

**GENERAL NOTES**

- 100) GENERAL CONTRACTOR SHALL REFER TO CIVIL, ARCHITECTURAL, ETC. PLANS AND COORDINATE ACTIVITIES OF ALL SUB-CONTRACTORS TO ENSURE ALL ITEMS ON THE APPROVED PLANS. REFERENCE CURRENT OWNER NEW BUILD RESPONSIBILITY MATRIX IN ADDITION TO THE BID NOTES AND CLARIFICATIONS DOCUMENTS.
- 101) CONTRACTOR SHALL REVIEW AND REFERENCE ALL CIVIL, ARCHITECTURAL, AND CANOPY CONSTRUCTION DRAWINGS PRIOR TO BID. CONTRACTOR SHALL REVIEW AND REFERENCE GEOTECHNICAL SOILS REPORT AND FOLLOW ALL GUIDELINES FOR AREAS OF RESPONSIBILITY. ITEMS OF RESPONSIBILITY OUTLINED IN THE FULL CONSTRUCTION SET WILL BE CONSIDERED AS PART OF THE BID.
- 102) VERIFY ALL FIELD DIMENSIONS PRIOR TO CONSTRUCTION.
- 103) GENERAL CONTRACTOR SHALL SCHEDULE REVIEW OF POTENTIAL SOIL CONTAMINATION WITH THE OWNER PRIOR TO CONSTRUCTION START. CONTACT OWNER PROJECT MANAGER FOR SITE CONTAMINATION STATUS PRIOR TO BID. IF CONTAMINATION EXISTS, CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL SOIL SAMPLING WITH OWNER DESIGNATED ENVIRONMENTAL FIRM.
- 104) THE OWNER PROJECT MANAGER MUST BE NOTIFIED DIRECTLY IF THE CONTRACTOR FINDS DISCREPANCIES WITHIN THESE PLANS. THE PROJECT MANAGER RESERVES THE RIGHT TO REVERSE ANY FIELD DECISIONS AT NO ADDITIONAL COST TO THE CONTRACT IF THE OWNER IS NOT IMMEDIATELY NOTIFIED DIRECTLY.
- 105) THE HIGHER COST OPTION SHALL AND WILL BE CONSIDERED PART OF THE CONTRACT IF DISCREPANCIES ARE FOUND WITHIN THESE DRAWINGS.
- 106) ALL CONTRACTORS ARE TO SUBMIT CONCRETE TESTING RESULTS FROM THIRD PARTY TESTING AGENCIES VERIFYING CONCRETE PSI AND MIXTURE TO THE OWNER PROJECT MANAGER FOR EACH DELIVERY TRUCK.
- 107) CONTRACTOR IS RESPONSIBLE FOR COORDINATING APPLICABLE TESTING WITH THE SERVICES OF AN APPROVED TESTING LABORATORY AND GEOTECHNICAL REPORT, APPLICABLE REGULATORY AGENCIES AND AS MAY BE FOUND IN THE ENGINEERING

- CONSTRUCTION DRAWINGS. CONTRACTOR TO VERIFY ALL TESTING WITH THE OWNER PRIOR TO COMMENCING CONSTRUCTION. FAILURE OF THE CONTRACTOR TO VERIFY ALL TESTING REQUIREMENTS WILL RESULT IN REMOVAL AND REPLACEMENT OF ALL ITEMS DEEMED APPROPRIATE BY THE OWNER PROJECT MANAGER AT THE CONTRACTOR'S EXPENSE. UPON COMPLETION OF THE WORK, THE SOILS ENGINEER MUST SUBMIT TO THE OWNER'S ENGINEER CERTIFICATIONS STATING THAT ALL REQUIREMENTS HAVE BEEN MET.
  - 108) LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN ACCORDING TO INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES AFFECTING WORK PRIOR TO CONSTRUCTION.
  - 109) CONTRACTOR SHALL CHECK PLANS AND FIELD CONDITIONS FOR CONFLICTS AND DISCREPANCIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONFLICT BEFORE PERFORMING WORK IN THE AFFECTED AREA.
  - 110) IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH THE PERMIT AND INSPECTION REQUIREMENTS OF THE VARIOUS GOVERNMENTAL AGENCIES. THE GENERAL CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION, AND SCHEDULE INSPECTIONS ACCORDING TO AGENCY INSTRUCTIONS.
  - 111) IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH AND ENFORCE ALL APPLICABLE SAFETY REGULATIONS.
  - 112) CONTRACTOR SHALL ENSURE THAT ALL PETROLEUM EQUIPMENT IS APPROVED FOR USE BY THE LOCAL REGULATORY AGENCY HAVING JURISDICTION AND SHALL COMPLETE NECESSARY FORMS/APPLICATIONS FOR THESE AGENCIES.
- SCOPE OF WORK**
- 200) PROVIDE A DETAILED CONSTRUCTION SCHEDULE WITH BID.
  - 201) OBTAIN ALL REQUIRED CONSTRUCTION PERMITS FOR THE PROPOSED WORK

- INCLUDING BUT NOT LIMITED TO ELECTRICAL TRADE PERMIT AND UNDERGROUND INSTALLATION PERMIT.
- 202) OBTAIN DE-WATERING PERMIT FOR TANK EXCAVATION. REFER TO GEOTECH REPORT FOR WATER TABLE. CONTRACTOR RESPONSIBLE FOR ALL DE-WATERING COSTS INCLUDING AIR-STRIPPER IF REQUIRED. DISCHARGE MUST OCCUR ON-SITE / CONTACT OWNER PROJECT MANAGER FOR STATUS OF SITE'S SOIL AND WATER CONTAMINATION PRIOR TO SUBMITTING BID.
- 203) INSTALL NEW UNDERGROUND STORAGE TANKS AS INDICATED ON PLANS. GENERAL CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PROTECT EXCAVATION FROM COLLAPSE AND SHALL PROVIDE SHORING, BRACING, OR SHEET PILING AS NECESSARY. ALL DAMAGED ADJACENT AREAS SHALL BE BROUGHT TO A CONDITION BETTER OR EQUAL TO ITS CONDITION PRIOR TO BEGINNING WORK OR AS OUTLINED ON CONSTRUCTION PLANS.
- 204) INSTALL CONCRETE DEADMAN FOR UST INSTALLATION.
- 205) BACKFILL ALL EXCAVATED AREAS WITH CLEAN PEA GRAVEL OR CRUSHED STONE PER TANK MANUFACTURER'S RECOMMENDATIONS.
- 206) INSTALL ALL PETROLEUM EQUIPMENT SPECIFIED IN THE ATTACHED DETAILS AND ON PETROLEUM MATERIAL SPECIFICATION SHEET. INCLUDING BUT NOT LIMITED TO FILL BUCKETS W/ OVERSPILL CONTAINMENT, TANK VENTS WITH VAPOR EXTRACTORS AND MANHOLES, AUTOMATIC TANK LEVEL MONITORS AND MANHOLES, STP PUMPS AND RELAYS, STP SUMPS AND MANHOLES, TANK INTERSTITIAL MONITORS AND MANHOLES. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL NECESSARY ITEMS NOT INDICATED ON PETROLEUM MATERIAL SPECIFICATION SHEET BUT REQUIRED FOR A COMPLETE AND OPERATIONAL JOB.
- 207) PROVIDE AND INSTALL CODE AND OWNER APPROVED CONDUIT TO ALL PETROLEUM RELATED EQUIPMENT FROM 15'-0" IN FRONT OF THE BUILDING. WIRE AND FINAL CONNECT ALL PETROLEUM EQUIPMENT LISTED ON PETROLEUM MATERIAL SPECIFICATIONS. INCLUDING BUT NOT LIMITED TO DISPENSER POWER, DISPENSER DATA, INTERCOM SYSTEM, TANK MONITORS, SUMP SENSORS, GAS CANOPY LIGHTING, GAS CANOPY SIGNAGE, E-STOPS, AND GAS CANOPY SECURITY CAMERAS. REFER TO

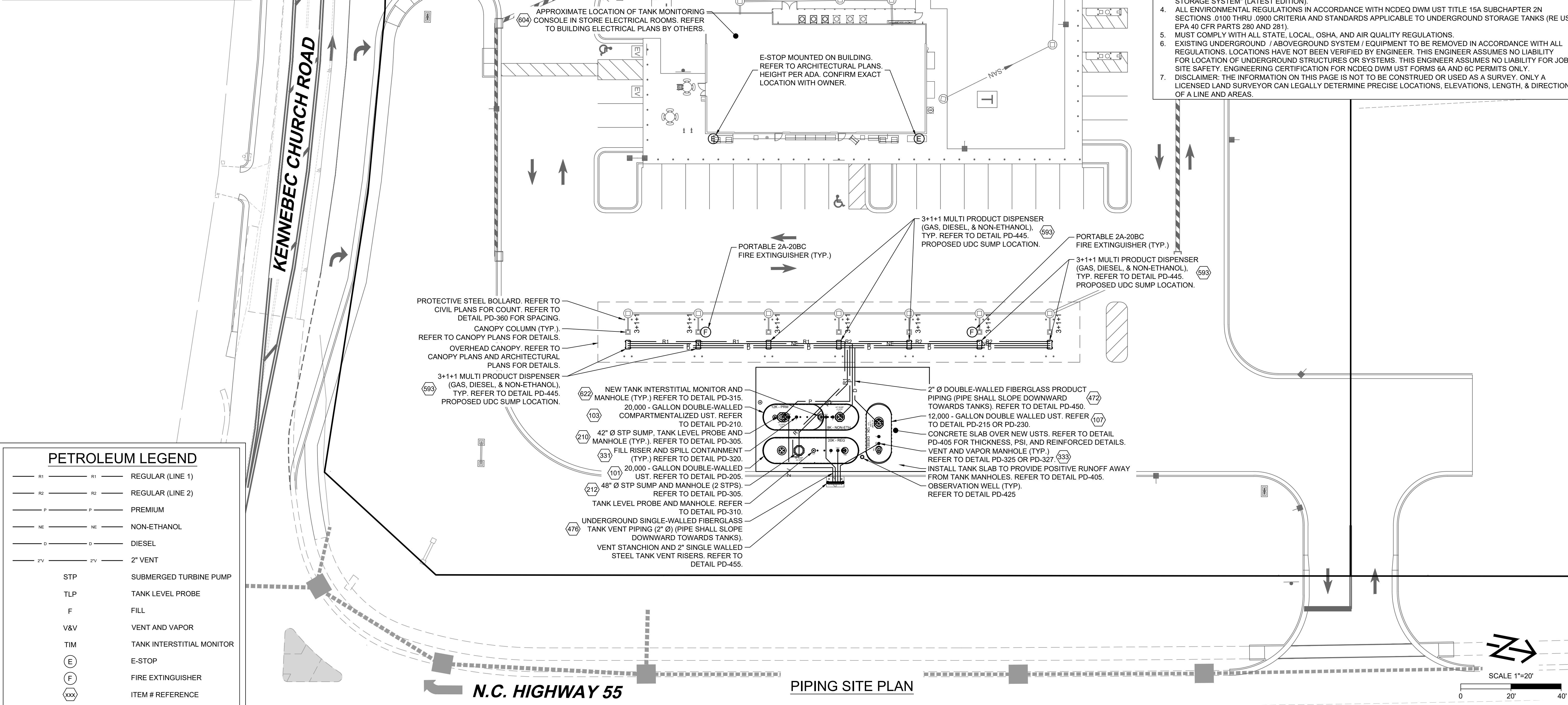
- ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.
- 208) INSTALL DISPENSERS. PROVIDE ALL NECESSARY PERSONNEL TRAINING AND START-UP.
- 209) INSTALL EMERGENCY STOP BUTTON(S) AND SIGNAGE ON EXTERIOR OF BUILDING AND BEHIND SALES COUNTER PER LOCAL JURISDICTION OR AS INDICATED IN THE ATTACHED PLANS, WHICHEVER IS MORE STRINGENT. FURNISH AND INSTALL EMERGENCY STOP BUTTON(S) AND SIGNAGE AT OTHER LOCATION(S) ON-SITE AS SHOWN IN THE PLANS. ALL EMERGENCY STOPS NOT MOUNTED ON THE BUILDING SHALL BE INSTALLED BY THE GENERAL CONTRACTOR.
- 210) INSTALL OWNER SUPPLIED TANK MONITORING SYSTEM. SPECIFICATIONS TO INCLUDE: CONSOLE, PRINTER, PROBES, CAP AND ADAPTOR KIT, CSLD, TCP/IP FOR REMOTE POLLING, AND SUBMERSIBLE PUMP SENSORS. BID TO INCLUDE REQUIREMENTS FOR A COMPLETE INSTALLATION PER LOCAL JURISDICTION.
- 211) FURNISH, INSTALL, AND PAINT TANK VENT STANCHION AND GAS GAUGE STICK HOLDER PER PLANS. FINISH VENT STANCHION PER EXTERIOR FINISH SCHEDULE. REFER TO DETAIL AND ARCHITECTURAL PLANS.
- 212) ALL PETROLEUM EQUIPMENT MUST BE TESTED AND FULLY FUNCTIONAL PRIOR TO INITIAL FUEL OPERATIONS.
- 213) INSTALL INTERCOM SYSTEM PER MATERIAL SPECIFICATION SHEET.
- 214) INCLUDE EQUIPMENT START-UP AND PERSONNEL TRAINING ON ALL SUPPLIED EQUIPMENT.
- 215) SCHEDULE PRECISION LINE AND LEAK DETECTOR TEST WITH OWNER PROJECT MANAGER. PROVIDE A COPY OF TESTING TO OWNER UPON COMPLETION.
- 216) FURNISH AND INSTALL NEW FILTERS AFTER ALL PRODUCT LINES HAVE BEEN PURGED AND METERS CALIBRATED. PURGE ALL AIR FROM LINES THEN PURGE 150 GALLONS THROUGH EACH METER.

- 217) SUPPLY A TECH ON-SITE FOR GRAND OPENING FOR 12 HOURS FROM 6 AM TO 6 PM. COORDINATE WITH CLIENT PROJECT MANAGER.
- 218) BALLAST TANKS WITH WATER.
- 219) REMOVE WATER FROM TANKS AND COORDINATE FUEL DELIVERY WITH OWNER PERSONNEL. PETROLEUM CONTRACTOR SHALL BE RESPONSIBLE FOR PRODUCT IN TANKS FROM DELIVERY UP TO GRAND OPENING.
- 220) INSTALL CONCRETE UST PAD PER DETAILS AND SPECIFICATIONS.
- 221) PAINT FILL CAPS SPECIFIED COLORS PER A.P.I. RP1637.
- 222) INSTALL FIRE EXTINGUISHERS AND REQUIRED SIGNAGE REGARDING SMOKING AND FUELING INSTRUCTIONS AT FUELING AREA PER NFPA CODE.
- 223) PROVIDE COPIES OF ALL WARRANTY DOCUMENTATION, TANK CHARTS, AND TESTING DOCUMENTATION TO OWNER PROJECT MANAGER UPON COMPLETION OF JOB AND PRIOR TO RECEIPT OF FINAL PAYMENT.
- 224) PROVIDE AS-BUILT DRAWING TO OWNER PRIOR TO RECEIVING FINAL PAYMENT.
- 225) CONTRACTOR SHALL PERFORM A 4 HOUR HYDROSTATIC TEST ON ALL PRODUCT PIPING, SECONDARY TANK LINERS, CONTAINMENT SUMPS, AND DISPENSER LINERS/SUMPS AT INITIAL INSTALLATION.
- 226) ALL NEW ELECTRICAL SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 70 "NATIONAL ELECTRICAL CODE" AND SPECIFICALLY ARTICLE 514.

- NOTES:**
1. REFER TO CIVIL ENGINEERING PLANS PREPARED BY TIMMONS GROUP (LATEST REVISION) FOR ADDITIONAL SITE RELATED DETAILS. FUEL TRUCK ROUTING IS BY CIVIL ENGINEER AND HAS NOT BEEN REVIEWED OR VERIFIED.
  2. THERE ARE NO KNOWN WATER SUPPLY WELLS WITHIN 500' OF UST SYSTEM.
  3. PETROLEUM PRODUCT PIPING LAYOUT IS DEPICTED FOR CLARITY. PETROLEUM CONTRACTOR SHALL CONFIRM THE DISPENSER PRODUCT INLET ORDER BEFORE INSTALLATION AND LAYOUT PIPE ACCORDINGLY.
  4. COORDINATE ALL UTILITY CLEARANCES WITH CIVIL PLANS (BY OTHERS), CONTRACTOR, AND OWNER.
  5. DEF TANK AND SYSTEM ARE NOT INCLUDED IN THE PETROLEUM SYSTEM QUANTITIES DEPICTED.

FACILITY NAME: CIRCLE K  
ADDRESS: 9706 KENNEBEC CHURCH RD, ANGIER, NC 27501

- NOTES:**
1. TANKS AND ALL RELATED PETROLEUM SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ALL REQUIREMENTS OF STATE BUILDING / ELECTRICAL / FIRE CODE (LATEST EDITIONS), SPECIFICALLY CHAPTER 23 "MOTOR FUEL-DISPENSING FACILITIES AND REPAIR GARAGES", CHAPTER 47 "FLAMMABLE AND COMBUSTIBLE LIQUIDS", AND CHAPTER 50 "HAZARDOUS MATERIALS - GENERAL PROVISIONS".
  2. AS A REFERENCE UNDER THE STATE FIRE CODE, THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) PAMPHLET 30-A "CODE FOR MOTOR FUEL DISPENSING FACILITIES AND REPAIR GARAGES", AND PAMPHLET 30 "CODE FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS", (LATEST EDITIONS), MAY ALSO BE USED.
  3. OTHER INDUSTRY STANDARDS ADOPTED INCLUDE THE PETROLEUM EQUIPMENT INSTITUTE (PEI) AND THE AMERICAN PETROLEUM INSTITUTE (API) UST STANDARDS. SPECIFICALLY THE PEI RP100: "INSTALLATION OF UNDERGROUND LIQUID STORAGE SYSTEMS" AND API RP 1615, "INSTALLATION OF UNDERGROUND PETROLEUM STORAGE SYSTEM" (LATEST EDITION).
  4. ALL ENVIRONMENTAL REGULATIONS IN ACCORDANCE WITH NCDQG DWM UST TITLE 15A SUBCHAPTER 2N SECTIONS. 0100 THRU .0900 CRITERIA AND STANDARDS APPLICABLE TO UNDERGROUND STORAGE TANKS (RE US EPA 40 CFR PARTS 280 AND 281).
  5. MUST COMPLY WITH ALL STATE, LOCAL, OSHA, AND AIR QUALITY REGULATIONS.
  6. EXISTING UNDERGROUND / ABOVEGROUND SYSTEM / EQUIPMENT TO BE REMOVED IN ACCORDANCE WITH ALL REGULATIONS. LOCATIONS HAVE NOT BEEN VERIFIED BY ENGINEER. THIS ENGINEER ASSUMES NO LIABILITY FOR LOCATION OF UNDERGROUND STRUCTURES OR SYSTEMS. THIS ENGINEER ASSUMES NO LIABILITY FOR JOB SITE SAFETY. ENGINEERING CERTIFICATION FOR NCDQG DWM UST FORMS 6A AND 6C PERMITS ONLY.
  7. DISCLAIMER: THE INFORMATION ON THIS PAGE IS NOT TO BE CONSTRUED OR USED AS A SURVEY. ONLY A LICENSED LAND SURVEYOR CAN LEGALLY DETERMINE PRECISE LOCATIONS, ELEVATIONS, LENGTH, & DIRECTION OF A LINE AND AREAS.



**PETROLEUM LEGEND**

R1	R1	REGULAR (LINE 1)
R2	R2	REGULAR (LINE 2)
P	P	PREMIUM
NE	NE	NON-ETHANOL
D	D	DIESEL
ZV	ZV	2" VENT
STP		SUBMERGED TURBINE PUMP
TLP		TANK LEVEL PROBE
F		FILL
V&V		VENT AND VAPOR
TIM		TANK INTERSTITIAL MONITOR
E		E-STOP
F		FIRE EXTINGUISHER
XXXX		ITEM # REFERENCE



PRELIMINARY  
NOT RELEASED FOR CONSTRUCTION

12/19/2023

THIS DRAWING PREPARED AT THE  
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REVISION DESCRIPTION	DATE
NCDQG SUBMITTAL	07/28/2023
NCDQG SUBMITTAL	11/14/2023
BID SET	12/19/2023

YOUR VISION ACHIEVED THROUGH OURS.

DATE: 12/23/2022

DRAWN BY: J. FRENCH

DESIGNED BY: J. DOOLEY

CHECKED BY: J. DOOLEY

SCALE: AS SHOWN

**TIMMONS GROUP**

NORTH CAROLINA LICENSE NO. C-1652

CIRCLE K - NTI NC55 KENNEBEC - ANGIER, NC  
ANGIER - WAKE COUNTY - NORTH CAROLINA

PETROLEUM SYSTEM INSTALLATION PLAN

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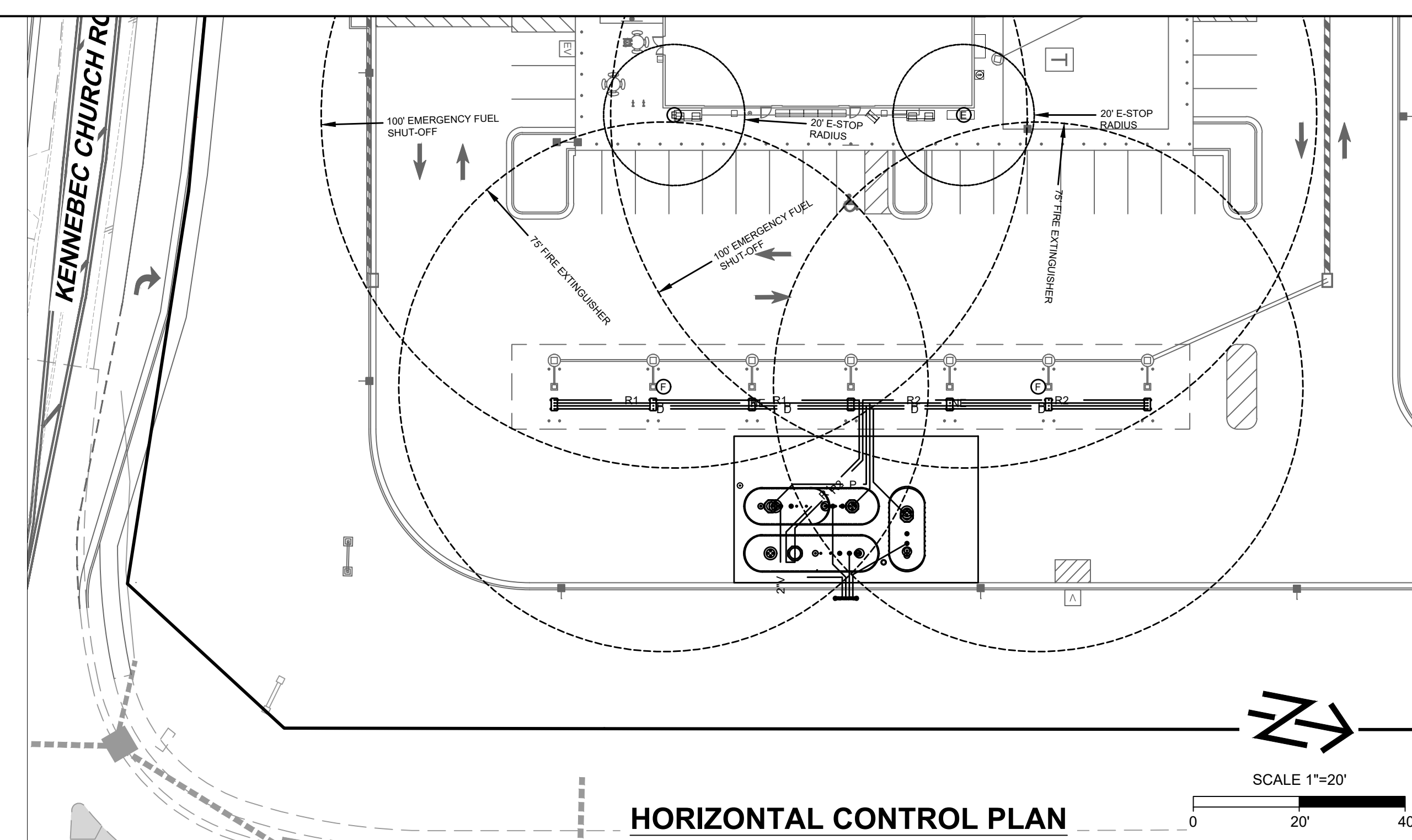
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**NOTES:**

