

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION



BID PROPOSAL

CONTRACT T202703201

OPEN END - CTF PROJECTS, CENTRAL, FY 26 - 29

Advertisement Date: August 10, 2026

INCLUDED IN THIS DOCUMENT:

BID PROPOSAL:

GENERAL DESCRIPTION
PROSPECTIVE BIDDER'S NOTES
GENERAL NOTICES
SPECIAL PROVISIONS
QUANTITY SHEET SUMMARY

ADDITIONAL BID PROPOSAL ITEMS:

ATTACHED OR POSTED DOCUMENTS:

PROJECT PLANS
QUESTIONS & ANSWERS (if posted)
BREAKOUT SHEETS

**PAPER BIDDERS CONTACT DELDOT
FOR BID SUBMITTAL DOCUMENTS:**

DRUG TESTING AFFIDAVIT;
CERTIFICATION FORM;
BID BOND FORM;
CD FOR BID PRICE ENTRY & PRINTING

This Bid Proposal and related documents can be viewed on bids.delaware.gov and, for subscribers bidx.com/de/

Internet Bids for Bidders with Bid Express® accounts can be submitted at [BIDX.com/de](https://bidx.com/de/); **OR**;

Paper Bids With CD will be received at the DelDOT Administration Building, Dover, DE;

ALL BIDS DUE PRIOR TO 2:00 P.M. Local Time, SEPTEMBER 1, 2026

DIGITAL ACCESSIBILITY NOTICE

The Delaware Department of Transportation (DelDOT) is committed to ensuring that its digital services, content, and documents are accessible to all users and is actively working to comply with applicable federal and state accessibility requirements. DelDOT continues to make improvements over time, with current efforts focused on programs, applications, content, and documents that are actively in use and available to the public.

Due to the nature and complexity of certain materials, including construction plans, technical drawings, historical documents, maps, and other graphic-intensive files, some documents may not currently be fully digitally accessible or compliant with current accessibility standards. In some cases, these documents are provided for historical, reference, informational, or procurement purposes only.

If you require an accessible version of a document or need assistance accessing any content, please contact DelDOT at (302) 760-2031 or DOT-ask@delaware.gov and reasonable efforts will be made to provide the information in an accessible format upon request. DelDOT appreciates your patience and understanding as accessibility improvements continue to be implemented.

GENERAL DESCRIPTION

A. BIDS DUE: SEPTEMBER 1, 2026 **PRIOR TO 2:00 P.M. Local Time** – unless changed via Addendum.

BIDS MUST BE SUBMITTED VIA:

(a) **Internet** - Bidders with DelDOT Bid Express® accounts can submit bids at bidx.com/de/.

OR:

(b) **Paper Bid Delivered To:** Delaware Department of Transportation, Administration Building
North Entrance, Bidders Room, 800 Bay Road, Dover, DE 19901

For paper bids, contact DelDOT at dot-ask@delaware.gov or (302) 760-2031 to request a CD for bidding, required forms, and instructions. Bidders enter their Bid Item prices onto the supplied CD then print the form and deliver in a sealed envelope; the Bid Form, completed CD, and required documents prior to the Bid due date and time.

(CD's cannot be used to submit bids to bidx.com)

Do not submit both Internet and Paper Bids. If so, the Internet bid and documents will be rejected.

BID OPENING: Bids will be publicly opened and read aloud at the Date and Time of the Bid Opening. The Bid Opening will be held at the 'Paper Bid Delivered To' address shown above. Bidder bears the risk of late delivery, bids received after the stated time will be returned unopened.

Attendance is not required. DelDOT offers a call-in number to hear the Bid Opening telephonically. The telephone number to call is (302) 504-8986.

When prompted, enter Meeting number (access code): 651 529 280#

It is anticipated the telephone access information will remain the same for all Bid Openings.

B. PRE-BID MEETING: No

C. LOCATION: Kent County

These improvements are more specifically shown on the Location Map(s) of the attached Plans.

D. DESCRIPTION: The improvements consist of furnishing all labor and materials for work which may include clearing and grubbing, ditching, tree removal, bituminous pavement, fog seal, speed humps, RCP, drainage inlets, PCC curb and sidewalk, pedestrian connections, riprap, pavement markings. Follow other incidental construction in accordance with the location, notes and details shown on the plans, and as directed by the Engineer.

E. COMPLETION TIME: All work on this contract must be complete within 1,095 Calendar Days. Extensions of contract time due to weather are specified in the Standard Specifications Section 108.7F, weather days. The Department's intent is to issue a Notice to Proceed for work to start on or about November 9, 2026.

F. SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, DELAWARE DEPARTMENT OF TRANSPORTATION, JANUARY 2026 apply to this Bid Proposal and Project. The Contractor shall make himself aware of any revisions and corrections and apply them to the applicable item(s) of this contract. The Standard Specifications can be viewed [here](#). Units of Measure can be found at 101.4.

G. ATTACHMENTS: Included as part of this Bid Proposal are; *Project Plans; Questions & Answers* (if posted); *Addenda* (if issued), *Referenced Documents, Documents Posted with this Bid Proposal*; and *Bid documents mailed to contractors*.

H. ADDENDA: All Addenda are posted on the internet at bids.delaware.gov, and bidx.com/de/ and are included as part of the Bid Proposal. The Bidder is responsible to check the Website as needed to ensure that the Bidder is aware of Addenda that are included in the Bid Proposal. If Addenda are issued, the final Addendum will be posted no later than the end of the day two business days prior to the bid date. Each Addendum number and issue date must be entered on the submitted Certification Form. This original Bid Proposal will not be updated, you must refer to each Addendum.

I. QUESTIONS: E-MAIL TO; dot-ask@delaware.gov

Questions regarding this project are to be e-mailed to the above address no less than **six business days** prior to the bid opening date in order to receive a posted response. Please include the Contract number in the subject line. Questions

and responses are posted at bids.delaware.gov, and bidx.com/de/. The date of the final posted Questions and Answers document must be entered on the submitted Certification Form.

J. FLAGGERS:

- A. Included in the Bid Proposal are the prevailing wages for highway construction as determined by the Department of Labor of the State of Delaware in accordance with [Title 29 Del. C. § 6960](#), relating to wages and the regulations implementing that Section.
- B. Flagger must be bid at a minimum equal to the Laborer wage rate and may be bid up to, but not to exceed, 3 times the Laborer wage rate in accordance with the County where the Work is being performed.
- C. The Department will adjust the bid to the minimum for prices bid below the minimum acceptable bid and to the maximum for prices bid above the maximum allowable bid prior to award of the Contract.
 - 1. Flagger overtime must be bid at minimum of 1.45 times and may be bid up to a maximum of 4.35 times, the Laborer wage rate in accordance with the County where the Work is being performed.
 - 2. When a Contract for a Project contains both Federal Davis-Bacon and State of Delaware prevailing wage standards, the employer's minimum wage obligations are determined by whichever standards are higher.
- D. Overtime:
 - 1. Payment for overtime will be considered on a weekly basis for time worked in excess of 40 hours for a continuous 7-day period beginning Monday and ending Sunday inclusive.
 - 2. Time worked on other Projects or Work activities other than flagging will not be counted in the normal 40 hours or the overtime.
- E. The cost of the flagging operation when performed by others who are not the Contractor's employees will not be included in the 50% subcontracting limit as outlined in Section 108.1.

K. PROSPECTIVE BIDDERS NOTES:

- 1. **BIDDERS MUST BE REGISTERED** with DelDOT in order to submit a bid. Registrations are now completed online through SimpliGov. To complete registration or for more information, click [here](#).
- 2. **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 amount bid.
- 3. **DELAWARE'S CONTRACTOR REGISTRATION ACT** - 19 Del.C. §§ 3601 *et seq.*, requires all contractors and subcontractors to register with the Delaware Department of Labor before performing construction services or maintenance. Refer to the GENERAL NOTICES section for further information.
- 4. **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 at the following link:**
<http://regulations.delaware.gov/register/december2017/final/21%20DE%20Reg%20503%2012-01-17.htm>

Note a few of the requirements;

- * At bid submission - Each bidder must submit with the bid a single signed affidavit certifying that the bidder and its subcontractors has in place or will implement during the entire term of the contract a Mandatory Drug Testing Program that complies with the regulation (*a blank affidavit form is attached*);
 - * At least two business days prior to contract execution - The awarded Contractor shall provide to DelDOT copies of the Employee Drug Testing Program for the Contractor, each participating DBE firm, and all other listed Subcontractors;
 - * 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 **DelDOT** has approved the program in writing.
5. **PERFORMANCE-BASED RATING SYSTEM** - 29 Del.C. §6962 (c)(12)(a) requires DelDOT to include a performance-based rating system for contractors. The Performance Rating for each Contractor shall be used as a prequalification to bid at the time of bid. Refer to 'General Notices' for details.

- 6. NO RETAINAGE** will be withheld on this contract unless through the Performance-Based Rating System.
- 7. EXTERNAL COMPLAINT PROCEDURE** can be viewed on DelDOT's Website, [Contractor Compliance/EEO - Delaware Department of Transportation](#) or request a copy by calling (302) 760-2555.
- 8. DELAWARE BUSINESS LICENSE**; a copy of your firm's Business License must be submitted with your bid.
- 9. FLATWORK CONCRETE TECHNICIAN CERTIFICATION TRAINING:**
Section 501.3, 503.3, 505.3, 610.3, 701.3 and 702.3 of the 2026 Standard Specifications require contractors to provide an American Concrete Institute (ACI) or National Ready-Mix Concrete Association (NRMCA) certified concrete flatwork technician to supervise all finishing of flatwork concrete.
- 10. PREVAILING WAGES DO NOT APPLY TO THIS PROJECT**, refer to *29 Del. C. § 6960 (m)*.
- 11. BREAKOUT SHEETS MUST** be submitted with your bid documents. Attach the breakout sheet(s) to the proposal. Failure to submit the breakout sheet with the proposal will result in the Department declaring the proposal as non-responsive and rejecting the bid.
- 12. SIGNAGE LANGUAGE:**
In order to maintain effective communication with the traveling public, only place signs, banners, flags, or other displays within the projects limits that meet the requirements of the latest version of the Delaware Manual on Uniform Traffic Control Devices. Any signs or other materials which deviate from the MUTCD, must be preapproved by the Engineer. The only signage and materials which may be displayed upon vehicles and equipment within the Project area are signs denoting the name of the Contractor and any subcontractors and other signs and/or materials required and approved pursuant to the MUTCD and the Engineer. Contractor shall immediately remove any signs or materials within the Project that does not meet these requirements immediately upon notification by the Engineer. Failure to remove signs or other materials following notification from the Engineer will result in Liquidated Damages being assessed in the manner and amount specified in the Standard Specifications section 108.9.A.
- 13.** No utility relocation involvement is anticipated. Should any conflicts be encountered during construction requiring adjustment and/or relocation of the agencies' existing facilities, the necessary relocation work shall be accomplished by the respective agencies' forces, as directed by the District Engineer. Any adjustments and/or relocations of municipally owned facilities shall be done by the State's contractor in accordance with the respective agencies' standard specifications as directed by the District Engineer.
- 14.** No environmental permits are required for this work provided no jurisdictional wetlands or waters are impacted. If there is any question as to whether or not a water or wetland is jurisdictional, contact the DelDOT Environmental Section at 302-760-2264.
- 15.** It is anticipated that all work will occur within DelDOT's existing right of way or easement areas. Should the need occur to trespass onto private property; it will be the responsibility of the Project manager to secure such trespass needs.
- 16.** It is anticipated that all work will occur within DelDOT's right of way. Should the need occur to trespass onto railroad property, including the highway-rail crossing; it will be the responsibility of the Project Manager to contact the railroad Chief Engineer and obtain written authorization before entering.
- 17.** The project manager shall be responsible for coordinating with the Traffic Section relating to any impacts to Traffic Section facilities (including but not limited to traffic loops, junction wells etc.) at least 4 weeks in advance of the start of the activity. Prior to initiating any work on this contract (or sites), the Project Manager shall be responsible for preparing and submitting for approval of the Safety Section, a Maintenance of Traffic Plan. Sufficient time shall be provided for the review and approval of the plan. The Maintenance of Traffic Plan shall include proposed time restrictions on the closure of travel lanes subject to the approval of the Safety Section.
- 18.** The Project Manager is responsible for ensuring any required documents and analysis as part of the adopted Work Zone Safety and Mobility Procedures and Guidelines has been completed prior to any work starting on this contract.

19. REVISED SPEC LANGUAGE:

The Revised Inspection Framework – January 2026 ([2026 Inspection Framework](#)) shall apply to this contract.

Delete from Section 101.3

Primary inspection. The inspection (formerly referred to as Final Inspection) conducted by the engineer to determine if the contractor has satisfactorily completed the project, or a portion of the project, in accordance with the contract.

Insert within Section 101.3

Acceptance Inspection. The inspection (formerly referred to as Primary Inspection) conducted by the Administering Section, contractor, and accepting section confirming that primary inspection punch list items have been addressed.

Primary inspection. The inspection (formerly referred to as initial inspection) conducted by the Department to review all contract work has been completed in accordance with the Plans, Standard Specifications, Special Provisions, and Standard Construction Details. The inspection is confirmation of the work completed per the contract documents.

Project Acceptance. The Department's notification to the Contractor that the time charges will cease, and construction activities are completed, releasing the contractor from liability and repairs or maintenance to the completed work.

Revise Section 104.12.A as follows.

- A. Before **acceptance** inspection, clean rubbish, excess materials, temporary structures, and equipment from the project, from any publicly owned borrow source used to complete the work, and from areas affected by the contractor in connection with the work within the right-of-way. Cut all grass and weeds taller than 6-inches. The cost of the final cleanup is incidental to Item 763000, **Initial Expense, De-Mobilization**.

Revise Section 105.4.F as follows.

- F. Submit copies of manufacturer's catalog cuts, drawings, wiring diagrams, and other relevant documents with working drawings for electrical and mechanical equipment. After the Department has reviewed all items of a particular system, prepare an instruction book for the particular system. Fasten and bind the items listed below in a leather or heavy plastic cover book with a title clearly shown. Provide five copies of the book to the engineer before **acceptance** inspection. Make the books available when connecting and energizing electrical and mechanical systems. Ensure that the final bound copies reflect changes or adjustments made during the work. Include the following in the instruction book:
 1. An equipment list.
 2. A complete description of the equipment.
 3. The sequence of operation including inter-locking and protective features.
 4. The use of by-pass switches.
 5. A detailed description of all wiring circuits.
 6. A recommended spare parts list.
 7. Renewal parts bulletins.
 8. Instruction bulletins for the provided equipment.
 9. Diagrams and drawings of reduced size suitable for binding.
 10. An index listing all items.

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Revise Section 105.13.D as follows.

- D. Include the cost of maintenance work during construction and before completion of the acceptance inspection punch list in the proposal. The Department will pay the cost of maintenance work occurring after completion of the acceptance inspection punch list.

Revise Section 105.14.A as follows.

- A. The engineer may order opening of certain sections of the work to traffic or other use before the contractor completes the work or before the engineer accepts the work. The Department will not consider opening sections of the work as constituting acceptance of the work or a waiver of any contract provisions. The engineer will pay the cost of repairing damage to the work caused by opening work to vehicular traffic unless opening the roadway is due to the fault, or inactivity of, the contractor or the contractor caused the damage. All other maintenance costs including, but not limited to, mowing grass and general cleanup are the contractor's responsibility until completion of the acceptance inspection punch list to the Department's satisfaction. Maintenance costs for work involving landscaping and vegetative growth are the contractor's responsibility until final acceptance.

Revise Section 105.16 as follows.

