

General Notes

- 1. Petroleum Contractor shall furnish all items with the exception of the items "Furnished by Wawa".
2. Contractor shall complete and furnish all documentation as required by the Wawa representative at the time of the punch list inspection.
3. Operation is to be 24 hours, 7 days a week, attended in accordance with NFPA 30A, Chapter 4 & Chapter 9.
4. Interior E-stops at cashier positions are detailed on Building Electrical Plans, in addition to exterior E-stops shown on these plans.
5. Wawa to provide the required labels & warnings detailed in NFPA 309-5.2 & 9-5.5.
6. Delaware & Maryland Only - Install additional E-stop with protective cover on building - center of right side, above tile band. Verify location with Project Manager.
7. Contractor must use only manufacturer approved tools for installation of all piping & dispenser pumps. No use of hand saws, hand saws, Sawsziti, utility knives, etc. will be allowed.
8. The Petroleum Contractor will furnish and install steel set fittings for the conduit at the canopy columns for connection by the General Contractor. The Petroleum Contractor will epoxy plug all seal off fittings as required in the electrical room, at the dispensers, and canopy columns.
9. Petroleum Contractor will receive all Wawa supplied equipment & will be responsible for any damage not identified to Wawa upon delivery. Petroleum Contractor to notify Wawa Project Manager within 24 hours of receiving equipment.
10. The Petroleum Contractor will be contracted to complete all tank installation, petroleum underground piping, backfill, stone subbase, fine grading & oil electrical conduit rough in associated with the pump and tank within time period determined by the Wawa Project Manager. Concrete pour (for the tank area, pump islands, and canopy areas), dispenser installation & wiring will be scheduled during project with Wawa Project Manager.
11. The General Contractor will layout tank pad, canopy pad & footer locations, excavate, form & pour footings for steel canopy, install canopy drain laterals from canopy columns to storm sewer laterals, install hose bibs at canopy area.
12. All manhole openings on the tank slab shall be installed with a 2" x 18" run crown of concrete to prevent water intrusion into the manhole.
13. All curbing surrounding tank slab shall be poured monolithic in conjunction with tank slab.
Installation
All work to be coordinated with Wawa Project Manager, General Contractor & Sub-contractors (including coordination of electrical conduit runs to the canopy & tank pads with the General Contractor).
All installation activities to be performed in strict accordance with PEI "Recommended Practices for Installation of Underground Liquid Storage Systems", PEI/PP100-05, PEI "Recommended Practices for Installations & Testing of Vapor Systems", PEI-RP300-04
For most current PEI versions, manufacturers installation manuals for all products, state & local code & the specifications & notes contained in these drawings.
Any discrepancy between these sources shall be identified & brought to attention of Wawa's representative before activity is performed for resolution.
Contractor is responsible for all local permits. Contact Wawa representative to verify that all required permits have been obtained. Contractor portions of registrations for state agencies shall be completed & given to Wawa's representative upon completion.
Excavation
All excavation to be sized to provide minimum bedding clearance & depth of burials as shown. (54" minimum from finish grade to top of tank)
Contractor to adhere to all OSHA standards for excavations. All excavations greater than 4 feet in depth are to be shored in accordance with OSHA standard (29CFR 1926.650-652). Fall Protection to be provided around tank excavation at all times in accordance w/applicable OSHA regulations.
Prior to backfill & tank installation, filter fabric shall be installed in accordance with applicable methods. Filter fabric is determined by site specific requirements & use shall be determined by Wawa Petroleum Dept.
Tanks
Tanks will be provided by Wawa & delivered to the site by the manufacturer. Contractor is responsible for scheduling delivery via Wawa's representative, unloading & inspection of tanks. Any problems encountered should immediately be disclosed to the Wawa representative & Wawa Fuel Equipment Department before activity is performed for resolution.
All tank handling & installation is to be in strict accordance with manufacturer's "Installation Manual & Operating Guidelines". All checklists including shipping documents are to be completed & provided to Wawa's representative. Wawa requires the use of a crane for all tank handling activities.
Tanks shall be installed with zero slope, dead level, with fills towards curb side or as directed by Wawa's representative.
- (1) 1" GRC to each canopy column for intercom camera/cameras. (location closest to store)
- (1) 1" GRC to each canopy column for lighting. (location furthest from store)
- (3) 1/2" GRC to each dispenser. (Sump sensor)
- (1) 1/2" GRC to each Sump sensor. (Sump sensor)
- (1) 1" GRC to each 120-gal reservoir. (Sump sensor)
- (1) 1" GRC to each 120-gal reservoir. (Sump sensor)
- (1) 1" GRC to each 5-gal Sump tank containment unit. (Sump sensor)
- (1) 1" GRC to each 5-gal Sump tank containment unit. (Sump sensor)
- (1) 1" GRC to each 5-gal Sump tank containment unit. (Sump sensor)
- (1) 1" GRC to each 5-gal Sump tank containment unit. (Sump sensor)
- (1) 1" GRC to each multi-port containment unit. (Sump sensor)
- (1) 1" GRC to each multi-port containment unit. (Sump sensor)