- QUANTITIES SHOWN HEREIN HAVE BEEN PROVIDED FOR INFORMATION PURPOSED ONLY. CONTRACTOR SHALL CONFIRM ALL QUANTITIES PRIOR TO PREPARING A BID AND PRIOR TO INITIATING ON-SITE ACTIVITY. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING MATERIALS AND EQUIPMENT AS NEEDED FOR SYSTEM INSTALLATION. ALLOW FOR CUTTING LOSSES AND WASTAGE WHEN ORDERING PIPING.
- SELECT STP SUMP HEIGHT BASED ON TANK BURIAL DEPTH NEEDED FOR PIPE INSTALLATION.
- VERIFY DISPENSER PACKAGES WITH OWNER PRIOR TO ORDERING. DISPENSER PACKAGES SHALL INCLUDE MECHANICAL TOTALIZERS, SPEAKERS, CALL BUTTONS, AND INTERCOMS.
- COORDINATE MONITORING CONSOLE SPECIFICATIONS WITH OWNER. SHALL HAVE ETHERNET TCP/IP COMMUNICATIONS MODULE. COORDINATE REMOTE POLLING REQUIREMENTS.
- CONTRACTOR SHALL USE COMPONENTS THAT COMPLY WITH ALL REQUIREMENTS OF (NESHAP) EPA REGULATION 40 CFR PART 63 AS APPLICABLE TO THIS PROJECT.
- PETROLEUM PIPING SHOWN SCHEMATICALLY. CONTRACTOR SHALL INSTALL PIPING PER FIELD CONDITIONS WITH DEVELOPER REPRESENTATIVE'S APPROVAL.
- AN APPROVED, CLEARLY IDENTIFIED, AND READILY ACCESSIBLE EMERGENCY FUEL SHUT-OFF SWITCH SHALL BE PROVIDED AND LOCATED NO FURTHER THAN 100 FEET TRAVEL DISTANCE, BUT NOT LESS THAN 20 FEET FROM THE FUEL DISPENSER. SUCH DEVICE SHALL BE DISTINCTLY LABELED AS "EMERGENCY FUEL SHUTOFF". (2018 NCFE 2303.2)
- DISPENSER OPERATING INSTRUCTIONS MUST BE CONSPICUOUSLY POSTED IN AN APPROVED LOCATION ON EVERY DISPENSER. (2018 NCFE 2304.2.3)
- DISPENSING DEVICES SHALL BE IN CLEAR VIEW OF THE ATTENDANT AT ALL TIMES. OBSTRUCTING SHALL NOT BE PLACED BETWEEN THE DISPENSING AREA AND THE ATTENDANT. (2018 NCFE 2304.2.4)
- THE ATTENDANT SHALL BE ABLE TO COMMUNICATE WITH PERSONS IN THE DISPENSING AREA AT ALL TIMES. AN APPROVED METHOD OF COMMUNICATING WITH THE FIRE DEPARTMENT SHALL BE PROVIDED FOR THE ATTENDANT. (2018 NCFE 2304.2.5)
- APPROVED EMERGENCY PROCEDURES SIGNS SHALL BE POSTED IN A CONSPICUOUS LOCATION AND SHALL READ (2018 NCFE 2304.3.5):  
 IN CASE OF FIRE, SPILL OR RELEASE  
 1. USE EMERGENCY PUMP SHUTOFF  
 2. REPORT THE ACCIDENT!  
 FIRE DEPARTMENT TELEPHONE NO. \_\_\_\_\_  
 FACILITY ADDRESS \_\_\_\_\_
- APPROVED PORTABLE FIRE EXTINGUISHER WITH A MINIMUM RATING OF 2-A-20-B-C SHALL BE PROVIDED AND LOCATED SUCH THAT AN EXTINGUISHER IS NOT MORE THAN 75 FEET FROM PUMPS, DISPENSERS, OR STORAGE TANK FILL-PIPE OPENINGS. (2018 NCFE 2305.5)
- WARNING SIGNS SHALL BE CONSPICUOUSLY POSTED WITHIN SIGHT OF EACH DISPENSER IN THE FUEL DISPENSING AREA AND SHALL STATE THE FOLLOWING: 1) NO SMOKING; 2) SHUT OFF MONITOR; 3) DISCHARGE YOUR STATIC ELECTRICITY BEFORE FUELING BY TOUCH A METAL SURFACE AWAY FROM FUELING NOZZLE; 4) TO PREVENT STATIC CHARGE, DO NOT REENTER YOUR VEHICLE WHILE GASOLINE IS PUMPING; 5) IF A FIRE STARTS, DO NOT REMOVE NOZZLE - BACK AWAY IMMEDIATELY; 6) IT IS UNLAWFUL AND DANGEROUS TO DISPENSE GASOLINE INTO UNAPPROVED CONTAINER; 7) NO FILLING OF PORTABLE CONTAINERS IN OR ON A MOTOR VEHICLE. PLACE CONTAINER ON GROUND BEFORE FILLING. (2018 NCFE 2305.6)

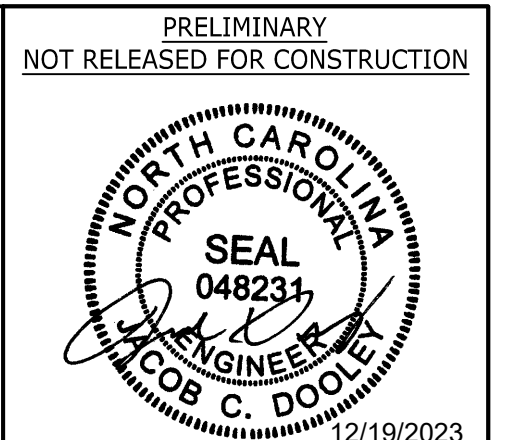


**HORIZONTAL CONTROL PLAN**

**SCHEDULE OF MATERIALS**

Item #:	ITEM / PART DESCRIPTION:	MANUFACTURER:	MODEL / PART #:	QUANTITY:	UNIT:	FURNISHED BY:	INSTALLED BY:	Item #:	ITEM / PART DESCRIPTION:	MANUFACTURER:	MODEL / PART #:	QUANTITY:	UNIT:	FURNISHED BY:	INSTALLED BY:
<b>PRODUCT TANKS:</b>															
101	20,000 GALLON UNDERGROUND STORAGE TANK (REG)	CONTAINMENT SOLUTIONS	DOUBLE WALL TANK	1	EA	OWNER	CONTRACTOR	600	18" RAINITITE BOLTED MANHOLE	EMCO WHEATON	A717-018BD	4	EA	OWNER	CONTRACTOR
103	20,000 GALLON UNDERGROUND STORAGE TANK (12,000/8,000 COMPARTMENT) (PRM, NON-ETH)	CONTAINMENT SOLUTIONS	DOUBLE WALL MULTI-COMPARTMENT TANK	1	EA	OWNER	CONTRACTOR	602	MONITORING WELL CAP & ADAPTOR W/ .5" GROMMET	OPW	62M-0500	0	EA	OWNER	CONTRACTOR
107	12,000 GALLON UNDERGROUND STORAGE TANK (DSL)	CONTAINMENT SOLUTIONS	DOUBLE WALL TANK	1	EA	OWNER	CONTRACTOR	604	TLS450PLUS W/ TCH DISPLAY & PRINT - CK	VEEDER ROOT	860091-301	1	EA	OWNER	CONTRACTOR
109	20,000 GALLON UNDERGROUND STORAGE TANK (XXXXXXXX)	CONTAINMENT SOLUTIONS	DOUBLE WALL TANK	0	EA	OWNER	CONTRACTOR	606	CSLD SOFTWARE ENHANCEMENT	VEEDER ROOT	332972-006	1	EA	OWNER	CONTRACTOR
<b>TURBINE / TANK SUMP EQUIPMENT:</b>															
210	42" TANK STP CONTAINMENT SUMP	CONTAINMENT SOLUTIONS	FIBERGLASS	3	EA	OWNER	CONTRACTOR	610	UNIVERSAL INPUT/OUTPUT INTERFACE MOD	VEEDER ROOT	332813-001	1	EA	OWNER	CONTRACTOR
212	48" TANK STP CONTAINMENT SUMP	CONTAINMENT SOLUTIONS	FIBERGLASS	1	EA	OWNER	CONTRACTOR	612	10' MAG PLUS TANK PROBE	VEEDER ROOT	846390-109	4	EA	OWNER	CONTRACTOR
214	SUMP RESIN KIT	CONTAINMENT SOLUTIONS	RESIN KIT	4	EA	OWNER	CONTRACTOR	614	PHASE SEPARATION 4" GAS FLOAT KIT - 10' CABLE	VEEDER ROOT	886100-010	3	EA	OWNER	CONTRACTOR
216	EMCO COMPOSITE 42" MANHOLE W/ CAM LOCK	EMCO WHEATON	A0716-042C	3	EA	OWNER	CONTRACTOR	616	4" NEW STYLE DIESEL FLOAT KIT - 10' CABLE	VEEDER ROOT	848400-011	1	EA	OWNER	CONTRACTOR
217	EMCO COMPOSITE 48" MANHOLE W/ CAM LOCK & D SEAL	EMCO WHEATON	A0717-048CD	1	EA	OWNER	CONTRACTOR	618	4" CAP AND RING KIT	VEEDER ROOT	312020-952	4	EA	OWNER	CONTRACTOR
218	FE PETRO 2 HP FIZED SPEED W/ MAG SHELL, NO RISER	FRANKLIN FUELING	FE-STPM200-VL2	5	EA	OWNER	CONTRACTOR	620	PIPING SUMP SENSOR	VEEDER ROOT	794380-208	11	EA	OWNER	CONTRACTOR
220	3.0 HP FIXED SPEED STP-TRUCK DIESEL	RED JACKET	3.0 HP FIXED SPEED STP; LENGTH BY CONTRACTOR	0	EA	OWNER	CONTRACTOR	622	HYDROSTATIC RESERVOIR SENSOR WITH VENTED CAP	VEEDER ROOT	794380-303	3	EA	OWNER	CONTRACTOR
224	2" BALL VALVE	OPW	21BV-0200 (BRASS); 21BV-0200SS (STAINLESS STEEL)	6	EA	OWNER	CONTRACTOR	624	UNIVERSAL SENSOR MOUNTING KIT	VEEDER ROOT	330020-012	3	EA	OWNER	CONTRACTOR
226	UNITED SIGN FILL PIPE ID TAG	UNITED SIGN	FPI-125X	8	EA	OWNER	CONTRACTOR	626	2" PROBE CAP AND ADAPTOR KIT	VEEDER ROOT	312020-928	3	EA	OWNER	CONTRACTOR
228	UNITED SIGN VAPOR RECOVERY ID TAG	UNITED SIGN	FPI-22	8	EA	OWNER	CONTRACTOR	628	DPLLD WITHOUT SWIFTCHECK	VEEDER ROOT	859080-001	6	EA	OWNER	CONTRACTOR
<b>SPILL CONTAINMENT OVERFILL PROTECTION, VENT AND VAPOR RECOVERY:</b>															
331	FILL SPILL BUCKET	EMCO WHEATON	A1004EVR-317SS-CM	4	EA	OWNER	CONTRACTOR	731	MULTI PRODUCT DISPENSER	GILBARCO	ENCORE 700S BLENDER NN-1 (3+0) SINGLE HOSE	0	EA	OWNER	CONTRACTOR
333	VAPOR BUCKET	EMCO WHEATON	A1004EVR-317SS-CM	4	EA	OWNER	CONTRACTOR	733	MULTI PRODUCT DISPENSER (NON-ETHANOL)	GILBARCO	ENCORE 700S BLENDER NL1 (3+1) TWO HOSE - NON-ETH	0	EA	OWNER	CONTRACTOR
335	8" OPW OVERFILL DROP TUBE	OPW	71SO-400C	0	EA	OWNER	CONTRACTOR	735	MULTI PRODUCT DISPENSER (DIESEL)	GILBARCO	ENCORE 700S BLENDER NL1 (3+1) TWO HOSE - DIESEL	0	EA	OWNER	CONTRACTOR
336	10" OPW OVERFILL DROP TUBE	OPW	71SO-410C	4	EA	OWNER	CONTRACTOR	737	MULTI PRODUCT DISPENSER	GILBARCO	ENCORE 700S BLENDER (3+1+1) THREE HOSE	7	EA	OWNER	CONTRACTOR
337	4" FILL CAP	OPW	634TT-EVR	4	EA	OWNER	CONTRACTOR	739	TRUCK DIESEL DISPENSER	GILBARCO	ENCORE 700S HI-FLOW NPB (MASTER/SATELLITE W/DEF)	0	EA	OWNER	CONTRACTOR
339	SWIVEL FILL ADAPTOR	OPW	61SALP-EVR	4	EA	OWNER	CONTRACTOR	741	TRUCK DIESEL DISPENSER	GILBARCO	ENCORE 700S HI-FLOW NPA (MASTER W/DEF)	0	EA	OWNER	CONTRACTOR
341	EXTRACTOR VALVE 4x4x2 (NO CAGE)	OPW	233-4420	4	EA	OWNER	CONTRACTOR	743	TRUCK DIESEL DISPENSER	GILBARCO	ENCORE 700S HI-FLOW (SATELLITE ONLY)	0	EA	OWNER	CONTRACTOR
343	STAGE II EXTRACTOR ASSEMBLY	OPW	233-4432	0	EA	OWNER	CONTRACTOR	745	TRUCK/AUTO DIESEL DISPENSER	GILBARCO	ENCORE 700S SINGLE PRODUCT, SINGLE SIDED	0	EA	OWNER	CONTRACTOR
345	SWIVEL VAPOR ADAPTOR	OPW	61VSA-EVR	3	EA	OWNER	CONTRACTOR	747	HUSKY 1+10 GAS NOZZLE BLACK	HUSKY	N10SUF-JUL	28	EA	OWNER	CONTRACTOR
347	VAPOR CAP	OPW	1711T-EVR/116-7085	3	EA	OWNER	CONTRACTOR	749	AUTO DIESEL DISPENSER NOZZLES	OPW	11B-0100 (AUTO DIESEL)	14	EA	OWNER	CONTRACTOR
349	4" DURATUFF BLACK PIPE CAP	OPW	116-7085	1	EA	OWNER	CONTRACTOR	751	TRUCK DIESEL DISPENSER NOZZLES	OPW	7HB-0100 (1" DIESEL)	0	EA	OWNER	CONTRACTOR
351	18" DIA. MANHOLE WITH STEEL COVER	OPW	104A-1800	0	EA	OWNER	CONTRACTOR	753	3/4" x 9" GAS HOSE - BLACK	CONTINENTAL/CONTITECH	3409 20021982	42	EA	OWNER	CONTRACTOR
353	2" PRESSURE VACUUM VENT	OPW	623V-2203	4	EA	OWNER	CONTRACTOR	755	3/4" x 8" WHIP HOSE - BLACK (GAS)	CONTINENTAL/CONTITECH	WHP3408 20022010	42	EA	OWNER	CONTRACTOR
<b>PIPE AND FITTINGS:</b>															
460	STABILIZER BAR KIT	---	---	0	---	OWNER	CONTRACTOR	757	HUSKY RECONNECTABLE BREAKAWAY	HUSKY	3360	42	EA	OWNER	CONTRACTOR
462	FLEX CONN 2" x 14" MxM SWIVEL END	FRANKLIN FUELING	FF20X14HMXM346	6	EA	OWNER	CONTRACTOR	759	HUSKY 3/4" SWIVEL	HUSKY	0350	42	EA	OWNER	CONTRACTOR
464	FLEX CONN 1.5" x 18" MxM SWIVEL END	FRANKLIN FUELING	FF15X18HMXM346	28	EA	OWNER	CONTRACTOR	761	FUEL FILTERS @ DIESEL STP	CIMTECH	BIO-TEK MODEL 800BHG-10 (810 ADAPTOR)	0	EA	OWNER	CONTRACTOR
466	BRAVO 2" FLANGED FITTING	BRAVO	F-20-FF	CONTRACTOR	EA	OWNER	CONTRACTOR	<b>MISCELLANEOUS EQUIPMENT:</b>							
468	1" x 3/4" CONDUIT DISPENSER ENTRY BOOT (IF NECESSARY)	AS APPROVED BY OWNER	---	CONTRACTOR	EA	OWNER	CONTRACTOR	870	24 STATION INTERCOM SYSTEM	3M	D2400	1	EA	CONTRACTOR	CONTRACTOR
470	DETECTABLE TRACER TAPE - YELLOW	PRESCO	D3105Y5-457	905	LF	OWNER	CONTRACTOR	872	INTERCOM SPEAKERS (INSIDE AUTO DISPENSERS)	GILBARCO	TO BE WIRED PER MANUFACTURER INSTRUCTIONS	0	EA	OWNER	CONTRACTOR
472	2" DOUBLE WALL FIBERGLASS PIPING	NOV FIBERGLASS	DUALOY 3000/LCX	905	LF	OWNER	CONTRACTOR	874	INTERCOM HANDSETS @ DIESEL ISLANDS	3M	---	0	EA	OWNER	CONTRACTOR
474	DOUBLE LAYER 4" CHASE PIPING	OPW	AXP40	0	LF	OWNER	CONTRACTOR	876	CASHIER ATTENDANT STATION-WITH SHUT OFF	POWER INTEGRITY	IA-ESORS	1	EA	OWNER	CONTRACTOR
476	2" SINGLE WALL FIBERGLASS PIPING	NOV FIBERGLASS	DUALOY 3000/L	115	LF	OWNER	CONTRACTOR	878	EMERGENCY SHUT OFF SWITCH	POWER INTEGRITY	IA-ESOC	2	EA	CONTRACTOR	CONTRACTOR
478	3" SINGLE WALL VENT PIPING (HARD PIPE)	NOV FIBERGLASS	DUALOY 3000/L	0	LF	OWNER	CONTRACTOR	880	DISPENSER HOOK ISOLATION	---	---	42	---	---	---
480	HARD PIPE ADHESIVE	NOV FIBERGLASS	PSX-34	CONTRACTOR	EA	OWNER	CONTRACTOR	882	SELF CONTAINED AIR/WATER PEDESTALS	EXCEL	461130101	0	EA	OWNER	CONTRACTOR
482	BRAVO 3/4 FIBERGLASS CONDUIT ENTRY 10 PACK W/ GLUE	BRAVO	F-07-FF-10PK	CONTRACTOR	EA	OWNER	CONTRACTOR	<b>ACCESSORY EQUIPMENT:</b>							
484	SUMP PENETRATION BOOT (CONDUITS) (ROUNDED SUMP SURFACES)	OPW	DEB-0075C (3/4"); DEB-0075 (1")	CONTRACTOR	EA	OWNER	CONTRACTOR	xxx	AIR HOSE REEL	REELCRAFT	D8650 ELP	0	EA	---	---
<b>ISLAND EQUIPMENT:</b>															
591	SHEAR VALVE - OPW 10 PLUS DOUBLE POPPET	OPW	10P-0152	28	EA	OWNER	CONTRACTOR	xxx	18" MONITOR WELL MANHOLE	EMCO WHEATON	A0721-018	1	EA	OWNER	CONTRACTOR
593	BRAVO 1000E FIBERGLASS SUMP FOR ENCORE DISPENSER	BRAVO	B1000-ENC	7	EA	OWNER	CONTRACTOR	xxx	12" MONITOR WELL MANHOLE	EMCO WHEATON	A0721-128AB	1	EA	OWNER	CONTRACTOR
595	EXISTING DISPENSER SUMP	EXISTING/UNKNOWN	---	0	EA	EXISTING	CONTRACTOR	<b>DEF EQUIPMENT:</b>							
597	BRAVO STABILIZER BAR	BRAVO	BRKT-1000-ENC	28	EA	OWNER	CONTRACTOR	xxx	8,000 GALLON UNDERGROUND STORAGE TANK (DEF)	CONTAINMENT SOLUTIONS	DOUBLE WALL TANK	0	EA	OWNER	CONTRACTOR
599	3' x 5' x 13" DISPENSER ISLAND FORMS	RIVERSIDE STEEL	3X5X13	0	EA	OWNER	CONTRACTOR	xxx	EMCO COMPOSITE 42" MANHOLE W/ CAM LOCK	EMCO WHEATON	A0716-042C	0	EA	OWNER	CONTRACTOR
								xxx	FE PETRO 2 HP FIZED SPEED W/ MAG SHELL, NO RISER	FRANKLIN FUELING	FE-STPM200-VL2	0	EA	OWNER	CONTRACTOR
								xxx	DEF REMOTE FILL BOX	MORRISON BROTHERS	515SD-0200 AC			OWNER	CONTRACTOR

**SITE:** CIRCLE K - NTI NC55 KENNEBEC - ANGIER, NC **TG PROJECT #:** 37630.105



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NCFE0 SUBMITTAL  
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DATE  
07/28/2023  
11/14/2023  
12/19/2023

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DATE  
12/23/2022

DRAWN BY  
J. FRENCH

DESIGNED BY  
J. DOOLEY

CHECKED BY  
J. DOOLEY

SCALE  
AS SHOWN

**TIMMONS GROUP**  
NORTH CAROLINA LICENSE NO. C-1652

**CIRCLE K - NTI NC55 KENNEBEC - ANGIER, NC**  
ANGIER - WAKE COUNTY - NORTH CAROLINA

**SCHEDULE OF MATERIALS AND HORIZONTAL CONTROL PLAN**

JOB NO.  
37630.105

SHEET NO.  
PE02

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TANK SPECIFICATIONS

1.0 EXCAVATION AND BACKFILL:

- A. EXCAVATION: IF UNEXPECTED WATER CONDITION OR ROCK IS ENCOUNTERED, IMMEDIATELY CONTACT THE OWNER FOR INSTRUCTIONS BEFORE PROCEEDING WITH THE EXCAVATION.
B. TANK HOLE SIZE IN UNSTABLE SOIL: SIZE AND EXCAVATION PERIMETER TO ALLOW 36" MINIMUM BETWEEN TANKS, 36" MINIMUM BETWEEN TANK SIDES AND END CAPS, AND 24" MINIMUM BETWEEN END CAPS AND THE WALL OF THE TANK HOLE.
C. TANK HOLE SIZE IN UNSTABLE SOIL: 1. UNSTABLE SOIL IS DEFINED AS HAVING LESS THAN 750 LBS./SQ. FT. COHESION, AS CALCULATED FROM AN UNCONFINED COMPRESSION TEST, OR SOILS WITH AN ULTIMATE BEARING CAPACITY OF LESS THAN 3,500 LBS./SQ. FT. LOOSE SAND, MUCK, BOG, PEAT, SWAMP OR LANDFILL WHERE SOIL IS SOFT ARE GENERALLY CONSIDERED UNSTABLE SOILS.
2. SIZE EXCAVATION PERIMETER TO ALLOW 36" MINIMUM BETWEEN TANKS AND A MINIMUM OF QUARTER THE TANK DIAMETER BETWEEN THE TANK ASIDES/END CAPS AND THE WALL OF THE TANK HOLE.
3. PERMANENT SHORING MAY BE USED TO STABILIZE THE WALLS OF THE TANK HOLE, AT THE DISCRETION OF THE CONTRACTOR. IF PERMANENT SHORING IS USED, FOLLOW "STABLE SOIL" SIZE CRITERIA. REFER TO "ALTERNATE BACKFILL MATERIALS" BELOW.
D. DEPTH OF TANK HOLE: 1. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING THE TANK HOLE DEPTH, CONSIDERING THE LENGTH OF PIPING RUNS, TO THE PUMP BLOCKS AND VENT RISERS, PIPE BURIAL DEPTH, YARD SLOPE AND THE FOLLOWING CRITERIA: (MEASURE AT THE REMOVE PUMP OPENING).
a. THE MINIMUM DEPTH OF COVER IS 4'-6" AND THE MAXIMUM IS 7'-0".
E. SAFETY REQUIREMENT: NO PERSON SHALL ENTER A TANK HOLE EXCAVATION BELOW THE 5 FT. DEEP LEVEL UNLESS THE WALLS ARE SHORED OR SIDE SLOPED AS PRESCRIBED BY CURRENT OSHA REGULATIONS AND THE TRENCH SAFETY ACT OF 1986. NO EXCEPTIONS. STATE OR LOCAL REQUIREMENTS THAT ARE MORE RESTRICTIVE THAN COMPLY SPECIFICATIONS ARE TO BE ADHERED TO AS THOUGH SPECIFIED IN COMPANY SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR ANY DESIGN, MATERIALS, EQUIPMENT, PERMITS, ETC., FOR SHORING OR SIDE SLOPING A HOLE.
F. FILL AND BACKFILL: ALL FILL MATERIAL SHALL BE PEA GRAVEL PER TANK MANUFACTURER'S RECOMMENDATIONS.

- 1.1 BALLAST
A. MATERIALS: CLEAN WATER IS TO BE USED AS A BALLAST UNDER ALL CONDITIONS WHERE BALLAST IS REQUIRED.
B. DRY HOLE CONDITION: TANKS, WITH BACKFILL TO TOP OF TANKS, MUST BE BALLASTED IF THERE IS ANY CHANCE THAT SURFACE OR SUBSURFACE WATER WILL ENTER THE TANK HOLE TO A DEPTH OF 36" OR GREATER ABOVE THE BOTTOM OF THE TANKS.
C. WET HOLE CONDITION: ATTEMPT TO PUMP WATER FROM THE TANK HOLE TO MAINTAIN A "DRY HOLE CONDITION". IF UNABLE TO OBTAIN AND "DRY HOLE CONDITION," OWNER IS TO BE NOTIFIED AND WILL DETERMINE THE COURSE OF ACTION TO BE FOLLOWED. INSTALL FILTER FABRIC, TIE-DOWN "LOGS", AND BEDDING AS SPECIFIED ELSEWHERE. AFTER BACKFILL TO TOP OF TANK, FILL WITH WATER UNTIL THE COMPLETION OF INSTALLATION. CAUTION - BALLAST LEVEL MUST NEVER EXCEED WATER OR BACKFILL LEVEL IN THE HOLE DURING INSTALLATION. DO NOT REMOVE BALLAST UNTIL TANK SLAB HAS BEEN POURED. DO NOT SET REMOTE PUMP MOTOR UNTIL BALLAST WATER HAS BEEN REMOVED FROM TANK.

- 1.2 DOUBLE WALL / FRP TANK INSTALLATION:
A. MATERIALS: 1. DOUBLE-WALL UNDERGROUND STORAGE TANKS AS SUPPLIED BY OWNER ARE TO BE INSTALLED BY CONTRACTOR IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AS SUPPLIED BY MANUFACTURER.