- A. Partial Acceptance.
 1. The decision to partially accept a portion of the project is solely at the discretion of the engineer. The engineer may partially accept portions of the work. The Department will not consider partial acceptance as constituting acceptance of the work that has not been partially accepted or a waiver of any contract provisions. The Department will maintain the partially accepted portion of the project, including repairing damage caused by the public.
- B. Project Acceptance
 1. The Department will cease counting contract time when the project reaches substantial completion as defined in Section 101.3, Definitions.
 2. Substantial Completion Verification
 - a. Upon receiving the contractor's notice of substantial completion of the project, the Department will verify all contract items are complete as defined in Section 101.3, Definitions. Items not deemed complete shall be completed by contractor prior to Department issuance of Substantial Completion.
 - b. After issuance of Substantial Completion, request Primary Inspection from the Department.
 - c. The Department will schedule the Primary Inspection within 30 calendar days of the request.
 3. Primary Inspection
 - a. The Department/Administering Section will conduct a Primary Inspection with the completion of 105.16.2 Substantial Completion Verification. The Administering Section will note and provide a written punch list by stations and in detail identifying work or conditions requiring correction. The punch list will include ADA inspection deficiencies.
 - b. Perform the corrective work noted on the punch list within 30 calendar days upon receipt of the punch list created by the Administering Section, unless the parties mutually agree to extend the time frame.
 - c. Upon completion of the primary inspection punch list, request an acceptance inspection from the Department. Prior to acceptance inspection scheduling, the Administering Section will confirm and annotate the primary inspection punch list and ensure ADA Inspection deficiencies have been addressed and documented.
 - d. The Administering Section will schedule Acceptance inspection with the Maintenance District within 30 days of confirmation of primary punch list item completion.
 4. Acceptance (formerly primary) Inspection.
 - a. The Department will conduct an acceptance inspection with the completion of 105.16.B.3, primary inspection. The Administering Section will provide a written punch list identifying deficiencies not satisfactorily addressed from the primary inspection punch list within 7 calendar days of the acceptance inspection.

- b. Perform the corrective work noted on the punch list within 15 calendar days upon receipt of the punch list created by the Administering Section, unless the parties mutually agree to extend the time frame.
 - c. The Administering Section will verify remediation work and will provide a list with dates that remedial activities were resolved to the Maintenance District when requesting Project Acceptance.
- C. Project Acceptance
1. The Administering Section will notify the Maintenance District that acceptance inspection punch list items have been addressed.
 2. The Maintenance District and/or other accepting entities will verify acceptance inspection punch list items have been addressed within 30 calendar days of notice from the Administering Section.
- D. Final Acceptance
1. The engineer will provide final acceptance in writing that will state the acceptance date as defined in Section 101.3, Definitions.
- E. Project Closeout
1. Upon final acceptance, provide the exempted documents, certificates, or proofs of compliance within 90 calendar days.
 2. The Department will not issue the final payment until the contractor executes and delivers the required documents.

Revise Section 108.8.K as follows.

- K. Once the Department determines that the work is substantially complete, the Department will suspend time charges and the assessment of liquidated damages. Failure to complete all punch list work identified during the primary and acceptance inspections within the timeframes allotted, will result in the Department restarting liquidated damages in accordance with the chart specified in Section 108.9, Schedule of Liquidated Damages. The assessment of post-substantial-completion liquidated damages will continue until project completion.

Revise Section 610.3.9.A.2 as follows.

2. The engineer will measure the width, length, and depth of each crack and establish the precise location of the crack termination points relative to permanent reference points on the member. The engineer will monitor and document the growth of individual cracks at an inspection interval the engineer will choose to determine if cracks are active or dormant after acceptance inspection.

Revise Section 722.3.2.A as follows.

- A. Provide on-site field instruction by the system manufacturer, at a location determined by the engineer. Provide a minimum of 2 training sessions consisting of installation training before beginning cable barrier construction and maintenance training before acceptance inspection. The manufacturer shall establish the training duration and shall provide field training on all aspects of the system. Coordinate the training schedule and location with the engineer. The engineer will advise the appropriate department staff, including construction inspectors and maintenance personnel regarding the training location and schedule. Provide all training materials in both hard copy and electronic PDF format.

Revise Section 722.3.2.C.1 as follows.

1. Hold the maintenance training a minimum of 7 calendar days before acceptance inspection of the system. Submit the proposed training date to the engineer a minimum of 14 calendar days prior to the training session date for review and approval. Include the following participants:
 - a. District Maintenance Engineer, or designated representative;
 - b. District Maintenance Superintendent, or designated representative;
 - c. Area Yard Supervisor, or designated representative; and
 - d. District maintenance personnel.

Revise Section 722.3.3.L as follows.

- L. Within 10 calendar days of the **primary** inspection, supply spare parts for the HTCBB system. Deliver the parts to the DelDOT maintenance facility as directed by the engineer. Provide an extra supply of the following:
 - 1. Socketed-type line posts, including post hardware, caps, reflective sheeting, straps, spacers, and socket covers. Include 200 posts and accessories.
 - 2. Rigging screws and threaded terminals. Provide enough materials to complete 8 turnbuckle assemblies.
 - 3. Anchor posts including post hardware and caps, reflective sheeting, straps, fittings, spacers, and socket covers. Provide enough materials to complete 3 end anchor installations.
 - 4. Fitting gaskets or socket covers. Provide 100 socket covers.

Revise Section 843.3.5.C as follows.

- C. Repair defects identified by the Department during **periodic or primary** inspections in accordance with this specification, including all highway lighting systems and components within the project limits. Begin highway lighting system repairs immediately following notice of the lighting system defect unless weather limitations prevent the corrective work. Provide notification to the Department before beginning corrective work.

Revise Section 843.3.5.D as follows.

- D. The Department will not consider the highway lighting system as substantially complete until correction of the deficiencies noted during the primary and **acceptance** inspections. Provide a maintenance bond for item 843001 – Electrical Testing upon substantial completion. Provide a maintenance bond meeting the following requirements:
 - 1. A bond sum equal to 100 percent of the value of all highway lighting system items the Department paid to the contractor;
 - 2. With original signatures, in ink, and not mechanical reproductions or facsimiles of any kind, naming the contractor as the principle;
 - 3. term of 1-year beyond the completion of the highway lighting system work; and
 - 4. written by a surety or insurance company licensed to write surety bonds in the State of Delaware by the Delaware Department of Insurance.

Revise 911.3.6.G as follows.

- G. Water bi-weekly during the period June 15 through October 1. Continue watering, without interruption, until completing watering of all the plants on the project. Use water in accordance with Section 911.2.9. The Department will allow use of tree watering bags as a part of the watering operation. Remove the tree watering bags before **acceptance** inspection.

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GENERAL NOTICES

CONTRACTOR REGISTRATION ACT

On July 1, 2021, the Contractor Registration Act, as codified in 19 Del.C. §§ 3601 *et seq*, took effect. This law requires all contractors to register with the Delaware Department of Labor before performing construction services or maintenance. The Contractor Registration Act applies to all contractors that engage in construction and maintenance within the State of Delaware. Additionally, it requires contractors to have Delaware workers' compensation insurance where required, compliance with labor laws, and proof of a state business license. The Delaware Department of Labor's Office of Contractor Registration is responsible for enforcement of the requirements of the Contractor Registration Act. If you have any questions about the contractor registration process, please call 302-430-7739 or email Contract.Registry@delaware.gov. Registration at <https://onestop.delaware.gov/>.

SPECIFICATIONS :

The Delaware specifications entitled "*Standard Specifications for Road and Bridge Construction January, 2026*", hereinafter referred to as the *Standard Specifications*; the *Supplemental Specifications* to the Standard Specifications effective as of the advertisement date of this Bid Proposal and hereby included by reference; the *Special Provisions*; *Notes on the Plans*; this *Bid Proposal* including referenced documents; any *Addenda* thereto; and any posted *Questions and Answers*; shall govern the work to be performed under this contract. The Contractor shall make itself aware of these specifications, revisions, and corrections, and apply them to the applicable item(s) of this contract.

CLARIFICATIONS :

Under any Section or Item included in the Contract, the Contractor shall be aware that when requirements, responsibilities, and furnishing of materials are outlined in the details and notes on the Plans and in the paragraphs preceding the "Basis of Payment" paragraph in the Standard Specifications or Special Provisions, no interpretation shall be made that such stipulations are excluded because reiteration is not made in the "Basis of Payment" paragraph.

The Department requires the use of various electronic applications for various documentation processes. These processes will be identified, and the Contractor's required use will be detailed during the Preconstruction Meeting. No additional payments will be made to the contractor to use or interface with the applications.

ATTESTING TO NON-COLLUSION :

The Department requires as a condition precedent to acceptance of bids a sworn statement executed by, or on behalf of, the person, firm, association, or corporation to whom such contract is to be awarded, certifying that such person, firm, association, or corporation has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with such contract. The form for this sworn statement is included in the proposal and must be properly executed in order to have the bid considered.

QUANTITIES :

The quantities shown are for comparison of bids only. The Department may increase or decrease any quantity or quantities without penalty or change in the bid price.

PERFORMANCE-BASED RATING SYSTEM

29 Del.C. §6962 (c)(12)(a) requires a Department of Transportation project, excluding municipal street aid contract, to include a performance-based rating system. At the time of bid, the Performance Rating for each Contractor shall be used as a prequalification to bid.

Bidders with Performance Rating scores equal to or greater than 85% shall be permitted to bid. Bidders with scores of less than 85% who comply with the retainage requirements of 29 Del.C. §6962 shall be permitted to bid provided the *Agreement to Accept Retainage* (located on the Certification Page) is executed and submitted with the bid. Lack of an executed *Agreement to Accept Retainage* will result in the rejection of the bid by the Department. Successful bidders awarded

Department contracts who have no performance history within the last five (5) years will be assigned a provisional Performance Rating of 85% at the date of advertisement.

Notification of Performance Rating. The Department shall post publicly the Performance Rating for all Contractors on the Department's [website](#). DelDOT will complete performance-based evaluations on the construction company contracted by the Department to build the project (the "Contractor"). Provisions to appeal Performance Ratings are described in the regulations. The regulations are set forth in Section 2408 of Title 2, Delaware Administrative Code, found [here](#).

PREFERENCE FOR DELAWARE LABOR:

Delaware Code, Title 29, Chapter 69, Section 6962, Paragraph (d), Subsection (4)b: "In the construction of all public works for the State or any political subdivision thereof, or by firms contracting with the State or any political subdivision thereof, preference in employment of laborers, workmen or mechanics shall be given to bona fide legal citizens of the State who have established citizenship by residence of at least 90 days in the State. Each public works contract for the construction of public works for the State or any political subdivision thereof shall contain a stipulation that any person, company or corporation who violates this section shall pay a penalty to the Secretary of Finance equal to the amount of compensation paid to any person in violation of this section."

EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS :

Delaware Code, Title 29, Chapter 69, Section 6962, Paragraph (d), Subsection (7) states;

- a. As a condition of the awarding of any contract for public works financed in whole or in part by State appropriation, such contracts shall include the following provisions:

During the performance of this contract, the contractor agrees as follows:

1. The contractor will not discriminate against any employee or applicant for employment because of race, creed, color, sex, sexual orientation, gender identity or national origin. The contractor will take positive steps to ensure that applicants are employed and that employees are treated during employment without regard to their race, creed, color, sex, sexual orientation, gender identity or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided by the contracting agency setting forth this nondiscrimination clause.
2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, sex, sexual orientation, gender identity or national origin.
3. The contractor will ensure employees receive equal pay for equal work, without regard to sex. Employee pay differential is acceptable if pursuant to a seniority system, a merit system, a system which measures earnings by quantity or quality of production, or if the differential is based on any other factor other than sex.

TAX CLEARANCE :

As payments to each vendor or contractor aggregate \$2,000, the Division of Accounting will report such vendor or contractor to the Division of Revenue, who will then check the vendor or contractor's compliance with tax requirements and take such further action as may be necessary to ensure compliance.

LICENSE :

A person desiring to engage in business in this State as a contractor shall obtain a license upon making application to the Division of Revenue.

CONTRACTOR / SUBCONTRACTOR LICENSE: 29 DEL. C. §6967:

- (b) No agency shall accept a proposal for a public works contract unless such contractor has provided a proper and current copy of its occupational and/or business license, as required by Title 30, to such agency.
- (c) Any contractor that enters a public works contract must provide to the agency to which it is contracting, within 30 days of entering such public works contract, copies of all occupational and business licenses of subcontractors and/or independent contractors that will perform work for such public works contract. However, if a subcontractor or independent contractor is hired or contracted more than 20 days after the contractor entered the public works contract the occupational or business license of such subcontractor or independent contractor shall be provided to the agency within 10 days of being contracted or hired.

DIFFERING SITE CONDITIONS:

SUSPENSIONS OF WORK and SIGNIFICANT CHANGES IN THE CHARACTER OF WORK:

Differing site conditions: During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the contract or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the contract are encountered at the site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before they are disturbed and before the affected work is performed.

Upon written notification, the engineer will investigate the conditions, and if he/she determines that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the contract, an adjustment, excluding loss of anticipated profits, will be made and the contract modified in writing accordingly. The engineer will notify the contractor of his/her determination whether or not an adjustment of the contract is warranted.

No contract adjustment which results in a benefit to the contractor will be allowed unless the contractor has provided the required written notice. No contract adjustment will be allowed under their clause for any effects caused on unchanged work.

Suspensions of work ordered by the engineer: If the performance of all or any portion of the work is suspended or delayed by the engineer in writing for an unreasonable period of time (not originally anticipated, customary or inherent to the construction industry) and the contractor believes that additional compensation and/or contract time is due as a result of such suspension or delay, the contractor shall submit to the engineer in writing a request for adjustment within 7 calendar days of receipt of the notice to resume work. The request shall set forth the reasons and support for such adjustment.

Upon receipt, the engineer will evaluate the contractor's request. If the engineer agrees that the cost and/or time required for the performance of the contract has increased as a result of such suspension and the suspension was caused by conditions beyond the control of and not the fault of the contractor, its suppliers, or subcontractors at any approved tier, and not caused by weather, the engineer will make an adjustment (excluding profit) and modify the contract in writing accordingly. The engineer will notify the contractor of his/her determination whether or not an adjustment of the contract is warranted.

No contract adjustment will be allowed unless the contractor has submitted the request for adjustment within the time prescribed. No contract adjustment will be allowed under this clause to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided for or excluded under any other term or condition of this contract.

Significant changes in the character of work: The engineer reserves the right to make, in writing, at any time during the work, such changes in quantities and such alterations in the work as are necessary to satisfactorily complete the project. Such changes in quantities and alterations shall not invalidate the contract nor release the surety, and the contractor agrees to perform the work as altered.

If the alterations or changes in quantities significantly change the character of the work under the contract, whether or not changed by any such different quantities or alterations, an adjustment, excluding loss of anticipated profits, will be made to the contract. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be

agreed upon, then an adjustment will be made either for or against the contractor in such amount as the engineer may determine to be fair and equitable.

The term "significant change" shall be construed to apply only to the following circumstances:

- (A) When the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction, or
- (B) When a major item of work, as defined elsewhere in the contract, is increased in excess of 125 percent or decreased below 75 percent of the original contract quantity. Any allowance for an increase in quantity shall apply only to that portion in excess of 125 percent of original contract item quantity, or in case of a decrease below 75 percent, to the actual amount of work performed.

RIGHT TO AUDIT

The Department shall have the right to audit the books and records of the contractor or any subcontractor under this contract or subcontract to the extent that the books and records relate to the performance of the contract or subcontract. The books and records shall be maintained by the contractor for a period of 3 years from the date of final payment under the prime contract and by the subcontractor for a period of 3 years from the date of final payment under the subcontract (29 Del.C. §6930).

