



STATE OF DELAWARE  
DEPARTMENT OF TRANSPORTATION  
PO BOX 778  
DOVER, DELAWARE 19903

JACK MARKELL  
GOVERNOR

JENNIFER COHAN  
SECRETARY

**VIA OVERNIGHT DELIVERY**

(302) 760-2030  
FAX (302) 739-2254

July 6, 2016

Contract No. T201680102.01  
Magnolia Truck Wash  
Kent County

Ladies and Gentlemen:

Enclosed is Addendum No. 1 for the referenced contract consisting of the following:

1. The Bid Proposal Cover, revised, to be substituted for the same page in the Proposal.
2. One (1) page, Completion Time, page i, Calendar Days revised, to be substituted for the same page in the Proposal.
3. One (1) page, Table of Contents, page iv revised, to be substituted for the same page in the Proposal.
4. One (1) page, Appendix A-Technical Specifications, page 4, section 1.4, paragraph A, number 3, revised, to be substituted for the same page in the Proposal.
5. Twelve (12) pages, Special Provision 763536-Truck Wash System, has been added to the Proposal.
6. The Pre-Bid Meeting Sign-In Attendance Sheet has been posted.
7. One (1) page, Subcontractor Category List, that was determined at the Pre-Bid Meeting held on June 29, 2016, has been added to the proposal.
8. The Pre-Bid Meeting Transcript will be posted as soon as it becomes available.
9. Two (2) pages, Bid Pages 1 and 2 revised, to be substituted for the same pages in the Proposal. Item Number 401810 has been deleted and Section 0002 Wash Equipment has been added.
10. One (1) page, Prospective Bidders Notes, page ii revised, to be substituted for the same page in the Proposal. Paragraph number 15 has been added.
11. Expedite File, Addendum No. 1.

Please note the revision listed above and submit your bid based upon this information.

Sincerely,

*~signature on file~*

Robert A. Kovacs

Competitively Bid Contracts Coordinator

STATE OF DELAWARE



DEPARTMENT OF TRANSPORTATION

BID PROPOSAL

for

CONTRACT T201680102.01

MAGNOLIA TRUCK WASH

KENT COUNTY

ADVERTISEMENT DATE: June 13, 2016

**PROSPECTIVE BIDDERS ARE ADVISED THAT THERE WILL BE A PRE-BID MEETING WEDNESDAY  
JUNE 29, 2016 AT 10:00 A.M. IN THE DelDOT ADMINISTRATION BUILDING,  
800 BAY ROAD, DOVER, DELAWARE, 19903.**

COMPLETION TIME: ~~±50~~ **210** Calendar Days

SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION  
DELAWARE DEPARTMENT OF TRANSPORTATION  
AUGUST 2001

Bids will be received in the Bidder's Room at the Delaware Department of Transportation's Administration Building, 800 Bay Road, Dover, Delaware until 2:00 P.M. local time July 19, 2016

**Contract No.T201680102.01**

**MAGNOLIA TRUCK WASH  
KENT COUNTY**

**GENERAL DESCRIPTION**

LOCATION

These improvements are located in Kent County more specifically shown on the Location Map(s) of the enclosed Plans.

DESCRIPTION

The improvements consist of furnishing all labor and materials for the construction of a Truck Wash Building and Apparatus at Magnolia Area 21/7 Yards, as well as other incidental construction in accordance with the location, notes and details shown on the plans and as directed by the Engineer.

COMPLETION TIME

All work on this contract must be complete within ~~150~~ **210** Calendar Days. It is the Department's intent to issue a Notice to Proceed such that work starts on or about July 1, 2016.

PROSPECTIVE BIDDERS NOTES:

1. BIDDERS MUST BE REGISTERED with DeIDOT and request a cd of the official plans and specifications in order to submit a bid. Contact DeIDOT at [dot-ask@state.de.us](mailto:dot-ask@state.de.us), or (302) 760-2031.
2. QUESTIONS regarding this project are to be e-mailed to [dot-ask@state.de.us](mailto:dot-ask@state.de.us) no less than six business days prior to the bid opening date in order to receive a response. Please include T201680102.01 in the subject line. Responses to inquiries are posted on-line at <http://www.bids.delaware.gov>.
3. THE BID PROPOSAL incorporates a cd containing **Expedite, version 5.9a** and its installation file. Bidders are to use the cd provided to enter their bid amounts into the Expedite file. The Expedite bid file must be printed and submitted in paper form along with the cd and other required documents prior to the Bid due date and time.
4. SURETY BOND - Each proposal must be accompanied by a deposit of either surety bond or security for a sum equal to at least 10% of the bid.
5. **DRUG TESTING** - Regulation 4104; The state Office of Management and Budget has developed regulations that require Contractors and Subcontractors to implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds pursuant to 29 Del.C. §6908(a)(6). Refer to the full requirements by following the below link: <http://regulations.delaware.gov/register/september2015/final/19%20DE%20Reg%20207%2009-01-15.htm>  
Please note a few of the requirements listed below;
  - \* At bid submission - submit with the bid a signed affidavit certifying that the Contractor has in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for their Employees that complies with this regulation;
  - \* Two business days prior to contract execution - The awarded Contractor shall provide to **DeIDOT** copies of the Employee Drug Testing Program for the Contractor, and may submit any Subcontractor's Employee Drug Testing Program for approval;
  - \* Subcontractors - Contractors that employ Subcontractors on the job site may do so only after submitting a copy of the Subcontractor's Employee Drug Testing Program along with the standard required subcontractor information. A Subcontractor shall not commence work until **DeIDOT** has approved the subcontractor in writing;
  - \* Testing Report Forms shall be submitted to DeIDOT monthly (forms will be provided).
  - \* Penalties for non-compliance are specified in the regulation.
6. Supplemental Specifications to the August 2001 Standard Specifications were issued November 24, 2014 and apply to this project. They can be [viewed here](#). The **Specifications Note** document is for the use by the bidders to reference the new numbers to the past numbers used for bidding purposes on previous Department contracts.
7. No RETAINAGE will be withheld on this contract.
8. The Department's External Complaint Procedure can be viewed on DeIDOT's Website at: <http://www.deldot.gov/information/business/>, or you may request a copy by calling (302) 760-2555.

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## SECTION 011000

### SUMMARY

#### PART 1 - DESCRIPTION

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. Section Includes:
  - 1. Project information.
  - 2. Work covered by Contract Documents.
  - 3. Access to site.
  - 4. Coordination with occupants.
  - 5. Work restrictions.
  - 6. Specification and drawing conventions.
  - 7. Miscellaneous provisions.

##### 1.3 PROJECT INFORMATION

- A. Project Identification: Magnolia Yard – Truck Wash Facility
  - 1. Project Location: 1235 Briarbush Road; Magnolia, DE 19962.
- B. Owner: Delaware Department of Transportation.
  - 1. Owner's Representative: Matthew Schlitter.
- C. Architect/Engineer: Johnson Mirmiran & Thompson.

##### 1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of construction of a new Truck Wash facility along with associated site improvements.
  - 1. This work is to include the new structure and associated site and utility work as shown on the contract drawings.
  - 2. Under a separate contract, an existing structure will be removed to allow for construction of the truck wash facility.
  - 3. ~~Under a separate contract, the truck wash system that will be housed in the new facility will be procured by DelDOT.~~ The general contractor will be responsible for coordinating with the selected wash system vendor for installation of the system in the new facility.

## **763536 - TRUCK WASH SYSTEM**

### **PART 1- GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this specification.
- B. Related Sections include the following:
  - 1. Section 220719 - Plumbing Piping Insulation
  - 2. Section 221116 - Domestic Water Piping
  - 3. Section 221119 - Domestic Water Piping Specialties
  - 4. Section 221116 - Sanitary Waste and Vent Piping
  - 5. Section 222114 – Facility Natural Gas Piping

#### **1.2 SCOPE OF WORK**

- A. To furnish a completely automatic, touchless heavy-duty salt truck vehicle wash system with a special heavy duty entrance de-mucking system which washes the salt from the front, roof, rear, sides and chassis of the Owner's fleet and other specified vehicles in drive-through mode. The system shall be designed to wash in separate functions the following parts of salt trucks; front of the salt bed, back of the cab, inside bed, area in-between bed and frame, complete under chassis, and salt spreader.
- B. The contractor is to be responsible for the supply of necessary equipment, materials and service for the complete assembly and erection of the equipment so that it is ready for operation as per these specifications.

#### **1.3 QUALITY ASSURANCE**

- A. Experience: The system shall be produced by a manufacturer of established reputation with experience supplying the specified equipment in similar applications.
- B. Installation: Provide a qualified manufacturer's representative to supervise the work related to equipment installation, check out and start up.
- C. Training: Provide a technical representative to train Owner's maintenance personnel in the operation and maintenance of specified equipment.