- 1.3 HANDLING OF TANKS:
A. RESPONSIBILITY: THE CONTRACTOR IS RESPONSIBLE FOR OFF-LOADING THE TANKS FROM THE DELIVERY VEHICLE. A CRANE OR BACKHOE OF SUFFICIENT LIFTING CAPACITY MUST BE USED. THE WEIGHT OF THE DOUBLE WALL TANK IS APPROXIMATELY 14,000 POUNDS.
B. LIFTING & MOVING: WHEN LIFTING OR MOVING A TANK, ALWAYS USE PROPERLY SIZED EQUIPMENT AND LIFT BY LIFTING LUG(S), ON LARGE TANKS, GREATER THAN 8' DIAMETER, USE A SPREADER BAR TO ENSURE A LIFT ANGLE OF AT LEAST 45° AT EACH LIFTING LUG. NEVER ROLL OR USE CABLES OR CHAINS AROUND A TANK. SET ON SMOOTH GROUND, FREE OF ROCKS AND FOREIGN OBJECTS. EXCEPTION - TANK CAN BE ROLLED UP TO 90° ON A SMOOTH CLEAN SURFACE.
C. CHOCKING: TANKS ARE TO BE CHOCKED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION UNTIL READY FOR INSTALLATION. IF WINDY CONDITIONS EXIST OR ARE EXPECTED, ANCHOR TANKS USING MINIMUM 1/2" NYLON OR HEMP ROPE OVER EACH TANK AND SECURE TO STAKES OF ADEQUATE SIZE TO PREVENT MOVEMENT OF THE TANKS.
D. OPENINGS: ALL TANKS ARE SHIPPED WITH DUST COVERS OR STEEL PLUGS IN EACH OPENING. DUST COVERS ARE TO REMAIN IN EACH OPENING UNTIL READY FOR THE PRE-INSTALLATION PRESSURE TEST. ALL TANKS MUST HAVE EITHER A DUST CAP OR STEEL PLUGS IN PLACE OR A 5 PSI PRESSURE RELIEF VALVE IN PLACE AT ALL TIMES.

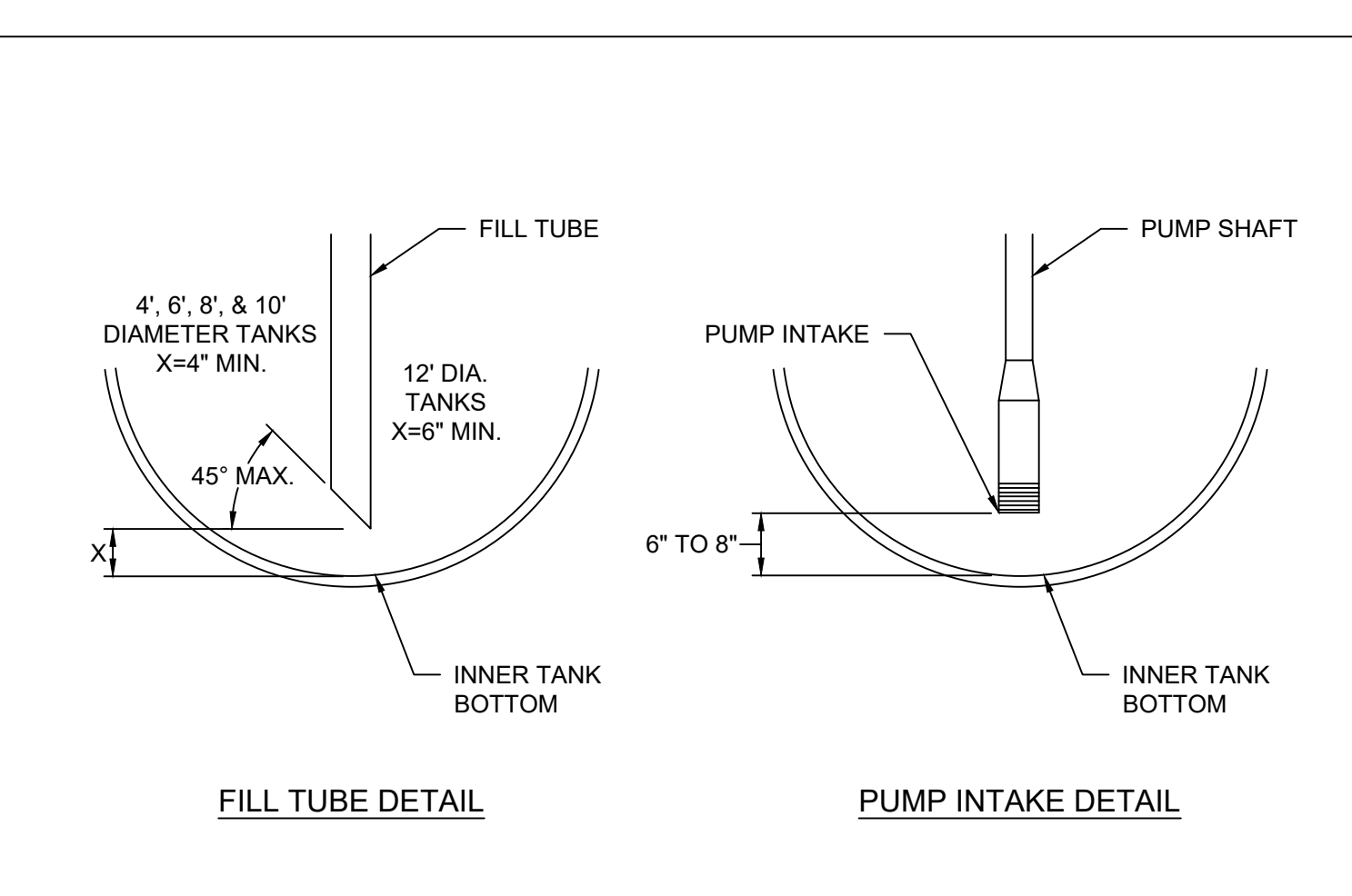
- E. DAMAGE: 1. INSPECT ALL TANKS CAREFULLY FOR SIGNS OF DAMAGE UPON RECEIPT. NOTE ANY DAMAGE ON THE SHIPPING DOCUMENTS AND NOTIFY THE OWNER. CONTACT THE TANK MANUFACTURER FOR ADDITIONAL INFORMATION.
2. IF THE TANK IS DAMAGED AT ANY OTHER TIME, DO NOT ATTEMPT REPAIRS. NOTIFY THE OWNER WHO WILL BECOME AWARE OF THE COURSE OF ACTION.
F. SETTING: SET TANKS FLAT ON PREPARED BED. THE ACCEPTABLE RANGE OF SLOPE IS 1" MAXIMUM AND 0" MINIMUM, WITH THE FILL END LOWER THAN REMOTE PUMP END OF THE TANK. TANKS THAT EXCEED THE ACCEPTABLE SLOPE OR SLOPE DOWNWARD TO THE REMOTE PUMP END MUST BE PROPERLY RESET.
G. INSTALLATION WITH IMPROVED MATERIALS: 1. PLACE A 12" LIFT OF BACKFILL EVENLY AROUND THE TANKS. PUSH BACKFILL COMPLETELY UNDERNEATH AND AROUND THE TANK. PROCEDURE CAN BE DONE FROM BANK OR ADJACENT TANK TOP. IF A MAN WILL BE IN THE HOLE TO "WORK" THE BACKFILL, HOLE MUST BE SHORED OR SIDE SLOPED AS PRESCRIBED BY CURRENT OSHA REGULATIONS.
2. PLACE SECOND 12" LIFT OR BACKFILL EVENLY AROUND THE TANKED. ADD BACKFILL EVENLY AROUND THE TANKS UP TO THE TOPS OF THE TANKS.
3. BACKFILL TO SUBGRADE AFTER PIPING AND TESTING IS COMPLETED.

- H. INSTALLATION WITH ALTERNATE MATERIALS: ALL ALTERNATE MATERIALS MUST RECEIVE WRITTEN APPROVAL FROM THE TANK MANUFACTURER.
1.4 TANK TESTING:
A. PRE-INSTALLATION TEST SET UP: PRIOR TO THE PRE-INSTALLATION TEST, ALL SHIPPING PADS MUST BE REMOVED FROM THE TANK AND THE VACUUM ON THE INTERSTITIAL SPACE MUST BE RELEASED. A VACUUM ON THE INTERSTITIAL SPACE IS SUBSTITUTE FOR THE PRE-INSTALLATION TEST. ALL INSTALLATION TESTS MUST BE PERFORMED AND RECORDED ON ACCEPTABLE FORMS.
B. NOTIFICATION: THE OWNER MUST OBSERVE ALL TESTS. NOTIFY AT LEAST 24 HOURS IN ADVANCE OF ANY TESTS.
C. PRESSURE APPLICATION SYSTEM: THE PRESSURE APPLICATION SYSTEM IS TO HAVE TWO PRESSURE GAUGES (RANGE 0 TO 10 PSI WITH 5 PSI PRESSURE RELIEFS) IN THE SYSTEM, BOTH IN GOOD CONDITION AND HAVING BEEN TESTED AND CALIBRATED WITHIN A THREE-MONTH PERIOD PRIOR TO THE TANK TEST (COPY OF THE TEST AND CALIBRATION DATA TO BE FURNISHED TO THE OWNER UPON REQUEST). USE EXTREME CARE AROUND AND NEAR THE PRESSURIZED TANK. RELIEVE THE PRESSURE PRIOR TO MOVING THE TANK OR REMOVING ANY FITTINGS. NEVER PRESSURIZE THE SECONDARY (OUTER) TANK WITHOUT PRESSURING THE PRIMARY (INNER) TANK FIRST.

- D. LEAKING TANKS: DO NOT INSTALL A TANK WHICH SHOWS ANY EVIDENCE OF A LEAK. THE OWNER IS TO BE NOTIFIED OF ANY DAMAGE AND WILL BECOME AWARE OF THE COURSE OF ACTION TO BE FOLLOWED.
E. SCOPE OF WORK: THE CONTRACTOR IS RESPONSIBLE FOR ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY TO CONDUCT THE FOLLOWING TESTS: PRE-INSTALLATION PRESSURE TEST, AIR AFTER-INSTALLATION PRESSURE TEST, AIR OR HYDROSTATIC.
F. PRE-INSTALLATION PRESSURE TEST, AIR: EXTREME CARE IS TO BE USED AROUND AND NEAR THE PRESSURIZED TANK. NEVER PRESSURIZE THE SECONDARY (OUTER) TANK WITHOUT PRESSURIZING THE PRIMARY (INNER) TANK.
1. PRIMARY (INNER) TANK TEST: TIGHTEN ALL TANK FITTINGS. LOCATE A PRESSURE GAUGE IN THE VENT/MONITOR FITTING IN THE SECONDARY (OUTER) TANK. LOCATE A SECOND PRESSURE GAUGE AT A FITTING IN THE MANWAY AND CONNECT THE AIR PRESSURE HOSE TO THE SAME FITTING. PRESSURIZE THE PRIMARY (INNER TANK TO A MINIMUM OF 4 PSI, MAXIMUM 5 PSI. MONITOR THE PRESSURE GAUGES A MINIMUM OF 1/2 HOUR. THERE SHOULD BE NO PRESSURE INCREASE IN THE SECONDARY (OUTER) TANK.
G. POST-INSTALLATION PRESSURE TEST, AIR: 1. PRIMARY (INNER) TANK TEST: PERFORM THIS TEST WITH ALL TANK RISERS AND FITTINGS ATTACHED. TIGHTEN ALL TANK FITTINGS. LOCATE A PRESSURE GAUGE IN ONE OF THE INTERSTITIAL SPACE MONITOR FITTINGS IN THE SECONDARY (OUTER) TANK. LOCATE A SECOND PRESSURE GAUGE WITH A 5 PSI PRESSURE RELIEF, TO ONE OF THE PRIMARY (INNER) TANK FITTINGS AND CONNECT THE AIR PRESSURE HOSE TO THIS SAME FITTING. PRESSURIZE THE PRIMARY (INNER) TANK TO A MINIMUM OF 4 PSI (MAXIMUM 5 PSI). SOAP ALL TANK FITTINGS AND MONITOR THE PRESSURE GAUGE FOR A MINIMUM OF 1/2 HOUR. THERE SHOULD BE NO PRESSURE INCREASE IN THE SECONDARY (OUTER) TANK.
H. POST-INSTALLATION PRESSURE TEST, HYDROSTATIC: NO TANK THAT SHOWS ANY EVIDENCE OF A LEAK IS TO BE KEPT IN THE SYSTEM. ANY DAMAGE INCURRED TO THE TANK DURING THE INSTALLATION WILL BE CONTRACTOR'S RESPONSIBILITY. THE OWNER IS TO BE NOTIFIED OF ANY DAMAGE AND WILL BE MADE AWARE OF THE COURSE OF ACTION TO BE FOLLOWED. IF A HYDROSTATIC TEST IS REQUIRED BY A LOCAL AGENCY, THE CONTRACTOR IS TO ISOLATE THE TANK FOR TESTING AND RECONNECT WHEN TESTING IS COMPLETE.
I. BALLASTING: ONLY THE PRIMARY (INNER) TANK SHALL BE USED WHEN BALLASTING THE TANK. NEVER FILL THE SECONDARY (OUTER) TANK WITH A FLUID. IF THE TANKS ARE BALLASTED, CONDUCT HYDROSTATIC TEST (INSTEAD OF THE POST-INSTALLATION AIR TEST) ON THE TANK AND FITTINGS.
J. BURIAL DEPTH: THE BURIAL DEPTH FROM THE TOP OF THE TANK TO GROUND LEVEL SHALL BE A MINIMUM OF 3 FEET AND A MAXIMUM OF 7 FEET. THE FITTINGS, IF A MANWAY IS USED, WILL BE APPROXIMATELY 5 TO 6 INCHES OFF THE TOP OF THE TANK. THIS SHALL BE CONSIDERED FOR THE SLOPE OF THE PIPING AND THUS MAY AFFECT THE TANK BURIAL DEPTH.
K. VENTING: VENT THE PRIMARY TANK AS REQUIRED BY TANK MANUFACTURER.
L. INTERSTITIAL MONITOR: INSTALL THE MONITORING GAUGE WITHIN RISER PROVIDED BY TANK MANUFACTURER.
M. INSTALLING THE CONTAINMENT SUMP: THE CONTAINMENT SUMP MUST BE WATERTIGHT TO PREVENT LIQUID INGRESS OR EGRESS. FIBERGLASS INSIDE AND OUTSIDE OF TANK COLLAR.
N. INSTALLING THE SPILL CONTAINMENT FILLBOX: THE SPILL CONTAINMENT FILLBOX MUST BE LIQUID TIGHT. TEST ALL FILLBOXES BY FILLING WITH WATER FOR A MINIMUM OF ONE HOUR. THERE SHOULD BE NO DROP IN THE WATER LEVEL DURING THE TEST. DO NOT DRAIN WATER INTO THE TANK.

- 1.5 APPROVED MATERIALS
A. APPROVED BACKFILL MATERIALS (CONTRACTOR SHALL CONFIRM TANK MANUFACTURER'S REQUIREMENTS)
1. CLEAN SAND: SELECT COARSE GRANULAR MATERIAL, CLEAN, AND FREE OF ANY DELETERIOUS MATTER OR DEBRIS.
2. PEA GRAVEL: A CLEAN, NATURALLY ROUNDED AGGREGATE WITH A 1/8" MINIMUM AND A 3/4" MAXIMUM DIAMETER. UP TO 5% OF THE PARTICLES MAY PASS THROUGH A #8 SIEVE.
3. STONE OR GRAVEL CRUSHINGS: WASHED MATERIAL WITH A PARTICLE SIZE BETWEEN 1/8" AND 1/2". UP TO 5% OF THE PARTICLES MAY PASS THROUGH A #8 SIEVE.
NOTE: APPROVED MATERIALS MUST BE DRY, FREE OF ICE AND SNOW, AND MEET ASTM C-33, PARAGRAPH 7.1 FOR QUALITY AND SOUNDNESS. THE DRY GRAVEL DENSITY MUST BE A MINIMUM OF 95 POUNDS PER CUBIC FOOT.
NOTE: BEDDING MATERIAL, TIE-DOWN "LOGS" AND SAMPLE WELLS ARE TO BE PLACED ON THE TOP OF THE FILTER FABRIC. EXCESS FABRIC AT THE TOP OF THE HOLE SHOULD BE FOLDED OVER THE BACKFILL MATERIAL AT THE SUBGRADE LEVEL.
B. RECOMMENDED FILTER FABRIC MATERIAL: REEMAY INC. - TYPAR 3401 OR TYPAR 3341 PHILLIPS FIBERS CORP. - "SUPAC 4N" FABRIC

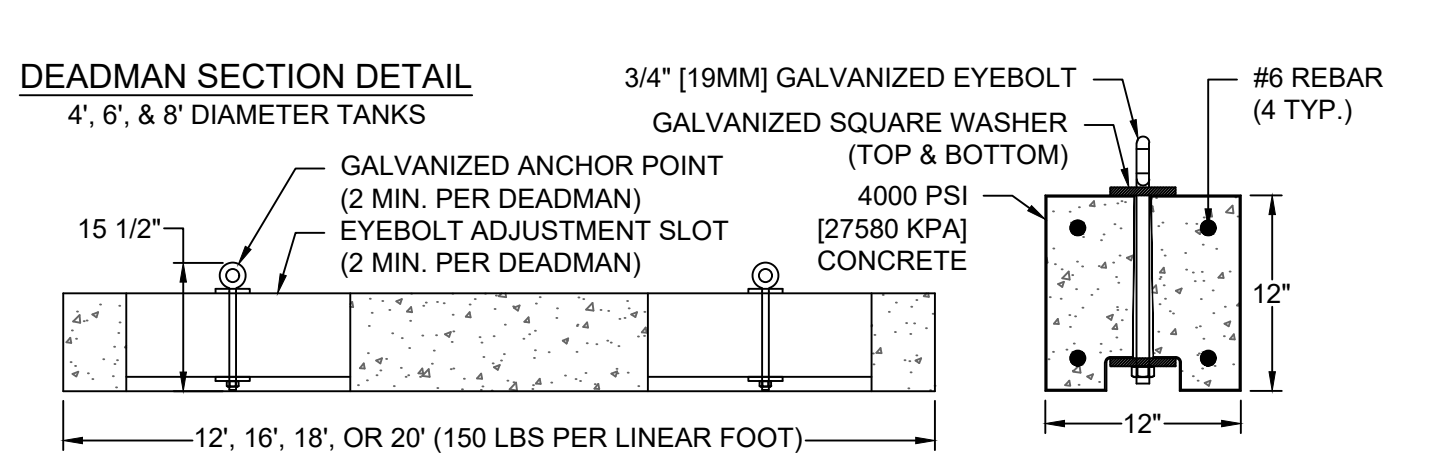
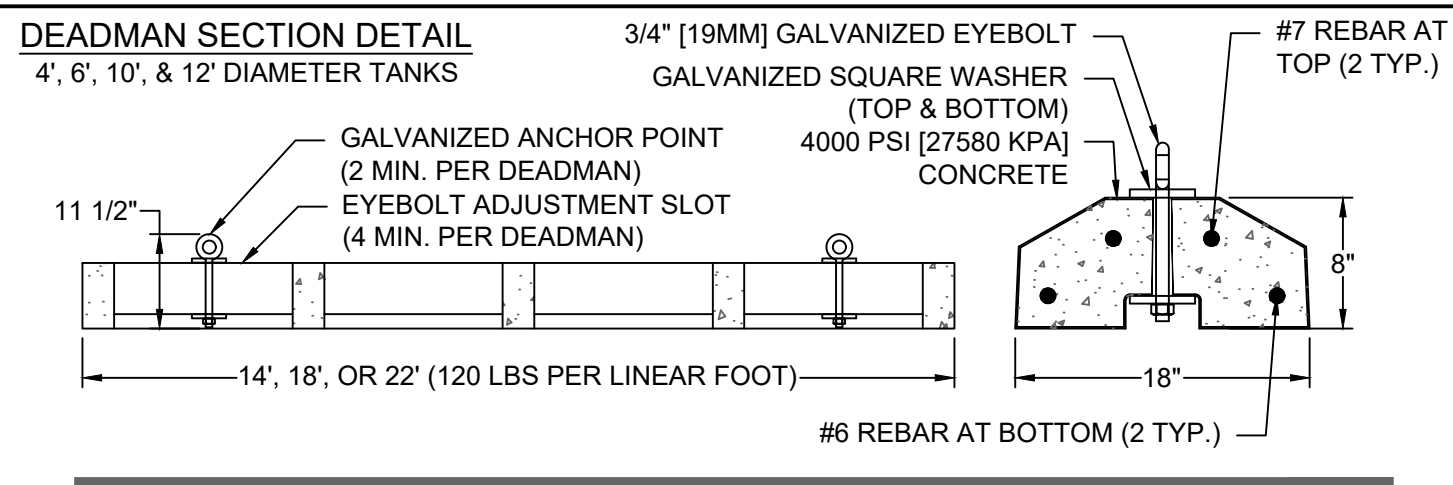
- SPECIFICATIONS
2.0 TANK HOLD-DOWNS (TIE-DOWNS)
A. HOLD-DOWN: WHEN SPECIFIED, THE "DEADMAN" SHALL BE INSTALLED PRIOR TO THE BED MATERIAL.
B. CAUTION: DO NOT PLACE TANKS ON CONCRETE SLABS, TIMBERS, BEAMS, CRADLES OR GROUT THE TANKS IN WET CEMENT. THE TANK, WHETHER TIED DOWN OR NOT, MUST NEVER BE LEFT ON THE BED WITHOUT A BACKFILL TO THE TOP OF THE TANK IF THERE IS ANY CHANCE OF WATER, 12" OR MORE ABOVE THE TANK BOTTOM, IN THE HOLE.



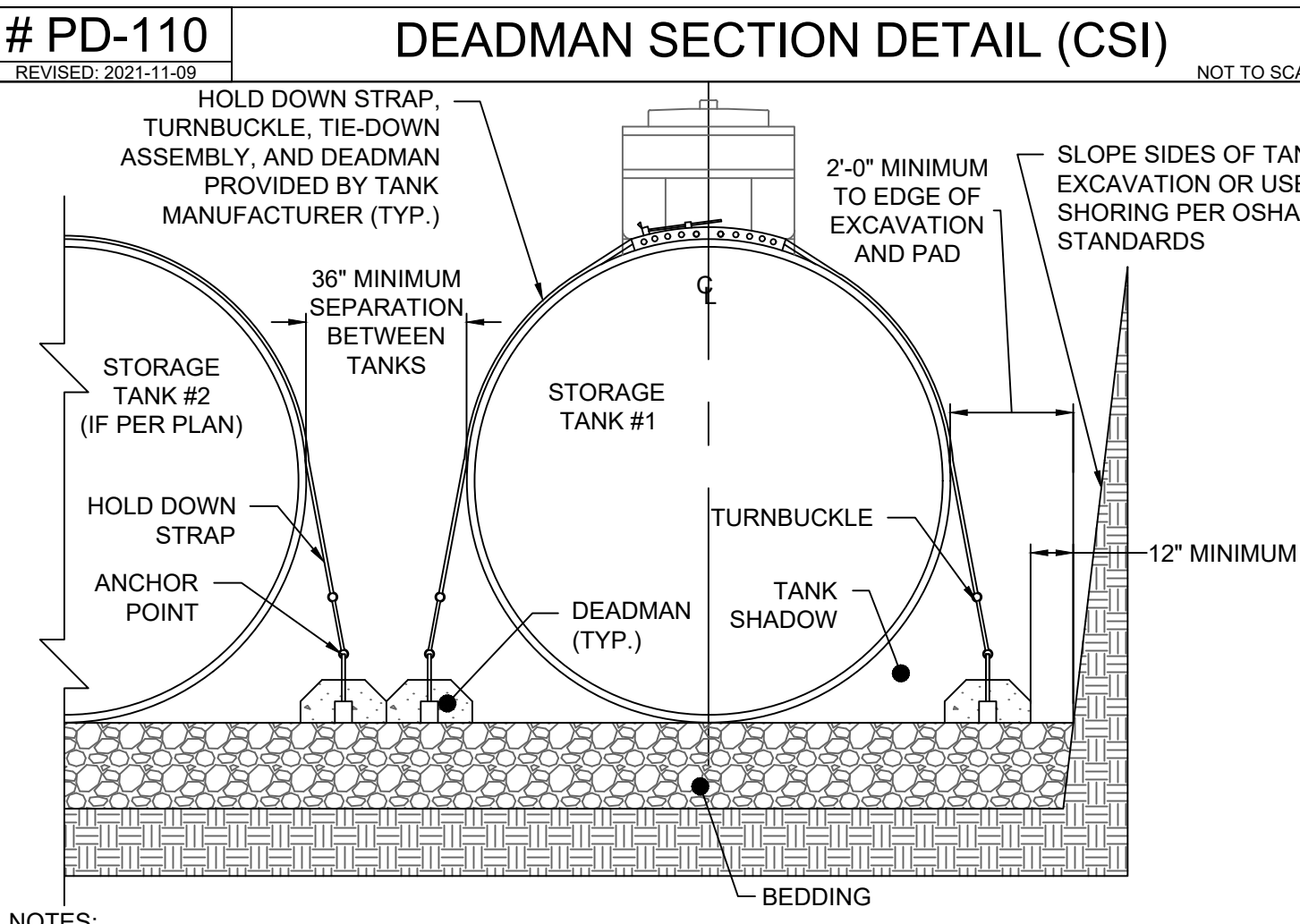
# PD-105 FILL TUBE AND PUMP INTAKE DETAIL (REVISED: 2021-11-09) NOT TO SCALE

- 2.1 TANK DEADMAN INSTALLATION
A. GENERAL REQUIREMENTS: ANCHOR ALL UNDERGROUND STORAGE TANKS WITH CONCRETE DEADMAN WHEN THICKENED TOP-SLAB DOES NOT PROVIDE ADEQUATE WEIGHT.
1. TANK BEDDING, BALLASTING AND TANK HOLE BACKFILL PROCEDURE ARE DESCRIBED IN THESE SPECIFICATIONS.
2. THE TANK ANCHORAGE SYSTEM SHOWN ON THE DRAWINGS IS DESIGNED FOR A MAXIMUM LEVEL OF GROUND WATER EQUAL TO THE SUBGRADE LEVEL.
2.2 MATERIALS
A. CONCRETE DEADMAN: REINFORCED CONCRETE, 18" X 8" IN CROSS-SECTION WITH CHAMFERED EDGES. LENGTH AS SHOWN ON THE DRAWINGS AND AS PROVIDED BY THE TANK MANUFACTURER.
B. ANCHOR CABLE: FIBERGLASS AS PROVIDED BY THE MANUFACTURER.
C. HARDWARE: CABLE CLAMPS, CABLE GUIDES, GUARDS, ETC., SHALL BE FURNISHED BY OWNER.
D. PROTECTIVE COATING: PRIOR TO BACKFILLING TANKS, APPLY A GENEROUS QUANTITY OF ASPHALT OR SIMILAR BITUMINOUS COATING BY BRUSH TO ALL EXPOSED STEEL CABLES, LOOPS AND HARDWARE.

