

STATE OF DELAWARE

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You must request a CD from
DeIDOT in order to bid.



DEPARTMENT OF TRANSPORTATION

BID PROPOSAL

for

CONTRACT T201701102.01

CURB RAMP ADA IMPROVEMENTS, CITY OF WILMINGTON,
PENNSYLVANIA AVE & PART OF DELAWARE AVE

NEW CASTLE COUNTY

ADVERTISEMENT DATE: September 2, 2019

COMPLETION TIME: 200 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 1, 2019**

**CURB RAMP ADA IMPROVEMENTS, CITY OF WILMINGTON,
PENNSYLVANIA AVE & PART OF DELAWARE AVE
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 curb ramp ADA improvements, City of Wilmington, Pennsylvania Ave & part of Delaware Ave, 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 200 Calendar Days. It is the Department's intent to issue a Notice to Proceed such that work starts on or about December 24, 2019.

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@delaware.gov, 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 1, 2019 unless changed via addendum.
2. QUESTIONS regarding this project are to be e-mailed to dot-ask@delaware.gov no less than six business days prior to the bid opening date in order to receive a response. Please include T201701102.01 in the subject line. Responses to inquiries are posted on-line at <http://www.bids.delaware.gov>.
3. PREQUALIFICATION REQUIREMENT - 29 Del.C. §6962 (c)(12)(a) requires DelDOT to include a performance-based rating system for contractors. The Performance Rating for each Contractor shall be **NEW** used as a prequalification to bid at the time of bid. Refer to Contract '*General Notices*' for details.
4. **THE BID PROPOSAL software used by DelDOT has changed. We now use Bid Express.** This new software is an updated version of the previous software used and operates similarly. The cd you request from DelDOT contains the Bid Express file and its installation file. Bidders are to use the cd provided to enter their bid amounts into the Bid Express file. The Bid Express bid file must be printed and submitted in paper form along with the electronic bid file and other required documents prior to the Bid due date and time. (DelDOT is not utilizing web based electronic bidding for this project).
5. 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.
6. 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 REVISED requirements at the following link:**

[http://regulations.delaware.gov/register/december2017/final/21 DE Reg 503 12-01-17.htm](http://regulations.delaware.gov/register/december2017/final/21_DE_Reg_503_12-01-17.htm)

Note a few of the Drug Testing requirements;

- * At bid submission - Each bidder must submit with the bid a single signed affidavit certifying that the bidder and its subcontractors has in place or will implement during the entire term of the contract a Mandatory Drug Testing Program that complies with the regulation, *the form is attached*;
- * At least two business days prior to contract execution - The awarded Contractor shall provide to DelDOT copies of the Employee Drug Testing Program for the Contractor, and any other listed Subcontractors;
- * Subcontractors - Contractors that employ Subcontractors on the job site may do so only after submitting a copy of the Subcontractor's Employee Drug Testing Program along with the standard required subcontractor information. A Subcontractor shall not commence work until **DelDOT** has approved the subcontractor in writing;
- * Penalties for non-compliance are specified in the regulation.

7. No RETAINAGE will be withheld on this contract unless through the Prequalification Requirements.
8. EXTERNAL COMPLAINT PROCEDURE can be viewed on DelDOT's Website [here](#), or you may request a copy by calling (302) 760-2555.
9. REMINDER; A copy of your firm's Delaware Business License must be submitted with your bid.
10. SECTION 106.06 BUY AMERICA Contract Requirement in the Delaware Standard Specifications for Road and Bridge Construction, August, 2016 does not apply to this contract.
11. 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](#).
- 11a. 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.

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

English Code	English Description	Multiply By	Metric Code	Metric Description	Suggested CEC Metric Code
ACRE	Acre	0.4047	ha	Hectare	HECTARE
BAG	Bag	N/A	Bag	Bag	BAG
C.F.	Cubic Foot	0.02832	m ³	Cubic Meter	M3
C.Y.	Cubic Yard	0.7646	m ³	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 ³	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 ²	Square Meter	M2
S.Y.	Square Yard	0.8361	m ²	Square Meter	M2
SY-IN	Square Yard-Inch	0.8495	m ² -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.....	<u>i</u>
LOCATION.....	<u>i</u>
DESCRIPTION.....	<u>i</u>
COMPLETION TIME.....	<u>i</u>
PROSPECTIVE BIDDERS NOTES.....	<u>i</u>
CONSTRUCTION ITEMS UNITS OF MEASURE.....	<u>iii</u>
GENERAL NOTICES.....	<u>1</u>
SPECIFICATIONS.....	<u>1</u>
CLARIFICATIONS.....	<u>1</u>
ATTESTING TO NON-COLLUSION.....	<u>1</u>
QUANTITIES.....	<u>1</u>
PREQUALIFICATION REQUIREMENT.....	<u>1</u>
PREFERENCE FOR DELAWARE LABOR.....	<u>2</u>
EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS.....	<u>2</u>
TAX CLEARANCE.....	<u>2</u>
LICENSE.....	<u>2</u>
DIFFERING SITE CONDITIONS.....	<u>3</u>
RIGHT TO AUDIT.....	<u>4</u>
PREVAILING WAGES.....	<u>4</u>
STATE WAGE RATES.....	<u>6</u>
SUPPLEMENTAL SPECIFICATIONS.....	<u>7</u>
SPECIAL PROVISIONS.....	<u>8</u>
CONSTRUCTION ITEM NUMBERS.....	<u>9</u>
401502 - ASPHALT CEMENT COST ADJUSTMENT.....	<u>10</u>
705504 - BRICK AND/OR BLOCK SIDEWALK.....	<u>11</u>
705505 - RESET STONE/BRICK SIDEWALK AND/OR STONE/BRICK ROADWAY.....	<u>13</u>
711500 - ADJUST AND REPAIR EXISTING SANITARY MANHOLE.....	<u>14</u>
763501 - CONSTRUCTION ENGINEERING.....	<u>15</u>
801500 - MAINTENANCE OF TRAFFIC - ALL INCLUSIVE.....	<u>24</u>
817565 - CURB PAINT.....	<u>29</u>
831513 - FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT (TRENCH).....	<u>36</u>
831514 - FURNISH AND INSTALL 2-1/2" SCHEDULE 80 PVC CONDUIT (TRENCH).....	<u>36</u>
831516 - FURNISH AND INSTALL 4" SCHEDULE 80 PVC CONDUIT (TRENCH).....	<u>36</u>
831523 - FURNISH AND INSTALL 2" GALVANIZED STEEL CONDUIT (TRENCH).....	<u>36</u>
831525 - FURNISH AND INSTALL 3" GALVANIZED STEEL CONDUIT (TRENCH).....	<u>36</u>
831526 - FURNISH AND INSTALL 4" GALVANIZED STEEL CONDUIT (TRENCH).....	<u>36</u>
831545 - FURNISH AND INSTALL 4" HDPE SDR-13.5 CONDUIT (BORE).....	<u>36</u>
831574 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 4" SCHEDULE 80 PVC CONDUITS IN TRENCH OR OPEN CUT.....	<u>36</u>
831578 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 4" HDPE 13.5 SDR CONDUIT IN DIRECTIONAL BORE.....	<u>36</u>
911509 - MULCHING.....	<u>41</u>
UTILITY STATEMENT.....	<u>42</u>

RIGHT OF WAY CERTIFICATE.....	<u>48</u>
ENVIRONMENTAL STATEMENT.....	<u>49</u>
RAILROAD STATEMENT.	<u>50</u>
BID PROPOSAL FORMS.	<u>51</u>
DRUG TESTING AFFIDAVIT.....	<u>58</u>
CERTIFICATION.	<u>59</u>
BID BOND.....	<u>61</u>

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 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.

PREQUALIFICATION REQUIREMENT

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

Bidders with Performance Rating scores equal to or greater than 85% shall be permitted to bid. Bidders with scores of less than 85% who comply with the retainage requirements of 29 Del.C. §6962 shall be permitted to bid provided the *Agreement to Accept Retainage* (located on the Certification Page) is executed and submitted with the bid. Lack of an executed *Agreement to Accept Retainage* will result in the rejection of the bid by the Department. Successful bidders awarded Department contracts who have no performance history within the last five (5) years will be assigned a provisional Performance Rating of 85% at the date of advertisement.

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

PREFERENCE FOR DELAWARE LABOR:

Delaware Code, Title 29, Chapter 69, Section 6962, Paragraph (d), Subsection (4)b:

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

EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS:

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

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

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

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

TAX CLEARANCE:

As payments to each vendor or contractor aggregate \$2,000, the Division of Accounting will report such vendor or contractor to the Division of Revenue, who will then check the vendor or contractor's compliance with tax requirements and take such further action as may be necessary to 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, 2019

CLASSIFICATION	NEW CASTLE	KENT	SUSSEX
BRICKLAYERS	55.89	55.89	55.89
CARPENTERS	55.95	55.63	44.22
CEMENT FINISHERS	35.48	35.70	28.39
ELECTRICAL LINE WORKERS	29.40	47.49	23.24
ELECTRICIANS	70.49	70.49	70.49
IRON WORKERS	65.24	26.10	27.72
LABORERS	45.30	41.69	40.93
MILLWRIGHTS	17.62	17.10	14.76
PAINTERS	71.29	71.29	71.29
PILEDRIERS	72.65	25.98	29.47
POWER EQUIPMENT OPERATORS	67.07	43.32	39.68
SHEET METAL WORKERS	24.89	22.21	20.12
TRUCK DRIVERS	37.52	30.88	37.62

CERTIFIED: 08/23/2019

BY: 

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: T201701102.01 Curb Ramp ADA improvements City of Wilmington Pennsylvania Ave and Part of Delaware Ave , New Castle County

SUPPLEMENTAL SPECIFICATIONS TO THE STANDARD SPECIFICATIONS

**EFFECTIVE AS OF THE ADVERTISEMENT
DATE OF THIS PROPOSAL
AND INCLUDED BY REFERENCE**

**The Supplemental Specifications can be viewed and printed from
the Department's Website.**

To access the Website;

- in your internet browser, enter; <https://www.deldot.gov>
- under 'BUSINESS', Click; 'Publications'
- scroll down under 'MANUALS' and Click; "Standard Specifications"
- be sure and choose the correct Standard Specification year; 2001 or 2016
- choose the latest revision prior to the date of this advertisement

The full Website Link is;

https://www.deldot.gov/Publications/manuals/standard_specifications/index.shtml

Copies of the Supplemental Specifications can be printed from the Website.

The Contractor shall make himself aware of these revisions and corrections (Supplemental Specifications), and apply them to the applicable item(s) of this contract.

SPECIAL PROVISIONS

CONSTRUCTION ITEM NUMBERS

All construction pay items are assigned a six (6) digit number, shown as Item Number on the Plans and/or in the Special Provisions, and shall be interpreted in accordance with the following:

Standard Item Number:

The first three digits of the construction item numbers indicates the Section number as described in the Standard Specifications, and all applicable requirements of the Section shall remain effective unless otherwise modified by the Special Provisions. The last three digits of the construction item identifies the item by sequential number under that Section. A comprehensive list of construction item numbers are listed in the Standard Specifications. Additions to this list will be made as required.

Special Provisions Item Number:

The first three digits of the construction items, covered under Special Provisions, indicates the applicable Section number of the Standard Specifications, and shall be governed fully by the requirements of the Special Provisions. The last three digit of the items covered under Special Provisions identifies the item by sequential number.

Examples

Standard Item Number - 202000 Excavation and Embankment

202 Indicates Section Number

000 Indicates Sequential Number

Special Provision Item Number - 202500 Grading and Reshaping Roadway

202 Indicates Section Number

500 Indicates Sequential Number

401502 - ASPHALT CEMENT COST ADJUSTMENT

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

The Delaware Posted Asphalt Cement Price will be issued monthly by the Department and will be the industry posted price for Asphalt Cement, F.O.B. Philadelphia, Pennsylvania. The link for the [posting is 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; and 15,000 gallons or more in case of Sections 304, 404 and 405.

5/05/15

705504 - BRICK AND/OR BLOCK SIDEWALK
705506 - BRICK AND/OR BLOCK ROADWAY

Description:

This work consists of furnishing all materials and constructing brick and/or block sidewalk/roadway in accordance with these specifications and in reasonably close conformity with the lines, grades, dimensions, and notes on the Plans and as established by the Engineer.

Materials:

The brick/block, referred to as "pavers" elsewhere in this special provision, shall be the shape, style, size and color as specified on the Plans.

