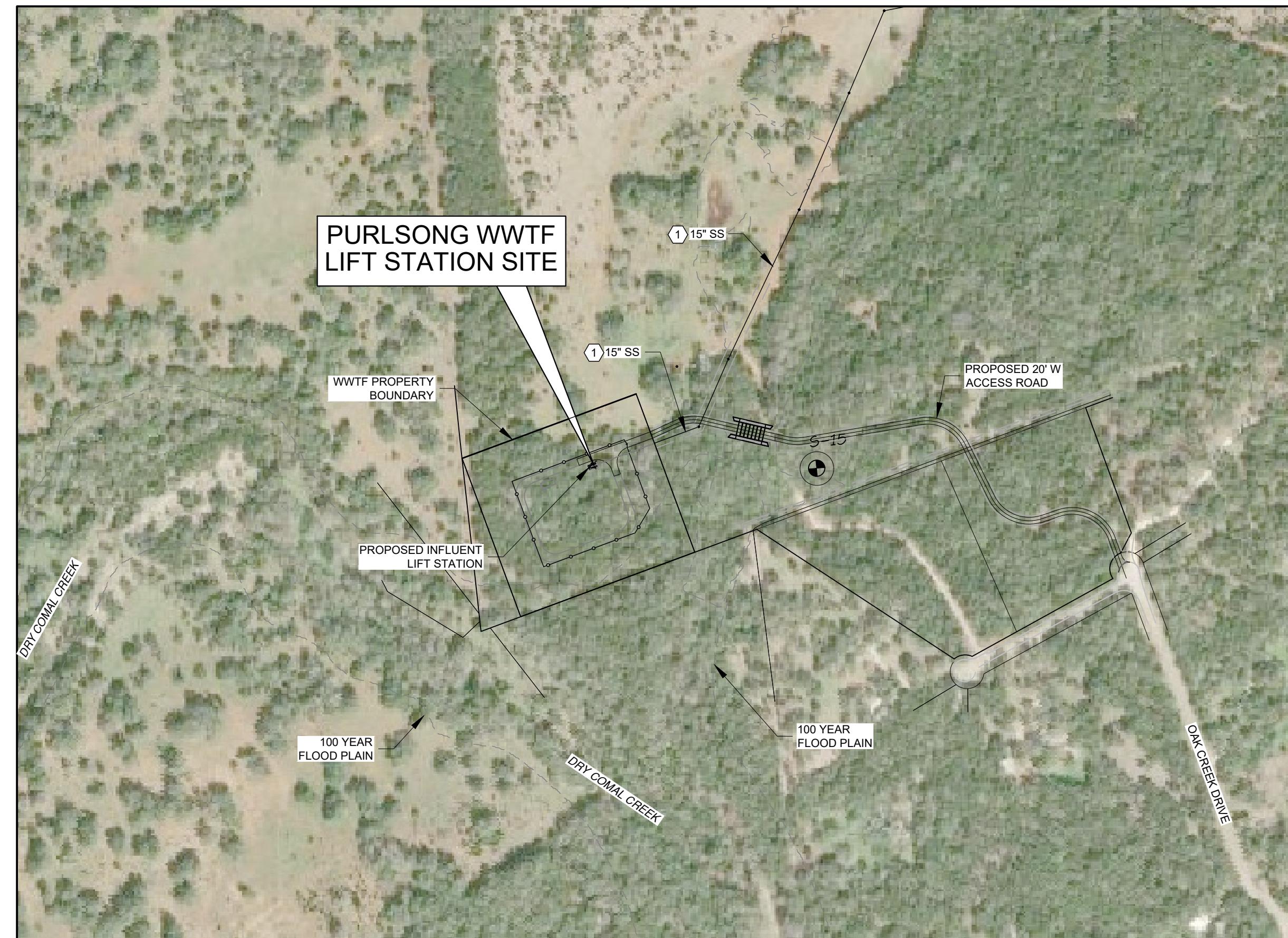
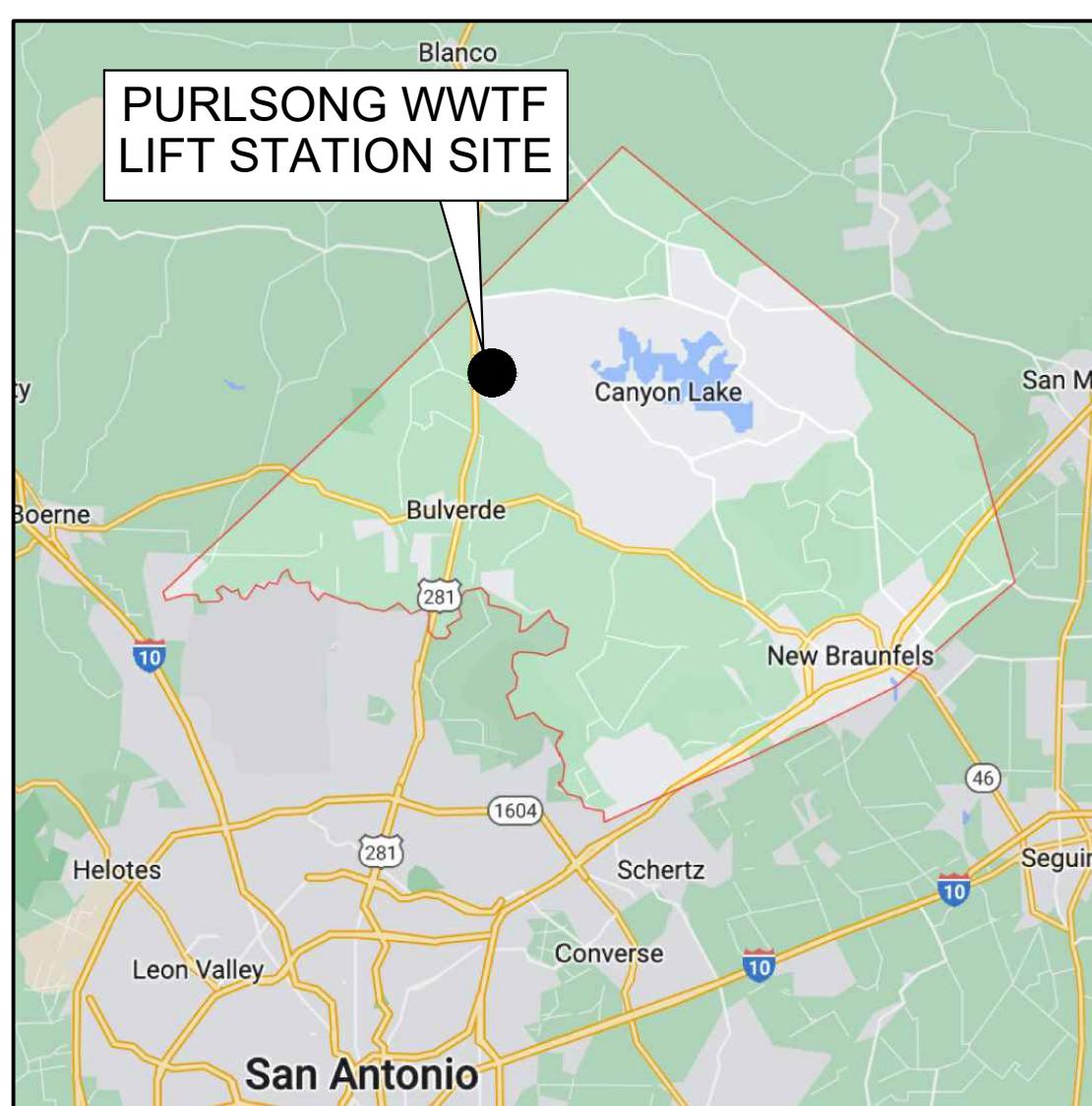
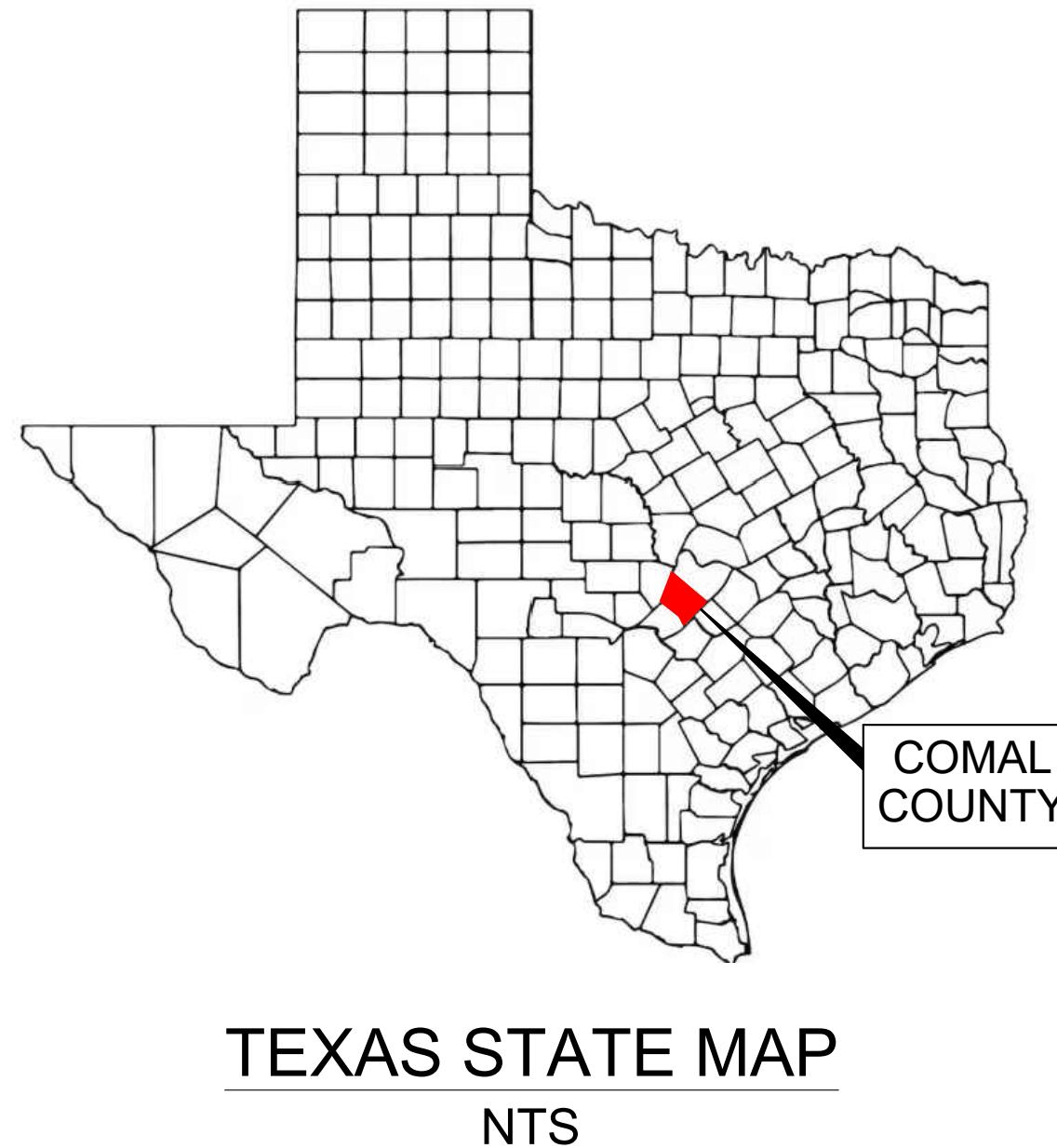


PURLSONG WASTEWATER TREATMENT FACILITY

LIFT STATION

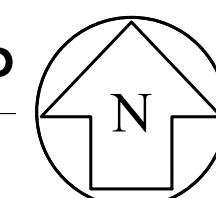
COMAL COUNTY, TEXAS

JANUARY 2026



PROJECT LOCATION MAP 

SCALE: 1" = 300 FT



PREPARED BY

The logo for J&A Wastewater. It features a stylized, handwritten-style signature of the letters 'j' and '&' followed by 'a' in blue. Below this, the word 'WASTEWATER' is printed in a smaller, sans-serif font.

Purlsong MMD of Comal County Comal County, Texas

**PURLSONG
WASTEWATER TREATMENT FACILITY
LIFT STATION**

COVER SHEET

Publish Date:			
			Project No:
Designed AU	Drawn BE/SAM	Checked JRS	Sheet: G-1
Engineer of Record			JRS

ABBREVIATIONS

AX	ANOXIC
AC	ACRE
AC-FT	ACRE-FEET
AWWA	AMERICAN WATER WORKS ASSOCIATION
BFV	BUTTERFLY VALVE
CBC	CONCRETE BOX CULVERT
€ OR CL	CENTERLINE
CCC	CHLORINE CONTACT CHAMBER
CCN	CERTIFICATE OF CONVENIENCE AND NECESSITY
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CIP	CLEAN-IN-PLACE
CO	CLEANOUT
CMP	CORRUGATED METAL PIPE
DI	DUCTILE IRON
DIA or Ø	DIAMETER
DIP	DUCTILE IRON PIPE
DR	DIMENSION RATIO
DWG	DRAWING
EFF	EFFLUENT
EL or ELEV	ELEVATION
EQ	EQUALIZATION
EW	EACH WAY
FF	FINISH FLOOR ELEVATION
FIG	FIGURE
FL	FLANGE
FM	FLOW METER or FORCE MAIN
FNPT	FEMALE NATIONAL PIPE THREAD
GAL	GALLON
GALV	GALVANIZED
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
HDPE	HIGH DENSITY POLYETHYLENE
ID	INNER DIAMETER
I.E.	FOR EXAMPLE
INF	INFILTRANT
INV	INVERT
IRR	IRRIGATION
KW	KILOWATT
LF	LINEAR FEET
LS	LIFT STATION
LSFM	LIFT STATION FORCE MAIN
mA	MILLIAMP (ONE THOUSANDTH OF AN AMP)
MATL	MATERIAL
MAX	MAXIMUM
MBR	MEMBRANE BIOREACTOR
MCC	MOTOR CONTROL CENTER
MGD	MILLION GALLONS PER DAY
MIN	MINIMUM
MH	MANHOLE
MJ	MECHANICAL JOINT
MNPT	MALE NATIONAL PIPE THREAD
MUD	MUNICIPAL UTILITY DISTRICT
N.C.	NORMALLY CLOSED
NGS	NATIONAL GEODETIC SURVEY
N.O.	NORMALLY OPEN
NOAA	NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM - EPA
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTER DIAMETER
OHWM	ORDINARY HIGH WATER MARK
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PA	PRE-AERATION or PRESSURIZED AIR
PE	POLYETHYLENE
PEN.	PENETRATION
PNT	POINT
psi	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R or RAD	RADIUS
RAS	RETURN ACTIVATED SLUDGE
RCF	REINFORCED CONCRETE PIPE
RFCA	RESTRAINED FLANGED COUPLING ADAPTER
RMJ	RESTRAINED MECHANICAL JOINT
ROW	RIGHT OF WAY
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SDR	STANDARD DIMENSION RATIO
SHT	SLUDGE HOLDING TANK
SPECS	SPECIFICATIONS
SS	SANITARY SEWER
SST	STAINLESS STEEL
STD	STANDARD
T&B	TOP AND BOTTOM
TBD	TO BE DETERMINED
TCEQ	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
TDH	TOTAL DYNAMIC HEAD
TL	TRANSMISSION LINE
TOS	TOP OF SLAB
TOW	TOP OF WALL
USBOR	UNITED STATES BUREAU OF RECLAMATION
WAS	WASTE ACTIVATED SLUDGE
WSEL	WATER SURFACE ELEVATION
WWTF	WASTE WATER TREATMENT FACILITY
WWTP	WASTEWATER TREATMENT PLANT
XFER	TRANSFER
XFMR	TRANSFORMER

LEGEND

— — — — —	TCEQ 150' BUFFER ZONE
W W W	EXISTING WATER
S S S	EXISTING SANITARY SEWER
○ ○ ○ ○ ○	EXISTING CHAIN LINK FENCE
FM FM FM	EXISTING FORCE MAIN
FE FE FE	EXISTING FINISHED EFFLUENT
OHE OHE OHE	EXISTING OVERHEAD ELECTRIC
1400	EXISTING MAJOR CONTOUR
1401	EXISTING MINOR CONTOUR
— — — — —	EXISTING PIPING (ABOVE, BELOW GROUND)
— — — — —	ABOVE GROUND PIPING
— — — — —	UNDERGROUND PIPING
○ ○ ○ ○ ○	CHAIN LINK FENCE
W W W	WATER LINE
S S S	SANITARY SEWER
FM FM FM	FORCE MAIN

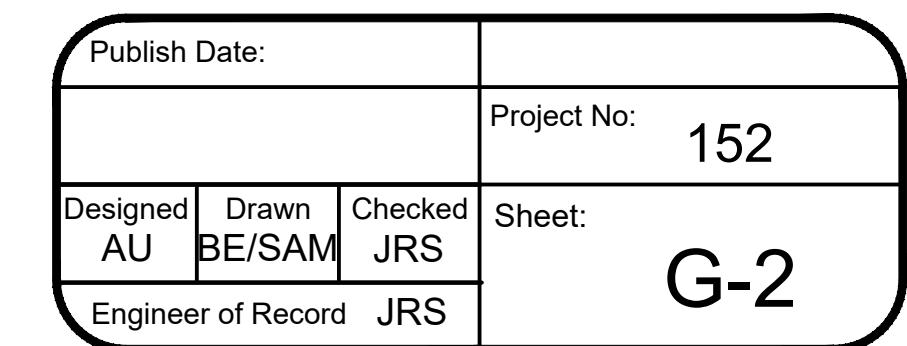
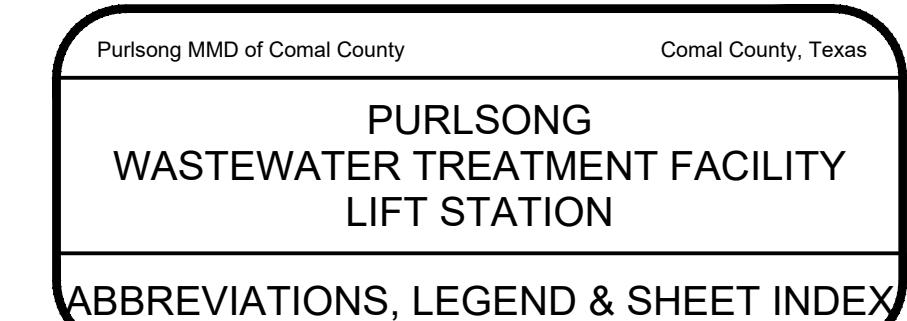
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EXISTING:

- × 52.53 EG SPOT ELEVATION (EXISTING GROUND)
- EXISTING POWER POLE
- (S) EXISTING SANITARY SEWER MANHOLE
- (WW) EXISTING WASTEWATER MANHOLE

PROPOSED:

- × 52.53 FG SPOT ELEVATION (FINISHED GROUND)
- CAP
- (S) SANITARY MANHOLE
- (WW) WASTEWATER MANHOLE



GENERAL NOTES

- PRIOR TO BEGINNING CONSTRUCTION, THE OWNER OR THEIR REPRESENTATIVE SHALL CONVENE A PRE-CONSTRUCTION CONFERENCE BETWEEN THE DISTRICT, THE DESIGN ENGINEER, SYSTEM SUPPLIER, CONTRACTOR(S), OPERATOR, COUNTY ENGINEER (IF APPLICABLE), AND TEXAS DEPARTMENT OF TRANSPORTATION IF APPROPRIATE.
- A COPY OF THE APPROVED PLANS SHALL BE AVAILABLE AT THE CONSTRUCTION SITE AT ALL TIMES DURING WORKING HOURS.
- THE CONTRACTOR SHALL MAINTAIN UP TO DATE "AS-BUILT" DRAWINGS AT THE SITE THROUGHOUT THE COURSE OF THE PROJECT. THE CONTRACTOR SHALL SUBMIT TWO (2) SETS OF COMPLETE AS-BUILT DRAWINGS TO THE OWNER'S REPRESENTATIVE AT THE COMPLETION OF THE PROJECT.
- THE CONTRACTOR SHALL ACQUIRE ALL NECESSARY CONSTRUCTION PERMITS PRIOR TO COMMENCING WORK.
- IN THE EVENT THAT THE CONTRACTOR ENCOUNTERS ITEMS OF HISTORICAL IMPORTANCE, THE CLIENT REPRESENTATIVE SHALL BE NOTIFIED IMMEDIATELY AND WORK IN THE AREA SHALL CEASE IMMEDIATELY UNTIL THE SITE CAN BE PROPERLY CLEARED.
- THE DESIGN ENGINEER'S APPROVAL MUST BE OBTAINED IN WRITING PRIOR TO ANY DEVIATIONS FROM THE CONTRACT DRAWINGS. ANY MODIFICATIONS OR DEVIATIONS FROM THE DESIGN DOCUMENTS, NOT APPROVED IN WRITING BY THE DESIGN ENGINEER, SHALL BE THE SOLE RESPONSIBILITY AND LIABILITY OF THE CONTRACTOR.
- FINISHED CONTOURS AND/OR SPOT ELEVATIONS ARE INDICATED ON THE DESIGN DRAWINGS. LOCATION ADJUSTMENTS FOR DESIGN ELEMENTS MAY BE REQUIRED TO ACHIEVE THE DESIGN INTENT, DEPENDING ON THE NATURE OF CONDITIONS UNCOVERED DURING EXCAVATION. CONSULT THE DESIGN ENGINEER PRIOR TO ADJUSTING SITE ELEMENTS.
- THE CONTRACTOR SHALL SUBMIT DIGITAL PHOTOGRAPHS OF THE INSTALLATION PROCESS FOR THE FULL DURATION OF THE CONSTRUCTION PROJECT.
- ALL WORK IN THE VICINITY OF LIVE STREAMS, WATER IMPOUNDMENTS, WETLANDS OR IRRIGATION SUPPLIES SHALL BE COMPLETED IN SUCH A MANNER AS TO MINIMIZE VEGETATION REMOVAL, SOIL DISTURBANCE AND EROSION. CROSSINGS OF LIVE STREAMS WITH HEAVY EQUIPMENT SHALL BE MINIMIZED, AS DETERMINED BY THE ENGINEER. EQUIPMENT REFUELING, MAINTENANCE AND CEMENT DUMPING IN THE VICINITY OF WATER COURSES IS STRICTLY PROHIBITED AND SHALL BE PERFORMED IN PROPER CONTAINMENT AREAS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANUP OF SPILLS ASSOCIATED WITH PROJECT CONSTRUCTION AND SHALL REPORT AND RESPOND TO SPILLS OF HAZARDOUS MATERIALS SUCH AS GASOLINE, DIESEL, MOTOR OILS, SOLVENTS, CHEMICALS, TOXIC AND CORROSIVE SUBSTANCES, AND OTHER MATERIALS WHICH MAY THREATEN PUBLIC HEALTH OR THE ENVIRONMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT ALL EXISTING SHRUBS AND TREES NOT IN CONFLICT WITH PROPOSED CONSTRUCTION. ANY SHRUBS OR TREES THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND OR AS NOTED ON PLANS.
- THE CONTRACTOR SHALL CONTROL BOTH SURFACE AND GROUND WATER TO ENSURE THAT NEITHER INTERFERE WITH CONSTRUCTION OR NEGATIVELY AFFECT THE INSTALLATION OF THE PROPOSED OR EXISTING IMPROVEMENTS. THE CONTRACTOR SHALL MAINTAIN ADEQUATE PUMPS AND PIPING ON THE SITE, TO ADEQUATELY CONTROL SURFACE AND GROUND WATER.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DESIGN, APPROVAL, IMPLEMENTATION AND MAINTENANCE OF PROPER TRAFFIC CONTROL MEASURES IN COMPLIANCE WITH STATE/COUNTY/CITY STANDARDS/REQUIREMENTS.
- THE CONTRACTOR SHALL STORE CONSTRUCTION DEBRIS WHERE IT WILL NOT BE A NUISANCE. ALL DEBRIS SHALL BE CONTAINED TO PREVENT SCATTERING. ALL DEBRIS, INCLUDING TREES AND UNDERGROWTH, SHALL BE DISPOSED OF PROPERLY AT AN APPROVED LANDFILL. ALL DEBRIS SHALL BE REMOVED FROM SITE PRIOR TO SUBSTANTIAL COMPLETION.
- THE CONTRACTOR WILL BE ALLOWED TO STORE EQUIPMENT IN THE CONSTRUCTION ZONE DURING NON-WORKING HOURS.
- DISPOSAL OR STORAGE OF USABLE MATERIALS (E.G. EXCESS DIRT, GRAVEL, ETC.) SHALL BE AT A SITE DESIGNATED BY THE OWNER DURING CONSTRUCTION.
- CONTRACTOR TO BE RESPONSIBLE FOR ALL CONTROL AND CONSTRUCTION STAKING BY A LICENSED SURVEYOR IN THE STATE OF TEXAS. SURVEYOR MUST CARRY ERROR AND OMISSIONS INSURANCE.
- THE CONTRACTOR SHALL TAKE MEASURES TO PROTECT HORIZONTAL AND VERTICAL CONTROL SURVEY MONUMENTS FROM DAMAGE DURING CONSTRUCTION.
- INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, GUIDELINES & RECOMMENDATIONS.
- ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE APPLICABLE CODES AND STANDARDS LISTED IN THE DESIGN DOCUMENTS.
- CONTRACTOR TO CONFORM TO ALL LOCAL BUILDING CODES INCLUDING BUT NOT LIMITED TO: UNIVERSAL PLUMBING CODE, NATIONAL ELECTRIC CODE AND TCEQ.
- CONTRACTOR SHALL PROVIDE A TRENCH SAFETY SYSTEM TO MEET, AS A MINIMUM, THE REQUIREMENTS OF OSHA SAFETY AND HEALTH REGULATION, PART 1926, SUBPART P AS PUBLISHED IN THE FEDERAL REGISTER, VOLUME 54, NO. 209, DATED OCTOBER 31, 1989.
- CONTRACTOR SHALL PERFORM ALL TRENCHING AND EXCAVATION WORK IN ACCORDANCE WITH OSHA SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION 1926, SUBPART P AS PUBLISHED IN THE FEDERAL REGISTER, VOLUME 54, NO. 209, DATED OCTOBER 31, 1989. CONTRACTOR SHALL SUBMIT AN EXCAVATION PLAN SEALED BY AN ENGINEER LICENSED IN THE STATE OF TEXAS FOR ANY EXCAVATION DEEPER THAN 20 FEET.
- ALL BEDDING MATERIAL SHALL 3/8" F BY TEXAS CRUSHED STONE, CAPITOL AGGREGATES, OR APPROVED EQUAL. CONTRACTOR SHALL PROVIDE A SAMPLE FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION.

- ALL EXPOSED 4" PIPING AND SMALLER SHALL BE INSULATED PER SPECIFICATIONS.
- PIPE BEDDING AND BACKFILL MATERIAL SHALL BE PROCURED BY THE CONTRACTOR.
- BACKFILL DENSITY TESTS SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND GEOTECHNICAL REPORT.
- UNDERGROUND UTILITIES SHALL BE INSTALLED TO THE MINIMUM DEPTH AS SHOWN ON THE CONSTRUCTION DRAWINGS. THIS INCLUDES ANY CROSSING SERVICES OR LATERALS. EXCEPTIONS MUST BE AUTHORIZED BY THE OWNER'S REPRESENTATIVE OR DESIGN ENGINEER.
- NEW AND REPAIRED POTABLE WATER MAINS SHALL BE DISINFECTED PER AWWA C651-14 PRIOR TO PLACING INTO SERVICE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY TESTING SERVICES REQUIRED FOR BACKFILL COMPACTION, CONCRETE TESTING AND DISINFECTION.
- EXISTING UNDERGROUND UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL BEAR THE RESPONSIBILITY OF VERIFYING UTILITY LOCATION, DEPTH AND SIZES. THE CONTRACTOR SHALL CALL TEXAS 811 PRIOR TO COMMENCING WORK TO HAVE UTILITIES LOCATED AND MARKED IN THE FIELD.
- THE CONTRACTOR SHALL PROTECT GAS MAINS AND SERVICES EXPOSED DURING EXCAVATION. SUPPORT OR PROTECTION SYSTEMS SHALL BE AS RECOMMENDED BY THE RESPECTIVE UTILITY OWNERS.
- THE CONTRACTOR SHALL CONTACT THE OWNER AT LEAST 48 HOURS PRIOR TO CONNECTING TO EXISTING WATER LINES.
- THE CONTRACTOR SHALL, AT THEIR EXPENSE, PERFORM QUALITY ASSURANCE TESTING FOR ALL INSTALLED PIPING. CONTRACTOR SHALL PROVIDE ALL LABOR AND EQUIPMENT INCLUDING PUMPS, TEMPORARY PIPING, AND GAUGES NECESSARY TO PERFORM THE TESTS. QUALITY ASSURANCE AND PRESSURE TESTING SHALL BE WITNESSED AND MONITORED BY THE ENGINEER OR THEIR REPRESENTATIVE.
- THE CONTRACTOR SHALL PROVIDE THE ENGINEER OR THEIR REPRESENTATIVE NO LESS THAN 24-HOURS NOTICE PRIOR TO PERFORMING STERILIZATION, QUALITY ASSURANCE TESTING OR PRESSURE TESTING.
- THE CONTRACTOR SHALL NOT OPEN OR CLOSE AND VALVES UNLESS AUTHORIZED BY THE OWNER.
- ALL VALVE BOXES AND COVERS SHALL BE CAST IRON.
- LINE FLUSHING, LEAK TESTING OR ANY ACTIVITY USING LARGE QUANTITIES OF WATER MUST BE SCHEDULED WITH THE OWNER.
- ALL PAVEMENT CUTS SHALL BE MADE BY A PAVEMENT SAW TO THE NEAREST JOINT. SAW CUTS SHALL BE PERPENDICULAR OR PARALLEL TO THE LENGTH OF ROADWAY. SAW CUTTING SHALL BE REQUIRED PRIOR TO ANY UNDERGROUND WORK IN ROADWAY.
- THE CONTRACTOR SHALL SAFEGUARD AND PRESERVE ALL RIGHT-OF-WAY MONUMENTS AND PROPERTY BOUNDARY MARKERS. ALL PROPERTY BOUNDARY MARKERS DISTURBED BY THE CONTRACTOR DURING CONSTRUCTION ARE TO BE REPLACED AND CERTIFIED BY A TEXAS LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION, ANY DAMAGES DONE TO EXISTING FENCES, STREETS, DRIVEWAYS, LANDSCAPING, STRUCTURES, AND/OR EXISTING UTILITIES. THE COST OF RESTORATIONS, IF ANY, SHALL SOLELY BE THE CONTRACTOR'S RESPONSIBILITY.

