

# STATE OF DELAWARE

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



## DEPARTMENT OF TRANSPORTATION

### BID PROPOSAL

for

CONTRACT T201601103.01

SR 48, SR 141 TO UNION STREET PAR  
AND PAVEMENT IMPROVEMENTS

NEW CASTLE COUNTY

ADVERTISEMENT DATE: February 17, 2020

COMPLETION TIME: 243 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 **March 10, 2020**

SR 48, SR 141 TO UNION STREET PAR AND PAVEMENT IMPROVEMENTS  
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 project is primarily pedestrian centric to improve the accessible routes and sidewalks along Lancaster Pike from West Court Drive to North Dupont Road. The improvements consist of furnishing all labor and materials for upgrading sidewalks, upgrading curb ramps, an accessible connection/crosswalk at the Lancaster Pike traffic signal near the Seven Day Farmers Market, a hawk signal near Mary Ella Drive, and lighting improvements. Also included in this project are pavement upgrades on Lancaster Pike from Barley Mill Plaza/Chestnut Run to Union Street 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 243 Calendar Days. The Contract Time includes an allowance for 28 Weather Days. It is the Department's intent to issue a Notice to Proceed such that work starts on or about April 20, 2020.

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](mailto: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 March 10, 2020 unless changed via addendum.
2. QUESTIONS regarding this project are to be e-mailed to [dot-ask@delaware.gov](mailto:dot-ask@delaware.gov) no less than six business days prior to the bid opening date in order to receive a response. Please include T201601103.01 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.
12. **ADDITIONAL INSURANCE REQUIREMENTS:**  
See additional insurance requirements found in Provision 801501-Maintenance of Railroad Traffic.

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

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

\*Not used for units of measurement for payment.

## TABLE OF CONTENTS

<b>GENERAL DESCRIPTION.....</b>	<b><u>i</u></b>
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>
<b>GENERAL NOTICES.....</b>	<b><u>1</u></b>
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>1</u>
EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS.....	<u>2</u>
TAX CLEARANCE.....	<u>2</u>
LICENSE.....	<u>2</u>
DIFFERING SITE CONDITIONS.....	<u>2</u>
RIGHT TO AUDIT.....	<u>3</u>
<b>PREVAILING WAGES.....</b>	<b><u>3</u></b>
STATE WAGE RATES.....	<u>5</u>
<b>SUPPLEMENTAL SPECIFICATIONS.....</b>	<b><u>6</u></b>
<b>SPECIAL PROVISIONS.....</b>	<b><u>7</u></b>
CONSTRUCTION ITEM NUMBERS.....	<u>8</u>
401502 - ASPHALT CEMENT COST ADJUSTMENT.....	<u>9</u>
211512 - REMOVAL OF HANDRAIL.....	<u>10</u>
401699 - QUALITY CONTROL/QUALITY ASSURANCE OF BITUMINOUS CONCRETE.....	<u>11</u>
615519 - RELOCATING BUS STOP SHELTER.....	<u>25</u>
701506 - REMOVE AND RESET P.C.C. PARKING BUMPERS.....	<u>26</u>
701511 - PORTLAND CEMENT CONCRETE CURB, SPECIAL.....	<u>27</u>
705512- TEMPORARY DETECTABLE WARNING SYSTEM.....	<u>28</u>
705522 - PCC SIDEWALK, SPECIAL 1.....	<u>30</u>
705523 - PCC SIDEWALK, SPECIAL 2.....	<u>30</u>
705528 - TEMPORARY PEDESTRIAN CONNECTION.....	<u>31</u>
711500 - ADJUST AND REPAIR EXISTING SANITARY MANHOLE.....	<u>32</u>
763597 - UTILITY CONSTRUCTION ENGINEERING.....	<u>33</u>
763621 - CONSTRUCTION ENGINEERING, REHABILITATION.....	<u>34</u>
801500 - MAINTENANCE OF TRAFFIC - ALL INCLUSIVE.....	<u>36</u>
801501 - MAINTENANCE OF RAILROAD TRAFFIC.....	<u>41</u>
813500 - PEDESTRIAN CHANNELIZING BARRICADE SYSTEM.....	<u>44</u>
813501 - TEMPORARY SIDEWALK, TYPE 2 (BOARDWALK).....	<u>45</u>
818504 - RELOCATE SIGN.....	<u>46</u>
831501 - FURNISH AND INSTALL 4" SCHEDULE 80 PVC CONDUIT (OPEN CUT).....	<u>47</u>
831514 - FURNISH AND INSTALL 2-1/2" SCHEDULE 80 PVC CONDUIT (TRENCH).....	<u>47</u>
831515 - FURNISH AND INSTALL 3" SCHEDULE 80 PVC CONDUIT (TRENCH).....	<u>47</u>
831516 - FURNISH AND INSTALL 4" SCHEDULE 80 PVC CONDUIT (TRENCH).....	<u>47</u>
831523 - FURNISH AND INSTALL 2" GALVANIZED STEEL CONDUIT (TRENCH).....	<u>47</u>
831545 - FURNISH AND INSTALL 4" HDPE SDR-13.5 CONDUIT (BORE).....	<u>47</u>
850520 - LUMINAIRE (LED), 150 WATTS HPS EQUIVALENT.....	<u>52</u>
<b>UTILITY STATEMENT.....</b>	<b><u>55</u></b>
<b>RIGHT OF WAY CERTIFICATE.....</b>	<b><u>65</u></b>
<b>ENVIRONMENTAL STATEMENT.....</b>	<b><u>66</u></b>

<b>RAILROAD STATEMENT. ....</b>	<b><a href="#"><u>67</u></a></b>
<b>BID PROPOSAL FORMS. ....</b>	<b><a href="#"><u>68</u></a></b>
<b>DRUG TESTING AFFIDAVIT. ....</b>	<b><a href="#"><u>81</u></a></b>
<b>CERTIFICATION. ....</b>	<b><a href="#"><u>82</u></a></b>
<b>BID BOND. ....</b>	<b><a href="#"><u>84</u></a></b>

## 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: 02/05/2020

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: T201601103.01 SR 48 SR 141 to Union Street Par and Pavement Improvements,  
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](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

**211512 - REMOVAL OF HANDRAIL**

**Description:**

The item shall consist of removal and disposal of existing handrail in accordance with the Plans and as directed by the Engineer.

**Material:**

Grout

Section 1047

**Construction:**

Carefully remove the existing handrail, posts, concrete anchors, steel foundation tubes, and hardware to avoid damaging the existing masonry wall. Any component of the existing masonry wall that is damaged by the Contractor during removal of the existing handrail shall be replaced by the Contractor at no expense to the Department. All removed material shall become the property of the Contractor and shall be removed from the site and disposed in accordance with 106.08.

Cavities shall be filled with Grout, in accordance with Section 1047, and shall be completed the same working day as the handrail removal. The finished grade shall be flush with the top of the existing masonry wall.

**Method of Measurement & Basis of Payment:**

Removal of Handrail will not be measured but the cost will be incidental to Item 211000 Removal of Structures and Obstructions. Price and Payment will constitute full compensation for furnishing all Materials, Equipment, labor, and incidentals to removing the handrail. The Department will not make separate payment for excavating, backfilling, and compacting cavities resulting from the removal of handrail, storing, and protecting Materials in the Right-of-Way.

5/31/2019



**401699 - QUALITY CONTROL/QUALITY ASSURANCE OF BITUMINOUS CONCRETE**

**.01 Description**

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

**.02 Bituminous Concrete Production – Quality Acceptance**

**(a) Material Production - Tests and Evaluations.**

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

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

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

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

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

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

production. If the actual production is going to be 50 tons or greater over the anticipated sub lot production, a new sample location will be determined on a statistically random, unbiased basis based upon the new actual production. The Engineer will combine the evaluation and test results for all of the applicable sublots in order to evaluate each individual lot.

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

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

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

**(b) Pavement Construction - Tests and Evaluations.**

The Engineer will directly base acceptance on the compaction acceptance test results, and on the inspection of the construction, the Contractor's QC Plan work, ride smoothness as referenced in the contract documents, lift thickness as referenced in the contract documents, joint quality as referenced in the contract documents, surface texture as referenced in the contract documents, and possibly the comparisons of the acceptance test results to the independent test results. For the compaction acceptance testing, the Engineer will sample the work on a statistically random basis, and will test and evaluate the work based on daily production.

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

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

The Engineer will evaluate and accept the compaction work on a daily basis. Payment for the compaction will be calculated by using the material production lots as referenced in **.02 Acceptance Plan (a) Material**

**Production - B Tests and Evaluation** and analyzing the compaction results over the individual days covered in the material production lot. The compaction results will be combined with the material results to obtain a payment for this item.

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

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

Testing locations will be a minimum of 1.0 feet from the newly placed longitudinal joint and 50 feet from a new transverse joint.

Cut one six (6) inch diameter core through the full lift depth at the exact location marked by the Engineer. Cores submitted that are not from the location designated by the Engineer will not be tested and will be paid at zero pay.

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

Provide any traffic control required for the structural number investigation, sampling, and testing work at no additional cost to the Department.

Commence coring of the pavement after the pavement has cooled to a temperature of 140°F or less. Cut each core with care in order to prevent damaging the core. Damaged cores will not be tested. Label each core with contract number, date of construction, and number XX of XX upon removal from the roadway. Place cores in a 6-inch diameter plastic concrete cylinder mold or approved substitute for protection. Separate cores in the same cylinder mold with paper. Attach a completed QC test record for the represented area with the corresponding cores. The Engineer will also complete a test record for areas tested for the QA report and provide to Materials & Research. Deliver the cores to the Engineer for testing, processing, and report distribution at the end of each production day.

Repair core holes per Appendix A, Repairing Core Holes in Bituminous Asphalt Pavements. Core holes shall be filled immediately. Failure to repair core holes at the time of coring will result in zero pay for compaction testing for the area in question.

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

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

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

use the JMF design value in addition to the available values to calculate the average theoretical maximum specific gravity.

### **.03 Payment and Pay Adjustment Factors.**

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

Pay Adjustment factors will only be calculated on in place material. Removed material will not be used in payment adjustment calculations.

Material Production Pay Adjustments will be calculated based upon 70% of the contract unit price and calculated according to section .03(a) of this specification. Pavement construction Pay Adjustments will be calculated based upon 30% of the contract unit price and calculated according to section .03(b) of this specification.

