

Y:\CEC Job\Projects\25-105 Well No 5_GA_5_4 Project Const\Eng\Imp\25-105 Improvement Plans.dwg, Jul 22, 2025-02:12 pm mja@je

ABBREVIATIONS:

AC	-	ASPHALT CONCRETE	MH	-	MANHOLE
AB	-	AGGREGATE BASE	MON.	-	MONUMENT
APPROX.	-	APPROXIMATELY			
ARV	-	AIR RELEASE VALVE	OG	-	ORIGINAL GROUND
AVE.	-	AVENUE			
			P.	-	PROPOSED
BC	-	BEGIN CURVE	PC	-	POINT OF CURVATURE
BFV	-	BACKFLOW VALVE	PCC	-	PORTLAND CEMENT CONC.
			PL	-	PROPERTY LINE
C&G	-	CURB AND GUTTER	PP	-	POWER POLE
CL	-	CENTER LINE	PRV	-	PRESSURE REDUCING VALVE
C.O.T.G.	-	CLEAN OUT TO GRADE	PT	-	POINT OF TANGENCY
CR	-	CURB RETURN	PUE	-	PUBLIC UTILITY ESMT.
CULV.	-	CULVERT			
			R/W	-	RIGHT-OF-WAY
DTL	-	DETAIL	SCH	-	SCHEDULE
D/W	-	DRIVEWAY	SD	-	STORM DRAIN
			SHT	-	SHEET
EC	-	END CURVE	SS	-	SANITARY SEWER
EL	-	ELEVATION	ST.	-	STREET
ELB	-	ELBOW	STA.	-	STATION
EP	-	EDGE OF PAVEMENT	STD.	-	STANDARD
ESMT.	-	EASEMENT	S/W	-	SIDEWALK
EX.	-	EXISTING			
EXP.	-	EXPIRES			
			TBC	-	TOP BACK OF CURB
F.E.S.	-	FLARED END SECTION	TBW	-	TOP BACK OF WALK
FH	-	FIRE HYDRANT	TOE	-	TOE OF SLOPE
FL	-	FLOW LINE	TOP	-	TOP OF SLOPE
FLG	-	FLANGE	TP	-	TELEPHONE POLE
FM	-	SEWER FORCE MAIN			
FND.	-	FOUND	VERT.	-	VERTICAL
GB	-	GRADE BREAK	w/	-	WITH
			W	-	WATER
HORIZ.	-	HORIZONTAL	WM	-	WATER METER
HP	-	HIGH POINT	WSP	-	WELDED STEEL PIPE
			WV	-	WATER VALVE
INTX.	-	INTERSECTION			
INV.	-	INVERT			
I.P.	-	IRON PIPE			
JP	-	JOINT POLE			
LIP	-	LIP OF GUTTER			
L.S.	-	LONG SWEEP			

LEGEND

●	FOUND MONUMENT
⊕	BENCHMARK
---	CENTERLINE
---	RIGHT OF WAY
---	EASEMENT

UTILITY REPRESENTATIVES

UTILITY	COMPANY	CONTACT	PHONE
SEWER	CITY OF COLUSA PUBLIC WORKS	STAFF	(530) 458-4941
DRAINAGE	CITY OF COLUSA PUBLIC WORKS	STAFF	(530) 458-2215
WATER	CITY OF COLUSA PUBLIC WORKS	STAFF	(530) 458-4941
IRRIG. WATER	CITY OF COLUSA PUBLIC WORKS	STAFF	(530) 458-4941
FIRE	COLUSA FIRE DEPARTMENT	STAFF	(530) 458-5890
CABLE TV	COMCAST	AGENT	(800) 934-6489
ELECTRICAL	PACIFIC GAS & ELECTRIC (PG&E)	STAFF	(877) 743-7782
GAS	PACIFIC GAS & ELECTRIC (PG&E)	STAFF	(877) 743-7782
PHONE	AT&T	STAFF	(855) 637-9525
USA	UNDERGROUND SERVICE ALERT	STAFF	(800) 227-2600

CITY OF COLUSA

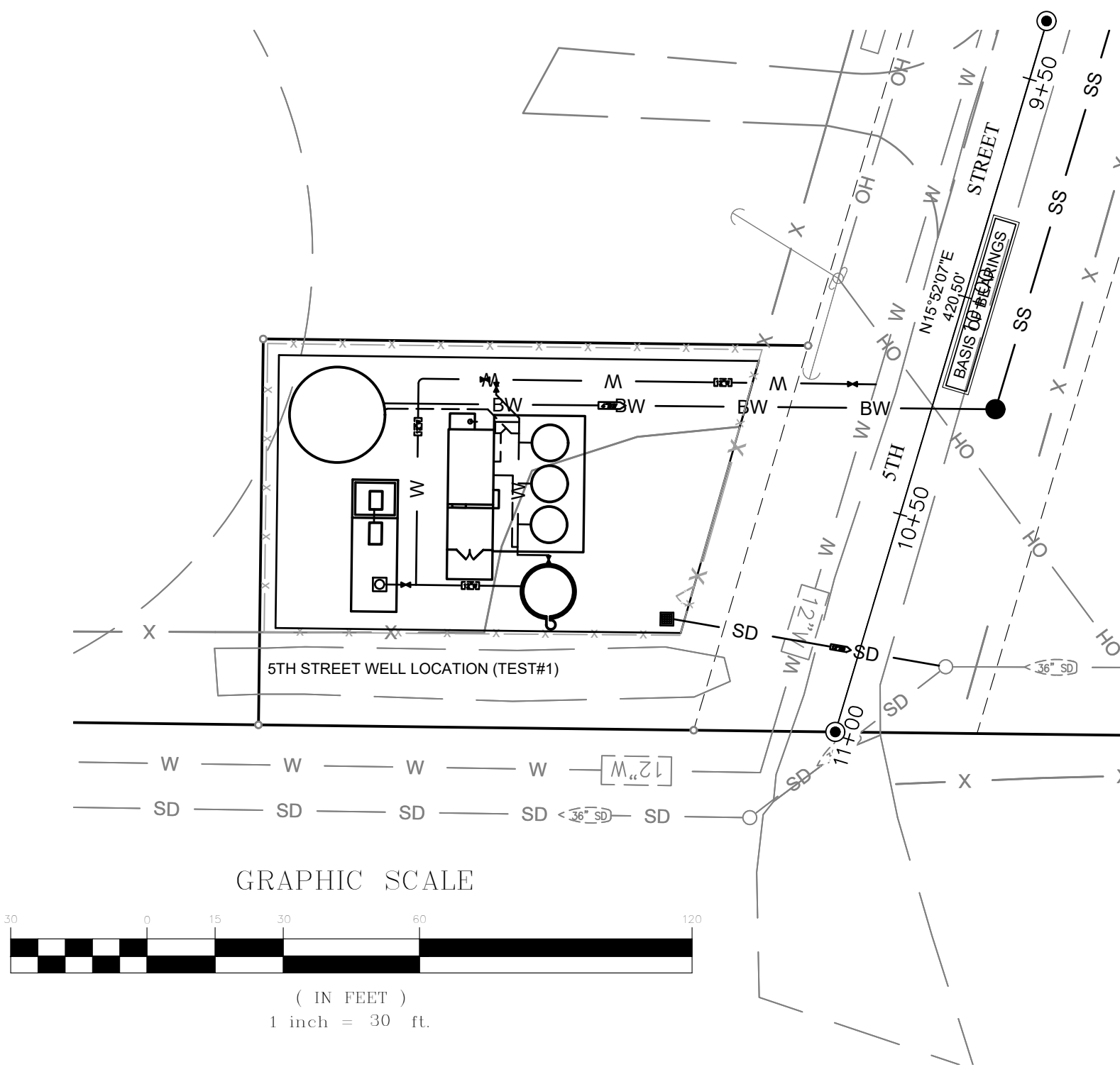
WATER WELL CONSTRUCTION PROJECT

CIVIL IMPROVEMENT PLANS

PROJECT NO. 0610002-001C

CITY OF COLUSA, COUNTY OF COLUSA, CALIFORNIA

JULY 2025



CEC GENERAL NOTES

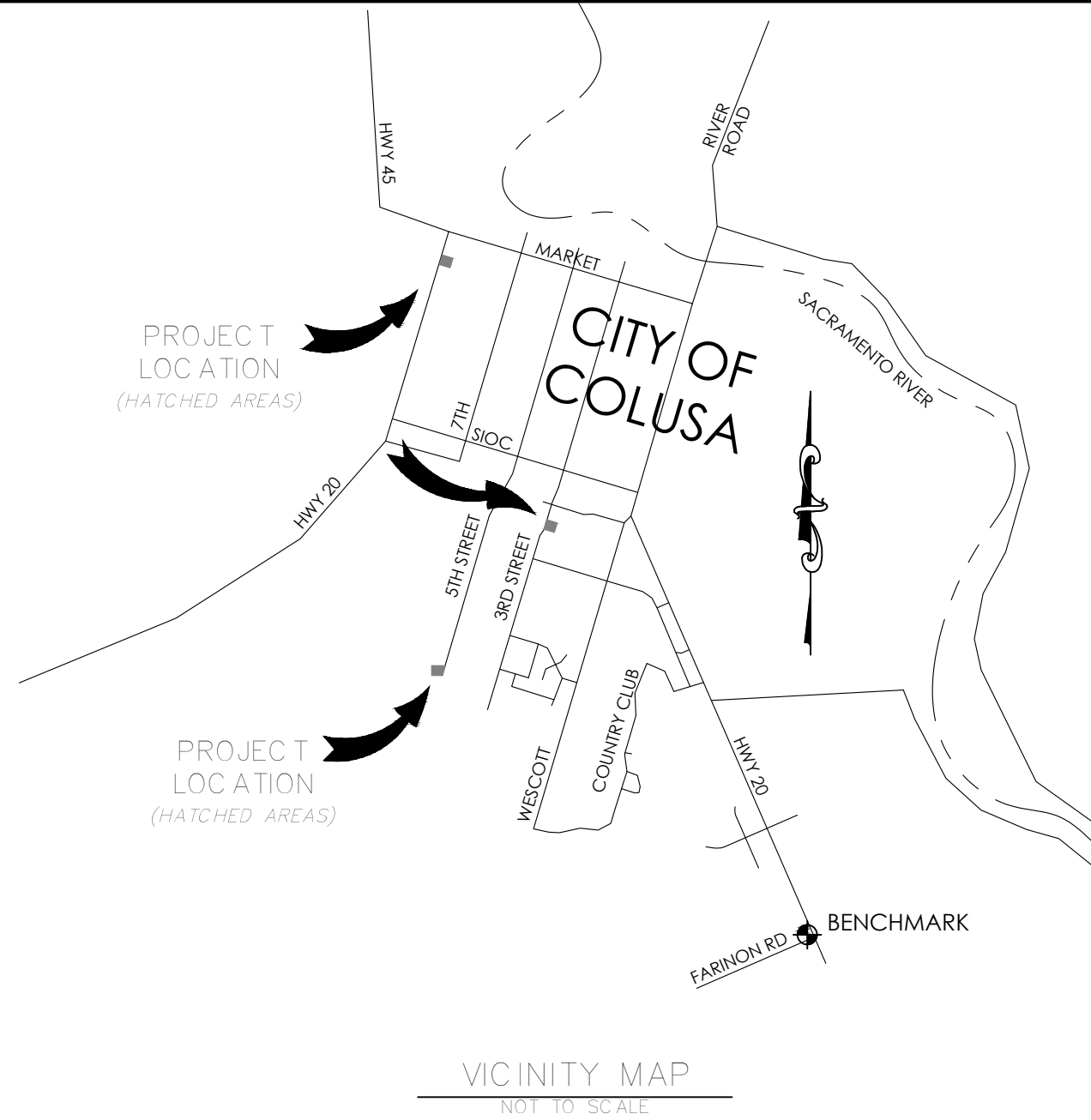
- 1.) ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THESE PLANS AND SPECIFICATIONS. CITY OF COLUSA STANDARD PLANS AND SPECIFICATIONS, AND TO THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND SPECIFICATIONS, LATEST EDITION. THE CONTRACTOR SHALL OBTAIN A COPY OF THE CITY'S IMPROVEMENT AND CONSTRUCTION STANDARDS PRIOR TO CONSTRUCTION. IN THE ABSENCE OF A SPECIFICATION FOR AN ITEM IN THESE PLANS AND THE CITY OF COLUSA STANDARD PLANS AND SPECIFICATIONS, ALL APPLICABLE FEDERAL AND STATE LAWS ARE TO BE ADHERED TO AND MEET CURRENT ENGINEERING AND CONSTRUCTION STANDARD PRACTICES TO THE SATISFACTION OF THE CITY ENGINEER.
- 2.) THE TYPES, LOCATIONS, SIZES, AND DEPTHS OF EXISTING UTILITIES WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATIONS WILL REVEAL SUCH INFORMATION. A REASONABLE EFFORT WAS MADE TO DELINEATE UTILITIES, HOWEVER, CALIFORNIA ENGINEERING COMPANY, INC. ASSUMES NO RESPONSIBILITY FOR THE COMPLETENESS AND ACCURACY OF THE LOCATION OF THE EXISTING UTILITIES ON THE PLANS, NOR FOR OTHER UTILITIES THAT MAY BE ENCOUNTERED. THE CONTRACTOR IS HEREBY NOTIFIED THAT HE IS RESPONSIBLE FOR VERIFICATION OF THE LOCATION OF ALL UTILITIES AT THE CONSTRUCTION SITE. IN THE EVENT THAT SUBSTANTIAL DISCREPANCIES ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER FOR DIRECTION.
- 3.) IN THE EVENT THERE IS A DISCREPANCY OR TYPOGRAPHICAL ERROR WITHIN THESE PLANS, OR REQUEST FOR INFORMATION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR DIRECTION. THE CONTRACTOR IS HEREBY NOTIFIED THAT THE ENGINEER SHALL BE ALLOWED A MINIMUM OF TWO WORKING DAYS TO ADDRESS THE ISSUE.

BASIS OF BEARINGS:

SEE SHEETS C1 THRU C4

VERTICAL DATUM:

THE ELEVATION DATUM OF THIS PROJECT IS THE BENCHMARK "COLIND" LOCATED AT THE NORTHEAST CORNER OF FARNON ROAD AND STATE ROUTE 20. APPROXIMATELY 70 FEET FROM SR 20 CENTERLINE. THE BENCHMARK ELEVATION IS 48.7 FEET NAVD88.



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CONTRACTOR TO CALL UNDERGROUND SERVICE ALERT (USA) AT 1-800-227-2600, 48 HOURS IN ADVANCE OF EXCAVATION

CITY OF COLUSA PUBLIC WORKS

APPROVED BY:

Jesse Cain

07/22/25

JESSE CAIN
PUBLIC WORKS

DATE

CALIFORNIA ENGINEERING COMPANY, INC.

SUBMITTED BY:

David L. Swartz

July 22, 2025

DAVID L. SWARTZ, P.E. # C52840 - P.L.S. # 8401
PROJECT ENGINEER
P.E. EXP. 12/31/26 - P.L.S. EXP. 06/30/26

CITY OF COLUSA

COVER

WATER WELL AND TREATMENT PLANS

PROJECT NUMBER
15-109

SHEET G1 OF 3



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Y:\CEC Job\Projects\25-105 Well No 8 (6)_ 4 Project Const\Eng\Imp\Pha\25-105 Improvement Plans.dwg, Jul 22, 2025-02:12 pm, mja@pe

CEC GENERAL NOTES

- 1.) THE CONSTRUCTION CONTRACTOR SHALL AGREE, THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND THE CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD CONSULTING ENGINEER AND THE CITY OF COLUSA HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT. EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE CONSULTING DESIGN PROFESSIONAL OR THE CITY OF COLUSA.
- 2.) ALL CONSTRUCTION MATERIALS, METHODS AND WORKMANSHIP SHALL CONFORM TO THE CITY OF COLUSA PUBLIC WORKS IMPROVEMENT STANDARDS, ADOPTED LATEST EDITION OF CAL TRANS CONSTRUCTION SPECIFICATIONS (RANK SHALL BE IN ABOVE LISTED ORDER WHERE DISCREPANCIES EXIST), ALL WORK IS SUBJECT TO THE APPROVAL OF CITY ENGINEER OR HIS AUTHORIZED REPRESENTATIVE. CERTIFICATION FOR CONFORMANCE WITH CITY SPECIFICATIONS WILL BE REQUIRED FOR ALL MATERIALS USED ON THE PROJECT UNLESS SPECIFICALLY WAIVED BY THE CITY ENGINEER.
- 3.) THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER 72-HOURS PRIOR TO COMMENCING WORK AND 24-HOURS PRIOR TO RESUMPTION AFTER INTERRUPTION.
- 4.) THE CONTRACTOR SHALL OBTAIN ALL NECESSARY ENCROACHMENT PERMITS FOR THE PROJECT, AND BE IN RECEIPT OF SUCH PERMITS AND APPROVED PLANS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- 5.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL CURRENTLY APPLICABLE SAFETY LAWS OF ANY JURISDICTIONAL BODIES. FOR MORE INFORMATION, PLEASE CONTACT THE STATE INDUSTRIAL SAFETY DEPARTMENT (916-455-5818).
- 6.) THE CONTRACTOR SHALL BE HELD RESPONSIBLE TO SEE THAT ALL SUBCONTRACTORS AND SUPPLIERS HAVE CURRENT COUNTY BUSINESS LICENSES. THE WORK WILL NOT BE ACCEPTED FOR COMPLETION UNTIL SUBMITTAL OF A COMPLETE LIST WITH LICENSE NUMBERS TO THE CITY ENGINEER.
- 7.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF EXISTING PUBLIC AND PRIVATE IMPROVEMENTS WITHIN AND ADJACENT TO THE WORK AND SHALL ADEQUATELY BARRICADE PROJECT TO KEEP THE GENERAL PUBLIC FROM THE SITE. ANY DAMAGE TO CITY OR PRIVATE IMPROVEMENTS SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR AT HIS EXPENSE TO CURRENT CITY OF COLUSA STANDARDS.
- 8.) THE CONTRACTOR IS TO EXPOSE THE ENDS OF WATER MAINS, SEWER AND DRAIN LINES AND EXISTING GRAVITY LINES FOR THE SURVEYOR TO VERIFY LOCATION AND DEPTH OF FACILITIES PRIOR TO PLACEMENT OF PIPE.
- 9.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPORTING ALL CONFLICTS, ERRORS, OMISSIONS, ETC. TO THE CONSULTING ENGINEER IMMEDIATELY UPON DISCOVERY. IF SO DIRECTED BY THE ENGINEER OR CITY ENGINEER, THE CONTRACTOR SHALL STOP WORK UNTIL MITIGATIONS CAN BE MADE. ANY COSTS INCURRED RESULTING FROM THE CONTRACTOR'S FAILURE TO STOP WORK AS DIRECTED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 10.) THE CONTRACTOR SHALL AT ALL TIMES COORDINATE HIS WORK WITH THAT OF OTHERS ON THE SITE. THE CONTRACTOR SHALL HAVE A RESPONSIBLE PARTY, WHO SHALL HAVE THE AUTHORITY TO REPRESENT AND ACT ON HIS BEHALF, ON THE JOB SITE DURING ALL WORKING HOURS.
- 11.) THE CITY OF COLUSA IS A MEMBER OF THE UNDERGROUND SERVICE ALERT (U.S.A.) ONE CALL SYSTEM. THE CONTRACTORS SHALL NOTIFY THE U.S.A. CENTER 48-HOURS IN ADVANCE OF PERFORMING ANY EXCAVATION WORK BY CALLING 1-800-227-2600.
- 12.) THE CONTRACTOR SHALL MARK IN WHITE PAINT ALL AREAS TO BE EXCAVATED PRIOR TO CONTACTING U.S.A.
- 13.) CONTRACTOR SHALL SUBMIT TO THE PUBLIC WORKS DEPARTMENT INSPECTOR A COPY OF THE COMPANY' ANNUAL CALOSHA TRENCHING PERMIT AND A COPY OF THE COMPANIES LETTER INFORMING CALOSHA OF THE TIME OF TRENCHING PRIOR TO EXCAVATION OF TRENCHES 5' OR DEEPER.
- 14.) ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY'S NOISE ORDINANCE.
- 15.) IF ANY AMOUNT OF BONES, STONE OR ARTIFACTS ARE UNCOVERED, WORK WITHIN 165 FEET OF THE AREA SHALL CEASE IMMEDIATELY AND A QUALIFIED ARCHEOLOGIST SHALL BE CONSULTED TO DEVELOP (IF NECESSARY) FURTHER MITIGATION MEASURES TO REDUCE ANY ARCHEOLOGICAL IMPACT TO A LESS THAN SIGNIFICANT EFFECT BEFORE CONSTRUCTION RESUMES IN THE AREA.
- 16.) CONTRACTOR SHALL PROVIDE THE CITY ENGINEER WITH SUBMITTALS FOR ALL MATERIALS TO BE USED. THE SUBMITTALS SHALL BE DELIVERED TO THE DEPARTMENT OF PUBLIC WORKS A MINIMUM OF TWO (2) WEEKS PRIOR TO THE PRE-CONSTRUCTION CONFERENCE.
- 17.) CERTIFICATION FOR CONFORMANCE WITH THE CITY OF COLUSA SPECIFICATIONS WILL BE REQUIRED OF ALL MATERIAL USED ON THE PROJECT UNLESS SPECIFICALLY WAIVED BY THE ENGINEER.
- 18.) CONTRACTOR SHALL ADEQUATELY BARRICADE PROJECT TO KEEP THE GENERAL PUBLIC FROM THE SITE.
- 19.) ALL APPLICABLE FEES TO BE PAID AND PERMITS REQUIRED SHALL BE OBTAINED BY THE CONTRACTOR BEFORE COMMENCEMENT OF CONSTRUCTION.
- 20.) A SOILS ENGINEER SHALL BE ENGAGED BY THE OWNER TO CERTIFY THAT THE VARIOUS ITEMS OF COMPACTION COMPLY WITH THE SPECIFICATIONS AND THAT SPECIAL WORK REQUIRED HAS BEEN DONE SATISFACTORILY.
- 21.) THE CONTRACTOR SHALL USE A WATER TRUCK WHEN REQUIRED TO MAINTAIN ADEQUATE DUST CONTROL.
- 22.) INTERMEDIATE TRENCH BACK FILL SHALL BE IN MAXIMUM LIFTS OF 8" AND SHALL HAVE A MINIMUM RELATIVE COMPACTION OF 90% OR AS DIRECTED BY THE SOILS ENGINEER. COMPACTION SHALL BE BY MECHANICAL MEANS.
- 23.) EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE PLANS AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP).
- 24.) PRIOR TO THE BEGINNING OF EARTHWORK THE CONTRACTOR SHALL CLEAR ALL ROOTS, ORGANIC MATTER, DEBRIS, PAVING, CURB, AND VEGETATION DESIGNATED TO BE SAVED, FROM THE AREA WITHIN WHICH EXCAVATION AND GRADING ARE TO BE CONDUCTED OR STORAGE OF EXCAVATED MATERIALS OR FILL IS TO BE MADE. VEGETATION CLEARED FROM THESE AREAS SHALL BE DISPOSED OF BY THE CONTRACTOR, AND INCLUDED IN THE COST OF CLEARING AND GRUBBING.
- 25.) IN TRANSITION AREAS FROM ONE STREET WIDTH TO ANOTHER STREET WIDTH, THE HEAVIER STRUCTURAL SECTION SHALL BE USED.
- 26.) DIMENSIONS SHOWN ON PLANS ARE TO CENTERLINE OF PIPE, UNLESS OTHERWISE NOTED.

CEC GENERAL NOTES CONTINUED

- 28.) SEWER AND WATER AND SERVICES TO HAVE A MINIMUM 10 FEET HORIZONTAL SEPARATION.
- 29.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES.
- 30.) CONTRACTOR SHALL POTHOLE ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY LOCATION AND DEPTH. THE TYPES, LOCATIONS, SIZES AND DEPTH OF EXISTING UTILITIES WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. THE CONTRACTOR IS CAUTIONED THAT ONLY EXCAVATIONS WILL REVEAL ACTUAL INFORMATION. A REASONABLE EFFORT WAS MADE TO DELINEATE UTILITIES. HOWEVER, CALIFORNIA ENGINEERING COMPANY ASSUMES NO RESPONSIBILITY FOR THE COMPLETENESS, NOR ACCURACY, NOR FOR OTHER UTILITIES WHICH MAY BE ENCOUNTERED. THE CONTRACTOR IS HEREBY NOTIFIED THAT THEY ARE RESPONSIBLE FOR VERIFICATION OF THE LOCATION OF ALL UTILITIES AT THE CONSTRUCTION SITE. IN THE EVENT CONFLICTS EXIST OR SUBSTANTIAL DISCREPANCIES ARE FOUND, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY AND ALLOW 2 WORKING DAYS FOR CHANGE TO BE MADE, COORDINATED AND APPROVED.

GRADING NOTES

- 1.) A SOILS ENGINEER SHALL CERTIFY THAT THE VARIOUS ITEMS OF COMPACTION AND MATERIALS HAVE BEEN ACCOMPLISHED. GRADING SHALL CONFORM TO CHAPTER 70 UBC, LATEST EDITION, AND TO THE RECOMMENDATION OF THE GEOTECHNICAL ENGINEERING REPORT, AND CITY REQUIREMENTS, WHICH EVER IS GREATER.
- 2.) ALL COMPACTION TESTING SHALL BE PERFORMED BY A LICENSED GEOTECHNICAL ENGINEER IN ACCORDANCE WITH THE GEOTECHNICAL AND CITY SPECIFICATIONS AND BE PAID FOR BY THE DEVELOPER (OR CONTRACTOR IN CASE OF RE-TESTING). THOSE TESTS WITHIN THE RIGHT-OF-WAY SHALL BE APPROVED BY THE CITY OF COLUSA AND ALL TESTING OUTSIDE THE RIGHT-OF-WAY CERTIFIED BY THE SOILS ENGINEER FOR THE PROJECT. THE RESULTS OF SOIL COMPACTION TESTING SHALL BE SUBMITTED TO THE CITY BI-MONTHLY.
- 3.) ALL UNSUITABLE AND SURPLUS MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED.
- 4.) SUFFICIENT EQUIPMENT SHALL BE AVAILABLE TO PROVIDE DUST CONTROL AT ALL TIMES DURING CONSTRUCTION. A WATER TRUCK SHALL BE USED, WHEN REQUIRED, TO MAINTAIN ADEQUATE DUST CONTROL. AREAS SURROUNDING THE WORK SHALL BE KEPT CLEAN AND RETURNED TO ORIGINAL CONDITION UPON COMPLETION OF THE CONTRACT. THE CONTRACTOR SHALL OBTAIN A FIRE HYDRANT WATER METER PRIOR TO COMMENCEMENT OF WORK.
- 5.) ROUTES TO THE PROJECT SITE FOR HEAVY EQUIPMENT AND MATERIAL SHALL BE APPROVED BY THE CITY ENGINEER.
- 6.) EROSION CONTROL HYDROSEEDING SHALL BE APPLIED TO ALL GRADED OR DISTURBED SOILS WITHIN THE WORK AREA AFTER COMPLETION OF IMPROVEMENTS OR IF PRACTICAL AFTER GRADING ALSO TO REDUCE DUST.
- 7.) WINTERIZATION NOTE *THE FOLLOWING ARE REQUIRED IF GRADING AND CLEARING IMPROVEMENTS ARE INCOMPLETE BY OCTOBER 15TH; EROSION PROTECTION ON SLOPES 10:1 OR STEEPER AND SWALES WITH SLOPES 2% OR GREATER. NO SEDIMENT SHALL LEAVE THE PROJECT AREA. GRADE GUTTER SAG POINTS TO DRAIN. PROVIDE FOR DRAINAGE OF IMPROVEMENTS. PREVENT SEDIMENTATION IN EXISTING STORM DRAIN SYSTEM AND CLEAN PIPES PER SECTION S560-05 (CAL-TRANS SPECS). SEAL OFF ALL SANITARY SEWER CONNECTION TO EXISTING SYSTEMS. IT IS THE CONTRACTORS RESPONSIBILITY TO MAINTAIN WINTERIZATION FACILITIES AT ALL TIMES OR UNTIL IMPROVEMENTS ARE FINAL.
- 8.) ALL EROSION CONTROL SHALL BE PLACED AS SPECIFIED ON THESE PLANS OR AS SHOWN ON THE SWPPP.
- 9.) TARPALLINS OR OTHER EFFECTIVE COVERS SHALL BE USED ON ALL STOCKPILED EARTH MATERIAL AND ON HAUL TRUCKS TO MINIMIZE DUST.
- 10.) THE CITY SHALL HAVE THE AUTHORITY TO STOP ALL GRADING OPERATIONS, IF, IN THE OPINION OF CITY STAFF, INADEQUATE DUST CONTROL MEASURES ARE BEING PRACTICED OR EXCESSIVE WIND CONDITIONS CONTRIBUTE TO FUGITIVE DUST EMISSIONS.
- 11.) ADJACENT STREET FRONTAGES SHALL BE SWEEP AT LEAST ONCE A DAY TO REMOVE SILT AND OTHER DIRT WHICH IS EVIDENT FROM CONSTRUCTION ACTIVITIES.
- 12.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING CONSTRUCTION VEHICLES LEAVING THE SITE ON A DAILY BASIS TO PREVENT DUST, SILT, AND DIRT FROM BEING RELEASED OR TRACKED OFFSITE.
- 13.) PRIOR TO INITIATING CLEARING AND GRUBBING ALL PROTECTIVE FENCING SHALL BE INSTALLED.

CONSTRUCTION STAKING

- 1.) THE PROJECT SURVEYOR EMPLOYED BY THE CITY SHALL PROVIDE ONE (1) SET OF CONSTRUCTION STAKES FOR LINE AND GRADE UNLESS OTHERWISE REQUESTED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING MONUMENTS AND OTHER SURVEY MARKERS DURING CONSTRUCTION. ALL SUCH MONUMENTS OR MARKERS DESTROYED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.
- 2.) IN THE EVENT OF A DISAGREEMENT OR DESTROYED STAKE OR MONUMENT, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE SURVEYOR PRIOR TO ANY FURTHER CONSTRUCTION. SURVEYOR: CALIFORNIA ENGINEERING COMPANY, INC.
- 3.) THE CONTRACTOR SHALL GIVE THE SURVEYOR 72-HOURS NOTICE PRIOR TO EACH PHASE OF CONSTRUCTION OR IN THE EVENT OF NEEDED RESTAKING. PRIOR TO REQUESTING ACCEPTANCE OF IMPROVEMENTS, THE SURVEYOR FOR THIS PROJECT SHALL SET SURVEY MONUMENTS AS SPECIFIED IN THE IMPROVEMENT STANDARDS.
- 4.) THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING MONUMENTS AND OTHER SURVEY MARKERS.
- 5.) THE CONTRACTOR SHALL HAVE THE SITE STAKED PRIOR TO CONSTRUCTION OF ANY IMPROVEMENTS TO ENSURE PROPER ALIGNMENTS AND ELEVATIONS. CEC WILL ONLY ENSURE ACCURACY ON ALIGNMENTS AND ELEVATIONS IF IT IS HIRED TO PERFORM CONSTRUCTION STAKING. CEC SHALL NOT BE HELD RESPONSIBLE FOR ALIGNMENT AND ELEVATION ACCURACY IF ANOTHER FIRM PERFORMS THE CONSTRUCTION STAKING.

WATER FACILITIES NOTES

- 1.) ALL WATER FACILITIES INCLUDING BUT NOT LIMITED TO LINES, SERVICE BOXES, VALVES, AND ALL MISCELLANEOUS APPURTENANCES SHALL CONFORM TO THE CITY OF COLUSA PUBLIC WORKS IMPROVEMENT STANDARDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY INFORMATION, REQUIREMENTS, AND DRAWINGS NECESSARY TO BID AND COMPLETE THE WORK SHOWN ON THESE PLANS AND INSTALLED PER MANUFACTURERS SPECIFICATIONS. PIPE ALTERNATIVES SHALL BE: POLYVINYL CHLORIDE PIPE - AWWA - C900 CLASS 150 DUCTILE - IRON PIPE - AWWA 151 CLASS 50.
- 2.) FIRE HYDRANTS SHALL BE APPROVED BY THE CITY ENGINEER AND COLUSA FIRE DEPARTMENT.
- 3.) ALL RUNS OF SEWER FORCE MAIN AND WATER MAIN PIPE SHALL HAVE NO.10 GAUGE, SOLID INSULATED SOFT-DRAWN COPPER WIRE TAPED ALONG THE TOP OF PIPE. THE WIRE SHALL BE STUBBED UP INSIDE EACH VALVE BOX AND DEAD END BLOWOFF ASSEMBLY AND BE INSTALLED AS PER STANDARD DRAWING ASSEMBLY W-5. ALL SPLICES SOLDERED AND SHRINK-WRAPPED OR TAPPED.
- 4.) AT UTILITY CROSSING MAINTAIN A MINIMUM 12" VERTICAL CLEARANCE BETWEEN WATER LINES AND ALL OTHER FACILITIES. ALL SEWERWATER CROSSINGS, INCLUDING SERVICES, SHALL CONFORM TO STATE HEALTH DEPARTMENT REQUIREMENTS WITH 10' MINIMUM HORIZONTAL CLEARANCE.
- 5.) ALL VALVES SHALL BE FLANGED TO TEES AND/OR CROSSES. ALL MAINLINE VALVES 16-INCH AND LARGER SHALL BUTTERFLY VALVES WHERE VALVE NUT IS GREATER THAN 30-INCH BELOW FINISHED GRADE. A VALVE OPERATING EXTENSION SHALL BE REQUIRED.
- 6.) ALL WATER SERVICES SHALL BE PER CITY OF COLUSA STANDARDS.
- 7.) WATER METER BOXES AND COVERS SUBJECT TO TRAFFIC SHALL BE REINFORCED CONCRETE.
- 8.) SERVICE CONNECTION TO EXISTING WATER MAIN (S), OR TO AN EXTENSION OF AN EXISTING WATER MAIN (S), WILL BE MADE BY A QUALIFIED CONTRACTOR. THE CONTRACTOR SHALL NOTIFY CITY 72 HOURS IN ADVANCE, SCHEDULE AND PROCEED WITH THE SERVICE CONNECTION WITH MINIMUM INTERFERENCE TO EXISTING WATER AND FIRE SERVICES. AN INSPECTION BY THE CITY CONSTRUCTION INSPECTOR OF ALL CONNECTIONS MADE BY THE CONTRACTOR IS REQUIRED PRIOR TO BACKFILLING.
- 9.) PIPE JOINTS WILL NOT BE ALLOWED WITHIN SIX FEET (6') OF VALVE, FITTING OR HYDRANT.
- 10.) UNDER NO CIRCUMSTANCES SHALL PIPE OR JOINT DEFLECTION EXCEED MANUFACTURERS RECOMMENDATION. DEFLECTION OF PIPE WILL NOT BE ALLOWED WITHIN TEN FEET (10') OF ANY FITTING OR VALVE.
- 11.) STANDARD PIPE LENGTHS (MINIMUM EIGHTEEN (18) TO TWENTY (20) FEET, SHALL BE USED FOR ALL HORIZONTAL AND VERTICAL DEFLECTIONS. PIPE LENGTHS LESS THAN STANDARD LENGTH SHALL BE APPROVED BY THE CITY ENGINEER.
- 12.) IN THE EVENT THAT THIS PROJECT INDICATES THAT WATER MAINS WILL BE CONSTRUCTED WITHOUT THE PROTECTION OF AN OVERLAYING PAVEMENT, PLASTICIZED METALLIC LOCATING TAPE SHALL BE PLACED EIGHTEEN INCHES (18") ABOVE ALL SAID WATER MAINS.
- 13.) WATER SYSTEM CONTRACTOR SHALL COORDINATE WITH THE STREET LIGHTING CONTRACTOR TO AVOID CONFLICTS WITH WATER SERVICES AND STREET LIGHT FOUNDATIONS AND ELECTRICAL PULLBOXES.
- 14.) CONTRACT TO PROVIDE 72-HOUR NOTIFICATION TO THE CITY DEPARTMENT OF PUBLIC WORKS PRIOR TO DISINFECTION.
- 15.) ALL WATER LINE FITTINGS 11-1/2 DEGREE OR GREATER, TEES, CROSSES, DEAD ENDS AND REDUCERS/INCREASERS SHALL BE PROVIDED WITH BOTH THRUST BLOCKS AND RESTRAINED JOINT PIPE LENGTHS
- 16.) ALL BACKFLOW PREVENTERS SHALL BE TESTED AND A BACKFLOW PREVENTER CERTIFICATION PERFORMED BY AN AWWA LICENSED TESTER SHALL BE SUBMITTED TO THE PUBLIC WORKS DEPARTMENT.

