7.0 Complete backfilling piping trenches and top of tanks to allow for an 8" thick concrete tank slab w/#4 rebar @ 18" OCEW and 6" thick yard/canopy paving ,3000 psi, with or without fiber mesh. Consult bid documents and Circle K Construction Manager. #4 rebar dowels at 18" O.C. shall be installed connecting new piping trench concrete with existing site paving or when replacing tanks at an existing site. Consult bid documents for non tank slab concrete strength.

8.0 (If required) Contractor to install 4" diameter .020 slotted PVC observation wells, only when required by state or local codes. Observation well caps to be painted white with a black triangle in the center. Existing monitoring or compliance wells should not be disturbed. In the event a well is damaged, immediately notify the Circle K Construction Manager. Any damaged wells will be replaced at the expense of the Contractor.

F. DISPENSERS

1.0 Dispensers to be independently set "at grade" to result in an average of 0 inches of reveal.

2.0 Contractor to provide storage for dispensers, hoses, nozzles and breakaways prior to installation and shall be responsible for any damage to equipment prior to job acceptance.

3.0 Dispensers shall be securely attached to anchor bolts which shall be set at finished grade. Expansion bolts may be used with the written approval of the Circle K Construction Manager. Quantity and size of anchor bolts shall be as specified in dispenser manufacturer's installation instructions. The dispensers are to be installed level and are to be caulked with a gray silicone at grade/dispenser interface.

4.0 Dispensers shall be activated only in presence of an authorized dispenser representative. Contractor has sole responsibility for damage to dispenser(s) if this instruction is not followed.

5.0 Purge the air from the piping system using industry standard practices and a grounded container approved for storage and handling Class I flammable liquids.

6.0 ELECTRICAL CHECKOUT:

6.1 Turn off ALL STP circuit breakers.

6.2 Confirm ALL nozzles are in their boots.

6.3 Verify ALL STP's are off.

6.4 Turn on circuit breaker for one STP. One hose at a time for product grade matching activated STP, perform the following at each dispenser.

6.4.1 Remove nozzle.

6.4.2 Activate operating handle and dispense product into an approved GROUNDED container.

6.4.3 Verify ONLY correct STP turns on.

6.4.4 Verify brand panels and octane decals on each side of dispenser matches product being dispensed by STP.

6.4.5 Verify correct nozzle type is installed, i.e. unleaded, diesel.

6.5 Repeat F5.4 – 5.4.5 for each product grade.

7.0 If misconnections or other problems are detected, make corrections and repeat entire dispenser check-out procedure.

8.0 Calibrate and seal meters per local regulations. Any re-calibration required to obtain approval from local regulators shall be contractor's responsibility.

9.0 Contractor to furnish and install new dispenser filters after completing all liquid testing and product line purging. Activate each product on each dispenser and inspect filter for leaks. Recheck primary line connections at dispenser base and STP for leaks.

10.0 Contractor shall perform start-up if approved by the dispenser/EPOS manufacturer. If Contractor is not approved by the dispenser/EPOS manufacturer, then an authorized Contractor shall be subcontracted to perform start-up. Contractor shall also provide an authorized service technician to provide up to 8 hours of on-site training for store personnel. Contractor is responsible for start-up and calibration of fueling systems. Cost must be included in Contractor's base bid.

11.0 Contractor shall provide and install pump #'s, octane decals, no smoking decals and emergency shut-off signs, per Shell image guidelines and all applicable codes and regulations. Contractor shall install all Circle K provided decals, pump toppers and windshield caddies/trash cans prior to final project acceptance.

12.0 Contractor to furnish and install fire extinguishers and appropriate decals per applicable regulations.

13.0 Install and make operational the Circle K provided 3M intercom system.

G. TESTING

1.0 Contractor shall perform a pressure decay test on the tank annular space after paving is complete by pressurizing to 5 or 10 inches water column depending on state regulations from a GROUNDED nitrogen source. Pressure shall be applied for 5 minutes. ANY TANK WHICH DOES NOT HAVE "0" PRESSURE DECAY SHALL BE REJECTED. Contact tank manufacturer for repair. Circle K Construction Manager shall witness this test.

2.0 Tank, line, leak detector and Stage II testing shall be conducted by a third party testing company subcontracted to the contractor. Testing methods must be approved by the Circle K Construction Management and conform to all local regulations and codes. Contractor shall schedule and coordinate the testing contractor along with any local inspections required to open the store. Contractor shall have a representative on-site during ALL testing. Circle K Construction Manager to witness all testing.