CONSTRUCTION SEQUENCE:

- INSTALL ALL EROSION CONTROL DEVICES AS SHOWN ON THE PLANS, PRIOR TO EARTHWORK CONSTRUCTION. BASED ON FIELD PERFORMANCE AND WEATHER CONDITIONS, ADDITIONAL EROSION CONTROL DEVICES MAY BE REQUIRED. ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE MAINTAINED BY THE CONTRACTOR.
- CONTRACTOR SHALL RESTRICT GRADING OPERATIONS TO THE AREAS INDICATED ON THE CONTRACT DRAWINGS. PERFORMING WORK OUTSIDE THE IDENTIFIED LIMITS SHALL NOT BE PERMITTED WITHOUT APPROVAL OF THE ENGINEER.
- EXISTING VEGETATION AND ENVIRONMENTAL FEATURES TO BE PRESERVED WITH CONSTRUCTION BARRIERS.
- CONSTRUCTION OF UNDERGROUND UTILITIES MAY BEGIN AT THIS TIME. INSTALLATION SHOULD PROCEED AS INDICATED ON THE PROJECT PLANS.
- COMPLETE ROUGH GRADING OF SITE. AREAS TO REMAIN UNDISTURBED FOR LONGER THAN 14 DAYS WILL BE SEEDED/MULCHED.
- CONSTRUCTION OF ABOVE-GROUND UTILITIES MAY BEGIN AT THIS TIME. INSTALLATION SHOULD PROCEED AS INDICATED ON THE PROJECT PLANS.
- FINAL GRADING AND SITE RESTORATION INCLUDING SEEDING/MULCHING.
- TEST ALL FACILITIES FOR ACCEPTANCE.
- CONDUCT SUBSTANTIAL COMPLETION WALK THROUGH WITH ENGINEER AND OWNER.
- EROSION CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL AN APPROVED PERMANENT COVER OF VEGETATION IS ESTABLISHED. REMOVAL OF DEVICES TO BE COORDINATED WITH THE OWNER OR REPRESENTATIVE.
- CONDUCT FINAL WALK THROUGH.
- PROJECT CLOSE-OUT INCLUDING ISSUANCE OF NOTICE OF ACCEPTANCE.

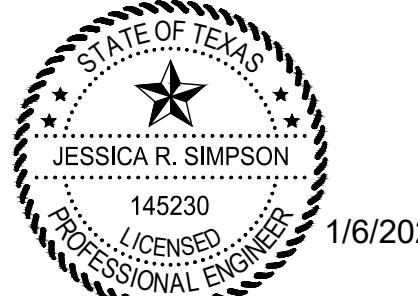
TCEQ LIFT STATION AND FORCE MAIN GENERAL CONSTRUCTION NOTES:

- THIS LIFT STATION AND/OR FORCE MAIN MUST BE CONSTRUCTED IN ACCORDANCE WITH 30 TEXAS ADMINISTRATIVE CODE (TAC) §213.5(C), THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) EDWARDS AQUIFER RULES, AND ANY LOCAL GOVERNMENT STANDARD SPECIFICATIONS.
- ANY MODIFICATION TO THE ACTIVITIES DESCRIBED IN THE REFERENCED LIFT STATION/FORCE MAIN (LSFM) SYSTEM APPLICATION FOLLOWING THE DATE OF APPROVAL MAY REQUIRE THE SUBMITTAL OF A LSFM SYSTEM APPLICATION TO MODIFY THIS APPROVAL, INCLUDING THE PAYMENT OF APPROPRIATE FEES AND ALL INFORMATION NECESSARY FOR ITS REVIEW AND APPROVAL.
- A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE PRESIDING TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE:
 - THE NAME OF THE APPROVED PROJECT;
 - THE ACTIVITY START DATE; AND
 - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.

AUSTIN REGIONAL OFFICE
12100 PARK 35 CIRCLE, BUILDING A
AUSTIN, TEXAS 78753-1808
PHONE: (512) 339-2929
FAX: (512) 339-3795
- UPON COMPLETION OF ANY LIFT STATION EXCAVATION, A GEOLOGIST MUST CERTIFY THAT THE EXCAVATION HAS BEEN INSPECTED FOR THE PRESENCE OF SENSITIVE FEATURES. THE CERTIFICATION MUST BE SIGNED, SEALED, AND DATED BY THE GEOLOGIST PREPARING THE CERTIFICATION. CERTIFICATION THAT THE EXCAVATION HAS BEEN INSPECTED MUST BE SUBMITTED TO THE APPROPRIATE REGIONAL OFFICE.
 - IF SENSITIVE FEATURE(S) ARE IDENTIFIED, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY AND 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 WERE PRESENT.
- 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 TCEQ 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.
- ALL FORCE MAIN LINES MUST BE TESTED IN ACCORDANCE WITH 30 TAC §217.68. TESTING METHOD WILL BE:
 - A PRESSURE TEST MUST USE 50 POUNDS PER SQUARE INCH ABOVE THE NORMAL OPERATING PRESSURE OF A FORCE MAIN.
 - A TEMPORARY VALVE FOR PRESSURE TESTING MAY BE INSTALLED NEAR THE DISCHARGE POINT OF A FORCE MAIN AND REMOVED AFTER A TEST IS SUCCESSFULLY COMPLETED.
 - A PUMP ISOLATION VALVE MAY BE USED AS AN OPPOSITE TERMINATION POINT.
 - A TEST MUST INVOLVE FILLING A FORCE MAIN WITH WATER.
 - PIPE MUST HOLD THE DESIGNATED TEST PRESSURE FOR A MINIMUM OF 4.0 HOURS.
 - THE LEAKAGE RATE MUST NOT EXCEED 10.0 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER DAY.

GBRA NOTES:

- DESIGN AND INSTALLATION SHALL BE IN ACCORDANCE WITH TCEQ RULES AND AWWA STANDARDS, AND IN ACCORDANCE WITH GBRA STANDARDS AS FURTHER DESCRIBED IN THIS DOCUMENT.
- ALL EXPOSED VERTICAL AND HORIZONTAL CONCRETE EDGES SHALL BE FORMED WITH 1/4" CHAMFER STRIPS.
- ALL EQUIPMENT, PIPING, AND VALVES SHALL BE LABELED FOR IDENTIFICATION PURPOSES (E.G. PIPE LABELS, COLOR CODING, BANDING, FLOW ARROWS, EQUIPMENT NUMBERS, VALVE TAGS, ETC.).
- PIPE BELLS SHALL BE INSTALLED IN UPSTREAM DIRECTION.
- HYDRAULIC STRUCTURES MUST PASS LEAKAGE TESTING PRIOR TO APPLICATION OF ANY COATINGS OR LININGS. FILL WITH CLEAN WATER TO OVERFLOW LEVEL. ALLOW MINIMUM 24-HOUR SATURATION PERIOD. TEST DURATION IS 1-HOUR. NO ALLOWABLE LEAKAGE. TEST EACH BASIN OR CHAMBER SEPARATELY. ANY AREAS OF VISIBLE MOISTURE SHALL BE REPAIRED AND RETESTED.
- THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING WASTEWATER SYSTEMS AT ALL TIMES DURING CONSTRUCTION. ANY WORK INVOLVING POWER OUTAGES, BYPASS PUMPING, PUMP AND HAUL, OR ANY OTHER INTERRUPTION OF FLOW MUST BE PERFORMED BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. ALL NECESSARY TEMPORARY POWER, BYPASS PUMPING, PUMP AND HAUL, TEMPORARY PLUGS, ETC., SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR. COORDINATE AND SCHEDULE ANY SUCH ACTIVITIES WITH GBRA AT LEAST TWO (2) WEEKS IN ADVANCE.
- EXPLOSIVES AND BLASTING ARE NOT ALLOWED.
- REFERENCE "GBRA DESIGN GUIDELINES FOR DEVELOPER UTILITIES" FOR INSPECTION REQUIREMENTS, SURVEY STAKING, PIPING, MANHOLES, TESTING REQUIREMENTS, ETC. ALL WORK SHALL BE IN ACCORDANCE WITH GBRA STANDARDS AS PUBLISHED AT THE FOLLOWING WEBSITE: [HTTP://WWW.GBRA.ORG/PUBLIC/WATERWASTEWATERSERVICES.ASPX](http://WWW.GBRA.ORG/PUBLIC/WATERWASTEWATERSERVICES.ASPX)
- DO NOT PAINT HOT-DIP GALVANIZED, BRASS OR ALUMINUM.
- PVC MALE ADAPTERS ARE NOT ALLOWED.
- ALL TESTING SHALL BE PERFORMED BY THE CONTRACTOR AND WITNESSED BY GBRA.
- FLANGE COUPLING ADAPTERS SHALL BE SMITH BLAIR MODEL 911. FLANGE ADAPTERS ARE NOT ALLOWED WITHIN HYDRAULIC STRUCTURES.
- EXPOSED/ABOVE GROUND CONDUIT SHALL BE ALUMINUM RIGID (3/4" MINIMUM). UNDERGROUND CONDUIT SHALL BE SCH 40 PVC (1" MINIMUM) AND SHALL BE INSTALLED IN REINFORCED CONCRETE DUCT BANKS. STUB-UPS FROM UNDERGROUND TO 6" ABOVE GRADE INCLUDING THE 90-DEGREE BENDS SHALL BE ETL-PVC-001 CERTIFIED PVC COATED GRIS CONDUIT, SUBMIT INSTALLER CERTIFICATION.
- ALL CONDUIT FITTINGS SHALL BE FORM 7 SAND CAST ALUMINUM WITH ALUMINUM COVERS AND 316SS SCREWS. SNAP-ON COVERS ARE NOT PERMITTED.
- USE UNY AND UNF ALUMINUM UNIONS FOR CONDUIT. GALVANIZED UNIONS ARE NOT PERMITTED.
- FOR CONDUIT, USE ALUMINUM SEAL-OFF FITTINGS WHERE REQUIRED BY NEC, SEAL WITH 3M-2123 RE-ENTERABLE SEALING COMPOUND.
- USE NOALOX OR OTHER COMPARABLE ANTI-OXIDIZING AGENT ON ALL CONDUIT THREADS.
- FIELD BENDING OF CONDUIT SHALL BE ACCOMPLISHED USING THE APPROPRIATE TOOLS. FLAME BENDING IS NOT ALLOWED.



Purisong MMD of Comal County	Comal County, Texas
PURLSONG	
WASTEWATER TREATMENT FACILITY	
LIFT STATION	
GENERAL NOTES 1	

Publish Date:	Project No.:		
	152		
Designed AU	Drawn BE/SAM	Checked JRS	Sheet: G-3
Engineer of Record JRS			

PAVEMENT NOTES

- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK WHERE NOT SPECIFICALLY COVERED IN THE SPECIFICATIONS OR GEOTECHNICAL REPORT SHALL CONFORM TO ALL APPLICABLE CITY, COUNTY OR TXDOT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).
- THE CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING UTILITY AND STORM DRAIN SYSTEMS PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL, OR BETTER, CONDITION ANY DAMAGE DONE TO EXISTING TREES, BUILDINGS, UTILITIES, FENCES, PAVEMENT, CURBS, OR DRIVEWAYS (NO SEPARATE PAY ITEMS).
- THE CONTRACTOR SHALL VERIFY ELEVATIONS AND LOCATIONS OF EXISTING FACILITIES AND NOTIFY THE ENGINEER OF ANY CONFLICTS PRIOR TO BEGINNING CONSTRUCTION.
- NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.
- THE CONTRACTOR SHALL SAW CUT EXISTING PAVING, CURB, AND SIDEWALKS TO PROVIDE A SMOOTH TRANSITION. NO JAGGED OR IRREGULAR EDGES WILL BE ALLOWED.

GRADING NOTES

- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK WHERE NOT SPECIFICALLY COVERED IN THE SPECIFICATIONS OR GEOTECHNICAL REPORT SHALL CONFORM TO ALL APPLICABLE CITY, COUNTY OR TXDOT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).
- SITE PREPARATION, GRADING, EXCAVATION AND FILL SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT AND SPECIFICATIONS.
- ALL SELECT FILL MATERIAL PROVIDED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING AND COMPACTING.
- ALL ELEVATIONS AND PROPOSED CONTOURS SHOWN ON THIS GRADING PLAN REFLECT FINISHED GRADES. THE THICKNESS OF PAVING, BASE, GRASS, TOPSOIL, AND MULCH MUST BE SUBTRACTED TO OBTAIN SUBGRADE ELEVATIONS.
- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MAY ARISE CONCERNING THE INTENT, PLACEMENT, OR LIMITS OF DIMENSIONS OR GRADES NECESSARY FOR CONSTRUCTION OF THIS PROJECT.
- THE CONTRACTOR SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
- THE CONTRACTOR SHALL REMOVE TOP SOIL, GRASS, ROOTS, DEBRIS, ETC. AND DISPOSE OFF SITE THOSE MATERIALS NOT SUITABLE FOR EMBANKMENT AND TOPSOIL. CLEAN STRIPPINGS AND TOPSOIL MAY BE STOCKPILED ON SITE FOR REUSE IN A LOCATION SPECIFIED BY THE OWNER.
- THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE STABILIZATION. ALL DISTURBED AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND TPDES/SWPP REQUIREMENTS. REFERENCE THE LANDSCAPE ARCHITECT'S PLAN, IF APPLICABLE.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS (EROSION CONTROL MEASURES) TO KEEP DRAINAGE AND SILT FROM WASHING INTO ADJACENT PROPERTY, STREETS, OR DRAINAGEWAYS. CONTRACTOR SHALL IMMEDIATELY REMOVE SILT/DEBRIS WHICH WASHES OFFSITE OR INTO EXISTING STORM DRAIN SYSTEMS. (SEE SWPP PLANS & TPDES BOOK).
- THE CONTRACTOR SHALL OBTAIN GRADES SHOWN HEREON WITHIN +/- ONE-TENTH (0.10) FOOT.
- IN PROPOSED PAVING AREAS, IT IS INTENDED THAT THE MINIMUM GRADE IS 1%. ALL EARTHEN SLOPES SHALL BE A MAXIMUM OF 3:1 AND A MINIMUM OF 2.0% UNLESS OTHERWISE SHOWN.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL, OR BETTER, CONDITION ANY DAMAGE DONE TO EXISTING TREES, BUILDINGS, UTILITIES, FENCES, PAVEMENT, CURBS, OR DRIVEWAYS (NO SEPARATE PAY ITEMS).
- THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN WORKING NEAR UTILITIES, GAS LINES, SEWER, OR EXISTING APPURTENANCES. PRIOR TO PERFORMING ANY EXCAVATION, CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND ENSURE UTILITIES HAVE BEEN ADEQUATELY LOCATED AND IDENTIFIED. THE ENGINEER SHALL BE NOTIFIED IF ANY UTILITY CONFLICTS ARE DISCOVERED.
- POSITIVE DRAINAGE SHALL BE MAINTAINED THROUGHOUT THE SCOPE OF THE PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.
- FOR FILL PLACEMENT ON HILL SIDES OR STEEP SLOPE AREAS, THE CONTRACTOR SHALL REFERENCE THE PROJECT SPECIFICATIONS AND GEOTECHNICAL REPORT FOR SPECIAL INSTRUCTIONS REGARDING BENCHING.
- NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.

DRAINAGE NOTES

- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK SHALL COMPLY WITH THE PROJECT GEOTECH REPORT, THE PROJECT SPECIFICATIONS, AND THE CURRENT CITY, COUNTY OR TXDOT.
- THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES. THE CONTRACTOR SHOULD EXERCISE EXTREME CAUTION WHEN WORKING NEAR EXISTING UTILITIES AND SHOULD THEY BE DAMAGED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR WILL BE REQUIRED TO REPAIR OR REPLACE THE DAMAGED FACILITIES AT CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ORIGINAL OR BETTER CONDITION DAMAGE DONE TO EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, LANDSCAPING AND STRUCTURES.
- CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION.
- WATER JETTING THE BACKFILL OF STORM DRAIN TRENCHES WILL NOT BE PERMITTED.
- NORTHINGS AND EASTINGS LISTED ON THESE PLANS ARE TO CENTER OF BOX FOR JUNCTION BOXES AND GRATE INLETS AND TO OUTSIDE CORNER FACE OF CURB FOR ALL CURB AND COMBINATION INLETS. ALL LENGTHS OF PIPE ARE TO INSIDE FACE OF STRUCTURES.
- CONTRACTOR SHALL GROUT INVERTS OF ALL STORM DRAIN INLETS, JUNCTION BOXES, AND DROP STRUCTURES TO DRAIN.

SITE UTILITY NOTES

- THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR IMMEDIATELY NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM THE PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
- DRAWINGS DO NOT SHOW ALL EXISTING UTILITIES. ALL EXISTING UTILITIES SHALL BE VERIFIED IN THE FIELD WHETHER SHOWN ON THIS PLAN OR NOT PRIOR TO INSTALLATION OF ANY NEW LINES.
- ALL FILL MATERIAL IS TO BE IN PLACE AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
- CONTRACTOR SHALL CALL FOR THE LOCAL JURISDICTIONAL INSPECTIONS AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR COMPLYING TO THE SPECIFICATIONS OF THE LOCAL JURISDICTION WITH REGARDS TO MATERIALS AND INSTALLATION OF THE UTILITIES AND STORM DRAINS.
- CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS, SPECIFICATIONS AND ALL TESTING.
- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS PROJECT SHALL COMPLY WITH THE FOLLOWING AS APPLICABLE:
 - A. CURRENT "NBU" WATER SYSTEM STANDARD SPECIFICATIONS FOR CONSTRUCTION
 - B. CURRENT "NBU" WATER SYSTEM UTILITY SERVICE REGULATIONS
 - C. CURRENT CITY OF NEW BRAUNFELS "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION"
 - D. CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS, AND DRAINAGE"
 - E. CURRENT CITY OF NEW BRAUNFELS "RIGHT-OF-WAY ORDINANCE AND CRITERIA MANUAL"
- MINIMUM TRENCH WIDTH SHALL BE 2 FEET.
- ALL CONCRETE FOR ENCASEMENTS SHALL HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH AT 3000 PSI.
- CONTRACTOR SHALL PROTECT ALL EXISTING TREES, FENCES, PAVING, UTILITIES, AND OTHER STRUCTURES SCHEDULED TO REMAIN. ANY STRUCTURE DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT THEIR EXPENSE.
- THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH ALL FINAL UTILITY AS-BUILT MEASUREMENTS, TOPS AND LENGTH OF SERVICE CONNECTIONS OF THE PROJECT.
- ALL GARBAGE OR SPOIL MATERIAL FROM THIS WORK SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AT HIS SOLE EXPENSE.
- GAS AND ELECTRIC ALIGNMENTS SHOWN ON THIS DRAWING ARE CONCEPTUAL. THE ACTUAL DESIGN AND LOCATIONS SHALL BE DETERMINED BY THE LOCAL SERVICE PROVIDER OR MEP ENGINEER.
- CONTRACTOR SHALL COORDINATE TELE, COMMUNICATIONS, CABLE, ELECTRIC AND GAS LINE INSTALLATION WITH LOCAL SERVICE PROVIDER. THE SERVICE PROVIDER WILL BE RESPONSIBLE FOR INSTALLATION OF GAS LINE TO WITHIN 5' OF BUILDING.
- REFER TO INTERIOR PLUMBING DRAWINGS FOR TIE-IN OF ALL UTILITIES.
- SEE IRRIGATION, LIGHTING AND ARCHITECTURAL PLANS FOR ADDITIONAL CONDUIT LOCATIONS AS APPLICABLE. VERIFY ALL CONDUIT AND SLEEVES LOCATIONS PRIOR TO PLACING ANY PAVEMENT.
- CONTRACTOR SHALL INSTALL ALL CONDUITS WITH A MINIMUM 4-FOOT SWEEP RADIUS. ALL CONDUITS SHALL HAVE A PULL STRING TO BE INSTALLED BY THE CONTRACTOR.
- NO WORK SHALL BE ALLOWED WITHIN THE PUBLIC RIGHT-OF-WAY WITHOUT AN APPROVED PERMIT.
- THE CONSTRUCTION OF UNDERGROUND PRIMARY ELECTRIC AND GAS DISTRIBUTION SYSTEMS SHALL BE GOVERNED BY THE ENGINEERING CONSTRUCTION PLANS PROVIDED BY THE LOCAL SERVICE PROVIDER. THE DRAWING SHALL SERVE ONLY AS REFERENCE DOCUMENT TO COORDINATE LOCATION OF THE PROPOSED PRIMARY ELECTRIC AND GAS DISTRIBUTION SYSTEM. THE LOCAL SERVICE PROVIDER'S CONSTRUCTION DRAWINGS AND CONSTRUCTION DETAILS SHALL COVER.
- CONTRACTOR SHALL INCLUDE IN HIS BID A 4" PVC CONDUIT FOR TELEPHONE AND A 2" PVC CONDUIT FOR CAT5E TV TO BE IN THE SAME TRENCH AS UNDERGROUND ELECTRIC LINES. CONTRACTOR SHALL VERIFY WITH APPROPRIATE UTILITY COMPANY PRIOR TO CONSTRUCTION ON NUMBER AND SIZE OF CONDUITS NEEDED FOR UTILITY SERVICE TO ALL BUILDINGS.
- BEDDING FOR ALL UTILITIES SHALL BE PER THE PROJECT SPECIFICATIONS. NO WATER JETTING OF BACKFILL MATERIAL WILL BE ALLOWED.

The following construction notes are intended to be advisory in nature and/or not constitute an approved or conditional approval by the Executive Director (ED), nor do they constitute a comprehensive listing of rules or conditions to be followed during construction. Further action may be required to achieve compliance with TCEQ regulations found in Title 30, Texas Administrative Code (TAC), Chapters 219.2 and 219.3. The following construction notes are not intended to supersede or replace any applicable TCEQ regulation, nor do they restrict the powers of the ED, the commission or any other governmental entity to prevent, correct, or curtail activities that result or may result in pollution of the Edwards Aquifer or hydrologically connected area 20, TAC, Chapters 219.2 and 219.3 or any other applicable TCEQ regulation, as well as all conditions of an Edwards Aquifer Protection Plan through all phases of plan implementation. Failure to follow these construction notes may result in enforcement action by the ED, the commission or any other governmental entity. TCEQ regulations and any violation is subject to administrative rules, orders, and penalties as provided under Title 30, TAC § 213.10 relating to Environment. Such violations may also be subject to civil penalties and injunction. The following "construction notes" in no way represent an approved exception by the ED to any part of the 30 TAC, Chapters 219.2 and 219.3 or any other TCEQ applicable regulation.

Texas Commission on Environmental Quality
Water Pollution Abatement Plan
General Construction Note - Legal Disclaimer
Edwards Aquifer Protection Plan Construction Note - Legal Disclaimer
The following construction notes are intended to be advisory in nature and/or not constitute an approved or conditional approval by the Executive Director (ED), nor do they constitute a comprehensive listing of rules or conditions to be followed during construction. Further action may be required to achieve compliance with TCEQ regulations found in Title 30, Texas Administrative Code (TAC), Chapters 219.2 and 219.3. The following construction notes are not intended to supersede or replace any applicable TCEQ regulation, nor do they restrict the powers of the ED, the commission or any other governmental entity to prevent, correct, or curtail activities that result or may result in pollution of the Edwards Aquifer or hydrologically connected area 20, TAC, Chapters 219.2 and 219.3 or any other applicable TCEQ regulation, as well as all conditions of an Edwards Aquifer Protection Plan through all phases of plan implementation. Failure to follow these construction notes may result in enforcement action by the ED, the commission or any other governmental entity. TCEQ regulations and any violation is subject to administrative rules, orders, and penalties as provided under Title 30, TAC § 213.10 relating to Environment. Such violations may also be subject to civil penalties and injunction. The following "construction notes" in no way represent an approved exception by the ED to any part of the 30 TAC, Chapters 219.2 and 219.3 or any other TCEQ applicable regulation.

when it occupies 50% of the basin's design capacity.

8. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from being discharged off-site.

9. All spoils (excavated material) generated from the project site must be stored on-site with proper E&S controls. For storage or disposal of spoils at another site off the Edwards Aquifer Protection Plan, the owner of the site must receive approval of a water pollution abatement plan for the placement of material or mass grading prior to the placement of spoils at the other site.

10. If portions of the site will have a temporary or permanent portion in construction activity lasting longer than the 14th day of the month, stabilization measures shall be initiated no later than the 14th day of the month. If activity will resume prior to the 21st day, stabilization measures are not required. If drought conditions or inclement weather prevent action by the 14th day, stabilization measures shall be initiated as soon as possible.

11. The following records shall be maintained and made available to the TCEQ upon request:

- the dates when major grading activities occur;
- the dates when construction activities temporarily or permanently cease on a portion of the site;
- the dates when stabilization measures are initiated.

12. The holder of any approved Edwards Aquifer protection plan must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:

- A. any physical or operational modification of any water pollution abatement structure, including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
- B. any change in the nature or character of the regulated activity from that which was originally approved of or change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
- C. any development of land previously identified as undeveloped in the original water pollution abatement plan.

Austin Regional Office
12100 Park 35 Circle, Building A
Austin, Texas 78753-2929
Phone: (512) 338-3795
Fax: (512) 338-3795

San Antonio Regional Office
14050 Judson Road
San Antonio, Texas 78233-4480
Phone: (210) 492-3096
Fax: (210) 492-4328

THESE GENERAL CONSTRUCTION NOTES MUST BE INCLUDED ON THE CONSTRUCTION PLANS PROVIDED TO THE CONTRACTOR AND ALL SUBCONTRACTORS.

TCEQ-0592 (Rev. July 15, 2015) Page 1 of 2

TCEQ-0592 (Rev. July 15, 2015) Page 2 of 2

PROPOSED CONSTRUCTION SEQUENCE

- INSTALL TEMPORARY STORMWATER EROSION CONTROL MEASURES IN AFFECTED CONSTRUCTION AREAS AND STABILIZED CONSTRUCTION ENTRANCES/EXITS.
- INSTALL TREE PRESERVATION MEASURES, IF REQUIRED.
- CONSTRUCT DRAINAGE.
- CONSTRUCT SUBGRADE AND BASE.
- CONSTRUCT ASPHALT PAVEMENT.
- ESTABLISH SITE STABILIZATION.
- REMOVE ALL TEMPORARY STORMWATER EROSION CONTROL MEASURES.

NOTES

1. SOME ITEMS ABOVE WILL OCCUR SIMULTANEOUSLY OR MAY OCCUR OUT OF SEQUENCE INDICATED.
2. ALL SEQUENCES SUBJECT TO CHANGE.

CAUTION UNDERGROUND UTILITIES

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS AND THE VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THESE LOCATIONS MAY NOT BE EXACT ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE LIGHTING, ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRIGATION, FAUCETS, AND OTHER UTILITIES. CONTRACTOR MUST CALL 1-800-DIG-TESS, AND CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION AND/OR START OF CONSTRUCTION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. ANY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND NOT TO CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

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 ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION PROGRAMS AND/OR PROCEDURES FOR THE CONSTRUCTION OF THE CONTRACTOR'S DOCUMENTS. THE CONTRACTOR'S DOCUMENTS FOR THE IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY 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.

PLAT NO. _____
JOB NO. NOVEMBER 2025
DESIGNER GDL
CHECKED HL DRAWN CA
SHEET G-4

PURLSON WASTEWATER TREATMENT PLANT

COMAL COUNTY, TEXAS

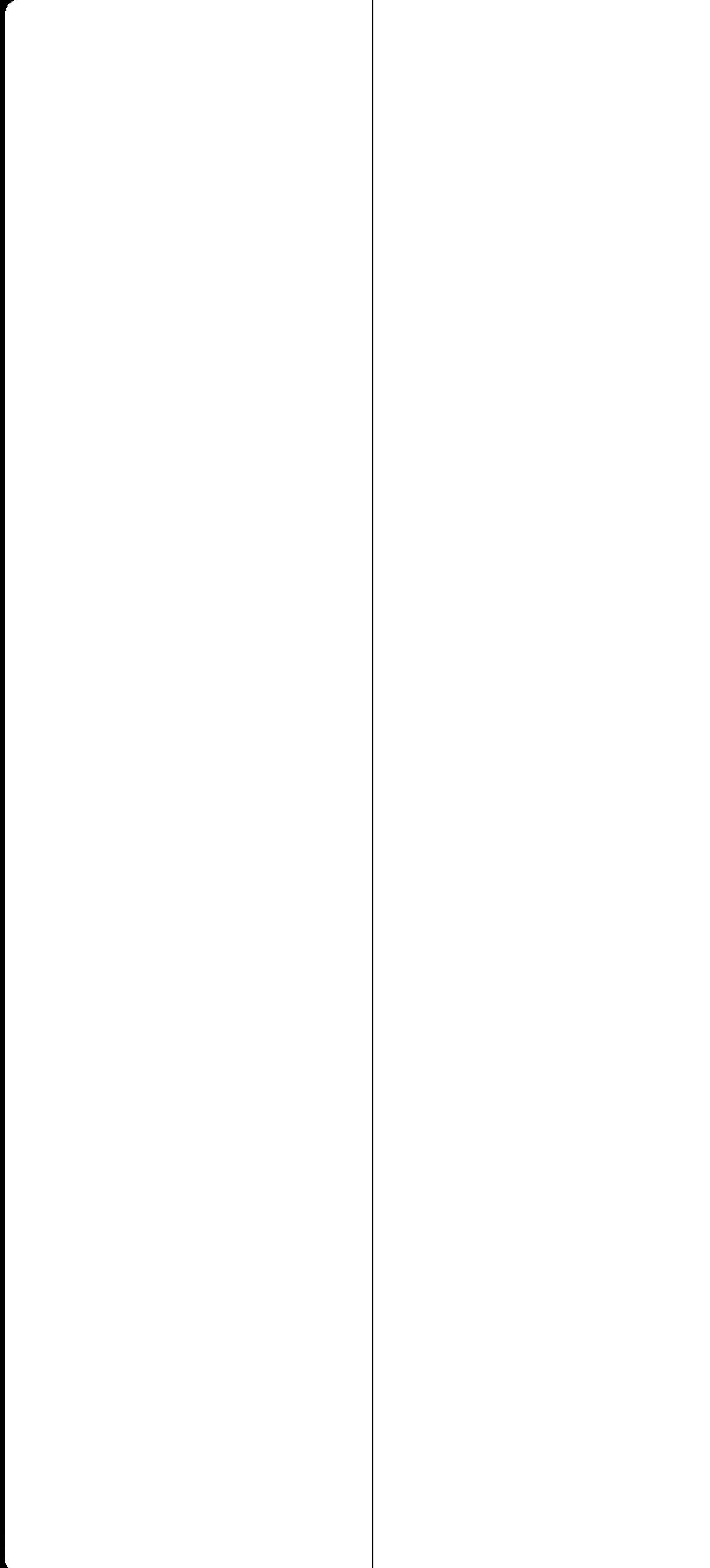
GENERAL NOTES 2

PAPE-DAWSON
1672 INDEPENDENCE DR, STE 102 NEW BRAUNFELS, TX 78132-6323
TEXAS ENGINEERING FIRM #470 TEXAS SURVEYING FIRM #1028800

DATE

NO. REVISION

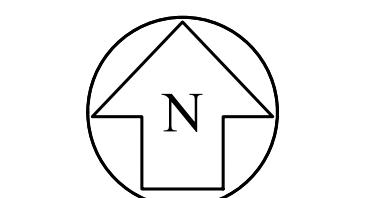
11-20-2025
HAYDEN M. FOWLES
PROFESSIONAL ENGINEER
127195
LICENSED





KEY NOTES:

1. REFER TO THE CIVIL CONSTRUCTION PLANS FOR 15" SANITARY SEWER DESIGN OUTSIDE OF THE WWTF PROPERTY BOUNDARY.



0 150 300 600
SCALE: 1" = 300 FT.