Backfill

- Wawa recommends that all back fill is to be Pea Gravel, naturally rounded aggregate nominal 1/4" (1/8" min., 3/4" max.) in size. Pea Gravel is to be washed, free flowing, free of ice, snow and debris & conform to ASTM C-33 par. 9.1, size numbers 6 through 8 of Table 2.
When Pea Gravel is not readily available crushed stone may be used. The material is to be a mix of angular particles, sizes between 1/8" and 1/2", and no more than 5% (by weight) of the material may pass through a #8 sieve.
The Contractor will provide Wawa's representative certification from the supplier that the material conforms to ASTM C-33 & any other applicable specification.
Disposal of Excavated Material
All excavated material is to be treated as clean back fill, removed & disposed by contractor.
Wawa's representative must be notified immediately if any contaminated materials are encountered or suspected.
In the event contaminated material is encountered, such material is to be segregated by contractor & will be transported & disposed by third party.
Contractor will provide loading & credit given to Wawa for transportation & disposal.
Excavation Dewatering
Wawa will provide soils & groundwater data for site to determine if dewatering is necessary.
Contractor shall be responsible for installation of all dewatering equipment, if necessary, & shall furnish pumps with appropriate dewatering rates for use in & around the excavation to maintain as dry an excavation as possible.
Contractor shall be responsible for any required permits to discharge water to the closest available source.
In the event that these measures are not sufficient to control the dewatering, Wawa's representative shall be notified & Wawa shall secure third party services to assist in dewatering.
Contractor is responsible for continuous monitoring of ground water until facility is open.
Testing
Final precision testing of tanks, lines & Stage II equipment will be performed for Wawa by third party. All other testing is to be performed by contractor & witnessed by Wawa's on site representative.
All testing shall be performed in accordance with manufacturer instructions.
Contractor shall perform air test on tanks at time of delivery. Use 3 - 5 psi for a minimum of 60 minutes.
Primary piping to be air tested at 50 psi for a minimum of 60 minutes while soaping joints. (Do not exceed 60psi max)
Secondary testing to be performed at no more than 5 psi for a minimum of 60 minutes.
Vapor/vent lines to be tested at 50 psi for a minimum of 60 minutes.
Air testing must remain in place on all piping (primary & secondary), with appropriate gauges until dispensers are set in place. Gauge reading needs to be documented that air test is good prior to dispenser set process. Upon completion of dispenser set process, an additional air test must be performed again on all piping until product is delivered & purge process begins.
**It is strongly recommended that contractor perform preliminary vapor leakage testing prior to covering vapor lines.
All sumps, including tank, spill bucket and dispenser to be hydrostatically tested in accordance with Federal, state & local regulations. At a minimum all sumps should be tested with water to a level 6" above highest joint or penetration for a minimum of 8 hours and verified liquid tight by the installing contractor. Initial & ending water level measurements to be observed by a Wawa representative. Failure to perform this test will result in a retest & subsequent repairs at contractor's expense.
All tests shall be recorded and given to Wawa's representative and included in the closeout documentation.
Hold Down Product
Water is to be used as hold down. Water is to be clean, free of debris & particles.
Contractor is responsible for securing and disposing of water. Tanks are to be filled to min. 90% capacity.
Prior to removing water contractor is to provide 72-hour notice to Wawa's representative. Wawa will make arrangements for delivery of product to replace water; all measurable levels of water shall be removed prior to replacing with gasoline. Verification of water removal shall be given to Wawa's representative.
Water should remain in tanks until all petroleum work completed & tank mat is installed.
Conduit Requirements:
See E 1 to E 5; Verify with building/canopy drawings by architect
NOTE: Conduits to be slubbed to edge of canopy and tank pads by general contractor; Petroleum contractor is responsible for ballasting.
Tanks shall be installed with zero slope, dead level, with fills towards curb side or as directed by Wawa's representative.
- (1) 1" GRC to each canopy column for intercom camera/cameras. (location closest to store)
- (1) 1" GRC to each canopy column for lighting. (location furthest from store)
- (3) 1/2" GRC to each dispenser. (Sump sensor)
- (1) 1/2" GRC to each Sump sensor. (Sump sensor)
- (1) 1" GRC to each 120-gal reservoir. (Sump sensor)
- (1) 1" GRC to each 120-gal reservoir. (Sump sensor)
- (1) 1" GRC to each 5-gal Sump tank containment unit. (Sump sensor)
- (1) 1" GRC to each 5-gal Sump tank containment unit. (Sump sensor)
- (1) 1" GRC to each 5-gal Sump tank containment unit. (Sump sensor)
- (1) 1" GRC to each 5-gal Sump tank containment unit. (Sump sensor)
- (1) 1" GRC to each multi-port containment unit. (Sump sensor)
- (1) 1" GRC to each multi-port containment unit. (Sump sensor)

