

**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
EQUIPMENT AND PROCUREMENT DIVISION  
BID INVITATION**

Bid Number: M-17-027P

**BID OPENING LOCATION:**  
AHTD Equipment and  
Procurement Division  
11302 West Baseline Road  
Little Rock, AR 72209

**MAIL TO:**  
AHTD Equipment and  
Procurement Division  
P.O. Box 2261  
Little Rock, AR 72203

**DELIVER TO:**  
AHTD Equipment and  
Procurement Division  
11302 West Baseline Road  
Little Rock, AR 72209

Bid Opening Date: January 24, 2017 Time: 11:00 a.m.

Sealed bids for furnishing the commodities and/or services described below, subject to the Conditions on Page 2 of this Bid Invitation will be received at the above-noted mail and delivery locations until the above-noted bid opening date and time, and then publicly opened at the above-noted bid opening location. **Bids must be submitted on this form, with attachments when appropriate, or bids will be rejected. Late bids and unsigned bids will not be considered.**

In compliance with this Bid Invitation and subject to all the Conditions thereof, the undersigned offers and agrees to furnish any and all items upon which prices are quoted, at the price set opposite each item.

Company Name: \_\_\_\_\_

Name (Type or Print): \_\_\_\_\_

Address: \_\_\_\_\_

Title: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

E-mail Address: \_\_\_\_\_

Federal Tax ID or Social Security No.: \_\_\_\_\_

**Signature:** \_\_\_\_\_

Signature must be legible, original (not photocopied) and in ink.  
Unsigned bids will be rejected.

Item No.	Description	Quantity	Unit	Unit Price	Amount
<b>FURNISH AND INSTALL FUEL PUMPS AND FUEL TANKS</b>					
1.	3000 Gallon Double Wall ACT-100 Underground Storage Tanks (UST) {Unleaded and Diesel}	2	Ea.		
2.	Suction Pumps and all Fill Systems {Unleaded and Diesel}	2	Ea.		
Concrete for tank pads and fueling areas to be handled by State Forces.					
Existing Veeder-Root Inventory Management System will be used.					
To meet the requirements of Arkansas State Highway and Transportation Department Specifications attached to and made a part of this bid.					
FOB: AHTD – Randolph County Area Headquarters, 3774 Hwy. 67 South, Pocahontas, AR					
Contact Person(s): Brad Smithee, District Engineer or Steve Leath – Assistant Maintenance Supt. at (870-239-9511)					
<b>Bid Bond</b> in the amount of 5% of total bid price required of all bidders at time of bid opening or bid will be rejected. <b><u>Personal and company checks are not acceptable as Bid Bonds.</u></b> See Condition 3 on page 2 of Bid Invitation. <b>Performance Bond only</b> (no checks of any kind allowed) in the amount of 100% of total bid price will be required of successful bidder prior to providing goods/services. See Condition 3 on page 2 of Bid Invitation.					
The successful bidder will be required to complete job within 45 days after notice to begin from District Engineer.					
Bids and Specifications are available on-line by going to the AHTD Web Site – <a href="http://www.arkansashighways.com">www.arkansashighways.com</a> and clicking on “Commodities and Services Bids/Contracts Information”. Tabulations will also be available at this site after award of bid/contract. If you have any questions, call this office at 501-569-2667.					
(40-0748)				TOTAL BID	