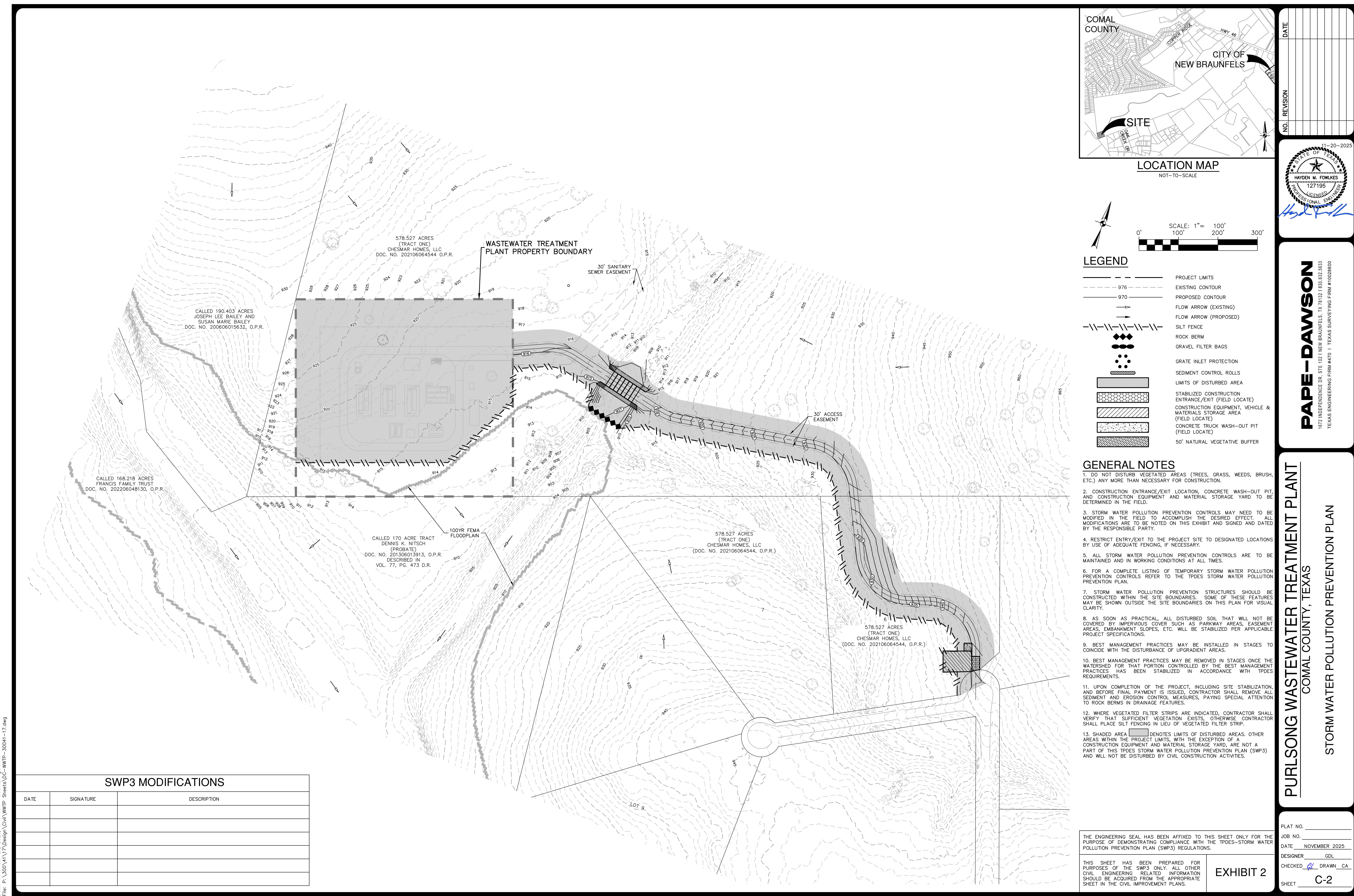


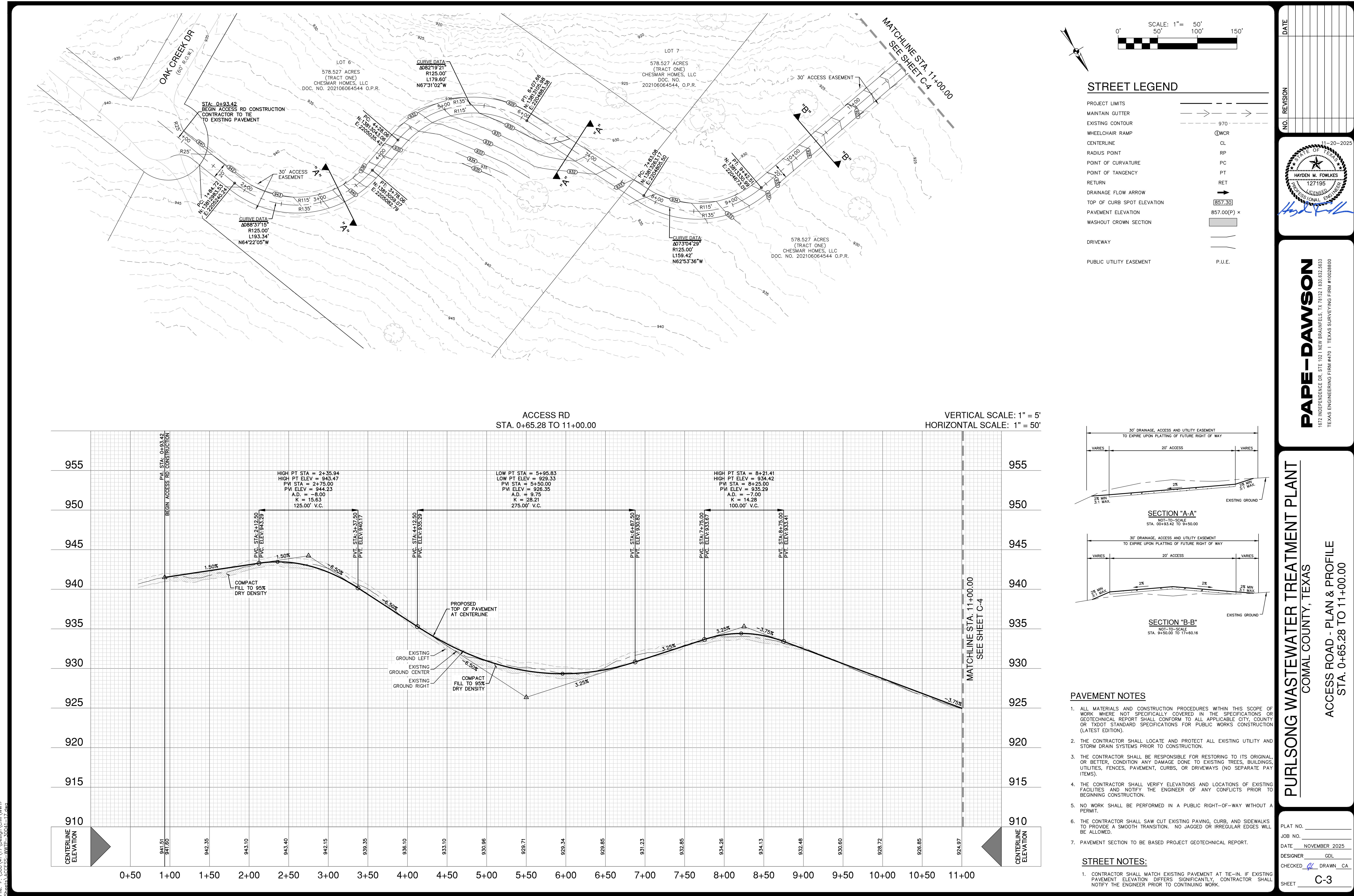
J. Simpson

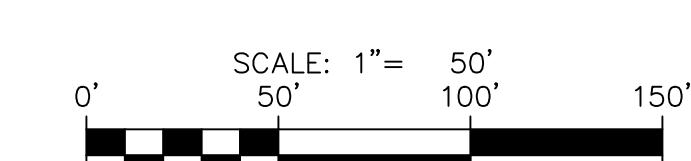
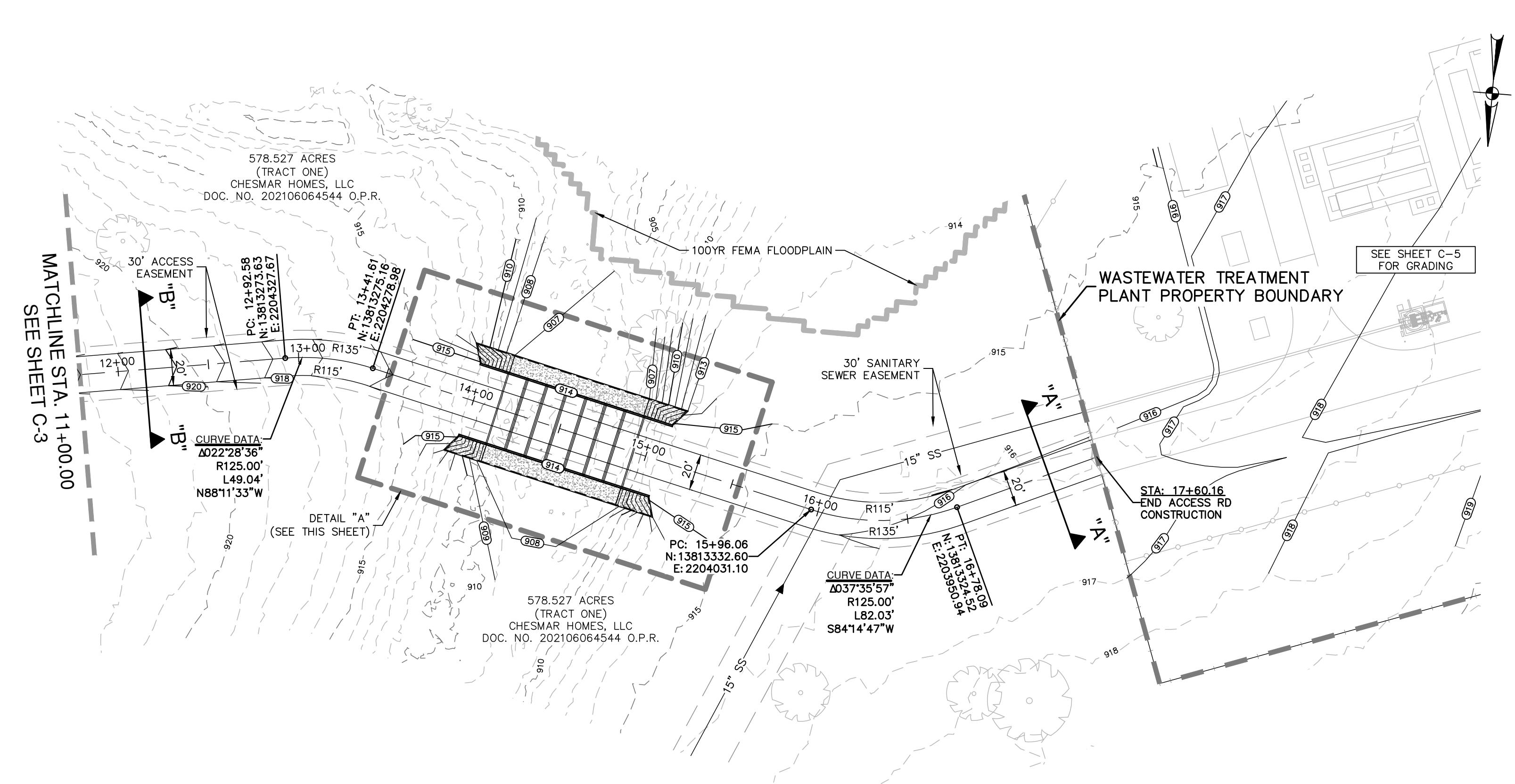
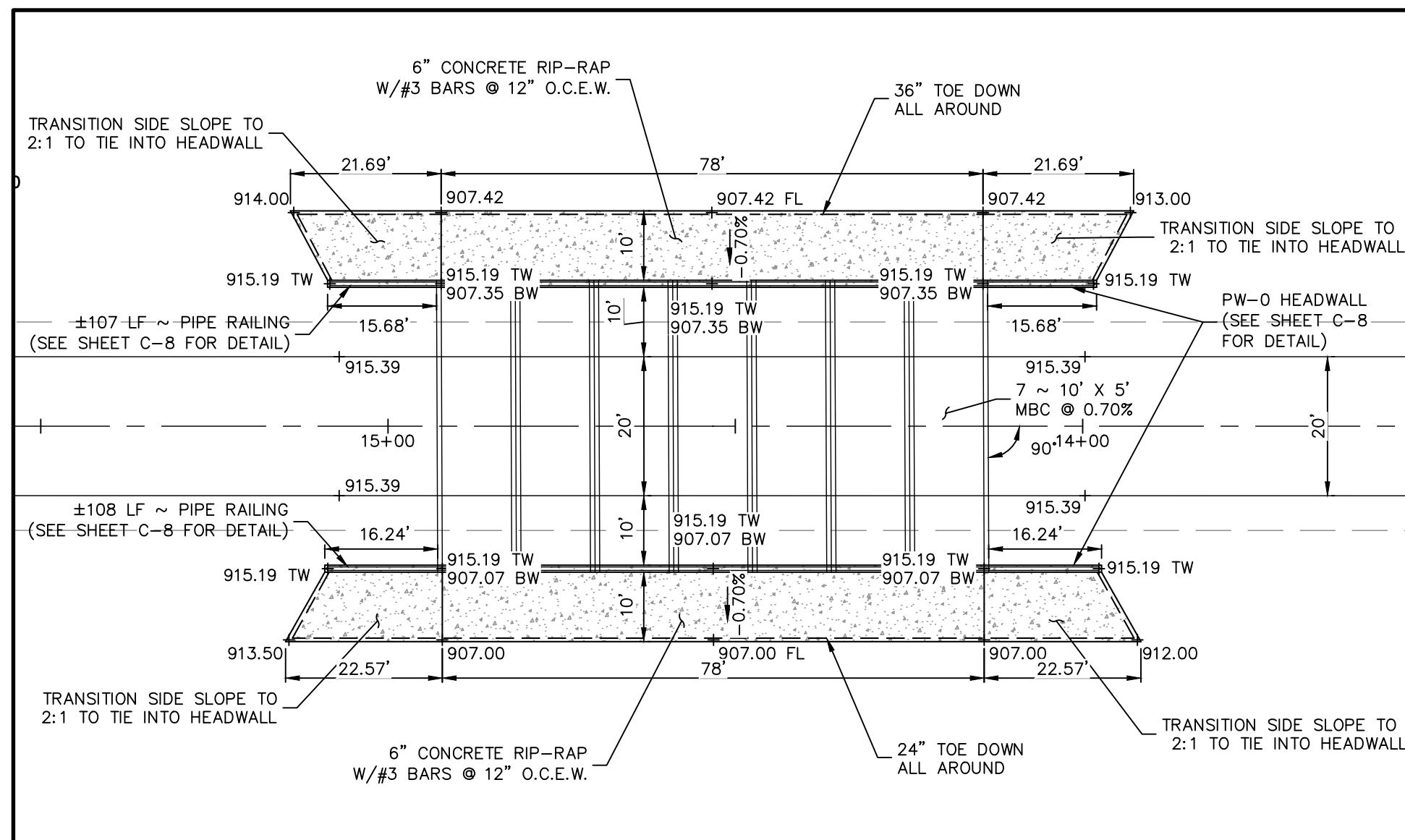


Purisong MMD of Comal County Comal County, Texas
PURLSONG
WASTEWATER TREATMENT FACILITY
LIFT STATION
OVERALL SITE PLAN

Publish Date:	Project No:	152
Designed AU	Drawn BE/SAM	Checked JRS
Engineer of Record JRS		Sheet: C-1







STREET LEGEND

PROJECT LIMITS	
MAINTAIN GUTTER	
EXISTING CONTOUR	
WHEELCHAIR RAMP	①WCR
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
DRAINAGE FLOW ARROW	
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) ×
WASHOUT CROWN SECTION	
DRIVeway	
PUBLIC UTILITY EASEMENT	P.U.E.

PAPER-DAWSON
16772 | INDEPENDENCE DR | STE 102 | NEW BRAUNFELS, TX 781132 | 830 632 5633

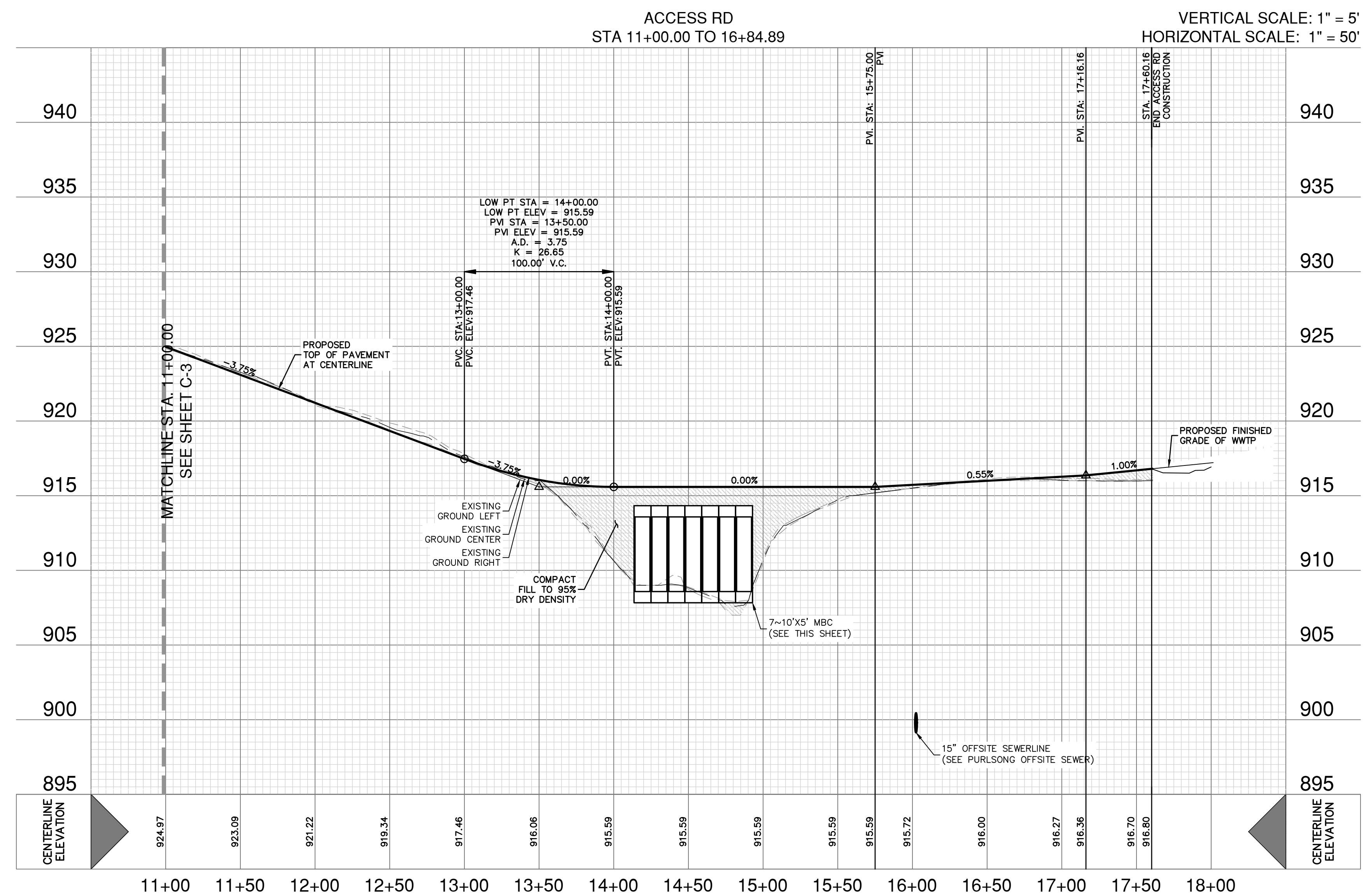
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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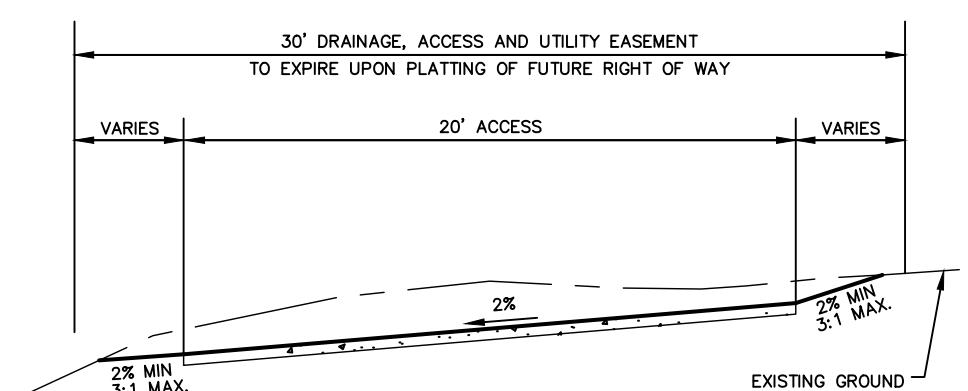
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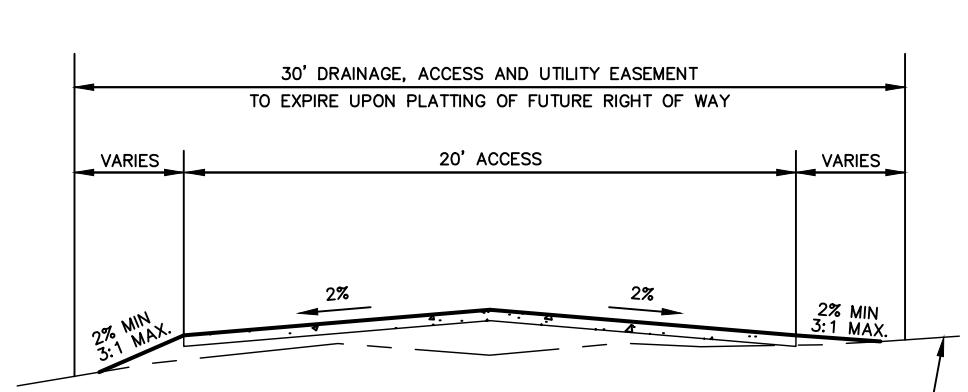


VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'

STREET NOTES:
CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE-IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.



SECTION "A-A"



SECTION "B-B"
NOT TO SCALE

PAVEMENT NOTES

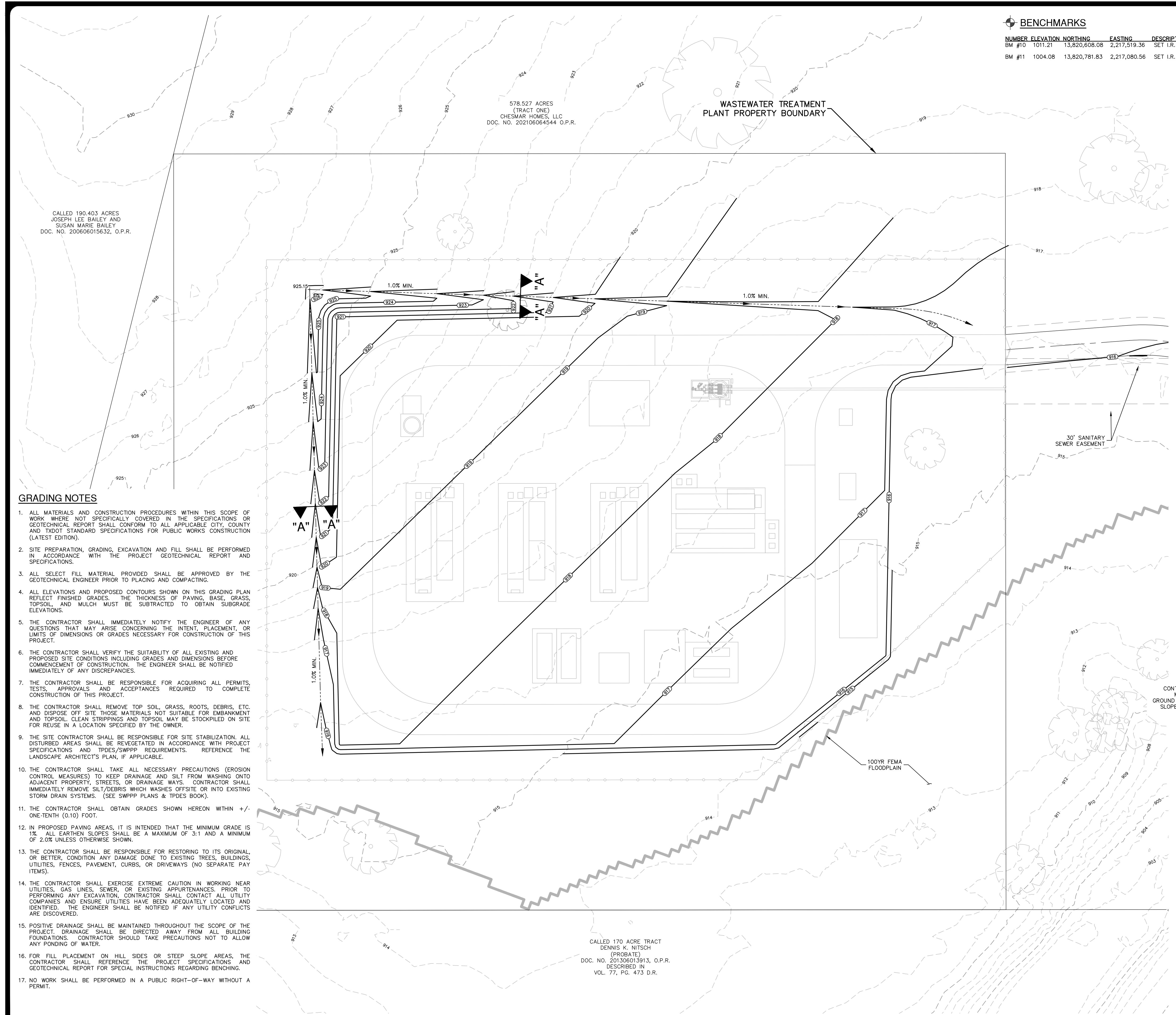
PI IBI SONGW
PLAT
JOB

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK WHERE NOT SPECIFICALLY COVERED IN THE SPECIFICATIONS OR GEOTECHNICAL REPORT SHALL CONFORM TO ALL APPLICABLE CITY, COUNTY OR TXDOT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).
2. THE CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING UTILITY AND STORM DRAIN SYSTEMS PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL, OR BETTER, CONDITION ANY DAMAGE DONE TO EXISTING TREES, BUILDINGS, UTILITIES, FENCES, PAVEMENT, CURBS, OR DRIVEWAYS (NO SEPARATE PAY ITEMS).
4. THE CONTRACTOR SHALL VERIFY ELEVATIONS AND LOCATIONS OF EXISTING FACILITIES AND NOTIFY THE ENGINEER OF ANY CONFLICTS PRIOR TO BEGINNING CONSTRUCTION.
5. NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.
6. THE CONTRACTOR SHALL SAW CUT EXISTING PAVING, CURB, AND SIDEWALKS TO PROVIDE A SMOOTH TRANSITION. NO JAGGED OR IRREGULAR EDGES WILL BE ALLOWED.

STREET NOTES:

1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE-IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.

DB NO. _____
ATE NOVEMBER 2025
SIGNER GDL
CHECKED GL DRAWN CA
HEET _____



A map of Comal County, Texas, showing the City of New Braunfels and surrounding areas. The map includes labels for 'COPPER RIDGE', 'HWY 46', 'CITY OF NEW BRAUNFELS', 'SITE', 'OAK CREEK DR', and a compass rose. A black arrow points from the word 'SITE' to a specific location in the lower-left quadrant of the map.