- 2.3 INSTALLATION PROCEDURE
A. PREPARE THE TANK HOLE TO RECEIVE THE DEADMAN. INSTALL SHORING (OR SIDE SLOPING) IN ACCORDANCE WITH SECTION 1.3.
B. PUMP THE WATER OUT OF THE TANK HOLE. KEEP WATER OUT OF THE TANK HOLE UNTIL TANKS HAVE BEEN SET, TIED DOWN, BALLASTED, AND BACKFILLED.
C. INSERT EACH STRAP THROUGH ITS OWN ANCHOR LOOP IN THE DEADMAN RESERVING SUFFICIENT STRAP SO THAT BOTH ENDS OF THE STRAP WILL BE KEPT AT THE TOP OF THE TANK HOLE AFTER THE DEADMAN ARE SET. LOWER AND POSITION THE DEADMAN IN THE TANK HOLE KEEPING BOTH ENDS OF THE STRAPS AT THE TOP OF THE HOLE. INSTALL THE 12" MINIMUM THICK BEDDING MATERIAL IN TANK HOLE. SMOOTH AND SLOPE PER THE TANK BEDDING INSTRUCTIONS.
D. PROCEED WITH SETTING THE TANKS BY ADDING BALLAST AS NECESSARY TO SINK AND KEEP DOWN THE TANKS. USE ONLY ENOUGH BALLAST TO HOLD THE TANKS DOWN UNTIL THE BACKFILL IS EVEN WITH THE TOP OF THE TANKS. (REFER TO SECTION 1.1 FOR TANK SETTING REQUIREMENTS.) CAUTION: BALLAST LEVEL IN TANK MUST NEVER EXCEED WATER (OR BACKFILL) LEVEL IN TANK HOLE DURING INSTALLATION.

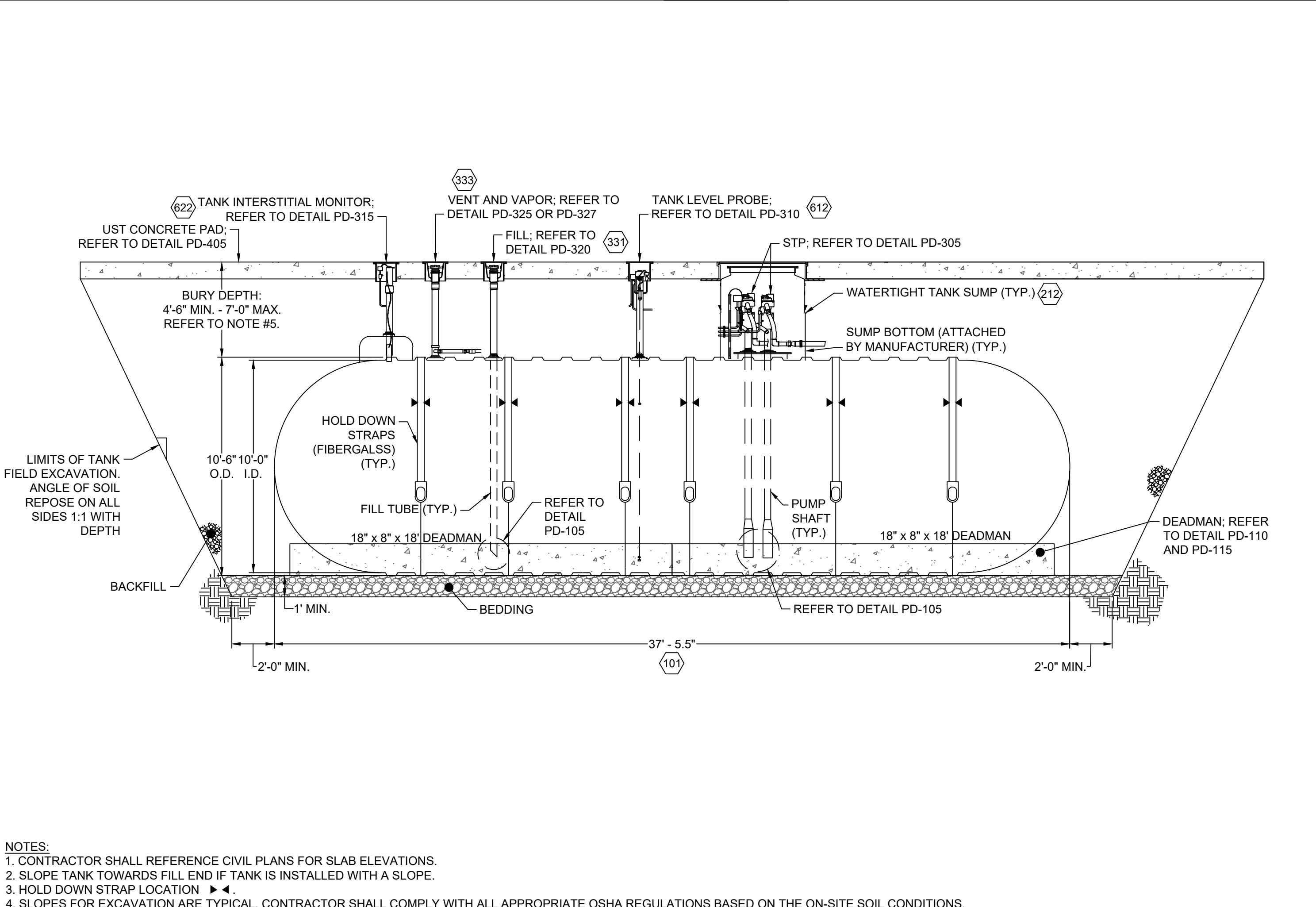


NOTES: 1. REFERENCE MANUFACTURER SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.



NOTES: 1. REFERENCE MANUFACTURER SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. 2. TOP OF TANKS TO BE SET AT SAME ELEVATION UNLESS DIRECTED BY CONSTRUCTION MANAGER.

# PD-115 DEADMAN TANK EXCAVATION DETAIL (REVISED: 2021-11-09) NOT TO SCALE



# PD-205 (CSI) 10' DIA. 20,000 GALLON TANK AND EXCAVATION DETAIL (REG. GAS) (REVISED: 2021-11-09) NOT TO SCALE



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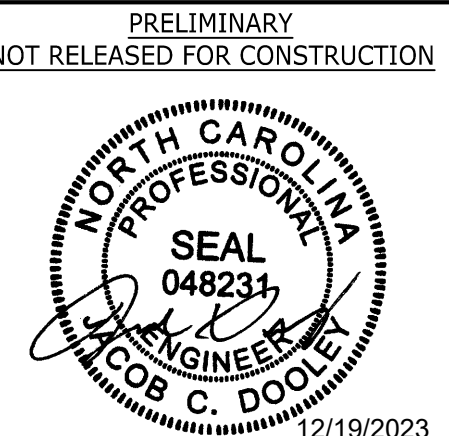
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07/28/2023	INDEQ SUBMITTAL
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12/19/2023	BID SET

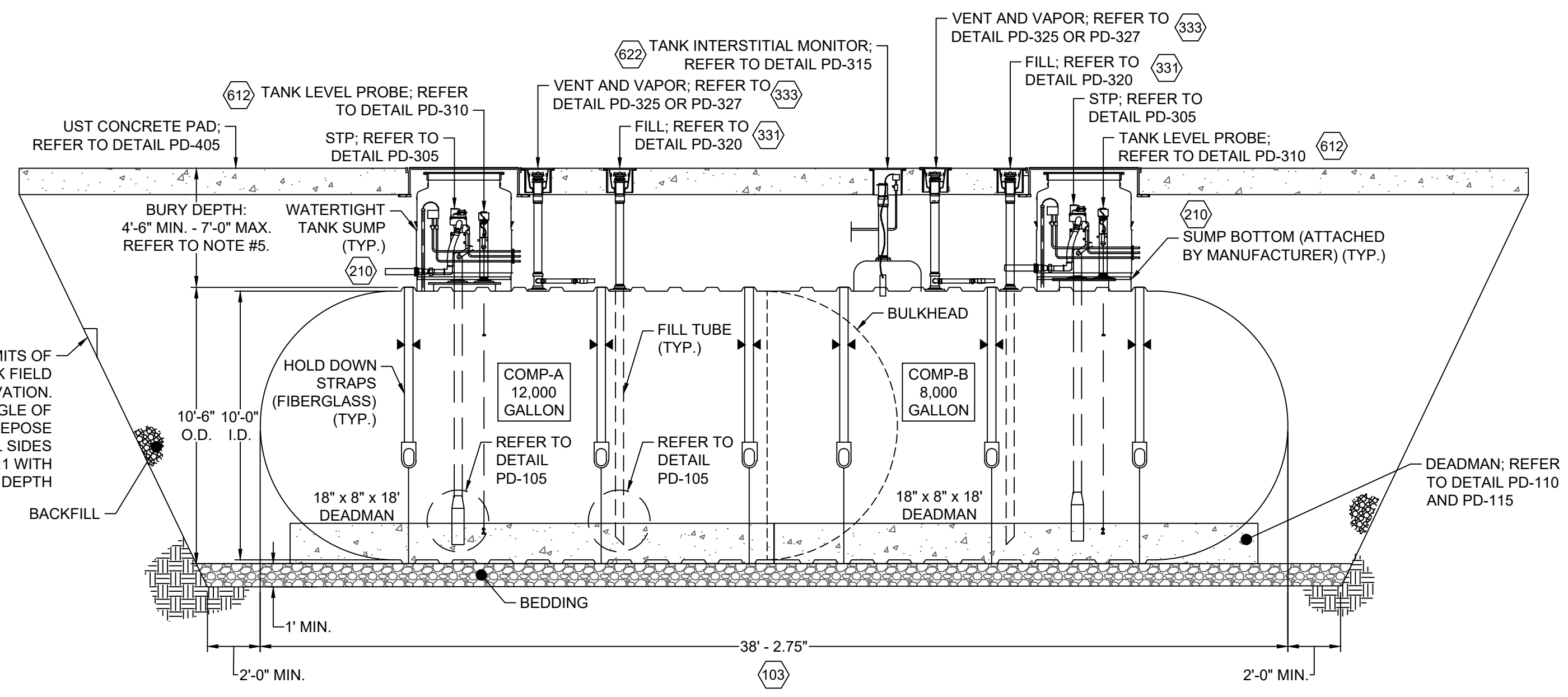
DATE	12/23/2022
DRAWN BY	J. FRENCH
DESIGNED BY	J. DOOLEY
CHECKED BY	J. DOOLEY
SCALE	AS SHOWN

**TIMMONS GROUP**  
 NORTH CAROLINA LICENSE NO. C-1652

**CIRCLE K - NTI NC55 KENNEBEC - ANGIER, NC**  
 ANGIER - WAKE COUNTY - NORTH CAROLINA

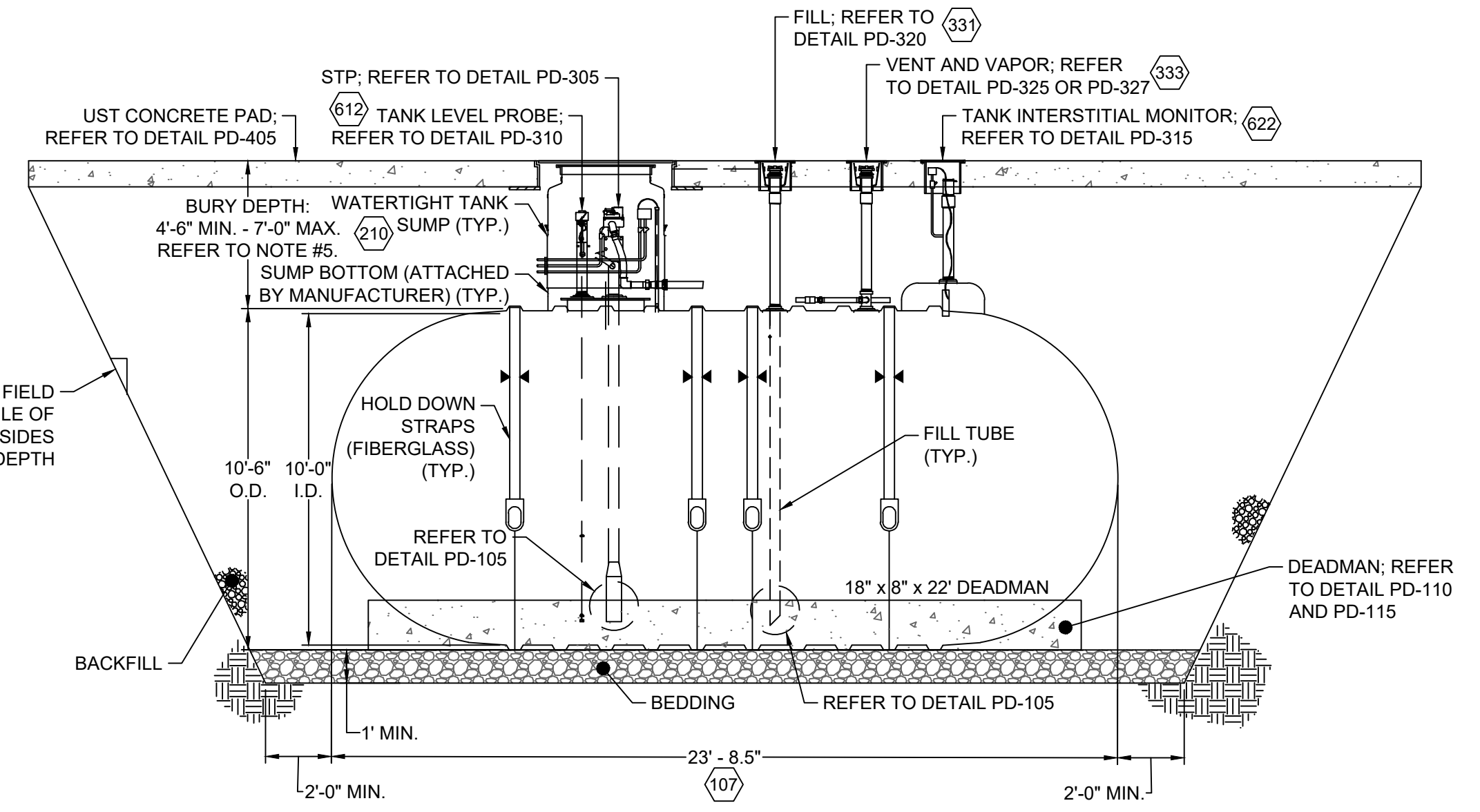
**NOTES AND DETAILS**

JOB NO. 37630.105  
 SHEET NO. PE04



- NOTES:**
1. CONTRACTOR SHALL REFERENCE CIVIL PLANS FOR SLAB ELEVATIONS.
  2. SLOPE TANK TOWARDS FILL END IF TANK IS INSTALLED WITH A SLOPE.
  3. HOLD DOWN STRAP LOCATION ▶ ◀
  4. SLOPES FOR EXCAVATION ARE TYPICAL. CONTRACTOR SHALL COMPLY WITH ALL APPROPRIATE OSHA REGULATIONS BASED ON THE ON-SITE SOIL CONDITIONS.
  5. MINIMUM BURY DEPTH BASED ON MANUFACTURER SPECIFICATION AND ANTI-BUOYANCY CALCULATIONS. TOP OF TANKS TO BE SET AT SAME ELEVATION UNLESS DIRECTED BY CONSTRUCTION MANAGER.
  6. REFERENCE MANUFACTURER SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

# PD-210 (CSI) 10' DIA. 20,000 GALLON COMPARTMENTALIZED TANK AND EXCAVATION DETAIL  
 REVISED: 2021-11-09 NOT TO SCALE

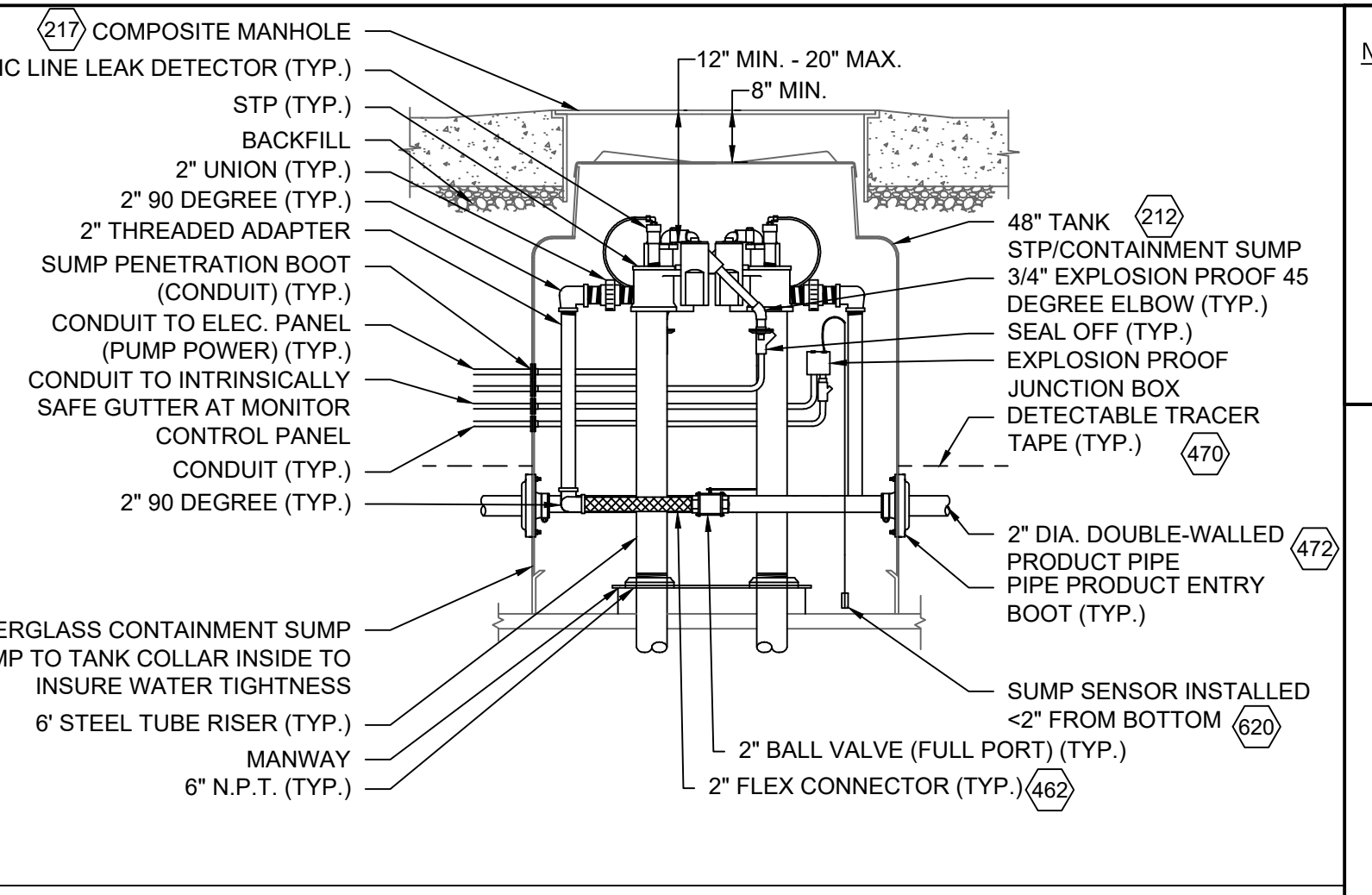
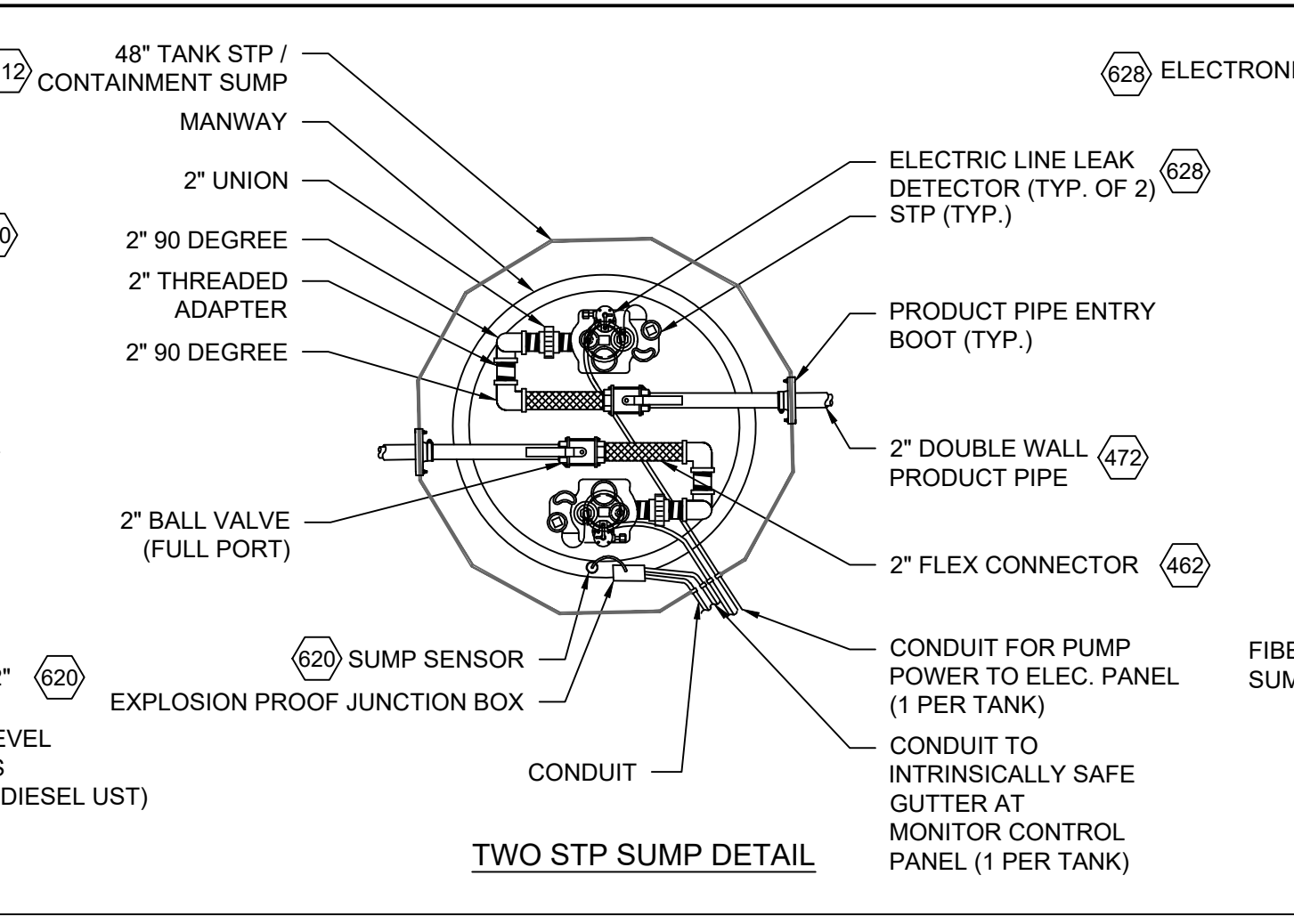
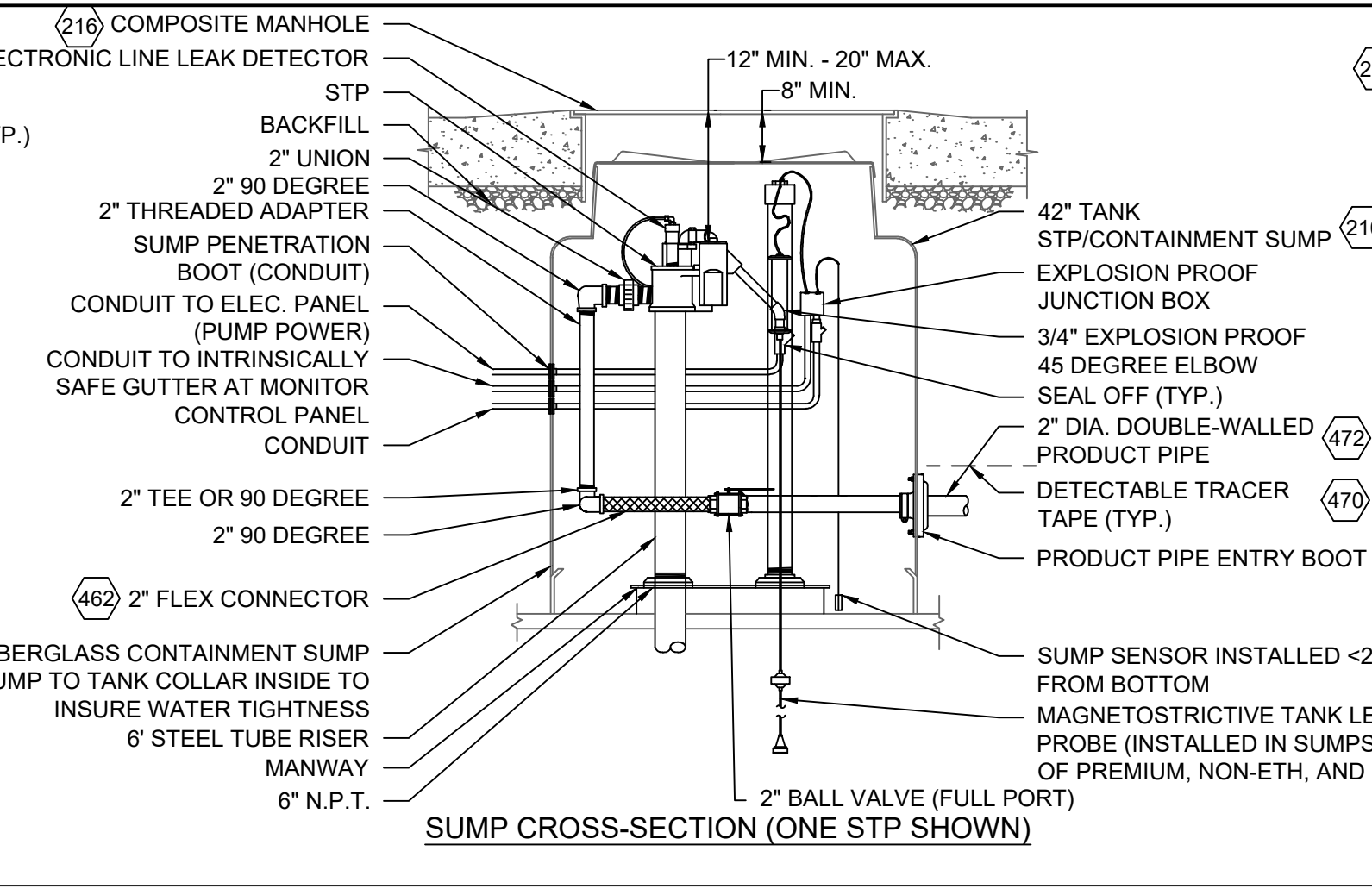
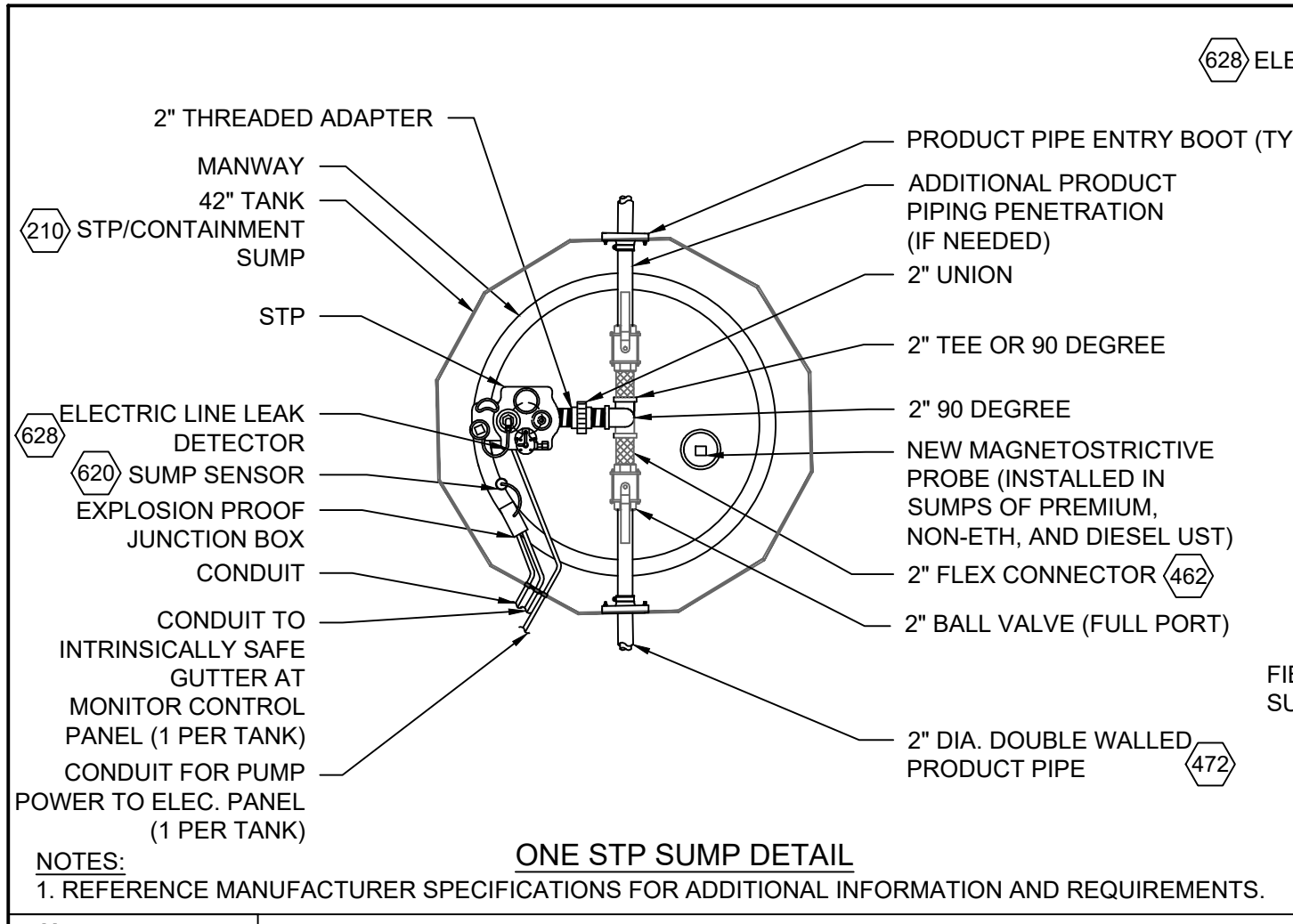