## STANDARD BID CONDITIONS

## M-17-027P

1. **ACCEPTANCE AND REJECTION:** The Arkansas State Highway and Transportation Department (AHTD) reserves the right to reject any or all bids, to accept bids in whole or in part (unless otherwise indicated by bidder), to waive any informalities in bids received, to accept bids on materials or equipment with variations from specifications where efficiency of operation will not be impaired, and to award bids to best serve the interest of the State.
2. **PRICES:** Unless otherwise stated in the Bid Invitation, the following will apply: (1) unit prices shall be bid, (2) prices should be stated in units of quantity specified (feet, each, lbs., etc.), (3) prices must be F.O.B. destination specified in bid, (4) prices must be firm and not subject to escalation, (5) bid must be firm for acceptance for 30 days from bid opening date. In case of errors in extension, unit prices shall govern. Discounts from bid price will not be considered in making awards.
3. **BID BONDS AND PERFORMANCE BONDS:** If required, a **Bid Bond** in the form of a cashier's check, certified check, or surety bond issued by a surety company, in an amount stated in the Bid Invitation, must accompany bid. Personal and company checks are not acceptable as Bid Bonds. Failure to submit a Bid Bond as required will cause a bid to be rejected. The Bid Bond will be forfeited as liquidated damages if the successful bidder fails to provide a required Performance Bond within the period stipulated by AHTD or fails to honor their bid. When a bidder claims and can show clear and convincing evidence that a material mistake was made in the bid and was not the bid intended, the bidder may be permitted to withdraw their bid prior to award without forfeiture of bid bond. Cashier's checks and certified checks submitted as Bid Bonds will be returned to unsuccessful bidders; surety bonds will be retained. The successful bidder will be required to furnish a **Performance Bond** in an amount stated in the Bid Invitation and in the form of a cashier's check, certified check, or surety bond issued by a surety company, unless otherwise stated in the Bid Invitation, as a guarantee of delivery of goods/services in accordance with the specifications and within the time established in the bid. Personal and company checks are not acceptable as Performance Bonds. In some cases, a cashier's check or certified check submitted as a Bid Bond will be held as the Performance Bond of the successful bidder. Cashier's checks or certified checks submitted as Performance Bonds will be refunded shortly after payment has been made to the successful bidder for completion of all terms of the bid; surety bonds will be retained. Surety bonds must be issued by a surety company authorized to do business in Arkansas, and must be signed by a Resident Local Agent licensed by the Arkansas State Insurance Commissioner to represent that surety company. Resident Agent's Power-of-Attorney must accompany the surety bond. Certain bids involving labor will require Performance Bonds in the form of surety bonds only (no checks of any kind allowed). These bonds shall not only serve to guarantee the completion of the work, but also to guarantee the excellence of both workmanship and material until the work is finally accepted and the provisions of the Plans, Specifications, and Special Provisions fulfilled. In such cases, the company issuing the surety bond must comply with all stipulations herein and must be named in the U. S. Treasury listing of companies holding Certificates of Authority as acceptable sureties on Federal Bonds and as acceptable reinsuring companies. Any excess between the face amount of the bond and the underwriting limitation of the bonding company shall be protected by reinsurance provided by an acceptable reinsuring company. Annual Bid and Performance Bonds on file with E & P Division must have sufficient unencumbered funds to meet current bonding requirements, or the bid will be rejected, unless the balance is submitted as set forth above, prior to bid opening.
4. **TAXES:** The AHTD is not exempt from Arkansas State Sales and Use Taxes, or local option city/county sales taxes, when applicable, and bidders are responsible to the State Revenue Department for such taxes. These taxes should not be included in bid prices, but where required by law, will be paid by the AHTD as an addition thereto, and should be added to the billing to the AHTD. The AHTD is exempt from Federal Excise Taxes on all commodities except motor fuels; and excise taxes should not be included in bid prices except for motor fuels. Where applicable, tax exemption certificates will be furnished by the AHTD.
5. **"ALL OR NONE" BIDS:** Bidders who wish to bid "All or None" on two or more items shall so stipulate on the face of bid sheet; otherwise, bid may be awarded on an individual item basis.
6. **SPECIFICATIONS:** Complete specifications should be attached for any substitution or alternate offered, or where amplification is necessary. Bidder's name must be placed on all attachments to the bid.
7. **EXCEPTIONS TO SPECIFICATIONS:** Any exceptions to the bid specifications must be stated in the bid. Any exceptions to manufacturer's published literature must be stated in the bid, or it will be assumed that bidder is bidding exactly as stated in the literature.
8. **BRAND NAME REFERENCES:** All brand name references in bid specifications refer to that commodity or its equivalent, unless otherwise stated in Bid Invitation. Bidder should state brand or trade name of item being bid, if such name exists.
9. **FREIGHT:** All freight charges should be included in bid price. Any change in common carrier rates authorized by the Interstate Commerce Commission will be adjusted if such change occurs after the bid opening date. Receipted common carrier bills that reflect ICC authorized rate changes must be furnished.
10. **SAMPLES, LITERATURE, DEMONSTRATIONS:** Samples and technical literature must be provided free of any charge within 14 days of AHTD request, and free demonstrations within 30 days, unless AHTD extends time. Failure to provide as requested within this period may cause bid to be rejected. Samples, literature and demonstrations must be substantially the same as the item(s) being bid, unless otherwise agreed to by AHTD. Samples that are not destroyed will be returned upon request at bidders expense. Samples from successful bidders may be retained for comparison with items actually furnished.
11. **GUARANTY:** Unless otherwise indicated in Bid Invitation, it is understood and agreed that any item offered or shipped on this bid shall be newly manufactured, latest model and design, and in first class condition; and that all containers shall be new, suitable for storage or shipment and in compliance with all applicable laws relating to construction, packaging, labeling and registration.
12. **BACKORDERS OR DELAY IN DELIVERY:** Backorders or failure to deliver within the time required may constitute default. Vendor must give written notice to the AHTD, as soon as possible, of the reason for any delay and the expected delivery date. The AHTD has the right to extend delivery if reasons appear valid. If reason or delivery date is not acceptable, vendor is in default.
13. **DEFAULT:** All commodities furnished will be subject to inspection and acceptance by AHTD after delivery. Default in promised delivery or failure to meet specifications authorizes the AHTD to cancel award or any portion of same, to reasonably purchase commodities or services elsewhere and to charge full increase, if any, in cost and handling to defaulting vendor. Applicable bonds may be forfeited.
14. **ETHICS:** *"It shall be a breach of ethical standards for a person to be retained, or to retain a person, to solicit or secure a State contract upon an agreement of understanding for a commission, percentage, brokerage, or contingent fee, except for retention of bona fide employees or bona fide established commercial selling agencies maintained by the contractor for the purpose of securing business."* (Arkansas Code, Annotated, Section 19-11-708).

