

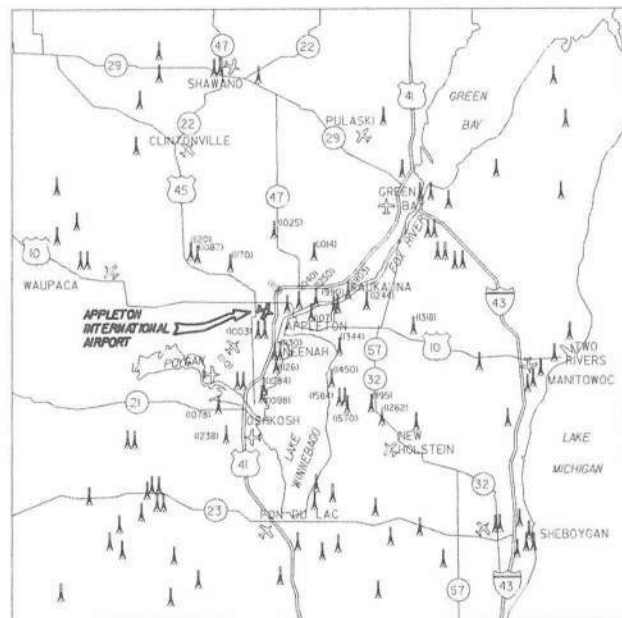


# APPLETON INTERNATIONAL AIRPORT APPLETON, WISCONSIN

## AIRCRAFT BULK FUELING SYSTEM EXPANSION N825 COUNTY RD. CB, APPLETON, WI 54914

- BASE BID: CONSTRUCT BULK FUEL SYSTEM EXPANSION**  
**ALTERNATE 1: PROVIDE ONE ADDITIONAL JET A TANK AND PLATFORM, PIPING, ELECTRICAL, FOUNDATIONS, ASSOCIATED TANK EQUIPMENT**  
**ALTERNATE 2: PROVIDE NEW CONCRETE COATING SYSTEM IN BULK FUEL CONTAINMENT AREA**  
**ALTERNATE 3: PROVIDE ELECTRICAL CONNECTION POINT FOR BACKUP GENERATOR**  
**ALTERNATE 4: DESIGN - CONSTRUCT CLAY TREATER SYSTEM (SEE SPECIAL PROVISIONS AND SHEET 5A)**

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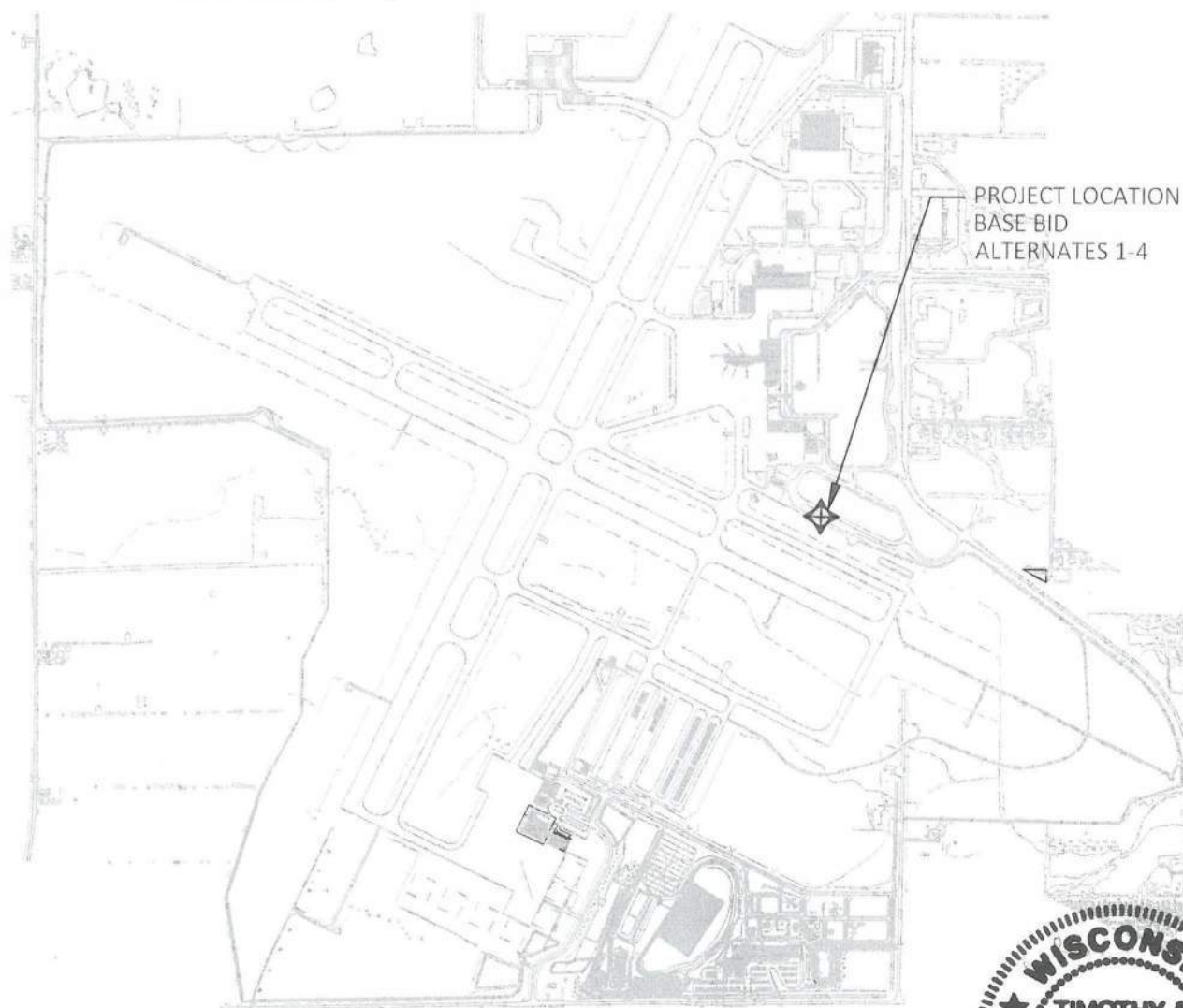


LOCATION MAP 1" = 1,000,000'

✈️ AIRPORT LOCATION  
 🗼 TOWER LOCATION (ELEVATION MSL)



VICINITY MAP 1" = 10,000'



PROJECT LOCATION  
BASE BID  
ALTERNATES 1-4

SUMMARY OF QUANTITIES				
ITEM	ITEM DESCRIPTION	QUANTITY	UNIT	AS-BUILT
BASE BID	CONSTRUCT BULK FUEL SYSTEM EXPANSION WITH ONE JET A TANK	1	LS	
ALT. 1	ADD SECOND JET A TANK AND TANK EQUIPMENT AT THE BULK FUEL FACILITY	1	LS	
ALT. 2	PROVIDE NEW CONCRETE COATING SYSTEM	1	LS	
ALT. 3	PROVIDE ELECTRICAL CONNECTION POINT FOR BACKUP GENERATOR	1	LS	
ALT. 4	CONSTRUCT CLAY TREATER SYSTEM	1	LS	

ORIGINAL PLANS PREPARED BY



**CONSTRUCTION DATA**

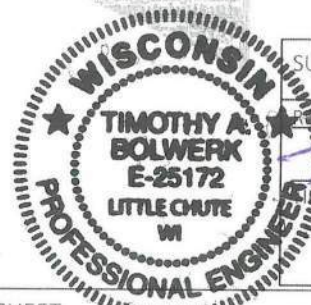
PRIME CONTRACTOR \_\_\_\_\_

MAJOR SUBCONTRACTORS AND/OR SUPPLIERS \_\_\_\_\_

WORK: COMMENCED \_\_\_\_\_ COMPLETED \_\_\_\_\_

PROJECT ENGINEER \_\_\_\_\_

TRUE NORTH  
MAG. DECLINATION  
3° 37' W 2018



SUBMITTED BY OMNI ASSOCIATES APPLETON, WI.

RECOMMENDED FOR APPROVAL

*Timothy A. Bolwerk*  
TIMOTHY A. BOLWERK P.E.

DATE 1/16/18

"AS CONSTRUCTED" APPROVAL

TIMOTHY A. BOLWERK P.E.

DATE \_\_\_\_\_

**OPERATIONS ON AIRPORT**

CONTRACTOR OPERATIONS ON THE AIRPORT SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

- DEFINITIONS:
  - LANDSIDE - THOSE AREAS ON THE AIRPORT CUSTOMARILY USED BY THE PUBLIC FOR ACCESS TO THE AIRPORT. THESE AREAS HAVE NO SECURITY RESTRICTIONS AND DO NOT PUT GROUND VEHICLES IN POTENTIAL CONFLICT WITH AIRCRAFT.
  - AIRSIDE - THE AIRCRAFT OPERATIONS AREAS INCLUDING THOSE AREAS USED FOR AIRCRAFT MAINTENANCE AND STORAGE. ANY AREA OF THE AIRPORT WHICH CANNOT BE CLEARLY IDENTIFIED AS LANDSIDE SHALL BE CONSIDERED TO BE AIRSIDE.
- PRIOR TO ANY PERSON WORKING AIRSIDE, THE CONTRACTOR SHALL HAVE THAT EMPLOYEE OBTAIN A BADGE WHICH INCLUDES TRAINING, SPECIFICALLY FOR APPLETON INTERNATIONAL AIRPORT. THE COST PER BADGE IS \$85. THE CONTRACTOR WILL BE REQUIRED TO KEEP A LIST OF ALL WORKERS WHO HAVE COMPLETED THE BADGING PROCESS. THE GATE GUARD SHALL NOT ALLOW ANYONE IN THE AIRPORT THAT IS NOT BADGED. THIS IS THE CONTRACTOR'S RESPONSIBILITY. ALL GATE GUARDS AND GROUND CONTROL MUST ALSO BE BADGED. IT IS RECOMMENDED THAT A FOREMAN OR SUPERVISOR FROM EACH CONTRACTOR BE ON SITE AND ACCOUNTABLE FOR THEIR EMPLOYEES.
- CONTRACTOR'S EQUIPMENT OPERATING ON THE AIRPORT SHALL BE MARKED BY IDENTIFYING MARKINGS OR FEATURES SUCH AS APPROPRIATE NAMES OR LOGOS. CONTRACTOR'S PERSONNEL WHILE ON THE AIRPORT SHALL BE IDENTIFIED BY CONTRACTOR'S LOGO ON HATS OR APPAREL AND EACH SHALL DISPLAY AN APPROPRIATE AIRPORT SECURITY BADGE WHILE AIRSIDE.
- DURING HAULING OPERATIONS, THE CONTRACTOR SHALL PROVIDE A TRAINED, UNIFORMED SECURITY GUARD(S) AT THE POINT(S) SELECTED FOR ACCESS OF PERSONNEL AND EQUIPMENT TO THE AIRPORT. A LOG OF PERSONS AND VEHICLES SHALL BE KEPT ON FORMS GIVEN TO THE ENGINEER EACH FOLLOWING DAY. ANY INCIDENTS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND THE AIRPORT MANAGER. THE GATE SHALL BE LOCKED AFTER EACH VEHICLE OR PERSON PASSES THROUGH UNLESS A GUARD IS PRESENT TO CONTROL TRAFFIC.
- IN THE EVENT THAT SECURITY IS BREACHED THROUGH THE CONTRACTOR'S NEGLIGENCE, THE CONTRACTOR SHALL COMPENSATE OUTAGAMIE COUNTY IN FULL FOR ALL COSTS ASSOCIATED WITH THE SECURITY BREACH, INCLUDING, BUT NOT LIMITED TO, FINES, LEGAL COSTS, EQUIPMENT REPLACEMENT, AND REPAIR OF DAMAGES.
- THE CONTRACTOR SHALL CONDUCT OPERATIONS ON THE AIRPORT IN A MANNER THAT WILL MINIMIZE INTERFERENCE WITH THE NORMAL OPERATION OF AIRPORT FACILITIES OPEN TO AIR TRAFFIC AND SHALL IMPLEMENT ALL SPECIFIED AND OTHER APPROPRIATE MEASURES TO ENSURE THE SAFETY OF ALL USERS OF THE AIRPORT.
- CONTRACTOR'S MOVEMENTS AIRSIDE IF APPLICABLE SHALL BE BY RADIO PERMISSION FROM THE TOWER IN ALL DESIGNATED MOVEMENT AREAS. THE CONTRACTOR SHALL HAVE FLAGGERS WITH RADIOS AT INTERSECTIONS AND ACCESS POINTS FOR AREAS WITHIN 250 FEET OF AN ACTIVE RUNWAY CENTERLINE, 100 FEET OF AN ACTIVE TAXIWAY CENTERLINE, OR 50 FEET OF AN ACTIVE APRON EDGE. CONTRACTOR'S PERSONNEL, VEHICLES, AND EQUIPMENT SHALL REMAIN CLEAR OF THESE AREAS UNTIL RADIO CLEARANCE HAS BEEN GIVEN FROM THE FAA CONTROL TOWER PERSONNEL. REPORTED VIOLATIONS OF THIS REQUIREMENT ARE SUBJECT TO COUNTY ORDINANCE INCLUDING A FINE UP TO \$500 FOR EACH VIOLATION. RADIO OPERATORS SHALL HAVE A VALID RADIO PERMIT, BE EQUIPPED WITH A RADIO PROVIDED BY THE CONTRACTOR WHICH HAS FREQUENCIES 119.6 MHZ, 121.5 MHZ, 121.7 MHZ AND 126.3 MHZ, AND USE THE FREQUENCY DESIGNATED BY THE ENGINEER FOR TRANSMITTING.
- WHEN THE FAA CONTROL TOWER IS CLOSED DURING HOURS OF CONSTRUCTION, A SUPPLEMENTARY METHOD OF CONTROL SATISFACTORY TO THE ENGINEER SHALL BE USED. THIS METHOD SHALL REQUIRE NO MORE CONTRACTOR'S PERSONNEL THAN THE ABOVE METHOD, SHALL BE INCIDENTAL TO TRAFFIC CONTROL AIRSIDE, AND SHALL BE SUBJECT TO THE SAME PENALTY FOR VIOLATIONS.
- THE CONTRACTOR SHALL NOT ALLOW ANY CONSTRUCTION EQUIPMENT TO PENETRATE ABOVE THE PLANE OF THE 3:1 APPROACH SLOPE OF ANY ACTIVE RUNWAY.
- ALL MOTORIZED VEHICLES AND EQUIPMENT OPERATED BY THE CONTRACTOR ON THE AIRPORT SHALL BE EQUIPPED WITH A FLASHING AMBER WARNING BEACON OR A 3 FOOT SQUARE FLAG OF A CHECKERED PATTERN OF INTERNATIONAL ORANGE AND WHITE SQUARES OF NOT LESS THAN 1 FOOT ON EACH SIDE, DISPLAYED IN FULL VIEW ABOVE THE VEHICLE. FOR PERIODS OF LIMITED VISIBILITY OR DARKNESS, THE VEHICLES SHALL BE EQUIPPED WITH FLASHING AMBER BEACONS APPROPRIATE FOR THE PURPOSE.
- THE CONTRACTOR WILL BE REQUIRED TO HAVE A POWER BROOM WITH OPERATOR AT THE PROJECT SITE DURING CONSTRUCTION OPERATIONS INVOLVING ACTIVE PAVEMENT AREAS. ALL ACTIVE APRONS, TAXIWAYS AND RUNWAYS SHALL BE CONSTANTLY SWEEP TO REMOVE TRACKED OR SPILLED DEBRIS RESULTING FROM CONSTRUCTION OPERATIONS. FAILURE TO KEEP ACTIVE SURFACES CLEAN SHALL MEAN CONSTRUCTION OPERATIONS WILL BE SUSPENDED UNTIL THE SURFACES ARE CLEANED TO THE SATISFACTION OF THE ENGINEER.
- HAUL ROUTES ON THE AIRPORT SHALL BE KEPT TO A MINIMUM AND WILL BE LOGGED BY THE ENGINEER WITH A VIDEO CAMERA PRIOR TO BEGINNING HAULING OPERATIONS. HAUL ROUTE LOGGING MAY BE WITNESSED BY A REPRESENTATIVE OF THE CONTRACTOR AND A REPRESENTATIVE OF THE AIRPORT.
- WHEN THE ENGINEER ORDERS A RUNWAY, TAXIWAY OR OTHER AIRCRAFT OPERATIONS AREA TEMPORARILY CLOSED, THE CONTRACTOR SHALL MARK WITH BARRICADES, LIGHTS AND TEMPORARY STRIPING IN ACCORDANCE WITH DETAILS SHOWN IN THE PLAN SHEETS. THE CONTRACTOR MAY NOT CLOSE ANY ACTIVE PAVEMENT AREA WITHOUT GIVING THE ENGINEER 24-HOUR PRIOR NOTICE.
- BARRICADES FOR USE AIRSIDE SHALL BE NO LESS THAN 18 INCHES NOR MORE THAN 24 INCHES IN HEIGHT, INCLUDING BLINKING LIGHTS. SPACING OF BARRICADES SHALL BE A MAXIMUM OF 10 FEET CENTER TO CENTER ALONG STRAIGHT LINES AND 10 FEET CENTER TO CENTER ON CURVES. BARRICADES SHALL BE ADEQUATELY WEIGHTED, SO AS TO WITHSTAND WIND, PROPELLER OR JET BLASTS OF UP TO 100 MPH. ALTERNATIVELY, BARRICADES

MAY BE BASE MOUNTED WITH FLEXIBLE OR FRANGIBLE CONNECTORS DESIGNED TO BEND OR BREAK NO MORE THAN 3-INCHES ABOVE THE PAVEMENT SURFACE AND THE BASES MAY BE SEMI-PERMANENTLY BONDED TO THE PAVEMENT SURFACE OR BE DOME-SHAPED CASTINGS OF NO MORE THAN 2" HEIGHT AND OF SUFFICIENT WEIGHT TO MEET STABILITY REQUIREMENTS. SANDBAGS OR OTHER CONTAINERS WHICH MAY BE WEAKENED TO THE POINT OF LEAKING OR RUPTURE BY WEATHERING OR OTHER ACTION DURING THE LIFE OF THIS PROJECT ARE NOT ACCEPTABLE FOR WEIGHTING OF BARRICADES. BARRICADES SHALL HAVE ALTERNATING STRIPES OF REFLECTIVE WHITE AND ORANGE. BARRICADES SHALL PRESENT A MINIMUM OF 1 SQUARE FOOT OF REFLECTIVE SURFACE TO VIEW FROM ANY DIRECTION OF APPROACH. AT NIGHT, BARRICADES SHALL BE EQUIPPED WITH RED BLINKING LIGHTS OF AT LEAST 5 CANDOLA. LIGHTS SHALL BE VISIBLE FROM ALL DIRECTIONS OF APPROACH AND REFLECTIVE PORTIONS MAY BE CONSIDERED PART OF THE BARRICADE'S REFLECTIVE AREA. CONTRACTOR SHALL HAVE STAFF ON CALL 24 HOURS A DAY FOR EMERGENCY MAINTENANCE OF THE BARRICADES. THE CONTRACTOR SHALL FURNISH TO THE ENGINEER AND AIRPORT MANAGER A TELEPHONE NUMBER WHICH WILL ASSURE RESPONSE WITHIN ONE HOUR OF THE CALL FOR EMERGENCY MAINTENANCE OF THE LIGHTS AND/OR BARRICADES.

WHEN THE WORK IS NEAR AREAS WITH POTENTIAL PEDESTRIAN TRAFFIC (ON AN APRON, NEAR A BUILDING, ETC), ADJACENT BARRICADES SHALL BE CONNECTED WITH HIGH VISIBILITY (BRIGHT YELLOW OR ORANGE) POLYETHYLENE BARRICADE TAPE 3 INCHES WIDE WITH A MESSAGE "CAUTION DO NOT ENTER" PRINTED IN 1 INCH HIGH LETTERS AT 5-FOOT INTERVALS OR LESS.

14. BARRICADES, FLAG PERSONS, BARRICADE TAPE, POWER BROOM, AND ALL OTHER INCIDENTAL ITEMS REQUIRED TO MAINTAIN A SAFE ENVIRONMENT FOR AIRCRAFT OPERATIONS WILL BE INCIDENTAL TO THE PROJECT.

15. ACCESS TO THE AIRPORT WILL BE MAINTAINED AT ALL TIMES BY USING APPROPRIATE BARRICADES, SIGNS, DETOURS, TEMPORARY RAMPS AND FLAG PERSONS, IF REQUIRED, TO DIRECT DRIVERS THROUGH THE CONSTRUCTION OPERATIONS.

16. BARRICADES AND OTHER TRAFFIC CONTROL ITEMS FOR USE LANDSIDE SHALL CONFORM TO THE REQUIREMENTS OF THE STATE HIGHWAY SPECIFICATIONS.

17. BARRICADES, FLAG PERSONS, BARRICADE TAPE, AND ALL OTHER INCIDENTAL ITEMS REQUIRED TO MAINTAIN A SAFE ENVIRONMENT FOR VEHICULAR OPERATIONS LANDSIDE WILL BE INCIDENTAL TO THE PROJECT.

18. EQUIPMENT AND MATERIALS SHALL NOT BE STORED OR PARKED WITHIN 750 FEET FROM THE CENTERLINE OF AN ACTIVE RUNWAY OR WITHIN 200 FEET FROM THE CENTERLINE OF AN ACTIVE TAXIWAY, UNLESS SPECIFICALLY AUTHORIZED IN WRITING BY THE ENGINEER.