LOCATION MAP

NOT-TO-SCALE

NOT TO SCALE

PAPE—DAWSON

1672 INDEPENDENCE DR, STE 102 | NEW BRAUNFELS, TX 78132 | 830.632.5633
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

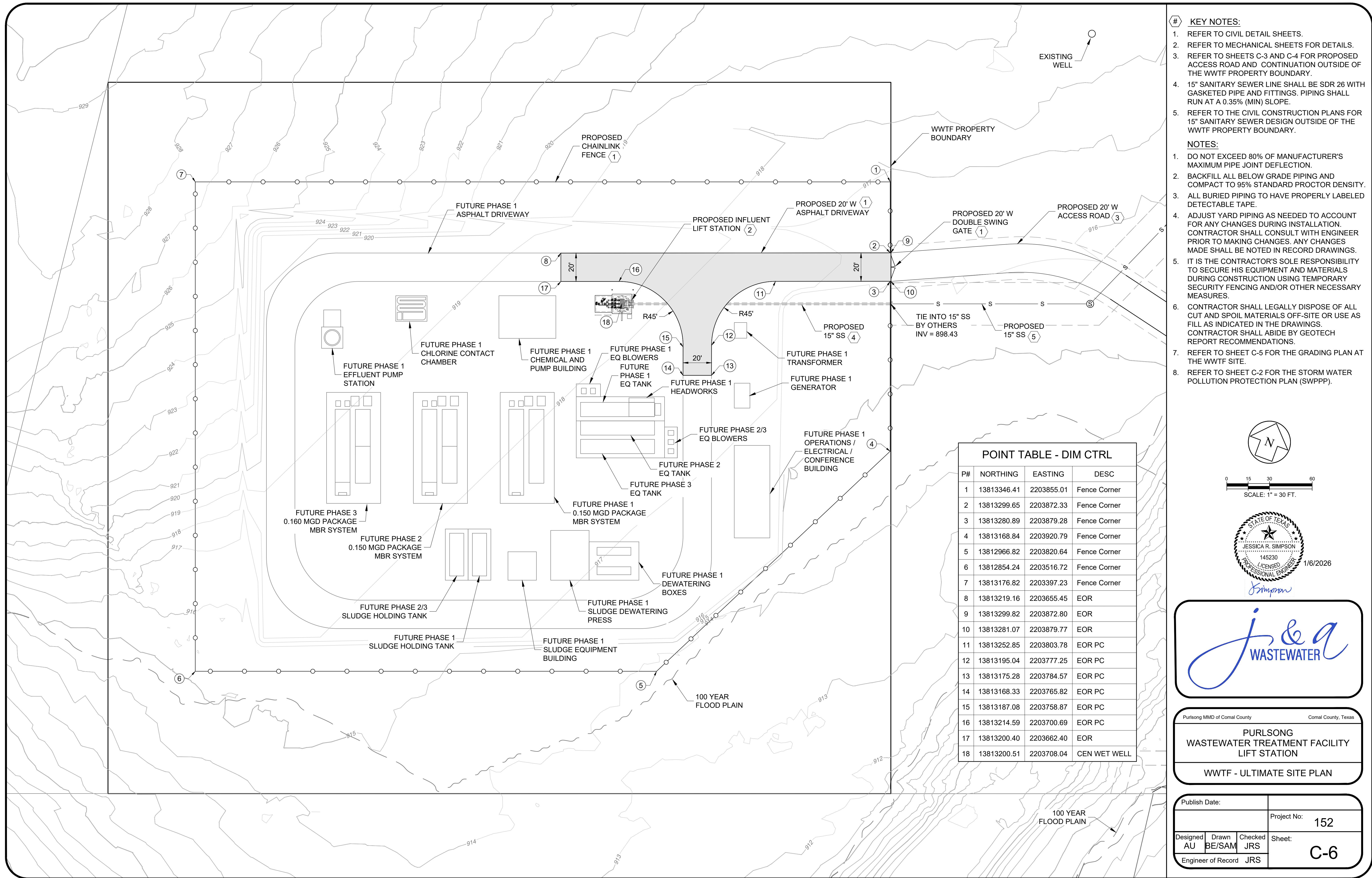
OVERALL GRADING AND DRAINAGE PLAN

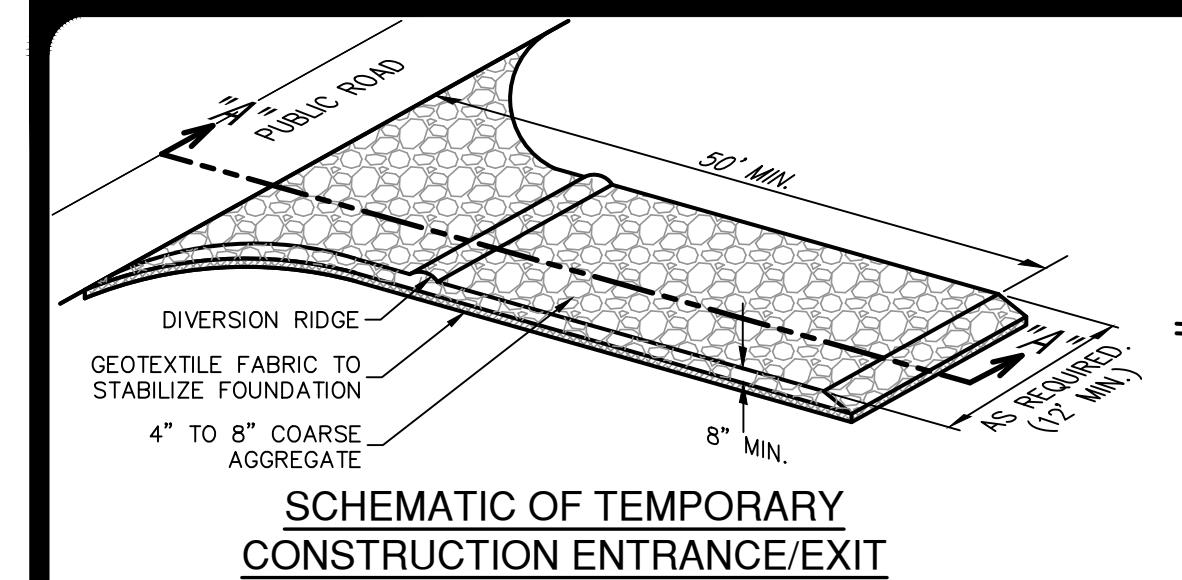
CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY 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.

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SCHEMATIC OF TEMPORARY CONSTRUCTION ENTRANCE/EXIT

MATERIALS

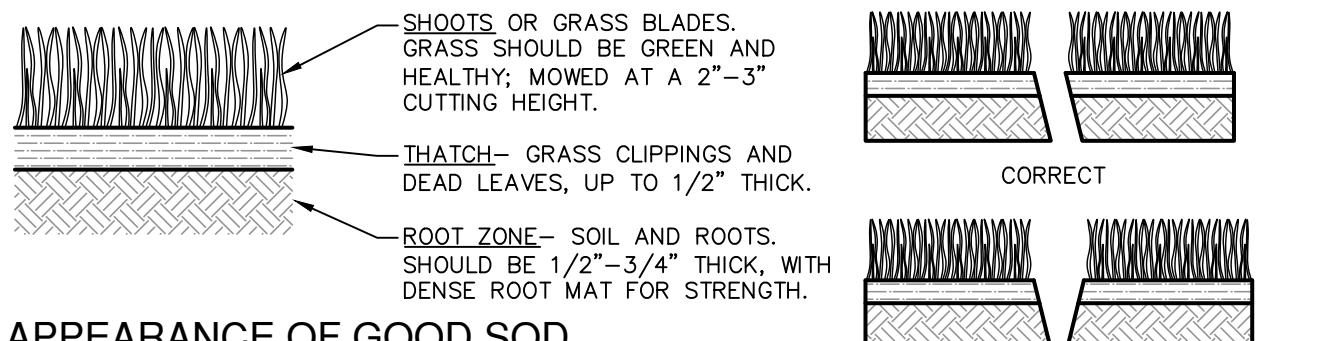
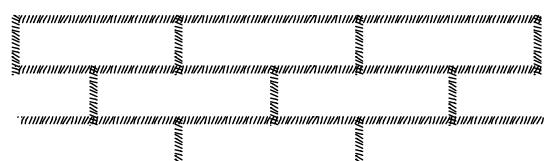
1. THE AGGREGATE SHOULD CONSIST OF 4-INCH TO 8-INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.
2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8-INCHES.
3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ/YD², A MULLEN BURST RATING OF 140 LB/IN², AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.
4. IF A WASHING FACILITY IS REQUIRED, A LEVEL AREA WITH A MINIMUM OF 4-INCH DIAMETER WASHED STONE OR COMMERCIAL ROCK SHOULD BE INCLUDED IN THE PLANS. DIVERT WASTEWATER TO A SEDIMENT TRAP OR BASIN.

INSTALLATION

1. AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE VEGETATION AND OTHER OBJECTIONAL MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE.
2. THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12 FEET OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.
3. THE CONSTRUCTION ENTRANCE SHOULD BE AT LEAST 50 FEET LONG.
4. IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6-INCHES TO 8-INCHES HIGH WITH 3:1 (H:V) SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.
5. PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.
6. PLACE STONE TO DIMENSIONS AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.
7. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN.
8. INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL

NOT-TO-SCALE

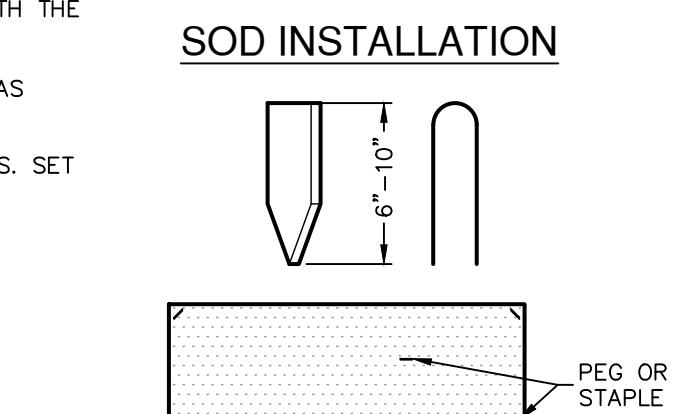
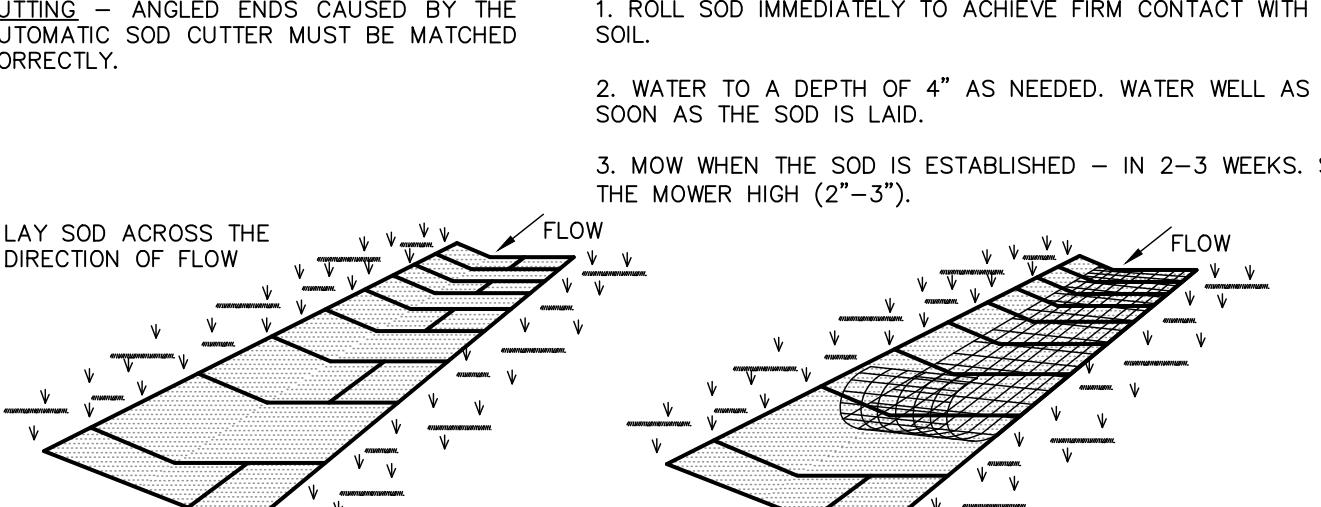


APPEARANCE OF GOOD SOD

NOTES:

1. ROLL SOD IMMEDIATELY TO ACHIEVE FIRM CONTACT WITH THE SOIL.
2. WATER TO A DEPTH OF 4" AS NEEDED. WATER WELL AS SOON AS THE SOD IS LAID.
3. MOW WHEN THE SOD IS ESTABLISHED - IN 2-3 WEEKS. SET THE MOWER HIGH (2"-3").

BUTTING - ANGLED ENDS CAUSED BY THE AUTOMATIC SOD CUTTER MUST BE MATCHED CORRECTLY.



MATERIALS

1. SOD SHOULD BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" INCH ($\pm 1/4"$ INCH) AT THE TIME OF CUTTING. THIS THICKNESS SHOULD EXCLUDE SHOOT GROWTH AND THATCH.
2. PIECES OF SOD SHOULD BE CUT TO THE SUPPLIER'S STANDARD WIDTH AND LENGTH, WITH A MAXIMUM ALLOWABLE DEVIATION IN ANY DIMENSION OF 5% TORN OR UNEVEN PADS SHOULD NOT BE ACCEPTABLE.
3. STANDARD SIZE SECTIONS OF SOD SHOULD BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED FROM A FIRM GRASP ON ONE END OF THE SECTION.
4. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS.

SITE PREPARATION

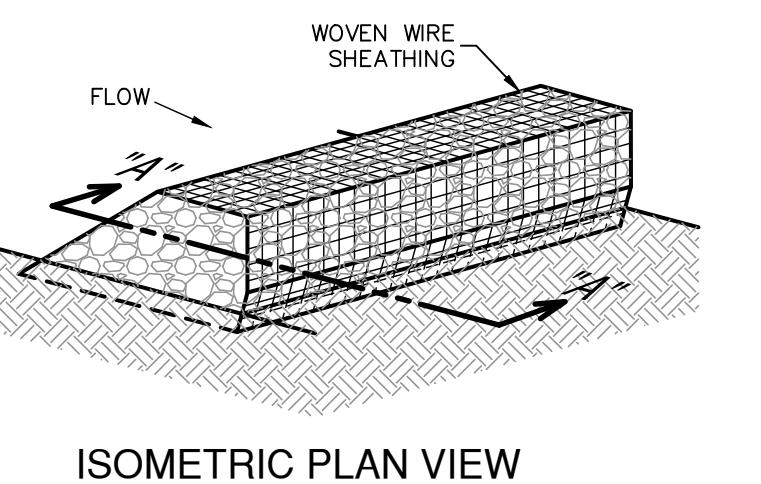
1. PRIOR TO SOIL PREPARATION, AREAS TO BE SODDED SHOULD BE BROUGHT TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLAN.
2. THE SURFACE SHOULD BE CLEARED OF ALL TRASH, DEBRIS AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBJECTS THAT WOULD INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS.
3. FERTILIZE ACCORDING TO SOIL TESTS. FERTILIZER NEEDS CAN BE DETERMINED BY A SOIL TESTING LABORATORY OR REGIONAL RECOMMENDATIONS CAN BE MADE BY COUNTY AGRICULTURAL EXTENSION AGENTS. FERTILIZER SHOULD BE WORKED INTO THE SOIL A DEPTH OF 3 INCHES. WITH A DISC, SPINGTOOTH HARRON OR OTHER SUITABLE EQUIPMENT. ON SLOPING LAND, THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE CONTOUR.

INSTALLATION IN CHANNELS

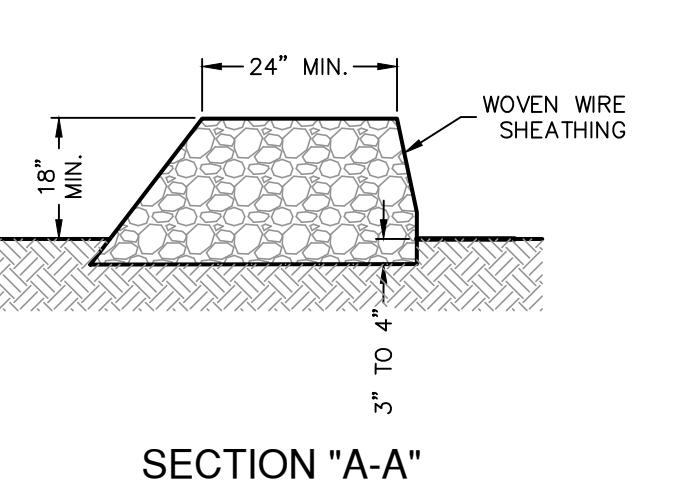
1. SOD STRIPS IN WATERWAYS SHOULD BE LAID PERPENDICULAR TO THE DIRECTION OF FLOW. CARE SHOULD BE TAKEN TO BUTT ENDS OF STRIPS TIGHTLY (SEE FIGURE ABOVE).
2. AFTER ROLLING OR TAMPING, SOD SHOULD BE PEGGED OR STAPLED TO RESIST WASHOUT DURING THE ESTABLISHMENT PERIOD. MESH OR OTHER NETTING MAY BE PEGGED OVER THE SOD FOR EXTRA PROTECTION IN CRITICAL AREAS.

SOD INSTALLATION DETAIL

NOT-TO-SCALE



ISOMETRIC PLAN VIEW



SECTION "A-A"

ROCK BERM

THE PURPOSE OF A ROCK BERM IS TO SERVE AS A CHECK DAM IN AREAS OF CONCENTRATED FLOW TO INTERCEPT SEDIMENT. RUNOFF DUE TO THE BERM'S RELEASE, THE WATER IS SHEET FLOW. THE ROCK BERM SHOULD BE USED WHEN THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 5 ACRES. ROCK BERMS ARE USED IN AREAS WHERE THE VOLUME OF RUNOFF IS TOO GREAT FOR A SILT FENCE TO CONTAIN. THEY ARE LESS EFFECTIVE FOR SEDIMENT REMOVAL THAN SILT FENCES, PARTICULARLY FOR FINE PARTICLES. ROCK BERM ARE OFTEN USED IN CHANNELS. DUE TO THEIR SIZE AS SUCH, ROCK BERMS ARE OFTEN USED AS CHANNEL FLOWS (DITCHES, GULIES, ETC.). ROCK BERMS ARE MOST EFFECTIVE AT REDUCING BED LOAD IN CHANNELS AND SHOULD NOT BE SUBSTITUTED FOR OTHER EROSION AND SEDIMENT CONTROL MEASURES FARTHER UP THE WATERSHED.

INSPECTION AND MAINTENANCE GUIDELINES

1. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT INTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.
3. WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
4. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
5. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.

2. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT IN AN APPROVED MANNER THAT WILL NOT CAUSE ANY ADDITIONAL SILTATION.

3. REPAIR ANY LOOSE WIRE SHEATHING.

4. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.

5. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.

6. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

MATERIALS

1. THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOOTS RINGS.

2. CLEAN, OPEN GRADED 3-INCH TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5-INCH TO 8-INCH DIAMETER ROCKS MAY BE USED.

INSTALLATION

1. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1 INCH OPENINGS.

2. BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER.

3. PLACE THE ROCK ALONG THE SHEATHING AS SHOWN IN THE DIAGRAM TO A HEIGHT NOT LESS THAN 18".

4. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH THE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.

5. BERM SHOULD BE BUILT ALONG THE CONTOUR AT ZERO PERCENT GRADE OR AS NEAR AS POSSIBLE.

6. THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.

7. THE BAGS SHOULD BE TIGHTLY BUTTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM FLOWING BETWEEN THE BAGS.

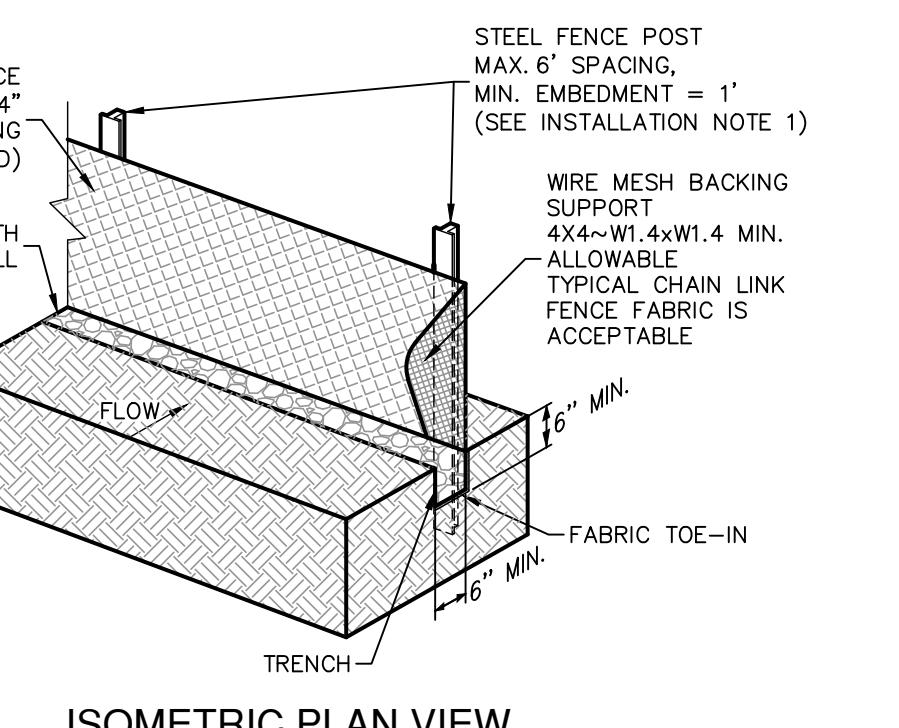
COMMON TROUBLE POINTS

1. INSUFFICIENT BERM HEIGHT OR LENGTH (RUNOFF QUICKLY ESCAPES OVER THE TOP OR AROUND THE SIDES OF BERM).

2. BERM NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND ONE SIDE).

ROCK BERM DETAIL

NOT-TO-SCALE



ISOMETRIC PLAN VIEW

A SILT FENCE IS A BARRIER CONSISTING OF GEOTEXTILE FABRIC SUPPORTED BY METAL POSTS TO PREVENT SOIL AND SEDIMENT LOSS FROM A SITE. WHEN PROPERLY USED, SILT FENCES CAN BE HIGHLY EFFECTIVE AT CONTROLLING SEDIMENT FROM DISTURBED AREAS. THEY CAUSE RUNOFF TO INSTALLLED, SILT FENCES ARE NOT LIKELY TO BE EFFECTIVE.

THE PURPOSE OF A SILT FENCE IS TO INTERCEPT AND DETAIN WATER-BORN SEDIMENT FROM UNPROTECTED AREAS OF A LIMITED EXTENT. SILT FENCE IS USED DURING THE PERIOD OF CONSTRUCTION NEAR THE PERIMETER OF A DISTURBED AREA TO INTERCEPT SEDIMENT WHILE ALLOWING WATER TO PERCOLATE THROUGH THE FENCE. SILT FENCE IS REMOVED OR PLACED ONCE THE DISTURBED AREA IS PERMANENTLY STABILIZED. SILT FENCE SHOULD NOT BE USED WHERE THERE IS A CONCENTRATION OF WATER IN A CHANNEL OR DRAINAGE WAY. IF CONCENTRATED FLOW OCCURS AFTER INSTALLATION, CORRECTIVE ACTION MUST BE TAKEN SUCH AS PLACING A ROCK BERM IN THE AREAS OF CONCENTRATED FLOW.

SILT FENCING WITHIN THE SITE MAY BE TEMPORARILY MOVED DURING THE DAY TO ALLOW CONSTRUCTION ACTIVITY PROVIDED IT IS REPLACED AND PROPERLY ANCHORED TO THE GROUND AT THE END OF THE DAY. SILT FENCES ON THE PERIMETER OF THE SITE OR AROUND DRAINAGE WAYS SHOULD NOT BE MOVED AT ANY TIME ABOVE.

6. SILT FENCE SHOULD BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

COMMON TROUBLE POINTS

1. FENCE NOT INSTALLED ALONG THE CONTOUR CAUSING WATER TO CONCENTRATE AND FLOW OVER THE FENCE.

2. FABRIC NOT SEATED SECURELY TO GROUND (RUNOFF PASSING UNDER FENCE).

3. FENCE NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND SIDES).

4. FENCE TREATING TOO LARGE AN AREA, OR EXCESSIVE CHANNEL FLOW (RUNOFF OVERTOPS OR COLLAPSES FENCE).

5. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL AT LEAST 4 FEET LONG WITH TEE OR Y-BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM WEIGHT 1.25 LB/FT, AND BRINELL HARDNESS EXCEEDING 140.

6. FENCE POSTS SHOULD BE SECURELY FASTENED TO THE GROUND.

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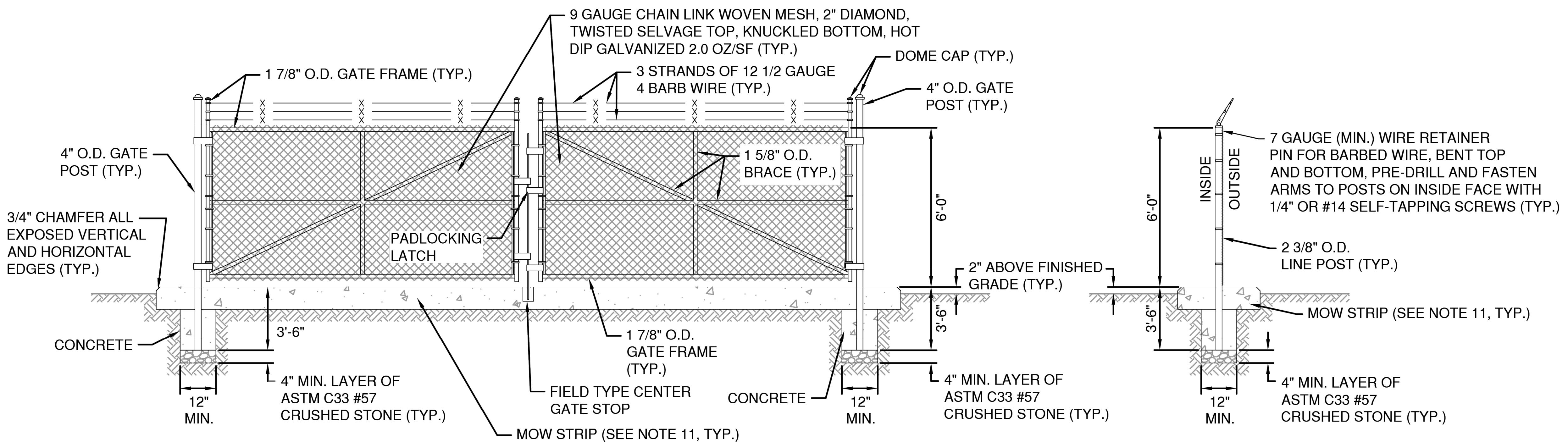
40. FENCE POSTS SHOULD BE SECURELY FASTENED TO THE GROUND.

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42. FENCE POSTS SHOULD BE SECURELY FASTENED TO THE GROUND.

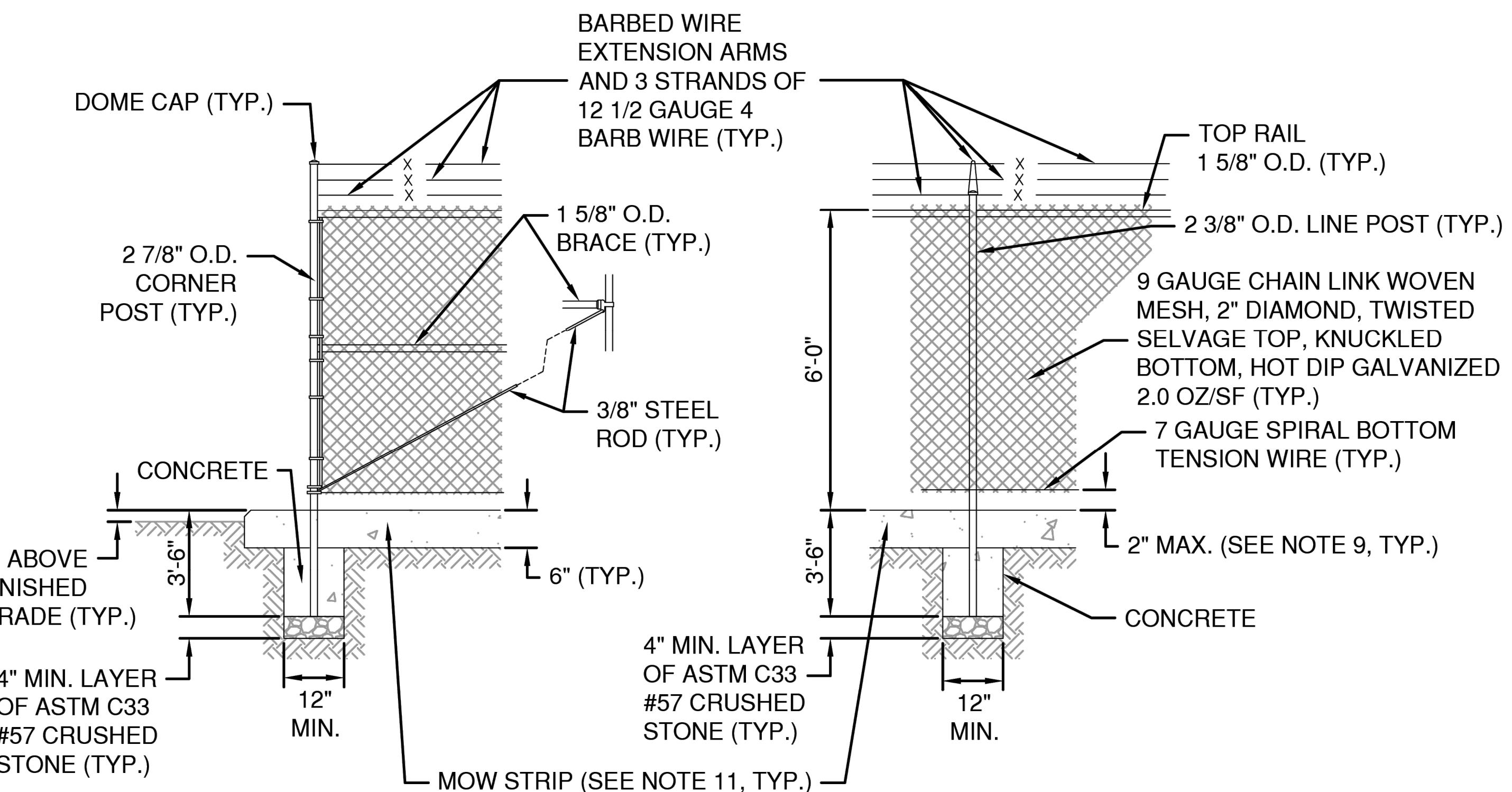
43. FENCE POSTS SHOULD BE SECURELY FASTENED TO THE GROUND.

44. FENCE POSTS SHOULD BE SECURELY FASTENED TO THE GROUND



NOTES:

1. SPLICING OF MATERIAL IS NOT ALLOWED.
2. ALL PIPE SHALL BE ASTM F1043 GROUP IC. ALL OTHER MATERIAL SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. GALVANIZING REPAIRS SHALL BE MINIMUM TWO (2) BRUSH COATS OF ZRC GALVILITE.
3. INSTALL A DUCK BILL HOLD BACK FOR EACH GATE LEAF WITH 12" MINIMUM POST DEPTH.
4. TENSION BARS SHALL BE 3/16" X 3/4".
5. TENSION BANDS SHALL BE MINIMUM 14 GAUGE AND 3/4" WIDTH.
6. BRACE BANDS SHALL BE MINIMUM 12 GAUGE AND 3/4" WIDTH.
7. POST BURY DEPTH MAY BE REDUCED IF 24" MINIMUM IN SOLID ROCK BELOW BOTTOM OF MOW STRIP.
8. MAXIMUM 10' POST SPACING.
9. MAXIMUM 2" GAP AT BOTTOM OF FENCE AND GATES.
10. INSTALL POSTS AND GATES PLUMB/LEVEL IN STRAIGHT ALIGNMENT BETWEEN CORNER POSTS.
11. MOW STRIP SHALL BE 6'D X 24"W REINFORCED CONCRETE CENTERED ON POSTS 2" ABOVE FINISHED GRADE, #4 REBAR @ 18" O.C.E.W., TOOL JOINTS CENTERED BETWEEN POSTS, BROOM FINISH (TYP.). INSTALL 1 1/2" PVC PIPE WEEPS BELOW REBAR AT 12" O.C. THRU MOW STRIP AT LOW POINTS; INSTALL 6" MIN. LAYER OF ASTM C33 #57 CRUSHED STONE OUTSIDE FENCE AND PERFORM GRADING OUTSIDE FENCE TO PROMOTE SITE DRAINAGE.