# **ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT NOTICE OF NONDISCRIMINATION**

The Arkansas State Highway and Transportation Department (Department) complies with all civil rights provisions of federal statutes and related authorities that prohibit discrimination in programs and activities receiving federal financial assistance. Therefore, the Department does not discriminate on the basis of race, sex, color, age, national origin, religion (not applicable as a protected group under the Federal Motor Carrier Safety Administration Title VI Program), disability, Limited English Proficiency (LEP), or low-income status in the admission, access to and treatment in the Department's programs and activities, as well as the Department's hiring or employment practices. Complaints of alleged discrimination and inquiries regarding the Department's nondiscrimination policies may be directed to Joanna P. McFadden Section Head – EEO/DBE (ADA/504/Title VI Coordinator), P. O. Box 2261, Little Rock, AR 72203, (501)569-2298, (Voice/TTY 711), or the following email address: [joanna.mcfadden@ahtd.ar.gov](mailto:joanna.mcfadden@ahtd.ar.gov)

Free language assistance for Limited English Proficient individuals is available upon request.

This notice is available from the ADA/504/Title VI Coordinator in large print, on audiotape and in Braille.

**RANDOLPH COUNTY AREA HEADQUARTERS  
NEW FUELING SYSTEM  
POCAHONTAS ARKANSAS**

**SECTION 23 10 00 - FACILITY FUEL SYSTEMS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This Section includes gasoline-diesel-fuel distribution systems and the following:
1. Piping
  2. Valves
  3. Fuel oil UST
  4. Fuel oil UST accessories
  5. Fuel oil storage tank pumps
  6. Fuel oil tank piping specialties
  7. Leak-detection and monitoring systems, including liquid-level gage systems

**1.2 DEFINITIONS**

- A. Fuel Oil: Includes gasoline and diesel fuel for "on-road" motor vehicles
- B. The following are industry abbreviations for storage tanks:
1. UST: Underground storage tank
- C. The following are industry abbreviations for plastic piping materials:
1. PE: Polyethylene plastic
  2. PTFE: Polytetrafluoroethylene plastic
  3. RTRF: Glass-fiber-reinforced thermosetting-resin fitting
  4. RTRP: Glass-fiber-reinforced thermosetting-resin pipe