PREVAILING WAGES

PREVAILING WAGES DO NOT APPLY TO THIS CONTRACT

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Contract T202703201
OPEN END, CTF PROJECTS, CENTRAL, FY 26 - 29

SPECIAL PROVISIONS

S.P. Code	SPECIAL PROVISION DESCRIPTION
201501-25	CLEARING AND GRUBBING
203500-25	DITCHING
211500-25	TREE REMOVAL, 6" TO 15" DIAMETER
211501-25	TREE REMOVAL, 6" TO 15" DIAMETER
211502-25	TREE REMOVAL, GREATER THAN 25" TO 37" DIAMETER
211503-25	TREE REMOVAL, GREATER THAN 37" TO 49" DIAMETER
211509-25	TREE TRIMMING
211510-25	STUMP REMOVAL
211511-25	ROOT PRUNING
401500-25	FOG SEAL
401502-25	ASPHALT CEMENT COST ADJUSTMENT
401506-25	SPEED HUMP
401576-25	PERVIOUS ASPHALT PAVEMENT – 9.5 MM TYPE C
401578-25	PERVIOUS ASPHALT PAVEMENT – 12.5 MM TYPE C
401699-25	QUALITY CONTROL/QUALITY ASSURANCE OF BITUMINOUS CONCRETE
401760-25	FOG SEAL WITH CURBING
601504-25	PERSONAL GRATE FOR PIPE INLET
760503-25	PAVEMENT MILLING, PATCHING
763587-25	MAN HOUR OF MISCELLANEOUS WORK
763621-25	CONSTRUCTION ENGINEERING, REHABILITATION
801500-25	MAINTENANCE OF TRAFFIC, REHABILITATION
806500-25	TRAFFIC OFFICERS
908516-25	SODDING

201501 – CLEARING AND GRUBBING

Description:

In accordance with Section 201.1.

Materials:

Not applicable.

Construction:

In accordance with Section 201.3.

Method of Measurement:

The Department will measure Clearing and Grubbing as the number of square yards acceptably cleared and grubbed.

Basis of Payment:

- A. The Department will pay for Clearing and Grubbing at the contract unit price per square yard. Price and payment will constitute full compensation for disposing of cleared and grubbed material and providing all tools, equipment, and incidentals required to complete the Work.
- B. The Department will consider all costs associated with the engineer's discretion to restrict earth-moving activities as incidental to the Work.
- C. The Department will not pay for the repair or replacement of damaged plants, features, or amenities that are identified to remain.

11/1/2024

203500 - DITCHING

Description:

This work consists of excavating lateral and longitudinal ditches.

Construction Methods:

A. Excavate ditches as shown on the Plans. Spread all material excavated from the ditches on each side of the ditch. Grade and contour the surface to blend with the surrounding ground. Prepare the land and condition along both sides of the ditch to the width necessary to receive the material. The Contractor will clear and dispose of any brush alongside the ditches in accordance with section 201. Stabilize the disturbed areas in accordance with section 908.

Method of Measurement:

A. The quantity of ditching will be measured in linear feet along the centerline of the ditch, constructed and accepted.

Basis of Payment:

A. The Department will pay the quantity of ditching at the contract unit price per linear foot. Price and payment will constitute full compensation for clearing, disposing of debris, excavating, and grading for all labor, materials, equipment, tools, and incidentals required to complete the work.

4/12/2022

211500 - TREE REMOVAL, 6" TO 15" DIAMETER

211501 - TREE REMOVAL, GREATER THAN 15" TO 25" DIAMETER

211502 - TREE REMOVAL, GREATER THAN 25" TO 37" DIAMETER

211503 - TREE REMOVAL, GREATER THAN 37" TO 49" DIAMETER

211504 - TREE REMOVAL, GREATER THAN 49" DIAMETER

Description:

This work consists of removing and disposing of trees with a diameter over 6".

Construction.

- A. The appropriate construction methods of Section 201 shall apply to this work. Final determination for removal of trees will be made by the engineer during the construction operation. Tree removal shall consist of felling a single tree by size classifications and the removal of stumps below the surrounding ground line. All portions or remnants of the tree and stump shall be completely removed from highway right-of-way and abutting properties. or as directed by the engineer.
- B. All portions or remnants of the tree shall become the property of the Contractor and shall be removed from the right-of-way and abutting properties at the close of each working day. All stumps, which cannot be removed the same day as felling, shall be cut flush with the ground prior to the end of work that day. All right-of-way removal sites shall be restored to preconstruction condition, satisfactory to the engineer, if ground disturbance, such as ruts or sod damage occurs during removal in areas not to be disturbed by grading operations.

Method of Measurement.

The quantity of trees for removal will be measured as the actual number of trees acceptably removed. The trunk diameter for all trees will be measured at a point 4' - 6" above the ground. For multiple-trunk trees that branch below the standard 4'-6" measurement, the diameter will be measured at the point immediately below the branching split or juncture. The diameter of the tree will be determined from the circumference of the tree as measured above.

Basis of Payment.

- A. The Department will pay for of trees designated for tree removal at the contract unit price per each tree by category, as follows:
 - 1. 6" to 15" diameter;
 - 2. greater than 15" to 25" diameter;
 - 3. greater than 25" to 37" diameter;
 - 4. greater than 37" to 49" diameter; and
 - 5. greater than 49" diameter.
- B. Price and payment will constitute full compensation for:
 - 1. removal of designated trees;

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2. restoration of ground disturbance in right-of-way removal sites; and
 3. all labor, equipment, tools, and incidentals required to complete the Work.
- C. Trees with a diameter of 6" and under will be removed under Section 201.

7/18/2024

211509 - TREE TRIMMING

Description:

This work consists of pruning trees and disposing of the resulting trimmings.

Construction Method:

Pruning shall be done in accordance with practices recommended by the International Society of Arboriculture in their publication Tree-Pruning Guidelines. (Edition current at time of advertisement).

The extent of the pruning shall be as noted and detailed on the Plans.

Method of Measurement:

The quantity of trees trimmed will be measured as the actual number of trees acceptably trimmed.

Basis of Payment:

The quantity of trees trimmed will be paid for at the Contract price per each tree. Price and payment will constitute full compensation for trimming, satisfactory disposal of trimmings, and for all labor, equipment, tools, and incidentals required to complete the work.

10/4/2022

211510 - STUMP REMOVAL

Description:

This work consists of removing stumps.

Materials

Not applicable.

Construction:

- A. Construct in accordance with Section 201.
- B. Remove designated stumps to a depth of not less than 10-inches below the surrounding ground, utilizing an approved stump grinder.
- C. Mound the wood chips and topsoil created by stump grinding over the ground stump, to the satisfaction of the engineer, to allow for settlement. Remove excess wood chips and topsoil.
- D. Stumps scheduled for removal will not exceed a height of 2-feet above the ground, measured vertically.
- E. Restore all ground, to original disturbed during operations to the satisfaction of the engineer.

Method of Measurement:

The Department will measure stump removal by the diameter in feet. The diameter in feet will be determined at a height of 6-inches from ground level. The diameter of stumps that exist at a height of less than 6-inches will be measured on the face of the stump at the stump's widest point.

Basis of Payment:

The Department will pay for the quantity of stump removal at the contract unit price per foot. Price and payment will constitute full compensation for removal of designated stumps; restoration of ground disturbed; and for all incidentals required to do the Work.

11/18/2024

211511 – ROOT PRUNING

Description.

This work consists of tree root pruning.

Materials.

Not applicable.

Construction.

- A. Root Pruning shall be performed by a certified arborist or tree care specialist.
- B. Operate a trenching machine, vibratory knife, rock saw, or other approved device along the outside limits of channel grading prior to any grading operations. Prune roots to a depth of 30-inches, unless otherwise directed by the engineer, and clean-cut roots and minimize construction activity shock to the affected trees. When a trenching machine is used, the trench shall be immediately backfilled. Root pruning shall be performed prior to the installation of the Tree Protection Fencing and Signage.
- C. Root pruning operations shall meet ANSI A300 standards for Tree Care Operations.
- D. Remove and dispose of wood debris and other waste materials.
- E. Trees which are immediately adjacent to the root pruning may be affected adversely due to their proximity to the excavation. Removal of any such additional trees must receive the written concurrence of the engineer.
- F. Removal of any limbs of trees which may interfere with construction operations will also require the written concurrence of the engineer.

Method of Measurement.

The Department will measure the quantity as the actual number of root pruning linear feet cut, as measured along planform ground surface cuts.

Basis of Payment.

The Department will pay for the quantity of root pruning at the Contract unit price per linear foot. Price and payment will constitute full compensation for all labor, material, equipment, tools, and incidentals necessary to complete the work.

6/15/2023

401500 - FOG SEAL**DESCRIPTION:**

This work consists of preparing the surface, providing, and applying an emulsified asphalt and water mixture as a surface seal.

MATERIALS:

A. Emulsified Asphalt Section 1016 (CQS-lhP)

1. The CQS-lhP must meet the chart below.

Emulsion Tests	Method	Specification
Saybolt Viscosity, 25°C, sfs	AASHTOT59	20-100
Saybolt Viscosity, 50°C, sfs	AASHTOT59	NA
Quick Sieve Test	AEITM4	Pass/Fail
Sieve Test, % by weight	AASHTOT59	max. 0.1
Particle Charge	AASHTOT59	Positive
Demulsibility, %	AASHTOT59	NA
Residue by Hot Plate Evaporation	AEITM 2,3	min. 62
Residue by Oven Evaporation	AASHTOT59	

Residue Tests	Method	Specification
Penetration, 25°C, 100g, 5 sec	AASHTOT49	40-90
Softening Point, R&B, °C	AASHTOT53	mm. 60°C/140°F
Ductility, 25°C, 5cm/min, cm	AASHTO 51	NA
Elastic Recovery, 10°C, %	AASHTO T301	NA

2. The contractor/supplier shall submit a Certificate of Analysis for each lot of CQS-lhP for approval.
3. The manufacturer shall dilute the emulsion no more than 24 hours before its intended use. This is to avoid settlement of the diluted emulsion. The dilution shall be completed at the manufacturer's facility.
4. The emulsion may be circulated using a centrifugal or other suitable pump to ensure uniformity.

B. Water

Section 1021

CONSTRUCTION METHODS:

A. Construction

1. Surface Preparation.

- a. Thoroughly clean the surface upon which the fog seal is to be placed to the satisfaction of the engineer. Remove all vegetation and debris prior to placing material.
- b. Blow off the surface using an approved industrial jet blower or with an approved vacuum broom truck.
- c. All preparation work shall be performed just prior to the application of the fog seal and be approved by the engineer.

2. Application Rate & Conditions

- a. Apply fog seal at a rate of 0.05 to 0.17 gal/yd² at ambient temperature.
- b. The engineer shall determine the appropriate application rate for the surface being sealed. This rate will be determined by test strip.
- c. The rate of application of the distributor shall be calibrated by an approved method determined by the engineer.
- d. Apply the fog seal when the air and surface temperature is 60°F and above. Measure the air and surface temperature in the shade away from artificial heat.
- e. The application shall not begin if rain or high winds are eminent. The engineer will determine when weather conditions are suitable for application.
- f. The fog seal should be a thin, uniform coating that is sufficient to seal the underlying pavement.
- g. Care must be taken to prevent splattering of adjacent pavement, curb and gutter, and structures during application.

B. Equipment:

1. Apply the fog seal using pressurized distributing equipment with a spray bar or other approved distribution system.
2. Distributors. The distributors used shall be capable of uniformly applying the bituminous material in liquid form. Devices to control the pressure, volume, and temperature shall be provided. Each distributor shall have an approved calibration chart, be equipped with an approved sampling device, and conform to the following:
 - a. *Pressure.* The pressure shall be supplied by a positive displacement pump or air compressor. The pressure shall be uniform throughout the entire width of spray. If pressure is supplied by an air compressor, automatic controls must be provided to maintain sufficient and even pressure throughout the application of an entire load.
 - b. *Temperature.* The distributor shall be equipped with a heating system that applies heat

uniformly across the width of the tank. Provisions shall be made for circulating or agitating the material whenever necessary while heating. The distributor shall be equipped with a thermometer marked in degrees Fahrenheit of sufficient range to determine the actual temperature of the material.

- c. *Tachometer.* All distributors shall be provided with an approved tachometer recording feet per minute with a tabulation of feet per load with adjustments. Each load tabulation shall start at zero. There shall also be a totaling tabulation of this instrument.
 - d. *Volume.* A tachometer shall give correct readings of the speed, and the volumetric efficiency of the distributor shall ensure the correct volume at various speeds. Tests shall be required to prove the volumetric efficiency of the distributor at various speeds as directed by the engineer.
 - e. *Circulating System.* All pump distributors shall be equipped with a circulating system designed to maintain a homogenous liquid while circulating in the distributor tank. This circulating system shall also be arranged to circulate the material in the tank truck before application.
 - i. Air distributors shall be equipped with a device for agitating the bituminous material in the tank trucks when necessary.
 - f. *Tests.* Necessary tests shall be made to determine the accuracy of all pressure gauges, tachometers, and pump efficiencies. The tests shall be made by the Contractor when and as required by the engineer.
 - g. *Spray Bars.* Each distributor shall be equipped with spray bars capable of applying material uniformly throughout the entire length of the spray bars when they are extended. Spray bar extensions shall be provided for applying up to a 12' width in one operation. Spray bars shall be equipped with a cleaning device and a shut-off valve to prevent dribbling, dripping, or streaking.
 - h. *Tank Capacity Gauge.* A float or other approved type tank capacity gauge shall be furnished to indicate the volume in the tank in not less than 25-gallon units. The gauge shall have adjustments for correction.
- 3. Tanks shall have a minimum capacity of 750 gallons.
 - 4. If the engineer deems that the equipment applying the material is inadequate or fails to comply with all regulations, the engineer will order the equipment to be removed from the job and require that another unit be placed on the work.
- C. Application of Fog Seal Material:
- 1. Apply the fog seal in one application at the rates specified using the pressure distributor for the full width of the sealing operation, unless otherwise directed. Apply at the temperature that is recommended by the manufacture.
 - 2. The contractor must always keep the nozzles of the spray bar clean. If one or more nozzles becomes

blocked during the application of bituminous materials, the distributor shall be stopped immediately, and the nozzles shall be cleaned. The streaked areas shall be made uniform using a hand hose or other approved method.

3. If the Contractor is unable to keep the application uniform, the operation shall be discontinued until a more experienced operator or a better distributor, or both, can be provided; or, the Contractor shall take such other precautions as may be necessary to keep the application within specified limits.
4. The Contractor shall provide effective means of protecting the structures or curbs from discoloration when applying bituminous materials adjacent to structures or curbs.

METHOD OF MEASUREMENT:

- A. The Department will measure the quantity of Fog Seal in Gallons. The actual number of gallons of fog seal applied will be measured and paid. The quantity will be determined by any or all of the following methods and verified for accuracy by computations based on field measurements taken on and along the completed finished surfaces. Multiple layers will not be measured separately.
 1. **Truck Measurement:** If bituminous materials are delivered to the Project in tank trucks, distributor tanks, or drums, the Contractor shall not remove any bituminous material from the transporting vehicle or container until necessary measurements have been made, nor shall the transporting vehicle or container be released until final outage has been measured. If weighing is not convenient, the Contractor shall furnish the engineer with a certified chart showing the dimensions and volume of each container together with a gauge or calibrated measuring rod which will permit the volume of the material to be determined by vertical measurement.
 2. **Metering:** The volume may be determined by metering, in which case the metering device used and the method of using it shall be subject to the approval of the engineer.
 3. **Time of Deliveries:** The arrival and departure of vehicles delivering bituminous materials to the Project site shall be so scheduled that the engineer is afforded proper time for the measurements of delivered volume and final outage. The engineer will make the necessary measurements only during the Contractor's normal daily working hours.

