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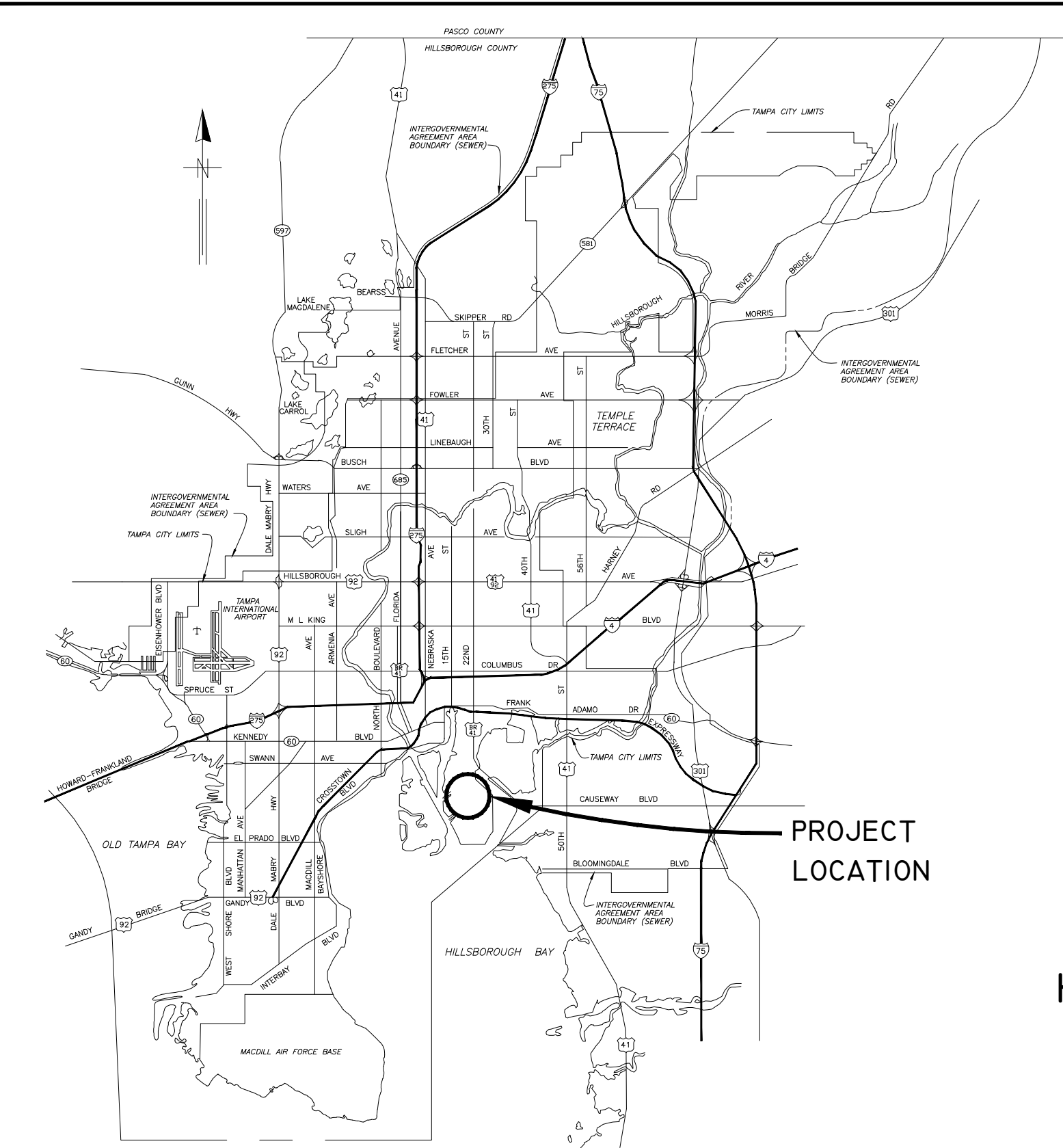
Please Email ALL Questions:

[MailTo:ContractAdministration@TampaGov.net](mailto:ContractAdministration@TampaGov.net)

Please Let Us Know If You Plan To Bid

City of Tampa
Contract Administration Department
306 E. Jackson St. #280A4N
Tampa, FL 33602
(813)274-8456

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 CTB - COTAMPA 11X17.CTB



LOCATION MAP

CITY of TAMPA



WASTEWATER DEPARTMENT

PLANS FOR
 HFC AWTP VEHICLE FUEL TANK REPLACEMENT

CONTRACT NO. 13-C-00040

Catalano Engineering, Inc.
 CIVIL - STRUCTURAL - MARINE
 120 SOUTH EDISON AVE. TAMPA, FL 33606
 (813) 254-1265 CERTIFICATE NO. 6828

No.	DATE	REVISIONS
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CITY of TAMPA
 WASTEWATER DEPARTMENT

HFC AWTP VEHICLE FUEL TANK REPLACEMENT
 COVER

W.O. -
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1.0
 OF

GENERAL NOTES

- GOVERNING BUILDING CODE: 2010 FLORIDA BUILDING CODE.
- CONTRACTOR SHALL NOTIFY THE ENGINEER IN CASE OF CONFLICT WITHIN THE CONTRACT DRAWINGS.
- VERIFY DETAILS, DIMENSIONS AND WEIGHT OF PURCHASED EQUIPMENT AS IT RELATES TO INFORMATION GIVEN ON STRUCTURAL DRAWINGS RELATIVE TO SUCH EQUIPMENT.
- VERIFY DIMENSIONS AND CONDITIONS RELATING TO SITE INCLUDING EXISTING UTILITIES AND SERVICES PRIOR TO START OF CONSTRUCTION.

CHANGES AND MODIFICATIONS

- CONFORM TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS.
- SUBMIT WRITTEN REQUEST TO THE ENGINEER FOR APPROVAL OF ANY PROPOSED CHANGE TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS.
- SPLICING, CUTTING NOTCHING AND OTHER ALTERATIONS TO STRUCTURAL MEMBERS ARE NOT PERMITTED WITHOUT WRITTEN AUTHORIZATION OF THE STRUCTURAL ENGINEERS.
- ANY UNAUTHORIZED DEVIATION FROM THE CONTRACT DRAWINGS, AND CORRECTION THEREOF, IS THE RESPONSIBILITY OF THE CONTRACTOR.
- CONFORM TO INFORMATION GIVEN IN THE CONTRACT DRAWINGS AND TO CHANGES APPROVED IN WRITING BY THE ENGINEER.

DESIGN DATA

- ROOF LIVE LOAD = 20 PSF
- ROOF DEAD LOAD = 35 PSF
- LATERAL LOADS:
 DESIGN WIND VELOCITY: 140 MPH (3 SECOND GUST)
 WIND IMPORTANCE FACTOR: 1.00
 BUILDING CATEGORY: II (ASCE 7-10, TABLE 1.1)
 EXPOSURE CATEGORY: OPEN
 WIND EXPOSURE CATEGORY: B (FBC 1609.4.3)
 COMPONENTS & CLADDING (CCp) (WALLS):
- SOIL BEARING CAPACITY = 2,500 PSF (ASSUMED)

CAST-IN-PLACE CONCRETE

- ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF THE ACI BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE ACI 318 (CURRENT).
- DESIGN COMPRESSIVE STRENGTH OF CONCRETE SHALL BE A MINIMUM OF 4,000 PSI AT 28 DAYS (U.N.O.). THE SLUMP JUST PRIOR TO PLACING SHALL BE 5" (±) 1" FOR ALL CONCRETE.
- REINFORCING BARS: ASTM A 615 GRADE 60 DEFORMED NEW BILLET STEEL OF DOMESTIC MANUFACTURE, FABRICATED IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE.
- WELDED WIRE FABRIC: ASTM A 185. SHALL BE PLACED IN CENTER OF FLOOR SLAB.
- PROVIDE PLASTIC TIPPED BAR SUPPORTS OF ADEQUATE STRENGTH AND SPACING TO SUPPORT THE WEIGHT OF REINFORCING BARS AND THE WEIGHT OF WORKERS. PLACE FIRST SUPPORT NO FARTHER THAN 12" FROM THE ENDS OF REINFORCING BARS.
- FOLLOW ACI 318 (CURRENT) AND ACI 315 (CURRENT) FOR REINFORCEMENT SUPPORT DETAILS.
- PLACE AND SUPPORT ANCHOR BOLTS AND INSERTS WITH THE SPECIFIED EXTENSION AND MAINTAIN THEIR POSITION AND ALIGNMENT DURING CONCRETE PLACEMENT.
- REINFORCING SHALL HAVE 3" COVER IN FOOTINGS.
- REINFORCING BARS ARE CONTINUOUS (U.N.O.). WHERE NECESSARY TOP BARS SHALL BE SPLICED 40 BAR DIAMETERS AT CENTER OF SPAN. BOTTOM BARS SHALL BE SPLICED 12" OVER CENTERLINE OF SUPPORT. LAP ALL DOWELS IN VERTICAL REINFORCEMENT, 40 BAR DIAMETERS. SPLICES AND LAPS OTHER THAN THOSE INDICATED WILL NOT BE PERMITTED WITHOUT PRIOR APPROVAL OF THE ENGINEER.
- SPLICE REINFORCING ONLY WHERE SHOWN ON THE DRAWINGS. WHERE CONTINUOUS REINFORCING IS SPECIFIED, SUCH REINFORCING MAY BE SPLICED IN ACCORDANCE WITH CRSI PROVISIONS.
- CORNER BARS IN WALLS, BEAMS AND TIE BEAMS ARE THE SAME SIZE AND SPACING AS THE HORIZONTAL REINFORCING STEEL.
- PROVIDE HOOKS ON ALL TOP REINFORCING BARS AT DISCONTINUOUS SLAB AND BEAM ENDS. HOOKS MAY BE TILTED FROM VERTICAL TO OBTAIN PROPER CONCRETE COVER.
- ALL HOOKS ON VERTICAL STIRRUP LEGS MUST BE PLACED AROUND AT LEAST ONE LONGITUDINAL REINFORCING BAR.
- CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT FOR ALL METAL EDGE FORMS.

STRUCTURAL ALUMINUM

- ALL ALUMINUM STRUCTURAL MEMBERS SHALL BE ASTM B221, 6061-T6 ALLOY.
- ALUMINUM BASE PLATES SHALL BE ISOLATED FROM CONCRETE SURFACES USING A 3 MIL BITUMEN COATING.
- ALL HARDWARE SHALL BE 316 STAINLESS STEEL (U.N.O.)

FOUNDATIONS

- DO NOT BEGIN CONSTRUCTION ABOVE GRADE UNTIL THE CONDITION AND CONFIGURATION OF THE SUBGRADE HAS BEEN VERIFIED.
- NOTIFY ENGINEER OF ANY UNUSUAL SITE SUBSURFACE CONDITION WHICH IS IN VARIANCE WITH KNOWN CONDITIONS, SUCH AS DIFFERENT SOILS ENCOUNTERED, SEEPAGE OR PRESENCE OF WATER, OR WHEN THERE IS A QUESTION OF BEARING CAPACITY.
- MINIMUM FOOTING DEPTH = 16" BELOW FINISHED GRADE (U.N.O.)
- THE CONTRACTOR SHALL REMOVE ALL VEGETATION AND ORGANIC SOILS FROM SUBGRADE.
- SUBGRADE SHALL BE WELL-DRAINED AND OF UNIFORM BEARING STRENGTH.
- SUBGRADE SHALL BE ROLLER-COMPACTED TO MINIMUM 98% PROCTOR DENSITY.
- SUBGRADE SHALL BE MOIST DURING CONCRETE PLACEMENT.
- CONTRACTOR SHALL ENSURE THAT CONCRETE CONSTRUCTION CONFORMS TO ACI 301 (CURRENT), SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS, ACI 302 (CURRENT), GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION, AND ACI 318 (CURRENT), BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, AS MODIFIED BELOW.
- CONCRETE SUPPLIER SHALL PROVIDE A MIX RESULTING IN MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, (f'c = 4,000 PSI) AS MEASURED BY TESTING CYLINDRICAL SPECIMENS PER ASTM C-39 (U.N.O.).
- CONTRACTOR SHALL NOT USE ADDITIVES CONTAINING CHLORIDES, FLUORIDES, AND NITRATES.
- CONTRACTOR SHALL ENSURE THAT CONCRETE COVER TO REBAR IN THE SLAB IS IN ACCORDANCE WITH ACI 318.
- A LAYER OF 6 MIL POLYETHYLENE PLASTIC SHEETING SHALL BE INSTALLED UNDER THE SLAB (TAPE JOINTS: 6" LAPPED AND TAPED).
- CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS RELATING TO THE PREFERRED TANK, UTILITIES AND EXISTING EQUIPMENT.
- SAW-CUTTING SHALL BE IN ACCORDANCE WITH ACI 302. SAW-CUTTING SHALL TAKE PLACE AS SOON AS THE CONCRETE SURFACE IS FIRM ENOUGH NOT TO BE TORN OR DAMAGED BY THE CUTTING BLADE.
- PROVIDE 1/2" THICK FULL-DEPTH BITUMINOUS EXPANSION JOINT MATERIAL (U.N.O.) AT ALL SURFACES WHERE EXTERIOR SLABS ABUT THE TANK FOUNDATION.
- PROVIDE STEEL TROWEL FINISH FOR INTERIOR SLAB AREAS. CREATE BROOM FINISH TEXTURE FOR EXTERIOR SLABS. (VERIFY WITH ARCHITECT).

