NEW YORK STATE | Office of General Services

DESIGN & CONSTRUCTION GROUP
THE GOVERNOR NELSON A. ROCKEFELLER
EMPIRE STATE PLAZA
ALBANY, NY 12242

ADDENDUM NO. 2 TO PROJECT NO. 47675

CONSTRUCTION WORK
FUEL TANK MODIFICATION & ENVIRONMENTAL REMEDIATION
– CENTRAL REGION
SERVICE CONTRACT
GNARESP CORNING TOWER
ALBANY, NY 12242

May 27, 2025

NOTE: This Addendum forms a part of the Contract Documents. Insert it in the Project Manual. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

SPECIFICATIONS

1. SECTION 231313 UNDERGROUND FUEL STORAGE TANKS AND FUEL SYSTEMS: Discard the Section bound in the Project Manual and substitute the accompanying Section (pages 231313 – 1 thru 231313 – 23) noted "Printed 05/21/2025".

DRAWINGS

2. Revised Drawings:
   a. Drawing Nos. C-23, C-24, and C-25, noted "ADDENDUM NO. 2 5/22/2025" accompany this Addendum and supersede the same numbered originally issued drawings.

END OF ADDENDUM

Brady M. Sherlock, P.E.
Director, Division of Design
Design & Construction

SECTION 231313

UNDERGROUND FUEL STORAGE TANKS AND FUEL SYSTEMS

PART 1 GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

A. Liquid Fuel Piping: Section 231100.

B. Earthwork: Section 310000.

C. Transient-Voltage Suppression for Low-Voltage Electrical Power Circuits: Section 264313

1.02 UNIT PRICE WORK

A. Payment for the Work listed in the Unit Price Schedule will be made at the unit price indicated multiplied by the units of completed Work.

B. The unit prices listed below shall include all Work specified in the Division 1 General Requirements Sections.

C. Definitions for unit price items as listed in the Unit Price Schedule in Document 004143:

1. **Item Nos. 231313.01 thru 231313.06 – ACT-100-U Jacketed Secondary Containment Tank Assembly (1,000-10,000 gallon size Inclusive):** Payment for this Work shall be made at the Contract unit price per tank. The unit price includes the Work required to provide the following:
   a. ACT-100-U Jacketed secondary containment tank.
   b. Hold-down straps and anchor bolts.
   c. Tank identification.
   d. Reverse flanged manway.
   e. Tank accessory package consisting of tank fill assembly, nameplate and holder, padlock, stickgage and manhole for leak monitoring system.
   f. Final leak testing.
2. **Item Nos. 231313.07 thru 231313.12 - Double Wall Fiberglass Tank Assembly (1,000-10,000 gallon size Inclusive):** Payment for this Work shall be made at the Contract unit price per tank. The unit price includes the Work required to provide the following:
   a. Double wall fiberglass tank.
   b. Hold-down straps and anchor bolts.
   c. Tank identification.
   d. Flanged manway with attached collar riser/containment sump(s) with water tight lid.

e. Tank accessory package consisting of tank fill assembly, nameplate and holder, padlock, stickgage and manhole for leak monitoring system.
f. Final leak testing.

3. **Item No. 231313.13 – Unleaded Gasoline Tank Installation Package:** Payment for this Work will be at the Contract unit price per package. The unit price includes the Work to provide the following:
   a. Vent cap.
   b. Stage I vapor recovery system consisting of spill containment assembly, extractor fitting, cap and adapter.
   c. Manual shutoff valve.

5. **Item No. 231313.14 –Diesel Motor Fuel Tank Installation Package:** Payment for this Work will be at the Contract unit price per package. The unit price includes the Work required to provide the following:
   a. Vent cap.
   b. Manual shutoff valve.

6. **Item No. 231313.15 – Fuel Oil or Diesel Generator Tank Installation Package**: Payment for this Work will be at the Contract unit price per package. The unit price includes the Work required to provide the following:
   a. Vent cap.
   b. Foot valve extractor assembly.
   c. Locking cap with adapter.
   d. Riser.
   e. Manual shutoff valve.
   f. Combination Fusible plug and shutoff valve.
   g. Oil filter.

7. **Item No. 231313.16 – Tank Gaging, Leak and Overfill Monitor System:** Payment for this Work will be at the Contract unit price per package. The unit price includes the Work required to provide the following:
   a. Alarm monitor panel.
   b. Leak sensors and magnetostrictive gage probe.
   c. Instrument control cables
   d. Overfill alarm device and sign.
   e. Printer (If printer is thermal type, include 6 rolls of thermal paper).
   f. Heavy duty surge protection and uninterruptible power supply
   g. Initial testing and debugging.
   h. Service of Company Field Advisor for a minimum of 8 hours.

8. **Item No. 231313.17 – Remote Tank Gaging, Leak and Overfill Monitor System:** Payment for this Work will be at the Contract unit price per package. The unit price includes the Work required to provide the following:
   a. Remote alarm monitor panel.
   b. Instrument control cables
   c. Heavy duty surge protection and uninterruptible power supply
   d. Initial testing and debugging.
   e. Service of Company Field Advisor for a minimum of 8 hours.

9. **Item No. 231313.18 - Instrumentation Package for an Additional Tank:** Payment for this Work will be at the Contract unit price per tank. The unit price includes the Work required to provide the following:
   a. Leak sensors and magnetostrictive gage probe.
   b. Instrument control cables.
   c. Initial testing and "debugging".
   d. Required connections to Alarm Monitor Panel specified in Item 231313.16 above, or to an existing panel.
10. **Item No. 231313.19 – Containment Sumps for Jacketed Secondary Containment Tanks:** Payment for this Work will be made at the Contract unit price per sump. The unit price includes the Work required to provide the following:
   a. Fiberglass containment sump and watertight lid.
   b. Manway mounting kit.
   c. Sump wall seal assemblies.
11. **Item No. 231313.20 – Flush Mount Watertight Access Lid Assembly**: Payment for this Work will be made at the Contract unit price per assembly. The unit price includes the Work required to provide the following:
   a. Flush mount watertight access lid assembly.
12. **Item No. 231313.21 - Single Hose Unleaded Gasoline Dispenser:** Payment for this Work will be made at the Contract unit price per dispenser. The unit price includes the Work required to provide the following:
   a. Single hose, single pump dispenser with illuminated product panel and register area, pulser, and high hose retractor.
   b. Dispenser sump.
   c. Sump leak sensor.
   d. Warning sign.
   e. Emergency Shut-Off Switch location sign. (See drawing C-33).
   f. Hose Assembly: Unleaded gasoline nozzle, reusable dry breakaway fitting, and (1) five-foot length and (1) ten-foot length of 3/4 inch dia. hose with swivel on each end.
13. **Item No. 231313.22 - Single Hose Diesel Dispenser**: Payment for this Work will be made at the Contract unit price per dispenser. The unit price includes the Work required to provide the following:
   a. Single hose, single pump dispenser with illuminated product panel and register area, pulser, and high hose retractor
   b. Dispenser sump.
   c. Leak sensor.
   d. Hose Assembly: One inch dia., (2) nine-foot lengths of hose (18' total) with swivel fittings on each end, reusable dry breakaway fitting, and diesel nozzle.
   e. Warning sign.
   f. Emergency Shut-Off Switch location sign. (See drawing C-33).
16. **Item No. 231313.23 – Dual Hose/Single Pump Diesel Dispenser:** Payment for this Work will be made at the Contract unit price per dispenser. The unit price includes the Work required to provide the following:
   a. Dual hose, single pump dispenser with illuminated product panel and register area, pulser, and high hose retractor

b. Dispenser sump.
c. Leak sensor.
d. (2) Hose Assemblies: One inch dia., (2) nine-foot lengths of hose (18' total) with swivel fittings on each end, reusable dry breakaway fitting, and diesel nozzle.
e. Warning sign.
f. Emergency Shut-Off Switch location sign. (See drawing C-33).

17. **Item No. 231313.24 – Dual Hose/Dual Pump Diesel Dispenser:** Payment for this Work will be made at the Contract unit price per dispenser. The unit price includes the Work required to provide the following:
    a. Dual hose, dual pump dispenser with illuminated product panel and register area, pulser, and high hose retractor
    b. Dispenser sump.
    c. Leak sensor.
    d. (2) Hose Assemblies: One inch dia., (2) nine-foot lengths of hose (18' total) with swivel fittings on each end, reusable dry breakaway fitting, and diesel nozzle.
    e. Warning sign.
    f. Emergency Shut-Off Switch location sign. (See drawing C-33).
18. **Item No. 231313.25 thru 231313.26 – Fuel Management System (Type A and Type B):** Payment for the Work will be made at the Contract unit price per system. The unit price includes the Work required to provide the following:
    a. Stand alone, magnetic strip card, key or keyless activated, self-contained, island mounted type system with heavy duty surge protection and uninterruptible power supply as specified in Article 2.14 of this section.
    b. Initial system testing, and debugging.
    c. Connection to facility designated computer by network cable, as specified in Subparagraph 2.15.A.1 of this section.
    d. Computer, monitor and printer including setup and training for keying and coding as specified in subparagraph 2.15 of this section.
    e. Service of Company Field Advisor for minimum of 8 hours.
19. **Item No. 231313.27 thru 231313.30 – Concrete Deadmen Anchoring System (for 4', 6', 8', and 10' diameter tanks):** Payment for the Work will be made at the Contract unit price per system. The unit price includes the Work required to provide the following:
    a. Pair of prefabricated concrete deadmen with anchor points.
    b. Placement and installation on level surface.
    c. Additional hold-down straps and turnbuckles beyond what is required in the Underground Storage Tank line item.