BASIS OF PAYMENT:

- A. The quantity of fog seal will be paid for at the contract unit price per gallon (GAL) of diluted CQS- 1hP. Price and payment will constitute full compensation for:
 1. preparing the surface
 2. mobilization
 3. furnishing all equipment, materials, and labor
 4. placing the material
 5. all labor, equipment, tools, and incidentals necessary to complete the work.

12/16/2022

401502 - ASPHALT CEMENT COST ADJUSTMENT

For Sections 304, 401, 402, 403, 404, and 405, payments to the Contractor shall be adjusted to reflect increases or decreases in the Delaware Posted Asphalt Cement Price when compared to the Project Asphalt Cement Base Price, as defined in these Special Provisions.

The Delaware Posted Asphalt Cement Price will be issued monthly by the Department and will be the industry posted price for Asphalt Cement, F.O.B. Philadelphia, Pennsylvania. The link for the posting is https://deldot.gov/Business/bids/index.shtml?dc=asphalt_cement_english.

The Project Asphalt Cement Base Price will be the Delaware Posted Asphalt Cement Price in effect on the date of advertisement.

All deviations of the Delaware Posted Asphalt Cement Price from the Project Asphalt Cement Base Price are eligible for cost adjustment. No minimum increases or decreases or corresponding percentages are required to qualify for cost adjustment.

Actual quantity of asphalt cement qualifying for any Asphalt Cement Cost Adjustment will be computed using the weight of eligible asphalt that is shown on the QA/QC pay sheets as a percentage for the delivered material.

If the mix was not inspected and no QA/QC pay sheet was generated, then the asphalt percentage will be obtained from the job mix formula for that mix ID. The asphalt percentage eligible for cost adjustment shall only be the virgin asphalt cement added to the mix.

There shall be no separate payment per ton cost of asphalt cement. That cost shall be included in the various unit prices bid per ton for those bid items that contain asphalt cement (mentioned above).

The Asphalt cement cost adjustment will be calculated on grade PG 64-22 asphalt regardless of the actual grade of asphalt used.

If the Contractor exceeds the authorized allotted completion time, the price of asphalt cement on the last authorized allotted workday, shall be the prices used for cost adjustment during the time

liquidated damages are assessed. However, if the industry posted price for asphalt cement goes down, the asphalt-cement cost shall be adjusted downward accordingly.

NOTE:

Application of Asphalt Cement Cost Adjustment requirements as indicated above shall apply only to those contracts involving items related to bituminous base and pavements, and with bitumen, having a total of 1,000 tons or more of hot-mix bid quantity in case of Sections 401, 402 and 403; and 15,000 gallons or more in case of Sections 304, 404 and 405.

12/14/2020

401506 - SPEED HUMP

Description:

This work consists of providing all materials, constructing bituminous concrete speed hump and installing delineators.

Materials:

A. Speed hump:

- | | |
|-------------------------------|-------------|
| 1. Bituminous concrete Type C | Section 401 |
| 2. Permanent striping | Section 817 |

B. Delineator blank

1. 6" x 12" aluminum plate, alloy 6061 T651 or 5052 H32, 1/8" (min) in thickness with 1-1/2" radius corners, punched with two (2) 1/2" holes 2" from top and bottom, treated with a chromate conversion coating meeting ASTM B449.
2. Reflector shall be covered on one side only with Type III High Intensity grade silver retroreflective sheeting or other approved material with greater reflectivity.
3. The breakaway delineator post shall be composed of square steel tubes conforming to the notes and details shown on the Plans.

C. Pavement striping shall be alkyd-thermoplastic or an approved permanent pavement marking tape.

Construction:

- A. Construct the speed humps in accordance with Section 401. The plans depict the construction of speed humps in two passes, the Department has obtained satisfactory results in constructing the speed hump through template ramps, which allow the placement of bituminous concrete in one pass. However, regardless of the method used, it shall be the responsibility of the contractor to produce satisfactory results in constructing the speed hump in accordance with the details shown on the Plan.
- B. Speed humps removed as part of the milling/paving operation within a residential community shall be replaced within 7 days of completion of paving. Installation of speed humps separate from a milling/paving operation shall be completed the same day.
- C. 2 reflectors per post are to be mounted back to back 4 feet from the ground with 2 M10x1.5 grade 2 plated steel hex head bolts with two way steel lock nuts. Nylon washers are also to be used between the bolt or nut and the reflector face. Within 48 hours of installation the speed hump shall be striped as specified in the plan notes and details. If the contractor elects to use temporary striping prior to the permanent pavement striping such temporary striping will be considered incidental to this item.

Method of Measurement:

The Department will measure the quantity of speed humps as the actual number of linear feet constructed and accepted, measured between the two curb lines of the road.

Basis of Payment:

A. The Department will pay for speed humps at the contract unit price per linear foot. Price and payment will constitute full compensation for:

1. Providing and placing all materials;
2. saw cutting;
3. removal
4. pavement milling;
5. providing and installing delineators;
6. temporary and permanent striping; and
7. labor, equipment, tools and incidentals;

11/22/2021

401575 - PERVIOUS ASPHALT PAVEMENT – 19.0 MM TYPE B

401576 - PERVIOUS ASPHALT PAVEMENT – 9.5 MM TYPE C

401578 – PERVIOUS ASPHALT PAVEMENT – 12.5 MM TYPE C

Description:

This specification is intended to be used for pervious asphalt pavement. Lift thicknesses will be as shown on the plans.

All portions of Division 400 of the Standard Specifications shall be applicable except as modified herein.

Materials:

- A. Asphalt cement shall be PG 76-22 per AASHTO MP-1.
- B. Coarse aggregate shall consist of clean, tough, durable fragments of crushed stone, or crushed gravel of uniform quality throughout. In the mixture, at least 75 percent, by mass (weight), of the material coarser than the 4.75 mm (No. 4) sieve shall have at least two fractured faces, and 90 percent shall have one or more fractured faces (ASTM D5821). Coarse aggregate shall be free from clay balls, organic matter, deleterious substances, and not more than 8.0% of flat or elongated pieces as specified in ASTM D4791 with a value of 5:1.
- C. Fine aggregate shall consist of clean, sound, durable, angular shaped particles produced by crushing stone or gravel that meets the requirements for wear and soundness specified for coarse aggregate. The aggregate particles shall be free from coatings of clay, silt, or other objectionable matter and shall contain no clay balls. The fine aggregate, including any blended material for the fine aggregate, shall have a plasticity index of not more than 6 and a liquid limit of not more than 25 when tested in accordance with ASTM D 4318.
- D. Mix Design.
 - 1. Pervious asphalt pavement mix shall have a binder content of 5.75% to 6.50 % by weight of dry aggregate. In accordance with ASTM D6390, drain down of the asphalt binder shall be no greater than 0.3%. If more absorptive aggregates, such as limestone, are used in the mix, then the amount of binder shall be based on the testing procedures outlined in the National Asphalt Pavement Association's Information Series 131 – "Pervious Asphalt Pavements for Stormwater Management" (2008).
 - 2. Submit a mix design at least 10 working days prior to the beginning of production. Make available samples of coarse aggregate, fine aggregate, mineral filler, fibers and a sample of the Performance Graded Asphalt Binder (PGAB) that will be used in the design of the mixture. A certificate of analysis (COA) of the PGAB shall be submitted with the mix design. The COA shall be certified by a laboratory meeting the requirements of AASHTO R18. The Laboratory will be certified by the Delaware DOT or qualified under ASTM D3666. HMA Plant/Field Technicians shall be certified by the Mid- Atlantic Region Technician Certification Program (MARTCP) and the Delaware Technician Certification Program.
 - 3. Bulk specific gravity (SG) used in air void content calculations shall not be determined and results will not be accepted using AASHTO T166 (saturated surface dry), since it is not intended for open graded specimens (>10% AV). Bulk SG shall be calculated using AASHTO T275 (paraffin wax) or ASTM D6752 (automatic vacuum sealing). Air void

content shall be calculated from the bulk SG and maximum theoretical SG (AASHTO T209) using ASTM D3203.

4. The materials shall be combined and graded to meet the composition limits by mass (weight) as shown in Table 1 below.

Table 1. Pervious Asphalt Pavement Mix Design Criteria

Sieve Size	NMAS (% Passing)		
	19.0 mm	12.5 mm	9.5 mm
19 mm	90 - 100	100	100
12.5 mm	90 max	90-100	100
9.5 mm		90 max	90 - 100
4.75 mm			90 max
2.36 mm	5 – 15	5-15	5 - 15
0.075 mm	2 – 4	2-4	2 - 4

Property	Specification
Asphalt binder content	5.75 - 6.50%
Fiber Content by Total Mixture Mass	0.3% cellulose or 0.4% mineral
Air Void Content (ASTM D6752/AASHTO T275)	16.0 - 22.0%
Drain down (ASTM D6390)*	<0.3%
Tensile Strength Ratio (AASHTO 283)**	>80%
Cantabro abrasion test on unaged samples (ASTM D7064-04)	<20%
Cantabro abrasion test on 7 day aged samples	<30%

* Cellulose or mineral fibers may be used to reduce drain down.

** If the TSR (retained tensile strength) values fall below 80% when tested per NAPA IS131 (with a single freeze thaw cycle rather than 5), then employ an antistrip additive to raise the TSR value above 80%.

E. Mix Production.

1. The pervious asphalt mix production shall be per Section 1014 and plant manufacturer's recommendations.

Construction Methods:

- A. The construction methods shall be per Section 401 except as modified herein.
- B. Minimum surface temperature of 60° F at time of placement and minimum ambient temperature of 50° F.
- C. The pervious asphalt pavement mix shall be placed either in a single lift not to exceed 4 inches thick or in two lifts. If more than one lift is used, sufficient care shall be taken to insure that the pervious asphalt layers join completely by keeping the time between layer placements minimal, keeping the first layer clear from dust and moisture, and minimizing traffic on the first layer.
- D. No traffic shall be permitted on material placed until the material has been thoroughly compacted and has been permitted to cool to below 100 °F.

- E. Make two passes with a standard asphalt pavement roller (5 ton minimum) operated in static mode. Do not over compact the material in order that permeability can be maintained.
- F. Any mixture that becomes loose and broken, mixed with dirt, or is in any way defective shall be removed and replaced with fresh mix. The mix shall be compacted to conform to the surrounding area.
- G. Installed pervious pavement shall not be used for equipment or materials storage during construction, and under no circumstances shall equipment be allowed to deposit soil on paved pervious surfaces.
- H. The full permeability of the pavement surface shall be tested by application of clean water at the rate of at least 5 gpm over the surface, using a hose or other distribution devise. Water used for the test shall be clean, free of suspended solids and deleterious liquids. The test shall be observed by the engineer.

Method of Measurement:

The Department will measure pervious asphalt pavement in accordance with Section 401.4.

Basis of Payment:

The Department will pay for pervious asphalt pavement in accordance with Section 401.5.

09/08/2023

401699 - QUALITY CONTROL/QUALITY ASSURANCE OF BITUMINOUS CONCRETE

.01 Description

This item shall govern the Quality Assurance Testing for supplying bituminous asphalt plant materials and constructing bituminous asphalt pavements and the calculation for incentives and disincentives for materials and construction. The Engineer will evaluate all materials and construction for acceptance. The procedures for acceptance are described in this Section. Include the costs for all materials, labor, equipment, tools, and incidentals necessary to meet the requirements of this specification in the bid price per ton for the bituminous asphalt. Payment to the Contractor for the bituminous asphalt item(s) will be based on the Contract price per ton and the pay adjustments described in this specification.

.02 Bituminous Concrete Production B Quality Acceptance

(a) Material Production - Tests and Evaluations.

All acceptance tests shall be performed by qualified technicians at qualified laboratories following AASHTO or DelDOT procedures and shall be evaluated using Quality Level Analysis. The Engineer will conduct acceptance tests. The Engineer will directly base acceptance on the acceptance test results, the asphalt cement quality, the Contractor's QC Plan work, and the comparisons of the acceptance test results to the QC test results. The Engineer may elect to utilize test results of the Contractor in some situations toward judging acceptance.

Supply and capture samples, as directed by the Engineer under the purview of the Engineer from delivery trucks before the trucks leave the production plant. Hand samples to the Engineer to be marked accordingly. The sample shall represent the material produced by the Contractor and shall be of sufficient size to allow the Engineer to complete all required acceptance tests. The Engineer will direct the Contractor when to capture these samples, on a statistically random, unbiased basis, established before production begins each day based upon the anticipated production tonnage. The captured sample shall be from the Engineer specified delivery truck. The Contractor may visually inspect the specified delivery load during sampling and elect to reject the load. If the contractor elects to reject the specified delivery truck, each subsequent load will be inspected until a visually acceptable load is produced for acceptance testing. All visually rejected loads shall not be sent to a Department project.

The first sample of the production day will be randomly generated by the Engineer between loads 0 and 12 (0-250 tons). Subsequent samples will be randomly generated by the Engineer on 500-ton sublots for the production day. Samples not retrieved in accordance with the Contractor's QC plan will be deemed unacceptable and may be a basis for rejection of material produced. Parallel tests or dispute resolution tests will only be performed on material captured at the same time and location as the acceptance test sample. Parallel test samples or Dispute Resolution samples will be created by splitting a large sample or obtaining multiple samples that equally represent the material. The Engineer will perform all splitting and handling of material after it is obtained by the Contractor.

The Contractor may retain dispute resolution samples or perform parallel tests with the Engineer on any acceptance sample.

The Engineer will evaluate and accept the material on a lot basis. All the material within a lot shall have the same JMF (mixture ID). The lot size shall be targeted for 2000 tons or a maximum period of three days, whichever is reached first. If the 2000th ton target lot size is achieved during a production day, the lot size shall extend to the end of that production day. The Contractor may interrupt the production of one JMF in order to produce different material; this type of interruption will not alter the determination of the size or limits of material represented by a lot. The Engineer will evaluate each lot on a subplot basis. The size for each subplot shall be 100 to 500 tons and testing for the sub lots will be completed on a daily basis. For each subplot, the Engineer will evaluate one sample.

The target size of sub-lots within each lot, except for the first sample of the production day, is equal-sized 500 ton sub lots and will be based upon anticipated production, however, more or fewer sublots, with differing sizes, may result due to the production schedule and conditions. If the actual production is less than anticipated, and it's determined a sample will not be obtained (based upon the anticipated tonnage), a new sample location will be determined on a statistically random, unbiased basis based upon the new actual production. If the actual production is going to be 50 tons or greater over the anticipated sub lot production, a new sample location will be determined on a statistically random, unbiased basis based upon the new actual production. The Engineer will combine the evaluation and test results for all of the applicable sublots in order to evaluate each individual lot.

If the Engineer is present, and the quantity exceeds 25 tons, a statistically random sample will be used for analysis. When the anticipated production is less than 100 tons and greater than 25 tons, and the Engineer is not present, the contractor shall randomly select a sample using the Engineer's random location program. The captured sample shall be placed in a suitable box, marked to the attention of the Engineer, and submitted to the Engineer for testing. A box sample shall also be obtained by the contractor at the same time and will be used as the Dispute Resolution sample if requested by the Engineer. The Contractor shall also obtain one liquid asphalt sample (1 pint) per grade of asphalt used per day and properly label it with all pertinent information.

The Engineer will conduct the following tests in order to characterize the material for the pavement compaction quality and to judge acceptance and the pay adjustment for the material:

- AASHTO T312 - Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor
- AASHTO T166, Method C (Rapid Method) - Bulk Specific Gravity of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface Dry Specimens
- AASHTO T308 - Determining the Asphalt Binder Content of Hot Mix Asphalt (HMA) by the Ignition Method
- AASHTO T30 - Mechanical Analysis of Extracted Aggregate
- AASHTO T209 - Theoretical Maximum Specific Gravity and Density of Hot Mix Asphalt (HMA)
- ASTM D7227 - Standard Practice for Rapid Drying of Compacted Asphalt Specimens using Vacuum Drying Apparatus

(b) Pavement Construction - Tests and Evaluations.