1. If the pavers specified are concrete unit pavers, they shall have an average compressive strength of 8000 psi with no single paver having a compressive strength less than 7200 psi at the time of delivery to the project. The pigment loading shall be a minimum of 3% and the pigmentation shall be uniform throughout the paver.
2. If the pavers specified are clay brick, the pavers shall meet the requirements of ASTM C902, Class SX, Type I.

In cases of existing sidewalk, the new pavers shall match the existing bricks in material, color and size, unless noted otherwise on the Plans.

If the Plans are silent regarding pavers, the Contractor shall supply clay brick in a color approved by the Engineer.

Sample pavers shall be submitted for approval and if requested by the Engineer, 3' x 3' sample panels shall be constructed for approval.

The edge restraint system shall be as specified on the Plans or as recommended by the paver manufacturer, whichever is stronger.

Sand for bedding shall conform to the requirements of Section 1003 - Fine Aggregate.

Portland Cement Concrete for sidewalk shall conform to the requirements of Section 1022, Class B.

Expansion for sidewalk shall conform to the requirements of Subsection 1042.

Construction Methods:

Place concrete for sidewalk to depths shown on plans and construct in accordance with Section 705 of the Standard Specifications.

Install the edge restraint system on the approved base as shown on the Plans where existing conditions do not provide edge restraint.

Spread a leveling course of bedding sand 1 to 1 1/2 inches thick, taking care that moisture is constant and the density is loose until the unit pavers are set and compacted. Place a material such as geotextile, or other approved material at curb joints to prevent sand from bleeding through.

Place pavers in patterns as designated on the Plans. If a joint spacing is not noted on the Plans, place the pavers with a tight joint. Select pavers from 4 or more cubes to blend color and texture variations. Do not use pavers with chips, cracks, discolorations, or other defects. Cut pavers with a motor driven masonry wet saw to provide clean, sharp, unchipped edges. Cut pavers to fit pattern specified and to neatly fit adjoining material.

Vibrate the pavers into the sand leveling course with a low amplitude plate vibrator capable of a 3,500 to 5,000 pound compaction force. Perform at least 3 passes across paving with vibrator. Protect paver face and edges by spreading a cushion of sand over the surface. Be careful not to destroy edges.

Spread dry sand and fill joints immediately after vibrating the pavers into leveling course. Brush and vibrate sand until joints are completely filled, then remove excess sand.

Prior to acceptance, any pavers that are chipped, broken, stained, or damaged shall be replaced at the contractor's expense.

Method of Measurement:

The quantity of brick and/or block paving will be measured as the number of square feet of sidewalk and/or roadway completed in-place and accepted.

Basis of Payment:

The quantity of brick and/or block paving will be paid for at the Contract unit price per square foot. Price and payment will constitute full compensation for excavation, furnishing and installing portland cement concrete, expansion material, brick pavers, restraint system, bedding sand, geotextile and sand for filling joints and for all labor, equipment, tools, and incidentals necessary to complete the work.

7/15/2019

705505 - RESET STONE/BRICK SIDEWALK AND/OR STONE/BRICK ROADWAY

Description:

This work consists of removing and resetting the existing stone/brick sidewalk and/or roadway in accordance with details, notes on the Plans and as directed by the Engineer.

Materials and Construction Method:

The stone/brick blocks from the existing sidewalks and/or roadway shall be removed, cleaned and stored for later use. Sand and/or mortar required for setting the stones/bricks shall comply with the applicable requirements of Section 619 of the Standard Specifications.

The installation pattern and spacing of stones/bricks shall match the existing sidewalk and/or roadway setting, unless otherwise specified on the Plans. The stones/bricks shall be set on an approved compacted foundation with 2" of sand over it. Joint filler material (sand or mortar) shall be compatible with the original sidewalk and/or roadway.

After completion of stone/brick setting, the sidewalk and/or roadway surface area shall be thoroughly cleaned of mortar and/or as applicable to the contract.

Method of Measurement:

The quantity of stone/brick sidewalk and/or roadway reset will be measured as the number of square feet measured at the surface of the sidewalk and/or roadway, reset and accepted.

Basis of Payment:

The quantity of stone/brick sidewalk and/or roadway reset will be paid for at the Contract unit price per square foot. Price and payment will constitute full compensation for removal, storage and cleaning of stones/bricks, furnishing all materials, resetting and cleaning the sidewalk and/or roadway, disposal of discarded materials, for all labor, tools, equipment, and all necessary incidentals to complete the work. The cost of providing replacement stone/brick for those which are damaged is incidental to this item.

7/15/2019

711500 - ADJUST AND REPAIR EXISTING SANITARY MANHOLE

Description:

This work consists of adjusting and repairing existing sanitary manholes in accordance with notes and details on the Plans and as directed by the Engineer.

Materials and Construction Methods:

Materials and construction methods shall conform to the applicable requirements of Section 711 of the Standard Specifications, and the Standard Specifications of the owner of the sewer system. If there is a conflict between the Department's Specifications and the Specifications of the owner, the latter will prevail.

Method of Measurement and Basis of Payment:

The method of measurement and basis of payment for the item shall be made in accordance with Subsections 711.04 and 711.05 of the Standard Specifications.

7/15/2019

763501 - CONSTRUCTION ENGINEERING

Description:

This work consists of construction lay out including; stakes, lines and grades as specified below. Subsection 105.10 Construction Stakes, Lines and Grades of the Standard Specifications is voided.

Based on contract plans and information provided by the Engineer, the Contractor shall stake out right-of-way and easements lines, limits of construction and wetlands, slopes, profile grades, drainage system, centerline or offset lines, benchmarks, structure working points and any additional points to complete the project.

The Engineer will only establish the following:

- (a) Original and final cross-sections for borrow pits.
- (b) Final cross-sections: Top and bottom pay limit elevations for all excavation bid items that are not field measured by Construction inspection personnel. The Contractor shall notify the Engineer when these pay limit elevations are ready and allow for a minimum of two calendar days for the Engineer to obtain the information.
- (c) Line and grade for extra work added on to the project plans.

Equipment. The Contractor shall use adequate equipment/instruments in a good working order. He/she shall provide written certification that the equipment/instrument has been calibrated and is within manufacturer's tolerance. The certification shall be dated a maximum of 9 months before the start of construction. The Contractor shall renew the certification a minimum of every 9 months. The equipment/instrument shall have a minimum measuring accuracy of [3mm+2ppmxD] and an angle accuracy of up to 2.0 arc seconds or 0.6 milligons. If the Contractor chooses to use GPS technology in construction stakeout, the Contractor shall provide the Engineer with a GPS rover and Automatic Level for the duration of the contract. The GPS rover shall be in good working condition and of similar make and model used by the Contractor. The Contractor shall provide up to 8 hours of formal training on the Contractor's GPS system to a maximum of four Engineer's appointees (DELDOT Construction Inspectors). At the end of the contract, the Engineer will return the GPS rover to the Contractor. If any of the equipment/instruments are found to be out of adjustment or inadequate to perform its function, such instrument or equipment shall be immediately replaced by the Contractor to the satisfaction of the Engineer. Choosing to use GPS technology does not give the contractor authority to use machine control.- Construction Engineering (GPS) Machine Control Grading shall only be used if noted in the General Notes in the plan set outlining the available files that will be provided to the Contractor and "the Release for delivery of documents in electronic form to a contractor" are signed by all parties prior to delivery of any electronic files. Only files designated in the General Notes shall be provided to the contractor. If machine control grading is allowed on the project see the "machine control" section of this specification. GPS technology and machine control technology shall not be used in the construction of bridges.

Engineering/Survey Staff. The Contractor shall provide and have available for the project an adequate engineering staff that is competent and experienced to set lines and grades needed to construct the project. The engineering personnel required to perform the work outlined herein shall have experience and ability compatible with the magnitude and scope of the project. Additionally, the Contractor shall employ an engineer or surveyor licensed in the State of Delaware to be responsible for the quality and accuracy of the work done by the engineering staff. When individuals or firms other than the Contractor perform any professional services under this item, that work shall not be subject to the sub contracting requirements of Subsection 108.01 of the Standard Specifications. The Contractor shall assume full responsibility for any errors and/or omissions in the work of the engineering staff described herein. If construction errors are caused

due to erroneous work done under Construction Engineering the Contractor accepts full responsibility, no matter when the error is discovered. Consideration will not be given for any extension of contract time or additional compensation due to delays, corrective work, or additional work that may result from faulty and erroneous construction stakeout, surveying, and engineering required by this specification.

Construction Methods:

Performance Requirements:

- (a) Construction Engineering shall include establishing the survey points and survey centerlines; finding, referencing, offsetting the project control points; running a horizontal and vertical circuit to verify the precision of given control points. Establishing plan coordinates and elevation marks for culverts, slopes, subbase, subsurface drains, paving, subgrade, retaining walls, and any other stakes required for control lines and grades; and setting vertical control elevations, such as footings, caps, bridge seats and deck screed. The Contractor shall be responsible for the preservation of the Department's project control points and benchmarks. The Contractor shall establish and preserve any temporary control points (traverse points or benchmarks) needed for construction. Any project control points (traverse points) or benchmarks conflicting with construction of the project shall be relocated by the Contractor. The Contractor as directed by the Engineer must replace any or all stakes that are destroyed at any time during the life of the contract. The Contractor shall re-establish centerline points and stationing prior to final cross-sections by the Engineer. The Vertical Control error of closure shall not exceed 0.035 ft times. The Horizontal Control precision ratio shall have a minimum precision of 1:20,000 feet of distance traversed prior to adjustment.
- (b) The Contractor shall perform construction centerline layout of all roadways, ramps and connections, etc. from project control points set by the Engineer. The Contractor using the profiles and typical sections provided in the plans shall calculate proposed grades at the edge of pavement or verify information shown on Grades and Geometric sheets.
- (c) The Contractor shall advise the Engineer of any horizontal or vertical alignment revisions needed to establish smooth transitions to existing facilities. The Contractor must immediately bring to the attention of the Engineer any potential drainage problem within the project limits. The Engineer must approve any proposed variation in profile, width or cross slope.
- (d) The Contractor shall establish the working points, centerlines of bearings on bridge abutments and on piers, mark the location of anchor bolts to be installed, check the elevation of bearing surfaces before and after they are ground and set anchor bolts at their exact elevation and alignment as per Contract Plans. Before completion of the fabrication of beams for bridge superstructures, the Contractor shall verify by accurate field measurements the locations both vertically and horizontally of all bearings and shall assume full responsibility for fabricated beams fitting and bearing as constructed. After beam erection and concurrently with the Department project surveyors or their designated representative, the Contractor shall survey top of beam elevations at a maximum of 10-ft stations and compute screed grades. These shall be submitted to the Engineer for review and approval before the stay in place forms are set. Construction stakes and other reference control marks shall be set at sufficiently frequent intervals to assure that all components of the structure are constructed in accordance with the lines and grades shown on the plans.
The Contractor will be responsible for all structure alignment control, grade control and all necessary calculations to establish and set these controls.
- (e) The Contractor, using contract plans, shall investigate proposed construction for possible conflicts with existing and proposed utilities. The Contractor shall then report such conflicts to the Engineer for resolution. All stakes for utility relocations, which will be performed by others, after the Notice to

Proceed has been given to the Contractor, shall be paid for under item 763597 - Utility Construction Engineering.