**1.3 PERFORMANCE REQUIREMENTS**

- A. Minimum test-pressure ratings for fuel oil storage tanks are the following:
1. Inner Tank, smaller than 12 foot diameter: 5psig
  2. Containment shell, smaller than 12 foot diameter: 5 psig
- B. Minimum working-pressure ratings for piping are the following, unless otherwise indicated:
1. Fuel Oil Double-Containing Piping:
    - a. Carrier-Pipe: 150 psig
    - b. Secondary-Containment Conduit: 5 psig
  2. Vent, Gage, and Fill Piping Minimum Working-Pressure Rating: 100 psig

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**1.4 SUBMITTALS**

- A. Product Data: For the following:
  - 1. Piping
  - 2. Valves
  - 3. Each type and size of fuel oil storage tank. Indicate dimensions, weights, loads, components, and location and size of each field connection.
  - 4. Fuel oil storage tank accessories
  - 5. Fuel oil storage tank pumps
  - 6. Fuel oil storage tank piping specialties
  - 7. Leak-detection and monitoring systems, including liquid-level gage systems
  - 8. Wiring diagrams: Power, signal, and control wiring
- B. Welding certificates
- C. Material certificates: For each fuel oil storage tank, signed by manufacturers
- D. Field quality-control test reports
- E. Operation and maintenance Data: For fuel oil storage tank pumps and leak-detection and monitoring systems to include in emergency, operation, and maintenance manuals
- F. Warranties: Special warranties specified in this Section

**1.5 QUALITY ASSURANCE**

- A. Product Options: Drawings indicate size, profiles, and dimensional requirements of fuel oil storage tanks and are based on specific units indicated . Refer to Division 1 Section "Product Requirements."
- B. Welding: Quality processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- D. Comply with ASME B3 1.3, "Process Piping," for fuel oil piping.
- E. Comply with NFPA 30, "Flammable and Combustible Liquids Code," for design, construction, installation, testing, and inspection of fuel oil distribution systems.
- F. Comply with requirements of the EPA and state and local environmental—protection authorities having jurisdiction. Include recording of fuel oil storage tanks and monitoring of tanks and piping.

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**1.6 DELIVERY, STORAGE, AND HANDLING**

- A. Lift and support fuel oil storage tanks only at designated lifting or supporting points, as shown on Shop Drawings. Do not move or lift tanks unless empty.
- B. Prepare fuel oil storage tanks and accessories for shipping as follows:
  - 1. Ensure that units are dry and internally protected against rust and corrosion.
  - 2. Protect fuel oil storage tank accessories and piping connections against damage.
- C. Store plastic pipes protected from direct sunlight. Support pipes to prevent sagging and bending.

**1.7 WARRANTY**

- A. Special Warranty: Manufacturers standard form in which manufacturer agrees to repair or replace components of fuel oil storage tanks that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following when used for storage of fuel oil at temperatures not exceeding 120 deg F:
    - a. Structural failure including cracking, breakup, and collapse.
    - b. Corrosion failure including external and internal corrosion of steel tanks.
  - 2. Warranty Period: 30 years from date of Substantial Completion.

**PART 2 - GENERAL**

**2.1 MANUFACTURERS**

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selections:
  - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to manufacturers specified.
  - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

**2.2 PIPES, TUBES, AND FITTINGS**

- A. Steel Pipe: ASTM A 53/A 53M, Schedule 40, Type S or E. Grade A or B, black.
  - 1. Steel Welding Fittings: ASTM A 234/A 234M, seamless or welded: ASME B 16.9, butt-welding type or ASME B 16.11, socket-welding type.
  - 2. Steel Threaded Fittings: ASME 1316.11, with threads according to ASME 131.20.1.