19. EXCAVATIONS AND OPEN TRENCHES LOCATED WITHIN 200 FEET FROM THE CENTERLINE OF AN ACTIVE RUNWAY SHALL BE ADEQUATELY SIGNED, MARKED AND LIGHTED. EXCAVATIONS AND OPEN TRENCHES LOCATED ADJACENT TO PAVEMENTS SHALL BE ADEQUATELY SIGNED, MARKED AND LIGHTED.

20. OPEN FLAME WELDING OR TORCH CUTTING OPERATIONS ARE PROHIBITED UNLESS ADEQUATE FIRE AND SAFETY PRECAUTIONS ARE PROVIDED AND HAVE BEEN APPROVED BY THE AIRPORT MANAGER.

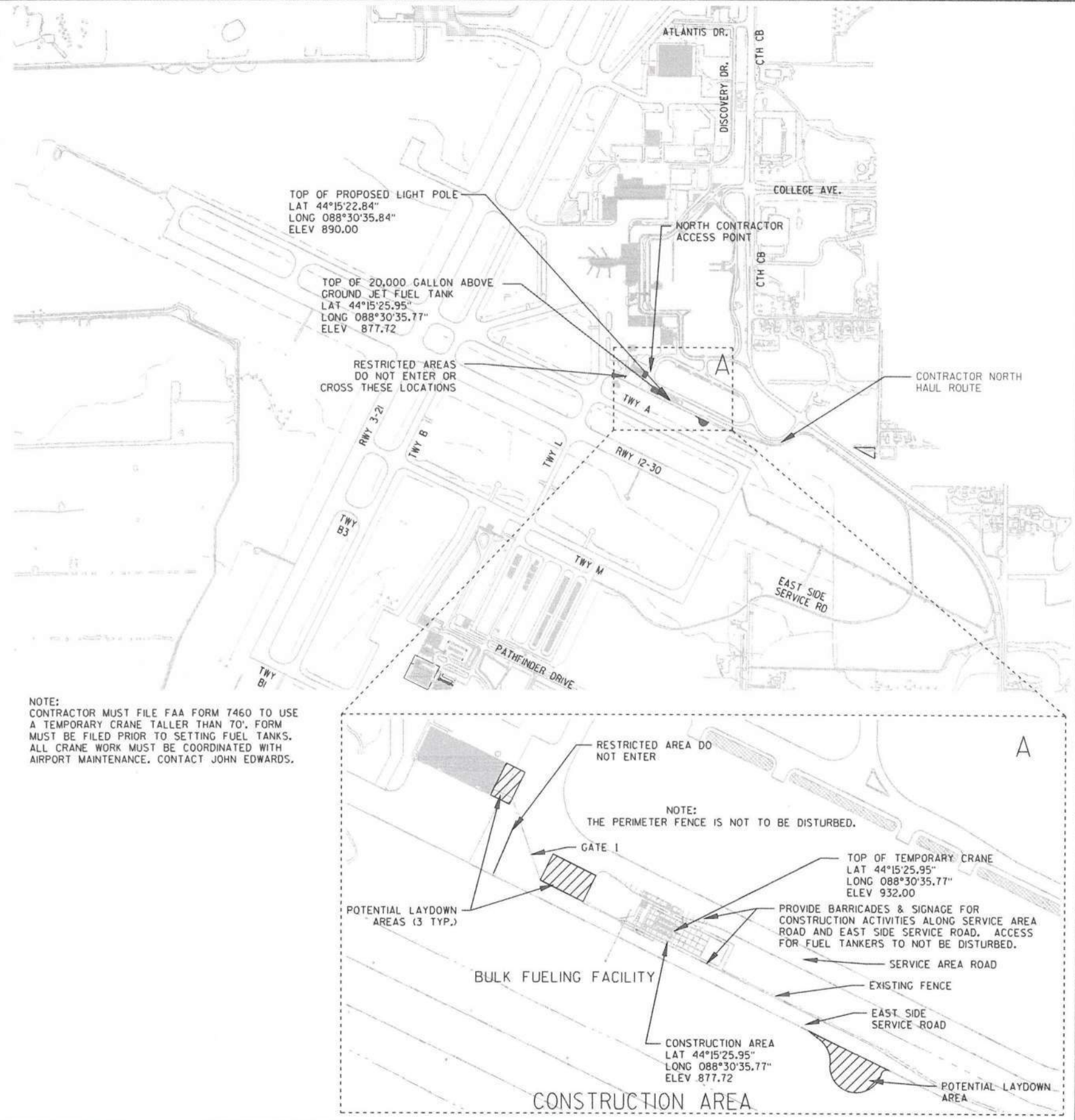
21. NAVAIDS - NONE ANTICIPATED.

22. PART 77 SURFACES - NONE ANTICIPATED.

23. NO UNATTENDED GAPS IN THE PERIMETER FENCE ARE PERMITTED.

24. CONTRACTOR PERSONNEL MUST BE BRIEFED ON WORK AREA RESTRICTIONS AND AREAS THAT THEY CAN ACCESS, PRIOR TO CONSTRUCTION.

**NOTE:**  
CONTRACTOR MUST FILE FAA FORM 7460 TO USE A TEMPORARY CRANE TALLER THAN 70'. FORM MUST BE FILED PRIOR TO SETTING FUEL TANKS. ALL CRANE WORK MUST BE COORDINATED WITH AIRPORT MAINTENANCE. CONTACT JOHN EDWARDS.



**BASE BID - CONSTRUCT AIRCRAFT BULK FUELING SYSTEM EXPANSION:**

- Obtain security badges and airport security clearance for all contractor/subcontractor staff working on the airport airside.
- File FAA Form 7460 for work to be done with a temporary crane such as moving tanks if crane height exceeds 70'. Form to be provided by OMNNI Associates.
- Coordinate work with Utilities.
- Set up Construction area barriers per the Construction Safety Plan.
- Layout foundation and added slab on grade/curb areas.
- Sawcut and remove concrete slabs on grade in the concrete containment area for the planned foundation for tank 3N and sawcut and remove concrete slabs on grade and associated curbs for the containment expansion area. Salvage signage and containment hose assembly for re-use.
- Excavate and salvage existing topsoil for the concrete containment area expansion. Also excavate and remove existing rip-rap outside existing containment area as well as the existing drain tile inlet and required drain tile.
- Excavate to planned containment slab expansion dense base subgrade elevation and place and compact dense base. Provide new drain tile inlet, drain tile and rip-rap as required.
- Form, place rebar, and pour concrete containment area slab on grade and curb.
- Reinstall drain tile inlet, drain tile, rip-rap, and topsoil at containment area perimeter as well as salvaged sign and hose assembly. Restore disturbed area with grass seed and fertilizer and cover disturbed area with erosion mat.
- Excavate to planned foundation grade for tank 3N.
- Form and pour new concrete foundations for tank 3N.
- Remove forms and backfill excavation with specified fill compacted to plan slab on grade subgrade elevation.
- Install underground conduit for electrical, grounding and tank management for tank 3N and stub through planned slab on grade surrounding new foundations.
- Pour concrete slab on grade surrounding foundations. Sawcut slabs as required and seal joints with approved joint sealant. Joint sealant shall be per specification P-605 of the Wisconsin Department of Transportation Bureau of Aeronautics Standard Specifications for Airport Construction or, if Alternate #2 is selected, compatible with the concrete coating system applied.
- Install one 20,000 gallon aboveground double-wall painted steel UL 142 Flameshield, internally lined Jet A Fuel tank on the new tank foundation. Install float type leak detection of tank interstice and high-level alarm system.
- Install concrete filled collision protection bollards for tank 3N and future tank 4N. Provide new plastic protective covers for the new bollards and also provide new plastic protective covers for the existing bollards.
- Install mechanical overfill shut off valve type drop tube in the tank fill.
- Install water removal fittings and piping on the tank to accommodate the water removal hand pumps. Water removal hand pumps to match existing.
- Remove existing stair and platform off tank 1N to be installed on tank 3N.
- Install overhead walkway platform from existing tank 2N to existing Tank 1N. Provide additional support columns and column foundation pads. Provide concrete landing pad for new stair at tank 3N.
- Install 4" internal floating suction in the Jet A 3N tank and extend 4" Jet A System stainless steel above ground piping from existing 4" flanged butterfly valve between tanks 1N and 2N to the tank 3N floating suction pipe. Provide anti-siphon solenoid valve on tank as well as isolation valve with any required thermal relief. The existing 4" suction piping extends back to the fueling cabinet 15 HP cabinet

- pump for refueler truck loading, product recirculation, and transport truck off-loading.
- Install 3" stainless steel above ground pipe from existing 3" flanged butterfly valve between tanks 1N and 2N to the aboveground tank 3N internal drop tube with mechanical overfill shut off valve. Provide isolation valve with any required thermal relief on this line. Existing 3" aboveground stainless-steel fill piping extends fully from the existing Jet A cabinet for filling Tanks 1N and 2N.
  - Install 3" and 4" tees and valves for future tank 4N.
  - Install 4" aboveground stainless-steel tank pressure/vent line for the tank - minimum 12' above ground.
  - Install new tank gauging on the tanks and tie into the existing tank gauging system with remote overfill alarm system.
  - Install a new additional Jet A pumping, metering, filtering and dispensing system cabinet with integral spill pan per the drawings and specifications. One 3"-10' hose for refueler loading.
  - Cut existing 4" stainless steel suction piping at horizontal elbow near existing fueling cabinet and install a horizontal tee. Connect (weld) 4" existing stainless pipe to the existing fueling cabinet on one leg of tee and install flanged isolation valve on other leg of tee to the new cabinet. Install piping and isolation valve with thermal relief to new cabinet from the new valve at the tee.
  - Install 1/2" stainless steel by-pass line with 45 psi expansion relief from within new cabinet and tie into existing by-pass line from existing cabinet. Existing by-pass line extends to tank 2N.
  - Cut existing 3" stainless steel fill piping at horizontal elbow near existing fueling cabinet and install a horizontal tee. Connect 3" existing stainless pipe to the existing fueling cabinet on one leg of tee and install isolation valve on other leg of tee to the new cabinet. Install piping and isolation valve with thermal relief to new cabinet from the new valve at the tee.
  - Install grounding as required for tanks and cabinet.
  - Install new underground wiring for electrical control to the new fueling tank and cabinet equipment from the Bulk Fueling Facility Fuel Farm Electrical Equipment Building and an existing power service panel inside the building. Wire all power, control, and electronic equipment for the Fueling System. Existing fueling cabinet is to be wired such that fuel can be individually pumped from each of the four tanks. New cabinet is also to be wired such that fuel can be individually pumped from each of the four tanks.
  - Upgrade the current Inform software for the tank monitoring console and provide all programming for monitoring tank levels and alarms on tank 3N. The system is to be installed per the plan and shall include connection to leak detectors and tank gauge probes and high-level alarm at the Bulk Fueling Site.
  - Conduct a WI Certified Calibration of all meters. Seal the meters after account calibration.
  - Conduct DATCP and Owner inspections and receive acceptance.
  - Conduct system pressure tests and equipment startup
  - Conduct Owner training on new system.
  - Remove any construction barriers and perform site cleanup.
  - Deliver all equipment manuals, warranties, and As-Built drawings to the Owner (3 copies)

**ALTERNATE #1: INSTALL ADDITIONAL JET A TANK (TANK 4N) AT BULK FUELING FACILITY**

- Sawcut and remove concrete slabs on grade in the concrete containment area for planned foundation for tank 4N.
- Lay out foundation locations.
- Excavate to planned foundation grade for tank 4N.
- Form and pour new concrete foundations for tank 4N.
- Remove forms and backfill excavation with specified compacted fill to plan slab on grade subgrade elevation.
- Install underground conduit for electrical, grounding and tank

- management for tank 4N and stub through planned slab on grade.
- Pour concrete slab on grade surrounding foundations. Sawcut slabs as required and seal joints with approved joint sealant. Joint sealant shall be per specification P-605 of the Wisconsin Department of Transportation Bureau of Aeronautics Standard Specifications for Airport Construction or, if Alternate #2 is selected, compatible with the concrete coating system applied.
  - Install one 20,000 gallon above ground double wall painted steel UL 142 Flameshield, internally lined Jet A Fuel tank with stairs and platform on new tank foundation. Install float type leak detection of tank interstice and high-level alarm system.
  - Install mechanical overfill shut off valve type drop tube in the tank fill.
  - Install water removal fittings and piping on the tank to accommodate the water removal hand pumps. Water removal hand pumps to match existing.
  - Install 4" internal floating suction in the Jet A 4N tank and extend 4" Jet A System stainless steel above ground piping from 4" flanged butterfly valve between tanks 3N and 4N to the tank 4N floating suction pipe. Provide anti siphon valve on tank as well as isolation valve with required thermal relief. Existing 4" suction piping extends back to the fueling cabinet 15 HP cabinet pump for refueler truck loading, product recirculation, and transport truck off-loading.
  - Install 3" stainless steel above ground pipe from 3" flanged butterfly valve between tanks 3N and 4N to the aboveground tank 4N internal drop tube with mechanical overfill shut off valve. Provide isolation valve with thermal relief on this line.
  - Install 4" aboveground stainless-steel tank vent lines for the tank - minimum 12' above ground.
  - Install new tank gauging on the tanks and tie into the existing tank gauging system with remote overfill alarm system.
  - Install grounding as required for tank.
  - Install new underground wiring for electrical control to the new fueling tank equipment from the Bulk Fueling Facility Fuel Farm Electrical Equipment Building and from existing service panels west of tank 2N. Wire all power, control, and electronic equipment for the Fueling System.
  - Conduct a WI Certified Calibration of all meters. Seal the meters after account calibration.
  - Conduct DATCP and Owner inspections and receive acceptance.
  - Conduct system pressure tests and equipment startup
  - Conduct Owner training on new system.
  - Deliver all equipment manuals, warranties, and As-Built drawings to the Owner (3 copies)

**ALTERNATE #2: PROVIDE NEW CONCRETE COATING SYSTEM IN BULK FUEL CONTAINMENT AREA**

- Provide an exterior concrete coating system to be applied to the existing and new containment area as indicated on the plans. The concrete coating system is to be fuel resistant, UV resistant, resistant to cracking to temperatures below -20F, impact resistant and liquid tight. The coating system is to also be slip resistant and of a finished color similar to the concrete. Coating system is to cover approximately 2,700 square feet including walls of curbs and vertical surfaces of foundations, etc.
- Price for installing the coating system shall include all materials, equipment, labor and supplies to properly prepare and clean the concrete subgrade (sand blasting/shotblasting) and for preparing all concrete joints in accordance with manufacturer's recommendations prior to installing the coating system in addition to the coating system and protection of the coating system during installation.
- Coating system can be installed by spray or roll on application; however, spray on applications will require proper protection for surrounding equipment, tanks, etc. from overspray.
- Acceptable manufacturers for the concrete sealant systems are Sika, PPG, Carboline, International Protective Coatings or approved equal.

**ALTERNATE #3: PROVIDE AN ELECTRICAL CONNECTION POINT FOR BACKUP GENERATOR**

- Provide an electrical connection system to connect the Airport's Power take off generator into the electrical system at the Bulk Fueling Electrical Building.
- The connection system is to generally consist of a new manual transfer switch, a new service disconnect switch and installation of a generator cord assembly provided by ATW.
- New equipment is to be installed per plans such that the electrical system could be run manually from the generator.

**ALTERNATE #4: CONSTRUCT A CLAY TREATER SYSTEM AT THE AIRPORT**

- The location of placement of the system will be to the east of the current bulk fueling system along the east side service road. this will be a new stand-alone site.
- A new electrical service will be required, and the Owner will provide the new electrical service. Contractor will provide electrical service and required equipment to the site from the meter pedestal. Include emergency shut offs and electrical equipment required that meet required codes for fueling areas. Provide lighting for the area.
- Security fencing will be required to be moved and maintained to allow construction of the new treater system. In addition, one hundred (100) feet of additional security fence will be required to match existing.
- Site grading is to include stripping topsoil, re-routing a shallow ditching, and all erosion control and restoration. All topsoil and any excess soil from grading to be wasted on site or used to build slab on grade areas.
- Estimate a concrete tank slab and equipment area with fuel containment and a fueling island for housing a fueling cabinet. Estimate 8 inches dense base beneath all concrete slab on grade. Provide protective posts for the area.
- Provide concrete foundations for tanks and process equipment.
- Provide and install two Flameshield, 10,000-gallon double wall tanks, one fueling cabinet, one clay treater and one vertical filter separator with all pumps, piping and valves necessary for a working system.
- The flow process will generally consist of a fueling cabinet that would be estimated to be similar to the cabinet being provided in the base bid for off-loading refuelers, piping to a clay treater, piping from the clay treater to a vertical filter separator, piping from the filter separator to a 10,000 gallon Jet A storage tank for holding recovered fuel prior to testing for placement back into an aircraft, piping to a second tank for holding recovered fuel that is tested and can be placed in aircraft, and then piping back to the fueling cabinet for offloading from the storage tank. The clay treater needs to be installed before the vertical filter separator. Piping would also need to be installed from the piping between the two tanks to back in front of the clay treater should the fuel in the first storage tank need additional treatment and/or recycling. All piping to be stainless piping. Isolation valves required at all equipment and valves required at fuel tanks per codes. All required isolation valves, solenoid valves, anti-siphon valves and thermal relief to be provided and to be stainless steel.
- Tanks require all code related venting and will be monitored via a tank monitoring system.
- The clay treater will be a fixed unit capable of handling up to 340 gallons per minute and would include an automatic air eliminator, automatic air eliminator check valve, differential pressure gauge, pressure relief valves, a working platform, ladder and hand rails, and include a standard housing design. All platforms and ladders to be galvanized steel, not painted.
- The filter separator will be a fixed vertical unit capable of handling up to 340 gallons per minute. The unit will be specified as an API 1581, 5th edition Category M, Type S unit with all standard accessories including auto air eliminator, auto air check valve, pressure relief valve, pressure gauge, float control, slug valve with rate of flow control, manual drain, water and sample probes, heater and sight glass. A working platform, ladder and hand rails are to be included. All platforms and ladders to be galvanized steel, not painted.

- The storage tanks must be 10,000-gallon above ground storage double wall, Flameshield Tank manufactured to Underwriters Laboratory (U.L.) 142 Standards, tested by SwRI 97-04, and in accordance with the Steel Tank Institute's F-001-01 standard requirements for Fuel Storage for holding the treated fuel. The tanks will have floating suction, emergency venting and manholes, and required galvanized steel platforms. Tank equipment would match equipment required for existing 20,000-gallon tanks and tank monitoring will be a separate system. Communication will be tied in at the existing fiber network.
- Incidental items are to be included to meet state and national codes such as fire extinguishers, signage, phone/intercom, external alarms, emergency stops, etc.
- Design storage tank filling rate is estimated at 240 GPM maximum for unloading a refueler truck and 220-240 GPM for loading the refuelers. Pipe sizes were estimated at 3" suction and 3" discharge piping system using the cabinet pump to the above ground tank through the clay treater and filter separator. The cabinet pump can off load the refueler at approximately 240 GPM. A flow control valve prior to the filter separator (in cabinet) must have a flow control regulator pilot set at 240 GPM (Filter Separator maximum setting) for possibly regulating pressure for refuelers. The 3" suction and 3" fill system is capable of recirculating the stored product through the clay treater system. The cabinet piping system must have internal or external thermal relief back to the first tank. The thermal relief must be set at 5 psi greater than the system maximum pump pressure.
- All permits required through state and local agencies as well as all required inspections, training, as-built documents, operations manuals, and forms will be required at project completion.