## 1.4 SUBMITTALS

### A. Product Data

1. Submit Product Data in strict accordance with the requirements of these specifications.
2. Restrict submitted material to pertinent data. For instance, do not include a manufacturer's complete catalog when pertinent information is contained on a single page.
3. All bidders shall provide the spinner manufacturer's certified test results that the spinner to be supplied has passed the required 5,000-hour continuous test run. Such certified test results shall indicate the condition of the spinner and the spinner components after the 5,000-hour test run.

### B. Engineering Drawings

1. Submittal engineering drawings must include the following:
  - a. Equipment general layout
  - b. Electrical layout
    - 1) Provide UL listing card or equivalent document of a Nationally Recognized Testing Laboratory from the company building the electrical panel(s) and attach with the electrical drawings indicating that the electrical panels will be built to the required standards (see section 11.10 Electric Control Panel).
  - c. Mechanical layout
  - d. Floor plan view
  - e. Isometric view with bill of materials
  - f. Any related in-ground electrical or mechanical installation

### C. Operation and Maintenance Manual

1. Assemble and provide copies of manual in 8.5 x 11-inch format. Fold out diagrams and illustrations are acceptable. Manuals shall be reproducible by dry copy method.

### D. Supplier Qualifications

1. The supplier shall have been regularly engaged in the design and supply of the type of equipment specified herein.
2. The wash system, high pressure cleaning systems, pumping stations and all electrical controls shall be designed and supplied by one supplier.
3. All similar items shall be the products of one manufacturer.

4. No deviations from these specifications will be allowed unless approved by the Owner in writing prior to bid closing.
5. All bidders requesting deviations shall submit the following with their request:
  - a. A complete list of spinner and touchless heavy duty vehicle wash systems manufactured and installed by the supplier. The list shall include all such installations made by the supplier in the last five (5) years, including the duration of service and application. Should the reference list have more than twenty-five (25) names, a list of the last twenty-five (25) installations shall suffice.
  - b. Provide the name of a contact person at each location that is familiar with the operation and maintenance of the wash system.
  - c. Based on the information supplied and discussions with the contact persons named, the engineer will determine the acceptability of the proposed deviation.

## 1.5 WARRANTY

- A. Warranty work specified herein is for a minimum of one (1) year from the date of substantial completion against defects in materials. All rotating spinners have a minimum three (3) year full parts warranty.
- B. Defects shall include, but not be limited to:
  1. Operation: Noisy, rough or substandard operation
  2. Parts: Loose, damaged and missing parts
  3. Finish: Abnormal deterioration

## PART 2- PRODUCTS

### 2.1 WASH SYSTEM PERFORMANCE

- A. Regardless of the Owner's approval for any deviations and/or changes, the contractor is solely responsible for the performance of the supplied equipment per these specifications. All equipment and equipment functions must be built and designed to these specifications.
- B. Should the equipment not perform as per these specifications, the contractor shall modify, add and/or alter the equipment supplied at his own expense until the performance is satisfactory.
- C. The equipment offered shall be the latest standard product, modified as necessary to meet the requirements of this specification, of a type that is commercially available and in satisfactory use.

- D. The vehicle washer shall be actuated in cycle sequence by vehicles driven in a fixed path between tire guides at a slow speed (50-60 feet / minute) through the washing system. All washing operations shall be automatically activated by the vehicle (driving through).
- E. The equipment is to satisfactorily wash up to 30 vehicles per hour. The vehicle wash shall be able to remove all visible heavy dirt accumulation and most of the road film from the Owner's vehicles when driven through the washer at 50 feet / minute, using only alkaline detergents. The amount of detergent used per vehicle to remove road film shall not exceed 0.35 gallons. The evaluation of the system capability to remove road film shall be determined only after washing has been completed and the vehicles have dried.
- F. The vehicle wash system must be capable of washing specified vehicles up to 14' in height including the following:
  - 1. Cars, Pick-ups, Vans
  - 2. Buses, School buses
  - 3. Utility trucks with or without attached ladders and other equipment
  - 4. Dump trucks