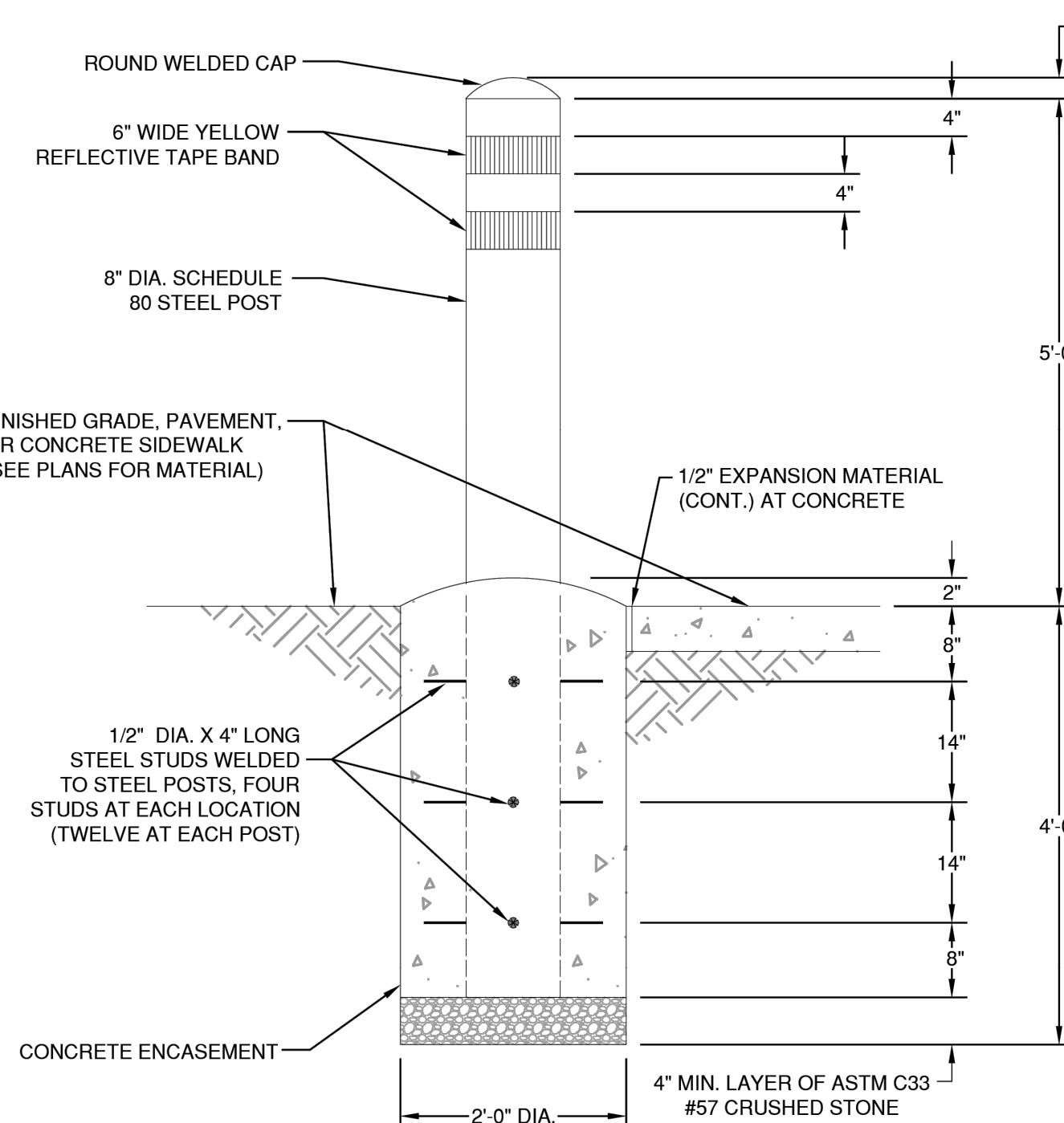
1
C-9 NTS
CHAIN LINK FENCING DETAIL



j & a
WASTEWATER

Purisong MMD of Comal County Comal County, Texas
WASTEWATER TREATMENT FACILITY PURLSONG LIFT STATION
CIVIL DETAILS 2

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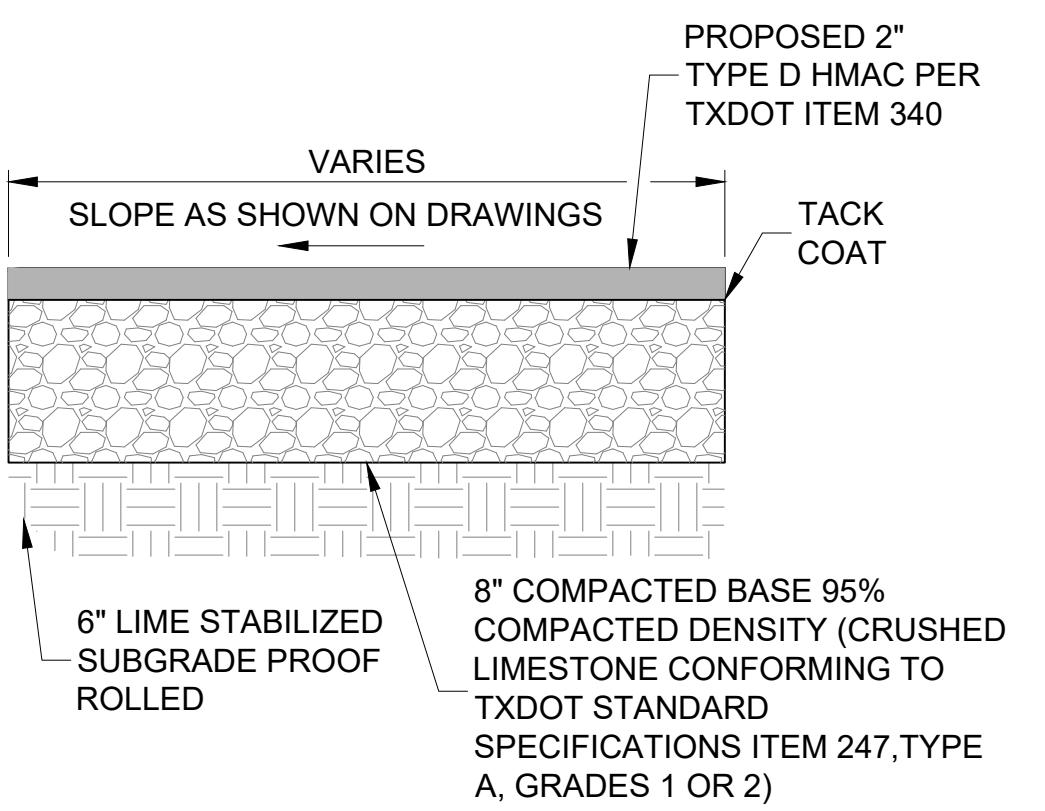


NOTES:

1. BOLLARDS ARE REQUIRED FOR ALL BURIED VALVES IN UNPAVED AREAS AND AT OTHER LOCATIONS WHERE SHOWN ON DRAWINGS.
2. ASSEMBLY SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
3. INSTALL ASSEMBLY PLUMB/LEVEL.

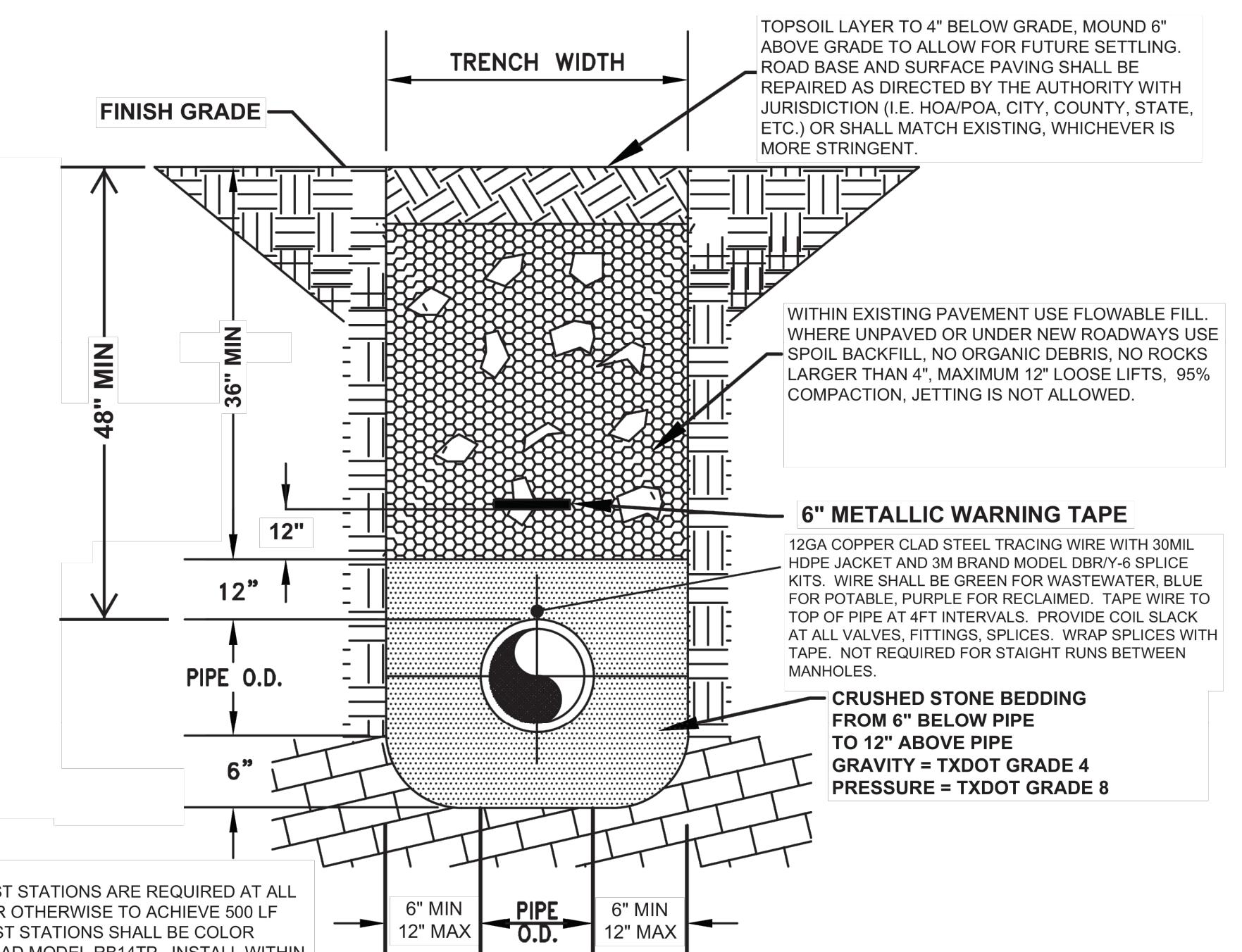
1 PIPE BOLLARD IN CONCRETE DETAIL
C-10 NTS

2 ASPHALT PAVEMENT DETAIL
C-10 NTS

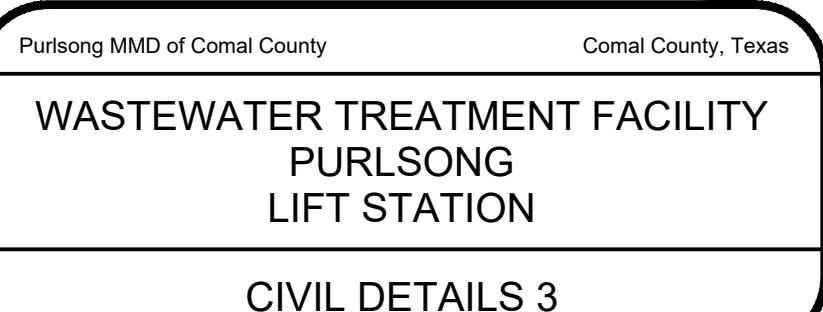
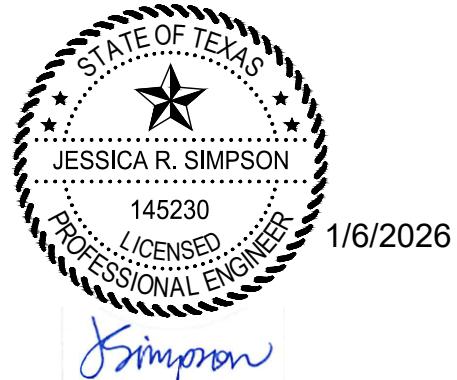


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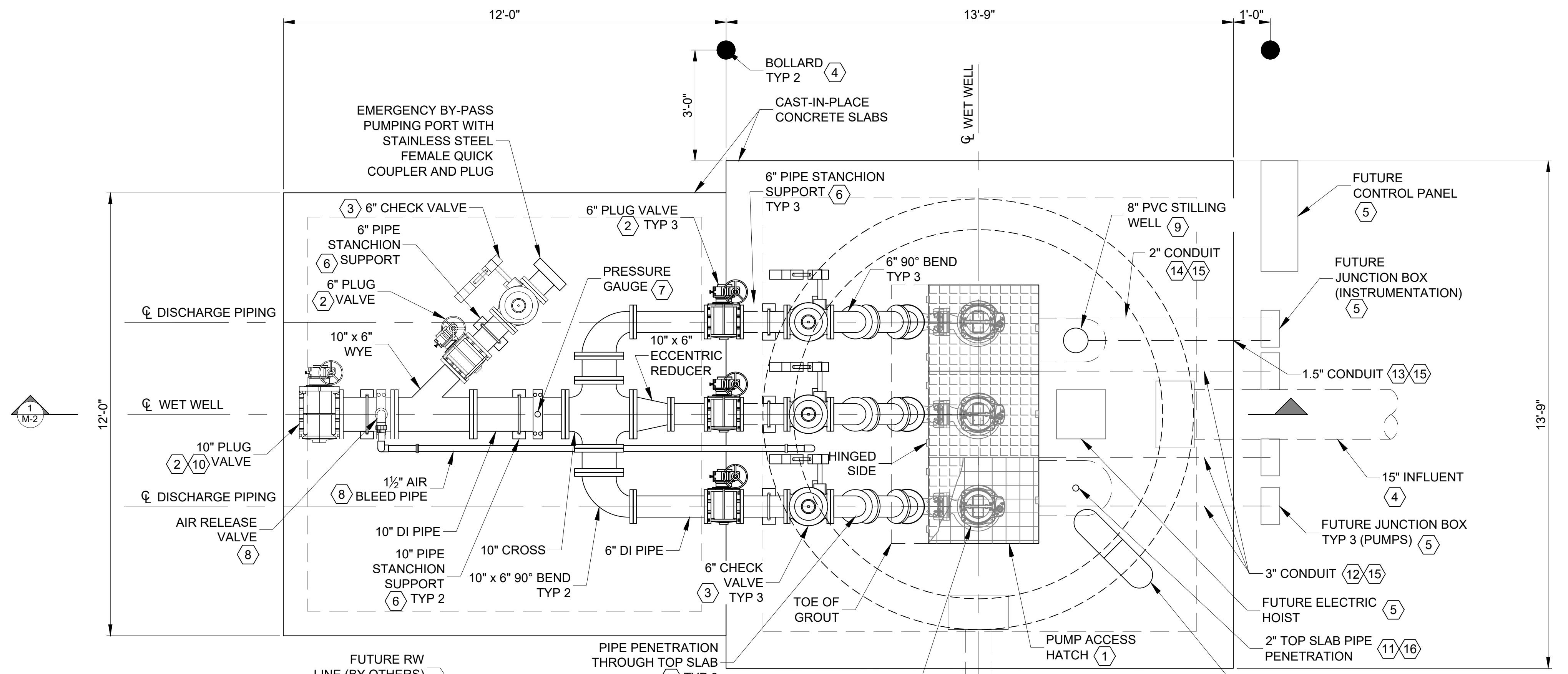
1. THE SUBGRADE SHALL BE COMPAKTED TO 95% OF THE STANDARD PROCTOR (ASTM D-698). THE SUBGRADE SHALL BE MOISTURE CONDITIONED TO THE OPTIMUM MOISTURE CONTENT (MINIMUM) TO +4%.



2 TYPICAL PIPE TRENCH DETAIL
C-10 NTS



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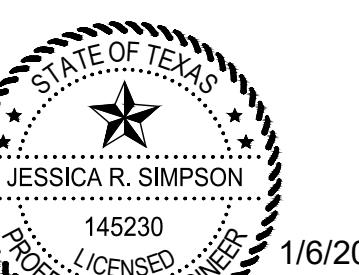


KEY NOTES:

1. CONTRACTOR TO CONFIRM SIZE AND LOCATION OF WET WELL HATCH(ES) PER SELECTED PUMP MANUFACTURER'S (KSB) REQUIREMENTS, WITH A MINIMUM 36" x 84" CLEAR OPENING. REFER TO SHEET 3, DETAIL 1 FOR ADDITIONAL HATCH DETAILS. PROVIDE 4" MINIMUM CLEARANCE IN ALL DIRECTIONS FROM PUMPS TO HATCH CLEAR OPENING. HATCH SHALL HAVE ALUMINUM SAFETY GRATES AND COVERS WITH PADLOCK STAPLES ON COVERS.
2. INSTALL FLANGED JOINT ROUND PORT PLUG VALVES WITH HORIZONTAL SHAFT, CLOSING DOWNWARD.
3. INSTALL FLANGED JOINT SWING TYPE CHECK VALVES WITH EXTERNAL LEVER AND WEIGHT.
4. REFER TO CIVIL SHEETS FOR DETAILS AND CONTINUATION.
5. PUMPS, TRANSDUCER, FLOATS, HOIST, WET WELL MIXING SYSTEM, JUNCTION BOXES, AND CONTROL PANEL WILL BE INSTALLED BY OTHERS AT A LATER DATE.
6. REFER TO SHEET M-4, DETAIL 3.
7. REFER TO SHEET M-3, DETAIL 2.
8. REFER TO SHEET M-3, DETAIL 4.
9. 8" PVC STILLING WELL, CAST IRON FRAME AND COVER, $\frac{3}{8}$ " 316 SST HOOK, SIDE ENTRY CONDUIT WITH BELL END ADAPTER. REFER TO SHEET M-4, DETAIL 2.
10. CONNECTION TO 10" PLUG VALVE BY OTHERS AT A LATER DATE.
11. 2" TOP SLAB PENETRATION FOR FUTURE WET WELL MIXING SYSTEM $\frac{3}{4}$ " HOSE.
12. INSTALL THREE 3" SCH 80 PVC CONDUITS MIDWAY THROUGH WET WELL TOP SLAB FOR FUTURE SUBMERSIBLE PUMP POWER/COMMS. STUB UP CONDUIT PER CONDUIT STUB UP DETAIL ON SHEET M-4.
13. INSTALL ONE 1.5" SCH 40 PVC CONDUIT MIDWAY THROUGH SLAB FOR FUTURE WET WELL TRANSDUCER CABLE.
14. INSTALL ONE 2" SCH 40 PVC CONDUIT MIDWAY THROUGH SLAB FOR FUTURE FLOAT CABLES.
15. CONTRACTOR SHALL VERIFY CONDUIT LAYOUT WITH ENGINEER PRIOR TO INSTALLATION. STUB UP CONDUIT PER DETAIL 4, SHEET M-4. CAP CONDUIT FOR FUTURE CONNECTION.
16. REFER TO SHEET M-3, DETAIL 3 FOR PIPE PENETRATION THROUGH TOP SLAB.

NOTES:

1. CONTRACTOR SHALL SUBMIT DIMENSIONED LAYOUT DRAWINGS OF WET WELL, INCLUDING PIPING/FITTINGS/VALVES LAY LENGTHS AND CONDUIT ROUTING, DEMONSTRATING ALL REQUIRED CLEARANCES BETWEEN PUMPS, HATCHES, TOP SLAB PENETRATIONS, HOIST, ETC.
2. ALL PUMP DISCHARGE PIPE AND FITTINGS WITHIN WET WELL SHALL BE FLANGED.
3. ALL PUMP DISCHARGE PIPE, VALVES AND FITTINGS OUTSIDE THE WELL, EXCEPT 316 SST AND PVC, SHALL RECEIVE AFTER INSTALLATION A WHITE COLOR HIGH-BUILD EPOXY COATING SYSTEM WITH A GREY PANTONE #431-U COLOR TOP COAT OF POLYURETHANE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
4. ALL SUPPORTS, GUIDE RAILS, BRACKETS, FASTENERS, AND ANCHORS WITHIN THE WET WELL SHALL BE TYPE 316 SST; ANY ASSOCIATED BOLTS, RODS, AND NUTS SHALL HAVE FLAT WASHERS. NUTS SHALL BE LOCK NUTS.
5. ALL VALVES TO BE NORMALLY CLOSED DURING PUMP AND HAUL OPERATIONS.
6. GROUNDING OF THE LIFT STATION SHALL BE DONE BY OTHERS AT A LATER DATE.



J Simpson j & a WASTEWATER

Purlsong MMD of Comal County Comal County, Texas

**PURLSONG
WASTEWATER TREATMENT FACILITY
LIFT STATION**

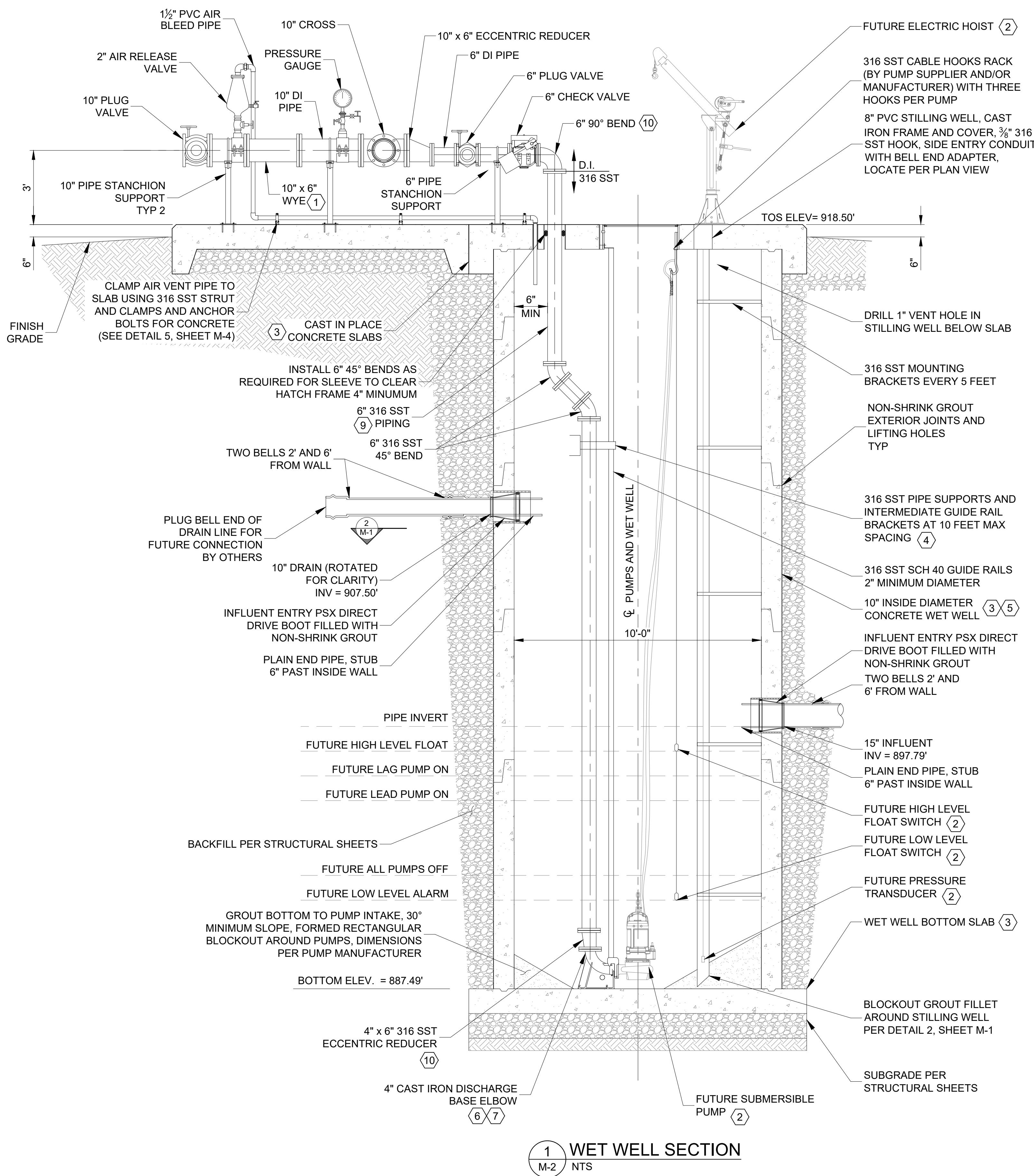
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LATERAL SUPPORT C4x7.25 316SS CHANNEL WELDED TO 6" X 6" X 1/2" 316SS PLATES.
BEND PLATES TO MATCH WET WELL CURVATURE. MOUNT TO WET WELL WALL
USING 4 EACH 1/2" DIAMETER 316SS EPOXY ANCHOR BOLTS MINIMUM. SET 1/2"
NEOPRENE GASKET ON WET WELL WALL SURFACES IN SIKA 1A (OR EQUAL) SEALANT

A technical line drawing of a curved metal frame. The frame is composed of two parallel curved top rails and two straight vertical side rails. The top rails are connected by a horizontal cross rail. Three vertical support posts are attached to the side rails, each featuring a circular cutout. A label '1/2" THREADED 316SS RODS' with a leader line points to the top rail, indicating the type of hardware used for the assembly.

**BRACKET DETAIL FOR PIPE AND
PUMP GUIDE RAIL SUPPORT, ALL
COMPONENTS SHALL BE 316SS**

3 WET WELL PIPING SUPPORT DETAIL
M-1 NTS



FUTURE SUBMERSIBLE PUMP INFORMATION EACH PUMP	
MANUFACTURER	KSB
MODEL	KRT F 100-254/184XEG-S
PUMP AND MOTOR WEIGHT	449.74 LBS
MOTOR RATED POWER	25 HP
DISCHARGE DIAMETER	4 in
IMPELLER SIZE OR MODEL	9 13/16 in
SPEED	1772 rpm
FLOW	699 gal/min
TOTAL DYNAMIC HEAD	50.4 ft
PUMP EFFICIENCY	51.6%
NPSH REQUIRED	22 ft
MOTOR EFFICIENCY @ FULL LOAD	88.8%
MOTOR POWER FACTOR @ FULL LOAD	0.8
MOTOR NEMA CODE LETTER	H
FIRM PUMPING CAPACITY	
FLOW	1,225 gal/min
TOTAL DYNAMIC HEAD	58 ft

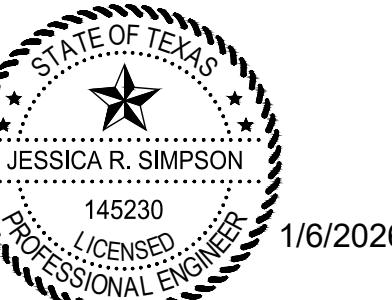
FUTURE PUMP CONTROL LEVELS	
WATER LEVEL ELEVATION:	ACTION:
896.79	BACK UP FLOAT - HIGH LEVEL ALARM & ALL PUMPS ON
895.79	PRIMARY TRANSDUCER - LAG PUMP ON
894.79	PRIMARY TRANSDUCER - LEAD PUMP ON
891.79	PRIMARY TRANSDUCER - ALL PUMPS OFF
890.79	BACK UP FLOAT - LOW LEVEL ALARM & ALL PUMPS OFF

KEY NOTES:

- 10" x 6" WYE BRANCH TO EMERGENCY BY-PASS. REFER TO SHEET M-1, DETAIL 1.
2. PUMPS, TRANSDUCER, FLOATS, AND HOIST WILL BE INSTALLED BY OTHERS AT A LATER DATE. PUMP OPERATION LEVELS ARE SHOWN FOR REFERENCE ONLY.
3. REFER TO STRUCTURAL SHEETS.
4. REFER TO SHEET M-1, DETAIL 3.
5. REFER TO THE SLAB AND CONCRETE CONSTRUCTION NOTES ON SHEET S-1 FOR CONCRETE AND GROUT ADMIXTURE REQUIREMENTS.
6. 4" CAST IRON, ASTM A48, CLASS 35B DISCHARGE BASE ELBOW (BY PUMP MANUFACTURER). CONNECTION BETWEEN PUMP DISCHARGE FLANGE AND DISCHARGE PIPE FLANGE SHALL BE MACHINED METAL TO METAL WATER-TIGHT CONTACT.
7. DISCHARGE BASE ELBOW WAS SELECTED BASED ON KSB SUBMERSIBLE PUMP KRT F 100-254/184XEG-S WITH A DESIGN FLOW OF 699 GPM AT 50.4 TDH, 25 HP, 9 13/16" IMPELLER, AND 1760 RPM (NOMINAL).
8. SLEVED DISCHARGE PIPE SHALL BE SEALED WITH SEAL LINK AND BACKER ROD. REFER TO SHEET M-3, DETAIL 2.
9. 6" DISCHARGE PIPING FROM CONNECTION TO THE DISCHARGE ELBOW TO THE FIRST FLANGE OUTSIDE OF THE WET WELL SHALL BE FLANGED 316 SST.
10. INSTALL INSULATING GASKET BETWEEN DISSIMILAR METAL CONNECTIONS.