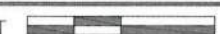
OMNNI PROJECT NO: E2290A17

APPLETON INTERNATIONAL AIRPORT

COUNTY: OUTAGAMIE

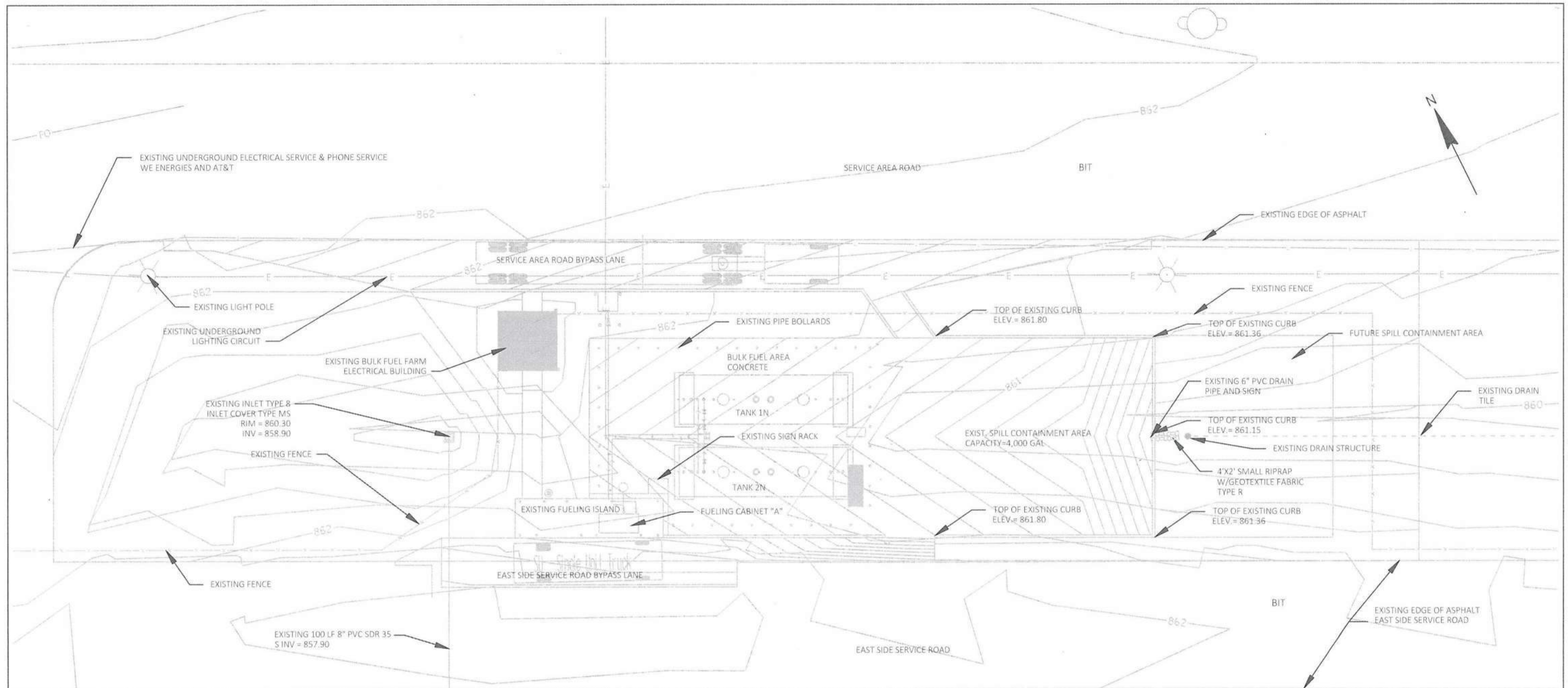
SCOPE OF WORK

SCALE, FEET



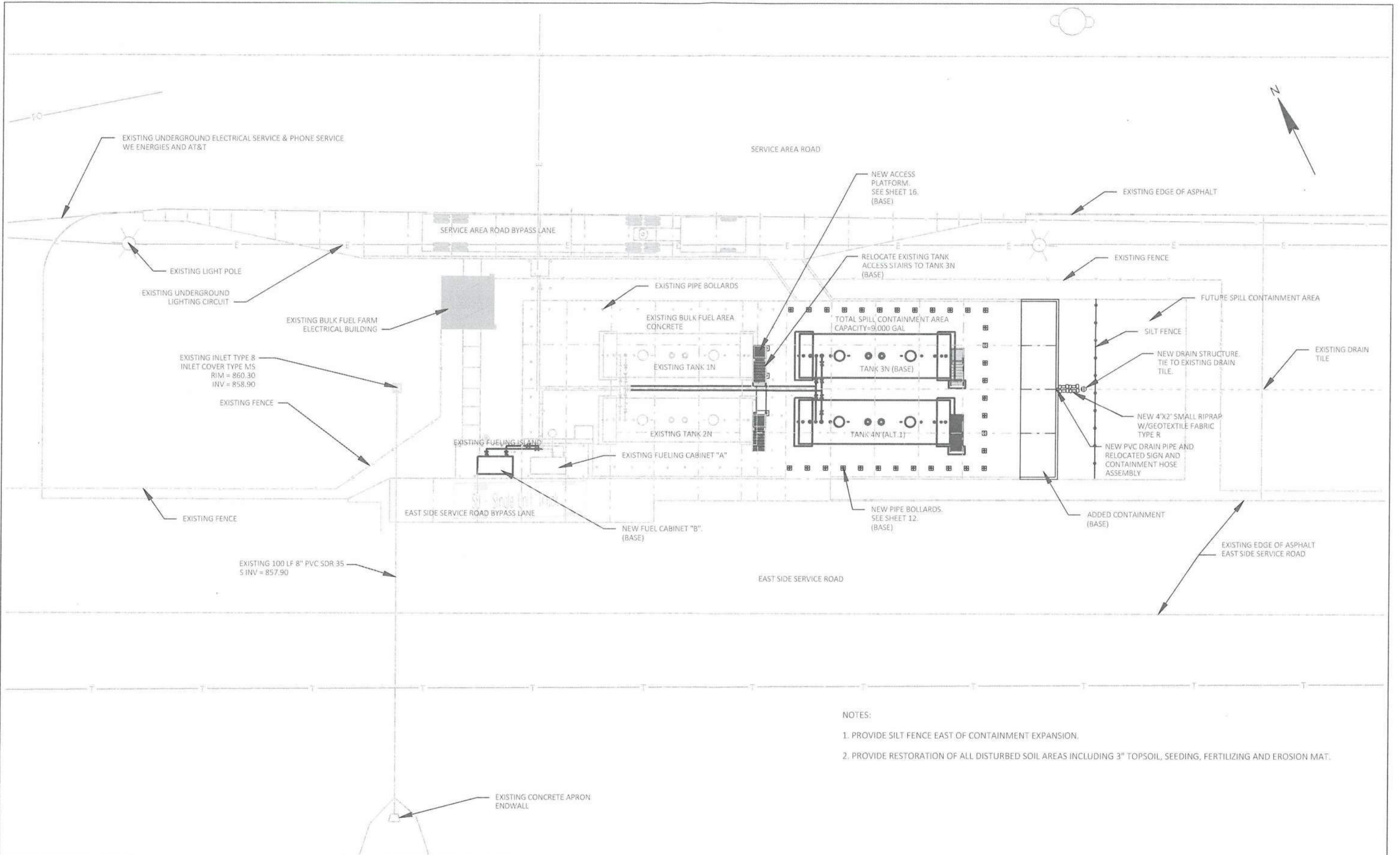
SHEET 3 OF 25

E

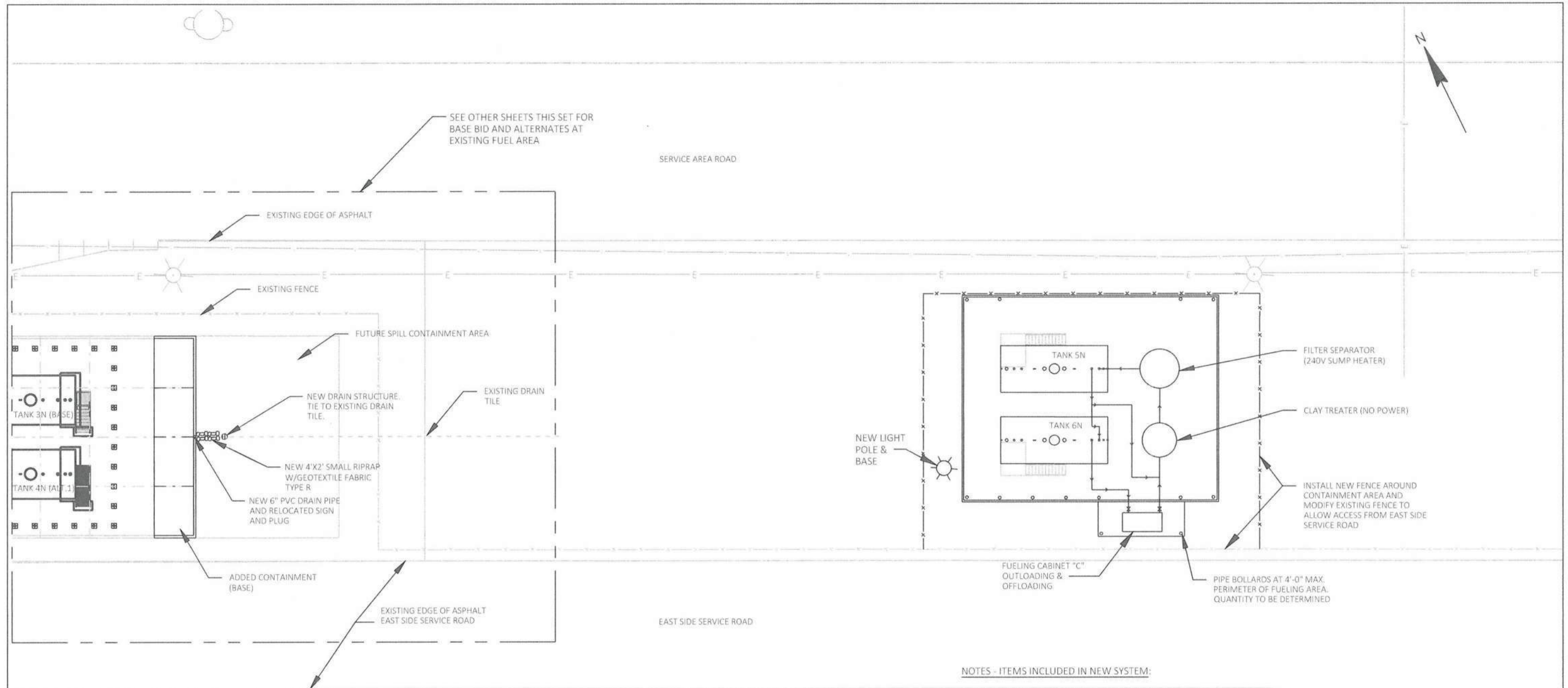


**NOTES:**

1. SECURITY FENCE IS NOT TO BE DISTURBED. SECURITY FENCE EXISTS IN BULK FUEL AREA AND AROUND ENTIRE AIRPORT.
2. PROVIDE BARRICADES/CONES AROUND ANY EQUIPMENT OR AREAS OF EXCAVATION OFF OF EAST SIDE SERVICE ROAD.
3. NO POTABLE WATER WELLS EXIST WITHIN 100' OF PROPOSED TANKS.
4. NO COMMUNITY SUPPLY WELLS EXIST WITHIN 1200' OF CONSTRUCTION SITE.
5. NO EXISTING UNDERGROUND SANITARY OR STORM SEWER PIPING IN PROPOSED AREA OF CONSTRUCTION.
6. NO WATER PIPING, NATURAL GAS OR CABLE ON CONSTRUCTION SITE.
7. BULK FUEL FARM ELECTRICAL BUILDING ON PROPOSED CONSTRUCTION SITE.
8. LARGEST COMPARTMENT OF TANKER DELIVERY TO SITE = 4,000 GALLONS  
LARGEST COMPARTMENT OF AIRPORT REFUELERS = 5,000 GALLONS.
9. EXISTING EMERGENCY SHUT-OFFS AT SIGN RACK ON FUELING ISLAND AND EXISTING BULK FUEL FARM ELECTRICAL BUILDING. SEE SHEET 18.
10. EMERGENCY COMMUNICATION THROUGH EMERGENCY INTERCOM AT BULK FUEL FARM ELECTRICAL BUILDING. SEE SHEET 18.
11. TANK HIGH LEVEL ALARM LOCATED AT BULK FUEL FARM ELECTRICAL BUILDING. SEE SHEET 18.
12. FIRE EXTINGUISHERS LOCATED AT BULK FUEL FARM ELECTRICAL BUILDING AND AT SIGN RACK. SEE SHEET 18.
13. EMERGENCY SIGNAGE EXISTS CONSISTING OF 3-"EMERGENCY SHUT OFF PUSH" SIGNS AT EMERGENCY STOP LOCATIONS, 2-"EMERGENCY INTERCOM" SIGNS AT EMERGENCY INTERCOM BUTTONS AND 1-"TANK HIGH LEVEL ALARM" SIGN AT ELECTRICAL BUILDING.
14. EMERGENCY INSTRUCTIONS SIGN LOCATED ON SIGNAGE RACK.
15. ALL FUEL TANKS TO CONTAIN JET A FUEL. JET A FUEL IS A CLASS II LIQUID.



- NOTES:
1. PROVIDE SILT FENCE EAST OF CONTAINMENT EXPANSION.
  2. PROVIDE RESTORATION OF ALL DISTURBED SOIL AREAS INCLUDING 3" TOPSOIL, SEEDING, FERTILIZING AND EROSION MAT.

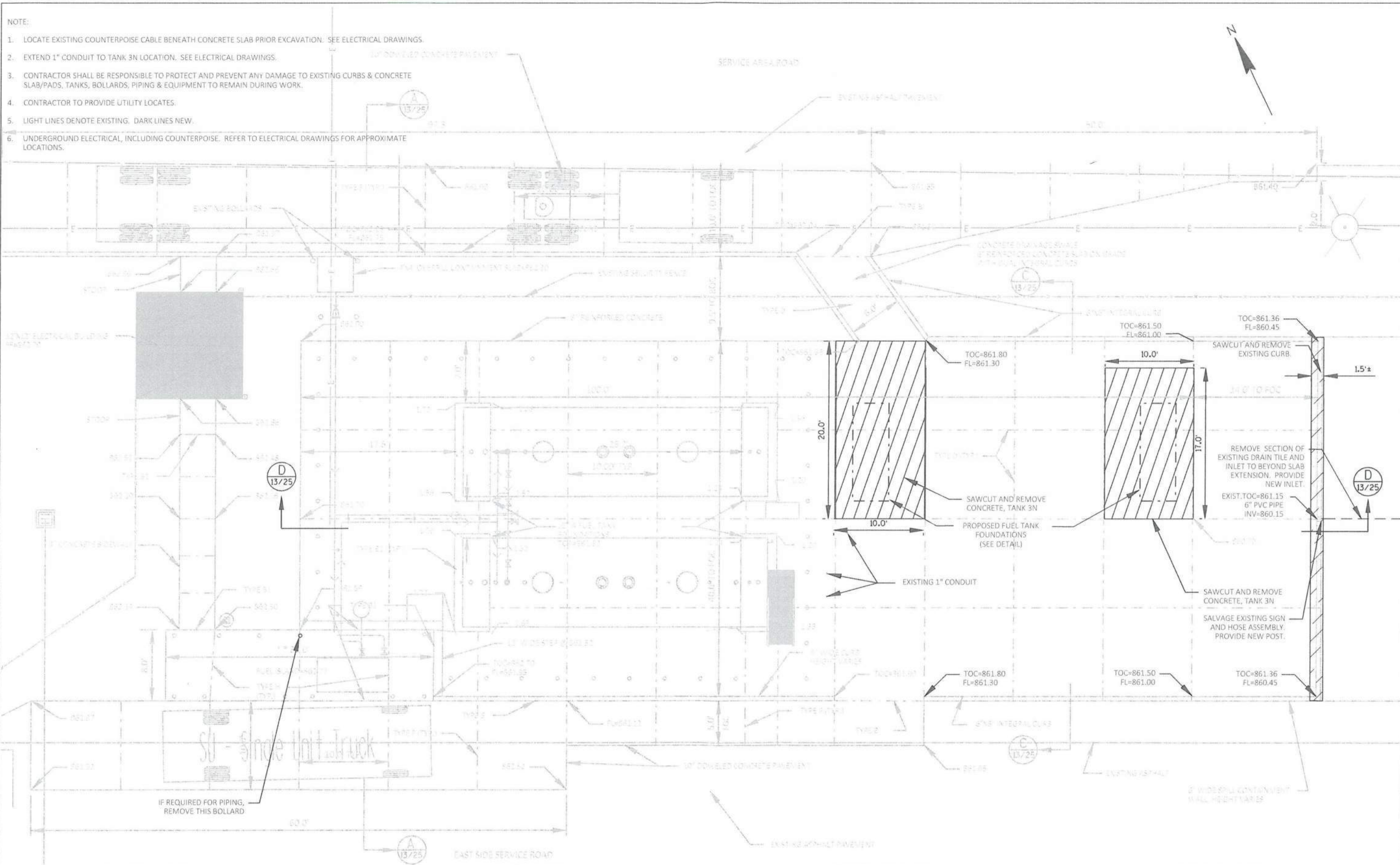


**NOTES - ITEMS INCLUDED IN NEW SYSTEM:**

1. OUTLOADING/OFFLOADING FUEL CABINET:
  - 15 HP PUMP, 208V, 3" DIAMETER
  - 120V DISP. LIGHT
  - 750W, 208V SUMP HEATER
2. TANKS:
  - COMMUNICATION TO TANK-MANAGEMENT SYSTEM FOR TANK LEVEL AND LEAK ALARMS
  - SOLENOID VALVES
3. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.

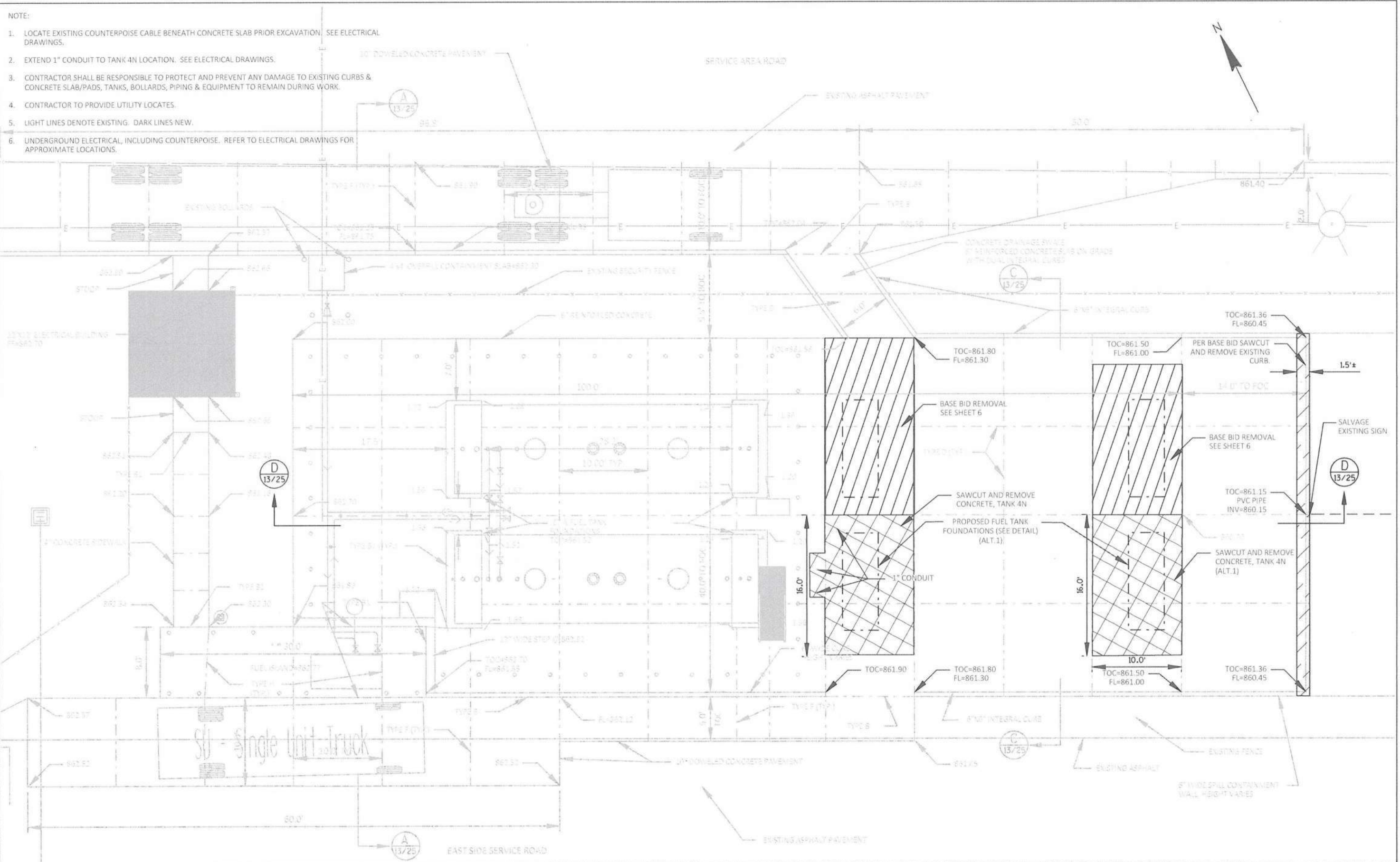
NOTE:

1. LOCATE EXISTING COUNTERPOISE CABLE BENEATH CONCRETE SLAB PRIOR EXCAVATION. SEE ELECTRICAL DRAWINGS.
2. EXTEND 1" CONDUIT TO TANK 3N LOCATION. SEE ELECTRICAL DRAWINGS.
3. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND PREVENT ANY DAMAGE TO EXISTING CURBS & CONCRETE SLAB/PADS, TANKS, BOLLARDS, PIPING & EQUIPMENT TO REMAIN DURING WORK.
4. CONTRACTOR TO PROVIDE UTILITY LOCATES.
5. LIGHT LINES DENOTE EXISTING. DARK LINES NEW.
6. UNDERGROUND ELECTRICAL, INCLUDING COUNTERPOISE. REFER TO ELECTRICAL DRAWINGS FOR APPROXIMATE LOCATIONS.