#### **(a) Material Production - Pay Adjustment.**

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

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

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

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

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

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

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

outside of the Single Test Tolerance parameters defined in Table 2, the Material Pay Adjustment factor shall be determined by Column C

9. For each lot, determine the final material price adjustment:

Final Material Pay Adjustment =

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

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

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

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

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

Table 3 – Quality Level Analysis by the Standard Deviation Method							
PU or PL	QU and QL for “n” Samples						
	n = 3	n = 4	n = 5	n = 6	n = 7	n = 8	n = 9
100	1.16	1.50	1.79	2.03	2.23	2.39	2.53
99	-	1.47	1.67	1.80	1.89	1.95	2.00
98	1.15	1.44	1.60	1.70	1.76	1.81	1.84
97	-	1.41	1.54	1.62	1.67	1.70	1.72
96	1.14	1.38	1.49	1.55	1.59	1.61	1.63
95	-	1.35	1.44	1.49	1.52	1.54	1.55
94	1.13	1.32	1.39	1.43	1.46	1.47	1.48
93	-	1.29	1.35	1.38	1.40	1.41	1.42
92	1.12	1.26	1.31	1.33	1.35	1.36	1.36
91	1.11	1.23	1.27	1.29	1.30	1.30	1.31
90	1.10	1.20	1.23	1.24	1.25	1.25	1.26
89	1.09	1.17	1.19	1.20	1.20	1.21	1.21
88	1.07	1.14	1.15	1.16	1.16	1.16	1.17

87	1.06	1.11	1.12	1.12	1.12	1.12	1.12
86	1.04	1.08	1.08	1.08	1.08	1.08	1.08
85	1.03	1.05	1.05	1.04	1.04	1.04	1.04
84	1.01	1.02	1.01	1.01	1.00	1.00	1.00
83	1.00	0.99	0.98	0.97	0.97	0.96	0.96
82	0.97	0.96	0.95	0.94	0.93	0.93	0.93
81	0.96	0.93	0.91	0.90	0.90	0.89	0.89
80	0.93	0.90	0.88	0.87	0.86	0.86	0.86
79	0.91	0.87	0.85	0.84	0.83	0.82	0.82
78	0.89	0.84	0.82	0.80	0.80	0.79	0.79
77	0.87	0.81	0.78	0.77	0.76	0.76	0.76
76	0.84	0.78	0.75	0.74	0.73	0.73	0.72
75	0.82	0.75	0.72	0.71	0.70	0.70	0.69
74	0.79	0.72	0.69	0.68	0.67	0.66	0.66
73	0.75	0.69	0.66	0.65	0.64	0.63	0.63
72	0.74	0.66	0.63	0.62	0.61	0.60	0.60
71	0.71	0.63	0.60	0.59	0.58	0.57	0.57
70	0.68	0.60	0.57	0.56	0.55	0.55	0.54
69	0.65	0.57	0.54	0.53	0.52	0.52	0.51
68	0.62	0.54	0.51	0.50	0.49	0.49	0.48
67	0.59	0.51	0.47	0.47	0.46	0.46	0.46
66	0.56	0.48	0.45	0.44	0.44	0.43	0.43
65	0.52	0.45	0.43	0.41	0.41	0.40	0.40
64	0.49	0.42	0.40	0.39	0.38	0.38	0.37
63	0.46	0.39	0.37	0.36	0.35	0.35	0.35
62	0.43	0.36	0.34	0.33	0.32	0.32	0.32

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

Table 4 - PWL Pay Adjustment Factors		
PWL	Pay Adjustment Factor (%) Column B	Pay Adjustment Factor (%) Column C
100	+5	0
99	+4	-1
98	+3	-2
97	+2	-3
96	+1	-4

95	0	-5
94	-1	-6
93	-2	-7
92	-3	-8
91	-4	-9
PWL<91	PWL - 100	PWL - 100

**(b) Pavement Construction - Pay Adjustments.**

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

- Degree of compaction of the in-place material

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

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

Table 5: Compaction Price Adjustment Highway Locations		
Degree of Compaction (%)	Range	Pay Adjustment Factor (%)
$\geq 97.0$	$\geq 96.75$	-100*
96.5	96.26 – 96.74	-5
96.0	95.75 – 96.25	-3
95.5	95.26 – 95.74	-2
95.0	94.75 – 95.25	0
94.5	94.26 – 94.74	0
94.0	93.75 – 94.25	1

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

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

**Table 5A: Compaction Price Adjustment Other<sup>1</sup> Locations**

Degree of Compaction	Range	Pay Adjustment Factor (%)
$\geq 97.0$	$\geq 96.75$	-100*
96.5	96.26 – 96.74	-5
96.0	95.75 – 96.25	-3
95.5	95.26 – 95.74	-2
95.0	94.75 – 95.25	0
94.5	94.26 – 94.74	0
94.0	93.75 – 94.25	0
93.5	93.26 – 93.74	1
93.0	92.75 – 93.25	3
92.5	92.26 – 92.74	1
92.0	91.75 – 92.25	0
91.5	91.26 – 91.74	0
91.0	90.75 – 91.25	0
90.5	90.26 – 90.74	0
90.0	89.75 – 90.25	0
89.5	89.26 – 89.74	0
89.0	88.75 – 89.25	-1
88.5	88.26 – 88.74	-3



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

\* or remove and replace at Engineer's discretion

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

#### **.04 Dispute Resolution.**

Disputes or questions about any test result shall be brought to the attention of the Contractor and the Engineer within two operational days of reported test results. The following dispute resolution procedures will be used.

The Engineer and the Contractor will review the sample quality, the test method, the laboratory equipment, and the laboratory technician. If these factors are not the cause of the dispute, a third party dispute resolution will be used.

Third party resolution testing can be performed at either another Contractor's laboratory, the Engineer's laboratory, or an independent accredited laboratory. Unless otherwise mutually agreed upon by DAPA and the Engineer, the Engineer's qualified laboratory in Dover and qualified personnel shall conduct the necessary testing for third party Dispute Resolution after the Engineer has provided reasonable notice to allow the Contractor to witness this testing.

When disputes over production testing occur, the samples used for Dispute Resolution testing will be those samples properly captured, labeled, and stored, as described in the second paragraph of the section of these specifications titled **.02 Acceptance Plan, (a) Material Production - Tests and Evaluations**. If no samples are available, the original testing results will be used for payment calculations.

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

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

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

The results of the dispute resolution testing shall replace all of the applicable disputed test results for payment purposes.

## **Appendix A - Repairing Core Holes in Bituminous Asphalt Pavement**

### **Description.**

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

### **Materials and Equipment.**

The following material shall be available to complete this work:

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

The following equipment shall be available to complete this work:

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

### **Construction Method.**

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

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

### **Performance Requirements.**

The Engineer will judge the patch on the following basis:

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

### **Basis of Payment.**

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

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

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

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

### Structural Number Calculations

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

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

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

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

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

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

### Example:

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

Calculation:

For the Type B lift the calculation would be:

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

For the Type C lift the calculation would be:

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

11/3/14

**615519 - RELOCATING BUS STOP SHELTER**

**Description:**

The item shall consist of relocation of the existing bus shelter and the construction of a 8" depth P.C.C. sidewalk pad for the relocated bus shelter in accordance with notes on Plans and as directed by the Engineer. The bus stop shall be kept in service at all times unless approval otherwise is obtained from the Engineer.

**Material:**

Materials required for the construction of the concrete pad shall conform to the requirements of Section 610. The anchor bolts shall be fabricated in accordance with ASTM A36 and galvanized in accordance with ASTM A153. The nuts and washers shall be grade 18-8 stainless steel.

**Construction Methods:**

The existing bus shelter shall be removed as one unit as carefully as possible to avoid damaging any components. The trash can shall also be carefully removed. The Contractor shall store the bus shelter and trash can until the concrete pad is completed.

The new bus shelter pad shall be constructed with a bolt pattern that matches the locations on the existing pad.

The salvaged shelter shall be installed on the new pad. Any component that is damaged by the Contractor shall be replaced by the Contractor.

The trash can shall be installed as directed by the Engineer.

**Method of Measurement & Basis of Payment:**

Removing, storing and relocating bus shelter and trash can, furnishing and installing the anchor bolts, construction of the P.C.C. pad and furnishing and placing the welded wire fabric shall be paid for at the contract unit price bid per Each for "Relocating Bus Shelter", which price and payment shall constitute full compensation for removing, storing, relocating and anchoring the bus shelter and trash can, and for all labor, tools and equipment necessary to complete this item of work. Any component of the bus shelter that is damaged by the Contractor shall be replaced by the Contractor at his own expense. Excavation shall be paid for under Section 207, "Excavation and Backfill for Structures".

1/30/2020

**701506 - REMOVE AND RESET P.C.C. PARKING BUMPERS**

**Description:**

This work consists of removing and resetting existing portland cement concrete bumpers in accordance with the details and notes shown on Plans. The new locations for resetting the parking bumpers shall be in accordance with Plans or will be determined in the field by the Engineer.

**Materials and Construction Methods:**

The Contractor shall remove and reset the parking bumpers exercising precaution to avoid damage. If, in the opinion of the Engineer, the parking bumpers are damaged by the Contractor's negligence, the damaged bumpers shall be replaced at the Contractor's expense.

Unless specified otherwise on the Plans, each parking bumper shall be anchored with two (2) 450 mm number 13 rebars driven flush with the top of the bumper. Reuse of existing anchor pins will be permitted if in the opinion of the Engineer their use will provide satisfactory anchorage.

Any surface preparation necessary to provide a stable installation of the bumpers will be considered incidental to this item.

**Method of Measurement:**

The quantity of P.C.C. parking bumpers removed and reset will be measured as the actual number of bumpers removed, reset and accepted.

**Basis of Payment:**

The quantity of P.C.C. parking bumpers removed and reset will be paid for at the Contract unit cost per each. Price and payment will constitute full compensation for removing and resetting the parking bumpers, anchor pins, and for all labor, equipment, tools and incidentals necessary to complete the work.

5/31/2019



**701511 - PORTLAND CEMENT CONCRETE CURB, SPECIAL**

**Description:**

This work consists of furnishing and constructing Portland Cement Concrete Curb, Special in accordance with the notes and details on the Plans and as directed by the Engineer. This item is to be used for construction of curb with a height greater than 8 inches, but less than 12 inches.

**Materials and Construction Methods:**

Materials and construction methods for Portland cement concrete curb, special shall conform to the requirements of Section 701 of the Standard Specifications, and the notes and details on the Plans.

**Method of Measurement and Basis of Payment:**

The quantity of Portland cement concrete curb, special will be measured and paid for in accordance with Subsections 701.04 and 701.05 of the Standard Specifications.

11/20/2019

**705512- TEMPORARY DETECTABLE WARNING SYSTEM****Description:**

This work consists of furnishing all materials and installing a temporary detectable warning system on an existing pavement, sidewalk or curb ramp that complies with the current accessibility guidelines of the Americans with Disabilities Act (ADA). The temporary surface mounted detectable warning system shall be in accordance with these Special Provisions, the Plans, the Standard Construction Details and as directed by the Engineer.

**Materials:**

The temporary detectable warning surfaces shall be either flexible or rigid surface mounted and included on the qualified products list below or an approved equal.

Manufacturers seeking inclusion of their product shall submit certified test results showing conformance to the Physical Properties section of this special provision, as well as installation instructions and the types of adhesives and sealants required.

<b>MANUFACTURER</b>	<b>PRODUCT NAME</b>	<b>DESCRIPTION</b>	<b>COLOR(S)</b>	<b>PHYSICAL TEST REQUIREMENTS</b>
Access Tile	Surface Applied	Surface Mount, Rigid	Yellow, Oynx, Black, Ochre Yellow, Pearl White, Colonial Red, Brick Red	A, B, C, D, E, G
ADA Solutions, Inc.	Surface Applied Paver	Surface Mount, Rigid	Yellow, Red Brick	A, B, C, D, E, G
Armor Tile Engineered Plastics, Inc.	Surface Applied Tile	Surface Mount, Rigid	Yellow, Red, Gray	A, B, C, D, E, G
Armorcast Products Co.	Tile Panel	Surface Mount, Rigid	Yellow	A, B, C, D, E, G
Ennis-Flint Trading Co.	Topmark	Surface Mount, Flexible	Black, Brick Red	A, B, C, D, F, G

**Configuration and Dimensions**

The temporary detectable warning surface shall consist of a system of truncated domes having a base diameter of 0.9 in. to 1.4 in., a top diameter 50 to 65 percent of the base diameter, and a height of 0.2 in. The domes shall be arranged in a square grid with center to center spacing of 1.66 to 2.35 in.

**Color**

The color shall be homogeneous across the surface of the material and contrast with adjoining surfaces.

**Identification**

The top surface shall have an identifier that uniquely distinguishes the manufacturer.

**Physical Properties**

	<b>PROPERTY</b>	<b>ASTM TEST METHOD</b>	<b>SPECIFICATION LIMIT</b>
A	Slip Resistance Coefficient	C 1028 (dry method)	0.80 minimum
B	Abrasive Wear, index	C 501	150 minimum
C	Fade (UV) Resistance/Color Retention	D 4587	Fade or Change in color after 2000 hours less than ?E=5*
D	Freeze/Thaw Resistance	C 1026	No disintegration
E	Adhesion/Bond Strength, pull off	C 482/C 882 (as appropriate)	No adhesion failure
F	Adhesion/Bond Strength, peel	D 903/ D 429 (modified as	No adhesion failure

		appropriate)	
G	Contract	Contrast percentage formula** using E 1349 to determine cap Y brightness/light reflectance values (LRV)	Current ADA requirement***

\*Chromaticity coordinates (L\*a\*b\*system) checked in conformance with D 2244, before and after test.

