGE PRESSURE TRANSMITTERS, OR ANY INSTRUMENTATION AND CONTROL DEVICE THAT IS INSTALLED BUT NOT SHOWN ON THESE STANDARD DRAWINGS.
- ANALOG SIGNAL CABLES SHALL BE CONTINUOUS AND WITHOUT SPLICES, FROM INSTRUMENT, THROUGH JUNCTION BOX, TO RESPECTIVE ANALOG I/O MODULE OR DEVICE. ANALOG SIGNAL CABLE SHALL BE LOOPED AND TIED IN A NEAT MANNER AND WITHOUT OVER BENDING.
- ANALOG SIGNAL WIRING SHALL NOT BE MIXED WITH ANY OTHER POWER, CONTROL OR SIGNAL WIRING.
- JUNCTION BOXES SHALL BE SIZED BASED ON THE SIZE, BENDING RADIUS, NUMBER OF LOOPS, AND TOTAL NUMBER OF ANALOG SIGNAL CABLES CONTAINED, BUT IN NO CASE SHALL THE INSTRUMENTATION AND CONTROL JUNCTION BOXES BE SMALLER THAN 16 IN. H. x 12 IN. W x 8 IN. D..
- ALL ALUMINUM CONDUITS SHALL BE PROVIDED WITH GROUNDING BUSHINGS AND SHALL BE GROUNDED.
- A DEDICATED GROUNDING CABLE SHALL BE INSTALLED TO GROUND THE JUNCTION BOX AND EACH CONDUIT BUSHINGS.

ANALOG SIGNAL WIRING JUNCTION BOX DETAIL

N.T.S.



KEYED NOTES:

WIRING DUCT FOR PUMP SENSOR WIRING.

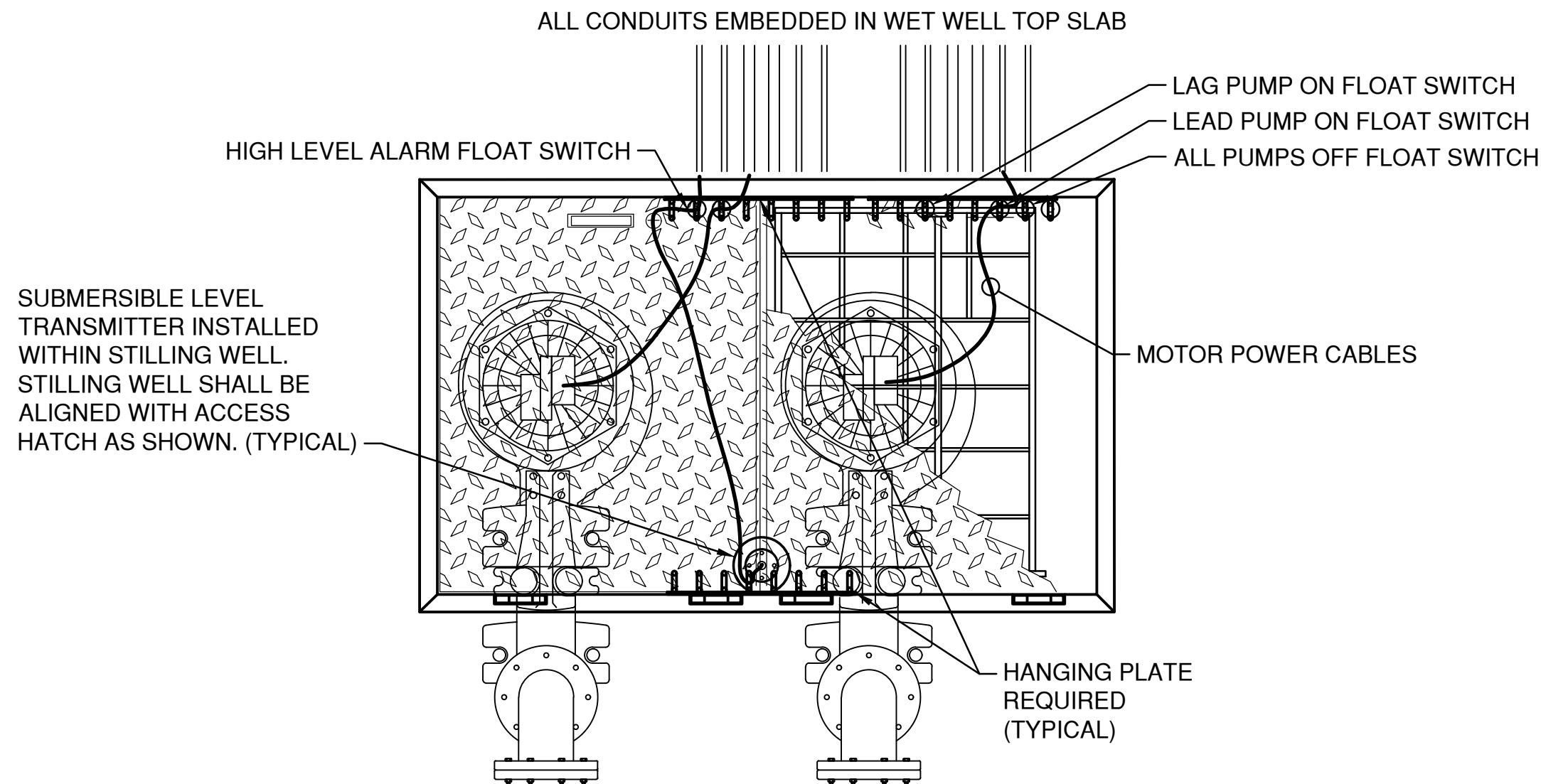
WIRING DUCT FOR MOTOR POWER WIRING.

NOTES:

- THIS JUNCTION BOX DETAIL APPLIES TO ALL JUNCTION BOXES INSTALLED TO CONNECT MOTORS SUCH AS PUMPS, BLOWERS, OR ANY SPECIAL MOTOR APPLICATION REQUIRED BUT NOT SHOWN ON THESE STANDARD DRAWINGS.
- JUNCTION BOXES SHALL BE SIZED TO MEET THE INTERNAL DIMENSIONS, BASED ON THE REQUIRED SIZE OF POWER DISTRIBUTION BLOCK, WIRING DUCTS AND NUMBER OF TERMINAL STRIPS FOR PUMP SENSOR SIGNALS, BUT IN NO CASE SHALL THE PUMP JUNCTION BOXES BE SMALLER THAN 20 IN. H. x 16 IN. W. x 8 IN. D.
- SHOWN INTERNAL DIMENSIONS SHALL BE MEASURED FROM EDGE OF BACK PANEL AND NOT FROM THE ENCLOSURE BODY.
- POWER DISTRIBUTION BLOCKS SHALL HAVE A SHORT CIRCUIT RATING THAT EXCEED THE MAXIMUM AVAILABLE FAULT CURRENT AT THE SERVICE ENTRANCE.
- ALL ALUMINUM CONDUITS SHALL BE PROVIDED WITH GROUNDING BUSHINGS AND SHALL BE GROUNDED.

MOTOR JUNCTION BOX INTERNAL DETAIL

N.T.S.



CONDUITS, HANGING PLATES, AND CONTROL DEVICES DETAIL

N.T.S.