- (f) The Contractor shall be responsible for the staking of all sidewalk and curb ramp grades in accordance with the plans and the Departments Standard Construction Details. The Contractor shall review the stakeout with the Engineer prior to construction. The Engineer must approve any deviation from plans, Department Standard Construction Details and Specifications in writing. The Contractor shall be responsible for any corrective actions resulting from problems created by adjustments if they fail to obtain such approval.
- (g) If wetland areas are involved and specifically defined on the Plans the following shall apply:
 - i. It is the intent of these provisions to alert the Contractor, that he/she shall not damage or destroy wetland areas, which exist beyond the construction limits. These provisions will be strictly enforced and the Contractor shall advise his/her personnel and those of any Subcontractor of the importance of these provisions.
 - ii. All clearing operations and delineation of wetlands areas shall be performed in accordance with these Special Provisions. Before any clearing operation commences the Contractor shall demarcate wetlands at the Limits of Construction throughout the entire project as shown on the Plans labeled as Limits of Construction or Wetland Delineation to the satisfaction of the Engineer.
 - iii. The material to be used for flagging the limits of construction shall be orange vinyl material with the wording "Wetland Boundary" printed thereon. In wooded areas, the flagging shall be tied on the trees, at approximate 20-foot intervals through wetland areas. In open field and yard areas that have been identified as wetlands, 6 foot posts shall be driven into the ground at approximate 50-foot intervals and tied with the flagging. The flagging shall extend approximately 12 inches in length beyond the post. Posts shall be oak with cross sectional dimensions of 1 ½ inches to 2 inches by 1 ½ inches to 2 inches or ¼ inch rebar.
 - iv. If the flagging has been destroyed and the Engineer determines that its use is still required, the Contractor shall reflag the area at no cost to the Department. If the Contractor, after notification by the Engineer that replacement flagging is needed, does not replace the destroyed flagging within 48 hours, the Engineer may proceed to have the area reflagged. The cost of the reflagging by the Engineer will be charged to the Contractor and deducted from any monies due under the Contract.
 - v. At the completion of construction, the Contractor shall remove all posts and flagging.
 - vi. The Contractor shall be responsible for any damages to wetlands located beyond the construction limits, which occurs from his/her operations during the life of the Contract. The Contractor shall restore all temporarily disturbed wetland areas to their preconstruction conditions. This includes restoring bank elevations, streambed and wetland surface contours and wetlands vegetation disturbed or destroyed. The expense for this restoration shall be borne solely by the Contractor.
- (h) Whenever the Engineer will be recording data for establishment of pay limits, the Contractor will be invited to obtain the data jointly with the Engineer's Survey Crew(s) in order to agree with the information. If the Contractor's representative is not able to obtain the same data, then the information obtained by the Engineer shall be considered the information to be used in computing the quantities in question.

Submittals. All computations necessary to establish the exact position of all work from the control points shall be made and preserved by the Contractor. All computations, survey notes, electronic files, and other records necessary to accomplish the work shall be made available to the Department in a neat and organized manner at any time as directed by the Engineer. The Engineer may check all or any portion of the stakeout survey work or notes made by the Contractor and any necessary correction to the work shall be made as soon

as possible. The Contractor shall furnish the Engineer with such assistance as may be required for checking all lines, grades, and measurements established by the Contractor and necessary for the execution of the work. Such checking by the Engineer shall not relieve the Contractor of his/her responsibility for the accuracy or completeness of the work. Copies of all notes must be furnished to the engineer at the completion of the project.

The Contractor shall submit any of the following at the Engineer's request:

- (a) Proposed method of recording information in field books to ensure clarity and adequacy.
- (b) A printout of horizontal control verification, as well as coordinates, differences and error of closure for all reestablished or temporary Control Points.
- (c) A printout of vertical control verification, with benchmark location elevation and differences from plan elevation.
- (d) Sketch of location of newly referenced horizontal control, with text printout of coordinates, method of reference and field notes associated with referencing control - traverse closure report.
- (e) Description of newly established benchmarks with location, elevation and closed loop survey field notes - bench closure report
- (f) All updated electronic and manuscript survey records.
- (g) Stakeout plan for each structure and culvert.
- (h) Computations for buildups over beams, screed grades and overhang form elevations.
- (i) A report showing differences between supplied baseline coordinates and field obtained coordinates, including a list of preliminary input data.
- (j) Any proposed plan alteration to rectify a construction stakeout error, including design calculations, narrative and sealed drawings.
- (k) Baseline for each borrows pit location.
- (l) Detailed sketch of proposed overhead ground mounted signs or signals showing obstructions that may interfere with their installation.
- (m) Copies of cut sheets.

Machine Control Grading

This Section of the specification shall only be used if machine control is authorized for use on the project.

Description:

This specification contains the requirements for grading operations utilizing Global Positioning Systems (GPS).

Use of this procedure and equipment is intended for grading the subgrade surface; it is not intended for the use in constructing final surface grades.

The Contractor may use any manufacturer's GPS machine control equipment and system that results in achieving the grading requirements outlined in section 202 of the standard specifications. The Contractor shall convert the electronic data provided by the Department into the format required by their system. The Department will only provide the information outlined in this document and no additional electronic data will be provided.

The Contractor shall perform at least one 500 foot test section with the selected GPS system to demonstrate that the Contractor has the capabilities, knowledge, equipment, and experience to properly operate the system and meet acceptable tolerances. The engineer will evaluate and make the determination as to whether additional 500 foot test sections are required. If the Contractor fails to demonstrate this ability to the satisfaction of the Department, the Contractor shall construct the project using conventional surveying and staking methods.

Materials:

All equipment required to perform GPS machine control grading, including equipment needed by DelDOT to verify the work, shall be provided by the Contractor and shall be able to generate end results that are in accordance with the requirements of Division 200 - EARTHWORK of the Standard Specifications.

Construction:

A. DelDOT Responsibilities:

1. The Department will set initial vertical and horizontal control points in the field for the project as indicated in the contract documents, (plans set). If the Contractor needs to establish new control points they shall be traversed from existing control points and verified to be accurate by conventional surveying techniques.
2. The Department will provide the project specific localized coordinate system.
3. The Department will provide data in an electronic format to the Contractor as indicated in the General Notes.
 - a. The information provided shall not be considered a representation of actual conditions to be encountered during construction. Furnishing this information does not relieve the Contractor from the responsibility of making an investigation of conditions to be encountered including, but not limited to site visits, and basing the bid on information obtained from these investigations, and the professional interpretations and judgments of the Contractor. The Contractor shall assume the risk of error if the information is used for any purpose for which the information is not intended.
 - b. Any assumption the Contractor makes from this electronic information shall be at their risk. If the Contractor chooses to develop their own digital terrain model the Contractor shall be fully responsible for all cost, liability, accuracy and delays.
 - c. The Department will develop and provide electronic data to the Contractor for their use as part of the contract documents in a format as indicated in the General

Notes. The Contractor shall independently ensure that the electronic data will function in their machine control grading system.

4. The Files that are provided were originally created with the computer software applications MicroStation (CADD software) and INROADS (civil engineering software). The data files will be provided in the native formats and other software formats described below. The contractor shall perform necessary conversion of the files for their selected grade control equipment. The Department will furnish the Contractor with the following electronic files:

- a. CAD files
 - i. Inroads -Existing digital terrain model (.DTM)
 - ii. Inroads -Proposed digital terrain model (.DTM)
 - iii. Microstation -Proposed surface elements - triangles
- b. Alignment Data Files:
 - i. ASCII Format

- 5. The Engineer shall perform spot checks of the Contractor's machine control grading results, surveying calculations, records, field procedures, and actual staking. If the Engineer determines that the work is not being performed in a manner that will assure accurate results, the Engineer may order the Contractor to redo such work to the requirements of the contract documents, and in addition, may require the Contractor to use conventional surveying and staking, both at no additional cost to the Department.

B. Contractor's Responsibilities

- 1. The Contractor shall provide the Engineer with a GPS rover and Automatic Level, for use during the duration of the contract. At the end of the contract, the GPS rover and Automatic Level will be returned to the Contractor. The Contractor shall provide a total of 8 hours of formal training on the Contractor's GPS machine control system to the Engineer and up to three additional Department appointees per rover.
- 2. The Contractor shall review and apply the data provided by the Department to perform GPS machine control grading.
- 3. The Contractor shall bear all costs, including but not limited to the cost of actual reconstruction of work, that may be incurred due to application of GPS machine control grading techniques. Grade elevation errors and associated corrections including quantity adjustments resulting from the contractor's use of GPS machine control shall be at no cost to the Department.
- 4. The Contractor shall convert the electronic data provided by the Department into a format compatible with their system.
- 5. The Contractor's manipulation of the electronic data provided by the Department shall be performed at their own risk.
- 6. The Contractor shall check and if necessary, recalibrate their GPS machine control system at the beginning of each workday in accordance with the manufacturer's recommendations, or more frequently as needed to meet the requirements of the project.
- 7. The Contractor shall meet the accuracy requirements as detailed in the Standard Specifications.
- 8. The Contractor shall establish secondary control points at appropriate intervals and at locations along the length of the project. These points shall be outside the project limits and/or where work is performed. These points shall be at intervals not to exceed 1000 feet. The horizontal position of these points shall be determined by conventional survey traverse and adjustments from the original baseline control points. The conventional traverse shall meet or exceed the Department's Standards. The elevation of these control points shall be

established using differential leveling from the project benchmarks, forming a closed loop. A copy of all new control point information including closure report shall be provided and approved by the Engineer prior to construction activities. The Contractor shall be responsible for all errors resulting from their efforts and shall correct deficiencies to the satisfaction of the Engineer and at no additional cost to the Department.

9. The Contractor shall provide stakes at all alignment control points, at every 500 foot stationing, and where required for coordination activities involving environmental agencies and utility companies at the Contractor's expense. Work that is done solely for utility companies and that is beyond the work performed under item 763501 - Construction shall follow and be paid for under item 763597 -Utility Construction Engineering.
10. The Contractor shall at a minimum set hubs at the top of finished grade at all hinge points on the cross section at 500 foot intervals on the main line and at least 4 cross sections on side roads and ramps as directed by the engineer or as shown on the plans. Placement of a minimum of 4 control points outside the limits of disturbance for the excavation of borrow pits, Stormwater Management Ponds, wetland mitigation sites etc. These control points shall be established using conventional survey methods for use by the Engineer to check the accuracy of the construction.
11. The Contractor shall preserve all reference points and monuments that are identified and established by the Engineer for the project. If the Contractor fails to preserve these items the Contractor shall reestablish them at no additional cost to the Department.
12. The Contractor shall provide control points and conventional grades stakes at critical points such as, but not limited to, PC's, PT's, superelevation points, and other critical points required for the construction of drainage and roadway structures.
13. No less than 2 weeks before the scheduled preconstruction meeting, the Contractor shall submit to the Engineer for review a written machine control grading work plan which shall include the equipment type, control software manufacturer and version, and proposed location of the local GPS base station used for broadcasting differential correction data to rover units.
14. The Contractor shall follow the guidelines set forth in the "Geometric Geodetic Accuracy Standards and Specifications for Using GPS Relative Positioning Techniques" and follow a minimum of Second Order Class 1, (2-I) classification standards.

Automated equipment operations have a high reliance on accurate control networks from which to take measurements, establish positions, and verify locations and features. Therefore, a strong contract control network in the field which is the same or is strongly integrated with the project control used during the design of the contract is essential to the successful use of this technology with the proposed Digital Terrain Model (DTM). Consistent and well designed site calibration for all machine control operations (as described below under Contract Control Plan) are required to ensure the quality of the contract deliverables. The Contract Control Plan is intended to document which horizontal and vertical control will be held for these operations. Continued incorporation of the Base Station(s) as identified in the Contract Control Plan is essential to maintaining the integrity of positional locations and elevations of features. The Contract Control Plan shall be submitted to the Department for review and approval by the Departments Survey Section 3 weeks prior to the start of any machine control work. The Contractor shall operate and maintain all elements of the Machine Grade Control continuously once the operations begin until otherwise approved by the Engineer.

Contract Control Plan:

The Contractor shall develop and submit a Contract Control Plan for all contracts which use Machine Control Grading. Contract control includes all primary and secondary horizontal and vertical control which will be used for the construction contract. Upon the Contractor's completion of the initial survey reconnaissance and control verification, but prior to beginning primary field operations, the Contractor shall submit a Contract Control Plan document (signed and sealed by the Delaware licensed Land Surveyor or Delaware Professional Engineer who oversees its preparation) for acceptance by the Engineer, which shall include the following:

1. A control network diagram of all existing horizontal and vertical control recovered in the field as contract control.
2. Include a summary of the calculated closures of the existing control network, and which control has been determined to have been disturbed or out of tolerance from its original positioning.
3. An explanation of which horizontal and vertical control points will be held for construction purposes. If necessary include all adjustments which may have been made to achieve required closures.
4. An explanation of what horizontal and vertical control (including base stations) was set to accomplish the required stakeout or automated machine operation. Include how the position of these new control points was determined.
5. Describe the proposed method and technique (technology and quality control) for utilizing the control to establish the existing and/or proposed feature location and to verify the completed feature location and/or measured quantity.
6. A listing of the horizontal and vertical datums to be used and the combined factor to be used to account for ellipsoidal reduction factor and grid scale factor.
7. If the Contractor chooses to use machine control as a method of measuring and controlling excavation, fill, material placement or grading operations as a method of measuring and controlling excavation, fill, material placement or grading operations, the Contractor Control Plan shall include the method by which the automated machine guidance system will initially be site calibrated to both the horizontal and vertical contract control, and shall describe the method and frequency of the calibration to ensure consistent positional results.
8. Issues with equipment including inconsistent satellite reception of signals to operate the GPS machine control system will not result in adjustment to the "Basis of Payment" for any construction items or be justification for granting contract time extension.

