SECTION 25 54 00 INTEGRATED FUELING SYSTEM

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. This is a general performance specification for the contractor to provide a complete assembled and integrated Fueling system with computer data logging software, in-tank fuel pumps, vents, valves, piping, vapor seals, explosion proof fittings, and all related appurtenances. This specification requires that the system design, manufacturing, and integration be the responsibility of one specialized supplier in order to maintain quality through the steps of procurement, manufacturer, integration, painting, and field installation.

1.2 RELATED SECTIONS

Section 23 11 13: Fleet Fuel Dispenser.
Section 23 12 14: Fleet & Fuel Management.
Section 23 13 23: Above Ground Storage Tanks.
Section 25 54 00: Level Gauging & leak Detection.

1.3 PERFORMANCE REQUIREMENTS

A. Comply with applicable code requirements and the following criteria. In case of conflict, the more stringent requirements shall govern.

B. National Fire Protection Association: Flammable and Combustible Liquids Code. (NFPA 30) & Motor Fuel Dispensing Facilities and Repair Garages Code (NFPA 30A)

D. National Electric Code (NEC), Article 513

E. NFPA 70 National Electric Code.

1.4 SUBMITTALS

A. PRODUCT DATA:

1. Manufacturer/Supplier’s product information and installation manual.
2. Submit complete Installation instruction manual as published by the fueling system’s manufacturer/supplier.

B. SHOP DRAWINGS:

1. Show details, sizes and dimensions, anchorage locations and accessory items.
2. Furnish setting diagrams for anchorage installation as required.

3. Where required by local jurisdiction, provide manufacturer's part numbers, of integrated components, to facilitate permitting requirements of the system.
4. Manufacturer/Supplier to receive owner approval of shop drawings prior to fabrication.

1.5 QUALITY ASSURANCE

A. The installation contractor shall to hold required state license/ certifications and appropriate experience specializing in installation of petroleum equipment and fueling systems. They shall be properly licensed as required by local jurisdictions, and provide evidence of a minimum 5 years successful experience performing work of this nature

B. Only field technicians who have 2+ years petroleum equipment installation field experience, and have received training from system manufacturer shall perform the installation and start-up of this system.

C. Welding: All welding for system configuration to be performed in a factory environment. Field welding of components is not permissible to create a finished system. Welding in accordance with applicable recommendations of the American Welding Society.

D.. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

E. Comply with ASME B31.3, "Process Piping," for fuel oil piping materials, installation, testing, and inspecting.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Storage and Protection: Ideally delivery should be coordinated to allow crane offloading and placement in prepared and final location minimizing the need for double handling. Keep all equipment protected from physical damage caused by other construction activities.

1.7 PROJECT SITE CONDITIONS

A. Field Measurements: Owner's General Contractor will provide guaranteed field measurements if schedule does not allow for physical dimensioning. Otherwise field verify horizontal and vertical dimensions, clearances, and setbacks of spaces where Fueling System will be installed prior to installation of the system under this section.

PART 2 - PRODUCTS

2.1 SUPPLIER

A. Acceptable Supplier: Distributed by West End Supply, 908-255-4351.

B. Equals: Only as approved by architect/engineer.

2.2 MATERIALS

A. Steel For Tank Body: Only new material shall be used in the manufacturing process, and the manufacturer shall ensure that the material used meets all appropriate specifications and quality assurance requirements.

B. Steel Pipe: Only new material shall be used in the manufacturing process, and the manufacturer shall ensure that the material used meets all appropriate specifications and quality assurance requirements.

C. Fasteners and Accessories: Provide all necessary hardware, accessories and incidental materials required for complete factory integration/fabrication of fueling system.

D. Welding Materials: Conform to AWS code and AWS filler metal specifications for material being welded.

E. Primer: Amercoat 68HS - Zinc based epoxy primer, by Ameron, certified to be compatible with finish coats specified in section 09900.

F. Finish Paint: Amershield - Armor coat finish in light tan, high-gloss polyurethane, by Ameron, certified to be compatible with finish coats specified in section 09900.

G. Integrated Components: Dispensers/Pumps, Valves, Vents, Fill Box, and other components necessary for a complete system to be incorporated as outlined on project specific parts list. All vents and valves must be factory installed to maintain strict quality control standards.

2.3 CUSTOM FABRICATED FUELING SYSTEM

A. GENERAL:

1. All fabrication and integration of tank components, spill containment deck and components, to be completed in a factory environment. Field assembly to be limited to the final assembly of vent riser, product delivery piping, calibration of clock gauge, and installation tie-in of monitoring options, as well as field start-up and calibration activities outlined in this section.
2. Electrical conduits and wiring to be installed in factory setting, preparing AST system for final connection to electrical service stub up on project location. All dispensers, pumps, solenoids, to be pre-wired at factory to facilitate site installation.
3. Upon factory installation and integration of all components. A two coat, factory finish to be applied. Primer and finish coat to be Ameron as per specification as outlined earlier in this section.