NOTE:

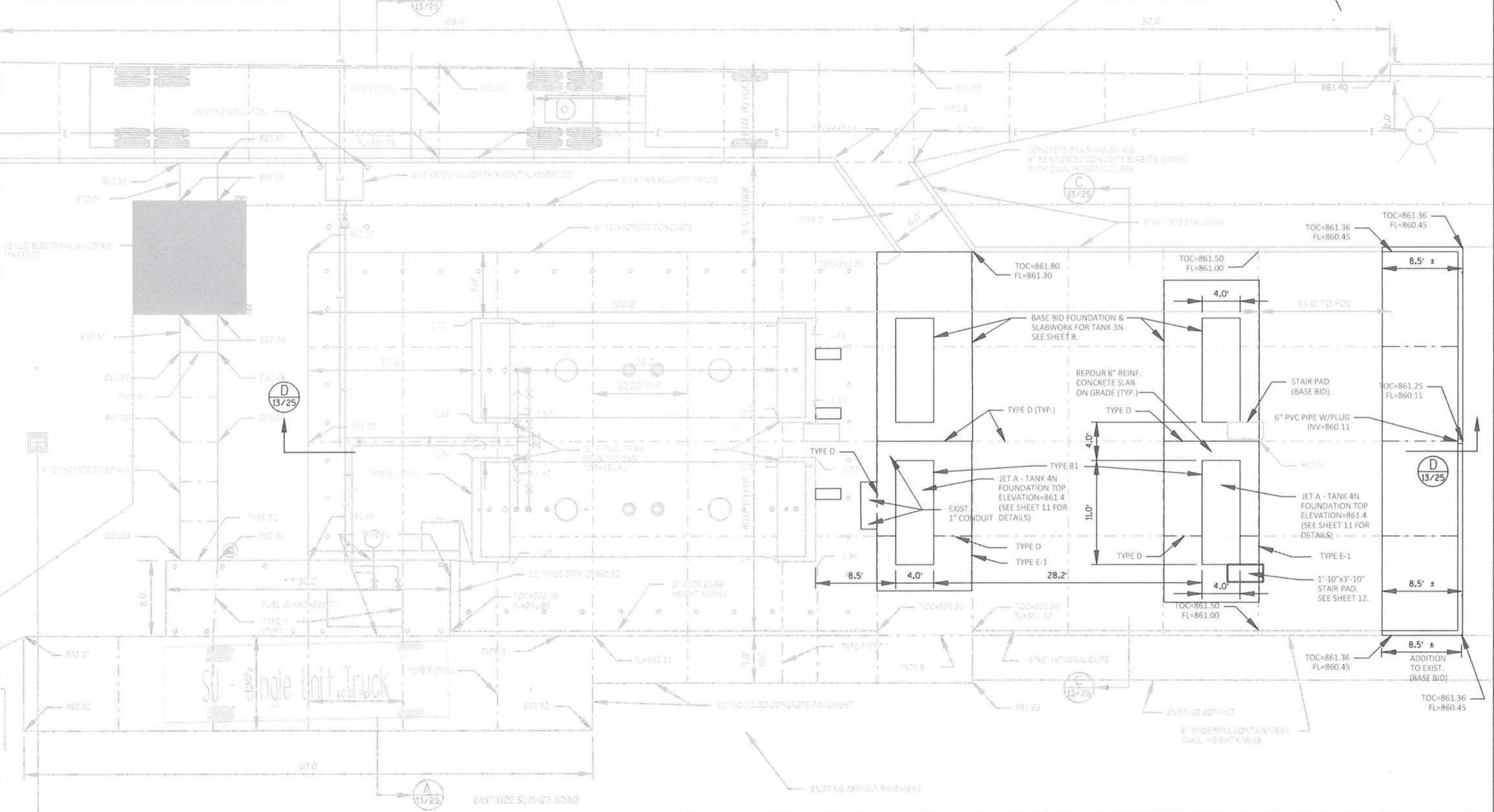
1. LOCATE EXISTING COUNTERPOISE CABLE BENEATH CONCRETE SLAB PRIOR EXCAVATION. SEE ELECTRICAL DRAWINGS.
2. EXTEND 1" CONDUIT TO TANK 4N LOCATION. SEE ELECTRICAL DRAWINGS.
3. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND PREVENT ANY DAMAGE TO EXISTING CURBS & CONCRETE SLAB/PADS, TANKS, BOLLARDS, PIPING & EQUIPMENT TO REMAIN DURING WORK.
4. CONTRACTOR TO PROVIDE UTILITY LOCATES.
5. LIGHT LINES DENOTE EXISTING. DARK LINES NEW.
6. UNDERGROUND ELECTRICAL, INCLUDING COUNTERPOISE. REFER TO ELECTRICAL DRAWINGS FOR APPROXIMATE LOCATIONS.

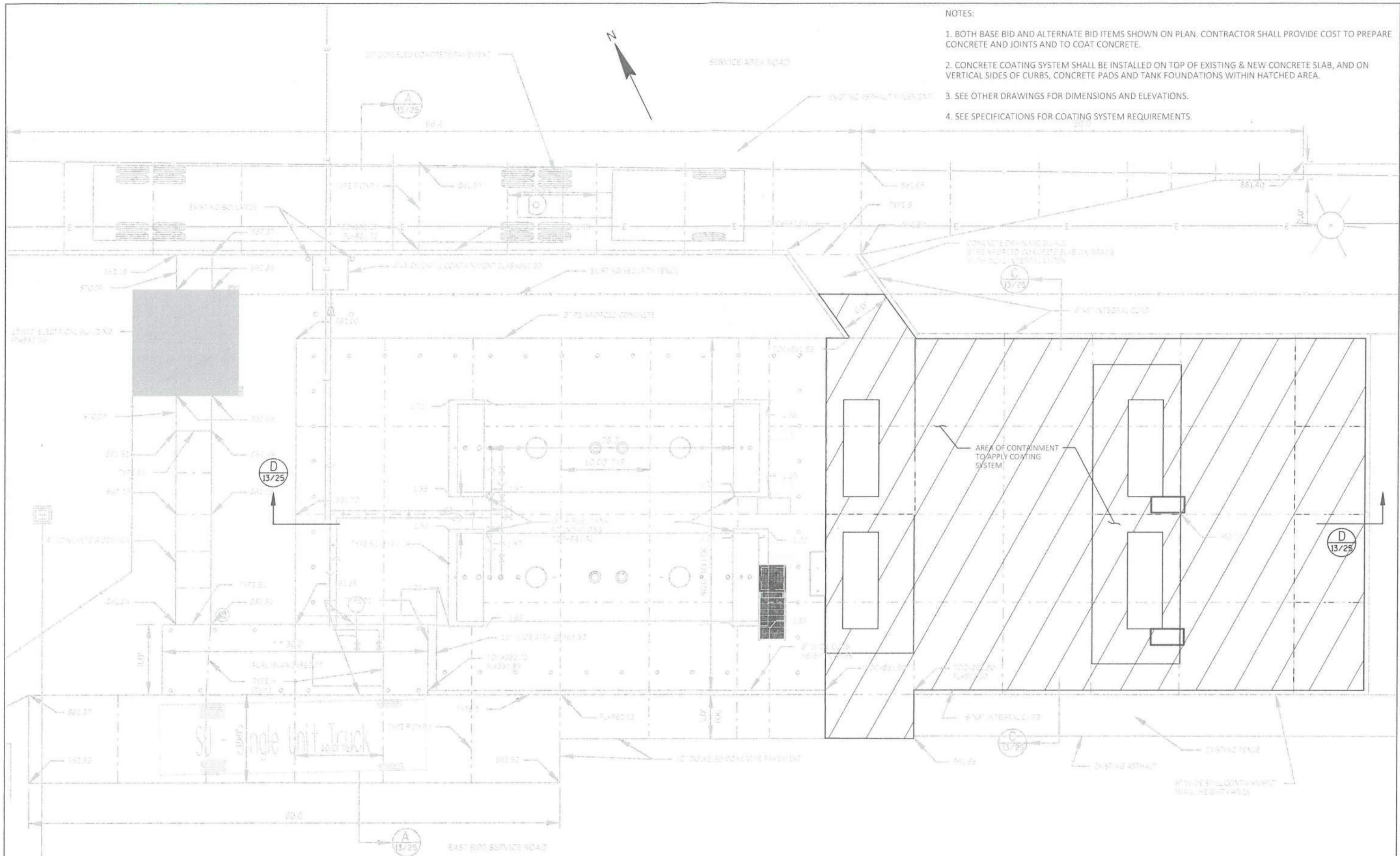




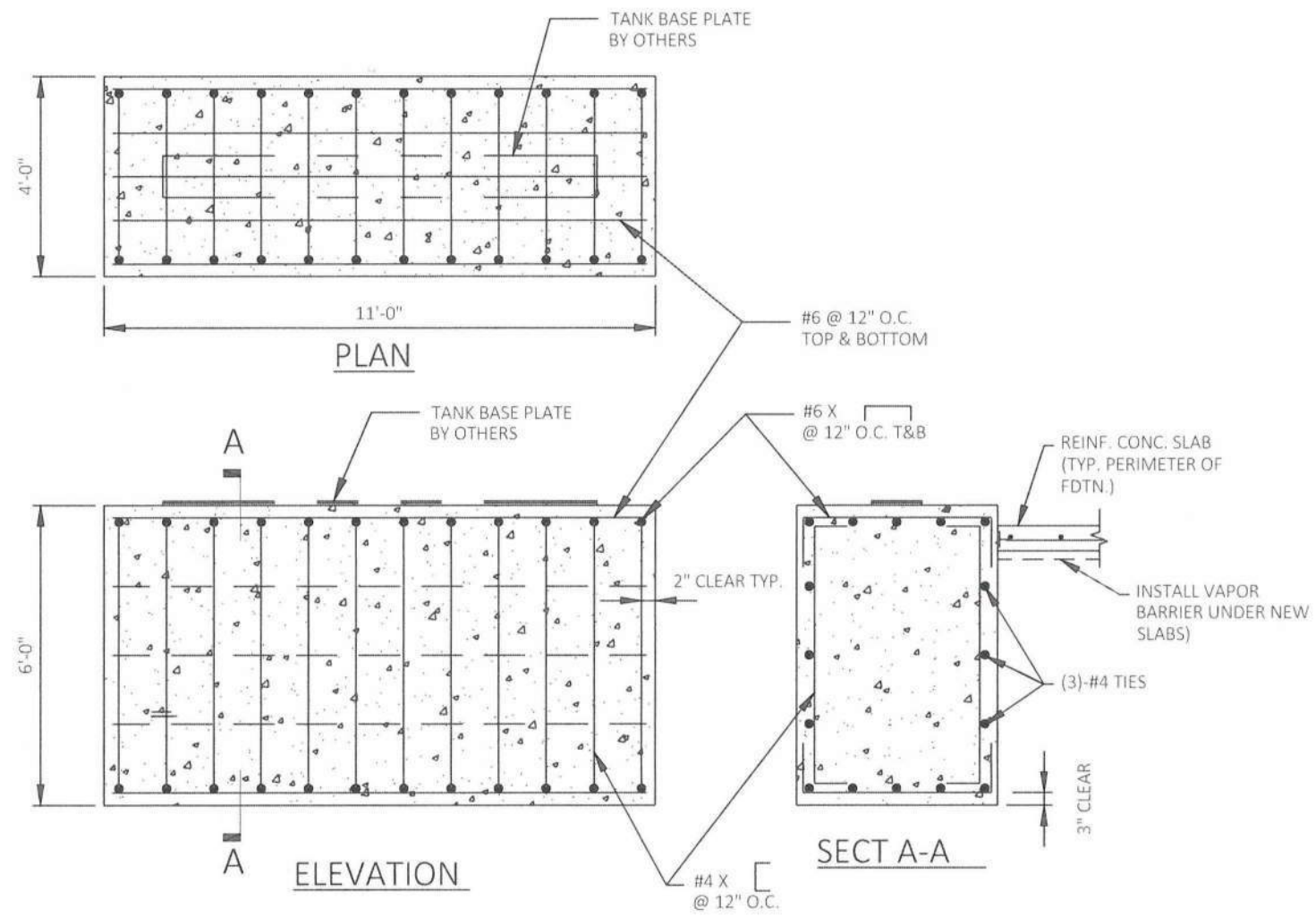
NOTE:

1. JET A TANK CLEARANCE FROM CONCRETE SLAB ON GRADE MAX=0.87', MIN=0.40'.
2. TANK FOUNDATIONS FOR TANK 4N TO BE INCLUDED AS PART OF ALT. 1.
3. PROVIDE PROTECTION FROM UNDERMINING EXISTING SLABS ON GRADE DURING FOUNDATION CONSTRUCTION.
4. SOIL BANK CAN BE USED FOR TANK FOUNDATION FORM BELOW SLAB GRADE ON SIDES WITH 2' OR LESS OF CLEARANCE AT SLABS. PORTION OF FOUNDATION ABOVE AGGREGATE BASE TO BE FORMED.
5. SOIL BACKFILL ALONG FOUNDATIONS TO BE COMPACTED TO A MINIMUM OF 95% OF STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM:D698).
6. VERIFY TANK FOUNDATION LOCATIONS AND SPACING WITH TANK MANUFACTURER SADDLE LOCATIONS.
7. IN EXCAVATED CONTAINMENT AREA EXPANSION, SALVAGE TOPSOIL FOR RESTORATION AND DISPOSE OF ALL SURPLUS SOILS NOT REQUIRED FOR RESTORATION.



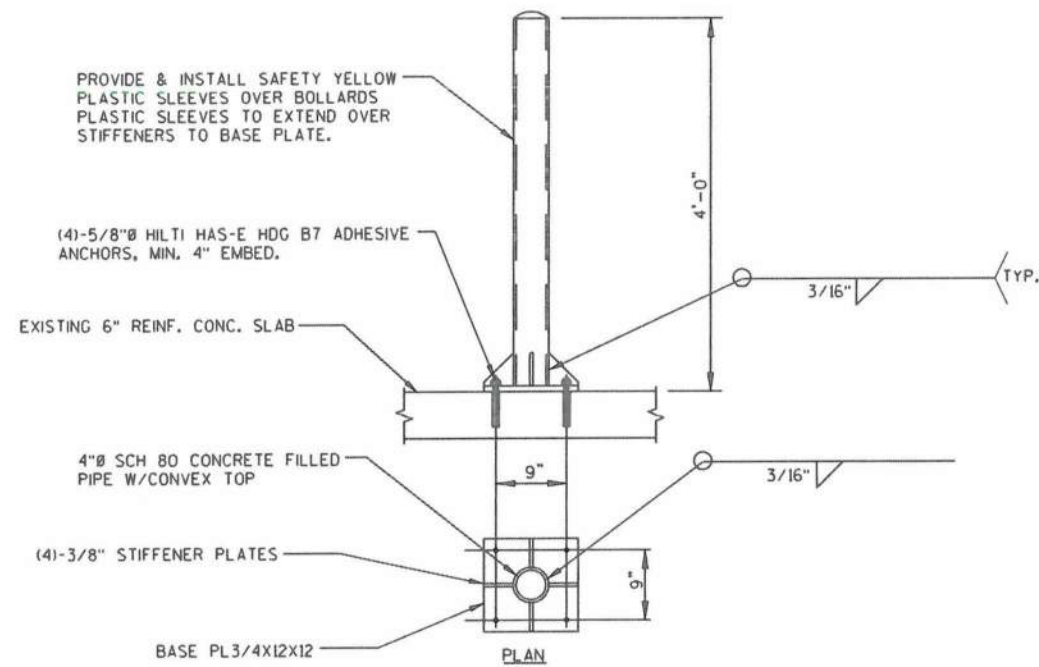


- NOTES:
1. BOTH BASE BID AND ALTERNATE BID ITEMS SHOWN ON PLAN. CONTRACTOR SHALL PROVIDE COST TO PREPARE CONCRETE AND JOINTS AND TO COAT CONCRETE.
  2. CONCRETE COATING SYSTEM SHALL BE INSTALLED ON TOP OF EXISTING & NEW CONCRETE SLAB, AND ON VERTICAL SIDES OF CURBS, CONCRETE PADS AND TANK FOUNDATIONS WITHIN HATCHED AREA.
  3. SEE OTHER DRAWINGS FOR DIMENSIONS AND ELEVATIONS.
  4. SEE SPECIFICATIONS FOR COATING SYSTEM REQUIREMENTS.



**FUEL TANK FOUNDATION**

SCALE:  $\frac{3}{8}'' = 1'$



PROVIDE & INSTALL SAFETY YELLOW PLASTIC SLEEVES OVER BOLLARDS PLASTIC SLEEVES TO EXTEND OVER STIFFENERS TO BASE PLATE.

(4)-5/8" HILTI HAS-E HDG B7 ADHESIVE ANCHORS, MIN. 4" EMBED.

EXISTING 6" REINF. CONC. SLAB

4" SCH 80 CONCRETE FILLED PIPE W/CONVEX TOP

(4)-3/8" STIFFENER PLATES

BASE PL 3/4x12x12

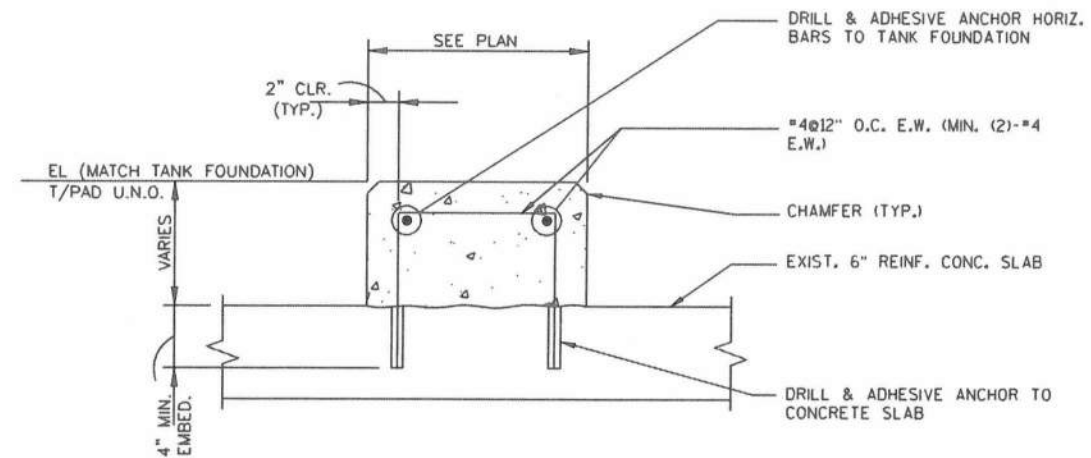
PLAN

### PIPE BOLLARD

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

**NOTES:**

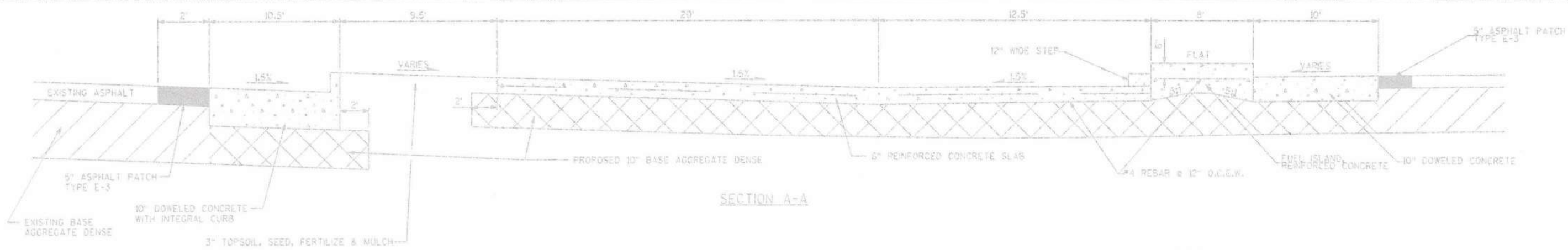
1. GALVANIZE FULL BOLLARD ASSEMBLIES.
2. PLASTIC PIPE BOLLARD SLEEVES ARE TO EXTEND OVER STIFFENER PLATES TO THE BASE PLATE.