Method of Measurement:

The quantity of Construction Engineering will not be measured.

Basis of Payment:

Payment will be made at the Lump Sum price bid for the item "Construction Engineering". The price bid shall include the cost of furnishing all labor, equipment, instruments, stakes and other material necessary to satisfactorily complete the work as herein described under this item for all roads and structures that are a part

of the contract. Adjustment in payment will be made for the deletion or addition of work not shown in the contract documents.

Monthly payment will be made under this item in proportion to the amount of work done as determined by the Engineer.

2/28/2018

801500 - MAINTENANCE OF TRAFFIC - ALL INCLUSIVE

Description:

This item shall consist of furnishing, installing, maintaining and/or relocating the necessary temporary traffic control devices used to maintain vehicular, bicycle and pedestrian traffic, including persons with disabilities in accordance with the Americans with Disabilities Act, as amended. All work shall be performed in a manner that will provide reasonably safe passage with the least practicable obstruction to all users, including vehicular, bicycle and pedestrian traffic.

All requirements of the Delaware Manual on Uniform Traffic Control Devices (MUTCD), Part 6, herein referred to as the Delaware MUTCD. (latest edition with all revisions made up to the date of Advertisement of this project) shall apply for all temporary traffic control devices. Any, and all, control, direction, management and maintenance of traffic shall be performed in accordance with the requirements of the Delaware MUTCD, notes on the Plans, this specification, and as directed by the Engineer.

The Contractor shall be aware that the Case Diagrams and safety measures outlined in the Delaware MUTCD are for common construction situations and modifications may be warranted based on the complexity of the job. The Contractor shall submit justification for modifications to the Temporary Traffic Control Plan (TTCP) to the Engineer for approval prior to implementation.

The Department reserves the right to impose additional restrictions, as needed, for the operational movement and safety of the traveling public. The Department reserves the right to suspend the Contractor's operations until compliance with the Engineer's directive for remedial action, based on but not limited to the following reasons:

1. The Contractor's operations are not in compliance with the Delaware MUTCD, the specifications or the Plans.
2. The Contractor's operations have been deemed unsafe by the Traffic Safety Engineer or District Safety Officer.

Materials and Construction Methods:

The Contractor shall submit a Temporary Traffic Control Plan (TTCP) or a Letter of Intent to use the Plan recommended Delaware MUTCD Case Diagram(s) at or prior to the pre-construction meeting. The Contractor shall submit the TTCP for all Contractor and subcontractor work to be performed on the project for the Department's approval before the start of work.

When specified by a note in the Plans, the Contractor shall be required to have an American Traffic Safety Services Association (ATSSA) certified Traffic Control Supervisor on the project. The authorized designee must be assigned adequate authority, by the Contractor, to ensure compliance with the requirements of the Delaware MUTCD and provide remedial action when deemed necessary by the Traffic Safety Engineer or the District Safety Officer. The ATSSA certified Traffic Control Supervisor's sole responsibility shall be the maintenance of traffic throughout the project. This responsibility shall include, but is not limited to, the installation, operations, maintenance and service of temporary traffic control devices. Also required is the daily maintenance of a log to record maintenance of traffic activities, i.e., number and location of temporary traffic control devices; and times of installation, changes and repairs to temporary traffic control devices. The ATSSA Traffic Control Supervisor shall serve as the liaison with the Engineer concerning the Contractor's maintenance of traffic. The name, contact number and certification for the designated Traffic Control

Supervisor shall be submitted at or prior to the pre-construction meeting. The cost of the ATSSA certified Traffic Control Supervisor shall be incidental to this item.

Temporary traffic control devices shall be maintained in good condition in accordance with the brochure entitled "Quality Guidelines for Temporary Traffic Control Devices", published by the American Traffic Safety Services Association (ATSSA). Any temporary traffic control devices that do not meet the quality guidelines shall be removed and replaced with acceptable devices. Failure to comply will result in work stoppage with time charges continuing to be assessed.

Any existing signs that conflict with any temporary or permanent construction signs shall be covered as needed or as directed by the Engineer. The cost for temporarily covering conflicting signs shall be incidental to this item.

Access to all transit stops located within the project limits shall be maintained unless otherwise directed by the Plans or the Engineer. Maintaining access shall include maintaining an area for the transit vehicle and also an accessible path for pedestrians to safely access the transit stop.

The Contractor shall notify the Engineer, in writing, no less than fourteen (14) calendar days prior to the start of any detour(s) and road closures. The Engineer will notify the following entities:

- Local 911 Center
- Local School Districts
- Local Post Offices
- DelDOT's Transportation Management Center (TMC)
- Town Managers
- Local Police
- DelDOT's Public Relations
- Delaware Transit Corporation (DTC)

Immediately prior to the implementation of any lane or road closures, the Engineer shall notify the DelDOT TMC at (302) 659-4600. Notifications shall also be provided when the closures are lifted. The Engineer shall notify TMC and the District Safety Officer if any lane closures cannot be removed prior to the end of the allowable work hours.

The Contractor shall notify the local 911 center if access to a fire hydrant is temporarily restricted. The Contractor shall provide written confirmation to the Engineer that the local 911 center has been notified.

If a detour is required during any part or the entire period of this Contract, an approved detour plan shall be obtained from the Department's Traffic Safety Section. All signs, barricades and other temporary traffic control devices required as part of the approved detour plan shall be installed and maintained by the Contractor on the route that is closed and on the detour route. Road closures without an approved detour plan shall not be allowed. If a road is closed without an approved detour plan, the Contractor's operations shall be stopped immediately.

The Contractor shall provide and maintain ingress and egress for each property abutting the construction area and each property located between the diversion points of any detour and the actual construction site. Construction activities which may temporarily or otherwise interfere with property access shall be coordinated in advance with the affected property owners.

The Contractor shall conduct construction operations in a manner which will minimize delays to traffic, and shall meet the following requirements:

1. If work is being performed within 200 feet in any direction of an intersection that is controlled by a traffic signal, the flagger(s) shall direct the flow of traffic in concert with the traffic signals in construction areas to avoid queuing, unless active work prohibits such action. The flagger shall direct traffic to prevent traffic from queuing through an intersection (i.e., blocking an intersection). Only a Traffic Officer may direct traffic against the operation of a traffic signal and only until the operation occurring within the intersection is completed.
2. When a lane adjacent to an open lane is closed to travel, the temporary traffic control devices shall be set 2 feet (0.61 m) into the closed lane from the edge of the open lane, unless an uncured patch exists or actual work is being performed closer to the open lane with minimum restriction to traffic.
3. Except for "buffer lanes" on high volume and/or high speed roadways, lanes shall not be closed unless construction activity requiring lane closure is taking place, or will take place within the next hour. Lanes shall be reopened immediately upon completion of the work. Moving operations will require the lane closures be shortened as the work progresses and as traffic conditions warrant to minimize the length of the closure. The Contractor shall conduct construction operations in a manner so as to minimize disruption to traffic during peak hours and periods of heavy flow. The Department reserves the right to stop or change the Contractor's operations, if in the opinion of the Engineer, such operations are unnecessary at that time or the operations are unnecessarily impeding traffic.
4. Work in the vicinity of traffic signals, shall be scheduled to minimize the time during which the signal is operated without detectors, and prior approval from the Engineer shall be required. TMC shall be notified in advance of cutting a loop detector, and be immediately notified once the loop detector has been reinstalled. The Contractor shall provide sufficient advance notice of the loop detector work with the Engineer to ensure the aforementioned requirements are met.

It is required that all temporary traffic control work and related items shall either be performed entirely by the Contractor's own organization, or totally subcontracted. Maintenance of equipment shall not be subject to this requirement.

Any deficiencies related to temporary traffic control that are reported to the Contractor in writing shall be corrected within 24 hours or as directed by the Engineer. Failure to comply will result in non-payment for those devices that are found to be deficient for the duration of the deficiency. Serious deficiencies that are not corrected immediately shall result in suspension of work until items identified are brought back into compliance.

At the end of each day's work, the Contractor shall correct all pavement edge drop-offs in accordance with Table 6G-1 in the Delaware MUTCD. This corrective work shall be accomplished with Temporary Roadway Material (TRM) unless an alternate method is specified in the Plans. All ruts and potholes shall be filled with TRM as soon as possible but no later than the end of each work day. Placement and Payment of TRM shall be completed in accordance with Section 403 of the Standard Specifications. If temporary elimination of a drop-off hazard cannot be accomplished, then the area should be properly marked and protected with temporary traffic control devices such as temporary barricades, warning signs, flashing lights, etc. as required by Section 6G.21 of the Delaware MUTCD.

All open trench excavation accessible by vehicular traffic must be backfilled prior to the end of each working day. Steel plates shall not be used except in emergency situations and only with prior written approval from the Engineer unless otherwise directed by the Plans.

The Contractor shall submit, at or prior to the preconstruction meeting, detailed drawings including but not limited to existing striping lengths, lane and shoulder widths, turn lane lengths, locations of stop bars, turn arrows, crosswalks and railroad crossings. The drawings shall depict the existing pavement markings for each project location. These drawings will be reviewed by the Department's Traffic Section to determine the need for modification(s) for compliance with the Delaware MUTCD. Temporary pavement markings, on the final pavement surface, shall match the Plan dimensions and layout or the approved drawings of the permanent markings in compliance with Section 3 of the Delaware MUTCD. All conflicting or errant striping shall be removed as directed by the Engineer in compliance with the specifications for Item 817031 - Removal of Pavement Striping.

At the end of each day's operation and before traffic is returned to unrestricted roadway use, temporary striping shall be utilized when the existing pavement is milled and hot mix will not be placed the same day or more than a single course of hot mix is to be placed or permanent roadway striping cannot be placed on the same day as the placement of the final course of hot mix. Placement of temporary striping shall receive prior approval from the Engineer and the contractor shall apply temporary pavement markings in accordance with the requirements of Section 817 of Delaware Standard specifications and the Delaware MUTCD. Payment for temporary pavement striping shall be made at the unit price bid for item 817 - Temporary Striping. Payment for final striping will be included in the applicable striping item.

The Contractor shall have temporary striping/delineating materials (such as raised markers, tape, and other approved materials) available at the job site for verification by the Department prior to starting the hot-mix paving operation on roads to be immediately opened to traffic. These materials shall be used by the Contractor for temporary markings if he/she fails to apply temporary marking paint, etc., as required by the Delaware MUTCD. No paving operations on roads to be immediately opened to traffic will be allowed unless such verification has been made for the availability of the materials at the job site.

Travel lane and ramp closings on multilane highways and Interstates shall not be permitted during the following holiday periods:

- December 24 through December 27 (Christmas Day)
- December 31 through January 3 (New Years Day)
- Friday prior to Easter through Easter Sunday
- Thursday prior to Memorial Day through the Tuesday following Memorial Day
- Dover International Speedway Race Weekends (Thursday prior to the race event through the day after the race event)
- July 3 through July 5 (Independence Day)
- Thursday prior to Labor Day through the Tuesday following Labor Day
- Wednesday prior to Thanksgiving Day through the Monday following Thanksgiving Day

Additional time restrictions may apply as noted in the project plans or as directed by the Engineer. Any requests to waive any restrictions must be made in writing to the Engineer for review and approval. A copy of the request shall be provided to the District Safety Officer for review.

Certification:

Temporary traffic control devices used on all highways open to the public in this State shall conform to the Delaware MUTCD. All devices shall be crashworthy in accordance with the National Cooperative Highway Research Program (NCHRP) Report 350, the memorandum issued August 28, 1998 by The USDOT Federal Highway Administration, and/or in accordance with the latest edition of the Manual for Assessing Safety Hardware (MASH), published by the American Association of State Highway and Transportation Officials (AASHTO).

The Contractor shall submit certification for temporary traffic control devices or vendors used specifically on this project at or prior to the pre-construction meeting.

Certification of compliance with NCHRP report 350 and/or MASH is required for the following categories of temporary traffic control devices:

Category I contains small and lightweight channelizing and delineating control devices which includes cones, tubular markers, flexible delineator post and drums, all without any accessories or attachments.