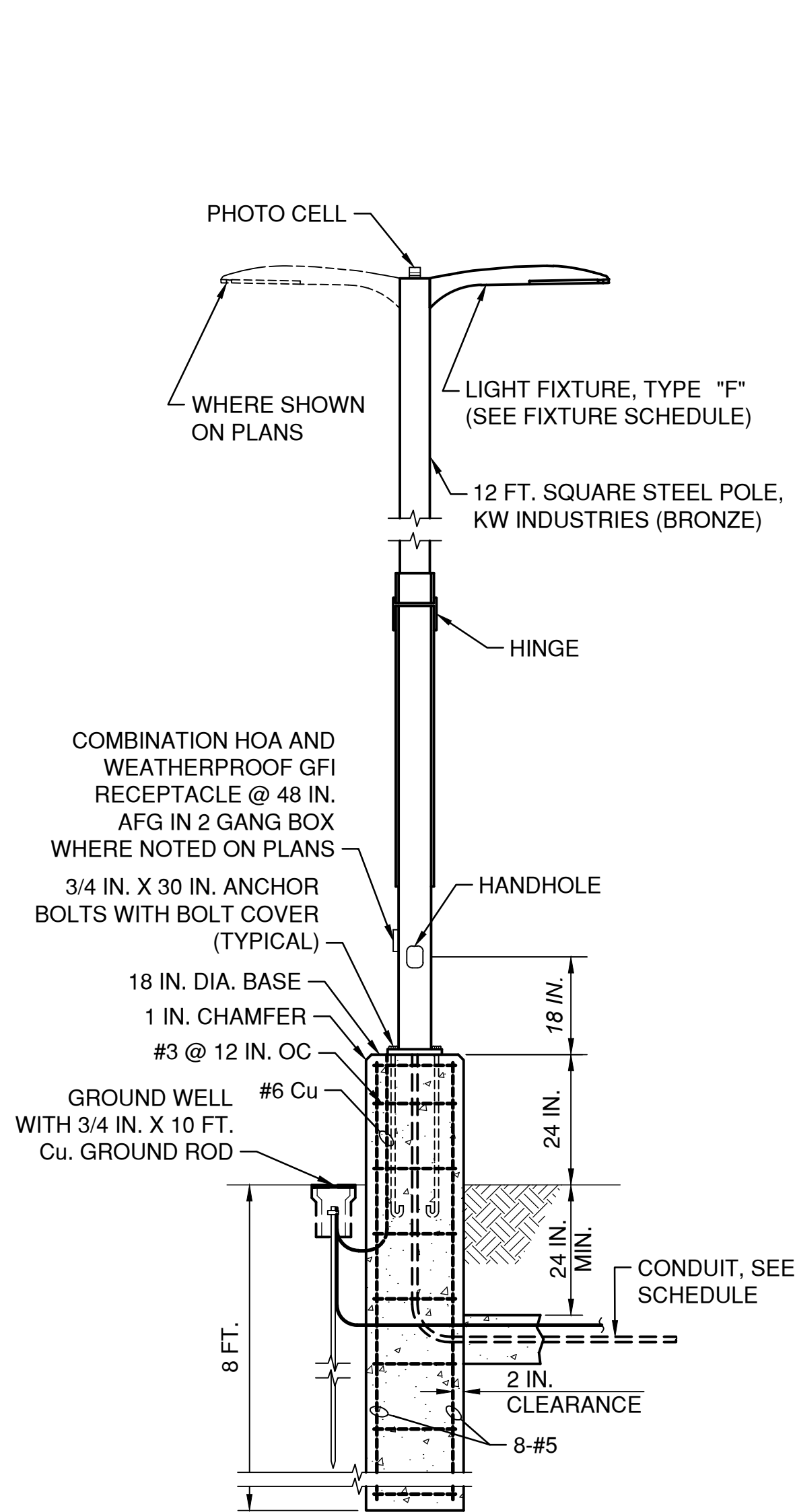
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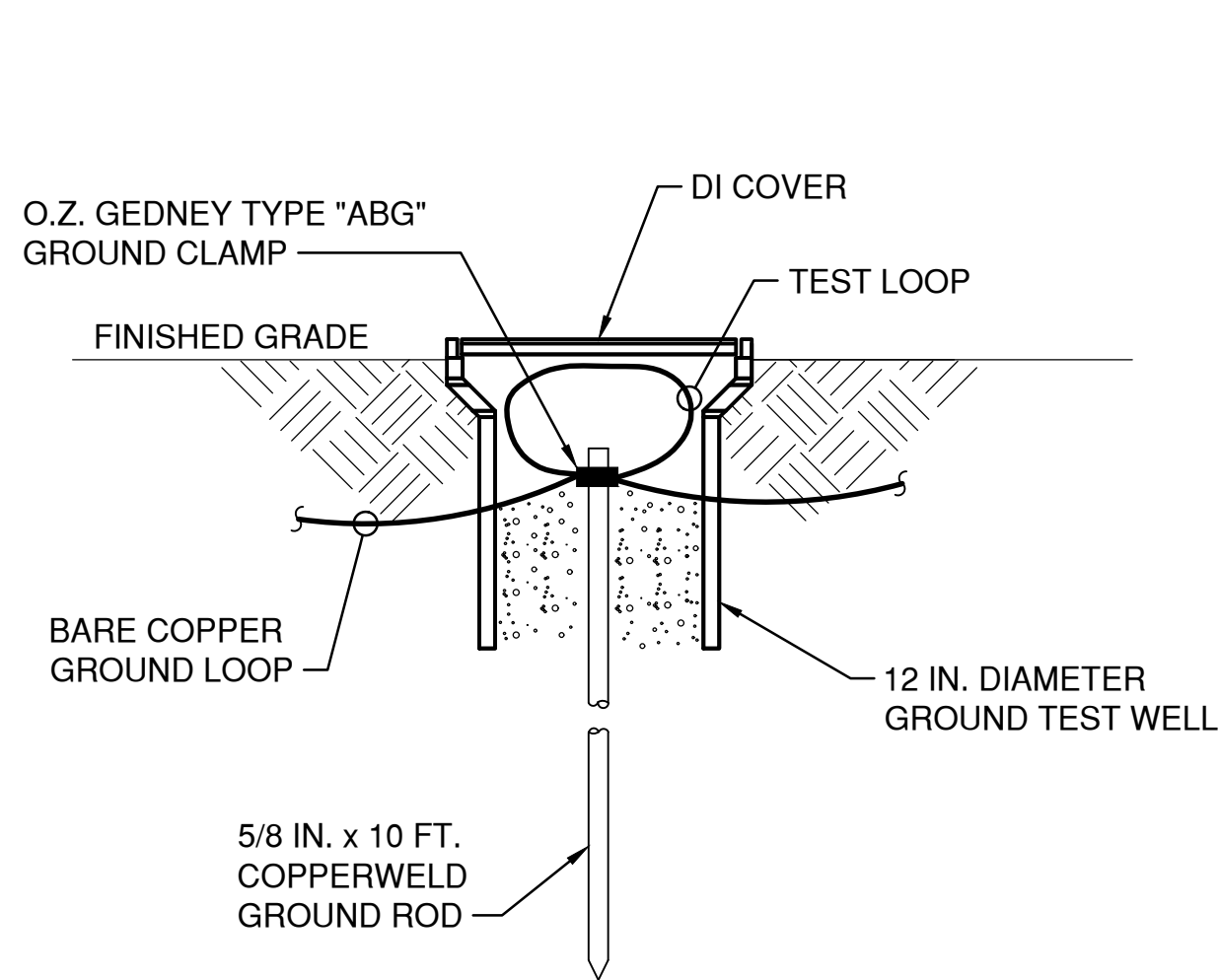
REVISIONS



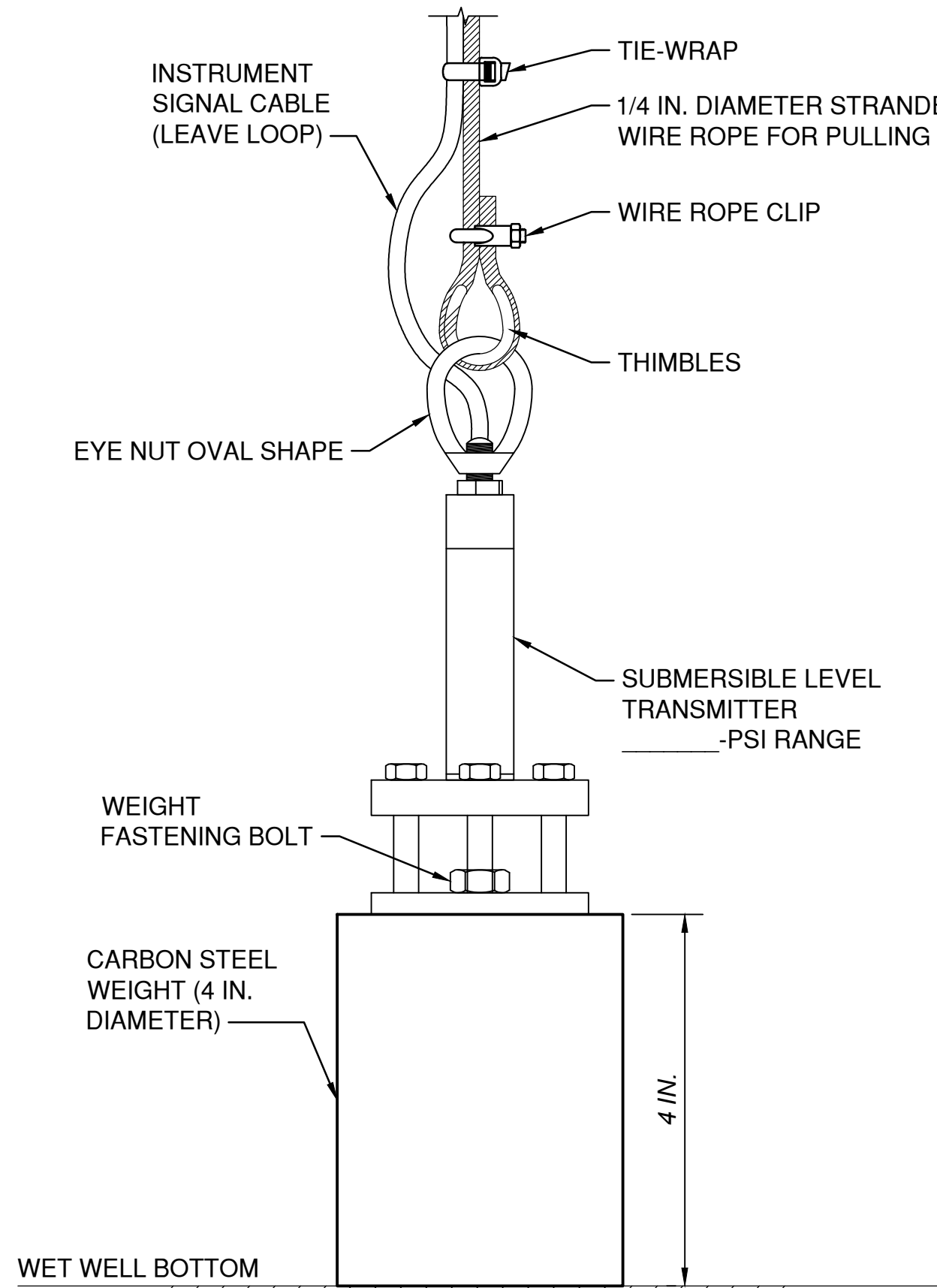
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AREA LIGHT POLE DETAIL
N.T.S. (TYPICAL)



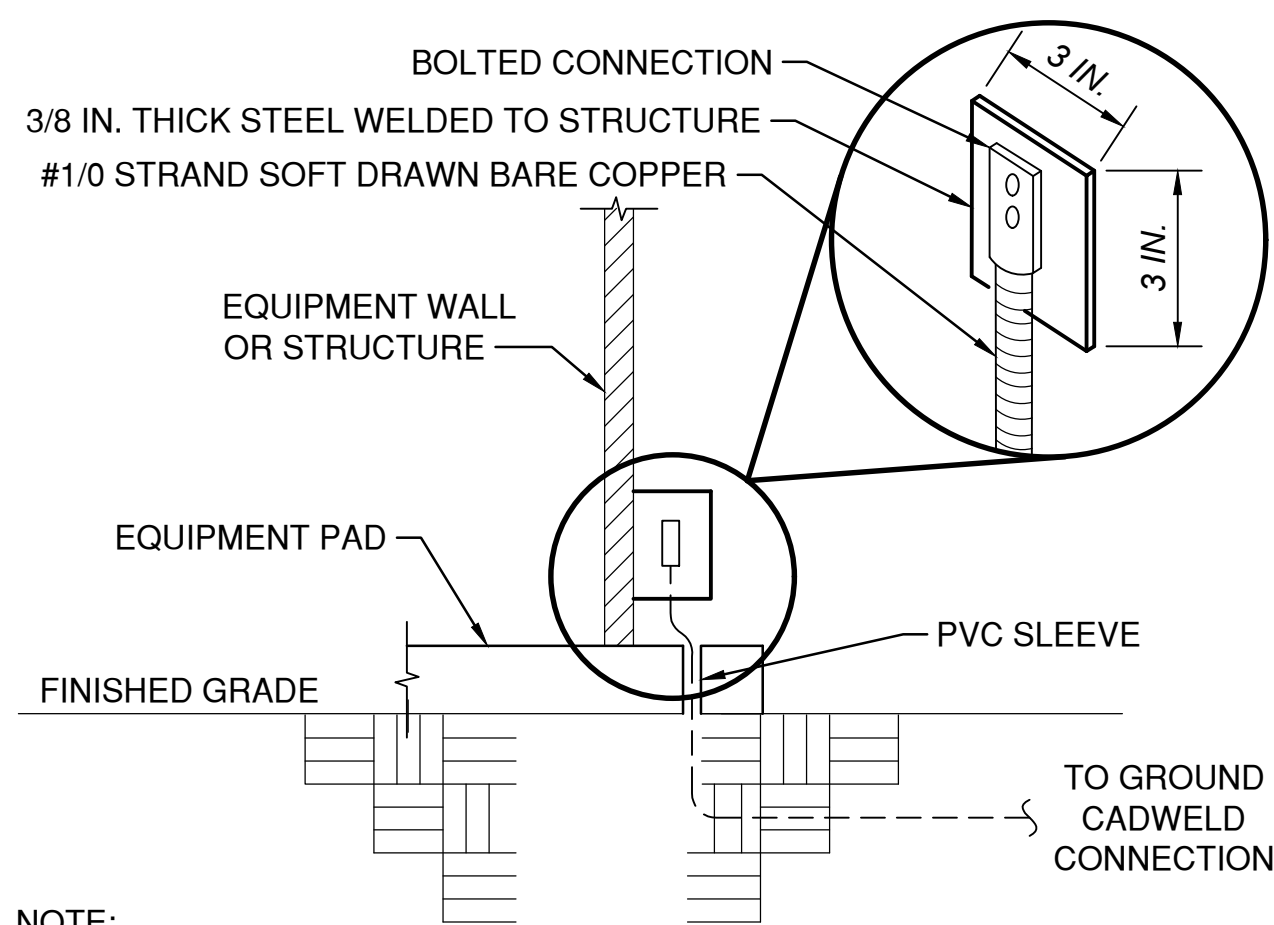
GROUND TEST WELL ARRANGEMENT DETAIL
N.T.S.



