

STATE OF DELAWARE



This Copy is for information only.  
You must request a CD from  
DeIDOT in order to bid.

DEPARTMENT OF TRANSPORTATION

BID PROPOSAL

for

CONTRACT T201806105.01

Pavement and Rehabilitation, North V, 2018

New Castle County

ADVERTISEMENT DATE: September 3, 2018

COMPLETION TIME: 155 Calendar Days

SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION  
DELAWARE DEPARTMENT OF TRANSPORTATION  
AUGUST 2016

Bids will be received in the Bidder's Room at the Delaware Department of Transportation's Administration Building, 800 Bay Road, Dover, Delaware prior to 2:00 P.M. local time October 2, 2018

**Contract No.T201806105.01**

**Pavement and Rehabilitation, North V, 2018**  
New Castle County

**GENERAL DESCRIPTION**

LOCATION

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

DESCRIPTION

The improvements consist of furnishing all labor and materials for this contract. This project involves pavement milling bituminous concrete pavement, bituminous concrete patching, bituminous concrete super-pave type c overlays, signing and pavement markings and other incidental construction in accordance with the location, notes and details shown on the plans and as directed by the Engineer.

COMPLETION TIME

All work on this contract must be complete within 155 Calendar Days. It is the Department's intent to issue a Notice to Proceed such that work starts on or about November 5, 2018.

PROSPECTIVE BIDDERS NOTES:

1. BIDDERS MUST BE REGISTERED with DelDOT and request a cd of the official plans and specifications in order to submit a bid. Contact DelDOT at [dot-ask@state.de.us](mailto:dot-ask@state.de.us), or (302) 760-2031. Bids will be received in the Bidder's Room at the Delaware Department of Transportation's Administration Building, 800 Bay Road, Dover, Delaware prior to 2:00 P.M. local time October 2, 2018 unless changed via addendum.
2. QUESTIONS regarding this project are to be e-mailed to [dot-ask@state.de.us](mailto:dot-ask@state.de.us) no less than six business days prior to the bid opening date in order to receive a response. Please include T201806105.01 in the subject line. Responses to inquiries are posted on-line at <http://www.bids.delaware.gov>.
3. THE BID PROPOSAL incorporates a cd containing **Expedite, version 5.9a** and its installation file. Bidders are to use the cd provided to enter their bid amounts into the Expedite file. The Expedite bid file must be printed and submitted in paper form along with the cd and other required documents prior to the Bid due date and time.
4. SURETY BOND - Each proposal must be accompanied by a deposit of either surety bond or security for a sum equal to at least 10% of the bid.
5. DRUG TESTING - Regulation 4104; The state Office of Management and Budget has developed regulations that require Contractors and Subcontractors to implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds pursuant to 29 Del.C. §6908(a)(6). **Refer to the full requirements by following the below link:** <http://regulations.delaware.gov/register/september2015/final/19%20DE%20Reg%20207%2009-01-15.htm>  
**Regulation was revised for projects advertised beginning 01/01/18.** Please review the revised regulation for details. Note a few of the requirements;
  - \* At bid submission - Each Contractor must submit with the bid *a single signed affidavit certifying that the Contractor and Subcontractor(s) has in place or will implement during the entire term of the contract a Mandatory Drug Testing Program that complies with the regulation;*
  - \* 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, and any other listed Subcontractors;

- \* ~~Testing Report Forms shall be submitted to DeIDOT monthly. No longer required.~~
  - \* Subcontractors - Contractors that employ Subcontractors on the job site may do so only after submitting a copy of the Subcontractor's Employee Drug Testing Program along with the standard required subcontractor information. A Subcontractor shall not commence work until **DeIDOT** has approved the subcontractor in writing;
  - \* Penalties for non-compliance are specified in the regulation.
6. NO RETAINAGE will be withheld on this contract.
  7. EXTERNAL COMPLAINT PROCEDURE can be viewed on DeIDOT's Website [here](#), or you may request a copy by calling (302) 760-2555.
  8. REMINDER; A copy of your firm's Delaware Business License must be submitted with your bid.
  9. AUGUST 2016 STANDARD SPECIFICATIONS apply to this contract. The Contractor shall make himself aware of any revisions and corrections (Supplemental Specifications, if any) and apply them to the applicable item(s) of this contract. The 2016 Standard Specifications can be [viewed here](#).
  - 9a. FLATWORK CONCRETE TECHNICIAN CERTIFICATION TRAINING:  
Section 501.03, 503.03, 505.03, 610.03, 701.03 and 702.03 of the 2016 Standard Specifications require contractor's 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. Concrete flatwork certification will be effective starting on June 1, 2018.
  10. **BREAKOUT SHEETS** MUST be submitted either with your bid documents; or within seven (7) calendar days following the bid due date by the lowest apparent bidder. Refer to instructions adjacent to the Breakout Sheets in this document.

**STATE OF DELAWARE  
CONSTRUCTION ITEMS UNITS OF MEASURE**

<b>English Code</b>	<b>English Description</b>	<b>Multiply By</b>	<b>Metric Code</b>	<b>Metric Description</b>	<b>Suggested CEC Metric Code</b>
ACRE	Acre	0.4047	ha	Hectare	HECTARE
BAG	Bag	N/A	Bag	Bag	BAG
C.F.	Cubic Foot	0.02832	m <sup>3</sup>	Cubic Meter	M3
C.Y.	Cubic Yard	0.7646	m <sup>3</sup>	Cubic Meter	M3
EA-DY	Each Day	N/A	EA-DY	Each Day	EA-DY
EA-MO	Each Month	N/A	EA-MO	Each Month	EA-MO
EA/NT	Each Night	N/A	EA-NT	Each Night	EA/NT
EACH	Each	N/A	EA	Each	EACH
GAL	Gallon	3.785	L	Liter	L
HOUR	Hour	N/A	h	Hour	HOUR
INCH	Inch	25.4	mm	Millimeter	MM
L.F.	Linear Foot	0.3048	m	Linear Meter	L.M.
L.S.	Lump Sum	N/A	L.S.	Lump Sum	L.S.
LA-MI	Lane Mile	1.609	LA-km	Lane-Kilometer	LA-KM
LB	Pound	0.4536	kg	Kilogram	KG
MFBM	Thousand Feet of Board Measure	2.3597	m <sup>3</sup>	Cubic Meter	M3
MGAL	Thousand Gallons	3.785	kL	Kiloliter	KL
MILE	Mile	1.609	km	Kilometer	KM
S.F.	Square Foot	0.0929	m <sup>2</sup>	Square Meter	M2
S.Y.	Square Yard	0.8361	m <sup>2</sup>	Square Meter	M2
SY-IN	Square Yard-Inch	0.8495	m <sup>2</sup> -25 mm	Square Meter-25 Millimeter	M2-25 MM
TON	Ton	.9072	t	Metric Ton (1000kg)	TON
N.A.*	Kip	4.448	kN	Kilonewton	N.A.*
N.A.*	Thousand Pounds per Square Inch	6.895	MPa	Megapascal	N.A.*

\*Not used for units of measurement for payment.

**TABLE OF CONTENTS**

**GENERAL DESCRIPTION..... [i](#)**  
    LOCATION..... [i](#)  
    DESCRIPTION..... [i](#)  
    COMPLETION TIME..... [i](#)  
    PROSPECTIVE BIDDERS NOTES..... [i](#)  
    CONSTRUCTION ITEMS UNITS OF MEASURE..... [iii](#)

**GENERAL NOTICES..... [1](#)**  
    SPECIFICATIONS..... [1](#)  
    CLARIFICATIONS..... [1](#)  
    ATTESTING TO NON-COLLUSION..... [1](#)  
    QUANTITIES..... [1](#)  
    PREFERENCE FOR DELAWARE LABOR..... [1](#)  
    EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS..... [1](#)  
    TAX CLEARANCE..... [2](#)  
    LICENSE..... [2](#)  
    DIFFERING SITE CONDITIONS..... [2](#)  
    RIGHT TO AUDIT..... [3](#)

**PREVAILING WAGES..... [4](#)**  
    STATE WAGE RATES..... [5](#)

**SPECIAL PROVISIONS..... [6](#)**  
    401502 - ASPHALT CEMENT COST ADJUSTMENT..... [7](#)  
    401696 – ENTRANCE, DRIVEWAY AND INTERSECTING STREET PAVING SURCHARGE  
    ..... [8](#)  
    401699 - QUALITY CONTROL/QUALITY ASSURANCE OF BITUMINOUS CONCRETE..... [9](#)  
    720500 - GALVANIZED AND FUSION-BONDED POLYESTER COATED GUARDRAIL. . . . . [24](#)  
    760502 - HIGH FRICTION SURFACE TREATMENT..... [28](#)  
    763621 - CONSTRUCTION ENGINEERING, REHABILITATION..... [34](#)

**UTILITY STATEMENT..... [36](#)**

**RIGHT OF WAY CERTIFICATE..... [44](#)**

**ENVIRONMENTAL STATEMENT..... [45](#)**

**RAILROAD STATEMENT..... [46](#)**

**BID PROPOSAL FORMS..... [47](#)**  
    BREAKOUT SHEET..... [57](#)

**DRUG TESTING AFFIDAVIT..... [60](#)**

**CERTIFICATION..... [61](#)**

**BID BOND..... [63](#)**

**GENERAL NOTICES**

SPECIFICATIONS:

The specifications entitled "Standard Specifications for Road and Bridge Construction, August, 2016", hereinafter referred to as the Standard Specifications, and Supplemental Specifications, the Special Provisions, notes on the Plans, this Bid Proposal, and any addenda thereto shall govern the work to be performed under this contract. The Specifications and any Supplemental Specifications can be [viewed here](#).

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.

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.

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 insure 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**

Included in this proposal are the minimum wages to be paid various classes of laborers and mechanics 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.

## **REQUIREMENT BY DEPARTMENT OF LABOR FOR SWORN PAYROLL INFORMATION**

Title 29 Del.C. §6960 stipulates;

(b) Every contract based upon these specifications shall contain a stipulation that the employer shall pay all mechanics and laborers employed directly upon the site of the work, unconditionally and not less often than once a week and without subsequent deduction or rebate on any account, the full amounts accrued at time of payment, computed at wage rates not less than those stated in the specifications, regardless of any contractual relationship which may be alleged to exist between the employer and such laborers and mechanics. The specifications shall further stipulate that the scale of wages to be paid shall be posted by the employer in a prominent and easily accessible place at the site of the work, and that there may be withheld from the employer so much of accrued payments as may be considered necessary by the Department of Labor to pay to laborers and mechanics employed by the employer the difference between the rates of wages required by the contract to be paid laborers and mechanics on the work and rates of wages received by such laborers and mechanics to be remitted to the Department of Labor for distribution upon resolution of any claims.

(c) Every contract based upon these specifications shall contain a stipulation that sworn payroll information, as required by the Department of Labor, be furnished weekly. The Department of Labor shall keep and maintain the sworn payroll information for a period of 6 months from the last day of the work week covered by the payroll.

Bidders are specifically directed to note the Department of Labor's prevailing wage regulations implementing §6960 relating to the effective date of the wage rates, at Section 6.3, which in relevant part states:

"Public agencies (covered by the provisions of 29 Del.C. §6960) are required to use the rates which are in effect on the date of the publication of specifications for a given project. In the event that a contract is not executed within one hundred twenty (120) days from the date the specifications were published, the rates in effect at the time of the execution of the contract shall be the applicable rates for the project."