MUNICIPAL WATER WELL DRILLING AND TREATMENT







THIS PLAN SET SHALL BE USED IN CONJUNCTION WITH THE FOLLOWING DOCUMENTS, ENTITLED"TECHNICAL REPORT FOR WELL CONSOLIDATION SWRCB PROJECT NO. 0610002-201C" AND "CONTRACT DOCUMENTS FOR COLUSA NEW WATER PRODUCTION WELL. PILOT TESTING UPGRADES TO WELL NOS 4, 5 & 6, ABANDON WELLS 2, 3 AND WALNUT RANCH WELLS 1 & 2, VOLUMES 1 THRU 7". THESE DOCUMENTS AND THEIR APPENDICES SHALL BE CONSIDERED A PART OF THIS PLAN SET.

FINAL MUNICIPAL WATER TREATMENT DESIGN AND CONSTRUCTION SHALL PROCEED GIVEN THE RESULTS OF PILOT TESTING AS OUTLINED IN THE ABOVE REFERENCED TECHNICAL REPORT AND CONTRACT DOCUMENTS. THIS PLAN SET SHALL NOT BE CONSIDERED A FINAL CONSTRUCTION SET UNTIL ALL PILOT TESTING RESULTS HAVE BEEN APPROVED AND THIS PLAN SET SIGNED BY ALL STAKEHOLDERS.


SANITARY SEWER NOTES

- 1.) ALL SANITARY SEWER CONSTRUCTION MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE CITY OF COLUSA PUBLIC WORKS DISTRICT AND THE MANUFACTURERS SPECIFICATIONS. ALL SANITARY SEWER INITIAL BACK FILL SHALL BE THE SAME MATERIAL USED FOR PIPE BEDDING AND SHALL BE PLACED TO 12" ABOVE TOP OF PIPE.
- 2.) THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF THE EXISTING MANHOLE BEING TIED INTO PRIOR TO PLACEMENT OF THE SEWER FORCE MAIN PIPE.
- 3.) THE SEWER FORCE MAIN PIPE ENTERING A MANHOLE WILL BE SET NOT LOWER THAN FLOWLINE-TO-CROWN WITH EXISTING PIPE UNLESS OTHERWISE SHOWN.
- 4.) THE CONTRACTOR SHALL MAINTAIN ALL EXISTING SEWER FACILITIES WITHIN THE CONSTRUCTION AREA UNTIL NEW IMPROVEMENTS ARE IN PLACE AND APPROVED.
- 5.) ANY WATER ENTERING THE SANITARY SEWER SYSTEM TO BE CONSTRUCTED UNDER THESE PLANS SHALL NOT BE DISCHARGED TO THE EXISTING SYSTEM. PLUGS SHALL BE INSTALLED IN EXISTING MANHOLES AS NECESSARY TO PERMIT PUMPING THE NEW SYSTEM CLEAR OF WATER AND DEBRIS PRIOR TO ACCEPTANCE. CARE SHALL BE EXERCISED IN LOCATING PLUGS TO AVOID INTERRUPTING SERVICE TO EXISTING CONNECTIONS. MORTAR OR BRICK PLUGS SHALL BE USED. INFLATABLE DEVICES ARE NOT SATISFACTORY.
- 6.) ALL SERVICES SHALL HAVE 3' OF COVER AT THE PROPERTY LINE AND SHALL BE TO THE CENTER OF THE LOT UNLESS OTHERWISE NOTED ON THE PLANS. THE CONTRACTOR SHALL PLACE A 4"x4" REDWOOD POST AT THE END OF EACH SERVICE EXTENDING FROM THE END OF PIPE TO AT LEAST 12" ABOVE SURFACE.
- 7.) ALL SEWER MAIN LINES, SERVICES, AND MANHOLES SHALL BE PRESSURE TESTED AIN ACCORDANCE WITH CITY OF COLUSA P.U.D. REQUIREMENTS AND/OR AS DIRECTED BY CITY OF COLUSA P.U.D.MANAGER.
- 8.) CURB TO BE BRANDED WITH "S" AT SEWER SERVICE LOCATIONS.
- 9.) ALL SEWER SERVICES CONNECTING TO SEWER FORCE MAIN SHALL BE CONNECTED WITH LONG SWEEP "Y" FITTING IN THE DIRECTION OF FLOW.
- 10.) ALL SEWER FORCE MAIN CLEANOUTS AND SEWER TRANSFER SERVICE CLEANOUTS SHALL HAVE A TRAFFIC RATED BOX , GATE VALVE AND BE TERMINATED WITH A THREADED PLUG.

LEGEND - EXISTING

- — — — — PCC CURB, GUTTER, SIDEWALK
- SD —  STORM DRAIN W/ DROP INLET
- SS —  SANITARY SEWER
- W —  WATER W/ VALVE
- x — x — FENCE
-  FIRE HYDRANT
-  SS/SD MANHOLE
-  TREE
-  STREET LIGHT
-  UTILITY BOX
-  UTILITY POLE W/ GUY

LEGEND - PROPOSED

- — — — — ASPHALT
- x — x — x — FENCE
- — — — — BUILDING
- SD —  STORM DRAIN W/ INLET
- — — — — STORM DRAIN W/ INLET
- W — — — — WATER LINE

PROJECT NUMBER 15-109	CITY OF COLUSA GENERAL NOTES AND LEGENDS WATER WELL AND TREATMENT PLANS	DATE: 7/22/2025 SCALE: NONE DRAWN BY: DJI DESIGNED BY: DJI CHECKED BY: DLS									
											
		CIVIL ENGINEERING LAND SURVEYING FUNDING PROCUREMENT CONSTRUCTION ADMINISTRATION www.cecusa.net									
		CALIFORNIA ENGINEERING COMPANY INC ESTD 1986									
		1110 Civic Center Blvd., Suite 404 Yuba City, CA 95993 (530) 751-0952 Office									
SHEET G2 OF 3											

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PROJECT NUMBER 15-109	CITY OF COLUSA		 CALIFORNIA ENGINEERING COMPANY INC ESTD 1965 CIVIL ENGINEERING LAND SURVEYING FUNDING PROCUREMENT CONSTRUCTION ADMINISTRATION www.cecusa.net 1110 Civic Center Blvd, Suite 404 Yuba City, CA 95993 (530) 751-0952 Office		DATE: 7/22/2025	NO.	DATE	DESCRIPTION
	OVERALL PROJECT SITE PLAN				SCALE: NONE	DRAWN BY: DJI	DESIGNED BY: DJI	CHECKED BY: DLS
SHEET G3 OF 3		WATER WELL AND TREATMENT PLANS						

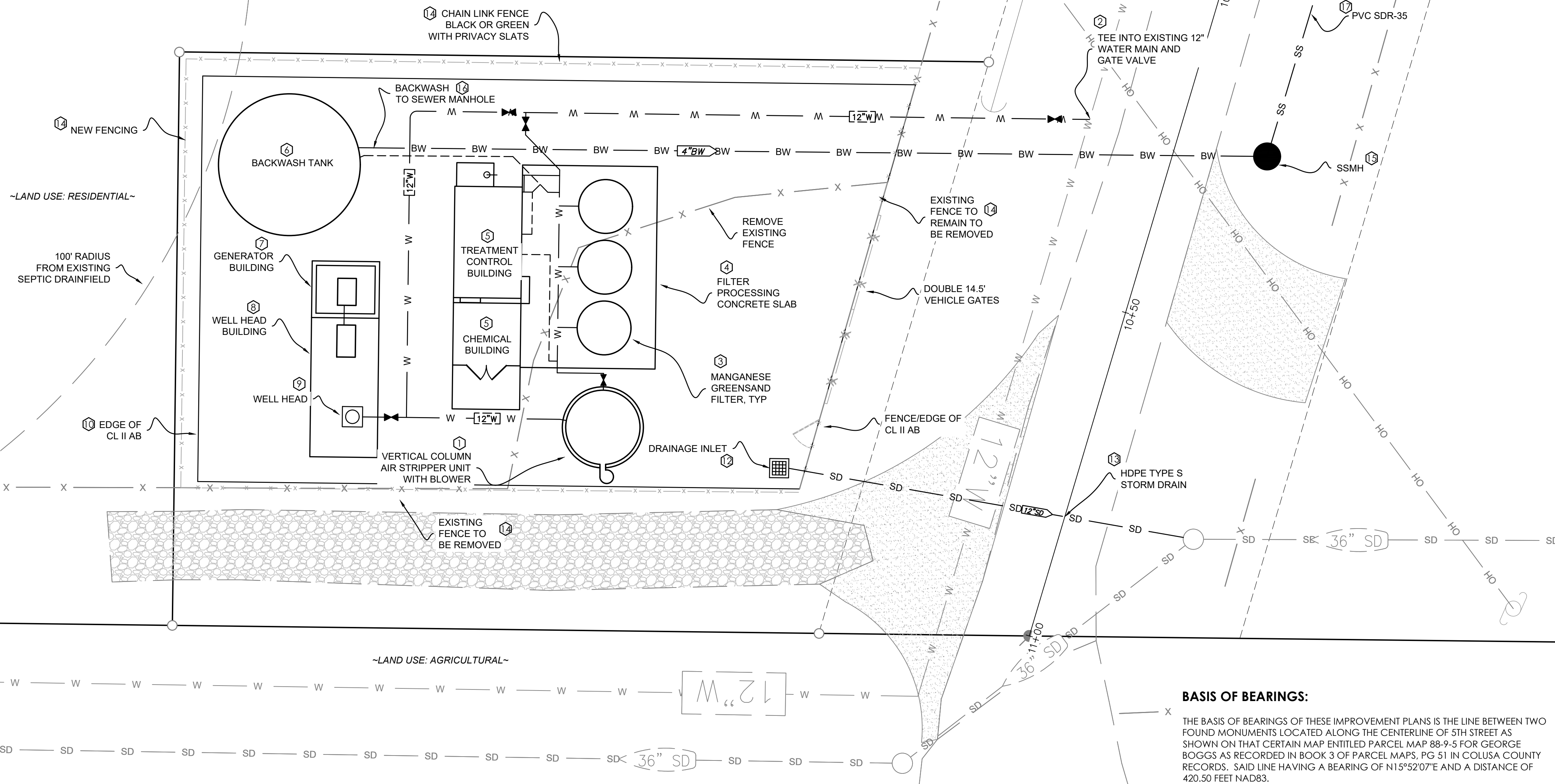
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CONSTRUCTION NOTES

- ① VERTICAL COLUMN AIR STRIPPER WITH SHALL BE SIZED IN ACCORDANCE WITH PILOT STUDY RESULTS AND BY THE MANUFACTURER FOR A FLOW RATE OF 2200 GPM. SEE DETAIL 1, SHEET D6
- ② TAP EXISTING 12" WATER MAIN WITH TEE PER CITY OF COLLUSA STANDARDS.
- ③ MANGANISE GREENSAND FILTER SYSTEM SHALL BE SIZED IN ACCORDANCE WITH PILOT STUDY RESULTS AND TO TREAT 2200 GPM. SEE DETAILS, SHEETS D3, D4, D5
- ④ FILTER PROCESSING CONCRETE SLAB SHALL BE 18" PCC WITH #5 REBAR "18" O.C. EACH WAY, TOP AND BOTTOM. SEE DETAIL 7, SHEET D9 AND DETAIL A, SHEET D3
- ⑤ CHEMICAL AND TREATMENT CONTROL BUILDINGS. SEE DETAILS, SHEET D9 & D10
- ⑥ BACKWASH TANK SHALL BE SIZED IN ACCORDANCE WITH PILOT STUDY RESULTS. SEE SHEET D11 AND D12
- ⑦ GENERATOR BUILDING W/ 50 KW GENERATOR. SEE DETAILS, SHEET D7 & D10
- ⑧ WELL HEAD BUILDING. SEE DETAILS, SHEETS D8 & D10. OUTFIT WITH SCADA CONTROLS. SEE SHEET E4.
- ⑨ WELL HEAD. SEE DETAILS, SHEET D1 & D2
- ⑩ GRADE SITE WITH 10" DEPTH CLASS II AGGREGATE BASE, GRADE TO DRAIN TO STORM DRAIN INLET
- ⑪ NOT USED
- ⑫ 24" X 24" JENSEN PRECAST STORM DRAIN INLET
- ⑬ HDPE PIPE STORM DRAIN, MIN SLOPE 0.002, CONNECT TO EXISTING MANHOLE
- ⑭ EXISTING FENCING TO BE REMOVED, INSTALL NEW 6' CHAIN LINK FENCING BLACK OR GREEN WITH PRIVACY SLATS
- ⑮ SANITARY SEWER MANHOLE PER CITY STANDARD DETAIL 7-14
- ⑯ BACKWASH PIPE TO SEWER MANHOLE
- ⑰ PVC SDR-35 SANITARY SEWER PIPE

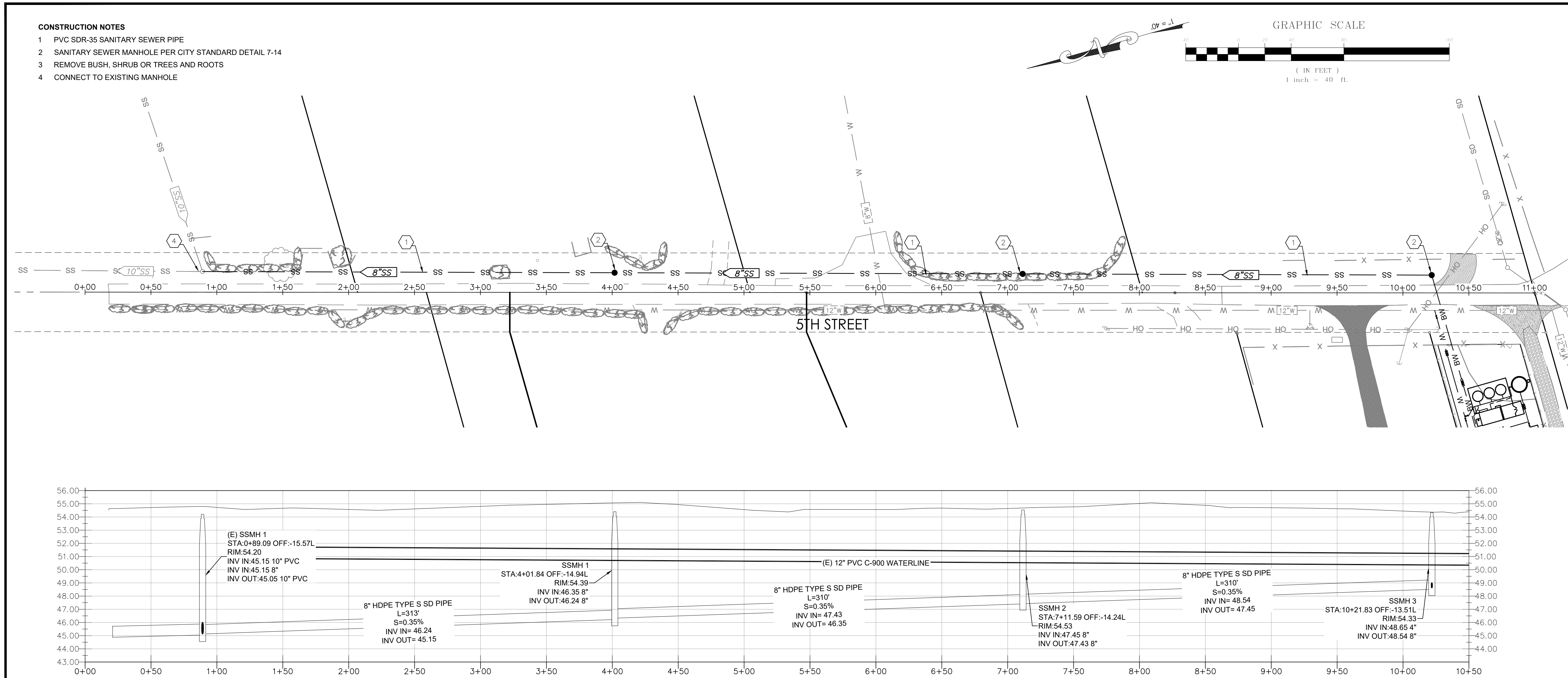
WELL DATA
SIZE: 20"
DEPTH: 785 FEET
SCREEN INTERVALS:
 206 to 228 feet
 270 to 300 feet
 410 to 430 feet
 740 to 770 feet
FLOW RATE: 2200 GPM



BASIS OF BEARINGS:

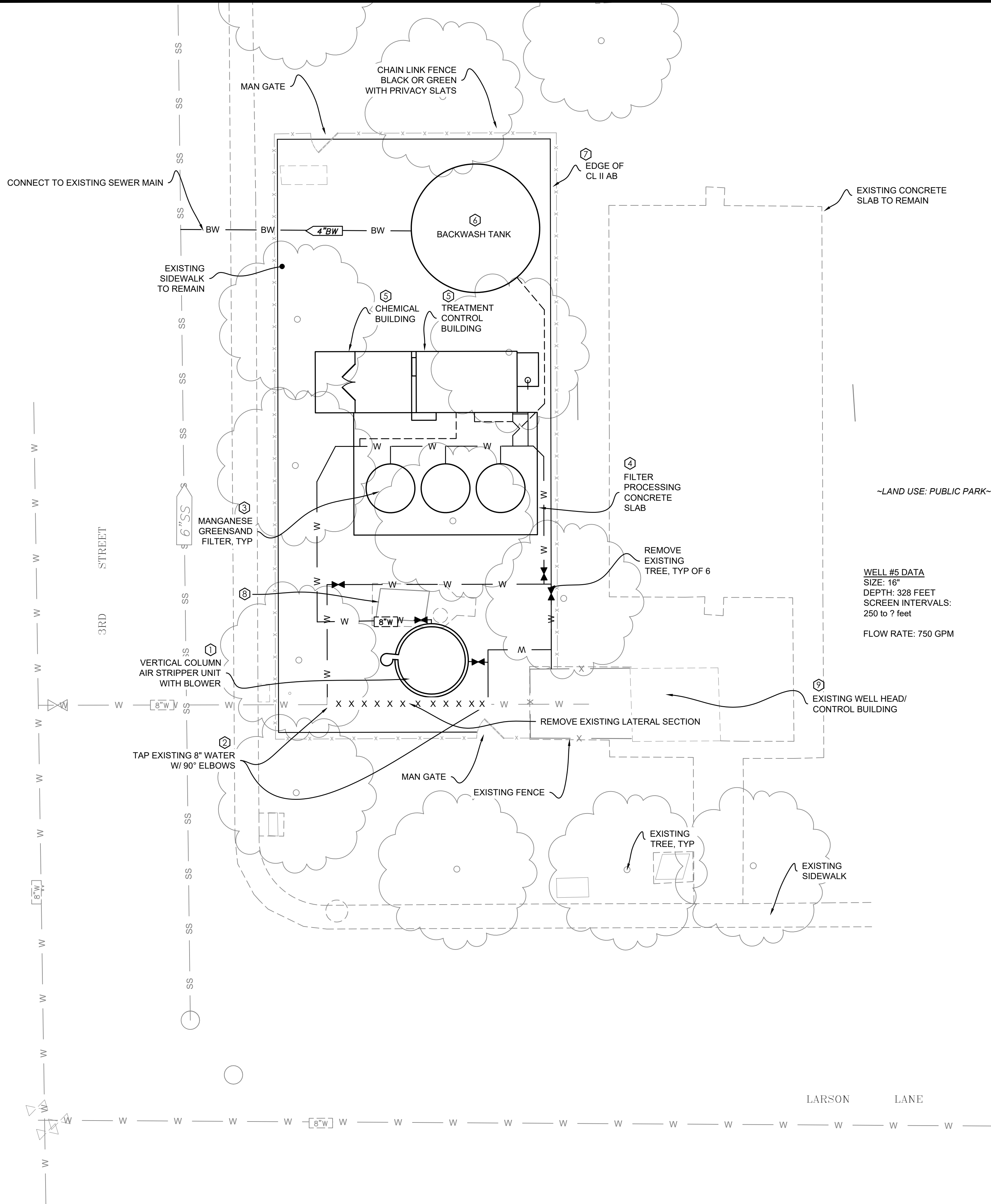
THE BASIS OF BEARINGS OF THESE IMPROVEMENT PLANS IS THE LINE BETWEEN TWO FOUND MONUMENTS LOCATED ALONG THE CENTERLINE OF 5TH STREET AS SHOWN ON THAT CERTAIN MAP ENTITLED PARCEL MAP 88-9-5 FOR GEORGE BOGGS AS RECORDED IN BOOK 3 OF PARCEL MAPS, PG 51 IN COLUSA COUNTY RECORDS. SAID LINE HAVING A BEARING OF N15°52'07"E AND A DISTANCE OF 420.50 FEET NAD83.

PROJECT NUMBER 15-109	CITY OF COLUSA	 CALIFORNIA ENGINEERING COMPANY INC <small>ESTD 1986</small>	SITE PLAN - 5TH STREET (WELL #9)		CIVIL ENGINEERING LAND SURVEYING FUNDING PROCUREMENT CONSTRUCTION ADMINISTRATION www.cecusa.net	1110 Civic Center Blvd, Suite 404 Yuba City, CA 95993 (530) 751-0952 Office	WATER WELL AND TREATMENT PLANS	DATE: 7/22/2025	NO.	DATE	DESCRIPTION
								SCALE: 1"=10'			
SHEET C1 OF 20								DRAWN BY:	DDI		
								DESIGNED BY:	DDI		
								CHECKED BY:	DLS		



PROJECT NUMBER 15-109	CITY OF COUSA 5TH STREET - SEWER CONNECTION WATER WELL AND TREATMENT PLANS	 CALIFORNIA ENGINEERING COMPANY INC ESTD 1986 CIVIL ENGINEERING LAND SURVEYING FUNDING PROCUREMENT CONSTRUCTION ADMINISTRATION www.cecuusa.net		DATE: 7/22/2025	NO.	DESCRIPTION
				SCALE: 1"=40' DRAWN BY: DDI DESIGNED BY: DDI CHECKED BY: DLS		
SHEET 1.1 of 20						

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CONSTRUCTION NOTES

- VERTICAL COLUMN AIR STRIPPER SHALL BE SIZED IN ACCORDANCE WITH PILOT STUDY RESULTS AND BY THE MANUFACTURER FOR A FLOW RATE OF 750 GPM. SEE DETAIL 1, SHEET D6
- TAP EXISTING 8" WATER LATERAL WITH 90° ELBOWS PER CITY OF COLUSA STANDARDS. REMOVE 2 LF SECTION OF EXISTING LATERAL WHERE SHOWN.
- MANGANESE GREENSAND FILTER SYSTEM SHALL BE SIZED IN ACCORDANCE WITH PILOT STUDY RESULTS AND TO TREAT 750 GPM. SEE DETAILS, SHEETS D3, D4, D5
- FILTER PROCESSING CONCRETE SLAB SHALL BE 18" PCC WITH #5 REBAR 18" O.C. EACH WAY, TOP AND BOTTOM. SEE DETAIL 7, SHEET D9 AND DETAIL A, SHEET D3
- CHEMICAL AND TREATMENT CONTROL BUILDINGS. SEE DETAILS, SHEET D9 & D10
- BACKWASH TANK SHALL BE SIZED IN ACCORDANCE WITH PILOT STUDY RESULTS. SEE SHEETS D11 & D12
- GRADE SITE WITH 10" DEPTH CLASS II AGGREGATE BASE
- REMOVE CONCRETE AND PARK BENCH
- OUTFIT EXISTING WELL HEAD BUILDING WITH SCADA CONTROLS. SEE SHEET E4.

BASIS OF BEARINGS:

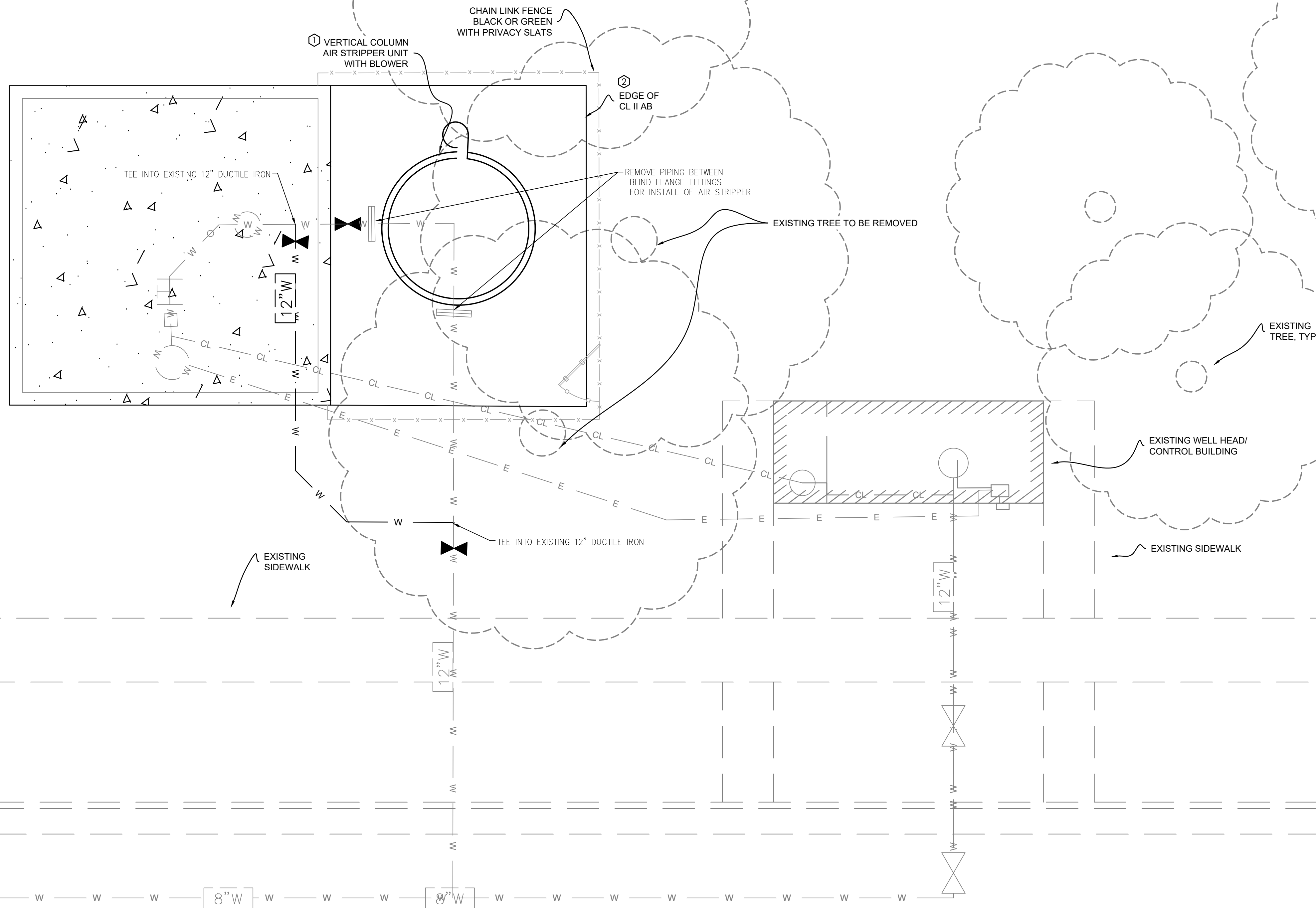
THE BASIS OF BEARINGS OF THESE IMPROVEMENT PLANS IS THE LINE BETWEEN TWO FOUND MONUMENTS LOCATED ALONG THE CENTERLINE OF COUNTRY CLUB DRIVE AS SHOWN ON THAT CERTAIN MAP ENTITLED SUBDIVISION OF COUNTRY CLUB ESTATES UNIT NO. 1 AS RECORDED IN BOOK 1 OF SUBDIVISION MAPS, PG 35 IN COLUSA COUNTY RECORDS. SAID LINE HAVING A BEARING OF N68°12'05"E AND A DISTANCE OF 193.08 FEET NAD83.

PROJECT NUMBER 15-109	CITY OF COLUSA	SITE PLAN - CITY WELL #5	WATER WELL AND TREATMENT PLANS	SHEET C2 OF 3	NO.	DATE	DESCRIPTION
					<div>CIVIL ENGINEERING LAND SURVEYING FUNDING PROCUREMENT CONSTRUCTION ADMINISTRATION www.cecusa.net</div> <div>CALIFORNIA ENGINEERING COMPANY INC ESTD 1965</div> <div>1110 Civic Center Blvd, Suite 404 Yuba City, CA 95993 (530) 751-0952 Office</div>		
					<div>REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA No. 52840 CIVIL DATE: 7/22/2025 SCALE: 1"=10' DRAWN BY: DJL DESIGNED BY: DJL CHECKED BY: DLS</div>		

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CONSTRUCTION NOTES

- ① VERTICAL COLUMN AIR STRIPPER SHALL BE SIZED IN ACCORDANCE WITH PILOT STUDY RESULTS AND BY THE MANUFACTURER FOR A FLOW RATE OF 1450 GPM. SEE DETAIL 1, SHEET D6
- ② GRADE SITE WITH 10" DEPTH CLASS II AGGREGATE BASE



~LAND USE: PUBLIC PARK~

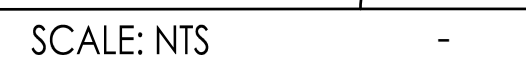
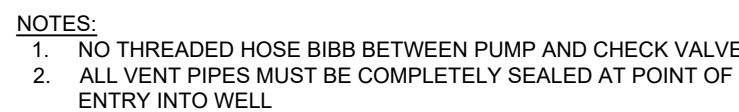
GRAPHIC SCALE

(IN FEET)
inch = 5 ft.