NOTES:

1. INSTRUMENT, WIRE ROPE AND ALL FASTENERS SHALL BE OF STAINLESS STEEL 316 TYPE.
2. WEIGHT SHALL BE DRILLED AND TAPPED AT THE CENTER TO ALLOW A BOLT TO SOLIDLY FASTEN INSTRUMENT TO WEIGHT.
3. INSTRUMENT SIGNAL CABLE SHALL BE FASTENED TO WIRE ROPE WITH THICK HEAVY DUTY PLASTIC TIE-RAPS.
4. EYE NUT THREADED TO INSTRUMENT AND OVAL SIZE SHALL BE LARGE ENOUGH TO ALLOW SIGNAL CABLE TO FREELY BEND AND PASS THROUGH.

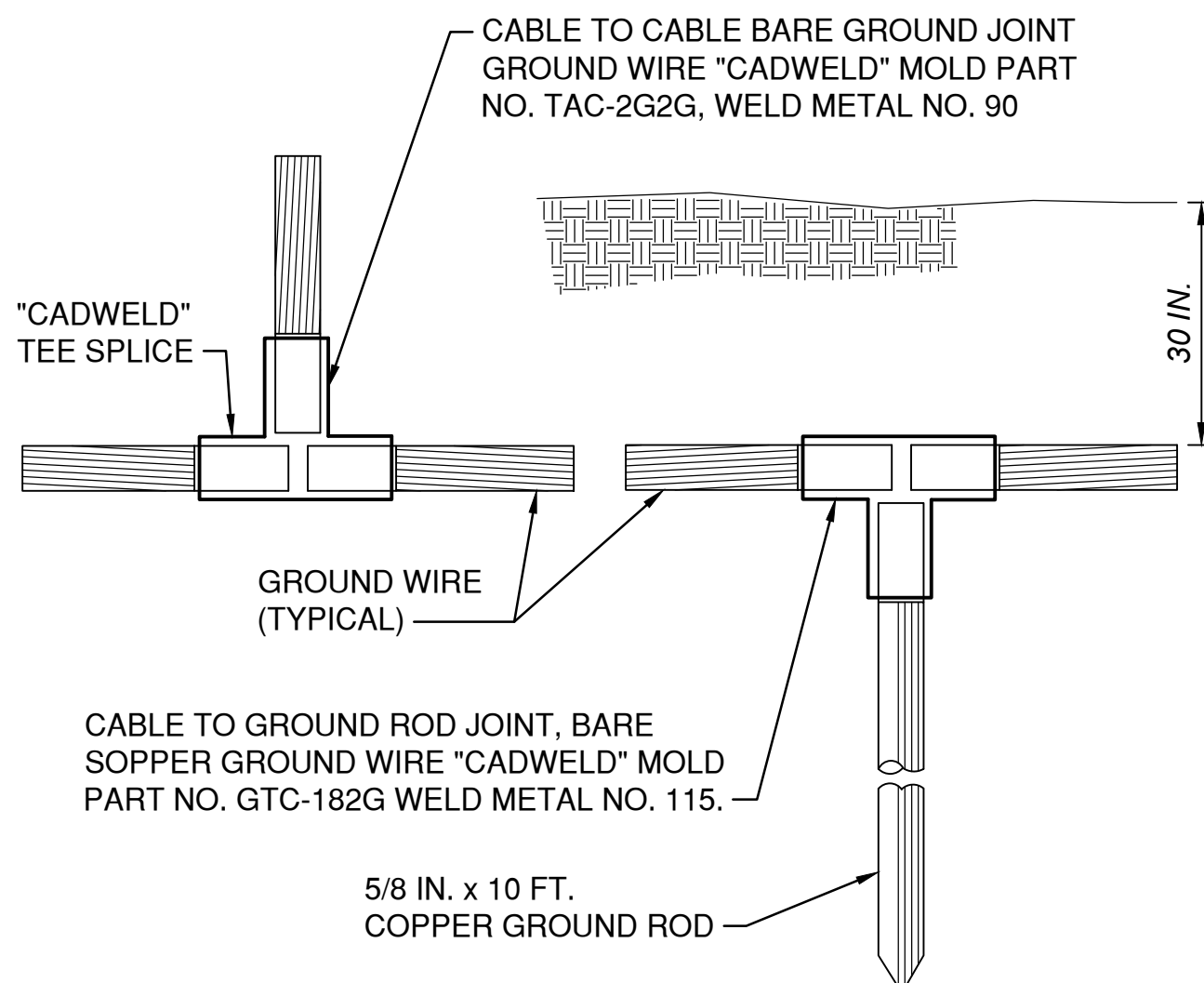
SUBMERSIBLE LEVEL TRANSDUCER MOUNTING DETAIL
N.T.S.



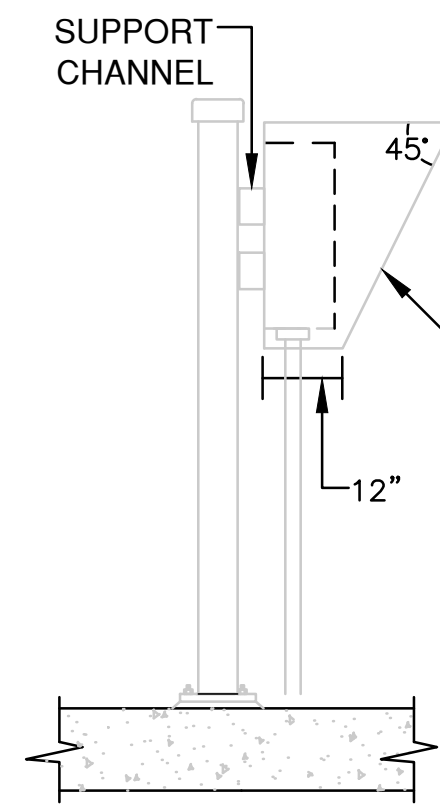
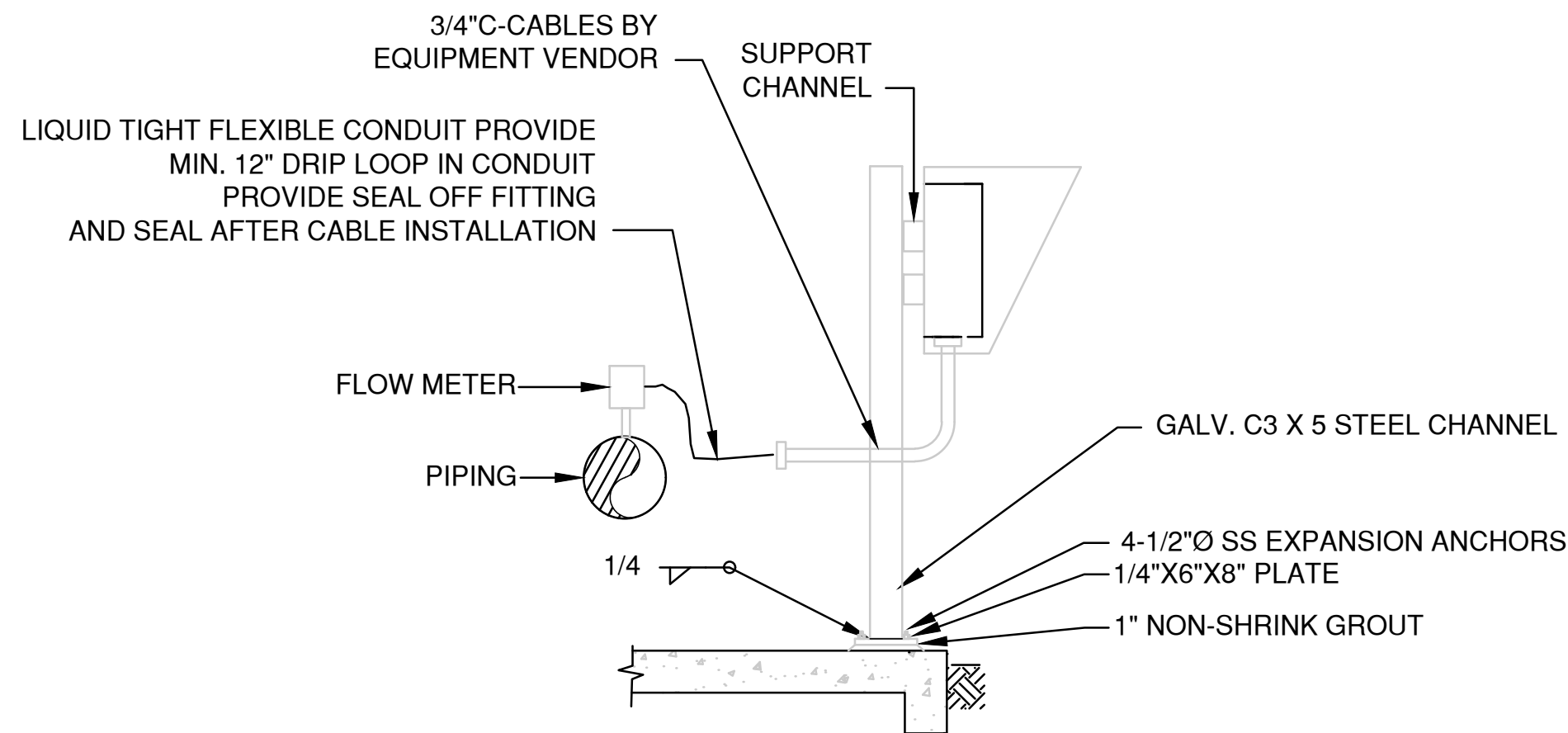
NOTE:

1. IF METAL STRUCTURES ARE NOT FURNISHED WITH PROVISION FOR BOLTED CONNECTION TO GROUNDING SYSTEM CONTRACTOR SHALL PROVIDE WELDED PAD FOR GROUND CONNECTION.