- NOTES:**
1. CONTRACTOR SHALL REFERENCE CIVIL PLANS FOR SLAB ELEVATIONS.
  2. SLOPE TANK TOWARDS FILL END IF TANK IS INSTALLED WITH A SLOPE.
  3. HOLD DOWN STRAP LOCATION ▶ ◀
  4. SLOPES FOR EXCAVATION ARE TYPICAL. CONTRACTOR SHALL COMPLY WITH ALL APPROPRIATE OSHA REGULATIONS BASED ON THE ON-SITE SOIL CONDITIONS.
  5. MINIMUM BURY DEPTH BASED ON MANUFACTURER SPECIFICATION AND ANTI-BUOYANCY CALCULATIONS. TOP OF TANKS TO BE SET AT SAME ELEVATION UNLESS DIRECTED BY CONSTRUCTION MANAGER.
  6. REFERENCE MANUFACTURER SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

# PD-215 (CSI) 10' DIA. 12,000 GALLON TANK AND EXCAVATION DETAIL  
 REVISED: 2021-11-09 NOT TO SCALE

S:\323237630-105-NC55Kennebec\Angier\CDWG\_Petro Plans\_Petroleum CAD Plans\37630\_105C-PE03-PE11.dwg | Plotted on 12/19/2023 10:06 AM | by Jacob Dooley

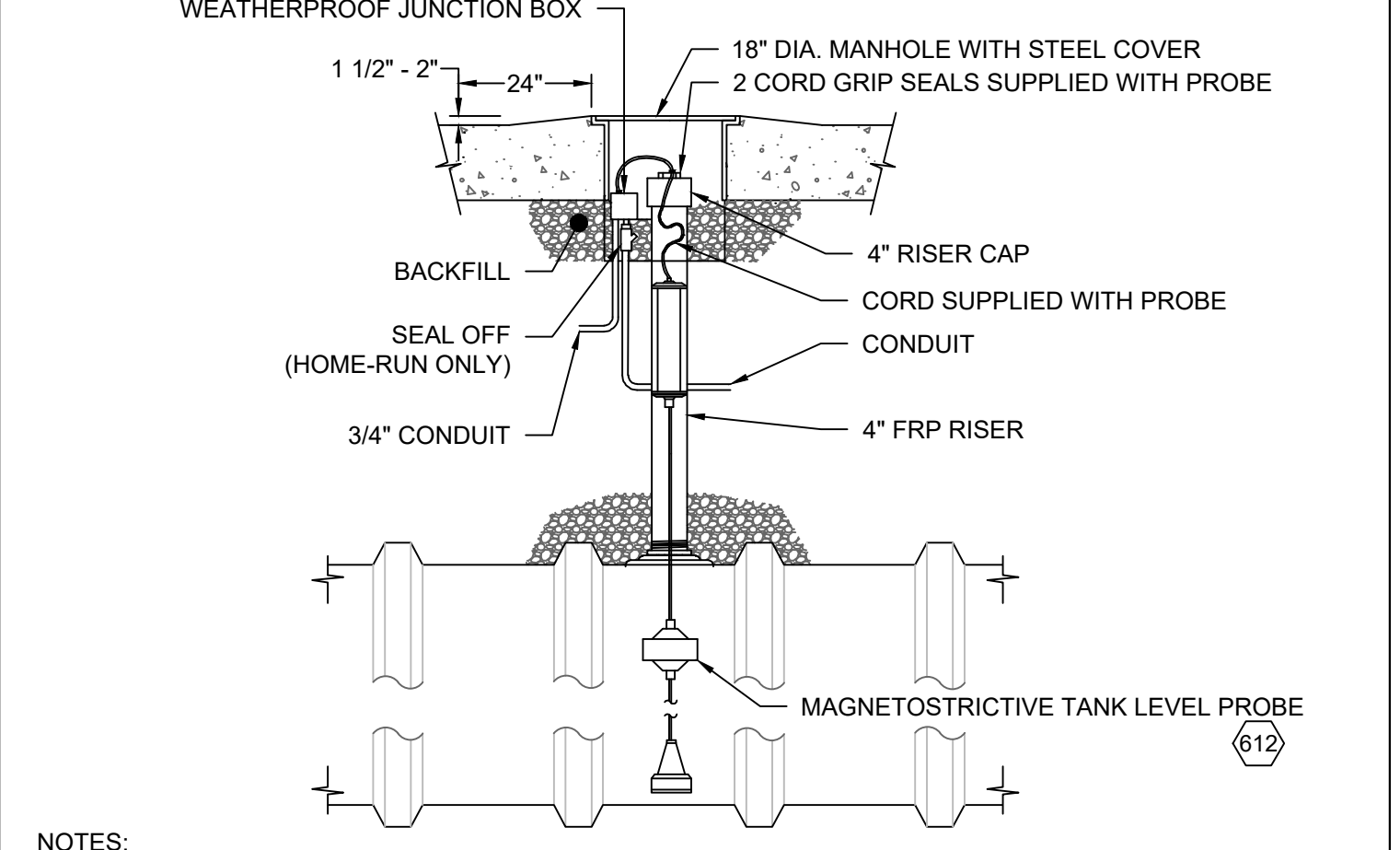
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NOTES:  
1. REFERENCE MANUFACTURER SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

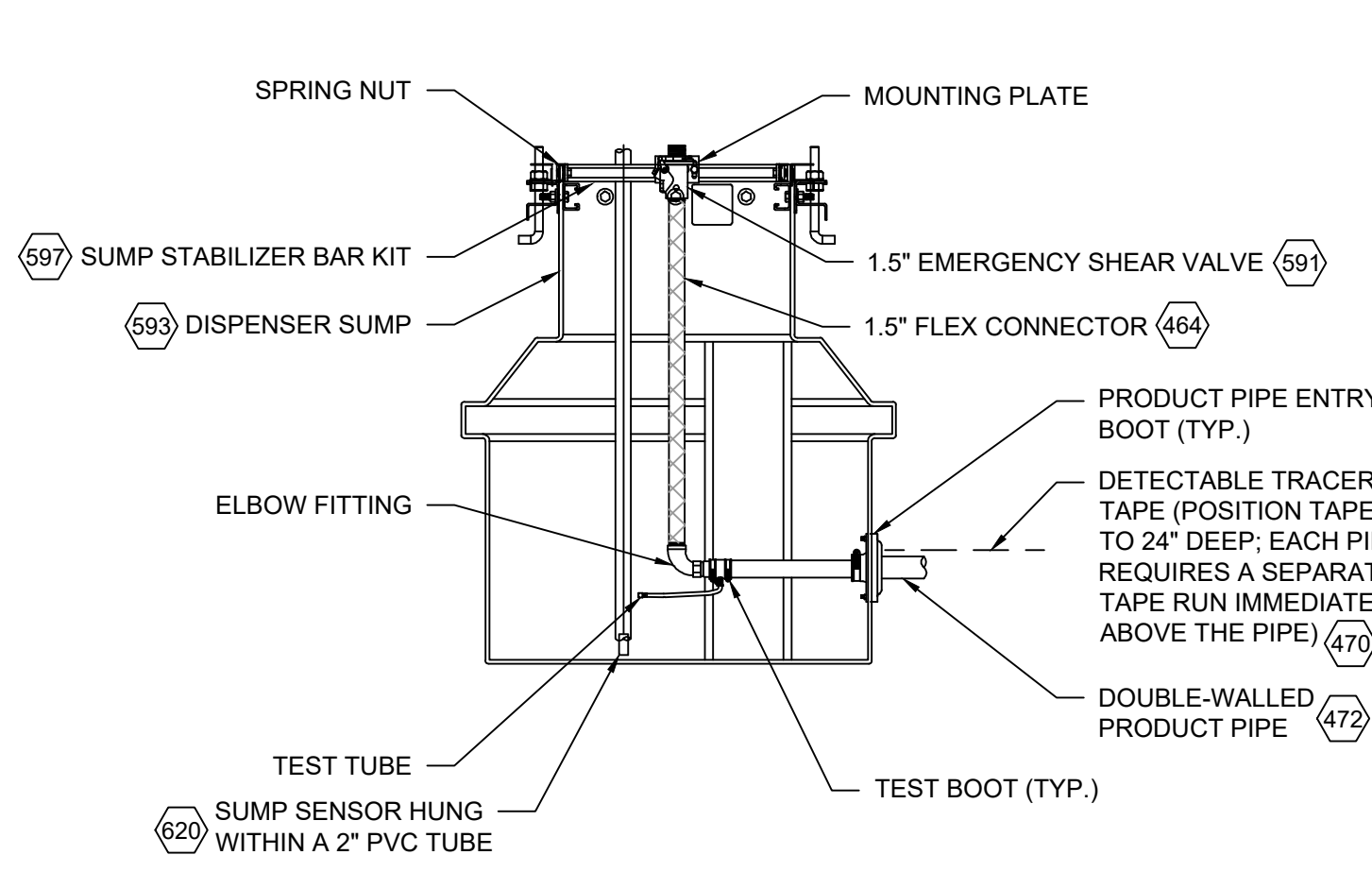
# PD-305  
REVISED: 2021-11-09

SUBMERSIBLE TURBINE PUMP (STP) AND SUMP DETAIL



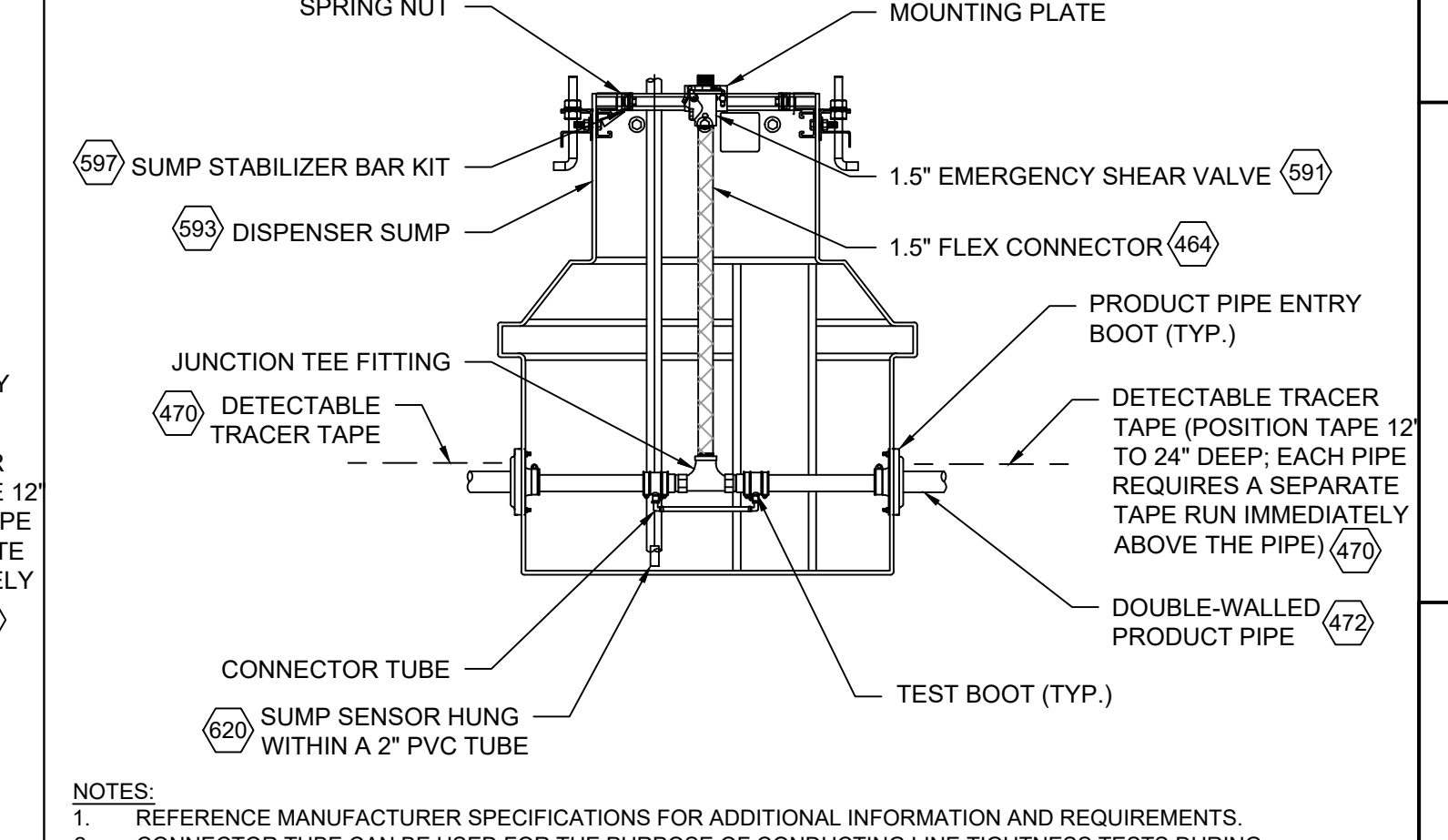
NOTES:  
1. MATCH APPROPRIATE PROBE LENGTH TO TANK DIAMETER.  
2. REFERENCE MANUFACTURER SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

# PD-310  
REVISED: 2021-11-09



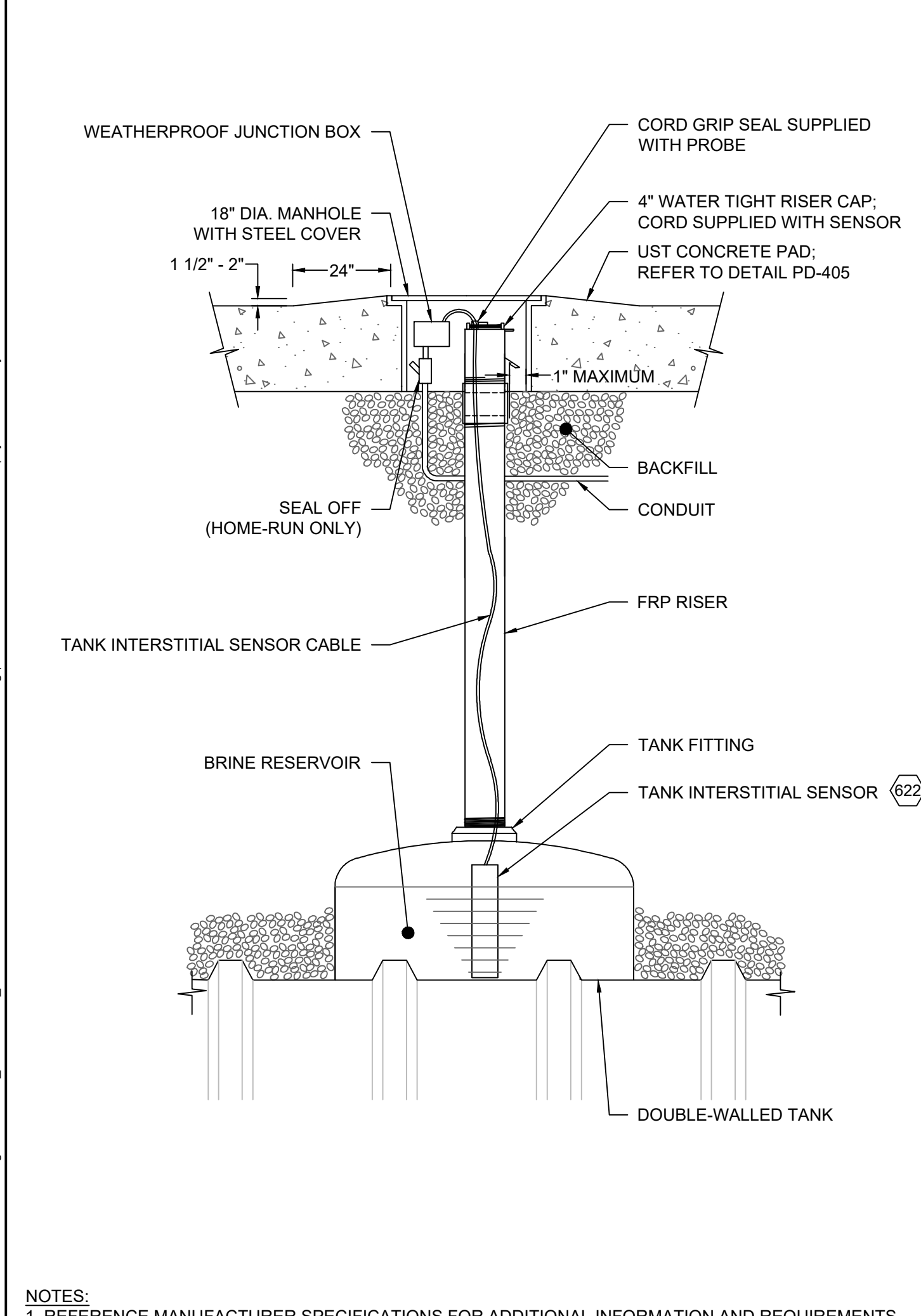
NOTES:  
1. REFERENCE MANUFACTURER SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

# PD-350  
REVISED: 2021-11-09



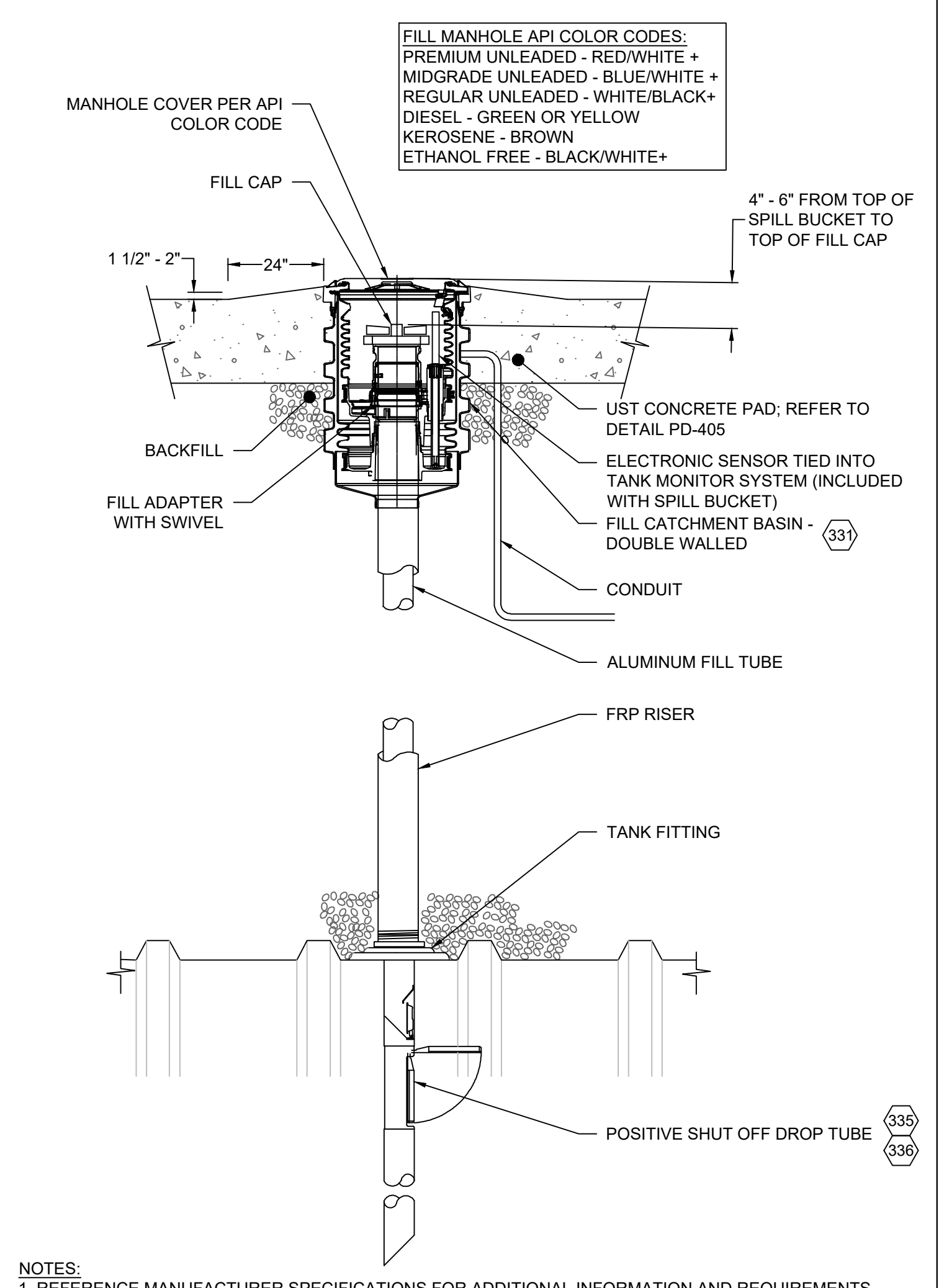
NOTES:  
1. REFERENCE MANUFACTURER SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.  
2. CONNECTOR TUBE CAN BE USED FOR THE PURPOSE OF CONDUCTING LINE TIGHTNESS TESTS DURING INSTALLATION OR TRIENNIAL TESTING, BUT WILL NEED TO BE DISCONNECTED DURING NORMAL OPERATION TO KEEP THE INTERSTICE OPEN WITHIN THE SUMPS.