Category II includes temporary traffic control devices that are not expected to produce significant vehicular velocity changes to impacting vehicles. These devices which shall weigh 100 pounds or less, include Type I, II and III barricades, portable sign supports with signs, and intrusion alarms. Also included are drums, cones, and vertical panels with accessories or attachments.

Category III includes temporary traffic control devices that are expected to cause significant vehicular velocity changes to impacting vehicles. These devices which weigh more than 100 pounds include temporary barrier, temporary impact attenuators, and truck-mounted attenuators.

Category IV includes portable or trailer-mounted devices such as arrow panels, variable message signs, temporary traffic signals and temporary area lighting.

For Category I devices, the manufacturer or Contractor may self-certify that the devices meet the NCHRP-350 and/or MASH criteria. The Contractor shall supply the Federal Highway Administration's NCHRP-350 and/or MASH acceptance letter for each type of device that falls under Category II and III devices.

Basis of Payment:

Payment will be made at the Lump Sum price for "Maintenance of Traffic", for which price and payment constitutes full compensation for all maintenance of traffic activities accepted by the Engineer, which shall include the cost of furnishing and relocating permanent and temporary traffic control signs, traffic cones or drums, submission of temporary traffic control plan(s), submission of existing pavement marking drawings, submission of all required certifications, labor, equipment and incidentals necessary to complete the item. Payment to furnish and maintain other temporary traffic control devices including but not limited to Portable P.C.C. Safety Barrier, Truck Mounted Attenuators, Portable Changeable Message Signs, Arrow Panels and Portable Light Assemblies will be made at the contract unit price for each item.

NOTE

If the Contractor does not complete the Contract work within the Contract completion time (including approved extension time), the Contractor shall be responsible for providing the necessary temporary traffic control devices that are required to complete any remaining work. The costs of such temporary traffic control shall be borne by the Contractor. No additional payment will be made to the Contractor to maintain traffic in accordance with the Delaware MUTCD, contract plans and specifications. Temporary traffic control items include, but not be limited to, warning lights, warning signs, barricades, plastic drums, P.C.C. safety barrier, flaggers, traffic officers, arrow panels, message boards, and portable impact attenuators.

10/5/16

817517 - WHITE OR YELLOW PAINT LINE, 4"
817518 - WHITE OR YELLOW PAINT LINE, 5"
817519 - WHITE OR YELLOW PAINT LINE, 6"
817520 - WHITE OR YELLOW PAINT LINE, 10"
817568 - WHITE OR YELLOW PAINT LINE, 12"
817521 - WHITE OR YELLOW PAINT LINE - LONG, 4"
817522 - WHITE OR YELLOW PAINT LINE - LONG, 5"
817523 - WHITE OR YELLOW PAINT LINE - LONG, 6"
817524 - WHITE OR YELLOW PAINT LINE - TRANSVERSE, 8"
817525 - WHITE OR YELLOW PAINT LINE - TRANSVERSE, 12"
817526 - WHITE OR YELLOW PAINT LINE - TRANSVERSE, 16"
817549 - STRAIGHT ARROW - PAINT
817551 - RIGHT OR LEFT ARROW - PAINT
817553 - COMBINATION ARROW - PAINT
817555 - SYMBOL - PAINT
817565 - CURB PAINT

Description:

This work consists of repainting of existing reflective pavement markings or painting where the line has not previously existed. The Contractor shall furnish the fast dry paint; the glass spheres; maintenance of traffic; and all labor, equipment and incidentals necessary to apply pavement markings in a safe and efficient manner.

Application:

General Requirements

These specifications cover the application of a heated pigmented binder (white and yellow) and optical glass spheres system to highway surfaces with specialized application equipment.

The reflective surface shall be obtained by applying optical glass spheres in a specified ratio onto and into the pigmented binder after the binder application in one operation by specialized equipment hereafter described in these specifications.

During and after material application, both daylight and nighttime inspections of the markings will be made by an authorized representative of the Division of Highway Operations, and if found to be defective or if they fail in any way to meet the specifications in this proposal, such markings will be rejected and must be replaced at no cost to the Department within the time limit specified.

The contractor shall assume all costs arising from the use of patented materials, equipment, devices, and processes used on or incorporated in the work.

Equipment Required

The successful bidder must use on this contract equipment meeting the following minimum requirements:

The equipment used to apply pavement markings shall meet the following requirements:

A. PAINT EQUIPMENT

1. Be able to apply double centerlines simultaneously (except temporary markings may be applied separately).
2. Capability to apply paint and glass beads to pavement at same time, leaving no more than 2" of painted line without glass beads at the beginning or end of a line.
3. Capability of hand gun operation for applying special markings. (This may be a separate piece of equipment).

B. Truck Mounted Paint Equipment

1. Must apply double centerlines simultaneously.
2. Shall be capable of pneumatically applying glass beads 1" behind the spray pattern of the paint gun.
3. Shall have automatic electrically controlled skipline mechanism capable of retracing the existing approximate 10 ft stripe and 30 ft skip or applying a new 10 ft stripe and 30 ft skip.

The application speed of the paint machine shall not be greater than 10 mph unless approved by the Project Coordinator.

The wet film thickness shall be (15 Mils), (+/- 1 Mil). A deduction will be made from the monies due the contractor for improper film thickness according to the following table:

<u>Thickness in (Mils)</u>	<u>Deduction for a 5" line</u>
<u>From To Less Than</u>	
(12)	Reapply
(12) To (13)	Deduct .015
(13) To (14)	Deduct .002

* Proportional rates apply to wider lines.

When the contractor is required to repaint a line, no payment will be made for the repainting.

The reflective surface shall be obtained by applying glass spheres at an average rate of 7 lbs. per gallon of pigmented binder onto and into the pigmented binder. The glass spheres shall be dispensed by a pneumatic system that results in the spheres being retained on the surface and embedded within the binder.

The rate of beads and paint application shall be determined at the end of the workday. The number of gallons of paint used and the number of pounds of glass spheres used shall be determined. The number of gallons of paint shall be divided into the number of pounds of glass spheres and result shall be 7 lbs. per gallon or greater.

A deduction will be made from monies due the contractor for improper bead application according to the following table:

<u>Glass Beads (lbs/gallons)</u>	<u>Deduction (5")</u>
<u>From To Less Than</u>	
(6.5)	Reapply
(6.5) to (6.7)	.015
(6.7) To (6.9)	.002

* Proportional rates apply to wider lines.

APPROVED MATERIALS:

GLASS BEADS

1. Scope

- 1.1 This specification covers glass beads to be sprayed upon pavement marking paint so as to produce a reflective pavement marking.

2. General Requirements

- 2.1 The beads shall be transparent, clean, colorless glass, smooth and spherically shaped, free from milkiness, pits, or excessive air bubbles and conform to all of the requirements of AASHTO M-247-81 (1996) with the addition of the requirements as noted below.

3. Specific Properties

- 3.1 Gradation. The beads shall meet the gradation requirements for Type 1 as given in Table I of AASHTO M-247-81 (1996).
- 3.2 Roundness. The glass beads shall have a minimum of 80 percent true spheres.
- *3.3 Moisture Resistant. A moisture resistant coating shall be applied to prevent absorption of moisture. The beads shall remain free of clusters and lumps; and flow freely from dispensing equipment.

* When Latex Traffic Paint is used the glass beads shall be Moisture Resistant.

4. Submission of Samples

- 4.1 A 50 lb. unopened bag of glass beads shall be submitted to the Bureau of Materials and Research for each lot or batch for testing 30 days prior to use.
- 4.2 A copy of the Manufacturer's certified analysis of each lot or batch and Material Safety Data Sheet shall also accompany the samples.
- 4.3 All samples shall be identified with the contract number(s) for which the glass beads will be used.

5. Packaging and Marking

- 5.1 Glass beads shall be furnished in 50 lb. moisture proof bags. Containers are to be guaranteed to furnish dry and undamaged beads.
- 5.2 Each package shall contain the following information:
 - 5.2.1 Name and address of manufacturer
 - 5.2.2 Shipping point
 - 5.2.3 Trademark or name
 - 5.2.4 The working "glass beads"
 - 5.2.5 Specification number
 - 5.2.6 Net weight in kilograms or lbs.

5.2.7 Lot or batch number

5.2.8 Month and year of manufacture

6. Retroreflectivity Readings

All Paint lines are required to meet a minimum reflectivity. The minimum reflectivity reading that will be accepted is 150 Millicandelas for white and 125 Millicandelas for yellow. These readings will be taken with a Delta LTL-X Retrometer with 30-meter geometry. If the Reflectivity fails to meet the minimum requirements the contractor will be required to re-paint the lines at their expense.

The following list contains all alkyd paints (pigmented binder) currently approved for use to perform the work:

1.

Manufacturer	Manufacturer's Code
Aexcel Corporation	72W-A042
Ennis Paint Inc.	WX08W001
Ennis Paint Inc.	DEW-21-M-1
Sherwin Williams	BP17949

2.

Manufacturer	Manufacturer's Code
Aexcel Corporation	72Y-A080
Ennis Paint Inc.	WX08L001
Ennis Paint Inc.	DEY-21-M-1
Sherwin Williams	BP17952

LATEX TRAFFIC PAINT

Latex Traffic Paint for traffic stripes or traffic markings shall be a white or a yellow ready-mixed pigmented binder which is emulsified in water and capable of anchoring reflective glass beads which are separately applied. In addition, the paint shall not contain any of the materials listed in the Environmental Protection Agency Code of Regulations (CFR) 40, section 261.24, table 1.

Manufacturers of Latex Paint shall have produced, to the satisfaction of the Department's Materials and Research Section, a Fast-Drying Traffic Paint, which meets the physical and composition requirements of this specification.

COMPOSITION: The exact composition of the Latex Paint shall be left the discretion of the manufacturer as stipulated hereinafter.

Pigment: The Pigment portion shall be a combination of prime and extender pigments as required to produce either a white or yellow Traffic Paint meeting the color and other requirements of the finished product for white or yellow, as specified elsewhere in this specification.

The prime pigment for white paint shall be Titanium Dioxide conforming to ASTM D 476, Type IV, with a minimum Titanium Dioxide content of 94 percent and shall be used at a minimum rate of 1 pd per gallon.

The prime pigment for yellow paint shall be a non-toxic organic pigment yellow, No. 75 or equal pre-approved by the Department, with excellent exterior and color permanence. The prime pigment shall also contain a minimum 0.2 pounds per gallon of Titanium Dioxide conforming to ASTM D 476, Type IV, 94 percent purity.

The percent pigment by weight of the finished product shall not be less than 60 nor more than 62 percent.

Vehicle: The Non-Volatile vehicle shall not be less than 42 percent by weight, and shall be pre-approved by the Department's Materials and Research section and meet the Dry Through (Early Washout) Requirements specified hereinafter.

Physical Properties:

- Color: The color shall match Federal Test Standard No. 595A, Latest Edition, No. 33538 for Yellow and No. 37886 for White.
- Organic Volatiles: The Volatile Organic Content (VOC) of the finished paint shall contain less than 2.1 pounds per gallon of Volatile Organic Matter of total Non-Volatile paint material.
- Volume of Solids: The finished paint shall not be less than 61 percent solids by volume.
- Total Solids: The finished paint shall not be less than 77.5 percent total Non-Volatiles by weight, when tested in accordance with ASTM D 2369.
- Liter Weight: The weight of the finished paint shall be 14 pounds per gallon plus or minus 0.2 pounds per gallon for each color.
- Grind: The grind shall not be less than 2 Hegman when tested in accordance with Federal Test Standard No. 141B, method 4411.
- Field No-Tracking Time: The paint shall dry to a no-track condition under traffic in no more than 75 seconds. The no tracking condition shall be determined by actual application on the pavement at a wet film thickness of .38 mm with white or yellow paint covered with glass beads at a rate of 7 pounds per gallon. The paint lines for this test shall be applied with the striping equipment operated so as to have the paint at temperatures up to 140 degrees F at the spray orifice. This maximum tracking time shall not be exceeded when the pavement temperature varies from 50 to 120 degrees F and under humidity conditions of 80% or less providing that the pavement is dry.
- Viscosity: The consistency of the paint shall be not less than 70 nor more than 95 KREB units at 77 degrees F, when tested in accordance with ASTM D 562.
- Flexibility: The paint shall show no cracking or flaking when tested in accordance with Federal Specification TT-P-1952B, section 4.3.7.
- Dry Opacity: The minimum contrast ratio shall be 0.95 when tested in accordance with Federal Test Standard No. 141B, Method 4121, Procedure B, using an 0.005 Bird Applicator.
- Daylight Reflectance: The Daylight Directional Reflectance shall not be less than 85 percent for the white paint and not less than 54 percent for the yellow (Relative to Magnesium Oxide), when tested in accordance with Federal Test Standard No. 141B, Method 6121.