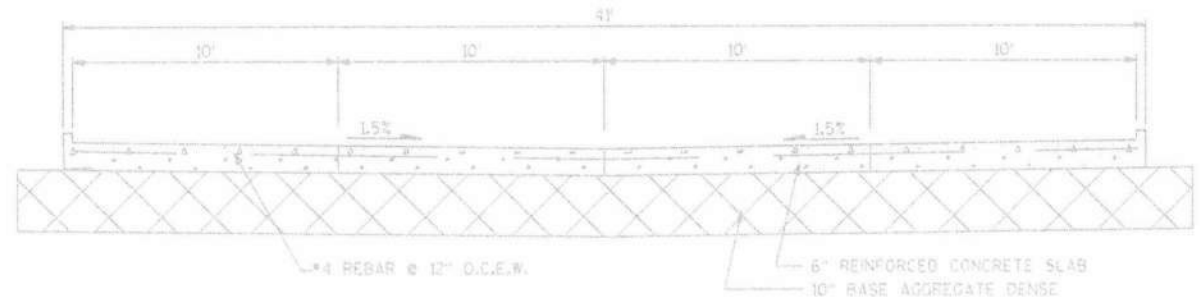
### CONCRETE PAD

SCALE: 1"=1'-0"

- (3 TYPICAL AT TANK IN ACCESS PLATFORM)
- (1 SIM AT BOTTOM OF TANK 3N STAIR FOR BASEID)
- (1 SIM AT BOTTOM OF TANK 4N STAIR FOR ALTERNATE 1)

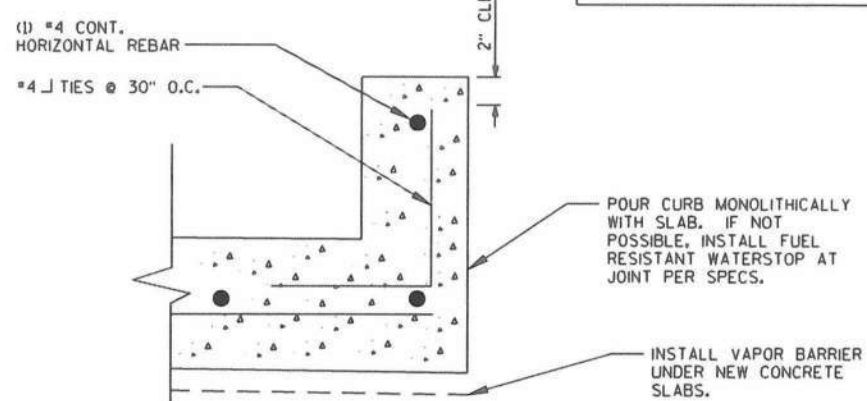


SECTION A-A

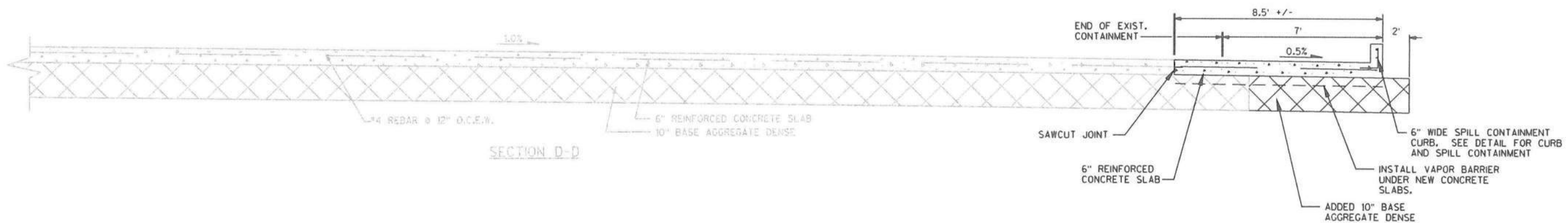


SECTION C-C

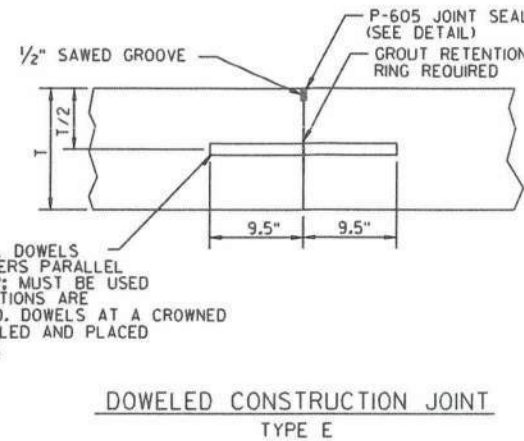
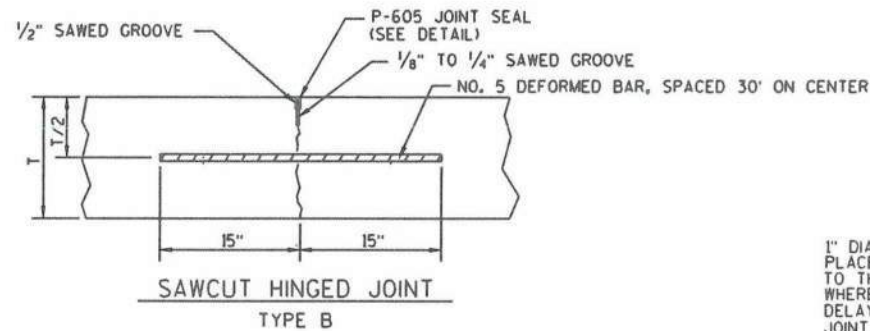
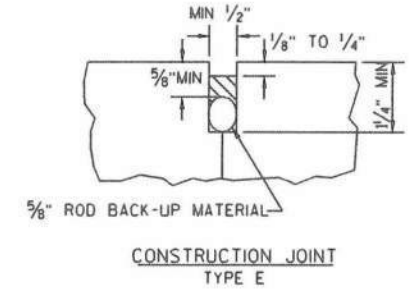
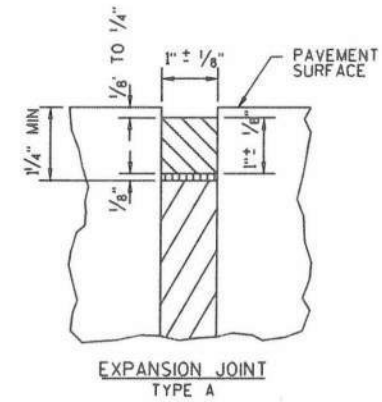
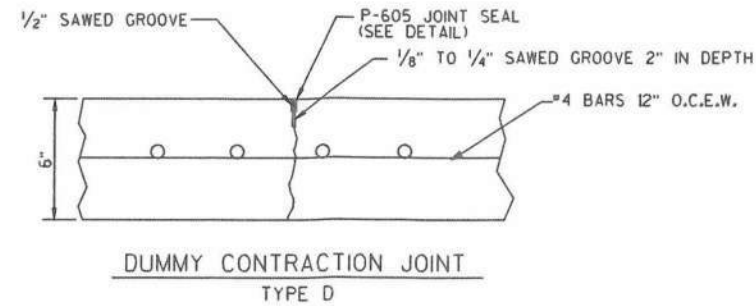
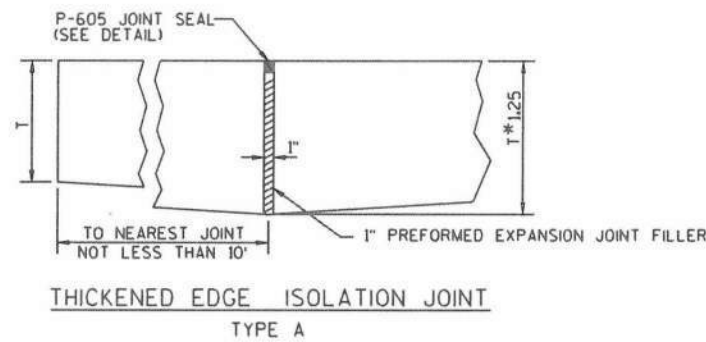
**NOTE:**  
 1. LIGHT LINES SIGNIFY EXISTING CONSTRUCTION.  
 DARK LINES ARE NEW.



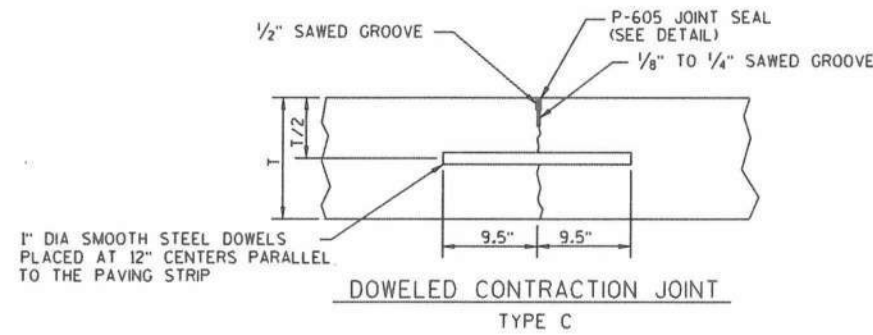
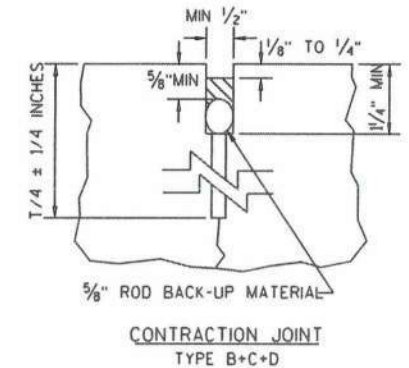
CURB AND SPILL CONTAINMENT WALL DETAIL



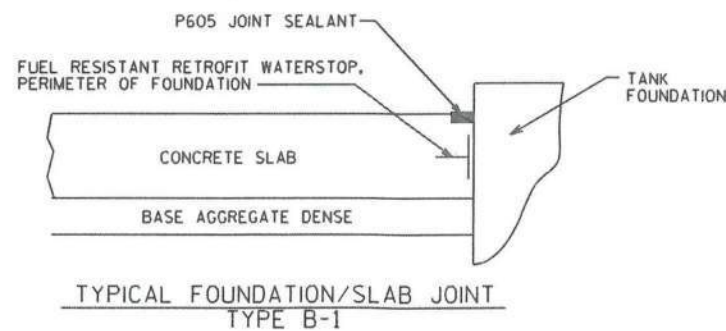
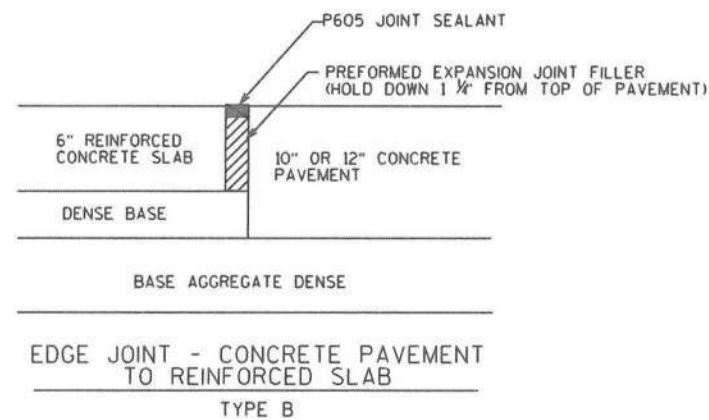
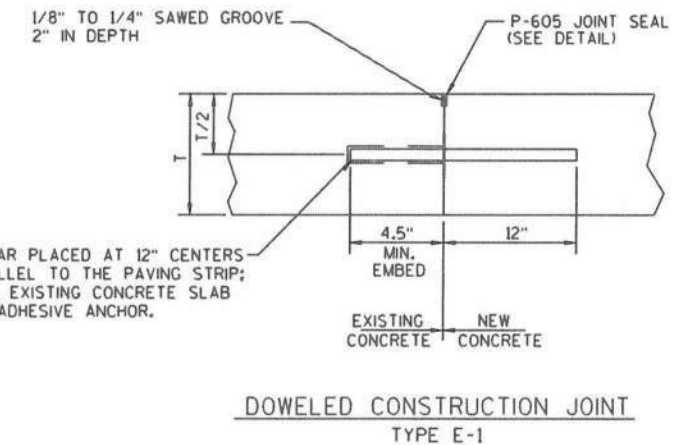
SECTION D-D



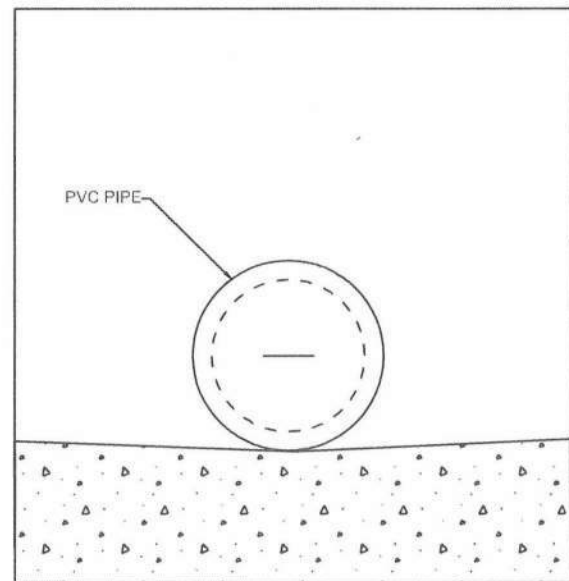
- SYMBOLS**
- SEALANT - P605, SHALL MEET ASTM D6690
  - BOND BREAKER MATERIAL
  - RESILIENT FILLER
  - ROD BACK-UP MATERIAL



**JOINT SEALING IN RIGID PAVEMENT**  
 NOTE: JOINT SEALANT RESERVOIR DEPTHS MAY BE MODIFIED TO MEET THE MANUFACTURER'S RECOMMENDATIONS WITH PRIOR WRITTEN APPROVAL FROM THE ENGINEER.

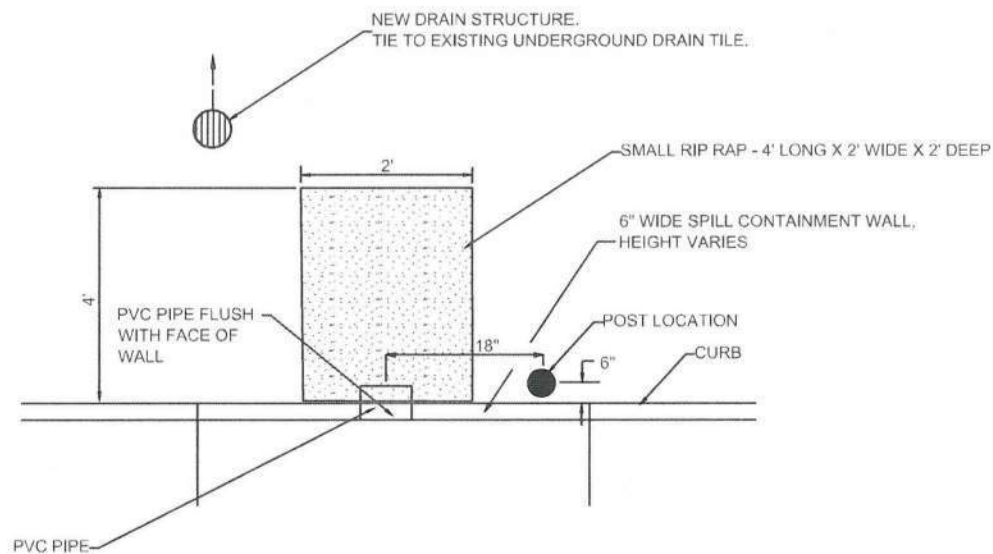
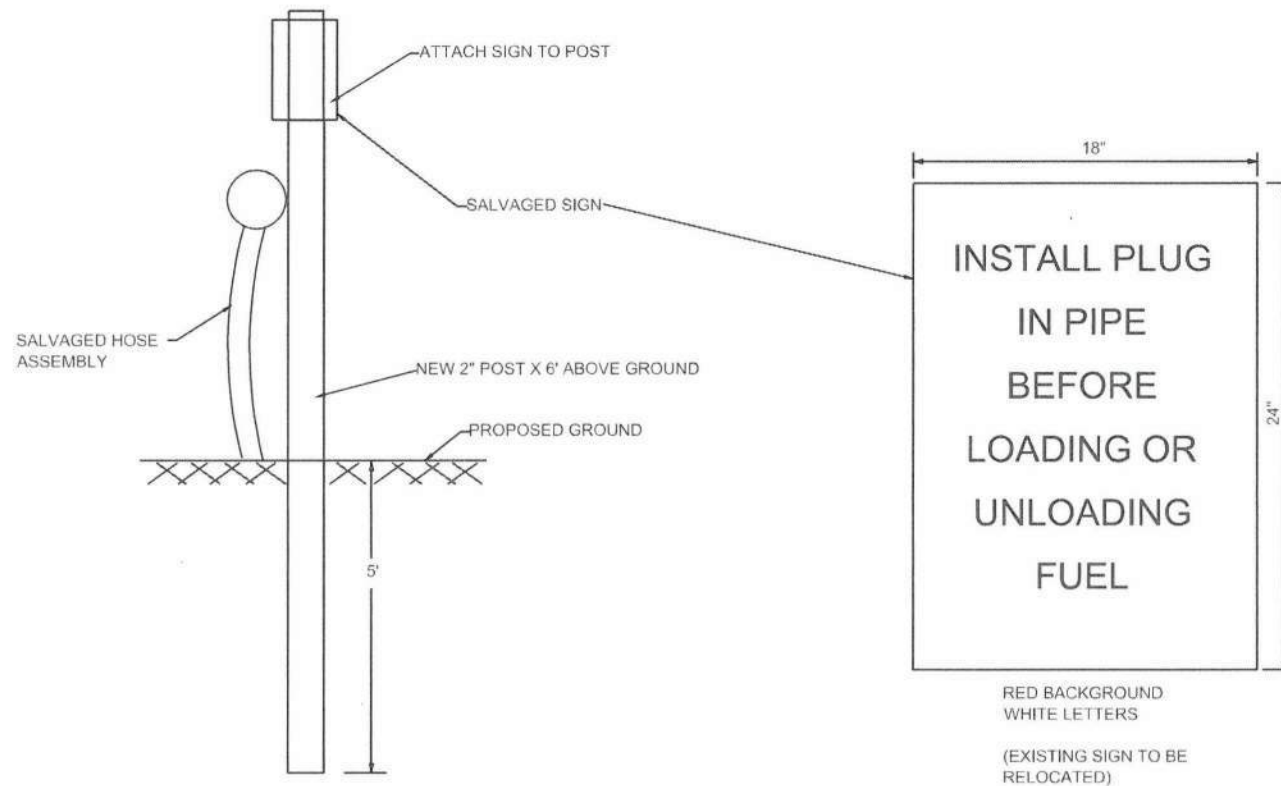


- NOTES:**
1. ALL DOWEL BARS SHALL BE EPOXY COATED PER ASTM A1078 AND COATED WITH MANUFACTURER RECOMMENDED BOND BREAKER.
  2. DOWEL BARS SHALL BE SUPPORTED AND HELD IN PLACE BY AN APPROVED ASSEMBLY WITHIN 1/8" PER FOOT OF PARALLEL TO SLAB SURFACE AND SLAB CENTERLINE. DOWEL BARS PLACED ALONG A CENTERLINE JOINT SHALL BE DRILLED AND PLACED HORIZONTALLY LEVEL.
  3. ALL DOWELS AND DEFORMED BARS INSTALLED IN EXISTING AND OTHER HARDENED CONCRETE SHALL BE EPOXY GROUTED INTO PLACE. EPOXY GROUT SHALL BE INJECTED AT THE BACK OF THE HOLE PRIOR TO INSERTING THE DOWEL OR THE TIE BAR.
  4. FORMED JOINTS SHALL BE FINISHED WITH A 1/4" RADIUS.
  5. EXISTING PAVEMENT WILL DIFFER IN THICKNESS, SIZE OF DOWELS, AND TIE-BARS, AND WILL CONTAIN WELDED WIRE FABRIC ONLY WHERE SHOWN IN TYPICAL SECTIONS.
  6. ALTERNATE #2: INSTALL JOINT SEALANT COMPATIBLE WITH COATING SYSTEM SELECTED IN LIEU OF P605 SEALANT.