Anchoring

- All tanks are to be anchored as shown on drawings. Deadmen may be field constructed or prefab as available from tank manufacturer.
Contractor to use reinforced precast concrete deadmen, length typically equal to the length of the tank, with anchor bolts to correspond with straps.
All tank straps must be provided by tank manufacturer & installed in strict accordance with manufacturer instructions & spaced as directed.
Connect anchor to straps with 3/4" forged steel turnbuckles. All exposed turnbuckles & anchor bolts must be wrapped & coated with Plichromatic & protected with 5 lb. anodes.
Wire rope may not be used.
Piping
Product piping is to be 2" dia. APT XP Series in ducting. All runs are to be continuous, all joints are to be made in dispenser containment units & tank sumps only. A separate ball valve is required for each piping run. Piping connections to submersible pump to be 2" galvanized or approved stainless steel Hex Line.
All entry bolts & fittings are to be APT product only. Risers & fitting to shear valves are to be galvanized steel or UL listed stainless steel Flexible connectors.
Pipe Testing
Testing of the secondary containment piping is required. The containment termination fitting in the sump is to be installed with the valve turned down. After testing, the valve is to be opened to allow drainage of the secondary piping to the sump monitor probe.
Steel Fittings
STEEL FITTINGS DIMENSIONS MATERIAL THREAD
Steel Pipe Nipples Class 150/PA 20 ASTM A 733 ASTM A 53 (F & E) ASME B.1 20.1 ASME B.1 16.
Steel Pipe Nipples Class 150/PA 20 N/A ASTM A 53 (F & E) ASME B.1 20.1 ASME E.1 16.
Schedule 40
Stage II Piping
Stage II piping to be 3" double wall LCX fiberglass by Ameron. Use only Ameron fiberglass adhesives. Pipe diameter as shown on layout.
In order to provide mechanical flexibility with the rigid piping system, provide at least four foot of straight pipe run before a change in direction of 30 or more (NFPA 30A Section 5.3.3 (2))
A vapor shear valve shall be installed in each dispenser pan for dispenser connection. Stainless steel flex connectors to be used to connect shear valve to fiberglass piping.
Vapor Return Piping
Vapor return piping to be 2" primary, double wall Ameron LCX fiberglass. Use only Ameron adhesives. Install 2" ball valve in T-3 (unleaded siphon) containment sump.
U.G. Conduit
All U.G. conduit shall be rigid galvanized steel. Conduit minimum burial depth is 24" per code. All junction boxes shall be class 1 & 2 rated. All electrical conduit in sump shall include a seal-off entering & leaving, which shall be installed 6" min. above highest penetration in sump. Dispenser conduits to be installed through metal sump top conduit knockouts.
Sump Penetrations
All penetrations of the tank sumps shall be sealed with double bulkhead fittings & not to exceed 15° angle in any direction to ensure the proper installation of oil bulkhead compression fittings & resultant of water tightness.
Dispenser Installation
Contractor shall install all dispensers in accordance with most current manufacturer installation practices. Strict adherence to installation guidelines should be followed at all times.
Dispenser DATA communication wiring shall be installed in separate conduit & shall be twisted pair, minimum 18 gauge, code coded for data & CRIND wiring, ISO rated 600 volt, 95% drops resistant. Wiring shall be home run from dispenser to universal distribution box (D-Box) with no splicing. (See chart below)
The dispenser communication DATA/FUEL loop shall be wired in a manner that will allow for dispensers to be split evenly on each distribution board in the Fuel/Fuel D-Box.
The dispenser communication CRIND loop shall be wired in a manner that will allow for dispensers to be split evenly on (1) distribution board in the CRIND loop D-Box.
Dispenser power wiring shall be run in separate conduit & shall be 12 AWG with home run to the dispenser to the breaker panel or isolation terminal block. (12) 12 AWG wires of different color to be run and terminating in J-box & brought in electrical room.
Communication Ports
Communication Ports
Tanks shall be U.L. listed (UL-1316) as called for on the site specific drawing & shall be fiberglass reinforced plastic (frp) double wall tanks as manufactured by Service Chemical. Installation of tanks & piping shall be in accordance with the latest edition of the installation manuals as provided by the manufacturer. Prior to testing, the gasoline contractor shall verify manway bolt tightness. Verify bolts are set per manufacturer's torque settings & adjust as necessary.