## 2.2 WASH SYSTEM COMPONENTS

- A. Heavy Duty Entry De-Mucking Wash System Platforms Side Spray Manifolds and Chassis Wash as shown on the contract drawings.
  - 1. Wash platforms should be minimum of 12 feet long and should be made of minimum of 3/8" thick hot dip galvanized steel or stainless steel. In the material of construction, no substitution to lower grade will be allowed.
  - 2. The wash main structure must be designed so that the truck tires shall drive over the spray manifold assemblies. The nozzles shall be located so that all spray angles spray at approximate 45-degree angle towards the rotating tires. The truck tires must roll on and contact the spray nozzle manifolds with all nozzles being protected.
  - 3. The system must have a minimum one pressure pumps for wash platforms one pump for side spray towers and one pump for chassis manifold total of 3 pumps (minimum 20 HP) each pump being able to deliver minimum of 380 GPM. Pumps with lower horsepower can be used, provided that the total horsepower of all pumps meets the specified total 20 horsepower and performance is minimum 380GPM.
  - 4. Side spray manifolds shall be 4 inch galvanized with 20 05-60 spray nozzles on each side spray manifold. Nozzle assemblies shall cover the side of the vehicle up to 6 feet. The supplier's drawings shall show that the entire truck tire tread area is completely covered with sprays.
  - 5. Chassis wash frame shall be constructed of 2-inch galvanized pipe with five manifolds that are adjustable to direct the water sprays onto the underside of the vehicle. Each manifold will have 12, 00-60 stainless steel nozzles for a total of 60 nozzles.

6. The de-mucking wash system must be equipped on both sides with minimum 4” hot dip galvanized tire guides for the entrance, full run of the wash platforms and for the exit. Guide rails shall be painted safety yellow with coating system appropriate for the environment and material.
7. System will have an entrance selector switch to allow the operator to activate or deactivate the entrance de-mucking program. Selector switch to have four positions,
  - a. Full wash with entry de-muck.
  - b. Full Salt truck wash only.
  - c. Small vehicle wash only, (one chemical arch and spinner arch)
  - d. System off.

B. Pumping Module

1. The pumps shall be ITT/Goulds Trash Hog pumps or engineer approved equal by one of the following manufacturers.
  - a) Patterson Pumps
  - b) Taco
  - c) Armstrong

C. Electric Motor

1. The electric motors shall be of the squirrel cage induction type suitable for across the line starting. Motor shall operate on 460 Volt, 3-phase, 60 cycle and be ODP with a 1.15 service factor.
2. The motors shall be sized so as not to exceed the nameplate horsepower during operation. The motors should be a minimum of 20 HP.

D. Detergent Arch Components

1. Timing of operation and position of the detergent arches shall be determined by the manufacturer to provide optimum detergent penetration before high-pressure wash cycle.
2. Detergent injector shall be provided with adjustable chemical injection ratio from 1:20 to 1:100. The ratio of detergent delivery (by the injector) must be readable on the injector calibrated settings. The detergent injector must be of the positive displacement type. Two chemical pumps are required for the soap arches.
3. The system shall have a water booster pump to ensure even water pressure.
4. The detergent arch shall be made of 1.25-inch stainless steel pipe, compatible with selected detergents, and equipped with 25 pieces of adjustable Swivel Nozzle Bodies with a Diaphragm Check Valve to evenly apply hot water/detergent solution to front, rear, sides and roof of the vehicle proceeding through the arch. The design of the detergent arch shall allow immediate activation of the nozzles upon arch activation by the vehicle.

5. The chemical spray components located in the equipment room must be assembled in a modular, wall-mounted assembly containing the following components:
  - a. Solenoid Valves (2 required)
  - b. Pressure Gauge
  - c. Pressure Regulator
  - d. In-line Screen
  - e. Isolator Ball Valves to by-pass Water Softener
6. The detergent arch shall be activated by a photo eye assembly. This assembly is to be mounted on the adjustable height steel frame located at the front of the wash. The photo eye assembly shall be able to be activated by all sizes of vehicles.
7. The detergent arch shall be supplied hot water through a gas fired hot water heater. The heater shall be a minimum of 199,000 BTU.
8. A water softener for the detergent arch is required to be included by the contractor to maintain the domestic water hardness level below 3 grains.

E. 4-Stage Salt Truck Bed Wash Arch

1. The salt bed arch shall function in four separate stages with each stage operated by a two (2) inch co-axial 2-way valve that utilizes a control tube that moves linearly along the same axis as the fluid flow. The valve shall be pressure balanced so that operation is unaffected by inlet pressure or pressure fluctuations. The designed cycle life for the intended application shall be a minimum of 500,000 cycles. Adjustable switch timing shall be between 150-2,000 milliseconds.
2. The de-salting arch shall operate in the following functional sequence:
  - a. Truck enters the de-salt arch,
  - b. The first activation of the arch washes the frond of the bed and the back of the cab,
  - c. The second stage flushes out the inside of the bed of the truck.
  - d. After completing the inside bed washing, the high pressure switches to washing in-between the bed and the frame, and includes rinsing the salt spreader.
3. All functions shall operate independently and all shall use the full volume from the specified high pressure pump. It is noted herein that switching times specified for valves are crucial for operational characteristics, and will be required for this operation.