3.0 Circle K will only pay for one successful set of tank, line, leak detector and Stage II tests (include in bid price). Any costs associated with failed tests and subsequent repairs/re-tests will be the Contractor's responsibility.

4.0 Contractor must obtain a copy of all test reports from testing company to be submitted with the project close out requirements of Section K.

5.0 Hydrostatic Test for STP Sump/Bravo Box/Spill Buckets:
The Submersible Turbine Pump (STP) Sump, spill bucket, and the Dispenser Sump installation will be tested for water-tightness. This hydrostatic test will be done whether a jurisdictional hydrostatic test is requested by an oversight agency or not. The hydrostatic test can be done concurrently with the jurisdictional test, if one is required. The STP sump and spill bucket installation contractor is responsible for coordinating with the Circle K Construction Manager at least 24 hours prior to the anticipated hydrostatic test time. The dispenser sump installation contractor will be responsible for coordinating the dispenser sump hydrostatic test with the Circle K Construction Manager at least 24 hours prior to the anticipated test time.

Methodology For STP Sump Hydrostatic Test:
After all piping and electrical penetrations have been sealed, and the STP sump installed and finished to the tank, the STP Sump installation contractor will introduce water into the STP sump 24-hours prior to the arrival of the Circle K Construction Manager. Water will be introduced into the STP sump past the highest penetration into the installed and finished sump. The water level should be stable at the tangent point on the top of the highest sump penetration. This tangent point will be the reference point for the Circle K Construction Manager's inspection, so it is important that the stable water level is precisely tangent to the top of the highest sump penetration. After water has remained in the STP Sump tangent to the top of the highest sump penetration, the Circle K Construction Manager will inspect the STP Sump for water leakage. The Circle K Construction Manager will inspect the bottom exterior of the sump for moisture collection, or to determine if leakage has occurred around the sump seal. The Circle K Construction Manager will inspect the water level to see if there is an observable subsidence of water from the top of the highest penetration. The Circle K Construction Manager will inspect to ensure that there is no observable subsidence from the tangent point of the highest sump penetration. The Circle K Construction Manager will inspect to ensure that there is no observable leakage on the exterior of any sump penetration, and to ensure that there should be no moisture collection or observable leakage around the exterior bottom of the installed and finished sump.

Methodology For Spill Bucket Hydrostatic Test:
Following installation of the spill buckets, a hydrostatic test will be conducted by the spill bucket installation contractor and witnessed by the the Circle K Construction Manager. The Contractor is to plug the riser so that water can not leak into the riser. Water will be introduced into the spill bucket to the top of the bucket. The water level should remain at the top of the bucket for a period of one hour. The Circle K Construction Manager will inspect to ensure that there is no observable subsidence from the top of the bucket.

Methodology For Dispenser Sump Hydrostatic Test:
In order to test the water tightness of the dispenser sumps a hydrostatic test will be conducted by the dispenser sump installation contractor and witnessed by the the Circle K Construction Manager. After all piping and electrical penetrations have been sealed, and the dispenser sump has been fastened to the dispenser island or drive slab, the Dispenser Sump installation contractor will introduce water into the Dispenser Sump to within 3"or 4" of the top of the dispenser sump. This will ensure that there is an adequate hydraulic head on the sealed penetrations to test water tightness. The Dispenser Sump Installation contractor will coordinate with Circle K Construction Manager 24-hours prior to the anticipated sump test inspection time. The Circle K Construction Manager will physically inspect each (side or bottom) penetration to ensure that no moisture or leakage exists around the fittings. The Circle K Construction Manager will feel each piping and electrical penetration to ensure that no moisture or leakage exists around these penetrations.

6.0 Vapor Piping (Stage I) Slope (Fall) Verification Test:
The piping Contractor will notify the Circle K Construction Manager at least 24 hours ahead of the anticipated test time. The verification of the 1/8" slope must be conducted with a standard calibrated 3' or 4' construction level. The test must be conducted when the piping backfill is nearly complete, and the tops of the vapor piping are still clear and accessible to the level. The TMC Construction Manager will start from the furthest dispenser working back toward the tanks. The Circle K CM will lay the levels at various OR continuous points on the vapor piping, checking the level bubble for the 1/8" slope. The Circle K CM will move down the length of the Stage II Vapor Piping run, measuring the tops of the back-filled piping every four feet, or as necessary to insure a proper slope. The Circle K CM will briefly sketch an 'as-built' of the Vapor Piping run, noting all high and low spots in the piping run.