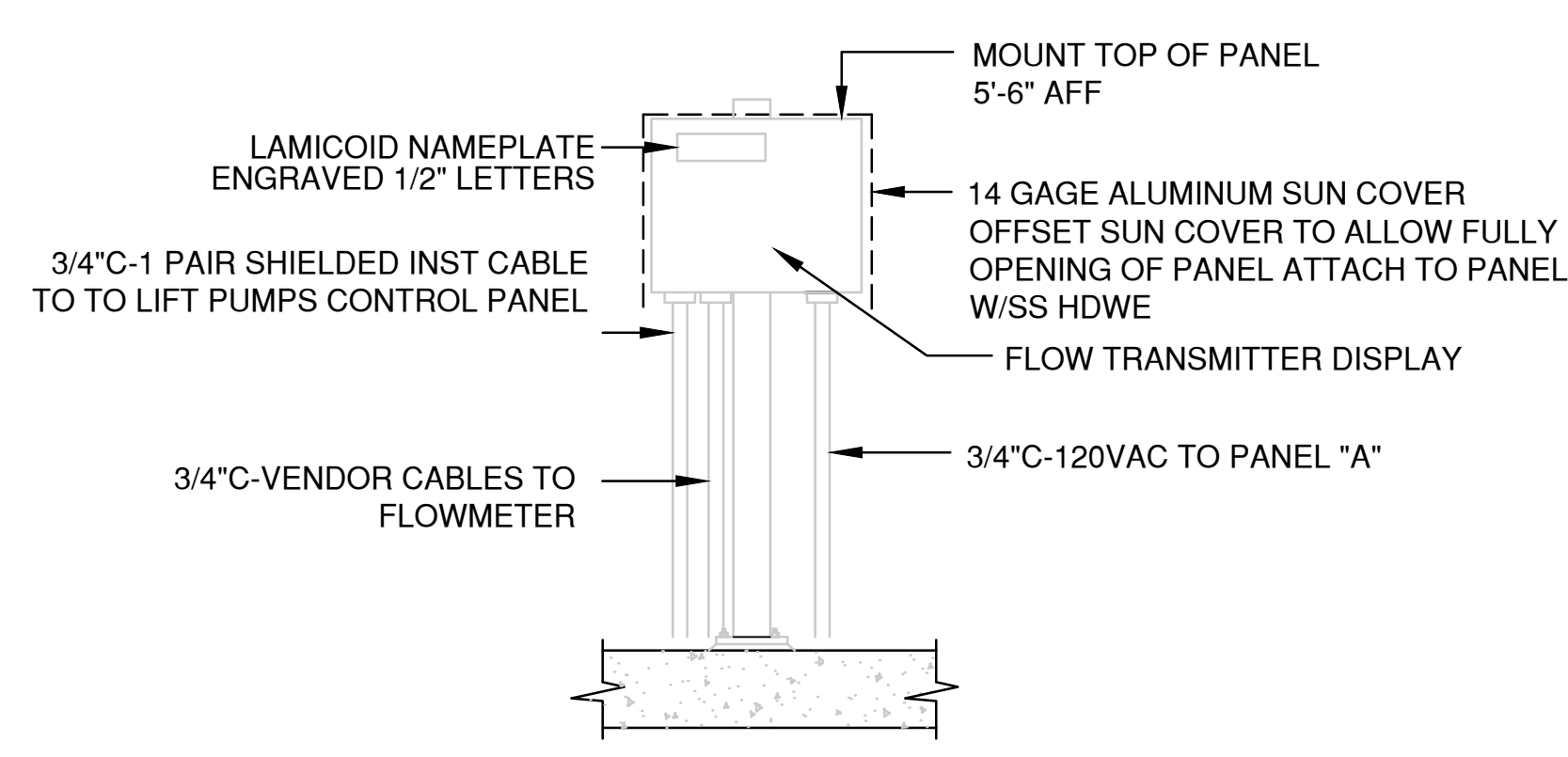
TYPICAL STRUCTURE GROUND DETAIL
N.T.S.



TYPICAL GROUND DETAIL
N.T.S.



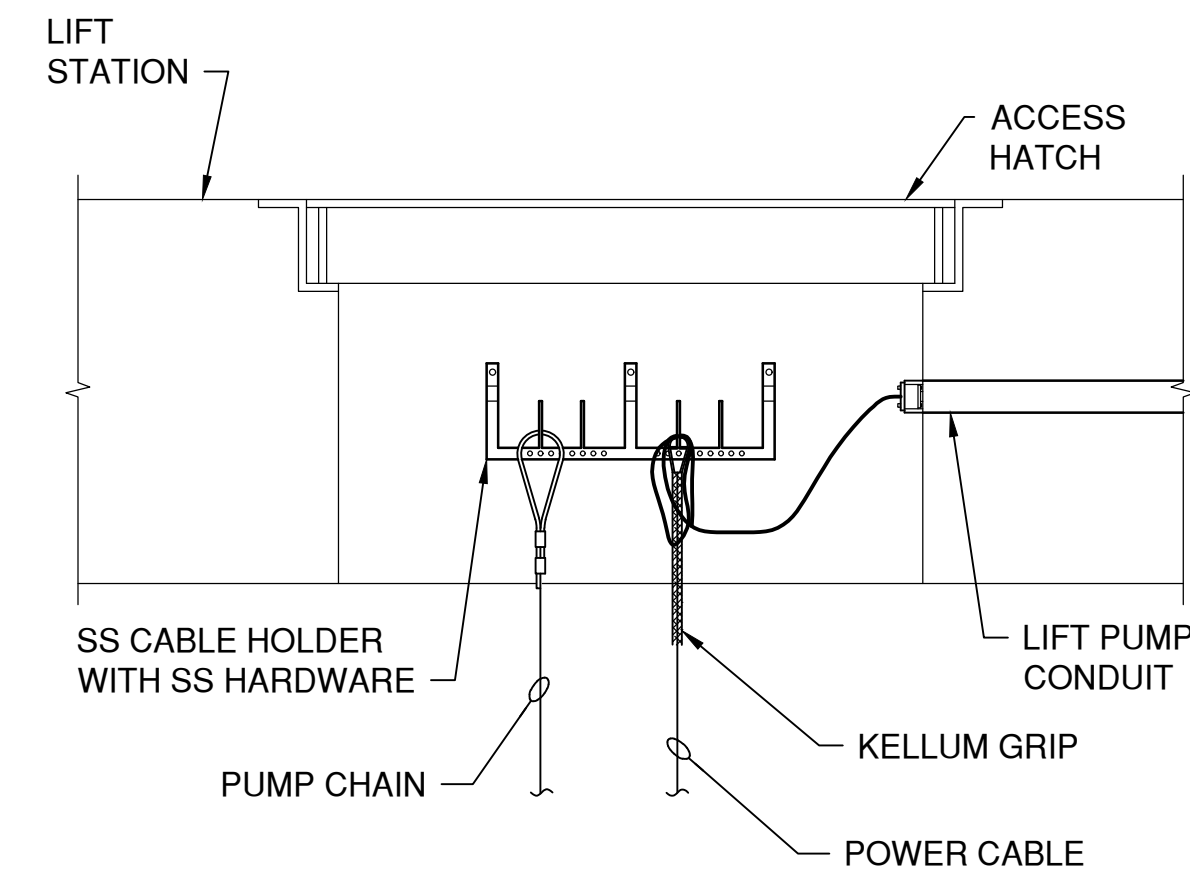
SIDE ELEVATION



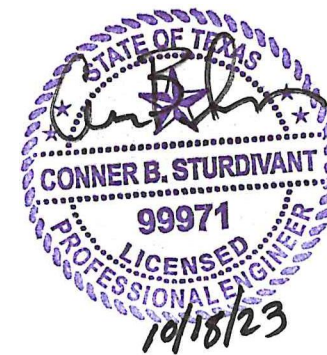
FRONT ELEVATION

NOTE: COORDINATE EXACT LOCATION AND FACING REQUIREMENTS W/ OWNER'S REPRESENTATIVE

TYPICAL FLOW TRANSMITTER INSTALLATION
N.T.S.



PUMP CABLE INSTALLATION
N.T.S.



GENERAL NOTES

GENERAL

Contractor shall carefully review the Structural series drawings and compare them with the Specifications (including any Addenda) as well as the Civil, Mechanical, Electrical and Plumbing series drawings. Before construction, all Civil drawing dimensions and proposed equipment shall be compared with the Structural drawings for compatibility.

Any differences shall be promptly referred to the Civil Engineer for instruction. In the event of a discrepancy between the Structural drawings and specifications, (unless directed otherwise) Contractor shall bid on the item of greater quantity and/or more expensive quality.

Foundation designs are based upon the geotechnical engineering recommendations provided by INTEC of San Antonio for this project in their geotechnical engineering report (No. 9231144) dated November 1, 2023.

CODE REQUIREMENTS FOR CONSTRUCTION

Building Code: 2021 International Building Code (IBC).

Concrete: Building Code Requirements for Reinforced Concrete, ACI 318-05 and Code Requirements for Environmental Concrete Structures, ACI 308-06.

Structural Steel: Manual of Steel Construction, American Institute of Steel Construction, Thirteenth Edition.

Design Loads: Minimum Design Loads for Buildings and Other Structures, ASCE 7-10.

DESIGN LOADS

- 1. Live Loads
 - A. Wet Well Concrete Cap 100 psf
- 2. Equivalent Lateral Fluid Pressure on Wet Well Walls 150 psf (Unfactored)

EXCAVATION, WET WELL FOUNDATION AND BACKFILL

- 1. Construction areas (3'-0" min. beyond the Wet Well and Equipment Pad perimeter) shall be stripped of all vegetation, organics and deleterious material, including debris, to expose the subgrade.
- 2. Wet well excavation shall comply with OSHA Standard 29CFR, Part 1926, Subpart F and all State of Texas and local requirements. According to OSHA, "sloping or benching for excavations greater than 20 ft. deep" shall be designed by a professional engineer registered to practice in the State of Texas.

Excavation may be sloped or shored at Contractor's discretion provided that methods comply with OSHA, state and local requirements.
- 3. During construction, excavation dewatering measures shall be implemented to prevent ponding of water on the subgrade. Subgrade and building pads shall not be allowed to dry out.