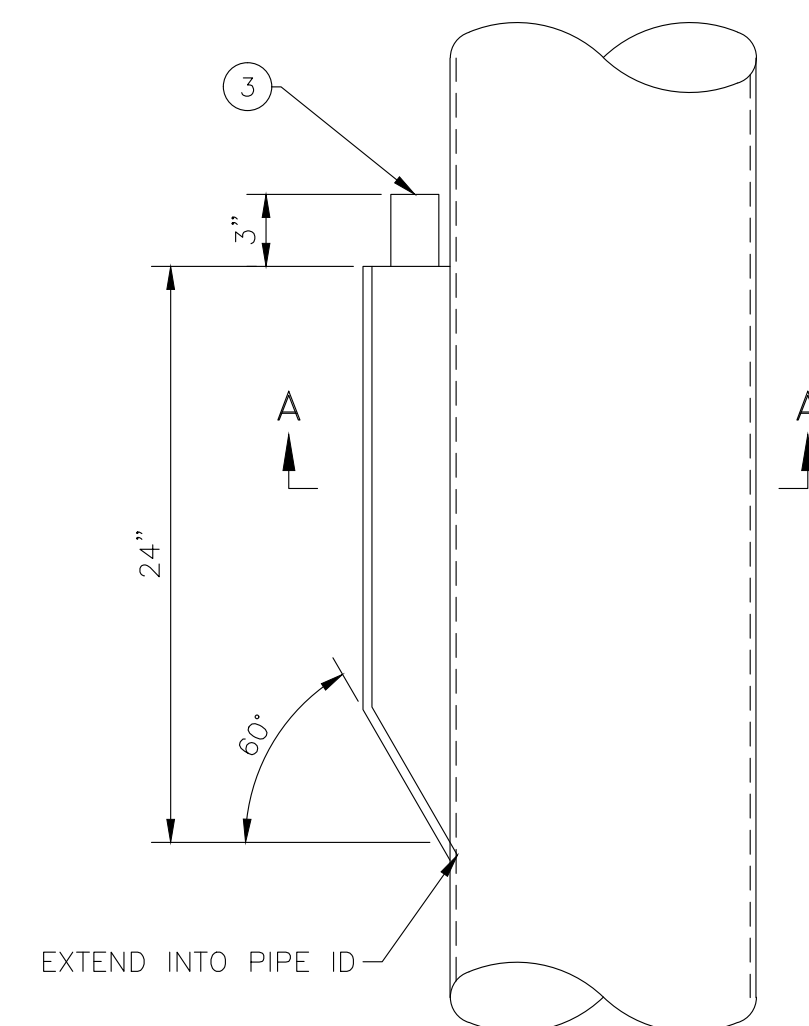
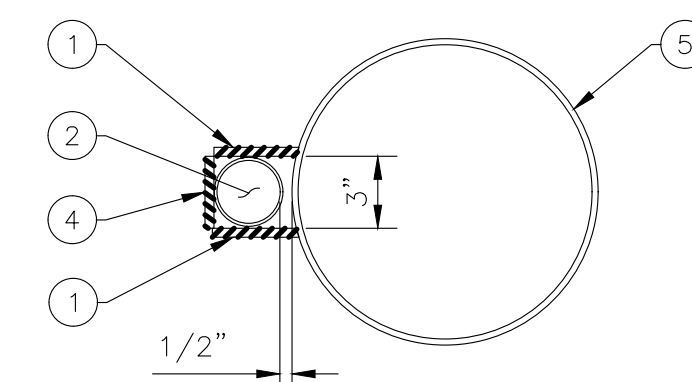
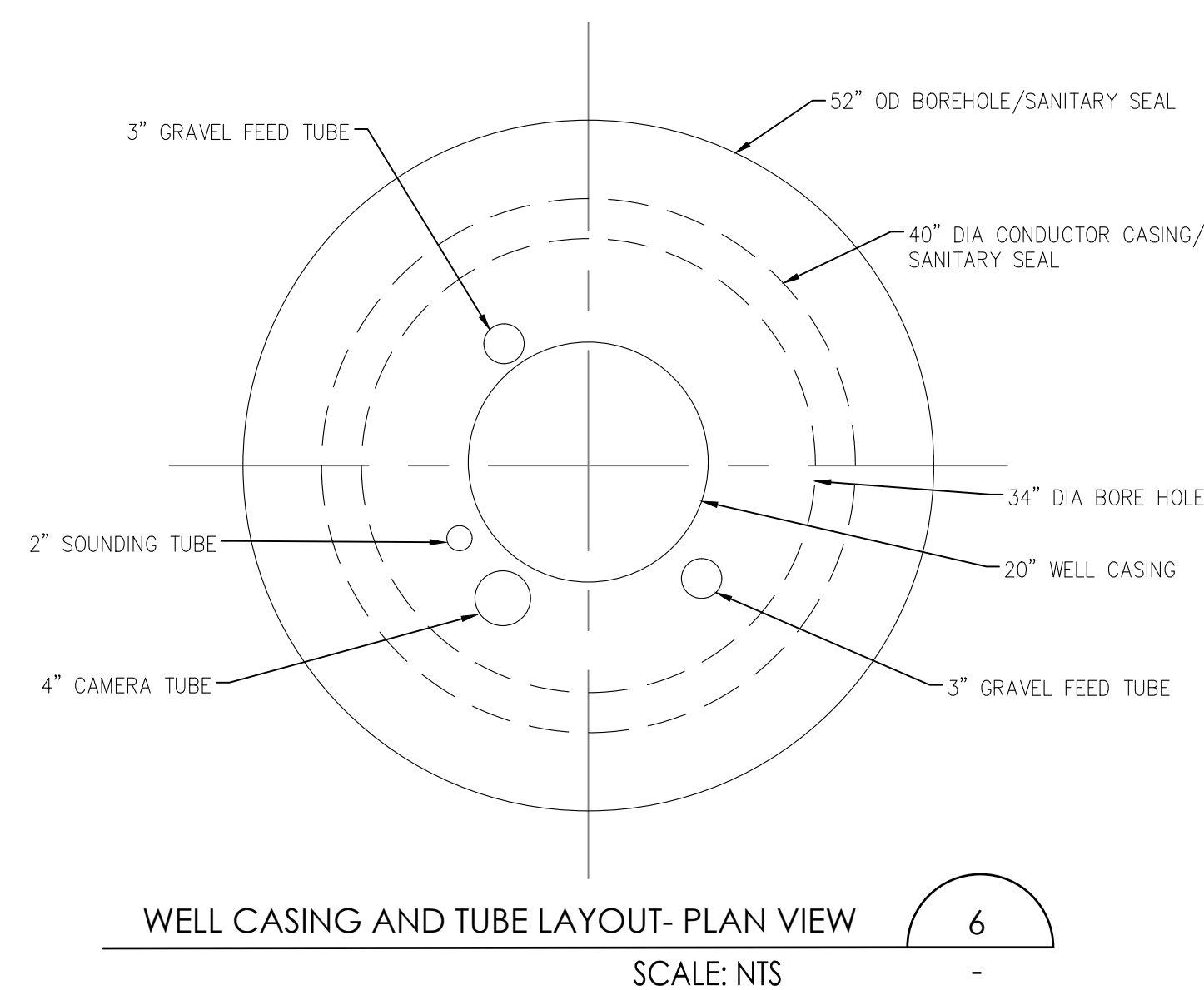
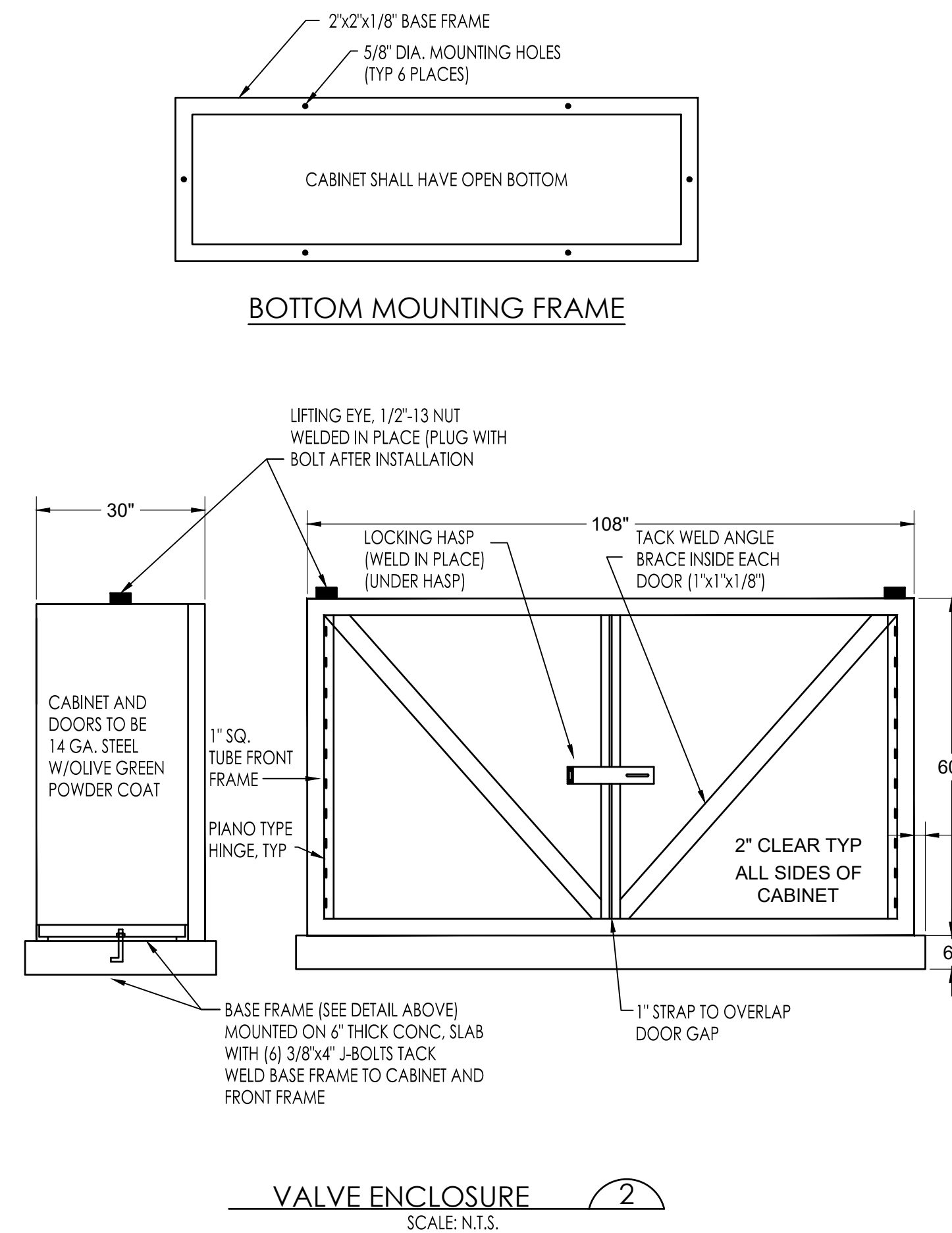
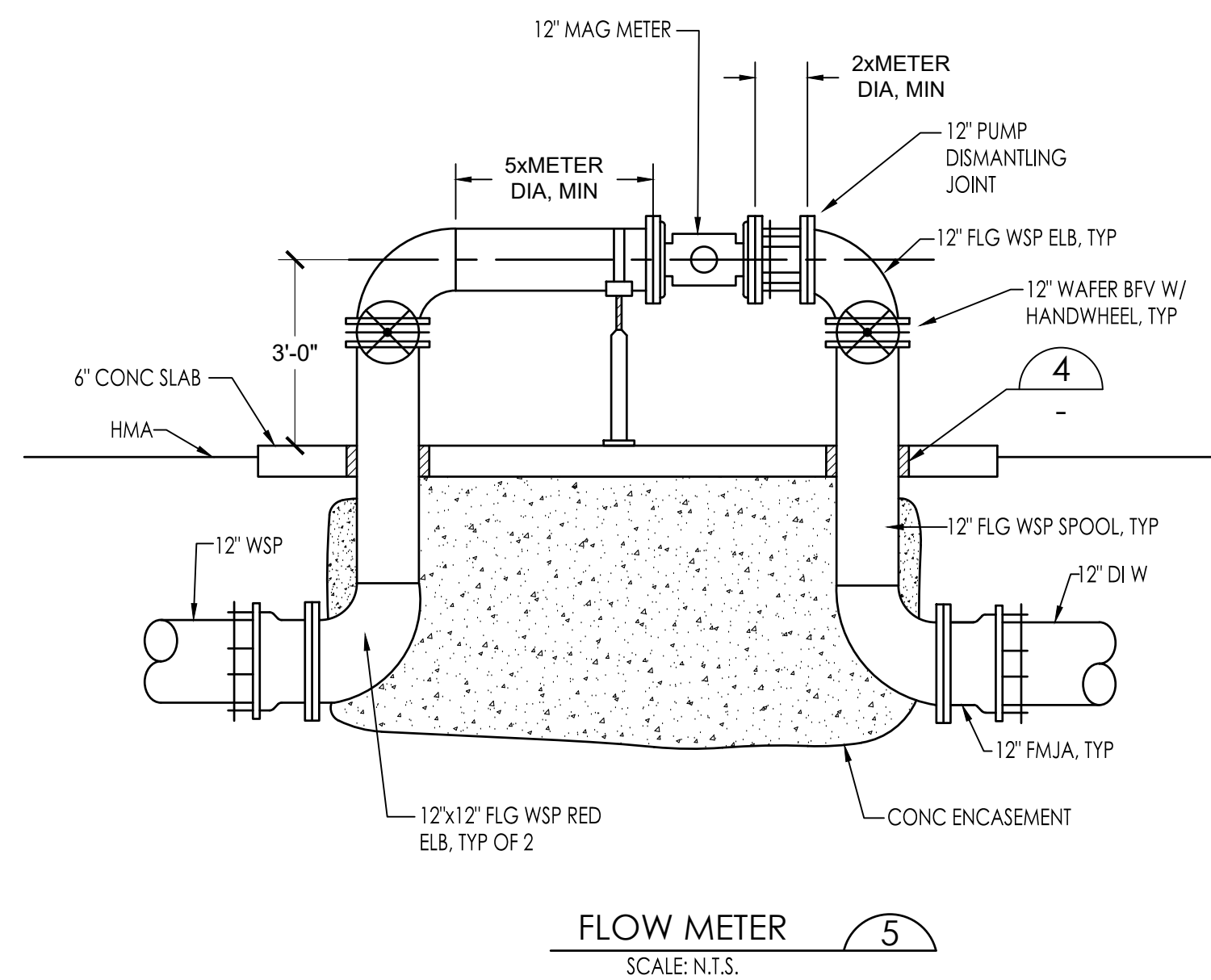
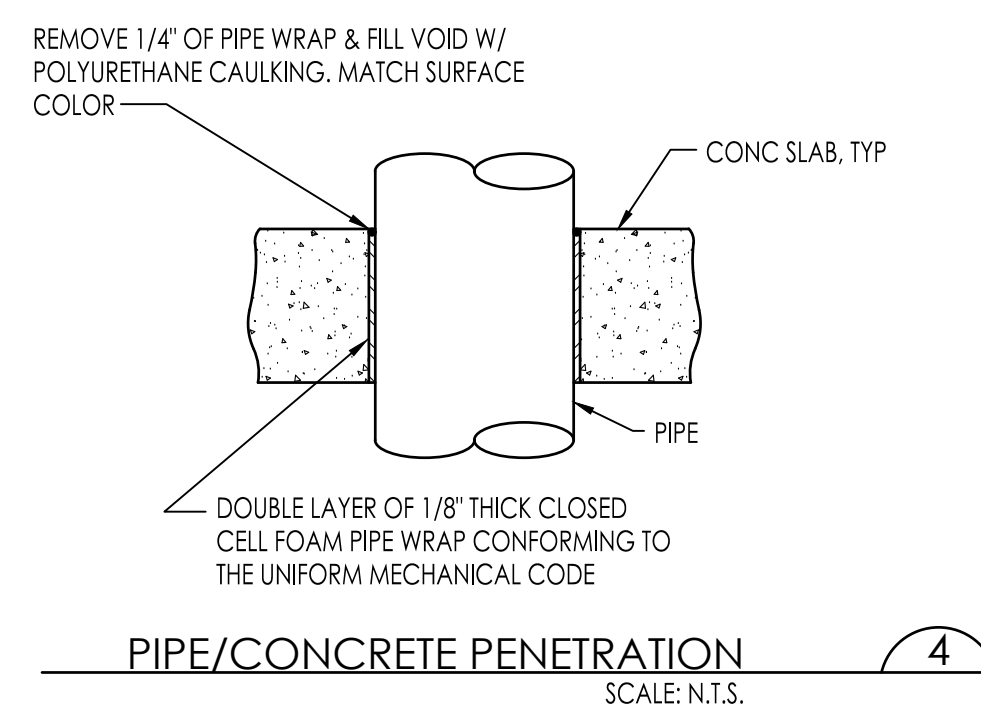
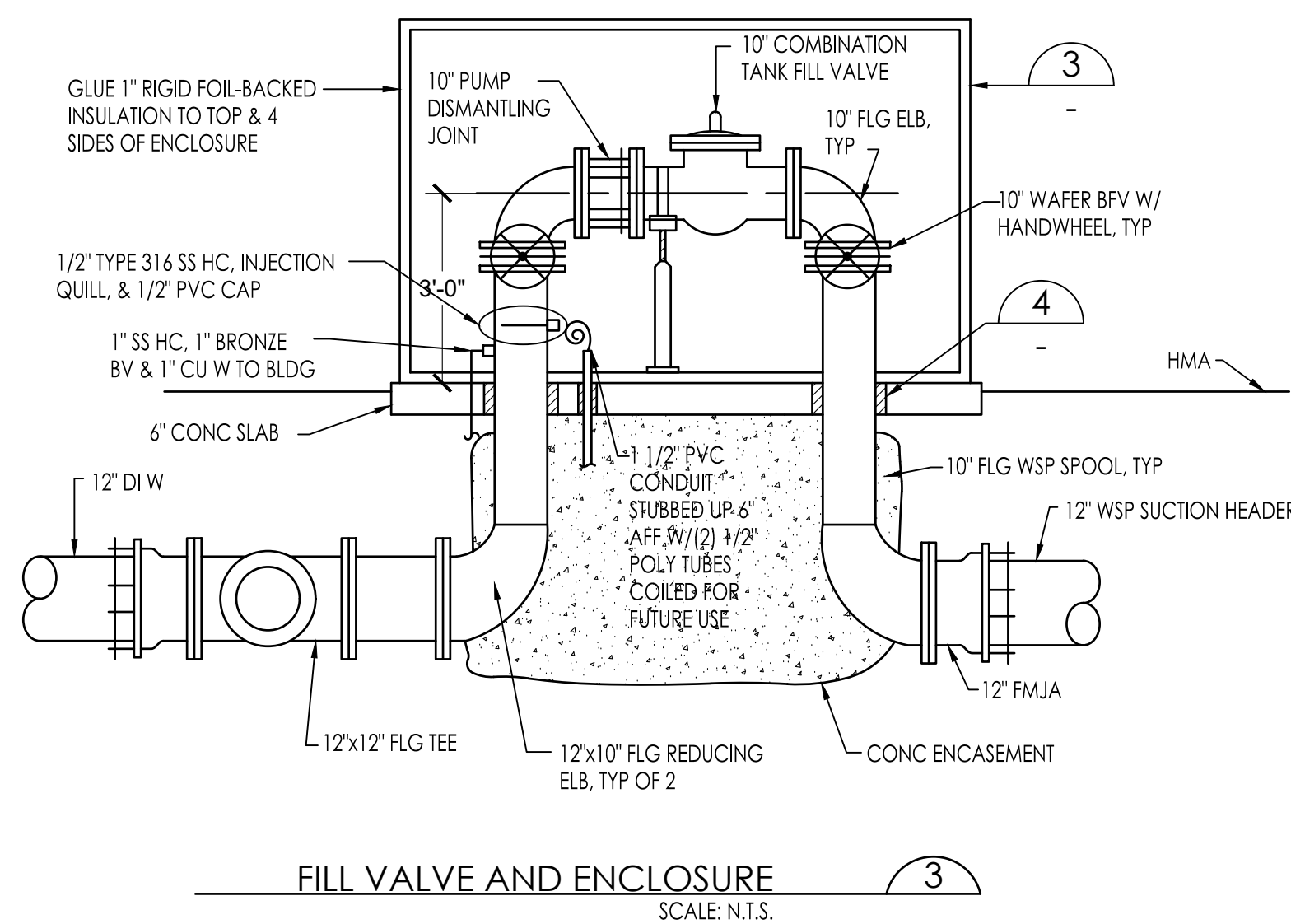
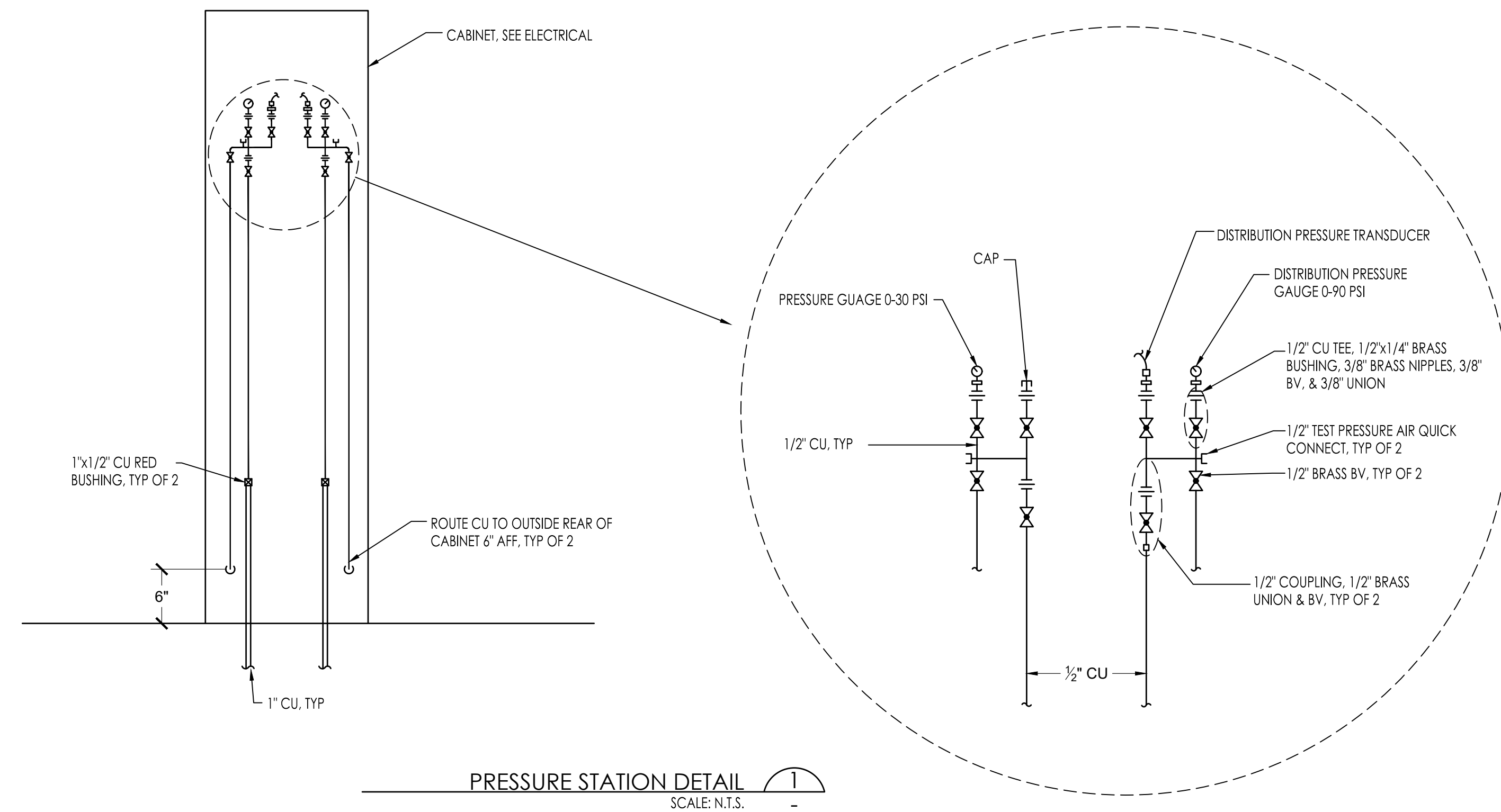
BASIS OF BEARINGS:

THE BASIS OF BEARINGS OF THESE IMPROVEMENT PLANS IS THE LINE BETWEEN TWO FOUND MONUMENTS LOCATED ALONG THE CENTERLINE OF COUNTRY CLUB DRIVE AS SHOWN ON THAT CERTAIN MAP ENTITLED SUBDIVISION OF COUNTRY CLUB ESTATES UNIT NO. 1 AS RECORDED IN BOOK 1 OF SUBDIVISION MAPS, PG 35 IN COLUSA COUNTY RECORDS. SAID LINE HAVING A BEARING OF N68°12'05"E AND A DISTANCE OF 193.08 FEET NAD83.

PROJECT NUMBER 15-109	CITY OF COUSA	SITE PLAN - CITY WELL #6A WATER WELL AND TREATMENT PLANS	1110 Civic Center Blvd. Suite 404 Yuba City, CA 95993 (530) 751-0952 Office CIVIL ENGINEERING LAND SURVEYING FUNDING PROCUREMENT CONSTRUCTION ADMINISTRATION CALIFORNIA www.cceusa.net ESTD 1986		DATE: 7/22/2025	NO.	DATE	DESCRIPTION
					SCALE: 1"=10'			
					DRAWN BY: DDI			
					DESIGNED BY: DDI			
					CHECKED BY: DLS			
SHEET C3 OF 3								



PROJECT NUMBER 15-109	CITY OF COLUSA	WELL DETAILS	<div>CALIFORNIA ENGINEERING COMPANY INC ESTD 1986 CIVIL ENGINEERING LAND SURVEYING FUNDING PROCUREMENT CONSTRUCTION ADMINISTRATION www.cecusa.net</div>	<div></div>	DATE:	7/22/2025	NO.	DATE	DESCRIPTION
					SCALE:	1"=10'			
					DRAWN BY:	DDI			
					DESIGNED BY:	DDI			
					CHECKED BY:	DLS			
SHEET D1	OF 12	WATER WELL AND TREATMENT PLANS							



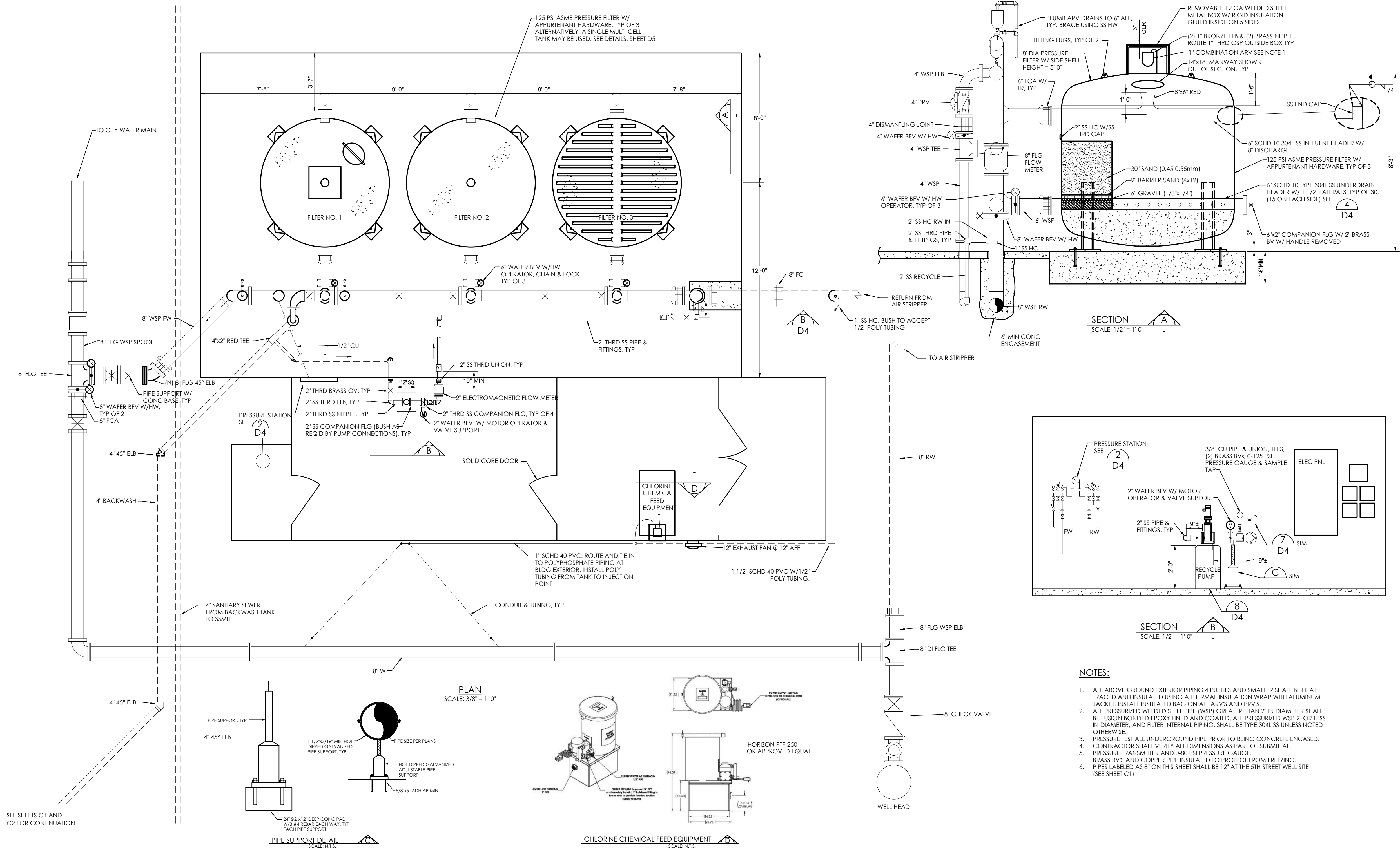
ITEM	DESCRIPTION
1	3-1/2" x 3/8" FLAT BAR SIDE PLATES
2	3" x 3/8" FLAT BAR TOP PLATE
3	2" NPS 304L WELD ON COUPLING
4	3" x 3/8" FRONT COVER
5	12.25" ID x 1/4" WALL TYPE 304L SST 304L STEEL CASING

NOTES:
1. ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED.
2. ALL PLATE MATERIAL 304L STAINLESS STEEL.

PROJECT NUMBER	CITY OF COLUSA	WELL & SITE DETAILS	WATER WELL AND TREATMENT PLANS
15-109			
SHEET D2 OF 12			

Y:\CEC Job\Projects\25-105 Well No 9_GA_5_4 Project Const\Eng\Imp\Pha\25-105 Improvement Plans.dwg Jul 22, 2025-02:15 pm mjaayne

FOR BIDDING PURPOSES, TO BE DESIGNED
AND SPECIFIED BY MANUFACTURER



NOTES:

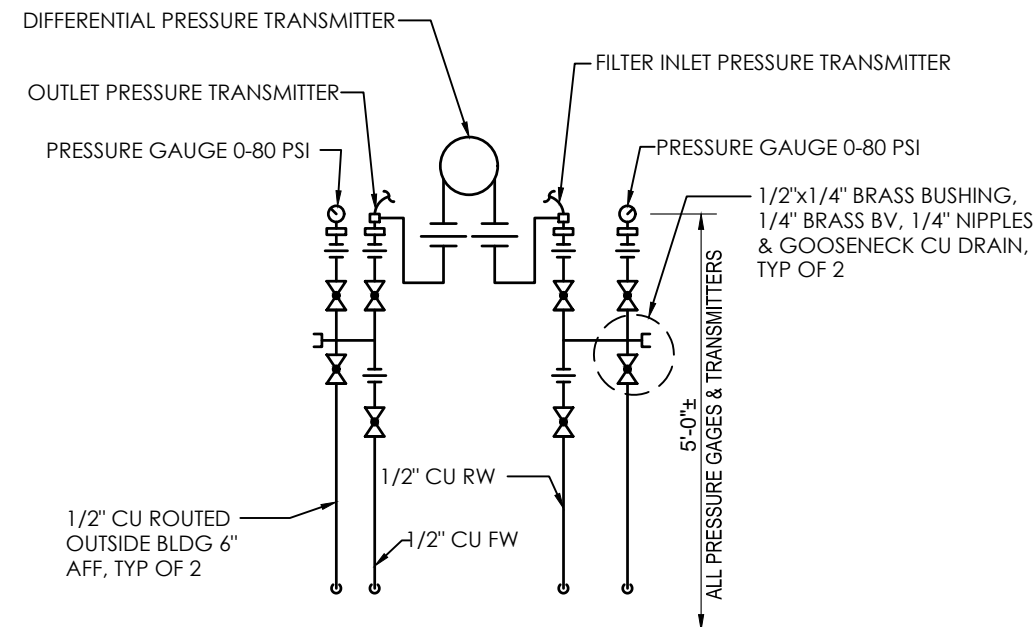
- ALL ABOVE GROUND EXTERIOR PIPING 4 INCHES AND SMALLER SHALL BE HEAT TRACED AND INSULATED USING A THERMAL INSULATION WRAP WITH ALUMINUM JACKET. INSTALL INSULATED BAG ON ALL ARYS AND PRVS.
- ALL PRESSURIZED WELDED STEEL PIPE (WSP) GREATER THAN 2" IN DIAMETER SHALL BE FUSION BONDED EPOXY LINED AND COATED. ALL PRESSURIZED WSP 2" OR LESS IN DIAMETER, AND FILTER INTERNAL PIPING, SHALL BE TYPE 304L SS UNLESS NOTED OTHERWISE.
- PRESSURE TEST ALL UNDERGROUND PIPE PRIOR TO BEING CONCRETE ENCASED.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AS PART OF SUBMITTAL.
- PRESSURE TRANSMITTER AND 0-80 PSI PRESSURE GAUGE. BRASS BVS AND COPPER PIPE INSULATED TO PROTECT FROM FREEZING.
- PIPES LABELED AS 8" ON THIS SHEET SHALL BE 12" AT THE 5TH STREET WELL SITE (SEE SHEET C1).