F. High Pressure Spinner Assembly

1. High pressure cleaning shall be achieved using ten (10) rotating spinners mounted on one common self-supporting arch assembly. Five (5) spinners are mounted on each side of the arch for complete coverage for all shapes and sizes of vehicles including wheels and insides of wheel wells.
2. The high pressure arch shall be made of 2-inch Schedule 40 galvanized pipe. The spinner(s) position in relation the vehicle shall be adjustable vertically and horizontally.
3. The three bottom spinners on each side must be protected by 2-inch Schedule 40 galvanized spinner protection guards. Should the vehicle jump the tire guide, spinners shall be protected spinner guards which will allow the complete spinner arch assembly to swing aside when struck by a vehicle. Systems without protection for the spinners shall not be acceptable. The supplier shall demonstrate to the Owner, the operations of the spinner guard system in a method that is agreed upon between the Supplier and the Owner.

G. Spinners

1. All spinners submitted for approved equal must have been tested and passed a 5,000-hour continuous test run. The test shall be conducted by the manufacturer and verified by an independent 3<sup>rd</sup> party.
2. Each spinner is to have four (4) fully adjustable spray nozzles. The nozzles are to be of the zero-degree type and be supported at the end by adjustable position elbows.
3. The rotational speed of each spinner is to be adjustable between 90 – 300 RPM. The rotational speed adjustment of the spinners is to be achieved through an internal oil pump. No free-floating oil pump gears without center shaft supports will be acceptable.
4. The rotational high-pressure water seal must be of the mechanical seal type.
5. The spinner inlet hookup must be a minimum of 1” stainless steel. Spinners equipped with smaller inlet hookups shall not be acceptable.
6. The nozzles are to be equipped with air jet nozzles. Zero-degree water is to pass through the secondary orifice, which will be a minimum of three (3) inches long and have eight (8) openings for air intake at the joint of the spray nozzle and air jet nozzle. Air jets and nozzles must be made of stainless steel. Spinners not equipped with air jet nozzles are not acceptable.
7. The spinner assembly shall have no periodic maintenance or lubrication requirements.

H. Spinner Adjuster Tool

1. The spinner adjuster tool, to set all four spinner elbows in an exact, pre-determined angle, shall be supplied with the system.
2. Adjustment of spinner elbow angles to a precise position by the adjustment tool shall be done without removing the spinners from the arch.

I. Chassis Wash System

1. The chassis wash system shall be operated by one of the 75HP pumps and shall be made of 3 inch, schedule 40 galvanized piping welded in a rectangular form.
2. The chassis wash flow shall be designed to cover 100% of the under chassis of all trucks used by the Owner.

J. Pumping Module

1. Pumps: The high pressure pumps (three required) shall be of the centrifugal diffuser type and shall be capable of producing pressures up to 320 PSI. The pump shall deliver a maximum flow of 300 GPM as determined by the nozzle sizes incorporated in zero degree spinners.
2. Casing: The suction casing shall be 3.0 inch 250 lb. ANSI flat faced flanged. It shall be oriented to right angles of the vertical center line when viewed from the drive end. The discharge is 2.5 inch 600 lb. ANSI raised face flange oriented on the vertical center line. The suction casing, discharge casing, stage casings and diffusers are made of ductile iron, free from blow holes, sand pockets, or other detrimental defects. Flow passages are smooth to permit maximum efficiency. Pump shall be equipped with external tie bolts to hold the radially split casing sealed by 'O' rings. The casing shall be capable of withstanding the hydrostatic test pressure of 150% of the maximum pumping pressure under which the pump could operate at the designed speed.
3. Impellers: The impellers are of the enclosed single suction type, hydraulically balanced to minimize axial thrust loads. Each impeller is individually keyed to the shaft. Impeller is bronze.
4. Stuffing Box: Packed type stuffing boxes shall be equipped with a mechanical seal.
5. Shaft Sleeves: The shaft sleeve through the stuffing box is 11-13% chrome stainless steel hardened to a minimum of 225 Brinnel and is keyed to shaft.
6. Shaft: The shaft is standard carbon steel adequately sized for loads transmitted.
7. Bearing: The bearings are designed for an average life of 50,000 hours. The outboard bearing is a deep groove type; the inboard bearings are of the radial roller type with grease fittings.
8. Base: A steel base plate contains the mounting of the pump and motor, which are carefully aligned and bolted in place prior to shipment. Final alignment will be checked and certified after installation and prior to operation by the user.
9. Coupling: The pumping module shall have a "Jaw" type coupling and includes a coupling guard.