\*\*Contract % =  $[(B1 - B2)/B1] \times 100$ ,

Where B1= (LRV) of the lighter area, and B2= (LRV) of the darker area

\*\*\* For the purpose of determining whether a material meets acceptable contract criteria, use actual cap Y brightness of detectable warning surface, and assume a value of 15 for the cap Y brightness of cured concrete, or a value of 4 for asphalt wearing surfaces to determine percentage difference. Detectable warning surfaces to be installed on other materials are required to undergo additional testing.

### **Construction Methods**

The temporary detectable warning system shall be surface applied. Install the system according to the manufacturer's recommendations. Unless specifically addressed in the manufacturer's recommendations, remove the existing surface texturing by grinding or other means. Remove all old adhesives and sealants.

The temporary detectable warning surface shall be 24 in. wide in the direction of pedestrian travel and installed for the full width of the pedestrian access route, sidewalk, curb ramp, landing, or blended transition. Do not bridge or overhand cracks or expansion joints.

Ensure that the vertical edges of the installed system are not more than 0.5 in. above the adjacent surfaces. Place a 2:1 or flatter bevel on edges that are more than 0.25 in. above the adjacent surface. The same edge requirements apply to cut material.

### **Method of Measurement:**

The quantity of temporary detectable warning system will be measured as the actual number of square feet completed and accepted by the Engineer.

### **Basis of Payment:**

The quantity of temporary detectable warning system will be paid for at the Contract Unit Price per square foot. Price and payment constitutes full compensation for furnishing all materials, cleaning existing surface, installing, maintenance for the duration of the contract, removing and disposing of the temporary detectable warning system, adhesives, sealants, hardware, and for all labor, equipment, tools and incidentals required to complete the Work.

11/28/2018

**705522 - PCC SIDEWALK, SPECIAL 1**  
**705523 - PCC SIDEWALK, SPECIAL 2**

**Description:**

This work consists of constructing Portland Cement Concrete Sidewalk on a prepared foundation as shown on the plans and as directed by the Engineer.

**Materials:**

Portland Cement Concrete - Portland Cement Concrete shall conform to the requirements of Section 501, Class B.

Bar Reinforcement - Bar Reinforcement shall conform to the requirements of Subsection 1037.

Preformed Expansion Joint Material - Preformed Expansion Joint Material shall conform to the requirements of Subsection 1042.

Curing Material - Curing materials shall conform to the requirements of Subsection 1022.01.5.

**Construction Methods:**

The work shall be done in accordance with Section 705 of the Standard Specifications for Road and Bridge Construction, latest edition at the time of advertisement.

Expansion Material - Place 1/2" thick by 6" wide expansion material meeting the requirements of DelDOT Standard Specification 1042 every 20' as per section 705.02. Longitudinal Rebars shall be cut at 20' intervals to allow for placement of expansion material. Expansion material shall cover the entire curb section and 8" thick sidewalk. Expansion material shall not be extended into the toe-wall area.

**Method of Measurement:**

The quantity of Portland Cement Concrete Sidewalk, Special will be measured by the square foot at the surface of the sidewalk, placed and accepted. Toe walls and curb depths are incidental to measured square feet.

**Basis of Payment:**

The quantity of Portland Cement Concrete Sidewalk, Special will be paid for at the Contract unit price per square foot. Price and payment will constitute full compensation for furnishing, hauling, and placing all materials including the Portland Cement Concrete, steel reinforcement, curb, expansion material, bar reinforcement, and other elements; for excavation and borrow; for preparing the foundation; for replacing rejected sidewalk; and for all labor, equipment, tools, and incidentals required to complete the work. If other than existing soil is approved for use as foundation material, it will be measured and paid for under the appropriate Section. If rock is encountered, measurement and payment for removal of the rock will be made under Section 202.

<b><u>ITEM</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>UNIT</u></b>
705522	P.C.C. SIDEWALK, SPECIAL 1	S.F.
705523	P.C.C. SIDEWALK, SPECIAL 2	S.F.

2/4/2020

**705528 - TEMPORARY PEDESTRIAN CONNECTION**

**Description:**

This item shall consist of furnishing, erecting and installing Temporary Pedestrian Connections at the required location(s) and in accordance with the notes and details on the Plans and as directed by the Engineer.

After the completion of the project, the Temporary Pedestrian Connections shall become the property of the Contractor and shall be removed from the project site.

**Materials and Construction Methods:**

The Temporary Pedestrian Connections shall be used as required during maintenance of traffic and pedestrians during construction as directed by the Engineer. Pedestrian Connections must be provided wherever an accessible pedestrian route crosses a curb or experiences a change of grade requiring a temporary Pedestrian Connection. The smallest possible slope should be used for all ramps and the maximum slope is 1:12. Transitions from ramps to walks or streets should be flush without abrupt changes. The adjoining landing areas, within three (3) feet of temporary Pedestrian Connections, shall not exceed 1:20. Temporary Pedestrian Connections must have a minimum width of 36", exclusive of flared sides. Temporary Pedestrian Connections surfaces must be stable and slip resistant. Changes in surface level up to 1/4 inch may be vertical without edge treatment. Changes in surface level greater than 1/4 inch must use a ramp. If a Pedestrian Connection is located where pedestrians must walk across the ramp or where the ramp is not shielded by handrails or guardrails, it must have flared sides. The maximum slope of the flare shall be 1:10.

The Contractor shall submit the locations of temporary Pedestrian Connections to be used during each stage of construction to the Engineer as part of the maintenance of pedestrian access plan for approval. The Engineer shall approve the Temporary Pedestrian Connection materials including the posts and methods of fabrication prior to installation.

Due to space limitations, the Contractor may be required to move the temporary Pedestrian Connections and/or reposition Pedestrian Connections from time to time so that adjacent construction activities and pedestrian access can coexist within the project site simultaneously as required. No payment shall be made for such relocation and the cost shall be incidental to the item.

**Method of Measurement:**

Temporary Pedestrian Connections shall be erected by the Contractor as required with payment to be made on an each (EA) used basis for the duration of the contract for temporary Pedestrian Connections actually furnished and used as required and approved by the Engineer.

**Basis of Payment:**

The number of temporary Pedestrian Connections measured as described above, shall be paid for at the contract unit price bid per each as required by the Contract. Price and payment shall be full compensation for furnishing, placing, maintaining, repositioning, preparation and cleaning the Pedestrian Connection area, removal and disposal of the temporary Pedestrian Connections and related accessories, furnishing all labor, materials, equipment, tools and all incidentals necessary to complete the work. Temporary Pedestrian Connections stolen or damaged shall be replaced at the Contractor's expense.

2/4/2020

**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 602 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 602.04 and 602.05 of the Standard Specifications.

5/31/2019

## **763597 - UTILITY CONSTRUCTION ENGINEERING**

### **Description:**

Utility Construction Engineering consists of providing construction and right-of-way/easement information to utility companies performing work (as defined in the Utility Statement) within the project limits. This may include but not necessarily be limited to staking right-of-way/easement lines, tops of cuts, bottoms of slopes, clear zones, drainage facilities, fill and cut grades, and other features that will enable utility companies to coordinate their work and correctly locate/relocate their facilities. Engineering/surveying required for utility work bid as part of the Contract is included in item 763501.

It is the intent of this item to cover engineering/surveying work that is done solely for utility companies and that is beyond the work performed under item 763501 - Construction Engineering. Work covered under Utility Construction Engineering will generally fall into two categories:

1. Engineering/surveying work that is not necessary for construction of the project, i.e. staking the clear zone line, providing cut/fill grades at proposed utility pole locations, staking back of drainage structures, and staking right-of-way lines where construction of the project (exclusive of utilities) is obviously well within the right-of-way.
2. Engineering/surveying work that is necessary for construction, but has to be provided for utility companies well in advance of the Contractor's need and will likely need to be redone later. This can essentially be any of the Construction Engineering work that when done early cannot be reasonably expected to remain undisturbed until needed for construction of the project (non-utility).

The Engineer must approve all requests for Utility Construction Engineering before the work begins. To this end, the Contractor should instruct utility companies to submit their requests to the Engineer. The Engineer will decide if the requested work meets the criteria for Utility Construction Engineering or is normal Construction Engineering and pass the requests along with his/her decisions to the Contractor. When the Engineer determines that the requested work qualifies as Utility Construction Engineering, the Department will reimburse the Contractor on a per hourly basis for each and every hour the Contractor's survey crew is in the field actively engaged in performing the Utility Construction Engineering work. The survey crew size shall be adequate to efficiently perform the work required and shall meet the approval of the Engineer. Office work associated with Utility Construction Engineering will be considered as incidental to the item.

The personnel engaged in and the equipment used for Utility Construction Engineering shall meet the requirements as described in item 763501 - Construction Engineering.

### **Method of Measurement:**

The quantity of Utility Construction Engineering will be measured as the actual number of hours the Contractor's survey crew is in the field actively engaged in utility construction engineering work.

### **Basis of Payment:**

The quantity of Utility Construction Engineering will be paid for at the Contract unit price per hour. Price and payment will constitute full compensation for furnishing all labor, equipment, instruments, stakes and other materials necessary to complete the work.

10/18/17

**763621 - CONSTRUCTION ENGINEERING, REHABILITATION**

**Description:**

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

Provide and have available for the project adequate engineering staff that is:

1. Competent and experienced to set lines and grades needed to construct the project;
2. Able to perform the work to the scope and magnitude outlined herein.

Construction Engineering functions and requirements:

1. Provide all necessary surveying equipment required for all engineering work on the project.
  - a. Check all equipment/instruments prior to use on the project.
  - b. Immediately replace or recalibrate equipment found to be out of adjustment or inadequate to perform its function to the satisfaction of the Engineer.
2. Perform all computations necessary to establish the exact position of the work from control points and preserve.
  - a. Maintain adequate workbooks of all computations survey notes and other records.
  - b. Make available to the Department, neat and legible, all computations, survey notes and other records necessary to accomplish the work.
3. Preliminary topographic survey for all proposed curb ramps locations identified in the Plans and the layout of grade information provided by the Engineer for curb ramp construction;
4. Obtain topographic information a minimum of 25' in each direction from the back of curb where the curb ramp is proposed;
  - a. Grades for the edge of pavement, gutter line (if applicable), top of curb, front and back edge of sidewalk, existing obstructions such as utility poles, junction wells, traffic poles and cabinets, manholes, valves, fire hydrants, drainage inlets, steps, retaining walls, building faces or other obstructions that are directly adjacent or within the proposed curb ramp limits.
  - b. Collect data in a format that is compatible with DelDOT Design Standards and submit to the Engineer for evaluation curb ramps that are located in areas with multiple obstructions, limited area, or other unique characteristics that require more detailed layout. The Engineer will provide the final grades for construction of these curb ramps.
5. Establish necessary grades to ensure all proposed curb ramps, roadways or ditches, installation of drainage structures, or other items of work as determined by the Engineer, have positive drainage;

Note:

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



**Method of Measurement:**

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

**Basis of Payment:**

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

7/10/2012

**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.

2/4/2020

**801501 - MAINTENANCE OF RAILROAD TRAFFIC**

**Description:**

The item shall consist of complying with all the terms and conditions set and defined under these specifications and notes on the Plans while performing the construction activities of this Contract.

**Insurance:**

Before any work on the project is commenced, the Contractor will be required to carry insurance of the following kinds and amounts in addition to any other forms of insurance or Bonds required under the terms of the contract and specifications.