Contractor may contact:

Department of Labor, Division of Industrial Affairs, 4425 N. Market Street, Wilmington, DE 19802  
Telephone (302) 761-8200.

STATE OF DELAWARE  
DEPARTMENT OF LABOR  
DIVISION OF INDUSTRIAL AFFAIRS  
OFFICE OF LABOR LAW ENFORCEMENT  
PHONE: (302) 761-8200

Mailing Address:  
4425 North Market Street  
3rd Floor  
Wilmington, DE 19802

Located at:  
4425 North Market Street  
3rd Floor  
Wilmington, DE 19802

PREVAILING WAGES FOR HIGHWAY CONSTRUCTION EFFECTIVE MARCH 15, 2018

CLASSIFICATION	NEW CASTLE	KENT	SUSSEX
BRICKLAYERS	53.89	53.89	53.89
CARPENTERS	54.62	54.81	43.57
CEMENT FINISHERS	34.63	34.85	27.71
ELECTRICAL LINE WORKERS	24.02	46.36	22.69
ELECTRICIANS	68.70	68.70	68.70
IRON WORKERS	63.68	25.48	27.06
LABORERS	43.30	40.70	39.95
MILLWRIGHTS	17.20	16.69	14.41
PAINTERS	68.79	68.79	68.79
PILEDRIVERS	70.92	25.36	28.77
POWER EQUIPMENT OPERATORS	45.46	42.29	38.73
SHEET METAL WORKERS	24.30	21.68	19.64
TRUCK DRIVERS	35.49	30.14	36.72

CERTIFIED: 08/23/2018

BY: [Signature] on behalf of Julie Peltz  
ADMINISTRATOR, OFFICE OF LABOR LAW ENFORCEMENT

**NOTE:** THESE RATES ARE PROMULGATED AND ENFORCED PURSUANT TO THE PREVAILING WAGE REGULATIONS ADOPTED BY THE DEPARTMENT OF LABOR ON APRIL 3, 1992.

CLASSIFICATIONS OF WORKERS ARE DETERMINED BY THE DEPARTMENT OF LABOR. FOR ASSISTANCE IN CLASSIFYING WORKERS, OR FOR A COPY OF THE REGULATIONS OR CLASSIFICATIONS, PHONE 302 761 8200

NON-REGISTERED APPRENTICES MUST BE PAID THE MECHANIC'S RATE.

PROJECT: T201806105.01 Pavement and Rehabilitation North V , New Castle County

# **SPECIAL PROVISIONS**

**401502 - ASPHALT CEMENT COST ADJUSTMENT**

For Sections 401, 402 and 403, 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 here](#).

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

If the Contractor exceeds the authorized allotted completion time, the price of asphalt cement on the last authorized allotted work day, 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.

5/05/15

**401696 – ENTRANCE, DRIVEWAY AND INTERSECTING STREET PAVING SURCHARGE**

**Description:**

To compensate for work associated with paving the tie-ins at entrances, driveways and intersecting streets when such work cannot be completed as part of the mainline (roadway, auxiliary lanes, shoulder) paving operation. The surcharge limits will extend from the outermost roadway element to the point of tie-in as directed by the Engineer with the following exceptions.

No Surcharge will be paid:

1. When the tie-in does not exceed three feet from the outermost roadway element.
2. For paving any portion of a tie-in which exceeds 100 feet from the outermost roadway element. The entire tie-in section will be performed under normal paving operations.
3. When the intersecting street is to be paved under the same Contract.
4. For paving of auxiliary lanes and crossovers in the median of divided highways.

**Method of Measurement:**

The quantity of entrance, driveway and intersecting street paving surcharge will be measured as the actual number of tons of bituminous concrete placed and accepted in entrances, driveways and intersecting streets as described in this item.

**Basis of Payment:**

The quantity of entrance, driveway and intersecting street paving surcharge will be paid for at the Contract unit price per ton. Price and payment will constitute full compensation for the additional labor and equipment costs involved with the reduced production associated with such work.

10/12/17

**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 – 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 sub-lots 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 2000<sup>th</sup> 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 Gyrotory 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

to 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, 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) – 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:

<b>Table 2 - Material Parameter Weight Factors</b>		
<b>Material Parameter</b>	<b>Single Test Tolerance (+/-)</b>	<b>Weight Factor</b>
Asphalt Content	0.4	0.30
#8 Sieve ( $\geq 19.0$ mm)	7.0	0.30
#8 Sieve ( $\leq 12.5$ 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 “n” 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.

<b>Table 3 – Quality Level Analysis by the Standard Deviation Method</b>							
<b>PU or PL</b>	<b>QU and QL for “n” Samples</b>						
	<b>n = 3</b>	<b>n = 4</b>	<b>n = 5</b>	<b>n = 6</b>	<b>n = 7</b>	<b>n = 8</b>	<b>n = 9</b>
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

<b>Table 3 – Quality Level Analysis by the Standard Deviation Method</b>							
<b>PU or PL</b>	<b>QU and QL for “n” Samples</b>						
	<b>n = 3</b>	<b>n = 4</b>	<b>n = 5</b>	<b>n = 6</b>	<b>n = 7</b>	<b>n = 8</b>	<b>n = 9</b>
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

<b>Table 4 - PWL Pay Adjustment Factors</b>		
<b>PWL</b>	<b>Pay Adjustment Factor (%) Column B</b>	<b>Pay Adjustment Factor (%) Column C</b>
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%.

<b>Table 5: Compaction Price Adjustment Highway Locations</b>		
Degree of Compaction (%)	Range	Pay Adjustment Factor (%)
$\geq 97.0$	$\geq 96.75$	-100*
96.5	96.26 – 96.74	-5
96.0	95.75 – 96.25	-3
95.5	95.26 – 95.74	-2
95.0	94.75 – 95.25	0
94.5	94.26 – 94.74	0

94.0	93.75 – 94.25	1
93.5	93.26 – 93.74	3
93.0	92.75 – 93.25	5
92.5	92.26 – 92.74	3
92.0	91.75 – 92.25	0
91.5	91.26 – 91.74	0
91.0	90.75 – 91.25	-5
90.5	90.26 – 90.74	-15
90.0	89.75 – 90.25	-20
89.5	89.26 – 89.74	-25
89.0	88.75 – 89.25	-30
88.5	88.26 – 88.74	-50
=<88.0	=<88.25	-100*

\* or remove and replace it at Engineer's discretion

<b>Table 5A: Compaction Price Adjustment Other<sup>1</sup> Locations</b>		
Degree of Compaction	Range	Pay Adjustment Factor (%)
>= 97.0	>= 96.75	-100*
96.5	96.26 – 96.74	-5
96.0	95.75 – 96.25	-3
95.5	95.26 – 95.74	-2
95.0	94.75 – 95.25	0
94.5	94.26 – 94.74	0
94.0	93.75 – 94.25	0
93.5	93.26 – 93.74	1
93.0	92.75 – 93.25	3
92.5	92.26 – 92.74	1
92.0	91.75 – 92.25	0
91.5	91.26 – 91.74	0
91.0	90.75 – 91.25	0
90.5	90.26 – 90.74	0
90.0	89.75 – 90.25	0
89.5	89.26 – 89.74	0
89.0	88.75 – 89.25	-1

88.5	88.26 – 88.74	-3
88.0	87.75 – 88.25	-5
87.5	87.26 – 87.74	-10
87.0	86.75 – 87.25	-15
86.5	86.26 – 86.74	-20
86.0	85.75 – 86.25	-25
85.5	85.26 – 85.74	-30
85.0	84.75 – 85.25	-40
84.5	84.26 – 84.74	-50
=< 84.0	=<84.25	-100*

\* or remove and replace at Engineer's discretion

<sup>1</sup> This 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 the 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 Contractors request where the results substantiate the acceptance test result will be assessed a fee of \$125. Any additional Dispute Resolution samples that substantiate the Contractors 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:

<b>Existing Material</b>	<b>Structural Coefficient</b>
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	$7 * 0.14 =$	<u>0.98</u>
		1.62

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	$7 * 0.14 =$	<u>0.98</u>
		2.52

11/3/14

**720500 - GALVANIZED AND FUSION-BONDED POLYESTER COATED GUARDRAIL**

**Description:**

This work consists of surface preparation, application, and applying fusion-bonded polyester coating over galvanized metal railing elements, posts, guardrail end terminals, guardrail transitions and any associated hardware in shop facilities as specified in the Contract documents, the Standard Construction Details, this specification, and as directed by the Engineer.

**Materials:**

Prior to coating any guardrail end terminals, submit written approval from the end terminal manufacturer allowing the fusion-bonded polyester coating to be installed on the end terminal.

Approved rust-proof spray paint, color to match fusion-bonded polyester coating.

**Galvanizing Coating:**

Prior to galvanizing operations, the galvanizing facility shall inspect and remove all sharp edges on rails, posts, or other hardware used in assemblies. The easing of all sharp edges is essential to the durability of the fusion-bonded polyester coating process and failure on the part of the galvanizing facility to perform this step will be cause for rejection of the material.

All surfaces of beams, components and assemblies receiving fusion-bonded polyester coating shall not be water-quenched, nor receive a chromate conversion coating after the galvanizing process.

Galvanized surfaces receiving fusion-bonded polyester coating shall be cleaned and prepared for coating in accordance with SSPC SP 16, including all information noted in Appendix A and ASTM D 6386, Sections 5.1 through 5.3, Section 5.4.1 and Section 5.4.3 respectively. Prior to sweep blasting, all surfaces shall be inspected to ensure the galvanized layer is smooth. Should any locations be found to have excessive liquid zinc run-off, dross or zinc oxide particles they shall be smoothed until the location is level with the surrounding area using hand or power tools as described in SSPC SP 2 and 3. The resultant profile of galvanized layer produced after sweep blasting shall be 1.0 to 1.5 mils as determined by ASTM D 4417, Method C.

Thickness of the galvanized layer shall be measured before and after sweep blasting in accordance with SSPC PA-2 to ensure all components conform to ASTM A 123 or ASTM A 153 as applicable. Any locations found having insufficient thickness shall be repaired in accordance with ASTM A 780.

All shapes, except beams, shall be hot-dipped galvanized in accordance with AASHTO M 111. The Contractor may elect to use either hot-dipped galvanized rolled H sections or fabricated sections, that conform to the requirements of ASTM A 769, Grade 36 (Grade 250) (b) Beams. All beams shall conform to the requirements of AASHTO M 180, Class A, Type I or Type II. 397.

After galvanizing, all components shall be thoroughly inspected and protected from rain or moisture during storage and shipment by a secured cover to the fusion-bonded polyester coating facility.

**Fusion-Bonded Polyester Coating:**

The fusion-bonded polyester coating applicator shall identify to the galvanizer all guardrail beam, components, and assemblies surfaces receiving fusion-bonded polyester coating to ensure the galvanizing method used on assemblies is compatible with subsequent application of powder coating. Coating and cleaning systems shall be applied in an environmentally controlled plant that is fully enclosed and preapproved by the Department's Materials & Research Section. A low pressure power washing to ensure removal of any organic contaminants prior to fusion-bonded polyester coating is required. Also, to ensure water and air molecules do not get trapped in the zinc coating and turn into pinholes and blisters due to outgassing, a "pre-heat" treatment of the piece prior to fusion-bonded polyester coating is required.