SHOP DRAWINGS

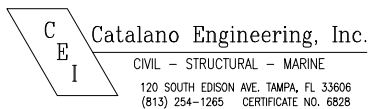
- SHOP DRAWINGS ARE AN AID FOR FIELD PLACEMENT, AND ARE SUPERSEDED BY THE STRUCTURAL DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO MAKE CERTAIN THAT ALL CONSTRUCTION IS IN FULL AGREEMENT WITH THE LATEST STRUCTURAL DRAWINGS.
- SHOP DRAWING CHECK: THE CONTRACTOR SHALL SUPPLY THE ENGINEER WITH A MINIMUM OF TWO SETS OF SHOP DRAWINGS A MINIMUM OF THREE WEEKS PRIOR TO FABRICATION. THE REVIEW OF SHOP DRAWINGS BY THE ENGINEER IS ONLY FOR GENERAL COMPLIANCE WITH THE STRUCTURAL DRAWINGS AND SPECIFICATIONS. THE REVIEW DOES NOT GUARANTEE IN ANY WAY THAT THE SHOP DRAWINGS ARE CORRECT NOR DOES IT INFER THAT THEY SUPERSEDE THE STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL REVIEW AND APPROVE THE SHOP DRAWINGS PRIOR TO SUBMITTAL TO THE ENGINEER.

TANK COMPONENTS (LUMP SUM)

- TANK COMPONENTS SHALL INCLUDE:
 - (4) FILL-RITE FR711VA METERED PUMPS AND ASSOCIATED FILTERS
 MODEL 9095AA OVERFILL PREVENTION VALVES (2) BY MORRISON BROTHERS, CO.
 - (2) 4000 GALLON CONVAULT PRECAST TANKS BY OLDCASTLE
 - 818 SERIES CLOCK GAUGES BY MORRISON BROTHERS, CO.
 - AT-A-GLANCE LEAK GAUGE BY KRUEGER SENTRY
 - EMERGENCY VENTS BY MORRISON BROTHERS, CO.
 - NFPA PLACARDS FOR CONVAULT (PART NO 999990)
 - PRESSURE/ VACUUM VENTS 749 SERIES BY MORRISON BROTHERS, CO
 - GROUND-BASED REMOTE FILL W/ CK VALVE, FILL ADAPTER & DUST CAP, VAPOR RECOVERY ADAPTER W/ CAP AND MORRISON MODEL 515 SPILL CONTAINMENT REMOTE SPILL CONTAINER.
 - VEEDER-ROOT "TIS-350 PLUS" TANK MONITORING SYSTEM SET-UP FOR A DUAL TANK APPLICATION
- TANKS SHALL BE EQUIPPED WITH A OPW PETROVEND K800 HYBRID w/ FCS 3000 FUEL SITE CONTROLLER & K800 SYS2 FIT V21.02A PV24700 PROGRAM CHIP FOR "CHIP KEYS".
- ALL COMPONENTS MUST BE APPROVED PRIOR TO PURCHASE OR DELIVERY BY THE OWNER AND THE VARIOUS REGULATORY AGENCIES HAVING JURISDICTION.
- THE LUMP SUM BID PRICE SHALL INCLUDE EVACUATING, DEMOLISHING AND REMOVING THE EXISTING TANKS IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATION.

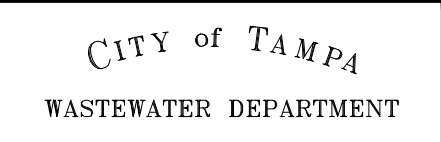
TRANSITION

- THE EXISTING FUEL TANKS AND DISPENSING SYSTEM SHALL REMAIN IN SERVICE AND OPERATIONAL UNTIL ALL APPROVED MATERIALS, EQUIPMENT AND CREWS ARE ON SITE.



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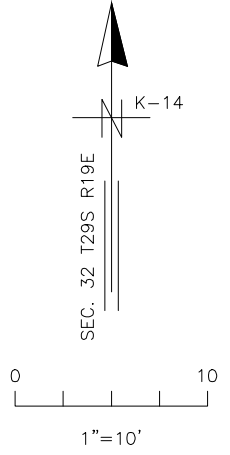
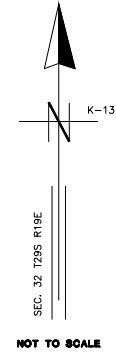
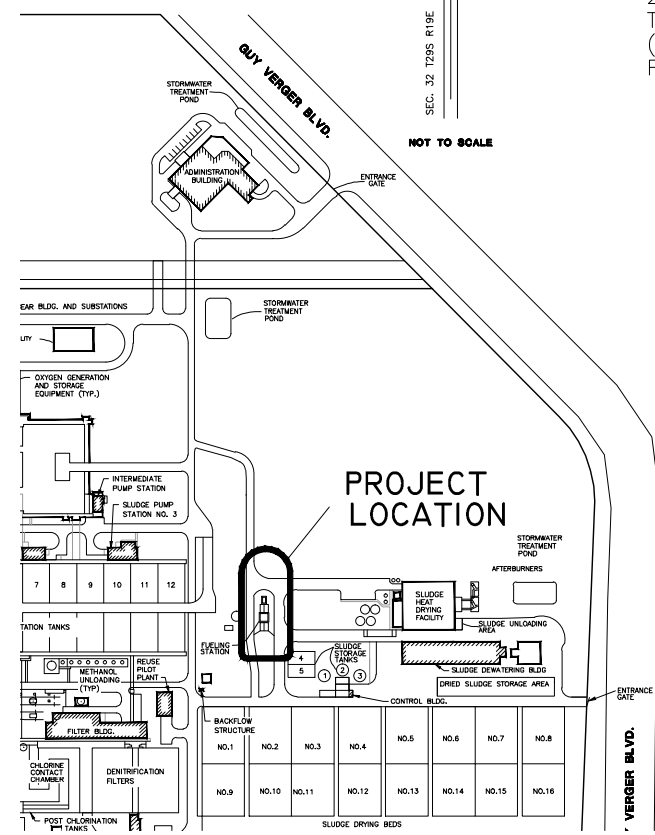
HFC AWTP VEHICLE FUEL TANK REPLACEMENT
 GENERAL NOTES

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CITY OF TAMPA
 HOWARD F. CURREN
 ADVANCED WASTEWATER
 TREATMENT PLANT

2700 MARITIME BLVD.
 TAMPA, FL 33605
 (813) 247-3451
 FAX: (813) 248-5269

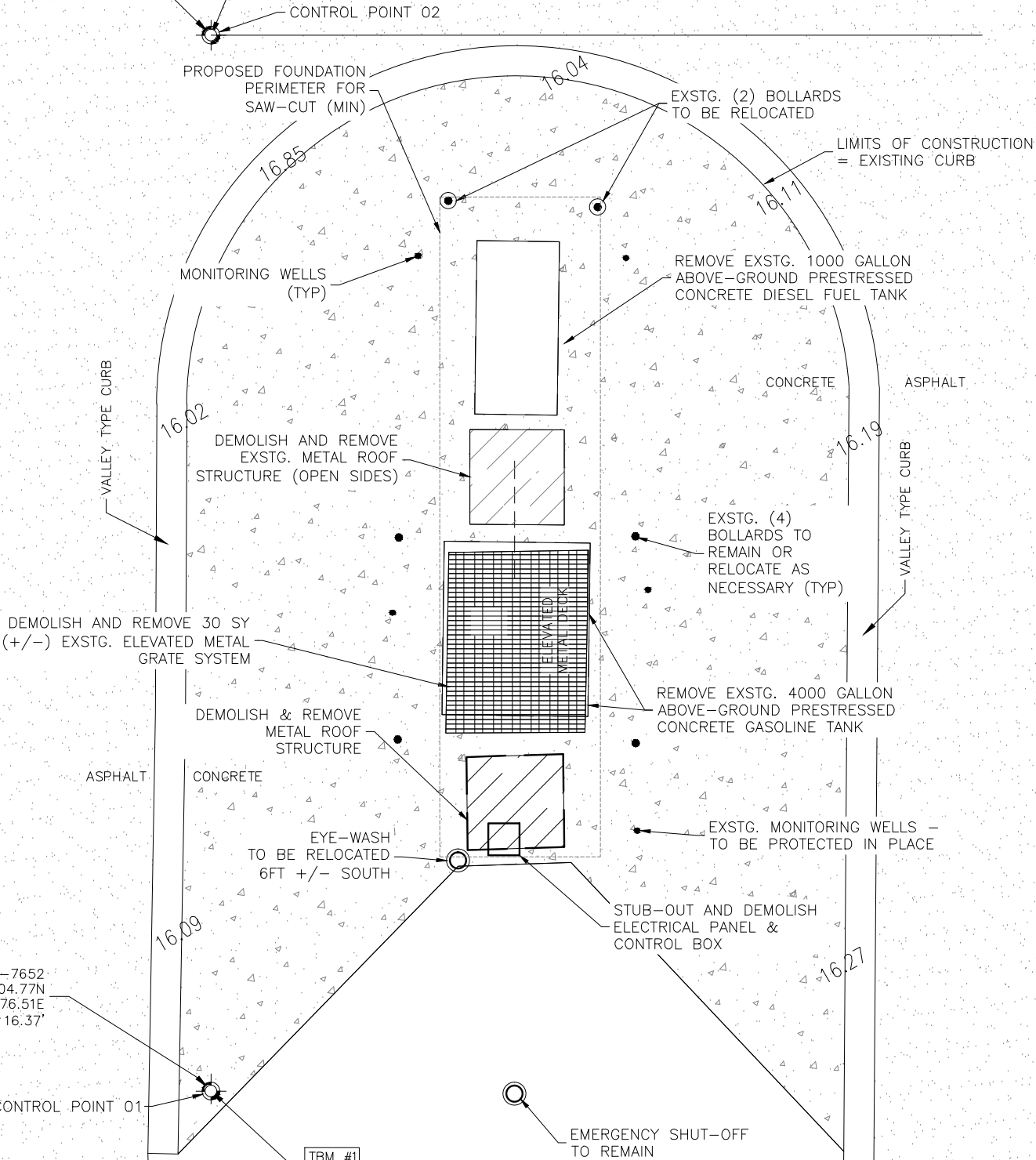


SND LB-7652
 1304974.82 N
 515774.90 E
 EL.: 15.83'

TBM #2
15.83'

SND LB-7652
 1304904.77N
 515776.51E
 EL.: 16.37'

TBM #1
16.37'



DEMOLITION NOTES:

- CONTRACTOR SHALL SAW-CUT CONCRETE PAVEMENT SURROUNDING THE EXISTING TANK FOOTING PER THE FOUNDATION GEOMETRY SHOWN ON SHEET 3.0.
- ALL SOILS, DEBRIS, FUEL TANKS, ELECTRICAL AND STRUCTURAL MATERIALS TO BE DEMOLISHED SHALL BE COMPLETELY REMOVED FROM THE SITE, CITY OF TAMPA PROPERTY, AND TAMPA PORT AUTHORITY PROPERTY AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE.
- ALL EXISTING CONCRETE APRON REMOVED OR DAMAGED SHALL BE REPLACED IN KIND WITH CONCRETE ON COMPACTED SUBGRADE USING 6X6 W2.9XW2.9 WWF (CENTERED).
- THE EXISTING FUEL STATION SHALL REMAIN IN SERVICE AND OPERATIONAL UNTIL ALL APPROVED MATERIALS, EQUIPMENT AND CREWS ARE ON SITE.