The Engineer will directly base acceptance on the compaction acceptance test results, and on the inspection of the construction, the Contractor's QC Plan work, ride smoothness as referenced in the contract

documents, lift thickness as referenced in the contract documents, joint quality as referenced in the contract documents, surface texture as referenced in the contract documents, and possibly the comparisons of the acceptance test results to the independent test results. For the compaction acceptance testing, the Engineer will sample the work on a statistically random basis and will test and evaluate the work based on daily production.

Notify the Engineer of any locations within that road segment that may not be suitable to achieve minimum (93%) compaction due to existing conditions prior to paving the road segment. Schedule and hold a meeting in the field with the Engineer in order to discuss all areas that may potentially be applicable to Table 5a before paving starts. Areas that will be considered for Table 5a will be investigated in accordance with the method described in Appendix B. If this meeting is not held prior to paving, no areas will be considered for Table 5a. Areas of allowable exemptions that will not be cored include the following: partial-depth patch areas, driveway entrances, paving locations of less than 100 tons from cold joint to cold joint, areas around manholes and driveway entrances, and areas of paving that are under 400 feet in continuous total length and/or 5 feet in width.

The exempt areas around manholes will be a maximum of 4 feet transversely on either side from the center of the manhole, and 20 feet longitudinally on either side from the center of the manhole. The exempt areas around driveway entrances shall be the entire width of the driveway, and 3 feet from the edge of the longitudinal joint next to the driveway. Areas of exemption that will be cored for informational purposes only include: areas where the mat thickness is less than three times the nominal maximum aggregate size as directed by the Engineer, violations of Section 401.08 in the Standard Specifications as directed by the Engineer, and areas shown to contain questionable subgrade properties as proven by substantial yielding under a fully legally loaded truck. Failure to obtain core samples in these areas will result in zero payment for compaction regardless of the exempt status.

The Engineer will evaluate and accept the compaction work on a daily basis. Payment for the compaction will be calculated by using the material production lots as referenced in **.02 Acceptance Plan (a) Material Production - B Tests and Evaluation** and analyzing the compaction results over the individual days covered in the material production lot. The compaction results will be combined with the material results to obtain a payment for this item.

The minimum size of a compaction lot shall be 100 tons. If the compaction lot is between 101 and 1000 tons, the Engineer shall randomly determine four compaction acceptance test locations. If the compaction lot is between 1001 and 1500 tons, the Engineer shall randomly determine six compaction acceptance test locations. If the compaction lot is between 1501 and 2000 tons, the Engineer shall randomly determine eight compaction acceptance test locations. If the compaction lot is greater than 2000 tons, the Engineer shall randomly determine two compaction acceptance test locations per 500 tons.

If a randomly selected area falls within an Engineer approved exemption area, the Engineer will select one more randomly generated location to be tested per the requirements of this Specification. If that cannot be accomplished, or if an entire location has been declared exempt, the compaction testing shall be performed as per these Specifications, but a note will be added to the results that the location was an Engineer approved exempt location.

Testing locations will be a minimum of 1.0 feet from the newly placed longitudinal joint and 50 feet from a new transverse joint. Cut one six (6) inch diameter core through the full lift depth at the exact location marked by the Engineer. Cores submitted that are not from the location designated by the Engineer will not be tested and will be paid at zero pay. Notify the Engineer prior to starting paving operations with

approximate tonnage to be placed. The Contractor is then responsible for notifying the appropriate Engineer test personnel within 12 hours of material placement. The Engineer will mark core locations within 24 hours of notification. After determination of locations, the Contractor shall complete testing within two operational days of the locations being marked. If the cores are not cut within two operational days, the area in question will be paid at zero-pay for compaction testing.

Provide any traffic control required for the structural number investigation, sampling, and testing work at no additional cost to the Department. Commence coring of the pavement after the pavement has cooled to a temperature of 140°F or less. Cut each core with care in order to prevent damaging the core. Damaged cores will not be tested. Label each core with contract number, date of construction, and number XX of XX upon removal from the roadway. Place cores in a 6-inch diameter plastic concrete cylinder mold or approved substitute for protection. Separate cores in the same cylinder mold with paper. Attach a completed QC test record for the represented area with the corresponding cores. The Engineer will also complete a test record for areas tested for the QA report and provide to Materials & Research. Deliver the cores to the Engineer for testing, processing, and report distribution at the end of each production day. Repair core holes per Appendix A, Repairing Core Holes in Bituminous Asphalt Pavements. Core holes shall be filled immediately. Failure to repair core holes at the time of coring will result in zero pay for compaction testing for the area in question.

The Engineer will conduct the following tests on the applicable portion of the cores in order to evaluate their quality:

- AASHTO T166, Method C (Rapid Method) B Bulk Specific Gravity of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface Dry Specimens
- AASHTO T209 - Theoretical Maximum Specific Gravity and Density of Hot Mix Asphalt
- ASTM D7227 - Standard Practice for Rapid Drying of Compacted Asphalt Specimens using Vacuum Drying Apparatus

The Engineer will use the average of the last five test values of the same JMF (mixture ID) material at the production plant in order to calculate the average theoretical maximum specific gravity of the cores. The average will be based on the production days test results and as many test results needed from previous days' production to have an average of five samples. If there are less than five values available, the Engineer will use the JMF design value in addition to the available values to calculate the average theoretical maximum specific gravity.

.03 Payment and Pay Adjustment Factors

The Engineer will determine pay adjustments for the bituminous asphalt item(s) in accordance with this specification. The Engineer will determine a pay adjustment factor for the material produced and a pay adjustment factor for the pavement construction. Pay adjustments for material and construction will be calculated independently. When the pay adjustment calculation for either material or construction falls to zero payment per tables 4, 5, or 5a, the maximum pay adjustment for the other factor will not exceed 100.

Pay Adjustment factors will only be calculated on in place material. Removed material will not be used in payment adjustment calculations. Material Production Pay Adjustments will be calculated based upon 70% of the contract unit price and calculated according to section .03(a) of this specification. Pavement construction Pay Adjustments will be calculated based upon 30% of the contract unit price and

calculated according to section .03(b) of this specification.

(a) Material Production - Pay Adjustment.

Calculate the material pay adjustment by evaluating the production material based on the following parameters:

Table 2 - Material Parameter Weight Factors		
Material Parameter	Single Test Tolerance (+/-)	Weight Factor
Asphalt Content	0.4	0.30
#8 Sieve (≥ 19.0 mm)	7.0	0.30
#8 Sieve (≤ 12.5 mm)	5.0	0.30
#200 Sieve (0.075mm Sieve)	2.0	0.30
Air Voids (4.0% Target)	2.0	0.10

Using the JMF target value, the single test tolerance (from Table 2), and the test values, the Engineer will use the following steps to determine the material pay adjustment factor for each lot of material:

1. For each parameter, calculate the mean value and the standard deviation of the test values for the lot to the nearest 0.1 unit.
2. For each parameter, calculate the Upper Quality Index (QU):

$$QU = ((\text{JMF target}) + (\text{single test tolerance}) - (\text{mean value})) / (\text{standard deviation}).$$
3. For each parameter, calculate the Lower Quality Index (QL):

$$QL = ((\text{mean value}) - (\text{JMF target}) + (\text{single test tolerance})) / (\text{standard deviation}).$$
4. For each parameter, locate the values for the Upper Payment Limit (PU) and the Lower Payment Limit (PL) from Table 3 - Quality Level Analysis by the Standard Deviation Method. (Use the column for An@ representing the number of sublots in the lot. Use the closest value on the table when the exact value is not listed).
5. Calculate the PWL for each parameter from the values located in the previous step:

$$PWL = PU + PL - 100.$$
6. Calculate each parameter's contribution to the payment adjustment by multiplying its PWL by the weight factor shown in Table 2 for that parameter.
7. Add the calculated adjustments of all the parameters together to determine the Composite PWL for the lot.
8. From Table 4, locate the value of the Pay Adjustment Factor corresponding to the calculated PWL. When all properties of a single test are within the single test tolerance of Table 2, Pay Adjustment factors shall be determined by Column B. When any property of a single test is outside of the Single Test Tolerance parameters defined in Table 2, the Material Pay Adjustment factor shall be determined by Column C.
9. For each lot, determine the final material price adjustment:

Final Material Pay Adjustment =
 (Lot Quantity) x (Item Bid Price) x (Pay Adjustment Factor) x 70%. This final pay calculation will be paid to the cent.

In lieu of being assessed a pay adjustment penalty, the Contractor may choose to remove and replace the material at no additional cost to the Department. When the PWL of any material parameter in Table 2 is below 60, the Engineer may require the removal and replacement of the material at no additional cost to the Department. Test results on removed material shall not be used in calculation of future PWL calculations for Mixture ID.

The test results from the Engineer on production that is less than 100 tons will be combined with the two most recently completed Engineer tests with the same Mixture ID to calculate payment for the lot encompassing the single test. If that cannot be accomplished, the approved JMF will be used to calculate payment for the lot encompassing the single test. Payment for previously closed lots will not be affected by the analysis.

When a sample is outside of the allowable single test tolerance for any Materials criteria in Table 2, that sample will be isolated. For payment purposes, the test result of the out of acceptable tolerance sample will be combined with the two previous acceptable samples of the same JMF and analyzed per this specification. The material that is considered out of the acceptable tolerance will only include the material within the represented sub-lot (i.e., a maximum of 500 tons). If the previous acceptable test result is from the previous production day, only the material produced on the second production day will be considered out of tolerance. All future sub lots will not include the isolated test. The pay factors for the out of tolerance sample lot will be calculated using column C of table 4.

If, during production, a QA sample test result does not meet the acceptable tolerances and the Contractors QC sample duplicates the QA sample test result, the Contractor can make an appropriate change to the mixture (within the JMF boundaries), and request to have that sample further isolated. After the Contractor has made appropriate changes, the Contractor will visually inspect each produced load. The first visually acceptable load will be sampled and tested. If that sample test result shows compliance with the specifications, the material that is considered out of the acceptable tolerance will include the material from the previous acceptable test result to the third load after the initially sampled and tested sample. If the sample does not meet the specification requirements, the Engineer will no longer accept material. Production may resume when changes have been made and an acceptable sample and test result is obtained.

Table 3 B Quality Level Analysis by the Standard Deviation Method							
PU or PL	QU and QL for An@ Samples						
	n = 3	n = 4	n = 5	n = 6	n = 7	n = 8	n = 9
100	1.16	1.50	1.79	2.03	2.23	2.39	2.53
99	-	1.47	1.67	1.80	1.89	1.95	2.00
98	1.15	1.44	1.60	1.70	1.76	1.81	1.84
97	-	1.41	1.54	1.62	1.67	1.70	1.72
96	1.14	1.38	1.49	1.55	1.59	1.61	1.63

95	-	1.35	1.44	1.49	1.52	1.54	1.55
94	1.13	1.32	1.39	1.43	1.46	1.47	1.48
93	-	1.29	1.35	1.38	1.40	1.41	1.42
92	1.12	1.26	1.31	1.33	1.35	1.36	1.36
91	1.11	1.23	1.27	1.29	1.30	1.30	1.31
90	1.10	1.20	1.23	1.24	1.25	1.25	1.26
89	1.09	1.17	1.19	1.20	1.20	1.21	1.21
88	1.07	1.14	1.15	1.16	1.16	1.16	1.17
87	1.06	1.11	1.12	1.12	1.12	1.12	1.12
86	1.04	1.08	1.08	1.08	1.08	1.08	1.08
85	1.03	1.05	1.05	1.04	1.04	1.04	1.04
84	1.01	1.02	1.01	1.01	1.00	1.00	1.00
83	1.00	0.99	0.98	0.97	0.97	0.96	0.96
82	0.97	0.96	0.95	0.94	0.93	0.93	0.93
81	0.96	0.93	0.91	0.90	0.90	0.89	0.89
80	0.93	0.90	0.88	0.87	0.86	0.86	0.86
79	0.91	0.87	0.85	0.84	0.83	0.82	0.82
78	0.89	0.84	0.82	0.80	0.80	0.79	0.79
77	0.87	0.81	0.78	0.77	0.76	0.76	0.76
76	0.84	0.78	0.75	0.74	0.73	0.73	0.72
75	0.82	0.75	0.72	0.71	0.70	0.70	0.69
74	0.79	0.72	0.69	0.68	0.67	0.66	0.66
73	0.75	0.69	0.66	0.65	0.64	0.63	0.63
72	0.74	0.66	0.63	0.62	0.61	0.60	0.60
71	0.71	0.63	0.60	0.59	0.58	0.57	0.57
70	0.68	0.60	0.57	0.56	0.55	0.55	0.54
69	0.65	0.57	0.54	0.53	0.52	0.52	0.51
68	0.62	0.54	0.51	0.50	0.49	0.49	0.48
67	0.59	0.51	0.47	0.47	0.46	0.46	0.46
66	0.56	0.48	0.45	0.44	0.44	0.43	0.43
65	0.52	0.45	0.43	0.41	0.41	0.40	0.40
64	0.49	0.42	0.40	0.39	0.38	0.38	0.37

63	0.46	0.39	0.37	0.36	0.35	0.35	0.35
62	0.43	0.36	0.34	0.33	0.32	0.32	0.32

Table 3 B Quality Level Analysis by the Standard Deviation Method							
PU or PL	QU and QL for An@ Samples						
	n = 3	n = 4	n = 5	n = 6	n = 7	n = 8	n = 9
61	0.39	0.33	0.31	0.30	0.30	0.29	0.29
60	0.36	0.30	0.28	0.27	0.27	0.27	0.26
59	0.32	0.27	0.25	0.25	0.24	0.24	0.24

Table 4 - PWL Pay Adjustment Factors		
PWL	Pay Adjustment Factor (%) Column B	Pay Adjustment Factor (%) Column C
100	+5	0
99	+4	-1
98	+3	-2
97	+2	-3
96	+1	-4
95	0	-5
94	-1	-6
93	-2	-7
92	-3	-8
91	-4	-9
PWL<91	PWL - 100	PWL - 100

(b) Pavement Construction - Pay Adjustments.

The Engineer will determine the pavement construction pay adjustment by evaluating the construction of the pavement, based on the following parameter:

- Degree of compaction of the in-place material

Using the test values for the cores, the Engineer will use the following steps to determine the pavement construction pay adjustment for each lot of work.

1. Calculate the core bulk specific gravity values from the subplot tests values, to the nearest 0.001 unit. Obtain the Theoretical maximum Specific Gravity values from the corresponding laboratory subplot tests.
2. Calculate the Degree of Compaction:
Degree of Compaction =
 $((\text{Core Bulk Specific Gravity}) / (\text{Theoretical Maximum Specific Gravity})) \times 100\%$ recorded to the nearest 0.1%.
3. The average compaction for the sublots shall be averaged together for the compaction level of the lot. The lots compaction test level shall be averaged and recorded to the nearest whole percent.
4. Locate the value of the Payment Adjustment Factor corresponding to the calculated degree of compaction from Table 5 or Table 5a.
5. Determine the pavement construction price adjustment by using the following formula:
Construction Pay adjustment = (Lot Quantity) x (Bid Price) x (Pay Adjustment Factor) x 30%.

Table 5: Compaction Price Adjustment Highway Locations		
Degree of Compaction (%)	Range	Pay Adjustment Factor (%)*
≥ 97.0	≥ 96.75	1
96.5	96.26 B 96.74	1
96.0	95.75 B 96.25	1
95.5	95.26 B 95.74	1
95.0	94.75 B 95.25	1
94.5	94.26 B 94.74	1
94.0	93.75 B 94.25	1
93.5	93.26 B 93.74	3
93.0	92.75 B 93.25	5
92.5	92.26 B 92.74	3
92.0	91.75 B 92.25	0
91.5	91.26 B 91.74	0
91.0	90.75 B 91.25	-5
90.5	90.26 B 90.74	-15
90.0	89.75 B 90.25	-20

89.5	89.26 B 89.74	-25
89.0	88.75 B 89.25	-30
88.5	88.26 B 88.74	-50
=<88.0	=<88.25	-100*

*remove and replace it at Engineer's discretion for Pay adjustment factor equal to -100% or breaking the mat by crushing aggregate or displacing mixture.