B. SYSTEM CONFIGURATION: See Construction Drawings for system configuration views. Note that the following list details the primary components necessary for system configuration. All attaching hardware, steel, pipe, and other materials not specifically mentioned, yet required for a functioning system, are to be included as part of the factory turn-key system.

C. Dispensers and Submersible Pumps

1. Submersible Pumps
   a. (2) 3/4 horsepower fixed speed, variable length submersible pumps, FE petro model STP75VL2 or approved equal.
   b. (2) Submersible pump smart controllers, FE Petro model 5800100215 or approved equal.
   c. (2) 2” Anti-siphon solenoid valves, Morrison Bros model 71002001V or approved equal.
2. Dispenser Platform
   a. (2) Stainless steel dispenser platform and containment sump, model Fairfield Industries DP2-LP or approve equal.
   b. (2) Emergency shut-off shear valves, OPW model 10BF-5275 or approved equal.
   c. (2) 2” x 12” fire rated flexible connectors, Hose Master Fireshield model FSMS20012 or approved equal.
3. Fire Extinguisher
   a. (5) 20 lb type BC fire extinguisher with painted galvanized steel cabinet and breakable acrylic front.
4. (2) Universal General Purpose Spill Kit 30 gallon
   a. 30 Gallon Poly Drum With Lid
   b. 50 Sorbent Pads
   c. 6 Sorbent Socks
   d. 4 Sorbent Pillows
   e. 1 Pair Of Goggles
   f. 1 Pair Of Gloves
   g. 1 Disposable Bag

2.4 SHOP CLEANING AND FINISHING

A. AST Components: Completely remove oil, grease, dirt, mill scale, rust, corrosion products, oxides, paint or other foreign matter from surface of steel and trim components.

B. Shop Primer: Immediately after shop fabrication and cleaning, spray apply primer to a minimum dry film thickness as recommended by manufacturer, but not less than 2.0 mils. After allowing primer coat to properly dry, follow paint manufacturer’s instructions for finish coat application.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin system installation until substrates and adjacent construction have been properly constructed. Verify concrete tank pad, electrical service stub ups, ESO location, bollard/barrier installation, clearances, setbacks, and other site related work that have impact to fueling system

B. If unsatisfactory conditions are encountered, notify Owner/Architect in writing. Do not proceed until unsatisfactory conditions have been corrected.

C. Notify Manufacturer of any detail or design deviations as may be determined by site conditions.

3.2 FUEL TANK INSTALLATION

A. Install systems in strict accordance with the manufacturer's recommendations, and applicable fire and environmental codes. State and local permits shall be obtained prior to installation.

B. Fueling System shall be clearly marked on all sides with warning signs: "FLAMMABLE" or "NO SMOKING", tank volume, product identification, and other signs as required by local jurisdictions and applicable code.

C. Electrical work shall be rated for hazardous area as required. Tanks shall be grounded in accordance with electrical codes.

D. The final system installation shall be inspected and approved by the supplier or it's certified contractor.

3.3 ELECTRICAL SYSTEM

A. Under the scope and specification for Site Electrical work, provisions shall provide for proper electrical system to meet the requirements of the fueling system. All wiring shall be designed and installed per the requirements of NFPA 70 and applicable sections of the National Electrical code. All necessary branch circuit conduit and wiring shall be installed, providing for a stub-up at designated location to which the turn-key AST fueling system can be tied. Insure electrical installation complies with applicable hazardous location requirements. All electrical system conduits shall have code-compliant vapor seals installed.

3.4 FIELD QUALITY CONTROL

A. Perform system inspection as outlined in manufacturer's installation manual.

B. Test fueling distribution in accordance with NFPA 30 and other applicable codes. Properly dispose of any fuel generated in adherence to environmental regulations.

C. Submit field installation inspection report to manufacturer and owners representative.

D. The final AST system installation shall be inspected and approved by the supplier or its certified contractor.

3.5 SYSTEM ACTIVATION

A. Prior to activating the system perform the following procedure:

1. Flush system piping with grade of fuel to be used by owner to remove any debris and foreign matter in piping prior to filling tank for the first time.
2. Service all system filters and screens and dispose of fuel in accordance with EPA and NFPA regulations after flushing.
3. Open valves to correct position for system operation.

3.6 OPERATIONAL TRAINING

A. Perform training of owner's personnel per the materials included with the system manufacturer's installation manual. The installation shall include three (3) days of onsite training, including the exporting of space delimited reports for importing into the Owner's Versatrans software by Tyler Technologies,

B. Review local requirements for system inspection, reporting, and registration, as well as administrative paperwork requirements.

C. Review maintenance considerations such as filter replacement with owner's representative.

D. Review train on use of Universal General-Purpose Spill Kit.

3.7 ADJUSTING AND CLEANING

A. Touch-up any abraded areas with the application of same coating used for shop primer and finish. Manufacturer to include sufficient quantity of primer and finish coats for this purpose.

B. Repair or replace damaged components.

END OF SECTION 25 54 00