If the bearing soils are softened by water intrusion or by desiccation, the unsuitable material must be removed from the foundation excavation and replaced as required by the project geotechnical engineer.
- 4. Once final wet well subgrade elevations have been achieved, coordinate with the appropriate INTEC personnel for their observation and direction regarding any required subgrade improvements (e.g. removal of debris/ soft material and replacement with compacted select fill).
- 5. The exposed subgrade shall then be moisture conditioned to between moisture conditioned to between (-) 1% and (+) 3% of optimum moisture content. The subgrade shall then be recompactd to at least 95% of the Standard Proctor dry density as determined by ASTM D698. The subgrade shall not be allowed to dry out or become saturated prior to installation of select fill.
- 6. Once approved, construct a 2500 psi (min. 28 day compressive strength) 6" thick unreinforced concrete working slab on top of the subgrade within 24 hours max. of subgrade approval.
- 7. Construct foundation mat.

- 8. Upon reaching a minimum foundation mat concrete strength of 3000 psi, coordinate with and install the prefabricated fiberglass wet well in accordance with manufacturer's recommendations.
- 9. Construct the perimeter reinforced concrete ring around the base of the prefabricated fiberglass wet well.
- 10. Backfill around the wet well walls in a uniform, balanced manner with an "Excavatable Flowable Fill" material meeting the requirements of the Texas Department of Transportation Item 401: Flowable Fill (80 psi to 200 psi max.) up to approximately 5 ft. below natural grade.

EQUIPMENT SLAB BUILDING PAD

- 1. Upon completion of 10. above, excavate and remove the existing soils in the Equipment Slab area (3'-0" min. beyond its perimeter) to a minimum depth of 5'-0" below natural grade.
- 2. The building pad excavation shall then be proofrolled with a 25 ton roller to locate any weak zones in the subgrade. The operating load and tire pressure shall be as required to produce a minimum ground contact pressure of 90 psi. A minimum of 10 passes shall be assumed for bidding purposes.

Proofrolling operations shall be reviewed and approved by a qualified representative of INTEC, the project geotechnical engineer. Soft spots shall be removed to firm soil and replaced with compacted select fill.
- 3. The exposed subgrade shall then be scarified to a depth of 8 inches, then moisture conditioned to between - 1% to + 3% of optimum moisture content. The subgrade shall then be recompactd to at least 95% of the Standard Proctor dry density as determined by ASTM D698.

Measures must be taken to ensure that the subgrade is not allowed to dry out or become saturated prior to installation of select fill. As the excavation will result in a 5 ft. deep "bathtub" prior to installation of select fill, the bottom of excavation should be sloped (1% or greater) to one side with additional drainage measures as required to remove rainwater runoff ASAP.
- 4. Bring the building pad to grade with a select structural fill. Select fill shall be a crushed limestone material with a maximum liquid limit of 40% and a plasticity index (PI) between 5 and 20. Maximum particle size shall be 3 inches in diameter and meet the following sieve requirements:

Passing No. 4 screen	40% - 80%
Passing No. 40 mesh sieve	10% - 50%
Passing No. 200 mesh sieve	less than 20%
- 5. Select structural fill shall be compacted to at least 95% of its maximum dry density as determined by test method ASTM D1557 within plus or minus 3% of optimum moisture content. Maintain compacted lift thicknesses to 6' or less.
- 6. Compaction operations be tested, reviewed and approved by a qualified representative of INTEC, the project geotechnical engineer.
- 7. During construction, a positive drainage scheme shall be implemented to prevent ponding of water on the subgrade. The subgrade and building pad shall not be allowed to dry out. Foundation backfill shall proceed as soon as possible (24 hours max.) after approval of the subgrade preparation. If the bearing soils are softened by water intrusion or by desiccation, the unsuitable material must be removed from the foundation excavation and replaced as required.
- 8. Grade beams shall be neatly excavated. Any debris in grade beam bottoms shall be removed prior to placing concrete. Grade beam excavations shall be level with a slope only as required to create internal sumps for runoff collection and removal.
- 9. Remove any surface water runoff or groundwater seepage accumulation in excess of 1-inch depth from foundation excavations.
- 10. Place a polyethylene sheet meeting the requirements of ASTM E154 with a minimum thickness of 10 mils on top of the select fill to act as a vapor barrier. Joints shall be lapped a minimum of 12 inches and sealed in accordance with manufacturer's recommendations.

CONCRETE AND REINFORCING STEEL

- 1. All concrete shall be normal weight concrete made with natural aggregates. Do not add air-entraining admixtures without receiving prior approval from the Engineer.
- 2. Concrete shall have a minimum compressive strength of 4000 psi at 28 days and shall not contain less than 5 1/2 sacks of cement per cubic yard of concrete with a maximum water/cement ratio of 0.43.
- 3. Construction joints in concrete pours shall be permitted only where indicated on the drawings. The location of construction joints shall be as approved by the Structural Engineer. Additional reinforcing at construction joints shall be as specified by the Engineer without additional cost to the Owner.
- 4. No conduit or piping shall be run within the concrete slab thickness specified. Provide additional excavation (and slab thickness) as required to maintain the minimum 6" slab thickness along with a minimum of 1' clearance/ cover from/between reinforcing steel.
- 5. Reinforcing steel shall be deformed new billet steel bars in accordance with A.S.T.M. Specification A615 Grade 60. Welded wire fabric shall conform to ASTM 185 requirements.
- 6. Detailing of reinforcing steel shall conform to the American Concrete Institute Detailing Manual.
- 7. Provide 2-#6 x 4'-0" 'L' shaped bars top and bottom at all corners and 'T' intersections of beams.
- 8. All hooks and bends in reinforcing bars shall conform to ACI Standards unless shown otherwise.
- 9. Lap continuous unscheduled reinforcing bars 48 bar diameters unless noted otherwise.
- 10. Tack welding on reinforcing steel will not be permitted.
- 11. Heat shall not be used in the fabrication or installation of reinforcement.
- 12. Reinforcing steel coverage shall be as follows:
 - a) Wet Well Foundation Mat - 3' bottom, 2' top, 3' sides
 - b) Cap Slab - 1 1/2' top, 2' bottom, 3' sides
- 13. Concrete must reach the following percentages of 28 day compressive strength (F_c) before forms may be removed:

mat and slab sides	40%
--------------------	-----

COORDINATION

- 1. Only certain of the required openings in the wet well structure are indicated on the structural series drawings. All sleeves, inserts, openings, frames, etc., required for incorporation of the Work of the Contract, including Mechanical, Electrical and Plumbing shall be provided. The provision for sleeves or framed openings shall include the verification and coordination of their sizes, alignment, dimensions, position, locations, elevations and grades. Openings not indicated on the structural series drawings, but required as above, shall be specifically noted on shop drawings for review by the Engineer.
- 2. Refer to Civil, Mechanical, Electrical and Plumbing series drawings for floor elevations, slopes, drains and location of depressed and elevated floor areas.
- 3. Structural series drawings shall be compared with drawings other series. Differences shall be referred to the Civil Engineer for instruction.
- 4. Compatibility of structural framing with proposed equipment, including location, loading and sizes, shall be verified prior prior to submission of shop drawings. Any conflicts or differences shall be referred to the Civil Engineer for review and approval or notation.
- 5. Shop drawings shall be prepared for all structural items and submitted for review by the Engineer. Engineering contract drawings shall not be reproduced and used as shop drawings. Any items deviating from the contract drawings or from previous shop drawings submitted shall be so noted. Written notice shall be provided for each deviation from the contract documents and from previous submittals.
- 6. The details designated as 'Typical Details' apply generally to the drawings in all areas where conditions are similar to those described in the details.
- 7. The design and provision of all temporary supports such as guys, braces, falsework, cribbing, masonry wall bracing, formwork, wall bracing, supports and anchors for safety lines or any other temporary elements required for the execution of the Contract are not included in these drawings and shall be the responsibility of the Contractor.

SPECIAL INSPECTIONS

GENERAL

- 1. In addition to the regular inspections required by Section 110 of the 2021 International Building Code (IBC), Special Inspections are required in accordance with Sections 1704, 1705 and 1706 of the 2021 IBC. Structural Observations as noted in Sections 1704.5.1 and 1704.5.2 will not be required.
- 2. Special Inspections as noted in Sections 1705.10 (Wind Resistance), 1705.11 (Seismic Resistance), and 1705.12 (Seismic Resistance) are not required.
- 3. See Specification Section 01450, 'Special Inspections and Quality Control', for a more detailed description of special inspection and quality control requirements.
- 4. Contractor shall communicate and coordinate work schedule with the Special Inspector. Contractor shall generally notify the Special Inspector of upcoming inspection items 7 days prior to the work being executed.

EXCAVATION, FILLING AND BACKFILLING

- 1. A qualified representative of the geotechnical engineer, INTEC of San Antonio, shall provide periodic inspections of excavation operations.
- 2. INTEC's representative must be engaged to carefully monitor all filling and backfilling operations, including placement and compaction of each lift as noted on this sheet and this sheet and Specification Section 01450.

STRUCTURAL CONCRETE

- 1. Inspect all reinforcing steel before placement of concrete and provide concrete inspection and testing in accordance with Specification Section 01450.
- 2. Provide periodic inspections of concrete formwork as required to confirm compliance with Specification Section 03100, "Concrete Formwork".



WINTER ENGINEERING
FIRM NO. F-1865

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(512) 261-4400

PRESA MOBILE HOME PARK

SAN ANTONIO, TEXAS

STRUCTURAL NOTES

JOB NO.: 002318
DATE: November 21, 2023
DRAWN: V.W. CHECKED: V.W.