# PD-355  
REVISED: 2021-11-09



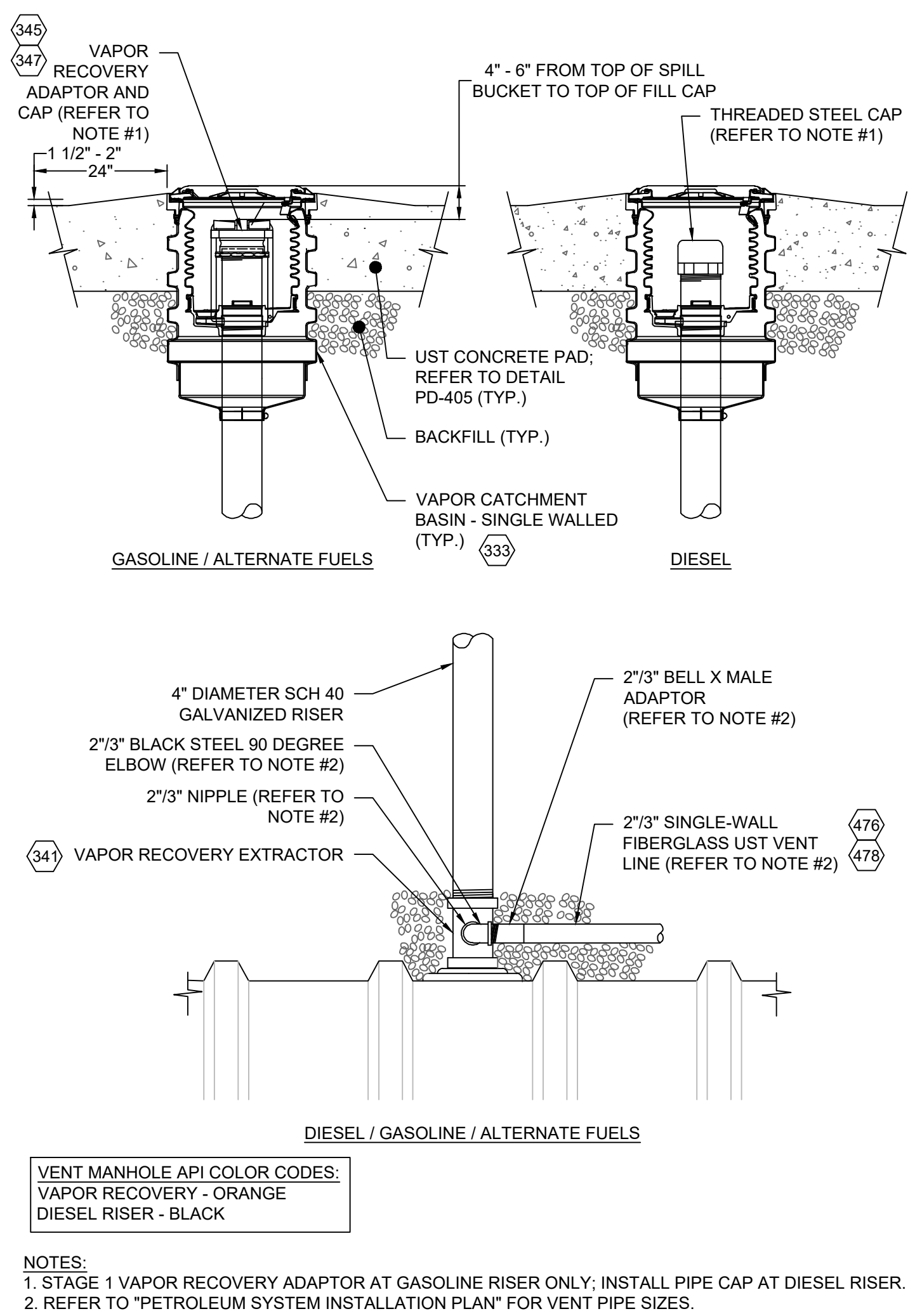
NOTES:  
1. REFERENCE MANUFACTURER SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

# PD-315  
REVISED: 2021-11-09



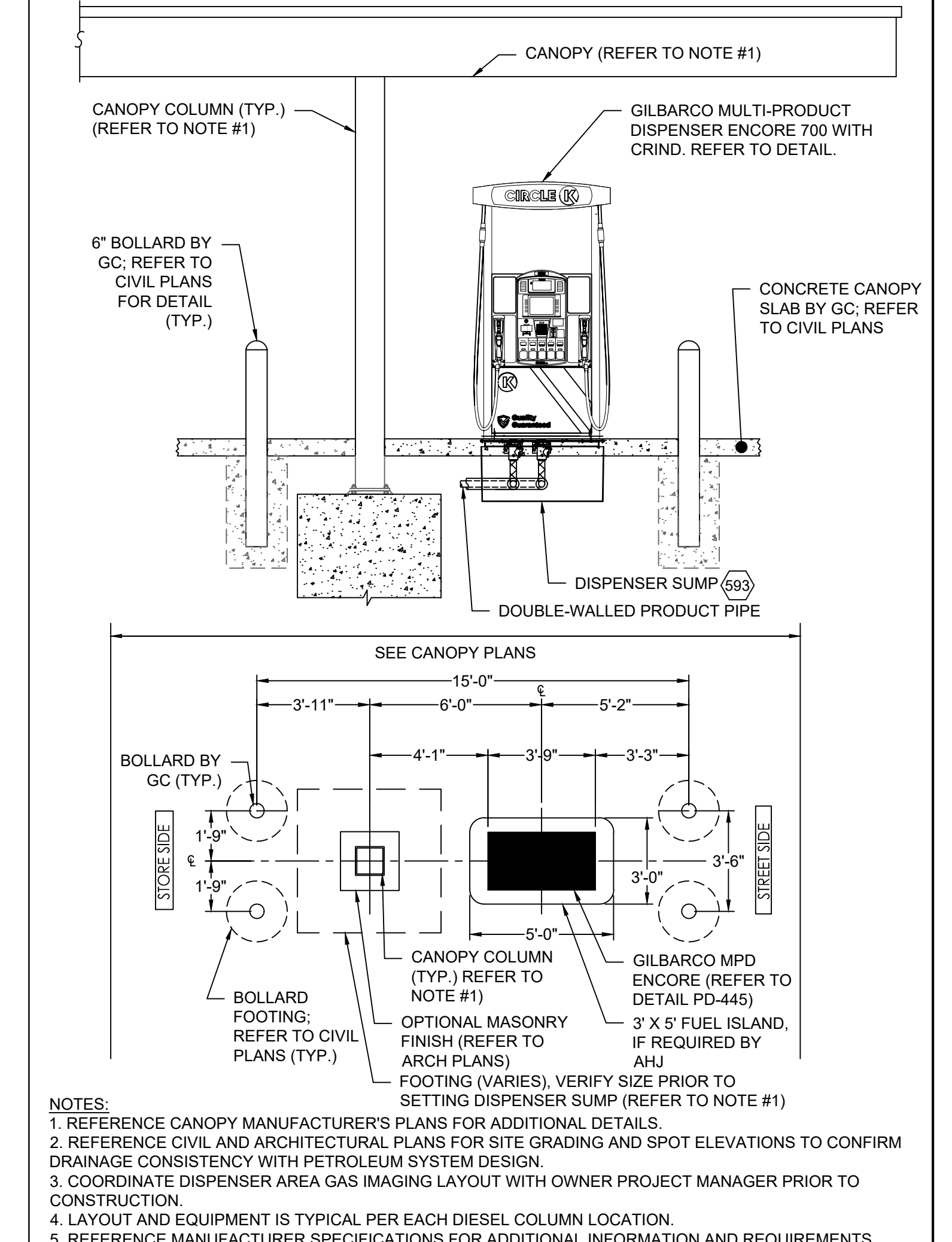
NOTES:  
1. REFERENCE MANUFACTURER SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

# PD-320  
REVISED: 2021-11-09



NOTES:  
1. STAGE 1 VAPOR RECOVERY ADAPTOR AT GASOLINE RISER ONLY; INSTALL PIPE CAP AT DIESEL RISER.  
2. REFER TO "PETROLEUM SYSTEM INSTALLATION PLAN" FOR VENT PIPE SIZES.

# PD-325  
REVISED: 2021-11-09



NOTES:  
1. REFERENCE CANOPY MANUFACTURER'S PLANS FOR ADDITIONAL DETAILS.  
2. REFERENCE CIVIL AND ARCHITECTURAL PLANS FOR SITE GRADING AND SPOT ELEVATIONS TO CONFIRM DRAINAGE CONSISTENCY WITH PETROLEUM SYSTEM DESIGN.  
3. COORDINATE DISPENSER AREA GAS IMAGING LAYOUT WITH OWNER PROJECT MANAGER PRIOR TO CONSTRUCTION.  
4. LAYOUT AND EQUIPMENT IS TYPICAL PER EACH DIESEL COLUMN LOCATION.  
5. REFERENCE MANUFACTURER SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

# PD-360  
REVISED: 2022-08-30



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DESIGNED BY J. DOOLEY  
CHECKED BY J. DOOLEY  
SCALE AS SHOWN

**TIMMONS GROUP**  
NORTH CAROLINA LICENSE NO. C-1652  
CIRCLE K - NTI NC55 KENNEBEC - ANGIER, NC  
ANGIER - WAKE COUNTY - NORTH CAROLINA  
NOTES AND DETAILS

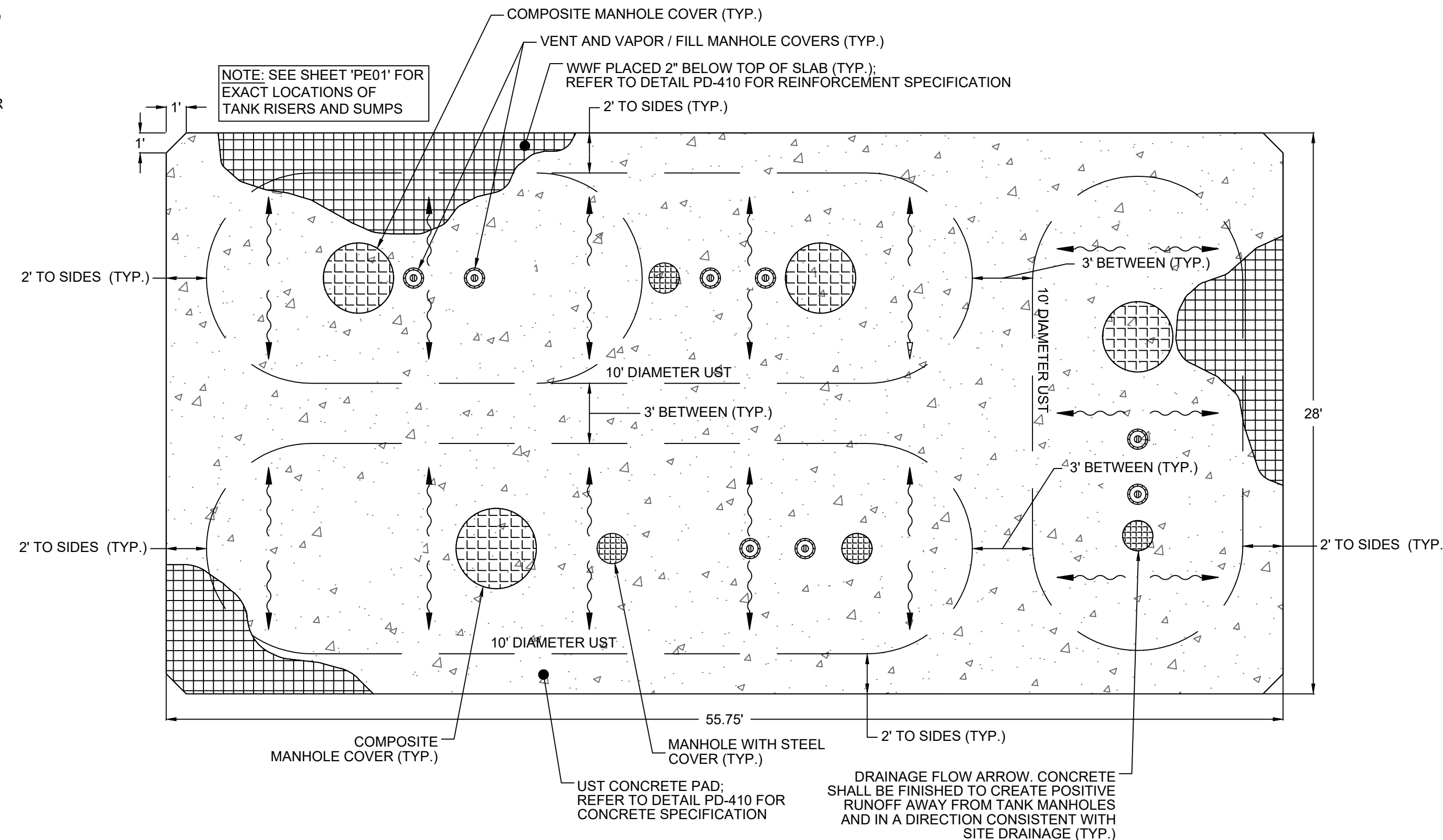
JOB NO. 37630.105  
SHEET NO. PE05

S:\323237630-105-NC55Kennebec\Angier\CDWG\_Petro Plans\_Petroleum CAD\Plan\37630\_105C-PED3-PE11.dwg | Plotted on 12/19/2023 10:08 AM | by Jacob Dooley

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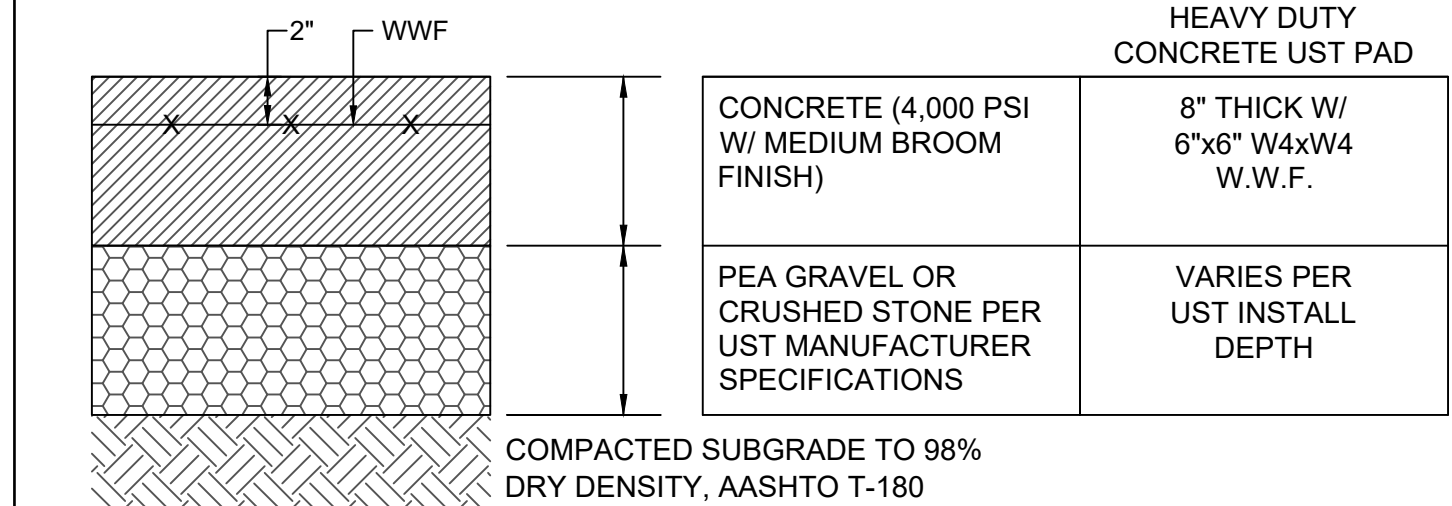
**GENERAL NOTES:**

- CONTRACTOR SHALL CONFIRM UST BUNG CONFIGURATION WITH OWNER AND UST MANUFACTURER PRIOR TO CONDUCTING ON-SITE WORK.
- CONTRACTOR SHALL VERIFY STP SIZE PRIOR TO CONDUCTING ON-SITE WORK; UST BUNG CONFIGURATION MAY DETERMINE STP SIZE TO BE UTILIZED.
- STP POWER CONDUIT AND DATA/LOW VOLTAGE CONDUITS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
- ALL NEW ELECTRICAL SHALL BE INSTALLED ACCORDING TO NFPA 70 "NATIONAL ELECTRICAL CODE" AND SPECIFICALLY ARTICLE 514.
- INSTALL A SPARE 1" CONDUIT TO THE REGULAR AND PREMIUM TANKS (VERIFY TERMINATIONS WITH OWNER).
- INSTALL A 4" AND 12" OBSERVATION WELL WITHIN UST CONCRETE PAD. 12" WELL TO BE AT LOW CORNER OF PAD.
- ALL COVERS, GASKETS, AND SEALS TO BE IN PLACE AND WATER TIGHT.
- CONCRETE SLAB SHALL HAVE A HEAVY BROOM FINISH.
- CONCRETE SLAB TO BE SEALED WITH AQUACRETE WB20 OR SIMILAR.
- CONCRETE REINFORCEMENT SHALL BE SUPPORTED BY CHAIRS (DOBE) OR BESSER BRICKS.
- API COLORED REFLECTORS SHALL BE INSTALLED AT THE FILL END MANHOLE PERIMETER.
- ALL CONCRETE SHALL HAVE POSITIVE FLOW AWAY FROM TANK OPENINGS.



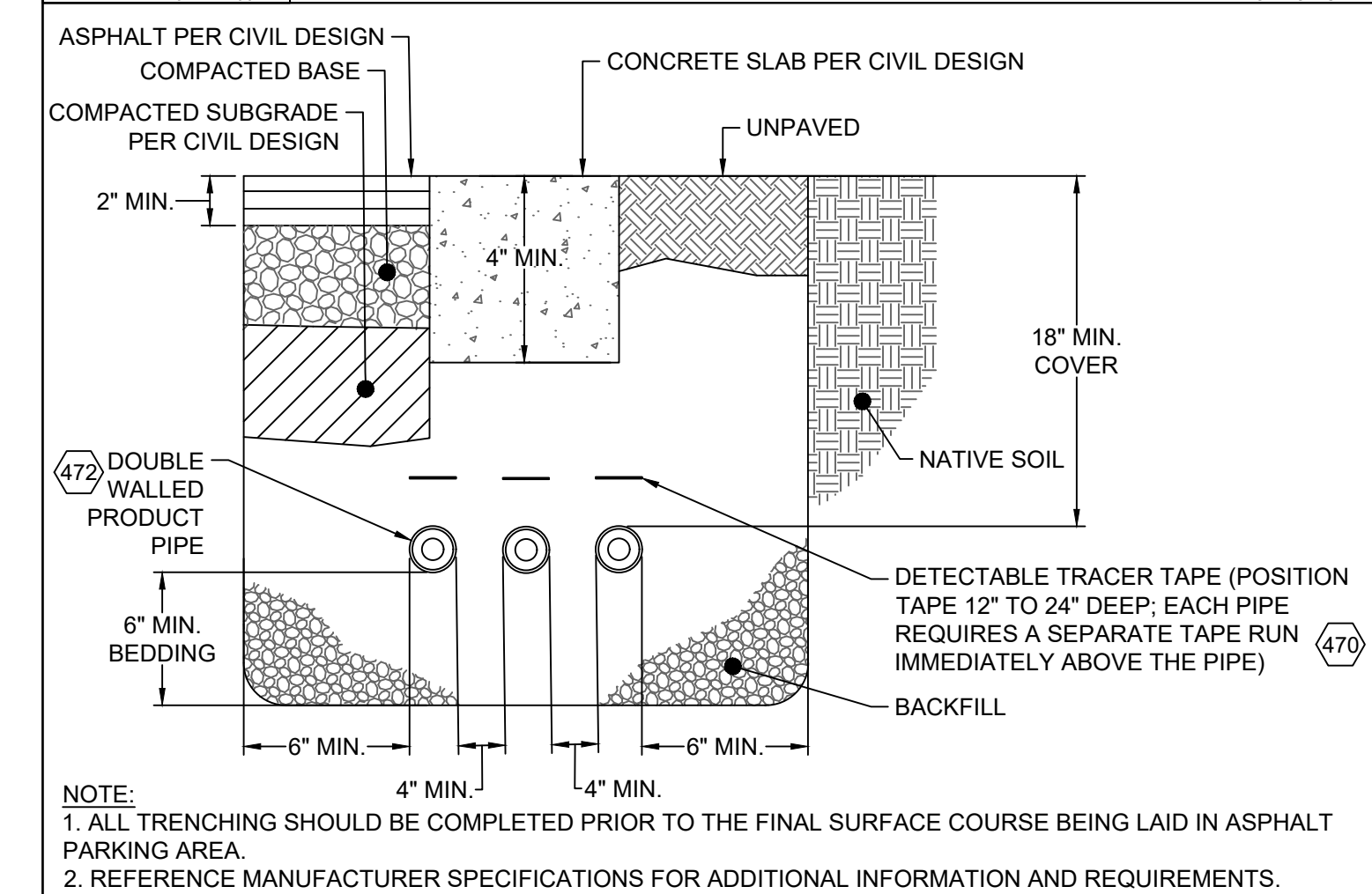
- NOTES:**
- REFER TO DETAIL PD-415 FOR CONTROL JOINTS INFORMATION.
  - REFERENCE MANUFACTURER SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

**# PD-405** UST CONCRETE PAD DETAIL NOT TO SCALE



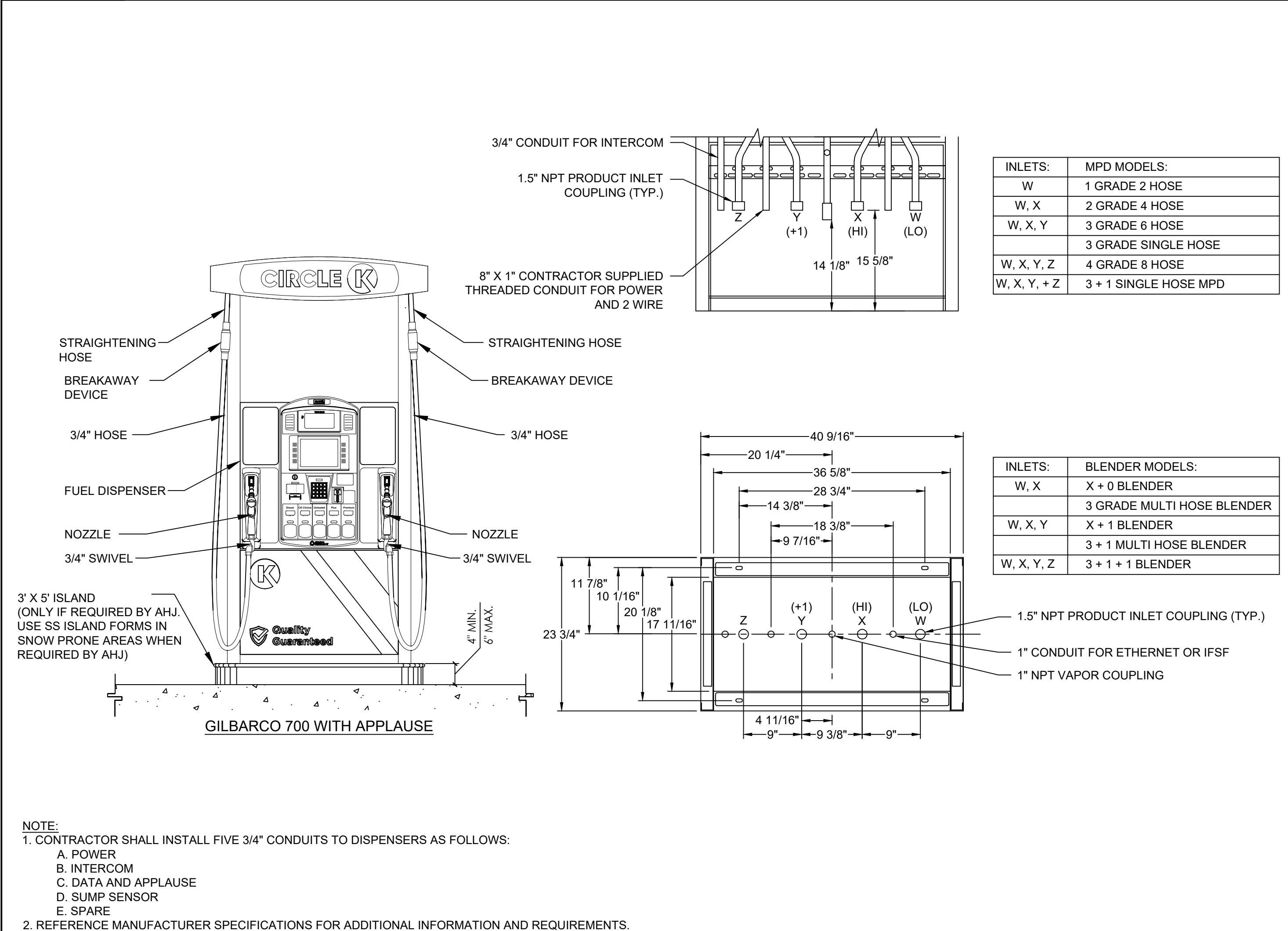
- NOTES:**
- PREPARING, GRADING, SHAPING, AND COMPACTION OF SUBGRADE SOILS SHOULD BE PERFORMED IN ACCORDANCE WITH DIVISION 5, SECTION 501 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (2018). PREPARING, GRADING, SHAPING, AND COMPACTION OF AGGREGATE BASE COURSE (ABC) STONE SHOULD BE PERFORMED IN ACCORDANCE WITH DIVISION 5, SECTION 520 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (2018). PLACEMENT AND COMPACTION OF THE BITUMINOUS CONCRETE SHOULD BE PERFORMED IN ACCORDANCE WITH DIVISION 6, SECTION 600 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (2018). PROPER SUBGRADE COMPACTION, ADHERENCE TO THE NCDOT SPECIFICATIONS, AND COMPLIANCE WITH PROJECT PLANS AND SPECIFICATIONS ARE CRITICAL TO THE PERFORMANCE OF THE CONSTRUCTED PAVEMENT.
  - CONTRACTOR RESPONSIBLE FOR REPAIRING ANY DAMAGES TO SUBGRADE PRIOR TO PLACING PAVEMENT AT NO ADDITIONAL COST.
  - CONTRACTOR RESPONSIBLE FOR PROTECTING PAVEMENT DURING ALL PHASES OF WORK. THE FINAL SURFACE OF PAVEMENT SHALL BE FREE OF ALL DEFECTS OR DAMAGE.