NOTES:

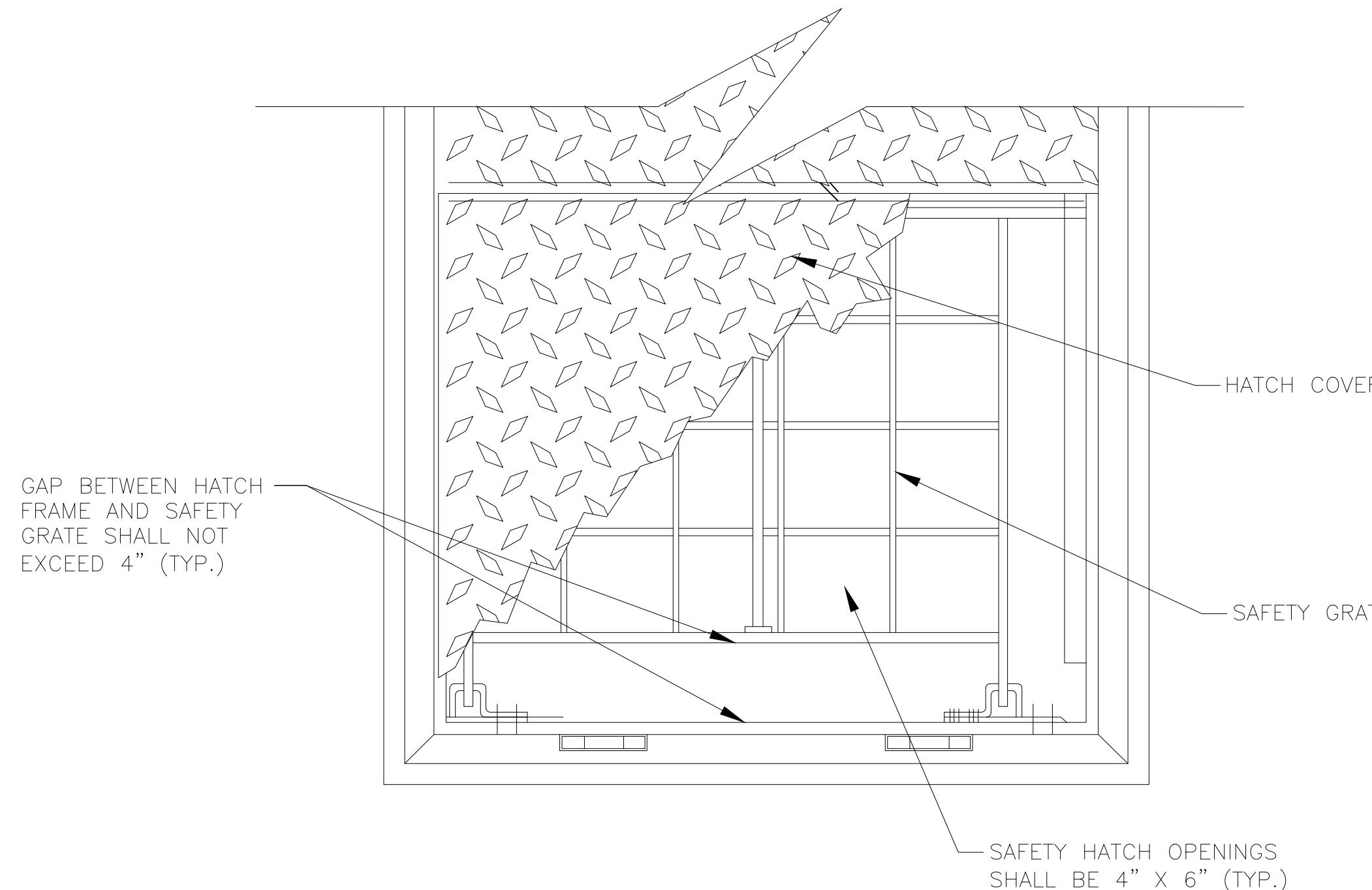
1. ALL PUMP DISCHARGE PIPE AND FITTINGS WITHIN WET WELL SHALL BE FLANGED.
2. ALL PUMP DISCHARGE PIPE, VALVES AND FITTINGS OUTSIDE THE WELL, EXCEPT 316 SST AND PVC, SHALL RECEIVE AFTER INSTALLATION A WHITE COLOR HIGH-BUILD EPOXY COATING SYSTEM WITH A GREY PANTONE #431-U COLOR TOP COAT OF POLYURETHANE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
3. ALL SUPPORTS, GUIDE RAILS, BRACKETS, FASTENERS, AND ANCHORS WITHIN THE WET WELL SHALL BE TYPE 316 SST; ANY ASSOCIATED BOLTS, RODS, AND NUTS SHALL HAVE FLAT WASHERS. NUTS SHALL BE LOCK NUTS.
4. REFER TO THE LIFT STATION PLAN VIEW ON SHEET M-1 FOR ORIENTATION OF PIPING AND APPURTENANCES.
5. OTHER ACCEPTABLE MANUFACTURERS FOR THE SUBMERSIBLE PUMPS, DISCHARGE ELBOW, AND ASSOCIATED COMPONENTS INCLUDE ABS AND FLYGT. THE CONTRACTOR SHALL SUBMIT THE PROPOSED PUMP AND DISCHARGE ELBOW TO THE ENGINEER FOR APPROVAL PRIOR TO THE BID DATE. IF AN ALTERNATE MANUFACTURER IS APPROVED BY THE ENGINEER, ANY MODIFICATIONS REQUIRED TO ACCOMMODATE THE ALTERNATE EQUIPMENT SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.



PURSONG MMD of Comal County Comal County, Texas
PURSONG
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M-2

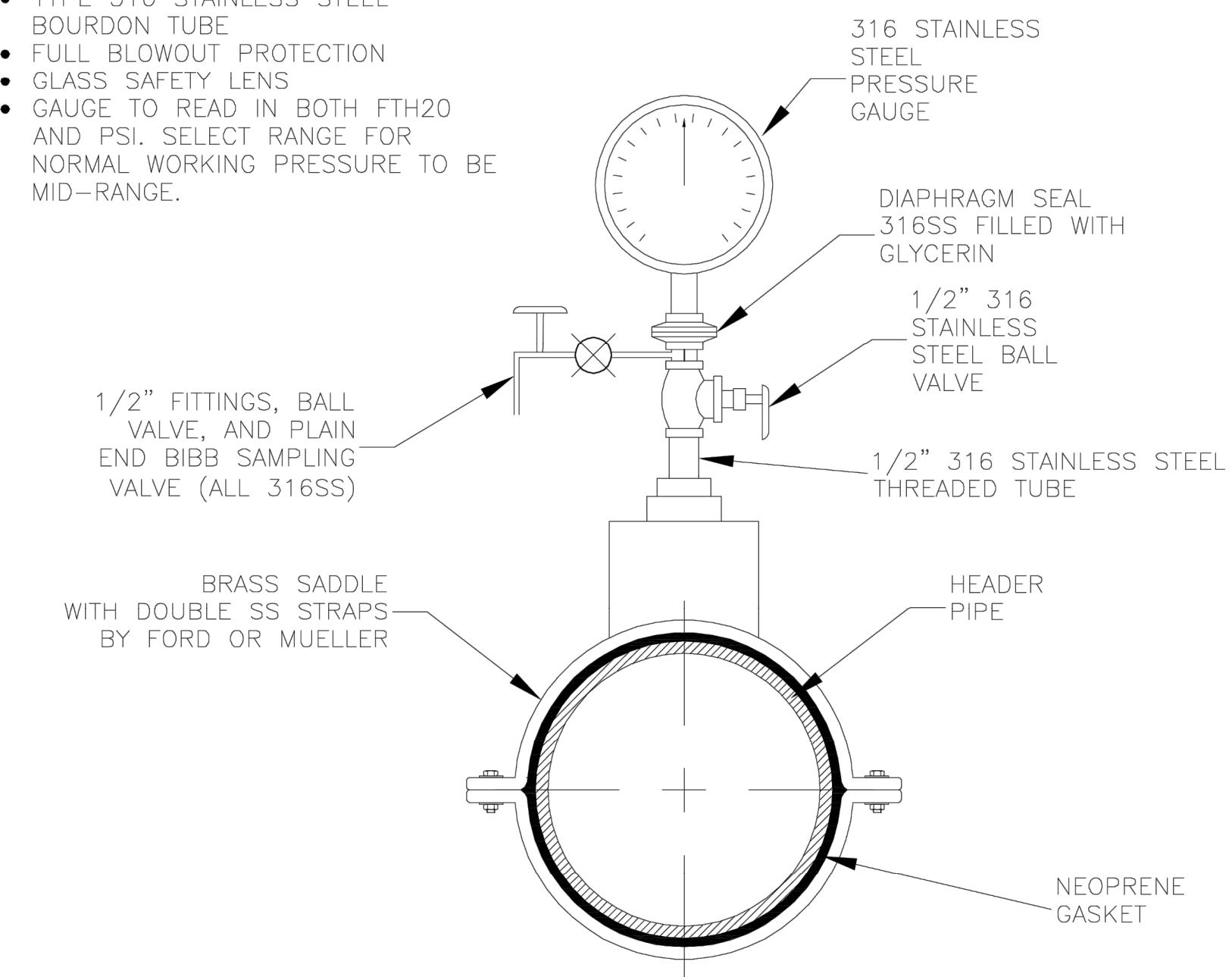


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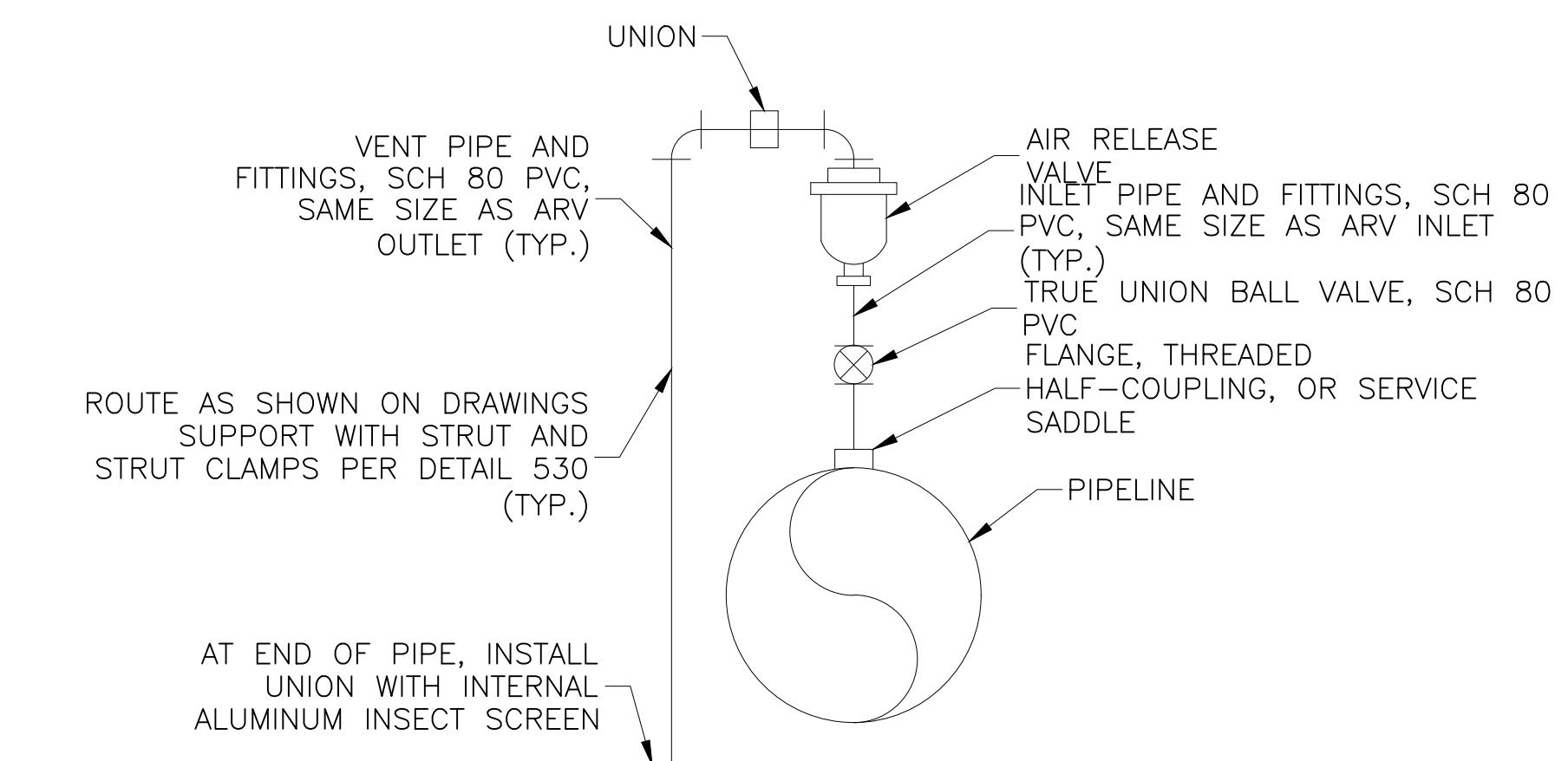
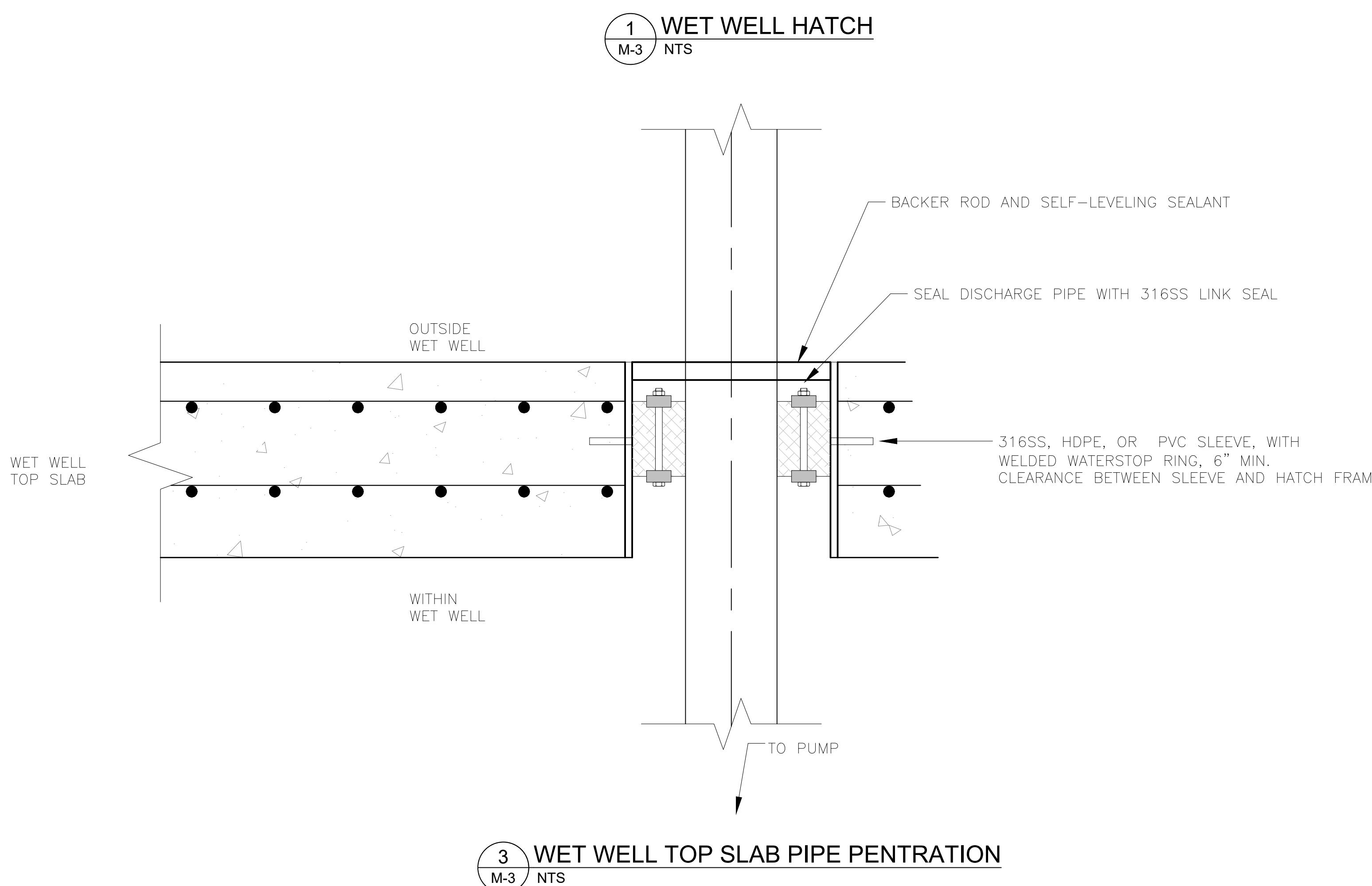
1. TOP OF SAFETY GRATES SHALL BE 1/2" MAXIMUM BELOW TOP OF CONCRETE SLAB.
2. ACCESS HATCH COVER SHALL BE PERFECTLY LEVELED WITH TOP OF CONCRETE SLAB.
3. HATCH ASSEMBLY SHALL BE EJCO SAFE HATCH OR EQUAL WITH ALUMINUM FRAME, GRATES, COVERS AND 316SS HARDWARE, FASTENERS, AND HINGES. HATCH ASSEMBLY SHALL BE RATED FOR 300 PSF LIVE LOAD.
4. COVERS SHALL BE EQUIPPED WITH SLAM LOCKS AND PADLOCK STAPLES. PROVIDE 2 EACH HATCH KEYS.
5. PROVIDE 4" MIN. CLEARANCE IN ALL DIRECTIONS FROM PUMPS AND MIXERS TO HATCH CLEAR OPENINGS.
6. INSTALL BITUMINOUS COATING ON ALL SURFACES IN CONTACT WITH CONCRETE.

KEY NOTES:

- PRESSURE GAUGE SHALL BE RATED FOR CORROSIVE SERVICE
- 4" DIAL SIZE
- GRADE 1A
- LIQUID FILLED
- TYPE 316 STAINLESS STEEL BOURDON TUBE
- FULL BLOWOUT PROTECTION
- GLASS SAFETY LENS
- GAUGE TO READ IN BOTH FTH20 AND PSI. SELECT RANGE FOR NORMAL WORKING PRESSURE TO BE MID-RANGE.



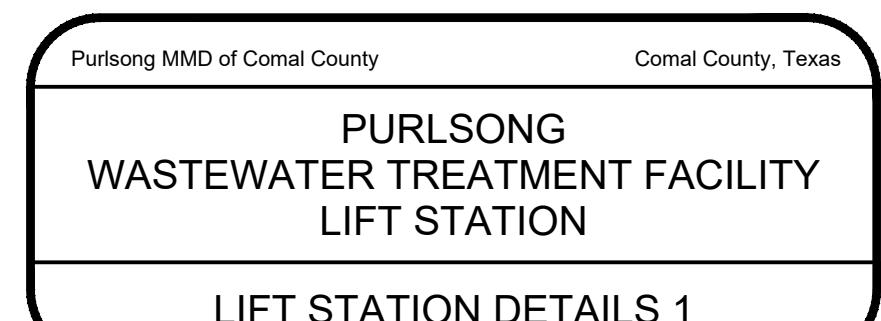
2 PRESSURE GAUGE INSTALLATION DETAIL
M-3 NTS



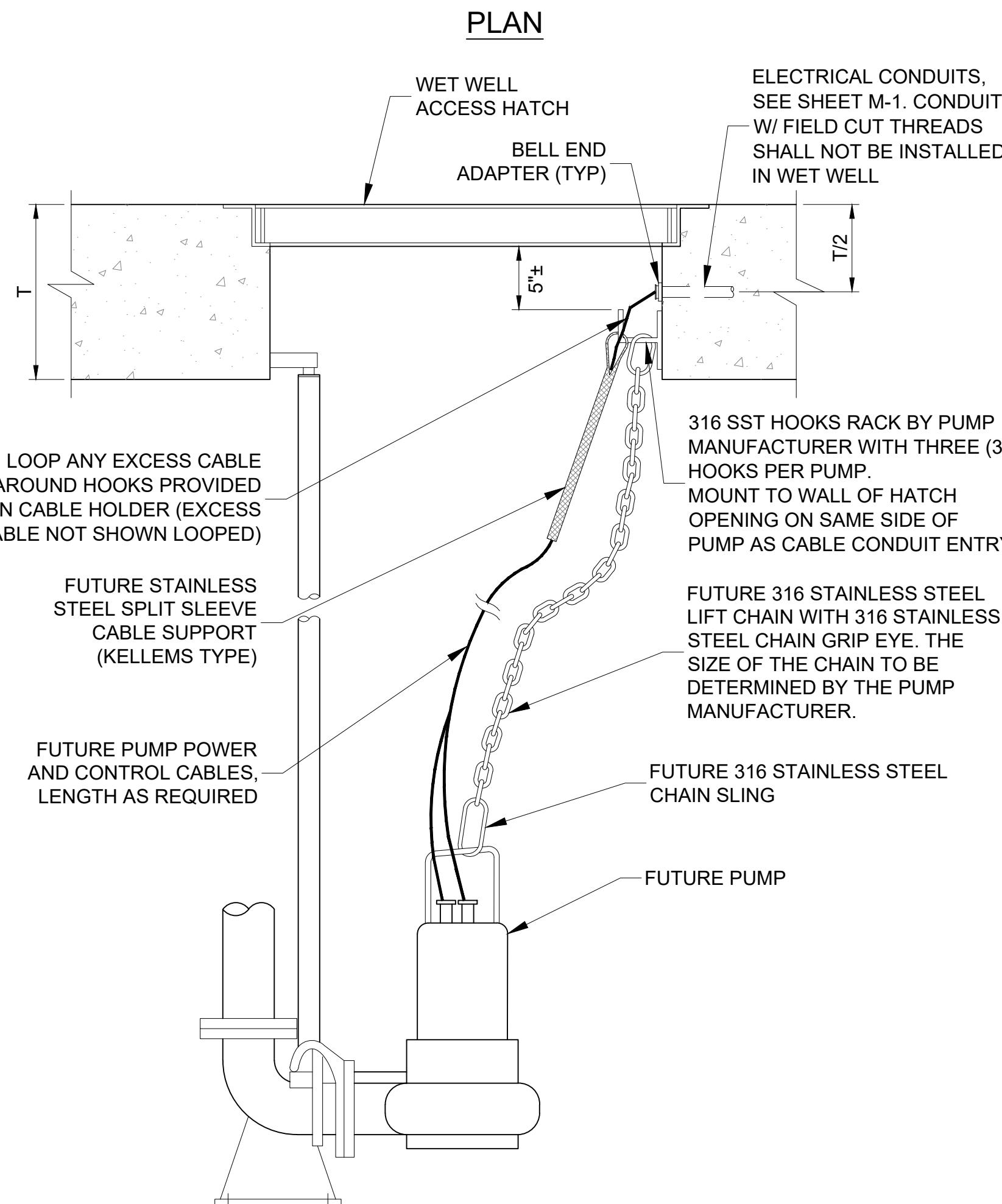
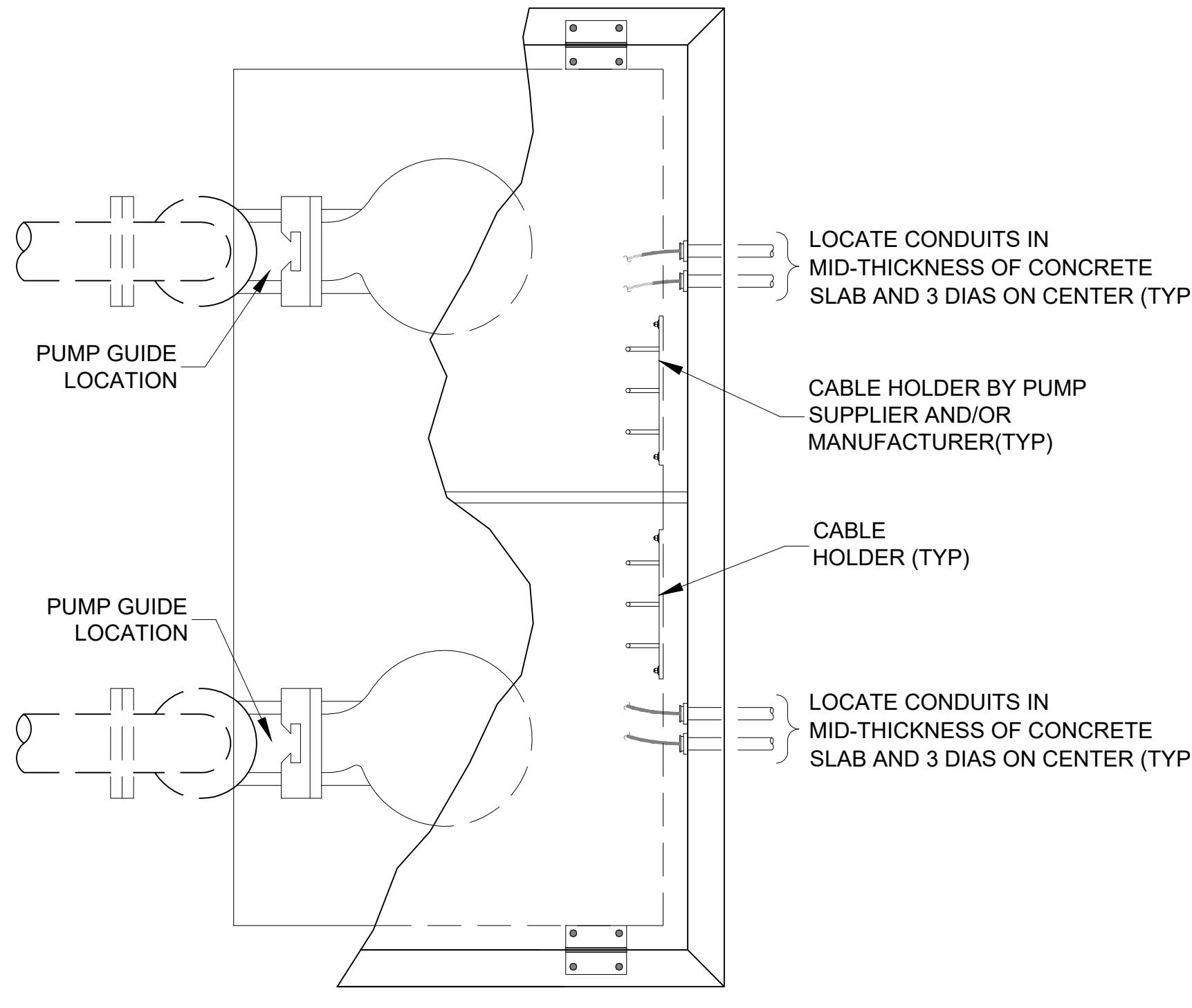
NOTES:

1. FOR WATER, AIR RELEASE VALVE SHALL BE 2" A.R.I. MODEL D-040L-RN WITH THREADED INLET AND OUTLET.
2. FOR WASTEWATER, AIR RELEASE VALVE SHALL BE 2" A.R.I. MODEL D-025-RN WITH THREADED INLET AND OUTLET, AND STAINLESS STEEL BODY CLAMP.
3. PVC MALE ADAPTER ARE NOT ALLOWED.
4. SERVICE SADDLE SHALL BE SMITH BLAIR 317 OR EQUAL.
5. TRUE UNION BALL VALVE SHALL BE GF, HAYWARD, NIBCO, OR SPEARS.
6. UNLESS INDICATED OTHERWISE, INSTALL ASSEMBLY PLUMB/LEVEL.

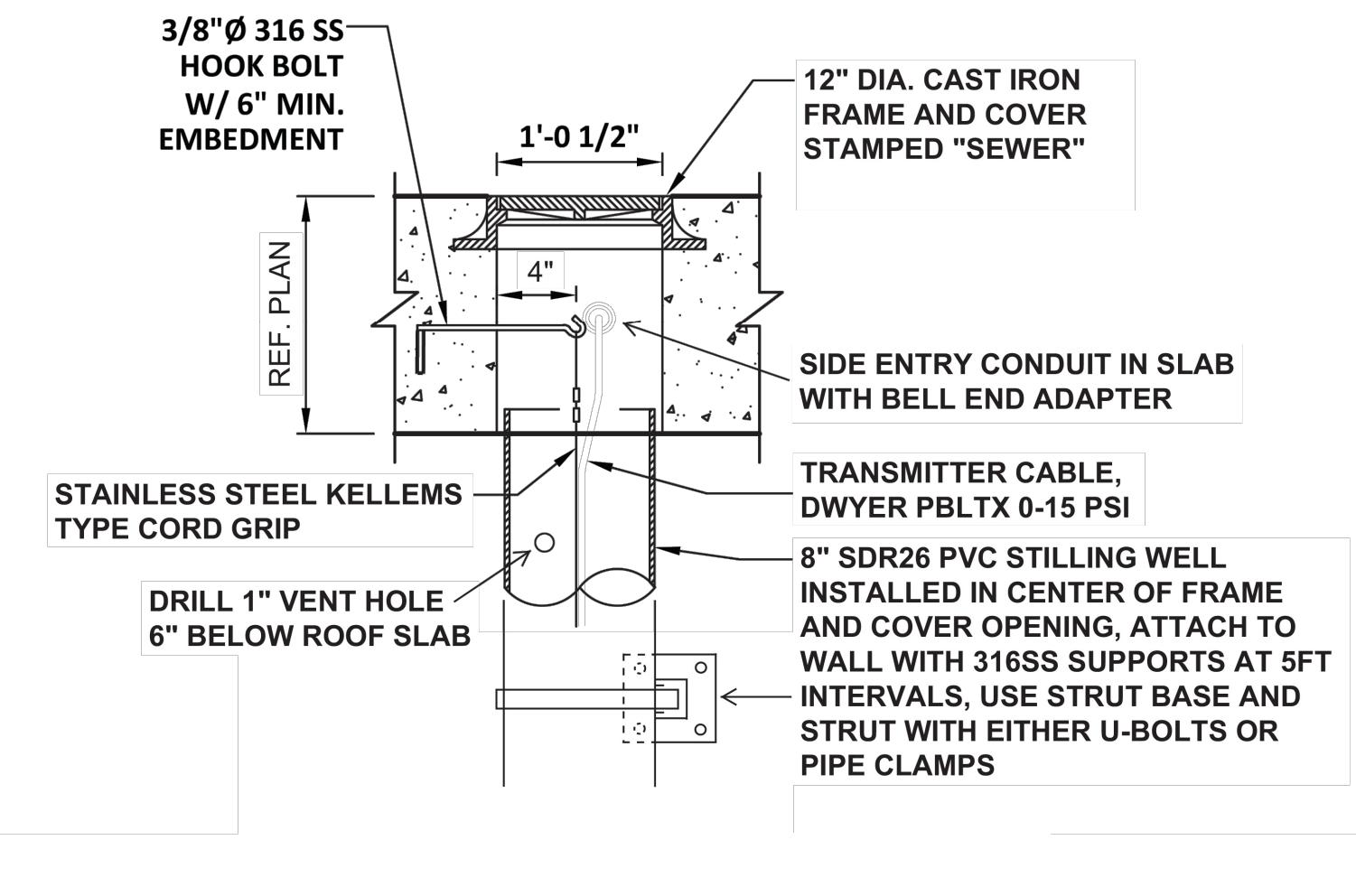
4 AIR RELEASE VALVE INSTALLATION DETAIL
M-3 NTS



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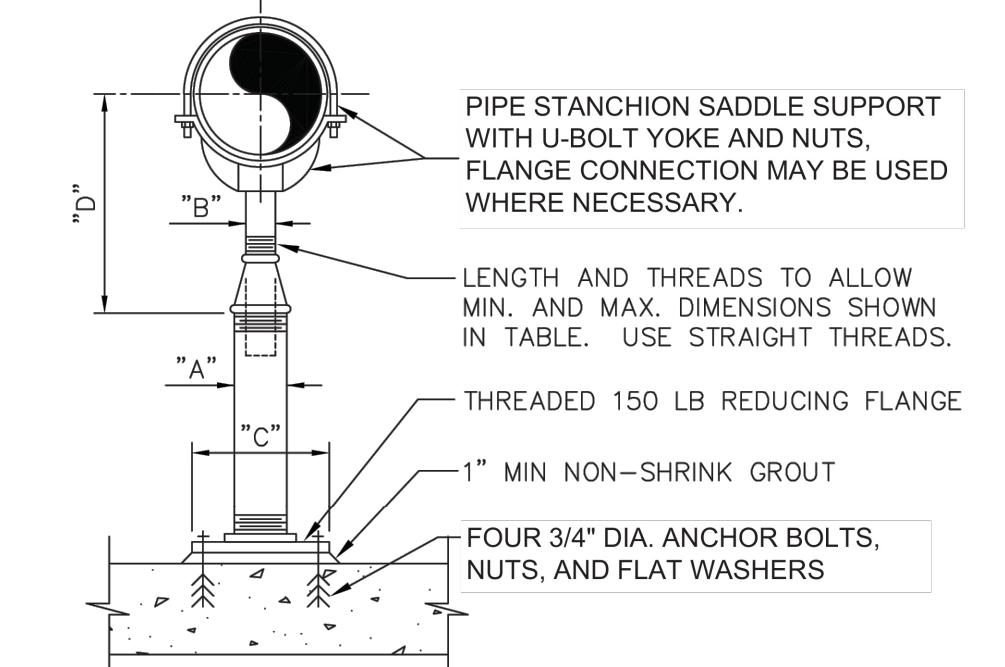
1 PUMP LIFTING AND CABLE DETAIL
M-4 NTS



NOTES:
1. LEVEL TRANSDUCER AND CORD GRIP ARE FUTURE ITEMS SHOWN FOR REFERENCE ONLY.