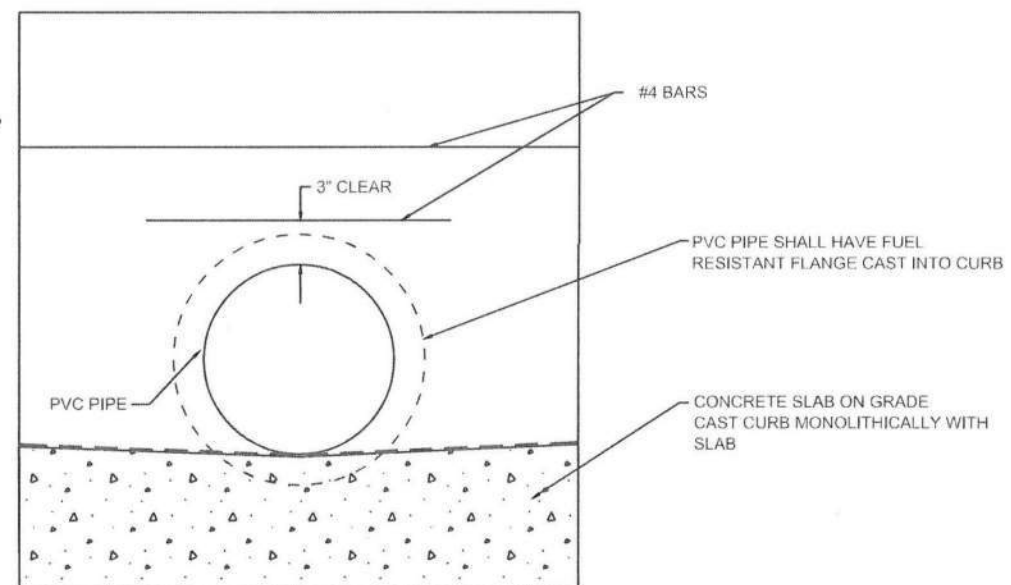


**SPILL CONTAINMENT DRAIN**

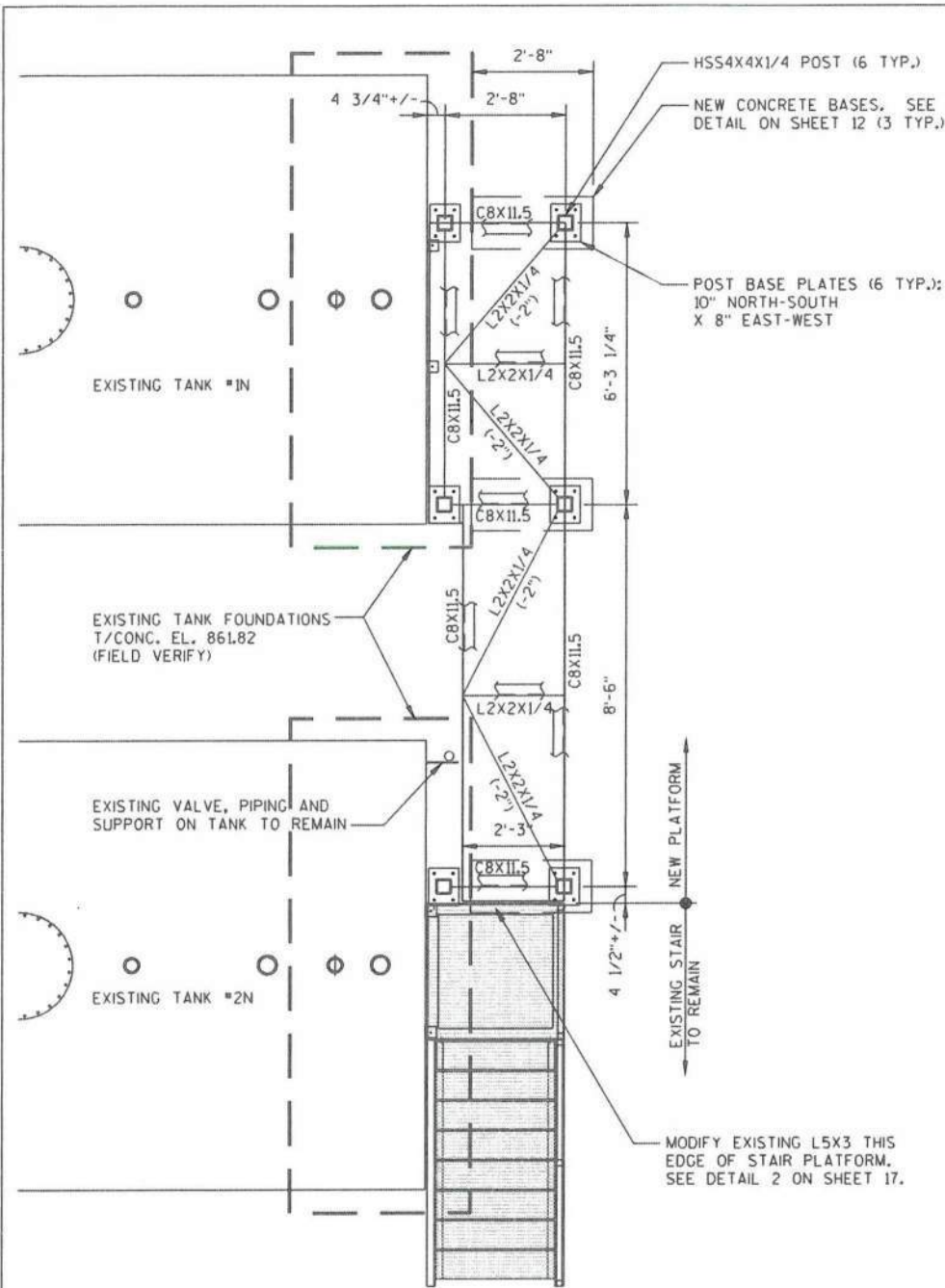
NOTE:  
PVC PIPE SLEEVE TO MATCH EXISTING  
SLEEVE FOR HOSE ASSEMBLY



**DRAIN SPILL CONTAINMENT DETAIL**



**CROSS SECTION VIEW  
OF DRAIN FACE**

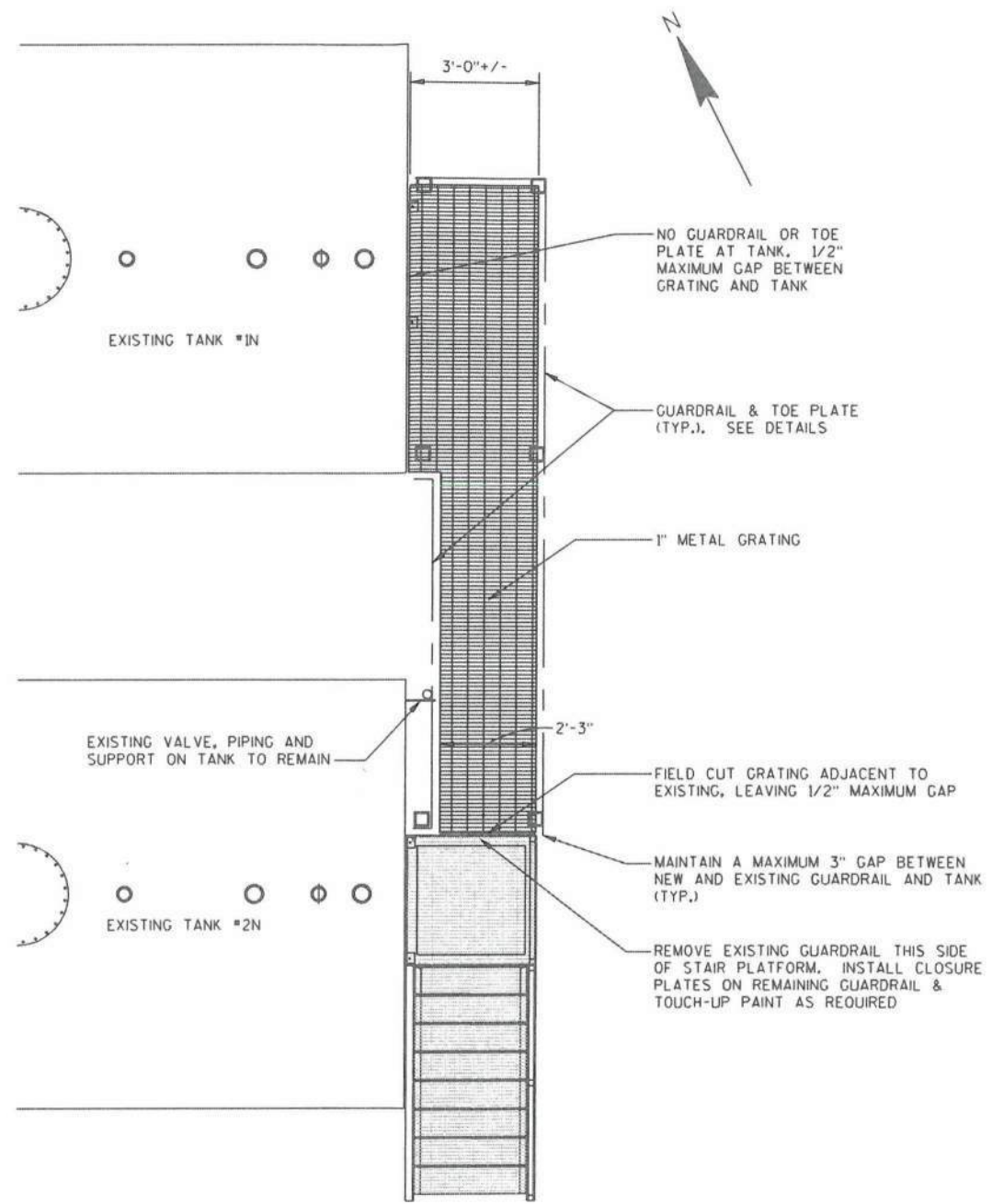


## PLATFORM FRAMING PLAN

SCALE: 1/4"=1'-0" (@ 11X17)

### NOTES:

1. TOP OF NEW STEEL EL. 868.86+/-, T/GRATING TO MATCH EXISTING STAIR LANDING.
2. SEE TYPICAL CONNECTION AND FRAMING DETAILS ON SHEETS 16 & 17.
3. TOP OF NEW CONCRETE BASES TO SUPPORT PLATFORM POSTS TO MATCH EXISTING ADJACENT TANK FOUNDATIONS.
4. WESTERN PLATFORM POST BASE PLATES ARE LOCATED ON EXISTING TANK FOUNDATIONS.



## PLATFORM PLAN

SCALE: 1/4"=1'-0" (@ 11X17)

### NOTES:

1. TOP OF NEW GRATING TO MATCH EXISTING AT EL. 868.945+/- (FIELD VERIFY).
2. SEE TYPICAL GUARDRAIL DETAIL ON SHEETS 16 & 17.

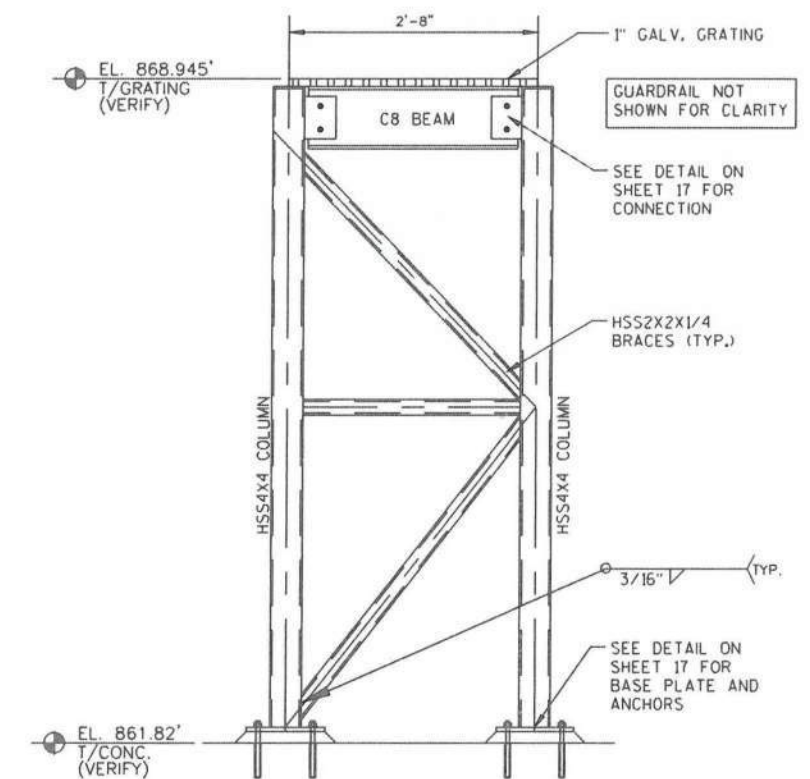
### GENERAL NOTES:

#### DESIGN LOADS

PLATFORM LIVE LOAD: 100 PSF

#### STRENGTH OF MATERIALS:

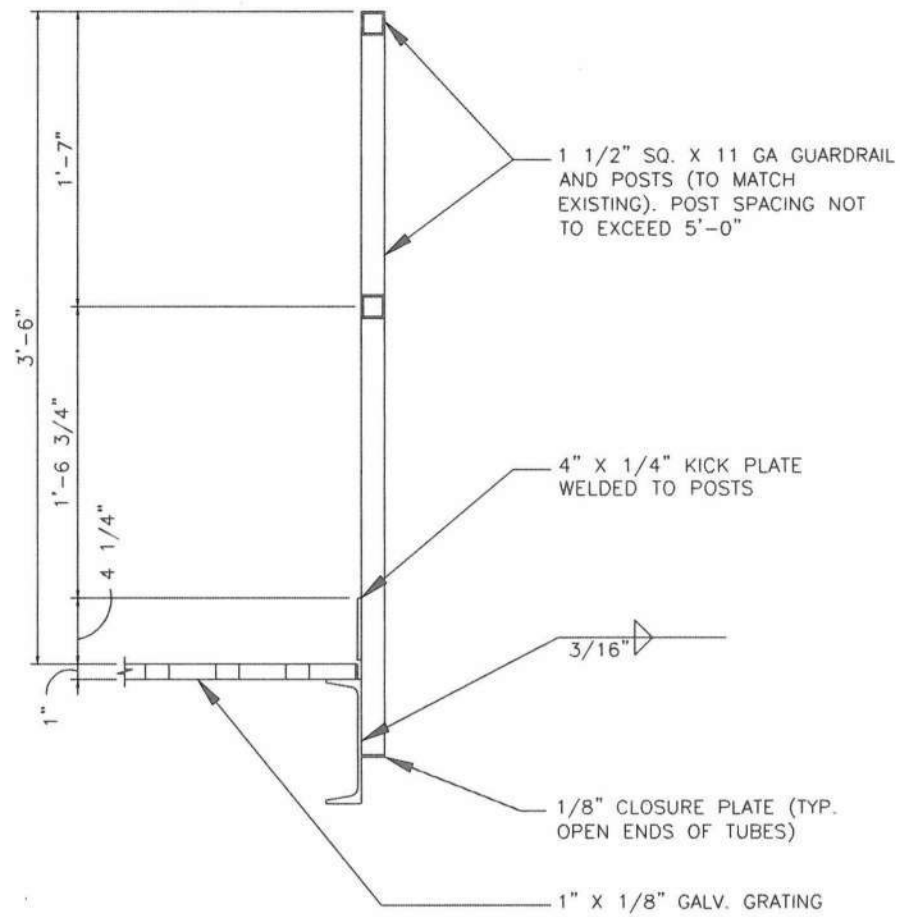
CAST-IN-PLACE CONCRETE	4000 PSI
REINFORCING STEEL	ASTM A615 GRADE 60, STANDARD SPLICE LENGTHS
<b>STRUCTURAL STEEL:</b>	
CHANNELS, ANGLES, PLATES	ASTM A36
TUBING	ASTM A500 GRADE B
PAINT	GALVANIZE STEEL FRAMING AND GUARDRAILS, FIELD TOUCH-UP AS NEEDED.
<b>WELDING ELECTRODES</b>	
ADHESIVE ANCHORING SYSTEM	HILTI HIT-HY200 ADHESIVE SYSTEM OR APPROVED EQUAL.
ANCHOR BOLTS, THRD ROD	ASTM F1554 GRADE 36, GALVANIZED
BOLTS FOR STRUCTURAL STEEL CONNECTIONS	ASTM A325-X, GALVANIZED
BAR GRATING	1"X1/8" WELDED BAR GRATING (I5-W-4), GALVANIZED, BAND ALL EDGES, MECHANICALLY FASTEN TO STEEL



## FRAMING ELEVATION

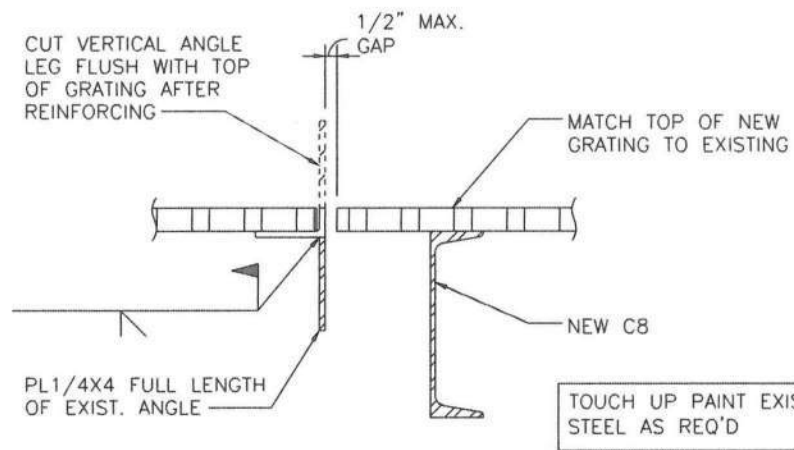
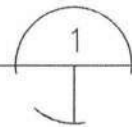
SCALE: 1/2"=1'-0" (@ 11X17)

(TYPICAL (2) FRAMES - NORTH AND SOUTH FRAMES)  
(SIMILAR CENTER FRAME - HSS2 BRACING NOT REQ'D)



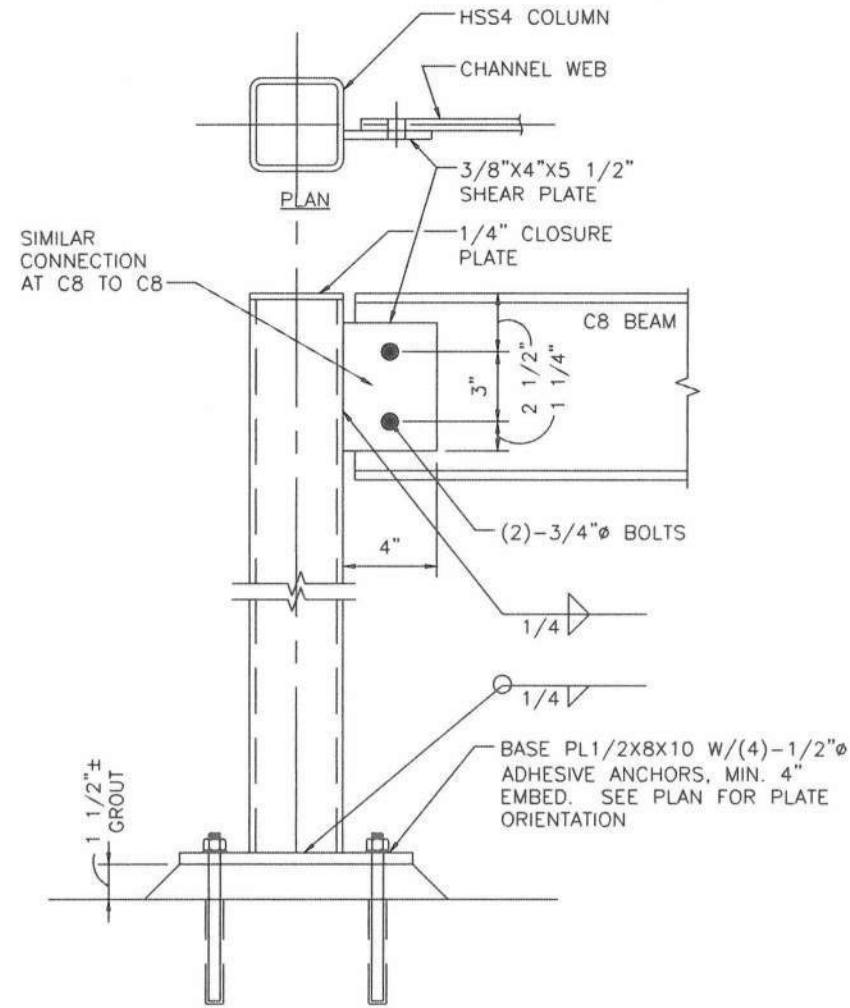
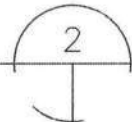
### GUARDRAIL DETAIL

SCALE: 1"=1'-0" (@ 11X17)



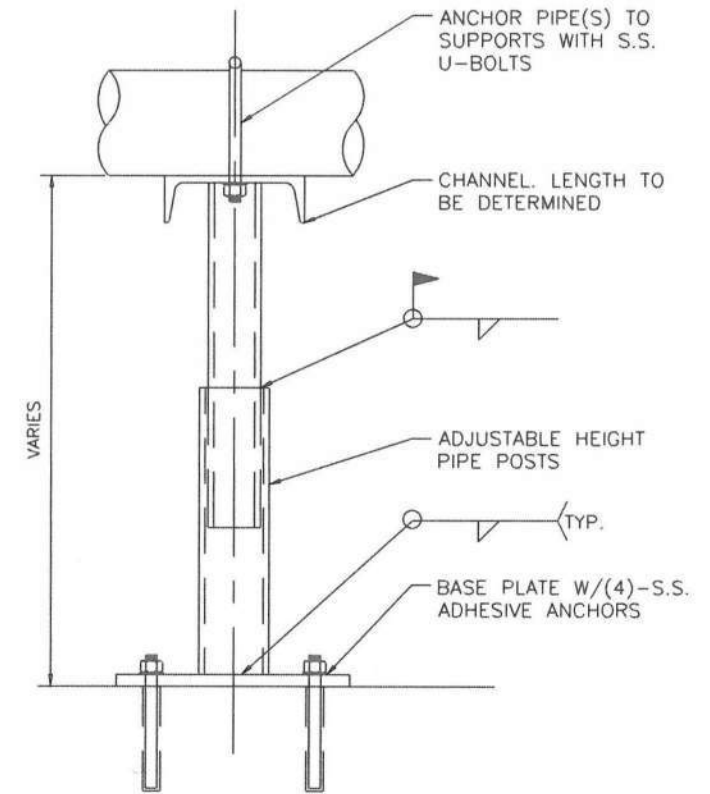
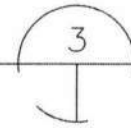
### DETAIL

SCALE: 1 1/2"=1'-0" (@ 11X17)



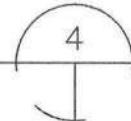
### HSS POST DETAIL

SCALE: 1 1/2"=1'-0" (@ 11X17)