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3. Steel Flanges and Flanged Fittings: ASME B 16.5.
  4. Malleable-Iron Threaded Fittings: ASME B 16.3, Class 150, standard pattern, with threads according to ASME B 1.20.1.
  5. Malleable-Iron Unions: ASME Bi 6.39, Class 150. Include brass—to—iron seat, ground joint, and threads according to ASME B 1 .20.1.
- B. Flexible Double-Contained Piping: UL 971, flexible, nonmetallic, carrier pipe with flexible, nonmetallic, secondary—containment pipe, for underground applications. Include bulkhead, termination, or other end fittings as required.
1. Manufacturers:
    - a. OPW Fueling Components.
    - b. Owner Approved Equal
- C. Transition Couplings:
1. Aboveground, Fuel Oil Piping: Manufactured coupling or fitting or companion flanges same size as, with pressure rating at least equal to and ends compatible with, piping to be joined
  2. Underground, Fuel Oil Piping: Coaxial coupling which maintains integrity of both inner and outer piping systems. Couplers to be of same manufacturer as piping system. All piping joints to be made in accessible locations.
  3. Nonmetallic Connectors: For connection to underground piping or underground sumps.
- D. Flexible Metal Hoses: UL 536, with 100-psig minimum pressure rating.
1. Manufacturers:
    - a. American Flexible Hose Co., Inc.
- E. Flexible Pipe Connectors: Flexible metal hose.
1. Manufacturers:
    - a. Franklin Fueling Systems
    - b. OPW Fueling Components
    - c. Flexicraft Industries.
    - d. Flex-Pression Ltd.
    - e. Hyspan Precision Products, Inc.
    - f. Unaflex Inc.
  2. Stainless-Steel-Hose/Stainless-Steel-Pipe, Flexible Pipe Connectors: Corrugated-stainless-steel tubing with stainless-steel wire-braid covering and ends welded to inner tubing.
    - a. Working-Pressure Rating: 150 psig minimum.
    - b. End Connections NPS 2 and Smaller: Threaded stainless—steel pipe nipple.
    - c. End Connections NPS 2-1/2 and Larger: Flanged stainless-steel nipple.

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**2.3 VALVES**

- A. Forged Brass Ball Vales: MSS SP-I 10; 3-piece bolted-body: 400-psig- (2760-kPa-) minimum. WOG. nonshock, working-pressure rating. Include full-port ball; PTFE seats; lever handle; and threaded ends according to ASME BI .20.1.
- B. Ductile Iron Valves: MSS SP-80. Type 3, Class 200. Include ends threaded according to ASME BI.20.I.
- C. Brass Vertical Ball Check Valves: ASTM B 61 or ASTM B 62, 2-piece construction; and 400—psig WOG, nonshock, working-pressure rating. Include integral bronze seats, replaceable stainless-steel ball, and threaded ends according to ASME B 1.20.1
- D. UL Valves: UI. 842, listed for fuel oil service.

**2.4 FUEL OIL UST**

- A. Manufacturers:
  - 1. Hall Tank Company
- B. Description: UL 58, UL 1746 and ULC-S603.1, double—wall, horizontal, Steel with 100-mil fiberglass outer coating.
  - 1. Type: ACT-100, DOUBLE WALLED.
- C. Construction: Fabricated with welded steel: suitable for operation at atmospheric pressure and for storing liquids with specific gravity up to 1.1. Fabricate tank for the following loads:
  - 1. Depth of Bury: Minimum - 3' 7"
  - 2. External Hydrostatic Pressure: To withstand general buckling with safety factor of 2:1 if hole is fully flooded.
  - 3. Surface Loads: AASI-110's "Specifications for Highway Bridges" with axle loads of 32,000 lb.

**2.5 FUEL OIL UST ACCESSORIES**

- A. Threaded pipe connection fittings on top of tank, for fill, supply, vent, sounding, and gaging, in locations and of sizes indicated. Include cast—iron plugs for shipping. Verily locations on submittal.
- B. Striker Plates: Inside tank, on bottom below fill, vent, sounding, gage, and other tube openings.
- C. Lifting Lugs: For handling and installation.



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- D. Sounding and Gage Tubes: Extension of fitting into tank, terminating 6 inches above tank bottom and cut at a 45—degree angle (1:1 slope).
- E. Bulkhead Fittings: Two—part pipe fitting for field assembly and of size required to fit over pipe. Include gaskets shaped to fit sump sidewall. Sleeves, seals, and clamps as required for liquid tight pipe penetrations.
- F. Anchor Straps: Storage tank manufacturer’s standard anchoring system, with straps, strap-insulating material, cables and turnbuckles, of strength at least one and one—half times maximum uplift force of empty tank without backfill in place.
- G. Filter Mat: Geotextile woven or spun filter fabric, in 1 or more layers, for minimum total weight of 3 oz./sq. yd.
- H. Overfill Prevention Valves: Factory fabricated or shop or field assembled from manufacturer’s standard components. Include drop tube, cap, fill nozzle adaptor, check-valve mechanism or other devices, and vent if required to restrict flow at 90 percent of tank capacity and to provide complete shutoff of filling at 95 percent of tank capacity.