1.03 REFERENCES

A. NFPA 30 - Flammable and Combustible Liquids Code.

B. NFPA 30A - Automotive and Marine Service Station Code.

C. NFPA 31 - Oil Burning Equipment.

D. NFPA 70 - National Electric Code.

E. NFPA 110 – Standards for Emergency and Standby Power Systems.

F. API 1615 - Installation of Underground Liquid Storage Systems.

G. Underwriter's Laboratories (UL).

H. ETL Testing Laboratories (ETL).

I. Steel Tank Institute (STI).

J. Factory Mutual Engineering and Research (FM).

K. NYS Department of Environmental Conservation Regulations.

L. US Environmental Protection Agency Regulations.

1.04 DEFINITIONS

A. Fuel System for No. 2 Fuel Oil: Fuel storage tank including corrosion prevention (steel tanks only), leak containment and detection for tank and underground piping, overfill prevention, high level alarm, gage system, and required accessories to connect to fuel burning apparatus.

B. Motor Fuel Dispensing System: Fuel storage tank including corrosion protection (steel tanks only), leak containment and detection for tank and underground piping, overfill prevention, high level alarm, gage system, dispenser, optional automated fuel management system, and automated fire extinguishing system with manual backup operation (unleaded gasoline systems only).

C. Fuel System for Diesel-Generators: Fuel storage tank including corrosion prevention (steel tanks only), leak containment and detection for tank and underground piping, overfill prevention, high level alarm, gage system, and required accessories to connect to diesel-alternator or day tank.

1.05 SUBMITTALS

A. Waiver of Submittals: The "Waiver of Certain Submittal Requirements" in Section 013300 does not apply to this Section.

B. Submittals Package: Submit the Product Data, and Quality Control Submittals specified below at the same time as a package.

C. Product Data: Catalog sheets, specifications, illustrations, wiring diagrams, CARB Stamp (where applicable), and installation instructions for each item specified for each type of system.

D. Quality Control Submittals:

1. Tank Installation Contractor's Qualifications Data:
    a. Name of Contractor, business address and telephone number.
    b. Names and addresses of 3 similar projects that the Contractor has worked on during the past 5 years.
2. Pipe Installer's Qualifications Data:
    a. Name of each person who will be performing the Work and their employer's name, business address and telephone number.
    b. Names and addresses of 3 similar projects that each person has worked on during the past 5 years.
    c. Copy of certification from pipe manufacturer(s).
3. Company Field Advisor Data: Include:
    a. Name, business address and telephone number of Company Field Advisor secured for the required services.
    b. Certified statement from the Company listing the qualifications of the Company Field Advisor.
    c. Services and each product for which authorization is given by the Company, listed specifically for this project.
4. Factory Test Certificate: For each fuel storage tank.
5. Final test procedure documentation.

1.06 WORK ORDER CLOSEOUT SUBMITTALS

A. Work Order Closeout Submittals: Submit the following to the Director's Representative at substantial completion of each work order:
1. Operation and Maintenance Data.
2. Warranty: Copy of specified warranty.
3. Tank Manufacturer Installation Check List.
4. Spare parts and special tools.
5. As-built drawings including fire suppression shop drawings.
6. Installers certification statement.
7. Completed Manufacturers installation checklist.

1.07 QUALITY ASSURANCE

A. Qualifications:
1. Tank Installation Contractor: The firm performing the Work of this Section shall have been regularly engaged in the installation and maintenance of underground fuel storage tanks for a minimum of 5 years, and shall have completed 3 similar projects.
2. Pipe Installer: Individual with minimum 5 years experience in installing fuel piping, have worked 3 similar projects, and shall be certified by pipe manufacturer of the type of pipe being installed.

B. Listings: Components of the system(s) for which Underwriters' Laboratories, Inc. (UL) provides product listing service, shall be listed and bear the listing mark.

C. Regulatory Requirements:
1. Systems for storing No. 2 fuel oil and diesel fuel for diesel-generators shall comply with the applicable requirements of UL 58, NFPA 30, NFPA 31, and NFPA 110.

2. Systems for storing diesel fuel or unleaded gasoline for motor fuel dispensing systems shall comply with the applicable requirements of UL 58, NFPA 30 and NFPA 30A.
3. New York State Department of Environmental Conservation Bulk Storage Regulations 6 NYCRR Part 613.
4. New York State Department of Environmental Conservation Petroleum and Volatile Organic Liquid Storage and Transfer 6 NYCRR Part 229.
5. New York State Department of Environmental Conservation Dispensing Site and Transport Vehicles 6 NYCRR Part 230.
6. Stage I vapor recovery systems shall be certified by the California Air Resources Board (C.A.R.B.).

D. Company Field Advisor:
1. Secure the services of a Company Field Advisor of the manufacturer of the leak and overfill monitoring system for a minimum of 8 hours for the following:
   a. Inspect installation and witness initial startup of system.
   b. Train facility personnel in the operation and maintenance of the system (minimum of two 2 hour training sessions. Schedule training sessions with the Director's Representative.
2. Secure the services of a Company Field Advisor of the manufacturer of the fuel management system for a minimum of 8 hours for the following:
   a. Inspect installation and witness initial startup of system.
   b. Train facility personnel in the operation and maintenance of the system (minimum of two 2 hour training sessions. Schedule training sessions with the Director's Representative.

1.08 WARRANTY

A. Double Wall ACT 100-U Tanks: Ten year manufacturer's warranty with additional 30 year extended warranty for each tank for internal and external corrosion.

B. Fiberglass Tanks: Thirty year manufacturer's warranty for each tank.

1.09 MAINTENANCE

A. Spare Parts:
1. Two keys for each padlock.

B. Special Tools:
1. One stick gage and two calibration charts for each fuel tank.
2. Two tools for each type and size vandal resistant fastener.
3. Two lifting arms for composite type manhole frames and lids.

PART 2 PRODUCTS

2.01 DOUBLE WALL ACT 100-U TANKS

A. Features:
   1. Underground storage tank with a steel primary (internal) tank completely surrounded (full 360 degrees, 100 percent of Volume) by a steel secondary (external) tank complete with 70 mil polyurethane coating.
   2. Interstitial space between the primary and secondary tank walls to allow for the free flow and containment of all leaked product from the primary tank, and the insertion of a monitoring device at the bottom of the secondary tank.
      a. Ship tanks to the work site with interstitial space pulled with a 20 inch hg vacuum to protect tank from condensation and corrosion.

B. Design Criteria: UL labeled for underground service in accordance with UL-58 (Type I) Construction Standard for Underground Tanks, UL-1746 Part II and IV for external corrosion protection, ACT-100-U.

C. Construction:
   1. Primary Steel Tank: Class A mild open hearth, or basic oxygen steel.
      a. Manufacturer Factory Pressure Test: Air test before installing secondary tank; prove tight under test pressures recommended by tank manufacturer.
   2. Secondary Steel Tank: Class A mild open hearth, or basic oxygen steel.
      a. Manufacturer Factory Vacuum Test: 20 inch hg for one hour.
      b. Secondary tank outer shell shall be separate from the inner primary containment tank, but in direct contact with the primary tank: where the inner tank is completely contained within the outer steel wall.
   3. Coating: Minimum 70 mil thick multi-component polyurethane with high cross link density.
      a. Complete integrity of the coating system is assured by a 10,000 volt minimum spark test performed over the entire surface at manufacturer's plant.
   4. Head Design: Flat type.
   5. Manway:
      a. Above liquid level type with reversed flange with double bolt ring mounting, and 24 inch minimum inside diameter. Provide one manway on tanks.
         1) Required Ring Pattens:
         a) One ring pattern for mounting cover plate.
         b) One ring pattern for mounting containment chamber.
      b. Bolted cover with UL listed gasket, and welded threaded openings of number and sizes required. Secure nuts or heads of bolts to underside of flange.
      c. Protect threads on bolts during transit and installation.
   6. Containment Sump Mounting Ring: Sized to accept 45 inch fiberglass containment sump, and as available by tank size.

7. Surface Preparation: Prepare exterior surface areas of the tank to a SSPC-SP 6/NACE No. 3 Commercial Blast Cleaning as required by manufacturer's UL listing.
8. Electric Isolation: UL approved dielectric nylon reducing bushings or flange isolation kits shall be used in each tank opening in order to isolate the tank from connecting steel pipes to prevent stray currents from entering the tank through the piping system.
9. Impact Plates:
   a. Under Manway: 24 x24 x 1/4 inch thick steel.
   b. Under Threaded Fittings: 12 x 12 x 1/4 inch thick steel
10. Strap Isolation Liner for Metallic Straps (Between Tank and Hold-Down Strap): Neoprene.

D. Tank Hold-Down Device:
1. Hold-Down Strap (By Tank Manufacturer):
   a. Polyester Straps (Tanks 10 ft dia. and smaller): Fabricated from 100 percent polyester webbing with reinforced loop on both ends with clamps and turnbuckles for connecting to concrete anchors.
      1) Strap width dependent on tank diameter and as recommended by tank manufacturer.
2. Anchor Bolt: Type 304 stainless steel (ASTM A 276), same diameter as the strap end rods and threaded on both ends; one end to fit the turnbuckle and the other end fitted with a 1/4 x 4 inch square Type 304 stainless steel plate (ASTM A 666), Type 304 stainless steel structural nut and washer. Length as required for proper anchoring.

E. Tank Identification: Permanent stencils, labels, or plates mounted on tanks, and include the following information:
1. Manufacturer's statement that tank conforms with Bulk Storage Regulation 6 NYCRR Part 613.
2. Standards of Design by which tank was manufactured.
3. List of products and additives which may be permanently stored in tank.
4. Year in which tank was manufactured.
5. Unique identification number.
6. Dimensions, working capacity, and tank model number.
7. Name of tank manufacturer and installer.
8. Date of tank installation.