**# PD-410** UST PAVEMENT SECTION DETAIL NOT TO SCALE

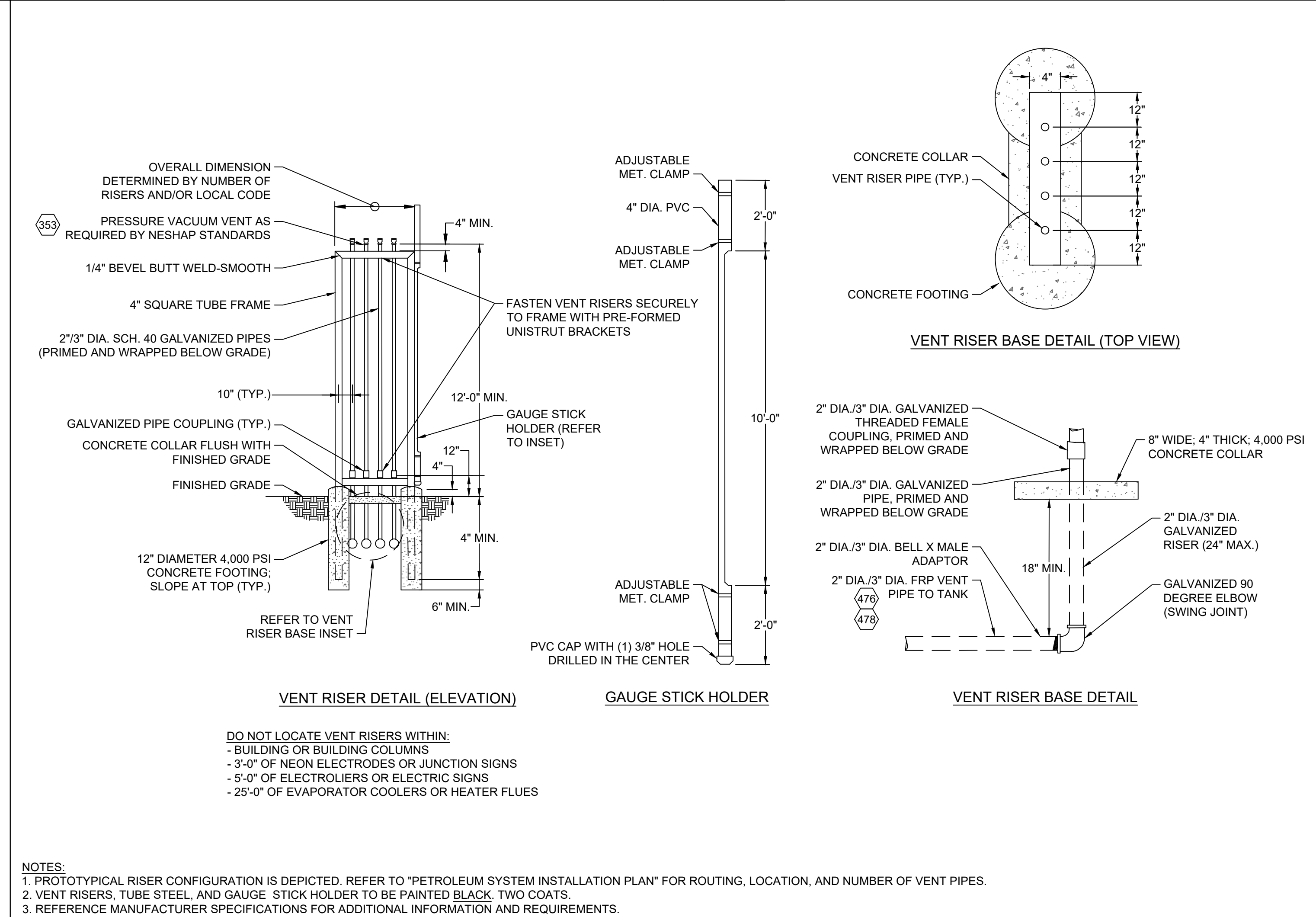


- NOTE:**
- ALL TRENCHING SHOULD BE COMPLETED PRIOR TO THE FINAL SURFACE COURSE BEING LAID IN ASPHALT PARKING AREA.
  - REFERENCE MANUFACTURER SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

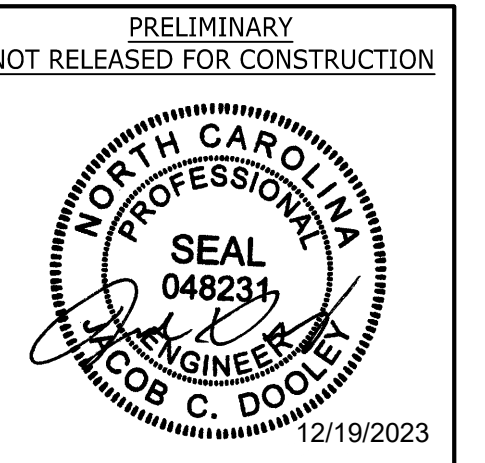
**# PD-450** PIPE TRENCH DETAIL NOT TO SCALE



**# PD-445** GILBARCO ENCORE DETAIL NOT TO SCALE



**# PD-455** FREESTANDING VENT RISER DETAIL NOT TO SCALE



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DATE: 12/23/2022

DRAWN BY: J. FRENCH

DESIGNED BY: J. DOOLEY

CHECKED BY: J. DOOLEY

SCALE: AS SHOWN

**TIMMONS GROUP**

NORTH CAROLINA LICENSE NO. C-1652

**CIRCLE K - NTI NC55 KENNEBEC - ANGIER, NC**

ANGIER - WAKE COUNTY - NORTH CAROLINA

**NOTES AND DETAILS**

JOB NO. 37630.105

SHEET NO. PE06

**CONCRETE SPECIFICATIONS**  
**(NOTIFY OWNER'S REPRESENTATIVE 24 HOURS PRIOR TO START OF CONCRETE PLACEMENT)**

**QUALITY ASSURANCE:**

A. CODES AND STANDARDS: COMPLY WITH PROVISIONS OF THE FOLLOWING CODES, SPECIFICATIONS, AND STANDARDS, EXCEPT WHERE MORE STRINGENT REQUIREMENTS ARE SHOWN OR SPECIFIED:

- AMERICAN CONCRETE INSTITUTE (ACI) 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS."
- ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE."
- CONCRETE REINFORCING STEEL INSTITUTE (CRSI) MANUAL OF STANDARD PRACTICE.

**SURFACE PREPARATION:**

A. ROUGH GRADING OF SITE TO BE COMPACTED TO AT LEAST 90% OF THE MODIFIED PROCTOR AT TANK SLAB & PUMP ISLANDS.

- WORK SHALL INCLUDE ANY ADDITIONAL SCRAPING, FILLING, COMPACTING, SUBGRADE TO PROPER GRADES, ELEVATIONS AND SHAPE TO RECEIVE WORK OF THIS SECTION.
- MAINTAIN FINISHED SUBBASE ELEVATION, AT NO MORE THAN 0.5 INCH ABOVE OR BELOW ELEVATIONS SHOWN ON CIVIL DRAWINGS.

**MATERIALS:**

A. ALL MATERIALS SHALL BE FREE FROM DEFECTS AND IMPERFECTIONS AND OF THE CLASSIFICATIONS AND GRADES DESIGNATED.

- CONCRETE MATERIALS:
  - PORTLAND CEMENT: ASTM C-150, NORMAL TYPE II (FOR DRAINAGE STRUCTURES) TYPE III (HIGH-EARLY).
  - PORTLAND CEMENT: ASTM C-185-77 TYPE 1A AIR ENTRAINING PORTLAND CEMENT.
  - COARSE AGGREGATE: C-33-77 MAXIMUM NOMINAL SIZE SHALL BE AS FOLLOWS:  
FOOTINGS: 1-1/2". ALL OTHER CONCRETE: 3/4".
  - WATER: CLEAN, POTABLE, AND FREE OF DELETERIOUS AMOUNTS OF ACIDS AND ORGANIC MATERIALS.
  - SAND: ASTM C-33, CLEAN, SHARP, NATURAL SAND FREE FROM LOAM, CLAY, AND LUMPS.
- REINFORCING STEEL:
  - RE-BAR (GAUGE AS NOTED IN DRAWINGS)
- JOINTS:
  - PERFORMED EXPANSION JOINTS
    - EXTERIOR CONCRETE: ASTM D-1751, "SEALTIGHT FIBRE" EXPANSION JOINT FILLER. CONCRETE TANK MAT, JOINTS WITHIN 12 FEET OF DISPENSER ISLANDS, SEALTIGHT ASPHALT EXPANSION JOINT FILLER AT ALL OTHER YARD IMPROVEMENTS. THICKNESS: 3/4" THICK UNLESS OTHERWISE INDICATED.
    - INTERIOR CONCRETE SLABS: ASTM C-994, "SEALTIGHT ASPHALT" EXPANSION JOINT FILLER. THICKNESS: 1/2" INCH UNLESS OTHERWISE INDICATED.
    - MANUFACTURER: W.R. MEADOWS OF GEORGIA, INC., ATLANTA, GEORGIA 30336 (404-691-5358).
  - JOINT SEALING COMPOUND: (EXTERIOR CONCRETE SLABS)
    - 2 COMPONENT NON-SAG/SELF LEVELING FED. SPEC. TT-500227EPOLYURETHANEL SIKAFLEX 2-C NS/SL. (GASOLINE RESISTANT) COLOR: LIMESTONE GRAY PRIMER: SIKAFLEX 429 MANUFACTURER: SIKAFLEX CORPORATION, LYNHURST, NJ 07071 (201-933-8800)
  - SEALANT BACKER ROD: ROUND CLOSED CELL POLYETHYLENE; COMPATIBLE WITH SEALANT, 50% LARGER THAN JOINT WIDTH. ETHAFOAM 58.
    - MANUFACTURER: DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN 48640 (201-845-5000).
- REFER TO CIVIL PLANS FOR STEEL PIPE GUARD DETAILS.
- NON-SHRINK GROUT: FACTORY PACKAGED PRE-MIXED COMPOUND, REQUIRING ONLY MIXING WITH WATER AT PROJECT SITE.
- CONCRETE:
  - BE READY-MIX, MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C 94 AND AS SPECIFIED
  - WHEN AIR TEMPERATURE IS BETWEEN 85 DEGREES F AND 90 DEGREES F, REDUCE MIXING AND DELIVERY TIME TO 60 MINUTES.
  - CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH IN PLACE AT 28 DAYS:
    - EXTERIOR SLABS AND CURBS: 4000 (MINIMUM) PSI AIR ENTRAINED 6% +/- 1%. SLUMP: 4" TO 5", WATER CEMENT RATIO 0.35 MAXIMUM.
    - FOUNDATIONS AND FOOTING: 3000 PSI
    - INTERIOR SLABS ON GRADE: 3000 PSI, RATIO 0.67 MAXIMUM.
- STANDARD THREADED FASTENERS:
  - ANCHOR BOLTS: ATSM A-307
  - INSTALL ANCHOR BOLTS, OTHER ANCHORAGES REQUIRED FOR SECURING STRUCTURAL STEEL TO FOUNDATIONS.
- FORMS:
  - CONFORM TO SHAPES, LINES AND DIMENSIONS INDICATED; SHALL BE MORTAR TIGHT AND WELL SECURED AGAINST WARPING, BULGING, AND DEFLECTION, PREPARED FOR REMOVAL WITHOUT DAMAGE.
  - WHERE SOIL CONDITIONS PERMIT AND ARE APPROVED BY THE SUB-CODE OFFICIAL, SIDE FORMING FORMS MAY BE OMITTED.
  - MATERIAL:
    - UNEXPOSED CONCRETE SURFACES: STANDARD GRADE OR BETTER LUMBER OR APA PLYWOOD RATED SHEATHING. EXPOSURE 1.
    - EXPOSED SURFACES: PLYWOOD OR METAL TO PRODUCE A SMOOTH FORM FINISH.

**EXECUTION:**

A. **FORMWORK ERECTION:**

- VERIFY LINES, LEVELS AND CENTERS BEFORE PROCEEDING WITH FORM WORK. ENSURE THAT DIMENSIONS AGREE WITH THE DRAWINGS.
- CONSTRUCT FORMWORK, SHORING, AND BRACING TO MEET DESIGN AND CODE REQUIREMENTS SO THAT RESULTANT FINISH CONCRETE CONFIRMS TO REQUIRED SHAPES, LINES, AND DIMENSIONS.
- PROVIDE BRACING TO ENSURE STABILITY OF FORMWORK. PROP OR STRAIGHTEN FORMWORK LIABLE TO BE OVERSTRESSED BY CONSTRUCTION LOADS.

B. **INSPECTION:**

- VERIFY THAT FORMWORK AND EXCAVATIONS ARE COMPLETED.
  - CHECK THAT REINFORCEMENT, PIPING, CONDUITS AND OTHER EMBEDDED ITEMS ARE SECURED IN PLACE.
  - CORRECT CONDITIONS DETRIMENTAL TO THE PROPER AND TIMELY COMPLETION OF THE WORK.

C. **JOINTS:**

- SEPARATE SLABS ON GRADES FROM VERTICAL FACES, STRUCTURAL ELEMENTS AND OTHER FIXED OBJECTS WITH PRE-MOLDED JOINT FILLER.
  - LOCATE JOINT FILLERS FULL WIDTH AND DEPTH OF JOINT AND NOT MORE THAN 1/2 INCH BELOW TOP SURFACE.
  - LOCATE EXPANSION JOINTS IN CURBS AND WALKS AT 20'-0" O.C. UNLESS OTHERWISE INDICATED ON PLANS. SET PERPENDICULAR TO LONGITUDINAL AXIS OF WALKS, CURBS, AND GUTTERS. MAKE JOINTS OF CURBS COINCIDE WITH JOINTS IN WALKS.
  - TOOLED JOINTS FOR SIDEWALKS: FORM IN CONCRETE BY GROOVING TOP PORTION WITH A CUTTING TOOL AND FINISHING EDGES WITH A JOINTER. SPACE AT WIDTH OF SIDEWALK, BUT NOT OVER 5'-0" CENTERS EACH WAY.
- EXTERIOR CONCRETE EXPANSION JOINTS (GASOLINE RESISTANT):
  - INSTALL SEALANT BACKER ROD ON TOP OF FID EXPANSION JOINT FILLER SO THAT CLEAR JOINT DEPTH IS 1/2 OF JOINT WIDTH BUT NEVER LESS THAN 3/8 INCH.
  - CLEAN ALL SURFACES. JOINT WALL SHALL BE SOUND, CLEAN, DRY, AND FREE FROM OIL, GREASE AND ANY OTHER FOREIGN MATTER. INSTALL BOND BREAKER AT BOTTOM JOINT TO PREVENT BOND.
  - APPLY CLOTH MASKING TAPE ALONG EDGES OF JOINT TO OBTAIN NEAT STRAIGHT EDGES.
    - APPLY PRIMER WITH A BRUSH ON CLEAN, DRY, SOUND JOINT SLOT SURFACES. INSTALL SEALANT WHEN PRIMER IS DRY (APPROXIMATELY 15-30 MINUTES).
  - PRE-CONDITION MATERIAL TO APPROXIMATE 75F. MIX COMPONENT B TO COMPONENT A IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
  - INSTALL SEALANT INTO JOINTS WITHIN 1/16 INCH OF SURFACE.
  - REMOVE MASKING TAPE BEFORE SEALANT HAS SET.

D. **CONCRETE REINFORCEMENT:**

- PLACE REINFORCING SUPPORTED BY CHAIRS OR CONCRETE BRICKS AND SECURED AGAINST DISPLACEMENT. MANUALLY PULLING STEEL UP NOT PERMITTED.
- BEFORE PLACING CONCRETE, ENSURE REINFORCING IS CLEAN, FREE OF LOOSE SCALE, DIRT, OR OTHER FOREIGN COATINGS WHICH WOULD REDUCE BOND TO CONCRETE.
- LAP BARS 40 DIAMETERS AT SPLICES AND RETURNED 24 DIAMETERS AT CORNERS.
- CONCRETE COVER: REINFORCEMENT: SHALL BE INSTALLED TO PROVIDE THE FOLLOWING MINIMUM CONCRETE COVER OVER STEEL ENFORCEMENT.
  - FOOTINGS: 3 INCHES OUTSIDE OF STEEL.
  - FLOOR SLABS ON EARTH BOTTOM: 2 INCHES OUTSIDE OF VERTICAL STEEL.

d) FORMED WALLS AGAINST EARTH: 2 INCHES OUTSIDE OF VERTICAL STEEL.

e) CONCRETE WALKS, CURBS, GUTTERS, ETC.: 1-1/2" MINIMUM CONCRETE COVER.

i. WELDED WIRE FABRIC: OF SIZES, SPACING INDICATED ON DRAWINGS; PLACED THROUGHOUT RESPECTIVE AREAS, WITH A MINIMUM OVERLAP OF 6 INCHES OR ONE SPACE, LACE SPLICES WITH WIRE. EXTENDED WITHIN 3 INCHES ON MAT EDGES AND JOINTS.

ii. ENTRANCE DRIVEWAYS, RAMPS, SIDEWALKS, CURBS, ETC., OUTSIDE OF PROPERTY LINES SHALL BE OF THICKNESS AND REINFORCED AS INDICATED ON CIVIL DRAWINGS, UNLESS REQUIRED OTHERWISE BY GOVERNING AUTHORITIES.

E. **CONCRETE PLACEMENT:**

- ASSURE THAT EXCAVATIONS AND FORMWORK ARE COMPLETED. HAND EXCAVATE FOOTING BOTTOMS TO PROPER ELEVATIONS. FILL EXCESSIVE EXCAVATIONS WITH CONCRETE.
  - DO NOT PLACE FOOTINGS ON NEW FILL UNLESS COMPACTED TO SPECIFIED DENSITY (I.E. 90% OF MODIFIED PROCTOR)
  - VERIFY THAT REINFORCEMENT, EXPANSION JOINT MATERIAL, OTHER EMBEDDED ITEMS ARE SECURED IN PLACE.
  - NOTIFY OWNER'S REPRESENTATIVE A MINIMUM OF 24 HOURS PRIOR TO THE START OF CONCRETE PLACEMENT.
  - PLACING CONCRETE SLABS: SUPPORT AND CONSOLIDATE CONCRETE SLABS IN A CONTINUOUS OPERATION, WITHIN LIMITS OF CONSTRUCTION JOINTS, UNTIL COMPLETING PLACEMENT OF A PANEL OR SECTION.
- COORDINATE MECHANICAL & ELECTRICAL SUBCONTRACTORS COORDINATING LOCATIONS OF PIPELINES, CONDUITS, ETC., PASSING THROUGH FOOTINGS. REINFORCE FOOTINGS TO BRIDGE SUCH LINES.
  - DROP FOOTINGS WHEN REQUIRED FOR CLEARANCE OF PIPES, ETC., ABOVE FOOTINGS, THROUGH FOUNDATION WALLS.
  - PROVIDE "STEPS" AT CHANGES IN FOOTING LEVELS, FULL WIDTH OF FOOTINGS, FILLED SOLIDLY FULL DEPTH OF EXCAVATION.
- FOUNDATIONS:
  - CONSTRUCT FOUNDATIONS FOR SITE LIGHTING POLES, CANOPY, STRUCTURES IDENTIFICATION SIGN, PRICE SIGN, BARRIER-FREE SIGN, AND OTHER EQUIPMENT INDICATED ON SITE PLAN.
    - INSTALL ANCHOR BOLTS WITH NUTS ON THREADS (FURNISHED BY MANUFACTURER) FOR SITE LIGHTING POLES IN POSITION DETERMINED BY TEMPLATE.
    - FURNISH AND INSTALL STEEL ANCHOR BOLTS/PLATES WITH HEX NUTS AND FLAT WASHERS FOR BUILDING(S), IDENTIFICATION SIGN, PRICE SIGN, CANOPY, ETC.
  - CANOPY FOUNDATIONS:
    - CANOPY FABRICATOR WILL FURNISH ERECTION DATE AND ANSWER ANY QUESTIONS REGARDING FOUNDATIONS OR ERECTION PROCEDURES. COORDINATE WORK WITH CANOPY FABRICATOR.
    - VERIFY THAT BASE PLATES AND/OR LEVELING PLACES ARE LEVEL AND AT PROPER ELEVATION READY TO RECEIVE COLUMNS, AND THAT COLUMN ANCHOR BOLTS ARE LOCATED CORRECTLY AND IN PROPER ALIGNMENT.
    - IF CONCRETE FOUNDATIONS CANNOT BE READY AS SCHEDULED, NOTIFY OWNER'S REPRESENTATIVE AND CANOPY FABRICATOR. FABRICATOR REQUIRES ONE WEEK'S NOTICE FOR ERECTION.
  - IDENTIFICATION SIGN AND PRICE SIGN FOUNDATIONS:
    - SIGNS: FURNISHED BY OWNER SIGN SUPPLIER AND DELIVERED TO THE PROJECT SITE.
    - SIGN SUPPLIER WILL FURNISH DATE OF DELIVERY AND DELIVERED TO THE PROJECT SITE.
    - CONTRACTOR SHALL FORM CONCRETE FOUNDATIONS WITH ANCHOR BOLTS, GROUT BASE PLACES AND ERECT SIGN.
- KEEP THE LOT FREE OF DITCHES AND MOUNDS OF DIRT TO ENABLE THE ERECTION EQUIPMENT TO BE DRIVEN AROUND THE PROPERTY FOR ACCESSIBILITY TO THE FOUNDATIONS.

F. **PLACING CONCRETE SLABS:**

- SOFT SPOTS IN SUBGRADE SHALL BE TAMPED OR ROLLED TO FIRM BEARING. MOIST MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE BACKFILL.
- DEPOSIT AND CONSOLIDATE CONCRETE SLABS IN A CONTINUOUS OPERATION, WITHIN THE LIMITS OF CONSTRUCTION JOINTS UNTIL THE PLACING OF A SECTION IS COMPLETED.
- CONSOLIDATE BY HAND, DO NOT SPREAD CONCRETE BY VIBRATION.
- BRING SLAB SURFACES TO THE CORRECT LEVEL WITH A STRAIGHT EDGE AND STRIKE OFF. USE BULL FLOATS OR DARBIES TO SMOOTH THE SURFACE, LEAVING IT FREE OF HUMPS OR HOLLOW. DO NOT SPRINKLE WATER ON THE PLASTIC SURFACE.
- INSTALL VAPOR BARRIER UNDER SLABS ON GRADE. LAP JOINTS MINIMUM 4 INCHES. DO NOT DISTURB OR DAMAGE VAPOR BARRIER WHILE PLACING CONCRETE REINFORCING. IF DAMAGE DOES OCCUR, REPAIR AREAS BEFORE REPLACING CONCRETE.
- ENSURE FLOOR SURFACES ARE DEPRESSED SUFFICIENTLY TO ACCOMMODATE FINISH MATERIAL.
- SLOPE CONCRETE AWAY (1 INCH FIRST FOOT AROUND MANHOLES) FROM SPILL CONTAINMENT MANHOLES.
- FLOOR DRAIN AREAS: KEEP FLOOR LEVEL AT WALLS AND SLOPE SURFACES TO DRAINS.

G. **HOT WEATHER PLACING:**

- WHEN HOT WEATHER CONDITIONS EXIST THAT WOULD SERIOUSLY IMPAIR THE QUALITY AND STRENGTH OF THE CONCRETE, PLACE CONCRETE IN COMPLIANCE WITH ACI 305 AND AS HEREIN SPECIFIED.
- COOL INGREDIENTS BEFORE MIXING TO MAINTAIN CONCRETE TEMPERATURE A TIME OF PLACEMENT BELOW 90 DEGREES F. MIXING WATER MAY BE CHILLED. TO CONTROL THE CONCRETE TEMPERATURE, PROVIDED THE WATER EQUIVALENT IS INCLUDED IN THE TOTAL AMOUNT OF MIXING WATER.
- WET FORMS THOROUGHLY BEFORE PLACING CONCRETE.
- DO NOT USE RETARDING ADMIXTURES WITHOUT THE WRITTEN APPROVAL OF THE OWNER'S REPRESENTATIVE.