1. Contractor's Public Liability Insurance

Contractor shall furnish evidence that, with respect to the operations it performs, it carries regular Contractor's Public Liability Insurance providing for a limit of not less than \$2,000,000.00 single limit, bodily injury and/or property damage combined, for damages arising out of bodily injuries to or death of all persons in any one occurrence and for damage to or destruction of property, including the loss of use thereof, in any one occurrence.

2. Contractor's Protective Public Liability Insurance

Contractor shall furnish evidence that, with respect to the operations performed by subcontractors, it carries in its own behalf regular Contractor's Protective Public Liability Insurance providing for a limit of not less than \$2,000,000.00 single limit, bodily injury and/or property damage combined, for damages arising out of bodily injuries to or death of all persons in any one occurrence and for damage to or destruction of property, including the loss of use thereof, in any one occurrence.

3. Railroad's Protective Public Liability Insurance

In addition to the above, Contractor shall furnish evidence that, with respect to the operations it or any of its subcontractors perform, it has provided Railroad Protective Public Liability Insurance (AAR-AASHTO form) in the name of the Railroad providing for a limit of not less than \$2,000,000.00 single limit, bodily injury and/or property damage combined, for damages arising out of bodily injuries to or death of all persons in any one occurrence and for damage to or destruction of property, including the loss of use thereof, in any one occurrence. Such insurance shall be furnished with an aggregate of not less than \$6,000,000.00 for all damages as a result of more than one occurrence.

All Builder's Risk Fire Insurance to cover labor and materials in place and materials on the site and in transit to the job site. This insurance should be written to cover the Railroad and the Contractor and in an amount not less than the replacement value of the materials.

The insurance hereinbefore specified shall be carried until all work required to be performed under the terms of the contract is satisfactorily completed and formally accepted. Failure to carry or keep such insurance in force until all work is satisfactorily completed shall constitute a violation of contract.

Contractor shall furnish to the Railroad a Certificate of Insurance for the ALL Builder's Risk Fire Insurance, a signed copy of the policy for Contractor's Public Liability Insurance and the original of the AAR-AASHTO policy for Railroad's Protective Public Liability Insurance. If any work is subcontracted, Contractor shall furnish a signed copy of the policy for Contractor's Protective Public Liability Insurance.

Each insurance policy shall be endorsed to provide that the insurance company shall notify the Railroad by registered or certified mail at least thirty days in advance of termination of any change in the policy. It is agreed that the providing of any conductors, flagmen or other employees shall not relieve the Contractor from liability or payment for any damages caused by its operations.

**Railroad Safety - Protection of Railroad Traffic:**

Contractor shall conduct the work in such a manner as to safeguard the train operations, tracks, facilities and property of the Railroad. All work affecting the Railroad property, right-of-way, or facilities shall be subject to the approval of the Railroad or their designated Representative.

Contractor's operations adjacent to, over or under the Railroad's tracks, right-of-way, and property shall be governed by the Railroad's standards and by such other requirements as specified by the Railroad or their designated Representative so as to insure safe and delay-free operation of trains and insuring the safety of all concerned including the Contractor's forces.

An operating track shall be considered obstructed or fouled when any object is brought closer than ten (10) feet horizontally from the center of track and projects above the top of tie. A power line shall be considered fouled when any object is brought to a point less than eight (8) feet therefrom. A signal line shall be considered fouled when any object is brought nearer than six (6) feet to any wire or cable. Cranes, trucks and other equipment shall be considered as fouling the track, power line or signal line when failure of equipment, whether working or at idle and with or without load, will obstruct the track or other Railroad facilities.

Equipment used by Contractor shall be in first-class condition to preclude any failure that would cause delay and interference with the operation of trains or cause damage to Railroad facilities.

Contractor's equipment shall not be placed or put in operation adjacent to the Railroad's tracks or facilities without obtaining clearance from the Railroad or their designated Representative. All such equipment shall be operated by the Contractor in a manner satisfactory to the Railroad.

Minimum overhead and lateral clearances as specified by the Railroad are to be maintained during the performance of the work. Existing overhead and lateral clearances are to be maintained during construction unless a temporary reduction in clearance for construction purposes is approved by the Railroad.

All wire and attachments shall be treated as live unless notified by the Railroad's Representative that they have been grounded and de-energized. Particular attention shall be given to the use of hand lines containing metal strands which shall not be permitted when working near or above exposed live wires. Metal ladders or ladders reinforced by metal in a longitudinal direction shall not be used near exposed wires. When working over wires, tools and materials not in use shall be stored in a manner to prevent them from falling. Tools or materials shall not be thrown to or from men working over the wires and men on the ground. Contractor shall be responsible for locating and protecting all underground facilities.

Contractor shall give notice to the Railroad or their designated Representative, a minimum of fourteen (14) calendar days in advance of the time work is to be commenced.

The Railroad may assign, at their expense, conductors and/or flagmen, and/or other similarly qualified employees to protect its trains and facilities, when in the opinion of the Railroad or in the opinion of their designated Representative, construction work will cause or may cause a hazard to the Railroad's facilities and/or the safe operation of trains.

The providing of such watchmen, inspectors, and other precautionary measures, shall not, however, relieve the Contractor from liability for payment of damages caused by his operations.

No operations of the Contractor shall be carried out without all the necessary protection to properly safeguard the work.

Contractor shall be responsible for damage to Railroad facilities or property arising out of the prosecution of its work. The Railroad shall undertake any necessary repair work at the sole cost and expense of the Contractor. Billing for the work shall be in accordance with standard billing procedures.

**Railroad Engineering and Inspection:**

The Railroad may furnish and assign an engineer or inspector for the general protection of Railroad property and operations during the construction of the project. This inspection service will be supplied at no expense to the Contractor.



**Payment of Railroad Services:**

It is a requirement of this Contract that Contractor shall reimburse the Railroad in full for work undertaken by the Railroad on behalf of Contractor in accordance with the provisions of these special requirements. Final contract payment will not be made to the Contractor until the Railroad certifies that all its bills against Contractor have been paid in full.

**Basis of Payment:**

The payment for the **Item 801501 - Maintenance Of Railroad Traffic**, shall be made for at the Contract unit price per Lump Sum bid for Item **801501 - Maintenance Of Railroad Traffic**, which price and payment will constitute full compensation for maintaining railroad traffic during the life of the project; submission of drawings and procedures to the Railroad; for all incidental costs imposed by the Railroad on the Contractor in accordance with the terms and condition set in these Specifications; meeting all insurance requirements as described herein; for any cost incidental to or arising from the need to meet any or all requirements outlined herein; for all materials, labor, tools, equipment, and incidentals necessary to complete the work.

**NOTE**

The "Railroad Protective Public Liability Insurance" shall be issued in the name of "Delaware Coast Line Railroad".

1/23/2020

## **813500 - PEDESTRIAN CHANNELIZING BARRICADE SYSTEM**

### **Description:**

Furnish, place, relocate, and maintain a pedestrian channelizing barricade system in accordance with the requirements of the Americans with Disabilities Act (ADA), the Delaware Manual on Uniform Traffic Control Devices (DE MUTCD), these specifications, the plans and details, and as directed by the Engineer.

### **Materials:**

Furnish a pedestrian channelizing barricade system meeting the National Cooperative Highway Research Program (NCHRP) Report 350 or the Manual for Assessing Safety Hardware (MASH) Test Level 2 certification. The approved system must have been tested as a barricade in accordance with the NCHRP 350 and/or MASH testing criteria. Submit a copy of the FHWA certification letter and associated documentation to the Engineer prior to acceptance by the Department and prior to installation of the device on the project.

- A. Barricade Rails:
  - 1. Manufactured from high density polyethylene (HDPE) with UV inhibitors.
  - 2. Barricade rails must accommodate a minimum of 7 3/4" wide retroreflective sheeting on both sides of the rails.
    - a. Use white prismatic and fluorescent orange retroreflective sheeting where the white and fluorescent orange colors are placed at 45-degree angles.
- B. Barricade supports:
  - 1. Manufactured from high density polyethylene (HDPE) with UV inhibitors and internally ballasted.
    - a. Use ballast material in accordance with manufacturer recommendations.

### **Construction Methods:**

Construct the barricade with continuous delineation along the designated walkway for use as a channelization device.

- A. Assemble the barricade without hardware and in accordance with manufacturer's recommendations.
- B. Provide continuous upper and lower rails for hand or cane trailing.
  - 1. Install upper rail of barricade a minimum 36" above the ground, measured from the ground to the top of the upper rail.
  - 2. Install lower rail of the barricade a minimum of 1 1/2" above the ground, measured from the ground to the bottom of the lower rail.
- C. No portion of the barrier structure or supports may extend into the walkway more than 3/4" further than the common plane formed by the upper and lower rails.
- D. Ensure that barricade joints are smooth and snag-resistant to accommodate safe hand trailing.
- E. Provide accommodations for attachment of audible information devices.
- F. Pedestrian channelizing barricades cannot be used as road closure barricades or provide positive protection between the temporary walkway and vehicular traffic.
- G. Remove pedestrian channelizing when it is no longer needed.
  - 1. Dispose of all materials in accordance with Subsection 106.08.

### **Method of Measurement:**

Pedestrian channelizing barricade will be measured along the linear centerline of the barricade in units of linear feet per day (LF/DY), acceptably installed, maintained, removed and completed as specified.

Basis of Payment:

Pedestrian channelizing barricade will be paid for at the contract unit price bid per linear feet per day for the item Pedestrian Channelizing Barricade. Price and payment includes full compensation for providing certification, furnishing, placing, maintaining, and relocating the barricades as required, all labor, equipment, tools, and all incidentals necessary to complete the work. Replace barricades stolen or damaged at no cost to the Department.

2/4/2020

**813501 - TEMPORARY SIDEWALK, TYPE 2 (BOARDWALK)**

**Description:**

The item shall consist of furnishing, erecting and installing Temporary Sidewalk, Type 2 (Boardwalk) at the required location(s) and in accordance with the notes and details on the Plans and as directed by the Engineer.

After the completion of the project, the Temporary Sidewalk shall become the property of the Contractor and shall be removed from the project site.

**Materials and Construction Methods:**

The Temporary Sidewalk shall be used as required during maintenance of traffic and pedestrians during construction as directed by the Engineer. Temporary Sidewalk must be provided wherever an accessible pedestrian route is required for use as a Temporary Sidewalk during construction. The minimum width of Temporary Sidewalk is four (4) feet. The smallest possible slope should be used for all boardwalk. Maximum permissible Temporary Sidewalk slope is 1:20. Transitions from Temporary Sidewalk to sidewalks or streets should be flush without abrupt changes. Temporary Boardwalk surfaces must be stable and slip resistant. Changes in surface level up to ¼ inch may be vertical without edge treatment. Changes in surface level greater than ¼ inch must use a ramp.

The Contractor shall submit the locations of Temporary Sidewalk to be used during each stage of construction to the Engineer as part of the maintenance of pedestrian access plan for approval. The Engineer shall approve the Temporary Sidewalk materials including the posts and methods of fabrication prior to installation.

Due to space limitations, the Contractor may be required to move the Temporary Sidewalk and/or reposition the Temporary Sidewalk from time to time so that adjacent construction activities and pedestrian access can coexist within the project site simultaneously as required. No payment shall be made for such relocation and the cost shall be incidental to the item.

**Method of Measurement:**

The measurement of the item shall be made along the centerline of the Temporary Sidewalk as the number of linear feet actually furnished and used as required and approved by the Engineer.

**Basis of Payment:**

The number of Temporary Sidewalk, Type 2 (Boardwalk) measured as described above, shall be paid for at the contract unit price bid per linear foot. Price and payment shall be full compensation for furnishing, placing, maintaining, repositioning, preparation and cleaning of Temporary Sidewalk area, removal and disposal of the Temporary Sidewalk and related accessories, furnishing all labor, materials, equipment, tools and all incidentals necessary to complete the work. Temporary Sidewalk stolen or damaged shall be replaced at the Contractor's expense.