PROJECT NUMBER 15-109	CITY OF COLUSA TREATMENT DETAILS WATER WELL AND TREATMENT PLANS	<div><div>CALIFORNIA ENGINEERING COMPANY, INC. <small>ESTD 1986</small></div><div>CIVIL ENGINEERING LAND SURVEYING FUNDING PROCUREMENT CONSTRUCTION ADMINISTRATION www.cecuusa.net</div></div>	<div>1110 Civic Center Blvd., Suite 404 Yuba City, CA 95993 (530) 751-0952 Office</div>	<div></div>		DATE: 7/22/2025	NO.	DATE	DESCRIPTION
				SCALE: 1"=10'					
						DRAWN BY: DDI			
						DESIGNED BY: DDI			
						CHECKED BY: DLS			

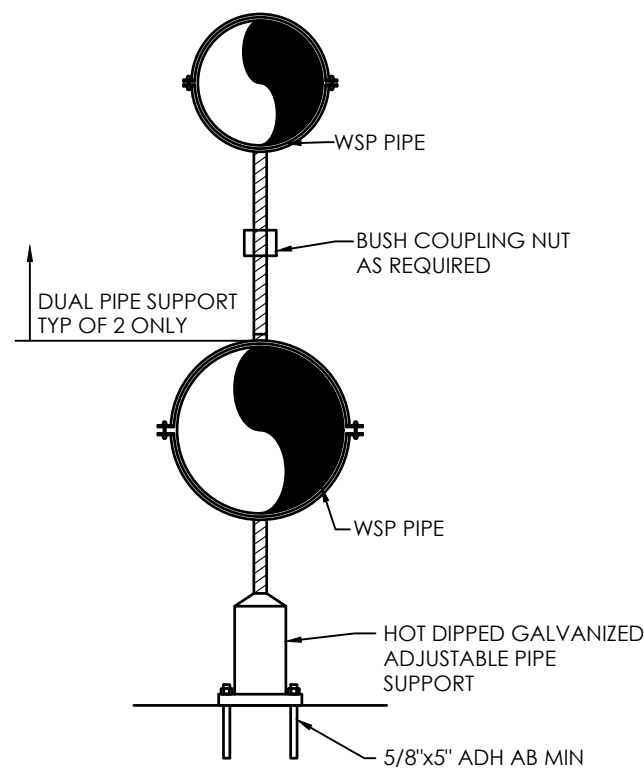
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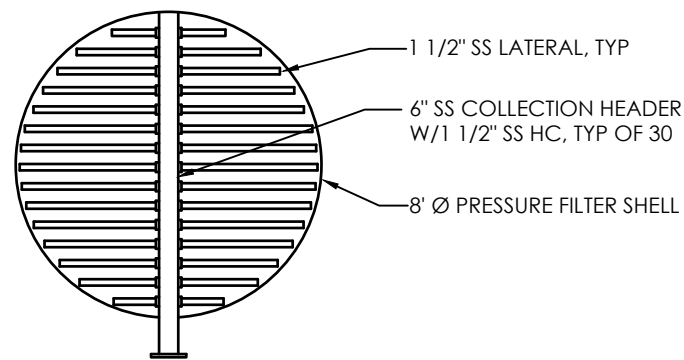
FOR BIDDING PURPOSES, TO BE DESIGNED
AND SPECIFIED BY MANUFACTURER



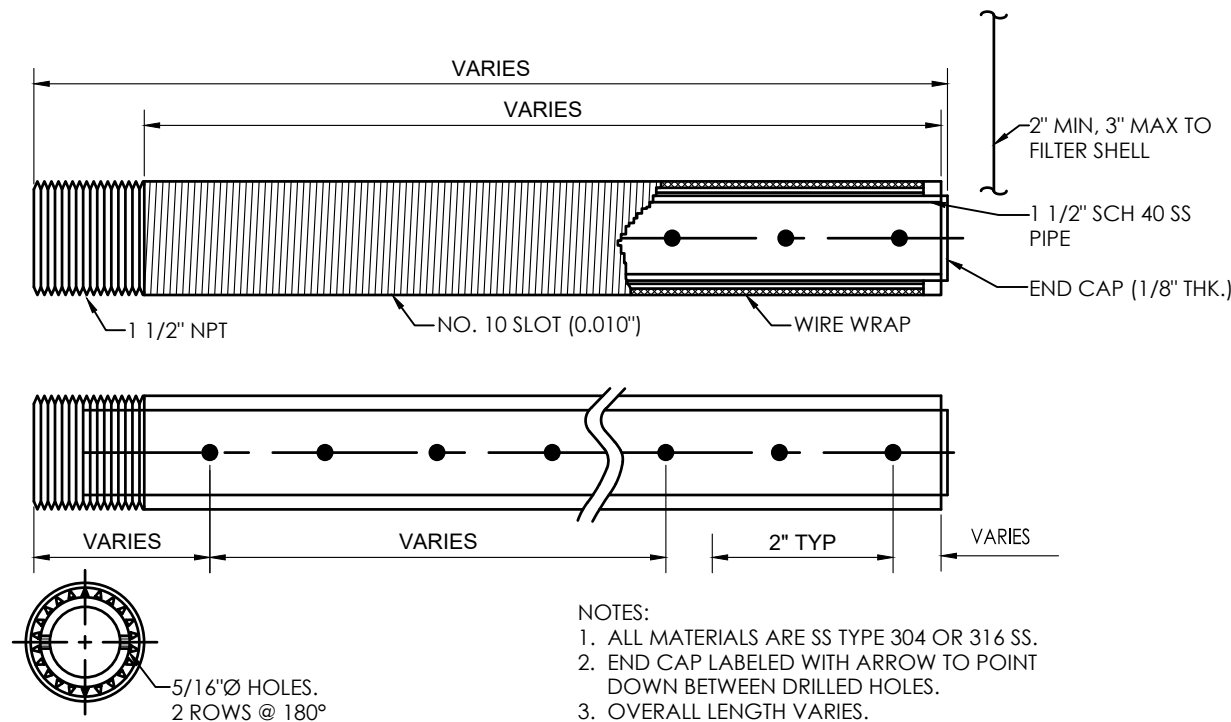
PRESSURE STATION DETAIL
SCALE: NTS



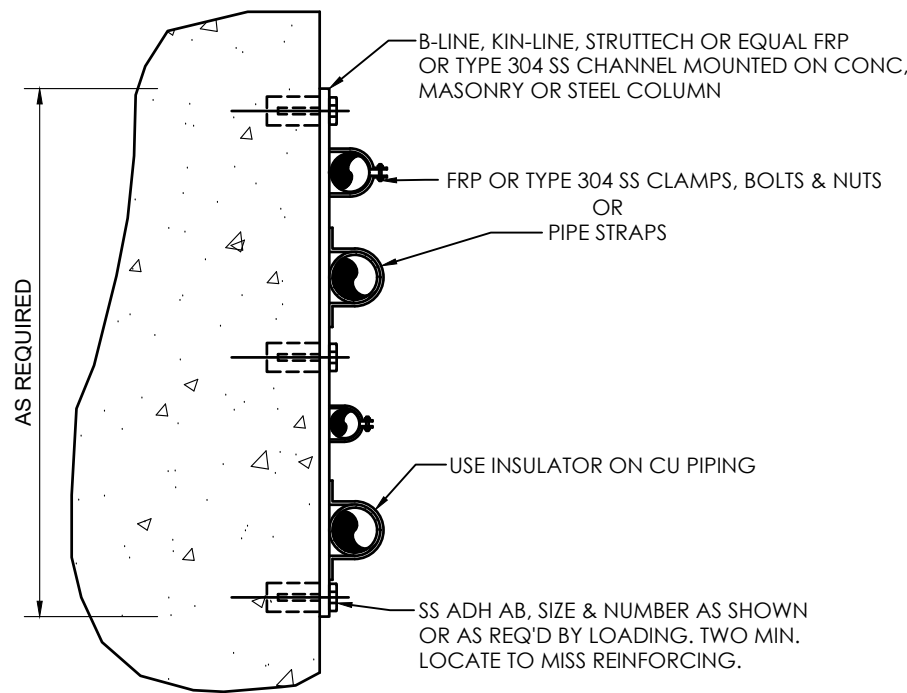
PIPE SUPPORT DETAIL
SCALE: NTS



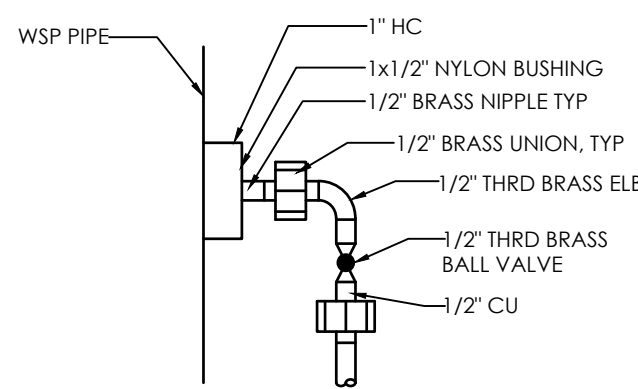
UNDERDRAIN AND LATERAL DETAIL
SCALE: NTS



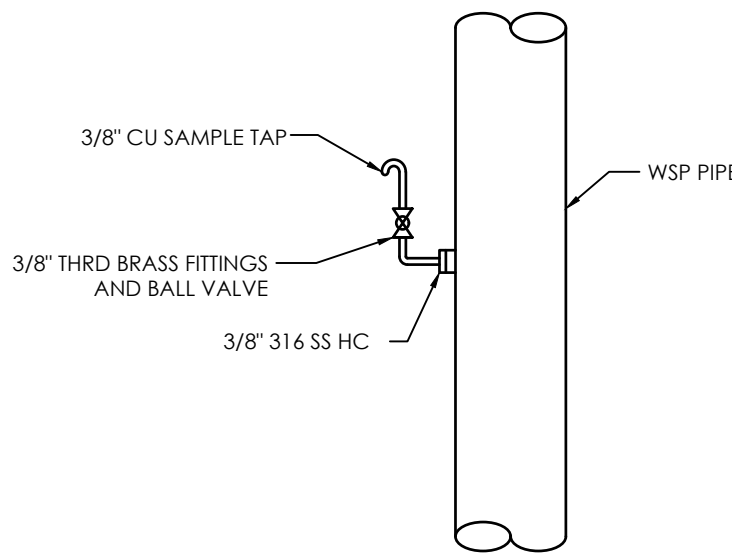
NOTES:
1. ALL MATERIALS ARE SS TYPE 304 OR 316 SS.
2. END CAP LABELED WITH ARROW TO POINT DOWN BETWEEN DRILLED HOLES.
3. OVERALL LENGTH VARIES.



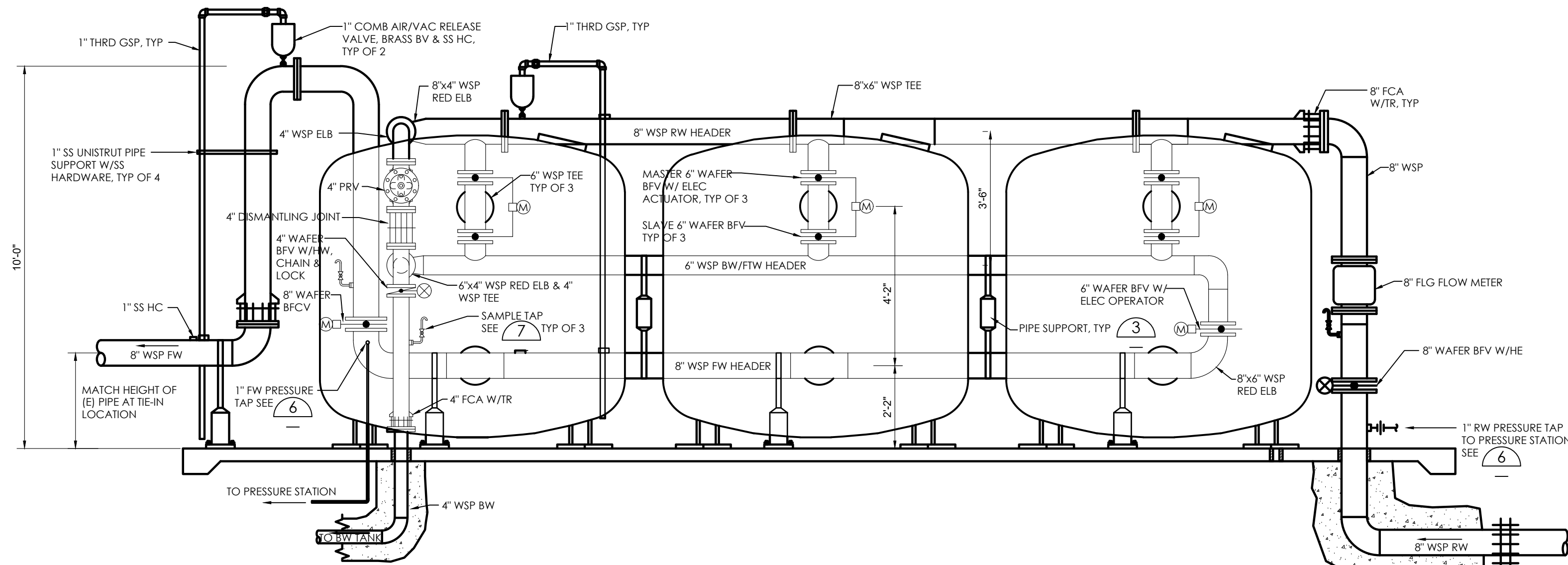
PIPE SUPPORT-TYPE 2
SCALE: NTS



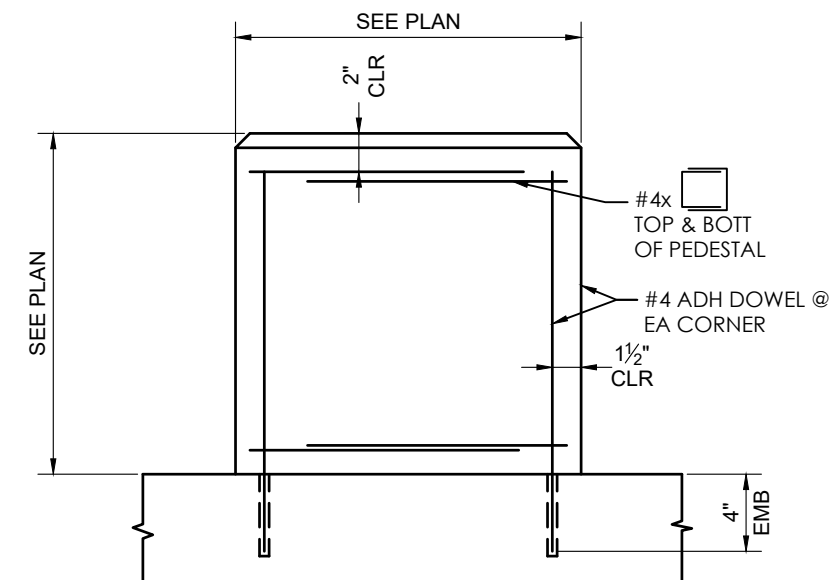
PRESSURE TAP DETAIL
SCALE: 1/2" = 1'-0"



SAMPLE TAP DETAIL
SCALE: NTS



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



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

PROJECT NUMBER	CITY OF COLUSA	DESCRIPTION	NO.	DATE
15-109	CITY OF COLUSA	TREATMENT DETAILS	7/22/2025	1"=10'
SHEET D4 OF 12	CITY OF COLUSA	WATER WELL AND TREATMENT PLANS	DRAWN BY: DDI	DESIGNED BY: DDI
	CITY OF COLUSA		CHECKED BY: DLS	

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ENGINEERING
LAND SURVEYING
FUNDING PROCUREMENT
CONSTRUCTION ADMINISTRATION
ESTD 1985
www.cceusa.net

CITY OF COLUSA

TREATMENT DETAILS

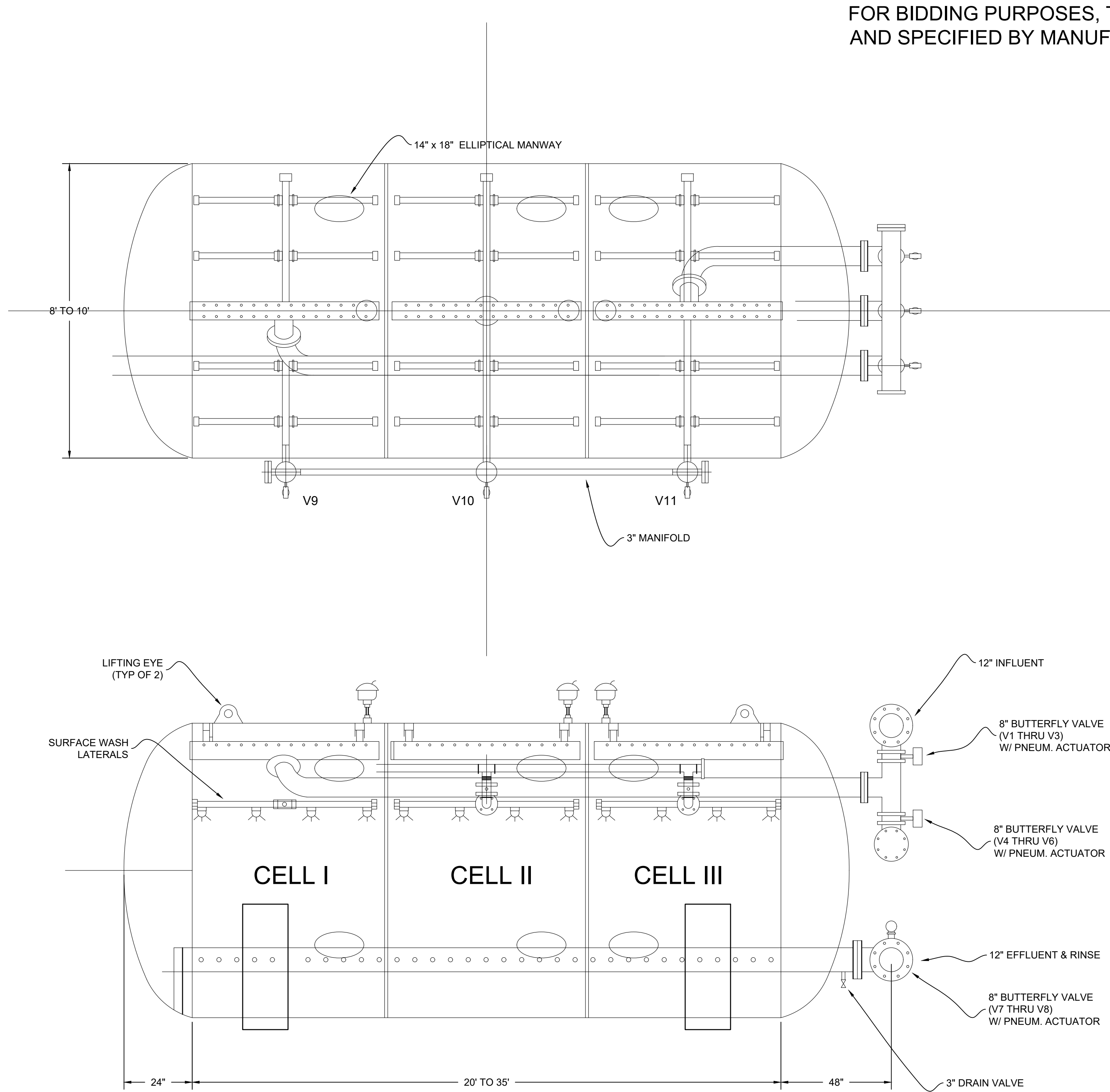
WATER WELL AND TREATMENT PLANS

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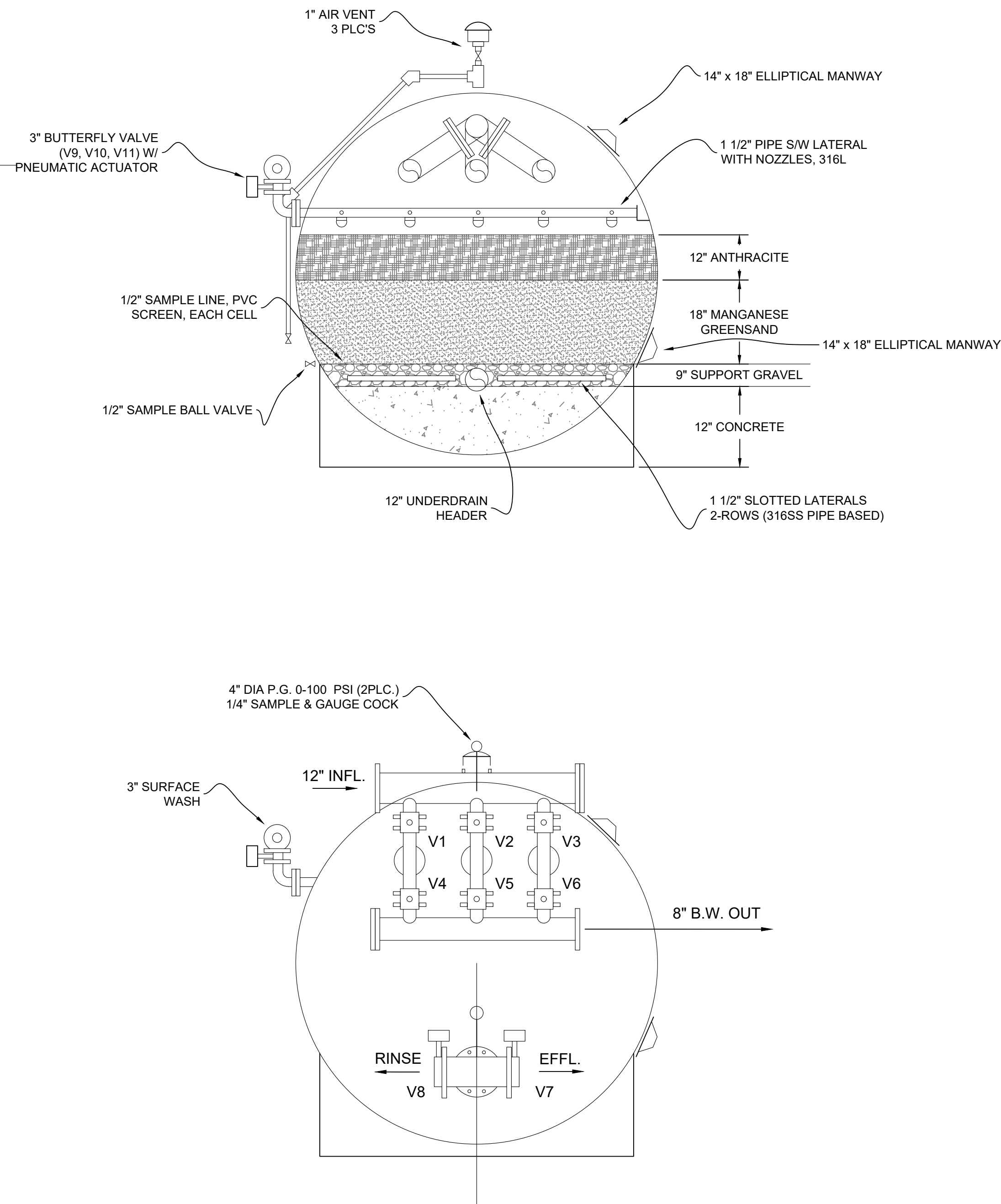
REGISTERED PROFESSIONAL ENGINEER
No. 93840
STATE OF CALIFORNIA

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**SINGLE MULTI-CELL TANK
ALTERNATIVE TO 3 INDIVIDUAL
PRESSURE FILTERS**



PROJECT NUMBER
15-109

SHEET **D5** OF **12**

CITY OF COLUSA

**TREATMENT DETAILS; ALTERNATE
FILTER TANK**

WATER WELL AND TREATMENT PLANS



**CALIFORNIA
ENGINEERING
COMPANY INC**
ESTD 1966
CIVIL ENGINEERING
LAND SURVEYING
FUNDING PROCUREMENT
CONSTRUCTION ADMINISTRATION
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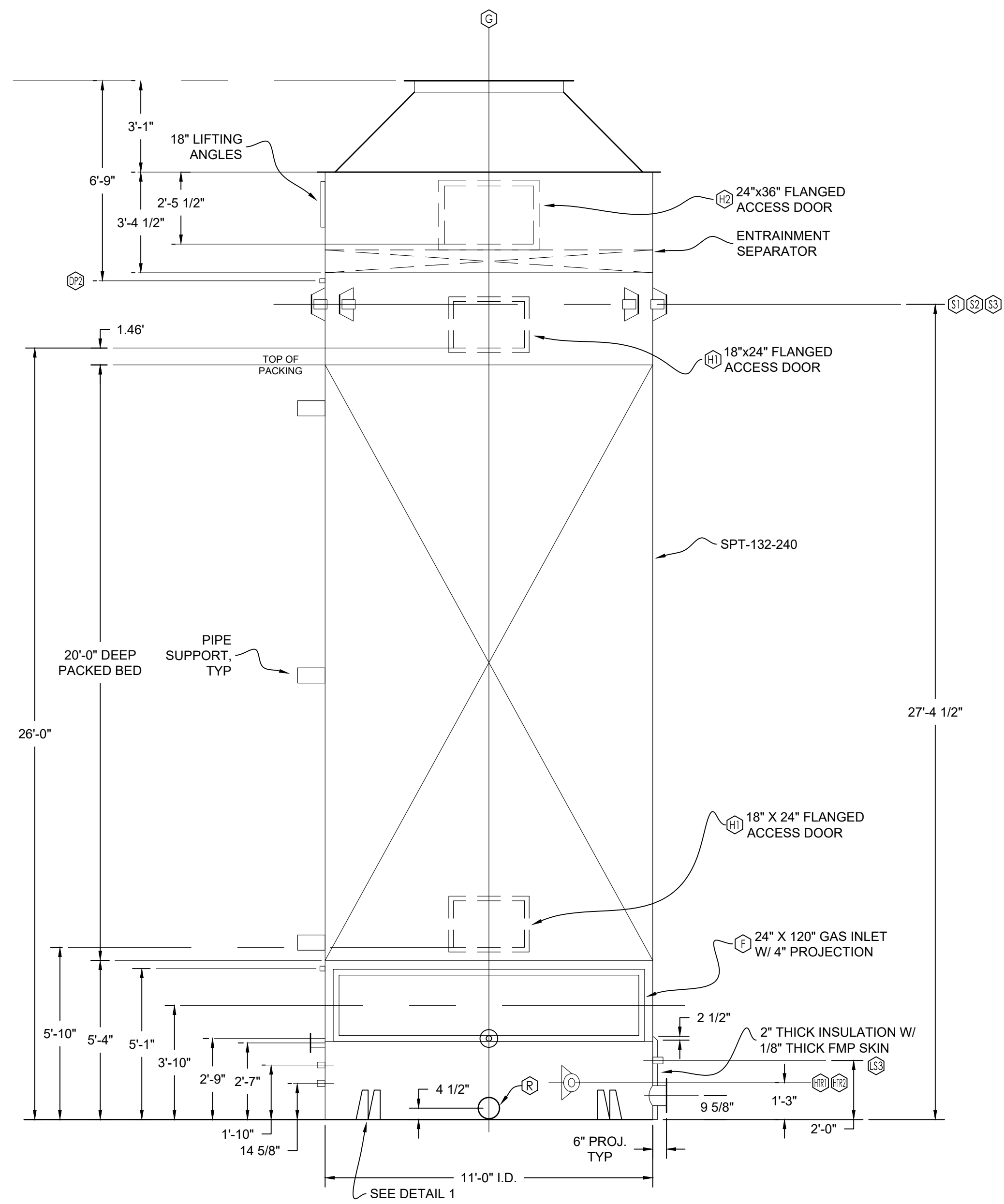
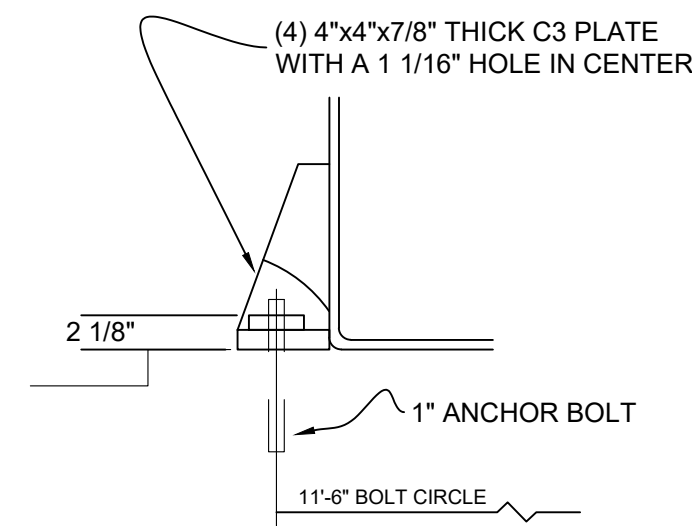
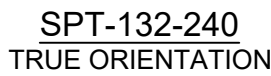
DATE: 7/22/2025
SCALE: 1"=10'
DRAWN BY: DJL
DESIGNED BY: DJL
CHECKED BY: DLS

DESCRIPTION

NO.

DATE

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PRESSURIZED VERTICAL COLUMN AIR STRIPPER

SCALE: N.T.S.

1

-

SERVICE	MARK	I.D.	O.D.	B.C.	NO OF HOLES	HOLE DIA	FLANGE THICK.	FLANGE TYPE	WALL THICK
GAS OUTLET	G	60"	68"	65"	36	7/8"	3/4"	C.M.	3/8"
SPRAY HEADER	S1,S2,S3	3"	7 1/2"	6"	4	3/4"	1 1/16"	S.W.	SCH 80
PUMP SUCTION	M	8"	13 1/2"	11 3/4"	8	7/8"	9/16"	C.M.	3/16"
DRAIN	V	1 1/2"	7 1/2"	6"	4	3/4"	1/2"	C.M.	3/16"
FILL & MAKEUP	U	2"	4 3/4"	4 3/4"	4	3/4"	1/2"	C.M.	3/16"
IMMERSION HTR	HTR1,HTR2	3"	7 1/2"	6"	4	3/4"	1/2"	C.M.	3/16"

LEVEL SWITCH LS1,LS2,LS3 1 1/4" NPT HALF CPLG
DIFFERENTIAL PRESS. DP1,DP2

PRESSURIZED VERTICAL COLUMN AIR STRIPPER

SCALE: N.T.S.