LAYOUT/CONTROL POINT TABLE

DESCRIPTION	BASELINE	STATION	OFFSET	NORTHING	EASTING
CONTROL PT 0001	N/A	N/A	N/A	1304904.770	515776.510
CONTROL PT 0002	N/A	N/A	N/A	1304974.820	515774.900

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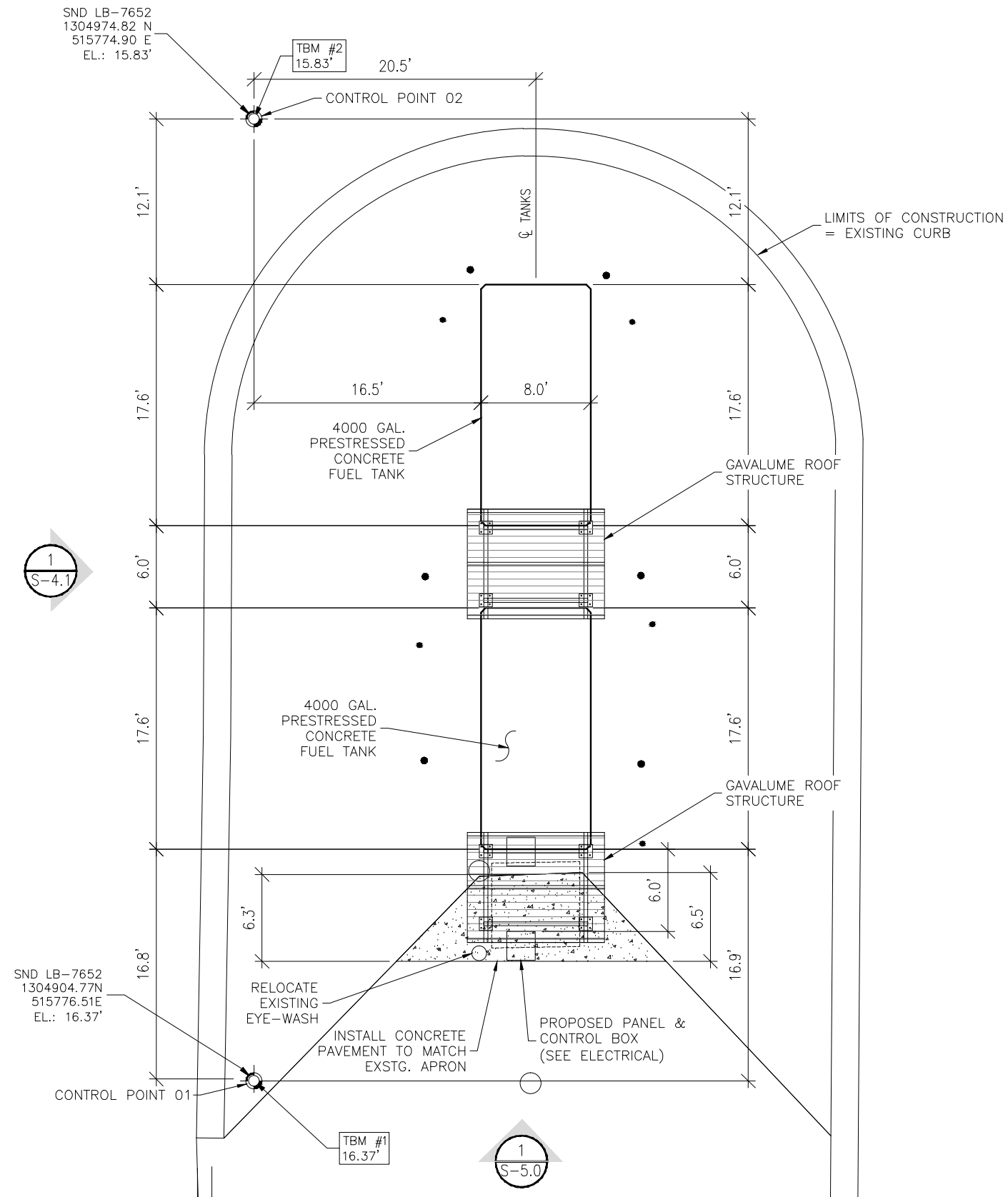
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CITY of TAMPA
 WASTEWATER DEPARTMENT

HFC AWTP VEHICLE FUEL TANK REPLACEMENT
EXISTING AND DEMOLITION PLAN

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JAMES CATALANO, P.E. #42507
 CATALANO ENGINEERING, INC.

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CITY of TAMPA
 WASTEWATER DEPARTMENT

HFC AWTP VEHICLE FUEL TANK REPLACEMENT
 GENERAL SITE PLAN

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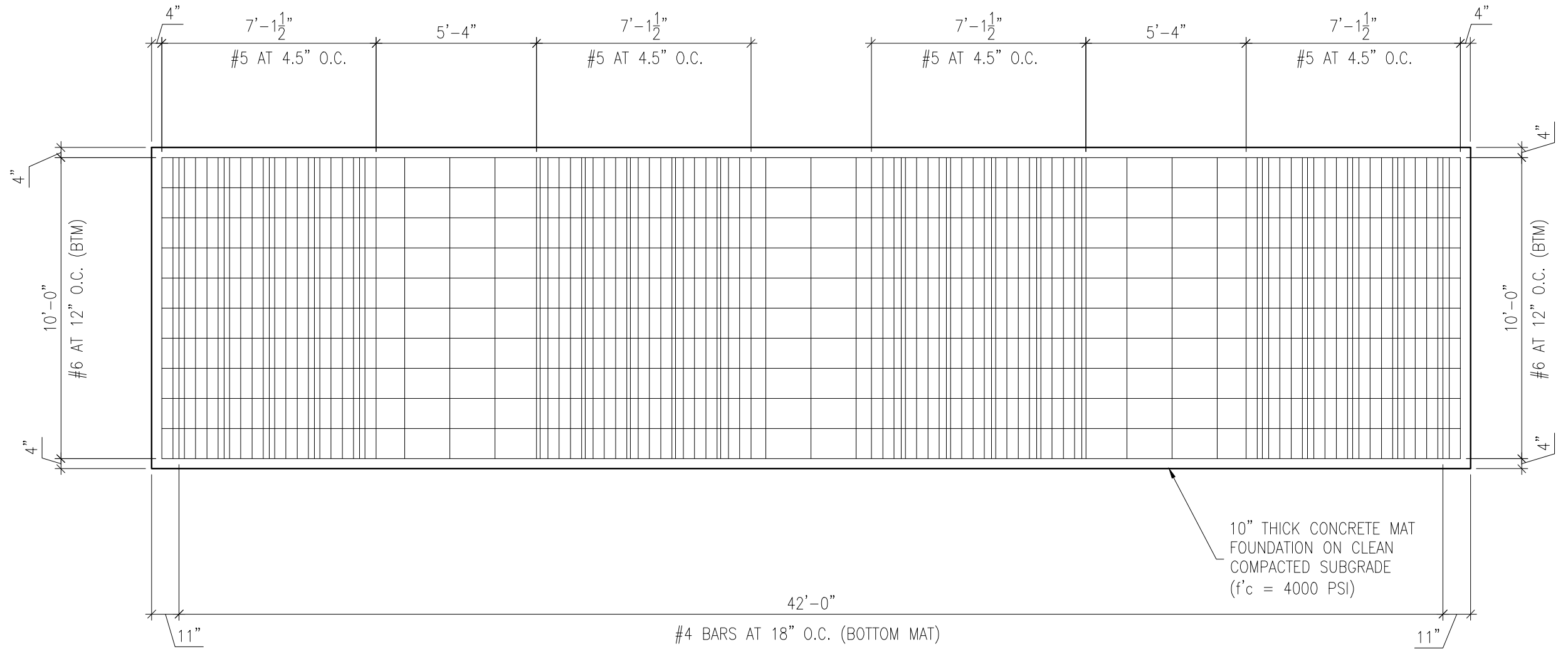
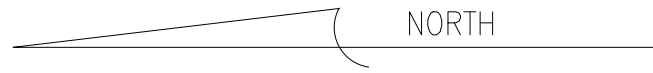


FOUNDATION LOCATION PLAN
 3/16" = 1 FT

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JAMES CATALANO, P.E. #42507 CATALANO ENGINEERING, INC.	No.	DATE	REVISIONS	DES: -	CITY of TAMPA WASTEWATER DEPARTMENT	HFC AWTP VEHICLE FUEL TANK REPLACEMENT FOUNDATION PLAN	W.O. -
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FOUNDATION PLAN - BOTTOM STEEL
 1/4" = 1 FT

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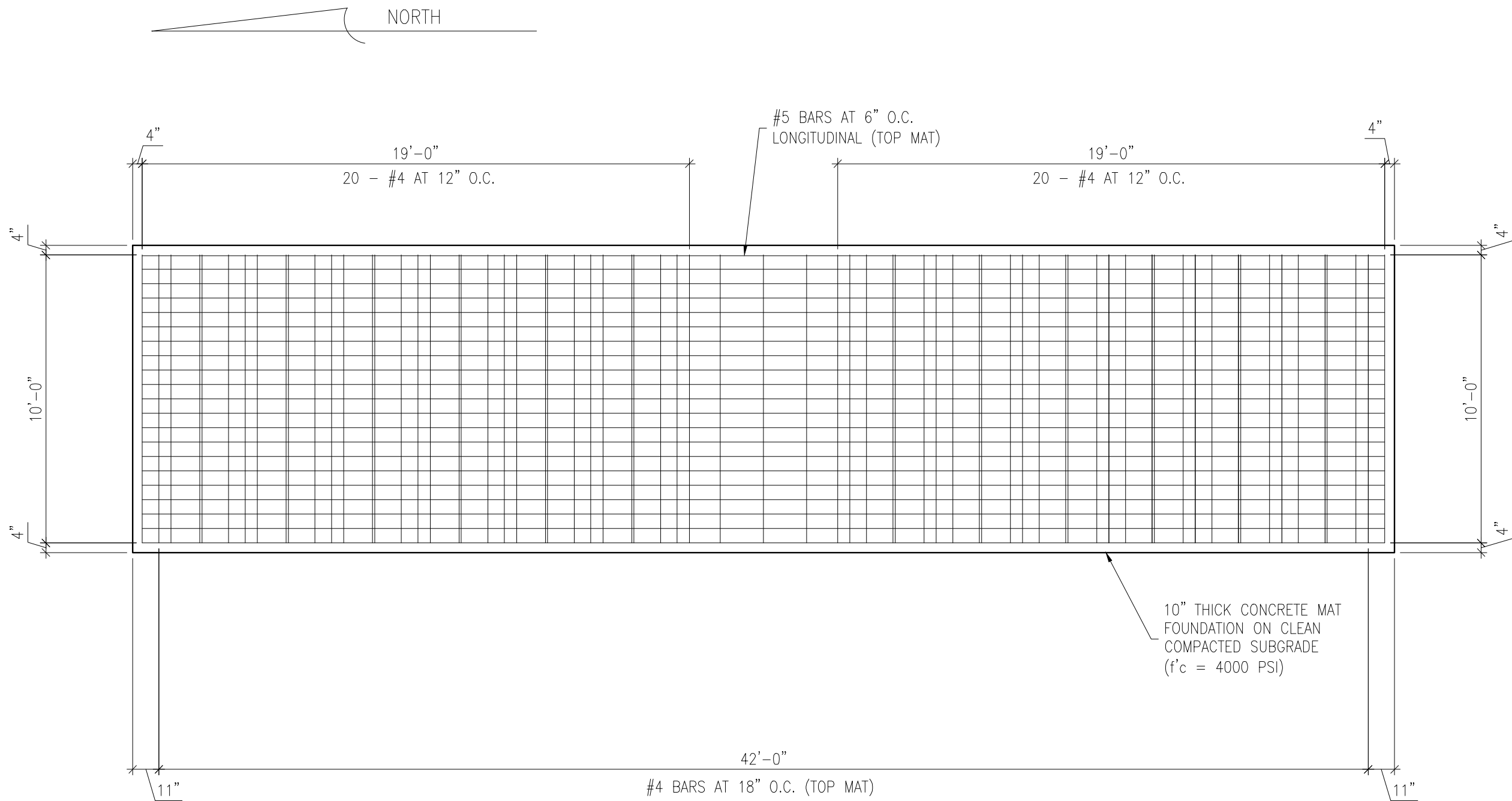
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CITY of TAMPA
 WASTEWATER DEPARTMENT

HFC AWTP VEHICLE FUEL TANK REPLACEMENT
FOUNDATION PLAN - BOTTOM STEEL

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 CATALANO ENGINEERING, INC.