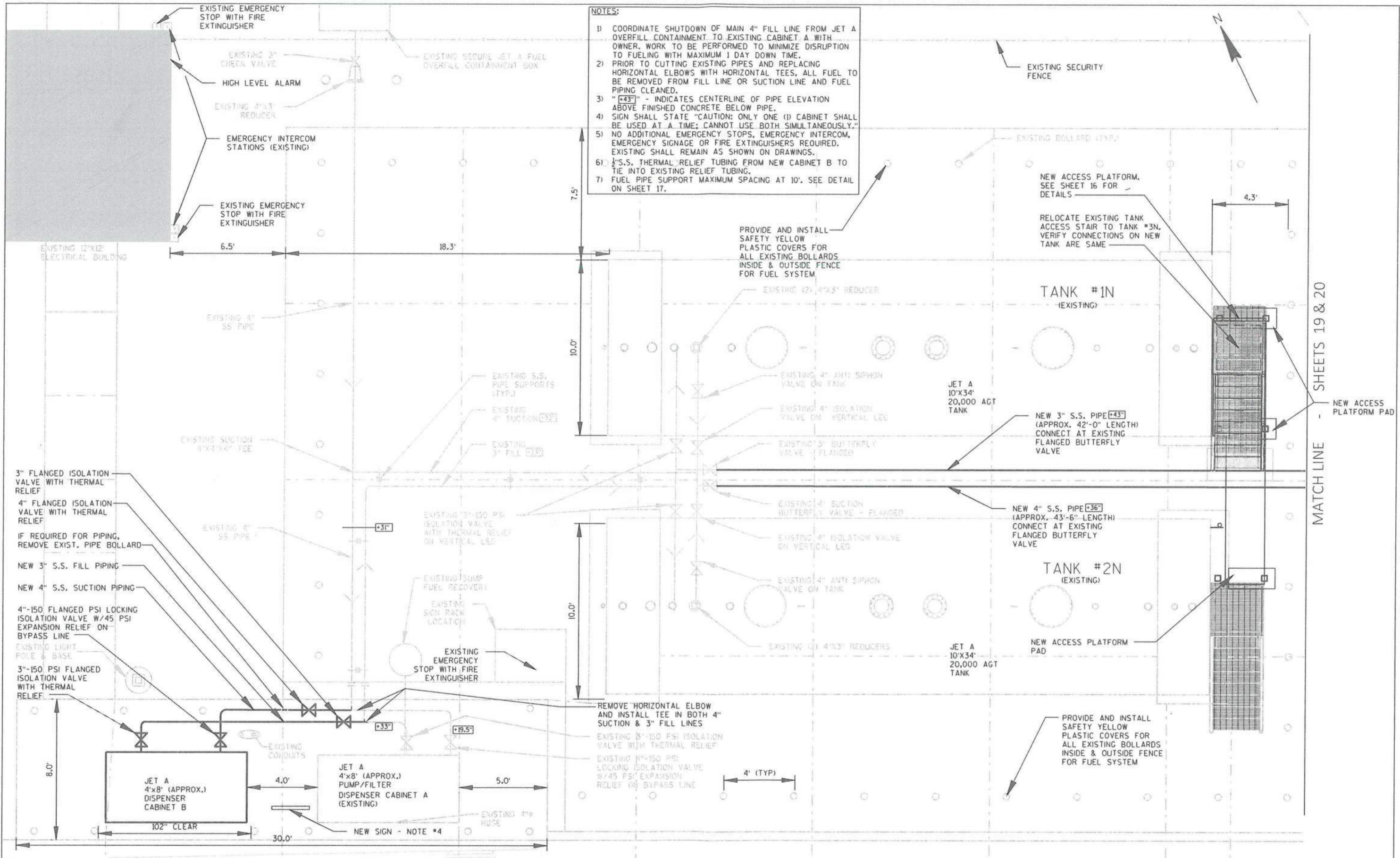
### PIPE SUPPORT DETAIL

SCALE: 1 1/2"=1'-0" (@ 11X17)



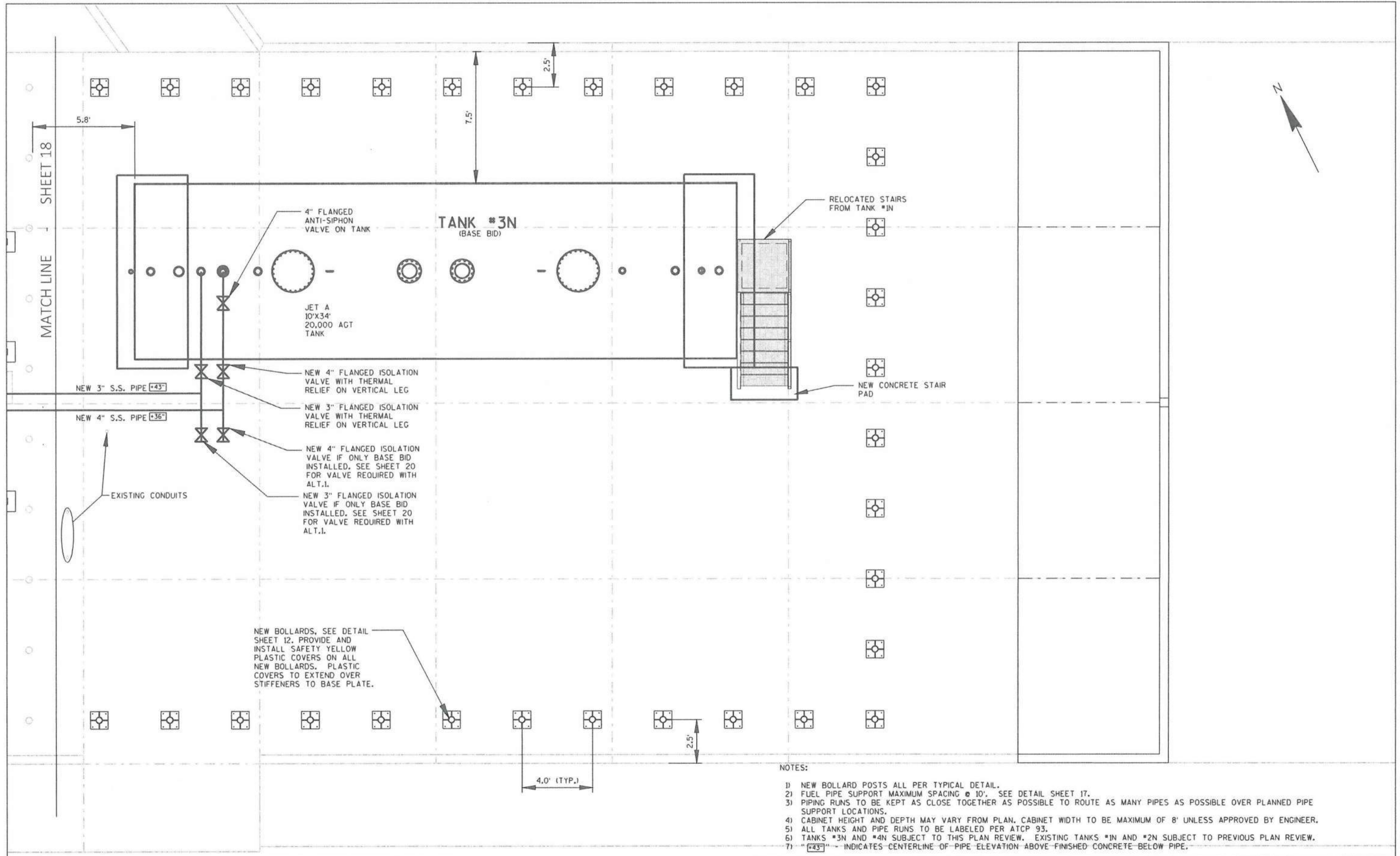
#### NOTES:

1. CONSTRUCT OF STAINLESS STEEL MEMBERS.
2. MEMBER SIZES AS DETERMINED BY CONTRACTOR, SIMILAR TO EXISTING.

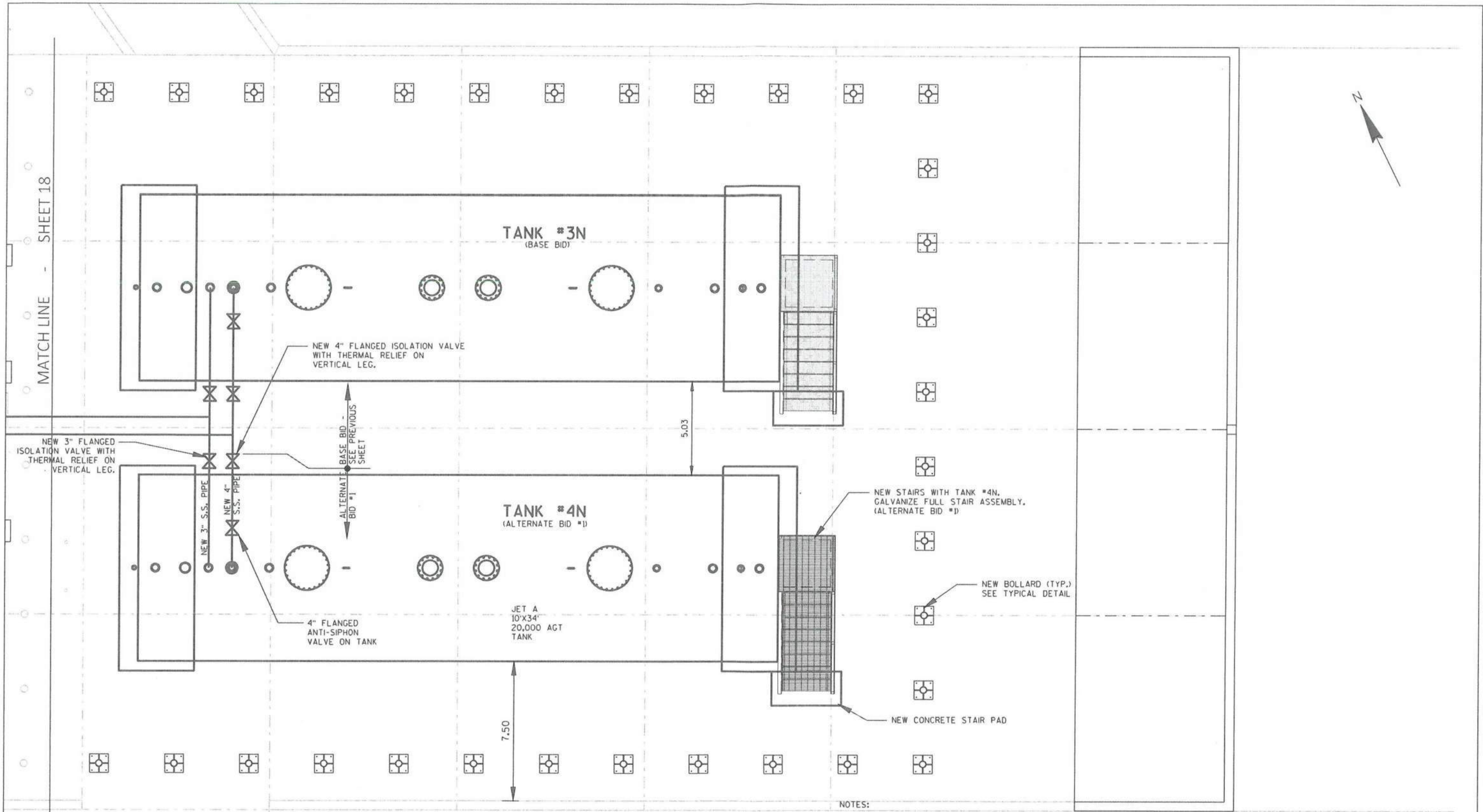


- NOTES:**
- 1) COORDINATE SHUTDOWN OF MAIN 4" FILL LINE FROM JET A OVERFILL CONTAINMENT TO EXISTING CABINET A WITH OWNER. WORK TO BE PERFORMED TO MINIMIZE DISRUPTION TO FUELING WITH MAXIMUM 1 DAY DOWN TIME.
  - 2) PRIOR TO CUTTING EXISTING PIPES AND REPLACING HORIZONTAL ELBOWS WITH HORIZONTAL TEES, ALL FUEL TO BE REMOVED FROM FILL LINE OR SUCTION LINE AND FUEL PIPING CLEANED.
  - 3) "[43]" - INDICATES CENTERLINE OF PIPE ELEVATION ABOVE FINISHED CONCRETE BELOW PIPE.
  - 4) SIGN SHALL STATE "CAUTION: ONLY ONE (1) CABINET SHALL BE USED AT A TIME; CANNOT USE BOTH SIMULTANEOUSLY."
  - 5) NO ADDITIONAL EMERGENCY STOPS, EMERGENCY INTERCOM, EMERGENCY SIGNAGE OR FIRE EXTINGUISHERS REQUIRED. EXISTING SHALL REMAIN AS SHOWN ON DRAWINGS.
  - 6) 1/2" S.S. THERMAL RELIEF TUBING FROM NEW CABINET B TO TIE INTO EXISTING RELIEF TUBING.
  - 7) FUEL PIPE SUPPORT MAXIMUM SPACING AT 10'. SEE DETAIL ON SHEET 17.

- 3" FLANGED ISOLATION VALVE WITH THERMAL RELIEF
- 4" FLANGED ISOLATION VALVE WITH THERMAL RELIEF
- IF REQUIRED FOR PIPING, REMOVE EXIST. PIPE BOLLARD
- NEW 3" S.S. FILL PIPING
- NEW 4" S.S. SUCTION PIPING
- 4"-150 FLANGED PSI LOCKING ISOLATION VALVE W/45 PSI EXPANSION RELIEF ON BYPASS LINE
- EXISTING LIGHT POLE & BASE
- 3"-150 PSI FLANGED ISOLATION VALVE WITH THERMAL RELIEF



- NOTES:
- 1) NEW BOLLARD POSTS ALL PER TYPICAL DETAIL.
  - 2) FUEL PIPE SUPPORT MAXIMUM SPACING @ 10'. SEE DETAIL SHEET 17.
  - 3) PIPING RUNS TO BE KEPT AS CLOSE TOGETHER AS POSSIBLE TO ROUTE AS MANY PIPES AS POSSIBLE OVER PLANNED PIPE SUPPORT LOCATIONS.
  - 4) CABINET HEIGHT AND DEPTH MAY VARY FROM PLAN. CABINET WIDTH TO BE MAXIMUM OF 8' UNLESS APPROVED BY ENGINEER.
  - 5) ALL TANKS AND PIPE RUNS TO BE LABELED PER ATCP 93.
  - 6) TANKS #3N AND #4N SUBJECT TO THIS PLAN REVIEW. EXISTING TANKS #1N AND #2N SUBJECT TO PREVIOUS PLAN REVIEW.
  - 7) "+43" - INDICATES CENTERLINE OF PIPE ELEVATION ABOVE FINISHED CONCRETE BELOW PIPE.



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- GENERAL NOTES
1. TANKS AND STAIRS TO BE SUPPLIED BY VENDOR. GALVANIZED STAIR ASSEMBLY. FIELD TOUCH UP AS REQUIRED.
  2. TANK EQUIPMENT AND REQUIRED CONNECTIONS TO BE BY CONTRACTOR.
  3. STOOP TO BE POURED AT BASE OF STAIRS FOR FINAL STEP FROM TANK STAIRS TO CONCRETE TANK SLAB.