2/4/2020

**818504 - RELOCATE SIGN**

**Description:**

This work consists of relocating the existing sign to the location shown on the Plans and as directed by the Engineer.

**Materials and Construction Methods:**

The Contractor shall carefully relocate and reinstall the existing sign. The Contractor shall safely store the sign, if necessary, until it can be reinstalled. The sign shall be set in Class B concrete conforming to the requirements of Section 1022 of the Standard Specifications at the same elevations as the original installation.

If the sign is damaged during the relocation process, the Contractor shall furnish a new sign with no cost to the Department.

**Method of Measurement & Basis of Payment:**

The quantity of relocated signs will be paid for at the Contract unit price bid per each. Price and payment will constitute full compensation for all of the work necessary to relocate the sign, including removing the existing sign, relocating the sign, re-installing the sign and for all labor, tools, equipment and incidentals necessary to complete the work.

1/30/2020

- 831500 - FURNISH AND INSTALL UP TO 6" SCHEDULE 80 PVC CONDUIT (OPEN CUT)
- 831501 - FURNISH AND INSTALL 4" SCHEDULE 80 PVC CONDUIT (OPEN CUT)
- 831502 - FURNISH AND INSTALL 3" SCHEDULE 80 PVC CONDUIT (OPEN CUT)
- 831503 - FURNISH AND INSTALL 2-1/2" SCHEDULE 80 PVC CONDUIT (OPEN CUT)
- 831504 - FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT (OPEN CUT)
- 831505 - FURNISH AND INSTALL 1" SCHEDULE 80 PVC CONDUIT (OPEN CUT)
- 831506 - FURNISH AND INSTALL 1" FLEXIBLE METALLIC-LIQUIDTIGHT CONDUIT
- 831507 - FURNISH AND INSTALL 2" FLEXIBLE METALLIC-LIQUIDTIGHT CONDUIT
- 831508 - FURNISH AND INSTALL 3" FLEXIBLE METALLIC-LIQUIDTIGHT CONDUIT
- 831509 - FURNISH AND INSTALL 4" FLEXIBLE METALLIC-LIQUIDTIGHT CONDUIT
- 831512 - FURNISH AND INSTALL 1" SCHEDULE 80 PVC CONDUIT (TRENCH)
- 831513 - FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT (TRENCH)
- 831514 - FURNISH AND INSTALL 2-1/2" SCHEDULE 80 PVC CONDUIT (TRENCH)
- 831515 - FURNISH AND INSTALL 3" SCHEDULE 80 PVC CONDUIT (TRENCH)
- 831516 - FURNISH AND INSTALL 4" SCHEDULE 80 PVC CONDUIT (TRENCH)
- 831517 - FURNISH AND INSTALL 1" SCHEDULE 80 PVC CONDUIT (ON STRUCTURE)
- 831518 - FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT (ON STRUCTURE)
- 831519 - FURNISH AND INSTALL 2-1/2" SCHEDULE 80 PVC CONDUIT (ON STRUCTURE)
- 831520 - FURNISH AND INSTALL 3" SCHEDULE 80 PVC CONDUIT (ON STRUCTURE)
- 831521 - FURNISH AND INSTALL 4" SCHEDULE 80 PVC CONDUIT (ON STRUCTURE)
- 831522 - FURNISH AND INSTALL 1" GALVANIZED STEEL CONDUIT (TRENCH)
- 831523 - FURNISH AND INSTALL 2" GALVANIZED STEEL CONDUIT (TRENCH)
- 831524 - FURNISH AND INSTALL 2-1/2" GALVANIZED STEEL CONDUIT (TRENCH)
- 831525 - FURNISH AND INSTALL 3" GALVANIZED STEEL CONDUIT (TRENCH)
- 831526 - FURNISH AND INSTALL 4" GALVANIZED STEEL CONDUIT (TRENCH)
- 831527 - FURNISH AND INSTALL 1" GALVANIZED STEEL CONDUIT (BORE)
- 831528 - FURNISH AND INSTALL 2" GALVANIZED STEEL CONDUIT (BORE)
- 831529 - FURNISH AND INSTALL 2-1/2" GALVANIZED STEEL CONDUIT (BORE)
- 831530 - FURNISH AND INSTALL 3" GALVANIZED STEEL CONDUIT (BORE)
- 831531 - FURNISH AND INSTALL 4" GALVANIZED STEEL CONDUIT (BORE)
- 831532 - FURNISH AND INSTALL 1" GALVANIZED STEEL CONDUIT (OPEN CUT)
- 831533 - FURNISH AND INSTALL 2" GALVANIZED STEEL CONDUIT (OPEN CUT)
- 831534 - FURNISH AND INSTALL 2-1/2" GALVANIZED STEEL CONDUIT (OPEN CUT)
- 831535 - FURNISH AND INSTALL 3" GALVANIZED STEEL CONDUIT (OPEN CUT)
- 831536 - FURNISH AND INSTALL 4" GALVANIZED STEEL CONDUIT (OPEN CUT)
- 831537 - FURNISH AND INSTALL 1" GALVANIZED STEEL CONDUIT (ON STRUCTURE)
- 831538 - FURNISH AND INSTALL 2" GALVANIZED STEEL CONDUIT (ON STRUCTURE)
- 831539 - FURNISH AND INSTALL 2-1/2" GALVANIZED STEEL CONDUIT (ON STRUCTURE)
- 831540 - FURNISH AND INSTALL 3" GALVANIZED STEEL CONDUIT (ON STRUCTURE)
- 831541 - FURNISH AND INSTALL 4" GALVANIZED STEEL CONDUIT (ON STRUCTURE)
- 831542 - FURNISH AND INSTALL 2" HDPE SDR-13.5 CONDUIT (BORE)
- 831543 - FURNISH AND INSTALL 2-1/2" HDPE SDR-13.5 CONDUIT (BORE)
- 831544 - FURNISH AND INSTALL 3" HDPE SDR-13.5 CONDUIT (BORE)
- 831545 - FURNISH AND INSTALL 4" HDPE SDR-13.5 CONDUIT (BORE)
- 831560 - FURNISH AND INSTALL UP TO 4" SCHEDULE 80 PVC CONDUIT (OPEN CUT)
- 831561 - FURNISH AND INSTALL 1-1/2" SCHEDULE 80 PVC CONDUIT (TRENCH)
- 831562 - FURNISH AND INSTALL 1-1/2" SCHEDULE 80 PVC CONDUIT (ON STRUCTURE)
- 831563 - FURNISH AND INSTALL 1-1/2" GALVANIZED STEEL CONDUIT (OPEN CUT)
- 831564 - FURNISH AND INSTALL 1-1/2" GALVANIZED STEEL CONDUIT (TRENCH)
- 831565 - FURNISH AND INSTALL 1-1/2" GALVANIZED STEEL CONDUIT (BORE)
- 831566 - FURNISH AND INSTALL 1-1/2" GALVANIZED STEEL CONDUIT (ON STRUCTURE)
- 831569 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 1" SCHEDULE 80 PVC CONDUITS IN TRENCH OR OPEN CUT
- 831570 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 1-1/2" SCHEDULE 80 PVC CONDUITS IN TRENCH OR OPEN CUT
- 831571 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 2" SCHEDULE 80 PVC CONDUITS IN TRENCH OR OPEN CUT
- 831572 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 2-1/2" SCHEDULE 80 PVC CONDUITS IN TRENCH OR OPEN CUT

- 831573 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 3" SCHEDULE 80 PVC CONDUITS IN TRENCH OR OPEN CUT**
- 831574 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 4" SCHEDULE 80 PVC CONDUITS IN TRENCH OR OPEN CUT**
- 831575 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 2" HDPE 13.5 SDR CONDUIT IN DIRECTIONAL BORE**
- 831576 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 2-1/2" HDPE 13.5 SDR CONDUIT IN DIRECTIONAL BORE**
- 831577 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 3" HDPE 13.5 SDR CONDUIT IN DIRECTIONAL BORE**
- 831578 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 4" HDPE 13.5 SDR CONDUIT IN DIRECTIONAL BORE**
- 831579 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 1" GALVANIZED STEEL CONDUIT IN TRENCH OR OPEN CUT**
- 831580 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 1-1/2" GALVANIZED STEEL CONDUIT IN TRENCH OR OPEN CUT**
- 831581 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 2" GALVANIZED STEEL CONDUIT IN TRENCH OR OPEN CUT**
- 831582 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 2-1/2" GALVANIZED STEEL CONDUIT IN TRENCH OR OPEN CUT**
- 831583 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 3" GALVANIZED STEEL CONDUIT IN TRENCH OR OPEN CUT**
- 831584 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 4" GALVANIZED STEEL CONDUIT IN TRENCH OR OPEN CUT**
- 831585 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 1" STEEL CONDUIT IN DIRECTIONAL BORE**
- 831586 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 1-1/2" STEEL CONDUIT IN DIRECTIONAL BORE**
- 831587 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 2" STEEL CONDUIT IN DIRECTIONAL BORE**
- 831588 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 2-1/2" STEEL CONDUIT IN DIRECTIONAL BORE**
- 831589 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 3" STEEL CONDUIT IN DIRECTIONAL BORE**
- 831590 - FURNISH & INSTALL SECOND AND SUBSEQUENT ADDITIONAL 4" STEEL 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 Contractors 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

- 850520 - LUMINAIRE (LED), 150 WATTS HPS EQUIVALENT**  
**850521 - LUMINAIRE (LED), 250 WATTS HPS EQUIVALENT**  
**850522 - LUMINAIRE (LED), 400 WATTS HPS EQUIVALENT**  
**850523 - LUMINAIRE (LED), 640 WATTS HPS EQUIVALENT (HIGH MAST ONLY)**  
**850524 - LED WALL PACK, 250 WATTS HPS EQUIVALENT**  
**850525 - LED WALL PACK, 400 WATTS HPS EQUIVALENT**  
**850526 - LED WALL PACK, 75 WATTS HPS EQUIVALENT**  
**850527 - LED WALL PACK, 150 WATTS HPS EQUIVALENT**

**Description:**

This work consists of furnishing and installing an LED light fixture (luminaire) on pole (not inclusive in this item) with wattage, lamp type and distribution type in accordance with these and the standard specifications as applicable and as shown on the plans. **The LED Wattages above are based on the equivalent output to HPS lighting. Refer to maximum LED Wattages below.**

The complete fixture shall have a heavy-duty, cast-aluminum housing, door with extruded aluminum heat sink, tool-less entry, hinged removable power tray door for easy maintenance, and have fastening hardware that is stainless steel or zinc plated steel. The fixture shall meet ANSI 136.31 3.0 G vibration requirements. Fixture shall have a two-bolt slip fitter system for mounting on a 1-1/4 inch to 2-3/8 inch mounting arm connection. A grey powder coat finish shall be applied to the fixture unless otherwise shown on the plans, or as directed by the engineer.

The fixture shall also meet the following criteria:

1. Lamps: LED
2. Wattage:
  - a. 50 Watt Maximum for Item No. 850526
  - b. 90 Watt Maximum for Item No. 850520 and 850527
  - c. 175 Watt Maximum for Item No. 850521 and 850524
  - d. 250 Watt Maximum for Item No. 850522 and 850525
  - e. 450 Watt Maximum for Item No. 850523
3. Voltage: 120V - 277V
4. CRI: 70 Minimum
5. Lumens:
  - a. 3,000 to 5,000 for Item No. 850526
  - b. 8,000 to 12,000 for Item No. 850520 and 850527
  - c. 16,00 to 20,000 for Item No. 850521 and 850524
  - d. 27,000 to 31,000 for Item No. 850522 and 850525
  - e. 40,000 to 50,000 for Item No. 850523
6. Rated L70 Lamp Life: 100,000 Hours Minimum when operated at 25 Degrees C (77 Degrees F)
7. Distribution: Type II or Type III (unless otherwise indicated)
8. Color Temperature: 3,000 K - 4,500 K
9. Drive Current: 850 mA Maximum
10. Driver: 0-10V Dimming
11. IP66 Rating for optical portion of the housing
12. 10kV/10kA minimum internal surge suppression module, meeting UL 1449/ANSI C62.41.2 Category C
13. 3 Pin NEMA Photocontrol Receptacle with a Shorting Cap.

