

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 90A, Chapter 4 & Chapter 4.
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 90A-6.2 & 4-9.5.
6. Contractor must use only manufacturer approved tools for installation of all piping & dispenser pumps. No use of hand saws, hand saws, hand saws, utility knives, etc. will be allowed.
7. The Petroleum Contractor will furnish and install seal off fittings for 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.
8. 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 72 hours of receiving equipment.
9. The Petroleum Contractor will be contracted to complete all tank installation, petroleum underground piping, backfill, stone subbase, fine grading & all 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.
10. The General Contractor will layout tank pad, canopy pad & footer location per site available Form & will be notified & Wawa shall secure third party services to assist in dewatering.
11. All manhole openings on the tank slab shall be installed with a 2" x 18" iron crown of concrete to prevent water intrusion into the manhole.
12. All curbing surrounding tank slab shall be poured monolithic in conjunction with tank slab.

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-93 par. 4.1, 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-93 & 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 pre-closure testing of tanks, lines 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.

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.

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 tank air 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.

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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 shall remain in tanks until all petroleum work is completed & tank mat is installed.

Conduit Requirements
See E-1 to E-5 Verify with building/concept drawings for all conduit. NOTE: Conduits to be installed to edge of canopy tank pad by general contractor. Petroleum contractor is responsible for balance.

- (1) 1" GRC to each canopy column for lighting.
- (2) 1" GRC to each canopy column for lighting.
- (3) 1" GRC to each dispenser.
- (4) 1" GRC to each dispenser.
- (5) 1" GRC to each interstitial rainwater. (Sump sensor)
- (6) 1" GRC to each BTP tank containment unit.
- (7) 1" GRC to each BTP tank containment unit. (Sump sensor)
- (8) 1" GRC to each multi-part containment unit. (Sump sensor)
- (9) 1" GRC to vent stack for overfill alarm & pressure device power.

Tanks shall be installed backfilled to top of tank & filled with water ballast the day they are delivered. Deviation from this process must be authorized by Wawa's representative. Scheduling is imperative to meet the process.

Tanks shall be UL listed (UL-191) called for on the specific drawing & shall be floodlight protected (FIP) device with tanks as manufactured. Deviation from this installation of tanks & piping shall be in accordance with the latest edition of the installation manual provided by the manufacturer. Prior to testing, the general contractor shall verify manway bolt tightness. Only bolts & seals, manufacturer's torque & adjust as necessary.

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Anchoring

Anchoring
All tanks are to be anchored as shown on drawings. Deadmen may be field constructed or precast 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 Fichtmastic & protected with 18 lb. anodes per tank side.

Wire rope may not be used.

Field
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 flex line.

All entry boots & fittings are to be APT product only. Risers & fitting to shear valves are to be UL listed stainless steel flexible connectors.

Field 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 DIMENSIONS MATERIAL THREAD

Steel Pipe Nipples	Class 150/20	ASTM A 199	ASTM A 53 (F 1 E)	ASME B1.20	ASME B1.16.3
Steel Pipe Nipples	Class 150/20	N/A	ASTM A 53 (F 1 E)	ASME B1.20	ASME B1.16.3
Schedule 40					

U.S. Conduit
All U.S. conduit shall be rigid galvanized steel. Conduit minimum bury depth is 24" per code. All junction boxes shall be class I, div. 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 all bulkhead compression fittings & resultant of water tightness.

Spill/Leak 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, color coded for data & GRIND wiring. ISO rated 600 volts, oil & gas resistant. Wiring shall be home run from dispenser to universal distribution box (D-Box) with no splicing. (See chart below)

The dispenser communication DATA/WUEL loop shall be wired in a manner that will allow for dispensers to be split equally on each distribution board in the Fuel loop D-Box.

The dispenser communication GRIND loop shall be wired in a manner that will allow for dispensers to be on one (1) distribution board in the GRIND loop D-Box.

Dispenser power wiring shall be run in separate conduit & shall be 12 AWG with home runs from the dispenser to the electrical panel or location relay. Two (2) spare wires of different color to be run also, terminating in D-Box & trough in electrical

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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 all bulkhead compression fittings & resultant of water tightness.

Spill/Leak 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, color coded for data & GRIND wiring. ISO rated 600 volts, oil & gas resistant. Wiring shall be home run from dispenser to universal distribution box (D-Box) with no splicing. (See chart below)

The dispenser communication DATA/WUEL loop shall be wired in a manner that will allow for dispensers to be split equally on each distribution board in the Fuel loop D-Box.

The dispenser communication GRIND loop shall be wired in a manner that will allow for dispensers to be on one (1) distribution board in the GRIND loop D-Box.

Dispenser power wiring shall be run in separate conduit & shall be 12 AWG with home runs from the dispenser to the electrical panel or location relay. Two (2) spare wires of different color to be run also, terminating in D-Box & trough in electrical

Anchoring

Anchoring
All tanks are to be anchored as shown on drawings. Deadmen may be field constructed or precast 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 Fichtmastic & protected with 18 lb. anodes per tank side.

Wire rope may not be used.

Field
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 flex line.

All entry boots & fittings are to be APT product only. Risers & fitting to shear valves are to be UL listed stainless steel flexible connectors.

Field 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 DIMENSIONS MATERIAL THREAD

Steel Pipe Nipples	Class 150/20	ASTM A 199	ASTM A 53 (F 1 E)	ASME B1.20	ASME B1.16.3
Steel Pipe Nipples	Class 150/20	N/A	ASTM A 53 (F 1 E)	ASME B1.20	ASME B1.16.3
Schedule 40					

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