PIPING TYPE

Steel	Double Wall
FRP	Other
Flexible	S/S

WI DEPT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION

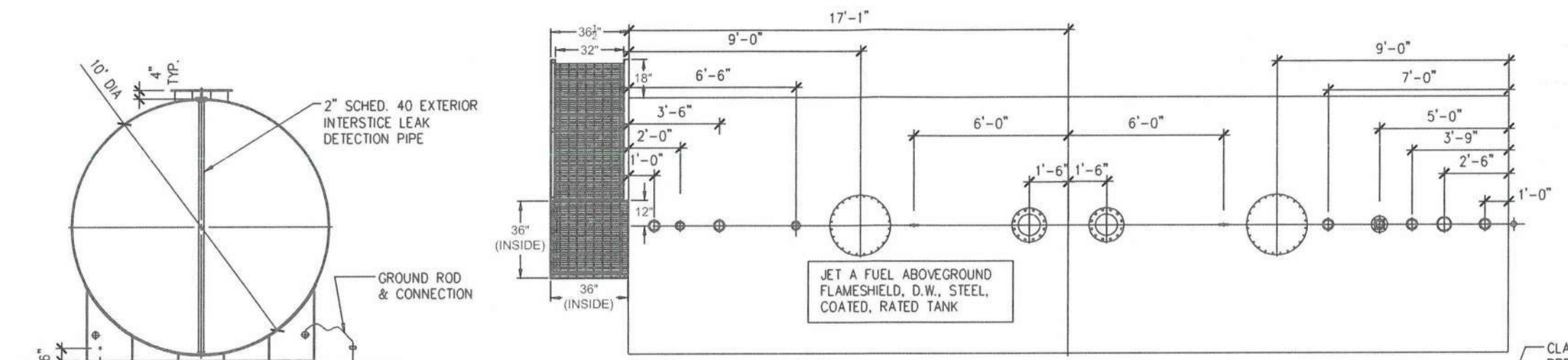
**Conditionally APPROVED**

1 UNDERGROUND STORAGE TANKS  
2 ABOVEGROUND STORAGE TANKS

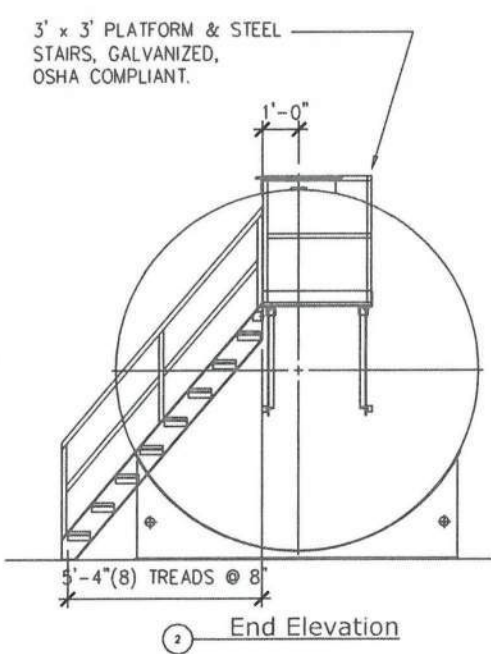
SINGLE WALL  
DOUBLE WALL

*E. J. [Signature]* JAN 29 2018

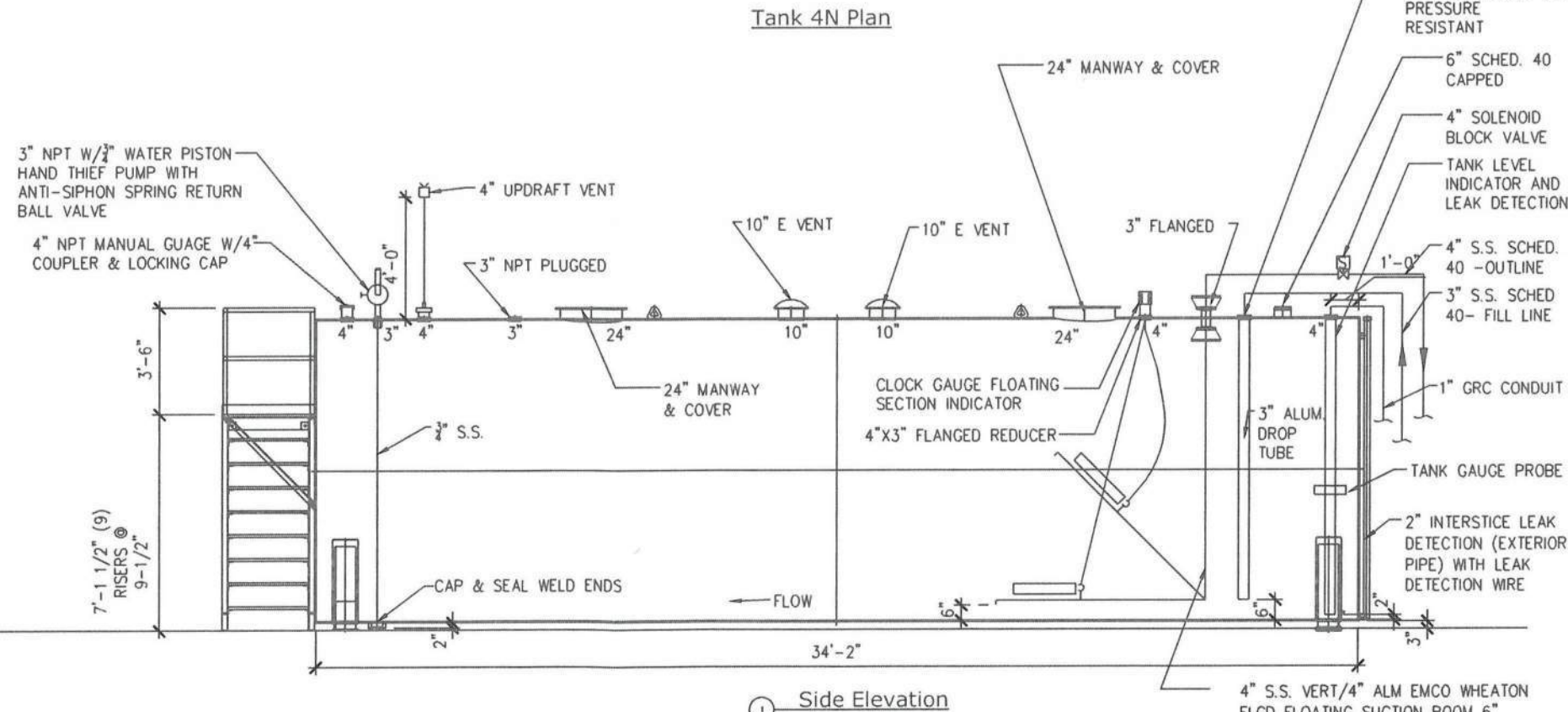
REFER TO APPROVAL LETTER FOR CONDITIONS AND SPECIFICATIONS



3 End Elevation



2 End Elevation

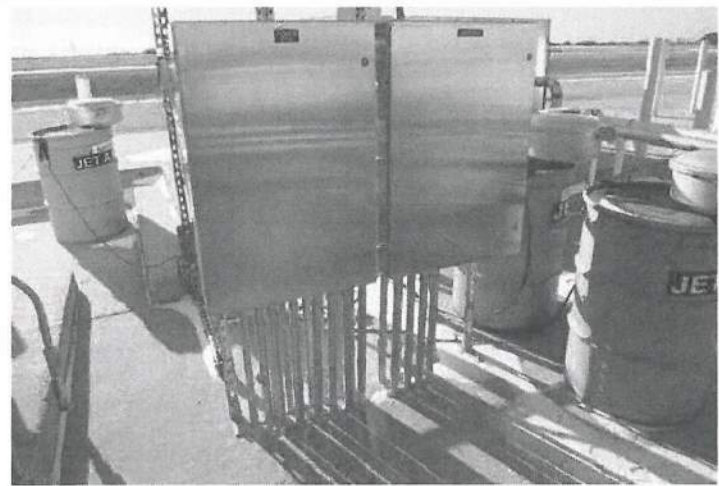


1 Side Elevation

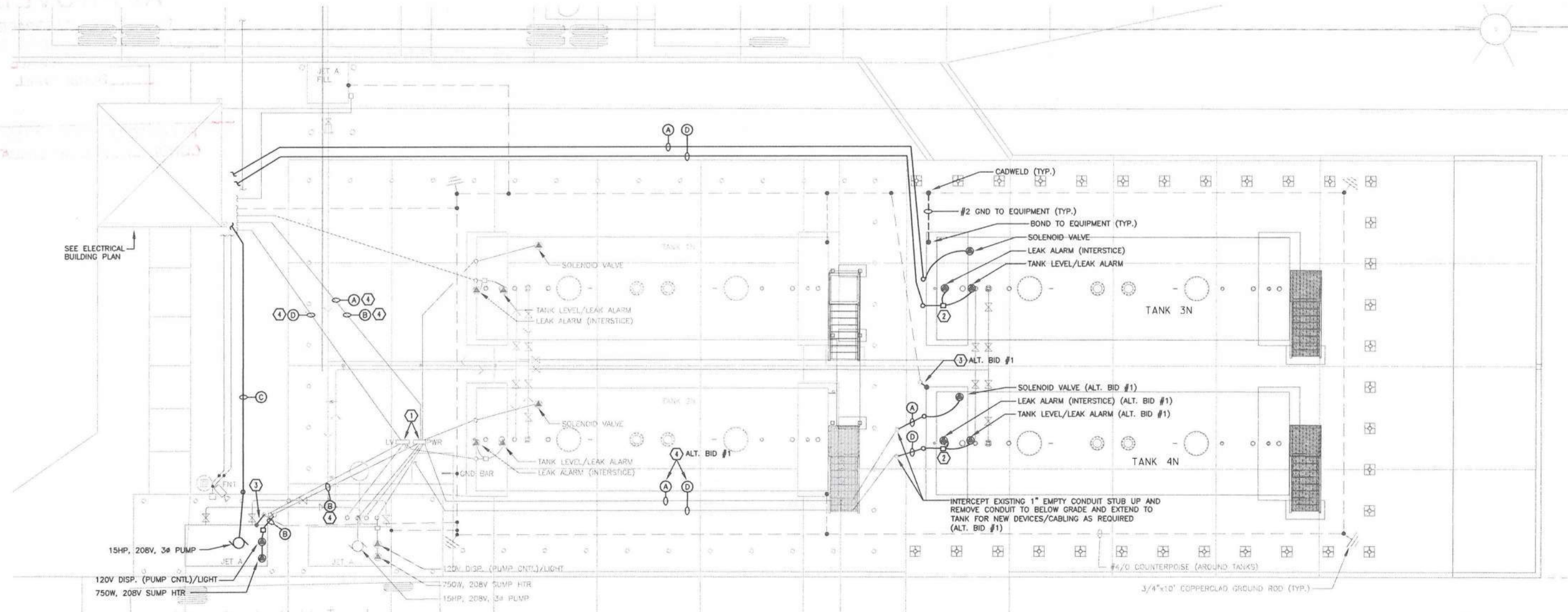
CONDUIT SCHEDULE		
ID	CONDUIT	CABLE
A	1"	2#12 & 1#12 GND.
B	1"	8#12 & 1#12 GND.
C	1"	3#6 & 1#8 GND.
D	1"	ALARM/LEVEL CABLES

- KEYED NOTES:**
- EXISTING JUNCTION BOX. NO SPLICES IN CABLES OR CURRENT CARRYING CONDUCTORS IN ENCLOSURE (GROUNDING CONDUCTORS BONDED TO GROUND BAR IN POWER ENCLOSURE AS APPROPRIATE).
  - CLASS 1, DIV 2 JUNCTION BOX, SIZE AS NEEDED.
  - EXTEND EXISTING #2 BARE EQUIPMENT BONDING CONDUCTOR (STUBBED UP THROUGH CONCRETE) TO TANK OR FUEL CABINET AND BOND SIMILAR TO EXISTING.
  - INSTALL NEW CONDUCTORS IN EXISTING EMPTY 1" CONDUIT.

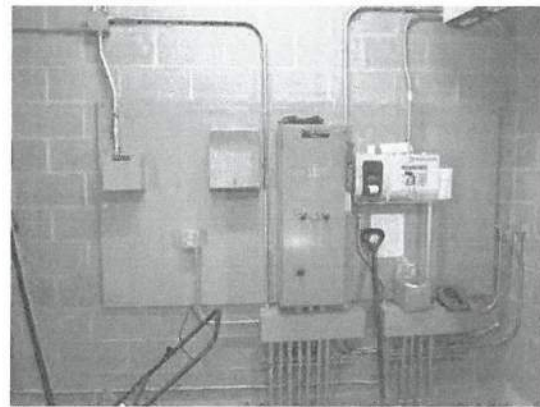
- GENERAL NOTES:**
- LIGHT LINES DENOTE EXISTING. DARK LINES DENOTE NEW.
  - CONTRACTOR TO VERIFY SITE CONDITIONS AND INCLUDE ALL NECESSARY WORK IN BID. INSTALLATION OF NEW MATERIALS/EQUIPMENT SHALL BE CONSISTENT WITH EXISTING INSTALLATION.
  - WORK IS INCLUDED AS PART OF BASE BID, UNLESS OTHERWISE NOTED.



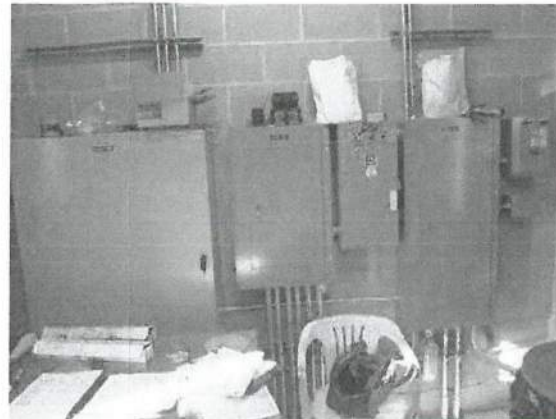
JUNCTION BOXES



**Powrtrek Engineering, Inc.**  
 2011 WATERLOON BL. SUITE C  
 WALKERSVILLE, VA 22651  
 PHONE: 703-877-8875  
 FAX: 703-877-9615



EAST INTERIOR EQUIPMENT



WEST INTERIOR EQUIPMENT



EAST EXTERIOR EQUIPMENT

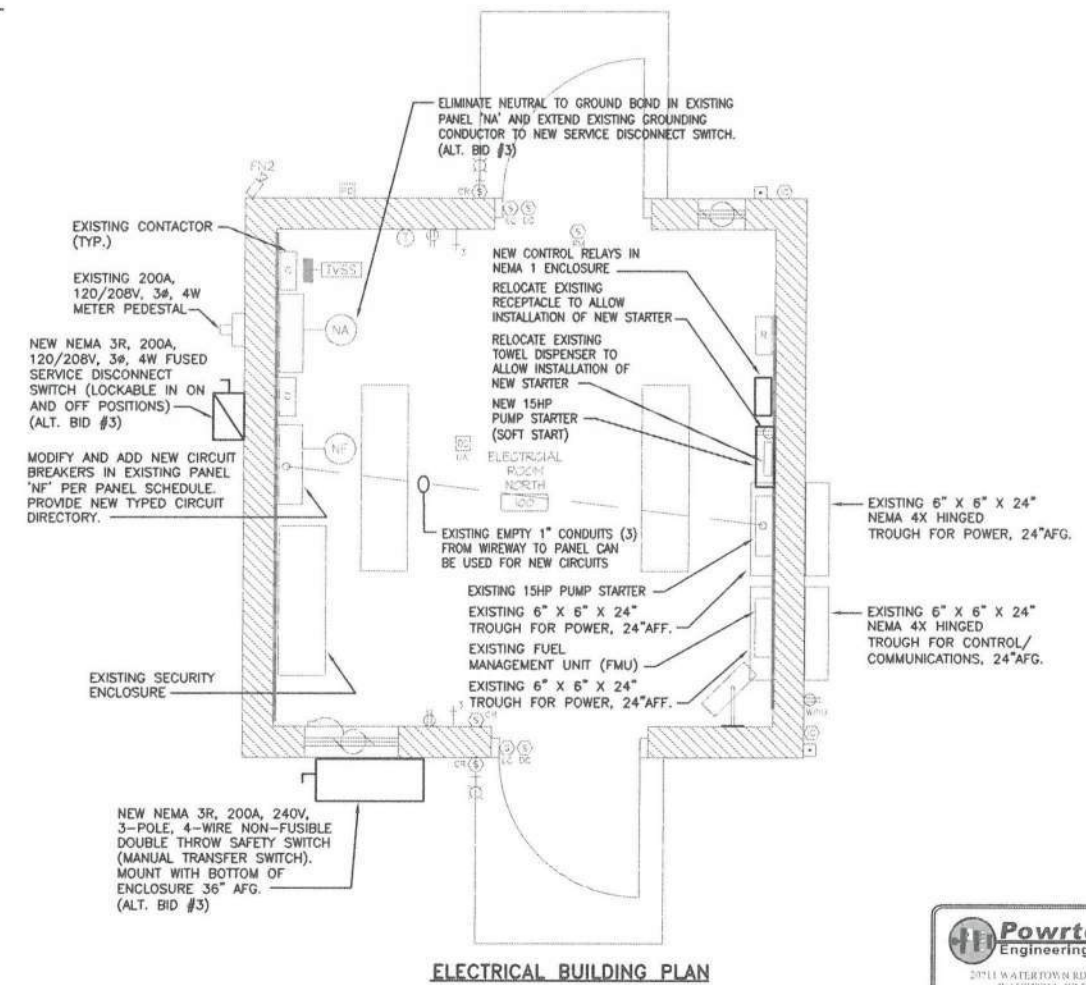
PANEL: NF	BUS AMPS: 225		MAIN: MLO		MOUNTING		REMARKS:		
	VOLTAGE: 120/208				SURFACE	X	EXISTING SQUARE D NQ PANEL		
PHASE: 3				FLUSH		10KAIC BOLT-ON BRANCH CBs			
WIRE: 4									
CIRCUIT DESCRIPTION	AMPS			CCT	CB	AMPS			CIRCUIT DESCRIPTION
	A	B	C			A	B	C	
15HP PUMP	48.3			90	1	2	20	3	SUMP HTR
15HP PUMP		48.3			3	4	2	3	SUMP HTR
15HP PUMP			48.3		5	6	20*		SPARE
DISPENSER PUMP CNTL/LIGHTS	5			20*	7	8	1		
					9	10	20*	5	FMU
DISPENSER PUMP CNTL/LIGHTS			5	20*	11	12	1		
					13	14	90		15HP PUMP
SPARE				20*	15	16			15HP PUMP
					17	18	3		15HP PUMP
SPARE				20*	19	20			
					21	22			
SPARE				20*	23	24			
					25	26			
SUMP HTR		3		20	27	28			
SUMP HTR			3	2	29	30			
					TOTAL				
					56.3 59.3 56.3				

\* 1-POLE, 2-WIRE CIRCUIT BREAKER  
 \*\* USE SPARE CIRCUIT BREAKER FOR NEW LOAD  
 \*\*\* NEW CIRCUIT BREAKER FOR NEW LOAD

NOTE: NEW 15HP PUMP NOT INCLUDED IN LOADING, DUE TO DIVERSITY WITH EXISTING 15HP PUMP.

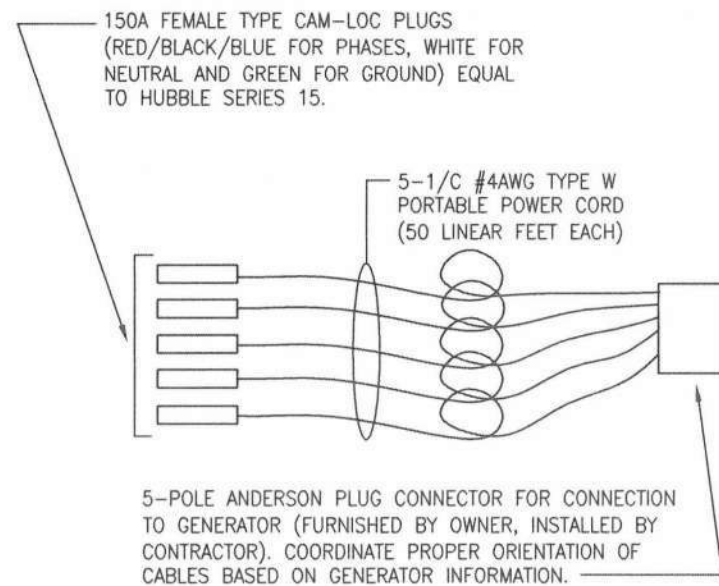
GENERAL NOTES:

1. LIGHT LINES DENOTE EXISTING, DARK LINES DENOTE NEW.
2. PROVIDE CONDUIT SEAL-OFFS BELOW TROUGHS AND NEAR EQUIPMENT CONNECTIONS AS REQUIRED BY CODE.
3. NEW SERVICE DISCONNECT, MANUAL TRANSFER SWITCH AND GENERATOR CORD AND ASSOCIATED WIRING IS PART OF ALT. BID 3. REFER TO ONE-LINE DIAGRAMS.
4. COORDINATE INSTALLATION OF NEW CONDUITS INTO EXISTING TROUGHS. NEW CONDUITS MAY ENTER ENDS OF TROUGHS; PROVIDE APPROPRIATE CONDULETS AS NEEDED. PROVIDE ADDITIONAL STRUT SUPPORTS MATCHING EXISTING TO ATTACH CONDUITS ON SIDE OF BUILDING.
5. VERIFY NEW LOCATIONS OF RELOCATED RECEPTACLE AND TOWEL DISPENSER WITH OWNER.
6. COORDINATE MONITORING AND CONTROL CONNECTIONS/CABLING REQUIREMENTS WITH FUELING EQUIPMENT INSTALLER.
7. PROVIDE ENGRAVED PLAQUES ON ALL EQUIPMENT AND DISCONNECT SWITCHES. MANUAL TRANSFER SWITCH SHALL INCLUDE PLAQUES AT APPROPRIATE SWITCH POSITION TO INDICATE "UTILITY" OR "GENERATOR".
8. HAND DIG AROUND EXTERIOR AS NEEDED.
9. CONDUIT EXPOSED ON EXTERIOR OF BUILDING SHALL BE RIGID STEEL.
10. WORK IS PART OF BASE BID, UNLESS OTHERWISE NOTED.

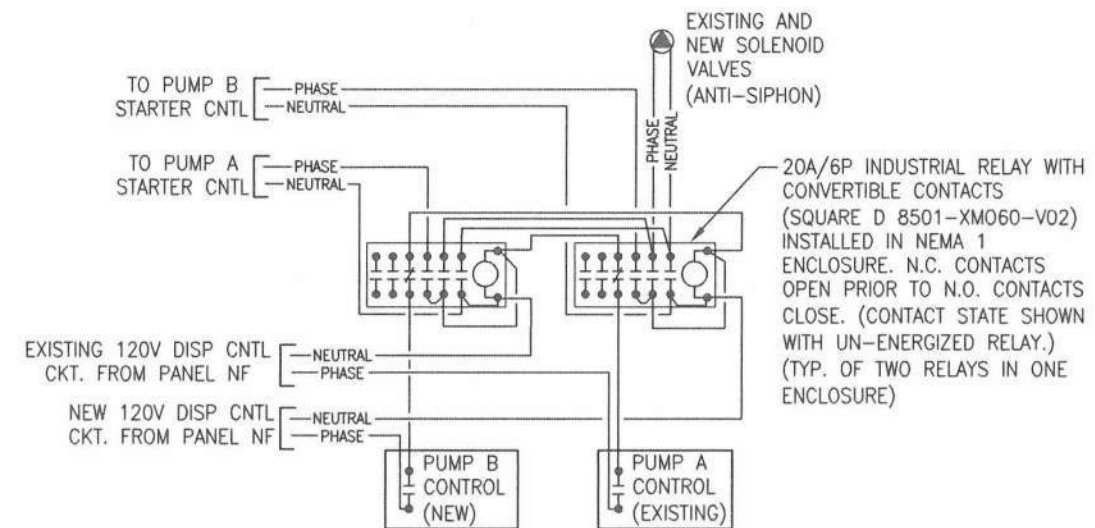


ELECTRICAL BUILDING PLAN





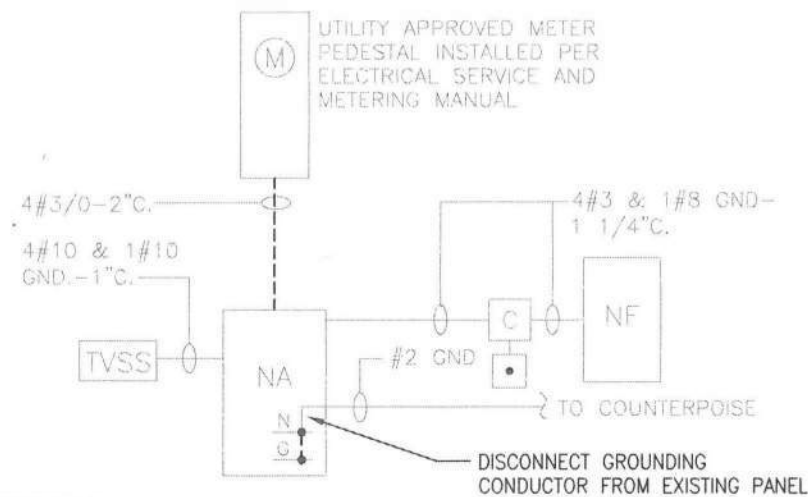
**GENERATOR CORD ASSEMBLY DETAIL**  
NO SCALE (ALT. BID #3)



**NOTES:**

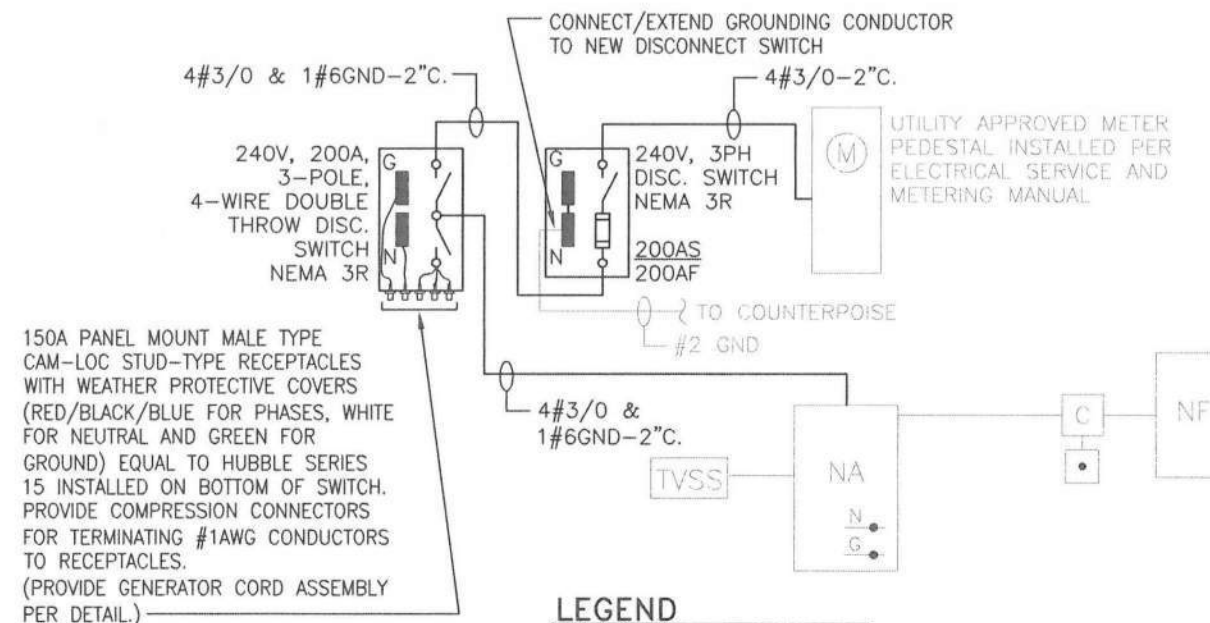
1. ACTIVATION OF A DISPENSER WILL ACTIVATE ASSOCIATED PUMP (STARTER), WILL OPEN ALL SOLENOID VALVES AND DEACTIVATE CONTROL CIRCUIT OF OTHER DISPENSER PUMP; SO AS ONLY ONE PUMP/DISPENSER CAN OPERATE AT A GIVEN TIME WHILE ALLOWING FUEL FROM ALL TANKS TO BE AVAILABLE.
2. COORDINATE CONTROL WIRING WITH EXISTING AND NEW FUELING EQUIPMENT. MODIFY EXISTING WIRING AS NEEDED (EXISTING SOLENOIDS ARE WIRED THRU AUX CONTACT IN EXISTING STARTER). NOT ALL CONDUCTORS SHOWN.
3. INSTALL RELAYS IN NEMA 1 ENCLOSURE.

**PUMP CONTACTOR CONTROL DIAGRAM**  
NO SCALE (BASE BID)



**LEGEND**  
 ——— EXISTING  
 - - - - EXISTING TO BE REMOVED

**EXISTING ONE-LINE DIAGRAM**  
NO SCALE (ALT. BID #3)



**LEGEND**  
 ——— EXISTING  
 ——— NEW

**MODIFIED ONE-LINE DIAGRAM**  
NO SCALE (ALT. BID #3)