Incon Tank Gauge Installation

- All Automatic Tank Gauge (ATG) installation & wiring to be performed in full accordance manufacturer's installation manuals. Contractor & electrical contractor performing ATG installation must have manufacturer installation certification. All probe and sensor wiring splices shall use manufacturer supplied splice kits & contained in a Class 1 electrical junction box.
All probe and sensor wiring must be 18AWG min shielded 'Belden' cable or equivalent.
Specific attention must be given to Manufacturer grounding requirements (#12 AWG conductor, buried ground to earth ground bus at power distribution panel).
Installation includes Overfill Alarm and acknowledgements switch on vent riser. Overfill should be wired to Relay Output 1 located the Power Supply Module.
Positive shut down of submersible controllers must be wired via the automatic tank gauge (ATG) Turbine Pump interface (TPI) port. It is the petroleum installation contractor's responsibility to run appropriate data cabling to properly shut off all STP's in an individual manner as controlled by the ATG. Except for the Unleaded STP's, each STP should have a home run wiring from the specified STP controller isolation relay box (STP-DH) to the appropriate STP controller (MAG). Unleaded STP's should have a home run wiring from the isolation relay box to the ATG's AC Input Module (Channel 1). Programming of the ATG will be the responsibility of the local programming/start up contractor selected to service the location. Coordination should be taken between the installation contractor and the programming / start up contractor to ensure that proper wiring and programming corresponds to the requirements for positive shutdown process.
Tank Leveling Requirement
Installation and programming required for all compartmentalized UST sites. Wiring to be added to all sites regardless of tank style and layout. Contractor will install one (1) 3-conductor "loop" data shielded cable from ATG console Communication Port (RS-485) to the corresponding MAC-VFC's TPI parts as shown.

Equipment Start-Up/Purging & Calibration

- Contractor shall notify Wawa representative 72 hours prior to equipment start-up. Dispenser, tank monitor & submersible pump commissioning to be performed by service vendor as selected by Wawa. Permanent electrical service to store must be installed prior to equipment start-up. EVO to be operational upon gas entering the tanks.
Upon completion of equipment commissioning by service vendor, Contractor shall purge all dispensing equipment in accordance with manufacturers' standard practices. Wawa requires a minimum of 150 gallons be purged from each meter after air is removed from product lines.
Purging of air from the product lines shall be accomplished using the product piping shear valve. Product shall be purged until no air is observed; a minimum of 50 gallons per shear valve. Initial purging of air shall NOT be done using the nozzle. Severe damage may occur to dispensing equipment. If damage occurs, Contractor is responsible for all repairs. Refer to manufacturer's instructions for proper purging procedures. Failure to purge from the shear valve will result in fortification of final payment.
Petroleum Contractor shall return to the site to purge & calibrate pumps, & shall return to the site for start up by a third party, as scheduled by the Wawa Project Manager.
Petroleum Contractor to be onsite during all third party testing activities.
The brine level in the tanks shall be verified & adjusted to 7-1/2" at greater than one tank capacity prior to store opening.