Cleaned surfaces shall be protected from conditions of high humidity, rainfall, or surface moisture and shall not be allowed to flash rust. Sweep or brush blast to SSPC SP16. Blast profile shall be approximately 1 to 1.5 mils, but not greater than 2 mils, as checked with a Test-O-Tex or Keane-Tator surface profile gauge or as approved by the Engineer. The fusion-bonded polyester coating shall be applied as an electrostatically charged dry powder sprayed onto grounded components using an electrostatic spray system. The coated components shall be given a thermal time/temperature cure to provide a fully cured finish. The coating thickness, after cure, shall be 7 mils plus or minus 2 mils in accordance with the manufacturer's recommendation when measured in accordance with ASTM D7091 and SSPC PA2.

After coating, each component shall be checked for continuity using a 67-1/2 volt wet sponge detector to check for holidays, pinholes, and discontinuities. Coating thickness shall be checked with a properly calibrated magnetic gauge. All components shall be padded and shall be handled with nylon slings during loading, unloading and installation. Control and acceptance of the Fusion-Bonded Polyester Coating will be based on the following tests as used on projects for the National Park Service:

Quality	Test	Limits
Abrasion	Tabor Abraser CS-10	100 Mg. Max.
	1000 Gram Load	Weight Loss
	1000 Cycles	Weight Loss
Adhesion	ASTM D1044	
	ASTM D-3359	5A
	Initial	5A
Gloss	1000 Hrs. (Item H)	
	ASTM D-523	82%-60 degrees
	Initial 500 Hrs.	90%-60 degrees
Hardness	1000 Hrs. (Item H)	
	ASTM D-3363	2H - No Gouge
	Impact	Pass 80 Inc. Lb.
Salt Spray Resistance	Direct	
	ASTM B-117	
	ASTM D-1654	
Thickness	1000 Hrs. Unscribed	Table 2 - 10
	400 Hrs. Scribed	Table 2 - 10
	ASTM G-12	6 mils ± 2 mils
Weather Resistance	ASTM G-23, 1000 Hrs., 18 min.	
	1000 Hrs. Unscribed	Water Spray
	400 Hrs. Scribed	No Film Failure
Color		Brown Polyester No. 20040, Mid-Gloss Chocolate Brown
Identify	Infrared Finger Print	Match Original

Flexibility	180 degrees Bend-120 Min. Light within 10 seconds	No Breaks, Flaking or Cracks. Tested w/a Q-Panel w/2 mils (50 mm) or less of Cracking
Humidity	ASTM D-2247/1000 Hrs.	No. Blister or Film Failure

**Construction Methods:**

Installation of guardrail, guardrail end terminals and guardrail transitions is specified in Sections 720 and 721 of the Standard Specifications and paid for under the respective guardrail pay items of the Contract. After curing and acceptance, the fusion-bonded polyester coating applicator shall protect the coated assemblies with multiple layers of wrapping, or other protective materials specified in the project specific fusion-bonded polyester coating plan.

During storage and subsequent shipping, each assembly shall be separated from other assemblies by expanded polystyrene spacers and other spacing materials specified in the project specific fusion-bonded polyester coating plan.

All guardrail and components shall be off-loaded and installed using extreme care to ensure coatings are not damaged. Upon delivery to the project site, coated assemblies and hardware shall be thoroughly inspected by the Engineer for any coating defects or damage. If damage is found, the Engineer will determine if the extent of the damage will constitute a cause for rejection.

It is required a representative from the fusion-bonded polyester coating applicator's firm be present to witness proper handling and erection processes are being employed by the Contractor to minimize or eliminate coating damage. Wood or other suitable material shall be used to protect tops of posts when pile driving.

All coating damage due to shipping, storage, handling, and installation operations shall be repaired by the Contractor at no additional expense to the Department. The Contractor shall provide the Engineer access to all locations of all powder coated members for verification of coating conditions prior to and following all coating repairs.

Repair damaged surfaces as follows:

1. Prepare surfaces in accordance with SSPC-SP 1 followed by SSPC-SP 2 or SSPC-SP 3. Solvents or degreasers used in SP 1 preparation shall be acceptable to the powder manufacturer and the manufacturer of the coating used for repair. Proof of acceptability shall be furnished to the Engineer. Extend the prepared area at least 2 inches into adjacent, tightly adhering, intact coating.
2. Feather the existing coating system surrounding each repair location. Feather the repair area for a distance of 1 inch to 2 inches to provide a smooth, tapered transition into the existing intact coating.
3. When the steel substrate is exposed in the repair area, the surface shall be prepared in accordance with SSPC SP11. Apply a coat of Organic Zinc primer conforming to ASTM A 780 in accordance with manufacturer's instructions and feather back existing coatings as stated above before re-application of topcoat.
4. The coating thickness of the touch-up material shall be the same thickness as the polyester and can be applied in multiple coats.

After installation, coat all exposed hardware (bolts, nuts and washers) with an approved spray paint that matches the color of the fusion-bonded polyester coating.

**Warranty**

Fusion-bonded polyester coated guardrail shall be warranted as specified herein for a period of three years from the date of acceptance. Should the coating system fail within three years after the project has been accepted, the coating shall be repaired by the Contractor in conjunction with the fusion-bonded polyester coating applicator at no cost to the Department. The extent and method of repair must be acceptable and agreed upon by the Department. System failure does not include damage from external agents, such as scraping from snow removal equipment, vandalism, debris impacts, collisions, etc., or normal loss of gloss and color. Once the duplex system (galvanizing and fusion-bonded polyester coating) has been accepted, a failure shall mean any visible corrosion, blistering, checking, cracking, or delamination (peeling) of the coating.

**Method of Measurement:**

Measure the quantity of fusion-bonded polyester coated guardrail as the number of linear feet of guardrail, including end terminals, transitions and associated hardware coated with fusion-bonded polyester coating.

**Basis of Payment:**

The quantity of guardrail coated with fusion-bonded polyester coating will be paid for at the Contract unit price per linear foot. Price and payment constitute surface preparation of all guardrail materials, including end terminals and guardrail transitions, fusion-bonded polyester coating materials, application of the fusion-bonded polyester coating on all guardrail components, delivery of coated materials to the project location, warranty, labor, equipment, tools, and necessary incidentals to complete the work as specified and as directed by the Engineer.

10/5/16

**760502 - HIGH FRICTION SURFACE TREATMENT**

**Description:**

Furnish and apply a high friction surface treatment, comprised of a polymeric resin binder and bauxite aggregate, in accordance with these specifications, as indicated on the Plans and as directed by the Engineer.

**Materials:**

The high friction surface system consists of a two-part base polymeric resin binder and high friction aggregate. In accordance with Section 106 of the Standard Specification, submit certification of conformance to the requirements in Table 1 and Table 2 at least 30 days prior to construction. Laboratory testing must be performed by an accredited laboratory.

***Polymeric Resin Binder:*** The binder resin system shall be a two-part thermosetting modified exothermic polymeric resin compound which holds the aggregate firmly in position and conforms to the requirements of Table 1.

<b>TABLE 1 BINDER RESIN SYSTEM REQUIREMENTS</b>		
<b>Property</b>	<b>Requirement</b>	<b>Test Method</b>
Ultimate Tensile Strength neat @ 7 days	2,000 psi minimum	D638
Compressive Strength	1,000 psi minimum @ 3 hours 5,000 psi minimum @ 7 days	C579
Gel Time	10 minutes minimum	C881
Water Absorption neat @ 24 hours	1.0% maximum	D570
Durometer Hardness (Shore D)	70.0 minimum	D2240
Dry-to-touch Time	3 hours maximum	D1640 5 mil thickness @ 75° F
Elongation at Break Point	30 - 70%	D638
Mixing Ratio	Per Manufacturer	Provide manufacturer's recommendations a minimum of 30 days prior to construction
Permeability to Chloride Ion @ 28 days, C	Less than 100	T277
Adhesion Strength @ 24 hours	200 psi minimum	D4541

**Bauxite Aggregate:** The material shall be clean, dry and free from foreign matter and conform to the requirements in Table 2. Deliver the bauxite to the construction site in clearly labeled super sacks weighing at least 2,200 lbs. 55 lb. bags of material may be substituted when hand applications are necessary.

<b>TABLE 2 AGGREGATE REQUIREMENTS</b>		
<b>Property</b>	<b>Specification</b>	<b>Limits Test Method</b>
Gradation	95.0% - 100.0% passing No. 6 0.0% - 5.0% passing No. 16	T27
Apparent Specific Gravity	3.1 Minimum	C25
Sodium Sulfate Soundness	12% Maximum	T104
LA Abrasion Test	30% Maximum. Test sample gradation differs from gradation requirements.	T96 (C grading)

**Equipment:**

**Truck Mounted Application Machine:** Perform mechanical application using an automated continuous application device. The binder resin system manufacturer shall approve the use of the automated continuous application device with their material. The applicator shall mechanically mix, meter, monitor and apply the binder resin system and high-friction aggregate in one continuous pass. The application vehicle shall feature volumetric metering pumps that continuously mix, meter, and monitor and apply the resin binder. If recommended by the manufacturer, metering pumps shall be heated. The application vehicle shall have continuous pumping and portioning devices that blend the binder resin system within a controlled system.

**Quality Control (QC) Plan:**

Submit a QC Plan for approval at least 30 days prior to placement of the high friction surface treatment. The QC Plan shall show proposed methods to control the equipment, materials, mixing and paving operations to ensure conformance with these Specifications. Discuss the QC Plan requirements at the pre-construction, pre-pave and progress meetings. The QC Plan shall contain at a minimum:

- a) Key Personnel and contact information
- b) Resin Production Plants, location of plants, personnel qualifications, inspection and record keeping methods, equipment calibration records, accreditation certificates and minimum frequencies of sampling and testing per Table 1.
- c) Aggregate Production Plant locations, personnel qualifications, inspection and record keeping methods, equipment calibration records, accreditation certificates and minimum frequencies of sampling and testing per Table 2.
- d) Moisture control methods of aggregate
- e) Cleaning and maintenance schedule for truck mounted application machine.
- f) Corrective actions that will be taken for unsatisfactory construction practices and deviations from specifications.
- g) A manufacturer's representative must be sent to the construction site to train construction personnel prior to placing the high friction surface treatment and must remain available during application as necessary. The manufacturer's representative is only required to be on-site during the first day of construction until the operation is working correctly. The Engineer reserves the right to require the manufacturer's representative to be on-site more than once to assist with contractor compliance/additional training.

The QC Plan shall designate a Plan Administrator, who shall have the full authority to institute any action necessary for the successful operation of the Plan. The Plan Administrator may supervise the QC Plan on more than one project, if that person can be in contact with the job site within one hour after being notified of a concern.

A field technician shall be present at the job site unless otherwise approved in the QC Plan. The technician shall be responsible for the required field quality control sampling and testing in conformance with the approved quality control plan and contract documents. Maintain and make available upon request complete records of sampling, testing, actions taken to correct problems and quality control inspection results. Any deviation from the approved QC Plan shall be cause for immediate suspension of operations.