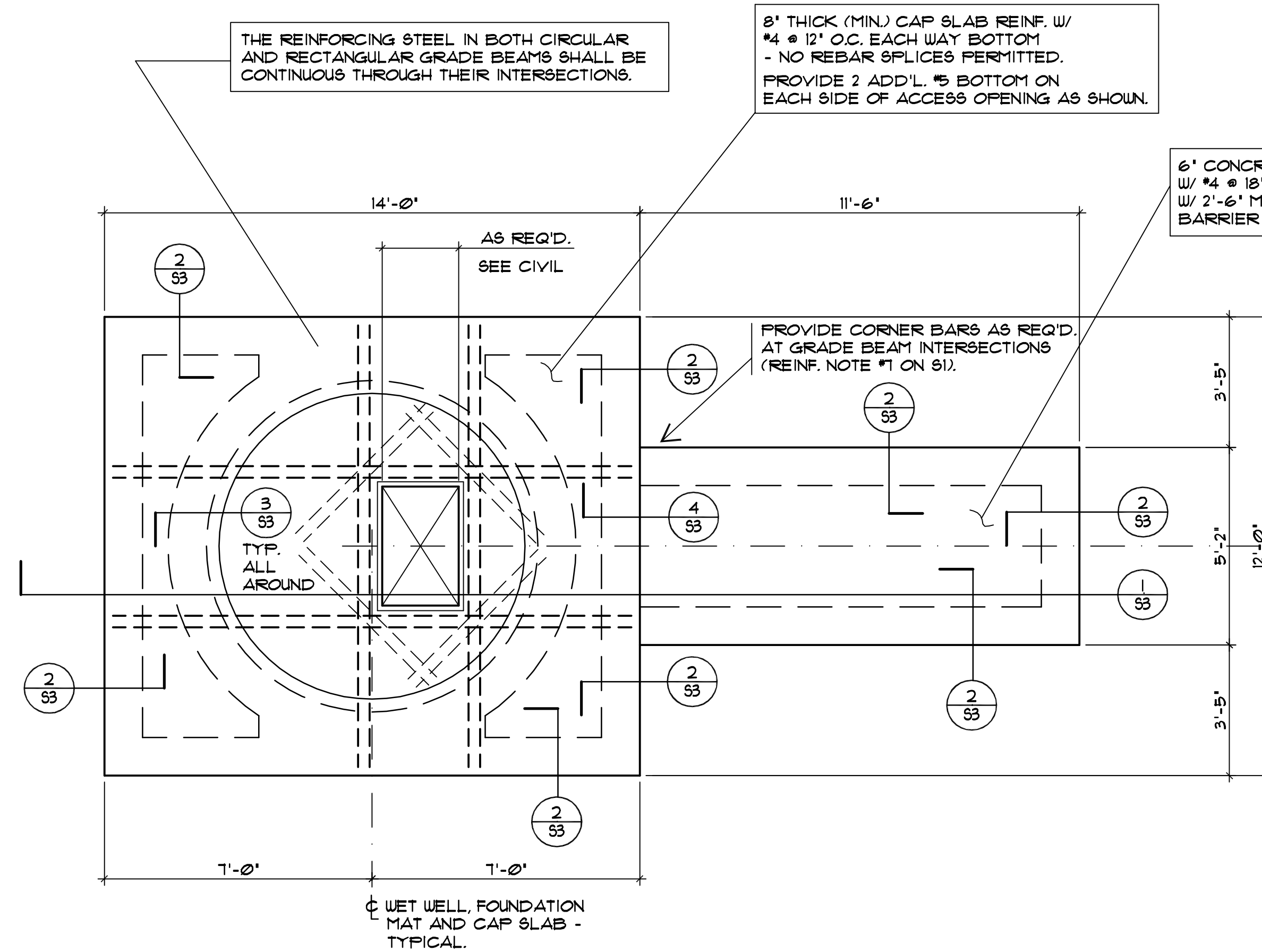
SHEET NUMBER:

S-1

ISSUE DATE

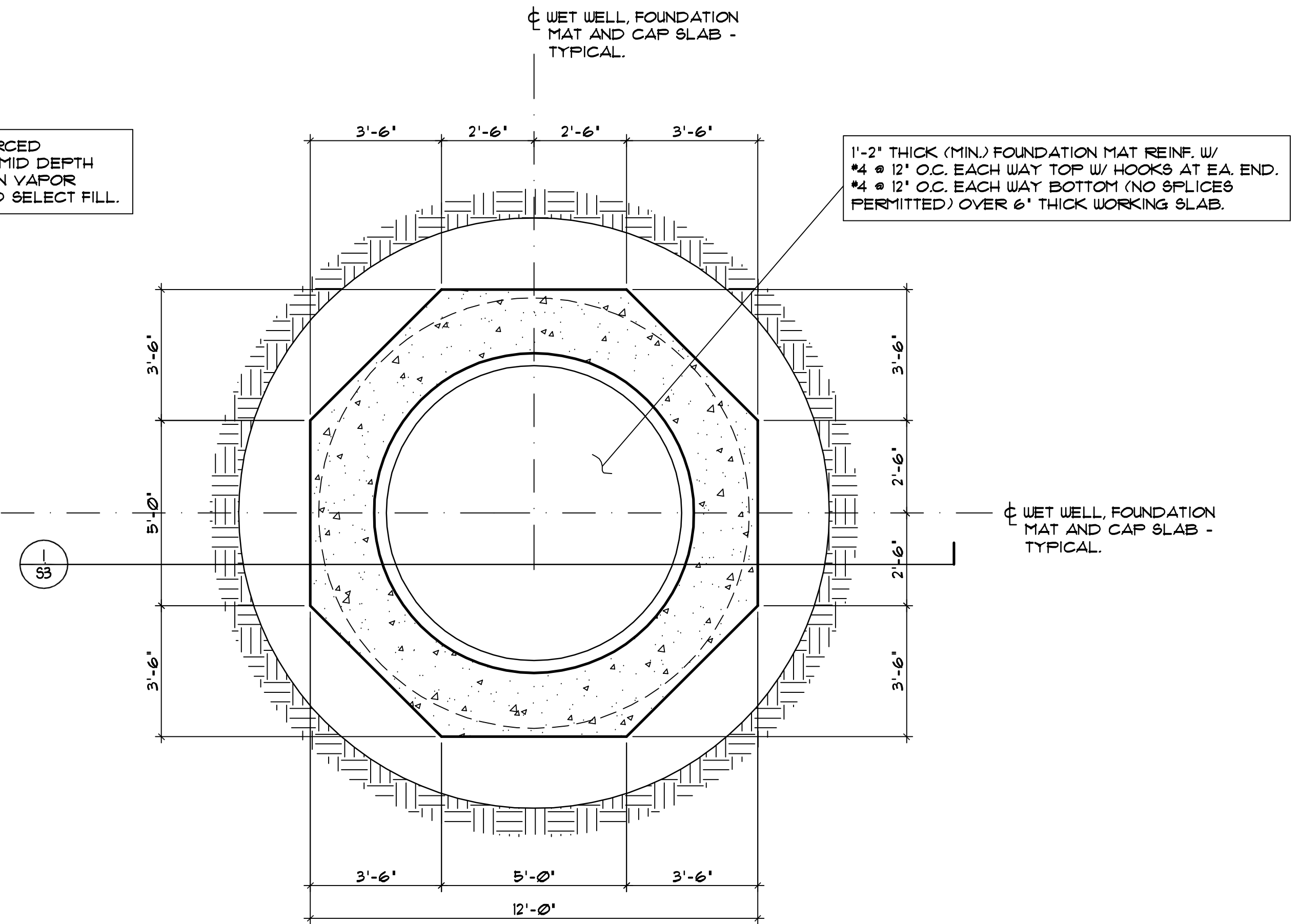
REVISIONS





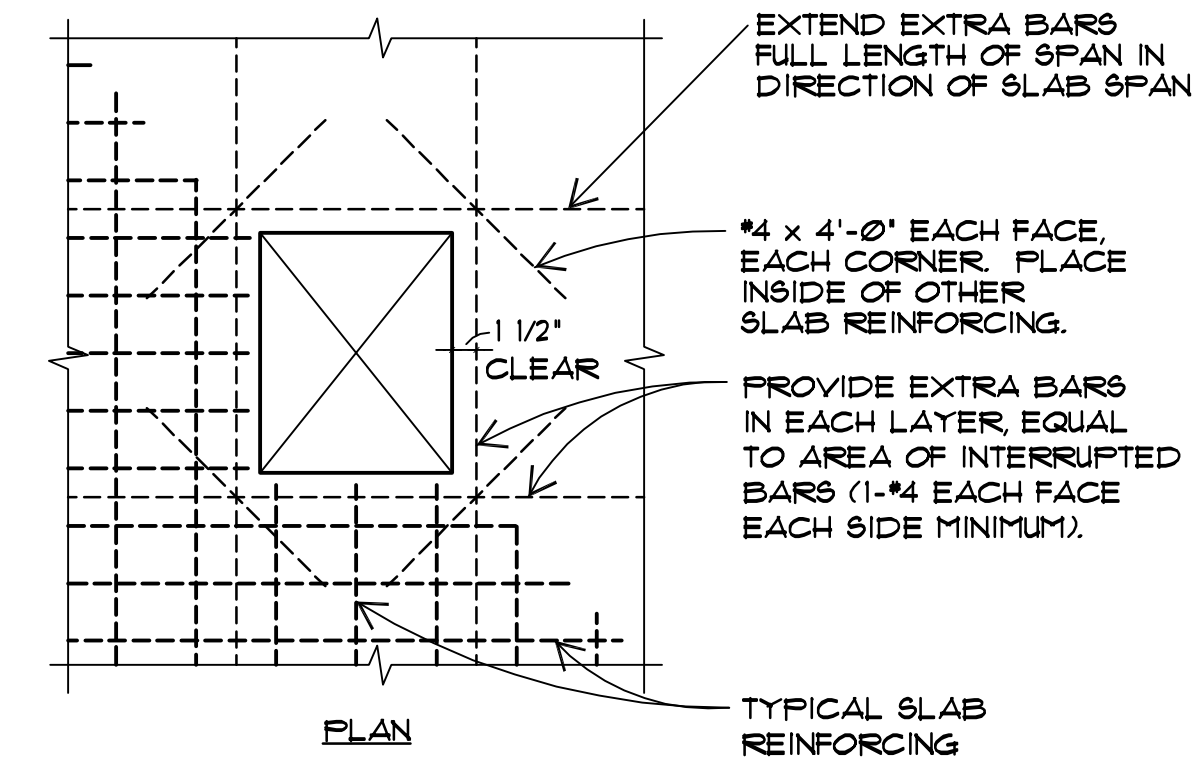
WET WELL CAP SLAB AND EQUIPMENT SLAB PLAN

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



WET WELL FOUNDATION MAT PLAN

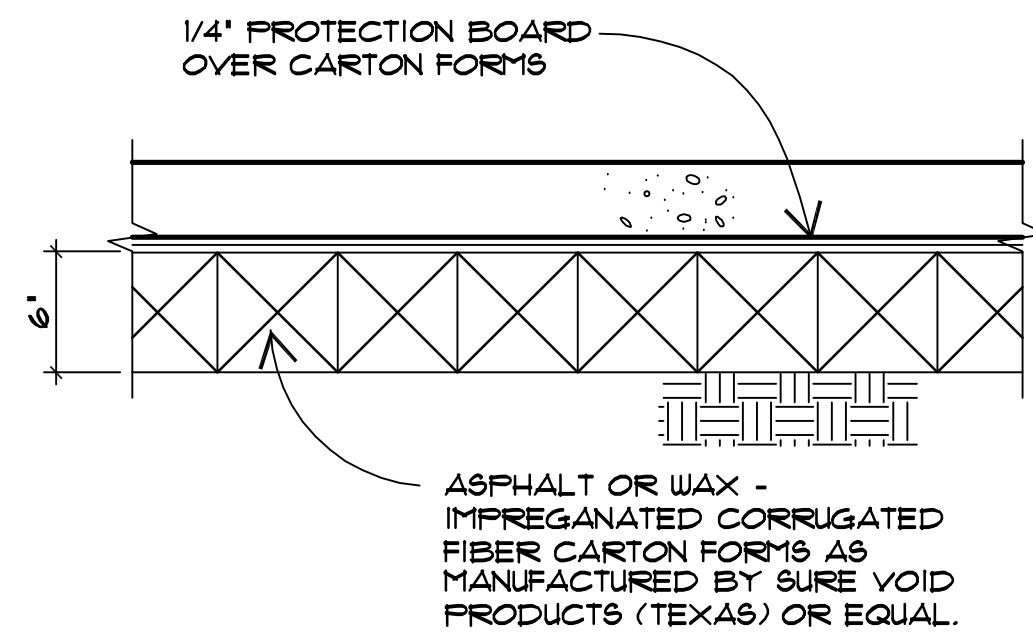
SCALE: 3/8" = 1'-0"



NOTE:
EXTRA BARS MAY BE OMITTED WHERE SIDES OF OPENING ARE FRAMED BY BEAMS.

