

STATE OF DELAWARE



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

DEPARTMENT OF TRANSPORTATION

BID PROPOSAL

for

CONTRACT T200809001.01

FEDERAL AID PROJECT NO. EIM-N213(001)

CFDA NO. 20.205

**HSIP NCC, I-95, N213 Carr Road & N3, Marsh Road
Interchange Improvements**

New Castle County

ADVERTISEMENT DATE: August 20, 2018

COMPLETION TIME: 424 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 **September 18, 2018**

Contract No.T200809001.01
Federal Aid Project No. EIM-N213(001)

HSIP NCC, I-95, N213 Carr Road & N3, Marsh Road Interchange 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 improvements consist of furnishing all labor and materials for this contract. This project will include additional turn lanes at the Marsh Road/Carr Road and Marsh Road/I-95 SB Ramp intersections; and pedestrian and bicycle improvements 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 424 Calendar Days. The Contract Time includes an allowance for 67 Weather Days. It is the Department's intent to issue a Notice to Proceed such that work starts on or about November 15, 2018.

PROSPECTIVE BIDDERS NOTES:

1. BIDDERS MUST BE REGISTERED with DelDOT and request a cd of the official plans and specifications in order to submit a bid. Contact DelDOT at dot-ask@state.de.us, 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 September 18, 2018 unless changed via addendum.
2. QUESTIONS regarding this project are to be e-mailed to dot-ask@state.de.us no less than six business days prior to the bid opening date in order to receive a response. Please include T200809001.01 in the subject line. Responses to inquiries are posted on-line at <http://www.bids.delaware.gov>.
3. THE BID PROPOSAL incorporates a cd containing **Expedite, version 5.9a** and its installation file. Bidders are to use the cd provided to enter their bid amounts into the Expedite file. The Expedite bid file must be printed and submitted in paper form along with the cd and other required documents prior to the Bid due date and time.
4. SURETY BOND - Each proposal must be accompanied by a deposit of either surety bond or security for a sum equal to at least 10% of the bid.
5. DRUG TESTING - Regulation 4104; The state Office of Management and Budget has developed regulations that require Contractors and Subcontractors to implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds pursuant to 29 Del.C. §6908(a)(6). **Refer to the full REVISED requirements at the following link:** <http://regulations.delaware.gov/register/december2017/final/21 DE Reg 503 12-01-17.htm>

Note a few of the requirements;

- * At bid submission - Each bidder must submit with the bid a 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, *form is attached*;
 - * At least Two business days prior to contract execution - The awarded Contractor shall provide to DelDOT copies of the Employee Drug Testing Program for the Contractor, each participating DBE firm, and all other listed Subcontractors;
 - * Subcontractors - Contractors that employ Subcontractors on the job site may do so only after submitting a copy of the Subcontractor's Employee Drug Testing Program along with the standard required subcontractor information. A Subcontractor shall not commence work until DelDOT has approved the subcontractor in writing.
6. **DBE PROGRAM REQUIREMENTS** (49CFR §26.53(b)(3)(i)(B)) require submission of DBE participation information from the apparent low bidder no later than five (5) calendar days **after bid opening**, (*forms are attached*)
 7. No RETAINAGE will be withheld on this contract.

8. EXTERNAL COMPLAINT PROCEDURE can be viewed on DelDOT's Website at; <http://regulations.delaware.gov/AdminCode/title2/2000/2500/2501.shtml> or you may request a copy by calling (302) 760-2555.
9. AUGUST 2016 STANDARD SPECIFICATIONS apply to this contract. The Contractor shall make himself aware of any revisions and corrections (Supplemental Specifications, if any) and apply them to the applicable item(s) of this contract. The 2016 Standard Specifications can be [viewed here](#).
- 9a. FLATWORK CONCRETE TECHNICIAN CERTIFICATION TRAINING:
Section 501.03, 503.03, 505.03, 610.03, 701.03 and 702.03 of the 2016 Standard Specifications require contractor's to provide an American Concrete Institute (ACI) or National Ready Mix Concrete Association (NRMCA) certified concrete flatwork technician to supervise all finishing of flatwork concrete. Concrete flatwork certification will be effective starting on June 1, 2018.
10. **BREAKOUT SHEETS MUST** be submitted either with your bid documents; or within seven (7) calendar days following the bid due date by the lowest apparent bidder. Refer to instructions adjacent to the Breakout Sheets in this document.
11. PROPOSED TRAINEE PLANS - The number of trainees to be trained will be **1**, as listed in the Training Special Provisions within Contract General Notices. The program(s) must be submitted online at <https://deldotojt.com> as soon as possible by the apparent low bidder. Award of the Contract will not take place until acceptable On-the-Job (OJT) program plans are received and approved by the Department's Civil Rights Section. Failure of the apparent low bidder to submit acceptable OJT Trainee Programs within ten (10) calendar days of bid opening shall create a rebuttable presumption that the bid is not responsive.
12. **Road User Cost:**

CONTRACT LIQUIDATED DAMAGES

The contract drawings and notes provide a sequence of construction for this contract.

FAILURE TO OPEN PROJECT TO UNRESTRICTED HIGHWAY TRAFFIC ON TIME

Westbound Carr Road at Marsh Road intersection User Delay Costs

A Road User Cost (RUC) of \$800.00/calendar day have been established for the reduction of westbound Carr Road to a single lane (left/through/right) at the Marsh Road intersection. This work will occur during Phase 2 as specified in the plans.

East Leg of Carr Road User Delay Costs

Interim RUC for delays in opening at least one lane in each direction along the east leg of Carr Road at the intersection with Marsh Road will be enforced according to the chart below. This work will occur during Phase 2 as specified in the plans.

East leg of Carr Road (Monday)	
Contractor Penalties for Failure to Reopen Lanes	
Time All Lanes Reopened ("Verizon Time")	Lane Closure
5:00 AM to 6:00 AM	No Penalty
6:00 AM to 7:00 AM	\$350.00
7:00 AM to 8:00 AM	\$1,100.00
8:00 AM to 9:00 AM	\$750.00
9:00 AM to 10:00 AM	\$550.00
10:00 AM to 11:00AM	\$500.00
11:00 AM to 12:00 PM	\$500.00

* The above will be assessed for up to a total of \$3,750 per day.

CONSTRUCTION ITEMS UNITS OF MEASURE

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

*Not used for units of measurement for payment.

TABLE OF CONTENTS

GENERAL DESCRIPTION.....	<u>i</u>
LOCATION.....	<u>i</u>
DESCRIPTION.....	<u>i</u>
COMPLETION TIME.....	<u>i</u>
PROSPECTIVE BIDDERS NOTES.....	<u>i</u>
CONSTRUCTION ITEMS UNITS OF MEASURE.....	<u>iii</u>
GENERAL NOTICES.....	<u>1</u>
SPECIFICATIONS.....	<u>1</u>
CLARIFICATIONS.....	<u>1</u>
ATTESTING TO NON-COLLUSION.....	<u>1</u>
QUANTITIES.....	<u>1</u>
EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS.....	<u>1</u>
TAX CLEARANCE.....	<u>2</u>
LICENSE.....	<u>2</u>
DIFFERING SITE CONDITIONS.....	<u>2</u>
CONFLICT WITH FEDERAL STATUTES OR REGULATIONS.....	<u>3</u>
FEDERAL LABOR AND EMPLOYMENT REQUIREMENTS.....	<u>3</u>
CONVICT PRODUCED MATERIALS:.....	<u>3</u>
TO REPORT BID RIGGING ACTIVITIES.....	<u>4</u>
NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION.....	<u>5</u>
STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY.....	<u>6</u>
TRAINING SPECIAL PROVISIONS.....	<u>9</u>
INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT.....	<u>10</u>
DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM SPECIFICATION.....	<u>10</u>
CRITICAL DBE REQUIREMENTS.....	<u>12</u>
GUIDANCE FOR GOOD FAITH EFFORT.....	<u>13</u>
REQUIRED CONTRACT PROVISIONS - FEDERAL-AID CONSTRUCTION CONTRACTS....	<u>15</u>
I. GENERAL.....	<u>15</u>
II. NONDISCRIMINATION.....	<u>15</u>
III. NONSEGREGATED FACILITIES.....	<u>19</u>
IV. DAVIS-BACON AND RELATED ACT PROVISIONS.....	<u>19</u>
V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT.....	<u>24</u>
VI. SUBLETTING OR ASSIGNING THE CONTRACT.....	<u>24</u>
VII. SAFETY: ACCIDENT PREVENTION.....	<u>25</u>
VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS.....	<u>26</u>
IX. IMPLEMENTATION OF CLEAN AIR & WATER POLLUTION CONTROL ACT....	<u>26</u>
X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY....	<u>27</u>
XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING....	<u>29</u>
CARGO PREFERENCE ACT.....	<u>30</u>
BUY AMERICA.....	<u>30</u>
APPENDICES TO THE TITLE VI ASSURANCE.....	<u>32</u>
PREVAILING WAGES.....	<u>34</u>
PREVAILING WAGE REQUIREMENTS.....	<u>34</u>
APPLICABILITY OF DAVIS-BACON LABOR STANDARD PROVISIONS TO FLAGGERS.....	<u>38</u>
ALL AGENCY MEMORANDUM NO. 130.....	<u>38</u>
SPECIAL PROVISIONS.....	<u>40</u>
401502 - ASPHALT CEMENT COST ADJUSTMENT.....	<u>41</u>
301500 - MILLED HOT-MIX BASE COURSE.....	<u>42</u>
401699 - QUALITY CONTROL/QUALITY ASSURANCE OF BITUMINOUS CONCRETE.....	<u>45</u>
401752 – SAFETY EDGE FOR ROADWAY PAVEMENT.....	<u>58</u>
501502 - DIAMOND GRINDING P.C.C. PAVEMENT AND PRECAST PAVEMENT.....	<u>59</u>
501503 - PRECAST CONCRETE PAVEMENT PANELS.....	<u>60</u>
602502 - CONVERTING EXISTING CATCH BASIN TO MANHOLE.....	<u>67</u>

607500- SOIL NAIL WALL.....	<u>68</u>
617515 - HEADWALL.....	<u>80</u>
711500 - ADJUST AND REPAIR EXISTING SANITARY SEWER MANHOLE.	<u>81</u>
723502 - P.C.C. SAFETY BARRIER PERMANENT, SINGLE FACE, 54".	<u>82</u>
763501 - CONSTRUCTION ENGINEERING.....	<u>84</u>
763503 - TRAINEE.	<u>92</u>
763508 - PROJECT CONTROL SYSTEM DEVELOPMENT PLAN.	<u>93</u>
763509 - CPM SCHEDULE UPDATES AND/OR REVISED UPDATES.....	<u>93</u>
763598 - FIELD OFFICE, SPECIAL I.....	<u>98</u>
813500 – PEDESTRIAN CHANNELIZING BARRICADE SYSTEM.....	<u>105</u>
813501 - TEMPORARY SIDEWALK – TYPE 2 (BOARDWALK).....	<u>107</u>
830501 - JUNCTION BOX ON STRUCTURE.....	<u>108</u>
850504 - UNDERPASS LIGHT FIXTURE (LED).	<u>109</u>
850522 - LUMINAIRE (LED), 400 WATTS HPS EQUIVALENT.	<u>110</u>
 UTILITY STATEMENT.....	 <u>113</u>
 RIGHT OF WAY CERTIFICATE.....	 <u>122</u>
 ENVIRONMENTAL STATEMENT.....	 <u>123</u>
 RAILROAD STATEMENT.	 <u>126</u>
 BID PROPOSAL FORMS.	 <u>127</u>
BREAKOUT SHEET.....	<u>151</u>
 DRUG TESTING AFFIDAVIT.	 <u>154</u>
 CERTIFICATION.....	 <u>155</u>
 BID BOND.	 <u>157</u>

GENERAL NOTICES

SPECIFICATIONS:

The specifications entitled "Delaware Standard Specifications for Road and Bridge Construction, August, 2016", hereinafter referred to as the Standard Specifications; Supplemental Standard 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.

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.

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 on a project designated to include federal funds, shall obtain a Delaware business license upon making application to the Division of Revenue. Proof of said license compliance to be made prior to, or in conjunction with, the execution of a contract to which he has been named.

SUBCONTRACTOR LICENSE: 29 DEL. C. §6967:

(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.

CONFLICT WITH FEDERAL STATUTES OR REGULATIONS:

Delaware Code, Title 29, Chapter 69, Section 6904, Paragraph (a):

"If any provision of this subchapter conflicts or is inconsistent with any statute, rule or regulation of the federal government applicable to a project or activity, the cost of which is to be paid or reimbursed in whole or in part by the federal government, and due to such conflict or inconsistency the availability of federal funds may be jeopardized, such provision shall not apply to such project or activity."

FEDERAL LABOR AND EMPLOYMENT REQUIREMENTS

Federal Regulation 23 CFR § 635.117(b) Labor and employment, states:

"No procedures or requirement shall be imposed by any State which will operate to discriminate against the employment of labor from any other State, possession or territory of the United States, in the construction of a Federal-aid project."

CONVICT PRODUCED MATERIALS:

- (a) Materials produced after July 1, 1991, by convict labor may only be incorporated in a Federal-aid highway construction project if such materials have been:
 - (1) Produced by convicts who are on parole, supervised release, or probation from a prison or
 - (2) Produced in a qualified prison facility and the cumulative annual production amount of such materials for use in Federal-aid highway construction does not exceed the amount of such materials produced in such facility for use in Federal-aid highway construction during the 12-month period ending July 1, 1987.
- (b) Qualified prison facility means any prison facility in which convicts, during the 12-month period ending July 1, 1987, produced materials for use in Federal-aid highway construction projects.

TO REPORT BID RIGGING ACTIVITIES:

The U. S. Department of Transportation (DOT) operates the below toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m. eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

TO REPORT BID RIGGING ACTIVITIES
CALL 1-800-424-9071

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION
TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY
(EXECUTIVE ORDER 11246)

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

Goals for Minority Participation In
Each Trade

12.3% (New Castle County)
14.5% (Kent & Sussex Counties)

Goals for Female Participation In
Each Trade

6.9% (Entire State)

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the Executive Order and the regulations in CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.
4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is New Castle County.

REV. 11-3-80

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY
CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these specifications:
 - a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
 - b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
 - c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
 - d. "Minority" includes:
 - i. Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - ii. Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - iii. Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - iv. American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Program Office or from the Federal procurement contracting offices. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.
5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.
6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
- a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
 - c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.
 - d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
 - e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.
 - f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
 - g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foreman, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
 - h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.
 - i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
 - j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.
 - k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

- l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
 - m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
 - n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
 - o. Document and maintain a record of all solicitations of offers for subcontractors from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
 - p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female work force participating, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is under utilized).
10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Order of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
14. The Contractor shall designate a responsible official to monitor all employment-related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate

of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

* * * * *

TRAINING SPECIAL PROVISIONS

This Training Special Provision supersedes subparagraph 7b of the Special Provision entitled "Specific Equal Employment Opportunity Responsibilities", (Attachment 1), and is in implementation of 23 U.S.C. 140(a). As part of the contractor's equal employment opportunity affirmative action program, training shall be provided as follows:

The contractor shall provide on-the-job training aimed at developing full journeyman in the type of trade or job classification involved.

The number of trainees to be trained under the special provision will be **1**. In the event the contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this Training Special Provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year apprenticeship or training.

The number of trainees shall be distributed among the work classification on the basis of the contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment. Prior to commencing construction, the contractor shall submit to the Department of Highways and Transportation for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the contractor shall specify the starting time for training in each of the classifications. The contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent that such persons are available within a reasonable area of recruitment. The contractor will be responsible for demonstrating the steps that he has taken in pursuance thereof, prior to a determination as to whether the contractor is in compliance with this Training Special Provision. This training commitment is not intended, and not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used the contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the contractor and approved by the Department of Highways and Transportation and the Federal Highway Administration. The Department of Highways and Transportation and the Federal Highway Administration shall approve a program if it is reasonably calculated to meet the equal employment opportunity obligations of the contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved but not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment

obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work the classification covered by the program. It is the intention of these provisions that the training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the division office. Some off-site training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the engineer, reimbursement will be made for training persons in excess of the number specified herein. This reimbursement will be made even though the contractor receives additional training program funds from other sources, provided such other sources does not specifically prohibit the contractor from receiving other reimbursement. Reimbursement for off-site training indicated above may only be made to the contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training; provides the instruction of the trainee; or pays the trainee's wages during the off-site training period.

No payment shall be made to the contractor if either the failure to provide the required training, or the failure to hire the trainees as a journeyman, is caused by the contractor and evidences a lack of good faith on the part of the contractor in meeting the requirements of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program. It is not required that all trainees be on board for the entire length of the contract. A contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid a least 60 percent of the appropriate minimum journeymen's rate specified in the contract for the first half of the of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees is an approved existing program are enrolled as trainees on this project. In fact case, the appropriate rates approved by the Department of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provisions.

The contractor shall furnish the trainee a copy of the program he will follow in providing the training.

The contractor shall provide each trainee with a certification showing the type and length of training satisfactorily completed.

The contractor will provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

* * * * *

INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT & TRANSPORTATION EQUITY ACT

Recipients of Federal-aid highway funds authorized under Titles I (other than Part B) and V of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), or Titles I, III, and V of the Transportation Equity Act for the 21st Century (TEA-21) are required to comply with the regulations of 49 Code of Federal Regulations (CFR) Part 26 - Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs.

DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM SPECIFICATION

The U.S. Department of Transportation (DOT) requires that the Delaware Department of Transportation continue the established Disadvantaged Business Enterprise (DBE) Program for participation in U.S. DOT programs and that the program follow the final rules as stated in 49 CFR Part 26 and the Department's approved DBE Program plan.

The following definitions apply to this subpart:

Disadvantaged Business Enterprise or DBE means a for-profit small business concern (1) that is at least 51 percent owned by one or more individuals who are both socially and economically disadvantaged or, in the case of a corporation, in which 51 percent of the stock is owned by one or more such individuals; and, (2) whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it.