**Construction Methods:**

***Weather Restrictions:*** Do not apply the binder resin material on wet surfaces (including condensation moisture from construction vehicles in front binder application), when the ambient temperature is less than 40°F or above 105°F, or when the anticipated weather conditions or pavement surface temperature would prevent the proper application of the surface treatment in accordance with the manufacturer's recommendations.

***Surface Preparation:*** Clean and fill all inadequately sealed joints and cracks 1/4 to 1-3/4 in. with a sealant approved by the binder resin material manufacturer, which will bond to the specified epoxy binder. Where high friction surface treatment will be applied on new asphalt surface in the same project, construct the high friction surface treatment a minimum of 30 days after placement of underlying and adjacent pavement. Completely remove all curing compounds on new Portland Cement Concrete surfaces prior to installation. Adequately cover and protect all utilities prior to placement of high friction surface treatment.

Clean existing surface by use of mechanical sweepers, high pressure air or other methods approved by the manufacturer prior to installation. Receiving surfaces must be clean, dry and free of all dust, oil, debris and any other material that might interfere with the bond between the epoxy binder material and existing surfaces. Asphalt surfaces may need to be washed with a mild detergent, rinsed and dried unless waived by the Engineer. Concrete surfaces may need to be shot, sand or water blasted.

***Test Section:*** Construct a test section (minimum of 200 SY) at a location approved by the Department in the preconstruction meeting to demonstrate equipment has been properly calibrated a minimum of 24 hours prior to beginning the project. If the project site is used for the test section, open the test section to traffic after curing has completed and no uncovered epoxy remains exposed. Correct deficient areas before opening to traffic as directed at no additional cost.

***Mechanical Application of HFST:*** Blend and mix the binder resin system in the ratio per the manufacturer's specifications ( $\pm 2$  percent by volume) and continuously apply once blended. The application vehicle shall be capable of applying a uniform application thickness of 50-65 mils (25 - 32 ft<sup>2</sup>/gal) and in varying widths of up to 12 feet. Coverage rate is based upon expected variances in the surface profile of the pavement. The operation should proceed in such a manner that will not allow the mixed material to separate, cure, dry, be exposed or otherwise harden in such a way as to impair retention and bonding of the aggregate. Do not spray binder material on existing pavement markings or utility appurtenances.

Apply the aggregate within 5 minutes ( $\pm 1$  minute) of the base resin binder application onto the pavement section. Mechanically apply the aggregate at a rate of 12 -15 lbs/yd<sup>2</sup> (achieving saturation) in such a manner that there is no disruption to the leveled binder. It is the responsibility of the Contractor to ensure full embedment of the calcined bauxite aggregate. Wet spots must be covered with aggregate prior to the gelling of the binder resin system. Reclaim excess aggregate that can be reused by using a vacuum sweeper. The recovered aggregate must be clean, uncontaminated and dry. Ensure that no seams are visible in the middle

of the traffic lanes of the finished work after application of the aggregate. Applications on high speed highways such as interstate ramps and bridge decks will require additional sweeping 3 days after the initial installation is completed.

Walking, standing, or any form of contact or contamination with the wet uncured binder resin system prior to application of the aggregate without the use of spiked shoes to minimize the disturbance to the binder layer will result in that section of binder resin system being removed and replaced at the Contractor's expense. Contractor equipment and traffic is not permitted on the HFST during curing period.

**Hand Application of HFST:** Hand application may be used when less than 300 square yards will be used in a project. Mix the binder components to the correct proportions within 4% by weight using a low speed high torque drill fitted with a helical stirrer. Uniformly spread the binder resin system onto the surface using a serrated edge squeegee at a uniform application thickness of 50 - 65 mils (25 - 32 ft<sup>2</sup>/gal). Coverage rate is based upon expected variances in the surface profile of the pavement.

Immediately broadcast aggregate at a rate of 12-15 lbs/yd<sup>2</sup> (achieving saturation) in such a manner as to not disrupt the leveled binder. It is the full responsibility of the Contractor to ensure full embedment of the calcined bauxite aggregate. Wet spots must be covered with aggregate prior to the gelling of the binder resin system. Reclaim excess aggregate that can be reused by using a vacuum sweeper. The recovered aggregate must be clean, uncontaminated and dry. Ensure that no seams are visible in the middle of the traffic lanes of the finished work after application of the aggregate.

Applications on high speed highways such as interstate ramps and bridge decks will require additional sweeping 3 days after the initial installation is completed.

Walking, standing, or any form of contact or contamination with the wet uncured binder resin system prior to application of the aggregate without the use of spiked shoes to minimize the disturbance to the binder layer will result in that section of binder resin system being removed and replaced at the Contractor's expense. Contractor equipment and traffic is not permitted on the HFST during curing period.

**Sampling and Testing:** During construction, sample and test binder and aggregate per Tables 1 and 2 at a minimum frequency of 1 split set per 2,000 square yards, providing one set to the Engineer. Sample and label the material under the direct observation of the Engineer.

**Curing and Clean Up:** Allow the treatment to cure for the minimum duration as recommended by the binder resin material manufacturer. Remove excess aggregate on the treated area and adjacent areas with raveled aggregate by hand or by suction sweeping. Perform initial clean up before opening to traffic. Excess aggregate can be reused on the following day's installation provided the reclaimed aggregate is clean, uncontaminated and dry. Perform secondary clean up 3 to 5 days after construction. Perform final clean up 3 to 5 weeks after construction.

**Field Acceptance Testing:** Ensure that the coverage rate of the retained aggregate is 11-15 lbs per square yard. Remove and re-apply high friction surface treatment where any patches of exposed epoxy exist, at no additional cost. The high friction surface treated area will be tested by the Department within 60 days after construction in accordance with the requirements in Table 3. Remove and replace deficient locations as directed.

<b>TABLE 3 FIELD ACCEPTANCE TESTING REQUIREMENTS</b>			
<b>Property</b>	<b>Requirements</b>	<b>Frequency</b>	<b>Test Method</b>
Field Dynamic Friction Value (20 km/hr) (By DelDOT)	0.90 Minimum	1 per each location or 1 per every 1,500 lane-feet, whichever is shorter. By DelDOT	ASTM E 1911
Mean Profile Depth (mm)	1.0 Minimum	1 per each location or 1 per every 1,500 lane-feet, whichever is shorter. By DelDOT	ASTM E 2157
FN40R (Corrected field FN by adding the correction in Table 4) OPTIONAL TEST	72 Minimum	Every 0.1 mile in each lane. By DelDOT	ASTM E 274 (Ribbed tire)

<b>Table 4 High Friction Surface Correction Factors for E274 Testing</b>					
<b>Test Speed (mph)</b>	<b>FN Correction</b>	<b>Test Speed (mph)</b>	<b>FN Correction</b>	<b>Test Speed (mph)</b>	<b>FN Correction</b>
20	-9.3	30	-4.8	40	0.0
21	-8.9	31	-4.4	41	0.5
22	-8.4	32	-3.9	42	1.0
23	-8.0	33	-3.4	43	1.5
24	-7.6	34	-2.9	44	2.0
25	-7.1	35	-2.5	45	2.5
26	-6.7	36	-2.0	46	3.1
27	-6.2	37	-1.5	47	3.6
28	-5.8	38	-1.0	48	4.1
29	-5.3	39	-0.5	49	4.6

**Method of Measurement:**

The Engineer will measure the quantity of acceptably placed high friction surface treatment. The quantity of high friction surface treatment will be measured in square yards of surface area, completed and accepted. No deduction will be made for the areas occupied by junction wells, manholes, inlets, drainage structures, pavement markings or by any public utility appurtenances within the area. Material placed outside of the designated treatment area will not be included in computing the quantity.

**Basis of Payment:**

The quantity of high friction surface treatment, installed and accepted, will be paid for at the Contract unit price per square yard. Price and payment will constitute full compensation for surface preparation, including removal of curing compounds on PCC pavement, filling cracks in hot-mix or concrete pavement surfaces as determined by the Engineer, furnishing and placing the epoxy binder and aggregate, test strip, sweeping, sampling and QC testing, cleanup and for all material, labor, equipment, tools and incidentals required to complete the work.

8/22/2018

**763621 - CONSTRUCTION ENGINEERING, REHABILITATION**

**Description:**

Collect survey information and provide layout as described in this provision and as noted on the Plans. Assume full responsibility for any errors and/or omissions in the work of all engineering staff employed.

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.

Construction Engineering functions and requirements:

1. Provide all necessary surveying equipment required for all engineering work on the project.
  - a. Check all equipment/instruments prior to use on the project.
  - b. Immediately replace or recalibrate equipment found to be out of adjustment or inadequate to perform its function to the satisfaction of the Engineer.
2. Perform all computations necessary to establish the exact position of the work from control points and preserve.
  - a. Maintain adequate workbooks of all computations survey notes and other records.
  - b. Make available to the Department, neat and legible, all computations, survey notes and other records necessary to accomplish the work.
3. Preliminary topographic survey for all proposed curb ramps locations identified in the Plans and the layout of grade information provided by the Engineer for curb ramp construction;
4. Obtain topographic information a minimum of 25' in each direction from the back of curb where the curb ramp is proposed;
  - a. 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.
  - b. Collect data in a format that is compatible with DeIDOT Design Standards and submit to the Engineer for evaluation 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.

3. 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;

Note:

Professional services performed under this item by individuals/firms other than the Contractor are not subject to the subcontracting requirements of Subsection 108.01 of the Standard Specifications.

**Method of Measurement:**

The quantity of Construction Engineering - Rehabilitation will be measured as the actual number of hours the Contractor's survey crew is in the field actively engaged in Construction Engineering – Rehabilitation Work.

**Basis of Payment:**

The quantity of Construction Engineering – Rehabilitation will be paid for at the Contract unit price per hour. Price and payment constitutes full compensation for furnishing all labor, equipment, instruments, stakes, and other material necessary to satisfactorily complete the work as herein described under this item.