7.0 The piping system shall be installed and tested in strict accordance with the manufacturers current installation instructions or AHJ. The installing contractor shall be responsible for all necessary specialty tools and consumables required for a complete testable piping installation.

H. CONCRETE PAVING

1.0 Concrete shall be in accordance with Circle K's paving specifications and details, sheet TA-3.0.

CANOPY (if required)

I.

1.0 Circle K will contract with vendor for Canopy fabrication and installation. Contractor is responsible for the following regarding the canopy: removal and disposal of old canopy, new canopy layout (elevations and location), electrical conduit, circuitry, and all connections, canopy footings, j-bolts, canopy drain connections, column shroud installation (where required), painting, flood testing finished canopy, safety, and scheduling and coordinating canopy contractor's work with project schedule.

2.0 Contractor is responsible for all inspections required for the canopy work.

3.0 Canopy scuppers from perimeter gutter to fore court.

J. PAINTING

1.0 Contractor to paint all fill/Stage I manholes the colors indicated below. Contractor to use paint that is an oil based, rust free, enamel. All "+'s" are to be 2 inches wide. Contractor is to provide a stencil for all "+'s" on all fill lids. Lip under fill lid and 2" of concrete surrounding lid is to be painted appropriate colors.

* White w/Black + = Regular Unleaded
* Red w/White + = Premium Unleaded
* Yellow = Diesel
* White w/Blue + = Non Ethanol Conventional Unleaded
* Orange = Stage I vapor

2.0 Tank level monitor manholes to be painted light gray, if applicable.

3.0 Contractor to paint all islands forms, canopy columns, vent riser and supports and fire extinguisher cases. GRAY (Pantone 11C)

4.0 Steel bollards at fuel islands to be primed and gray vinyl sleeves to be installed Furnished & installed by GC. (Pantone 11C)

K. REQUIRED DOCUMENTATION

A project contact list with all General Contractor and Subcontractor contacts and phone numbers shall be submitted to Circle K Construction Manager, along with a CPM schedule prior to starting this project.

1.0 The following documentation is required prior to releasing the final 10% retainage on the project. THESE DOCUMENTS SHALL BE SUBMITTED IN A BOUND PROJECT CLOSE OUT FOLDER.

* Site information (address, site #, etc.)
* Project description with start and finish dates and CPM schedule
* G.C. information along with subcontractor list
* Job progress photos (see K-3.0)
* Daily job progress logs (New builds only)
* Underground tank installation checklist (N/A)
* Piping manufacturer's installation checklist
* Copies of tank, line, and Stage II VR test results
* UST Information Sheet
* Copies of all permits and inspections
* Copy of certificate of occupancy (if required)
* Completed and signed punch list
* As-built drawings to scale depicting precise location of all components installed (including product/vapor line sizes and locations, conduit sizes, location and material, exact tank location and dimensions, etc.)
* Tank charts (Leave second copy at store)
* Final release of lien from Contractor and each subcontractor/supplier and subcontractor's affidavit
* Copy of contract, change orders, and written approvals for deviations from these drawings.
* Copy of Signed Tank Disposal Certificate and ALL waste manifests.
* Compliance Information Form
* Tank Layout Form

2.0 Contractor shall maintain and turn over 2 copies of an indexed operation and maintenance manual, consisting of booklets for all newly installed equipment. Give one copy to Circle K Construction Manager and leave one at the store. Contractor shall leave tankcharts, tankstick, manway removal device, water finding paste, and all keys at the store.

3.0 Job progress photos – fuel system installation

At a minimum, the following photos are to be submitted on a CD and Disk labeled with scope of work, store # and address, in bound project close out folder as described in K-1.0, prior to release of retainage.

1. Photos of location prior to start of construction (minimum 4).
2. Each old tank and old tank hole.
3. Open tank hole.
4. Installation of new tanks including deadman and holddown straps. (1 during, 1 at finish).
5. Pea gravel backfill (includes tamping of pea gravel at 5:00 and 7:00 position). (3 photos)
6. Installation of product lines, vent lines and electrical in tank hole.
7. Installation of fill tubes and submersible pumps.
8. Backfilled tanks only before concrete pour, showing rebar.
9. Rebar properly installed around fill and Stage 1 manhole/Stp manhole.
10. Tank field ready to receive concrete (includes rebar on chairs or brick bats).
11. Depth of new concrete.
12. Tank field completed (includes joints, painted fill caps, and vent risers). (min. 2)
13. Open trenches.
14. Product piping in trenches (properly spaced).
15. Stage dressed pipe.
16. Pea gravel backfill in trenches (show pea gravel under product lines).
17. Show installation of dispenser containment boxes.
18. Product pipe trenches ready to receive concrete (show rebar doweled into existing concrete).
19. Location of photo electric cell or contactor for canopy lights and signs.
20. Installation of new canopy footings.
21. Picture of finished canopy.
22. Pictures of location at the end of construction. (minimum 4)