2.02 FIBERGLASS FUEL STORAGE TANKS

A. Features:
1. Double wall fiberglass reinforced plastic (FRP) underground storage tanks with a primary (internal) tank and a secondary (external) tank.
2. Interstitial space between the primary and secondary tank walls to allow for the free flow and containment of all leaked product from the primary tank, and the insertion of a monitoring device at bottom of secondary tank.

B. Design Criteria:
   1. UL labeled for underground service in accordance with UL-1316 Construction Standard for Glass-Fiber-Reinforced Plastic Underground Storage Tanks.
   2. Internal Load: Primary and secondary tanks shall withstand air pressure test as recommended by tank manufacturer. Maximum test pressure as recommended by tank manufacturer.
   3. Internal and external tanks shall be factory vacuum tested to assure structural integrity.
   4. Surface Loads: H-20 axles loads when properly installed according to current manufacturer's installation instructions.
   5. External Hydrostatic Pressure: 7 feet of overburden with the hole fully flooded.
   6. Tanks capable of supporting accessory equipment such as drop tubes, submersible pumps and ladders when installed according to tank manufacturer's recommendations and limitations.
   7. Vent primary and secondary tanks to atmospheric pressure. The tanks are not designed as pressure vessels.

C. Product Storage:
   1. Tanks capable of storing gasoline, gasohol, 100 percent ethanol or methanol, jet fuel, diesel fuel, AV gas, kerosene, and potable water at ambient underground temperature, fuel oil at temperatures not to exceed 150 degrees F, and fuels with a specific gravity up to 1.1.

D. Construction:
   1. Materials (Primary and Secondary Tanks): Isophthalic polyester resin and glass fiber reinforcement.
   2. Manway:
      a. Above liquid level type with 22 inch minimum inside diameter. Provide one manway on tanks.
      b. Bolted cover with UL listed gasket and welded threaded openings of number and sizes required. Secure nuts or heads of bolts to underside of flange.
      c. Protect threads on bolts during transit and installation.
   3. Containment Sump Mounting Collar: Sized to accept 42-inch fiberglass containment sump.
   4. Monitor Fittings: 4-inch NPT fitting.
   5. Gage/Deflector Plates (Under Manways and Fitting Openings): Steel.

E. Containment Sump: Round type with watertight lids, 42 inch dia., by fiberglass tank manufacturer.
   1. Construction: Same material as tank.
   2. Bonding Kit: As recommended by fiberglass tank manufacturer.

F. Tank Hold-Down Device:
   1. Hold-Down Strap (By Tank Manufacturer): Fiberglass reinforced plastic, preshaped to fit the tank contour. The quantity and location of hold down straps shall be as recommended by tank manufacturer.
   2. Eye Bolt: Cadmium plated ASTM A 36 steel, eye on one end, and the other threaded and fitted with a l/4" x 4" square steel plate, structural nut

and washer. Rod length as required for proper anchoring into the concrete mat.

3. Wire Rope: Improved plow steel, 6 x 19 strand, galvanized, fiber core, minimum tensile strength 12500 pounds.
4. Wire Rope Clamps: Cadmium plated for corrosion resistance.

G. Tank Identification: Permanent stencils, labels, or plates mounted on tanks, and include the following information:

1. Manufacturer's statement that tank conforms with Bulk Storage Regulation 6 NYCRR Part 613.
2. Standard of Design by which tank was manufactured.
3. List of products and additives which may be permanently stored in tank.
4. Year in which tank was manufactured.
5. Unique identification number.
6. Dimensions, design, working capacity, and tank model number.
7. Name of tank manufacturer and installer.
8. Date of tank installation.

H. Flanged Manway: One required.

1. Ring Pattern (Tanks with Mounting Collar): One ring pattern for mounting cover plate.

2.03 CONTAINMENT SUMP ASSEMBLY FOR ACT-100U TANKS

A. Fiberglass Containment Chamber (watertight): TSDF-4536 by OPW Pices, or Franklin T48360/0.

1. Minimum I.D.: 45 inches.
2. Watertight cover lid.
3. Manway Mounting Kit: Resin kit; OPW RK-5000.
4. Entry Fitting and Test Boot with Air Stem: OPW Pisces PTB, or APT MD Series (entry boots) and STB Series (test boots).
5. Containment chamber shall seal watertight to the tank and secondary containment system.

2.04 FLUSH MOUNT WATERTIGHT ACCESS LID ASSEMBLY (AT GRADE)

A. Acceptable Manufacturers:

a. EBW Safe-Lite FRC Slide Action.
b. OPW Conquistador.
c. Fibrelite.

B. Cover: Fiber reinforced composite type complying with DOT H-20 load requirements, and identified with API color coding, and fuel identification plate, minimum 44 inch dia.

C. Skirt: 1/4 inch rolled steel angle iron ring welded to 14 gage steel skirt with galvaneel finish, and provisions to secure cover to skirt ring with vandal resistant fasteners.

D. Slide Action Handle: Allows cover removal from a standing position.

2.05 TANK ACCESSORY PACKAGE

A. Tank Fill Assembly:
   1. Top Seal Fill Pipe Cap: OPW 634-TT, Franklin 777-201-01.
   2. Top Seal Fill Pipe Swivel Adapter: CARB/EVR approved; OPW61SALP-1020-EVR, or Franklin SWF-100-B.
   3. Below Grade Spill Containment Assembly: EBW 715-474-01 Flex Catch, or OPW 101BG-2115C.
      a. Size: 15 gallon.
      b. Cover: Waterproof, hinged, locking type.
      c. Shell: Durable polyethylene, or fiberglass shell with cast iron base.
      d. Cover Lid Manhole: Plastic or steel skirt with composite manhole cover complying with DOT H-20 load requirements.
      e. Drain valve.

B. Fill Limiting Valve:
   1. Morrison Bros. 9095AA (includes adapter), Franklin Fueling Auto Limiter II, or OPW 71SO.
      a. Drop tube required.
      b. Adapter: OPW 633T, Morrison Bros. 305 or Franklin Fueling 774.
      c. Cap: OPW 634TT, Morrison Bros. 305C or Franklin Fueling 778.

C. Nameplate Holders: Corrosion resistant steel plates and straps (4 inch) with vandal resistant fasteners; OPW 107, or EBW 787.

D. Fill Port Nameplate:
   1. Construction: Minimum 1/8 inch thick two color laminated plastic engravers stock with the following items engraved in contrasting symbol and background colors conforming to the American Petroleum Institute (API) color coding for the particular fuel type, and consistent with facility fuel supplier's marking.
      1. Manufacturer's statement that tank conforms with Bulk Storage Regulation 6 NYCRR Part 614.
      2. Standard of Design by which tank was manufactured.
      3. List of products and additives which may be permanently stored in tank.
      4. Year in which tank was manufactured.
      5. Unique identification number.
      6. Dimensions, design, working capacity, and tank model number.
      7. Name of tank manufacturer.
      8. Date of tank installation.
      9. API color symbol.
      10. Installers name.

E. Padlock: Bronze, Master Lock 911-DKA.
   1. Key all locks alike.

F. Stick Gage: Hardwood, calibrated in 1/8 inch increments.

G. Manhole for Leak Monitor System: H-20 loading, 18 inch dia cast iron body, minimum 18 inch steel skirt and cover secured with minimum of 2 cap screws; OPW 6110-18WT, Morrison Bros. 418TM (18 inch dia.), or EBW MW-1800.

H. Test Valve: 200 psig WOG, bronze body, screwed end, gate or ball valve; Morrison Bros. 691, or OPW 21BV.

2.06 UNLEADED GASOLINE TANK INSTALLATION PACKAGE

A. Vent (Unleaded Gasoline Tanks): Composite body, pressure-vacuum vent type, CARB and EVR certified, designed to direct vapors upward. Fitting relief valve shall be set for 3 inches water column pressure and 8 inches water column vacuum; OPW 623V, EBW 802, or Morrison Bros. 749.

B. Stage I Vapor Recovery System: Certified by California Air Resources Board (C.A.R.B.). (Client usage over 120,000 gallons per year as per 6 NYCRR Part 230 requirements)
   1. Below Grade Spill Containment Assembly: EBW 705-474-01 Flex Catch, or OPW 101BG-2100.
      a. Size: 5 gallon.
      b. Cover: Waterproof, hinged, locking type.
      c. Shell: Durable polyethylene shell with plastic or cast iron base.
      d. Cover Lid Manhole: Plastic or steel skirt with composite manhole cover complying with DOT H-20 load requirements.
      e. Drain valve.
   2. Extractor Fitting (for tank testing): Universal V421, OPW 233, EBW 300 Series, or Morrison Bros. 560.
   3. Cap: EVR certified; OPW 1711T-7085-EVR, or EBW 304 Series.
   4. Adapter: EVR certified; OPW 61VSA-1020-EVR, or Franklin SWV-101-B.

C. Manual Shutoff Valve: Steel ball valve, 1 1/2 inch size, Jomar T-SS-2000N, or Morrison Bros. 691BSS (stainless steel).

2.07 DIESEL MOTOR FUEL TANK INSTALLATION PACKAGE

A. Vents (Diesel Motor Fuel Tanks): Aluminum body and cover, open type 30 or 40 mesh brass screen, and rain shield, designed to direct vapors upward; OPW 23; EMCO Wheaton A4103, Morrison Bros. 354, or EBW 800 series.