Luminaire mounting height shall be as indicated on drawings. Luminaire shall provide point illumination of not less than the given values in the table that follows:

Luminaire	Foot-candle Point Table	
	Point 1	Point 2
Luminaire (LED), 75 Watts HPS Equivalent	0.10	0.11
Luminaire (LED), 150 Watts HPS Equivalent	0.16	0.22
Luminaire (LED), 250 Watts HPS Equivalent	0.27	0.37

Luminaire (LED), 400 Watts HPS Equivalent	0.46	0.55
Luminaire (LED), 640 Watts HPS Equivalent	0.55	0.60

Point 1 coordinates are 90 feet longitudinal distance. Point 2 coordinates are 90 feet longitudinal and 30 feet transverse. The point values given in the table are based on a 30 foot mounting height with a Light Loss Factor of 1. The point values produced by the submitted fixture shall be included with the fixture submittal.

Metal Parts shall be free of burrs and sharp corners and edges. Doors, frames, and other internal access shall be smooth operating and free of light leakage under operating conditions.

Factory applied labels shall comply with UL 1598. Labels shall be located where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place. Labels shall include the following lamp characteristics:

1. CCT and CRI for all luminaires

Luminaire finish shall be manufacturers standard paint applied to factory-assembled and tested luminaire before shipping.

#### **Construction Methods:**

Contractor should install luminaires in accordance with the manufacturer's installation instructions and shall follow the following installation requirements:

1. Comply with NECA 1.
2. Fasten luminaire to pole.
3. Install luminaires at height indicated on drawings and level and square with finished grade.
4. Perform an illumination test.

Luminaire identification decals shall be installed to the luminaire housing in accordance with NEMA conventions. The contractor shall ensure the decal is readily visible from the ground and meets **ANSI C136.15-2015 Roadway and Area Lighting Equipment-Luminaire Field Identification standard**.

After installation of luminaires and control devices and after electrical circuitry has been energized, test units to confirm proper operation.

Inspect each installed luminaire for damage. Replace damaged luminaires and components.

Luminaires will be considered defective if they do not pass tests and inspections.

Contractor shall provide fixture cutsheets, details, and the IESNA LM-79 and LM-80 test reports to the engineer for shop drawing review before purchasing.

Provide documentation that demonstrates that the proposed model of LED luminaire has been tested for electromagnetic compliance following the measurement protocols specified in ANSI standard C63.4-2003, and required by 47 CFR 15.31.

If Contract Documents require each light fixture to be provided with an independent photoelectric control device, a photocell shall be provided with each lighting fixture in place of the shorting cap. Provide photoelectric control using solid state circuitry, cadmium sulfide type with hermetically sealed silicone rectifier rated 120volt, 60 cycle AC and 1000 watts maximum load. Photoelectric control shall be provided with "Fail On" functionality such that in the event of a photocell becoming inoperative, the light fixture will remain in a permanent "On" state through day and nighttime hours. Photo control shall be twist lock type, with suitable mounting bracket with locking type receptacle.

The photoelectric control shall be set to operate, by default factory setting or by field adjustment, using the following criteria:

- Turn on the light fixture at a minimum vertical illumination value of 3 foot-candles.

- Turn off the light fixture at a maximum vertical illumination value of 6 foot-candles.

All electrical Materials shall conform to the requirements of the National Electrical Code of the National Fire Protection Association, and to all local and state laws and ordinances governing such installations.

**Method of Measurement:**

The quantity of LED luminaires will be measured as the number luminaires furnished, installed, complete in place, and accepted

**Basis of Payment:**

The quantity of luminaires will be paid for at the Contract unit price per each. Price and payment will constitute full compensation for furnishing all materials, including the luminaires, and for all labor, equipment, tools, and incidentals required to complete the item installation.

4/17/2018

## UTILITY STATEMENT



**State Contract No. T201601103**

**Project ID No. 16-99001**

**SR 48, SR 141 to Union Street PAR and Pavement Improvements**

**New Castle County, Delaware**

**January 10, 2020**

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

<b>City of Wilmington</b>	<b>Sanitary Sewer</b>
<b>City of Wilmington</b>	<b>Water</b>
<b>Comcast Cable</b>	<b>Communications</b>
<b>Delaware Department of Transportation</b>	<b>Electric / Signals</b>
<b>Delaware Department of Transportation</b>	<b>Communications / ITMS</b>
<b>Delmarva Power</b>	<b>Electric</b>
<b>Delmarva Power</b>	<b>Gas</b>
<b>New Castle County – Special Services</b>	<b>Sanitary Sewer</b>
<b>Verizon of Delaware Inc.</b>	<b>Telephone</b>

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

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### **City of Wilmington Department of Public Works – Sewer**

The City of Wilmington (Sewer) has confirmed they maintain no facilities from SR 141 to N Dupont Road. City of Wilmington (Sewer) maintains facilities from N Dupont Road to Union Street.

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### **City of Wilmington Department of Public Works – Water**

The City of Wilmington (CoW) maintains underground water facilities within the project limits.

It is anticipated that existing CoW water main may be relocated prior to the State's Contract from SR 141 to N DuPont Road.

The following adjustments are required for the existing CoW facilities as part of the State's Contract. Adjustments shall be performed so that there are no unnecessary disruptions of services:

January 10, 2020:Page 1 of 10

State Contract No. T201601103

SR 48, SR 141 to Union Street PAR and Pavement Improvements

New Castle County

## UTILITY STATEMENT

1. Adjust 3 manholes at Station 121+38, 53' left.
2. Adjust water valve and meter at Station 125+15, 27' left.
3. Adjust water valve at Station 138+50, 30' left.
4. Adjust water meter at Station 140+90, 28' left.

Adjustments within limits of the mill and overlay have not been identified in this statement. The State's Contractor will perform these adjustments so that there are no unnecessary disruptions of service.

Adjustments to the CoW's existing facilities will be done by the State's Contractor as shown in the contract documents. The Contractor shall determine the number of days required and show that in schedule. The work is not considered complete until accepted by The City of Wilmington.

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### **Comcast Cable – Communications**

Comcast Cable maintains aerial and underground facilities within the project limits.

Comcast proposed changes to the aerial facilities include but are not limited to:

1. Comcast to relocate guy wire to new Delmarva anchor on DPL Pole # 47241-43760 at Sta. 118+70 RT. Comcast to coordinate with Delmarva to provide 80" vertical clearance above proposed sidewalk grade.
2. Comcast to remove existing guy wire and anchor on DPL Pole # 47341-43713 at Sta. 129+75, 30' RT.

Adjustments within limits of the mill and overlay have not been identified in this statement. Comcast will perform these adjustments as described below.

Comcast will complete these changes. These relocations/adjustments are expected to take approximately 7 calendar days to complete after Comcast has been given a minimum of 14 days advance notice that work shall begin and the right-of-way and proposed work has been laid out in the field by the State's Contract, clearing and grubbing has been performed. Comcast relocations will begin after DP&L has completed their work.

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### **Delaware Department of Transportation – Electric / Signals**

DelDOT maintains the following underground facilities from West Court Drive to N Dupont Road:

1. Intersection of Lancaster Pike @ 7 Day Farmers Market:
  - a. Underground conduit and electric along the north side of Lancaster Pike from Station 119+65 to Station 125+10 and along the south side of Lancaster Pike from Station 121+75 to Station 122+25. Conduit supplies existing loop detector systems and pedestrian push button locations.
2. Intersection of Lancaster Pike @ N. DuPont Road:



## UTILITY STATEMENT

- a. Underground conduit and electric along the south and north side of Lancaster Pike from Station 146+00 to Station 147+00. Conduit supplies existing loop detector system and pedestrian push button location on the south side of Lancaster Pike.

DelDOT also maintains facilities within the extended project limits from SR 141 to Union Street.

The following adjustments are required for the existing DelDOT facilities. All adjustments shall be performed so that there are no unnecessary disruptions of services:

1. Remove existing utility pole-mounted electric service pedestal from DPL Pole # 4725143768 and install new electric service pedestal at Station 119+59, 39' left. Install conduit from DPL pole to pedestal and from the proposed pedestal to the existing junction well at Station 119+67, 35' left.
2. Adjust two (2) junction wells at Station 119+67, 35' left.
3. Adjust junction well at Station 120+92, 42' left.
4. Install lighting control cabinet and secondary power disconnect at Station 121+71, 61' left and conduit to connect it to the junction well at Station 121+54, 47' left.
5. Retrofit two (2) existing DelDOT Light Standards at Station 121+52, 51' left and Station 123+16, 54' left as shown on the plans.
6. Upgrade existing pedestrian signal heads at the 7 Day Farmers Market intersection with countdown displays and replace existing pushbuttons with latching LED indicator pushbuttons.
7. Adjust two (2) junction wells at Station 123+13, 52' left.
8. Adjust junction well at Station 125+04, 30' left.

Adjustments within limits of the mill and overlay have not been identified in this statement. The State's Contractor will perform these adjustments so that there are no unnecessary disruptions of service.

The Contractor must use care when working in these areas. Any adjustments to DelDOT facilities shall be performed by the State's contractor in accordance with the Standard Specifications as directed by the District Engineer.

**The contractor shall report any impacts to any vehicle detection system to the Traffic Management Center (TMC) (Cell #77) (24 HR 302-659-4600), seven (7) calendar days before the loop system is impacted by construction activities.**

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### **Delaware Department of Transportation – Communications / ITMS**

DelDOT has requested that ITMS line be installed as part of Contract T201601103. The ITMS line is proposed along the northern side of Lancaster Pike from Station 121+75 to Station 137+63 and from Station 141+06 to Station 145+82. ITMS from Station 137+63 to Station 141+06 will be performed by DelDOT in advance of Contract T201601103.

## UTILITY STATEMENT

The State's contractor shall make every effort to maintain 10-foot horizontal clearance from the existing New Castle County Sewer trunk line while staying within the State's right-of-way.

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### **Delmarva Power (Electric)**

Delmarva Power Electric Distribution (Delmarva) maintains aerial and underground electric distribution electric facilities on the north and south sides of SR 48 from West Court Drive to N Dupont Road with lateral feeds servicing adjacent residences/businesses. Delmarva also maintains facilities throughout the extended project limits from SR 141 to Union Street.

Delmarva proposes the following adjustments and/or relocations to its existing facilities to be completed concurrently with the State's Contract. Adjustments or relocations shall be performed so that there are no unnecessary disruptions of services.

1. Delmarva will relocate guy wire and anchor at Station 118+70, 62' right and coordinate with Comcast to install their guy wires on the same anchor.
2. Delmarva will install a new utility pole at station 124+65, left as shown on the plans.
3. Delmarva will install a new utility pole and guy wire at station 129+17, right as shown on the plans.

Adjustments within limits of the mill and overlay have not been identified in this statement. Delmarva will perform these adjustments as described below.

Delmarva power will supply and install proposed lighting as shown on the plans and execute the lighting agreement through the tariff system with the Department.

Delmarva to provide power for new lighting cabinet at the 7 Day Farmers Market Intersection and the new signal cabinet at the proposed HAWK signal adjacent to Mary Ella Drive.

Delmarva will complete this work. These relocations/adjustments are expected to take approximately 20 calendar days to complete after Delmarva has been given a minimum of 60 days advance notice that work shall begin and the right-of-way and proposed work has been laid out in the field by the State's Contract, clearing and grubbing has been performed, cuts and fills have been completed to within one foot of final grades and the relocations have been made accessible. Delmarva's lead time for cable and associated materials is approximately 12 weeks.