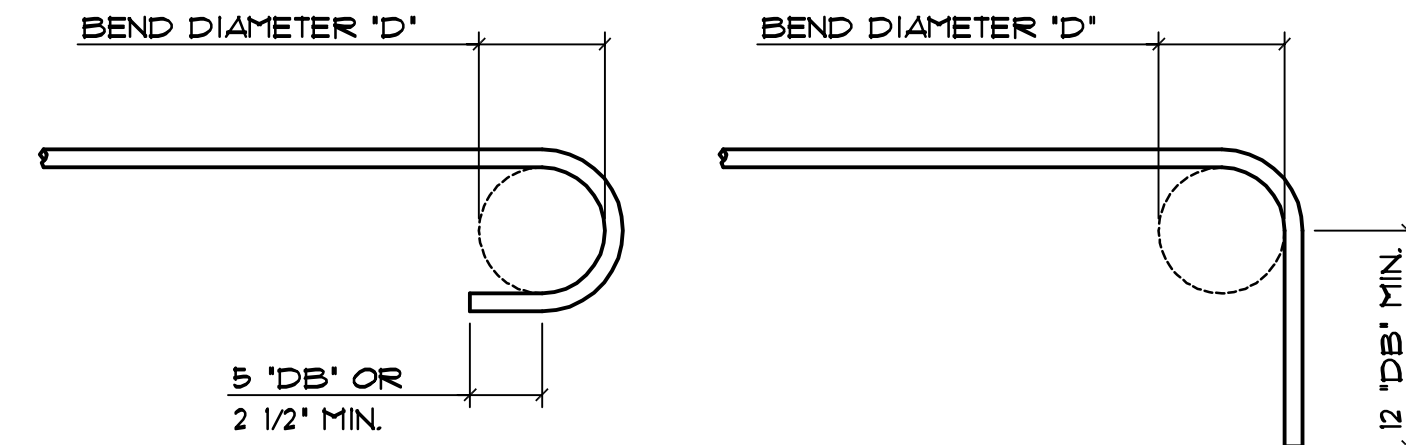
1 TYPICAL REINFORCEMENT AT CONCRETE CAP SLAB OPENING DETAIL

NO SCALE



2 TYPICAL SLAB-ON-VOID DETAIL

NO SCALE



3 ACI STANDARD HOOK DETAILS

NO SCALE

WHERE: D = BAR BEND DIAMETER
DB = BAR DIAMETER
D = 6 DB FOR #3 THRU #8 BARS
D = 8 DB FOR #9 THRU #11 BARS
D = 10 DB FOR #14 AND #18 BARS



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PRESA MOBILE HOME PARK
SAN ANTONIO, TEXAS
LIFT STATION PLANS AND TYPICAL DETAILS

JOB NO.: 002318
DATE: November 21, 2023
DRAWN: V.W. CHECKED: V.W.
SHEET NUMBER:

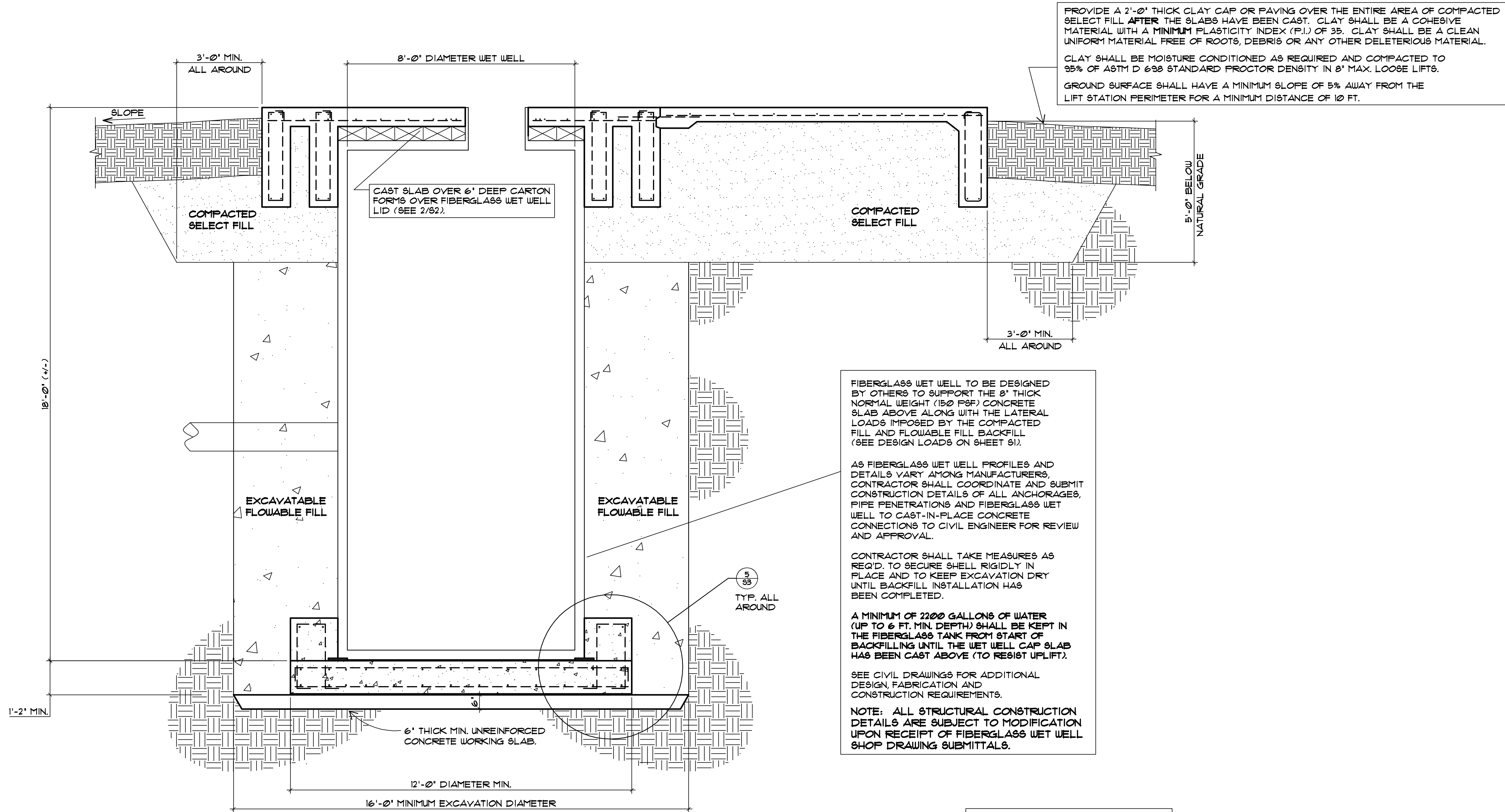
S-2

ISSUE DATE

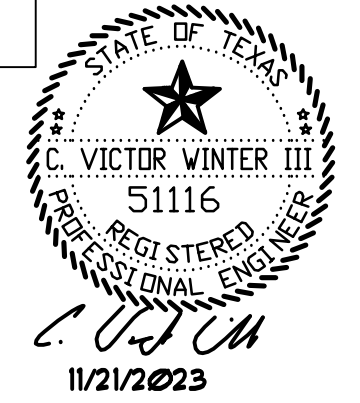
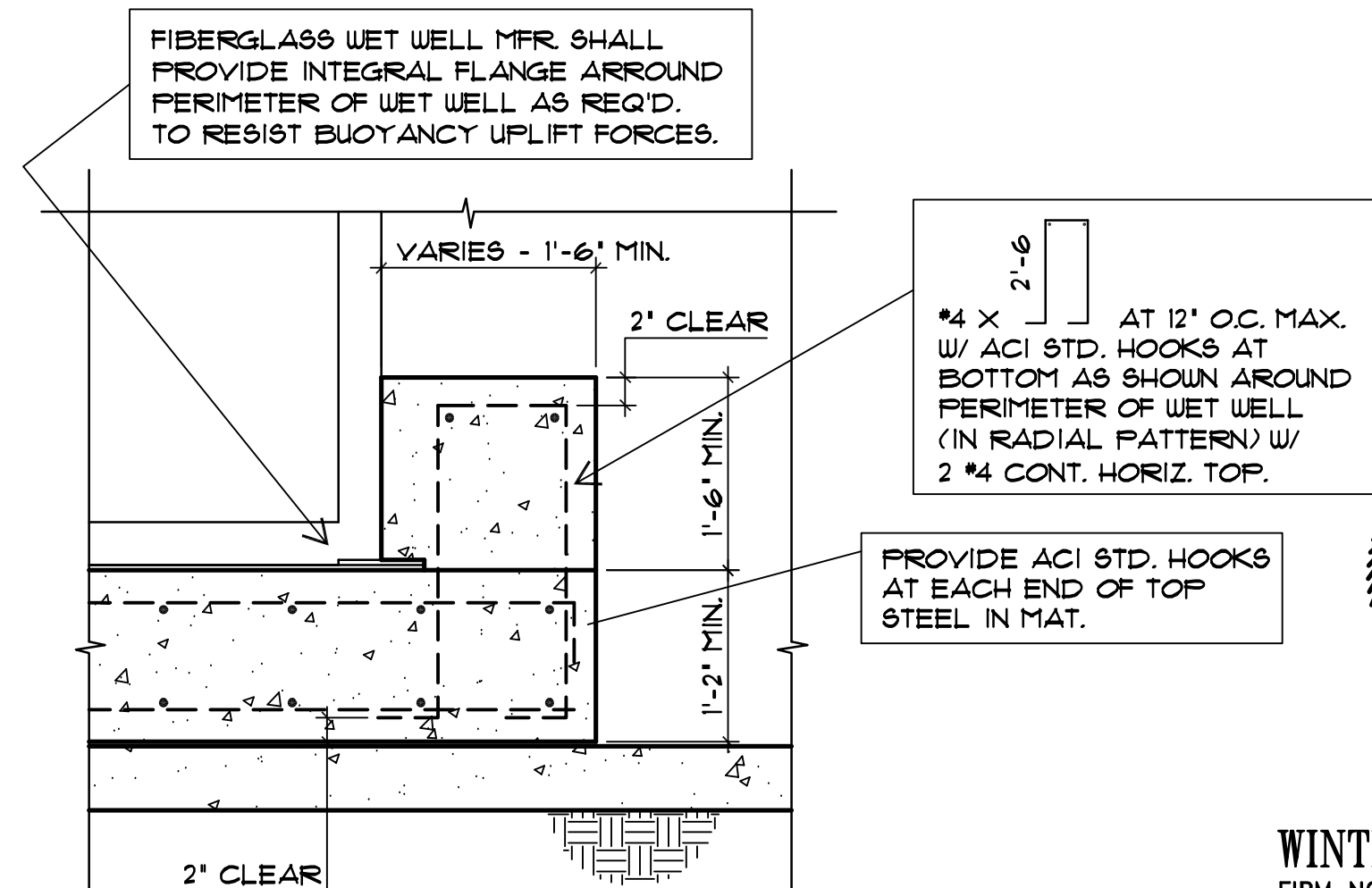
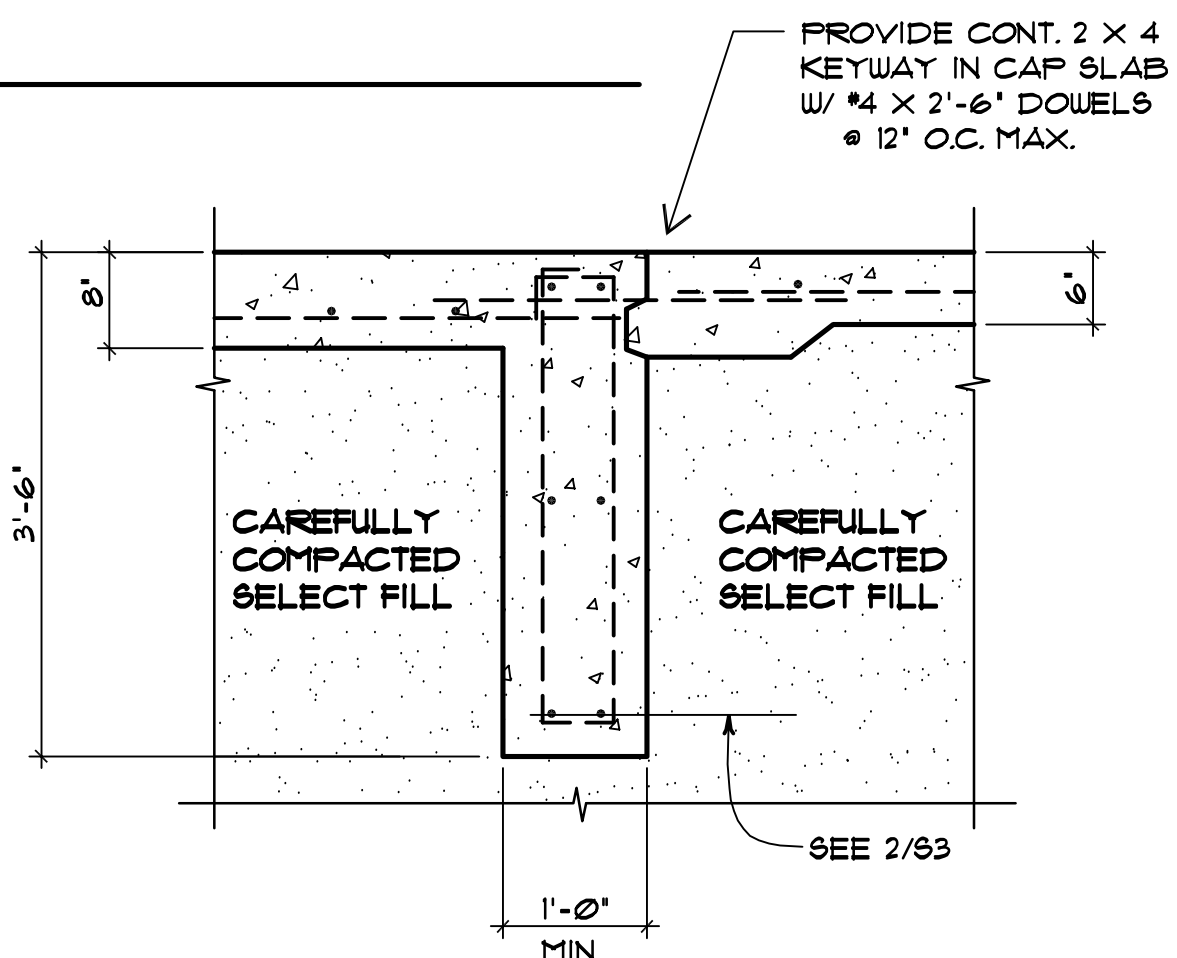
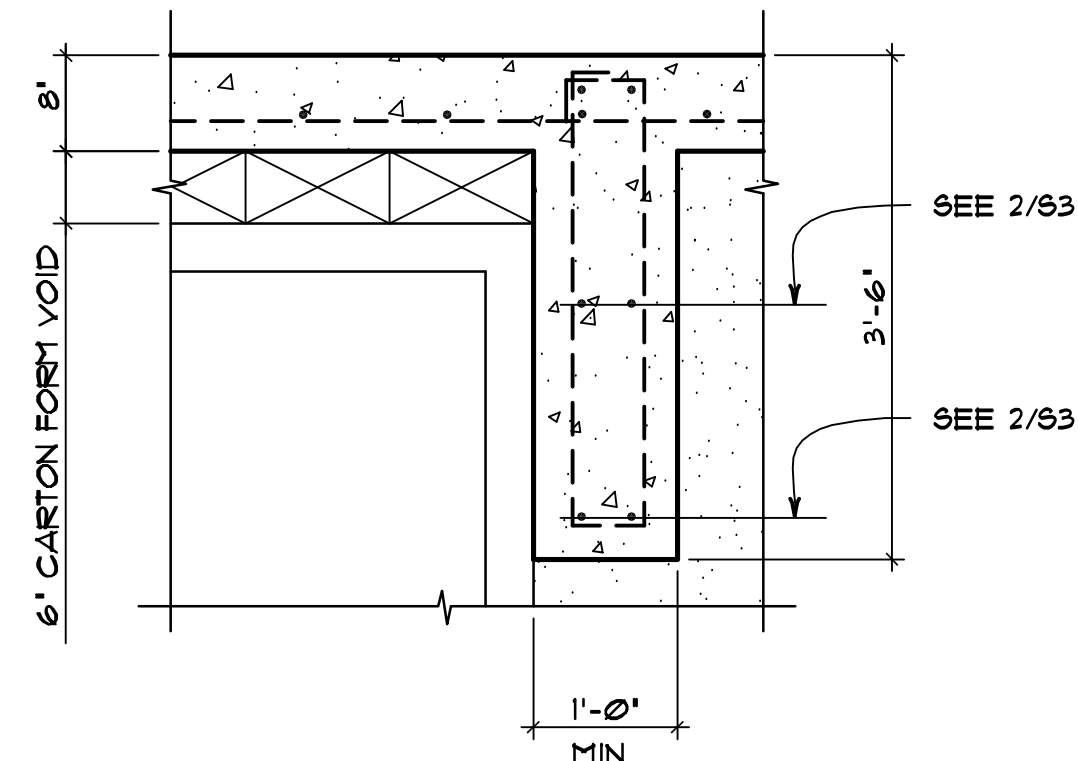
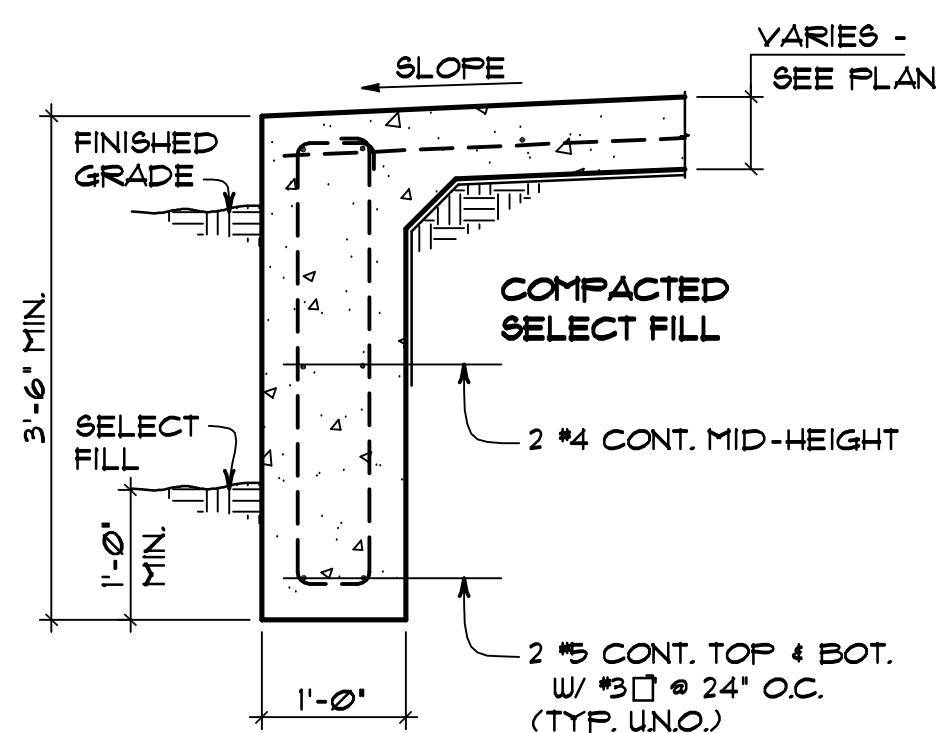
REVISIONS

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1 WET WELL SECTION
SCALE: 1/2" = 1'-0"



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JOB NO.: 002318
DATE: November 21, 2023
DRAWN: V.W. CHECKED: V.W.

SHEET NUMBER:
S-3