DOT-assisted contract means any contract between a recipient and a contractor (at any tier) funded in whole or in part with DOT financial assistance, including letters of credit or loan guarantees, except a contract solely for the purchase of land.

Good Faith Efforts means efforts to achieve a DBE goal or other requirement of this part which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement.

Joint Venture means an association of a DBE firm and one or more other firms to carry out a single, for-profit business enterprise, for which the parties combine their property, capital, efforts, skills and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the work of the contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture are commensurate with its ownership interest.

Race-conscious measure or program is one that is focused specifically on assisting only DBEs, including women-owned DBEs.

Race-neutral measure or program is one that is, or can be, used to assist all small businesses. For the purposes of this part, race-neutral includes gender neutrality.

Small Business concern means, with respect to firms seeking to participate as DBEs in DOT-assisted contracts, a small business concern as defined pursuant to section 3 of the Small Business Act and Small Business Administration regulations implementing it (13 CFR part 121) that also does not exceed the cap on average annual gross receipts specified in 49 CFR §26.65(b).

Socially and economically disadvantaged individuals means any individual who is a citizen (or lawfully admitted permanent resident) of the United States and who is - (1) any individual who a recipient finds to be a socially and economically disadvantaged individual on a case-by-case basis; (2) any individual in the following groups, members of which are rebuttably presumed to be socially and economically disadvantaged:

- (i) Black Americans which includes persons having origins in any of the Black racial groups of Africa;
- (ii) Hispanic Americans which includes persons of Mexican, Puerto Rican, Cuban, Dominican, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;
- (iii) Native Americans which includes persons who are American Indians, Eskimos, Aluets, or Native Hawaiians;
- (iv) Asian-Pacific Americans which includes persons whose origins are from Japan, China, Taiwan, Korea, Burma (Myanmar), Vietnam, Laos, Cambodia (Kampuchea), Thailand, Malaysia, Indonesia, the Philippines, Brunei, Samoa, Guam, the U.S. Trust Territories of the Pacific Islands (Republic of Palau), the Commonwealth of the Northern Marianas Islands, Macao, Fiji, Tonga, Kiribati, Juvalu, Nauru, Federated States of Micronesia, or Hong Kong;
- (v) Subcontinent Asian Americans which includes persons whose origins are from India, Pakistan, Bangladesh, Bhutan, the Maldives Islands, Nepal or Sri Lanka;
- (vi) Women;
- (vii) Any additional groups whose members are designated as socially and economically disadvantaged by the SBA, at such time as the SBA designation becomes effective.

DelDOT will establish specific goals for each particular DOT-assisted project which will be expressed as a percentage of the total dollar amount of contract bid. The specific contract goals for this contract are:

Disadvantaged Business Enterprise 12 % Percent

DelDOT continues to reserve the right to approve DBE subcontractors and all substitutions of DBE subcontractors prior to award and during the time of the contract.

Bidders are required to submit with their bids the completed DBE Program Assurance portion of the Certification document which will state the bidders intent of meeting the goals established for this contract; or in the instance where a contractor cannot meet the assigned DBE Goals for this contract, he/she shall at the time of bid submit documentation required to verify that he/she has made a Good Faith Effort to meet the DBE Goals. Guidance for submitting a Good Faith Effort is identified in the next section and in the DBE

Program Plan. Further, the apparent low bidder must submit to DelDOT within five (5) calendar days after the bid opening, executed originals of each and every DBE subcontract to satisfy contract goals consistent with the DBE Program Assurance submitted as part of the bid package.

No contract work shall be performed by a DBE subcontractor until the executed DBE subcontract is approved in writing by DelDOT and the Department has issued the required Notice to Proceed. Any DBE subcontract relating to work to be performed pursuant to this contract, which is submitted to DelDOT for approval, must contain all DBE subcontractor information, the requirements contained in this contract, and must be fully executed by the contractor and DBE subcontractor.

Each contract between the prime contractor and each DBE subcontractor shall at the minimum include the following:

1. All pertinent provisions and requirements of the prime contract.
2. Description of the work to be performed by the DBE subcontractor.
3. The dollar value of each item of work to be completed by the DBE subcontractor and the bid price of each item of work to be completed by the DBE subcontractor.

* * * * *

CRITICAL DBE REQUIREMENTS

A bid may be held to be non-responsive and not considered if the required DBE information is not provided. In addition, the bidder may lose its bidding capability on Department projects and such other sanctions as the Department may impose. It is critical that the bidder understands:

1. In the event that the bidder cannot meet the DBE goal as set forth in this specification, he/she shall at the time of bid submit to the Department that percentage of the DBE Goal that will be met, if any, on the written and notarized assurance made a part of this contract. The contractor shall also at the time of bid submit all documentation that the contractor wishes to have the Department consider in determining that the contractor made a Good Faith Effort to meet contract DBE Goals. The Department will not accept Good Faith Effort documentation other than on the scheduled date and time of the bid opening. However, the Department may ask for clarification of information submitted should the need arise.
2. A bid which does not contain either a completely executed DBE Program Assurance and/or Good Faith Effort documentation, where appropriate, shall be declared non-responsive and shall not be considered by the Department.
3. Failure of the apparent low bidder to present originals of all DBE subcontracts to substantiate the volume of work to be performed by DBE's as indicated in the bid within five (5) calendar days after the bid opening shall create a rebuttable presumption that the bid is not responsive.
4. Bidders are advised that failure to meet DBE Goals during the term of the contract may subject them to Department sanctions as identified in the DBE Program Plan.
5. In the execution of this contract, the successful bidder agrees to comply with the following contract clauses:

Prompt Payment: The prime contractor/consultant receiving payments shall, within 30 days of receipt of any payment, file a statement with the Department on a form to be determined by the Department that all subcontractors furnishing labor or material have been paid the full sum due them at the stage of the contract, except any funds withheld under the terms of the contract as required by Chapter 8, Title 17 of the Delaware Code, annotated and as amended. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of DelDOT. This clause applies to both DBE and non-DBE subcontractors.

Retainage: The prime contractor agrees to return retainage to each subcontractor within 15 calendar days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of DelDOT. This clause covers both DBE and non-DBE subcontractors. As guidance, once a subcontractor has satisfactorily completed the physical work, and has given to the prime contractor a certified statement that all laborers, lower tier contractors, and materialmen who have furnished labor and materials to the subcontractor have been paid all monies due them, the prime contractor shall return retainage to the subcontractor within 15 calendar days.

6. In the execution of this contract, the successful bidder agrees to comply with the following contract assurance and will include this same language in each subcontractor contract:

"The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such remedy as the recipient deems appropriate." 49 CFR Section 26.13

7. In addition to this specification, bidders must comply with all provisions of the rules and regulations adopted by the U.S. Department of Transportation for DBE participation in U.S. DOT and DelDOT Programs (49 CFR Part 26) and the Delaware Department of Transportation Disadvantaged Business Enterprise Program Plan; each of which is hereby incorporated and made part of this specification. Bidders are also reminded that they must be responsible and responsive bidders in all other aspects aside from the DBE Program in order to be awarded the contract.
8. In accordance with 49 CFR 26.53(f)(1), DelDOT requires that a prime contractor not terminate a DBE subcontractor without prior written consent from the DelDOT Civil Rights Office. This includes, but is not limited to, instances in which a prime contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm.

* * * * *

GUIDANCE FOR GOOD FAITH EFFORT

When the DBE Goals established for a contract by DelDOT are not met, the contractor shall demonstrate good faith efforts to meet the DBE contract goals. The contractor shall demonstrate that the efforts made were those that a contractor actively and aggressively seeking to meet the goals established by DelDOT would make, given all relevant circumstances. Evidence of this good faith effort will be submitted with the bid at the time of the bid opening.

The contractor is expected to demonstrate good faith efforts by actively and aggressively seeking out DBE participation in the project to the maximum extent, given all relevant circumstances. Following are the kinds of efforts that may be taken but are not deemed to be exclusive or exhaustive and DelDOT will consider other factors and types of efforts that may be relevant:

1. Efforts made to select portions of the work proposed to be performed by DBEs in order to increase the likelihood of achieving the stated goal. Selection of portions of work are required to at least equal the goal for DBE utilization specified in this contract.
2. Written notification at least ten (10) calendar days prior to the opening of a bid soliciting DBE interest in participating in the contract as a subcontractor or supplier and for specific items of work.
3. Efforts made to obtain and negotiate with DBE firms for specific items of work:
 - a. Description of the means by which firms were solicited (i.e. by telephone, e-mail, written notice, advertisement).
 - b. The names, addresses, telephone numbers of DBE's contacted, the dates of initial contact; and whether initial solicitations of interest were followed-up by contacting the DBEs to determine with certainty whether the DBEs were interested.
 - c. A description of the information provided to DBE firms regarding the plans, specifications and estimated quantities for portions of the work to be performed.
 - d. A statement of why additional agreements with DBE's were not reached in order to meet the projected goal.
 - e. Listing of each DBE contacted but not contracted and the reasons for not entering a contract.
4. Efforts made to assist DBEs that need assistance in obtaining bonding, insurance, or lines of credit required by the contractor.
5. Reasons why certified DBEs are not available or not interested.
6. Efforts to effectively use the services of available disadvantaged community organizations; disadvantaged contractor's groups; local, state and federal DBE assistance offices; and other organizations that provide assistance in recruitment and placement of DBEs.

The following are examples of actions that may not be used as justification by the contractor for failure to meet DBE contract goals:

1. Failure to contract with a DBE solely because the DBE was unable to provide performance and/or payment bonds.
2. Rejection of a DBE bid or quotation based on price alone.
3. Rejection of a DBE because of its union or non-union status.
4. Failure to contract with a DBE because the contractor normally would perform all or most of the work in the contract.

Administrative reconsideration:

Within five (5) days of being informed by DelDOT that it is not responsive because it has not documented sufficient good faith efforts, a bidder may request administrative reconsideration. Bidder should make this request in writing to the following reconsideration official: Director of Finance, DelDOT, 800 Bay Road, Dover, Delaware 19901, and Email a copy to dot-ask@state.de.us. The reconsideration official will not have played any role in the original determination that the bidder did not document sufficient good faith efforts.

As part of this reconsideration, the bidder will have the opportunity to provide written documentation or argument concerning the issue of whether it met the goal or made adequate good faith efforts to do so. The bidder will have the opportunity to meet in person with the reconsideration official, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. The final decision made by the reconsideration official will be communicated to the bidder in writing. The result of the reconsideration process is not administratively appealable to the U.S. Department of Transportation.

* * * * *

REQUIRED CONTRACT PROVISIONS - FEDERAL-AID CONSTRUCTION CONTRACTS
(Exclusive of Appalachian Contracts)

FHWA-1273 -- Revised May 1, 2012 <http://www.fhwa.dot.gov/programadmin/contracts/1273/1273.docx>

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.
3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.
4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:
 - a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.
 - b. The contractor will accept as its operating policy the following statement:
"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: 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, pre-apprenticeship, and/or on-the-job training."
2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.
3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:
 - a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.
 - b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.
 - c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

- d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
 - e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.
4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.
- a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.
 - b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.
 - c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.
5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:
- a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
 - b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
 - c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
 - d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.
6. Training and Promotion:
- a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.
 - b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

- c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.
 - d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.
7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:
- a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.
 - b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.
 - c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.
 - d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.
8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.
9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.
- a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.
 - b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.
10. Assurance Required by 49 CFR 26.13(b):
- a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.
 - b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.
 - a. The records kept by the contractor shall document the following:
 - (1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;
 - (2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and
 - (3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;
 - b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

- a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

- b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
 - (i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
 - (ii) The classification is utilized in the area by the construction industry; and
 - (iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- (3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- (4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.
- c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

- a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.
- b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency.
- (2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
 - (i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

- (ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
 - (iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
 - (3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.
 - (4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.
 - c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.
4. Apprentices and trainees
- a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.
 - d. Apprentices and Trainees (programs of the U.S. DOT).
Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.
- 5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.
 - 6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.
 - 7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
 - 8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

- a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.
3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.
4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price,

excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

- a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:
 - (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
 - (2) the prime contractor remains responsible for the quality of the work of the leased employees;
 - (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
 - (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.
 - b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.
2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.
 3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.
 4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.
 5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).
3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

- a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.
- c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.
- d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).
- f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
- g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.
- h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

- i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

- a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:
 - (1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;
 - (2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and
 - (4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

- a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.
- b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
- c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.
- d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction

(such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

- e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
- f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.
- g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.
- h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

- 1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.
- 2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

- 1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:
 - a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

- b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.
3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

* * * * *

CARGO PREFERENCE ACT

Requirements in the Federal-aid Highway Program

(a) Agreement Clauses. "Use of United States-flag vessels:

(1) Pursuant to Pub. L. 664 (43 U.S.C. 1241(b)) at least 50 percent of any equipment, materials or commodities procured, contracted for or otherwise obtained with funds granted, guaranteed, loaned, or advanced by the U.S. Government under this agreement, and which may be transported by ocean vessel, shall be transported on privately owned United States-flag commercial vessels, if available.

(2) Within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (a)(1) of this section shall be furnished to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(b) Contractor and Subcontractor Clauses. "Use of United States-flag vessels: The contractor agrees—

(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

NOTE:

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

* * * * *

BUY AMERICA

Requirements in the Federal-aid Highway Program

By signing and submitting this proposal, the bidder certifies that:

In accordance with 23 U.S.C, 313 and 23 CFR 635.410, all iron and steel materials permanently incorporated into this project will be produced in the United States and that all manufacturing processes involving these materials will occur in the U.S, except that a minimal amount of foreign steel or iron materials may be used, provided the cost of the foreign materials does not exceed 0.1 percent of the total Contract cost or \$2,500.00, whichever is greater. If such minimal amount of foreign steel is used, the Contractor shall maintain a record of the costs to ensure that the allowable limit is not exceeded. This documentation shall be presented to the Department upon request.

At the Department's request, I/we will provide manufacturer's/supplier's documentation verifying domestic origin as defined in the Specifications. All Materials accepted on the basis of such Certificate of Compliance may be sampled by the Department and tested at any time. Use of Material on the basis of Certificate of Compliance shall not relieve the Contractor of responsibility for incorporating Material in the Project conforming to the requirements of the Contract. Any Material not conforming to such requirements will be subject to rejection whether in place or not. The Department reserves the right to refuse to permit the use of Material on the basis of Certificate of Compliance.

* * * * *

APPENDICES TO THE TITLE VI ASSURANCE

APPENDIX A

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, (Federal Highway Administration (FHWA), or Federal Transit Authority (FTA)), as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.
3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.
4. **Information and Reports:** The contractor will provide all information and reports required by the Acts and the Regulations, and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Federal Highway Administration (FHWA), or Federal Transit Authority (FTA) to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the Federal Highway Administration (FHWA), or Federal Transit Authority (FTA), as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the Federal Highway Administration (FHWA), or Federal Transit Authority (FTA) may determine to be appropriate, including, but not limited to:
 - withholding payments to the contractor under the contract until the contractor complies;
 - and/or cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through five in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts and the Regulations. The contractor will take action with respect to any subcontract or procurement as the Recipient or the Federal Highway Administration (FHWA), or Federal Transit Authority (FTA) may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

APPENDIX E

During the performance of this contract, the contractor or consultant, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following nondiscrimination statutes and authorities; including but not limited to:

Pertinent Non-Discrimination Authorities:

Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.

The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 460 I), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);

Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);

Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;

The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);

Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);

The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);

Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 - 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;

The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 41123) (prohibits discrimination on the basis of race, color, national origin, and sex);

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures nondiscrimination against minority populations by discouraging programs; policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;

Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);

Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

* * * * *

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 Part VI., Section C., 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."

PREVAILING WAGE REQUIREMENTS

It is DelDOT's understanding that the Davis-Bacon Act is not a preemptive statute in the broad sense, and does not preempt or displace State of Delaware prevailing wage requirements.

When a contract for a project contains both Federal Davis-Bacon and State of Delaware prevailing wage standards because of concurrent Federal and State coverage, the employer's minimum wage obligations are determined by whichever standards are higher.

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

Mailing Address:
4425 North Market St., 3rd Fl
Wilmington, DE 19802

Located at:
4425 North Market St., 3rd Fl
Wilmington, DE 19802

PREVAILING WAGES FOR HIGHWAY CONSTRUCTION EFFECTIVE MARCH 15, 2018

CLASSIFICATION	NEW CASTLE	KENT	SUSSEX
BRICKLAYERS	53.89	53.89	53.89
CARPENTERS	54.62	54.81	43.57
CEMENT FINISHERS	34.63	34.85	27.71
ELECTRICAL LINE WORKERS	24.02	46.36	22.69
ELECTRICIANS	68.70	68.70	68.70
IRON WORKERS	63.68	25.48	27.06
LABORERS	43.30	40.70	39.95
MILLWRIGHTS	17.20	16.69	14.41
PAINTERS	68.79	68.79	68.79
PILEDRIERS	70.92	25.36	28.77
POWER EQUIPMENT OPERATORS	45.46	42.29	38.73
SHEET METAL WORKERS	24.30	21.68	19.64
TRUCK DRIVERS	36.49	30.14	36.72

CERTIFIED: 07/18/2018

BY: [Signature]

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: T200809001.01 HSIP NCC I95 N213 Carr road

GENERAL DECISION: DE180005 07/27/2018 DE5

State: DELAWARE

Construction Type: HIGHWAY

COUNTY: New Castle County in Delaware

HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.35 per hour (or the applicable wage rates listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1 (a) (2) - (60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number

Publication Date

0

07/27/2018

SUDE2018-002

03/15/2018

Rates

Fringes

Bricklayer

53.89

Carpenter

54.62

Cement Mason/Concrete Finisher

34.63

ELECTRICIAN

Electrician

68.70

Line Worker

24.02

Ironworker

63.68

Laborer

43.30

Millwright

17.20

Painter

68.79

Power Equipment Operator:

Piledriver

70.92

Power Equipment Operator

45.46

Sheet Metal Worker

24.30

Truck Driver

36.49

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of “identifiers” that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than “SU” or “UAVG” denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under an “SU” identifier indicated that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

APPLICABILITY OF DAVIS-BACON LABOR STANDARD PROVISIONS TO FLAGGERS

The U.S. Department of Labor has established that the duties of flaggers working on contracts covered by the Davis-Bacon Act, are manual and physical in nature. Accordingly, all employees performing the work of flaggers on Davis-Bacon covered contracts shall be entitled to receive applicable prevailing wage rates.