Table 5A: Compaction Price Adjustment Other ¹ Locations		
Degree of Compaction	Range	Pay Adjustment Factor (%)*
>= 97.0	>= 96.75	1
96.5	96.26 B 96.74	1
96.0	95.75 B 96.25	1
95.5	95.26 B 95.74	1
95.0	94.75 B 95.25	1
94.5	94.26 B 94.74	1
94.0	93.75 B 94.25	1
93.5	93.26 B 93.74	1
93.0	92.75 B 93.25	3
92.5	92.26 B 92.74	1
92.0	91.75 B 92.25	0
91.5	91.26 B 91.74	0
91.0	90.75 B 91.25	0
90.5	90.26 B 90.74	0
90.0	89.75 B 90.25	0
89.5	89.26 B 89.74	0
89.0	88.75 B 89.25	-1
88.5	88.26 B 88.74	-3
88.0	87.75 B 88.25	-5
87.5	87.26 B 87.74	-10
87.0	86.75 B 87.25	-15
86.5	86.26 B 86.74	-20
86.0	85.75 B 86.25	-25
85.5	85.26 B 85.74	-30

85.0	84.75 B 85.25	-40
84.5	84.26 B 84.74	-50
≤ 84.0	≤ 84.25	-100*

* remove and replace at Engineer's discretion for Pay adjustment factor equal to -100% or breaking the mat by crushing aggregate or displacing mixture.

¹This chart is to be used for areas where the structural value of the area to be paved is less than 1.75 as determined by the Engineer. See Appendix B - Method for Obtaining Cores for Determination of Roadway Structure. This chart is applicable to rehabilitation work only; full depth construction will not be considered for Table 5a.

.04 Dispute Resolution

Disputes or questions about any test result shall be brought to the attention of the Contractor and the Engineer within two operational days of reported test results. The following dispute resolution procedures will be used. The Engineer and the Contractor will review the sample quality, the test method, the laboratory equipment, and the laboratory technician. If these factors are not the cause of the dispute, a third-party dispute resolution will be used.

Third party resolution testing can be performed at either another Contractor's laboratory, the Engineer's laboratory, or an independent accredited laboratory. Unless otherwise mutually agreed upon by DAPA and the Engineer, the Engineer's qualified laboratory in Dover and qualified personnel shall conduct the necessary testing for third party Dispute Resolution after the Engineer has provided reasonable notice to allow the Contractor to witness this testing. When disputes over production testing occur, the samples used for Dispute Resolution testing will be those samples properly captured, labeled, and stored, as described in the second paragraph of the section of these specifications titled **.02 Acceptance Plan, (a) Material Production - Tests and Evaluations**. If no samples are available, the original testing results will be used for payment calculations.

Dispute Resolution samples for air void content will be heated by a microwave oven.

If there is a discrepancy between the Engineer's acceptance test result and the Contractor's test result, the Contractor may ask for the Dispute Resolution sample to be tested. The Contractor may request up to two dispute resolution samples be tested per calendar year without charge. Any additional Dispute Resolution samples run at the Contractor's request where the results substantiate the acceptance test result will be assessed a fee of \$125. Any additional Dispute Resolution samples that substantiate the Contractor's test result will not be assessed the fee.

When disputes over compaction core test results occur, the Engineer's acceptance core will be used for the dispute resolution sample. The Contractor will be advised on when the testing will occur as referenced above to witness the testing. The results of the dispute resolution testing shall replace all of the applicable disputed test results for payment purposes.

Appendix A - Repairing Core Holes in Bituminous Asphalt Pavement

Description.

This appendix describes the procedure required to repair core holes in a bituminous concrete pavement.

Materials and Equipment.

The following material shall be available to complete this work:

- Patch Material - DelDOT approved High Performance Cold Patch material shall be used.

The following equipment shall be available to complete this work:

- Sponge or other absorbent material - Used to extract water from the hole.
- Compaction Hammer - mechanical (electrical, pneumatic, or gasoline driven) tamping device with a flat, circular tamping face smaller than 6 inches in diameter.

Construction Method.

After core removal from the hole, remove all excess water from within the hole, and prevent water from re-entering the hole.

Place the patch material in lifts no greater than 3 inches and compact with mechanical tamping device. If the hole is deeper than 3 inches, use two lifts of approximately equal depths so that optimum compaction is achieved. Make sure that the patch surface matches the grade of the existing roadway. Make every effort to achieve the greatest possible compaction

Performance Requirements.

The Engineer will judge the patch on the following basis:

- The patch shall be well compacted
- The patch surface shall match the grade of the surrounding roadway surface.

Basis of Payment.

No measurement or payment will be made for the patching work. The Contractor must gain the Engineer's acceptance of the patching work before the Engineer will accept the material represented by the core.

Appendix B - Method for Obtaining Cores for Determination of Roadway Structure

The Contractor is responsible for obtaining cores in areas that they propose are eligible for compaction price adjustments according to Table 5a in this specification. Table 5a is not applicable for new full-depth pavement box construction. Cores submitted for this process shall be obtained according to the following process.

1. Contact Materials & Research (M&R) personnel to determine if information about the area is already available. If M&R has already obtained cores in the location that is being investigated, the contractor may opt to use the laboratory information for the investigation and not core the area on their own.
2. If M&R does not have information concerning the section of the roadway, the contractor needs to contact M&R to arrange for verification of coring operations. Arrangements shall be made to allow for an individual from M&R to be on the site when the cores are obtained. Cores will be turned over to M&R for evaluation.
3. The Contractor is responsible for providing all traffic control and repairing core holes in accordance to 401699 Appendix A - Repairing Core Holes in Bituminous Asphalt Pavements.
4. Cores are to be taken throughout the entire project for the area in question. Cores will be spaced, from the start of the project in increments determined based on field and project specifics. Cores will be evenly distributed throughout the project location. The cores will be taken in the center of the lane in question.
5. Additional cores may be taken at other locations, if surface conditions indicate that there may be a substantial difference in the underlying section. The location of these cores should be documented and submitted to M&R.
6. Cores shall be full depth and include underlying materials. If there is a stone base included in the pavement section, at a minimum 1 core must have information concerning the thickness of the base. This is determined by augering to the subgrade surface.
7. The calculations used to determine the structural capacity of the roadway is as follows. If the contractor finds, upon starting the coring process, that the areas are of greater thickness than applicable to Table 5a, they may terminate the coring process on their own and retract the request.

Structural Number Calculations

Each pavement box material is assigned a structural coefficient based upon AASHTO design guides. The structural coefficient is used to determine the total strength of the pavement section.

Materials used in older pavement sections are assigned lower structural coefficients to compensate for aging of the materials. The coefficients used to determine the structural number of an existing pavement are:

Existing Material	Structural Coefficient
HMA	0.32
Asphalt Treated Base	0.26
Soil Cement	0.16
Surface Treatment (Tar & Chip)	0.10
GABC	0.14
Concrete	0 - 0.7*

- * The Structural Coefficient of Concrete is dependent upon the condition of the concrete. Compressive strengths & ASR analysis are used to determine condition - contact the Engineer if this situation arises.

Newly placed materials use a different set of structural coefficients. They are as follows:

New Material	Structural Coefficient
HMA	0.40
Asphalt Treated Base (BCBC)	0.32
Soil Cement	0.20
GABC	0.14

Example:

Location includes placement of a 1.25" Type C overlay on 2.25" Type B. Existing roadway is cored and is shown to consist of 2" HMA on 7" GABC.

Calculation:

For the Type B lift the calculation would be:

Existing HMA	$2 * 0.32$	=	0.64
GABC	$7 * 0.14$	=	0.98
			<u>1.62</u>

For the Type C lift the calculation would be:

Newly Placed B	$2.25 * 0.4$	=	0.90
Existing HMA	$2 * 0.32$	=	0.64
GABC	$7 * 0.14$	=	0.98
			<u>2.52</u>

4/21/2026

401760-FOG SEAL WITH CURBING

Description:

This specification is for specific use on roads within subdivisions. The work consists of preparing the surface, protecting the concrete areas (i.e., curbs, gutters, sidewalks, and driveways) tightly monitoring the traffic on the roads and individual driveways to prevent product to transfer onto the concrete surfaces, furnishing and applying an emulsified asphalt and water mixture as a surface seal.

Materials:

Materials for fog seal shall be a 1:1 mixture CSS-1h, which conforms to Section 1016 of the Standard Specifications, and water, which conforms to Section 1021 of the Standard Specifications. A Certificate of Analysis shall be submitted for each lot of CSS-1h for approval. The percentage of residual asphalt of the CSS-1h shall be no less than 57 percent. The emulsion should be diluted no more than 24 hours before its intended use. This is to avoid settlement of the diluted emulsion. The emulsion may be circulated using a centrifugal or other suitable pump to ensure uniformity.

Surface Preparation:

The surface upon which the Fog Seal is to be placed shall be cleaned thoroughly to the satisfaction of the Engineer. Surface preparation shall be completed by removing all vegetation prior to sweeping with a power broom followed by a final sweeping with an approved vacuum truck or flushed with a water pump-unit to remove dust, dirt, and debris. The pavement surface must be clean and dry before applying the fog seal. If flushing is required, it should be completed 24 hours prior to the application of the fog seal to allow for adequate drying. The preparation shall be done just prior to the application of the fog seal and be approved by the Engineer.

Equipment:

Distributors. The distributors used shall be capable of uniformly applying the bituminous material in liquid form. Devices to control the pressure, volume, and temperature shall be provided. Each distributor shall have an approved calibration chart, be equipped with an approved sampling device, and conform to the following:

- a. Pressure. The pressure shall be supplied by a positive displacement pump or air compressor. The pressure shall be uniform throughout the entire width of spray. If pressure is supplied by an air compressor, automatic controls must be provided to maintain sufficient and even pressure throughout the application of an entire load.
- b. Temperature. The distributor shall be equipped with a heating system that applies heat uniformly across the width of the tank. Provisions shall be made for circulating or agitating the material whenever necessary while heating. The distributor shall be equipped with a thermometer marked in degrees, Fahrenheit, of sufficient range to determine the actual temperature of the material.
- c. Tachometer. All distributors shall be provided with an approved tachometer recording feet per minute with a tabulation of feet per load with adjustments. Each load tabulation shall start at zero. There shall also be an individual road and daily totaling tabulation of this instrument.

- d. Volume. A tachometer shall give correct readings of the speed, and the volumetric efficiency of the distributor shall ensure the correct volume at various speeds. Tests shall be required to prove the volumetric efficiency of the distributor at various speeds as the Engineer directs.
- e. Circulating System. All pump distributors shall be equipped with a circulating system designed to maintain a homogenous liquid while circulating in the distributor tank. This circulating system shall also be arranged to circulate the material in the tank truck before application.

Air distributors shall be equipped with a device for agitating the bituminous material in the tank trucks when necessary.

- f. Tests. Necessary tests shall be made to determine the accuracy of all pressure gauges, tachometers, and pump efficiencies. The tests shall be made by the Contractor when and as Engineer requires.
- g. Spray Bars. Each distributor shall be equipped with spray bars capable of applying material uniformly throughout the entire length of the spray bars when they are extended. Spray bar extensions shall be provided for applying up to a 12' width in one operation. Spray bars shall be equipped with a cleaning device and a shut-off valve to prevent dribbling, dripping, or streaking.
- h. Tank Capacity Gauge. A float or other approved type of tank capacity gauge shall be furnished to indicate the volume in the tank in not less than 25-gallon increments. The gauge shall have adjustments for correction.

Tanks shall have a minimum capacity of 750 gallons.

The rate of application of the distributor shall be calibrated by an approved method as the Engineer determines.

If the Engineer deems that the equipment applying the material is inadequate or fails to comply with all regulations, the Engineer will order the equipment to be removed from the job and require that another unit be placed to continue the work.

Application of Fog Seal Material:

The fog seal shall be applied in one application at the rates specified using the pressure distributor for the full width of the sealing operation, unless the Engineer directs otherwise. Handwork will be considered adjacent to concrete areas. Apply at the temperature that is recommended by the manufacturer.

The nozzles of the spray bar shall be kept clean at all times. If one or more nozzles become blocked during the application of bituminous materials, the distributor shall be stopped immediately, and the nozzles shall be cleaned. The streaked areas shall be made uniform using a hand hose or other approved methods.

If the Contractor is unable to keep the application uniform, the operation shall be discontinued until a more experienced operator or a better distributor, or both, can be provided; or the Contractor shall take such other precautions as may be necessary to keep the application within specified limits.

When applying bituminous materials adjacent to structures or curbs, the Contractor shall furnish

and use effective means of protecting the structures or concrete areas of curb, gutter, sidewalks, and driveways from discoloration. Discoloration can occur because of either the nozzles' spray or vehicles' tires tracking the product.

Construction Methods:

The fog seal shall be applied at a rate of 0.05 to 0.17 gal/yd² at ambient temperature. The application rate appropriate for the surface being sealed shall be determined by the Engineer. This rate will be determined by test strip. The tests will continue to the satisfaction of the Engineer. Apply the fog seal when the air temperature is 60 Degrees F and rising and the surface temperature is 60 Degrees F and above. Measure the air and surface temperature in the shade away from artificial heat. The application shall not begin if rain or high winds are eminent. The Engineer will determine when weather conditions are suitable for application. The fog seal should be a thin, uniform coating sufficient to seal the underlying pavement. The fog seal shall be applied using pressurized distributing equipment with a spray bar or other approved distribution system. During the application of the fog seal, care shall be taken to prevent splattering of adjacent pavement, curb and gutter and structures. Staging areas will not be within the subdivision and must be coordinated with the Engineer.

Method of Measurement:

A. The Department will measure the quantity of Fog Seal with Curbing in gallons.

The quantity will be determined by any or all of the following methods and should be verified for accuracy by computations based on field measurements taken on and along the completed finished surfaces. Multiple layers will not be measured separately.

1. Truck Measurement: If bituminous materials are delivered to the Project in tank trucks, distributor tanks, or drums, the Contractor shall not remove any bituminous material from the transporting vehicle or container until necessary measurements have been made, nor shall the transporting vehicle or container be released until final outage has been measured. If weighing is not convenient, the Contractor shall furnish the Engineer with a certified chart showing the dimensions and volume of each container together with a gauge or calibrated measuring rod, which will permit the volume of the material to be determined by vertical measurement.
2. Metering: The volume may be determined by metering, in which case the metering device used and the method of using it shall be subject to the approval of the Engineer.
3. Time of Deliveries: The arrival and departure of vehicles delivering bituminous materials for the Project site shall be so scheduled that the Engineer is afforded proper time for the measurements of delivered volume and final outage. The Engineer will make the necessary measurements only during the Contractor's normal daily working hours.

Basis of Payment:

- A. The Department will pay for Fog Seal with Curbing at the contract unit price per gallon of diluted CSS-1h. Price and payment will constitute full compensation for:
1. Preparing the surface;
 2. protecting the surfaces that do not receive fog seal;
 3. mobilizing and furnishing all equipment;
 4. materials and labor;
 5. placing the material; and
 6. all labor, equipment, tools, and incidentals to complete the work.

12/16/2022

601504 - PERSONNEL GRATE FOR PIPE INLET

Description:

This work consists of providing materials, fabricating, delivering and constructing personal grates for pipe inlets.