B. Manual Shutoff Valve: Brass, full port ball valve, 1 1/2 inch size, Jomar T-100NE, or Morrison Bros. 691B.

2.08 FUEL OIL OR GENERATOR TANK INSTALLATION PACKAGE

A. Vents (No. 2 Fuel Oil and Diesel Fuel Tanks): Aluminum body and cover, open type 30 or 40 mesh brass screen. Fitting designed to direct vapors upward, OPW 23; EMCO Wheaton A4103, Morrison Bros. 354, or EBW 800 series

B. Foot Valve Extractor Assembly:
   1. Pipe Cap: Die cast zinc, steel cross bar, (4 inch), OPW 116, Morrison Bros. 578, or EBW 320 series.
   2. Foot Valve: Double poppet type with bronze body and poppet, metal to metal seat, 20 or 24 mesh galvanized brass screen, and extension legs; Morrison Bros. 335A, or EBW 50 thru 201 series.
   3. Extractor Fitting: Cast iron body with bronze cap; OPW 233, Morrison Bros. 560, or EBW 320 series.

C. Locking Pipe Cap with Adapter (Fuel Oil and Diesel Fuel for Diesel Generators): Cast iron collar and cap with buna gasket (3 inch); OPW 634TE-7085 cap with OPW 633T-8076 adapter, Morrison Bros. 178 cap with Morrison Bros. 305 adapter, or EBW 779-200-01 cap with 778-302-01 adapter.

D. Riser: Standard weight black steel pipe with 150 lb. rated black steel fittings, and threaded joints with thread sealant.

E. Manual Shutoff Valve: Brass, full port ball valve, 1 inch size, Jomar T-100NE, or Morrison Bros. 691B.

F. Combination Fusible Plug and Shut Off Valve: Bronze body globe valve with threaded ends, spring and replaceable fusible element which melts at 165 degrees F; Preferred Utilities Fusomatic Valve, or Morrison Bros. 939.

G. Oil Filter: Cast iron body with threaded ends, clamped cover and handle, brass bracket strainer with 3/64 inch perforations, and designed for 150 psig maximum working pressure; Preferred Utilities 72.

H. Anti-Siphon Valve: Epoxy coated ductile iron body with brass cap and seat, and viton disc; Morrison Model 910, Morrison 912 (Stainless Steel).
   1. Used when supply line is below liquid level of tank.

2.09 DISPENSER SUMP

A. Type: One piece with stabilizer bar kits for shear valves, and rain lip; OPW DS Series, or APT LM Series.

2.10 EMERGENCY FUEL SHUTOFF VALVE

A. Type: Double poppet valve, normally open, designed to automatically shut down fuel delivery to the pump upon impact or in the event of fire;
   1. Fusible Link Melting Temperature: 160 degrees F.
   2. Acceptable Valves: Universal Valve 521, EMCO Wheaton A60-003, EBW 662, or OPW 10BFP5726.

2.11 SUCTION PUMP DISPENSERS

A. Full Size Suction Pump Dispensers: Pad mounted.
   1. Types:
      a. Single Hose, Single Product Type: Wayne G6201P/27AGJK/AJS with hose with swivel fittings on each

end, breakaway fitting, illuminated product panel and register area, pulser, and high hose retractor; 115/230 V ac.

b. Dual Hose, Single Product Type: Wayne G6202P/27AGJK/AJS with hose with swivel fittings on each end, breakaway fitting, illuminated product panel and register area, pulser, and high hose retractor; 115/230 V ac.

C. Dual Hose, Dual Product Type: Wayne G6203P/27AGJK/AJS with hose with swivel fittings on each end, breakaway fitting, illuminated product panel and register area, pulser, and high hose retractor; 115/230 V ac.

2. Mounting Bracket: Approved by tank manufacturer for mounting the suction pump dispenser to the pad.

3. Hose Mast Kit: Wayne Option "J". Prevents hose from touching the concrete and out of the fueling lane when the nozzle is hung in its housing.

4. Cabinet and Frame:
   a. All stainless steel construction.

5. Pumping Unit: Positive displacement, self priming, gear type with integral centrifugal air separator, adjustable bypass valve, suction strainers at inlet connection, and 1 hp continuous duty motor with thermal overload protection.

6. Dispenser Accessories:
   a. Totalizer.
   b. Double swivel fitting.
   c. Whip hose.
   d. Pulser.
   e. Fuel Filters: As manufactured by Cim-Tek for required fuel type and environmental conditions.
   f. Balance Adapter
   g. Hose Mast Assembly: Wayne 889918-001.

B. Hose and Nozzle Assemblies:
   1. Unleaded Gasoline Hose and Nozzle Assembly:
      a. Nozzle: OPW 11AP, Husky 1A
      b. Breakaway Coupling: Dry reusable type; Husky 3360, or EBW 697.
      c. Hose: 3/4 inch dia, minimum 15 feet long (One 5 foot hose and One 10 foot hose).
   2. Diesel Fuel Hose and Nozzle Assemblies:
      a. Nozzle: OPW 7H, Husky 1HS
      b. Breakaway Coupling: Dry reusable type; Husky 2776, EBW 797, or OPW 66RB.
      c. Hose: 1 inch dia, maximum 18 feet required (Two 9 foot hoses).

C. Warning Sign: Dispenser area mounted, as required per local fire code; with the following text:
   "1. NO SMOKING.
   2. SHUT OFF MOTOR.
   3. DISCHARGE YOUR STATIC ELECTRICITY BEFORE FUELING BY TOUCHING A METAL SURFACE AWAY FROM THE NOZZLE.

4. TO PREVENT STATIC CHARGE, DO NOT REENTER YOUR VEHICLE WHILE GASOLINE IS PUMPING.
5. IF A FIRE STARTS, DO NOT REMOVE NOZZLE – BACK AWAY IMMEDIATELY.
6. IT IS UNLAWFUL AND DANGEROUS TO DISPENSE GASOLINE INTO UNAPPROVED CONTAINERS.
7. NO FILLING OF PORTABLE CONTAINERS IN OR ON A MOTOR VEHICLE. PLACE CONTAINER ON GROUND BEFORE FILLING.
8. TURN OFF HANDHELD ELECTRICAL DEVICES BEFORE DISPENSING FUEL.
9. REMAIN WITH THE VEHICLE WHILE FUELING."

D. Emergency Procedures Sign: Dispenser area mounted, as required per local fire code; with the following text:
"INCASE OF FIRE, SPILL OR RELEASE
1. USE EMERGENCY PUMP SHUTOFF.
2. REPORT THE ACCIDENT!
FIRE DEPARTMENT TELEPHONE NO. – (local number entered here).
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION SPILL HOTLINE NO. (Current NYS DEC number entered here).
FACILITY ADDRESS_____ (Street address and name entered here)."

E. Emergency Fuel Shutoff Sign
1. Distinctly label "EMERGENCY FUEL SHUTOFF".
2. Provide in accordance with New York State Fire Code Section 2303.2.
3. Provide sign on dispenser indicating Emergency Fuel Shutoff Switch Location.

2.12 TANK GAGING, LEAK AND OVERFILL MONITOR SYSTEM

A. Acceptable Companies:
1. Veeder Root Inc., Simsbury, CT, (800) 873-3313.
2. OMNTEC/Electro Levels Mfg. Co., Ronkonkoma, NY, (516) 467-5787.

B. Type: Continuous operation tank gaging, leak detection and overfill monitor system for double wall storage tanks, double wall product piping, and containment sumps.
1. Systems shall have system test capability, and shall be UL listed and/or FM approved.

C. Alarm Monitor Panels: Locate panel inside nearest appropriate building as directed by Director's Representative.

1. The alarm panel shall visually indicate the following:
a. Status of each tank's interstitial space.
b. Status of each containment system.
c. Status of high level sensor set at 95 percent of tank operating capacity (on or off). When sensor is tripped, audio alarm shall be activated and be audible at fill port location.

D. Non Discriminating Leak Sensors:
   1. Detects leaks in the following:
      a. Interstitial space between tank walls.
      b. Piping system which drains into containment sump.
   2. Sensors: Non discriminating type not sensitive to condensation forming on the sensor surface, or dripping across the sensor surface.

E. Magnetostrictive Gage Probe:
   1. Includes temperature sensors, and both product and water floats capable of sensing product level to nearest 0.001 inch.
   2. Upon demand, the system shall indicate water level, product level, and average product temperature.
   3. System shall sense and alarm leakage rates greater than 0.2 gal/hr.

F. Instrumentation Control Cable: Connect probe and sensor to alarm monitor panel, as recommended by manufacturer of leak and overfill monitor system.

G. Audible Overfill Alarm Device: Weatherproof, surface mounted basic grille type, 120 V ac as manufactured by tank gaging, leak detection and overfill monitor system manufacturer.

H. Overfill Alarm Device Sign: Constructed of 1/8 inch thick two color laminated plastic engravers stock, with the words “OVERFILL ALARM DEVICE” engraved in white on red background. Size sign and lettering for easy reading from ground level.

I. Printer: As recommended by system manufacturer. If printer is thermal type provide 6 rolls of thermal paper at each location.

2.13 REMOTE TANK GAGING, LEAK AND OVERFILL MONITOR SYSTEM

A. Acceptable Companies:
   1. Veeder Root Inc., Simsbury, CT, (800) 873-3313.
   2. OMNTEC/Electro Levels Mfg. Co., Ronkonkoma, NY, (516) 467-5787.