**No working/existing Delmarva facilities can be taken out of service.**

**These facilities will remain in place and active during the duration of this contract.**

**To report a downed wire, call 1-800-898-8042.**

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

### Customer/Contractor Acknowledgement

#### Performing Work within Dangerous Proximity of High Voltage Lines

"You are hereby notified by Delmarva Power that NO work can be performed at this location within dangerous proximity to Delmarva's overhead lines and that you are required by law to comply with applicable OSHA regulations and the applicable state High Voltage Safety Act. Performance of any activity or causing any person, equipment or things to come within dangerous proximity of Delmarva's overhead lines creates an extreme risk of severe injury or death. You are further notified that no



## UTILITY STATEMENT

activities may be conducted within dangerous proximity of Delmarva's overhead lines until mutually agreeable measures to prevent contact with overhead lines have been reached with Delmarva and Delmarva has provided you with written authorization to perform the activities.

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

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### **Delmarva Power (Gas)**

Delmarva (Gas) maintains underground facilities within the project limits from West Court Drive and N Dupont Road. The existing main resides along the south side of Lancaster Pike with lateral feeds servicing adjacent residences/businesses. Delmarva (Gas) also maintains facilities in the extended project limits from SR 141 to Union Street.

Delmarva proposes the following adjustments and/or relocations to its existing facilities to be completed in advance of the State's Contract. Adjustments or relocations shall be performed so that there are no unnecessary disruptions of services:

1. Delmarva will adjust gas valve at Station 125+73, 26' right.
2. Delmarva will adjust gas valve at Station 125+75, 28' right.
3. Delmarva will relocate the 6" steel gas main from Station 125+25 to Station 125+75.

Delmarva will complete this work.

Delmarva proposes the following adjustments and/or relocations to its existing facilities to be completed concurrently with the State's Contract. Adjustments or relocations shall be performed so that there are no unnecessary disruptions of services:

1. Delmarva will adjust gas valve at Station 125+73, 26' right.
2. Delmarva will adjust gas valve at Station 125+75, 28' right.
3. Delmarva will adjust gas valve at Station 128+90, 24' left.
4. Delmarva will adjust gas valve at Station 129+44, 24' right.
5. Delmarva will adjust gas valve at Station 133+66, 56' left.
6. Delmarva will adjust gas valve at P46 (Cathedral Cemetery Entrance).

Adjustments within limits of the mill and overlay have not been identified in this statement. Delmarva will perform these adjustments as described below.

Delmarva will complete this work. The adjustments are expected to take approximately 5 calendar days to complete after Delmarva has been given a minimum of 8 weeks advance notice by the State Contractor that work shall begin and the right-of-way and proposed work has been laid out in the field by the State's Contract, clearing and grubbing has been performed, cuts and fills have been completed to within one foot of final grades and the relocations have been made accessible.

**No working/existing Delmarva Power-Gas facilities can be taken out of service.**

**These facilities will remain in place and active during the duration of this contract. If you smell natural gas, leave the area immediately and then call 302-454-0317, 24 hours a day.**

## UTILITY STATEMENT

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### **New Castle County – Sanitary Sewer**

New Castle County Sanitary Sewer (NCC) maintains underground facilities within the project limits from West Court Drive to N Dupont Road along the north side of Lancaster Pike with lateral feeds servicing adjacent residences/businesses. NCC Sanitary Sewer also maintains underground facilities within the extended project limits from SR 141 to Union Street.

The following adjustments and/or relocations to its existing facilities to be completed concurrently with the State's Contract, by the State's Contractor. Adjustments or relocations shall be performed so that there are no unnecessary disruptions of services:

1. Adjust manhole at Station 125+09, 34' left.
2. Adjust manhole at Station 129+87, 30' left.
3. Adjust manhole at Station 131+17, 29' left.

Adjustments within limits of the mill and overlay have not been identified in this statement. The State's Contractor will perform these adjustments as described below.

Adjustments to New Castle County's existing facilities will be done by the State's Contractor in accordance with the Standard Details and Standard Specifications of New Castle County and as shown in the contract documents. The Contractor shall contact New Castle County Dept. Special Services at (302) 395-5756 five (5) calendar days prior to any relocation work beginning. The Contractor shall determine the number of days required and show that in schedule. The work is not considered complete until accepted by New Castle County.

The State's contractor shall make every effort to maintain 10-foot horizontal clearance from the existing New Castle County Sewer trunk line while staying within the State's right-of-way during installation of DelDOT ITMS.

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

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### **Verizon of Delaware Inc. – Telephone**

Verizon of Delaware Inc. maintains aerial and underground facilities on the north and south sides of Lancaster Pike from West Court Drive to N Dupont Road, with lateral feeds servicing adjacent residences/businesses. Verizon also maintains underground and aerial utilities within the extended project limits from SR 141 to Union Street.

The following adjustments and/or relocations are required for the existing Verizon facilities. Adjustments shall be performed so that there are no unnecessary disruptions of services. **The adjustments and/or relocations below were provided by Verizon.**

1. Conduit run on the north side of Lancaster Pike may be impacted by full depth restoration between stations 126+08 LT to 126+98 LT.



## UTILITY STATEMENT

2. Roof of Manhole #160 at station 126+40 L34 may be within the full depth pavement section.
3. Verizon will remove existing guy wire/anchor on pole 47359-43703, station 131+55, right.
4. Buried cable on the south side of Lancaster Pike may be impacted by the proposed sidewalk improvements between stations 131+56 RT to 131+67 RT.
5. Verizon will remove existing pole, guy wire/anchor and aerial crossing of Lancaster Pike at station 131+80, left.
6. Buried cable on the south side of Lancaster Pike may be impacted by the proposed sidewalk improvements between stations 134+03 RT to 134+20 RT.
7. Buried cable on the south side of Lancaster Pike may be impacted by the proposed sidewalk improvements between stations 139+92 LT to 140+12 LT.

Adjustments within limits of the mill and overlay have not been identified in this statement. Verizon will perform these adjustments as described below.

Verizon will complete these changes. These relocations/adjustments are expected to take approximately 14 calendar days to complete after Verizon has been given a minimum of 30 days advance notice that work shall begin and the right-of-way and proposed work has been laid out in the field by the State's Contract, clearing and grubbing has been performed. Verizon relocations will begin when DP&L has completed their work.

**No working/existing Verizon facilities can be taken out of service.**

**These facilities will remain in place and active during the duration of this contract.**

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The following adjustments and/or relocations are required for unknown existing facilities within the extended project limits from SR 141 to Union Street:

1. Adjust water valve at P146 (Gray Ave).
2. Adjust junction well at P40 (S Ford Ave).
3. Adjust junction well at P148 (Ford Ave).
4. Remove remains of abandoned utility pole at P42 (Colonial Ave).
5. Adjust junction well at P150 (Greenhill Ave).

Adjustments within limits of the mill and overlay have not been identified in this statement. The State's Contractor will perform these adjustments.

### **GENERAL NOTES:**

1. The Contractor's attention is directed to Section 105.09 Utilities, Delaware Standard Specifications, August 2016. The Contractor shall contact Miss Utility (1-800-282-8555) two working days prior to any excavation. The Contractor is responsible for the support and protection of all utilities when excavating. The Contractor is responsible for ensuring proper clearances, including safety clearances, from overhead utilities for construction

## UTILITY STATEMENT

equipment. The Contractor is advised to check the site for access and operating purposes for his equipment and, if necessary, make arrangements directly with the utility companies for field adjustments for adequate clearances.

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

Company	Name	Email	Phone
City of Wilmington – Sewer	Michelle Devillers	mdevillers@wilmingtonde.gov	(302) 576-3072
City of Wilmington – Water	Luis Camacho	lcamacho@wilmingtonde.gov	(302) 576-3065
Comcast Cable	Keith Allridge	keith@americomm-llc.com	(717) 776-1073
DelDOT	Karl S. Brown	Karl.Brown@delaware.gov	(302) 326-4466



## UTILITY STATEMENT

Delmarva – Electric	Angel Collazo	Angel.Collazo@delmarva.com	(302) 454-4370
Delmarva – Gas	Robert Kitson	Robert.Kitson@delmarva.com	(302) 429-3848
New Castle County – Special Services	David Clark	david.clark@newcastlede.gov	(302) 395-5705
Verizon of Delaware	George Zang	George.w.zang@verizon.com	(302) 422-1238

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

UTILITY STATEMENT

**Prepared and Recommended by:**



Pennoni

1/10/2020

DATE

**Approved as to form by**



Utilities Section, DelDOT

13 January, 2020

DATE

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

**CERTIFICATE OF RIGHT-OF-WAY STATUS**

**STATE PROJECT NO. T201601103**

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

**SR 48, SR 141 TO UNION STREET PAR  
AND PAVEMENT IMPROVEMENTS**

**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:

- 1. Parcel 1-R Lancaster Pike Property, LLC-agreement signed, awaiting payment  
available 2/20/2020**
- 2. Parcel 2-L Realty Income Wilmington Lancaster, LLC-in condemnation  
available 4/15/2020**

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 **April 15, 2020.**

RIGHT OF WAY SECTION



Monroe C. Hite, III  
Chief of Right of Way



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

JENNIFER COHAN  
SECRETARY

January 31, 2020

ENVIRONMENTAL REQUIREMENTS

FOR  
State Contract No. T201601103  
Federal Aid No.: N/A

Contract Title: SR 48, SR 141 to Union Street PAR and Pavement Improvements

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.:** T201601103

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

**Project Title:** SR 48, SR 141 to Union Street Par and Pavement Improvements

**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"/> State of Delaware<br>Delmarva Central | <input type="checkbox"/> Wilmington & Western |
| <input checked="" type="checkbox"/> East Penn                  | <input type="checkbox"/> Delmarva Central     |
|  | <input type="checkbox"/> None                 |

DOT Inventory No.: 593277H No. Trains/Day: 2 Passenger Trains (Y / N): N

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

- ☐ No Railroad involvement.
- ☒ Railroad Agreement unnecessary but railroad flagging required. The contractor shall follow requirements stated in the DeDOT Maintenance of Railroad Traffic Item in the Special Provisions. Contractor shall coordinate railroad flagging with DeDOT's Railroad Program Manager at (302) 659-4060.
- ☐ 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 DeDOT Maintenance of Railroad Traffic Item in the Special Provisions. Contractor shall coordinate railroad flagging with DeDOT's Railroad Program Manager at (302) 659-4060.

**Approved As To Form:**

*Richard Sinegar*  
DeDOT Railroad Program Manager

1/30/20

DATE

# **BID PROPOSAL FORMS**

**CONTRACT T201601103.01**

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 T201601103.01  
- Name of Contractor

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE: 1  
DATE:

CONTRACT ID: T201601103.01 PROJECT(S): T201601103

All figures must be typewritten.