FOUNDATION PLAN - TOP STEEL
1/4" = 1 FT

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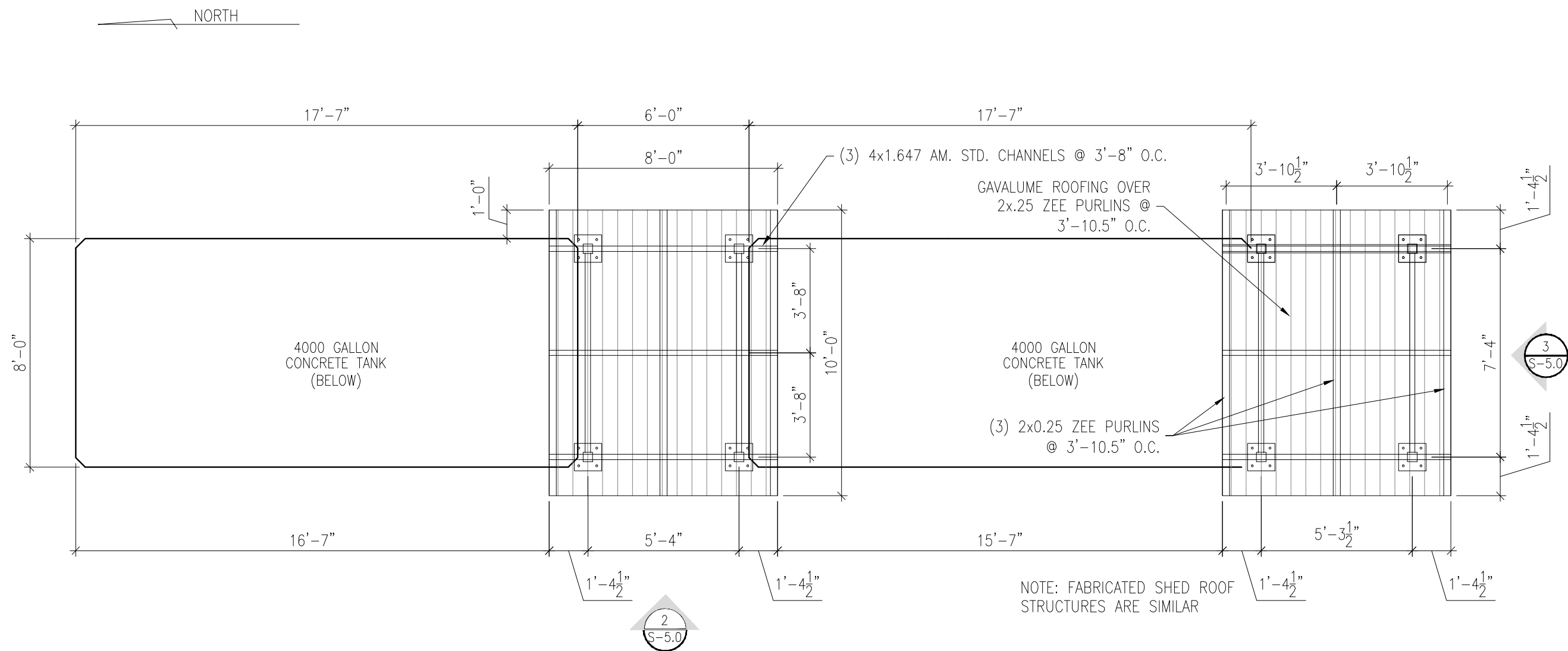
CITY of TAMPA
 WASTEWATER DEPARTMENT

HFC AWTP VEHICLE FUEL TANK REPLACEMENT
FOUNDATION PLAN - TOP STEEL

W.O. -
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JAMES CATALANO, P.E. #42507
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PLAN VIEW
1/4" = 1 FT

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JAMES CATALANO, P.E. #42507
 CATALANO ENGINEERING, INC.

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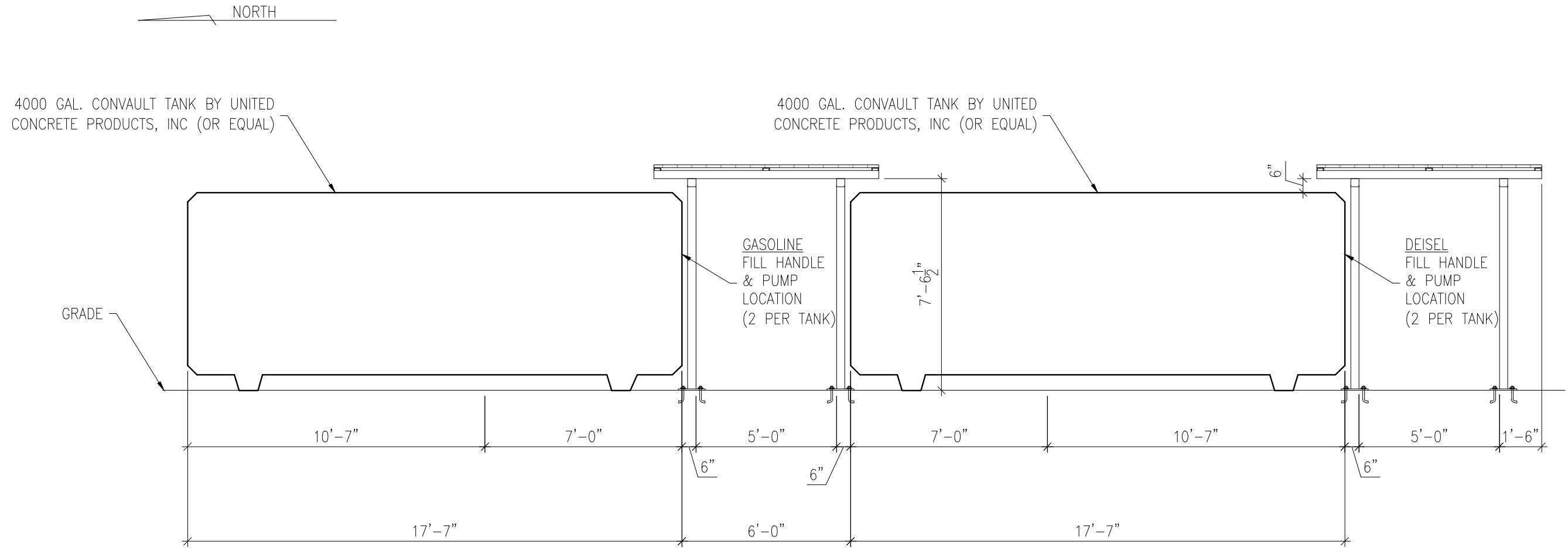
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CITY of TAMPA
 WASTEWATER DEPARTMENT

HFC AWTP VEHICLE FUEL TANK REPLACEMENT
PLAN VIEW

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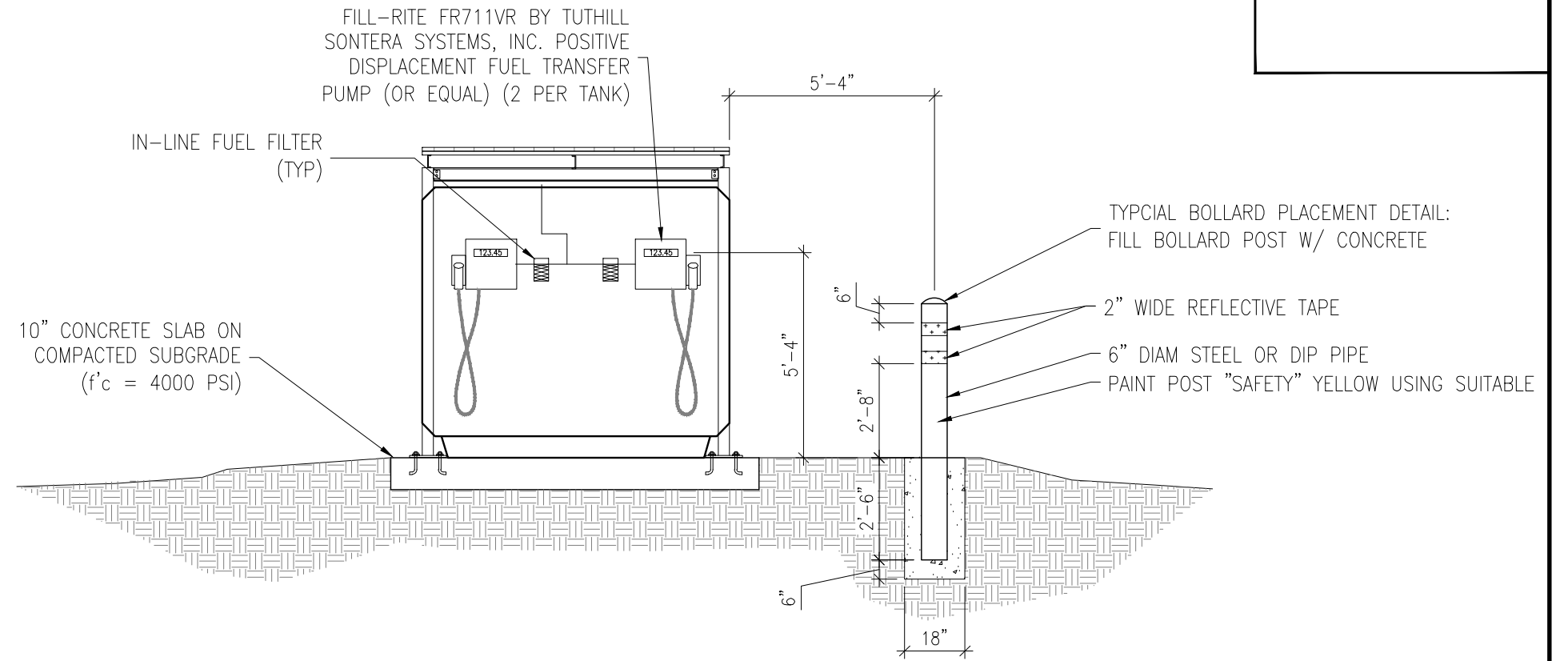
NOTE:
 THE CONTRACTOR SHALL VERIFY THE POSITION OF DIESEL VS. GASOLINE STORAGE TANK WITH THE CITY OF TAMPA PRIOR TO INSTALLATION.