* * * * *

ALL AGENCY MEMORANDUM NO. 130
U.S. DEPARTMENT OF LABOR
EMPLOYMENT STANDARDS ADMINISTRATION
WAGE AND HOUR DIVISION
WASHINGTON, DC 20210

GUIDELINES

HIGHWAY CONSTRUCTION

Highway projects include the construction, alteration, or repair of roads, streets, highways, runways, taxiways, alleys, trails, paths, parking areas, and other similar projects not incidental to building or heavy construction.

EXAMPLES: Alleys, Base Courses, Bituminous treatments, Bridle Paths, Concrete pavement, Curbs, Excavation and embankment (for road construction), Fencing (highway), Grade crossing elimination (overpasses and underpasses), Guard rails on highway, Highway signs, Highway bridges (overpasses, underpasses, grade separation), Medians, Parking lots, Parkways, Resurfacing streets and highways, Roadbeds, Roadways, Runways, Shoulders, Stabilizing courses, Storm sewers incidental to road construction, Street paving, Surface courses, Taxiways, and Trails.

ANY QUESTIONS REGARDING THE APPLICATION OF THE GUIDELINES ABOVE TO A PARTICULAR PROJECT OR ANY DISPUTES REGARDING THE APPLICATION OF THE WAGE SCHEDULES ARE TO BE REFERRED TO THE WAGE AND HOUR DIVISION, U.S. DEPARTMENT OF LABOR FOR RESOLUTION, AND THE INSTRUCTIONS OF THE WAGE AND HOUR DIVISION ARE TO BE OBSERVED IN ALL INSTANCES.

* ALL AGENCY MEMORANDUM NO. 130
U.S. DEPARTMENT OF LABOR
EMPLOYMENT STANDARDS ADMINISTRATION
WAGE AND HOUR DIVISION
WASHINGTON, DC 20210

SPECIAL PROVISIONS

401502 - ASPHALT CEMENT COST ADJUSTMENT

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

The Delaware Posted Asphalt Cement Price will be issued monthly by the Department and will be the industry posted price for Asphalt Cement, F.O.B. Philadelphia, Pennsylvania. The link for the posting is http://www.deldot.gov/information/business/bids/asphalt_cement_english.shtml.

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

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

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

If the mix was not inspected and no QA/QC pay sheet was generated, then the asphalt percentage will be obtained from the job mix formula for that mix ID.

The asphalt percentage eligible for cost adjustment shall only be the virgin asphalt cement added to the mix.

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

The Asphalt cement cost adjustment will be calculated on grade PG 64-22 asphalt regardless of the actual grade of asphalt used. The Project Asphalt Cement Base Price per ton for the project will be the Delaware Posted Asphalt Cement Price in effect on the date of project advertisement.

If the Contractor exceeds the authorized allotted completion time, the price of asphalt cement on the last authorized allotted work day, shall be the prices used for cost adjustment during the time liquidated damages are assessed. However, if the industry posted price for asphalt cement goes down, the asphalt-cement cost shall be adjusted downward accordingly.

NOTE:

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

5/05/15

301500 - MILLED HOT-MIX BASE COURSE

Description:

It is the intent of this Special Provision to qualify the use of milled hot-mix asphalt pavement material in lieu of graded aggregate as a base course. All requirements of Section 301 shall remain in effect except as modified below:

Materials:

The material used to construct milled hot-mix asphalt pavement base courses shall be uniformly graded with a maximum size of 1 1/2".

Subgrade Preparation:

The subgrade shall be properly constructed in accordance with Subsection 202.03.10 I. No base course material shall be placed until the subgrade has been approved by the Engineer.

Placement:

- a. *Equipment.* The milled material shall be spread uniformly by an approved spreading machine or box in such a manner that no segregation occurs. A conventional motor grader will not be approved for placement of milled material on mainline roadway sections.

Where it is not possible to use a spreading machine or box in patching or other tight areas, other approved methods can be used only in such manner that no segregation occurs. Compaction shall be uniformly attained by approved rollers or compactors. No milled materials shall be placed until approved equipment is on the Project site and is operational.

- b. *Spreading and Compacting.* Milled material shall be placed in successive layers. Each layer shall be placed in a level, uniform cross-section not to exceed 12" in depth, loose measurement, unless otherwise approved by the Engineer. The milled material shall be deposited and spread parallel to the centerline and the layer shall extend to the full width as shown on the Plans. The milled material shall be handled so that no segregation of fine or coarse particles occurs. No more than 1,000' of material, as measured along the roadway centerline, shall be spread in advance of compaction operations. Each layer shall be properly compacted as specified, before starting the next layer.

Compaction or rolling shall be performed parallel to the roadway centerline starting at the edges and progressing toward the center. It shall continue until each layer is thoroughly and uniformly compacted to the full width as shown on the Plans.

The milled material shall be compacted by the following method: a sheepfoot roller (minimal 50 ton static roller) shall make the required number of passes on the base material to achieve the target density followed by a back-drag by either a bulldozer or a motor grader. After the pavement base material has been placed, a 15 ton/1800 vpm (minimum) vibratory steel wheel roller shall compact the base material. Compaction will be measured per subsection *Performance* below. In small areas where the above noted equipment cannot be used, the contractor must request approval from the Department to place the millings with other equipment. The Department reserves the right to reject or approve the areas for placement of millings as determined by the Engineer.

After compaction, all voids in the surface of each layer will be filled with millings and compacted (with the vibratory steel wheel roller) until the layer of base material is well bonded and firm, as determined by the Engineer.

In no case shall vehicles be allowed to travel in a single track or to form ruts in the base course. If any sharp irregularities are formed in the subgrade or base course material, the affected area shall be scarified to a depth of 6" and compacted to conform to the requirements of Section 202 or this Section.

- c. *Performance.* Compaction of milled hot-mix asphalt pavement base courses will be monitored by measuring the in-place density using a nuclear density gauge and comparing it to a control strip target

density. The mean base compaction shall be at least 98% of the control strip target density and sufficiently uniform that individual test results are at least 96% of the control strip target density, the base course represented by the test will be considered defective and the Contractor shall further compact the area. After further compaction, the original test site and one other randomly selected site within the area will be tested. The average of two test results will be included in the mean density for that day's placement.

To determine the control strip target density, a control strip with a minimum length of 300' shall be constructed at the beginning of work on each pavement base. Each control strip is to remain in place and become a section of the completed roadway. A control strip shall have an area of at least 400 yd². For small areas, the Contractor may request to have a test strip waived. This request shall be submitted to the Engineer for review.

Upon completion of the rolling, the mean density of the control strip will be determined by averaging the results of ten nuclear density tests taken at randomly selected sites within the control strip. The mean density of the control strip shall be the target density for the remainder of the pavement base course which it represents. Compaction shall be expressed as a percentage of the target density.

The finished surface of the graded aggregate base course shall not vary from that required on the Plans by more than 1/2" when tested with a 10' straightedge applied to the surface parallel to the centerline of the pavement and when tested with a template cut to the cross-section of the pavement. The actual thickness of the graded aggregate base course shall not be more than 1/2" less than the thickness shown on Plans. Those portions of completed base course not meeting these performance requirements shall be completely removed and replaced with proper material placed in accordance with this Section.

A straightedge meeting the approval of the Engineer shall be supplied by the Contractor at each placement operation. The straightedge shall be constructed of rigid materials that resist warping and bending.

Method of Measurement:

The quantity of milled hot-mix base course will be measured by the cubic yard and will be paid for under Item 301001 - Graded Aggregate Base Course. The volume of cubic yards will be measured as the number of square yards of surface area of milled hot-mix base course, placed and accepted, multiplied by the depths shown on the Plans. If the depth of milled hot-mix base course, placed and accepted, is greater than the depth shown on the Plans, the Plan depth will be used to measure the quantity of payment.

If the limits of measurement for pay quantities for milled hot-mix base course are designated on the Plans, the quantity of milled hot-mix base course measured for payment will be the number of square yards of surface area multiplied by the depth placed within the payment lines and grades shown on the Plans. If the limits are not designated on the Plans, or have been changed by the Engineer, in-place dimensions of the accepted milled hot-mix base course will be established. The computation of quantity will be made from cross-sections taken after the completion of work under this Section.

Materials placed beyond the designated lines and grades as shown on the Plans or beyond the limits established by the Engineer will not be measured for payment.

There will be no separate payment made for filling voids with millings as required under Placement subsection (b) *Spreading and Compaction*.

Basis of Payment:

Millings used for Base Course will be paid at the unit bid price for Item 301001 - Graded Aggregate Base Course, Type B. All costs to bring the millings into compliance with the requirements of 301500 are incidental to Item 301001. No payment will be made under this item 301500.

Price and payment will constitute full compensation for hauling, stockpiling (includes any double handling of material), preparing the subgrade, placing and compacting the materials, and for all labor, equipment, tools and incidental required to complete the work.

No additional compensation will be made to the Contractor to crush, screen or otherwise modify the milled hot-mix base course to meet the necessary gradation.

No payment will be made for materials placed beyond the designated lines and grades as shown on the Plans or beyond the limits established by the Engineer.

10/5/16

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 2000th ton target lot size is achieved during a production day, the lot size shall extend to the end of that production day. The Contractor may interrupt the production of one JMF in order to produce different material; this type of interruption will not alter the determination of the size or limits of material represented by a lot. The Engineer will evaluate each lot on a subplot basis. The size for each subplot shall be 100 to 500 tons and testing for the sub lots will be completed on a daily basis. For each subplot, the Engineer will evaluate one sample.

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

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

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

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

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

(b) Pavement Construction - Tests and Evaluations.

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

Notify the Engineer of any locations within that road segment that may not be suitable to achieve minimum (93%) compaction due to existing conditions prior to paving the road segment. Schedule and hold a meeting in the field with the Engineer in order to discuss all areas that may potentially be applicable to Table 5a before paving starts. Areas that will be considered for Table 5a will be investigated in accordance 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 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:

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

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

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

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

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

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

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

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

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

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

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

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 =
((Core Bulk Specific Gravity) / (Theoretical Maximum Specific Gravity)) x 100% recorded to the nearest 0.1%.
3. The average compaction for the sublots shall be averaged together for the compaction level of the lot. The lots compaction test level shall be averaged and recorded to the nearest whole percent.
4. Locate the value of the Payment Adjustment Factor corresponding to the calculated degree of compaction from Table 5 or Table 5a.
5. Determine the pavement construction price adjustment by using the following formula:
Construction Pay adjustment = (Lot Quantity) x (Bid Price) x (Pay Adjustment Factor) x 30%.

Table 5: Compaction Price Adjustment Highway Locations		
Degree of Compaction (%)	Range	Pay Adjustment Factor (%)
≥ 97.0	≥ 96.75	-100*
96.5	96.26 – 96.74	-5
96.0	95.75 – 96.25	-3
95.5	95.26 – 95.74	-2
95.0	94.75 – 95.25	0
94.5	94.26 – 94.74	0
94.0	93.75 – 94.25	1
93.5	93.26 – 93.74	3
93.0	92.75 – 93.25	5
92.5	92.26 – 92.74	3
92.0	91.75 – 92.25	0

91.5	91.26 – 91.74	0
91.0	90.75 – 91.25	-5
90.5	90.26 – 90.74	-15
90.0	89.75 – 90.25	-20
89.5	89.26 – 89.74	-25
89.0	88.75 – 89.25	-30
88.5	88.26 – 88.74	-50
≤ 88.0	≤ 88.25	-100*

* or remove and replace it at Engineer's discretion

Table 5A: Compaction Price Adjustment Other ¹ Locations		
Degree of Compaction	Range	Pay Adjustment Factor (%)
≥ 97.0	≥ 96.75	-100*
96.5	96.26 – 96.74	-5
96.0	95.75 – 96.25	-3
95.5	95.26 – 95.74	-2
95.0	94.75 – 95.25	0
94.5	94.26 – 94.74	0
94.0	93.75 – 94.25	0
93.5	93.26 – 93.74	1
93.0	92.75 – 93.25	3
92.5	92.26 – 92.74	1
92.0	91.75 – 92.25	0
91.5	91.26 – 91.74	0
91.0	90.75 – 91.25	0
90.5	90.26 – 90.74	0
90.0	89.75 – 90.25	0
89.5	89.26 – 89.74	0
89.0	88.75 – 89.25	-1
88.5	88.26 – 88.74	-3
88.0	87.75 – 88.25	-5
87.5	87.26 – 87.74	-10
87.0	86.75 – 87.25	-15
86.5	86.26 – 86.74	-20

86.0	85.75 – 86.25	-25
85.5	85.26 – 85.74	-30
85.0	84.75 – 85.25	-40
84.5	84.26 – 84.74	-50
≤ 84.0	≤ 84.25	-100*

* or remove and replace at Engineer's discretion

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

.04 Dispute Resolution.

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

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

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

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

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

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

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

Appendix A - Repairing Core Holes in Bituminous Asphalt Pavement

Description.

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

Materials and Equipment.

The following material shall be available to complete this work:

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

The following equipment shall be available to complete this work:

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

Construction Method.

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

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

Performance Requirements.

The Engineer will judge the patch on the following basis:

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

Basis of Payment.

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

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

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

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

Structural Number Calculations

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

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

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

11/3/14

401752 – SAFETY EDGE FOR ROADWAY PAVEMENT

Description:

This work consists of the construction of safety edge(s) along bituminous concrete pavement or P.C.C. pavement in accordance with the details and notes on the Plans and as directed by the Engineer.

Construction Methods:

The safety edge shall not be constructed adjacent to curb or in front of guardrail sections.

In bituminous concrete pavement sections, prior to the construction of the safety edge, the fill or in situ material at the edge of pavement shall be compacted so that it is level with the top of the pavement, prior to the final surface overlay.

In bituminous concrete pavement sections, the contractor shall attach a device to the screed of the paver unit that confines the material at the end of the gate and extrudes the asphalt material in such a way that results in a compacted wedge shape pavement edge of 32 degrees (construction tolerance range of 26 to 40 degrees). Contact shall be maintained between the device and the road shoulder surface. The device shall be manufactured so that it can be easily adjusted to transition at cross roads, driveways and obstructions without stopping the paver unit. The device's shape shall constrain the asphalt and cause compaction, as well as increase the density of the extruded profile.

In bituminous concrete pavement sections, the Transtech Shoulder Wedge Maker, Carlson Safety Edge End Gate or an approved equal shall be used to produce the safety edge. Contact information for these wedge shape compaction devices is listed below:

Transtech Systems, Inc.
1594 State Street
Schenectady, NY 12304
1-800-724-6306
www.transtechsys.com

or

Carlson Paving Products
18425 50th Ave. E
Tacoma, WA 98446
1-253-278-9426
www.carlsonpavingproducts.com

or an approved equal.

In P.C.C. pavement sections, the paver screed shall be modified to provide a chamfer at the end of the P.C.C. pavement in accordance with the details and notes on the Plans, or as directed by the Engineer.

Method of Measurement:

Safety Edge will not be measured for payment.

Basis of Payment:

The cost associated with the construction of safety edge(s), including but not limited to the wedge device, preparation and compaction of the fill or in situ material, and placement of the safety edge in accordance with the Plans and Details shall be incidental to the bituminous concrete pavement or P.C.C. pavement item being placed.

4/5/2017

501502 - DIAMOND GRINDING P.C.C. PAVEMENT AND PRECAST PAVEMENT

Description:

This work consists of end-to-end texturing (blanket grinding) of the pavement surface to provide consistent texture and improved ride quality on existing pavement and patching.

Equipment:

Grinding Equipment: A self-propelled machine with diamond-impregnated grinding blades that does not strain or damage the pavement and that has demonstrated successful grinding and texturing of concrete pavements. The equipment must produce a pavement surface having a corduroy-type texture consisting of grooves $1/8$ inch \pm $1/32$ inch wide parallel to the centerline of the roadway spaced $1/16$ to $1/8$ inch apart and $1/16$ inch \pm $1/32$ inch deep. The equipment must contain a system capable of capturing all slurry or residue resulting from the grinding and texturing operations and discharging material into suitable holding tanks.

10' Straightedge: a rigid 10' straightedge capable of measuring deviations.

Testing:

The contractor must test areas patched under this contract using an approved 10' straightedge for compliance to specifications. Newly patched areas must not have any deviations (high or low) exceeding 0.25" in 10'

Correction Methods:

Areas patched under this contract must be corrected prior to blanket grinding the entire roadway. Do not create new deviations during the corrective work.

Texturing / Blanket Grinding:

Texture / blanket grind the pavement longitudinally. Begin and end at lines approximately perpendicular to the pavement centerline. Texture the full pavement width including all adjacent lanes. Grinding and texturing must be completed before placement of new joint sealant. The final pavement surface must allow surface water to flow freely off the traveled way.

Before opening a lane to traffic, the pavement surface shall be clean, and it shall have no cross-slope deviations exceeding $1/8$ inch in 10 feet.

Method of Measurement:

The quantity of excessive deviations in areas patched under this contract that must be corrected will not be measured for payment

The quantity of blanket grinding of PCC pavement will be measured by square foot.

Basis of Payment:

The quantities for correcting excessive deviations in P.C.C. pavement and diamond grinding will not be paid.

The quantity for blanket grinding of PCC pavement will be paid by square foot unit price.

Any pavement joint sealant that was placed for this contract and damaged by the grinding operations must be repaired at no expense to the Department.

5/22/18

501503 - PRECAST CONCRETE PAVEMENT PANELS

Description:

This work consists of furnishing and installing a full-depth precast concrete pavement system. This includes the survey, design, fabrication, transportation of panels and materials, saw cutting and removal of existing pavement, base adjustments, placement of bedding material, grouting as required, diamond grinding, joint sealing, placement of temporary pavement transitions and all necessary materials and equipment to complete the work as shown on the Contract Plans.