3/16/17



STATE OF DELAWARE  
**DEPARTMENT OF TRANSPORTATION**

800 BAY ROAD  
P.O. Box 778  
DOVER, DELAWARE 19903

JENNIFER COHAN  
SECRETARY

**February 12, 2018**  
**UTILITY STATEMENT**  
**STATE CONTRACT #T201806105**  
**F.A.P. # NONE**  
**P6# 18-06105**  
**PAVEMENT & REHABILITATION**  
**NORTH V, 2018**  
**NEW CASTLE COUNTY**

**LOCATIONS:**

**Location #1 – Wollaston/Old Milltown Road from 11' North of Kirkwood Highway to HM/PCC Joint at Milltown Road**

**Location #2 – Possum Park Road from HM Joint 118' North of Kirkwood Highway to HM Joint 55' South of Possum Hollow Road**

**Location #3 – Pike Creek Blvd. from HM Joint @ New Linden Hill Road to HM Joint @ Skyline Drive**

**Location #4 – School Lane form HM Joint at DuPont Parkway to HM Joint after Valley Forge Road**

**Location #5 – Thompson Station Road from HM Joint @ Stop Sign to Turn Left onto Chambers Road to HM Joint 781' North of Paper Mill Road**

**Location #6 – St. James Church Road from 62' South of Kirkwood Highway to Telegraph Road**

**General Scope of Work – 2" PROFILE MILL, BITUMINOUS CONCRETE PATCHING, 2' BITUMINOUS CONCRETE TYPE C, PCC CURB, PCC SIDEWALK, ADA IMPROVEMENTS, SIGNING, AND PAVEMENT MARKINGS**

The following utility companies my own and/or maintain facilities within the project limits:

**24/7 MID-ATLANTIC**  
**ARTESIAN WATER COMPANY**  
**AT&T TRANSMISSION**  
**CAVALIER TELEPHONE**  
**CITY OF NEW CASTLE**  
**CITY OF NEWARK-ELECTRIC**  
**CITY OF NEWARK-WATER**  
**COMCAST**  
**DELAWARE PIPELINE COMPANY**  
**DELDOT**  
**DELMARVA POWER**



**DELMARVA POWER GAS  
FIBERTECH  
LEVEL 3 COMMUNICATIONS  
NEW CASTLE DEPT SPECIAL SVC  
PEG BANDWIDTH  
VERIZON**

Utility adjustments and/or relocations shall be performed as narrated, but are not limited to the following:

**24/7 MID-ATLANTIC:**

24/7 Mid-Atlantic owns and maintains overhead and underground facilities within the project limits of location #4. These facilities will remain in place and active during the duration of this project. Should any adjustments to 24/7 Mid-Atlantic facilities be needed, they shall be made by 24/7 Mid-Atlantic with a minimum of seven (7) calendar days in advance given to 24/7 Mid-Atlantic by the State Contractor.

**No working/existing 24/7 Mid-Atlantic facilities can be taken out of service.  
These facilities will remain in place and active during the duration of this contract.**

**ARTESIAN WATER COMPANY:**

Artesian Water Company maintains facilities within the project limits of locations #1, 3, 4, and 6 with no anticipated impacts. The Contractor must use care when working in these areas. The Contractor is not permitted to draw water from any hydrant for any use, without the written permission of the Artesian Water Company and proper metering and backflow prevention equipment in place. Any adjustments, including valve risers, to Artesian Water Company facilities shall be performed by the utility after a fourteen (14) calendar day notice from the contractor. The time to complete any relocations/adjustments will depend on the nature of the work.

At location #1, Artesian Water Company, owns and maintains a 16" water main on the east bound side of Kirkwood Highway from Wallaston Road to just north of Wallaston Road with water valve risers in the roadway. Artesian also owns and maintains a 12" water main on the west bound side that crosses the road just east of Wallaston Road and ties into the water main on the east bound side. The 12" water main continues on the east bound side to Milltown Road with water valve risers in the roadway and road crossings at each intersection.

At location #3, Artesian Water Company, owns and maintains a 12" water main at the intersection of Skyline Drive and Pike Creek Blvd. Artesian Water Company also owns and maintains a 16" cast iron water main at the intersection of New Linden Hill Road and Pike Creek Blvd with water valve risers in the roadway.

At location #4, Artesian Water Company, owns and maintains a 12" water main along the northwest bound side with water valve risers in the roadway and road crossings at each intersection.

At location #6, Artesian Water Company, owns and maintains a 2" water main along the west bound side of St. James Church Road with water valve risers in the roadway and shoulder from Kirkwood Hwy to Old Capitol Trail. At the Saint James Church Road and Old Capital Trail intersection, the water main crosses on under the road and continues on the east bound side as 8" water main to Telegraph Road, where the water main ties into the main on Telegraph Road with valve water risers in the roadway and road crossings at each intersection.

**No working/existing Artesian Water Company facilities can be taken out of service.  
These facilities will remain in place and active during the duration of this contract.**

**AT&T TRANSMISSION:**

AT&T owns and maintains overhead and underground facilities within the project limits of locations #4 and 5. These facilities will remain in place and active during the duration of this project. Should any adjustments to AT&T facilities be needed, they shall be made by AT&T with a minimum of seven (7) calendar days in advance given to AT&T by the State Contractor.

**No working/existing AT&T facilities can be taken out of service.  
These facilities will remain in place and active during the duration of this contract.**

**CAVALIER TELEPHONE:**

Cavalier Telephone owns and maintains overhead and underground facilities within the project limits of location #5. These facilities will remain in place and active during the duration of this project. Should any adjustments to Cavalier Telephone facilities be needed, they shall be made by Cavalier Telephone with a minimum of seven (7) calendar days in advance given to Cavalier Telephone by the State Contractor.

**CITY OF NEW CASTLE-ELECTRIC:**

The City of New Castle maintains existing underground electric facilities within the project limits of location #4. No relocations are anticipated. These facilities will remain in place and active during the duration of the construction project. This includes street lighting. The contractor must use care when working in these underground areas.

**CITY OF NEW CASTLE- WATER & SEWER**

The City of New Castle-Water, maintains facilities within the project limits of locations #4 with no anticipated impacts. No relocations are anticipated. However, manhole or valve adjustments and/or repairs are to be done by the State Contractor as directed by the District Engineer.

The City of New Castle maintains existing sanitary sewer facilities throughout the project location. No relocations are anticipated. However, manhole/cleanout adjustments and/or repairs are to be done by the State Contractor as directed by the District Engineer.

Should any relocations and/or adjustments of City of New Castle water/sewer be needed they shall be performed by the State's Contractor in accordance with the respective agencies' standard specifications as directed by the District Engineer. The State contractor shall notify City of New Castle Engineering a minimum of seven (7) calendar days in advance of the State contractor performing any necessary facility adjustments. The time to complete any relocations/adjustments found to be necessary during the construction of the highway contract will depend on the nature of the work.

**CITY OF NEWARK-ELECTRIC:**

The City of Newark maintains existing aerial and underground electric facilities within the project limits of locations #2 and 5. No relocations are anticipated. These facilities will remain in place and active during the duration of the construction project. This includes street lighting. The contractor must use care when working in these underground areas.

**CITY OF NEWARK-WATER:**

The City of Newark-Water, maintains facilities within the project limits of locations #2 and 5 with no anticipated impacts. No relocations are anticipated. However, manhole or valve riser adjustments and/or repairs are to be done by the State Contractor as directed by the District Engineer.

The City of Newark maintains existing sanitary sewer facilities throughout the project location. No relocations are anticipated. However, manhole/cleanout adjustments and/or repairs are to be done by the State Contractor as directed by the District Engineer.

Should any relocations and/or adjustments of City of Newark water/sewer be needed they shall be performed by the State's Contractor in accordance with the respective agencies' standard specifications as directed by the District Engineer. The State contractor shall notify City of Newark Engineering a minimum of seven (7) calendar days in advance of the State contractor performing any necessary facility adjustments. The time to complete any relocations/adjustments found to be necessary during the construction of the highway contract will depend on the nature of the work.

**COMCAST:**

Comcast maintains overhead and underground facilities within all six locations. The contractor must use care when working in these underground areas as well as overhead cable crossings. Any adjustments to Comcast facilities shall be performed by the utility after a minimum of fourteen (14) calendar day notice from the contractor. The time to complete any relocations/adjustments will depend on the nature of the work.

**No working/existing Comcast facilities can be taken out of service.  
These facilities will remain in place and active during the duration of this contract.**

**DELAWARE PIPELINE COMPANY:**

The Delaware Pipeline Company (DPC) maintains a 16" high pressure liquid petroleum pipeline within the median of US 13 at location #4 with no anticipated impacts. Delaware Pipeline Company requests that no digging or excavating be done until a site meeting with the contractor occurs, and there must be a DPC representative on site while working near the Delaware Pipeline Company's line. ALL prospective bidders are advised to contact the Delaware Pipeline Company before bidding to receive all documents pertaining to working around the Delaware Pipeline Company's facilities before submitting a bid. All plans and written correspondence shall be sent to:

Delaware Pipeline Company, Attention: Maintenance Department, 1811 River Road, Delaware City, DE 19706.

The Delaware City, DE Maintenance Department's contact number is **1-302-836-6500**.

**No working/existing Delaware Pipeline Company facilities can be taken out of service.  
These facilities will remain in place and active during the duration of this contract.  
The Delaware Pipeline Company's 24-hour toll-free emergency contact number is 1-855-887-9768.**

**DELDOT:**

Del Dot maintains ITMS, fiber, lighting and/or signal systems throughout the project limits of all locations. The Contractor must use care when working in these areas. Any adjustments to Del DOT facilities shall be performed by the State's contractor in accordance with the Standard Specifications as directed by the District Engineer. The contractor shall report any impacts to any vehicle detection system to the Traffic Management Center (TMC) (Cell #77) (24 HR 302-659-4600), seven (7) calendar days before the loop system is impacted by construction activities.

**DELMARVA POWER-ELECTRIC:**

Delmarva Power maintains overhead and underground facilities within all six locations. The contractor must use care when working in these underground areas as well as overhead conductor crossings. Any adjustments to Delmarva facilities shall be performed by the utility with fourteen (14) calendar day notice from the contractor.

**No working/existing Delmarva facilities can be taken out of service.  
These facilities will remain in place and active during the duration of this contract.**

Delmarva Power has a written requirement regarding working near overhead power lines.

Customer/Contractor Acknowledgement

Performing Work within Dangerous Proximity of High Voltage Lines

“You are hereby notified by Delmarva Power that NO work can be performed at this location within dangerous proximity to Delmarva’s overhead lines and that you are required by law to comply with applicable OSHA regulations and the applicable state High Voltage Safety Act. Performance of any activity or causing any person, equipment or things to come within dangerous proximity of Delmarva’s overhead lines creates an extreme risk of severe injury or death. You are further notified that no activities may be conducted within dangerous proximity of Delmarva’s overhead lines until mutually agreeable measures to prevent contact with overhead lines have been reached with Delmarva and Delmarva has provided you with written authorization to perform the activities.

Additionally any work involving the use of a crane with intentions to remain outside of dangerous proximity, but within 20 feet of the Company’s overhead lines, requires an Encroachment Prevention Plan in order to satisfy OSHA”

**DELMARVA POWER GAS:**

Delmarva Power Gas maintains facilities within the project limits of location all six locations with no anticipated impacts. No relocations are anticipated. The Contractor must use care when working in these areas. Any adjustments, including valve risers, to Delmarva Power–Gas facilities shall be performed by the utility after a minimum of fourteen (14) calendar day notice from the contractor. The time to complete any relocations/adjustments will depend on the nature of the work.

**No working/existing Delmarva Power–Gas facilities can be taken out of service.  
These facilities will remain in place and active during the duration of this contract.**

**FIBERTECH:**

Fibertech owns and maintains overhead and underground facilities within the project limits of location #4. These facilities will remain in place and active during the duration of this project. Should any adjustments to Fibertech facilities be needed, they shall be made by Fibertech with a minimum of seven (7) calendar days in advance given to Fibertech by the State Contractor.

**No working/existing Fibertech facilities can be taken out of service.  
These facilities will remain in place and active during the duration of this contract.**

**LEVEL 3 COMMUNICATIONS:**

Level 3 Communications owns and maintains underground facilities within the project limits of location #4. These facilities will remain in place and active during the duration of this project. Should any adjustments to Level 3 Communications facilities be needed, they shall be made by Level 3 Communications with a minimum of seven (7) calendar days in advance given to Level 3 Communications by the State Contractor.