Materials:

- A. Materials in accordance with Sections 601 and 611.
- B. All rebar, hardware and fasteners shall be galvanized in accordance with Subsection 1039.10.

Construction Methods:

- A. Submit working drawing in accordance with Section 105.4.
- B. Construct personal grates for pipe inlets in accordance with the plans.

Method of Measurement:

The Department will not measure the quantity of personal grate for pipe inlet.

Basis of Payment:

- A. The Department will pay for personal grate for pipe inlet at the contract lump sum price. Price and payment will constitute full compensation for:
 - 1. Design and submittals for all working drawings;
 - 2. providing, hauling and installing materials;
 - 3. lock;
 - 4. excavation;
 - 5. removal and disposal of existing end sections;
 - 6. backfilling and compacting; and
 - 7. cribbing, shoring, sheeting, coating, and paving.

Note:

The breakout sheet attached to the Bid Proposal shows all personnel grate for pipe inlets proposed for this contract. Fill in the per each unit price and the cost (unit price times the proposed quantity) for each item listed. The lump sum price bid for item 601504-Personal Grate for Pipe Inlet shall be in the sum of the total cost for all items listed. The completed breakout sheet shall be attached to the bid proposal.

The Department reserves the right to delete from the contract the providing and installing of one or more of the items listed and the right to add or subtract from the quantity of each item listed. The lump sum to be paid will be adjusted in accordance with the unit prices as submitted required above. There will be no extra compensation if such additions and/or deletions are made.

08/03/2022

760503 - PAVEMENT MILLING, PATCHING

Description:

This work consists of milling the existing bituminous concrete pavement patch areas at the locations and to the depths shown on the plans and/or as directed by the engineer.

Construction Methods:

Section 760 Pavement Milling of the Standard Specifications shall be applicable to this item, except the milled patch areas must be paved with material designated on the plans flush with the adjacent pavement prior to opening to traffic.

Method of Measurement:

- A. The Department will measure the quantity of pavement milling, patching in square yard per inch of depth.
- B. Any additional depth, not approved by the engineer in writing, will not be measured.

Basis of Payment:

- A. The Department will pay for pavement milling, patching at the contract unit price per square yard per inch of depth. Price and payment will constitute full compensation for:
 - 1. Milling or planning the existing pavement;
 - 2. removing and disposing of milled material; and
 - 3. all labor, tools, equipment, and incidentals to complete the Work.

10/03/2022

763587 – MAN HOUR OF MISCELLANEOUS WORK

Description:

This work consists of clearing, grubbing, and disposing of selected trees (regardless of size), shrubs, brush and other vegetation and disposal of all vegetation and debris within the limits of the areas that have been designated and as directed by the engineer. Any trash or rubbish in the designated areas shall be removed and disposed of as part of this operation. This work also includes the preservation from injury or defacement all vegetation and trees selected to remain and as directed by the engineer.

Construction Methods:

A. Field Meeting.

1. Prior to commencing the clearing and grubbing operation, hold a field meeting with DeIDOT Central District, the designer, and the construction inspecting firm to clarify the limits of herbicidal treatment and clearing and grubbing.

B. General.

1. Remove only material as directed and as determined during the field meetings. If the Contractor chooses to do such work with mechanical equipment, he must ensure that the slope is suitable for the safe operation of such equipment. For areas where the slope is determined to be too steep for the safe operation of mechanical equipment, the contractor shall conduct the clearing and grubbing operations using necessary hand equipment. The contractor must use all necessary precautions and fall protection to ensure the safety of all workers and the general public.
 - a. All arboriculture practices for tree care operations shall be conducted in accordance with ANSI Z133.1 as prepared by the International Society of Arboriculture.
 - b. The Contractor shall be solely responsible for all liability or damage including but not limited to damage to existing sidewalks, curbs, gutters, fences, guardrail, and utilities caused by or connected with the removal operations.
 - c. To conduct clearing and grubbing operations, the contractor should use the existing fence gates to access the sites whenever feasible. The Contractor should inform the Engineer if any gate is locked. The Contractor might find it necessary at some sites to roll back or remove a section of existing chain link fence to access the job site. The Contractor must re-connect the fence at the end of the day to secure the site. Rolling back and reconnecting the existing fence will be incidental to clearing and grubbing. Repair of the fence as approved by the engineer will be incidental to clearing and grubbing.

C. Maintenance of Traffic.

1. The Contractor must install maintenance of traffic control measures as required, or as directed by

the engineer prior to all clearing and grubbing operations.

D. Trees Designated to be removed or remain.

1. Certain areas have been designated and tagged for the trees to remain. Other areas have been designated and tagged for the trees to be removed. The limits of the clearing and grubbing shall be as discussed and as clarified during the field meeting.
 - a. Protect all trees, shrubs and plants designated to remain. Any trees, shrubbery or plants designated to remain that are damaged shall be replaced or repaired by a certified tree surgeon. If pruning is determined necessary to avoid impacts to adjacent trees to remain, all pruning shall be in accordance with the International Society of Arboriculture's current Tree Pruning Guideline, Publication ISBN 1-881956-07-5 and as illustrated on the Standard Construction Details.

E. Tree Removals and Trimming.

1. Any tree designated for removal that has been verified during the field meeting shall be cut off as flush to the ground as possible. The tree stumps will remain and shall be treated with an herbicide immediately after cutting to prevent sprouting.
 - a. Use all precautions necessary to ensure that no trees, branches, or other debris fall onto any adjacent roadway during any time during this contract. The contractor must also ensure that all existing utilities, fences, guardrails, sidewalks, curbs, and all other existing roadside structures are not damaged during any of the clearing and grubbing operations.

F. Shrub, Brush, and Other Plant Removal, and Preparation of Ground Surface.

1. Prior to clearing operations for areas covered with shrubs, brush, and other plants, apply an herbicide treatment as specified by the Engineer as required to facilitate the clearing operations. Allow adequate curing time for the herbicide before proceeding with clearing and grubbing. Herbicide treatment will be incidental to this item number. These areas should be cleared to a depth of 1 to 2 inches below the existing grade. The contractor must stabilize all disturbed areas with seed and mulch within 24 hours of the initial disturbance.
 - a. All depressions greater than 6 inches in depth on the slope surfaces caused by the clearing and grubbing operations shall be backfilled with approved material and compacted as directed by the Engineer.
 - b. Upon the removal of trees, brush, shrubs, etc., as required for clearing and grubbing, all disturbed areas shall be stabilized with seed and mulch within 24 hours of the initial disturbance.

G. Disposal.

1. All materials removed by the clearing and grubbing operation shall become the property of the

Contractor as shall be removed from the Project or otherwise disposed of as specified in Subsection 106.09.

Method of Measurement:

The Department will measure the quantity of man hour of miscellaneous work in hours.

Basis of Payment:

A. The Department will pay for Man Hour of Miscellaneous Work at the contract unit price per hour.

Price and payment will constitute full compensation for:

- a. Removal and disposal of trees (regardless of size), brush, shrubs, trash and rubbish;
- b. providing and compacting approved materials;
- c. herbicides;
- d. providing and operating all safety equipment required to ensure safety of the workers;
- e. ensure that no material falls onto adjacent roadways;
- f. replacement or repair of damaged trees, shrubbery and plants that were designated to remain;
- g. pruning as necessary;
- h. cutting, rolling back; reconnecting, and repairing existing chain link fence to access the area;
- i. disposal; and
- j. all incidentals require to complete the Work.

B. The Department will pay for:

- a. Maintenance of traffic in accordance with section 801
- b. seeding in accordance with section 908; and
- c. mulching in accordance with section 908.

C. The Department will not pay for any damaged property to be replaced as directed by the engineer.

07/10/2026

763621 - CONSTRUCTION ENGINEERING, REHABILITATION

Description:

- A. Collect survey information and provide layout in accordance with the contract. Assume full responsibility for any errors and/or omissions in the work of all engineering staff employed.
- B. Provide and have available for the project adequate engineering staff that is:
 - 1. Competent and experienced to set lines and grades needed to construct the project.
 - 2. Able to perform the work to the scope and magnitude outlined herein.
 - 3. Construction engineering functions and requirements:
 - a. Provide all necessary surveying equipment required for all engineering work on the project.
 - i. Check all equipment/instruments prior to use on the project.
 - ii. Immediately replace or recalibrate equipment found to be out of adjustment or inadequate to perform its function to the satisfaction of the engineer.
 - b. Perform all computations necessary to establish the exact position of the work from control points and preserve.
 - i. Maintain adequate workbooks of all computations survey notes and other records.
 - ii. Make available to the Department, neat and legible, all computations, survey notes and other records necessary to accomplish the work.
 - c. Provide preliminary topographic survey for all proposed curb ramp locations identified in the Plans and the layout of grade information required by the engineer for curb ramp construction.
 - d. Obtain topographic information a minimum of 25 feet in each direction from the back of curb at proposed curb ramp locations.
 - i. Grades for the edge of pavement, gutter line (if applicable), top of curb, front and back edge of sidewalk, existing obstructions such as utility poles, junction wells, traffic poles and cabinets, manholes, valves, fire hydrants, drainage inlets, steps, retaining walls, building faces or other obstructions that are directly adjacent or within the proposed curb ramp limits.
 - ii. Collect data in a format that is compatible with the Departments design standards and submit to the engineer for evaluation of curb ramps that are located in areas with multiple obstructions, limited area, or other unique characteristics that require more detailed layout. The engineer will provide the final grades for construction of these curb ramps.

- iii. Establish necessary grades to ensure all proposed curb ramps, roadways or ditches, installation of drainage structures, or other items of work as determined by the engineer, have positive drainage.
- C. Professional services performed under this item by individuals/firms other than the Contractor are not subject to the subcontracting requirements of Subsection 108.1.

Method of Measurement:

The Department will measure construction engineering - rehabilitation as the actual number of hours the survey crew is in the field actively engaged in construction engineering - rehabilitation work.

Basis of Payment:

The Department will pay for construction engineering - rehabilitation at the contract unit price per hour. Price and payment constitutes full compensation for providing all labor, equipment, instruments, stakes, and other material necessary to satisfactorily complete the Work.

7/20/23

801500 – MAINTENANCE OF TRAFFIC, REHABILITATION

DESCRIPTION:

This work consists of providing temporary traffic control to maintain vehicular, bicycle, and pedestrian traffic through the project work zone where roadway and/or full sidewalk detours are specified to be used for completion of repair work.

MATERIALS:

- A. Crashworthy temporary traffic control devices in accordance with current AASHTO MASH standards.
- B. Category I through Category III temporary traffic control devices - Certification of compliance with MASH required.
 - 1. Category I devices - The manufacturer or contractor may self-certify that the devices meet the MASH criteria.
 - 2. Category II and III devices - MASH eligibility letter, including all applicable attachments required for each type of device.
- C. Submit documentation requesting approval of temporary traffic control devices 14 days before the start of work. Submission requirements and instructions for source information are listed on DelDOT's website: <https://deldot.gov/Business/prodlists/index.shtml>. The Department approves temporary traffic control devices based on:
 - 1. Self-Certification
 - 2. Approved products lists

CONSTRUCTION:

- A. Place temporary traffic control devices in accordance with the contract and DE MUTCD. Follow the manufacturer's installation instructions.
- B. Maintain temporary traffic control devices throughout the project duration. Replace damaged temporary traffic control devices within 24 hours of notification or when directed by the engineer.
- C. Maintain temporary traffic control devices at a minimum in a "marginal" condition in accordance with the brochure entitled "Quality Guidelines for Temporary Traffic Control Devices," available from the American Traffic Safety Services Association (ATSSA). The engineer may reject a temporary traffic control device that does not meet the "marginal" condition.
- D. Temporary traffic control devices are the contractor's property unless otherwise indicated in the contract.
- E. General Temporary Traffic Control and Traffic Maintenance.
 - 1. Maintain a work zone that protects the travelling public and persons working on the project. If

necessary, implement additional safety measures not expressly required by the contract to ensure the safety of all persons.

2. The contractor may adjust longitudinal dimensions for maintenance of traffic configurations to fit field conditions.
3. Inventory existing signs within the contract limits
 - a. Maintain existing signs that must remain in place during the project as noted in the contract or as directed by the engineer.
 - b. Remove other existing signs and store.
4. Always maintain access within the project limits for businesses and residences
 - a. Coordinate temporary driveway or entrance closures for tie-in purposes with the engineer and the property owner in advance of the closures.
5. Regarding bus stops, unless otherwise directed by the contract or the engineer:
 - a. Maintain an area for the bus vehicle to safely pick-up and drop-off passengers.
 - b. Provide an accessible path for pedestrians to safely access the bus stop.
6. Maintain existing access for bicycles and pedestrians. If temporary sidewalk closures are necessary, install pedestrian detours in accordance with the DE MUTCD. Damage to existing sidewalk will be repaired at the Contractor's expense. Clear sidewalks of all construction debris at the end of each workday.
7. Conduct construction operations in a manner that minimizes delays to traffic.
 - a. Follow the requirements of the memorandum titled, "Temporary Traffic Control within Intersections," of the DE MUTCD for work within intersections or in close proximity to intersections.
 - b. Schedule work in the vicinity of traffic signals to minimize the time during which the signal operates without detection.
 - c. Set temporary traffic control devices on the work zone side of the pavement marking, if possible, when closing a lane adjacent to an open lane.
 - d. Do not close lanes unless a construction activity requiring a lane closure is taking place or will take place within 1 hour of closure, except for buffer lanes on high volume or high-speed roadways. Reopen lanes immediately upon completing the work. Shorten the lane closure for moving operations as work progresses, and as traffic conditions warrant, to keep the length of the closure to a minimum. Conduct construction operations in a manner that minimizes disruption to traffic during peak hours and periods of heavy traffic flow. The Department will stop the contractor's operations if, in the opinion of the engineer, such operations are unnecessarily impeding traffic.

- F. Notification to the engineer for road closures and detours.
 - 1. Submit notification no less than 14 calendar days before the start of detours and road closures.
 - 2. Obtain the approval of the chief traffic engineer, or designee, a minimum of 48 hours in advance of proposed restrictions beyond those specified in the contract.
- G. Written notice to property owners, businesses, and residents.
 - 1. Provide written notice 48 hours in advance of the start of construction work including the following:
 - a. The scope of work, working hours, anticipated start and completion dates, and a summary of construction activities that might interfere with property access.
 - b. A schedule and access coordination plan.
 - c. The contractor's name, address, and a Department contact phone number.
- H. Provide written verification to the engineer that the property owners and residents were notified.
- I. Failure to give proper notice may result in suspension of work in accordance with Section 104.8 of the standard specifications.
- J. Before obstructing a fire hydrant, notify the local 911 center and provide the engineer with written confirmation of the notice.
- K. Keep lanes open for a period of time that depends on the day of the week that the legal or observed holiday falls. The following schedule determines the periods of time the lanes must remain open, unless otherwise allowed by the contract:

TABLE 1: DAY OF HOLIDAY LANE CLOSURES

<i>Day of holiday or event</i>	<i>Time all lanes must be open to traffic</i>
Sunday	12:00 PM Friday through 5:59 AM Monday
Monday	12:00 PM Friday through 11:59 PM Monday
Tuesday	12:00 PM Monday through 11:59 PM Tuesday
Wednesday	12:00 PM Tuesday through 11:59 PM Wednesday
Thursday	12:00 PM Wednesday through 11:59 PM Thursday
Thursday (Thanksgiving)	6:00 AM Wednesday through 11:59 PM Sunday
Friday	12:00 PM Thursday through 5:59 AM Monday
Saturday	12:00 PM Friday through 5:59 AM Monday

- L. Do not close travel lanes or roads within 1 mile of a designated polling place during the primary and general elections that fall during an even numbered year.
- M. Follow all additional restrictions that may apply as noted in the contract or as directed by the engineer.
- N. The Department will consider failure to comply with the requirements of this section as justification for suspension of work in accordance with Section 104.2.D of the standard specifications. The Department will continue assessing time charges until the contractor corrects the deficiencies.
- O. Non-compliance includes:

1. Failure to correct deficiencies within 24 hours of written deficiency notices related to temporary traffic control.
2. Non-compliance with the DE MUTCD or the contract.
3. Unsafe operations.
4. Placement of non-compliant temporary traffic control devices.