**2.6 FUEL OIL STORAGE TANK PUMPS**

- A. Description: Suction Pump
  - 1. Manufacturers:
    - a. Wayne Fueling Systems
    - b. Veeder Root/Red Jacket
- B. Controls for Pumps Supplying Diesel—Fuel—Oil Dispensers: Pump controller panel, complying with UL 353 and UL 508C and with terminals for connections to diesel-fuel-oil dispenser (s). Controller to be of same manufacturer as Pumps.
- C. Mechanical Line Leak Detectors: UL listed device made by fuel oil pump manufacturer for control and shutdown of diesel fuel oil flow during piping leaks and for installation with fuel oil pump in pump discharge piping. Select detector model appropriate for fuel oil type piping material. Include attachments and tubing.

**2.7 FUEL-OIL STORAGE TANK PIPING SPECIALTIES**

- A. Manufacturers:
  - 1. Smith Fiberglass Products Company.
- B. Fitting Materials: Cast iron. Malleable iron, brass, or corrosion—resistant metal; suitable for fuel oil service.

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1. Surface, Flush—Mounted Fittings: Waterproof and suitable for truck traffic. (H-20 rated)
  2. Aboveground—Mounted Fittings: Weatherproof.
- C. Spill—Containment Fill Boxes. Double wall with sump base, double wall polyethylene primary and secondary buckets, concrete ring, mounting ring and cover rated for H-20 traffic loads. Color coded lid for product identification.
- D. Supply and Sounding Drop Tubes: Fuel oil supply piping or lining, inside tank, terminating 6 inches above bottom of tank, and with end cut at a 45 degree angle (1:1 slope). Equipped with overflow protection as noted above.
- E. Pipe Adapters and Extensions: Compatible with piping and fittings.
- F. Extractor fitting with ball float vent valve.
- G. Pressure vacuum vent 2" w.c. pressure 8" w.c. vacuum with adaptor bushing and corrosion resistant.
- H. Manhole/tank access: 44-1/4" powder coated steel ring, galvanized steel. Skin. Composite Cover with provision to be bolted to steel ring. Rated for H-20 traffic loads.
- I. Vapor Port/Gauging Cover 16" nominal diameter. E-coat cast iron base with integral drain. Heavy duty mounting ring and H-20 rated cover. Polyethylene bellow with stainless clamps and nitrile seals for containment.

**2.8 FUEL-OIL DISPENSING SPECIALTIES**

- A. Manufacturers:
1. Wayne Fueling Systems
- B. Spill-Containment Dispenser Sump Boxes. 1 piece single wall fiberglass with steel top reinforcement and integral stabilizer bar for mounting of shear valves. UL approved.
- C. Sump Entry Fittings: Fiberglass type for Fuel piping, Neoprene type fitting for conduits with positive seal at both sump and pipe entry. Studed flange compression connection into sump and clamped connection at piping or conduit such that there are no metallic parts exposed to surrounding ground. Fitting shall be capable of accommodating up to 15° misalignment of pipe or conduit entering sump. UL approved.
- D. Emergency Shut-Off Valve: Malleable iron fusible link double poppet type valve engineered to separate on impact, shutting off flow to dispensing device. Shear groove shall be contained and valve shall be designed to activate in case of any shear groove leak. UL approved.
- E. Vapor Line Shear Valve: Malleable iron fusible poppet type valve engineered to separate on impact, allowing vent termination to break away without damage to below grade piping. UL approved.