Abrasion Resistance: The Abrasion Resistance shall be such that no less than 210 liters of sand shall be required for removal of the paint film when tested in accordance with this Federal Specification TT-P-1952B, Section 4.3.8.

- Water Resistance: The paint shall conform to Federal Specification TT-P-1952B, section 4.5.6. There shall be no blistering or appreciable loss of adhesion, softening, or other deterioration after examination.
- Freeze-Thaw Stability: The paint shall show no coagulation or change in consistency greater than 5 KREB units, when tested in accordance with Federal Specification TT-P-1952B, Section 4.5.7.
- Heat Stability: The paint shall show no coagulation, discoloration, or changes in consistency greater than plus or minus 5 KREB units when tested in accordance with Federal Specification TT-P-1952B, section 4.5.8.
- Dilution Test: The paint shall be capable of dilution with water at all levels without curdling or precipitation such that the wet paint can be readily cleaned up with only water.
- Dry Through (Early Washout): The Dry Through time of a (15 mil) wet film placed immediately in a Humidity Chamber, maintained at 72.5 plus or minus 2.5 degrees F and 90 plus or minus 5 percent relative humidity shall be less than or equal to the Department Laboratory reference film when tested in accordance with ASTM D 1640, except that the pressure exerted the minimum needed to maintain contact with the thumb and film.
- Color Appearance After Aging: The white paint shall show no more than slight discoloration and the yellow paint shall be within the limits of the Color Tolerance Chart for Standard Highway Yellow, after accelerated weathering in accordance with Federal Specification TT-P-115D, Section 3.5.9.1.
- Shelf Life: All paint furnished shall have a minimum shelf life of 9 months at temperatures above 35 degrees F. When tested, the paint shall conform to the physical requirements specified herein. In addition, the paint shall show no skinning, gelling or hardening on the surface, nor hard settling upon storage in the sealed containers, that will affect the performance of the product.

Inspection and Testing:

More detailed information concerning these materials is available by contacting the Department's Materials and Research Section, (302) 760-2400.

Upon notification of award, it shall be the responsibility of the vendor to contact the Department's Materials and Research Section to arrange for sampling and testing of approved materials.

All samples required by the Department's Materials and Research Section shall be supplied by the vendor 30 days prior to use in amounts and sizes indicated, at no cost to the Department.

Method of Measurement:

The quantity of pavement striping will be measured by the number of linear feet of pavement striping line placed on the pavement and accepted. The Contractor shall have on his equipment a suitable measuring device capable of determining the total number of "Linear Feet" of materials actually applied within a tolerance of $\pm 2\%$. This device shall be calibrated, at least, twice weekly during marking operations.

Basis of Payment:

The quantity of pavement striping payment will be paid for at the Contract unit price per linear foot. Price and payment shall include constitute full compensation for supplying and applying the marking material and for all labor, test, protection, equipment, tools, manipulation, supplying maintenance of traffic, and incidentals necessary to complete the item of work to the satisfaction of the Department. All Arrows shall be paid for as Each. All symbols shall be paid for per Square Foot.

1/26/2018

831513 - FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT (TRENCH)
831514 - FURNISH AND INSTALL 2-1/2" SCHEDULE 80 PVC CONDUIT (TRENCH)
831516 - FURNISH AND INSTALL 4" SCHEDULE 80 PVC CONDUIT (TRENCH)
831523 - FURNISH AND INSTALL 2" GALVANIZED STEEL CONDUIT (TRENCH)
831525 - FURNISH AND INSTALL 3" GALVANIZED STEEL CONDUIT (TRENCH)
831526 - FURNISH AND INSTALL 4" GALVANIZED STEEL CONDUIT (TRENCH)
831545 - FURNISH AND INSTALL 4" HDPE SDR-13.5 CONDUIT (BORE)
**831574 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 4" SCHEDULE
80 PVC CONDUITS IN TRENCH OR OPEN CUT**
**831578 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 4" HDPE 13.5
SDR CONDUIT IN DIRECTIONAL BORE**

Description:

This work consists of furnishing and installing a conduit or shield, of the type and size required and as specified in the contract documents or as directed by the Engineer.

Materials:

All conduits shall be UL listed.

HDPE Conduit - 2" and 4" diameter, high density polyethylene (HDPE) SDR-13.5, smooth wall conduit with permanently pre-lubricated lining, meeting ASTM D2447, ASTM D3035 and NEMA TC7 specifications.

PVC Conduit - 4", 3", 2-1/2", 2" or 1" diameter, schedule 80 rigid polyvinyl chloride (PVC) conduit, meeting Commercial Standard CS-272-65 (PVC), ASTM D-1785 and U.C. Standard 651 specifications.

Galvanized Steel Conduit - 4", 3", 2-1/2", 2", 1-1/2 or 1" diameter, rigid galvanized steel conduit meeting National Electric Code 2002, Article 344.

HDPE Conduit to PVC Conduit Coupling - Galvanized steel meeting Commercial Standard CS-272-65 (PVC), ASTM D-1785 and U.C. Standard 651 specifications

Flexible Metallic-Liquidtight Conduit - meets National Electric Code 2002, Article 350

Weatherhead for galvanized or PVC conduit - material shall match the adjoining conduit

Insulated grounding bushing with knockouts - meet or exceed UL 514 B

Condulets for conduit sizes - material shall match the adjoining conduit

Anchors - A 307, Galvanized per A 153

One hole conduit hangers - Steel City Series 6H or 6H-B, CADDY CD3B Rigid Conduit Hanger, or approved equal

End caps - material shall match the adjoining conduit

LONG sweep sections for conduit sizes - material shall match the adjoining conduit, and shall be manufactured 90 degree sweeping bends.

Construction Methods:

General Installation Requirements -

The Department has the right to reject any installation method proposed for a given work site. PVC shall not be installed under existing pavement unless it is on a continuous roll or with the Engineer's written approval.

Conduit installed underground shall be installed in a straight line between terminal points. In straight runs, junction well spacing shall be no more than 600 feet for fiber optic conduit or no more than 300 feet for copper in conduit, or as directed by the Engineer. If bends are required during installation, they must be manufactured sweeping bends. The Engineer will be consulted before any bends are installed to ensure that the proper arc is provided.

Underground conduit shall have a minimum cover as measured from the finished grade of 24 inches and a maximum cover of 48 inches. The opening shall be filled half way with the cover material, and tamped down firmly before filling in the remainder of the opening. Additional lifts shall be used as required to install the metallic warning tape at the specified depth. All cover material shall be free of rocks, debris, vegetation or other deleterious material that may damage the conduit. An underground utility warning tape shall be installed as specified in this section and the remainder of the fill shall be added, tamping down the top layer.

Conduit not terminated to a base or in a junction well shall be terminated 2 feet beyond the edge of the pavement unless otherwise directed by the Engineer, and properly capped. Tape is NOT an approved method. Conduit shall not extend more than 3 inches inside a junction well. See Standard Construction Details or applicable Plan Details for typical methods of termination.

All underground conduits shall be marked in the ground with a metallic warning tape. The marking tape shall be buried directly above the conduit run that it identifies, at a depth of approximately 12 inches below final grade. The tape identifying ALL conduits shall be at least 6 inches wide, and have a minimum thickness of 3 mils and 500 percent elongation.

The color of the metallic warning tape identifying fiber optic cable should be bright orange (preferably AULCC orange), and shall read "WARNING - OPTICAL CABLE" or other wording approved by the Engineer that conveys the same message. The color of the tape identifying all other cables shall be bright red, and shall read "WARNING -BURIED ELECTRIC BELOW" or other wording approved by the Engineer that conveys the same message.

Using conduit tools, rigid metallic conduit shall be cut, reamed, and threaded. The thread length shall be as necessary to ensure that the sections of conduits when screwed into a coupling and tightened correctly will butt together and the joint will be watertight. A three-piece threaded union, as approved by the Engineer, shall be used to join two threaded lengths of conduit in the case where a standard coupling will not work. A threaded union shall not be used in a conduit run that is to be driven. At no time is a threadless coupling or a split-bolt coupling to be used for direct buried conduit.

All lengths of HDPE conduit shall be connected with irreversible fusion couplings. Mechanical and removable couplings will not be accepted.

All lengths of PVC conduit shall be connected by one conduit end fitting inside the flared end of the other conduit section. If this is not possible, then a coupling may be used. Regardless of how connection is made, all joints shall be sealed with the appropriate epoxy to ensure that the two conduit pieces bond to one another to form a solid waterproof link. Using conduit tools, the conduit shall be cut and prepared. If approved by the

Engineer, a coupler module may be used where conduit segments do not align properly to allow the flared end of one conduit segment to mate with the normal end of the other segment.

Sealed end caps (with knockouts if empty) shall be placed on the ends of all conduits, after compressed air has been used to clear all foreign matter.

If not already pre-installed by the manufacturer, a polyester or polypropylene pulling rope or tape (fish wire) with a minimum rated strength of 1250 pounds shall be installed in each conduit for future use. In instances where the Contractor installs the cable, the fish wire may be eliminated.

All PVC and HDPE conduits shall have a continuous metallic trace wire installed for the entire length of the conduit run for all fiber installations.

Generally, Item No. 908020 - Erosion Control Blanket Mulch in the Department's 2016 Standard Specifications would be used to stabilize slopes that are 2:1 or flatter. For slopes that are steeper than 2:1 and/or receive a moderate amount of concentrated flow, Item No. 908021 - Turf Reinforcement Matting, Type 1 in the Department's 2016 Standard Specifications would be used for slope stabilization. However, if required Contractor shall refer to DelDOT's Erosion and Sediment Control Manual for the placement of steep slope stabilization.

Installation of Conduit Under Existing Pavement, Directional Bore -

Directional bore shall be used for installation of conduits under existing pavement with a conduit diameter not less than 1-1/2". The size of a bore shall not exceed the outside diameter of the conduit by more than 1 inch. If it does, cement grout shall be pumped into the void. Only HDPE and/or Galvanized Steel conduit may be installed by Directional Bore methods.

Installation of Conduit Under Existing Pavement, Open Cut -

Installation by sawcutting the full pavement depth and removing the existing pavement with an excavator or by hand methods, shall be used only for conduits not less than 1-1/2" diameter. The Engineer must first approve all open cutting of roadways. The width and length of open cut and patch restoration materials shall be as shown on the plan details. The Contractor shall be responsible for the removal of all cut pavement and surplus excavation, and for the replacement and correction of any damaged pavement outside the sawcut limits after the conduit(s) are installed. Asphalt pavement, concrete, base course, sawcutting, and/or borrow from an outside source as required to restore the roadway will be paid for separately under their respective bid items.

Installation of Conduit Under Existing Pavement, Unpaved Trench -

Trenching or other approved method shall be used for installation of conduit in unpaved trench or under new pavement. Backfill in conduit trenches shall be compacted thoroughly as it is being placed. At the discretion of the Engineer, sod, that must be removed for the placement of conduit, shall be removed either by the use of an approved sod cutter and then replaced, or 6 inches of topsoil shall be placed and the surface seeded in accordance with Section 734001 - Seeding. In areas where new pavement is to be placed or in areas where total reconstruction is taking place, sodding or seeding may not be required by the Engineer. Sodding and/or topsoil from an outside source if required will be paid for separately under their respective bid items. Seeding is considered incidental to the conduit item.

Installation of Conduit on Structure -

Conduit installed on structure shall consist of drilling anchors into concrete, brick, stone, steel or wood and mounting the conduit with the proper clamps or hangers. The conduit shall be attached to the structure by use of one-hole conduit hangers and approved anchors not more than 36 inches apart. Any 90-degree turns in the conduit run shall be accomplished by placing the proper size and type manufactured sweeping bends for the application needed.

Installation of Additional Conduit in Trench or Open Cut Pavement:

In the case of slotted or trenched installations, the Contractor shall install additional conduits at the same time as the initial installation. The Engineer shall indicate the quantity of conduits to be installed during a build. Additional conduits may be stacked one on top of the other, side by side or in a matrix. The orientation shall be at the Contractor's discretion, but conduits shall not twist around one another or be allowed to deviate from straight line paths except in the case of bend installations. Conduits installed at the same time in the same trench or slot shall remain oriented the same in relation to one another throughout the conduit run.