Table with 3 columns: DESCRIPTION, PART NUMBER, QUANTITY. Includes items like UNDERGROUND STORAGE TANKS, DISPENSER TRIM, TANK TRIM, GRADE LEVEL TRIM, SUBMERSIBLE PUMP TRIM, and HANGING HARDWARE.

Table with 3 columns: DESCRIPTION, PART NUMBER, QUANTITY. Includes items like AC Input Module, Relay Module, Probe Module, 3-Wire Sensor Module, and I.S. Modules.

Table with 3 columns: DESCRIPTION, PART NUMBER, QUANTITY. Includes items like Dispenser Package, Fibrelite Manway, and Fibrelite Bittical.

Table with 3 columns: DESCRIPTION, PART NUMBER, QUANTITY. Includes items like Fibrelite Manway, Fibrelite Bittical, Fibrelite D plates, Submersible Pump Trim, and Hanging Hardware.

Table with 3 columns: DESCRIPTION, PART NUMBER, QUANTITY. Includes items like Fibrelite Manway, Fibrelite Bittical, Fibrelite D plates, Submersible Pump Trim, and Hanging Hardware.

Table with 3 columns: DESCRIPTION, PART NUMBER, QUANTITY. Includes items like Fibrelite Manway, Fibrelite Bittical, Fibrelite D plates, Submersible Pump Trim, and Hanging Hardware.

BOHLER ENGINEERING logo and contact information. Includes address: 2255 GLADES ROAD, SUITE 3031 BOCA RATON, FLORIDA 33431. Phone: (561) 571-0280. Fax: (561) 571-0281.

Table with 4 columns: REV, DATE, COMMENT, BY. Used for tracking revisions.

811 KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG. Website: www.call811.com

APPROVED FOR CONSTRUCTION. PROJECT NO.: FLB100067. DRAWN BY: DH. CHECKED BY: CR. DATE: 08/30/18. SCALE: AS NOTED. CAD.D: FT5.

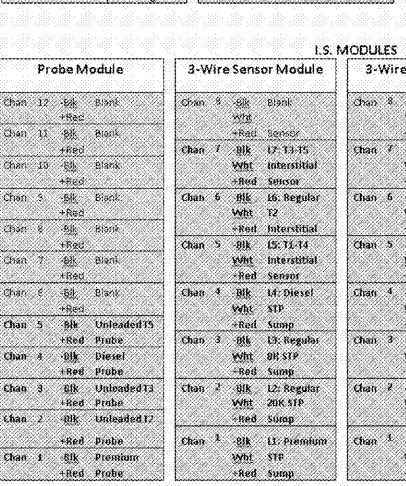
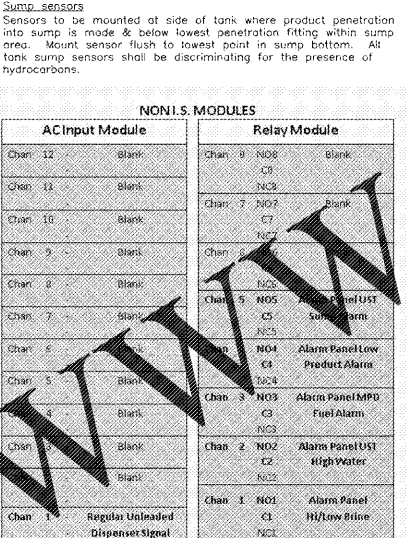
LOCATION OF SITE: 3300 NW 87TH AVENUE MIAMI, FL.

BOHLER ENGINEERING logo and address: 2255 GLADES ROAD, SUITE 3031 BOCA RATON, FLORIDA 33431. Phone: (561) 571-0280. Fax: (561) 571-0281.

Cristopher Cabello, Professional Engineer, No. 83025. State of Florida. License No. 11025719.

SHEET TITLE: GENERAL NOTES & LEGEND (22,000 COMPART. TANKS)

SHEET NUMBER: G-5



NOTES: 1. FOR EXISTING CONVERSION WITH DIESEL PRODUCT ADDITION, VERIFY ALL INSTALLATION PER SITE SPECIFIC SCOPE OF WORK.

GASOLINE DETAILS
FLORIDA
GENERAL NOTES & LEGEND
(22,000 COMPARTMENTALIZED TANKS)