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- F. Pressure vacuum vent 2" w.c. press 8" w.c. vac with adaptor bushing and corrosion resistant. UL approved.
- G. Fleet Suction Pump, Single Product Single Hose design. Equipped with high mounted hose mast with internal retraction mechanism, stainless steel cabinet w/ removable panels. Wayne Select model 3/G7201P/2HJ/JW is Owner Required. Requests for substitution are discouraged. UL approved.
- H. Hose Safety Break Away: 3/4" NPTF reconnect able break away device with dual valves. UL approved.
- I. Multi-Plane Swivel: (2) plane rotation capable allowing 360°rotation at dispenser nozzle and 270°rotation at hose end of device. Each swivel point shall have (2) seals and unit shall be capable of withstanding 50 PSI maximum pressure. UL approved.
- J. Fuel Dispensing Hose. NPTM ends, 12'-0" length. Synthetic rubber cover hard wall wire braid reinforcement w/ nitrile synthetic rubber inner tube. Suitable for use with gasoline, gasoline-ethanol blends (E85), diesel, and biodiesel blends (Up to B-20) UL 87A or UL 330 approved or approval pending.
- K. Dispensing Nozzle-Gasoline: 3/4" NPTF inlet pressure sensing automatic shutoff dispensing nozzle. Designed to prevent nozzle to be jammed open by foreign objects. 50 PSIG maximum working pressure UL approved. Hand insulator and anti-splash back included with color by Owner.
- L. Dispensing Nozzle- Gasoline: 1" NPTF inlet pressure sensing automatic shutoff dispensing nozzle w/ T' spout and ring retainer. Designed to prevent nozzle to be jammed open by foreign objects. 50 PSIG maximum working pressure UL approved Green hand insulator and anti-splash back included.
- M. Dispenser Island Form: Type Carbon steel island form with integral sump support and pump mounting capabilities. 16' x 4'x 13" tall with brushed finish and 1 1/4" bead rolled top edge.

**2.9 LEAK-DETECTION AND MONITORING SYSTEMS**

- A. Manufacturers:
  - 1. Veeder-Root.
- B. Description: Calibrated, leak—detection and —monitoring system and liquid—level gage system complying with UL 1238 with probes and oilier sensors and remote alarm panel with integral printer for fuel oil storage tanks and fuel oil piping.

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**2.10 SOURCE QUALITY CONTROL**

- A. Test and inspect fuel oil storage tanks, after fabrication and before shipment. according to the following:
  - 1. Horizontal. Steel USFs with the STI-P3 Corrosion—Protection System: UL 58 and STI-P3.
- B. Verification of Performance: Rate fuel oil storage tanks according to applicable standards.

**PART 3 - EXECUTION**

**3.1 PIPING APPLICATIONS**

- A. Use flanges, unions, transition and special fittings and valves with pressure ratings same as or higher than system's pressure rating in aboveground and containment sump applications, unless otherwise indicated.
- B. Underground, Fuel Oil Piping: Use the following piping materials. Size indicated is carrier-pipe size.
  - 1. All Sizes: Rigid nonmetallic piping and bonded joints.
  - 2. All Sizes: Rigid double—contained piping and bonded joints.
- C. Underground Vent Piping: Use the following piping materials for each size range:
  - 1. NPS 2 (DN 50) and Smaller: NPS 2-1/2 (DN 65) flexible double walled nonmetallic piping.
  - 2. NPS 2-1/2 to NPS 4 (DN 65 to DN 100): NPS 3 and NPS 1 (DN 80 and DN 100) rigid nonmetallic piping and bonded Joints.

**3.2 VALVE APPLICATIONS**

- A. Drawings indicate valve types to be used. Where specific valve types are not indicated, the following requirements apply:
  - 1. Shutoff Duty: Use ball valves.

**3.3 PIPING INSTALLATION**

- A. Locate groups of pipes parallel to each other, spaced to permit valve servicing.
- B. Install fittings for changes in direction and branch connections.
- C. Install underground, double-contained fill and vent piping at uniform slope downward toward fuel oil storage tank

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- D. Install reductions in pipe sizes using eccentric reducer fittings. Install fitting with level side down.
- E. Install flexible connectors at piping connections to USE.
- F. Install double—contained piping according to manufacturer’s written instructions for assembly, joining, trench preparation, and installation.
- G. Install and terminate double—contained piping at fuel oil storage tank and at dispenser sumps.
- H. All piping material changes shall take place in approved containment sumps.

**3.4 VALVE INSTALLATION**

- A. Install valves in accessible locations. Protect valves from physical damage, and install metal tag attached with metal chain indicating fuel oil piping systems.