Installation of Additional Conduits in Directional Bore:

In the case of a directional bore that more than one conduit shall be installed, the Contractor shall, at the same time as the initial installation, install one (1) or more additional conduits. The Engineer shall indicate the quantity of conduits to be installed during a build. The additional conduits may be stacked one on top of the other, side by side or in a matrix. The orientation shall be at the Contractor's discretion, but conduits shall not twist around one another or be allowed to deviate from straight line paths except in the case of a gentle bend. Conduits installed at the same time, in the same bore shall remain oriented in the same relation to one another throughout the conduit run.

Method of Measurement:

The quantity of conduit furnished and installed as specified, shall be measured as the number of linear feet of conduit furnished, installed as specified, complete in place, and accepted.

The length of each conduit installed under existing pavement by a directional bore or by open cutting the pavement shall be measured along the path of the bore or open cut, from the point that cannot be trenched to the point that trenching can resume.

The length of any conduit that is reduced or divided (with a junction well or conduit body) shall be measured as part of the larger conduit.

Basis of Payment:

The quantity of conduit will be paid for at the Contract unit price per linear foot. Price and payment shall include full compensation for all materials, and labor, topsoil and seed if needed, and incidentals necessary to complete the item. Payment for all necessary couplings shall be incidental to the price of the conduit.

For conduit installed by Directional Bore, the linear foot payment also includes excavation and backfilling for Bore Equipment, placing the conduit, caps if required, and all other requirements and incidentals listed in the body of this specification.

For conduit installed by Open Cutting existing pavement, the linear foot payment also includes excavating, backfilling, placing the conduit, disposal of excess materials, and all other requirements and incidentals listed in the body of this specification.

For conduit installed in an Unpaved Trench, the linear foot payment also includes excavating, removal of sod if required, backfilling, placing the conduit, disposal of excess materials, replacing excavated on-site sod if required, seeding if required, and all other requirements and incidentals listed in the body of this specification. Sod and/or topsoil furnished from an outside source, will be paid for separately.

For conduit installed on a structure, the linear foot payment also includes furnishing and installing anchors and hangers, removal of excess materials, and all other requirements and incidentals listed in the body of this specification.

4/12/2018

911509 - MULCHING

Description:

This work consists of furnishing, placing and anchoring mulch over bear ground.

Materials:

Mulch shall be either chopped pine bark, licorice root, shredded hardwood bark, wood chips, tan bark, or an approved equal as accepted by the Engineer. All mulching materials will be visually inspected by the Area Engineer prior to delivery at the mulching site and shall conform to the following requirements:

- (a) Chopped pine bark shall be freshly prepared so as not to be decomposed or in any condition that may shorten its lifetime as an effective mulch. It shall be free of stones, sticks, weed seeds, pieces of wood, or bark that measures 4" in their longest dimension and shall not contain any toxic or foreign materials. The mulch shall contain no more than 50% of material passing through a $\frac{3}{4}$ " sieve.
- (b) Licorice root shall be the by-product of the licorice extraction process. It shall be fibrous material free from all foreign and toxic substances.
- (c) Tan bark shall be a by-product of the tanning process. It shall be fibrous and free of foreign toxic substances.
- (d) Shredded hardwood bark shall be from a deciduous hardwood source and be mechanically ground to a maximum size of 6". In addition, the bark shall be relatively free of bark fines dust and shall exclude all foreign and toxic substances.
- (e) Wood chips must be stockpiled for at least one year prior to placement as verified by the Department's inspection representative and shall not contain leaves, twigs, wood shavings and sawdust, or any foreign or toxic substances. In addition, fertilizer in accordance with Subsection 737.08 shall be applied at the rate of 0.5 lb/yd² prior to wood chip placement.

Only one of the above mulches will be selected and approved for use throughout the entire Project, and written certification for the above listed requirements of the mulch shall be submitted by the Contractor.

Construction Methods:

Mulch shall be placed such that the final elevation of the mulch is 1" lower than the sidewalk and or curb that it is abutting up too, approximately 5" +/-.

Method of Measurement:

The quantity of mulching will be measured in square yards of actual surface mulched.

Basis of Payment:

The quantity of mulching will be paid for at the Contract unit price per square yard. Price and payment will constitute full compensation for furnishing and placing all materials; for all methods of securement; and for all labor, equipment, tools and incidental to complete the required work.

2/26/19



**STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION**

**800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903**

**JENNIFER COHAN
SECRETARY**

**UTILITY STATEMENT
MAY 17, 2019
STATE CONTRACT # T201701102
P3e# 17-99006
Curb Ramp ADA Improvements,
City of Wilmington,
Pennsylvania Avenue and Part of Delaware Avenue
New Castle County, Delaware**

The following utilities own and/or maintain facilities within or near the contract limits:

**City of Wilmington Sanitary
City of Wilmington Water
Comcast
Crown Castle (Fibertech)
Delmarva Power & Light - Electric Distribution
Delmarva Power & Light - Gas
Verizon Delaware LLC
AT&T
Cavalier Telephone
XO Communications
Zayo**

The following is a breakdown of the utilities involved, adjustments and/or relocations as required (all calendar days are approximate):

City of Wilmington Sanitary

The City maintains underground facilities within the limits of Contract T201701102.

Any relocations/adjustments of the City sanitary facilities that may arise during construction will be performed by the State's Contractor in accordance with the respective agencies' standard specifications as directed by the Engineer. The State contractor shall notify the City a minimum of seven (7) calendar days in advance of the State contractor performing any necessary facility adjustments. These facility adjustments include the following:

- a. Manhole - Northwest corner, Pennsylvania Avenue/N. Harrison Street intersection
- b. Manhole - Northwest corner, Delaware Avenue/N. Adams Street intersection



State Contract No. T201701102

City of Wilmington Water

The City maintains underground facilities within the limits of Contract T201701102.

Any relocations/adjustments of the City water facilities that may arise during construction will be performed by the State's Contractor in accordance with the respective agencies' standard specifications as directed by the Engineer. The State contractor shall notify the City a minimum of seven (7) calendar days in advance of the State contractor performing any necessary facility adjustments. These facility adjustments include the following:

- a. Water Valve - Northeast corner, Pennsylvania Avenue/Tower Road intersection
- b. Fire Hydrant - Northwest corner, Pennsylvania Avenue/Woodlawn Avenue intersection
- c. Water Meter & Water Valve - Northwest corner, Pennsylvania Avenue/N. Grant Avenue intersection
- d. Water Valves (2) - Northeast corner, Pennsylvania Avenue/N. Grant Avenue intersection
- e. Water Valves (2) - Southwest corner, Pennsylvania Avenue/N. Harrison Street intersection
- f. Water Valve - Northwest corner, Delaware Avenue/N. Adams Street intersection

Comcast

Comcast maintains overhead facilities within the limits of Contract T201701102 with no apparent conflicts with the proposed construction activities.

Any relocations/adjustments to Comcast's existing facilities that may arise during construction will be performed by the appropriate Company's forces during construction of this project. The time to complete any relocations/adjustments will depend on the nature of the work.

Crown Castle (Fibertech)

Crown Castle (Fibertech) maintains underground and/or overhead facilities within the limits of Contract T201701102 with no apparent conflicts with the proposed construction activities.

Any relocations/adjustments to Crown Castle's (Fibertech) existing facilities that may arise during construction will be performed by the appropriate Company's forces during construction of this project. The time to complete any relocations/adjustments will depend on the nature of the work.

Delmarva Power – Electric Distribution

Delmarva Power – Electric maintains underground and/or overhead facilities within the limits of Contract T201701102.

Delmarva Power - Electric shall be responsible for adjusting four (4) existing electric manholes/junction wells at the following locations:

- a. Manhole - Northwest corner, Pennsylvania Avenue/N. Lincoln Street intersection
- b. Manhole - Northwest corner, Delaware Avenue/N. Harrison Street intersection
- c. Manhole - Northeast corner, Delaware Avenue/N. Harrison Street intersection
- d. Junction Well - Northwest corner, Pennsylvania Avenue/N. Harrison Street intersection

State Contract No. T201701102

It is anticipated that this work will take 5 calendar days to complete after Delmarva Power-Electric has been given a minimum of 30 calendar days notice by the State's contractor that the work shall begin, any cuts/fills/clearing have been completed, and the right-of-way and proposed work has been laid out by the State's contractor. State's Contractor to coordinate electric services with Delmarva Power – Electric.

Delmarva Power – Gas Distribution

Delmarva Power - Gas maintains underground facilities within the limits of Contract T201701102.

Delmarva Power - Gas shall be responsible for adjusting existing facilities at the following locations:

- a. Manhole - Southwest corner, Pennsylvania Avenue/Pasture Street intersection
- b. Valve (2) - Southeast corner, Pennsylvania Avenue/N. Broom Street intersection

It is anticipated that this work will take 5 calendar days to complete after Delmarva Power-Gas has been given a minimum of 30 calendar days notice by the State's contractor that the work shall begin, and the right-of-way and proposed work has been laid out by the State's contractor.

Verizon Delaware LLC

Verizon Delaware LLC maintains underground facilities within the limits of Contract T201701102.

Verizon shall be responsible for adjusting four (4) existing telephone manholes at the following locations:

- a. Northeast corner, Pennsylvania Avenue/Tower Road intersection (2)
- b. Northwest corner, Pennsylvania Avenue/N. Broom Street intersection
- c. Northwest corner, Pennsylvania Avenue/N. Franklin Street intersection

It is anticipated that this work will take 5 calendar days to complete after Verizon Delaware LLC has been given a minimum of 30 calendar days notice by the State's contractor that the work shall begin, and the right-of-way and proposed work has been laid out by the State's contractor.

AT&T

AT&T maintains underground and/or overhead facilities within the limits of Contract T201701102 with no apparent conflicts with the proposed construction activities.

Any relocations/adjustments to AT&T's existing facilities that may arise during construction will be performed by the appropriate Company's forces during construction of this project. The time to complete any relocations/adjustments will depend on the nature of the work.

Cavalier Telephone

Cavalier Telephone maintains underground and/or overhead facilities within the limits of Contract T201701102 with no apparent conflicts with the proposed construction activities.

Any relocations/adjustments to Cavalier Telephone's existing facilities that may arise during construction will be performed by the appropriate Company's forces during construction of this project. The time to complete any relocations/adjustments will depend on the nature of the work.

State Contract No. T201701102

XO Communications

XO Communications maintains underground and/or overhead facilities within the limits of Contract T201701102 with no apparent conflicts with the proposed construction activities.

Any relocations/adjustments to XO Communication's existing facilities that may arise during construction will be performed by the appropriate Company's forces during construction of this project. The time to complete any relocations/adjustments will depend on the nature of the work.

Zayo

Zayo maintains underground and/or overhead facilities within the limits of Contract T201701102 with no apparent conflicts with the proposed construction activities.

Any relocations/adjustments to Zayo's existing facilities that may arise during construction will be performed by the appropriate Company's forces during construction of this project. The time to complete any relocations/adjustments will depend on the nature of the work.

General Utility Notes

Should any conflicts be encountered during construction requiring adjustment and/or relocation outside of the companies and facilities listed above, the necessary adjustment and/or relocation work shall be accomplished by the respective agencies, as directed by the District Engineer.

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 purposes for his equipment and, if necessary, make arrangements directly with utility companies for field adjustments for adequate clearances.

2. It is understood and agreed that the contractor has considered in their bid all permanent and temporary utility appurtenances in their present or relocated positions as shown on the plans or described in the utility statement and/or are readily discernible and that no additional compensation will be allowed for any delays, inconvenience, or damage sustained by him/her 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.

3. The Contractor shall follow all requirements of the Delaware Code, Title 26, Chapter 8. Underground Utility Damage Prevention And Safety. Chapter 8 includes, among other

requirements, Section 806. Duties of Excavators which contains the requirement for the Contractor to excavate prudently and carefully and to take all reasonable steps necessary to properly protect, support and backfill underground utility lines. This protection shall include but may not be limited to hand digging, within the limits of the planned excavation or demolition, starting 2 feet of either side of the extremities of the underground utility line for other than parallel type excavations and at reasonable distances along the line of excavation for parallel type excavations.

4. 16 Del. C. § 7405B requires notification to and mutually agreeable measures from the public utility for any person intending to carry on any function, activity work or operation within dangerous proximity of any high voltage overhead lines. Close coordination with public utility companies owning overhead lines is required and must take place prior to commencement of any work. All contractors/other utilities must also maintain a distance of 10'-0" from all energized lines.