**No working/existing Level 3 Communications facilities can be taken out of service.  
These facilities will remain in place and active during the duration of this contract.**

**NEW CASTLE DEPT SPECIAL SVC:**

New Castle County Special Services maintains underground sanity sewer within all six locations with no anticipated impacts except to manhole and clean out riser elevations.

Any adjustments and/or relocations of municipally owned sewer or water facilities shall be performed by the State’s contractor in accordance with the respective agencies’ standard specifications as directed by the District Engineer. The State contractor shall coordinate any potential conflicts with facility owners and provide adequate notice prior to performing work.

**No working/existing New Castle County facilities can be taken out of service.  
These facilities will remain in place and active during the duration of this contract.**

**PEG BANDWIDTH:**

PEG Bandwidth owns and maintains overhead and underground facilities within the project limits of locations #2 and 5. These facilities will remain in place and active during the duration of this project. Should any adjustments to PEG Bandwidth facilities be needed, they shall be made by PEG Bandwidth with a minimum of seven (7) calendar days in advance given to PEG Bandwidth by the State Contractor.

**No working/existing PEG Bandwidth facilities can be taken out of service.  
These facilities will remain in place and active during the duration of this contract.**

**VERIZON:**

Verizon maintains overhead and underground facilities within all six locations. The contractor must use care when working in these underground areas as well as overhead cable crossings. Any adjustments to Verizon facilities shall be performed by the utility after twenty 28 (28) calendar notice from the contractor. The time to complete any relocations/adjustments will depend on the nature of the work.

**No working/existing Verizon facilities can be taken out of service.  
These facilities will remain in place and active during the duration of this contract.**

**General Utility Notes**

Outside of the companies and facilities discussed above, no additional utility involvement is anticipated. Should any conflicts be encountered as a result of the contractor's means and methods during construction requiring adjustment and/or relocation, the necessary relocation work shall be accomplished by the respective utility company and funded by the State's Contractor as directed by the District Engineer. The State Contractor shall coordinate any potential conflicts with utility companies and provide adequate notice prior to performing work.

Any utility conflicts that are not readily discernable shall be coordinated by the State Contractor once the conflict is recognized. The time to complete any relocations/adjustments found to be necessary during construction of the highway project will depend on the nature of the work.

Once the State's contractor has given the Utility the advance notice required above, it is the responsibility of the State's contractor to have the work area prepared and accessible for the Utility to perform the tasks listed above. If the site conditions are not ready and the state contractor has given notice to the utility on when the work is to be accomplished, the State's Contractor shall be responsible for any extra cost incurred by the utility company and the State Contractor shall also be responsible for any time delays. Between when the required notice is given to the Utility and when the work is performed and completed, the coordination and scheduling of the Utility is the sole responsibility of the State's Contractor. All costs related to the coordination and scheduling of the utilities is incidental to the contract.

Any adjustments and/or relocations of municipally or county owned sewer or water facilities shall be performed by the State's Contractor in accordance with the respective agency's standard specifications as directed by the District Engineer. The State contractor shall coordinate any potential conflicts of municipally or county owned sewer or water facilities with facility owners and provide adequate notice to the municipally or county and to the District Engineer prior to performing work.

## **General Notes**

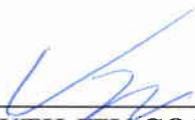
1. The Contractor's attention is directed to Section 105.09 Utilities, Delaware Standard Specifications, August 2016. The Contractor shall contact Miss Utility (1-800-282-8555) two working days prior to any excavation. The Contractor is responsible for the support and protection of all utilities when excavating. The Contractor is responsible for ensuring proper clearances, including safety clearances, from overhead utilities for construction equipment. The Contractor is advised to check the site for access and operating purposes for his equipment and, if necessary, make arrangements directly with the utility companies for field adjustments for adequate clearances.
2. The information shown in the Contract Documents, including the Utility Statement and the Utility Schedule contained herein, concerning the location, type and size of existing and proposed utilities, their locations, and construction timing has been compiled by the preparer based on information furnished by each of the involved Utility Companies. It shall be the responsibility of the State's Contractor to verify all information and coordinate with the Utility Companies prior to and during construction, as specified in Section 105.09 of the Standard Specifications.
3. It is understood and agreed that the Contractor has considered in his bid all permanent and temporary utility appurtenances in their present and relocated positions as shown on the plans or described in the Utility Statement or are readily discernible and that no additional compensation will be allowed for any delays, inconvenience, or damage due to any interference from the utility facilities and appurtenances or the operation of moving them, except that the Contractor may be granted an equitable extension of time unless the delay is caused by the Contractor's delay in having the site conditions ready for the utility relocation work after the Contractor has provided the advance notice that the site conditions would be ready for the utility relocation work. The contractor's means and method of construction are not taken into account when known utility conflicts are identified. If the Contractor's means and method of construction create a utility conflict the Utility Statement will prevail in discussions with the utility and the Contractor. The State's Contractor shall be responsible for any costs associated with any temporary outages; holding, bracing and shielding of utility facilities; temporary relocations; or permanent relocations that are not specifically identified in this utility statement or shown in the contract plan set.
4. Coordination and cooperation among the Utility Companies and the State's Contractor are of prime importance. Therefore, the Contractor is directed to contact the following Utility Company representatives with any questions regarding this work prior to submitting bids and work schedules. Proposed work schedules should reflect the Utility Companies' proposed relocations. The Utility Companies do not work on weekends, nights or legal holidays.

Nick Lutz	24/7 Mid-Atlantic	nickl@247midatlantic.com	443- 610-2991
Wayne Tyler	Artesian Water Company	wtyler@artesianwater.com	302- 453-6987
Louis Marello	AT&T	lmarello@att.com	914- 397-3744
Harry Sheppard	Cavalier Telephone	Harry.sheppard@windstream.com	302- 224-7121
Jay Guyer	City of New Castle	guyerlj@newcastlecity.com	302- 323-2333
Rick Vitelli	City of Newark – Electric	rvitelli@newark.de.us	302- 366-7050
Tom Coleman	City of Newark – Water	tcoleman@newark.de.us	302- 366-7055
Keith Allridge	Comcast	keith@americomm-llc.com	717- 776-1073
Knol McRae	Comcast	Knol_mcrac@cable.comcast.com	302- 661-4462
Darrell Eller	Delaware Pipeline Company	Darrell.eller@pbfenergy.com	302- 834-6078

James Bunting	DelDOT Traffic	Jim.bunting@state.de.us	302- 760-4814
Angel Collazo	Delmarva Power – Electric	Angel.collazo@delmarva.com	302- 454-4370
Kristin Stanfil	Delmarva Power Gas	Kristin.stanfil@delmarva.com	302- 429-3706
Bill Muehlberger	Fibertech Networks	Bmuehlberger@fibertech.com	585- 362-0019
Nickey Worthington	Level 3 Communications	Nickey.worthington@level3.com	720- 888-0336
Dave Clark	New Castle County Dept. of Spec. Services	dclark@nccde.org	302- 395-5705
Mike Llamas	PEG Bandwidth	mllamas@pegbandwidth.com	443- 827-1786
George Zang	Verizon Delaware Inc.	George.w.zang@verizon.com	302- 422-1238

5. As outlined in Chapter 3 of the DelDOT Utilities Manual, individual utility companies are responsible for obtaining all required permits from municipal, State and federal government agencies and railroads. This includes but is not limited to water quality permits/DNREC Water Quality Certification, DNREC Subaqueous Lands/Wetlands permits, DNREC Coastal Zone Consistency Certification, County Floodplain permits (New Castle County only), U.S. Coast Guard permits, US Army Corps 404 permits, sediment and erosion permits, and railroad crossing permits.
6. Individual utility companies are required to restore any areas disturbed in conjunction with their relocation work. If an area is disturbed by a utility company and is not properly restored, the Department may have the State's Contractor perform the necessary restoration. Any additional costs incurred as a result will be forwarded to the utility company.
7. 16 Del. C. § 7405B requires notification to and mutually agreeable measures from the public utility operating the electric line for any person intending to carry on any function, activity, work or operation within dangerous proximity of any high voltage overhead electric lines. All contractors/other utilities must also maintain a minimum distance of 10'- 0" from all overhead energized lines. Additional clearance may be required from high voltage transmission lines.
8. Any existing facilities that are comprised of hazardous materials will be removed by the Utility Company unless otherwise outlined in the contract documents or language above. Any existing facilities containing hazardous materials will be purged by the Utility Company unless otherwise outlined in the contract documents or language above.

**DIVISION OF TRANSPORTATION SOLUTIONS**


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**UTILITY COORDINATOR**  
[chuck.ferguson@state.de.us](mailto:chuck.ferguson@state.de.us)


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**DATE**

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

CERTIFICATE OF RIGHT-OF-WAY STATUS

STATE PROJECT NO. T201806105

F.A.P. NO. N/A for R/W

PAVEMENT & REHABILITATION, NORTH V, 2018

NEW CASTLE COUNTY

Certificate of Right-of-Way Status – 100%

Status - LEVEL 1

As required by 23 CFR, Part 635, and other pertinent Federal and State regulations or laws, the following certifications are hereby made in reference to this highway project:

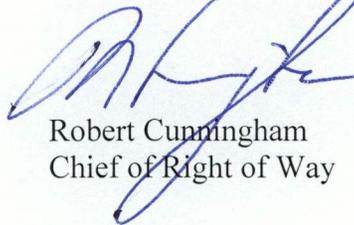
All project construction or work shall be performed within existing rights of way and permanent easements; and,

All necessary real property interests, including control of access rights when pertinent, were acquired as part of previous highway projects, and include legal and physical possession; and,

This project does not cause any persons to be displaced as defined in 49 CFR, Part 24; and,

The State has the right to remove, salvage, or demolish any improvements or personal property that may be located within project limits.

RIGHT OF WAY SECTION



Robert Cunningham  
Chief of Right of Way

January 17, 2018



STATE OF DELAWARE  
**DEPARTMENT OF TRANSPORTATION**  
800 BAY ROAD  
P.O. BOX 778  
DOVER, DELAWARE 19903

JENNIFER COHAN  
SECRETARY

August 9, 2018

ENVIRONMENTAL REQUIREMENTS

FOR  
State Contract No. T201806105  
Federal Aid No.: N/A

Contract Title: Pavement & Rehabilitation, North V, 2018

Due to the nature of the proposed construction activities, permits are not required for this project. However, the following construction requirements and special provisions have been developed to minimize and mitigate impact to the surrounding environs. These requirements by DelDOT, not specified within the contract, are listed below. These requirements are the responsibility of the contractor and are subject to risk of shut down at the contractor's expense if not followed.

GENERAL REQUIREMENTS:

1. All construction debris, excavated material, brush, rocks, and refuse incidental to such work shall be placed either on shore above the influence of flood waters or on some suitable dumping ground.
2. That effort shall be made to keep construction debris from entering adjacent waterways or wetlands. Any debris that enters those areas shall be removed immediately.
3. The disposal of trees, brush, and other debris in any stream corridor, wetland, surface water, or drainage area is prohibited.
4. DelDOT Environmental Studies Section must be notified ((302)760-2264) if there are any changes to the project methods, footprint, materials, or designs, to allow the Department to coordinate with the appropriate resource agencies (COE, DNREC, and SHPO), for approval.