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

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

SECTION 0001 LANCASTER PIKE PEDESTRIAN IMPROVEMENTS, WEST COURT DRIVE  
DUPONT ROAD

0010	201000 CLEARING AND GRUBBING	LUMP	LUMP		
0020	202000 EXCAVATION AND EMBANKMENT	1922.000 CY			
0030	207000 STRUCTURAL EXCAVATION	59.000 CY			
0040	209006 BORROW, TYPE F	34.000 CY			
0050	211000 REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LUMP	LUMP		
0060	211001 REMOVAL OF PORTLAND CEMENT CONCRETE PAVEMENT, CURB AND SIDEWALK	253.000 SY			
0070	301001 GRADED AGGREGATE BASE COURSE, TYPE B	362.000 CY			
0080	301006 RECYCLED ASPHALT PAVEMENT	164.000 CY			
0090	401015 SUPERPAVE TYPE B, PG 70-22	265.000 TON			

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE: 2  
DATE:

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0100	401045 SUPERPAVE TYPE C, PG 70-22 (NON-CARBONATE STONE)	5967.000 TON				
0110	403000 BITUMINOUS CONCRETE AND/OR COLD-LAID BITUMINOUS (TRM) CONCRETE	30.000 TON				
0120	503001 PATCHING PORTLAND CEMENT CONCRETE PAVEMENT, 6' TO 15', TYPE A	2549.000 SY				
0130	503002 PATCHING PORTLAND CEMENT CONCRET PAVEMENT, 15' TO 100', TYPE B	1020.000 SY				
0140	503006 DOWEL BARS	1920.000 EACH				
0150	504001 CRACK AND JOINT SEALING LESS THAN 3/4 INCH WIDE	7669.000 LF				
0160	601052 REINFORCED CONCRETE PIPE, 12", CLASS V	74.000 LF				
0170	602004 DRAINAGE INLET, 48" X 30"	2.000 EACH				
0180	602100 REPLACE DRAINAGE INLET GRATE(S)	2.000 EACH				
0190	602130 ADJUSTING AND REPAIRING EXISTING DRAINAGE INLET	16.000 EACH				

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE: 3  
DATE:

CONTRACT ID: T201601103.01

PROJECT(S): T201601103

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0200	602132 ADJUSTING AND REPAIRING EXISTING MANHOLE	24.000 EACH				
0210	607010 MODULAR BLOCK RETAINING WALLS	36.000 SF				
0220	610000 PORTLAND CEMENT CONCRETE MASONRY, CLASS A	57.000 CY				
0230	611001 BAR REINFORCEMENT, EPOXY COATED	8588.000 LB				
0240	613001 SILICONE-BASED ACRYLIC CONCRETE SEALER	432.000 SF				
0250	615000 STEEL STRUCTURES	100.000 LB				
0260	615519 RELOCATING BUS STOP SHELTER	1.000 EACH				
0270	619002 POINTING EXISTING MASONRY	52.000 LF				
0280	624008 CLOSED-CELL JOINT SEAL	52.000 LF				
0290	624010 SILICONE JOINT SEAL, 1"	6.000 LF				

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE: 4  
DATE:

CONTRACT ID: T201601103.01 PROJECT(S): T201601103

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0300	626010 ALUMINUM PEDESTRIAN RAILING	186.000 LF				
0310	701011 PORTLAND CEMENT CONCRETE CURB, TYPE 1-4	1170.000 LF				
0320	701012 PORTLAND CEMENT CONCRETE CURB, TYPE 1-6	1241.000 LF				
0330	701013 PORTLAND CEMENT CONCRETE CURB, TYPE 1-8	35.000 LF				
0340	701506 REMOVE AND RESET PORTLAND CEMENT CONCRETE PARKING BUMPERS	30.000 EACH				
0350	701511 PORTLAND CEMENT CONCRETE CURB, SPECIAL	101.000 LF				
0360	702000 TRIANGULAR CHANNELIZING ISLANDS	115.000 SF				
0370	705001 PORTLAND CEMENT CONCRETE SIDEWALK, 4"	12143.000 SF				
0380	705002 PORTLAND CEMENT CONCRETE SIDEWALK, 6"	373.000 SF				
0390	705005 PORTLAND CEMENT CONCRETE SIDEWALK, 8"	1348.000 SF				

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE: 5  
DATE:

CONTRACT ID: T201601103.01

PROJECT(S): T201601103

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0400	705007 SIDEWALK SURFACE DETECTABLE WARNING SYSTEM	869.000 SF				
0410	705008 PEDESTRIAN CONNECTION, TYPE 1	5220.000 SF				
0420	705009 PEDESTRIAN CONNECTION, TYPE 2, 3, AND/OR 4	3625.000 SF				
0430	705512 TEMPORARY DETECTABLE WARNING SYSTEM	140.000 SF				
0440	705522 PORTLAND CEMENT CONCRETE SIDEWALK, SPECIAL 1	540.000 SF				
0450	705523 PORTLAND CEMENT CONCRETE SIDEWALK, SPECIAL 2	230.000 SF				
0460	705528 TEMPORARY PEDESTRIAN CONNECTION	2.000 EACH				
0470	710002 ADJUST WATER VALVE BOXES	31.000 EACH				
0480	711500 ADJUST AND REPAIR EXISTING SANITARY MANHOLE	22.000 EACH				
0490	760010 PAVEMENT MILLING, BITUMINOUS CONCRETE PAVEMENT	101923.000 SYIN				

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE:  
DATE:

6

CONTRACT ID: T201601103.01

PROJECT(S): T201601103

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0500	762000 SAW CUTTING, BITUMINOUS CONCRETE	1511.000 LF				
0510	762001 SAW CUTTING, CONCRETE, FULL DEPTH	7970.000 LF				
0520	763000 INITIAL EXPENSE/DE-MOBILIZATION	LUMP	LUMP			
0530	763597 UTILITY CONSTRUCTION ENGINEERING	10.000 HOUR				
0540	763621 CONSTRUCTION ENGINEERING, REHABILITATION	300.000 HOUR				
0550	801500 MAINTENANCE OF TRAFFIC, ALL INCLUSIVE	LUMP	LUMP			
0560	801501 MAINTENANCE OF RAILROAD TRAFFIC	LUMP	LUMP			
0570	802002 ARROW PANELS TYPE B	288.000 EADY				
0580	803001 FURNISH AND MAINTAIN PORTABLE CHANGEABLE MESSAGE SIGN	56.000 EADY				
0590	808002 FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	120.000 EADY				



DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE:  
DATE:

7

CONTRACT ID: T201601103.01

PROJECT(S): T201601103

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0600	811001 FLAGGER, NEW CASTLE COUNTY STATE	3400.000 HOUR				
0610	811013 FLAGGER, NEW CASTLE COUNTY, STATE, OVERTIME	1100.000 HOUR				
0620	813001 TEMPORARY BARRICADES, TYPE III	5520.000 LFDY				
0630	813500 PEDESTRIAN CHANNELIZING BARRICADE SYSTEM	324000.000 LFDY				
0640	813501 TEMPORARY SIDEWALK, TYPE 2 (BOARDWALK)	100.000 LF				
0650	817002 PERMANENT PAVEMENT STRIPING, SYMBOL/LEGEND, ALKYD-THERMOPLASTIC	8926.000 SF				
0660	817003 TEMPORARY MARKINGS, PAINT, 4"	75716.000 LF				
0670	817004 TEMPORARY MARKINGS, PAINT, SYMBOL/LEGEND	16710.000 SF				
0680	817005 PERMANENT PAVEMENT STRIPING, ALKYD-THERMOPLASTIC, 5"	110.000 LF				
0690	817012 RETROREFLECTIVE PREFORMED PATTERNED MARKINGS, SYMBOL/LEGEND	127.000 SF				

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE: 8  
DATE:

CONTRACT ID: T201601103.01

PROJECT(S): T201601103

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0700	817013 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, WHITE/YELLOW, 5"	53262.000 LF				
0710	817014 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, WHITE/YELLOW, 10"	169.000 LF				
0720	817015 PREFORMED RETROREFLECTIVE THERMOPLASTIC MARKINGS, BIKE SYMBOL	8.000 EACH				
0730	817018 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, BLACK, 3"	1186.000 LF				
0740	817019 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, BLACK, 5"	89.000 LF				
0750	817025 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, BLACK, 14"	30.000 LF				
0760	817031 REMOVAL OF PAVEMENT STRIPING	8233.000 SF				
0770	818504 RELOCATE SIGN	2.000 EACH				
0780	819016 INSTALLATION OF 4" DIAMETER HOLE, LESS THAN OR EQUAL TO 6" DEPTH	23.000 EACH				

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE: 9  
DATE:

CONTRACT ID: T201601103.01 PROJECT(S): T201601103

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

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0790	819017 INSTALLATION OF 4" DIAMETER HOLE, GREATER THAN 6" DEPTH	1.000 EACH				
0800	819018 INSTALLATION OR REMOVAL OF TRAFFIC SIGN(S) ON SINGLE SIGN POST	304.000 EACH				
0810	819019 INSTALLATION OR REMOVAL OF TRAFFIC SIGN(S) ON MULTIPLE SIGN POSTS	141.000 SF				
0820	819020 REMOVAL OF GROUND MOUNTED WOOD POST	9.000 EACH				
0830	830001 CONDUIT JUNCTION WELL, TYPE 1, 20" X 20" PRECAST CONCRETE	2.000 EACH				
0840	830002 CONDUIT JUNCTION WELL, TYPE 4, 20" X 42-1/2" PRECAST CONCRETE	5.000 EACH				
0850	830004 CONDUIT JUNCTION WELL, TYPE 7, 36" X 60" PRECAST POLYMER CONCRETE	3.000 EACH				
0860	830008 ADJUST OR REPAIR EXISTING CONDUIT JUNCTION WELL	10.000 EACH				
0870	831501 FURNISH AND INSTALL 4" SCHEDULE 80 PVC CONDUIT (OPEN CUT)	190.000 LF				

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE: 10  
DATE:

CONTRACT ID: T201601103.01

PROJECT(S): T201601103

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

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0880	831514 FURNISH AND INSTALL 2-1/2" SCHEDULE 80 PVC CONDUIT (TRENCH)	32.000 LF				
0890	831515 FURNISH AND INSTALL 3" SCHEDULE 80 PVC CONDUIT (TRENCH)	19.000 LF				
0900	831516 FURNISH AND INSTALL 4" SCHEDULE 80 PVC CONDUIT (TRENCH)	1505.000 LF				
0910	831523 FURNISH AND INSTALL 2" GALVANIZED CONDUIT (TRENCH)	74.000 LF				
0920	831545 FURNISH AND INSTALL 4" HDPE SDR-13.5 CONDUIT (BORE)	758.000 LF				
0930	832006 FURNISH AND INSTALL 1-CONDUCTOR #2 AWG STRANDED COPPER, TYPE USE-2	518.000 LF				
0940	832008 FURNISH AND INSTALL 1-CONDUCTOR #6 STRANDED COPPER, TYPE USE-2	494.000 LF				
0950	832017 FURNISH AND INSTALL STRANDED INSULATED COPPER GROUND WIRE, 1/#2 AWG	259.000 LF				
0960	834002 POLE BASE, TYPE 3A	1.000 EACH				

DELAWARE DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF ITEMS

PAGE: 11  
DATE:

CONTRACT ID: T201601103.01 PROJECT(S): T201601103

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

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0970	834005 POLE BASE, TYPE 4A	2.000 EACH				
0980	835002 CABINET BASE TYPE M	1.000 EACH				
0990	835003 CABINET BASE TYPE P	1.000 EACH				
1000	846001 FURNISH AND INSTALL LOOP WIRE 1-CONDUCTOR #14 AWG ENCASED IN 1/4" FLEXIBLE TUBING IN A LOOP SAWCUT	2812.000 LF				
1010	847004 LIGHTING CONTROL AND DISTRIBUTION ENCLOSURE (120/240;100 AMP)	1.000 EACH				
1020	850520 LUMINAIRE (LED), 150 WATTS, HPS EQUIVALENT	2.000 EACH				
1030	905001 SILT FENCE	1532.000 LF				
1040	905005 INLET SEDIMENT CONTROL, CURB INLET	35.000 EACH				
1050	908004 TOPSOIL, 6" DEPTH	1004.000 SY				

CONTRACT ID: T201601103.01

PROJECT(S): T201601103

All figures must be typewritten.

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

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1060	908016 PERMANENT GRASS SEEDING, SUBDIVISION	1004.000 SY				
1070	908020 EROSION CONTROL BLANKET MULCH	1004.000 SY				
	SECTION 0001 TOTAL					
	TOTAL BID					

CANNOT BE  
USED FOR  
BIDDING



**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. T201601103.01

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 \_\_\_\_\_

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**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. T201601103.01 , 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