K. Electric Motor

1. The electric motor shall be of the squirrel cage induction type suitable for across the line starting.

2. The motor shall operate on 460 Volt, 3 Phase, 60 Cycle and be ODP with a 1.15 service factor.
3. The motor shall be sized to not exceed the name plate horse power during operation. The motor should be a minimum of 75 HP.

L. Activators

1. All system activators shall be photo eyes, except for the bed wash which will be activated by a limit switch.
2. All system operations and switching between various stages shall be fully automatic. The staging shall work as long as the truck speed is below 60ft/minute.

M. Water Holding Tanks

1. The system shall be equipped with a minimum of four 1,500-gallon polyethylene water holding tank equipped with a high and a low level float switch.
2. The holding tank shall be filled via 2", slow closing solenoid valve activated by a high-level float switch in the holding tank.

N. Electric Control Panel and Components

1. The panel and controls must be built according to these specifications. No substitutions shall be allowed. The control system shall be PLC based with separate HMI.
2. The PLC shall be the process application controller and provide near real time control of the entire wash system. It shall be connected to distributed I/O via an Ethernet network. The operator interface shall be through a separate HMI not integral to the PLC, connected to the PLC via Ethernet
3. The PLC shall be panel mounted in a 48"x36"x12" electrical enclosure, which also houses the electrical controls for the wash system. The PLC may be mounted in its own enclosure in an office environment. The PLC provides the centralized infrastructure to enable simple and complete integration with other systems.
4. The PLC and HMI programs shall be developed and provided by the supplier. These programs shall include the specified wash components and provide capacity for future expansion. The bidder shall submit the proposed program that will be utilized for the PLC program and the HMI program during the submittal process.
5. PLC and HMI programs shall provide the following:
  - a. GUI shall be intuitive to use by people without computer experience. Little or no training should be required.
  - b. At program start up, all devices shall be initialized to a known state.

- c. All system settings, such as baud rates, parity, comm. port configurations, etc. shall be reconfigurable without necessitating recompiling the application software.
  - d. All user configurable settings shall be stored in the PLC and/or HMI and saved to their respective SD cards. These include all timing set points, alarm settings, and communication settings.
  - e. Periodic polling of I/O shall be every 20 ms or less.
  - f. Alarms should have user configurable delays to prevent nuisance tripping.
  - g. Latency: scanning interval for all closed loop processes should be executed <20 ms.
  - h. Provide terminal windows for spying on any devices communicating to PC via Ethernet, RS232, etc. These will be used for troubleshooting communications problems.
  - i. Failure of any single component shall result in disabling the entire wash. For example, the system will not be allowed to wash vehicles in a crippled state if a chemical pump motor overloads and trips.
6. The Industrial Control Panel shall be manufactured and evaluated in accordance with the Underwriters Laboratories, Inc. (UL) standard 508A (Industrial Control Panels). In addition, the panel shall be evaluated for high-capacity short circuit withstand and shall bear the appropriate UL marks including the short circuit withstand value mark as part of the official UL label.
  7. The industrial Control Panel shall be designed for operation on a 460 Volt, 3 phase, 60 Hertz system, with a short circuit capacity of 65,000 amperes RMS Symmetrical available at the incoming line terminals of the control panel.
  8. The Industrial Control Panel shall be designed to meet the requirements of the National Electric Code (NEC) Articles 430 and 670, also the National Fire Protections Association (NFPA) Standard 79 (Industrial Machinery).
  9. E-Stop related operator controls, all push buttons, selector switches, pilot devices, system control and access functions must be by Touch Screen Operator Interface Terminal.
  10. Electric Panels that are not UL approved are not acceptable.
  11. The activation switches shall be designed to be activated by all fleet vehicles used by the Owner. Each activator shall be pre-mounted and wired to a water tight junction box equipped with built-in drainage holes.