References:

- PCI Design Handbook, 7th Edition, with all Interims and Errata
- AASHTO M111: Standard Specifications for Zinc (Hot-Galvanized) Coatings on Iron and Steel Products
- AASHTO M235: Standard Specifications for Epoxy Resin Adhesive
- ASTM B633: Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel
- ASTM C578: Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
- ASTM C637: Standard Specification for Aggregates for Radiation-Shielding Concrete
- ASTM C938: Standard Practice for Proportioning Grout Mixtures for Preplaced-Aggregate Concrete
- ASTM C1107: Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)
- ASTM C2665: Standard Specification for Poly Vinyl Chloride (PVC) Drain, Waste and Vent Pipe and Fittings
- ASTM D3963: Standard Specification for Fabrication and Jobsite Handling of Epoxy-Coated Steel Reinforcing Bars
- ASTM D4101: Standard Specification for Polypropylene Injection and Extrusion Materials
- ASTM C109: Standard Test Method for Compressive Strength of Hydraulic-Cement
- ASTM C157: Standard Test Method for Length Change of Hardened Hydraulic-Cement Mortar and Concrete
- ASTM C266: Standard Test Method for Time of Setting of Hydraulic-Cement Paste by Gillmore Needles
- ASTM C666: Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing
- ASTM C939: Standard Test Method for Flow of Grout for Preplaced-Aggregate Concrete (Flow Cone Method)
- ASTM C940: Standard Test Method for Expansion and Bleeding of Freshly Mixed Grouts for Preplaced-Aggregate Concrete in the Laboratory
- ASTM C942: Standard Test Method for Compressive Strength of Grouts for Preplaced-Aggregate Concrete in the Laboratory
- ASTM C1038: Standard Test Method for Expansion of Hydraulic Cement Mortar Bars Stored in Water
- ASTM C1090: Standard Test Method for Measuring Changes in Height of Cylindrical Specimens of Hydraulic Cement Grout

Submittals:

(A) Shop Drawings:

- Prepare shop drawings for each unique panel stamped by a Professional Engineer licensed in the State of Delaware.
- Shop Drawings shall include the following:
 - A) Length, width and thickness dimensions (including surface planarity) for each unique panel.
 - B) Detail and locate reinforcement (bar chart required).
 - C) Detail and locate grout channels, ports and vents, block-outs, key-ways, dowel bars, tie bars and embedded hardware.
 - D) Detail and locate lifting inserts and devices. Lifting stress calculations shall be submitted with Shop Drawings.

E) Edge and surface finish details.

- Design calculations shall be submitted with Shop Drawings.

(B) Installation Plans:

- Prepare a detailed installation plan for approval by the Engineer at least 30 days before beginning panel installation.
- Include the following at a minimum in the installation plan:
 1. Detailed panel and joint drawings.
 2. Details for removal of existing pavement and saw cut plan matching new panel sections.
 3. Details for subgrade improvements including procedures and equipment used to achieve required grade and compaction.
 4. Details for placement of panel support materials.
 5. Details for placement of grout dams around panel perimeters.
 - A) For grade-supported panels include the following:
 - i. Bedding material composition and gradation.
 - ii. Procedures and equipment used to place, compact and grade bedding material.
 - iii. Bedding grout instructions to fill small isolated voids between the panel and bedding.
 - B) For grout supported panels include the following:
 - i. Panel leveling details, using embedded leveling devices.
 - ii. Grout material properties, composition, mix design (if appropriate), and design strength.
 - iii. Procedure and equipment used to prepare and place grout beneath the panels.
 6. Detailed procedures for lifting, moving, lowering and adjusting panels into position.
 7. Procedure and equipment used to verify that panel surface is at the correct grade and cross slope.
 8. Details for placement of dowel bars and longitudinal joint ties.
 9. Details for grout encasement of dowel bars, longitudinal joint ties, lifting inserts and grout ports.

(C) Contractor Quality Control (QC) Plan:

- The Contractor must submit a QC plan to the Engineer at least 30 days before beginning panel installation. The QC plan shall include a detailed description of how the Contractor intends to ensure panels are installed in accordance with specifications and special provisions.
- The QC plan shall include the following at a minimum as applicable:
 1. The Contractor's installation team including names, titles, responsibilities and authorities of the project manager, job site foreman, team leaders, surveyor or layout person and crew members.
 2. All team member certifications, qualifications and training (include Pavement System Developer provided training).
 3. Designate by name and title the team member who will be responsible for marking, sawing and removal of existing pavement.
 4. Designate by name and title the team member who is responsible for ensuring that the subgrade material and bedding material meet compaction and grade requirements.
 5. Designate by name and title the team member who is responsible for delivery of the un-damaged pavement panels to the job site for placement.
 6. Designate by name and title the team member who is responsible for placement of pavement panels and ensuring that pavement panels meet grade requirements.
 7. Designate by name and title the team members who the Department's inspectors are to interact with in all QC/QA matters.

Materials:

- A. Concrete: Use Portland Cement Concrete (PCC) that is in compliance with the Standard Specifications, except that the minimum 28-day compressive strength shall be 5,000 psi. and the minimum 28-day flexural strength shall be 650 psi. Use 1-inch maximum size aggregate. Submit a PCC mix design using the absolute volume method per ACI Publication 211.1 a minimum of 30 days prior to casting panels.

- B. Reinforcing Steel: Reinforcing steel shall comply with the Standard Specification. Bars shall be epoxy coated on all surfaces and shall be full length, single bars. Do not use lap splices within the panel. Handling of bars shall comply with ASTM D3963.
- C. Dowel Bars and Tie Bars: Dowel bars and tie bars shall comply with the Standard Specifications and all surfaces shall be epoxy coated.
- D. Grout Channels, Ports and Vents: Use Schedule 40 PVC pipe in conformance with ASTM D 2665 or Corrugated Plastic Duct that is sufficiently rigid to withstand loads imposed during placing of concrete while maintaining its shape, remaining in proper alignment and remaining watertight.
- E. Lifting Inserts and Devices: Lifting inserts and devices shall meet the following criteria:
- Use inserts and devices that can support the required vertical and horizontal forces with the applicable safety factors as specified in Chapter 5 of the PCI Design Handbook, 7th edition
 - Use inserts and devices that have a 3-inch top cover and a minimum 1-inch bottom cover after panel installation. This may require partial removal of the devices after installation.
 - Coil loop lifting inserts shall be electro galvanized in accordance with ASTM B633 all other lifting inserts and devices shall be galvanized after fabrication in accordance with AASHTO M111.
- F. Grout Dams: Shall be foam strips fabricated from rigid high-density extruded polystyrene (XPS) conforming to ASTM C578 Type VII or approved equal. Grout dams shall be sized appropriately to prevent leakage during all under-panel grouting.
- G. Grout: Grout shall meet the following criteria:
- Grout for grout-supported bedding material may be proportioned under ASTM C938 or use prepackaged grout complying with ASTM C1107. Fine aggregate if used must meet grading two (2) in ASTM C637. Proportion the ingredients of the grout to meet the properties in Table 1.

TABLE 1
Cementitious Bedding Material Properties

Quality Characteristic	Test method	Requirement
Compressive Strength at 1 hour	ASTM C942	500 PSI Min.
Compressive Strength at 7 days	ASTM C942	2,500 PSI Min.
Expansion	ASTM C940	0 to 3.0%
Bleeding at 30 minutes	ASTM C940	0.10% Max.
Eflux Time	ASTM C939	15 to 30 seconds
Shrinkage at 28 days	ASTM C157	<0.04% dry
Flowability	ASTM C939	≤30 seconds - 1/2" flow cone

-Grout for encasement and fill material shall meet the requirements shown in Table 2.

TABLE 2
ENCASEMENT AND GROUT FILL MATERIAL REQUIREMENTS FOR MORTARS

Property	Test Method	Requirement
Compressive Strength, 28-day min.	ASTM C109	5,000 psi min
Compressive Strength, open to traffic	ASTM C109	2,500 psi
Maximum Expansion	ASTM C1090	0.40%
Maximum Shrinkage	ASTM C1090	0.050%
Freeze-Thaw, min.	ASTM C666	95.0% @ 300 cycles
Initial Set Time, min.	ASTM C266	15 min.
Chloride Content, max.	ASTM C1152	0.050%
Sulfate Content, max.	ASTM C1038	0.01%

- Grout will be tested for compressive strength by the Department at intervals determined by the Engineer.

- H. Granular Bedding for Grade-Supported Panels: Bedding material for grade-supported panels shall be crushed stone meeting the gradation in Table 3 below. The material shall be free of deleterious material and shall be supplied at the optimum moisture to facilitate compaction and consolidation.

Table 3
Granular Bedding Course Gradation

Sieve Size	Percent Passing
3/8 inch	100%
#4	85-100%
#10	55 – 75%
#40	10 – 40%
#200	0 – 10%

- I. Epoxy Resin Adhesive for Securing Drilled Dowels: Use epoxy resin that conforms to the requirements of AASHTO M 235 Type IV. Use grout retention rings, dowel bar caps and best practices to provide a good bond.
- J. Joint Sealant: Joint sealant material shall comply with Section 808 of the Standard Specifications.

Quality Control and Assurance:

Precast pavement panels shall be manufactured in a PCI or NPCA certified plant.

Quality Control (QC) is the responsibility of the fabricator. The person in charge of the QC Department must have completed Level II or Level III segments of the PCI Plant Quality Personnel Certification Program and hold a current certification or PQS II – QA/QC of the NPCA Certification Program and hold a current certification, unless otherwise agreed by the Engineer. All technicians at plants manufacturing precast pavement panels shall hold a current ACI Concrete Field Testing Technician Certification Grade 1, or equivalent, or work under the direct supervision of an ACI certified technician who shall be on site for the full duration of testing.

The Department will perform Quality Assurance. The role of the QA Inspector includes but is not limited to:

- Witnessing, documenting, and reporting on the performance of the QC Department.
- Collecting all certifications, calibrations, and reports necessary to assure that the product meets the specified requirements.
- Witness the testing of all fresh concrete.
- Witness the placement of all concrete.
- Witness the testing of process control cylinders for release, stripping, lifting and design strength.
- Determine the acceptability of the finished product.

The fabricator must give two (2) week notice to the Department prior to beginning any of the above operations. The presence of the QA Inspector does not relieve the Contractor of the responsibility of meeting all the requirements of the plans and specifications herein.

The fabricator shall identify each panel by date of cast, identification number and manufacturer identification. Panel identification shall be by etching, printed label or RFID chip. Etch markings in fresh concrete on two sides and bottom. Etching shall not be placed on the wearing surface (top). Affix printed labels to two sides. RFID chips must be placed in accordance with system recommendations. RFID readers must be provided to the Contractor by the fabricator. All panels must be identifiable upon arrival at the job staging area or job site. Panels that are unidentifiable are cause for rejection.

Prevent cracking or damage during handling and storage of precast panels. Panels that sustain damage or surface defects during fabrication, handling, storage, transporting or installation are subject to review and rejection.

Any of the following conditions shall be cause for rejection of precast panels:

- Any cracks with crack widths greater than 0.004 inches.
- Voids or honeycombed areas.

All proposed repair procedures shall be in writing. Approval shall be obtained from the Engineer prior to performing the repairs. Repair work must reestablish the panel's structural integrity, durability and aesthetics to the satisfaction of the Engineer.

Failure to take corrective action to eliminate repetitive damage is cause for rejection of the additional damaged panels whether repaired or not.

Panels shall be fabricated to the following tolerances:

Precast panel dimensional tolerances shall comply with Table 4 – Dimensional Tolerances for Precast Panels.

Table 4
Dimensional Tolerances for Precast Panels

Panel Dimensions: Length & Width	± 1/4"
Panel Dimensions: Nominal Thickness	± 1/8"
Panel Dimensions: Squareness (diagonal difference @ top of panel)	± 3/16"
Horizontal Alignment	± 1/4"
Deviation from straightness of mating edge of panels	
Vertical Alignment – Camber, Horizontal Skew, and Vertical Batter	± 1/8"
Position of lifting anchors (horizontal location)	± 6.0"
Position of non-prestressed reinforcement (horizontal & vertical)	± 1/2"
Position of pre-tensioned strands & Tendon duct at shear key, if used (horizontal & vertical)	± 1/4"
Position of dowel bar inserts (horizontal & vertical)	± 1/4"
Dimensions of block outs & grout pockets	± 1/4"

Construction Methods:

- A. Field Verification: The Contractor shall verify dimensions shown in the Contract Plans by field measurements. All necessary field information required for the fabrication and the installation of the precast panels shall be obtained prior to any preparation of the shop drawings and the installation plan. Any significant variation from the contract plans shall be reported to the Engineer.
- B. Fabrication: Do not place concrete in the forms until the Engineer has inspected the placement of all materials within the pavement panels.

Panels shall be manufactured to the thickness shown and shall include additional thickness to provide for the required blanket milling post placement required under Subsection 501.03.11.3 Surface Corrections. A minimum clearance of reinforcement and embedded items shall remain 3.0 inches.

Cure the precast panels in accordance with ACI, PCI or the approved plant Quality Control Plan. Begin curing immediately following surface finishing. Curing shall continue until lifting strength is attained. After curing, all form release material, curing material and any form material adhering to concrete surfaces shall be removed by power washing without causing damage to the surface.

Do not strip the form before the precast panels have attained a minimum compressive strength of 3,000 psi.

Top edges of precast panels shall be rounded with a hand stone to prevent chipping during handling and installation. No chamfering of panel top edges will be allowed.

All concrete surfaces which do not create a mechanical bond and are in contact with fill grout shall have an exposed aggregate finish. The roughened surface finish may be created by applying a retarder to the

form work followed by power washing the unhydrated paste from the surface immediately after removal of the formwork or by abrasive basting of the surface prior to shipping.

Use lift devices cast into panels when lifting and moving panels at the fabrication plant and at the project site. Panel lifting stress calculations for typical and largest or any unique panels shall be provided in the shop drawing submittal.

Exposed surface finish shall be medium brushed or burlap drag texture.

- C. Placing Pavement Panels: The Contractor shall place the precast panels as shown in the approved installation plan.

Comply with the precast panel placement tolerances in Table 5 unless noted otherwise in the contract documents or accepted Pre-Installation Submittals.

- D. Installing Dowel Bars and Longitudinal Joint Ties: The Contractor shall install dowel bars and longitudinal joint ties as shown in the approved installation plan.

If allowed by the system designer specification and approved by the Engineer, in-place panels may be opened to traffic prior to bedding and encasement grout being placed.

- E. Placement of Bedding Grout and Encasement Grout: The Contractor shall place all grout as shown in the approved installation plan.

The Contractor shall verify that in-place panels that have been subjected to traffic loading are at correct grade and in compliance with the panel placement tolerances in Table 5 prior to grout placement.

Placement of dowel bar grout shall be completed within 48-hours of initial panel placement. If adverse weather delays grouting operations, complete as soon as weather permits. Place bedding grout after dowel bar grout and in the same work shift.

Construction traffic shall be kept off of panels after grouting and prior to opening to traffic.

Table 5
Precast Panel Placement Tolerances

Horizontal Alignment: Longitudinal centerline to surveyed centerline marked on the surface of the base and adjacent panels.	$\frac{1}{2}$ " maximum
Transverse centerline to surveyed marks on adjacent panels	$\frac{1}{2}$ " maximum
Vertical alignment: Top surface of precast panel with respect to top surface adjacent panels at any point	$\frac{1}{4}$ " maximum
Gap width at top surface between adjoining panels Note: Maintaining variable transverse joint width in excess of 1/2 inch will be cause for stoppage of panel installation operations until the Contractor states in writing how he plans to correct this deficiency.	$\frac{1}{2}$ " maximum transverse $\frac{1}{2}$ " maximum longitudinal

Method of Measurement:

The quantity for "Precast Concrete Pavement" will be measured as the number of square yards installed and accepted. The area will be computed based on the plan dimensions as shown on the contract plans. Removal, repair and reconstruction of base material will be measured for payment separately in accordance with Section 501. Fine Grading or base adjustments up to 2" in depth are considered incidental and shall consist of proposed base materials or in the absence of a proposed base material the material shall meet or exceed Select Borrow in accordance with Section 301.

Basis of Payment:

The work is composed of survey, design, fabrication and materials, transportation of panels and materials, removal of existing pavement including any associated saw cutting, base adjustments, placement of bedding material, grouting as required, diamond grinding of the pavement surface, joint sealing, clean up and placement of temporary pavement transitions as applicable to the contract.

The payment for "Precast Concrete Pavement" will be at the Contract unit price bid per square yard. Price and payment will constitute full compensation for survey, design, fabrication and materials, transportation of panels and materials, removal of existing pavement including any associated saw cutting, base adjustments, placement of bedding material, grouting as required, diamond grinding and for furnishing all equipment, tools, labor, and incidentals required to complete the work.

All temporary marking shall be installed using a State approved solvent based paint. Alternative temporary markings will only be allowed by approval of the Engineer and shall be fully removed prior to diamond grinding of the final surface.

4/25/2018

602502 - CONVERTING EXISTING CATCH BASIN TO MANHOLE

Description:

This work consist of furnishing all materials, and constructing a manhole from an existing catch basin in accordance with the locations, notes and details shown 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 as specified on the Plans.

Portland Cement Concrete shall meet the requirements of Class B, Section 1022 of the Standard Specifications.

Method of Measurement:

The quantity of catch basins converted to manholes will be measured as the number of catch basins converted to manholes and accepted.

Basis of Payment:

The quantity of catch basins converted to manholes will be paid for at the Contract unit price per each. Price and payment will constitute full compensation for constructing the manhole from the existing catch basin, for all materials including reinforcing steel, cover & frames and for all labor, equipment, tools, and incidentals necessary to complete the item. The cost for salvaging and delivering gratings to the location as specified on the Plans shall be included in the unit price bid for the item.