B. Provide a 7” color touch screen graphic remote display (Part Number RD7CTS) as manufactured by OMNTEC Mfg., Inc, or approved equal. Display must utilize industry standard protocol for use with most Automatic Tank Gauge monitoring systems. The remote ATG monitor shall display current tank inventory and leak sensor alarms. Display shall come equipped with three LED lights on panel face for Ok, Warning, and Alarm Status. Alarms shall be displayed visually on a 7” color touch screen with wide viewing angle as well as Warning and Alarm lights on face of panel. System shall have 85dB piezoelectric horn for audible alarm indication. Enclosure shall be powder coated industrial steel for indoor mounting. Must be capable of flush mount or recess mounting as required. Enclosure shall be compact in size, not to exceed (H) 7.63” (W) 8.08” (D) 3.20”. System must operate on 120/240 VAC or 12VDC via hard wired or power cord kit (Part Number RD-PCK) Include a 75’ extension cable for connection from RD7CTS to ATG monitor (Part Number RD-232C-75) For RS-232 connection at distances greater than 75’ and up to 3000’ provide an RS-232 booster kit (Part Number C232-422-RD7CTS). For RS-485 connection (port must output industry standard

protocol) at distances greater than 75’ and up to 3000’ Part number RD7CTS-485 is also available. If using with Proteus X model ATG, an RS-485 port comes standard. If using with Proteus K model ATG, a DB-485 RS-485 board must be added in order to connect to RD7CTS-485. Where necessary, provide a wireless link that will allow 500’ line of site communication between main ATG and RD7CTS (Part Number WRS-232) as manufactured by OMNTEC Mfg., Inc. To extend signal an additional 500’ line of site, provide WRS-232R repeater. For distances up to One mile, provide WRS-232XR extended length wireless transceiver in lieu of WRS-232/WRS-232R.

2.14 FUEL FOR TESTING

A. Coordinate with the Facility thru the Director’s Representative for the delivery of a full tank of each appropriate fuel type for testing to verify that fuel transfer equipment and instrumentation is operating properly.
   1. The Facility shall pay for delivery of fuel.

2.15 FUEL MANAGEMENT SYSTEM

A. Type A: Stand alone, magnetic strip card, programmable keys or keyless activated, self contained, island mounted type capable of 24 hour monitoring, and simultaneous control of maximum of 4 hoses.
   1. Acceptable Systems:
      a. FuelMaster 2500 System by Syn-Tech Systems, Inc., 100 Four Points Way, Tallahassee, FL 32305, (800) 888-9136, www.myfuelmaster.com.
      b. K800 Fuel Control System by OPW , 6900 Santa Fe Drive, Hodgkins, IL 60525, (708) 485-4200, www.opwglobal.com.
   2. Features:
      a. Microprocessor:
         1) Capable of reprogramming without changing hardware, and communicates with communication controller by internal network or by dial-up phone lines.
         2) Memory: 2 MEG.
      b. Keypad: Heavy duty, alpha-numeric membrane type with separate key for each letter (no shift or function keys required).
      c. Display: Backlit LCD with contrast adjustment that is highly visible and easy to read in total darkness or direct sunlight.
      d. Dispenser selection controlled thru system logic by vehicle and/or operator card data.
      e. Programmable to limit delivery by card or vehicle identification.
      f. Audible “Card Left in Reader” alarm.
      g. Capable of recording and storing transaction data including operator vehicle, quantities, day and time, odometer reading; and printing this information on demand.
      h. Interfaces with fuel dispensers, tank monitoring equipment, and capable of data transfer via modem to facility computers.
      i. Storage capacity with battery backup for minimum 500 transactions.
      j. Transient protection on AC power input and modem communication.

k. Manual system override switches.
l. Weatherproof Cabinet and Stand: Powder coated steel construction.
m. Capable of reconciliation reporting.
n. Maximum Operating Temperature: -40 degrees F to 122 degrees F.

B. Type B: Stand alone, magnetic strip card, programmable keys or keyless activated, self contained, island mounted type capable of 24 hour monitoring, and simultaneous control of maximum of 16 hoses.

1. Acceptable Systems:
   a. AssetWorks Fuel Focus System by AssetWorks, 998 Old Eagle School Road, Suite 1215, Wayne, PA 19087, (610) 687-9202, www.assetworks.com.
2. Features:
   a. Microprocessor:
      1) Capable of reprogramming without changing hardware, and communicates with communication controller by internal network or by dial-up phone lines.
      2) Memory: 1 GB RAM, battery backed
         4 GB Industrial Flash Drive
   b. Keypad: Heavy duty, alpha-numeric membrane type with separate key for each letter (no shift or function keys required).
   c. Display: Backlit LCD with contrast adjustment that is highly visible and easy to read in total darkness or direct sunlight.
   d. Dispenser selection controlled thru system logic by vehicle and/or operator card data.
   e. Programmable to limit delivery by card or vehicle identification.
   f. Capable of recording and storing transaction data including operator vehicle, quantities, day and time, odometer reading; and printing this information on demand.
   g. Interfaces with fuel dispensers, tank monitoring equipment, and capable of data transfer via modem to facility computers.
   h. 4 GB storage capacity for transactions and database history in the event of loss of communication with FleetFocus database.
   i. Transient protection on AC power input and modem communication.
   j. Manual system override switches.
   k. Weatherproof Cabinet and Stand: Powder coated steel construction.
   l. Capable of reconciliation reporting.
   m. Maximum Operating Temperature: -40 degrees F to 130 degrees F.

2.16 CONCRETE DEADMEN

Provide concrete deadmen with the dimensions for the appropriate-sized tank in accordance with the tables below. Deadmen sizes are approximate. Actual sizes shall be based on the specific tank manufacturer requirements.

A. 4-foot diameter tanks

QTY	QTY	QTY	UNIT	Description
2	2		EA	Deadman 12”x12”x12’
		2	EA	Deadman 12”x12”x16’
4	4	4	EA	Galvanized Anchor Point
600	1,000	1,500		Gallons

B. 6-foot diameter tanks

QTY	QTY	QTY	QTY	QTY	QTY	QTY	UNIT	Description
2	2			4			EA	Deadman 12”x12”x12’
		2			4		EA	Deadman 12”x12”x16’
			2			4	EA	Deadman 12”x12”x18’
4	4	4	4	8	8	8	EA	Galvanized Anchor Point
1,500	2,000	3,000	4,000	5,000	6,000	8,000		Gallons

C. 8-foot diameter tanks

QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	UNIT	Description
2	2	2			4	4	2		EA	Deadman 12”x12”x12’
			2				2	4	EA	Deadman 12”x12”x16’
				2					EA	Deadman 12”x12”x18’
4	4	4	4	4	8	8	8	8	EA	Galvanized Anchor Point
2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000		Gallons

D. 10-foot diameter tanks

QTY	UNIT	Description
2	EA	Deadman 8-3/4”x18”x22’
8	EA	Galvanized Anchor Point
10,000		Gallons

2.17 COMPUTER AND ACCESSORIES

A. Computer, monitor, printer and other associated accessories to meet recommended requirements for Fuel Management System.

1. Data cable for connection of programming computer and dispensing area control terminal: General Cable's GenSpeed 6 or GenSpeed 5000 Outside Plant Cable.
   a. Category 5e or Category 6 certified.
   b. Rated for submersion in water.

B. Hardwired Power Conditioner: Surge protection and power conditioner to meet the recommended requirements of the fuel management system supplier and Section 264313: Transient Voltage Suppression for Low-Voltage Electrical Power Circuits.

2.18 FASTENERS

A. Vandal Resistant Fasteners: Stainless steel, allen or torx head, both with center post.

PART 3 EXECUTION

3.01 PREPARATION

A. Testing Prior to Installation:
   1. Before placing the tank into its excavation, plug all openings and pressure test tank in accordance with manufacturer's printed test instructions, unless otherwise specified.
   2. Tanks should not be pressurized beyond manufacturer's specified limits. The tank must hold the test pressure for 30 minutes.
   3. Check fitting connections, and seams in outermost tank by applying a soap suds solution.
   4. Reject any leaking tanks.

3.02 INSTALLATION

A. Install the Work of this section in accordance with the item manufacturer's printed installation instructions, unless otherwise shown or specified.

3.03 FUEL STORAGE TANK

A. Double Wall ACT 100-U Tanks: Touch-up any abraded or marred factory coating as directed by tank manufacturer before placing tank and containment sump into excavation.

B. Lower tank carefully into the excavation using lifting lugs provided on the tank. Set the tank on a full length concrete slab covered with a 12 inch layer of pea gravel.

C. Do not use chocks or saddles to support or block the tank in position.

D. Install tank anchoring devices to secure tank firmly in place.

E. Do not place fuel into tank until backfilling is completed.

F. Plug and seal all unused openings in containment sump.

3.04 TANK ACCESSORIES

A. Fuel Identification: Attach laminated plastic nameplate to each tank fill pipe to identify the fuel in the tank.

B. Tank Identification: Affix tank identification stencil, label, or plate permanently to tanks and fill ports.

C. Install padlocks on all lockable caps on fill and vapor recovery piping.

D. Terminate vent lines with vent caps.

E. Overfill Alarm Device Sign: Mount sign adjacent to alarm device in a location that is easily readable from ground level.