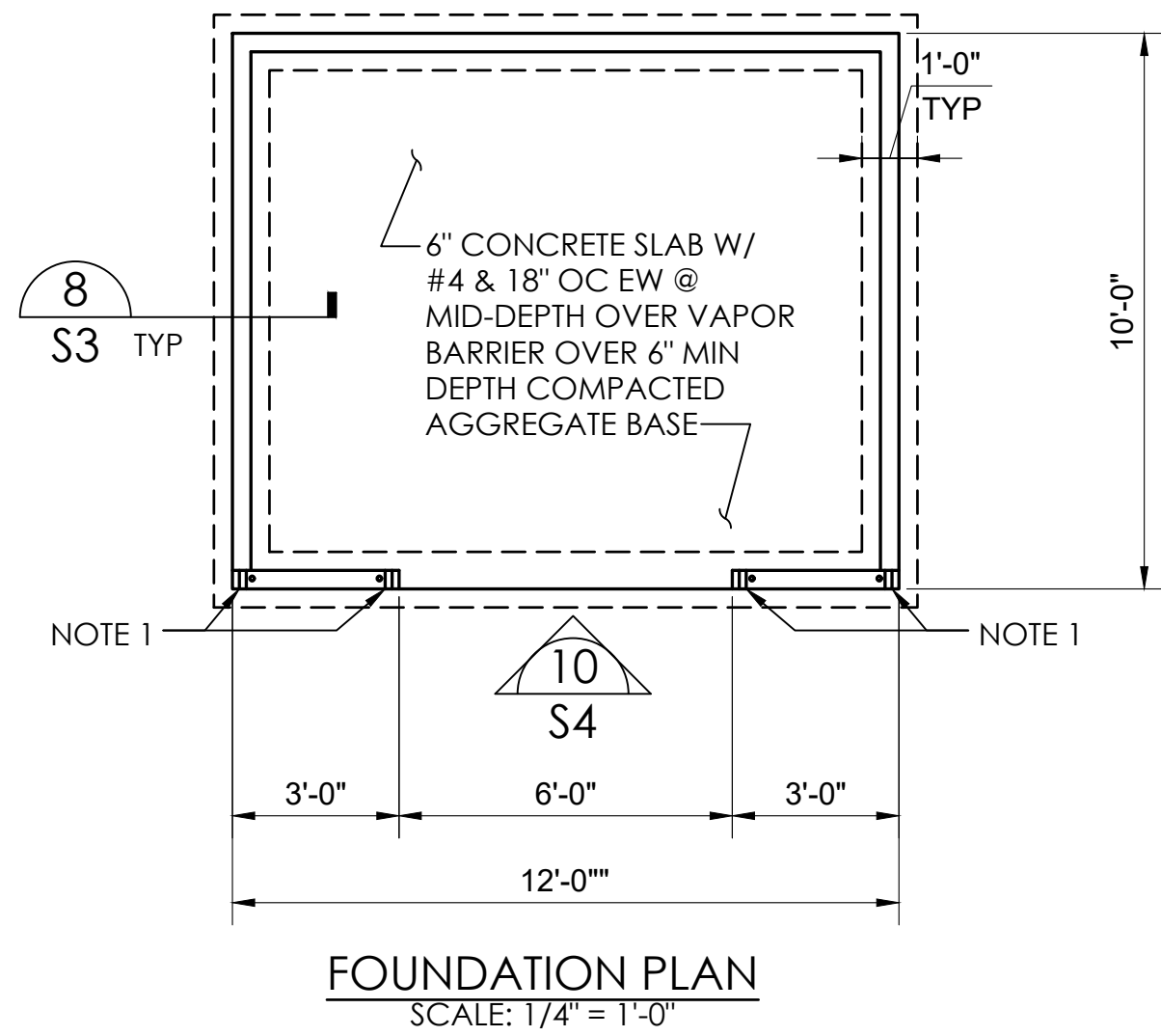
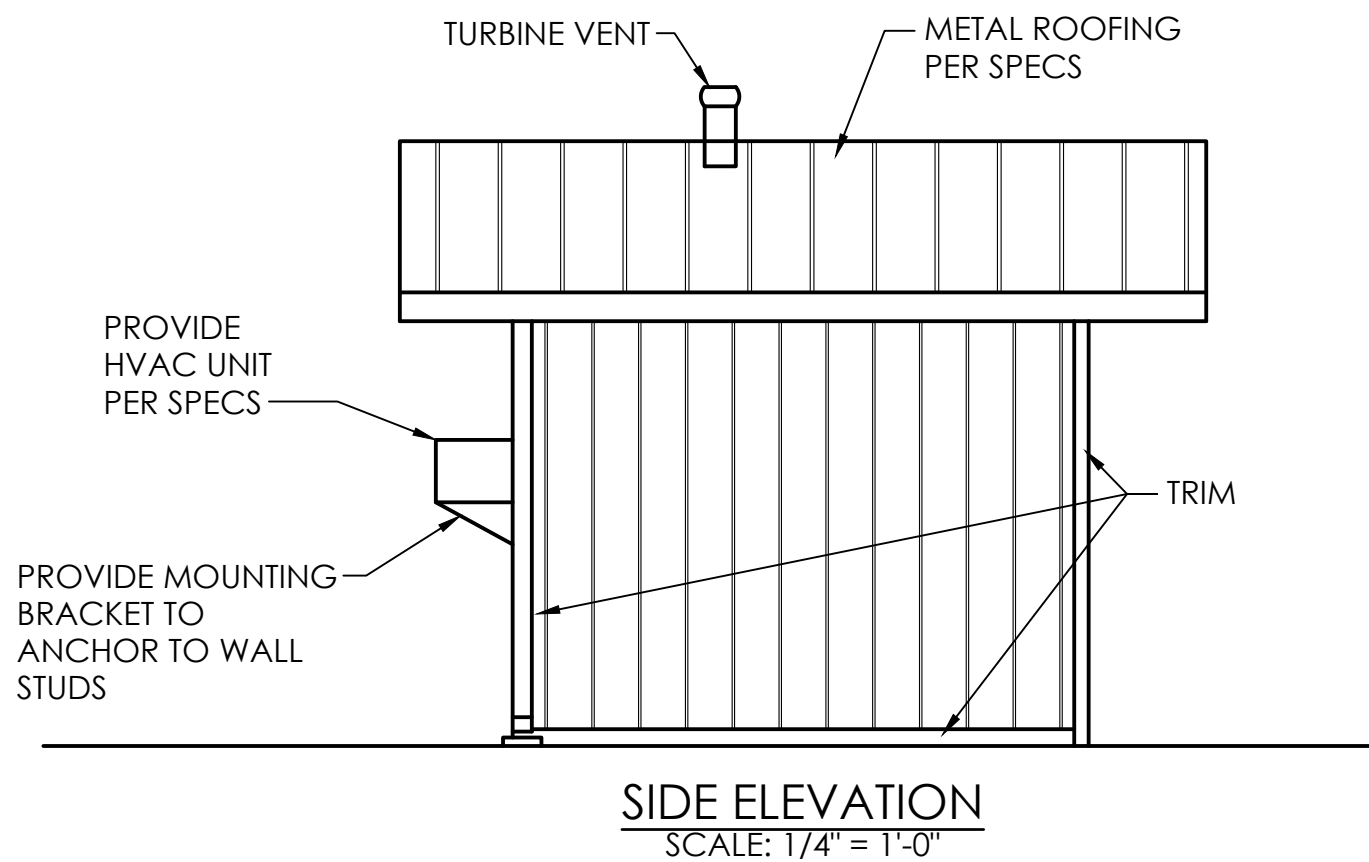
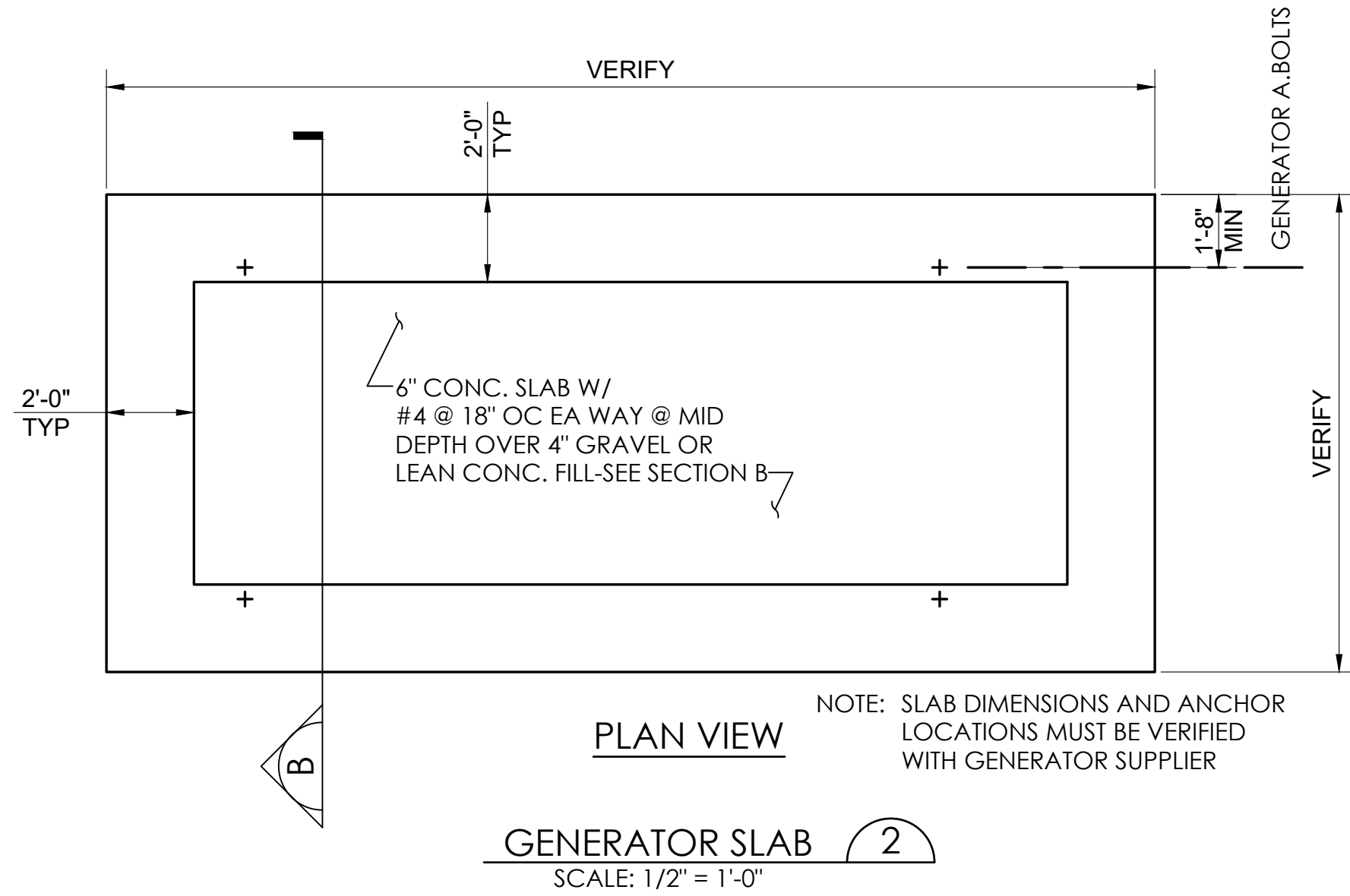
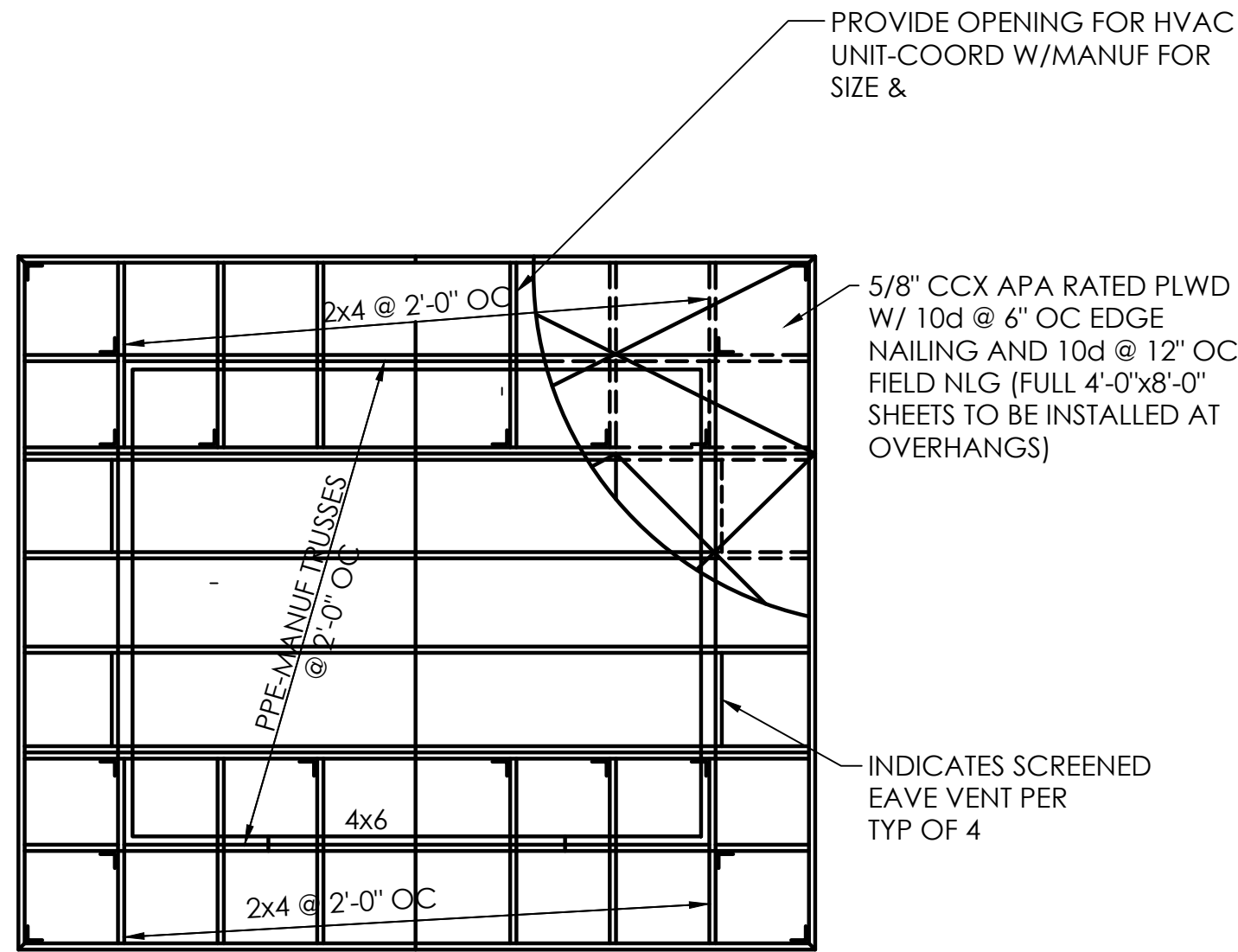
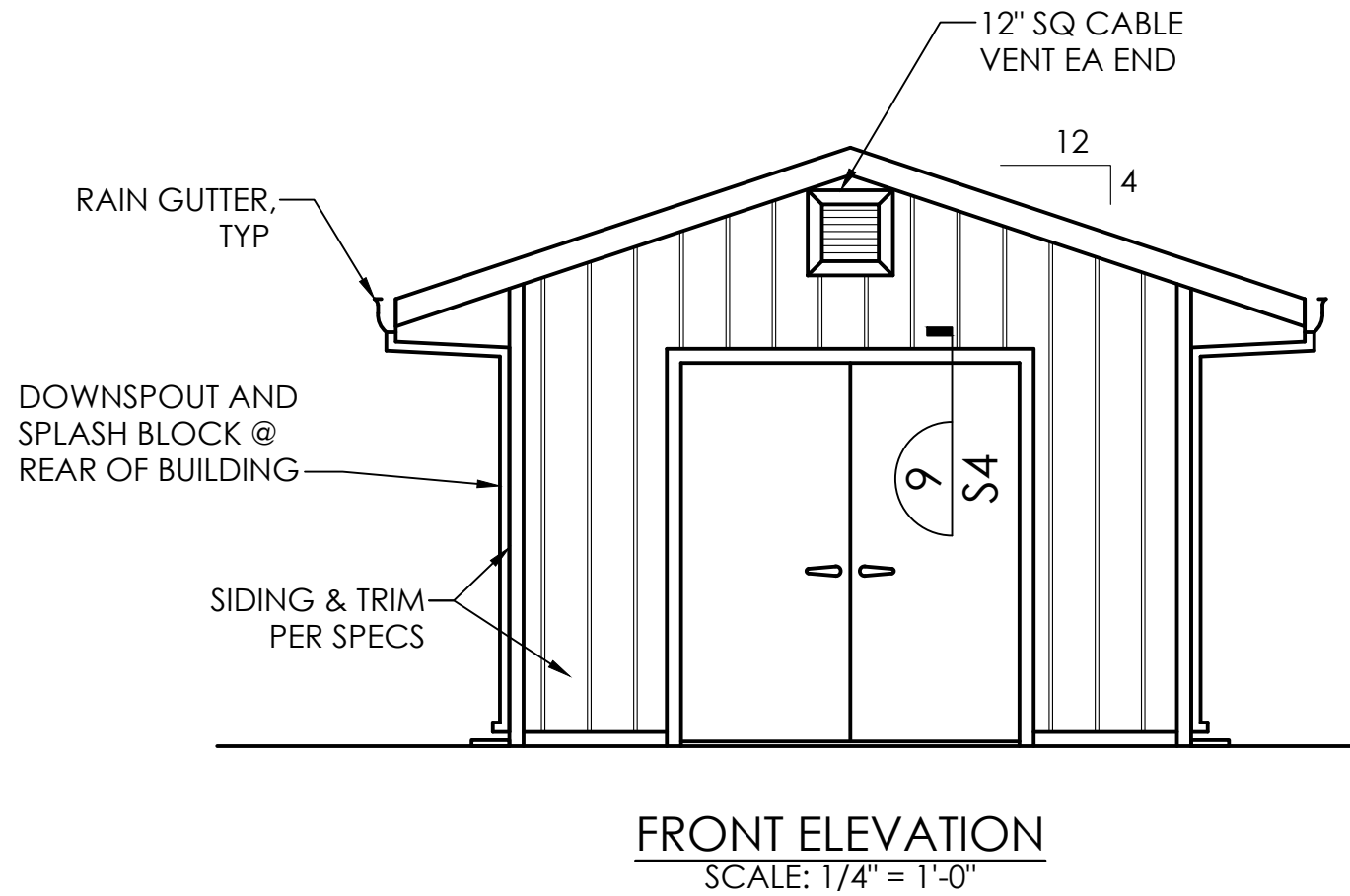
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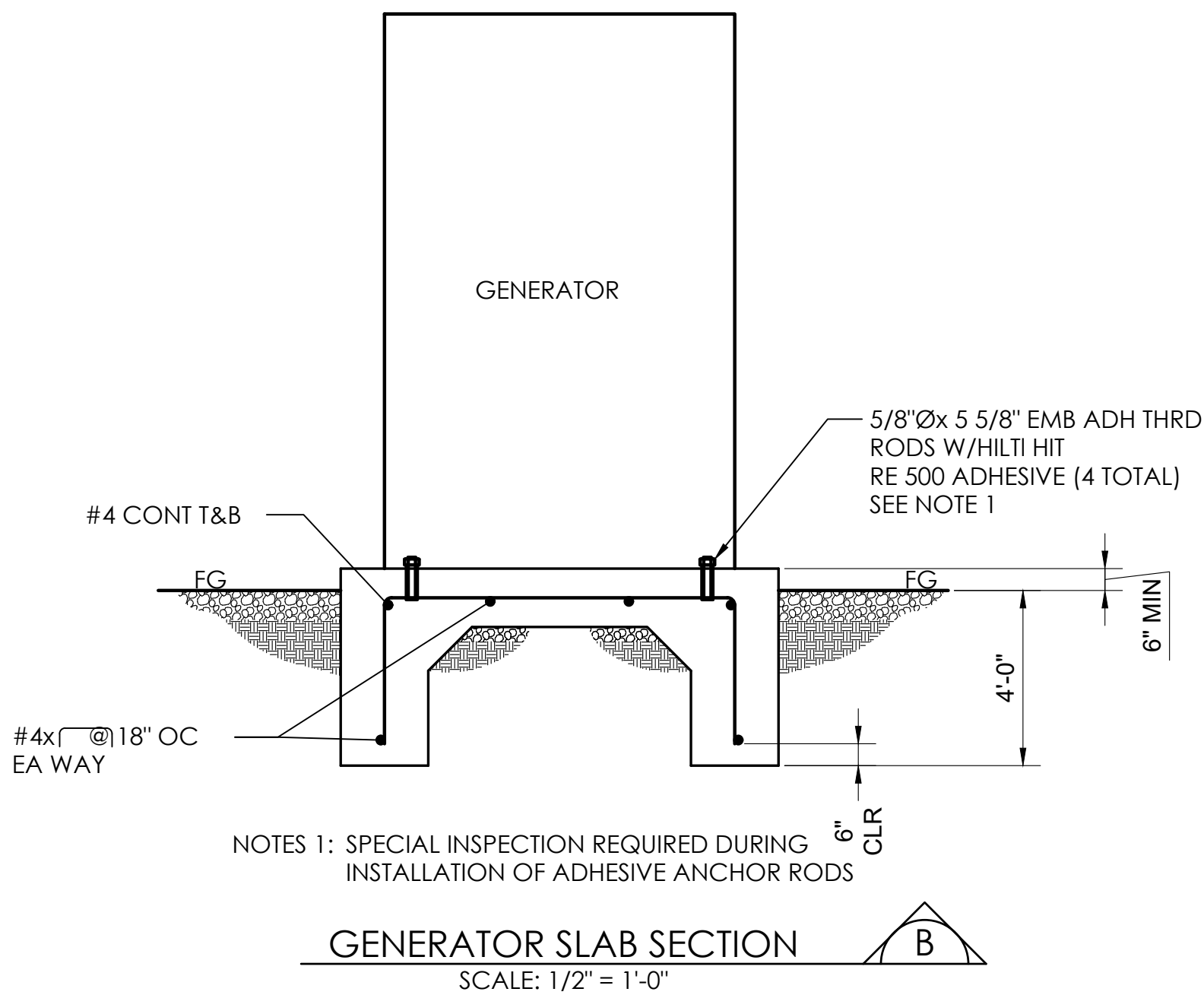
1. UNIT MUST HAVE FULL BOTTOM SUPPORT & SUMP MUST BE FILLED TO THE OVERFLOW BEFORE OPERATING UNIT.
2. ALL ATTACHED DUCTING MUST BE INDEPENDENTLY SUPPORTED. TEH DUCT WHICH CONNECTS TO THE GAS INLET MUST EITHER BE A HORIZONTAL DUCT RUN OR IT MUST DROP DOWN FROM A HIGHER ELEVATION BEFORE CONNECTING TO THE UNIT. ANY OTHER DUCT CONFIGURATIONS WILL IMPACT THE DESIGN OF THE GAS INLET AND MUST BE CALLED TO THE ATTENTION OF THE MANUFACTURER.
3. GAS INLET FLANGE SHALL BE MATCH DRILLED IN THE FIELD.
4. ALL FLANGES EXCEPT GAS INLET, GAS OUTLET, & ACCESS DOORS ARE 150 LB. DRILLED FLANGES & ALL COUPLINGS ARE THREADED.
5. MATERIALS OF CONSTRUCTION:
 - SCRUBBER, STACK - FRP VINYL ESTER RESIN
 - QUENCH - FRP VINYL ESTER RESIN
 - PACKED BED - NO. 2K TELLERETTE PACKING (P/P)
 - ENTRAINMENT SEPARATOR - CHEVRON (NOR'LY)
 - COUPLINGS - FRP
 - 150 LB. FLANGES - FRP
 - SPT SPRAY HEADER - SCH 80 CPVC
6. COLOR:
 - 100 MILL CORROSION BARRIER - NATURAL
 - STRUCTURAL LAYERS - NATURAL
 - EXTERIOR TOP COAT - GREY WITH UV INHIBITOR
7. RUBBER PAD ELEVATION CAN BE ADJUSTED TO SUIT THE HEIGHT OF THE PUMP SECTION.
8. NEOPRENE GASKETS & 18-8 S.S. BOLTING WILL BE FURNISHED FOR THE TOP COVER & ACCESS DOORS.
9. BOLT HOLES IN ROUND FLANGES SHALL STRADDLE NATURAL CENTERLINES.
10. FIELD INSTALL PACKING IN THE SCRUBBER WHERE DESIGNATED.
11. FIELD INSTALL THE GRATING WHICH SUPPORTS THE PACKED BED & THE CHEVRON BLADES USED IN THE ENTRAINMENT SEPARATOR.
12. UNIT WEIGHT: INSTALLED (DRY) = 6,800 LBS. APPROX.
 OPERATING (WET) = 18,740 LBS. APPROX.
13. THE SCRUBBER SUMP WILL BE HYDROTESTED TO THE OVERFLOW LEVEL IN THE SHOP.

PROJECT NUMBER 15-109	CITY OF COLUSA	 CALIFORNIA ENGINEERING COMPANY INC <small>ESTD. 1966</small>	AIR STRIPPER DETAILS WATER WELL AND TREATMENT PLANS	CIVIL ENGINEERING LAND SURVEYING FUNDING REQUIREMENT CONSTRUCTION ADMINISTRATION www.cecusa.net		DATE: 7/22/2025	NO.	DATE	DESCRIPTION
						SCALE: 1"=10'			
						DRAWN BY: DDI			
						DESIGNED BY: DDI			
						CHECKED BY: DLS			

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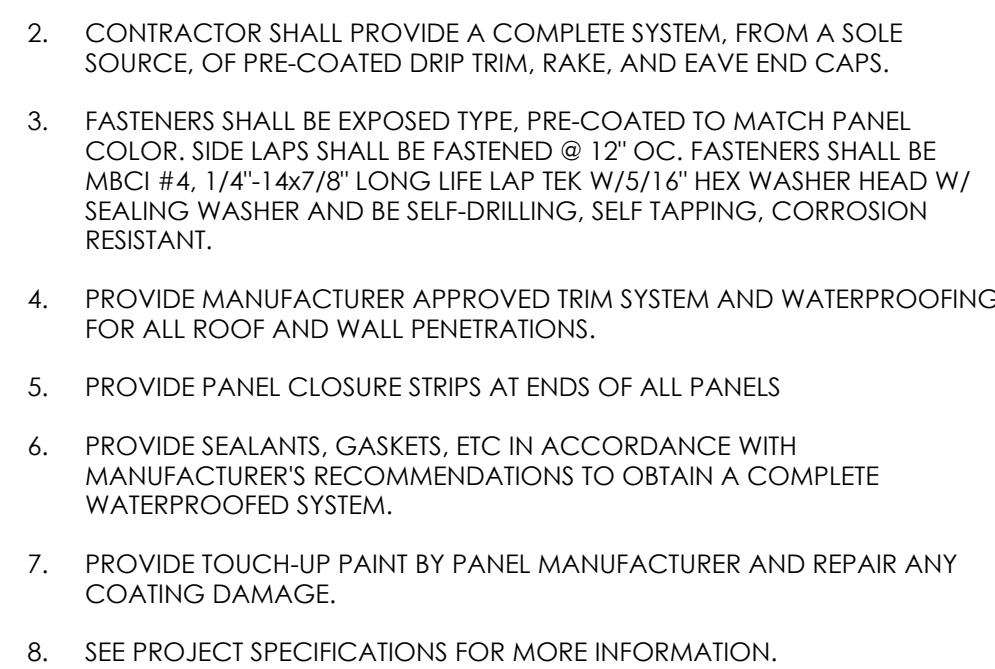




- NOTES:
1. PROVIDE LTT19 HOLDOWN TO DBL STUD. PROVIDE SSTB16 A. BOLT, TYP
 2. PROVIDE R-13 BATT INSULATION IN WALLS AND R-30 BATT INSULATION ABOVE CEILING.

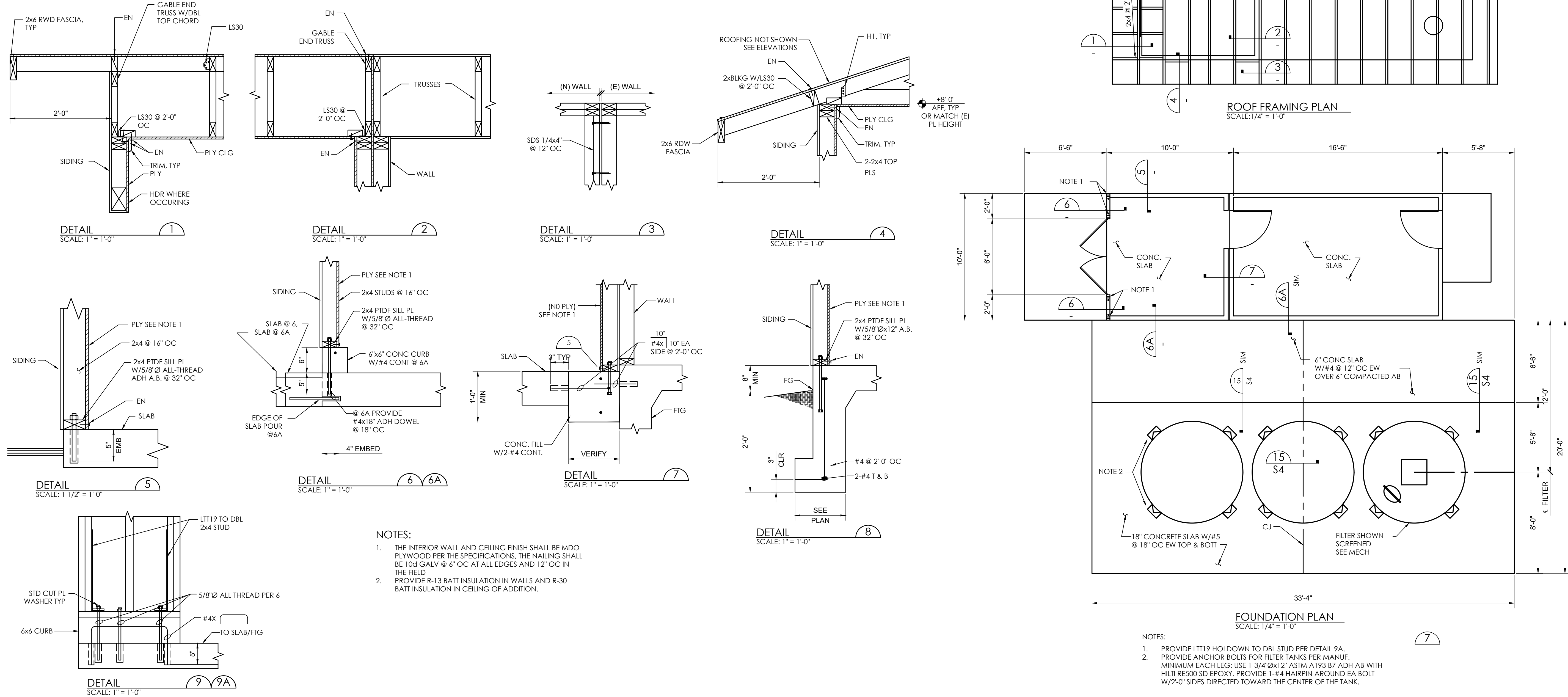


PROJECT NUMBER	CITY OF COLUSA	DESCRIPTION
15-109	GENERATOR AND BUILDING DETAILS	NO. DATE
		DATE: 7/22/2025 SCALE: 1"=10' DRAWN BY: DDJ DESIGNED BY: DDJ CHECKED BY: DLS
SHEET D7 OF 12	WATER WELL AND TREATMENT PLANS	REGISTERED PROFESSIONAL ENGINEER DAVID LYNDOLPH No. 93840 www.cecusa.net
		CIVIL ENGINEERING LAND SURVEYING FUNDING PROCUREMENT CONSTRUCTION ADMINISTRATION www.cecusa.net ESTD 1985 1110 Civic Center Blvd., Suite 404 Yuba City, CA 95993 (530) 751-0952 Office

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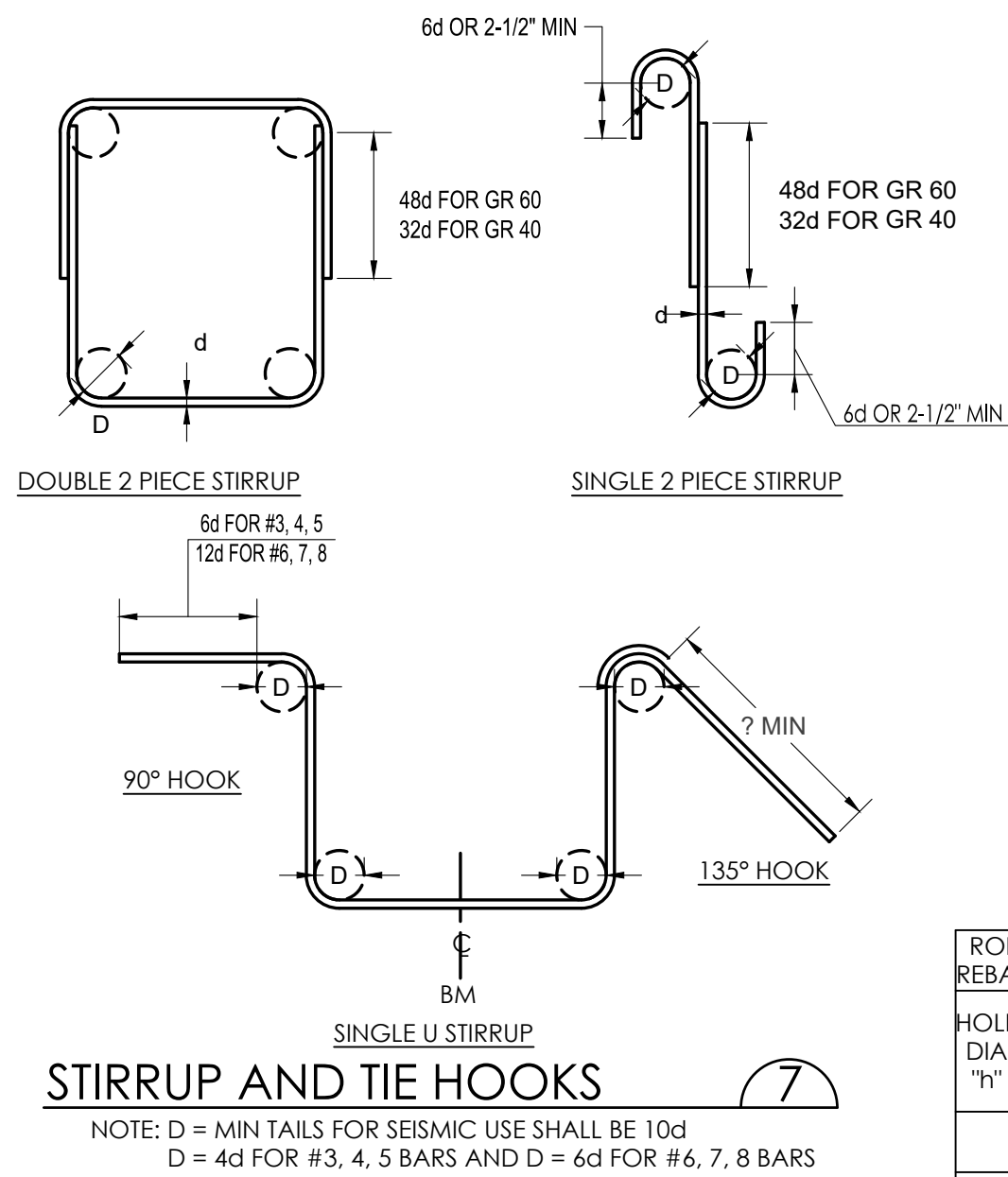
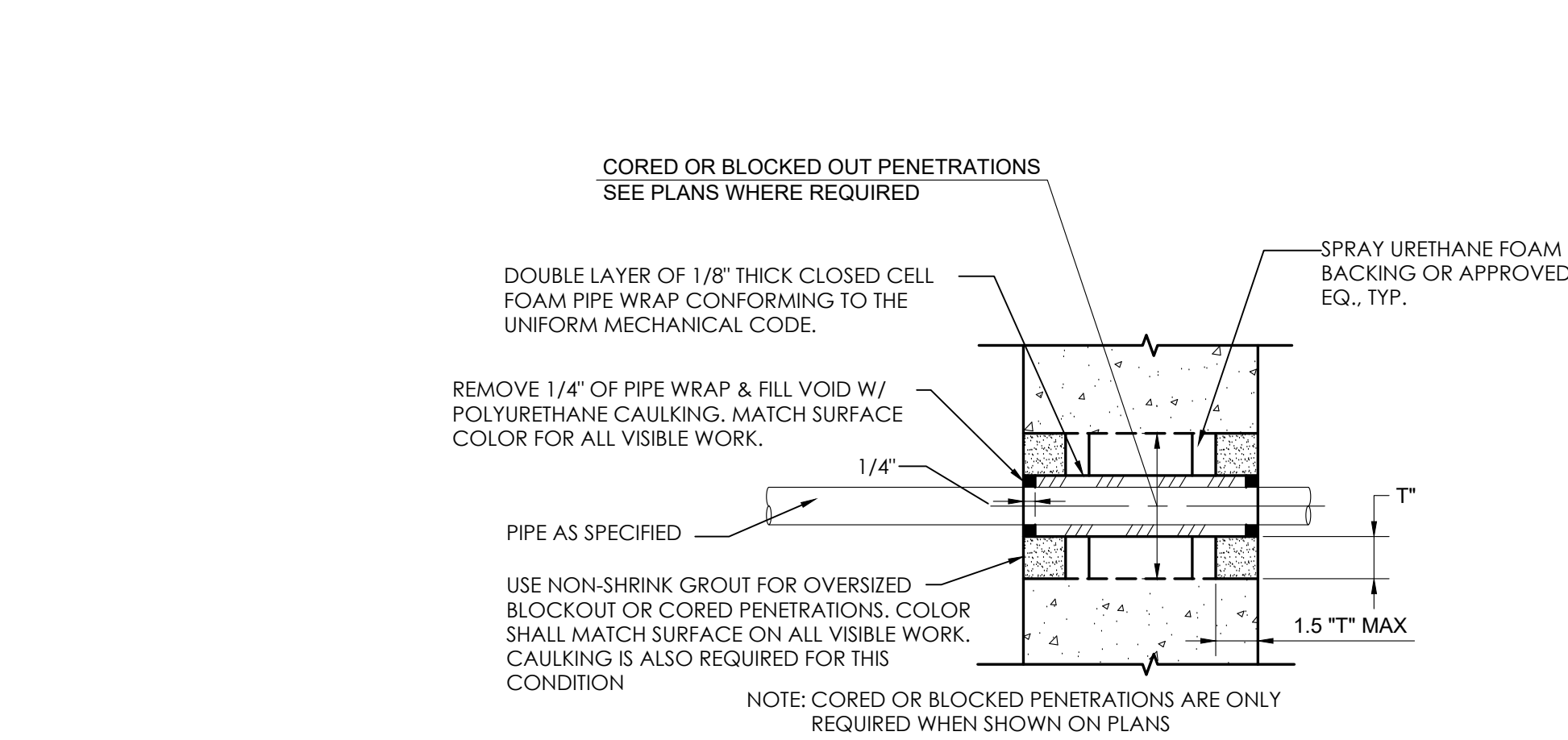


PROJECT NUMBER	CITY OF COLUSA	 CALIFORNIA ENGINEERING COMPANY, INC. <small>ESTD. 1986</small>	WELL HEAD BUILDING DETAILS	WATER WELL AND TREATMENT PLANS	DATE: 7/22/2025 SCALE: 1"=10' DRAWN BY: DDL DESIGNED BY: DDL CHECKED BY: DLS		NO. _____ DATE _____ DESCRIPTION _____
SHEET D8 OF 12							



PROJECT NUMBER 15-109	CITY OF COLUSA	 CALIFORNIA ENGINEERING COMPANY INC <small>ESTD 1986</small>	CIVIL ENGINEERING LAND SURVEYING FUNDING PROCUREMENT CONSTRUCTION ADMINISTRATION www.cceusa.net		DATE: 7/22/2025 SCALE: 1"=10' DRAWN BY: DDL DESIGNED BY: DDL CHECKED BY: DLS	NO.	DATE	DESCRIPTION
SHEET D9 OF 12		CHEM AND CTRL BUILDING DETAILS WATER WELL AND TREATMENT PLANS						