ELEVATION VIEW
 1/4" = 1 FT

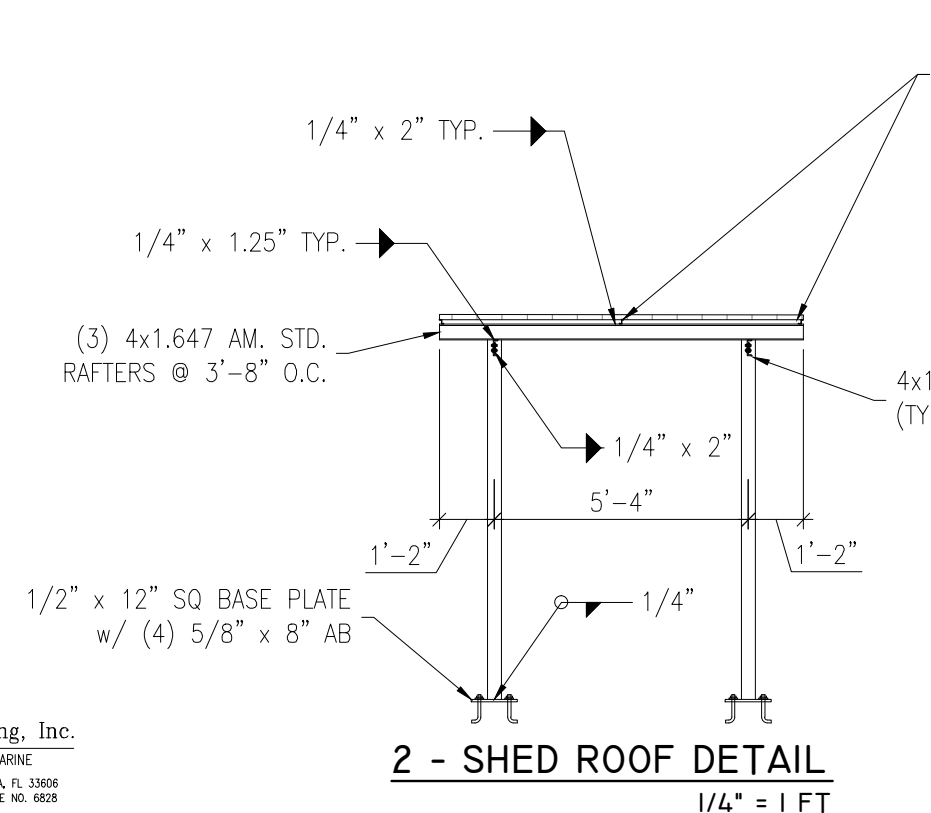
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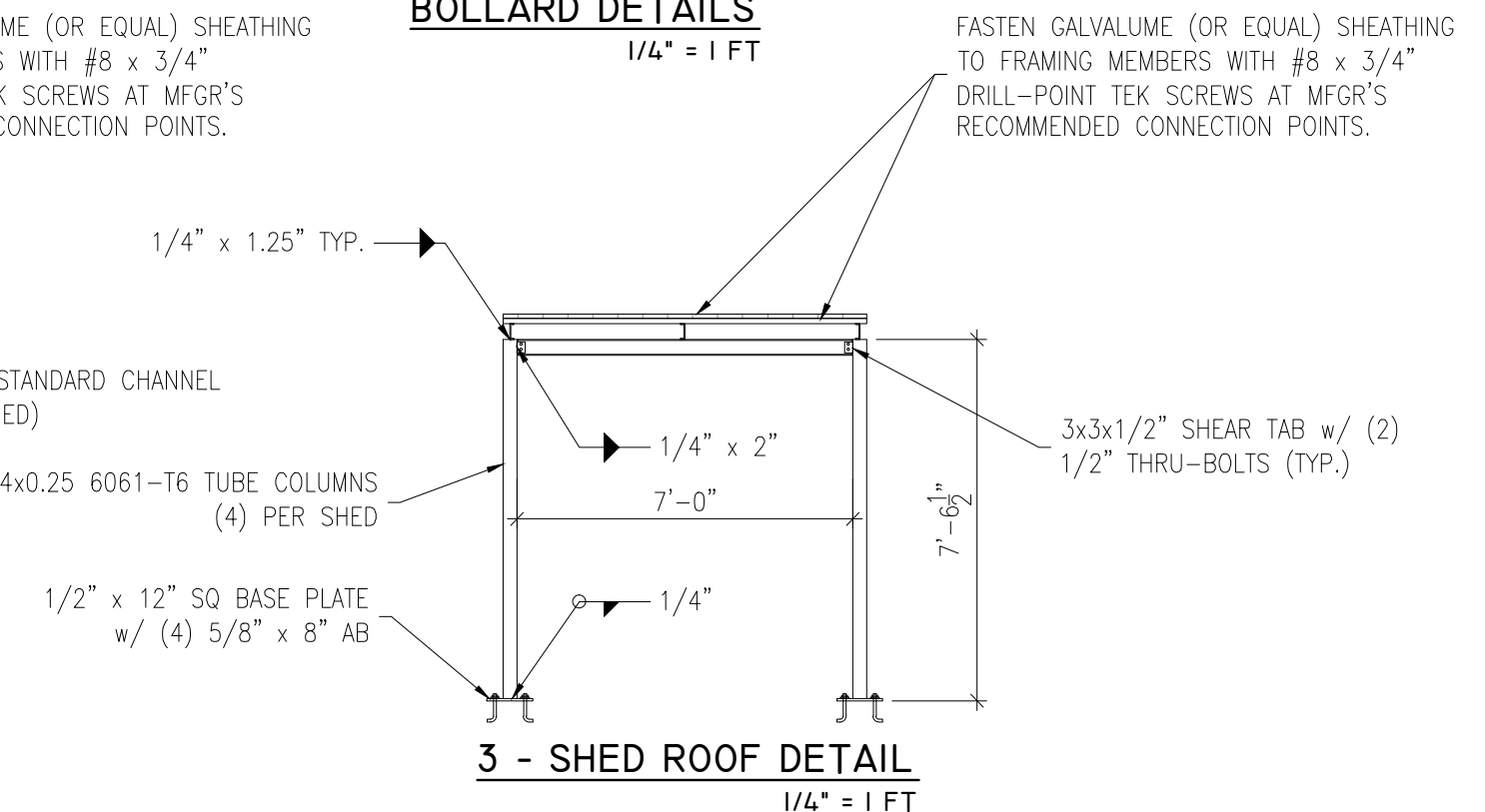


I - CONTROL & BOLLARD DETAILS
 1/4" = 1 FT



2 - SHED ROOF DETAIL
 1/4" = 1 FT

FASTEN GALVALUME (OR EQUAL) SHEATHING TO ZEE PURLINS WITH #8 x 3/4" DRILL-POINT TEK SCREWS AT MFGR'S RECOMMENDED CONNECTION POINTS.



3 - SHED ROOF DETAIL
 1/4" = 1 FT

FASTEN GALVALUME (OR EQUAL) SHEATHING TO FRAMING MEMBERS WITH #8 x 3/4" DRILL-POINT TEK SCREWS AT MFGR'S RECOMMENDED CONNECTION POINTS.

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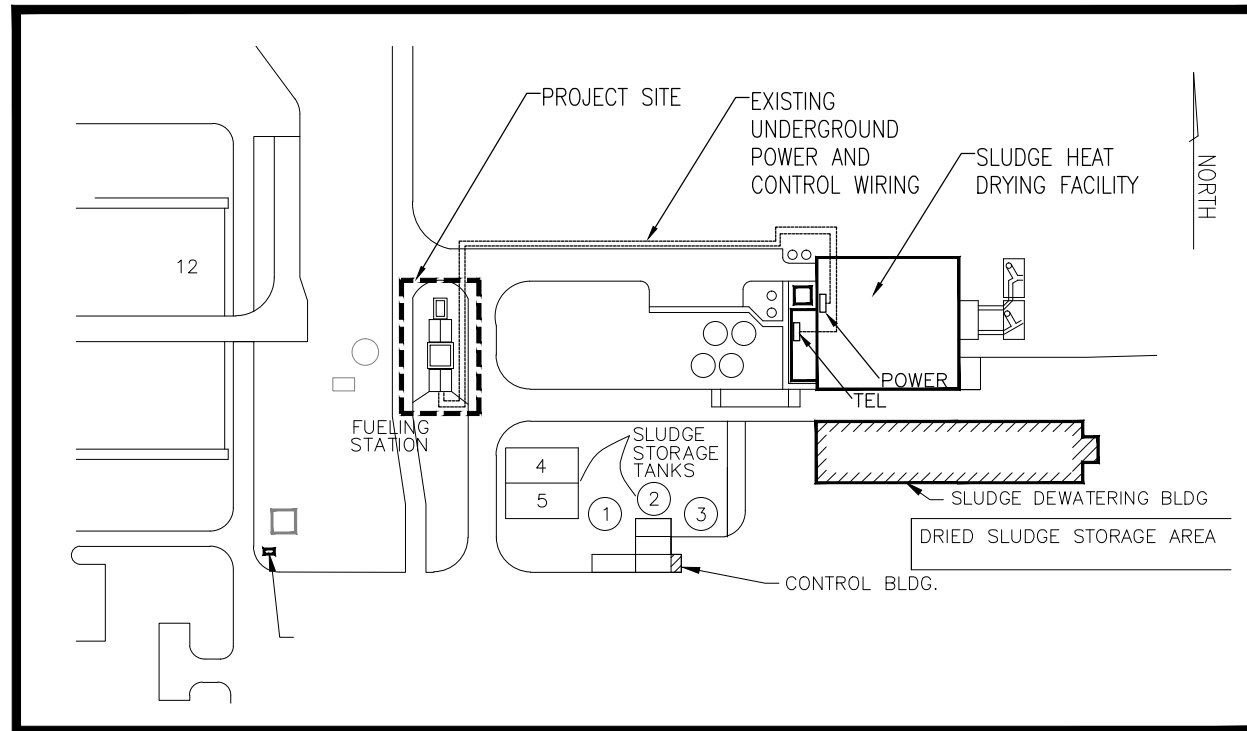
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CITY of TAMPA
 WASTEWATER DEPARTMENT