5. As outlined in Chapter 3 of the DelDOT Utilities Manual, utilities 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 highway contractor perform the necessary restoration. Any additional costs incurred as a result will be forwarded to the utility company.

7. 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 shall reflect the utility companies' proposed relocations. The utility companies do not work on weekends or legal holidays.

State Contract No. T201701102

Bryan Lennon	City of Wilmington Sanitary	blennon@wilmingtonde.gov	(302) 576-3075
Vince Carroccia	City of Wilmington Water	vcarroccia@wilmingtonde.gov	(302) 576-3081
Matt Murray	Comcast (Americomm, LLC)	mattm@americomm-llc.com	(717) 509-7873
Bill Muehlberger	Crown Castle (Fibertech)	bmuehlberger@lighttower.com	(585) 743-1773
Angel Collazo	Delmarva Power Electric – Distribution	angel.collazo@delmarva.com	(302) 454-4370
Laszlo Keszler	Delmarva Power Gas	laszlo.keszler@delmarva.com	(302) 429-3069
George Zang	Verizon Delaware LLC	george.w.zang@verizon.com	(302) 422-1238
Jay Everly	AT&T	jay@trecgroup.com	(610) 238-6465
Harry Sheppard	Cavalier Telephone	harry.sheppard@windstream.com	(302) 224-7121
Mike Yancey	XO Communications	m.yanceyl@verizon.com	(703) 391-5765
Chris Ricciuti	Zayo	Chris.ricciuti@zayo.com	(484) 696-3903

PREPARED AND RECOMMENDED BY:

Zachary Scholl
Digitally signed by Zachary Scholl
 DN: cn=Zachary Scholl, ou=ballroom,
 ou=rrk, ou=UserAccounts, dc=ad,
 dc=rrk, dc=com
 Date: 2019.05.21 12:52:23-0400

Rummel, Klepper & Kahl, LLP
 Consulting Engineers
zscholl@rkk.com

05/21/2019
 Date

APPROVED AS TO FORM BY:


 Utilities Engineer, DelDOT
Chuck.Ferguson@delaware.gov

22 May 2019
 Date

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

CERTIFICATE OF RIGHT-OF-WAY STATUS

STATE PROJECT NO. T201701102

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

CURB RAMP ADA IMPROVEMENTS, CITY OF WILMINGTON,
PENNSYLVANIA AVENUE AND PART OF DELAWARE AVENUE

NEW CASTLE COUNTY

Certificate of Right-of-Way Status - Conditional

STATUS - LEVEL 3

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

The acquisition or right of occupancy and use of some remaining parcels is not complete, but all occupants of the residences on such parcels has had replacement housing made available to them in accordance with 49 CFR 24.04. The parcels which are not available are:

Parcel 6-L – CVS – waiting for funds to be disbursed and execution of agreement

All necessary real property interests have been or shall be acquired in accordance with current FHWA/State directives covering the acquisition of real property.

No occupants were permanently displaced for this project and the State has physical possession and the right to remove, salvage, or demolish any personal property acquired as part of this project.

The State shall ensure that any occupants of residences, businesses, farms, or non-profit organizations and who have not yet moved from the right-of-way are protected against unnecessary inconvenience and disproportionate injury or any action coercive in nature.; and,

Anticipated clearance for all parcels is September 15, 2019.

RIGHT OF WAY SECTION



Monroe C. Hite, III
Chief of Right of Way

June 19, 2019



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

JENNIFER COHAN
SECRETARY

April 26, 2019

ENVIRONMENTAL REQUIREMENTS

FOR
State Contract No. T201701102
Federal Aid No.: N/A

Contract Title: Curb Ramp ADA Improvements, City of Wilmington, Pennsylvania Avenue, and part of Delaware Avenue

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, but listed below, 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 (302) 760-2264 must be notified 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.: T201701102

Federal Aid No.:

Project Title: Curb Ramp ADA Improvements, City of Wilmington, Pennsylvania Avenue & Part of Delaware Avenue

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.: N/A No. Trains/Day: N/A Passenger Trains (Y / N): N/A

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

14 June 18

DATE

BID PROPOSAL FORMS

CONTRACT T201701102.01

UNLESS OTHERWISE DIRECTED, SUBMIT ALL FOLLOWING PAGES TO:

DEPARTMENT OF TRANSPORTATION
BIDDERS ROOM
800 BAY ROAD
DOVER, DELAWARE 19901

Identify the following on the outside of the sealed envelope:

- Contract Number T201701102.01
- Name of Contractor

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 1
DATE:

CONTRACT ID: T201701102.01 PROJECT(S): T201701102

All figures must be typewritten.

CONTRACTOR : _____

LINE	ITEM	APPROX.	UNIT PRICE	BID AMOUNT
NO	DESCRIPTION	QUANTITY	----- -----	-----
		AND UNITS	DOLLARS CTS	DOLLARS CTS

SECTION 0001 Category 0001

0010	201000 CLEARING AND GRUBBING	LUMP	LUMP	
0020	202000 EXCAVATION AND EMBANKMENT	300.000		
		CY		
0030	209006 BORROW, TYPE F	100.000		
		CY		
0040	211001 REMOVAL OF PORTLAND CEMENT CONCRETE PAVEMENT, CURB AND SIDEWALK	1808.000		
		SY		
0050	301002 GRADED AGGREGATE BASE COURSE, TYPE B, PATCHING	132.000		
		CY		
0060	401026 BITUMINOUS CONCRETE, SUPERPAVE TYPE C, 160 GYRATIONS PG 64-22 PATCHING	68.000		
		TON		
0070	401027 BITUMINOUS CONCRETE, SUPERPAVE TYPE B, 160 GYRATIONS PG 64-22 PATCHING	103.000		
		TON		
0080	401028 BITUMINOUS CONCRETE, SUPERPAVE BITUMINOUS CONCRETE BASE COURSE, 160 GYRATIONS PG 64-22 PATCHING	169.000		
		TON		

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 2
DATE:

CONTRACT ID: T201701102.01 PROJECT(S): T201701102

All figures must be typewritten.

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS CTS	BID AMOUNT DOLLARS CTS
0090	602130 ADJUSTING AND REPAIRING EXISTING DRAINAGE INLET	25.000 EACH		
0100	602131 ADJUSTING AND REPAIRING EXISTING DOUBLE DRAINAGE INLET	1.000 EACH		
0110	628011 CRACK SEALING BRIDGE DECKS, APPROACH SLABS, SIDEWALKS, ETC	60.000 LF		
0120	701010 PORTLAND CEMENT CONCRETE CURB, TYPE 1-2	104.000 LF		
0130	701011 PORTLAND CEMENT CONCRETE CURB, TYPE 1-4	805.000 LF		
0140	701012 PORTLAND CEMENT CONCRETE CURB, TYPE 1-6	2224.000 LF		
0150	701013 PORTLAND CEMENT CONCRETE CURB, TYPE 1-8	77.000 LF		
0160	705001 PORTLAND CEMENT CONCRETE SIDEWALK, 4"	4970.000 SF		
0170	705002 PORTLAND CEMENT CONCRETE SIDEWALK, 6"	9045.000 SF		
0180	705007 SIDEWALK SURFACE DETECTABLE WARNING SYSTEM	1340.000 SF		

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 3
DATE:

CONTRACT ID: T201701102.01 PROJECT(S): T201701102

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CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS CTS	BID AMOUNT DOLLARS CTS
0190	705504 BRICK AND/OR BLOCK SIDEWALK	320.000 SF		
0200	705505 REST STONE/BRICK SIDEWALK AND/OR STONE/BRICK ROADWAY	335.000 SF		
0210	710002 ADJUST WATER VALVE BOXES	8.000 EACH		
0220	710003 ADJUST FIRE HYDRANTS	1.000 EACH		
0230	711500 ADJUST AND REPAIR EXISTING SANITARY MANHOLE	2.000 EACH		
0240	760014 ENTRANCE, DRIVEWAY AND INTERSECTING STREET MILLING SURCHARGE	2.000 SY		
0250	762000 SAW CUTTING, BITUMINOUS CONCRETE	2855.000 LF		
0260	762001 SAW CUTTING, CONCRETE, FULL DEPTH	917.000 LF		
0270	763000 INITIAL EXPENSE/DE-MOBILIZATION	LUMP	LUMP	
0280	763501 CONSTRUCTION ENGINEERING	LUMP	LUMP	

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 4
DATE:

CONTRACT ID: T201701102.01 PROJECT(S): T201701102

All figures must be typewritten.

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS CTS	BID AMOUNT DOLLARS CTS
0290	801500 MAINTENANCE OF TRAFFIC, ALL INCLUSIVE	LUMP	LUMP	
0300	817002 PERMANENT PAVEMENT STRIPING, SYMBOL/LEGEND, ALKYD-THERMOPLASTIC	SF 11124.000		
0310	817013 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, WHITE/YELLOW, 5"	LF 200.000		
0320	817031 REMOVAL OF PAVEMENT STRIPING	SF 5924.000		
0330	817565 CURB PAINT	LF 10.000		
0340	830001 CONDUIT JUNCTION WELL, TYPE 1, 20" X 20" PRECAST CONCRETE	EACH 5.000		
0350	830002 CONDUIT JUNCTION WELL, TYPE 4, 20" X 42-1/2" PRECAST CONCRETE	EACH 2.000		
0360	830008 ADJUST OR REPAIR EXISTING CONDUIT JUNCTION WELL	EACH 17.000		
0370	830010 REMOVAL OF EXISTING JUNCTION WELL	EACH 3.000		

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE:
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5

CONTRACT ID: T201701102.01

PROJECT(S): T201701102

All figures must be typewritten.

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS CTS	BID AMOUNT DOLLARS CTS
0380	831513 FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT (TRENCH)	10.000 LF		
0390	831514 FURNISH AND INSTALL 2-1/2" SCHEDULE 80 PVC CONDUIT (TRENCH)	175.000 LF		
0400	831516 FURNISH AND INSTALL 4" SCHEDULE 80 PVC CONDUIT (TRENCH)	25.000 LF		
0410	831523 FURNISH AND INSTALL 2" GALVANIZED CONDUIT (TRENCH)	65.000 LF		
0420	831525 FURNISH AND INSTALL 3" GALVANIZED STEEL CONDUIT (TRENCH)	10.000 LF		
0430	831526 FURNISH AND INSTALL 4" GALVANIZED STEEL CONDUIT (TRENCH)	15.000 LF		
0440	831545 FURNISH AND INSTALL 4" HDPE SDR-13.5 CONDUIT (BORE)	325.000 LF		
0450	831574 FURNISH AND INSTALL SECOND AND SUBSEQUENT ADDITIONAL 4" SCHEDULE 80 PVC CONDUIT IN TRENCH OR OPEN CUT	45.000 LF		

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE:
DATE:

6

CONTRACT ID: T201701102.01

PROJECT(S): T201701102

All figures must be typewritten.

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS CTS	BID AMOUNT DOLLARS CTS
0460	831578 FURNISH AND INSTALL SECOND AND SUBSEQUENT ADDITIONAL 4" LF HDPE SDR-13.5 CONDUIT IN DIRECTIONAL BORE	45.000		
0470	833001 BONDING AND GROUNDING EXISTING JUNCTION WELL	10.000 EACH		
0480	834005 POLE BASE, TYPE 4A	12.000 EACH		
0490	834007 POLE BASE EXTENSION	4.200 CF		
0500	835003 CABINET BASE TYPE P	1.000 EACH		
0510	908004 TOPSOIL, 6" DEPTH	60.000 SY		
0520	908016 PERMANENT GRASS SEEDING, SUBDIVISION	60.000 SY		
0530	911509 MULCHING	625.000 SY		
	SECTION 0001 TOTAL			
	TOTAL BID			



**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, not required from subcontractors)

CERTIFICATION
Contract No. T201701102.01

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	No.	Date	No.	Date	No.	Date	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 _____

Agreement to Accept Retainage

"Bidder acknowledges that if its Performance-Based Rating as defined in 29 Del.C. §6962 and section 2408 NEW of Title 2 of Delaware's Administrative Code is below the required minimum threshold, as a condition to bid, Bidder acknowledges, consents and agrees to the Department withholding retainage of up to 5% from the monies due at the time of each progress payment under the contract."

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

Corporate
Seal

By: _____

Name of Bidder (Organization)

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. T201701102.01 , 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