O. Tire Guides

1. Tire guides shall be fabricated from 4-inch diameter galvanized steel pipe headings, supported at 5 foot intervals, to provide guide runs on both sides of the vehicle. The tire guides shall run the full length of the wash system.
2. The system shall have an angled entry. The ends of the rails are capped and all headings are smoothly finished to prevent tire damage. Brackets supporting the pipe shall be made of a minimum 3/8" steel plate that is welded to concrete imbedded cleats or anchor bolted to the concrete.

3. Tire guides shall be painted safety yellow with coating system appropriate for the environment and material.

### **PART 3- EXECUTION**

#### **3.1 INSTALLATION**

- A. Equipment shall be installed in accordance with manufacturer's supplied installation drawings.
- B. Equipment supplier shall undertake the commissioning of the system and make all required adjustments to ensure proper operation.
- C. The equipment manufacturer shall start up the system. The Owner shall have all operating personnel present during the start up and equipment training.
- D. The supplier shall arrange for an adequate amount of detergent to be available for the performance testing.
- E. The Owner's personnel shall be trained for a minimum of five (5) hours in the system's operation and maintenance.
- F. The supplier shall provide the Owner with the names and addresses of all local service and maintenance personnel to assist in future service.

#### **3.2 MECHANICAL INTERCONNECTING PIPING**

- A. All field plumbing and mechanical work will be done by the Mechanical Contractor or General Contractor, including:
  1. Water and gas utilities up to and connecting to the equipment.
  2. Interconnecting piping between various equipment components located in the equipment room.
  3. Interconnecting piping between the equipment located in the equipment room and the equipment located in the wash bay.
  4. Furnish and installation of:
    - a) Exhaust duct for water heater
    - b) Backflow preventer
    - c) Underground pipe for chassis wash
    - d) Grating for trench

#### **3.3 ELECTRICAL INTERCONNECTING WIRING**

- A. All field electrical work will be done by the Electrical Contractor or General Contractor, including:
  1. Electrical service up to and connecting to the equipment panel.

2. Interconnecting wiring between various equipment components located in the equipment room.
3. Interconnecting wiring between the equipment located in the equipment room and the equipment located in the wash bay.
4. Furnish and installation of:
  - a) Underground conduits (if required) to be laid when concrete pad is being poured.

END OF SECTION 111100

**Pre-Bid Meeting** **Page 1**  
**Project No. T201680102.01**  
**Magnolia Truck Wash**  
**May 29, 2016, 10:00 A.M.**

Name	Company	Address	E-Mail Address	Phone #
Jeff Norman	George & Lynda, Inc.	150 Lafferty Lane Dover, DE 19901	jnorman@geoly1.com	302-342-3126
John Ward	ATA-Interleau Wash Eq.	9669-D Main Street Fairfax VA 22031	john@alantylifts.com	571-422-6861
Rob Solloway	Keut Const	2 Big Oak Rd Stuyvesant DE	estimator2@keuteconstruction.com	658-6469
CORRY JACOBI	THE COBI GROUP	3424 OLD CAPITAL TRAIL WILMINGTON, DE 19808	CORRYCOBI@GMAIL.COM	302-448-0650
ANNE M. JACOBI	TUE COBI GROUP	" "	AMJACOBI@TUECOBIGROUP.NET	302-407-3085
Steve Serbu	AMAKOR, Inc.	72 Clinton Street Dela ware City, DE 19706	AMAKOR@aol.com	302-834-8664
BILL BOOTH	COMMONWEALTH CONSTR CO	2317 PENNSYLVANIA AVE WILM, DE	bbooth@commonwealth.com	302-654-6611
Scott Witter	Westmatic Truck Wash Equipment	485 Cayuga Rd Buffalo, NY 14225	scott.witter@westmatic.com	716-243-6792
JOSH GEORGE	Whiting-Turner	131 continuation Drive suite 404 Newark DE 19713	josh.george@whiting-turner.com	302-292-0676
Justin Hiner	Willow Construction	400 Maryland Ave East 10 PO Box 237 Harrington, DE 19952	justin@willowconstruction.com	410-310-8658
B. Scott Schurman	BRS Consulting, Inc	PO Box 237 Harrington, DE 19952	scott@brsconsulting.com	302-786-2326
SCOTT CAPALDI	CRITICAL DESIGN & CONSTRUCTION CORP.	1601 CONCORD PK. SUITE 38 WILM, DE 19803	SACAPALDI@CDACORP.NET	302-588-4406
Mumwine contel	JJID INC	100 Bear Julian	mcontel@JJID	302-897-0537
Bryn Warren	B.W. Electric Inc.	15342 S. DUPONT DR Hwy Harrington DE 19952	bwelectre@bwelectricinc.com	302-566-6248



LIST OF SUBCONTRACTORS

**Contract: T201680102.01**

In accordance with 29 Del. C. S6962(d)10a and 10b., a Pre-Bid Meeting was held on June 29, 2016 to select the subcontractor categories to be included in the bids for performing the work required for this contract.