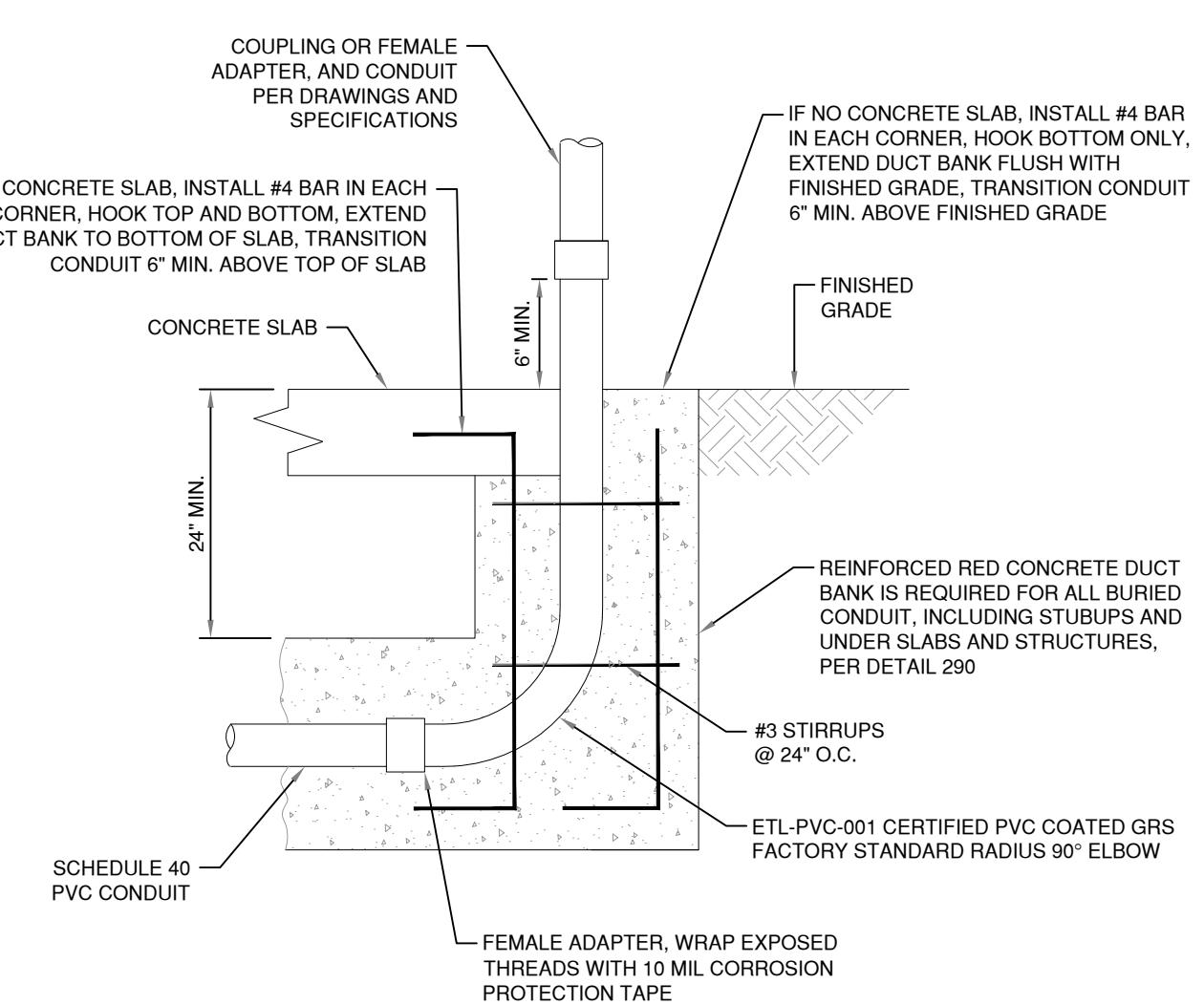
2 STILLING WELL
M-4 NTS

ADJUSTABLE PIPE SUPPORT SCHEDULE DIMENSIONS IN INCHES				
PIPE SIZE	"A"	"B"	"C"	"D"
				MINIMUM MAXIMUM
≤ 2 1/2	2 1/2	1 1/2	9	8 13
3	2 1/2	1 1/2	9	8 1/2 13 1/2
3 1/2	2 1/2	1 1/2	9	8 1/2 13 1/2
4	3	2 1/2	9	9 1/2 14
6	3	2 1/2	9	10 1/2 15 1/2
8	3	2 1/2	9	11 1/2 16 1/2
10	3	2 1/2	9	13 1/2 18 1/2
12	3	2 1/2	9	15 19 1/2
14	4	3	11	16 1/2 20 1/2
16	4	3	11	17 1/2 22 1/2
18	6	3 1/2	13 1/2	19 1/2 24
20	6	3 1/2	13 1/2	21 25 1/2
24	6	4	13 1/2	23 1/2 28 1/2
30	6	4	13 1/2	27 31 1/2
32	6	4	13 1/2	28 1/2 32 1/2
36	6	4	13 1/2	30 1/2 34 1/2

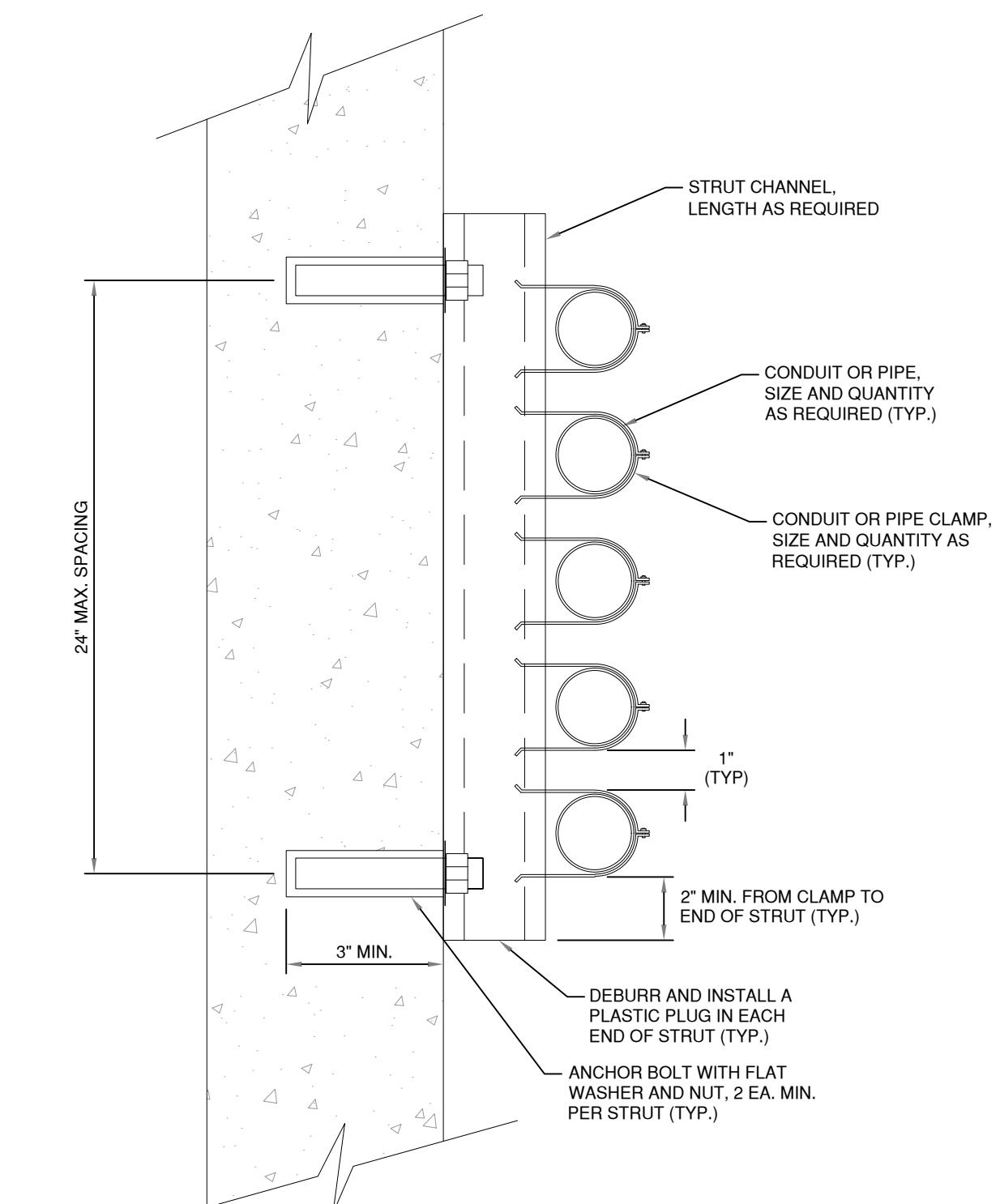


NOTES:
1. INSTALL WHERE SHOWN ON DRAWINGS.
2. ALL MATERIAL TO BE 316 STAINLESS STEEL.
3. PIPE SHALL BE SCHEDULE 40.

3 ADJUSTABLE STANCHION PIPE SUPPORT DETAIL
M-4 NTS



4 CONDUIT STUBUP DETAIL
M-4 NTS



5 STRUT AND CLAMP DETAIL
M-4 NTS



Pursong MMD of Comal County
Comal County, Texas
PURSONG
WASTEWATER TREATMENT FACILITY
LIFT STATION
LIFT STATION DETAILS 2

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1.0 GENERAL

1.1 THIS STRUCTURAL DESIGN IS SITE SPECIFIC AND MAY NOT BE USED FOR DIFFERENT SITE LOCATIONS WITHOUT WRITTEN PERMISSION FROM LONE STAR STRUCTURAL, LLC

1.2 THIS WET WELL HAS BEEN DESIGNED AS A GROUND SUPPORTED CONCRETE SLAB-ON-GRADE FOUNDATIONS, AND AS SUCH WILL MOVE WITH THE SOILS UPON WHICH IT BEARS. THIS DESIGN IS INTENDED TO LIMIT SUCH MOVEMENT TO WITHIN THE DEFLECTION TOLERANCES SET FORTH IN THE INTERNATIONAL BUILDING CODE, EDITION ENFORCED AT TIME OF DESIGN.

1.3 THIS STRUCTURAL DESIGN IS BASED ON GEOTECHNICAL REPORT DONE BY RABA KISTNER (REPORT NO: ANA24-027-00), DATED OCTOBER 17, 2024

1.4 DO NOT SCALE THIS DRAWING. THIS IS A SCHEMATIC PLAN TO BE USED TO LOCATE AND IDENTIFY STRUCTURAL ELEMENTS ONLY. DIMENSIONAL CONTROL IS THE RESPONSIBILITY OF THE BUILDER AND CONTRACTOR TO FOLLOW THE ENGINEERING PLANS, DESIGNER PLANS, OR EXISTING SITE CONDITIONS. USE THIS PLAN FOR PLACEMENT OF STRUCTURAL ELEMENTS ONLY.

1.5 THE CONTRACTOR SHALL FULLY REVIEW AND COMPARE ALL CONSTRUCTION DOCUMENTS, INCLUDING EXISTING SITE CONDITIONS, AND THE GEOTECHNICAL REPORT PRIOR TO THE START OF WORK. VERIFY ALL DIMENSIONS, LOCATION OF PIPING, ANCHOR LOCATIONS, AND ALL OTHER NOTED ITEMS. IF A DISCREPANCY EXIST, THE CONTRACTOR NOTIFY THE DESIGNER AND LSS IN WRITING OF ANY DISCREPANCY AND FOR DIRECTIONS TO RESOLVE THE DISCREPANCY. THE DESIGNER PLANS TAKE PRECEDENCE OVER THIS DRAWING IF ANY NON-STRUCTURAL DIMENSIONAL DISCREPANCY EXISTS.

1.6 THE BUILDER SHALL COORDINATE THIS DRAWING WITH ALL STRUCTURAL, CIVIL, ELECTRICAL, AND MECHANICAL PLANS AND SHALL NOTIFY THE DESIGNER AND LSS IN WRITING OF ANY DISCREPANCY AND FOR DIRECTIONS TO RESOLVE THE DISCREPANCY.

1.7 SEE SITE PLAN, CIVIL, OR DESIGNER PLANS FOR ACTUAL TOP-OF-SLAB AND FINISH ELEVATIONS.

1.8 THE DETAILS DESIGNATED AS "TYPICAL DETAILS", AND NOTES MARKED "TYPICAL" OR "TYP." APPLY GENERALLY TO THE DRAWINGS IN ALL AREAS WHERE CONDITIONS ARE SIMILAR TO THOSE DESCRIBED IN THE DETAILS.

1.9 COMPLETE SHOP DRAWINGS SHALL BE PROVIDED, AS SPECIFIED, FOR ALL FABRICATED ITEMS AND SHALL BE REVIEWED PRIOR TO FABRICATION. STRUCTURAL DRAWINGS SHALL NOT BE REPRODUCED FOR SHOP DRAWINGS.

1.10 THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL TEMPORARY ERECTION, BRACING, TRENCH PROTECTION, AND SHORING FOR ALL STRUCTURAL WORK. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STANDARD OF CARE MEASURES TO ENSURE SITE SAFETY. THE CONTRACTOR AT ANY PHASE SHALL NOTIFY THE ENGINEER OF ANY CONDITION WHICH MAY HAVE AN IMPACT OF THE STRUCTURAL INTEGRITY OF THE STRUCTURE, OR UNSTABLE SOIL CONDITIONS.

1.11 THE CONTRACTOR SHALL NOT CHANGE OR DEVIATE FROM THE PROVIDED PLANS, WITHOUT OBTAINING WRITTEN APPROVAL FROM THE OWNER, AND LSS.

1.12 ALL CONSTRUCTION, AND SHORING SHALL CONFORM TO THE LATEST STANDARDS AND SPECIFICATIONS OF THE CITY, COUNTY, AND OR DEPARTMENT OF TRANSPORTATION. IF THESE JURISDICTIONS DO NOT APPLY, THE CONTRACTOR SHALL REFER TO THE TEXAS DEPARTMENT OF TRANSPORTATION FOR ANY SPECIFICATIONS NOT EXPLICITLY PROVIDED ON THE STRUCTURAL, MECHANICAL, CIVIL, OR ELECTRICAL PLANS.

1.13 THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS, PAYING ALL FEES FOR OTHERWISE COMPLYING WITH ALL APPLICABLE REGULATIONS GOVERNING THE WORK.

1.14 PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL NOTIFY COMPANIES AND UTILITY PROVIDERS WHICH HAVE FACILITIES IN THE VICINITY OF THE CONSTRUCTION TO BE PREFORMED.

1.15 CLEARING AND CRUBBING OPERATIONS AND THE DISPOSAL OF ALL DEBRIS SHALL BE PREFORMED BY THE CONTRACTOR IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES.

1.16 ALL WASTE MATERIAL RESULTING FROM THE PROJECT SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR.

1.17 IT IS THE CONTRACTOR'S RESPONSIBILITY FOR CONTROL OF SURFACE EROSION, AND TEMPORARY DRAINAGE OF THE SITE UNTIL THE OWNER ACCEPTS THE WORK AS COMPLETE.

1.18 IT IS THE CONTRACTOR'S RESPONSIBILITY TO READ AND THOROUGHLY UNDERSTAND THE GEOTECHNICAL REPORT FOR THE SITE IF AVAILABLE, AND BE FAMILIAR WITH THE PROPOSED PROJECT SITE. IF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION, IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY FOR IMPLEMENTING ALL NECESSARY MEASURES TO PREVENT/ STOP GROUNDWATER INTRUSION INTO THE WORK AREA, AT NO ADDITIONAL COST TO THE OWNER.

2.0 DESIGN DATA AND CRITERIA

2.1 DESIGN CODES:

2.1.1 2021 INTERNATIONAL BUILDING CODE

2.1.2 ACI 318-19 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE

2.1.3 ACI 350-20 CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES

2.1.4 ASCE 7-22 MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES

2.2 SOIL PARAMETERS:

POTENTIAL VERTICAL RISE.....<1 INCH
BEARING CAPACITY.....18 KSI (AT BASE OF WET WELL)
PLASTICITY INDEX.....<20

2.3 DEAD LOADS:

WEIGHT OF COMPONENTS

2.4 WIND LOADS:

RISK CATEGORY.....III
EXPOSURE CATEGORY.....B
BASIC WIND SPEED.....120 MPH

2.5 SEISMIC DESIGN DATA:

RISK CATEGORY.....III
SITE CLASS.....C
SS.....0.050
S1.....0.027
SDS.....0.044
SD1.....0.027

3.0 SITE PREPARATION, DRAINAGE, AND BACKFILL

3.1 THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE GEOTECHNICAL REPORT COMPLETED BY RABA KISTNER (REPORT NO: ANA24-027-00), DATED OCTOBER 17, 2024 FOR ALL SITE PREPARATION, EXCAVATION, PLACEMENT AND COMPACTION OF SELECT STRUCTURAL FILL/ BACKFILL SHALL BE PERFORMED IN ACCORDANCE WITH THE REPORT. IF DISCREPANCIES EXIST BETWEEN THESE PLANS, AND THE GEOTECHNICAL REPORT, THEY SHALL BE REPORTED TO THE SEOR IN WRITING PRIOR TO CONSTRUCTION.

3.2 ALL AREAS TO SUPPORT THE STRUCTURES SPECIFIED SHALL BE STRIPPED OF ALL VEGETATION AND ORGANIC MATERIAL IN ACCORDANCE WITH TXDOT SPECIFICATION ITEM 400 "EXCAVATION AND BACKFILL FOR STRUCTURES". PROOF ROLLING, SOILS CONSOLIDATION, AND COMPACTING SHALL BE COMPLETED PRIOR TO THE PLACEMENT OF FILL MATERIAL. IT IS THE ENGINEER'S RECOMMENDATION THAT IN ACCORDANCE WITH ANY GEOTECHNICAL REPORT, OR IN THE ABSENCE THEREOF, SELECT STRUCTURAL FILLS BE PROVIDED AT THE LOCATION OF PROPOSED FOUNDATION CONSTRUCTION. A MINIMUM DEPTH OF FILL MATERIAL SHALL BE AS SPECIFIED IN THE GEOTECHNICAL REPORT, OR EQUAL TO THE DEPTH OF SURFACE SOILS EXCAVATION. CONTRACTOR SHALL REFER TO THE DESIGN DATA LISTED IN THE STRUCTURAL NOTES FOR MINIMUM DEPTH OF COMPACTED SELECT FILL. THE STRUCTURAL FILL SHALL CONSIST OF TYPE A CRUSHED LIMESTONE, OR TYPE B CLAYEY CRUSHED GRAVEL, IN ACCORDANCE WITH TXDOT SPECIFICATION ITEM 247 FOR GRADE 1 FILL MATERIALS. STRUCTURAL FILL SHALL BE PLACED IN LIFTS OF 6 INCHES, AND COMPACTED IN ACCORDANCE WITH TXDOT SPECIFICATION TEX-113-E, WITH MOISTURE CONTENT CONTROLLED TO CONFORM TO TXDOT SPECIFICATION ITEM 204 "SPRINKLING".

3.3 TREES WITHIN THE VICINITY OF THE STRUCTURE OF ONE TIMES THE MATURE TREE HEIGHT MAY DAMAGE THE DESIGNED FACILITY. EXISTING AND NEWLY PLANTED TREES WITHIN ONE TIMES THE MATURE TREE HEIGHT TO THE FOUNDATION PERIMETER ARE AT THE RISK OF BUILDER AND/OR OWNER AND MUST HAVE A PROPERLY DESIGNED AND PLACED ROOT SHIELD (ROOT BARRIER), DESIGNED BY AN ARBORIST OR TREE EXPERT, TO INHIBIT TREE ROOT GROWTH TOWARD AND UNDER THE FOUNDATION.

3.4 VOIDS (HOLES) CREATED AS A RESULT OF DEMOLITION AND REMOVAL OF EXISTING STRUCTURES, TREES, AND OTHER EXISTING OBJECTS SHALL BE FILLED WITH WELL COMPACTED SELECT FILL MATERIAL. THIS IS USUALLY DONE BY LAYERING THE HOLE WITH SELECT FILL MATERIAL APPLYING WATER AND COMPACTING EACH LAYER, COMPACTING WITH HEAVY EARTH MOVING EQUIPMENT OR A HEAVY TRUCK. CONTINUE THIS PROCESS UNTIL THE HOLE IS FILLED.

3.5 EXCAVATIONS SHALL BE OBSERVED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER'S OFFICE, TO VERIFY THAT BEARING SOILS ARE SIMILAR TO THOSE LISTED IN THE REPORT. COMPACTION TESTING SHALL BE COMPLETED AT THE CONTRACTORS EXPENSE PRIOR TO THE PLACEMENT OF ANY STEEL REINFORCING, OR CONCRETE. SOIL TYPE, AT THE EXCAVATED DEPTH, AND COMPACTION TESTING SHALL ALL BE REPORTED IN WRITING TO THE SEOR.

3.6 SITE SURFACE DRAINAGE DURING CONSTRUCTION IS VERY IMPORTANT IN CONTROLLING MOISTURE PROBLEMS ASSOCIATED WITH THE BELOW SLAB FILL, LOT FILL MATERIAL, AND SUB-GRADE SOILS. BUILDER SHALL PROVIDE POSITIVE DRAINAGE AWAY ROM THE FOUNDATION. THE BUILDER IS RESPONSIBLE FOR THE INSTALLATION OF BERMS OR SWALES ON THE UPHILL SIDE OF THE CONSTRUCTION AREA TO DIVERT SURFACE RUNOFF AWAY FROM THE FOUNDATION AREA DURING CONSTRUCTION.

3.7 THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF FINAL SURFACE DRAINAGE PATTERN TO PREVENT PONDING AND LIMIT SURFACE WATER INFILTRATION AT THE FOUNDATION PERIMETER. LSS IS NOT RESPONSIBLE FOR FOUNDATION WITH INADEQUATE DRAINAGE AND/OR GROUND WATER COLLECTION PROXIMATE TO THE FOUNDATION PERIMETER OR BENEATH THE FOUNDATION.

3.8 MATERIALS USED FOR SELECT FILL SHALL CONSIST OF TYPE A CRUSHED LIMESTONE, OR TYPE B CLAYEY CRUSHED GRAVEL, IN ACCORDANCE WITH TXDOT SPECIFICATION ITEM 247 FOR GRADE 1 FILL MATERIALS. BACKFILL MATERIAL USED AROUND THE EXTERIOR WALLS OF THE TREATMENT PLANT SHALL BE LOW PLASTIC (<30) AS SPECIFIED IN TXDOT ITEM 123 TYPE A. COMPACTED AND PLACED PER TXDOT ITEM 132 "EMBANKMENT". THE USE OF ON-SITE MATERIALS SHALL BE PROHIBITED. EACH LIFT OF BACKFILL SHALL BE TESTED AND DOCUMENTED. WITHIN 5 FEET OF THE WALLS, COMPACTION SHALL BE COMPLETED USING HAND GUIDED EQUIPMENT TO ACHIEVE MAXIMUM DENSITY. LIFTS SHALL BE COMPLETED IN NO GREATER THE 6" LIFTS AROUND WALLS AND UNDER FOUNDATIONS.

3.9 BACKFILL AROUND WET WELL EXTERIORS WALLS, SHALL BE CRUSHED STONE, OR WASHED GRAVEL FOR A MINIMUM OF 12" ON ALL SIDES, OR APPROVED ALTERNATE. BACKFILL BEYOND 12" OF EXTERIOR WALLS SHALL REFER TO NOTE 3.10.

3.10 EXCAVATION AND BACKFILL SHALL BE COMPLETED IN ACCORDANCE WITH TXDOT ITEMS 400 - EXCAVATION AND BACKFILL FOR STRUCTURES, ITEM 402-TRENCH AND EXCAVATION PROTECTION, ITEM 403- TEMPORARY SPECIAL SHORING, AND ITEM 132 FOR EMBANKMENT

4.0 SLAB AND CONCRETE CONSTRUCTION

4.1 SOIL FROM BEAM EXCAVATION AND OTHER SITE EXCAVATIONS SHALL NOT BE USED AS SLAB FILL MATERIAL.

4.2 SLAB FILL MATERIAL SHALL BE COVERED AND PROTECTED FROM GETTING WET PRIOR TO PLACEMENT IN THE FOUNDATION SLAB AREAS AND AFTER PLACEMENT IN THE FOUNDATION SLAB AREAS.

4.3 TRENCHING OF GRADE BEAMS SHALL BE EXCAVATED TO PROVIDE THE BEAM CROSS SECTION INDICATED. BEAM AND SLAB DEPTHS AND WIDTHS AS INDICATED ARE MINIMUM ACCEPTABLE SIZES. LARGER SIZE BEAMS AND SLABS FORMED BY LESS ACCURATE TRENCHING MAY REQUIRE ADDITIONAL REINFORCING NOT SHOWN WHICH SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION REVIEW. ALL LOOSE DIRT FROM SIDES AND BOTTOMS OF TRENCHES SHALL BE REMOVED. HAUNCHES SHALL BE CUT ON EACH SIDE OF TRENCHES OF ADEQUATE SIZE TO MAINTAIN THE VERTICAL SIDES OF THE TRENCH.

4.4 REMOVE FREE WATER FROM BEAM TRENCHES AND ALL OTHER EXCAVATIONS BEFORE PLACING CONCRETE. CLEAN BOTTOM OF BEAM TRENCHES OF LOOSE SOIL, ROOTS, GRAVEL, AND ALL DEBRIS PRIOR TO PLACING CONCRETE. CONCRETE SHALL NOT BE PLACED ON SOILS THAT HAVE BEEN DISTURBED BY RAINFALL OR WATER SEEPAGE.

4.5 FORMWORK SHORING SHALL BE DESIGNED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE (ACI) ACI 347, "STANDARD FOR DESIGN AND PLACEMENT OF CONCRETE FORMWORK", CONCRETE FORMWORK SHALL REMAIN IN PLACE UNTIL THE CONCRETE HAS REACHED 75% DESIGN STRENGTH. NO ADDITIONAL WORK SHALL BE PERFORMED UNTIL THE CONCRETE HAS REACHED 90% OF THE DESIGN STRENGTH.

4.6 ALL CONCRETE SHALL BE PLACED IN ACCORDANCE WITH ACI 302.1R.

4.7 PROPER CURING OF ALL CONCRETE SURFACES SHALL BE PROVIDED BY THE BUILDER AND IN ACCORDANCE WITH THE LATEST EDITION OF ACI 308, "STANDARD PRACTICE FOR CURING CONCRETE". IF SPRAY-ON CURING COMPOUNDS ARE USED, THEY NEED TO BE COMPATIBLE WITH SUBSEQUENT FINISH APPLICATIONS.

4.8 ALL CONCRETE AND REINFORCING STEEL SHALL MEET LATEST EDITION OF ASTM A615 AND ACI 117 "STANDARD TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS".

4.9 WHILE SOME SHRINKAGE CRACKING IS TO BE EXPECTED IN THE CONCRETE, IT HAS BEEN SHOWN TO BE SIGNIFICANTLY REDUCED THROUGH PROPER CURING PROCEDURES AND PROPER CONTROL OF ADMIXTURES. ONLY THOSE ADMIXTURES HAVING SPECIFIC WRITTEN AUTHORIZATION OF THE DESIGN ENGINEER SHALL BE INTRODUCED WITH THE CONCRETE MIX.

4.10 TESTING SHALL BE THE SOLE RESPONSIBILITY OF THE BUILDER, AND ANY SUBSTANDARD STRENGTHS SHALL BE REPORTED TO LSS.

4.11 CONCRETE SHALL BE PLACED IN ACCORDANCE WITH LATEST EDITION OF ACI 350-20 "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES"

4.12 CONCRETE COMPRESSIVE STRENGTH:
- MISCELLANEOUS SLABS FOR BUILDINGS, AND EQUIPMENT
- 3,000 PSI MINIMUM STRENGTH AT 28 DAYS.
- WATER BEARING STRUCTURES, (WALLS AND SLAB) - UNLESS COATED OR SPECIFIED
- 4,000 PSI MINIMUM STRENGTH AT 28 DAYS.
- REINFORCED CONCRETE PIPE:
- 5,000 PSI MINIMUM STRENGTH AT 28 DAYS

4.13 PROVIDE "HYDRAULIC CEMENT CONCRETE" PER TXDOT ITEM 421 CLASS S CONCRETE. PORTLAND CEMENT SHALL CONFORM TO ASTM C150, TYPE II. FLY ASH SHALL CONFORM TO ASTM C618, CLASS F. MAXIMUM WATER CEMENT RATIO SHALL BE .45

4.14 PROVIDE MODERATE AIR ENTRAINMENT FOR MODERATE EXPOSURE, NOT EXCEEDING 5%.

4.15 REINFORCING STEEL SHALL MEET LATEST EDITION OF ASTM A-615, GRADE 60 DEFORMED BARS. #3 BARS MAY BE GRADE 40.

4.16 WELDED WIRE MESH (WWM) SHALL MEET LATEST EDITION OF ASTM A-185 OR ASTM A-497. USE FLAT SHEETS ONLY. ALL LAPS TO BE 2 FULL SQUARES.

4.17 ALL REINFORCEMENT SHALL BE SECURELY SUPPORTED AT 48" O.C. TO PREVENT VERTICAL AND HORIZONTAL MOVEMENT DURING THE PLACEMENT OF CONCRETE. METAL, PLASTIC, CONCRETE, OR MASONRY CHAIRS MAY BE USED TO SUPPORT REINFORCEMENT. SLAB REINFORCING SHALL BE CENTERED IN CONCRETE SLAB THICKNESS.