HFC AWTP VEHICLE FUEL TANK REPLACEMENT
DETAILS

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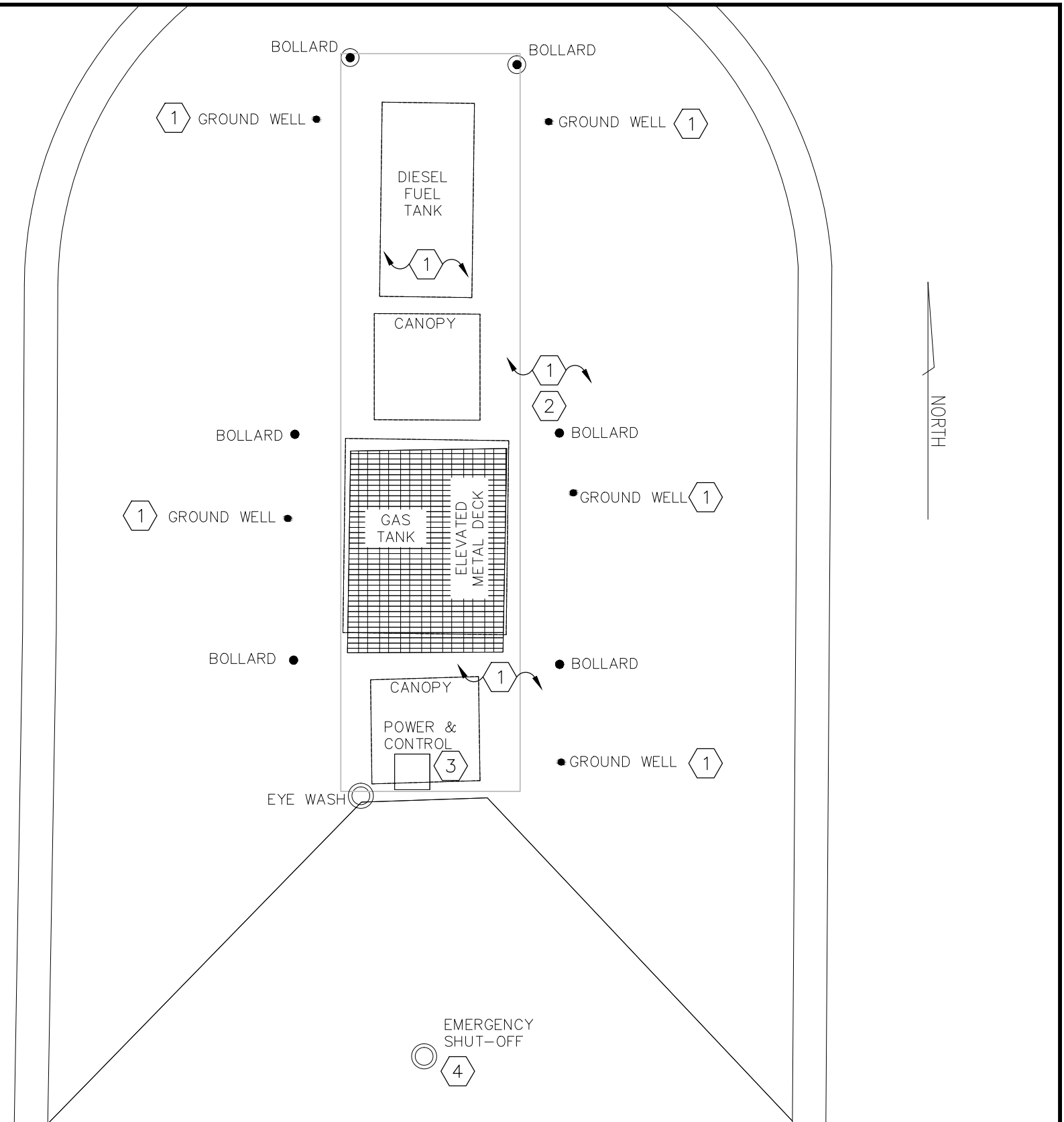
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 CATALANO ENGINEERING, INC.



WIDE AREA SITE PLAN

DEMOLITION KEY NOTES

1. REMOVE ALL LIGHTNING PROTECTION AIR TERMINALS, TERMINAL BASES, DOWN LEADS. UNDERGROUND CABLING EXPOSED BY SLAB DEMOLITION. UNDERGROUND CABLING NOT EXPOSED BY SLAB DEMOLITION AND ACCESS WELLS SHALL REMAIN. REMOVE ACCESS WELL COVERS AND FILL ACCESS WELLS WITH CONCRETE (PERMANENTLY ABANDONED).
2. FROM WITHIN ENTIRE PROJECT AREA, REMOVE ALL LIGHTING, POWER AND COMMUNICATIONS CONDUIT AND EQUIPMENT. TURN OVER TO OWNER AS SALVAGE, PROPERLY DISPOSE OF OFF SITE ALL EQUIPMENT AND MATERIAL THE OWNER DOES NOT RETAIN.
3. REMOVE EXISTING CONTROL BOX AND POWER PANEL.
4. REMOVE EMERGENCY POWER OFF BUTTON.



ELECTRICAL DEMOLITION PLAN

1/8" = 1 FT

Catalano Engineering, Inc.
 CIVIL - STRUCTURAL - MARINE
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HAHN ENGINEERING, INC.
 MECHANICAL & ELECTRICAL CONSULTING
 2005 S. DALE HWY. TAMPA, FLORIDA 33629
 Phone: 813.831.8588 Fax: 813.831.7548

BID SET

JEFFREY J. HAHN, P.E. #58045 HAHN ENGINEERING, INC.	No.	DATE	REVISIONS	DES: -	CITY of TAMPA WASTEWATER DEPARTMENT	HFC AWTP VEHICLE FUEL TANK REPLACEMENT ELECTRICAL DEMOLITION PLAN	W.O. -
	3			DRN: -			SHEET
	2			CKD:			EI.0
	1			DATE:			OF

KEY NOTES

1. PROVIDE NEW LIGHTNING PROTECTION SYSTEM INCLUDING ALL AIR TERMINALS, ADHESIVE BASES, DOWN LEADS, CONDUCTORS, GROUND RODS, TEST WELLS, CLAMPS AND OTHER REQUIRED MATERIALS AND LABOR FOR A COMPLETE MASTER LABEL SYSTEM. PROVIDE SHOP DRAWINGS FOR OWNER REVIEW AND APPROVAL.
2. INTERCEPT EXISTING POWER AND COMMUNICATIONS CONDUIT IN THE UNPAVED AREA. PROVIDE NEW MINIMUM 24" X 24" H20 TRAFFIC RATED HAND HOLE WITH EXPLOSION PROOF WIRING, CONDUIT AND FITTINGS (SEE E2.0 AND E2.2). PROVIDE 6" OF GRAVEL ON BOTTOM OF HAND HOLE.

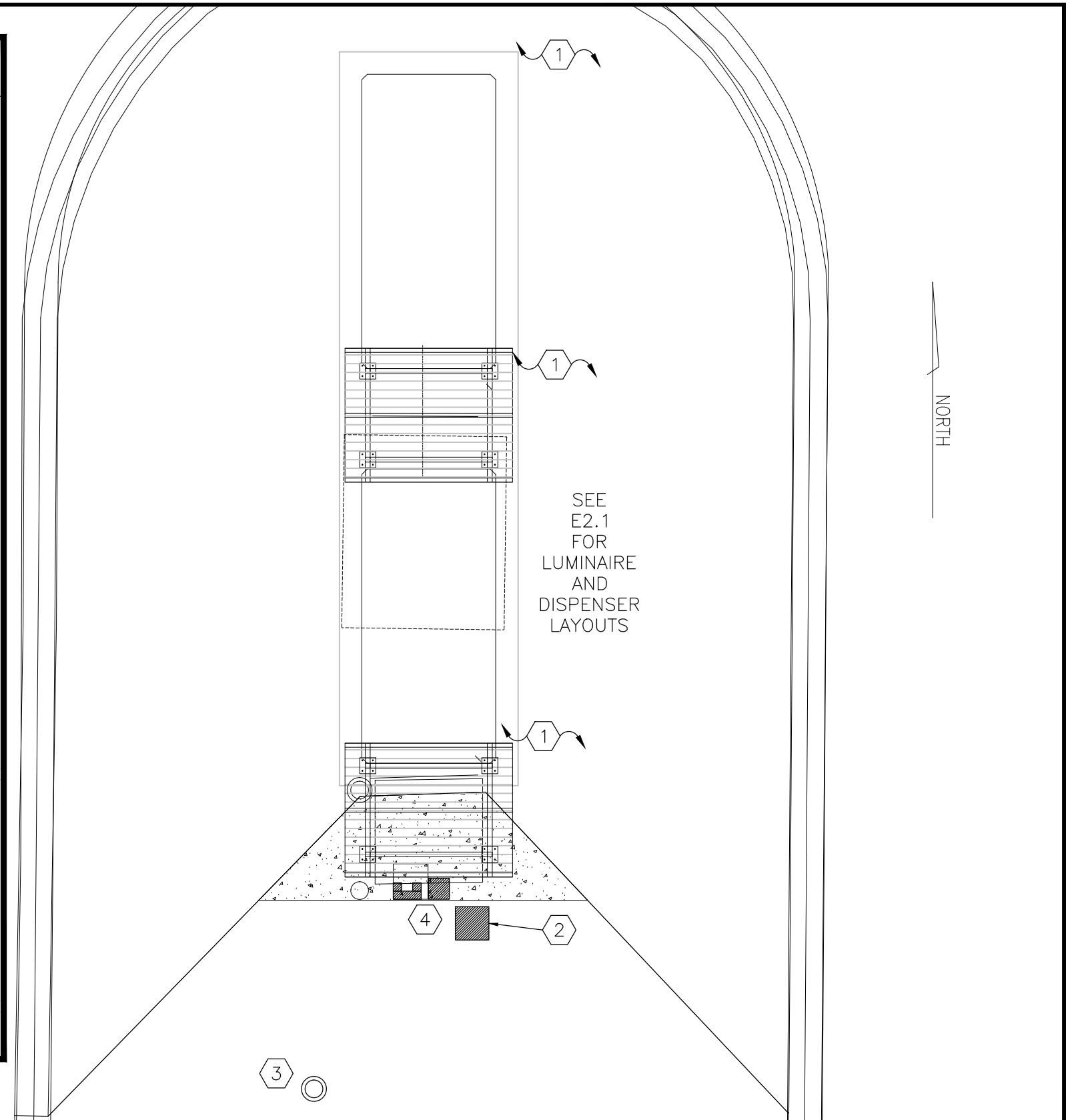
ALL CONDUIT ABOVE GROUND SHALL BE THREADED RIGID ALUMINUM.

THIS HAND HOLE IS WITHIN A CLASSIFIED AREA. THREAD EXISTING CONDUIT AND PROVIDE CONDUIT SEALS IN HAND HOLE. ALL WIRING SHALL BE PROVIDED IN ACCORDANCE WITH NEC ARTICLE 514.8 'UNDERGROUND WIRING'.

UNDERGROUND WIRING SHALL BE INSTALLED IN PVC COATED THREADED RIGID ALUMINUM CONDUIT. CONDUIT BODIES AND SEAL FITTINGS IN HAND HOLE SHALL BE PVC COATED ALUMINUM. ANY PORTION OF ELECTRICAL WIRING THAT IS BELOW THE SURFACE OF A CLASS I, DIVISION 1, OR A CLASS I, DIVISION 2, LOCATION SHALL BE SEALED WITHIN 3.05 M (10 FT) OF THE POINT OF EMERGENCE ABOVE GRADE. EXCEPT FOR LISTED EXPLOSION PROOF REDUCERS AT THE CONDUIT SEAL, THERE SHALL BE NO UNION, COUPLING, BOX, OR FITTING BETWEEN THE CONDUIT SEAL AND THE POINT OF EMERGENCE ABOVE GRADE.

PROVIDE TWO PROPERLY SIZED OUTDOOR RATED CLASS I, DIVISION I, GROUP D ALUMINUM JUNCTION BOXES, GROUSE HINDS GUB, JUNCTION BOXES, OR EQUAL (ONE POWER, ONE CONTROLS) IN HAND HOLE TO FACILITATE SPLICING OF CONDUCTORS.

SEE POWER AND SYSTEMS PLAN E2.1 AND RISER DIAGRAM E2.2.
3. PROVIDE NEW EMERGENCY ILLUMINATED POWER OFF BUTTON ON NEW 4"X4" CONCRETE POST MINIMUM 20 FEET AWAY FROM DISPENSERS IN GRASS AREA. PROVIDE COMMUNICATIONS WIRING FROM PUMP CONTROLLER, SEAL ALL WIRING.
4. NEW POWER AND PUMP CONTROL PEDESTAL LOCATIONS. SEE RISER DIAGRAM SHEET E2.2.