STATE OF DELAWARE  
**DEPARTMENT OF TRANSPORTATION**  
 800 BAY ROAD  
 P.O. Box 778  
 DOVER, DELAWARE 19903

JENNIFER COHAN  
 SECRETARY

**RAILROAD STATEMENT**

**For**

**State Contract No.:** T201806105

**Federal Aid No.:** N/A

**Project Title:** Pavement and Rehabilitation, North V, 2018

**The following railroad companies maintain facilities within the contract limits:**

- |                                              |                                               |
|----------------------------------------------|-----------------------------------------------|
| <input type="checkbox"/> Amtrak              | <input type="checkbox"/> Maryland & Delaware  |
| <input type="checkbox"/> CSX                 | <input type="checkbox"/> Norfolk Southern     |
| <input type="checkbox"/> Delaware Coast Line | <input type="checkbox"/> Wilmington & Western |
| <input type="checkbox"/> East Penn           | <input checked="" type="checkbox"/> None      |
| <input type="checkbox"/> Delmarva Central    |                                               |

DOT Inventory No.: \_\_\_\_\_ No. Trains/Day: \_\_\_\_\_ Passenger Trains (Y / N): \_\_\_\_\_

**In accordance with 23 CFR 635, herein is the railroad statement of coordination (check one):**

- No Railroad involvement.
- Railroad Agreement unnecessary but railroad flagging required. The contractor shall follow requirements stated in the DelDOT Maintenance of Railroad Traffic Item in the Special Provisions. Contractor shall coordinate railroad flagging with DelDOT's Railroad Program Manager at (302) 760-2183.
- Railroad Agreement required. The necessary Railroad Agreement is pending. The Contractor cannot begin work until the Agreement is complete and fully executed. Railroad related work to be undertaken and completed as required for proper coordination with physical construction schedules. The Contractor shall follow requirements stated in the DelDOT Maintenance of Railroad Traffic Item in the Special Provisions. Contractor shall coordinate railroad flagging with DelDOT's Railroad Program Manager at (302) 760-2183.

**Approved As To Form:**

  
 \_\_\_\_\_  
 Robert A. Perrine  
 DelDOT Railroad Program Manager

7Nov17  
 \_\_\_\_\_  
 DATE

# **BID PROPOSAL FORMS**

**CONTRACT T201806105.01**

UNLESS OTHERWISE DIRECTED, SUBMIT ALL FOLLOWING PAGES TO:

DEPARTMENT OF TRANSPORTATION  
BIDDERS ROOM (B1.11.01)  
800 BAY ROAD  
DOVER, DELAWARE 19901

Identify the following on the outside of the sealed envelope:

- Contract Number T201806105.01
- Name of Contractor

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE: 1  
DATE:

CONTRACT ID: T201806105.01 PROJECT(S): T201806105

All figures must be typewritten.

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

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS   CTS	BID AMOUNT DOLLARS   CTS
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SECTION 0001 Category 0001

0010	202000 EXCAVATION AND EMBANKMENT	201.300 CY		
0020	211001 REMOVAL OF PORTLAND CEMENT CONCRETE PAVEMENT, CURB AND SIDEWALK	520.000 SY		
0030	301002 GRADED AGGREGATE BASE COURSE, TYPE B, PATCHING	153.200 CY		
0040	301003 GRADED AGGREGATE BASE COURSE, TYPE B	220.000 TON		
0050	301008 RECYCLED ASPHALT PAVEMENT	2184.000 TON		
0060	302002 DELAWARE NO. 3 STONE	16.000 TON		
0070	401005 SUPERPAVE TYPE C, PG 64-22 (CARBONATE STONE)	3470.000 TON		
0080	401030 SUPERPAVE TYPE B, PG 64-22, PATCHING	26.000 TON		
0090	401031 SUPERPAVE TYPE BCBC, PG 64-22, PATCHING	2140.000 TON		

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE: 2  
DATE:

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

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0100	401044 SUPERPAVE TYPE C, PG 64-22 (NON-CARBONATE STONE)	7750.000 TON				
0110	401696 ENTRANCE, DRIVEWAY, AND INTERSECTING STREET PAVING SURCHARGE	580.000 TON				
0120	402000 BITUMINOUS CONCRETE PATCHING	36570.000 SYIN				
0130	403000 BITUMINOUS CONCRETE AND/OR COLD-LAID BITUMINOUS (TRM) CONCRETE	260.000 TON				
0140	602130 ADJUSTING AND REPAIRING EXISTING DRAINAGE INLET	6.000 EACH				
0150	602131 ADJUSTING AND REPAIRING EXISTING DOUBLE DRAINAGE INLET	2.000 EACH				
0160	602132 ADJUSTING AND REPAIRING EXISTING MANHOLE	6.000 EACH				
0170	701011 PORTLAND CEMENT CONCRETE CURB, TYPE 1-4	799.500 LF				
0180	701013 PORTLAND CEMENT CONCRETE CURB, TYPE 1-8	80.000 LF				
0190	701014 PORTLAND CEMENT CONCRETE CURB, TYPE 2	440.000 LF				

CONTRACT ID: T201806105.01 PROJECT(S): T201806105

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0200	701019 INTEGRAL PORTLAND CEMENT CONCRETE CURB AND GUTTER, TYPE 2	80.000 LF				
0210	701023 INTEGRAL PORTLAND CEMENT CONCRETE CURB AND GUTTER, TYPE 3-8	440.000 LF				
0220	701031 CURB OPENING, 2' OPENING	4.000 EACH				
0230	705001 PORTLAND CEMENT CONCRETE SIDEWALK, 4"	800.000 SF				
0240	705002 PORTLAND CEMENT CONCRETE SIDEWALK, 6"	1300.000 SF				
0250	707001 RIPRAP, R-4	52.000 SY				
0260	708001 GEOTEXTILES, STABILIZATION	64.000 SY				
0270	710002 ADJUST WATER VALVE BOXES	5.000 EACH				
0280	720019 GALVANIZED STEEL POST, 8'	202.000 EACH				
0290	720021 GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	1950.000 LF				

CONTRACT ID: T201806105.01 PROJECT(S): T201806105

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0300	720022 GALVANIZED STEEL BEAM GUARDRAIL, TYPE 2-31	25.000 LF				
0310	720024 GUARDRAIL OVER CULVERTS, TYPE 1-31	2.000 EACH				
0320	720028 CURVED GUARDRAIL SECTION	37.500 LF				
0330	720034 GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-27	287.500 LF				
0340	720500 GALVANIZED FUSION BONDED POLYESTER COATED GUARDRAIL	475.000 LF				
0350	721001 GUARDRAIL END TREATMENT, TYPE 1-31, TEST LEVEL 3	9.000 EACH				
0360	721003 GUARDRAIL END TREATMENT, TYPE 2-31, TEST LEVEL 3	8.000 EACH				
0370	721006 END ANCHORAGE 31	1.000 EACH				
0380	721007 ENTRANCE SPECIAL END ANCHORAGE	3.000 EACH				
0390	721008 BURIED END SECTION	1.000 EACH				

CONTRACT ID: T201806105.01 PROJECT(S): T201806105

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0400	721013 GUARDRAIL TO BARRIER CONNECTION, EXIT TYPE 27	1.000 EACH				
0410	760010 PAVEMENT MILLING, BITUMINOUS CONCRETE PAVEMENT	190500.000 SYIN				
0420	760502 HIGH FRICTION SURFACE TREATMENT	18000.000 SY				
0430	762000 SAW CUTTING, BITUMINOUS CONCRETE	6432.000 LF				
0440	762001 SAW CUTTING, CONCRETE, FULL DEPTH	390.000 LF				
0450	763000 INITIAL EXPENSE/DE-MOBILIZATION	LUMP		LUMP		
0460	763621 CONSTRUCTION ENGINEERING, REHABILITATION	35.000 HOUR				
0470	801500 MAINTENANCE OF TRAFFIC, ALL INCLUSIVE	LUMP		LUMP		
0480	803001 FURNISH AND MAINTAIN PORTABLE CHANGEABLE MESSAGE SIGN	225.000 EADY				
0490	804001 FURNISH AND MAINTAIN PORTABLE LIGHT ASSEMBLY (FLOOD LIGHTS)	128.000 EADY				

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE: 6  
DATE:

CONTRACT ID: T201806105.01 PROJECT(S): T201806105

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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0500	806001 TRAFFIC OFFICERS	360.000	75.00000		27000.00	
		HOUR				
0510	808002 FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	175.000				
		EADY				
0520	811001 FLAGGER, NEW CASTLE COUNTY STATE	3544.000				
		HOUR				
0530	811013 FLAGGER, NEW CASTLE COUNTY, STATE, OVERTIME	656.000				
		HOUR				
0540	817002 PERMANENT PAVEMENT STRIPING, SYMBOL/LEGEND, ALKYD-THERMOPLASTIC	2362.000				
		SF				
0550	817003 TEMPORARY MARKINGS, PAINT, 4"	182576.000				
		LF				
0560	817004 TEMPORARY MARKINGS, PAINT, SYMBOL/LEGEND	4855.000				
		SF				
0570	817012 RETROREFLECTIVE PREFORMED PATTERNED MARKINGS, SYMBOL/LEGEND	11.000				
		SF				
0580	817013 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, WHITE/YELLOW, 5"	76288.000				
		LF				

DELAWARE DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF ITEMS

PAGE: 7  
 DATE:

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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0590	817015 PREFORMED RETROREFLECTIVE THERMOPLASTIC MARKINGS, BIKE SYMBOL	EACH 28.000				
0600	817027 RAISED/RECESSED PAVEMENT MARKER	EACH 110.000				
0610	817031 REMOVAL OF PAVEMENT STRIPING	SF 17.000				
0620	819016 INSTALLATION OF 4" DIAMETER HOLE, LESS THAN OR EQUAL TO 6" DEPTH	EACH 1.000				
0630	819018 INSTALLATION OR REMOVAL OF TRAFFIC SIGN(S) ON SINGLE SIGN POST	EACH 287.000				
0640	819019 INSTALLATION OR REMOVAL OF TRAFFIC SIGN(S) ON MULTIPLE SIGN POSTS	SF 74.000				
0650	830008 ADJUST OR REPAIR EXISTING CONDUIT JUNCTION WELL	EACH 1.000				
0660	846001 FURNISH AND INSTALL LOOP WIRE 1-CONDUCTOR #14 AWG ENCASED IN 1/4" FLEXIBLE TUBING IN A LOOP SAWCUT	LF 465.000				
0670	905004 INLET SEDIMENT CONTROL, DRAINAGE INLET	EACH 35.000				

CONTRACT ID: T201806105.01 PROJECT(S): T201806105

All figures must be typewritten.