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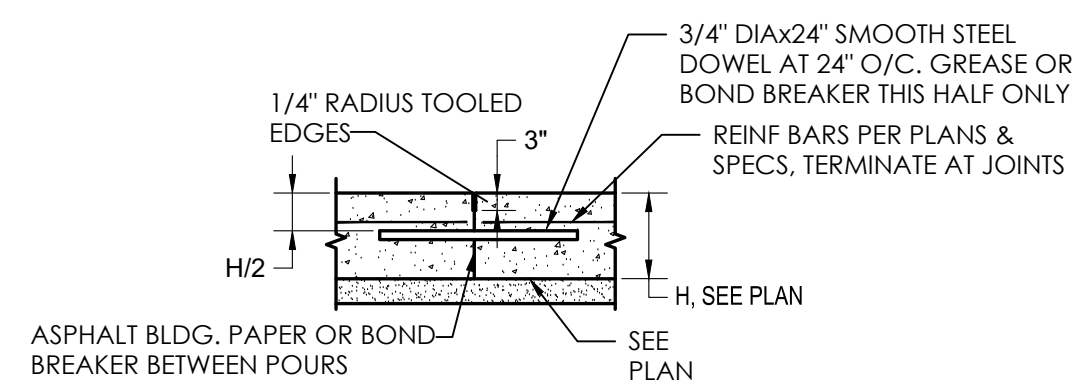
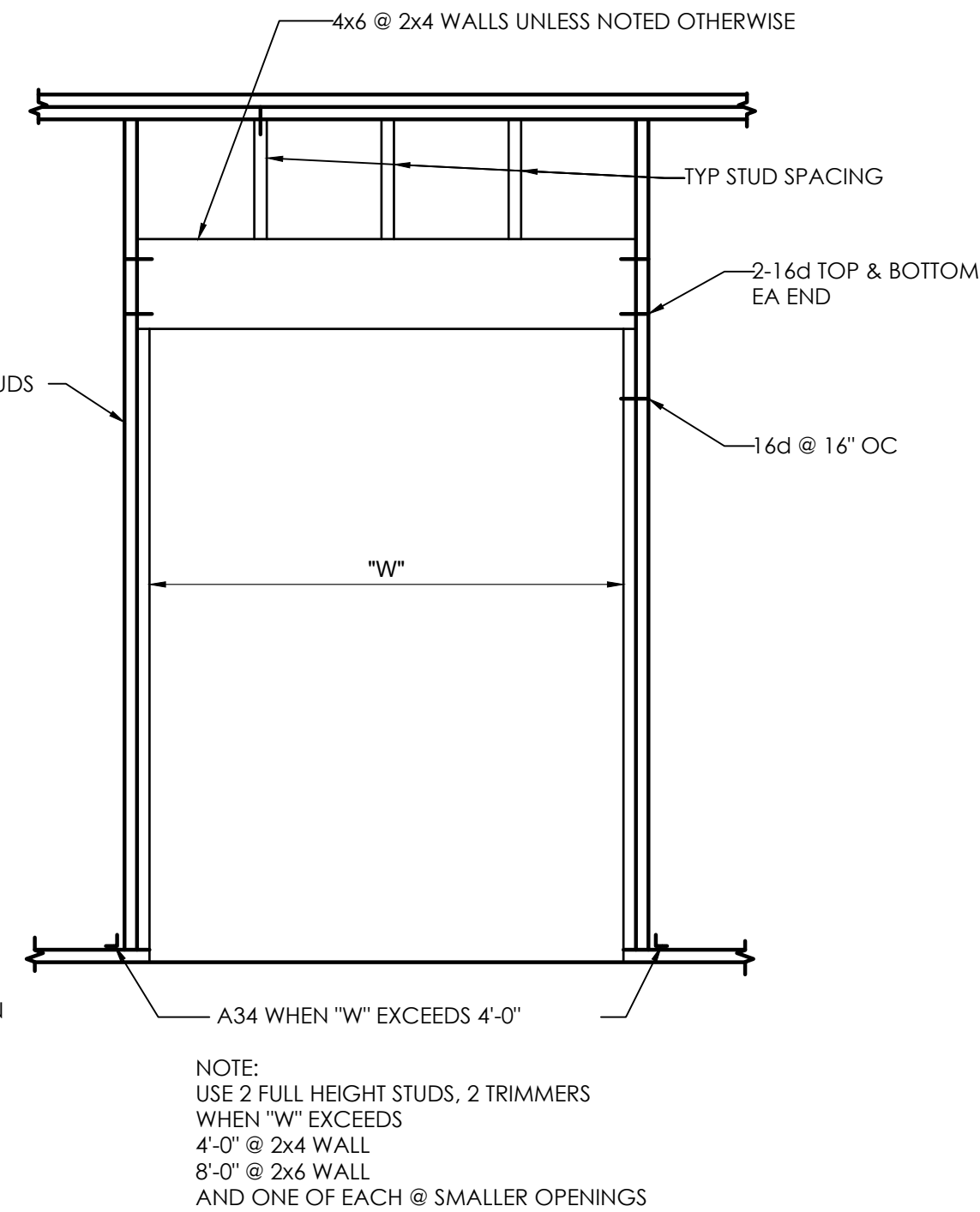
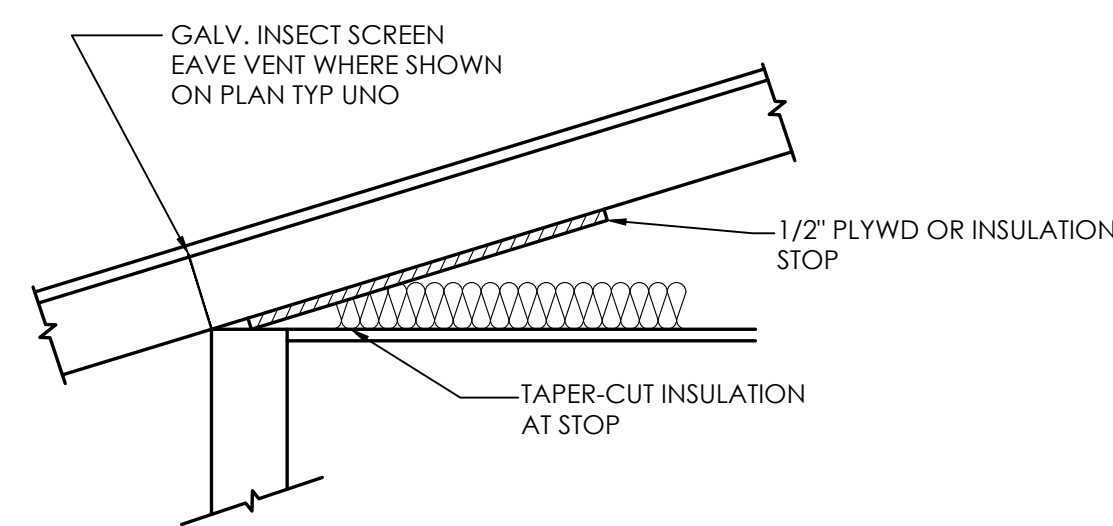
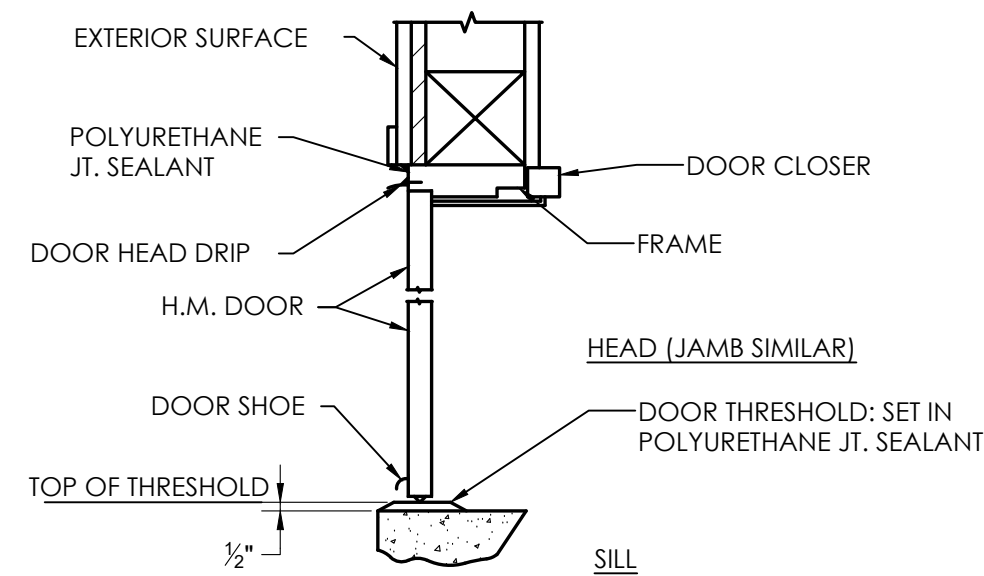
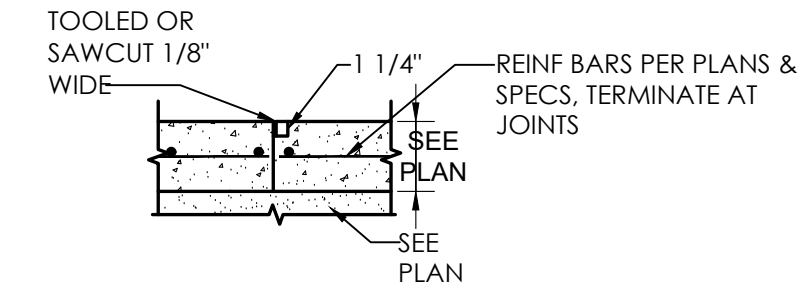
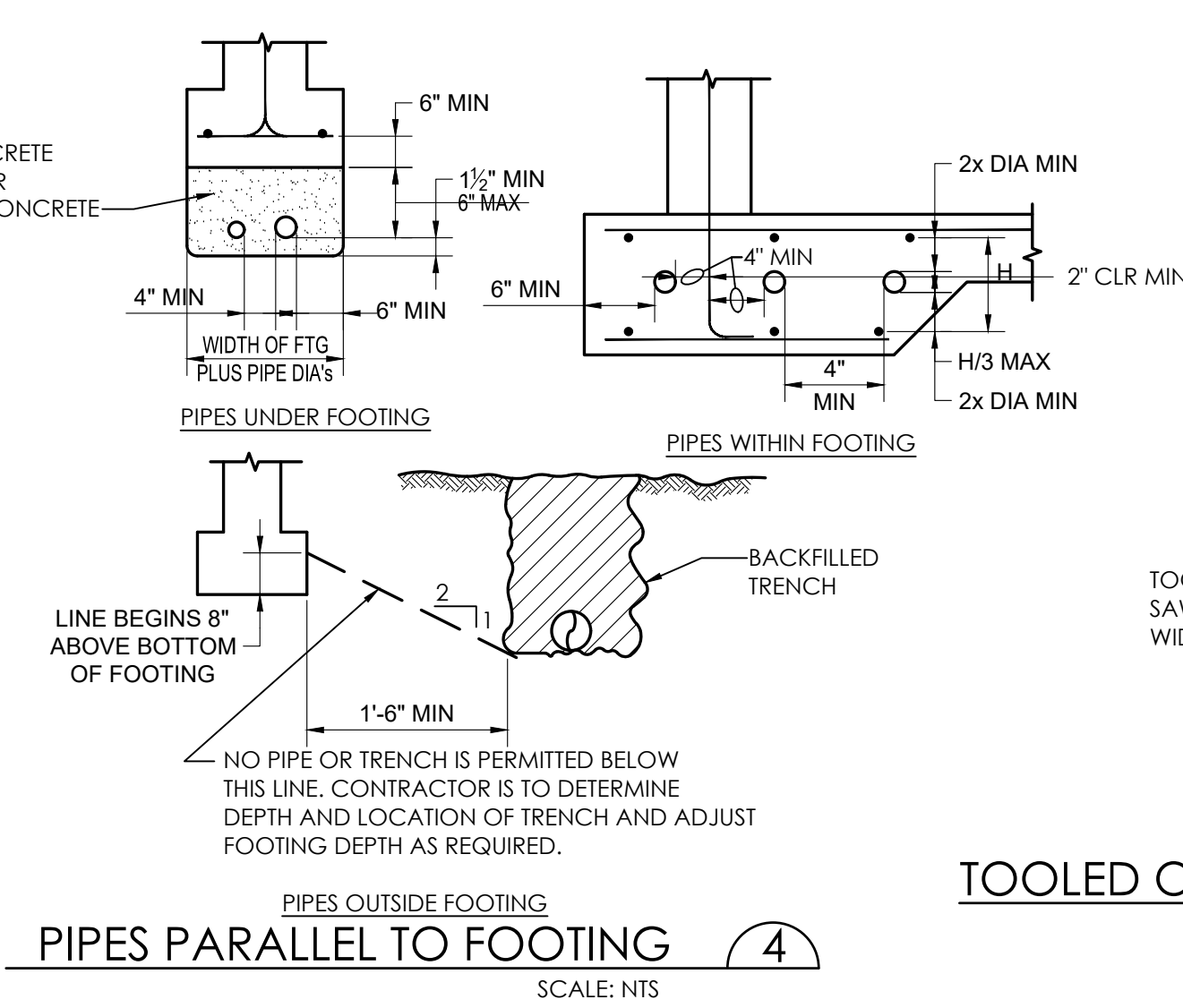
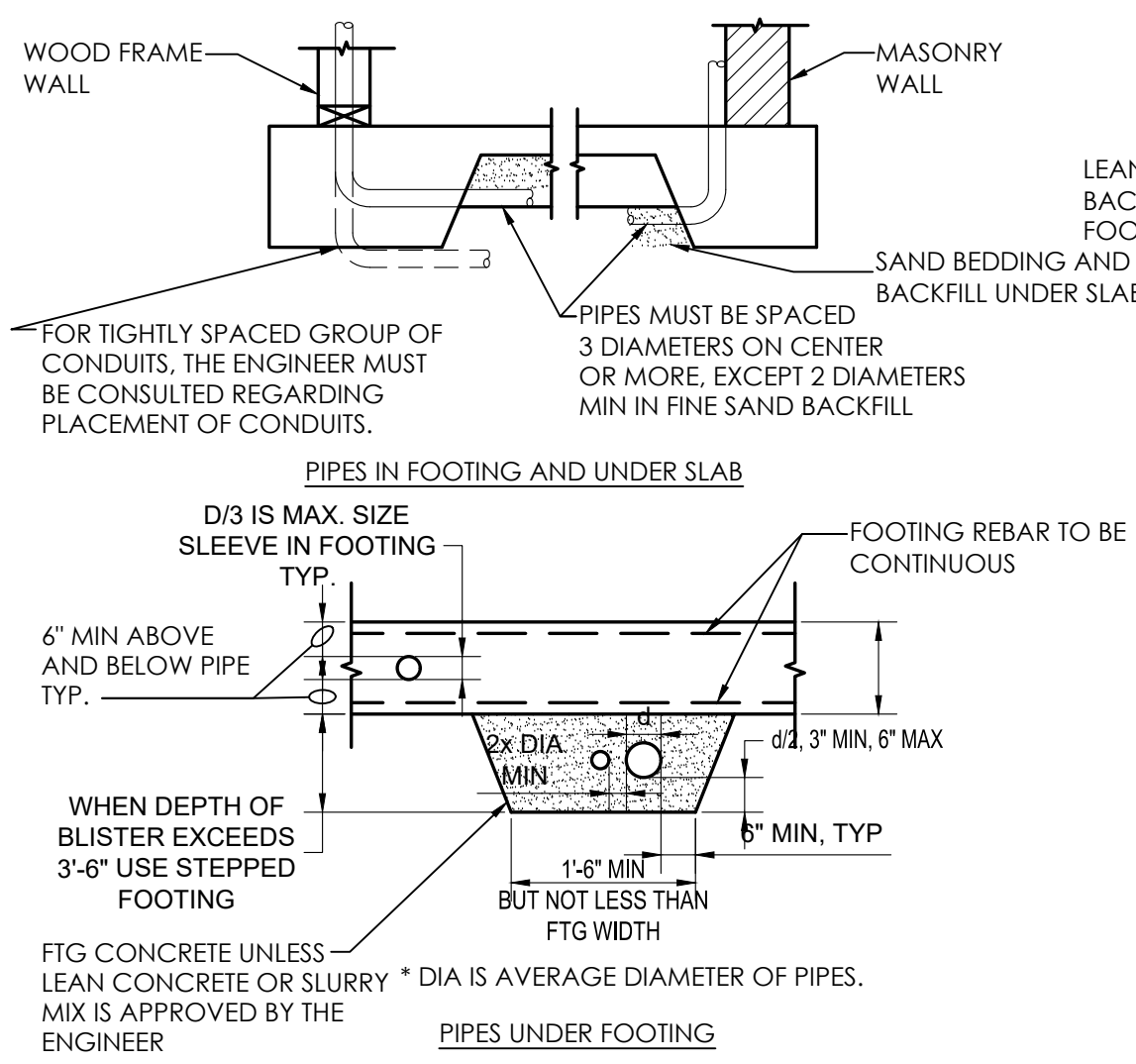
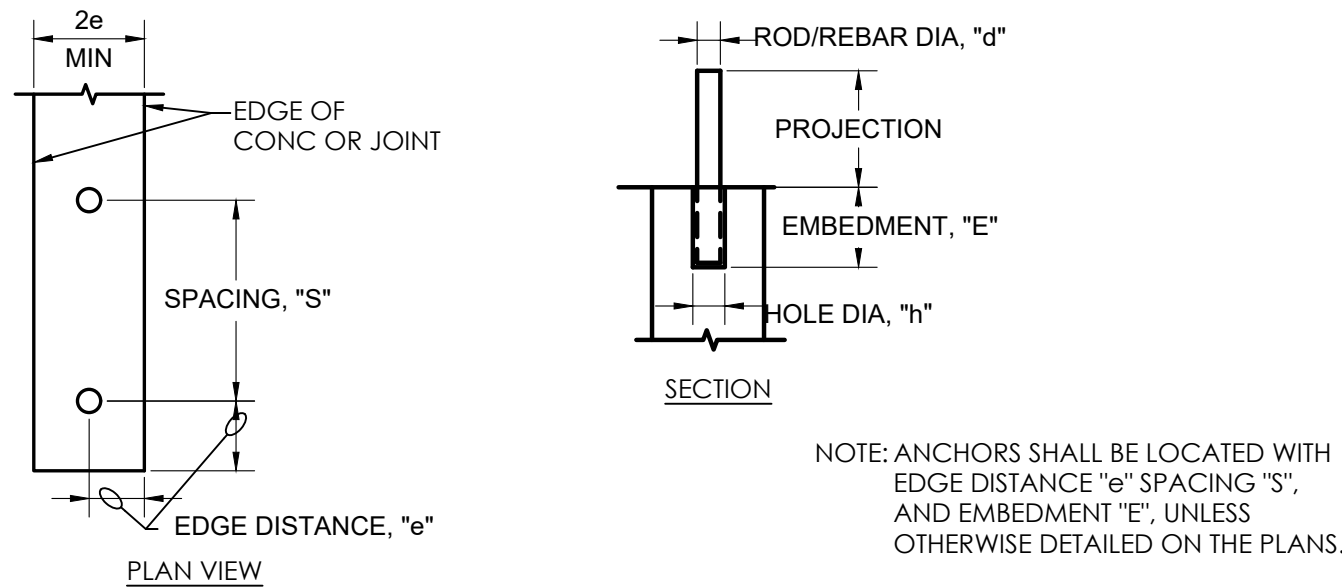
STANDARD REBAR BENDS

NOTE: D = 6d FOR #3 THRU #8 BARS
D = 8d FOR #9, 10, 11 BARS

SCALE: NTS

ROD OR REBAR DIA	GENERATOR ADH ANCHOR SUPPORT (1)						TYPICAL ADH ANCHOR (2)					
	3/8	1/2	5/8	3/4	7/8	1	3/8	1/2	5/8	3/4	7/8	1
HOLDER DIA "H"	7/16	9/16	3/4	7/8	1	1 1/8	7/16	9/16	3/4	7/8	1	1 1/8
REBAR DIA "H"	1/2	5/8	3/4	7/8	1	1 1/8	/	9/16	/	7/8	/	1 1/8
E	3 3/8	4 1/2	5 5/8	6 3/4	7 7/8	9	3 1/2	4 1/4	5	6 3/4	7 3/4	9
e	5 1/16	6 3/4	8 7/16	10 1/8	11 13/16	13 1/2	5 1/4	6 3/8	7 1/2	10 1/8	11 5/8	13 1/2
S	5 1/16	6 3/4	8 7/16	10 1/8	11 13/16	13 1/2	5 1/4	6 3/8	7 1/2	10 1/8	11 5/8	13 1/2

- (1) GENERATOR SUPPORT ADH ANCHOR BOLTS SHALL BE HIL TI-HIT RE 500 ADHESIVE ANCHORS INSTALLED IN PROPERLY CLEANED HOLES IN ACCORDANCE WITH ICC REPORT NO ESR-2322
- (2) TYPICAL ADH ANCHOR BOLTS SHALL BE SIMPSON SET-XP ADHESIVE ANCHORS INSTALLED IN PROPERLY CLEANED HOLES IN ACCORDANCE WITH ICC REPORT NO ESR-2508. THESE ANCHORS ARE NOT SUITABLE FOR SUBMERGED APPLICATIONS.
- (3) ANCHOR ROD SHALL BE ZINC PLATED THREADED A36 STEEL. SS ADH AB SHALL USE TYPE 304 STAINLESS STEEL THREADED ROD U.N.O. EMBEDDED ENDS SHALL HAVE A 45° CHAMFER.



IS SPLICE LENGTH TABLE (SEE NOTES)													28 DAY DESIGN COMPR STRENGTH			
BAR SIZE	3	4	5	6	7	8	9	10	11	2	3					
MIN COVER	3/4	3/4	3/4	1	1	1	2	2 1/2	2	2 1/2	1	2	3			
TOP BAR	26	34	43	51	61	81	69	146	102	77	185	130	93	227	159	114
OTHER	20	27	33	39	48	62	53	111	78	59	142	99	71	174	123	87
TOP BAR	23	31	39	46	55	73	62	131	91	69	166	117	84	204	143	102
OTHER	18	24	30	35	43	56	47	100	70	53	128	89	64	156	110	78
TOP BAR	21	28	35	42	50	66	56	119	83	63	151	106	76	185	130	93
OTHER	16	22	27	32	39	51	43	91	64	48	116	81	58	142	100	71
TOP BAR	18	24	30	36	43	57	48	103	72	55	131	92	65	160	112	80
OTHER	16	19	23	28	33	44	37	79	56	42	101	70	50	123	86	62

CONCRETE REINF. SPLICE TABLE

SCALE: NTS

PROJECT NUMBER		SHEET D10 of 12	
15-109			
CITY OF COLUSA		BUILDING DETAILS	
WATER WELL AND TREATMENT PLANS			
CALIFORNIA ENGINEERING COMPANY INC		CIVIL ENGINEERING LAND SURVEYING FUNDING PRODUCTION CONSTRUCTION ADMINISTRATION www.cecusa.net ESTD 1965	
1110 Civic Center Blvd, Suite 404 Yuba City, CA 95993 (530) 751-0952 Office		REGISTERED PROFESSIONAL ENGINEER DAVID LYNDOLPH No. 93840 STATE OF CALIFORNIA	
DATE: 7/22/2025		SCALE: 1"=10'	
DRAWN BY: DJL		DESIGNED BY: DJL	
CHECKED BY: DLS		NO.:	
DATE:		DESCRIPTION	

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[illegible]

10x6 OVERFLOW
SEE
4
D12

30" FLG MANWAY,
TYP OF 4

8" WSP TANK DRAIN
W/ GV & PIPE SUPPORT

MIN 1'-4"
AIR GAP
TO RIM

4' DIA SLUDGE MANHOLE
ENCASED IN CONC MIN
6" ALL AROUND
RIM ELEV 78.5
BOTTOM ELEV 74.0
4" OUTLET INV 74.5

CEMENT CONTOUR
INV TO 4" OUTLET

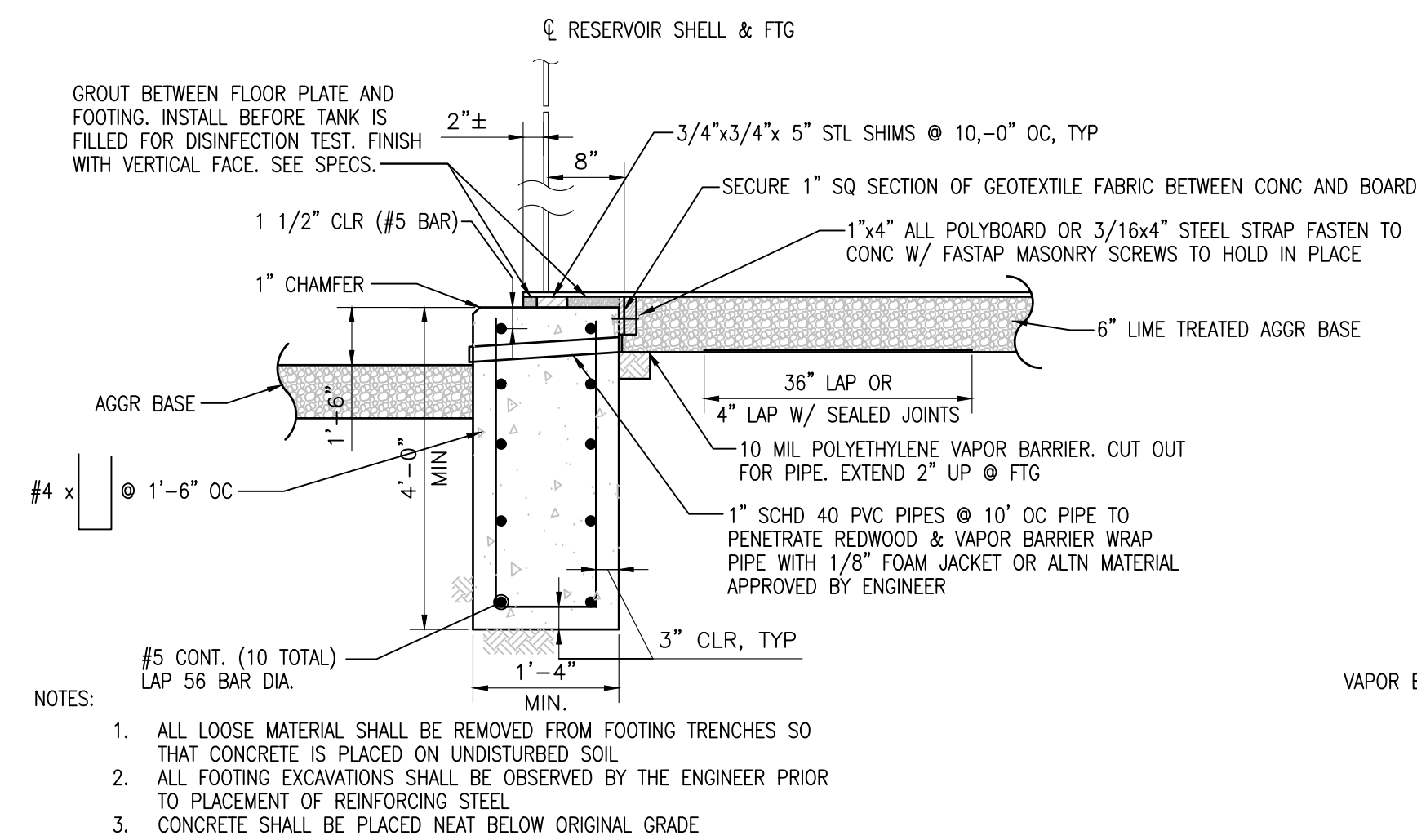
6" WSP OVERFLOW ENCASED IN
CONC MIN 6" ALL AROUND

6" WSP OUTLET ENCASED IN
CONC MIN 6" ALL AROUND

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

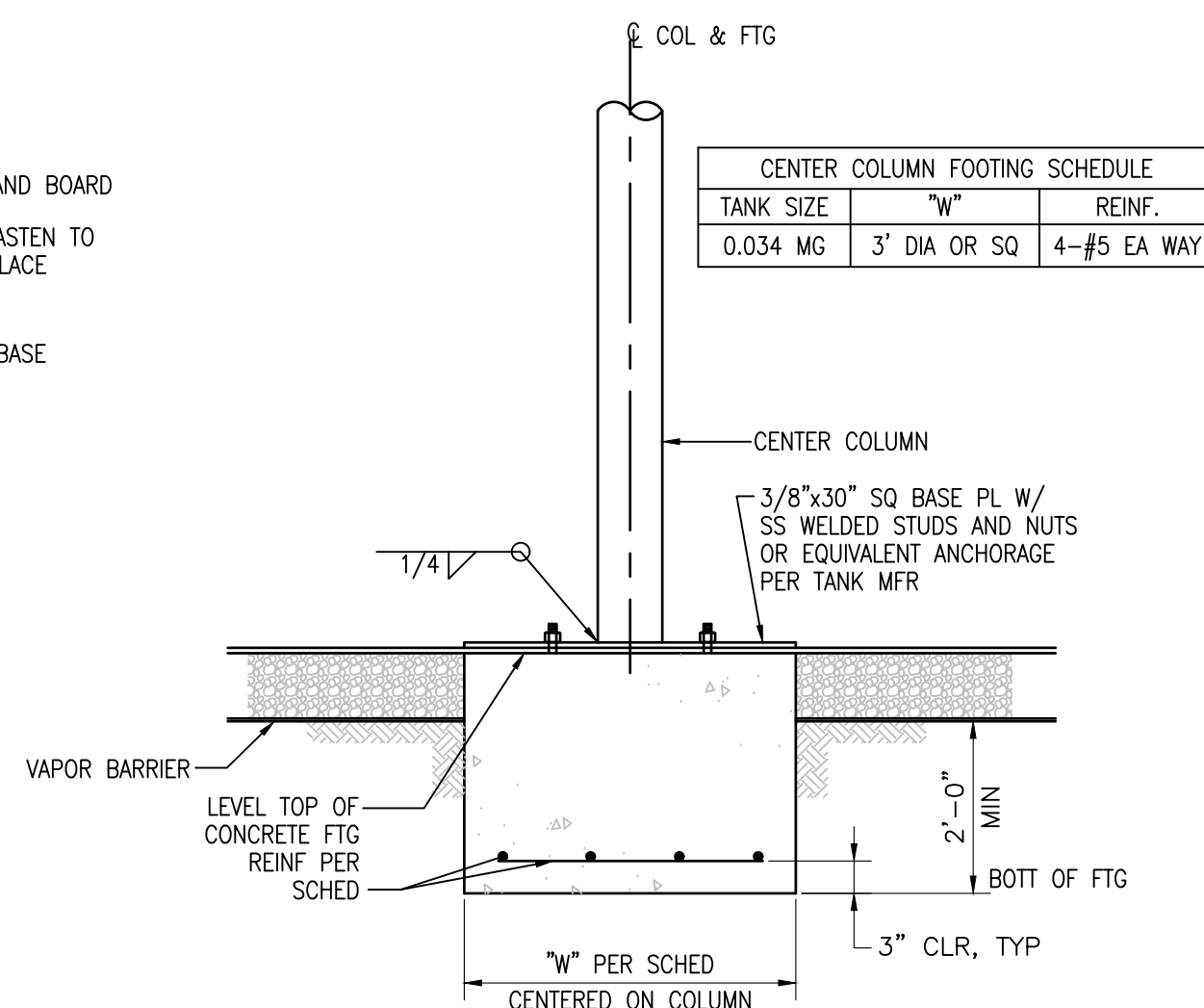
PROJECT NUMBER 15-109	CITY OF COLUSA BACKWASH TANK DETAILS	CIVIL ENGINEERING LAND SURVEYING FUNDING PROCUREMENT CONSTRUCTION ADMINISTRATION www.cccusa.net CALIFORNIA ENGINEERING COMPANY INC. ESTD 1986		DATE:	7/22/2025	NO.	DATE	DESCRIPTION
				SCALE:	1"=10'			
				DRAWN BY:	DDL			
				DESIGNED BY:	DDL			
				CHECKED BY:	DLS			
SHEET D11 of 12	CITY OF COLUSA	1110 Civic Center Blvd. Suite 404 Yuba City, CA 95693 (530) 751-0952 Office						