L. Tank and Line Monitoring System

Tank and line monitor to be installed by Veeder Root Certified Technician. Installation to include: mounting controller near electrical panel, installing all tank level probes, sump probes, liquid level sensors (if required), all conduits and wiring, connecting all cables, and system start up. Contractor to include installation in base bid.

M. ELECTRICAL

1.0 All electrical work to conform with local and national electrical codes at a minimum.

2.0 All wires must be continuous run (no splices) from dispenser to console terminal strip box.

3.0 All spare wires should be taped and looped at ends and labeled.

4.0 Submersible pump relays must be used if 1-1/2 HP pump motors are installed. If not supplied with submersible pump, consult the Circle K construction manager.

5.0 Terminate all conduits with appropriate seal-off fittings at each end.

6.0 All conduit and junction box conduit threaded connections inside sumps or dispenser pans/sumps shall be made with thread sealant per E-3.4. Bonding straps shall be installed where required by code.

7.0 Electrical unions and pull boxes are not permitted below the top of a dispenser pan/sump. Pull boxes are not permitted inside an STP sump. The only electrical union permitted inside an STP sump can only be installed between the explosion proof junction box and the STP. Seal-offs and explosion proof junction box shall be installed wherever shown in these drawings.

8.0 Conduit system (i.e. conduit, seal-offs, explosion proof junction boxes) inside STP sumps and dispenser pans/sumps shall be soap tested to first conduit connection outside STP sump or dispenser pan/sump at 5 psi after all connections are made and prior to installing wiring. Circle K Construction manager shall witness these soap tests.

9.0 An explosion proof junction box where shown (Crouse-Hinds Model GUP215 with S302 "O"-Ring, or owner approved equal) shall be installed per NEC Sections 501 and 514, NFPA 30, 30A and 70. Conduit shall be 1" or 3/4" Dia. galvanized rigid or 3/4" schedule 40 conduit where permitted by code.

10.0 Contractor to install emergency shut-off switches where indicated on sheet TA-2.1. Shut-off switch and electrical material required to make the switch operational shall be furnished by the contractor (including emergency shut-off sign). Placement of emergency shut off switch(es) and proximity to the dispensers must be in accordance with all applicable codes and regulations. More than one might be required. Consult bid documents and Circle K construction manager for quantity and location of emergency shut-off switch(es).

11.0 Contractor shall furnish all new conduits, wiring and seal offs for dispensers, STPs and monitoring equipment per these drawings. Each STP and dispenser shall have its own circuit breaker.

12.0 All exposed conduits and gutter boxes shall be painted by contractor to match building colors.

13.0 Contractor to seal all conduit builiding penetrations and clearances.

14.0 Contractor shall type and laminate the breaker panel labels. Contractor shall label all STP control boxes.

15.0 Contractor shall furnish and install a new 100A electrical "fuel system" sub-panel and ensure that the stores electrical system is properly bonded for existing stores. (Part of CP-1 Panels)

16.0 Gilbarco STP Isolation Relays must be provided for each dispenser. If not supplied with dispenser, consult Circle K construction manager.

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CLIENT:

CIRCLE K STORES, INC.
SOUTH ATLANTIC DIVISION
215 PENDLETON ST
WAYCROSS, GA 31501
PHONE: (912) 285-4011

DESIGN TEAM:

MDM SERVICES, INC.
engineering • environmental • construction
1055 KATHLEEN ROAD, LAKELAND, FLORIDA 33805
(863) 646-9130
EB #0004857

TANK & PIPING PLANS & SPECIFICATIONS

NO.	DATE	REVISION DESCRIPTION

NOT FOR CONSTRUCTION
BID SET

RICHARD R. MORRIS, P.E.
GA REG # 013997

SITE ADDRESS:

CIRCLE K
1717 E 16th AVE.
CORDELE, CRISP COUNTY
GEORGIA

SCALE:	MDM JOB #: 20183
DATE: 9/01/2020	
DESIGNED BY:	
DRAWN BY: JR	FILE NAME:
CHECKED BY:	

DRAWING TITLE:

GENERAL NOTES

SHEET NO:

TA-2