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

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0680	908001 TOPSOIL	745.000				
		TON				
0690	908004 TOPSOIL, 6" DEPTH	1512.400				
		SY				
0700	908014 PERMANENT GRASS SEEDING, DRY GROUND	4784.000				
		SY				
0710	908020 EROSION CONTROL BLANKET MULCH	1729.000				
		SY				
	SECTION 0001 TOTAL					
	TOTAL BID					

CANNOT BE  
 USED FOR  
 BIDDING

# **BREAKOUT SHEET INSTRUCTIONS**

**BREAKOUT SHEET(S) MUST BE SUBMITTED EITHER WITH YOUR BID DOCUMENTS; OR WITHIN SEVEN (7) CALENDAR DAYS FOLLOWING THE BID DUE DATE BY THE LOWEST APPARENT BIDDER.**

BREAKOUT SHEETS ARE TO BE SUBMITTED TO DELDOT'S CONTRACT ADMINISTRATION AS SHOWN BELOW. BREAKOUT SHEETS CANNOT BE CHANGED AFTER AWARD. THE DEPARTMENT WILL REVIEW THE FIGURES SUBMITTED ON THE BREAKOUT SHEET(S) TO ENSURE THEY MATCH THE RESPECTIVE LUMP SUM BID AMOUNT(S). MATHEMATICALLY INCORRECT BREAKOUT SHEETS WILL BE RETURNED FOR IMMEDIATE CORRECTION.

BREAKOUT SHEETS MAY BE SUBMITTED;

VIA E-MAIL TO: [DOT-ASK@STATE.DE.US](mailto:DOT-ASK@STATE.DE.US)  
SUBJECT: **T201806105.01** Breakout Sheet

OR MAILED TO: DELDOT  
CONTRACT ADMINISTRATION  
PO BOX 778, DOVER, DE 19903

'BREAKOUT SHEET' AND THE PROJECT NUMBER  
MUST APPEAR ON THE ENVELOPE.

**BREAKOUT SHEET - 1****CONTRACT NO. T201806105.01****Item 801500 - MAINTENANCE OF TRAFFIC - ALL INCLUSIVE**

LOCATION NO.	LOCATION - DESCRIPTION	WORKING HOURS	PRIMARY MOT CASE SET-UPS	UOM	UNIT PRICE	AMOUNT	CALENDAR DAYS
1	Possum Park Road from Kirkwood Highway to Possum Hollow Road	7:00pm-6:00am	TA3, TA10	LS	\$	\$	
2	Wollaston Road/Old Milltown Road from Kirkwood Highway to Milltown Road	7:00am-7:00pm	ROAD CLOSURE w/DETOUR	LS	\$	\$	
3	Pike Creek Center Road from Skyline Drive to New Linden Hill Road	7:00am-7:00pm	TA10	LS	\$	\$	
4	St. James Church Road from Kirkwood Highway to Telegraph Road	8:00am-6:00pm	ROAD CLOSURE w/DETOUR	LS	\$	\$	
5	School Lane from DuPont Parkway to University Avenue	9:00am-3:00pm Route 13 Limit 7:00am-7:00pm Remainder	TA10	LS	\$	\$	
6	Thompson Station Road from Paper Mill Road to Chambers Rock Road	7:00am-7:00pm	ROAD CLOSURE w/DETOUR	LS	\$	\$	

**TOTAL ITEM 801500 - MAINTENANCE OF TRAFFIC - ALL INCLUSIVE \$ \_\_\_\_\_ TOTAL DAYS \_\_\_\_\_**

(LUMP SUM BID PRICE FOR ITEM 801500 - MAINTENANCE OF TRAFFIC - ALL INCLUSIVE)

**\*TOTAL DAYS SHOULD EQUAL ORIGINAL CONTRACT DURATION**

# "ATTENTION"

# TO BIDDERS

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OR WITHIN SEVEN (7) CALENDAR DAYS FOLLOWING THE BID DUE DATE BY THE  
LOWEST APPARENT BIDDER.**

BREAKOUT SHEETS ARE TO BE SUBMITTED TO DELDOT'S CONTRACT ADMINISTRATION AS SHOWN BELOW. BREAKOUT SHEETS CANNOT BE CHANGED AFTER AWARD. THE DEPARTMENT WILL REVIEW THE FIGURES SUBMITTED ON THE BREAKOUT SHEET(S) TO ENSURE THEY MATCH THE RESPECTIVE LUMP SUM BID AMOUNT(S). MATHEMATICALLY INCORRECT BREAKOUT SHEETS WILL BE RETURNED FOR IMMEDIATE CORRECTION.

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MUST APPEAR ON THE ENVELOPE.



**AFFIDAVIT  
OF  
EMPLOYEE DRUG TESTING PROGRAM**

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors, that complies with this regulation:

**Contractor Name:** \_\_\_\_\_

**Contractor Address:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**Authorized Representative (typed or printed):** \_\_\_\_\_

**Authorized Representative (signature):** \_\_\_\_\_

**Title:** \_\_\_\_\_

Sworn to and Subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

My Commission expires \_\_\_\_\_. NOTARY PUBLIC \_\_\_\_\_.

**THIS PAGE MUST BE SIGNED, NOTARIZED, AND RETURNED WITH YOUR BID.**

(This form is required from the prime contractor only)

**CERTIFICATION**  
Contract No. T201806105.01

The undersigned bidder, \_\_\_\_\_  
whose address is \_\_\_\_\_  
and telephone number is \_\_\_\_\_ hereby certifies the following:

I/We have carefully examined the location of the proposed work, the proposed plans and specifications, and will be bound, upon award of this contract by the Department of Transportation, to execute in accordance with such award, a contract with necessary surety bond, of which contract this proposal and said plans and specifications shall be a part, to provide all necessary machinery, tools, labor and other means of construction, and to do all the work and to furnish all the materials necessary to perform and complete the said contract within the time and as required in accordance with the requirements of the Department of Transportation, and at the unit prices for the various items as listed on the preceding pages.

The foregoing quantities are considered to be approximate only and are given as the basis for comparison of bids. The Department of Transportation may increase or decrease the amount of any item or portion of the work as may be deemed necessary or expedient. Any such increase or decrease in the quantity for any item will not be regarded as a sufficient ground for an increase or decrease in the unit prices, nor in the time allowed for the completion of the work, except as provided in the contract.

Accompanying this proposal is a surety bond or a security of the bidder assigned to the Department of Transportation, for at least ten (10) percentum of total amount of the proposal, which deposit is to be forfeited as liquidated damages in case this proposal is accepted, and the undersigned shall fail to execute a contract with necessary bond, when required, for the performance of said contract with the Department of Transportation, under the conditions of this proposal, within twenty (20) days after date of official notice of the award of the contract as provided in the requirement and specifications hereto attached; otherwise said deposit is to be returned to the undersigned.

I/We are licensed, or have initiated the license application as required by Section 2502, Chapter 25, Title 30, of the Delaware Code.

By submission of this proposal, each bidder and each person signing on behalf of any bidder, certifies as to its own organization, under penalty of perjury, that to the best of each signer's knowledge and belief:

1. The prices in this proposal have been arrived at independently without collusion, consultation, communication, or Agreement with any other bidder or with any competitor for the purpose of restricting competition.
2. Unless required by law, the prices which have been quoted in this proposal have not been knowingly disclosed and will not knowingly be disclosed by the bidder, directly or indirectly, to any other bidder or competitor prior to the opening of proposals.
3. No attempt has been made or will be made by the bidder to induce any other person, partnership, or corporation to submit or not to submit a proposal for the purpose of restricting competition.

=====  
I/We acknowledge receipt and incorporation of addenda to this proposal as follows:

No.	Date								
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

**BIDDERS MUST ACKNOWLEDGE RECEIPT OF ALL ADDENDA**

**MUST INSERT DATE OF FINAL QUESTIONS AND ANSWERS ON WEBSITE:** \_\_\_\_\_



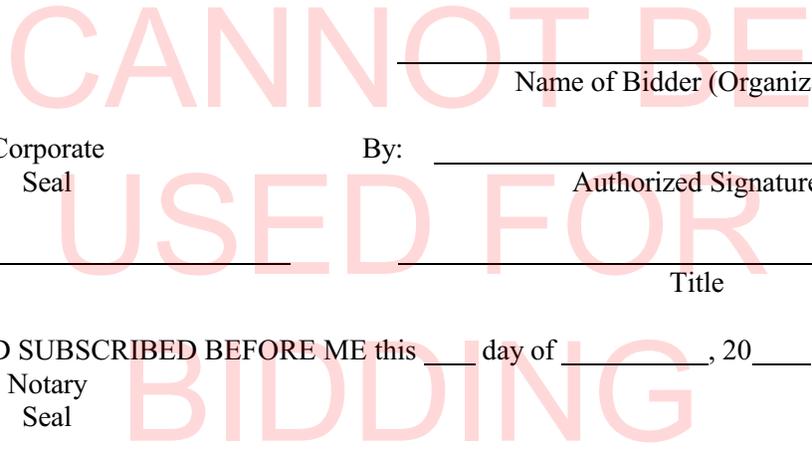
**AFFIRMATION:**

Within the past five (5) years, has your firm, any affiliate, any predecessor company or entity, owner, Director, officer, partner or proprietor been the subject of a Federal, State, Local government suspension or debarment?

**YES** \_\_\_\_\_ **NO** \_\_\_\_\_ if yes, please explain \_\_\_\_\_

-----

Sealed and dated this \_\_\_\_\_ day of \_\_\_\_\_ in the year of our Lord two thousand \_\_\_\_\_ ( 20\_\_ ).



\_\_\_\_\_  
Name of Bidder (Organization)

Corporate  
Seal

By: \_\_\_\_\_  
Authorized Signature

Attest \_\_\_\_\_  
Title

SWORN TO AND SUBSCRIBED BEFORE ME this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Notary  
Seal

\_\_\_\_\_  
Notary

**BID BOND**

TO ACCOMPANY PROPOSAL  
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: \_\_\_\_\_

of \_\_\_\_\_ in the County of \_\_\_\_\_ and State of \_\_\_\_\_  
as **Principal**, and \_\_\_\_\_ of \_\_\_\_\_ in the County of \_\_\_\_\_  
and State of \_\_\_\_\_ as **Surety**, legally authorized to do business in the  
State of Delaware ("**State**"), are held and firmly bound unto the **State** in the sum of \_\_\_\_\_  
Dollars (\$ \_\_\_\_\_), or \_\_\_\_\_ percent not to exceed \_\_\_\_\_

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_) of amount of bid on  
Contract No. T201806105.01, to be paid to the **State** for the use and benefit of its Department of  
Transportation ("**DelDOT**") for which payment well and truly to be made, we do bind ourselves, our and  
each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole  
firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden **Principal**  
who has submitted to the **DelDOT** a certain proposal to enter into this contract for the furnishing of  
certain materiel and/or services within the **State**, shall be awarded this Contract, and if said **Principal**  
shall well and truly enter into and execute this Contract as may be required by the terms of this Contract  
and approved by the **DelDOT**, this Contract to be entered into within twenty days after the date of official  
notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be  
void or else to be and remain in full force and virtue.

Sealed with \_\_\_\_\_ seal and dated this \_\_\_\_\_ day of \_\_\_\_\_ in the year of our Lord  
two thousand and \_\_\_\_\_ ( 20\_\_ ).

SEALED, AND DELIVERED IN THE  
presence of

\_\_\_\_\_  
Name of Bidder (Organization)

Corporate  
Seal

By: \_\_\_\_\_  
Authorized Signature

Attest \_\_\_\_\_

\_\_\_\_\_  
Title

\_\_\_\_\_  
Name of Surety

Witness: \_\_\_\_\_

By: \_\_\_\_\_  
\_\_\_\_\_  
Title