FOR BIDDING PURPOSES, TO BE DESIGNED
AND SPECIFIED BY MANUFACTURER

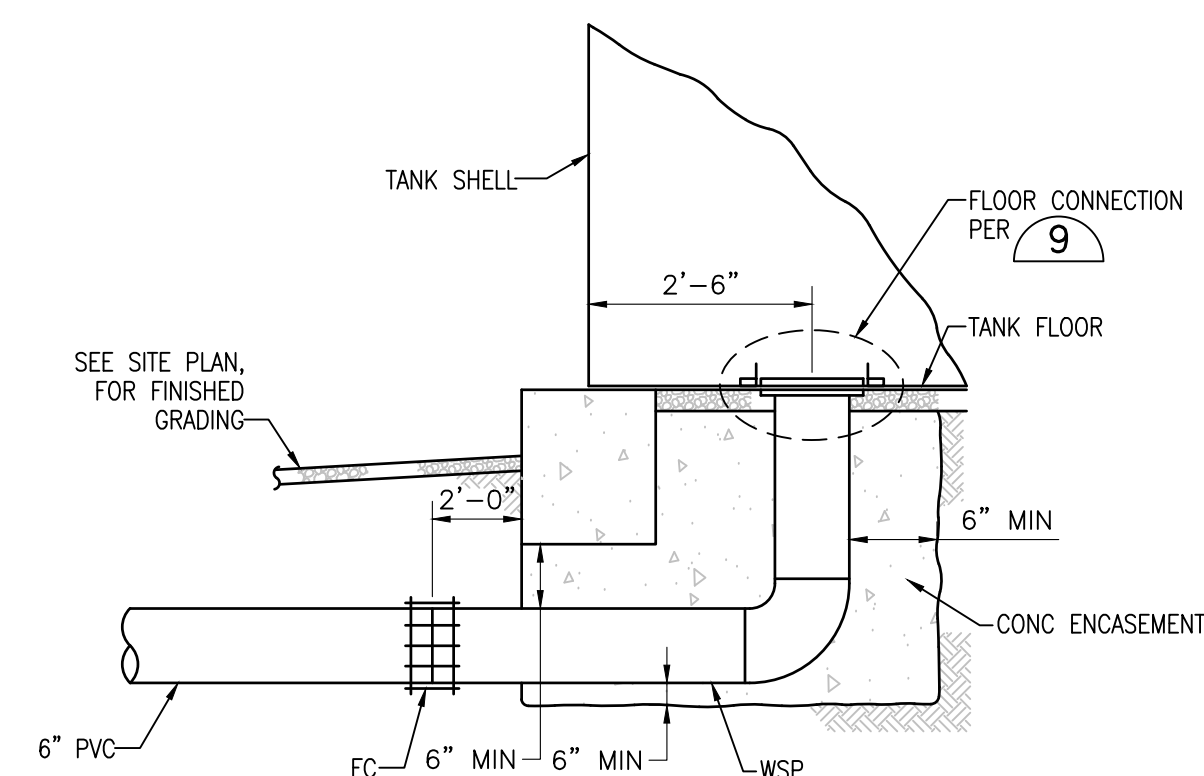


RING FOOTING DETAIL

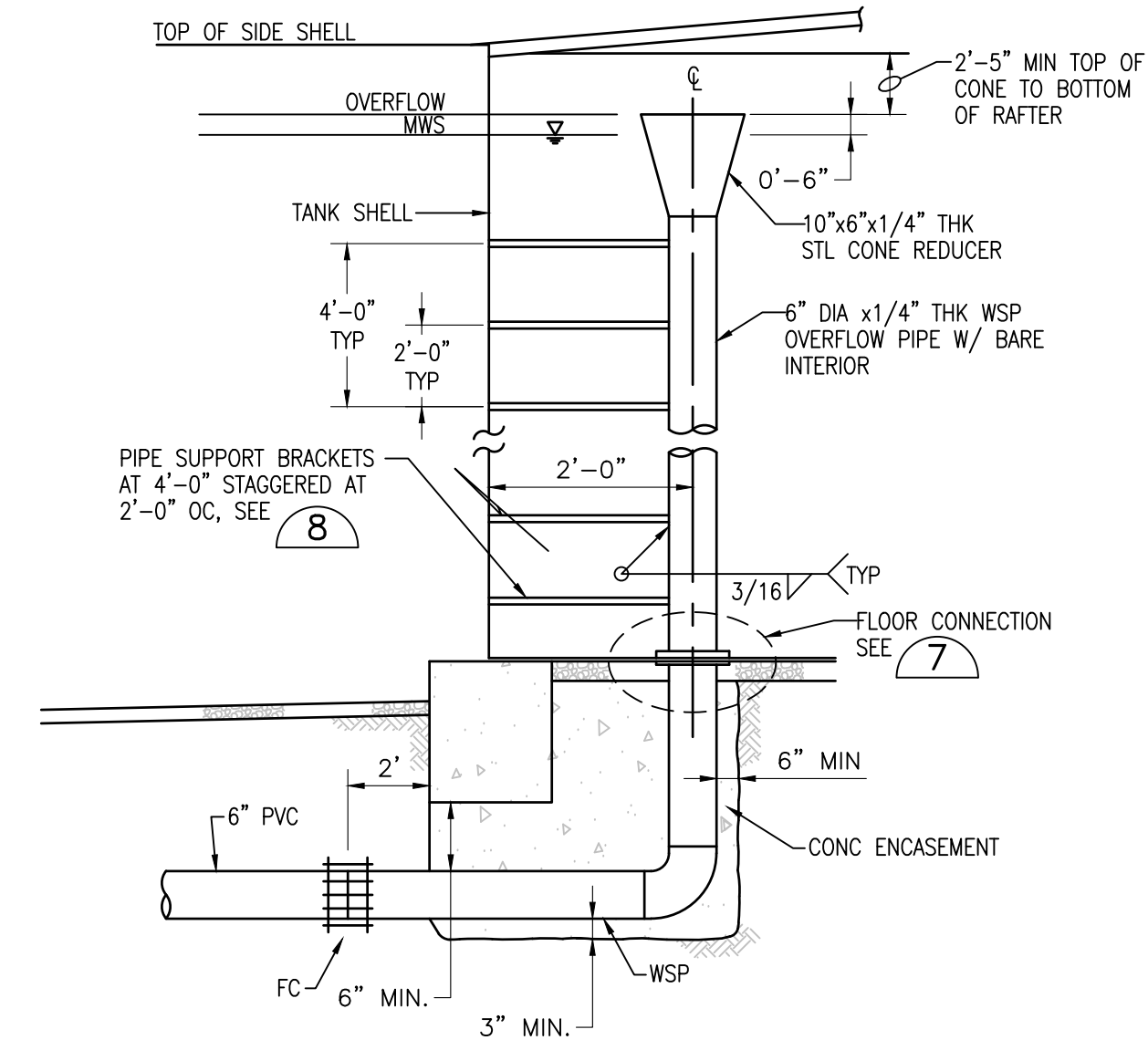
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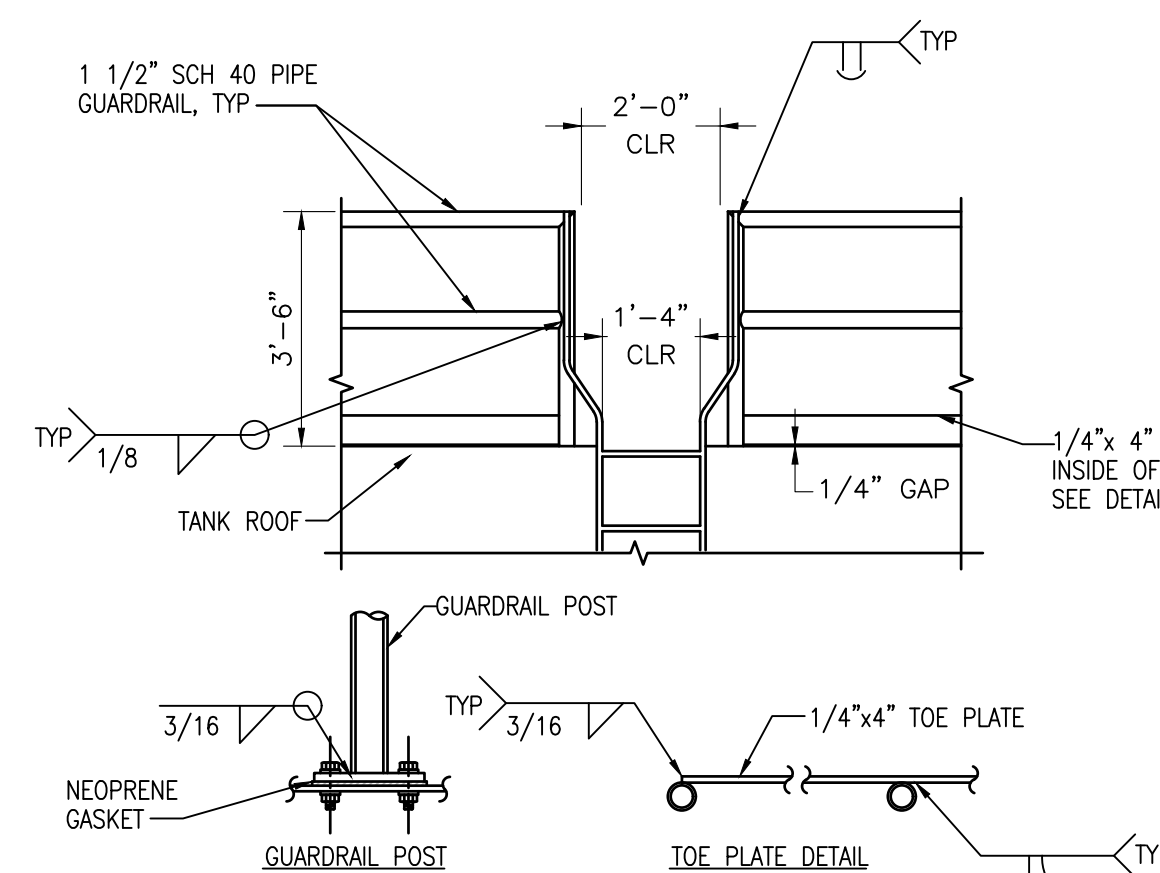
OPTIONAL CENTER COLUMN 2



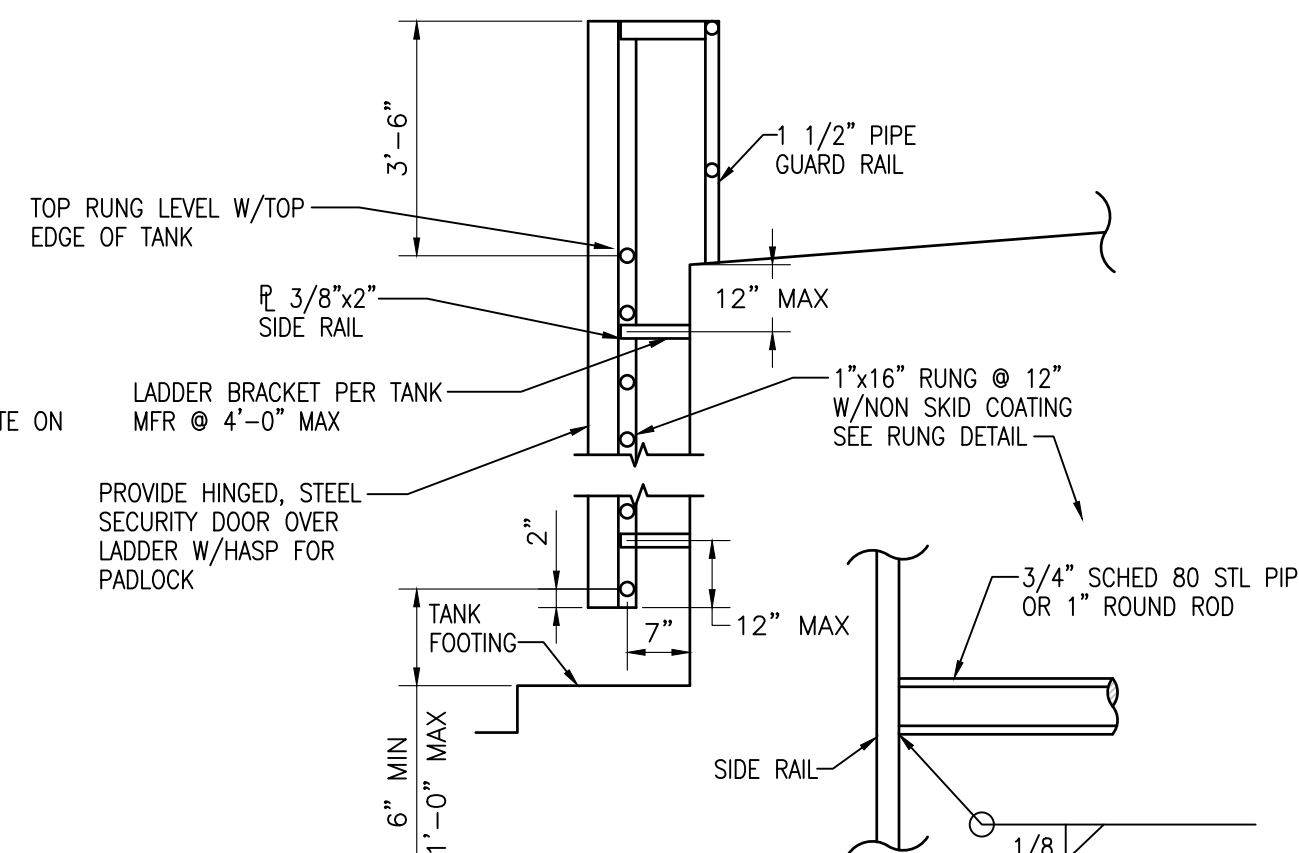
OUTLET PIPE DETAIL 3



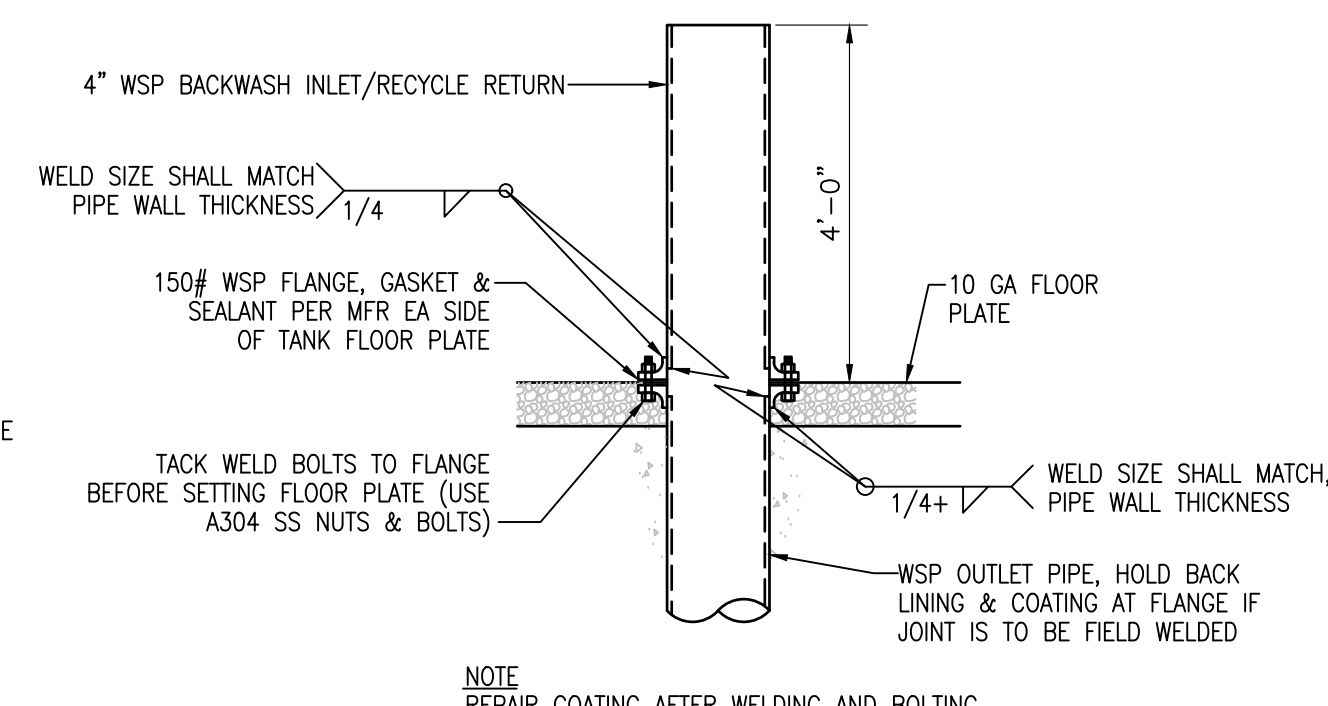
OVERFLOW PIPE DETAIL 4



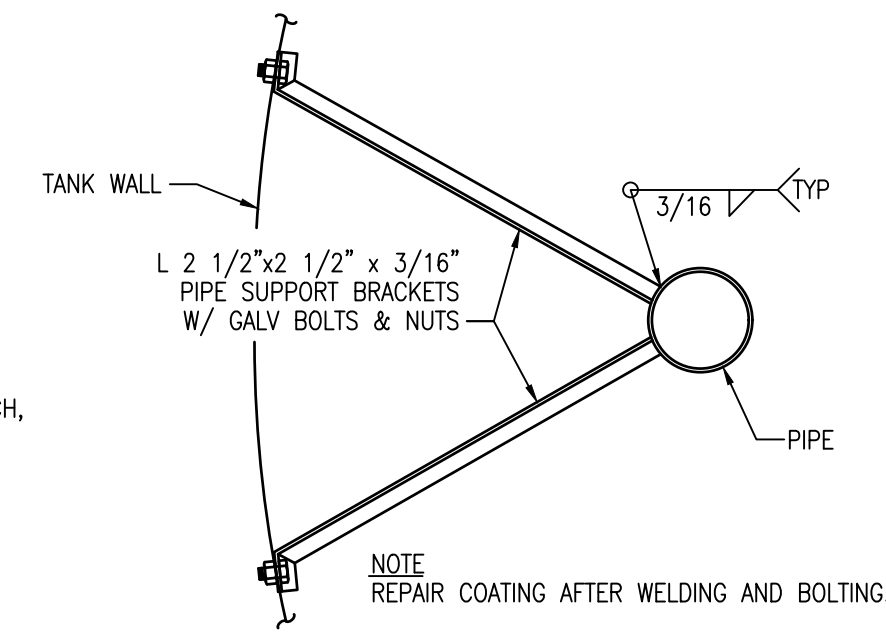
TOP LANDING 5
SCALE: N.T.S.




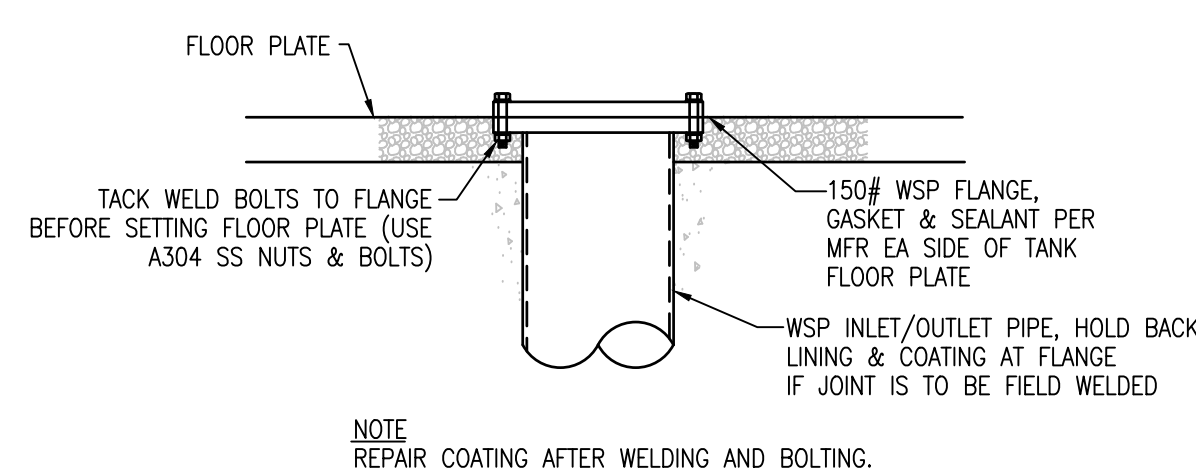
LADDER DETAIL 6
SCALE: N.T.S.



INLET/RECYCLE PIPE FLOOR CONNECTION (7)
SCALE: N.T.S.

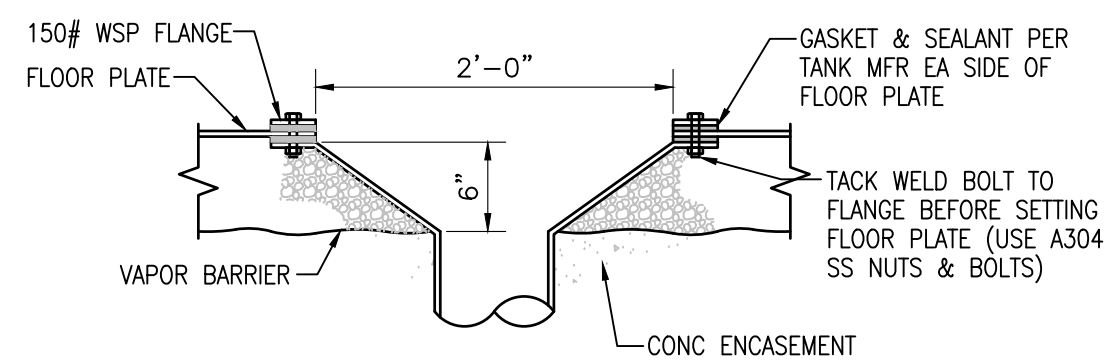


PIPE SUPPORT 
SCALE: 1/2" = 1'-0"

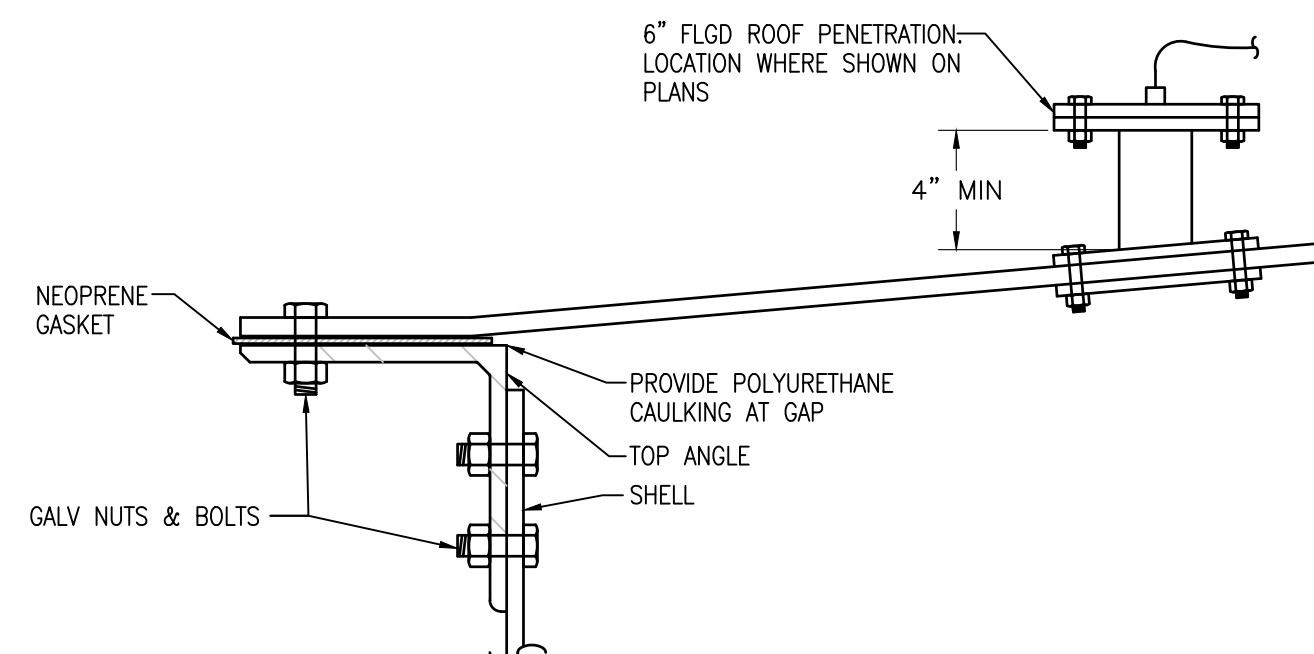


OUTLET PIPE FLOOR CONNECTION 9

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



SUMP DETAIL 10
SCALE: 1" = 1'-0"



ROOF PL/SHELL CONNECTION DETAIL (11)

CENTER COLUMN FOOTING SCHEDULE		
TANK SIZE	"W"	REINF.
0.034 MG	3' DIA OR SQ	4-#5 EA WAY

DATE:	7/22/2025	NO.	DATE	DESCRIPTION
SCALE:	1"=10'			
DRAWN BY:	DDI			
DESIGNED BY:	DDI			
CHECKED BY:	DLS			

CALIFORNIA
ENGINEERING
C O M P A N Y I N C
ESTD 1886

CIVIL ENGINEERING
LAND SURVEYING
FUNDING PROCUREMENT
CONSTRUCTION ADMINISTRATION
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1110 Civic Center Blvd., Suite 404 | Yuba City, CA 95993 | (530) 751-0952 Office

CITY OF COLUSA

BACKWASH TANK DETAILS

WATER WELL AND TREATMENT PLANS

PROJECT NUMBER
15-109
SHEET D12 OF 12

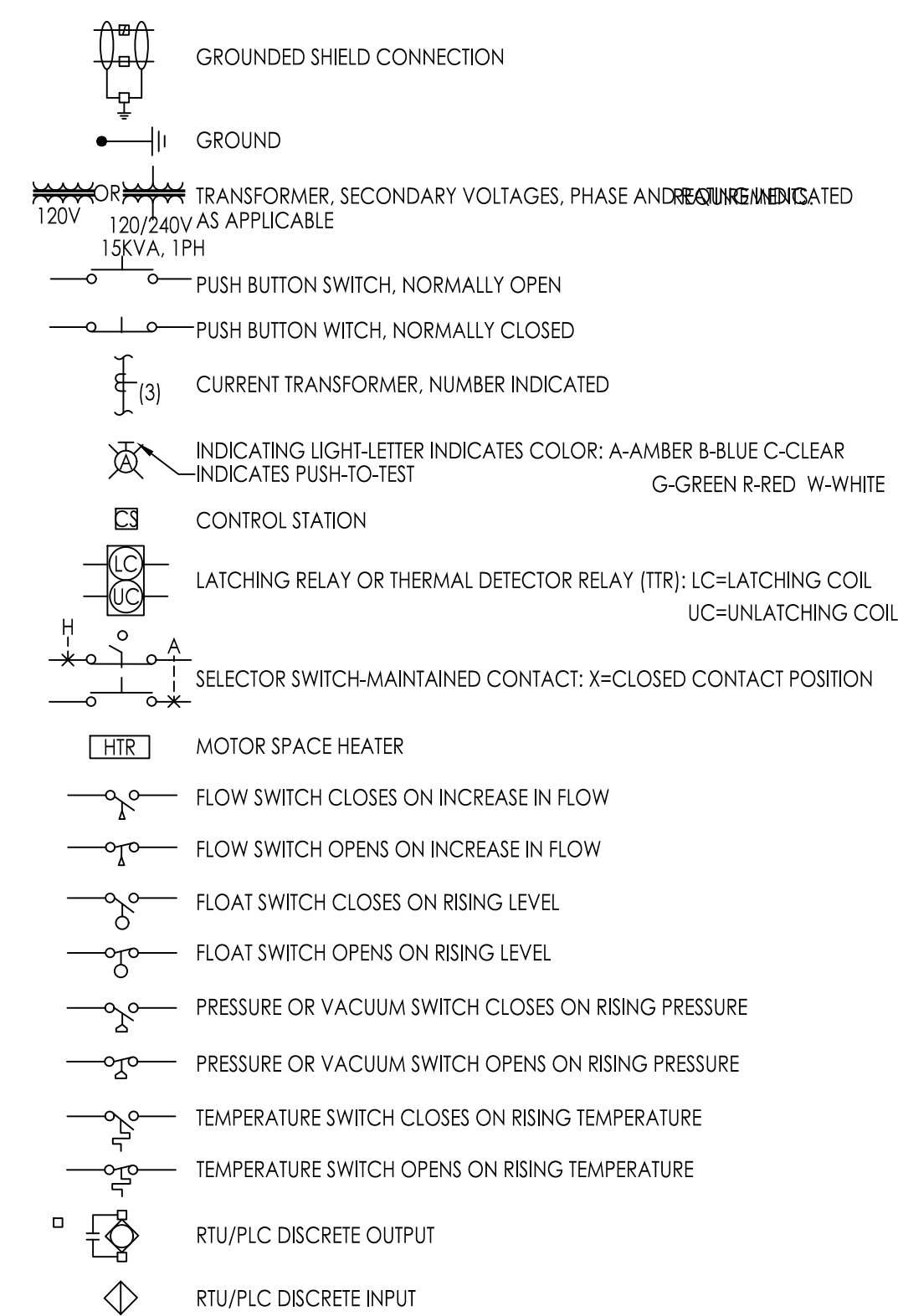


PANEL CL

PANEL L

ELECTRICAL SYMBOLS

- | | | |
|----------------|--|---|
| ----- | CONDUIT EXPOSED | |
| ----- | CONDUIT CONCEALED OR BURIED | |
| == | CROSSHATCHES ON CONDUIT RUN INDICATES NUMBER OF #12 CONDUCTORS | |
| == | CROSSHATCHES W/ BARS INDICATE NUMBER OF #10 CONDUCTORS | |
| ==G | SUBSCRIPT G INDICATES GREEN GROUND CONDUCTOR | |
| → LA-2 | HOME RUN-DESTINATION SHOWN | |
| → | CONDUIT DOWN | |
| → | CONDUIT UP | |
| ⊙ | CONNECTION POINT | |
| MCC | MAJOR ELECTRICAL COMPONENT OR DEVICE NAME OR IDENTIFYING SYMBOL AS SHOWN | |
| ■ | SURFACE MOUNT PANELBOARD | |
| ■ | RECESS MOUNT PANELBOARD | |
| ▤ | TERMINAL JUNCTION BOX | |
| ⑤ | MOTOR, HORSEPOWER INDICATED | |
| ○ | LUMINAIRE | } TYPE INDICATED
SEE LUMINAIRE
SCHEDULE |
| □ | LUMINAIRE-FLUORESCENT | |
| ● | LUMINAIRE AND POLE | |
| ⊖ | WALL MOUNTED LUMINAIRE | |
| ⊗ | EXIT LIGHTS | |
| ⊗ | EXIT LIGHT W/ DIRECTIONAL CHEVRON | |
| ⊗ | LUMINAIRE W. EMERGENCY BATTERY PACK | |
| ⊕ | EMERGENCY DC LIGHT UNIT | |
| ○ | FLOOD LIGHTS | |
| So or | SMALL LETTER SUBSCRIPT AT SWITCH AND LUMINAIRE INDICATES SWITCHING | |
| S ₂ | WALL SWITCH: 2-DOUBLE POLE 3-THREE WAY 4-FOUR WAY WP-WEATHERPROOF | } MOUNT 48" AFF FROM THE TOP OF THE SWITCH UNLESS OTHERWISE NOTED |
| S _M | MANUAL MOTOR STARTER | |
| 30 | NONFUSED DISCONNECT, SIZE INDICATED 3-POLE UNLESS INDICATED OTHERWISE | |
| 60/40 | FUSED DISCONNECT, SIZE INDICATED (60/40=SWITCH RATING: 40=FUSE RATING) 3-POLE UNLESS INDICATED OTHERWISE | |
| 2 | STARTER MAGNETIC, NEMA SIZE INDICATED | |
| 2 | COMBINATION MAGNETIC STARTER, NEMA SIZE INDICATED | |
| ⊕ | CONVENIENCE RECEPTACLE, DUPLEX / WP-WEATHERPROOF 1L-TWISTLOCK | } WHEN NOTED } MOUNT 15" AFF BOTTOM OF UNLESS OTHERWISE NOTED |
| ⊕ | 4-PLEX CONVENIENCE RECEPTACLE | |
| — — | CAPACITOR | |
| ◀ | TELEPHONE RECEPTACLE (OUTLET BOX ONLY) | |
| ⊙ | JUNCTION BOX | |
| — — | TERMINAL OR CLAMP GROUND CONDUCTOR CONNECTION | |
| — — | CADWELDED GROUND CONDUCTOR CONNECTION | |
| ● | GROUND ROD | |
| — — | CONTACT-NORMALLY OPEN W/ NEMA SIZE INDICATED AS APPLICABLE | |
| — — | CONTACT-NORMALLY CLOSED W/ NEMA SIZE INDICATED AS APPLICABLE | |
| — TDR
TC | TIME DELAY RELAY CONTACT, TIMED TO CLOSE | |
| — TDR
TO | TIME DELAY RELAY CONTACT, TIMED TO OPEN | |
| □— —□ | REMOTE DEVICE | |
| —(XX)— | RELAY COIL: CR=CONTROL RELAY TDR=TIME DELAY RELAY | |
| —○—E | OVERLOAD RELAY, E=ELECTRONIC | |
| — — | MAGNETIC STARTER W/ NEMA SIZE INDICATED | |
| 100/M | CIRCUIT BREAKER, MAGNETIC TRIP ONLY, FRAME SIZE SHOWN, 3-POLE UNLESS INDICATED OTHERWISE | |
| 400 | CIRCUIT BREAKER, THERMAL MAGNETIC TRIP SHOWN, 3-POLE UNLESS INDICATED OTHERWISE | |
| 100 | SWITCH-CURRENT RATING INDICATED, 3-POLE UNLESS INDICATED OTHERWISE | |
| — — | LIGHTNING ARRESTOR | |
| — — | FUSE | |
| — —V | METER W/ SWITCH-SCALE SHOWN | |



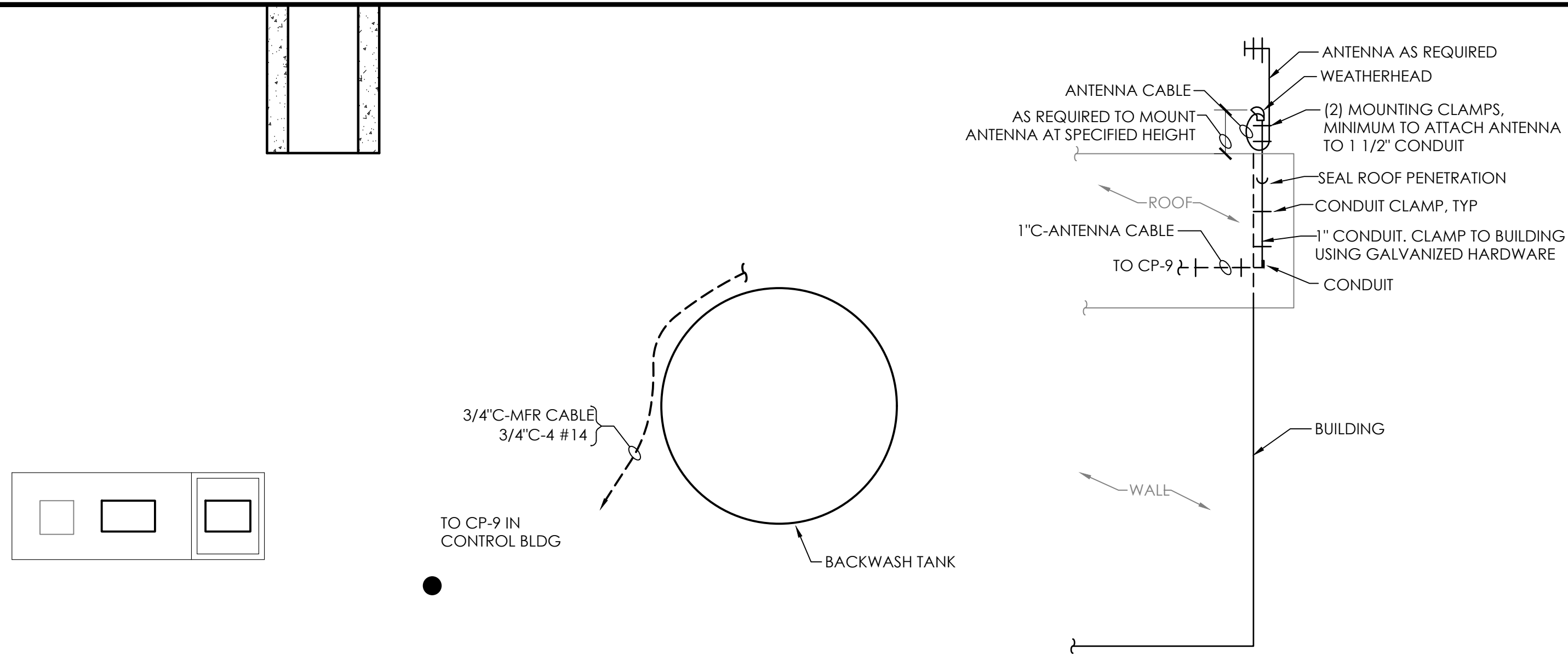
ELECTRICAL ABBREVIATIONS

A	- AMMETER AMPERE
AC	- ALTERNATING CURRENT
AFF	- ABOVE FINISHED FLOOR
ATS	- AUTOMATIC TRANSFER SWITCH
AIC	- AMPS INTERRUPTING CAPACITY
BRKR	- BREAKER
C or COND	- CONDUIT
CKT	- CIRCUIT
CPT	- CONTROL POWER TRANSFORMER
CR	- CONTROL RELAY
CS	- CONTROL STATION
CT	- CURRENT TRANSFORMER
DC	- DIRECT CURRENT
ETM	- ELAPSED TIME METER
[E] or EXIST	- EXISTING
G	- GROUND
GF	- GROUND FAULT INTERRUPT
INST	- INSTANTANEOUS
J	- JUNCTION BOX
LA	- LIGHTNING ARRESTOR
LCP	- LIGHTING CONTROL PANEL
LTG	- LIGHTING
M	- MAGNETIC CONTRACTOR COIL
MCR	- MOTOR CONTROL CENTER
MF	- MANUFACTURER
NEC	- NATIONAL ELECTRICAL CODE
N	- NEUTRAL
NA	- NON-AUTOMATIC
NEMA	- NATIONAL ELECTRIC MANUFACTURER'S ASSOCIATION
OL	- OVERLOAD RELAY
PB	- PULL BOX
PC	- PHOTOCELL
PNL	- PANELBOARD
PLC	- PROGRAMMABLE LOGIC CONTROLLER
R	- RADIO METETRY SIGNAL
RECEPT	- RECEPTACLE
RTU	- REMOTE TELEMETRY UNIT
SWBD	- SWITCHBOARD
SWGR	- SWITCHGEAR
SYM	- SYMMETRICAL
T	- THERMOSTAT or TELE CONDUIT
TDR	- TIME DELAY RELAY
TJB	- TERMINAL JUNCTION BOX
TYP	- TYPICAL
UH	- UNIT HEATER
V	- VOLTMETER, VOLT
VFD	- VARIABLE FREQUENCY DRIVE
W	- WATT
WP	- WEATHERPROOF (NEMA 4)
XFMR	- TRANSFORMER
ZS	- POSITION SWITCH (LIMIT SWITCH)