3.05 FIELD QUALITY CONTROL

A. Testing: After installation of tank and piping, test the system in the presence of the Director's Representative, as follows:

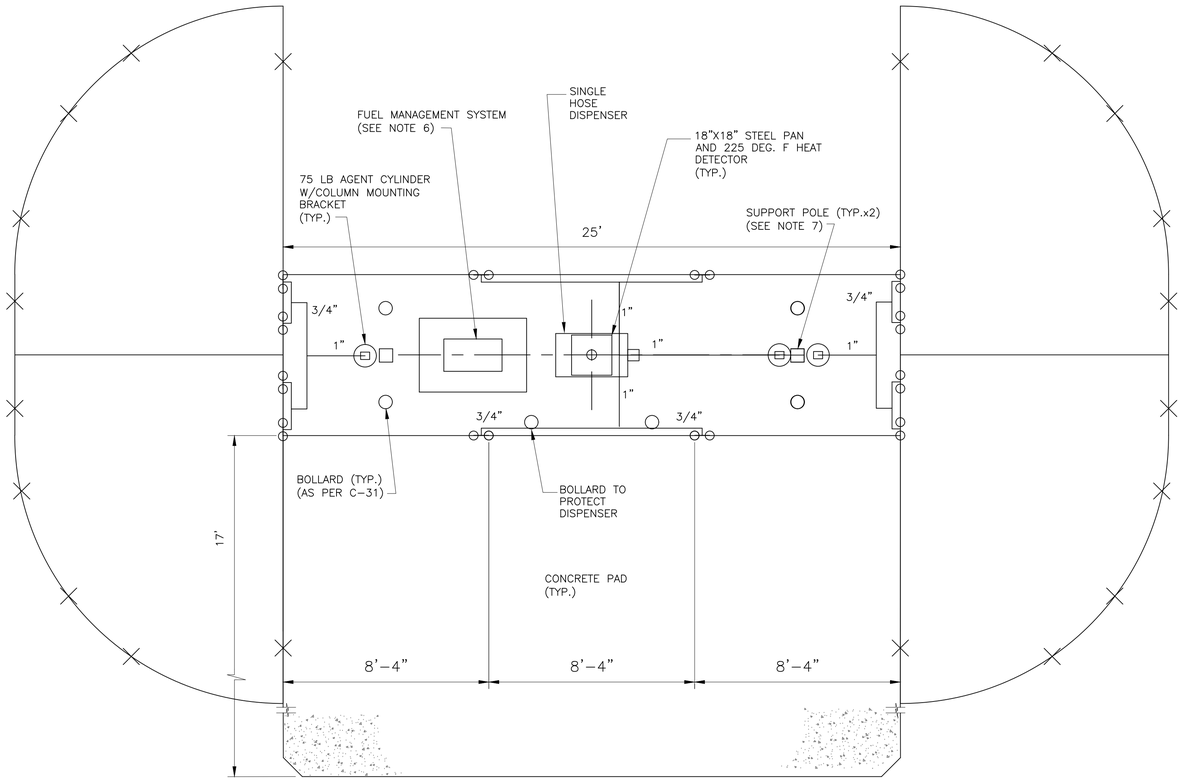
1. Piping:
   a. Flexible Primary Piping and Flexible Containment Piping: Before backfilling, plug ends and test with air at manufacturer's recommended test pressure, and hold for 3 hours without leaking.
   b. Copper Tubing and Steel Piping: Before painting or backfilling, plug ends and test with air at 1-1/2 times operating pressure, and hold for 3 hours without leaking.
2. Tanks:
   a. Before backfilling, pressure test tank in accordance with manufacturer's printed test instructions, unless otherwise specified.
   b. Tanks should not be pressurized beyond manufacturer's specified limits.
   c. The tank must hold the test pressure for 30 minutes.
   d. Check fitting connections, and seams in outermost tank by applying a soap suds solution.
   e. After backfilling, make measurement of vertical distance from top of 4 inch gage opening to top of impact/deflector plate, and submit this information to the Director's Representative.
   f. Provide completed tank manufacturers installation checklist to the Director's Representative.
3. Fuel System for No. 2 Fuel Oil:
   a. After reconnecting piping, burning apparatus, and tanks, and when directed, perform a system acceptance test in the presence of the Director's Representative to demonstrate that the fuel system is operating properly.
   b. Make required repairs and final adjustments.

4. Motor Fuel Dispensing System:
   a. After reconnecting piping, fuel dispensers, and tanks, and when directed, perform a system acceptance test in the presence of the Director's Representative to demonstrate that the fuel dispensing system is operating properly.
   b. Make required repairs and final adjustments.
   c. Minimum flow rate for diesel or gasoline systems is 11.0 gpm.
   d. Use a 5 gal. calibration can to calibrate the dispenser(s).
5. Fuel System for Diesel-Generators:
   a. After reconnecting piping, diesel-alternator, and tanks, and when directed, perform a system acceptance test in the presence of the Director's Representative to demonstrate that the fuel system is operating properly.
   b. Make required repairs and final adjustments.

3.06 ALARMS

A. The high level sensor shall be set to trip the system at 90% of full tank capacity. The visual and audible alarm devices shall be seen and heard from the fill port location.

END OF SECTION

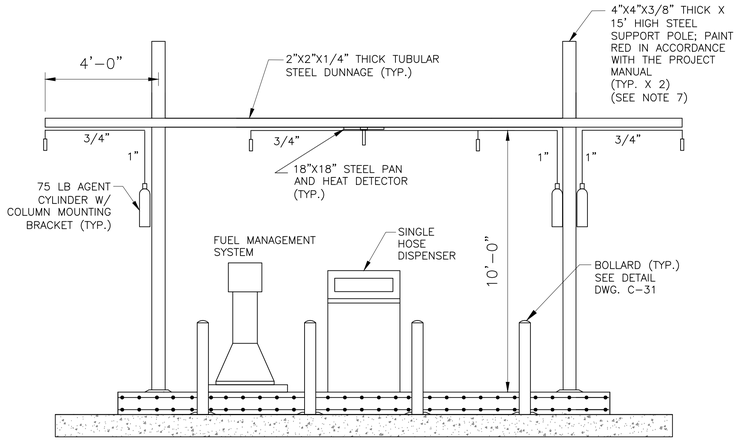


SINGLE HOSE DISPENSER ISLAND PLAN

SCALE: NONE

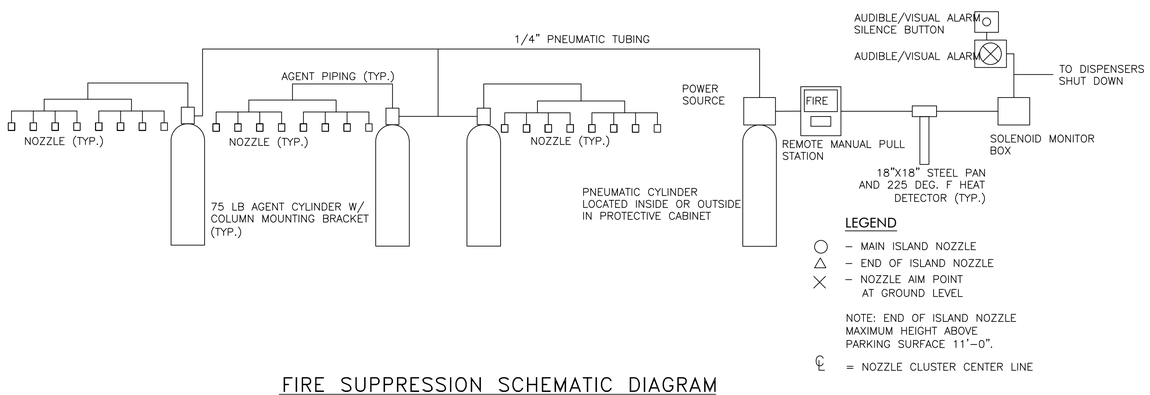
NOTES:

1. NUMBER OF NOZZLES AND PIPE SIZES ARE DIAGRAM ONLY. ACTUAL PIPE SIZE AND ROUTING TO BE VENDER CERTIFIED AND DESIGNED FOR HAZARD AREA.
2. SYSTEM TO BE UL1254 AND AS PER NFPA-17.
3. DUNNAGE LAYOUT TO BE SUBMITTED FOR DIRECTOR APPROVAL.
4. INSTALL EMERGENCY FUEL PUMP SHUT-OFF SWITCH BETWEEN 20 AND 100 FEET FROM FUEL DISPENSER.
5. FIRE SUPPRESSION SYSTEM MAY BE TIED INTO THE FACILITY'S CENTRAL ALARM SYSTEM. TIE-IN LOCATION AND ARRANGEMENT SHALL BE DETERMINED ON A SITE BY SITE BASIS. CONTRACTOR TO PROVIDE WIRE AND CONDUIT TO ALARM PANEL. FACILITY TO PROVIDE FINAL CONNECTION TO CENTRAL PANEL.
6. FOR ASSET WORKS FUEL MANAGEMENT SYSTEMS, STUB UP ALL REQUIRED CONDUIT IN AN 11" X 11" AREA.
7. FIRE SUPPRESSION SYSTEM SUPPORT POLES ARE PROHIBITED FROM BEING USED AS LIGHTING SUPPORT POLES. PROVIDE LIGHT POLES SEPARATELY.
8. PROVIDE FIRE SUPPRESSION SYSTEM FOUNDATION AND ANCHORING IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS.



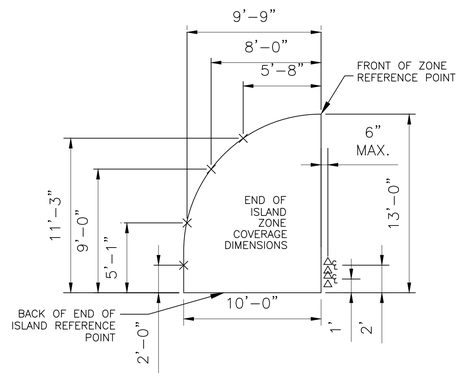
SINGLE HOSE DISPENSER ISLAND ELEVATION

SCALE: NONE



FIRE SUPPRESSION SCHEMATIC DIAGRAM

SCALE: NONE



TYPICAL NOZZLE AIMING POINTS DETAIL

SCALE: NONE

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION #: 0017995

LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK STATE:

TO THE BEST OF THE REGISTERED DESIGN PROFESSIONAL'S KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND/OR SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 ENERGY CODE OF NEW YORK STATE.