4/9/2018

607500- SOIL NAIL WALL

DESCRIPTION:

This work consists of constructing a permanent soil nail wall as specified herein and as shown on the Plans. The Contractor shall furnish all labor, materials, and equipment required to complete the work.

The work shall include performing the following activities in accordance with the design plans, the required submittals by the Contractor and these specifications: excavating in staged lifts drilling of the soil nail drill-holes to the diameter and length required per plans; grouting of soil nails; supplying and installing the specified drainage features; supplying and installing bearing plates, washers, nuts, and other required hardware and miscellaneous materials; and constructing the initial and final soil nail wall facing and formliners.

MATERIALS:

Facing

Facing materials shall conform to the following sections and subsections.

Shotcrete Facing

Shotcrete facing shall meet the requirements of Section 24, "Pneumatically Applied Mortar" of the AASHTO LRFD Bridge Construction Specifications, 4th Edition.

Shotcrete: $f_c' = 4.0$ ksi.

Cast-in-place Concrete

Cast-in-place (CIP) concrete shall meet the requirements of Section 610 of the DelDOT Standard Specifications.

Concrete: Class A - $f_c' = 4.5$ ksi

Reinforcing Steel

Reinforcing steel shall meet the requirements of Section 1037 of the DelDOT Standard Specifications.

Architectural Surface Finishes

Architectural surface finishes may include textured surfaces or a surface finish with color/stain application.

Soil Nails

Soil Nail Solid Bar

Solid nail bars shall meet the requirements of AASHTO M31/ASTM A615 for Grade 75 steel bars, and ASTM A 722 for Grade 150 steel. Soil nail bar shall be continuous without splices or welds, new, straight, undamaged, epoxy coated or galvanized as shown on the Plans. The length of the threaded portion of the bar at the wall anchorage shall be as needed to allow proper attachment of the bearing plate and nut. If threads are cut into a soil nail bar, the contractor shall verify that the bar meets the minimum capacity required at the threaded section.

Bar Couplers

Bar couplers shall develop the full nominal tensile capacity of the soil nail bars as certified by the manufacturer.

Fusion Bonded Epoxy Coating

Fusion bonded epoxy coating shall meet the requirements of ASTM A 775 and have a minimum thickness of 12 mils (12 thousandths of an inch) as applied electrostatically. Bend test requirements are waived.

Zinc Coating

Zinc galvanized coating shall meet the requirements of Article 11.10.6.4.2a (AASHTO LRFD Bridge Design Specifications, 7th edition with 2015 and 2016 Interim Revisions) and have a minimum of 2.0 oz/ft² or 3.4 mil thickness applied in accordance with ASTM A123 for bars and structural steel shapes, and ASTM A153 for nuts, plates, and other hardware.

Other Soil Nail Components

Centralizers

Centralizers shall be manufactured from Schedule 20 or 40 PVC pipe or tube, steel, or other materials not detrimental to the soil nail steel bar. Wood shall not be used. Centralizers shall be securely attached to the soil nail bar and shall be sized to allow: (a) positioning of the soil nail bar within 1 in. of the center of the drill-hole; (b) tremie pipe insertion to the bottom of the drill-hole; and (c) grout to freely flow up the drill-hole. They shall be installed at regular intervals not to exceed 10 ft along the length of the nail and a distance of 1.5 ft from each end of the nail.

Grout

Grout shall be a neat cement or sand/cement mixture with a minimum 3 day compressive strength of 1,500 psi and a minimum 28 day compressive strength of 3,000 psi, meeting the requirements of AASHTO T106/ASTM C109. The specific gravity of the freshly prepared neat cement grout shall range between 1.8 and 1.9.

Sand

Sand for grout and/or shotcrete shall meet the requirements of AASHTO M6/ASTM C33.

Portland Cement

Portland cement for grout and/or shotcrete shall meet the requirements of AASHTO M85/ASTM C150, Type I, II, III, V, or Type I/II.

Admixtures

Admixtures shall meet the requirements of AASHTO M194/ASTM C494. Admixtures shall be compatible with the grout and mixed in accordance with the manufacturer's recommendations. Accelerators shall not be permitted. Expansive admixtures shall not be permitted except where the grout is used as part of corrosion protecting encapsulation.

Film Protection

Polyethylene film for moisture loss control shall meet the requirements of ASTM C171.

Connection Components

Bearing Plates

Bearing plates shall meet the requirements of ASTM A709 Grade 50.

Nuts

Nuts shall meet the requirements of ASTM A563, Grade B, hexagonal, and fitted with beveled washer or spherical seat to provide uniform bearing.

Shear Connectors

Shear connectors of the soil nail head shall consist of headed-studs or anchor bolts.

Welded-Wire Mesh

Welded wire mesh (WWM) shall meet the requirements of AASHTO M55/ASTM A185 or A497.

Geocomposite Strip Drain

Geocomposite strip drain shall be manufactured with a drainage core (e.g., geonet) and a filtration geotextile attached to or encapsulating the core. Drainage core shall be manufactured from long-chain synthetic polymers composed of at least 85 percent by mass of polypropylenes, polyester, polyamine, polyvinyl chloride, polyoleofin, or polystyrene and have a minimum compressive strength of 40 psi when tested in accordance with ASTM D 1621 Procedure A. The drainage core with the geotextile fully encapsulating the core shall have a minimum flow rate of 0.1 gallons per second per foot of strip width under a gradient of 1.0 tested in accordance with ASTM D 4716.

Initial Shotcrete

All materials, methods, and control procedures for initial shotcrete shall be submitted to the Owner's Engineer for review and approval.

CONTRACTOR QUALIFICATIONS

The soil nailing contractor shall meet the following qualification requirements:

1. Have completed at least three permanent soil nail wall projects during the past three years totaling at least 10,000 ft² of soil nail wall face area and at least 500 permanent soil nails.
2. Provide on-site supervisors and drill operators with experience installing permanent soil nail walls on at least three projects over the past three years.
3. Submit a brief description of at least three projects, including the owner agency's name, address, and current phone number; location of project; project contract value; and scheduled completion date and completion date for the project.

SUBMITTALS

Personnel

At least 30 calendar days before starting soil nail work, submit names of the Engineer, on-site supervisors, and drill operators assigned to the project, and a summary of each individual's experience. Only those individuals designated as meeting the qualifications requirements shall be used for the project. The Contractor cannot substitute for any of these individuals without written approval of the Owner or the Owner's Engineer. Work shall not be started nor materials ordered until the Contractor's qualifications have been approved by the Owner's Engineer. The Owner's Engineer may suspend the work if the Contractor substitutes unqualified personnel for approved personnel during construction. If work is suspended due to

the substitution of unqualified personnel, the Contractor shall be fully liable for all additional costs resulting from the suspension of work, and no adjustment in contract time resulting from the suspension of the work shall be allowed.

Surveys

The Contractor shall be responsible for providing the necessary survey and alignment control during the excavation for each lift, locating drill holes and verifying limits of the soil nail wall installation.

Construction Plan

At least 45 days before starting soil nail work, the Contractor shall submit a Construction Plan to the Owner's Engineer that includes the following:

1. Project start date and proposed detailed wall construction sequence.
2. Drilling and grouting methods and equipment, including the drill hole diameter proposed to achieve the specified nominal pullout resistance values shown on the Plans.
3. Nail grout mix design, including compressive strength test results (per AASHTO T106/ASTM C109) supplied by a qualified independent testing lab verifying the specified minimum 3-day and 28-day grout compressive strengths. For neat cement grout include specific gravity test results of the fresh grout used for compressive testing.
4. Nail grout placement procedures and equipment.
5. Shotcrete facing materials and methods, including mix and anticipated strength.
6. Soil nail testing methods and equipment setup.
7. Identification number and certified calibration records for each test jack, pressure gauge, dial gauge and load cell to be used. Jack and pressure gauge shall be calibrated as a unit. Calibration records shall include the date tested, the device identification number, and the calibration test results and shall be certified for an accuracy of at least 2 percent of the applied certification loads by a qualified independent testing laboratory within 90 days prior to submittal.
8. Manufacturer Certificates of Compliance for the soil nail ultimate strength, nail bar steel, Portland cement, centralizers, bearing plates and epoxy coating.
9. Approval of the Construction Plan does not relieve the Contractor of his responsibility for the successful completion of the work.

At least 45 days before the planned start of the wall excavation, the Contractor shall submit shop drawings to the Owner's Engineer for review and approval. Include all details, dimensions, quantities, ground profiles and cross-sections necessary to construct the wall. The Contractor shall verify the limits of the wall and ground survey data before preparing the shop drawings. The working drawings shall be prepared to the DelDOT standards. The Contractor shall not begin construction or incorporate materials into the work until the submittal requirements are satisfied and found acceptable to the Owner's Engineer.

STORAGE AND HANDLING

Soil nail bars shall be stored and handled in a manner to avoid damage or corrosion. Soil nail bars exhibiting abrasions, cuts, welds, weld splatter, corrosion, or pitting shall be replaced. Bars exhibiting damage to epoxy coating shall be repaired or replaced at no additional cost. Repaired epoxy coating areas shall have a minimum 0.012-in. thick coating. Damaged galvanization shall be repaired by coating the damaged area with a field grade, zinc-rich paint.

EXCAVATION

The height of exposed unsupported final excavation face cut shall be established by contractor and shall not exceed the vertical nail spacing plus the required reinforcing lap or the short-term stand-up height of the ground, whichever is less. Excavation to the final wall excavation line and shotcrete application shall be completed in the same work shift, unless otherwise approved by the Owner's Engineer.

Excavation of the next-lower lift shall not proceed until soil nail installation, reinforced shotcrete placement, attachment of bearing plates and nuts, and nail testing have been completed and accepted in the current lift. Nail grout and shotcrete shall have attained at least their specified 3-day compressive strength before excavating the next underlying lift.

SOIL NAIL INSTALLATION

The soil nail length and drill hole diameter necessary to develop the load capacity and to satisfy the acceptance criteria for the design load required shall be provided, but not less than the lengths or diameters shown in the Plans.

Drill holes for the soil nails shall be drilled at the locations, elevations, orientations, and lengths shown on the Plans. The drilling equipment and methods shall be selected to be suitable for the ground conditions and in accordance with the accepted installation methods submitted by the Contractor. If caving ground is encountered, cased drilling methods shall be used to support the sides of the drill-holes. Soil nail bars shall be provided as shown in the Plans.

Centralizers shall be provided and sized to position the soil nail bars to within 1 in. of the center of the drill hole. Centralizers shall be positioned as shown on the Plans so that their maximum center-to-center spacing does not exceed 10 ft, and shall be located to within 1.5 ft from each end of the nail bar.

GROUTING

The drill hole shall be grouted after installation of the soil nail bar and within 2 hours of completion of drilling. The grout shall be injected at the lowest point of each drill-hole through a grout tube, casing, hollow-stem auger, or drill rods. The outlet end of the conduit shall deliver grout below the surface of the grout as the conduit is withdrawn to prevent the creation of voids. The drill hole shall be filled in one continuous operation. Cold joints in the grout column shall not be allowed except at the top of the test bond length of proof tested production nails. The space above the bottom elevation of the inclined drill hole opening called a "bird's beak" due to its shape, shall be filled up with additional grout after a temporary cover is placed in front of the drill hole, or filled with shotcrete.

Final grout for hollow bar soil nails must meet the same specific gravity and strength requirements as for solid bars listed previously. Drilling grouts may have a specific gravity of 1.4 to 1.6. After the bar is installed to the desired depth, the final grout shall have a specific gravity of 1.8 to 1.9 as measured from the grout return at the top of the drill hole.

SOIL NAIL TESTING

Tests

The Contractor shall perform both verification and proof testing of designated test soil nails. Verification tests on sacrificial test nails shall be conducted at locations shown on the Plans. Proof tests on production nails shall be conducted at locations selected by the Owner's Engineer or as shown on the plans. Testing of any nail shall not be performed until the nail grout and shotcrete facing have attained at least their specified 3-day compressive strength.

The Contractor shall provide all necessary equipment to perform the soil nail testing including, but not limited to, dial gauges, dial gauge support, jack and pressure gauge, electronic load cell with machined platens placed at either end of the load cell, and a reaction frame. In non-creep susceptible soils and as approved by the Engineer, the use of a load cell may be replaced with a dual pressure gauge system with the low reading gauge being used for soil nail acceptance.

The pressure gauge shall be graduated in 100 psi increments or less. The soil nail head movement shall be measured with a minimum of 2 dial gauges capable of measuring to 0.001 inch. The Contractor shall have available calibrated back up gauges and test loading equipment to minimize down time due to testing equipment failure.

The Contractor shall not apply loads greater than 80 percent of the minimum ultimate tensile strength of the tendon for Grade 150 bars or 90 percent of the yield strength of the tendon for Grade 75 bars. Preliminary results shall be submitted to the Engineer within 24 hours of the test completion. A full report containing test load results shall be submitted to the Engineer within 5 working days of the test completion.

Verification Testing

Verification testing shall be performed on sacrificial test soil nails as shown on the plans. Verification testing shall be performed prior to installation of production soil nails to confirm the appropriateness of the Contractor's drilling and installation methods, and verify the required soil nail pullout resistance.

Verification test soil nails shall have both bonded and unbonded lengths. Along the unbonded length, the soil nail bar shall not be grouted. The unbonded length of the test soil nails shall be at least 3 feet as measured from the back of the bearing plate to the top of the grout.

Verification tests shall be conducted according to the loading schedule of Table 1. Each load increment shall be held for at least 10 minutes. The Contractor shall record soil nail movements at each load increment and the time intervals shown in the table for each load step. Creep tests shall be performed at 0.75 VTL. The alignment load (AL) should be the minimum load required to align the testing apparatus and shall not exceed 5 percent of the VTL. The dial gauges shall be set to "zero" after applying the alignment load. Following application of the maximum load, the load shall be reduced to the alignment load and the dial gauge readings recorded as the permanent set.

Each load increment shall be held for at least 10 minutes. The Contractor shall monitor the verification test soil nail for creep at the 0.75 VTL load increment by measuring and recording soil nail movement. The load shall be maintained during the creep test within 2 percent of the intended load by use of the load cell. The test results shall be presented for the Engineers review and acceptance prior to production. The Engineer shall have 10 working days to review the report and based on the results, design modifications may be required.

The bonded length of the soil nail during verification tests (LB VT) shall be:

- (a) For Grade 75 and other mild steel in accordance with ASTM A615, the maximum bond length ($L_{BVT_{MAX}}$), is defined as:

$$L_{BVT_{MAX}} = \frac{A_t \cdot f_y \cdot C_{RTY}}{r_{PO}}$$

- (b) For Grade 150 and other high-strength steel in accordance with ASTM A722, the maximum bond length ($L_{BVT_{MAX}}$), is defined as:

$$L_{BVT_{MAX}} = \frac{A_t \cdot f_u \cdot C_{RTU}}{r_{PO}}$$

where:

CRTY = reduction coefficient for mild-grade steel = 0.9

CRTU = reduction coefficient for high-strength steel = 0.8

A_t = cross-sectional steel area of the test soil nail in square inches

f_y = nominal yield strength of test soil nail (mild steel) in kips per square inch

f_u = nominal tensile strength of test soil nail (high-strength steel) in kips per square inch

r_{PO} = nominal pullout resistance in kips per foot of test soil nail per plans = $\pi \times q_u \times D_{DH}$

q_u = nominal bond strength in kips per square foot

D_{DH} = drill hole diameter in feet

- (c) If $L_{B\ VTmax} > 10$ feet, select $L_{B\ VT}$ to be $10 \text{ feet} \leq L_{B\ VT} \leq L_{B\ VTmax}$.
- (d) If $L_{B\ VTmax} < 10$ feet, to avoid tensile breakage, select $L_{B\ VT} = 10$ feet and increase the test soil nail bar size as needed, and recalculate $L_{B\ VTmax}$ until $L_{B\ VTmax} > 10$ ft.
- (e) The maximum (nominal) load during the verification test is defined as the Verification Test Load (VTL) and is calculated as $VTL = L_{B\ VT} \times r_{PO}$

Table 1
VERIFICATION TEST LOADING SCHEDULE

Load	Hold Time (minutes) ²
AL ¹	1
0.13 VTL	10 (recorded at 1, 2, 4, 5, 10)
0.25 VTL	10 (recorded at 1, 2, 4, 5, 10)
0.38 VTL	10 (recorded at 1, 2, 4, 5, 10)
0.50 VTL	10 (recorded at 1, 2, 4, 5, 10)
0.63 VTL	10 (recorded at 1, 2, 4, 5, 10)
0.75 VTL (Creep Test) ³	60 (recorded at 1, 2, 4, 5, 6, 10, 20, 30, 50, 60)
0.88 VTL	10
1.00 VTL ⁴	10
AL	1 ⁵
1 AL = alignment load, which is less than or equal to 0.025 VTL 2 Soil nail movement shall be measured after each load increment has been achieved and at each time step. 3 Maintain the load during the creep test within 2 percent of the intended load by use of the load cell. 4 The Engineer may allow loading to failure to determine nominal soil conditions. 5 Permanent soil nail movement shall also be recorded	

Proof Testing of Production Soil Nails

Successful proof testing shall be performed on 5 percent of the production soil nails in each soil nail row or a minimum of 1 per row. Verification tests shall not be included in the 5 percent; except that the Engineer may allow the verification tests to be included based on the plans and site conditions. The Engineer will determine the locations and number of proof tests prior to soil nail installation in each row unless otherwise shown on the plans. Production proof test soil nails shall have both bonded and temporary unbonded lengths. Fully grouted test soil nails shall not be proof tested. The Contractor shall maintain the stability of the hole for the temporary unbonded test length for subsequent grouting. If the unbonded test length of production proof test soil nails cannot be satisfactorily grouted subsequent to testing, the proof test soil nail shall become sacrificial and shall be replaced with an additional production soil nail installed at the Contractor's expense. The temporary unbonded length of the test soil nail shall be at least 3 feet as measured from the back of the bearing plate to the top of the grout.

Proof tests shall be conducted according to the loading schedule of Table 2. Unless the soil is susceptible to creep per subsection 504.15, each load increment shall be held until readings are stable as defined by three readings within 0.005 inches taken one per minute over three minutes. The Contractor shall record soil nail movements at each load increment and the time intervals shown in the table for each load step.