4.18 SLAB REINFORCING BARS SHALL BE TIED AT EVERY OTHER INTERSECTION AND SUPPORTED AT 48 INCHES O.C. WITH METAL, PLASTIC, CONCRETE, OR MASONRY CHAIRS. EVERY STIRRUP BAR SHALL BE TIED AT BOTH TOP AND BOTTOM BEAM REINFORCING BAR LOCATION. STIRRUPS ARE TO BE INSTALLED VERTICALLY. ANGLED STIRRUPS ARE NOT PERMITTED.

4.19 WHEN AMBIENT TEMPERATURE FALLS BELOW 40 DEGREES OR RISES ABOVE 95 DEGREES, RECORD SHALL BE KEPT OF CONCRETE TEMPERATURES AND HE PROTECTION PROVIDED FOR CONCRETE DURING PLACEMENT. PROTECTION FOR CONCRETE CAN INCLUDE, BUT NOT LIMITED TO INSULATION BLANKETS, PLASTIC SHEETING, OR SPRAY ON CURING COMPOUNDS.

4.20 UNLESS OTHERWISE NOTED, REINFORCING STEEL LAPS AND SPLICES SHALL COMPLY WITH THE FOLLOWING SCHEDULE.

SPECIFIED CONCRETE COVER FOR CAST IN PLACE NON PRESTRESSED MEMBERS			
CONCRETE EXPOSURE	MEMBER	REINFORCEMENT	SPECIFIED COVER, (INCHES)
CAST AGAINST AND PERMANENTLY IN CONTACT WITH GROUND, OR LIQUIDS	ALL	ALL	3
EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	ALL	NO. 6 THROUGH NO. 18 NO. 5 BAR AND SMALLER	2 1 1/2
NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	SLABS, JOIST, AND WALLS BEAMS, COLUMNS, PEDESTALS, AND TENSION TIES	NO. 14 AND NO. 18 BARS NO. 11 AND SMALLER PRIMARY REINFORCEMENT, STIRRUPS, TIES, SPIRALS, AND HOOPS	1 1/2 3/4 1 1/2
AROUND CONDUIT, PIPING, ANCHOR PLATES, AND MISC. EMBEDDED ITEMS	ALL	ALL	2

4.21 UNLESS OTHERWISE NOTED, REINFORCING STEEL LAPS AND SPLICES SHALL COMPLY WITH THE FOLLOWING SCHEDULES.

Ld TENSION DEVELOPMENT LENGTH (GRADE 60 BARS- NORMAL WEIGHT CONCRETE)				Ldh HOOK DEVELOPMENT LENGTH (GRADE 60 BARS- NORMAL WEIGHT CONCRETE)			
BAR SIZE	f'c=3,000 PSI	f'c=4,000 PSI	f'c=5,000 PSI	BAR SIZE	f'c=3,000 PSI	f'c=4,000 PSI	f'c=5,000 PSI
#3	1-5"	1-3"	1-1"	#3	0-9"	0-8"	0-7"
#4	1-10"	1-7"	1-5"	#4	0-11"	0-10"	0-9"
#5	2-4"	2-0"	1-10"	#5	1-2"	1-0"	0-11"
#6	2-9"	2-5"	2-2"	#6	1-5"	1-3"	1-1"
#7	4-0"	3-6"	3-2"	#7	1-8"	1-5"	1-3"
#8	4-7"	4-0"	3-7"	#8	1-10"	1-7"	1-5"
#9	5-2"	4-6"	4-0"	#9	2-1"	1-10"	1-8"
#10	5-10"	5-1"	4-6"	#10	2-4"	2-1"	1-10"
#11	6-6"	5-7"	5-0"	#11	2-7"	2-3"	2-0"

4.22 ALL BEAM SIZES, SLAB THICKNESS, AND REINFORCING SIZES ARE A MINIMUM AND SHALL NOT BE DECREASED WITHOUT PRIOR APPROVAL BY LSS.

4.23 ALL BEAM SPACING ARE MAXIMUM AND SHALL NOT BE INCREASED OR RELOCATED WITHOUT APPROVAL BY LSS.

4.24 CURING OF CONCRETE SHALL BE IN CONFORMANCE WITH ACI 308 "STANDARD PRACTICE FOR SHORING CONCRETE" CURING OPERATIONS SHALL BEGIN AS SOON AS POSSIBLE WITHOUT DAMAGING THE CONCRETE SURFACE. (MINIMUM 7 DAYS)

4.25 ALL WATER STOPS SHALL BE ADEKA P-201

4.26 RUNNING CONDUIT CONTINUOUSLY THROUGH SLABS OR WALLS IS PROHIBITED. CONTRACTOR SHALL ENSURE LONG HORIZONTAL RUNS OF CONDUIT IS ROUTED THROUGH THE SUBGRADE OR ADJACENT SOIL.

4.28 IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH ALL APPLICABLE DISCIPLINES, OR SUB CONTRACTORS TO VERIFY THE LOCATIONS OF ALL PROPOSED ANCHORS, EMBEDS, PLUMBING, ELECTRICAL, OR OTHER UTILITIES WHICH WILL BE PLACED INSIDE THE SLAB PRIOR TO THE PLACEMENT OF CONCRETE, AND ENSURE THE SLAB/ BEAM STEEL DOES NOT INTERFERE WITH THE PROPOSED ITEMS, TO INCLUDE POST INSTALLED ANCHORS. IF REQUIRED, SHIFT SLAB STEEL NO MORE THAN 6" IN ANY DIRECTION TO AVOID FUTURE CONFLICTS.

4.29 GROUT FILL SHALL BE 3,000 PSI CONCRETE WITH XYPEX BIO-SAN CSOO ADDITIVE. ADDITIVES SHALL BE MIXED PER THE MANUFACTURER'S SPECIFICATIONS TO ENSURE PROPER MIXING. GROUT USED FOR EQUIPMENT MOUNTING SHALL BE SIKAGROUT 928 OR EQUAL.

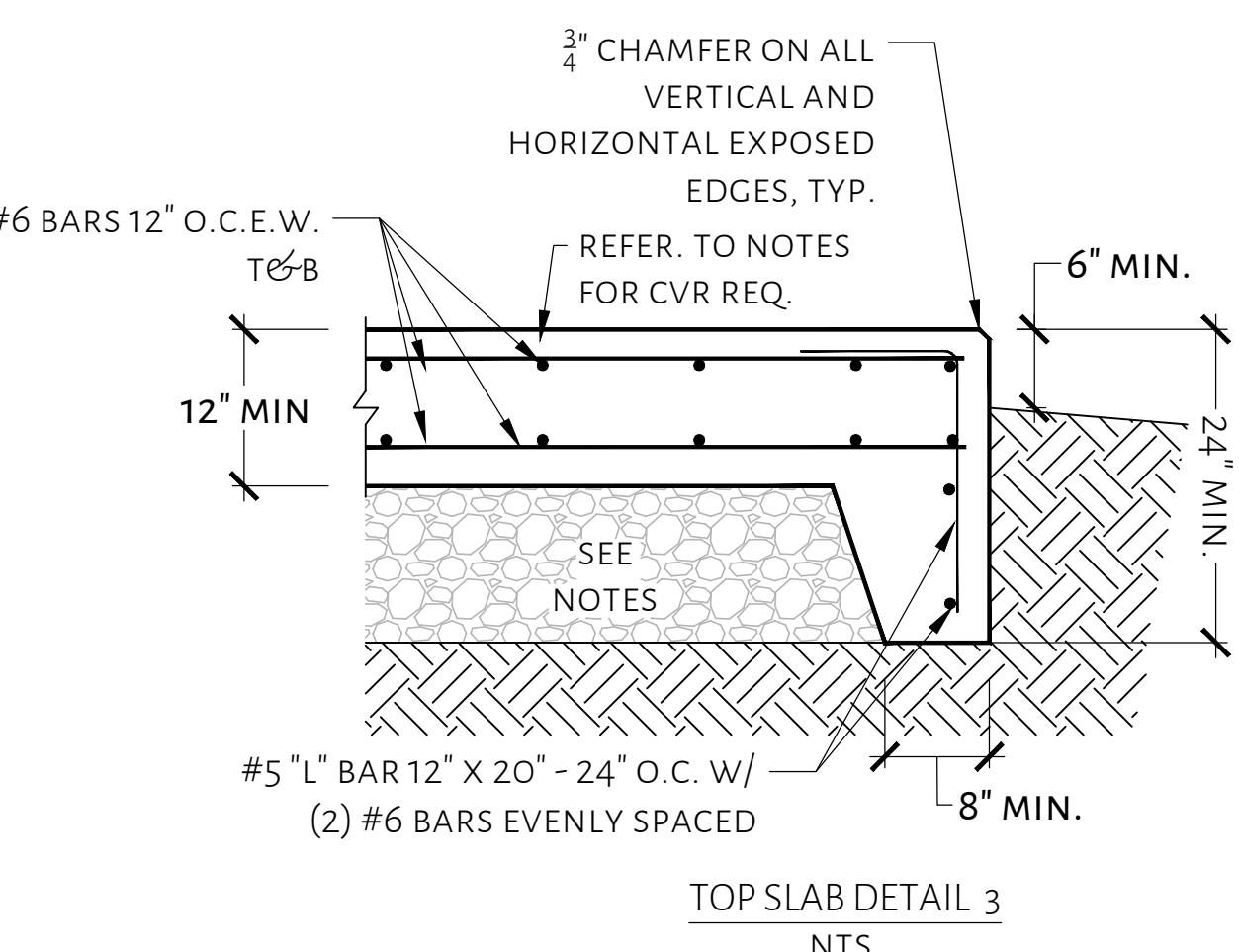
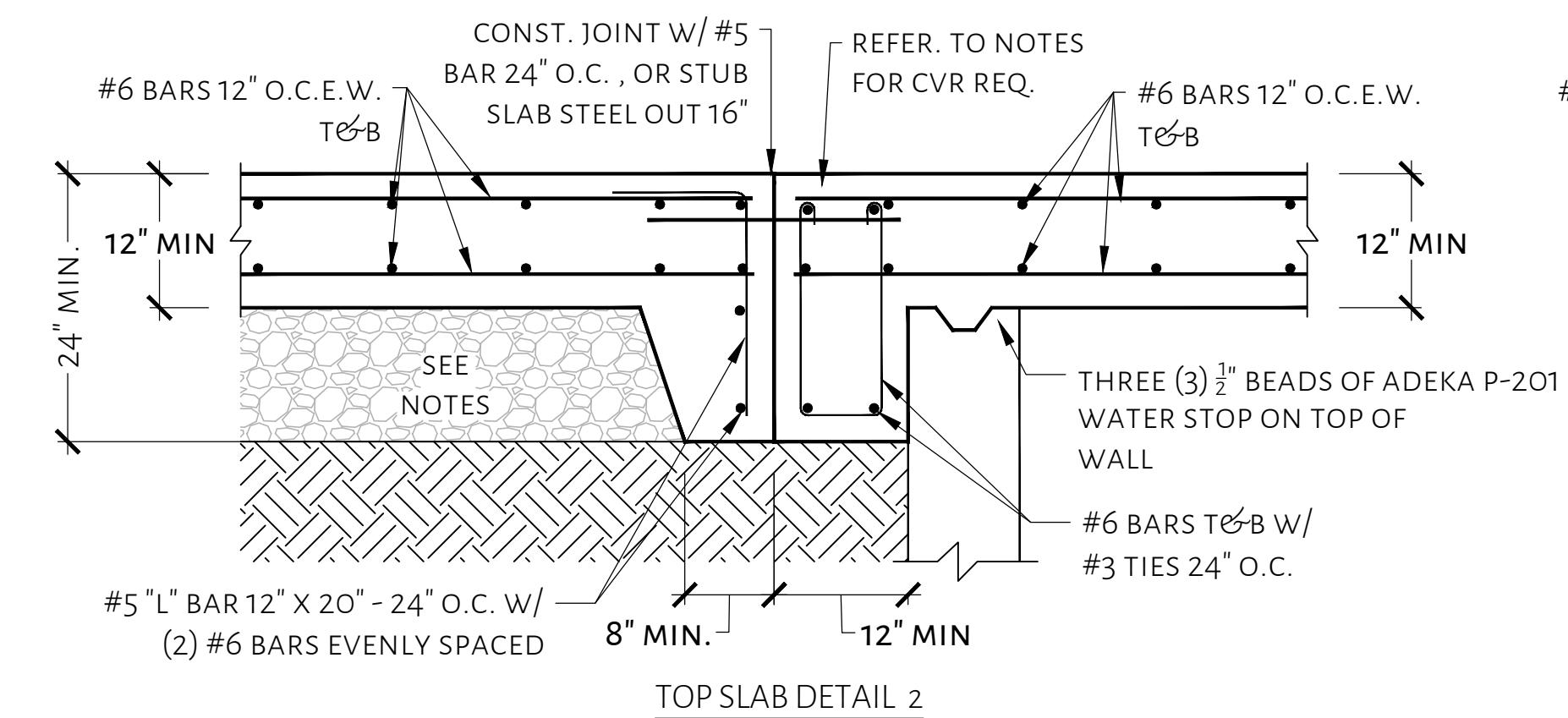
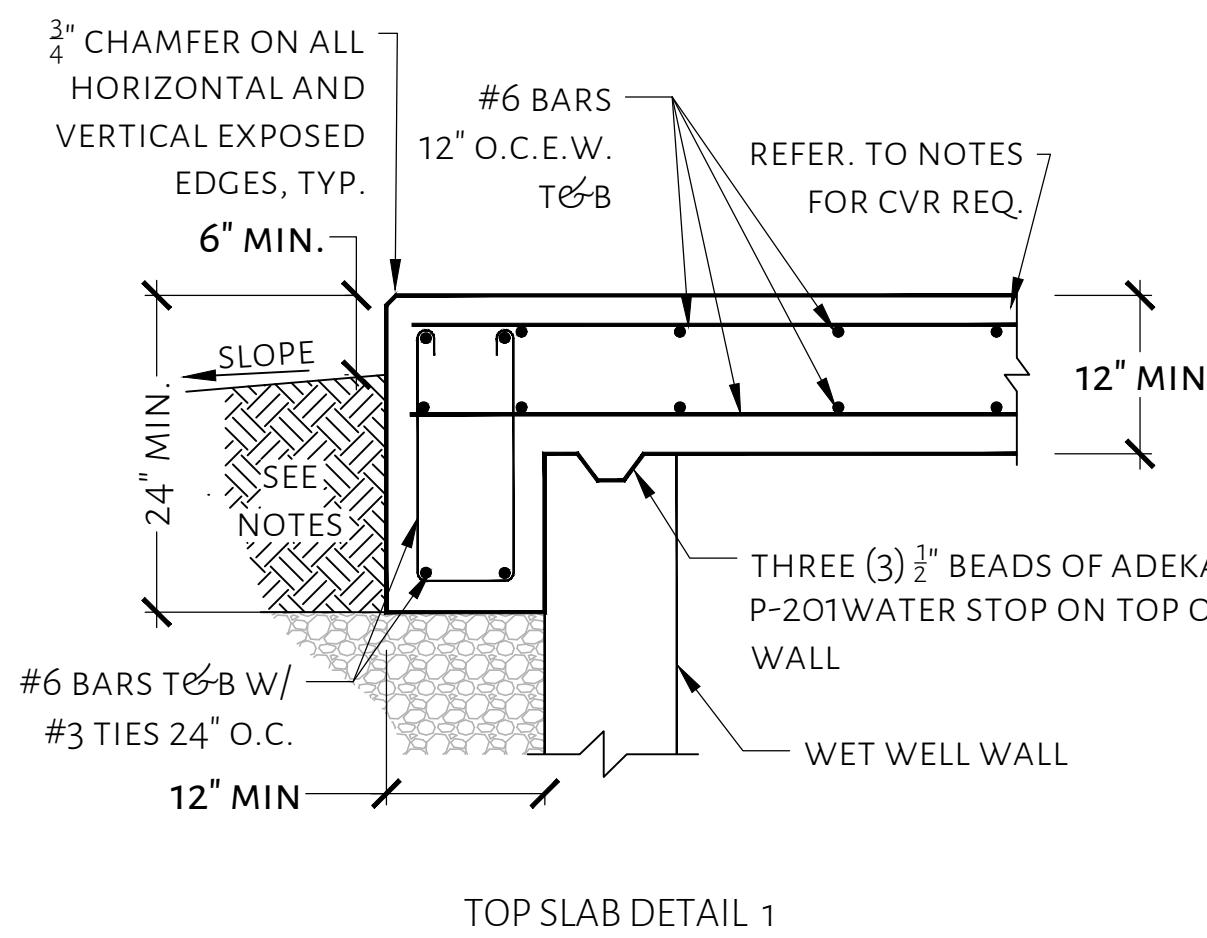
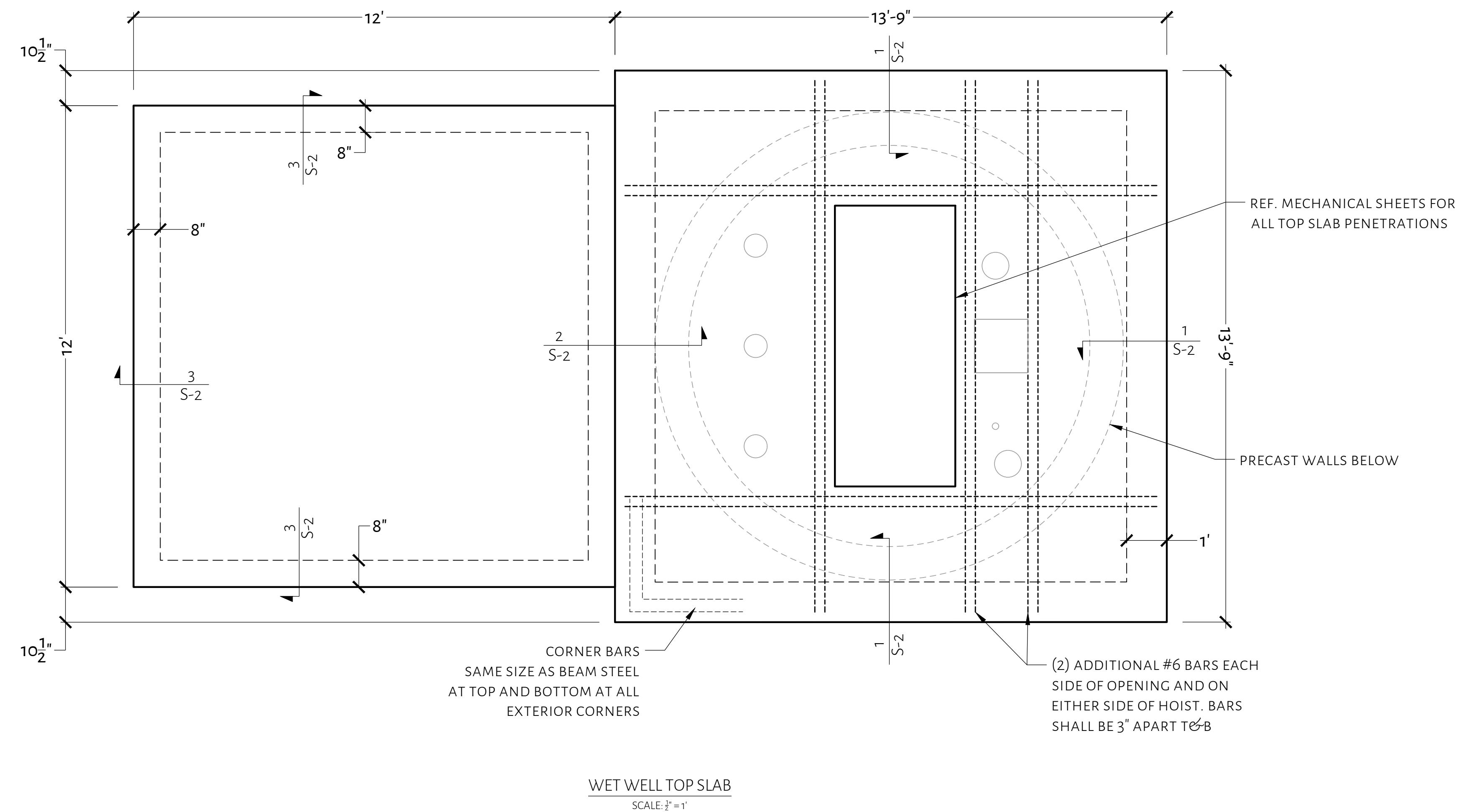
4.30 ALL WATER BEARING WASTEWATER STRUCTURES SHALL UTILIZE XYPEX BIO-SAN CSOOADMIXTURE MIXED IN STRICT CONFORMANCE PER THE MANUFACTURERS SPECIFICATIONS.

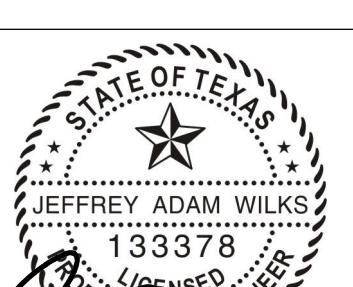
5.0 TESTING AND INSPECTIONS:

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NOTES

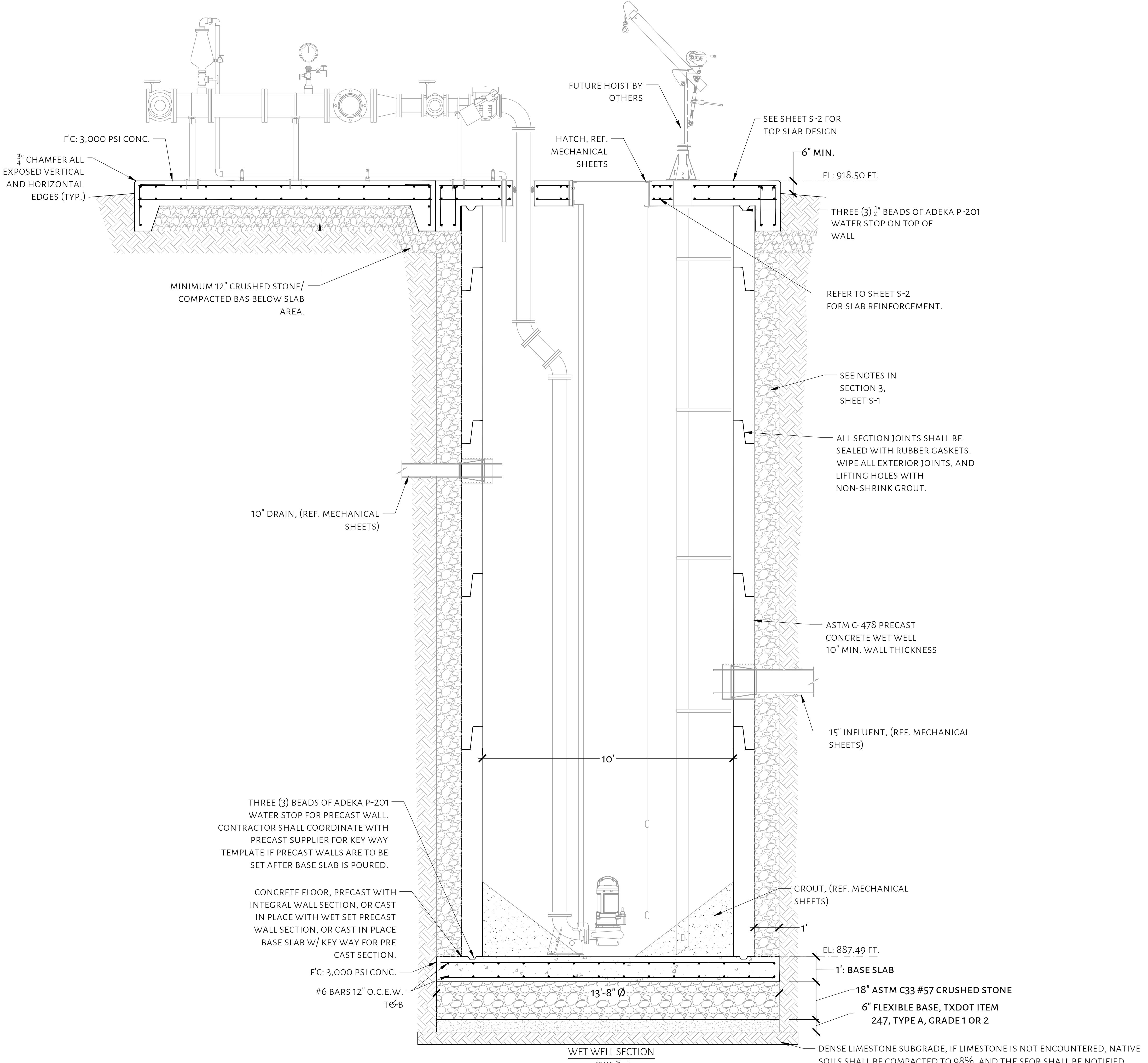
NORTH



		LONE STAR STRUCTURAL, LLC	
WWW.LONESTARSTRUCTURAL.COM TEXAS REGISTERED FIRM F-20642 P: 210.827.5509			
PURLSONG LIFT STATION NEW BRAUNFELS, TEXAS		JOB: 2519JAWW06232025 DATE: 06 JANUARY 2026 DRAWN: JW DESIGN: JW WET WELL TOP SLAB SHEET: S-2	
		JEFFREY ADAM WILKS 133378 LICENSED PROFESSIONAL ENGINEER <small>20 January 2026</small>	

1. THIS DESIGN IS SITE SPECIFIC AND MAY NOT BE USED FOR DIFFERENT SITE LOCATIONS WITHOUT WRITTEN PERMISSION FROM LONE STAR STRUCTURAL, LLC.
2. DETAILS PROVIDED ARE FOR INSTALLATION GUIDANCE. ALTERNATE DESIGNS SHALL BE ALLOWED AND APPROVED BY THE SEOR.
3. ALL DIMENSIONS SHALL BE VERIFIED WITH ALL DESIGN DISCIPLINES. IF A DISCREPANCY EXIST, NOTIFY THE DESIGNER AND SEOR IN WRITING FOR THE ISSUE TO BE RESOLVED.
4. LONE STAR STRUCTURAL RELEASES ALL LIABILITY FOR THE PERFORMANCE OF THE FOUNDATION DESIGN, IF THE PRE-POUR INSPECTIONS ARE NOT COMPLETED BY LONE STAR STRUCTURAL, LLC OR ANY ALTERATIONS ARE MADE TO THE ORIGINAL PLAN USED FOR DESIGN WHICH ARE NOT REVIEWED AND APPROVED BY LONE STAR STRUCTURAL IN WRITING PRIOR TO COMPLETION.
5. THE STRUCTURAL SYSTEM FOR THIS PROJECT SHALL NOT BE CONSTRUCTED BY USING THE STRUCTURAL DRAWINGS ALONE. THESE DRAWINGS WERE DEVELOPED FROM DATA DERIVED PRIMARILY FROM THE DESIGNER DRAWINGS AND SECONDARILY FROM MEP, CIVIL AND OTHER DISCIPLINES . IT IS INTENDED THAT CONSTRUCTION PROCEED BY UTILIZING ALL OF THE INFORMATION CONTAINED IN THE ENTIRE SET OF CONSTRUCTION DOCUMENTS TAKEN AS A WHOLE; FAILURE TO DO SO WILL RESULT IN ERRORS WHICH SHALL BE CORRECTED AT THE CONTRACTORS EXPENSE.
6. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND THE LOCATION OF THE HATCH PRIOR TO POURING.
7. CONTRACTOR SHALL REFER TO THE DESIGNERS PLANS, AND VERIFY ELEVATIONS AND SPECIFICATIONS. IF ANY DISCREPANCIES EXIST, CONTACT THE SEOR IN WRITING TO RESOLVE THE ISSUE.

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BUOYANCY DESIGN

WET WELL DESIGN DATA CONSTANTS:

- WET WELL INSIDE DIAMETER (ϕ)	$ID_{WW} = 10 \text{ FT.}$
- WET WELL OUTSIDE DIAMETER (ϕ)	$OD_{WW} = 11.67 \text{ FT.}$
- WET WELL DEPTH (INSIDE DEPTH)	$D_{WW} = 29.92 \text{ ft.}$
- BASE SLAB VOLUME: (V_{BS})	$V_{BS} = 146.70 \text{ ft}^3$
- TOP SLAB VOLUME (BEAMS INCLUDED) (V_{TS}) (ASSUMED 3 FT. X 7 FT. HATCH)	$V_{TS} = 219.06 \text{ ft}^3$
- SURFACE AREA OF BTM. SLAB OUTSIDE OF WET WELL (SOIL AREA)	$A_{SA} = 39.79 \text{ ft}^2$
- SPECIFIC GRAVITY OF WATER (ρ)	$\rho = 63 \frac{\text{lb}}{\text{ft}^3}$
- SPECIFIC GRAVITY OF CONCRETE (ρ)	$\rho = 150 \frac{\text{lb}}{\text{ft}^3}$
- SPECIFIC GRAVITY OF SOIL DRY (ρ)	$\rho = 100 \frac{\text{lb}}{\text{ft}^3}$
- SPECIFIC GRAVITY OF SOIL SATURATED (ρ)	$\rho = 110 \frac{\text{lb}}{\text{ft}^3}$

RESISTING FORCES CALCULATION:

$$\begin{aligned} \text{WEIGHT OF TOP SLAB: } W_{TS} &= (V_{TS} \times \rho_c) & W_{TS} &= 32,859 \text{ lbs} \\ \text{WEIGHT OF BASE SLAB: } W_{BS} &= (V_{BS} \times \rho_c) & W_{BS} &= 22,005 \text{ lbs} \\ \text{WEIGHT OF WALLS: } W_{WW} &= \left(\left(\frac{\pi (OD^2)}{4} \right) - \left(\frac{\pi (ID^2)}{4} \right) \right) \times H_{WW} \times \rho_c & W_{WW} &= 127,288.66 \text{ lbs} \\ \text{WEIGHT OF SOIL: } W_s &= A_{SA} \times H_{soil} \times \rho_{soil \text{ sat.}} & W_{soil} &= 178,577.52 \text{ lbs} \end{aligned}$$

$$\text{TOTAL RESISTING FORCE: } R_f = 360,730.18 \text{ lbs}$$

ACTING FORCES CALCULATION:

$$\text{WET WELL BUOYANCY FORCE: } Bf_{WW} = \left(\left(\frac{\pi (ID_{WW}^2)}{4} \right) \times D_{WW} \right) \times \rho_{water} \quad Bf_{WW} = 148,044.76 \text{ lbs}$$

$$\text{TOTAL ACTING FORCES } Af = 148,044.76 \text{ lbs}$$

TOTAL FACTOR OF SAFETY SF = 2.44

* CALCULATIONS BASED ON OPEN PIT INSTALLATION METHOD.

* ASSUMES EMPTY WET WELL AND FLOOD WATERS AT THE TOP OF THE FINISHED SLAB.

* ASSUMES UNDER FLOODED CONDITIONS, SOIL IS SATURATED