WARNING:

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STATE OF NEW YORK · MARTIN J. WESOLOWSKI · No. 074044 · LICENSED PROFESSIONAL ENGINEER

REGISTRATION EXPIRES: 12/31/2026

CONTRACT:

CONSTRUCTION

TITLE:

FUEL TANK MODIFICATION AND ENVIRONMENTAL REMEDIATION

LOCATION:

CENTRAL REGION
VARIOUS FACILITIES

MARK	DATE	DESCRIPTION
	5/22/2025	ADDENDUM NO. 2
	1/31/2025	FINAL SUBMISSION

PROJECT NUMBER:	47675 – C
DESIGNED BY:	M. GUTMANN
DRAWN BY:	A. KELLY
FIELD CHECK:	M. WESOLOWSKI
APPROVED:	M. WESOLOWSKI

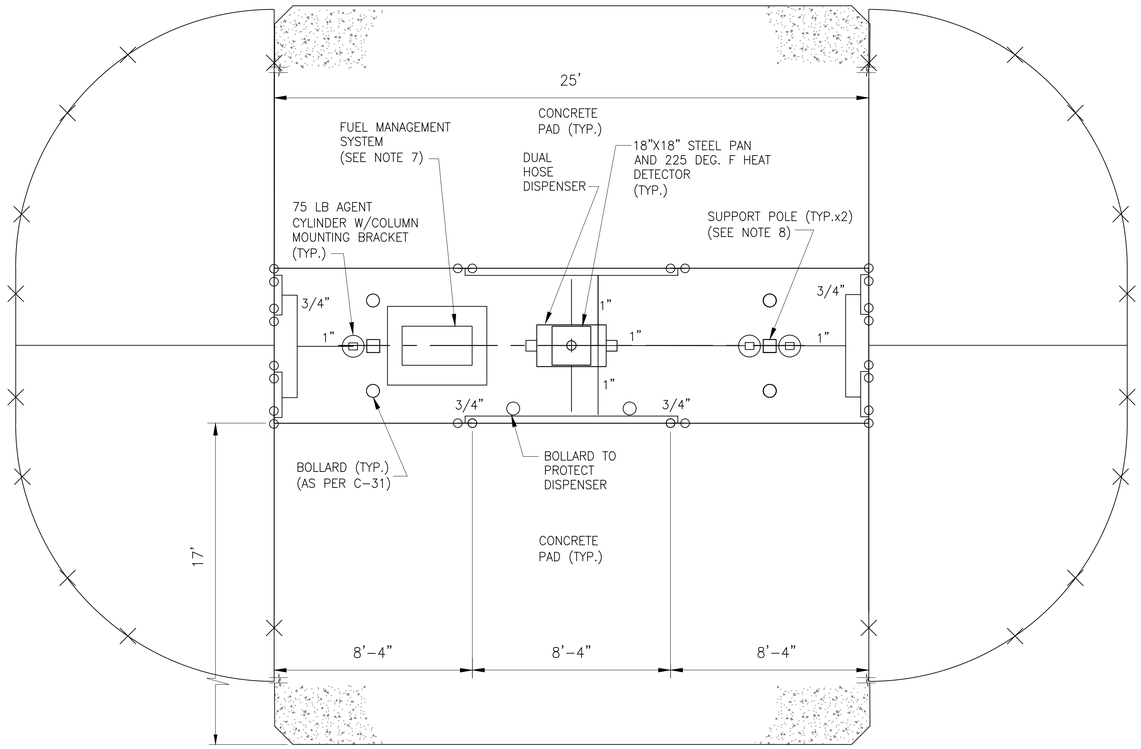
SHEET TITLE:

SINGLE HOSE DISPENSER ISLAND FIRE SUPPRESSION DETAILS

DRAWING NUMBER:

C-23

SHEET 25 OF 51

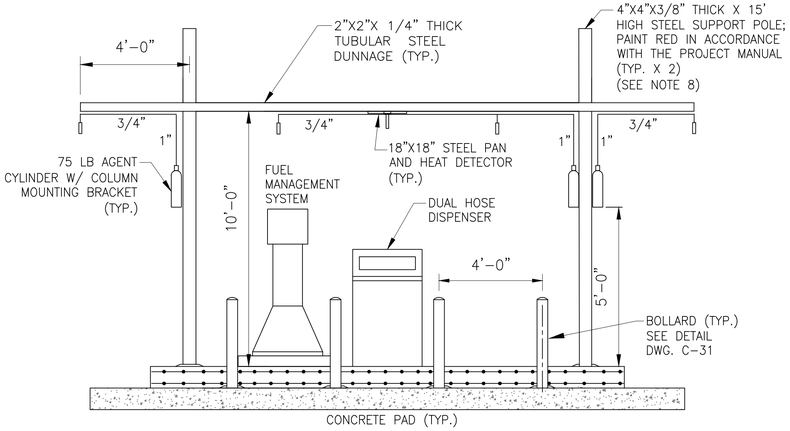


DUAL HOSE DISPENSER ISLAND PLAN

SCALE: NONE

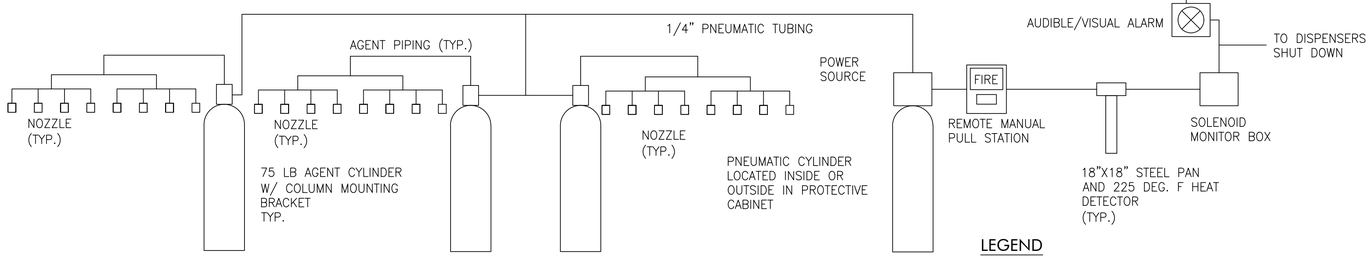
NOTES:

1. NUMBER OF NOZZLES AND PIPE SIZES ARE DIAGRAM ONLY. ACTUAL PIPE SIZE AND ROUTING TO BE VENDER CERTIFIED AND DESIGNED FOR HAZARD AREA.
2. SYSTEM TO BE UL1254 AND AS PER NFPA-17.
3. DUNNAGE LAYOUT TO BE SUBMITTED FOR DIRECTOR APPROVAL.
4. INSTALL EMERGENCY FUEL PUMP SHUT-OFF SWITCH BETWEEN 20 AND 100 FEET FROM FUEL DISPENSER.
5. FIRE SUPPRESSION SYSTEM MAY BE TIED INTO THE FACILITY'S CENTRAL ALARM SYSTEM. TIE-IN LOCATION AND ARRANGEMENT SHALL BE DETERMINED ON A SITE BY SITE BASIS. CONTRACTOR TO PROVIDE WIRE AND CONDUIT TO ALARM PANEL. FACILITY TO PROVIDE FINAL CONNECTION TO CENTRAL PANEL.
6. AVOID HOSE ARCS INTERSECTING TO MINIMIZE AREA COVERED BY FIRE SUPPRESSION SYSTEM.
7. FOR ASSET WORKS FUEL MANAGEMENT SYSTEMS, STUB UP ALL REQUIRED CONDUIT IN AN 11" X 11" AREA.
8. FIRE SUPPRESSION SYSTEM SUPPORT POLES ARE PROHIBITED FROM BEING USED AS LIGHTING SUPPORT POLES. PROVIDE LIGHT POLES SEPARATELY.
9. PROVIDE FIRE SUPPRESSION SYSTEM FOUNDATION AND ANCHORING IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS.



DUAL HOSE DISPENSER ISLAND ELEVATION

SCALE: NONE



FIRE SUPPRESSION SCHEMATIC DIAGRAM

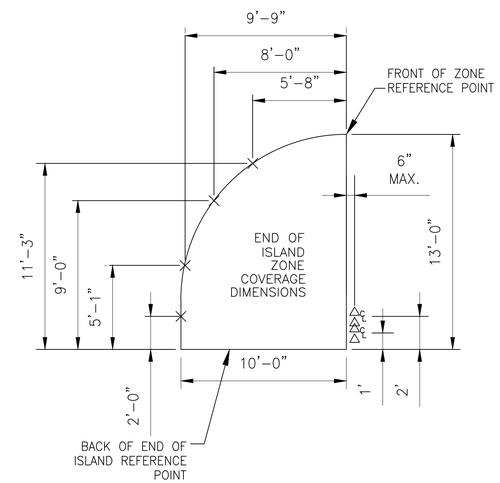
SCALE: NONE

LEGEND

- ◯ – MAIN ISLAND NOZZLE
- △ – END OF ISLAND NOZZLE
- × – NOZZLE AIM POINT AT GROUND LEVEL

NOTE: END OF ISLAND NOZZLE MAXIMUM HEIGHT ABOVE PARKING SURFACE 11'-0".