Creep tests shall be performed at 1.00 PTL. The alignment load (AL) shall be the minimum load required to align the testing apparatus and shall not exceed 5 percent of the PTL. Set dial gauges to "zero" after applying the alignment load. Following application of the maximum load, reduce the load to the alignment load and record the permanent set.

The creep period shall start as soon as the maximum test load (1.0 PTL) is applied and the soil nail movement shall be measured and recorded at 1 minute, 2, 3, 5, 6, and 10 minutes. Where the soil nail movement between 1 minute and 10 minutes exceeds 0.04 inch, the maximum test load shall be maintained for an additional 50 minutes and movements recorded at 20 minutes, 30, 50, and 60 minutes. All load increments shall be maintained within 5 percent of the intended load.

The bonded length of the soil nail during verification tests, L_{BPT} , shall be:

- (a) For Grade 75 and other mild steel in accordance with ASTM A615, the maximum bond length (L_{BPTmax}), is defined as:

$$L_{BPTmax} = \frac{A_t \cdot f_y \cdot C_{RTY}}{r_{PO} \cdot 0.75}$$

- (b) For Grade 150 and other high-strength steel in accordance with ASTM A722, the maximum bond length (L_{BPTmax}), is defined as:

$$L_{BPT} = \frac{A_t \cdot f_u \cdot C_{RTU}}{r_{PO} \cdot 0.75}$$

- (c) Select L_{BPT} to be 10 ft or L_{BPTmax} , whichever is smaller, to avoid tensile breakage.
- (d) Production proof test soil nails that are shorter than 13 feet may be tested with less than the minimum 10 feet bond length. The maximum load in the proof test (PTL) is calculated as $PTL = L_{BPT} \times r_{PO} \times 0.75$

Table - 2
PROOF TEST LOADING SCHEDULE

Load	Hold Time (minutes) ²
AL ¹	1
0.17 PTL	Until Movement Stabilizes ³
0.33 PTL	Until Movement Stabilizes
0.50 PTL	Until Movement Stabilizes
0.67 PTL	Until Movement Stabilizes
0.83 PTL	Until Movement Stabilizes
1.0 PTL (Creep Test) ⁴	10 (recorded at 1, 2, 4, 5, 6, and 10)
AL	1

Notes:

- 1 AL = alignment load, which is less than or equal to 0.025 PTL.
- 2 Times are measured after the target load has been achieved in each increment.
- 3 If the soils reinforced with soil nails are relatively susceptible to deformation of creep, it is recommended to hold each load increment for 10 minutes and to record the soil nail movement at 1, 2, 5, and 10 minutes.
- 4 If the soil nail movement measured between 1 and 10 minutes exceeds 0.04 in., PTL must be maintained for 50 additional minutes and movements must be recorded at 20, 30, 50, and 60 minutes. The permanent soil movement must also be recorded.

ACCEPTANCE CRITERIA OF TEST SOIL NAILS

A test soil nail shall be considered acceptable when the following criteria are met.

(a) *Verification testing.* The following criteria shall be met for acceptance of the soil nail:

- (1) Pullout shall not occur at loads less than 1.00 VTL.
- (2) The total movement (Δ_{VTL}) measured at VTL shall exceed 80 percent of the theoretical elastic elongation of the unbonded length (L_{UB}), as defined by:

$$\Delta_{VTL} > 0.8 \frac{VTL \cdot L_{UB}}{E \cdot A_t}$$

where E = Young's modulus of steel (29,000 ksi).

- (3) The creep movement between the 1 and 10 minute readings at 0.75 VTL shall be less than 0.04 in.
- (4) The creep movement between the 6 and 60 minute readings at 0.75 VTL shall be less than 0.08 in.
- (5) The creep rate shall be linear or decreasing throughout the creep test load-hold period.

(b) *Proof testing.* The following criteria shall be met to acceptance of the soil nail:

- (1) No pullout occurs.
- (2) The total soil nail movement (Δ_{PTL}) measured at PTL shall be greater than 80 percent of the theoretical elastic elongation of the unbonded length, as defined by:

$$\Delta_{PTL} > 0.8 \frac{PTL \cdot L_{UB}}{E \cdot A_t}$$

- (3) The creep movement shall be less than 0.04 in. between the 1 and 10 minute readings.
- (4) If this movement is exceeded, PTL shall be maintained for an additional 50 minutes with readings recorded at 20, 30, 50, and 60 minutes.
- (5) If the creep test is extended, the creep movement between the 6 and 60 minute readings shall be less than 0.08 in.

REJECTION OF TEST SOIL NAILS

Verification Test Soil Nails

The Owner's Engineer will evaluate the results of each verification test. Installation methods that do not satisfy the nail testing requirements shall be rejected. The Contractor shall propose alternative methods for review by the Owner's Engineer and shall install replacement verification test nails. Replacement test nails shall be installed and tested at no additional cost.

Proof Test Soil Nails

For proof test nails, the Owner's Engineer may require the Contractor to replace some or all of the installed production nails between a failed proof test soil nail and the adjacent passing proof test nail. Alternatively, the Owner's Engineer may require the installation and testing of additional proof test nails to verify that adjacent previously installed production nails have sufficient nominal pullout resistance. Installation and testing of additional proof test nails or installation of additional or modified nails as a result of proof test nail failure(s) shall be at no additional cost.

WALL DRAINAGE NETWORK

All elements of the soil nail wall drainage network shall be installed and secured as shown on the Plans. The drainage network shall consist of geocomposite drain strips, PVC connection pipes, soil nail wall footing drains, and weep holes, as shown on the Plans. Exclusive of the wall footing drains, all elements of the drainage network shall be installed prior to shotcreting.

Geocomposite Drain Strips

Geocomposite drain strips shall be centered between the columns of soil nails, as shown on the Plans. Drain strips shall be at least 12 in. wide and placed with the geotextile side against the ground. Strips shall be secured to the excavation face. Contamination of the geotextile with shotcrete shall be prevented. Drain strips shall be vertically continuous.

Footing Drains

Footing drains shall be installed at the bottom of the wall, as shown on the Plans. The drainage geotextile shall envelope the footing drain aggregate and pipe and shall conform to the dimensions of the trench. The drainage geotextile shall overlap on top of the drainage aggregate as shown on the Plans. Damaged or defective drainage geotextile shall be repaired or replaced.

SHOTCRETE FACING

Initial shotcrete facing shall be provided as shown in the plans. Where shotcrete is used to complete the top ungrouted zone of the soil nail drill-hole near the face, the nozzle shall be positioned into the mouth of the drill-hole to completely fill the void.

Attachment of Nail Head Bearing Plate and Nut

A bearing plate, washers, and nut shall be attached to each nail head as shown on the Plans. While the shotcrete construction facing is still plastic and before its initial set, the plate shall be uniformly seated on the shotcrete by hand-wrench tightening the nut. Where uniform contact between the plate and the shotcrete cannot be provided, the plate shall be set in a bed of grout. After grout has set for 24 hours, tighten the nut by hand with a wrench. The bearing plates with headed studs shall be located within the tolerances shown on the Plans.

Shotcrete Facing Tolerances

Construction tolerances for the shotcrete facing from plan location and plan dimensions shall be as follows:

Horizontal location of welded wire mesh; reinforcing bars, and headed studs: 0.4 in.

Location of headed-studs on bearing plate: 1/4 in.

Spacing between reinforcing bars: 1 in.

Reinforcing lap: 1 in.

Complete thickness of shotcrete:
o If troweled or screeded: 0.6 in.
o If left as shot: 1.2 in.

Planeness of finish face surface-gap under 10-ft straightedge:
o If troweled or screeded: 0.6 in.
o If left as shot: 1.2 in.

Nail head bearing plate deviation from parallel to wall face: 10 degrees

REINFORCING STEEL

The Contractor shall submit all order lists and reinforcement bending diagrams to the Owner's Engineer, and shall fabricate reinforcing steel, ship and protect material, place, fasten, and splice reinforcing steel as required by the Plans.

STRUCTURAL CONCRETE

The Contractor shall design the concrete mix, store, handle, batch, and mix material and deliver concrete, provide quality control, and construct concrete facing to meet the specified resistance.

ARCHITECTURAL SURFACE FINISHES

Textured form liners shall be furnished, form liners installed, and a surface finish (color/stain application) applied that will duplicate the architectural surface finish shown on the Plans. The Contractor shall submit detailed drawings of the form liner for approval by the Owner's Engineer at least 7 days before form liner work begins. Before production work begins, a 3-ft high, by 1.5-ft wide, by 10-ft long test panel shall be constructed on site using the same forming methods, procedures, form liner, texture configuration, expansion joint, concrete mixture and color/stain application proposed for the production work.

BACKFILLING BEHIND WALL FACING UPPER CANTILEVER

If backfilling is required behind an extension of the wall facing at the top of a soil nail wall, compaction of the soil backfill performed within 3 ft of the wall extension shall be performed using light mechanical tampers.

ACCEPTANCE

Material for soil nail retaining walls will be accepted based on the manufacturer production certification or from production records. Construction of soil nail retaining walls will be accepted based on visual inspection and the examination of relevant production testing records by the Owner's Engineer.

MEASUREMENT AND PAYMENT

SOIL NAILS

Production soil nails shall not be measured and shall be incidental to "Soil Nail Wall" item. No separate measurement will be made for pullout test nails, which shall be considered incidental to "Soil Nail Wall" item.

STRUCTURE EXCAVATION

Structure excavation for the soil nail wall shall not be measured and shall be incidental to "Soil Nail Wall" item. No measurement will be made for using temporary stabilizing berms.

WALL FACE

The wall face of soil nail walls shall not be measured and shall be incidental to "Soil Nail Wall" item. No measurement or payment will be made for additional shotcrete or CIP concrete needed to fill voids created by irregularities in the cut face, excavation overbreak or inadvertent excavation beyond the Plan final wall face excavation line, or failure to construct the facing to the specified line and grade and tolerances.

METHOD OF MEASUREMENT:

Payment for soil nail wall will not be measured but paid for at the contract lump sum price for "Soil Nail Wall" item.

BASIS OF PAYMENT:

The quantity for soil nail will be paid for at the Contract lump sum price. Price and payment will constitute full compensation for furnishing, soil nail solid bars, bearing plates, nuts, shear connectors, welded-wire mesh, reinforcing steel, concrete for shotcrete and cast-in-place facing, formliners and all incidental expenses including all materials, equipment, tools, and labor incidental thereto, furnishing material and labor for excavation for soil nail wall, removal of portion of riprap slope protection, hauling and disposal of excavated material, installing drainage system (except the underdrain drainage system - Item 709001) and Geocomposite strip drain, soil nail pullout testing and incidentals required to complete the work.

7/5/2018

617515 - HEADWALL

Description:

This work consists of furnishing and placing a concrete drainage headwall as shown on the Plans.

Materials:

Materials shall conform to the requirements of Section 601, 1022 and 1037 of the Standard Specifications.

Construction Methods:

Concrete headwalls shall be placed in conformance with the details, dimensions, and notes as shown in the details found in the Plans and at the location shown on the Plans.

Method of Measurement and Basis of Payment:

The quantity of headwalls will be measured and paid for at the Contract unit price per each. Price and payment will constitute full compensation for furnishing, hauling, and installing materials, including concrete and bar reinforcement; for excavating, backfilling, and compacting; for cribbing, shoring, and sheeting; and for all labor, equipment, tools, and incidentals required to complete the work.

4/27/2018

711500 - ADJUST AND REPAIR EXISTING SANITARY SEWER MANHOLE

Description:

The item shall consist of the adjustment and repair of existing New Castle County sanitary sewer manholes.

Materials and Construction Methods:

The materials and construction methods shall meet the requirements of the most recent version of New Castle County's specifications and standard details.

Method of Measurement:

The quantity of sanitary sewer manholes adjusted or repaired will be measured as the actual number of each, adjusted or repaired.

Basis of Payment:

The quantity of drainage inlets and manholes adjusted or repaired will be paid for at the contract unit price for sanitary sewer manholes repaired from the top of cover to a depth of 3' below. Sanitary sewer manholes repaired below a depth of 3', but not more than 4½', will be paid for at one and one-half times the unit price. Drainage inlets and manholes repaired below a depth of 4½' will be paid for at two times the unit price. Price and payment will constitute full compensation for excavating, backfilling, compacting, and disposing of materials; for removing and resetting covers and portions of structures; for furnishing and placing all materials, including the replacement of the concrete curb portion of drainage inlets and all mortar repair; and for all labor, equipment, tools and incidentals required to complete the work.

5/29/2018

723502 - P.C.C. SAFETY BARRIER PERMANENT, SINGLE FACE, 54"

Description:

This work consists of constructing and placing Portland Cement Concrete Barrier, 54" in accordance with the Contract Documents, as directed by the Engineer and as shown on the Plans for Contract T200809001.

Materials:

Provide Materials as specified in:

A. Portland Cement Concrete Section 1022

1. Minimum 28-day compressive strength is 4,500 pounds per square inch
2. Blend of a minimum of 40% slag (GGBFS)
3. Fine aggregate shall be white sand from a source approved by the Engineer

B. Reinforcing Steel Section 1037

1. Epoxy coated
2. Grade 60

C. Steel Connector Plate Standard Construction Details

D. Barrier Reflectors Section 1073

No changes or substitutions of suppliers will be permitted without approval of the Engineer once the Project commences.

Construction Methods:

Provide precast or cast-in place barriers meeting Contract requirements. Slip-form construction methods are only permitted if indicated in the Contract Documents. Conduct a pre-pour meeting at least ten (10) Calendar Days prior to Work with representatives from the Engineer, Contractor, and other interested parties in attendance.

Excavate to the required depth and compact the barrier foundation to the specified density, line and grade. Replace soft and unsuitable material and compact with an approved Material.

After placing the barrier, backfill remaining excavated areas and compact to specified density with approved Material in layers up to 8-inches.

Construct cast-in-place barrier with forms that meet Section 610. Construct precast units as specified in Section 612. Remove the precast units from the forms and casting bed after 12 hours if the units reach a compressive strength of at least 1,400 pounds per square inch. Saw cut joint to ensure crack-free concrete. Any cracking will be repaired at no additional cost to the Department. Apply a Class 2 rubbed finish as specified in Section 610 to exposed cast-in-place or precast barrier faces.

Ensure that the surfaces of barriers vary no more than 1/4 inch in 10 feet as measured from a straightedge in a longitudinal direction. Meet a tolerance of 1/4 inch in vertical and horizontal alignment between adjoining units measured from a 10 foot straightedge in a longitudinal direction across the joint.

Cast a slot for connecting precast barriers as shown in the Standard Construction Details.

Install barrier reflectors on the face of the traffic side face of the barrier wall sections. Install barrier reflectors as follows:

- A. Install the reflector at a point 39 inches above the final grade of the roadway surface, measured to the top of the reflector.
- B. Space reflectors horizontally 100 feet apart on center. For sections of barrier wall that are less than 200 linear feet, evenly space a minimum of two reflectors on the traffic face of the barrier wall.

Method of Measurement:

The quantity of concrete barrier will be measured as the number of linear feet constructed and accepted. The length will be measured along the centerline of the concrete barrier.

Basis of Payment:

The quantity of concrete barrier will be paid at the Contract Unit Price per linear foot constructed, complete-in-place and accepted. Price and payment will constitute full compensation for Portland Cement Concrete, excavation, forms, backfill, and installation of barrier reflectors and for all labor, Materials, Equipment, tools, and incidentals necessary to complete the Work, complete in place, and accepted.

Payment for furnishing barrier reflectors will be made under Section 824. Payment for undercut will be made under Section 202.

2/5/2018

763501 - CONSTRUCTION ENGINEERING

Description:

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

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

The Engineer will only establish the following:

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

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

Engineering/Survey Staff. The Contractor shall provide and have available for the project an adequate engineering staff that is competent and experienced to set lines and grades needed to construct the project. The engineering personnel required to perform the work outlined herein shall have experience and ability compatible with the magnitude and scope of the project. Additionally, the Contractor shall employ an engineer or surveyor licensed in the State of Delaware to be responsible for the quality and accuracy of the work done by the engineering staff. When individuals or firms other than the Contractor perform any professional services under this item, that work shall not be subject to the sub contracting requirements of Subsection 108.01 of the Standard Specifications. The Contractor shall assume full responsibility for any errors and/or omissions in the work of the engineering staff described herein. If construction errors are caused due to erroneous work done under Construction Engineering the Contractor accepts full responsibility, no matter when the error is discovered. Consideration will not be given for any extension of contract time or additional compensation due to delays, corrective work, or additional work that may result from faulty and erroneous construction stakeout, surveying, and engineering required by this specification.