H. **SLAB FINISHES:**

- FLOAT FINISH:
  - AFTER THE CONCRETE HAS BEEN EDGED AND JOINTED APPLY FLOAT FINISH.
  - WORK SLAB EDGES AND FORM JOINTS WITH EDGING TOOL AND ROUND TO 1/4 INCH RADIUS.
  - AFTER PLACING CONCRETE SLABS, DO NOT WORK THE SURFACE FURTHER UNTIL READY FOR FLOATING. BEGIN FLOATING WHEN THE SURFACE WATER HAS DISAPPEARED OR WHEN THE CONCRETE HAS STIFFENED SUFFICIENTLY TO PERMIT THE OPERATION OF A POWER-DRIVEN FLOAT, OR BOTH. CONSOLIDATE THE SURFACE WITH A POWER-DRIVEN FLOATS, OR BY HAND-FLOATING WHEN AREA IS SMALL.
  - MAINTAIN SURFACE PLANE TO A TOLERANCE NOT EXCEEDING 1/4 INCH IN 10 FEET WHEN TESTED WITH A 10 FOOT STRAIGHT EDGE PLACED ON THE SURFACE AT NOT LESS THAN 2 DIFFERENT ANGLES. CUT DOWN HIGH SPOTS AND FILL ALL LOW SPOTS TO UNIFORMLY SLOPE SURFACES TO DRAINS. IMMEDIATELY AFTER LEVELING, REFLOAT THE SURFACE TO A UNIFORM, SMOOTH, GRANULAR TEXTURE.
- TROWEL FINISH:
  - APPLY STEEL TROWEL FINISH TO CONCRETE SLABS FOR SURFACES TO RECEIVE FLOOR COVERING. TROWELING AFTER ONLY BULLFLOATING OR DARBING WILL NOT BE PERMITTED.
  - AFTER FLOATING, BEGIN THE FIRST TROWEL FINISH OPERATION USING A POWER-DRIVEN TROWEL. BEGIN FINAL TROWELING OF 0.01 INCH AT DISPENSER MATS AND MAXIMUM VARIATIONS AT ALL OTHER AREAS OF 1/8 INCH IN 10 FEET WHEN TESTED WITH A 10 FOOT STRAIGHT EDGE.
  - CONSOLIDATE THE CONCRETE SURFACE BY THE FINAL HAND TROWELING OPERATION, FREE OF TROWEL MARKS, UNIFORM IN TEXTURE AND APPEARANCE AND WITH SURFACE PLANE.
- BROOM FINISH:
  - APPLY AFTER HAND TROWELING, FINISH SURFACE BY SCORING IN PARALLEL LINES WITH A FINE HAIR STABLE BROOM.
  - FINISH EXTERIOR RAMPS, CONCRETE SIDEWALKS, PLATFORMS WITH NON-SLIP BROOM SURFACE BY SCORING IN PARALLEL LINES WITH A MEDIUM BROOM FINISH.
  - SCORING SHALL BE PERPENDICULAR TO THE DIRECTION OF TRAFFIC. COORDINATE FINISH REQUIREMENTS WITH THE OWNER REPRESENTATIVE.
- FINISHES:
  - CONCRETE SLABS TO RECEIVE QUARRY OR CERAMIC TILE SHALL HAVE STEEL TROWEL AND FINE BROOM FINISH WITH NO CURING COMPOUNDS USED.
  - CONCRETE SLABS TO RECEIVE VINYL COMPOSITION TILE SHALL BE SCREEDED TO A LEVEL AND TRUE SURFACE, THEN STEEL TROWELED TO A UNIFORM SURFACE, FREE OF SCORE MARKS, GROOVES, OR DEPRESSIONS.

I. **CONCRETE CURB & GUTTERS:**

- PLACE CURBS ON GRADED UNDISTURBED BOTTOMS AND IN ACCORDANCE WITH DOT SPECIFICATIONS FOR CONCRETE CURB & GUTTER.
  - DEPOSIT CONCRETE IN MAXIMUM LAYERS OF 6 INCHES. CHECK FACE AND TOP OF CURB WITH 10 FOOT STRAIGHT EDGE, ELIMINATE IRREGULARITIES MORE THAN 1/4 INCH. ROUND TOP OF FACE OF CURBS WITH FINISHED TOOL.
  - FORMS SHALL BE MADE OF WOOD OR STEEL IN SIZE TO MAINTAIN FORM SECTION STRAIGHT UNDER PRESSURE OF NEWLY PLACED CONCRETE. REMOVE FORMS WITHIN 24 HOURS AFTER PLACING CONCRETE. FINISH EXPOSED SURFACES WITH FLOAT AND TROWEL, REPAIR DEFECTS.
  - PARGING: NOT PERMITTED.
  - LOCATE EXPANSION JOINTS IN CURBS TO MATCH JOINTS IN SIDEWALK AT INTERVAL NOT TO EXCEED 20' UNLESS OTHERWISE INDICATED.
  - LOCATE CONTROL JOINTS 10 FEET O.C. CONTROL JOINTS: MADE BY SCORING CONCRETE FACE 1/4 INCH INTO CURB FACE.

J. **CONCRETE CURING & PROTECTION:**

- GENERAL:
  - PROTECT FRESHLY PLACED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE COLD OR HOT TEMPERATURE, AND MAINTAIN WITHOUT DRYING AT A RELATIVELY CONSTANT TEMPERATURE FOR THE PERIOD OF TIME NECESSARY FOR PROPER HARDENING OF THE CONCRETE. CURE CONCRETE BY MOISTURE-RETAINING COVER CURING.
  - START INITIAL CURING AS SOON AS FREE WATER HAS DISAPPEARED FROM THE CONCRETE SURFACE AFTER PLACING AND FINISHING. CONTINUE CURING FOR AT LEAST 7 CONSECUTIVE DAYS DURING WHICH THE CONCRETE IS EXPOSED TO AIR TEMPERATURES ABOVE 50 DEGREES F. AVOID RAPID DRYING AT THE END OF THE FINAL CURING PERIOD.
  - CEMENT DUSTING TO DRY UP STANDING WATER ON NEW CONCRETE WILL NOT BE ALLOWED.
- CURING METHODS: USE ONLY WATER THAT IS FREE OF IMPURITIES WHICH COULD ETCH OR DISCOLOR EXPOSED, NATURAL CONCRETE SURFACES.
- PROTECTION: DURING THE CURING PERIOD PROTECT CONCRETE FORM DAMAGE CAUSED BY RAIN. PROTECT ALL FINISHED CONCRETE SURFACES FROM DAMAGE BY SUBSEQUENT CONSTRUCTION OPERATIONS.

K. **CONCRETE SURFACE REPAIRS:**

- REPAIR AND PATCH DEFECTIVE AREAS WITH CEMENT MORTAR IMMEDIATELY AFTER REMOVAL OF FORMS, BUT ONLY WHEN ACCEPTABLE TO OWNER'S REPRESENTATIVE. CUT ROCK POCKETS, HONEYCOMBS, VOIDS OVER 1/4 INCH DIAMETER DOWN TO SOLID CONCRETE BUT, IN NO CASE TO A DEPTH LESS THAN 1".
- EXPOSED TO VIEW SURFACES:
  - WHEN DRY PATCHING MORTAR SHALL MATCH COLOR OF SURROUNDING SURFACES. PROVIDE TEST AREAS AT INCONSPICUOUS LOCATIONS TO VERIFY MIXTURE AND COLOR MATCH BEFORE PROCEEDING WITH PATCHING.
- REPAIR CONCRETE FORMED SURFACES THAT CONTAIN DEFECTS THAT ADVERSELY AFFECT THE DURABILITY OF THE CONCRETE, IF DEFECTS CANNOT BE REPAIRED, REMOVE AND REPLACE THE CONCRETE.

L. **MISCELLANEOUS CONCRETE ITEMS:**

- CONCRETE PAVEMENTS, CONCRETE SIDEWALKS, RAMPS, CURBING, AND OTHER CONCRETE THAT EXIST ARE NOT INDICATED TO BE REMOVED SHALL BE MAINTAINED AS PART OF THE WORK OF THIS CONTRACT.
  - DEMOLISH AND REMOVE EXISTING ITEMS CONFLICTING WITH NEW WORK AND NEW FINISHES.
  - PATCHING, REPAIRING SHALL BE INTEGRAL WITH EXISTING WORK TO COMPLETE THE PROJECT.
  - BEFORE CONSTRUCTION BEGINS, OWNER REPRESENTATIVE WITH CONTRACTOR SHALL TAKE PHOTOGRAPHS AND REVIEW EXISTING CONDITIONS OF SIDEWALKS, CURBS, ETC., TO VERIFY EXISTING CONDITIONS FOR PATCHING, REMOVALS, AND REPAIRING.
- GROUT:
  - PRIOR TO GROUTING, CONTRACTOR SHALL:
    - REMOVE DIRT, OIL, GREASE, ETC., ON SURFACES IN CONTACT W/ GROUT. SATURATE W/ CLEAN WATER, REMOVE WATER PRIOR TO PLACING GROUT.
    - LIGHTLY ROUGHEN CONCRETE.
- CANOPY MANUFACTURER WILL ERECT CANOPY ON COLUMNS USING THE FOLLOWING PROCEDURE:
  - PLACE WASHER ON LOWER NUT AND ADJUST FOR ELEVATION.
  - SET COLUMN IN PLACE.
  - PLACE WASHER ON PLATE AND TIGHTEN NUT,
  - ADJUST FOR ELEVATION AND PLUMB COLUMN.
  - GROUT: BY CONCRETE CONTRACTOR.
- NON-SHRINK GROUT:
  - USE FOR GROUTING THE SPACE BETWEEN THE TOP OF THE CONC. BEARING SURFACE AND THE BOTTOM OF PLATES, ANCHORS, GROUTING ANCHOR BOLTS.
  - PROVIDE CLEARANCE BETWEEN THE FORMWORK AND THE AREA TO BE GROUTED TO PERMIT PLACEMENT OF GROUT.
  - PLACE AND CURE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- TESTING:
  - OBTAIN 7 DAY CYLINDERS FOR TESTING AT 1 EVERY 1000 SQUARE FEET UNDER CANOPY AND ONE CYLINDER AT TANK SLAB.

**VENT (RIGID) PIPING SPECIFICATIONS**

**2.1 PRODUCT, VENT & VAPOR RECOVERY PIPING**

A. **PIPING:**

- STEEL PIPE: NONE PERMITTED FOR PRODUCT DISCHARGE OR VENTING EXCEPT AT VENT RISERS.

B. **HANDLING OF PIPE & FITTINGS:**

ALL INSTALLATIONS SHALL CONFORM TO PIPE MANUFACTURER'S SPECIFICATIONS AND GUIDELINES.

- FIBERGLASS PIPE: PROTECT AGAINST ABRASION FROM SHARP OR HARD OBJECTS; IMPACT DAMAGE FROM IMPROPER STORAGE, TRANSPORTING, LAYING OR BACKFILLING. INSPECT ALL PIPES FOR DAMAGE PRIOR TO USING IN THE PIPING SYSTEM.
- STEEL PIPE AND FITTINGS: PROTECT AGAINST DAMAGE TO THE PROTECTIVE COATING.

2.2 **INSTALLATION REQUIREMENTS**

A. **LAYING OF PIPE:**

- INTERIOR SURFACE OF ALL PIPE AND FITTINGS MUST BE FREE FROM DIRT, SCALE, METAL, FIBERGLASS PARTICLES, ETC., BEFORE CONNECTING.
- DO NOT SUPPORT PIPING WITH FOREIGN OBJECTS, SUCH AS SCRAPS OF WOOD, PIPE, ETC. USE MAJOR OIL APPROVED PIPING SUPPORT.

B. **CUTTING OF PIPE:**

- CUT PIPE TO ENSURE A SQUARE CUT END. CUT PIPE END MUST BE WITHIN 1/8" OF SQUARE.

C. **TAPERING & REAMING:**

- FIBERGLASS PIPE: ALL CUT ENDS MUST BE TAPERED PER PIPE MANUFACTURER SPECIFICATIONS. PROTECT PIPE DURING TAPERING TO PREVENT PIPE DAMAGE. FINISH TAPER SHALL BE SMOOTH, CLEAN, AND FREE FROM SURFACE DEFECTS. LENGTH OF TAPER FOR 2" DIAMETER PIPE IS 15/8" AND FOR 3" DIAMETER PIPE IS 1 3/4". FOR OTHER SIZE PIPE, CONSULT PIPE MANUFACTURER'S SPECS.
- STEEL PIPE: REAM ENDS PER INDUSTRY STANDARDS.

D. **BONDING & ADHESIVE SYSTEMS:**

- ALL FIBERGLASS PIPE SURFACES TO BE BONDED SHALL BE CLEANED WITH SOLVENT AS RECOMMENDED BY MANUFACTURER. APPLY PRESSURE UNTIL MECHANICAL LOCK IS ACHIEVED. BACK AXIAL PRESSURE SHOULD BE MAINTAINED ON ALL PREVIOUSLY ASSEMBLED JOINTS TO REDUCE THE CHANGE OF SEPARATION.
- INSPECT ALL FITTINGS FOR PROPER ALIGNMENT AND POSSIBLE 'BACK OUT' AT THE JOINTS.
- FOLLOW PIPE MANUFACTURER'S RECOMMENDATIONS ON CURE TIME.

E. **THREADED JOINTS:**

THREADED JOINTS MUST BE REAMED AND HAVE CLEAN CUT, PERFECT THREADS AND BE MADE UP WITH NON-HARDENING JOINT COMPOUND INSOLUBLE IN PETROLEUM PRODUCTS. **DO NOT USE ADHESIVE FOR THREADED CONNECTIONS.**

F. **FIBERGLASS TO STEEL PIPE CONNECTIONS:**

FIBERGLASS THREADED END ADAPTORS ARE TO BE THREADED INTO THE STEEL PIPE OR FITTING BEFORE BONDING ONTO THE FIBERGLASS PIPE. ALL FLEXIBLE CONNECTORS ARE MADE FEMALE AND CONNECTS TO THE FIBERGLASS PIPING. **DO NOT USE ADHESIVE FOR THREADED CONNECTIONS.**

G. **SPECIAL FITTINGS:**

POSITION THE VALVE SO THAT THE LINE TEST PORT PLUG IS ACCESSIBLE.

H. **SETTING & BEDDING PIPE:**

- PIPING SHALL BE PLACES ON PREPARED BED IN SUCH A MANNER AS TO MINIMIZE POINTS AT WHICH ONE PIPE MAY CROSS OVER ANOTHER PIPE. AT POINTS WHERE PIPING MUST CROSS OVER, A MINIMUM OF 4 INCHES MUST SEPARATE THE PIPES.
- PROCEED TO "FIRST TEST" PRIOR TO BACKFILLING TRENCHES WHEN PIPING IS PLACED ON THE BED.

I. **CLEANING SOLVENTS:**

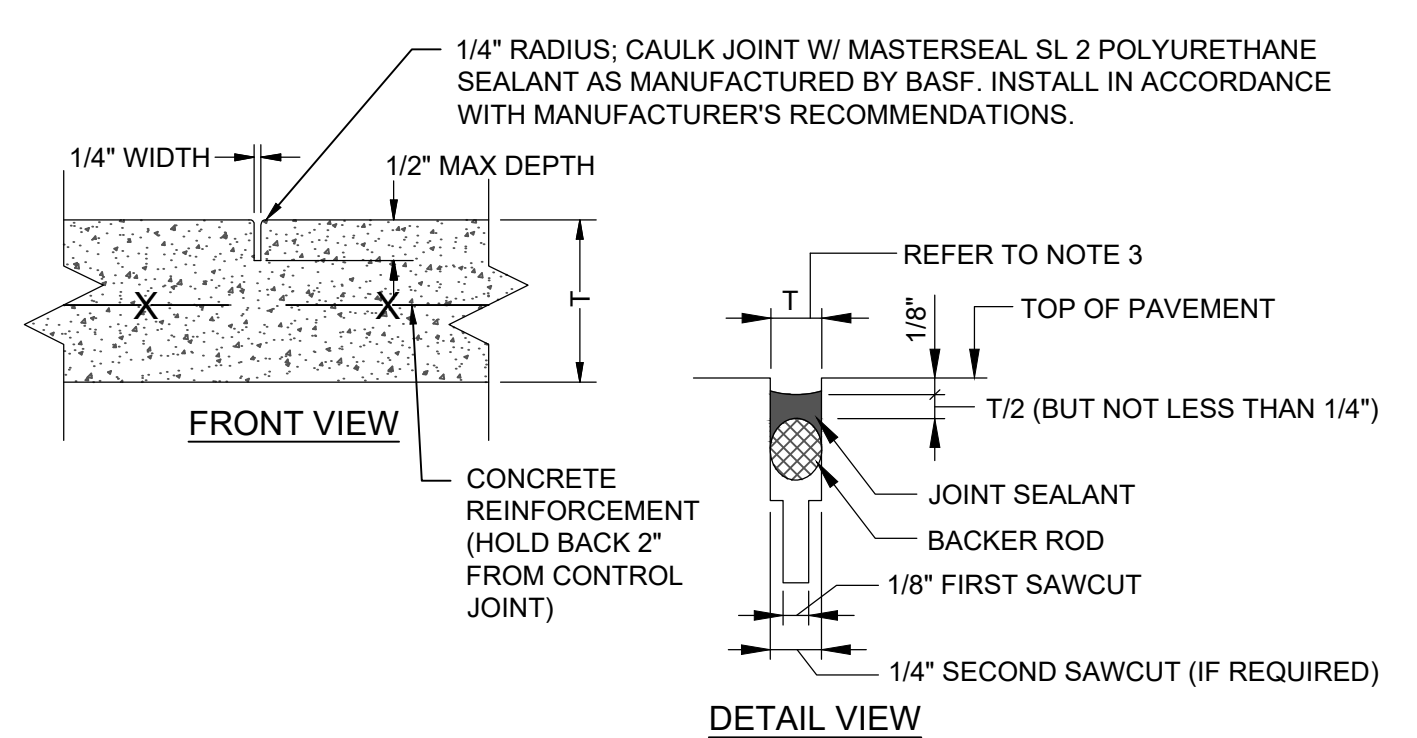
REMOVE ANY ACCUMULATION OF ACCIDENTAL SPILL OF PIPE CLEANING SOLVENTS ON THE TANK IMMEDIATELY WITH A CLEAN CLOTH. AFTER THE PIPING IS COMPLETE, INSPECT THE CONTAINMENT SUMP AND OTHER COLLECTION POINTS FOR PIPING CLEANING SOLVENTS.

J. **FLEX CONNECTOR BOOTS:**

ENCASE ALL FLEX CONNECTORS IN AN ISOLATION BOOT WHEN IN CONTACT WITH SOIL OR BACKFILL MATERIAL. MOVE THE ISOLATION TO INSPECT AND TEST ALL PRIMARY PIPING AND FLEX CONNECTOR.

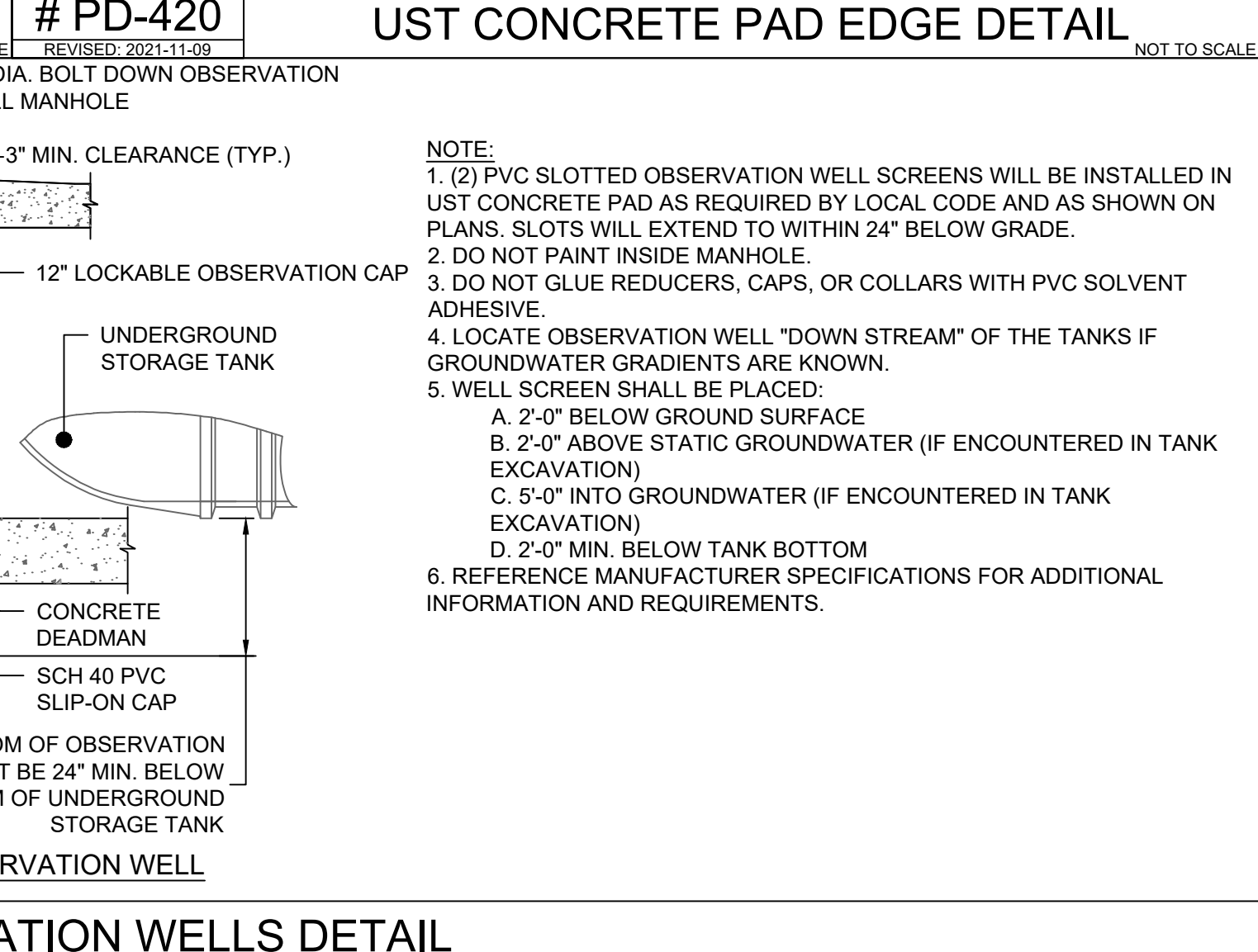
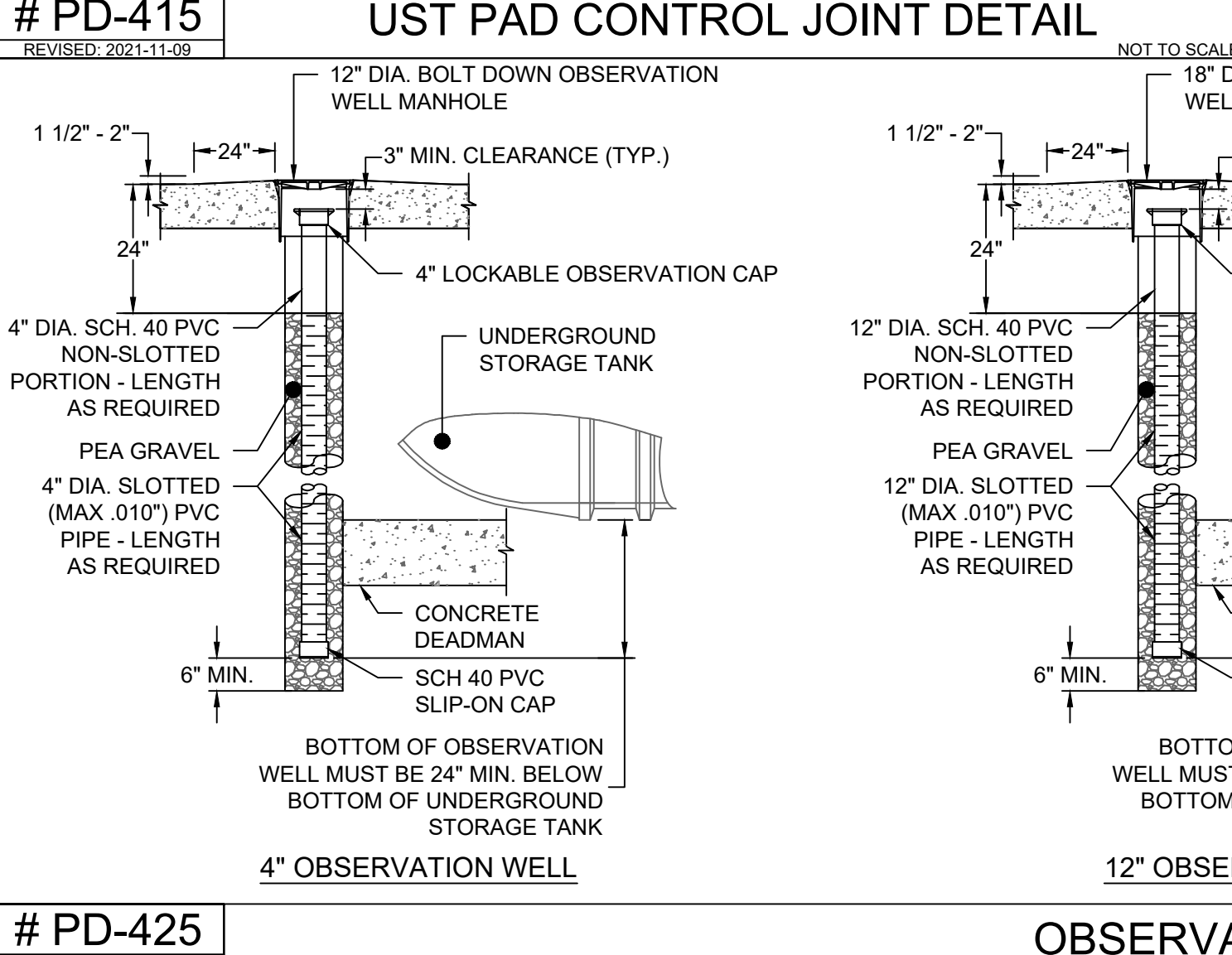
2.3 **TESTING OF PIPING:**

A. **TESTING PER STATE AND MANUFACTURER REQUIREMENTS.**



NOTES:

- REFER TO UST CONCRETE PAD DETAIL FOR CONCRETE DESIGN.
- SAWCUT JOINTS THE SAME DAY AS THE POUR.
- WAIT AS LONG AS FEASIBLE TO SEAL JOINTS TO ALLOW CONCRETE SHRINKAGE TO OCCUR. IF REQUIRED, RE-SEAL JOINT IMMEDIATELY PRIOR TO INSTALLING SEALANT TO ACHIEVE NECESSARY JOINT WIDTH. ENSURE JOINT IS CLEAN, DRY, AND SIDES ARE PREPARED PER MANUFACTURER'S RECOMMENDATIONS.
- REFERENCE MANUFACTURER SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.



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12/19/2023

THIS DRAWING PREPARED AT THE  
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REVISION DESCRIPTION  
NEDEQ SUBMITTAL  
NEDEQ SUBMITTAL  
BID SET

DATE  
07/28/2023  
11/14/2023  
12/19/2023

DATE  
12/23/2022

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SCALE  
AS SHOWN

**TIMMONS GROUP**  
NORTH CAROLINA LICENSE NO. C-1652

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**NOTES AND DETAILS**

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37630.105

SHEET NO.  
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