℄ = NOZZLE CLUSTER CENTER LINE



TYPICAL NOZZLE AIMING POINTS DETAIL

SCALE: NONE

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STATE OF NEW YORK · MARTIN J. WESOLOWSKI · LICENSED PROFESSIONAL ENGINEER · NO. 071065

REGISTRATION EXPIRES: 12/31/2026

CONTRACT: CONSTRUCTION

TITLE: FUEL TANK MODIFICATION AND ENVIRONMENTAL REMEDIATION

LOCATION: CENTRAL REGION VARIOUS FACILITIES

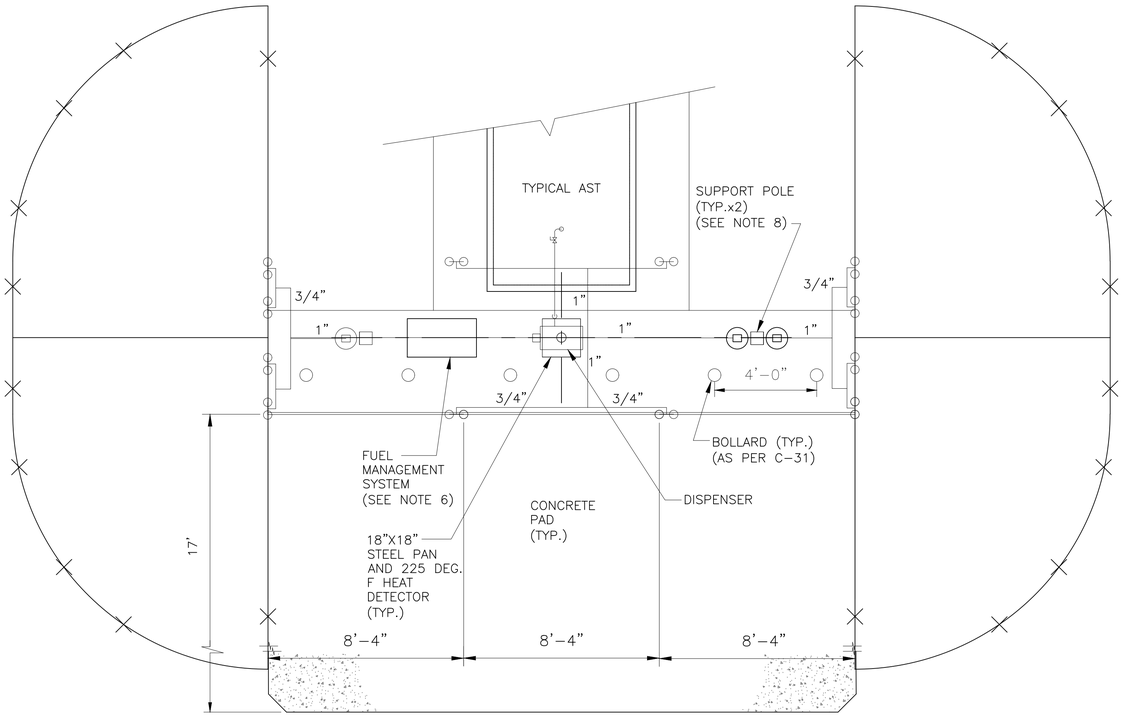
MARK	DATE	DESCRIPTION
	5/22/2025	ADDENDUM NO. 2
	1/31/2025	FINAL SUBMISSION

PROJECT NUMBER:	47675 – C
DESIGNED BY:	M. GUTMANN
DRAWN BY:	A. KELLY
FIELD CHECK:	M. WESOLOWSKI
APPROVED:	M. WESOLOWSKI

SHEET TITLE: DUAL HOSE DISPENSER ISLAND FIRE SUPPRESSION DETAILS

DRAWING NUMBER: C-24

SHEET 26 OF 51

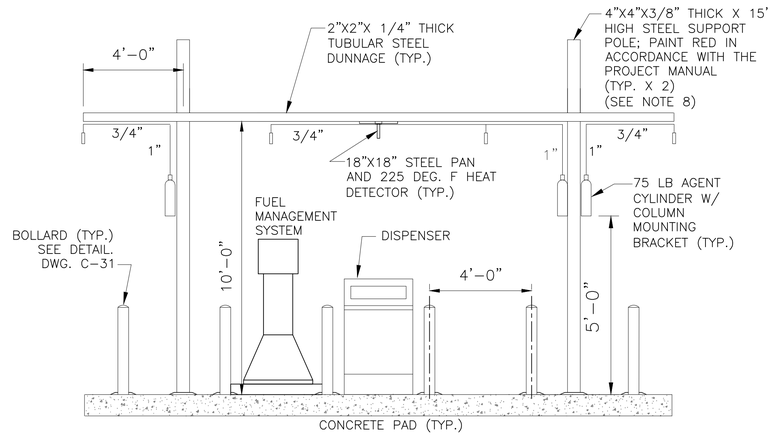


DUAL HOSE DISPENSER ISLAND PLAN

SCALE: NONE

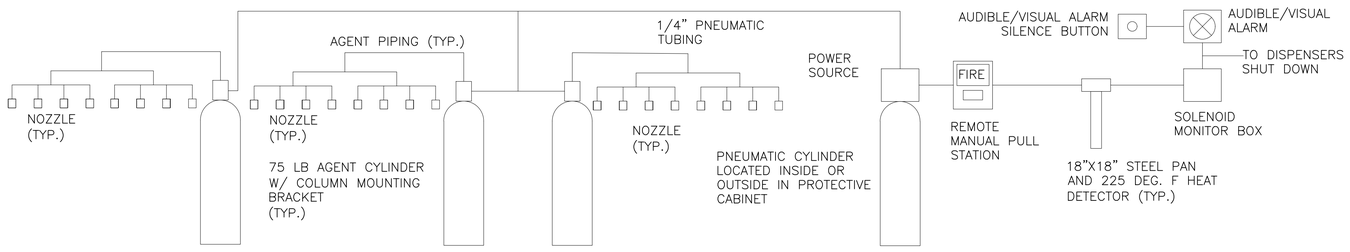
NOTES:

1. NUMBER OF NOZZLES AND PIPE SIZES ARE DIAGRAM ONLY. ACTUAL PIPE SIZE AND ROUTING TO BE VENDER CERTIFIED AND DESIGNED FOR HAZARD AREA.
2. SYSTEM TO BE UL1254 AND AS PER NFPA–17.
3. DUNNAGE LAYOUT TO BE SUBMITTED FOR DIRECTOR APPROVAL.
4. INSTALL EMERGENCY FUEL PUMP SHUT–OFF SWITCH BETWEEN 20 AND 100 FEET FROM FUEL DISPENSER.
5. FIRE SUPPRESSION SYSTEM MAY BE TIED INTO THE FACILITY'S CENTRAL ALARM SYSTEM. TIE–IN LOCATION AND ARRANGEMENT SHALL BE DETERMINED ON A SITE BY SITE BASIS. CONTRACTOR TO PROVIDE WIRE AND CONDUIT TO ALARM PANEL. FACILITY TO PROVIDE FINAL CONNECTION TO CENTRAL PANEL.
6. AVOID HOSE ARCS INTERSECTING TO MINIMIZE AREA COVERED BY FIRE SUPPRESSION SYSTEM.
7. FOR ASSET WORKS FUEL MANAGEMENT SYSTEMS, STUB UP ALL REQUIRED CONDUIT IN AN 11" X 11" AREA.
8. FIRE SUPPRESSION SYSTEM SUPPORT POLES ARE PROHIBITED FROM BEING USED AS LIGHTING SUPPORT POLES. PROVIDE LIGHT POLES SEPARATELY.
9. PROVIDE FIRE SUPPRESSION SYSTEM FOUNDATION AND ANCHORING IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS.



DUAL HOSE DISPENSER ISLAND ELEVATION

SCALE: NONE



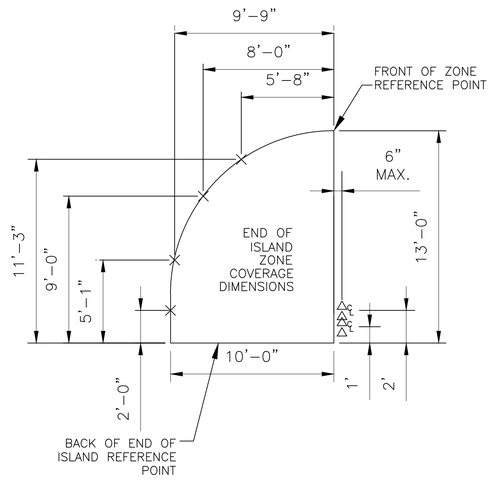
FIRE SUPPRESSION SCHEMATIC DIAGRAM

SCALE: NONE

LEGEND

- ◯ – MAIN ISLAND NOZZLE
- △ – END OF ISLAND NOZZLE
- × – NOZZLE AIM POINT AT GROUND LEVEL

  NOTE: END OF ISLAND NOZZLE MAXIMUM HEIGHT ABOVE PARKING SURFACE 11'–0".
- ℄ = NOZZLE CLUSTER CENTER LINE



TYPICAL NOZZLE AIMING POINTS DETAIL

SCALE: NONE

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT

CERTIFICATE OF AUTHORIZATION #: 0017995

LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

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STATE OF NEW YORK · MARK I. WESOLOWSKI · LICENSED PROFESSIONAL ENGINEER · NO. 071256

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APPROVED:	M. WESOLOWSKI

SHEET TITLE:

ABOVEGROUND FUEL STORAGE TANK SINGLE AND DUAL HOSE DISPENSER AND ISLAND DETAILS

DRAWING NUMBER:

C–25