Construction Methods:

Performance Requirements:

- (a) Construction Engineering shall include establishing the survey points and survey centerlines; finding, referencing, offsetting the project control points; running a horizontal and vertical circuit to verify the precision of given control points. Establishing plan coordinates and elevation marks for culverts, slopes, subbase, subsurface drains, paving, subgrade, retaining walls, and any other stakes required for control lines and grades; and setting vertical control elevations, such as footings, caps, bridge seats and deck screed. The Contractor shall be responsible for the preservation of the Department's project control points and benchmarks. The Contractor shall establish and preserve any temporary control points (traverse points or benchmarks) needed for construction. Any project control points (traverse points) or benchmarks conflicting with construction of the project shall be relocated by the Contractor. The Contractor as directed by the Engineer must replace any or all stakes that are destroyed at any time during the life of the contract. The Contractor shall re-establish centerline points and stationing prior to final cross-sections by the Engineer. The Vertical Control error of closure shall not exceed 0.035 ft times. The Horizontal Control precision ratio shall have a minimum precision of 1:20,000 feet of distance traversed prior to adjustment.
- (b) The Contractor shall perform construction centerline layout of all roadways, ramps and connections, etc. from project control points set by the Engineer. The Contractor using the profiles and typical sections provided in the plans shall calculate proposed grades at the edge of pavement or verify information shown on Grades and Geometric sheets.
- (c) The Contractor shall advise the Engineer of any horizontal or vertical alignment revisions needed to establish smooth transitions to existing facilities. The Contractor must immediately bring to the attention of the Engineer any potential drainage problem within the project limits. The Engineer must approve any proposed variation in profile, width or cross slope.
- (d) The Contractor shall establish the working points, centerlines of bearings on bridge abutments and on piers, mark the location of anchor bolts to be installed, check the elevation of bearing surfaces before and after they are ground and set anchor bolts at their exact elevation and alignment as per Contract Plans. Before completion of the fabrication of beams for bridge superstructures, the Contractor shall verify by accurate field measurements the locations both vertically and horizontally of all bearings and shall assume full responsibility for fabricated beams fitting and bearing as constructed. After beam erection and concurrently with the Department project surveyors or their designated representative, the Contractor shall survey top of beam elevations at a maximum of 10-ft stations and compute screed grades. These shall be submitted to the Engineer for review and approval before the stay in place forms are set. Construction stakes and other reference control marks shall be set at sufficiently frequent intervals to assure that all components of the structure are constructed in accordance with the lines and grades shown on the plans. The Contractor will be responsible for all structure alignment control, grade control and all necessary calculations to establish and set these controls.
- (e) The Contractor, using contract plans, shall investigate proposed construction for possible conflicts with existing and proposed utilities. The Contractor shall then report such conflicts to the Engineer for resolution. All stakes for utility relocations, which will be performed by others, after the Notice to Proceed has been given to the Contractor, shall be paid for under item 763597
- Utility Construction Engineering.
- (f) The Contractor shall be responsible for the staking of all sidewalk and curb ramp grades in accordance with the plans and the Departments Standard Construction Details. The Contractor shall review the stakeout with the Engineer prior to construction. The Engineer must approve any deviation from plans, Department Standard Construction Details and Specifications in writing. The Contractor shall be responsible for any corrective actions resulting from problems created by adjustments if they fail to obtain such approval.

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

Submittals. All computations necessary to establish the exact position of all work from the control points shall be made and preserved by the Contractor. All computations, survey notes, electronic files, and other records necessary to accomplish the work shall be made available to the Department in a neat and organized manner at any time as directed by the Engineer. The Engineer may check all or any portion of the stakeout survey work or notes made by the Contractor and any necessary correction to the work shall be made as soon as possible. The Contractor shall furnish the Engineer with such assistance as may be required for checking all lines, grades, and measurements established by the Contractor and necessary for the execution of the work. Such checking by the Engineer shall not relieve the Contractor of his/her responsibility for the accuracy or completeness of the work. Copies of all notes must be furnished to the engineer at the completion of the project.

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

- (a) Proposed method of recording information in field books to ensure clarity and adequacy.
- (b) A printout of horizontal control verification, as well as coordinates, differences and error of closure for all reestablished or temporary Control Points.
- (c) A printout of vertical control verification, with benchmark location elevation and differences from plan elevation.

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

Machine Control Grading

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

Description:

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

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

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

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

Materials:

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

Construction:

A. DelDOT Responsibilities:

1. The Department will set initial vertical and horizontal control points in the field for the project as indicated in the contract documents, (plans set). If the Contractor needs to establish new control points they shall be traversed from existing control points and verified to be accurate by conventional surveying techniques.

2. The Department will provide the project specific localized coordinate system.
3. The Department will provide data in an electronic format to the Contractor as indicated in the General Notes.
 - a. The information provided shall not be considered a representation of actual conditions to be encountered during construction. Furnishing this information does not relieve the Contractor from the responsibility of making an investigation of conditions to be encountered including, but not limited to site visits, and basing the bid on information obtained from these investigations, and the professional interpretations and judgments of the Contractor. The Contractor shall assume the risk of error if the information is used for any purpose for which the information is not intended.
 - b. Any assumption the Contractor makes from this electronic information shall be at their risk. If the Contractor chooses to develop their own digital terrain model the Contractor shall be fully responsible for all cost, liability, accuracy and delays.
 - c. The Department will develop and provide electronic data to the Contractor for their use as part of the contract documents in a format as indicated in the General Notes. The Contractor shall independently ensure that the electronic data will function in their machine control grading system.
4. The Files that are provided were originally created with the computer software applications MicroStation (CADD software) and INROADS (civil engineering software). The data files will be provided in the native formats and other software formats described below. The contractor shall perform necessary conversion of the files for their selected grade control equipment. The Department will furnish the Contractor with the following electronic files:
 - a. CAD files
 - i. Inroads -Existing digital terrain model (.DTM)
 - ii. Inroads -Proposed digital terrain model (.DTM)
 - iii. Microstation -Proposed surface elements - triangles
 - b. Alignment Data Files:
 - i. ASCII Format
5. The Engineer shall perform spot checks of the Contractor's machine control grading results, surveying calculations, records, field procedures, and actual staking. If the Engineer determines that the work is not being performed in a manner that will assure accurate results, the Engineer may order the Contractor to redo such work to the requirements of the contract documents, and in addition, may require the Contractor to use conventional surveying and staking, both at no additional cost to the Department.

B . Contractor's Responsibilities

1. The Contractor shall provide the Engineer with a GPS rover and Automatic Level, for use during the duration of the contract. At the end of the contract, the GPS rover and Automatic Level will be returned to the Contractor. The Contractor shall provide a total of 8 hours of formal training on the Contractor's GPS machine control system to the Engineer and up to three additional Department appointees per rover.
2. The Contractor shall review and apply the data provided by the Department to perform GPS machine control grading.

3. The Contractor shall bear all costs, including but not limited to the cost of actual reconstruction of work, that may be incurred due to application of GPS machine control grading techniques. Grade elevation errors and associated corrections including quantity adjustments resulting from the contractor's use of GPS machine control shall be at no cost to the Department.
4. The Contractor shall convert the electronic data provided by the Department into a format compatible with their system.
5. The Contractor's manipulation of the electronic data provided by the Department shall be performed at their own risk.
6. The Contractor shall check and if necessary, recalibrate their GPS machine control system at the beginning of each workday in accordance with the manufacturer's recommendations, or more frequently as needed to meet the requirements of the project.
7. The Contractor shall meet the accuracy requirements as detailed in the Standard Specifications.
8. The Contractor shall establish secondary control points at appropriate intervals and at locations along the length of the project. These points shall be outside the project limits and/or where work is performed. These points shall be at intervals not to exceed 1000 feet. The horizontal position of these points shall be determined by conventional survey traverse and adjustments from the original baseline control points. The conventional traverse shall meet or exceed the Department's Standards. The elevation of these control points shall be established using differential leveling from the project benchmarks, forming a closed loop. A copy of all new control point information including closure report shall be provided and approved by the Engineer prior to construction activities. The Contractor shall be responsible for all errors resulting from their efforts and shall correct deficiencies to the satisfaction of the Engineer and at no additional cost to the Department.
9. The Contractor shall provide stakes at all alignment control points, at every 500 foot stationing, and where required for coordination activities involving environmental agencies and utility companies at the Contractor's expense. Work that is done solely for utility companies and that is beyond the work performed under item 763501 - Construction shall follow and be paid for under item 763597 -Utility Construction Engineering.
10. The Contractor shall at a minimum set hubs at the top of finished grade at all hinge points on the cross section at 500 foot intervals on the main line and at least 4 cross sections on side roads and ramps as directed by the engineer or as shown on the plans. Placement of a minimum of 4 control points outside the limits of disturbance for the excavation of borrow pits, Storm-water Management Ponds, wetland mitigation sites etc. These control points shall be established using conventional survey methods for use by the Engineer to check the accuracy of the construction.
11. The Contractor shall preserve all reference points and monuments that are identified and established by the Engineer for the project. If the Contractor fails to preserve these items the Contractor shall reestablish them at no additional cost to the Department.
12. The Contractor shall provide control points and conventional grades stakes at critical points such as, but not limited to, PC's, PT's, superelevation points, and other critical points required for the construction of drainage and roadway structures.
13. No less than 2 weeks before the scheduled preconstruction meeting, the Contractor shall submit to the Engineer for review a written machine control grading work plan which shall include the equipment type, control software manufacturer and version, and proposed location of the local GPS base station used for broadcasting differential correction data to rover units.

14. The Contractor shall follow the guidelines set forth in the "Geometric Geodetic Accuracy Standards and Specifications for Using GPS Relative Positioning Techniques" and follow a minimum of Second Order Class 1, (2-I) classification standards.

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

Contract Control Plan:

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

1. A control network diagram of all existing horizontal and vertical control recovered in the field as contract control.
2. Include a summary of the calculated closures of the existing control network, and which control has been determined to have been disturbed or out of tolerance from its original positioning.
3. An explanation of which horizontal and vertical control points will be held for construction purposes. If necessary include all adjustments which may have been made to achieve required closures.
4. An explanation of what horizontal and vertical control (including base stations) was set to accomplish the required stakeout or automated machine operation. Include how the position of these new control points was determined.
5. Describe the proposed method and technique (technology and quality control) for utilizing the control to establish the existing and/or proposed feature location and to verify the completed feature location and/or measured quantity.
6. A listing of the horizontal and vertical datums to be used and the combined factor to be used to account for ellipsoidal reduction factor and grid scale factor.
7. If the Contractor chooses to use machine control as a method of measuring and controlling excavation, fill, material placement or grading operations as a method of measuring and controlling excavation, fill, material placement or grading operations, the Contractor Control Plan shall include the method by which the automated machine guidance system will initially be site calibrated to both the horizontal and vertical contract control, and shall describe the method and frequency of the calibration to ensure consistent positional results.

8. Issues with equipment including inconsistent satellite reception of signals to operate the GPS machine control system will not result in adjustment to the "Basis of Payment" for any construction items or be justification for granting contract time extension.

Method of Measurement:

The quantity of Construction Engineering will not be measured.

Basis of Payment:

Payment will be made at the Lump Sum price bid for the item "Construction Engineering". The price bid shall include the cost of furnishing all labor, equipment, instruments, stakes and other material necessary to satisfactorily complete the work as herein described under this item for all roads and structures that are a part of the contract. Adjustment in payment will be made for the deletion or addition of work not shown in the contract documents.

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

2/28/2018

763503 - TRAINEE

Description:

The item shall consist of providing training in the construction crafts in accordance with the requirements stated in the General Notices of this proposal under the Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246).

Basis of Payment:

The payment for the item shall be made at a fixed rate of \$.80 per hour toward the hourly rate of the trainee.

8/15/17

763508 - PROJECT CONTROL SYSTEM DEVELOPMENT PLAN
763509 - CPM SCHEDULE UPDATES AND/OR REVISED UPDATES

Description:

The Contractor shall plan, schedule and construct the Project by using a Critical Path Method Project Schedule (CPM) meeting the requirements of these specifications. Use the CPM for coordinating and monitoring the Work specified in the Contract Documents including all activities of Subcontractors, vendors, suppliers, utilities, railroads, the Department, and all other parties associated with the construction of the Contract. Include all Work in the CPM; including but not limited to submittals, major procurement, delivery, and construction activities. Include all activities, including bid items, quantified in the Contract Documents. Base the CPM upon the entirety of the Contract Documents. Utilize CPM software that generates files compatible with Primavera P6 Project Management Release: 7.0.0.

Scheduling Representative:

Designate a scheduling representative prior to submission of the Original Critical Path Method Project Schedule (OCPM). The scheduling representative is the person primarily responsible for development and maintenance of the CPM schedule; the Contractor's representative in all matters regarding the schedule; and the Contractor's designated attendee for all schedule related meetings. The scheduling representative shall also be knowledgeable of the status of all parts of the Work throughout the duration of the Project. Replacement of the scheduling representative will require written approval from the Engineer.

Submit the qualifications of the scheduling representative to the Engineer for approval. This approval is required before the OCPM will be accepted. The scheduling representative shall have at least three years of verifiable experience for preparing and maintaining CPM project schedules on Contracts of similar size and complexity.

Critical Path, Project Completion Date, and Float:

The critical path is defined as the series of activities in a CPM that has the longest path in time. The submitted activity sequence and durations must generate a CPM with only one critical path. Divide Project wide activities such as Maintenance of Traffic, Construction Engineering, or Temporary Erosion Control that, by their nature, generate long durations and complement other activities into "establish" and "conclude" activities to prevent this type of Work from occupying a significant portion of the critical path.

The project start date, or initial data date, of the original CPM shall be the first chargeable day of Work. Nonproductive Work and administrative activities may begin and/or end prior to the project start date. The Original CPM must use all of the Contract Time and contain a critical path containing exactly zero float. Early completion schedules are not permitted. The schedule ending date of the Original CPM that uses all of the Project Time is the contract completion date.

Total Float is the difference between the schedule's finish date and the contract completion date. Free float is the difference in time between an activity's early finish and late finish. Free float is a shared commodity for the use of the Department and the Contractor and is not for the exclusive use or benefit of either party. Both parties have the full use of free float until depleted.

Submittal of the OCPM; the Start of Work and the Schedule of Record:

Complete and submit the proposed original CPM schedule (OCPM) database and the written narrative (WN) within 30 calendar days after Contract is Awarded. The WN is a description of any elements of the Schedule that deviate from the proposed construction sequence shown in the Contract Documents. Submit the OCPM in CPM format fully compatible with Primavera P6 Project Management Release: 7.0.0 by email or CD ROM as a single compressed database in CPM format.

The Engineer will complete the review of the OCPM within 30 calendar days after submittal. If required, a Joint Review Conference will be convened at which time the Engineer and Contractor may make corrections and adjustments to the proposed OCPM. If a revision is necessary due to the Engineer's review or the Joint Review Conference, submit the proposed revision within seven calendar days after receiving the Engineer's review comments or within seven calendar days after the date of the Joint Review Conference, whichever is the latest. Make revisions in accordance with the requirements for the OCPM. The Engineer will respond to the revised OCPM within seven calendar days after receipt. Clearly identify each submittal and resubmittal for clarity by labeling "2nd Draft", "3rd Draft", etc.

Do not start any Work until the OCPM is accepted. If the Engineer is ready to issue a Notice to Proceed but the OCPM is not yet accepted, the Engineer may issue the NTP and start Contract Time, but forbid Work to begin until the OCPM is accepted. The Engineer may partially accept a OCPM and allow Work to begin if the required corrections to the OCPM are minor, but the Engineer will not accept submittals that do not show the complete schedule. The Engineer will not pay any estimates until the OCPM is partially accepted. Once the OCPM is partially accepted, the Engineer will pay the first estimate. If the Contractor fails to make a good faith effort to address the Engineer's comments before the second estimate is due for payment, the Engineer will not pay the second estimate until a good faith effort is made by the Contractor to comply. The Engineer may not withhold an estimate payment if, within the estimate period in question, the Engineer has failed to provide timely review comments in response to the Contractor's submittal. The Engineer may, however, withhold the payment of subsequent estimates if the Contractor fails to make a good faith effort to address the Engineer's comments. Upon issuance of the Notice to Proceed, the start date utilized in the OCPM will be adjusted to comply with the first chargeable day of Work. Any delay in starting Work caused by the acceptance of the OCPM by the Engineer will not be considered as a basis for any adjustment in the Contract amount or time. For Contracts that have fast-tracked starts, the Engineer and the Contractor may agree to alter the response times and approval dates listed above. Upon notification that the OCPM has been accepted, the corrected copy will become the CPM of record. The CPM of record shall be the Contractor's work plan for completing the entire Contract as specified in the Contract Documents.

Requirements for the OCPM:

The format of the OCPM database shall be the precedence diagram method with days as the planning unit and shall be based on Calendar Days. Use the Department's partially predetermined coding structure (CS) that is furnished by the Engineer.

Activity Sequencing. Activity sequence must be logical and representative of the Contractor's order of the Work. Successors and predecessors determine the schedule logic or activity sequence. A given activity cannot start until all of the given activity's predecessors have been completed. Use only finish to start dependency relationships (links); do not use lag times without approval from the Engineer. The Engineer may request that the Contractor resequence the activities to reflect realistic job logic. When scheduling using multiple resources, each resource unit shall have a corresponding activity. Durations of activities include all the time necessary to complete the activity including, but not limited to, Contractor's non-work periods (other than those shown on the calendars), reasonably foreseeable inclement weather, weekends and holidays. Base schedule calculations on retained logic, contiguous durations, and total float as finish float.

Activity Resources. Sequence activities to reflect resource apportionment. Logically connect and code each activity to reflect the crew (resource) performing the operation. Submit a summary list of crews, their crew codes, and their operation(s) with each schedule submission, unless unchanged. Identify responsibility for each activity. Identify Subcontractors, DBE's, utilities and Work performed by others that affects the Schedule.

Breakdown and Durations of Activities. An individual activity is required for each construction element or each activity not under the control of the Contractor that affects the sequence or progress of the Work. The Engineer reserves the right to require additional breakdown of the Work activities at any time. Each activity must be identified by a name, symbol and coding, and shall have a duration, sequence, responsibility and resource(s). Choose activity names that are descriptive and identify single construction elements. Activity symbols, or ID's, shall be unique and systematic.

Activity types must be either “task”, “start milestone”, or “finish milestone”. Do not use “hammock” type activities. Date constraints, float and duration constraints, and/or flags for activities are not permitted.

Assign a reasonable duration to each activity representative of its scope. Durations may not exceed 14 calendar days unless approved by the Engineer. Determine the duration of each activity by using productivity rates based on Calendar Days.

Include the preparation and approval of Working Drawings as activities. Include phasing (staging) milestones as activities. Correlate phasing milestones with the sequence of construction provided in the Contract Documents. Use a separate start and finish milestone activity to delineate each phase (stage).

Utility Work. Include all Work performed by utilities on the Project as activities in the OCPM. Include each utility item of Work shown in the Contract’s Utility Statement as an activity. Durations for utility activities shall be the same as the durations shown in the Utility statement for each activity unless otherwise approved by the Engineer.