METHOD OF MEASUREMENT:

The Department will not measure this item.

BASIS OF PAYMENT:

- A. The Department will pay for temporary traffic control at the lump sum contract price. Price and payment will constitute full compensation for:
 1. Maintenance of traffic activities accepted by the engineer;
 2. supply, installation, maintaining, and removing maintenance of traffic devices, including, but not limited to:
 - a. temporary warning signs and plaques;
 - b. plastic drums;
 - c. traffic cones;
 - d. arrow panels; and
 - e. truck mounted attenuators.
 3. submitting TTCPs;
 4. submitting certifications;
 5. correcting edge drop-offs; and
 6. a certified ATSSA traffic control supervisor.
- B. No additional payment will be made to move temporary traffic control devices in accordance with the TTCPs or as necessary to address safety issues as included in this item.

04/29/2026

806500 – TRAFFIC OFFICERS

Description:

In accordance with Section 806.1.

Materials:

Not applicable.

Construction:

In accordance with Section 806.3.

Method of Measurement:

In accordance with Section 806.4.

Basis of Payment:

- A. The Department will pay for traffic officers at the contract unit price per hour. Price and payment constitute full compensation for providing traffic officers, vehicles, and equipment.
- B. For bidding purposes, the Department has fixed the unit price at \$180.00 per hour. The Department will pay for traffic officers based on a submitted invoice from the police department plus 10 percent.

07/17/2025

908516 - SODDING

Description:

This work consists of preparing the ground area and providing and placing approved sod.

Materials:

A. Sod

1. Sod shall be well rooted from high quality seed of known origin and native to the locality of the work. The Department reserves the right to visit the proposed sod source prior to the granting of a source approval. Sod shall be stripped, delivered, and laid within a period of 36 hours. Sod stripped and delivered but not laid within this period shall be reinspected and approved by the engineer prior to use.
 - a. If Fine Fescue-Bluegrass sod is used, it shall contain the following percentages by weight in the blend:
 - i. Creeping Red Fescue (*Festuca rubra* L. subsp. *Rubra*) 10 Percent
 - ii. Chewing Fescue (*Festuca rubra* L. subsp. *commutata* Gavd.) 20 Percent
 - iii. Hard Fescue (*Festuca longifolia* Thuill.) 55 Percent
 - iv. Kentucky Bluegrass (*Poa pratensis* L.) 15 Percent
 - b. The varietal makeup of the Fine Fescue-Bluegrass sod must be submitted to the engineer for approval prior to the actual cutting and lifting of the sod.
 - c. Sod shall be free of objectionable grassy and broadleaf weeds. Sod shall be considered free of such weeds if less than five such plants are found per 100 square feet of area. Sod shall not be acceptable if it contains any of the following weeds: common bermudagrass (wiregrass), quackgrass, Johnsongrass, poison ivy, nutsedge, nimblewill, Canadian thistle, bindweed, bentgrass, wild garlic, ground ivy, perennial sorrel, or brome grass.
 - d. Sod shall be reasonably free of thatch, diseases, nematodes, and soil-borne insects. All sod must display the official State Certification tags of the state from which the sod originated. The same shall apply to all sod shipped intra-state with prior inspection and tagging through the Delaware State Department of Agriculture.

B. Water Section 1021.

Construction Methods:

A. Cutting Sod.

1. Before stripping, sod shall be mowed uniformly at a height of 1-inch to 22 inches. Sod shall be

machine cut at a uniform soil thickness of 5/8-inch to 1/4-inch, at the time of cutting. Measurement for thickness shall exclude top growth and thatch. The sod pad size shall be cut to a minimum uniform width of 12-inches and a minimum length of 12 inches.

B. Placing.

1. Sod shall be placed only when the soil is moist and favorable to growth. Sod shall not be placed between November 1 and April 1, unless weather and soil conditions are considered favorable, and permission is granted.

C. Preparation of Grade.

1. The area to be sodded shall be shaped and finished to the lines and grades indicated on the Plans, and the surface loosened prior to placing the sod. The Contractor shall water the slope before the sod is placed.

D. Laying the Sod.

1. The sod shall be placed on the prepared surface with the edges in close contact. Each strip or section of sod shall be fitted and tamped into place with hand tampers of not less than 100 square inches in area.
 - a. After slopes of either cuts or fills have been shaped to conform to the finished grade and cross-section shown on the Plans, the shoulders and toes of the slope shall be rounded off to a 5' radius, or as otherwise indicated in the Plans.
 - b. On all slopes, sod shall be laid with the long edges parallel to the contour starting at the bottom of the slope. Successive strips shall be neatly matched, and all joints staggered or broken. When placing sod in drainage ditches, the length of the strip shall be laid parallel to the direction of the flow of the water. Where the sod may be displaced during sodding operations, the workers, when replacing it, shall work from ladders or treated planks to prevent further displacement.
 - c. Each strip or section of sod placed on slopes 1:2 (vertical to horizontal) and steeper, and surface drainage V-shaped or flat bottom ditches or gutters, shall be staked securely with at least two stakes or pins spaced not more than 24-inches apart with the flat side against the slope. Stakes shall either be wood wedges or T-shaped wire pins. Wood wedges shall be 2 inches by 1-inch by 6-inches to 2 inches by 1-inch by 12- inches, as required by soil conditions, and driven so that the last 1-inch remains above the top of the sod. T-shaped wire pins shall be machine bent from 15-inch pieces of 8 gage low carbon bright steel with an 8-inch leg, a 4-inch head, and a 1 secondary drive and driven flush with the top of the sod.
 - d. When sodding adjacent to a sidewalk, curb, pavement, or retaining walls, sufficient allowance

shall be made in grading for the thickness of the sod, so that when placed, the sod shall be flush with the tops of such structures. The sod shall be tamped to ensure tight joints and a smooth level surface. As the top of the slope is reached, the sod shall be trimmed to a line placed at a fixed distance from the break of the bank and along the entire length of the cut or fill. The top of the bank shall have been previously graded, so that the sod, when applied, comes flush with the average level of the top of the bank. All surfaces shall be uniform in appearance and reasonably true to line and grade.

- e. Water the sod immediately after placement to a depth sufficient so that the underside of the new sod pads and soil immediately below the sod are thoroughly wet. The sod shall be kept moist until growth is established. All sod in which shrinking, burning, or turning brown occurs shall be rejected, removed, and replaced.
- f. A satisfactory stand of grass from sod, as determined by the engineer, shall be required. To be acceptable, a stand of grass from sod must display an even flush of growth and show evidence of soil surface contact, minimal undermining, and minimal erosion.

Method of Measurement:

The Department will measure the quantity of sodding in square yards.

Basis of Payment:

- A. The Department will pay for sodding at the contract unit price per square yard. Price and payment will constitute full compensation for:
 - 1. Providing sod;
 - 2. grading;
 - 3. rounding the shoulders and toes of slopes;
 - 4. hauling;
 - 5. laying;
 - 6. tamping;
 - 7. watering until final acceptance; and
 - 8. labor, equipment, tools, and incidental required to complete the Work.

07/10/2026



**Delaware Department of Transportation
Quantity Sheet Summary**

Proposal ID: T202703201

Project Description: OPEN END, CTF PROJECTS, CENTRAL, FY 26 - 29

NOT TO BE USED FOR BIDDING

Item Number	Description	Unit	Quantity
201501	CLEARING AND GRUBBING	SY	1000
202000	EXCAVATION AND EMBANKMENT	CY	500
202004	UNDERCUT EXCAVATION, PATCHING	CY	50
203500	DITCHING	LF	3025
207003	STRUCTURE BACKFILLING	CY	1000
207004	STRUCTURE EXCAVATION	CY	1000
207023	STRUCTURAL BACKFILL, BORROW TYPE C, PROVIDING ONLY	CY	1000
211000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	1
211001	REMOVAL OF PORTLAND CEMENT CONCRETE PAVEMENT, CURB AND SIDEWALK	SY	4000
211002	REMOVAL OF GUARDRAIL AND FENCE	LF	1200
211500	TREE REMOVAL, 6" TO 15" DIAMETER	EACH	30
211501	TREE REMOVAL, GREATER THAN 15" TO 25" DIAMETER	EACH	30
211502	TREE REMOVAL, GREATER THAN 25" TO 37" DIAMETER	EACH	30
211503	TREE REMOVAL, GREATER THAN 37" TO 49" DIAMETER	EACH	30
211509	TREE TRIMMING	EACH	30
211510	STUMP REMOVAL	LF	300



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Item Number	Description	Unit	Quantity
211511	ROOT PRUNING	LF	900
301001	GABC	CY	250
301003	GABC	TON	100
301004	GABC, PATCHING	TON	150
302005	DELAWARE NO. 57 STONE	TON	100
401005	SUPERPAVE TYPE C, 9.5 mm, PG 64-22 (CARBONATE STONE)	TON	6500
401014	SUPERPAVE TYPE B, PG 64-22	TON	1000
401029	SUPERPAVE TYPE C, 9.5 mm, PG 64-22, PATCHING	TON	500
401030	SUPERPAVE TYPE B, PG 64-22, PATCHING	TON	250
401036	SUPERPAVE TYPE C, 9.5 mm, PG 64-22, WEDGE	TON	150
401500	FOG SEAL	GAL	26000
401506	SPEED HUMP	LF	150
401576	PERVIOUS ASPHALT PAVEMENT - 9.5mm TYPE C	TON	200
401758	COAL SLAG	LB	11200
401760	FOG SEAL WITH CURBING	GAL	27500
601000	CLEANING DRAINAGE PIPE, 15"-24" DIAMETER	LF	600
601001	CLEANING DRAINAGE PIPE, GREATER THAN 24" DIAMETER	LF	500

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Item Number	Description	Unit	Quantity
601011	REINFORCED CONCRETE PIPE, 15", CLASS III	LF	80
601012	REINFORCED CONCRETE PIPE, 18", CLASS III	LF	60
601100	REINFORCED CONCRETE ELLIPTICAL PIPE, 14" X 23", CLASS III	LF	60
601141	REINFORCED CONCRETE FLARED END SECTION, 15"	EACH	6
601142	REINFORCED CONCRETE FLARED END SECTION, 18"	EACH	4
601146	REINFORCED CONCRETE FLARED END SECTION, 30"	EACH	4
601170	REINFORCED CONCRETE FLARED END SECTION, 14" X 23"	EACH	2
601191	PVC PIPE, 6"	LF	108
601219	CORRUGATED POLYETHYLENE PIPE, TYPE S, 12"	LF	304
601220	CORRUGATED POLYETHYLENE PIPE, TYPE S, 15"	LF	120
601504	PERSONAL GRATE FOR PIPE INLET	LS	1
602001	DRAINAGE INLET, 24" X 24"	EACH	6
602002	DRAINAGE INLET, 34" X 18"	EACH	6
602003	DRAINAGE INLET, 34" X 24"	EACH	6
602005	DRAINAGE INLET, 48" X 48"	EACH	7
602011	DRAINAGE INLET, 72" X 72"	EACH	6
602031	MANHOLE, 48" X 48"	EACH	4

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Item Number	Description	Unit	Quantity
602100	DRAINAGE INLET GRATE(S)	EACH	6
602101	DRAINAGE INLET FRAME(S)	EACH	6
602130	ADJUSTING AND REPAIRING EXISTING DRAINAGE INLET	EACH	6
602132	ADJUSTING AND REPAIRING EXISTING MANHOLE	EACH	6
701012	PCC CURB, TYPE 1-6	LF	400
701014	PCC CURB, TYPE 2	LF	400
701018	I.PCC CURB AND GUTTER, TYPE 1-8	LF	400
701019	I.PCC CURB AND GUTTER, TYPE 2	LF	600
701023	I.PCC CURB AND GUTTER, TYPE 3-8	LF	400
705001	PCC SIDEWALK, 4"	SF	7000
705002	PCC SIDEWALK, 6"	SF	1200
705008	PEDESTRIAN CONNECTION, TYPE 1	SF	900
705009	PEDESTRIAN CONNECTION, TYPE 2, 3, AND/OR 4	SF	800
705010	PEDESTRIAN CONNECTION, TYPE 5	SF	600
705013	TRUNCATED DOME DETECTABLE WARNING SURFACE	SF	400
707001	RIPRAP, R-4	SY	325
707002	RIPRAP, R-5	SY	75

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Item Number	Description	Unit	Quantity
707020	PRESACKED CONCRETE RIPRAP	CY	200
708003	GEOTEXTILES, RIPRAP	SY	400
710002	ADJUST WATER VALVE BOXES	EACH	35
760010	PAVEMENT MILLING, BITUMINOUS CONCRETE PAVEMENT	SYIN	4500
760011	PAVEMENT MILLING, BITUMINOUS CONCRETE PAVEMENT, TAPER CUT	SYIN	8000
760012	PAVEMENT MILLING, BITUMINOUS CONCRETE PAVEMENT, VARIABLE DEPTH	SYIN	2500
760503	PAVEMENT MILLING, PATCHING	SYIN	800
762000	SAW CUTTING, BITUMINOUS CONCRETE	LF	1200
762001	SAW CUTTING, CONCRETE, FULL DEPTH	LF	200
762002	SAW CUTTING, CONCRETE, VARIABLE DEPTH	LF	600
762004	BUTT JOINTS	SY	3000
763000	INITIAL EXPENSE/DE-MOBILIZATION	LS	1
763587	MAN HOUR OF MISCELLANEOUS WORK	HOUR	680
763621	CONSTRUCTION ENGINEERING, REHABILITATION	HOUR	100
801500	MAINTENANCE OF TRAFFIC, REHABILITATION	LS	1
802003	ARROW PANELS TYPE C	EADY	45
803001	PROVIDE AND MAINTAIN PORTABLE CHANGEABLE MESSAGE SIGN	EADY	45

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Item Number	Description	Unit	Quantity
804001	PROVIDE AND MAINTAIN PORTABLE LIGHT ASSEMBLY (FLOOD LIGHTS)	EADY	25
805001	PLASTIC TRAFFIC CONTROL DRUMS	EADY	750
806500	TRAFFIC OFFICERS	HOURL	100
808002	PROVIDE AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	EADY	50
811002	FLAGGER, KENT COUNTY	HOURL	1700
811014	FLAGGER, KENT COUNTY, OVERTIME	HOURL	340
813001	TEMPORARY BARRICADES, TYPE III	LFDY	149
846001	PROVIDE AND INSTALL LOOP WIRE 1-CONDUCTOR #14 AWG ENCASED IN 1/4" FLEXIBLE TUBING IN A LOOP SAWCUT	LF	400
860001	PERMANENT PAVEMENT STRIPING, LATEX, 6"	LF	1800
860004	TEMPORARY MARKINGS, LATEX, 4"	LF	1600
860007	TEMPORARY PAVEMENT STRIPING, LATEX, SYMBOL/LEGEND	SF	700
862006	PERMANENT PAVEMENT STRIPING, ALKYD-THERMOPLASTIC, SYMBOL/LEGEND	SF	500
908001	TOPSOIL	TON	400
908003	TOPSOIL, 4" DEPTH	SY	3000
908014	PERMANENT GRASS SEEDING, DRY GROUND	SY	700
908016	PERMANENT GRASS SEEDING, SUBDIVISION	SY	2700

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Item Number	Description	Unit	Quantity
908026	EROSION CONTROL MULCH	SY	3400
908516	SODDING	SY	400
908005	TOPSOIL, 12" DEPTH	SY	250