ELECTRICAL SITE PLAN

1/8" = 1 FT

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BID SET

No.	DATE	REVISIONS
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2		
1		

JEFFREY J. HAHN, P.E. #58045
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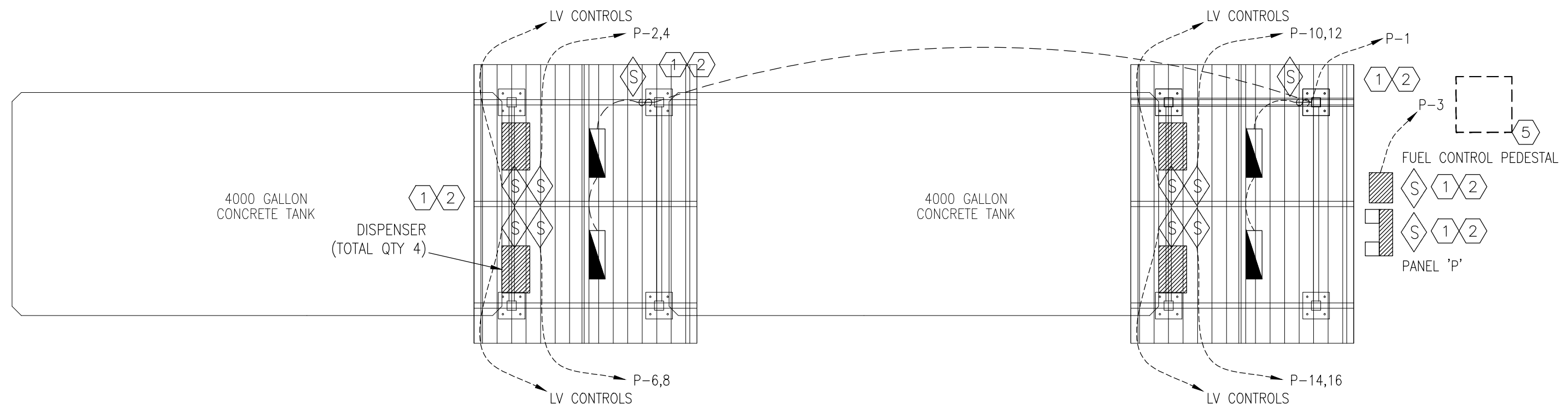
CITY of TAMPA
WASTEWATER DEPARTMENT

HFC AWTP VEHICLE FUEL TANK REPLACEMENT
ELECTRICAL SITE PLAN

W.O. -
SHEET
E2.0
OF

NORTH

GENERAL NOTE: CLASS 1 DIVISION 2 BOUNDARY EXTENDS 20 FEET IN RADIUS FROM ALL DISPENSERS FROM GROUND LEVEL TO 18 INCHES ABOVE FINISHED GRADE/SLAB. ALL WIRING IN THIS AREA MUST BE EXPLOSION PROOF. PROVIDE CONDUIT SEALS FOR ALL POWER AND CONTROL WIRING CROSSING WITHIN 10 FEET OF THE BOUNDARY. PROVIDE ALL WIRING IN ACCORDANCE WITH NEC ARTICLES 500 AND 514.



LEGEND			
S	CONDUIT SEAL. LOCATION AND QUANTITIES ARE DIAGRAMMATIC. EXACT LOCATION AND QUANTITY DEPENDS UPON EQUIPMENT ROUGH-IN AND CONDUIT LOCATION. PROVIDE SEALS IN ACCORDANCE WITH NEC ARTICLES 500 AND 514. WHEN RUNNING SHIELDED CABLE THROUGH A SEAL-OFF, STRIP THE CABLE JACKET BACK SO APPROXIMATELY 3" OF JACKETED CABLE PROTRUDES PAST EACH SEAL-OFF.	▲	EXPLOSION PROOF LUMINAIRE, APPLETON MODEL FDBAESLED
▨	FUEL CONTROL PEDESTAL AND POWER PANEL, PROVIDE CONDUIT AND WIRING CONNECTIONS PER MANUFACTURER RECOMMENDATIONS. PROVIDE ALL CONDUIT SEALS.	\$	EXPLOSION PROOF LIGHT SWITCH

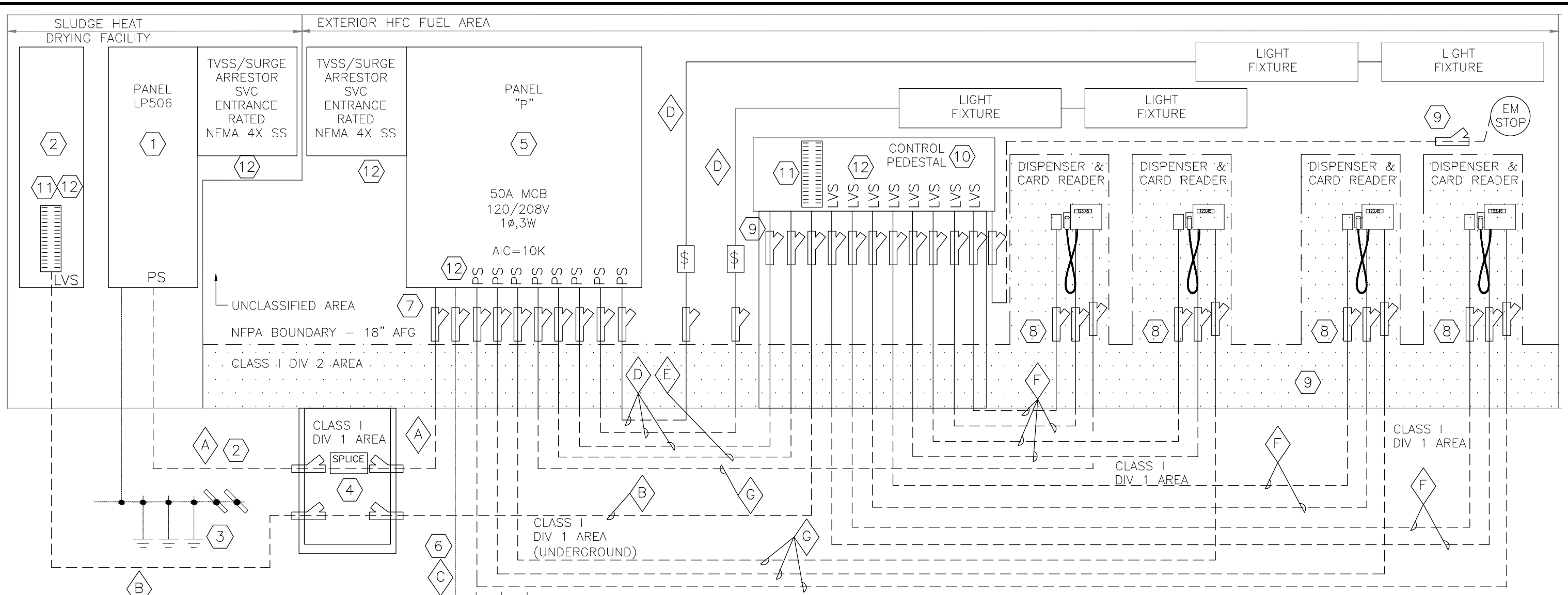
POWER AND SYSTEMS KEY NOTES	
<p>1. PROVIDE SEALS AT EACH DISPENSER. A LISTED SEAL SHALL BE PROVIDED IN EACH POWER AND CONTROL CONDUIT ENTERING OR LEAVING A DISPENSER OR ANY CAVITIES OR ENCLOSURES IN DIRECT COMMUNICATION THEREWITH. THE SEALING FITTING SHALL BE THE FIRST FITTING AFTER THE CONDUIT EMERGES FROM THE EARTH OR CONCRETE.</p> <p>2. PROVIDE SEALS AT BOUNDARY OF UNCLASSIFIED AND CLASSIFIED AREAS IN ACCORDANCE WITH NEC ARTICLE 501.15, 501.15(A)(4) AND (B)(2). THIS APPLIES TO HORIZONTAL AND VERTICAL BOUNDARIES OF THE DEFINED CLASS I</p>	<p>LOCATIONS.</p> <p>3. PROVIDE NEW NEMA 4X EMERGENCY STOP BUTTON MOUNTED TO 4" CONCRETE POST AT A MINIMUM OF 20 FEET AWAY FROM PUMPS.</p> <p>4. PROVIDE NEW EXPLOSION PROOF LED LUMINAIRE (4 LOCATIONS), APPLETON FDBAESLED OR APPROVED EQUAL. CONNECT TO LIGHT SWITCH AT EACH ROOF AREA, PROVIDE CONDUIT SEALS PER NEC ARTICLES 500 AND 514.</p> <p>5. NEW TRAFFIC RATED HAND HOLE, SEE KEY NOTE #2, SHEET E2.0.</p>

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BID SET

JEFFREY J. HAHN, P.E. #58045 HAHN ENGINEERING, INC.	No.	DATE	REVISIONS	DES: -	CITY of TAMPA WASTEWATER DEPARTMENT	HFC AWTP VEHICLE FUEL TANK REPLACEMENT POWER AND SYSTEMS WIRING PLAN	W.O. -
	3			DRN: -			SHEET
	2			CKD:			E2.1
	1			DATE:			OF



WIRING LEGEND

- A (3) #6 AWG AND (1) #10 AWG CU OIL/GAS RESISTANT THWN IN 1.25" CONDUIT
- B 10 PAIR CAT 3 OIL/GAS RESISTANT OUTDOOR RATED IN 1" C
- C #6 AWG CU OIL/GAS RESISTANT THWN IN 1" C
- D (2) #12 AWG CU AND (1) #10 AWG CU EGC OIL/GAS RESISTANT THWN IN 1/2" C.
- E #6 AWG CU OIL/GAS RESISTANT THWN IN 3/4" C
- F PETRO-NET WIRE (2-CONDUCTOR, 18AWG TFFN TWISTED) IN 3/4" C
- G (3) #12 AWG CU AND (1) #10 AWG CU EGC OIL/GAS RESISTANT THWN IN 1/2" C.

⬡ RISER KEY NOTES

1. EXISTING POWER PANEL IN SLUDGE HEAT DRYING FACILITY.
2. EXISTING BRANCH CIRCUIT FROM SLUDGE HEAT DRYING FACILITY, (3) #6 AND (1) #10 CU IN 1.25" CONDUIT.
3. EXISTING GROUNDING ELECTRODE SYSTEM AT SLUDGE HEAT DRYING FACILITY.
4. PROVIDE NEW H2O TRAFFIC RATED PULL BOX IN GRASS AREA SOUTH OF EXISTING PUMP STATION TO INTERCEPT POWER AND COMMUNICATIONS CONDUIT. POWER WIRING TO BE SPLICED AND EXTENDED, NEW CONTROL WIRING FROM SLUDGE FACILITY TO NEW CONTROL BOX LOCATION. SPLICE POWER IN APPROVED EXPLOSION PROOF JUNCTION BOX IN HAND HOLE. PROVIDE CONDUIT SEALS.
5. PROVIDE NEW PANEL, 50A MCB 120/208V 1 PHASE, NEMA 4X STAINLESS STEEL, SEE PANEL SCHEDULE. MOUNT ON TWO 6"x6" CONCRETE POSTS BURIED MINIMUM 3 FEET BELOW GRADE WITH STAINLESS STEEL OR COMPOSITE UNISTRUT CROSS MEMBERS AND STAINLESS STEEL HARDWARE. MOUNT PANEL AT HEIGHT TO ALLOW CONDUIT SEALS TO BE ABOVE CLASS I DIV 2 BOUNDARY AT 18 INCHES ABOVE FINISHED SLAB.
6. CONNECT PANEL EQUIPMENT GROUNDING CONDUCTOR TO REBAR AND LIGHTNING PROTECTION GROUND RODS WITH #4 CU WIRE.
7. PROVIDE NEC ARTICLE 500.15 COMPLIANT SEALS AT PANEL (BOUNDARY BETWEEN UNCLASSIFIED AND CLASSIFIED AREAS).
8. PROVIDE NEW ARTICLE 500.15 COMPLIANT SEALS AT EACH PUMP ENCLOSURE.
9. PROVIDE NEC ARTICLE 500.15 COMPLIANT SEALS FOR ALL LOW VOLTAGE CONTROL WIRING. PROVIDE EXPLOSION PROOF LIGHT SWITCHES.
10. OPW TERMINAL WITH PEDESTAL (ALLOWS INSTALLATION IN CLASS I DIV 2 AREA).
11. PROVIDE 110 BLOCK FOR WIRING TERMINATION AND SURGE ARRESTORS.
12. PROVIDE SURGE ARRESTORS FOR ALL LOW VOLTAGE (LVS=LOW VOLTAGE SURGE ARRESTER) AND POWER WIRING (PS=POWER SURGE ARRESTER) AT BOTH THE HEAT DRYING FACILITY AND WHEN COPPER WIRING EXITS THE POWER PANEL OR CONTROL BOX.