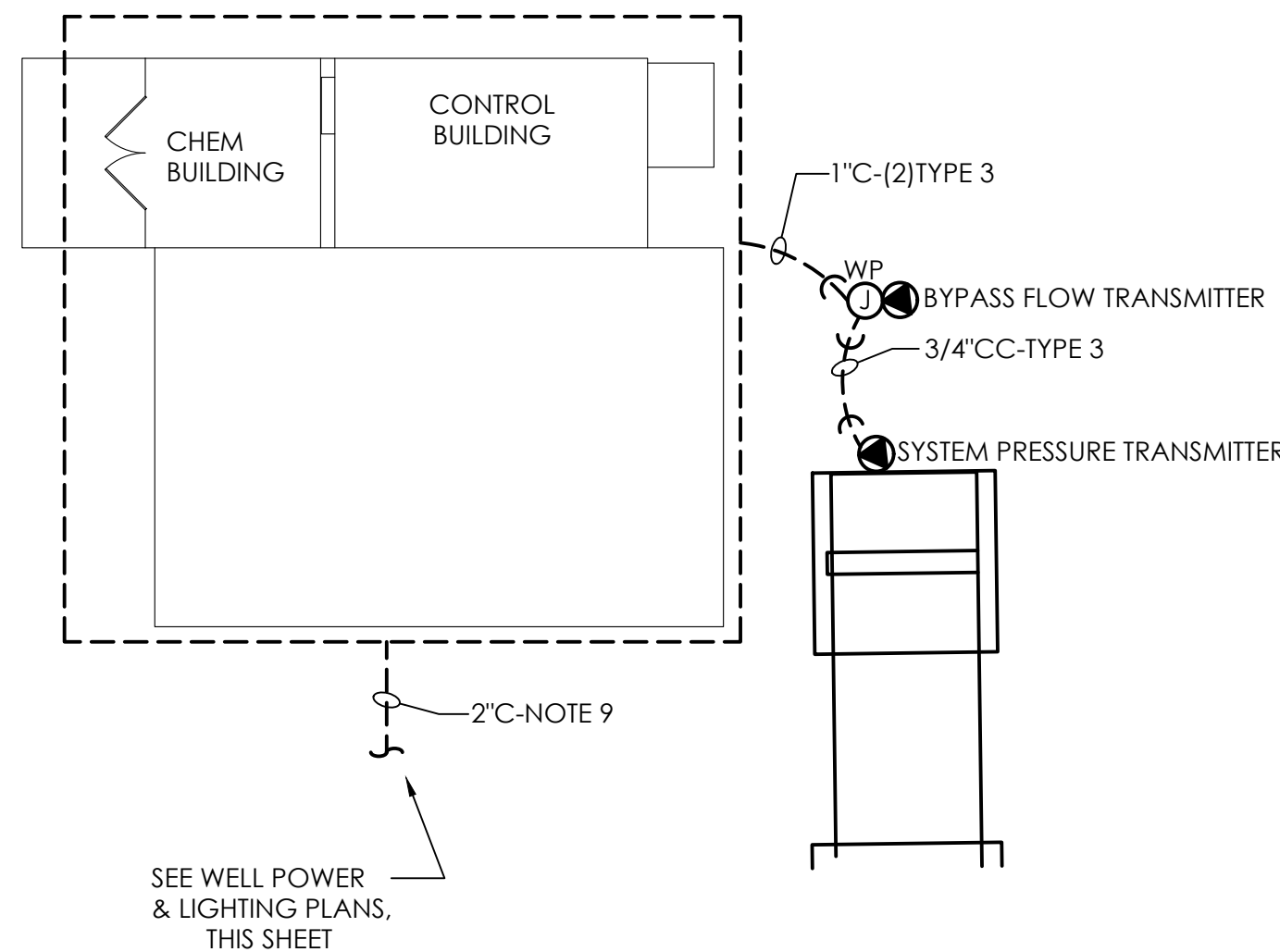
NOTE: THIS IS A SUPPLEMENTAL STANDARD
LEGEND. SOME SYMBOLS OR ABBREVIATIONS MAY
APPEAR ON THIS LEGEND AND NOT ON THE PLANS.

PROJECT NUMBER 15-109	CITY OF COLUSA ELECTRICAL DETAILS	CIVIL ENGINEERING LAND SURVEYING FUNDING PROCUREMENT CONSTRUCTION ADMINISTRATION www.colusa.net ESTD 1986		DATE: 7/22/2025	NO.	DATE	DESCRIPTION
				SCALE: 1"=10'			
				DRAWN BY: DDL			
				DESIGNED BY: DDL			
				CHECKED BY: DJS			
SHEET E1 OF 4	WATER WELL AND TREATMENT PLANS 1110 Civic Center Blvd, Suite 404 Yuba City, CA 95993 (530) 751-0952 Office						

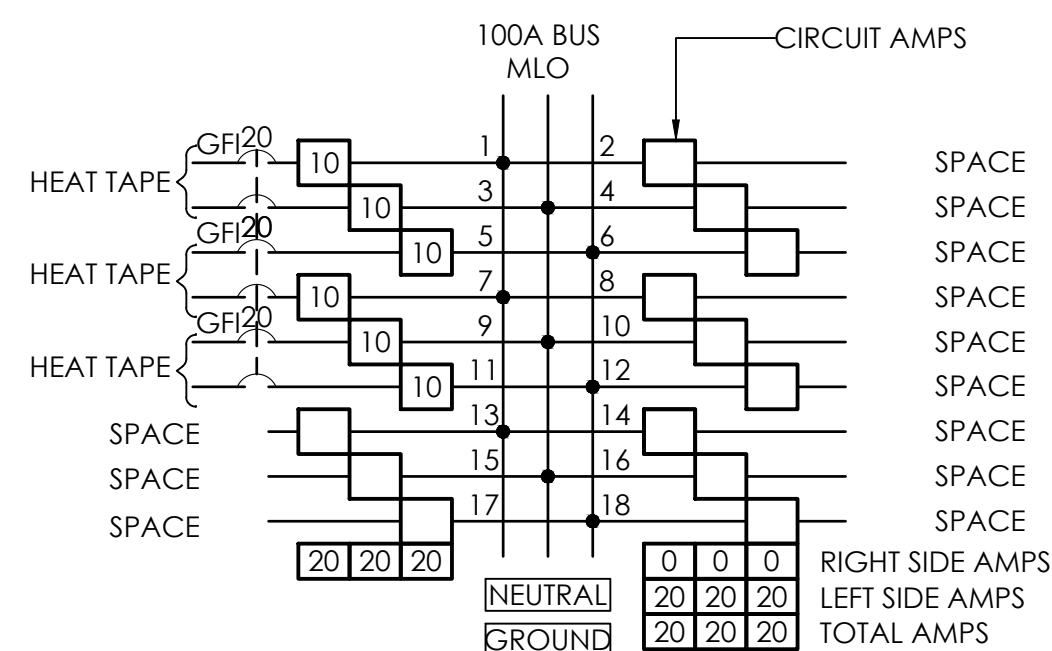
Y:\CEC\Job\Projects\25-105 Well No 9_BA_5_4 Project Const\Eng\Imp\Pha25-105 Improvement Plans.dwg Jul 22, 2025-02:17 pm mjaape



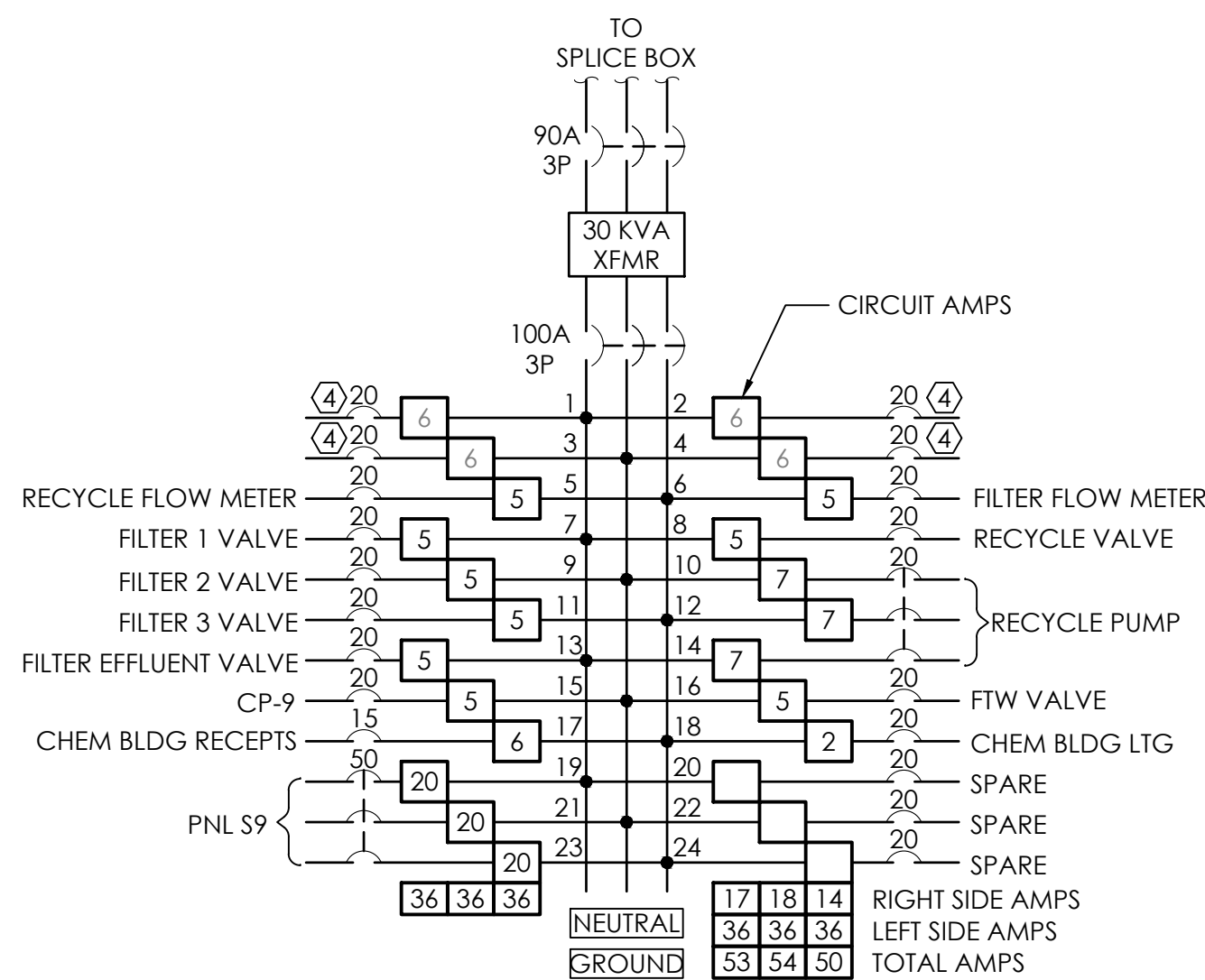
BUILDING ANTENNA MOUNTING DETAIL
SCALE: NTS



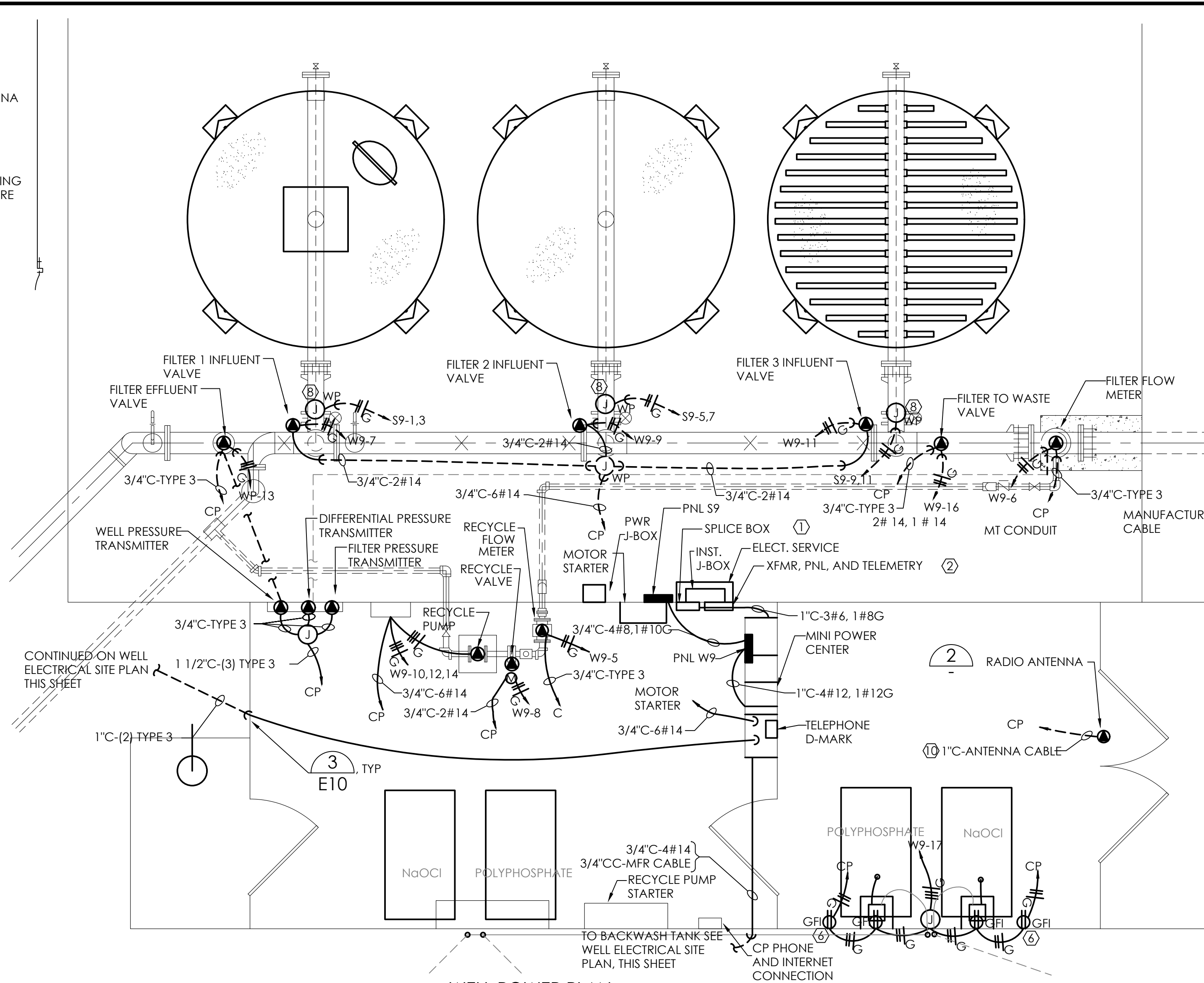
WELL ELECTRICAL SITE PLAN
SCALE: 1" = 10'



PANEL S9 (NEMA 3R)
VOLTAGE: 120/208V
LOCATION: OUTSIDE CNTRL BLDG
MOUNTING: SURFACE
AMPS IC: 10,000A



PANEL W9
VOLTAGE: 120/208V
LOCATION: MINI-POWER CENTER
MOUNTING: SURFACE
AMPS IC: 10,000A



WELL POWER PLAN
SCALE: 3/8" = 1'-0"

NOTE:
THE ELECTROMAGNETIC FLOW TRANSMITTER CALLED OUT AS "FILTER FLOW METER" IN THE WELL POWER PLAN SHALL BE LOCATED AT THE FRONT OF CONTROL PANEL CP-9. THE TRANSMITTER SHALL BE MOUNTED IN THE FRONT DOOR OF CP-9 AS TO BE VIEWABLE FROM OUTSIDE THE FRONT OF THE PANEL. THE FLOW METER ELEMENT SHALL REMAIN WHERE SHOWN AND SHALL BE CONNECTED TO THE TRANSMITTER USING 3/4"C AND CONDUCTORS PER MANUFACTURER'S REQUIREMENTS. THE TRANSMITTER SHALL BE CONNECTED TO CP-9 UTILIZING 2#12, 1#12G FOR POWER, AND (1) TYPE 3 CABLE FOR SIGNAL

KEY NOTES

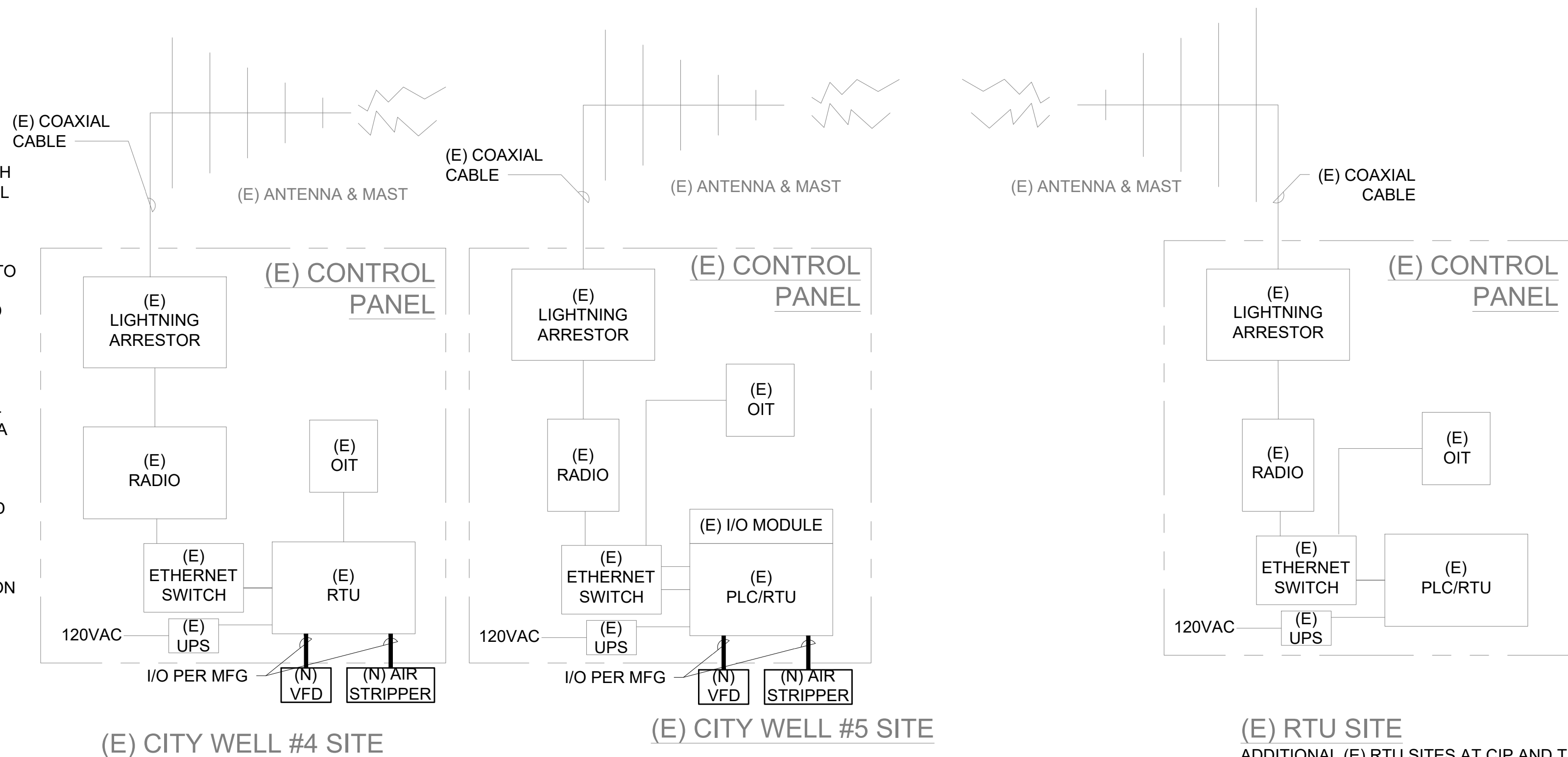
- TAP MOTOR FEEDER CONDUCTORS IN SPLICE BOX TO FEED MINI POWER CENTER AS SHOWN. MAKE MODIFICATIONS NECESSARY.
- CONNECT 120VAC CIRCUITS TO NEW PNL W9 IN MINI POWER CENTER USING 1/2"C-2#12,1#12G
- PROVIDE FLOW TRANSMITTER AT EXISTING PROPELLER FLOW METER. MAKE MODIFICATIONS NECESSARY.
- MODIFY LOADS SERVED BY EXISTING CHEMICAL BLDG ELECTRICAL PANEL AS NECESSARY TO CONNECT TO NEW PANEL W9 AS SHOWN.
- N/A
- SWITCH RECEPTACLE POWER VIA CONTACT CLOSURE IN CONTROL PANEL CP-9.
- MOUNT LEVEL SWITCHES AT THE FOLLOWING ELEVATIONS:
HIGH: ___ FT
LOW: ___ FT
- PROVIDE AND INSTALL HEAT TAPE OVER ALL EXPOSED VALVES AND PIPING.
- COORDINATE W/OWNER BROADBAND INTERNET SERVICE PROVIDER CONNECTION ROUTE CONNECTION TO WELL CONTROL BUILDING CONTROL PANEL.
- ROUTE CONDUIT ABOVE PLYWOOD CEILING.

PROJECT NUMBER		CITY OF COLUSA		ELECTRICAL DETAILS		WATER WELL AND TREATMENT PLANS	
15-109							
SHEET E2		OF 4					
DESCRIPTION		NO.		DATE		DATE	

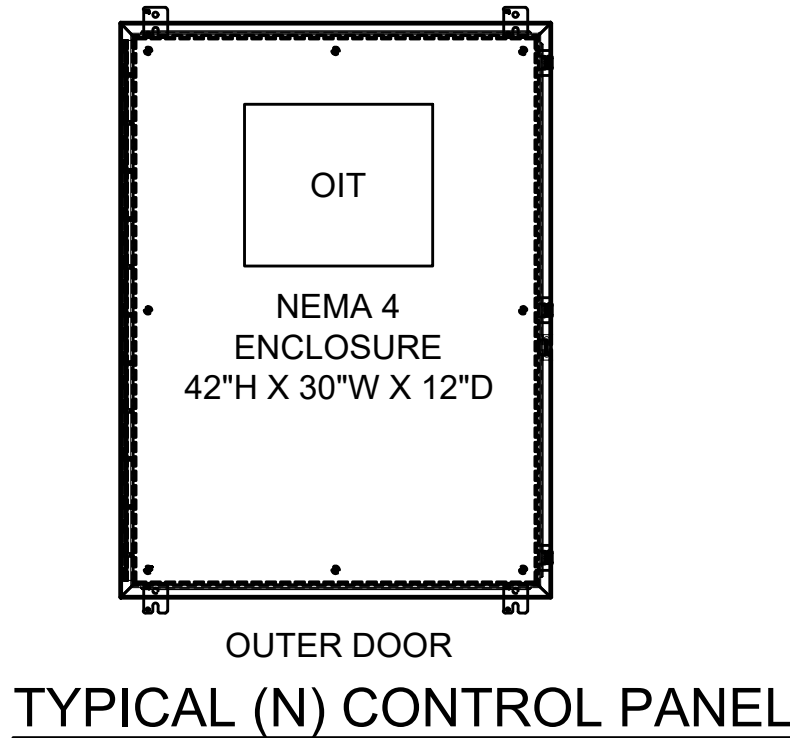
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NOTES:

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL PROJECT SPECIFICATIONS. ALL WORK SHALL BE DONE IN ACCORDANCE WITH NEC. ALL EQUIPMENT SHALL BE UL LABELED.
- PROVIDE MAST AND ANTENNA . GROUND MAST TO LOCAL GROUND ROD: PROVIDE GROUND CONDUCTOR BETWEEN MAST GROUND ROD AND SERVICE GROUND ROD. ANTENNA SHALL BE ORIENTED PER RADIO SYSTEM SUPPLIER'S RECOMMENDATIONS.
- PROVIDE POWER FROM LOCAL PANELBOARD: 3/4 INCH CONDUIT WITH 2#12 + #12G MINIMUM WITH A 20/1 CIRCUIT BREAKER
- WHERE SHOWN PROVIDE A CONDUIT AND NETWORK CABLE BETWEEN THE SCADA RTU AND THE FILTER CONTROL PANEL PLC. COORDINATE REGISTER INFORMATION WITH THE FILTER CONTROL PANEL PLCs [MANUFACTURER/SUPPLIER] SO ALL INFORMATION REGARDING THE FILTERS IS AVAILABLE VIA THE SCADA SYSTEM AT THE SCADA CENTRAL COMPUTER LOCATION.



(N) FIFTH STREET WELL (#9) SITE



1. GENERAL SCADA REQUIREMENTS

WORK INCLUDED: PROVIDE ALL REQUIRED LABOR, PROJECT EQUIPMENT AND MATERIALS, TOOLS, CONSTRUCTION EQUIPMENT, SAFETY EQUIPMENT, TRANSPORTATION, AND TEST EQUIPMENT TO SATISFACTORILY COMPLETE ALL NEW SCADA WORK SHOWN ON THIS DRAWING, OR REQUIRED FOR A COMPLETE AND FULLY OPERATING SYSTEM. PROVIDE FIELD SERVICES, AND TRAINING.

OPERATIONS AND MAINTENANCE MANUALS: PROVIDE OPERATING AND MAINTENANCE INSTRUCTIONS. IN EACH MANUAL, INCLUDE EQUIPMENT DESCRIPTIONS, RECORD "AS-BUILT" SHOP DRAWINGS, PROGRAMMING INFORMATION, OPERATION AND MAINTENANCE INSTRUCTIONS, PARTS ORDERING DATA AND RATINGS FOR THE EQUIPMENT FURNISHED FOR TO COMPLETE THE SCADA SYSTEM.

THE CONTRACTOR SHALL PROVIDE LABOR, INSTRUMENTS, AND OTHER MATERIAL TO COMPLETE THE TESTS. PERFORM THE OPERATIONAL READINESS TEST AND FUNCTIONAL ACCEPTANCE TEST. FUNCTIONAL ACCEPTANCE TEST (FAT): THE CONTRACTOR SHALL PERFORM THE FAT AND SHALL OPERATE ALL EQUIPMENT AND SYSTEMS OVER THE FULL OPERATING RANGE, SHALL DEMONSTRATE PROPER OPERATION OF ALARMS AND INDICATORS, AND, IN GENERAL, SHALL DEMONSTRATE THAT THE EQUIPMENT AND SYSTEMS MEET THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. SYSTEM TESTING: THE CONTRACTOR/SYSTEM SUPPLIER SHALL PROGRAM, INSTALL AND TEST ALL COMPONENTS. PROVIDE A QUALIFIED MANUFACTURER'S SERVICE PERSON TO PERFORM TESTING. TRAIN OWNER PERSONNEL: PROVIDE FOUR HOURS ON SITE TRAINING.

2. CONTROL PANELS AND REMOTE TELEMETRY UNITS SPECIFICATIONS

THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS REQUIRED, TO INSTALL COMPLETE AND READY FOR OPERATION, AND FIELD TEST THE CUSTOM CONTROL PANELS AS SHOWN ON THE DRAWINGS. MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED IN ALL CASES WHERE MANUFACTURERS OF ARTICLES USED FURNISH INSTRUCTIONS COVERING POINTS NOT SHOWN ON THE DRAWINGS OR HEREIN SPECIFIED. PERMANENTLY IDENTIFY EACH WIRE AT EACH TERMINATION BY MEANS OF A HEATSHRINK NUMBERED SLEEVE. IN GENERAL, ALL COMPONENTS SHALL MATCH THE CITY'S EXISTING DATA FLOW SYSTEMS BASED SCADA SYSTEM. THE REMOTE TELEMETRY UNITS SHALL BE REMOTE TELEMETRY UNITS (RTU). THE RTU SHALL BE A MICROPROCESSOR-BASED, FULLY-PROGRAMMABLE, DUAL-FUNCTION-DEVICE DESIGNED FOR USE WITH SCADA SYSTEMS SET UP FOR PUMP CONTROL AND MONITORING: MATCH EXISTING ALLEN BRADLEYPLC. THE RTU SHALL BE CAPABLE OF OPERATING FROM A CUSTOM-WRITTEN PLC PROGRAM. THE RTU SHALL BE MANUFACTURED BY ALLEN BRADLEY. THE UNIT SHALL INCLUDE AN I/O EXPANSION MODULE WHERE REQUIRED. THE RTU SHALL INCLUDE AN INTEGRATED 2 WATT DIGITAL RADIO. AS A MINIMUM THE RTU SHALL HAVE THE FOLLOWING FEATURES: THE RTU SHALL PROVIDE PROGRAMMABLE LOGIC CONTROLLER (PLC) FUNCTIONALLY. PROVIDE OPERATOR INTERFACE TERMINALS (OIT) WHERE SHOWN ON THE PLANS: THE OITS SHALL BE MANUFACTURED BY MAPLE SYSTEMS, RED LION OR MAGELIS. (TO MATCH EXISTING)., RADIO TO BE MDS TO MATCH EXISTING.

3. PROGRAMMING

ALL PROGRAMMING OF THE SCADA SYSTEM, RTUS AND OITS SHALL ADHERE TO THE CITY'S STANDARDS. AT (E) SITES ADD PROGRAMMING FOR (N) VFD AND (N) AIR STRIPPER CONTROL PANELS.

THE RTUS SHALL BE CONFIGURED TO OPERATE FAILSAFE IN THE EVENT OF A RTU FAILURE. THE RTU SHALL MONITOR AND TRANSMIT TO SCADA ALL PARAMETERS, STATUS AND ALARMS. FLOW LOOPS: MONITOR AND INDICATE FLOW RATES, TOTALIZED FLOWS AND COMBINED TOTALIZED FLOW LOCALLY. PROVIDE LOW-LOW, LOW AND HIGH FLOW ALARMS. MONITOR AND INDICATE ALARMS LOCALLY AT THE OI AND REMOTELY VIA SCADA. PROVIDE INDEPENDENT CALL TIME DELAY SETPOINTS FOR CALL OF EACH MAJOR PUMP IN THE AUTO MODE. IN AUTO MODE OF OPERATION THE PUMP SHALL BE CALLED TO START BY THE RTU BASED UPON SYSTEM PRESSURE: PUMP UP.

THE PLC PROGRAMMER SHALL PROVIDE PROGRAMMING DOCUMENTATION THAT FULLY DESCRIBES THE APPLICATION PROGRAM FUNCTION AND APPLICATION.

IN ADDITION TO THE REQUIRED APPLICATION PROGRAMMING AND WARRANTY SERVICE THE CONTRACTOR/SYSTEM SUPPLIER SHALL PROVIDE 4 HRS OF ON SITE RTU PROGRAMMING SERVICES. ALLOTTED PROGRAMMING HOURS ARE IN ADDITION TO THE REQUIREMENTS OF THE SPECIFICATION TO PROVIDE FOR A COMPLETE AND OPERATIONAL SYSTEM.

4. TESTING

TEST THE SYSTEM TO THE OWNER'S SATISFACTION.

ECS

ECS Engineering, Inc.
Electrical & Control Systems Engineering
91711-3696
samterry@earthlink.net

CITY OF COLUSA		SCADA DIAGRAMS, SPECIFICATIONS AND NOTES		WATER WELL AND TREATMENT PLANS	
PROJECT NUMBER	15-109	DATE		SHEET	
DESCRIPTION		NO.		E4 OF 20	
DATE: 07-11-2025		SCALE: NOT TO SCALE		DRAWN BY: CCE	
DESIGNED BY: CCE		CHECKED BY: SWT		NO. 7125	
05/18/18		1110 Civic Center Blvd., Suite 404		Yuba City, CA 75993	
Office (530) 751-0952		Fax (530) 751-0953		Engineering - Planning - Surveying - Community Development	
www.sectusa.net		www.sectusa.net		www.sectusa.net	

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