This proposal is based on work to be performed by the Subcontractors listed below for the categories selected at the Pre-Bid Meeting.

A bid submitted in the name of an individual should list the individual names followed by T/A and the name of the company.

EXAMPLE: John Doe, T/A Doe Contracting Company

In accordance with Title 29, Subsection 6962(d)(10)b of the Delaware Code, a penalty of \$2,000.00 will be withheld from the successful bidder for each occurrence for the failure to utilize any or all of the Subcontractors set forth below:

<u>CATEGORIES</u>	<u>SUBCONTRACTOR</u>	<u>ADDRESS CITY AND STATE</u>
Electrical	_____	_____
Masonry	_____	_____
Plumbing	_____	_____
Site Work	_____	_____
Truck Wash System	_____	_____

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE: 1  
DATE:

CONTRACT ID: T201680102.01 PROJECT(S): T201680102

All figures must be typewritten.

CONTRACTOR : \_\_\_\_\_

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
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0010	202000 EXCAVATION AND EMBANKMENT	CY 1300.000				
0020	208000 EXCAVATION AND BACKFILLING FOR PIPE TRENCHES	CY 170.000				
0030	302007 GRADED AGGREGATE BASE COURSE, TYPE B	CY 660.000				
0050	612502 PVC PIPE, 6"	LF 305.000				
0060	612503 PVC PIPE, 8"	LF 80.000				
0070	612522 CORRUGATED POLYETHYLENE PIPE, TYPE S, 12"	LF 92.000				
0080	614632 4" POLYETHYLENE SERVICE LINE, CLASS 160	LF 100.000				
0090	708051 DRAINAGE INLET, 34" X 24"	EACH 2.000				
0100	709518 SANITARY CLEANOUT	EACH 6.000				
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DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE: 2  
DATE:

CONTRACT ID: T201680102.01 PROJECT(S): T201680102

All figures must be typewritten.

CONTRACTOR : \_\_\_\_\_

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0110	727014 CONSTRUCTION SAFETY FENCE	755.000 LF				
0120	763569 BUILDINGS	LUMP	LUMP			
0130	905001 SILT FENCE	250.000 LF				
0140	905004 INLET SEDIMENT CONTROL, DRAINAGE INLET	5.000 EACH				
	SECTION 0001 TOTAL					
SECTION 0002 WASH EQUIPMENT ALT GROUP OA2						
0150	763536 TRUCK WASH SYSTEM	LUMP	LUMP			
	SECTION 0002 TOTAL					
	TOTAL BID					

9. **PLEASE NOTE** revisions to 'Equality of Employment Opportunity on Public Works' under General Notices.
10. **REMINDER**; A copy of your Delaware Business License must be submitted with your bid.
11. **Delete** Section 106.06 Buy America Contract Requirement from the Delaware Standard Specifications for Road and Bridge Construction, August, 2001".
12. This project incorporates **Appendix-A TECHNICAL SPECIFICATIONS**, which is a part of this contract. Appendix-A contains additional specifications required for this project.
13. There are various manufactures listed throughout the Appendix-A Technical Specifications. In addition to all listed manufactures, "Approved Equals" are also authorized.
14. In accordance with 29 Del. C. §6962(d)(10)a, a **Pre-Bid Meeting** will be held to select the subcontractor categories to be included in the bids for performing the work required for this contract. In accordance with Title 29 Del. C. §6962(d)(10)b of the Delaware Code, a penalty of \$2,000.00 will be withheld from the successful bidder for each occurrence for the failure to utilize any or all of the Subcontractors submitted with the bid.

The Pre-Bid Meeting will be held Wednesday June 29, 2016 at 10:00 a.m. in the DelDOT Administration Building, 800 Bay Road, Dover, Delaware, 19903.

15. Section 0002 of the Bid Pages is an alternate group that the Department may or may not award. However, anyone submitting a bid must still bid this section. If the Department chooses to use this section, then the contractor with the lowest Total Bid, which includes both section 0001 & 0002 will be awarded this project. If the Department chooses not to award section 0002, then the contractor with the lowest total bid in section 0001 will be awarded this project.