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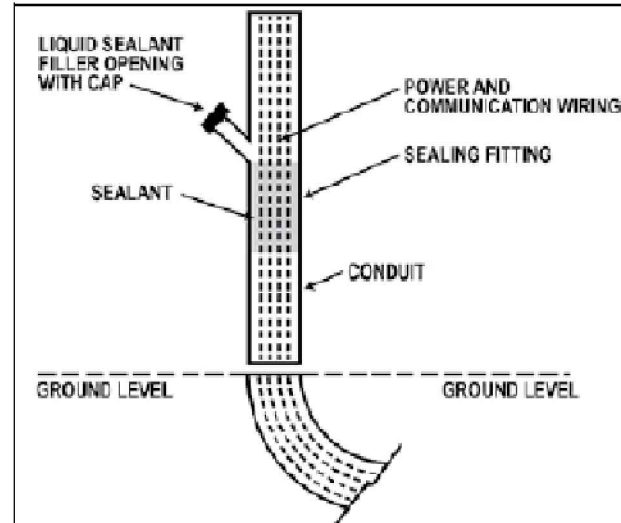
CITY of TAMPA
 WASTEWATER DEPARTMENT

HFC AWTP VEHICLE FUEL TANK REPLACEMENT
POWER RISER DIAGRAM AND SCHEDULES

W.O. -
 SHEET
E2.2
 OF

PANEL 'P'

Conduit Sealing

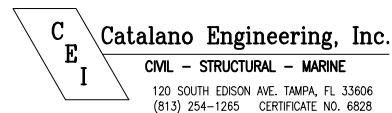


PANEL		P		02/015/14		AUTO CALCULATIONS	
HI VOLTAGE	208	SYM RMS AMPS	10,000	LOAD (VA)	3,300		
LOW VOLTAGE	120	MAIN BREAKER TYPE	MCB	DIVERSITY(VA)	0		
PHASE	1	MAIN BKR AMPS	50A MCB	25% C LOAD	0		
HERTZ	60	FED TOP/BOTTOM	BOTTOM	TOTAL VA	3,300		
NEUTRAL	Y	MOUNTING	SURFACE	TOTAL KVA	3		
GROUND BUS Y/N	Y	NEMA TYPE	NEMA 4X SS	CONN AMPS	16		
GND WIRE Y/N	Y	MANUFACTURER	SQUARE D	FACTOR AMPS	0		
WIRE THHN/THW	THW	PANEL TYPE	NQOD	TOTAL AMPS	16		
FED FROM	XFMR			DESIGN AMPS	50		
NO.OF POLES	18	PROVIDE SWITCHED NEUTRAL FOR DISPENSER BREAKERS.		NO OF COND.	SEE RISER		
MIN. AMPS	50			COND. SIZE	SEE RISER		
% FACTOR	0			# OF WIRES	SEE RISER		
BUSSING	COPPER			WIRE SIZE	SEE RISER		
ISOLATED GND	N			SIZE OF GND	SEE RISER		

CIR #	BREAKER	CIRCUIT DESCRIPTION	L1	L2
1	20A-1P	LIGHT FIXTURES	500	----
3	20A-1P	CONTROLLER	----	200
5	20A-1P	SPARE	0	----
7	20A-1P	SPARE	----	0
9	20A-1P	SPARE	0	----
11	20A-1P	SPARE	----	0
13	20A-1P	SPARE	0	----
15	30A-2P	TVSS	----	0
17	--	---	0	----

CIR #	BREAKER	CIRCUIT DESCRIPTION	L1	L2
2	20A-2P	DISPENSER	325	----
4	--	---	----	325
6	20A-2P	DISPENSER	325	----
8	--	---	----	325
10	20A-2P	DISPENSER	325	----
12	--	---	----	325
14	20A-2P	DISPENSER	325	----
16	--	---	----	325
18	20A-1P	SPARE	0	----

LOAD CALCULATIONS FOR PANEL		P	
CONNECTED LOAD L1			1,800 VA
CONNECTED LOAD L2			1,500 VA
SUB TOTAL VA			3,300 VA
RECEPTACLE LOAD		0 VA	
LESS 1ST 10,000 VA		10,000 VA	
REMAINING VA		0 VA	
50% OF THE REMAINING VA		0 VA	
LESS DIVERSITY (PER ARTICLE 220-13 N.E.C.)			0 VA
CONTINUOUS LOAD		0 VA	
		X .25	
PLUS 25% OF THE CONTINUOUS LOAD			0 VA
SUB TOTAL			3,300 VA
FACTOR	0%		0 VA
TOTAL VA			3,300 VA
AMPS	3,300 VA / VOLTAGE -->	208	16 AMPS

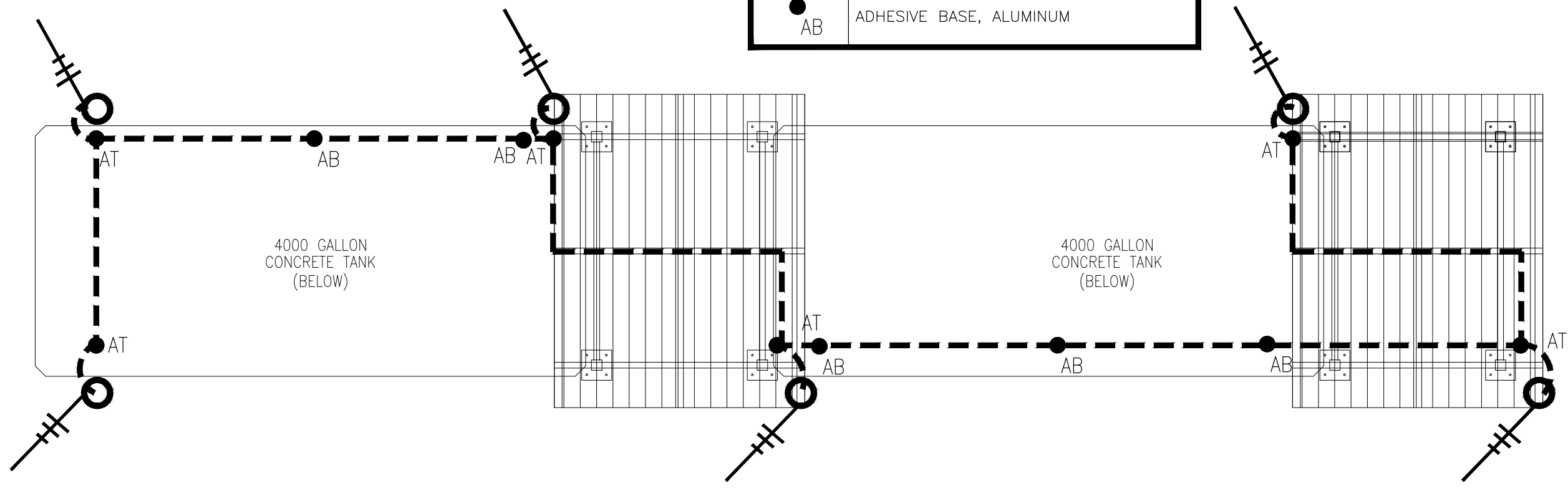


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	3			DRN: -			SHEET
	2			CKD:			E2.3
	1			DATE:			

NORTH

LEGEND	
● AT	AIR TERMINAL, BLUNT TIP, 24" X 0.5 INCH DIAM ALUMINUM, SECURE W/ADHESIVE BASE 'AB'
○	TRAFFIC RATED GROUND TEST WELL, 12"
⚡	3/4" X 10' STAINLESS STEEL GROUND ROD, CONNECT VIA EXOTHERMIC WELD.
—	ALUMINUM CLASS I CONDUCTOR, A24
● AB	ADHESIVE BASE, ALUMINUM



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LIGHTNING PROTECTION PLAN

1/4" = 1 FT

BID SET

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 HAHN ENGINEERING, INC.

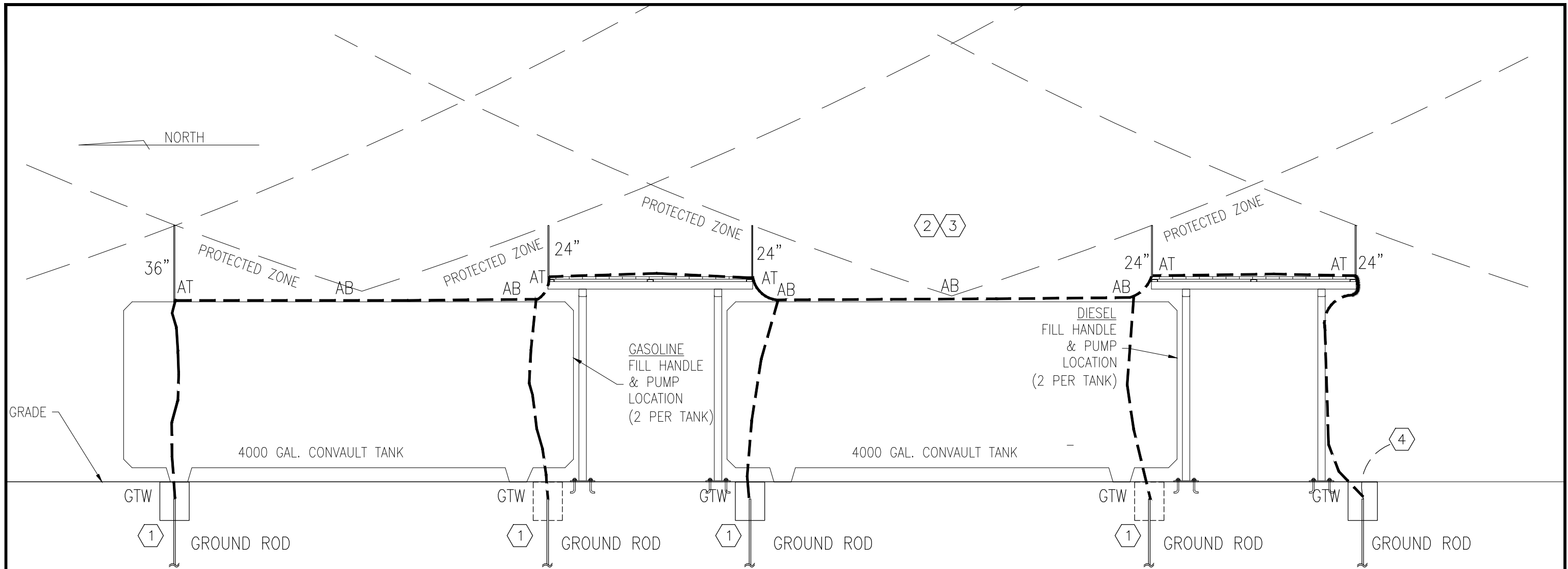
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CITY of TAMPA
 WASTEWATER DEPARTMENT

HFC AWTP VEHICLE FUEL TANK REPLACEMENT
LIGHTNING PROTECTION PLAN

W.O. -
 SHEET
E3.0
 OF



- LIGHTNING PROTECTION KEY NOTES**
- IN ADDITION TO DOWN LEAD CONNECTION TO GROUND ROD, CONNECT TO FOOTER STRUCTURAL REBAR WITH CLASS I CONDUCTOR AND COMPRESSION CONNECTION AT EVERY GROUND TEST WELL.
 - PROVIDE SHOP DRAWINGS FOR REVIEW AND APPROVAL AND A UL LIGHTNING PROTECTION MASTER LABEL UPON COMPLETION OF PROJECT.
 - PROVIDE BONDING JUMPERS TO ALL METALLIC STRUCTURAL PIECES NOT CONNECTED TO TANKS OR METAL ROOF STRUCTURE.
 - CONNECT TO PANEL GROUND BAR WITH #4 COPPER.

LEGEND

● AT	AIR TERMINAL, BLUNT TIP, 24" OR 36" X 0.5 INCH DIAM ALUMINUM
○ GTW	TRAFFIC RATED GROUND TEST WELL, 12"
---	ALUMINUM CLASS I CONDUCTOR, A24
● AB	ADHESIVE BASE, ALUMINUM
---	LIGHTNING PROTECTION RADIUS

LIGHTNING PROTECTION ELEVATION

1/4" = 1 FT

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