**3.5 FUEL-OIL UST INSTALLATION**

- A. Install USTs according to manufacturer’s written instructions and standards specified.
- B. Excavate to sufficient depth for a minimum of 3 feet of earth cover from top of tank to finished grade. Allow for cast-in-place, concrete-ballast base plus 6 inches of sand or pea gravel between ballast base and tank. Extend excavation at least 12 inches around perimeter of tank.
- C. Set tie-down eyelets for hold-down straps in concrete-ballast base and tie to reinforcing steel.
- D. Place 6 inches of clean sand or pea gravel on top of concrete-ballast base.
- E. Set tank on fill materials and install hold-down straps.
- F. Install piping connections.
- G. Install tank leak-detection and -monitoring devices.
- H. Install containment sumps.
- I. Backfill excavation pea gravel or approved back fill material (crushed stone).
- J. Install filter mat between bottom of tank hole excavation and backfill material and top of backfill material and earth fill.

**3.6 CONNECTIONS**

- A. Install piping adjacent to equipment to allow service and maintenance.

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- B. Install unions, in piping NPS 2 (DN 50) and smaller, adjacent to each valve and at final connection to each piece of equipment having threaded pipe connection.
- C. Ground equipment according to NEC 2014 and manufacturers recommendations.
- D. Connect wiring according to NEC 2014 and manufacturers recommendations.

**3.7 CONCRETE BASES**

- A. Construct fuel oil storage tank concrete Deadman anchors according to tank manufacturer's setting templates for anchor—bolt and tie locations.

**3.8 LEAK-DETECTION AND MONITORING SYSTEM INSTALLATION**

- A. Install leak-detection and -monitoring systems according to manufacturer's written instructions. Install alarm panel inside building where indicated.
  - 1. Relocate Veeder-Root TLS 450 Tank Monitoring System from existing AHTD location in Pocahontas, AR
  - 2. Provide correct length Mag Probes for new tanks.
  - 3. Double-Wall Fuel Oil Storage Tanks: Provide and Install leak-detection sensors in interstitial spaces in both tanks.
  - 4. Double-Contained Fuel Oil Piping: Install leak-detection sensor in dispenser sumps.

**3.9 LABELING AND IDENTIFYING**

- A. Equipment Nameplates and Signs: Install engraved plastic—lamine equipment nameplates and signs on each AST and on equipment exposed in sumps and manholes.
  - 1. Text: In addition to identifying unit, distinguish between multiple units, inform operator of operational requirements, indicate safety and emergency precautions, and warn of hazards and improper operations.
- B. Warning Tapes: Arrange for installation of continuous underground detectable warning tape during backfilling of trenches.
  - 1. Piping: Over underground, fuel oil distribution piping.
  - 2. Fuel Oil Storage Tanks: Over edges of each UST.

**3.10 FIELD PAINTING OF ABOVEGROUND PIPING AND STRUCTURES**

- A. Paint exposed metal piping, valves, and piping specialties except units with Factory-applied paint or protective coating.

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- B. Steel Piping: Prepare surface of aboveground steel piping and apply painting systems for severe environment with semi-gloss finish for ferrous metal. Color: Manufacturer's standard color selected by Owner.

**3.11 FIELD QUALITY CONTROL**

- A. Perform field tests on underground piping and UST's before backfilling.
- B. Perform the following field tests and inspections and prepare test reports:
  - 1. Test fuel oil piping according to NFPA 30, "Piping Systems" Chapter on testing or NFPA 31, "Piping, Pumps, and Valves" Chapter on tests of piping.
  - 2. Test fuel oil storage tanks according to NFPA 30. "Tank Storage" Chapter on testing and maintenance or NFPA 31, "Tank Storage" Chapter on testing and maintenance.
  - 3. Test liquid—level gage systems for accuracy by manually measuring fuel oil levels at not less than five different depths while filling tank and checking against gage indication.
  - 4. Test leak—detection and —monitoring systems for accuracy by manually operating sensors and checking against alarm panel indication.
- C. Remove and replace units and retest as specified above.

**3.12 ADJUSTING**

- A. Adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

**3.13 DEMONSTRATION**

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to operate liquid-level gage system, leak-detection and -monitoring systems and fuel oil storage tank pumps.

**END OF SECTION 23 10 00**