Calendars. Assign a calendar to each activity in the schedule. Use a minimum of 6 calendars, when applicable: (1) Full Schedule; (2) Permit Requirements; (3) Winter Condition; (4) Concrete Work; (5) Asphalt Paving Work; and (6) Nighttime Asphalt Paving Work. Use additional calendars if needed. Calendar non-work periods shall reflect the average Delaware weather history for the jobsite and the restrictions identified in the Contract Documents. The Contractor may choose perform Work during an activity’s calendar non-work period at no additional cost to the Department if weather conditions are favorable for such Work and the Work does not violate a set forth in the Contract Documents. The maximum allowable non-work period for each calendar is set forth below. The Contractor may choose to shorten non-work periods at his/her discretion.

CALENDAR	MAXIMUM NON-WORK PERIOD
Full Schedule	None
Winter Condition	December 1 through March 15
Concrete Work	December 1 through March 15
Asphalt Paving	November 15 through March 15
Nighttime Asphalt Paving	October 15 through April 30

Written Narrative (WN). Provide a written narrative (WN) as part of the OCPM explaining the following:

- (a) Relationships between activities not obviously identified
- (b) Equipment usage and limitations.
- (c) Manpower usage and limitations.
- (d) Use of additional shifts and overtime.
- (e) Activity codes, abbreviations, and activity identification system.
- (f) All calendars utilized in the CPM and the basis of determining each non-work period
- (g) All abbreviations.
- (h) Use of calendars.
- (i) Any other conditions that affect the schedule and are not readily discernible in the database.

CPM Updates:

Provide monthly updates to the CPM of record. Meet with the Engineer once a month prior to submitting the update to review the status of the schedule’s activities. Prepare an updated list of activities showing all of the actual start and actual finish for each of the schedule’s activities so that both parties can agree on the dates. Use the dates that were agreed upon in the meeting to status the CPM of record and submit the updated schedule to the Engineer for approval. Assign a unique file name to each update (Number/version). The data date of the update shall be the next day after the end of the update period. As part of the monthly update, submit a written description that identifies any delays or disruptions to the schedule experienced during the period of an update, any change in manpower or equipment, and any potential delays to the completion date of the schedule.

Do not include any revisions to the CPM without prior approval. Failure to submit complete updates in a timely manner may result in the withholding of estimates by the Engineer. The Engineer agrees to refrain from withholding estimates unless the Contractor is habitually late in providing updates, is more than four weeks late in submitting an update or has failed to submit an update that is part of a resolution to a serious problem that must be addressed immediately.

Revisions to the Schedule of Record:

Revisions are defined as any changes to the database other than status updates, log entries and moving the data date. Discuss any proposed revisions to the CPM verbally with the Engineer. If the revision is minor in nature, the Engineer may allow the revision to be included on the next Update of the CPM. If the Engineer determines that the revision is not minor in nature, submit the proposed revision for review and approval prior to deviating from the approved CPM. When a revision to the CPM is required due to changes in the Contract initiated by the Engineer, immediately contact the Engineer to discuss the changes. The Engineer may allow a deviation from the approved CPM for specific mitigating activities.

The Engineer may direct the Contractor to revise the schedule of record at the Contractor's expense if: the critical path has less than minus ten (-10) Calendar Days of total float due to the Contractor's failure to perform the Work in accordance with the schedule; the Contractor requests to re-sequence the Work; and/or the Contractor has performed a significant amount of Work out of sequence. The Engineer may direct the Contractor to revise the schedule for any other reason; and such a revision will be paid at the unit cost for a CPM Revision.

The Engineer will review and respond to the proposed revision within 7 Calendar Days after receipt. Resubmit, if required, within seven calendar days after receipt of the Engineer's review comments. The Engineer reserves the right to reject any proposed revision that adversely impacts the Department, utilities, or other concerned parties.

Extensions of Contract Time and/or Incentive/Disincentive Dates.

Make requests for extension of Contract time in writing and subject to the notice and timeliness of submission provisions as provided for elsewhere in the Contract. Requests for an extension of Contract time or change in an incentive/disincentive date will be evaluated by the Engineer's analysis of the CPM of record and any proposed revision submitted. Include in the request a written narrative of the events that impacted the schedule and a detailed explanation of why the Contractor cannot meet the requirements of the schedule of record. Only delays to activities that affect the Contract completion date or will be considered for an extension of Contract time. Only delays to activities that affect the completion duration of an incentive/disincentive period will be considered for an extension of an incentive/disincentive completion date. The extension of the specified Contract completion date or incentive/disincentive date will be based upon the number of Calendar Days the Contract completion date or incentive/disincentive date is impacted as determined by the Engineer's analysis. The Engineer and Contractor may agree to defer the analysis of a potential impact to the schedule until the completion of the activities that are affected. Such a deferment does not relieve the Contractor of his/her duty to identify potential impacts to the schedule in the applicable schedule updates.

All requests for extensions of Contract Time must be supported by the most recent CPM Update. If, within a reasonable period of time, the Contractor fails to make a good faith effort to produce an acceptable CPM update and uses an unacceptable CPM update to support a request for a time extension, the Contractor loses the right to receive that time extension; and/or the right to receive compensation for that delay caused in whole or in part by the Engineer.

Final As Built Schedule.

Submit a final CPM Schedule database within 14 Calendar Days of Substantial Completion. Failure to submit a final CPM Schedule may result in the withholding of estimates by the Engineer.

Method of Measurement:

The Project Control System will be measured in two items. The item, "Project Control System Development Plan" will be lump sum. The item "CPM Schedule Updates and/or Revised Updates" will be measured one each per update that is submitted and accepted.

Basis of Payment:

The item, "763508 – Project Control System Development Plan" will be paid at the Contract's lump sum bid price on the next monthly estimate after completion of the requirements of the Project Control System Development Plan, which includes the approval of the Original CPM Schedule. Price and payment will constitute full compensation for preparing the CPM database, acquiring the necessary software, attending all scheduling meetings with the Department, submitting and resubmitting all documents and for all labor, tools, equipment and incidentals necessary to complete the Work.

The item, "763509 – CPM Schedule Updates and/or Revised Updates" will be paid at the Contract unit price per each approved CPM schedule update as described above. Price and payment will constitute full compensation for preparing, submitting and resubmitting all CPM updates, for attendance at all scheduling meetings with the Department, for preparing and reviewing a list of actual start and actual finish dates with the Engineer, and for all labor, tools, Equipment and incidentals necessary to complete the Work.

2/11/2015

763598 - FIELD OFFICE, SPECIAL I

Description:

The field office work shall consist of furnishing, erecting, equipping, maintaining, and removing a singlewide modular office and adjacent parking area. The Contractor shall submit a specific location layout drawing and construction details for the proposed field office and its parking area for approval by the Engineer. The field office and parking area shall be for the exclusive use of Department Officials, Engineers, Designers, North Region Construction (NRC) Personnel, Consultants, and Inspectors.

The field office structure shall be free of asbestos and/or other hazardous materials. The field office and its parking area shall be constructed and installed in accordance with all applicable city, county, state, and federal codes. The Contractor shall be responsible for obtaining all required licenses and permits for installation and placement of the field office and its parking area. The costs of obtaining such licenses and permits to be incidental to the "Field Office, Special" Item. The field office shall be available for use by the Department continuously throughout the duration of the project.

Construction and Equipment:

The field office shall be new and have a minimum floor space of 600 square feet with minimum exterior dimensions of 50'-0" length by 12'-0" width. The floor to ceiling height shall be nominal 8'-0". The exterior walls, ceiling, and floor shall be insulated. The field office shall be of weather-proof construction, tightly floored and roofed, constructed with an air space above the ceiling for ventilation, supported above the ground, safely secured to its support if the support is an inground anchored foundation or otherwise by tie-downs to the ground, and fully skirted with rigid watertight covering overlapping the bottom of the exterior siding to the existing ground.

The Contractor shall provide entries to the field office by constructing a stair and deck platform with canopy at each exterior door. These entries shall be fabricated using treated dimension lumber, be constructed with hand and safety railing, be designed to last the life of the Contract, and conform to the requirements of the Architectural Accessibility Board and other federal, state and local boards, bodies and/or courts having jurisdiction in the Contract limits.

The Contractor shall construct and maintain an all weather parking area adjacent to the office of at least 2500 square feet and having a minimum of 10 functional parking spaces striped for full size cars. All weather pathways from the parking area to the entrances of the field office shall also be constructed and maintained. This parking area and entrance pathways shall have a minimum of 2" type "C" hot mix on top of minimum 6" graded aggregate subbase. Snow and/or ice shall be removed from the parking area and from the entrance pathways to the field office within 12 hours after each occurrence. Costs for furnishing, placing, and maintaining the aggregate base and hot mix, and for snow and/or ice removal, to be incidental to the Field Office, Special" Item. The ground area 30'-0" from around the perimeter of the field office to the field office shall be landscaped and maintained. If the earthen grounds do not have a stand of weed free grass, the surface of this area shall be loosened to a depth of 4" and a satisfactory seedbed shall be prepared free of debris and extraneous matter. The area shall be seeded to a healthy stand of grass or sodded, after which the area shall be watered, mowed, and trimmed a minimum of three times a month during the growing seasons. Cost for this landscaping and maintenance to be incidental to the "Field Office, Type I Special" Item.

The field office shall have full carpeting, kitchenette facilities, and interior and exterior paneling, lighting, and plumbing fixtures. The field office shall have a minimum of two (2) exterior doors, each door having a passage and a deadbolt lock. These door locks shall be keyed and at least 2 complete sets of keys shall be supplied to the Engineer's representatives. The exterior doors shall be insulated or have storm doors. The field office shall have a minimum of six (6) windows, each window having a minimum glass area of 1150 square inches and a horizontal mini-blind covering the full glass area. The windows shall be insulated or have storm windows. All windows shall be equipped with a locking device. All doors and windows shall have screens installed and repaired when damaged.

At least two (2) outside water service connections shall be provided at the field office. Each water connection shall have a 3/4" frost proof hose bib with vacuum breaker and shall include 100 linear feet of 5/8" minimum diameter reinforced, industrial or commercial grade, soft rubber hose per connection.

The field office shall be provided with sufficient natural and artificial light and shall be adequately heated and cooled to provide comfortable working conditions.

The field office shall have satisfactory lighting, electrical outlets, heating equipment, exhaust fan, and air-conditioning connected to an operational power source. Plan and drawing areas shall have individual fluorescent lights situated over their worktables. Replacement fluorescent lights shall be furnished as required. Electrical current, water, and any fuel for heating equipment shall be furnished and the cost of such shall be borne by the Contractor. Maintenance of the heating, exhaust fan, and air-conditioning equipment shall be provided for by validated service contracts for the length of the Contract. These service contracts shall allow a Department authorized project person to deal directly with the service organization to request repair. The Contractor shall furnish and maintain two fire extinguishers and provide one lighted "Exit" sign for each exterior passage door. Fire extinguisher(s) may be chemical or dry power and shall be UL Classification 10-B:C(min.) and shall be suitable for Types A:B:C fires. A commercial or industrial type first aid and safety kit suitable for project conditions and hazards (including snakebite) shall be provided and maintained to full capacity on a monthly basis.

The Contractor shall provide an alarm system for field office security with electronic, direct connection to a security service provider. The security system shall have interior motion, window, and entrance detectors and built in manual fire alarm. All windows of the field office shall be covered with steel bar grids as a deterrent to forced entry. The Contractor shall provide validated monitoring and service contracts for the length of the Contract. These contracts shall allow a Department authorized project person to deal directly with the security service provider to request service and/or repair.

The Contractor shall furnish and maintain an adequate supply of cold potable water, a minimum 23 cubic foot new refrigerator, and a minimum 900-watt new microwave oven. Maintenance of the potable water supply equipment, refrigerator, and microwave shall be provided for by validated service contracts for the length of the Contract. These service contracts shall allow a Department authorized project person to deal directly with the service organization to request repair.

Suitable indoor toilet facilities, conforming to the requirements of the State and Local Boards of Health or of other bodies or courts having jurisdiction in the area, shall be provided. When separate facilities for men and women are not available or required, a sign with the wording "Rest Room" (letter heights 1" minimum) shall be placed over the doorway and an adequate positive locking system shall be provided on the inside of the doorway to insure privacy. The facility(s) shall be maintained by the Contractor to be clean and in good working condition and shall be stocked by the Contractor with adequate lavatory and sanitary supplies at all times during the period of the Contract.

The Contractor shall be responsible for performing or for making arrangements for all necessary telephone connections and/or for their maintenance; for providing a new telephone equipment system, for payment of all connections and the new telephone system equipment and its installation; and for final disconnection of the telephones.

The field office telephone system shall have a total of 5 lines consisting of 2 direct single lines with call forward busy feature, 2 dedicated computer use line with broadband connection for either DSL or cable, and 1 dedicated facsimile line and have 5 key sets consisting of 1 master key set having privacy feature, and 4 four-button key sets having privacy feature (1 set which may be for wall mounting), all for the official and exclusive use of the Engineer and other representatives of the Department. Arrangement shall be made to allow a Department authorized project person to deal directly with the telephone company to report outages and/or request repair. Monthly billings for the field office telephone system shall be received and paid by the Contractor. A copy of each bill shall be forwarded to the Project Resident for reimbursement on the subsequent contract pay estimate. The reimbursement will be for the amount of the bill only and shall not include any additional mark-up or profit.

For all other utilities, the Contractor shall be responsible for performing or for making arrangements for all necessary utility connections and/or for their maintenance; for payment of all utility connections, installations, service fees and bills; and for final disconnection of utilities.

The field office interior shall be furnished by the Contractor. The Contractor shall provide new and maintain the following office furnishings, all which are to be approved by the Engineer prior to installation in the field office. Placement of these furnishings shall be as directed by the Engineer. 6 full size office desks each with filing drawer and fully adjustable ergonomic design swivel chair with armrests and five leg base having wheel casters, 1 computer station with acoustical panels having minimum 60 NRC rating for privacy screen and fully adjustable ergonomic design swivel chair with armrests and five leg base having wheel casters, 1 large conference table for a minimum of 12 people with surrounding chairs with armrests, 2 folding tables minimum 6'-0" by 3'-0" each with ergonomic design straight back chair with armrests, 1 work table, 1 supply cabinet, 2 rough plan racks, 2 legal size filing cabinets with 4 drawers, 2 legal size fire-resistant filing cabinets with lock and key with 4 drawers and meeting fire underwriters' approval for not less than one hour test, 2 book shelves minimum 3'- 6" by 4'- 6", 3 vertical surface legal size three compartment pockets, 2 dry erase boards minimum 4' by 3' each with markers and erasers, and 2 cork bulletin boards minimum height 3' by 2'. These office furnishings will remain the property of the Contractor at the conclusion of the project.

The Contractor shall also furnish new and maintain the following office equipment, all which are to be approved by the Engineer prior to installation in the field office. The required equipment will enable the Department to synchronize project record keeping and office functions. The equipment shall be delivered in working and useable condition:

- 4 heavy-duty calculators having extra large 12-digit fluorescent display, full size keyboard with contoured keys, two-color ribbon printer, and AC powered;

- 1 compact plain paper copying machine and cabinet with stationary platen, bypass feeding, and dual loading cassette system with cassettes for letter, legal, and ledger size paper. Copy machine to have zoom and preset reduction and enlargement features, automatic two (2) sided copying, automatic document feeder with minimum 30 sheet capacity, and 20 bin collator with automatic stapling capacity;

- 1 desktop model, compact facsimile machine with automatic paper cutter, 10-sheet feeder, halftones with 16 levels of gray, 50-number auto dialing, answering machine hook-up, large LCD readout, date and time stamp, and advanced telephone features;

- 1 DVD camcorder with on-screen programming, full-range auto focus, high-speed shutter, high-resolution, bookmark search, time-lapse recording, rechargeable batteries and charger, tripod, and protective carrying case;

- 1 integrated color monitor and DVD/VHS cassette recorder having minimum 20" screen, automatic on/play/rewind/stop, remote, full range speaker, and digital auto tracking;

- 1 micro cassette recorder, having fast playback, voice-activated system, three-digit tape counter, silent auto-stop and pause, two tape speeds, one-touch and follow-up, built-in condenser microphone, cue and review, and rechargeable with combination battery charger/AC adapter;

- 1 telephone answering machine having all-digital recording, 14 minute message capacity, selectable message time, voice prompt assistance, day/time stamp, call screening, two-digit LED message indicator, toll saver, power failure memory back-up, and message interrupt from any station; and

- 2 digital cameras with minimum 1/2.7" 4.0 mega pixel, 3X optical / 6X precision digital zoom, 12-bit DXP A/D conversion, 2.5" 123K pixel LCD display, 5-mode program AE and each with dual media slots, SXGA/XGA/VGA image resolution, E-mail mode. Also

intelligent flash with red-eye protection, MPEG movie mode, clip motion, light metering, TEXT mode (GIF), playback zoom and resize, white balance, lithium battery system and in-camera picture effects, memory stick/card (minimum 256MB) capability, and storage case.

Consumables as required to manage the business of the project shall be provided for all office equipment for the length of the Contract. These consumables shall be furnished on request and shall include but not be limited to paper, tapes, ribbons, rolls, toner, cleaning kits, microcassette tapes and batteries, answering machine cassettes, camera batteries and memory sticks and/or discs, DVD and CD R/RW media, etc.

Maintenance of all office equipment shall be provided for by a validated service contract for the length of the Contract. This service contract shall allow a Department authorized project person to deal directly with the service organization to request repair.

Included in the unit price bid per month for the Field Office on this project will be two (2) IBM compatible Microcomputer Systems both which will be furnished and maintained by the Contractor for use by the Engineer. The specified computer systems will synchronize the construction management functions of the Department to monitor, report, and perform the accounting of the project work. The computer systems and all their related equipment specified below shall be furnished new and remain the property of the Contractor at the conclusion of the Contract. A detailed listing of the proposed computer systems and all their related equipment to be provided by the Contractor shall be submitted for approval by the Engineer prior to furnishing the Microcomputer Systems. The Microcomputer Systems shall be Laptop Computer Systems each with docking station. Each of the two (2) Microcomputer Systems shall consist of:

Central Processing Unit (CPU) – Lap Top

Pentium M processor, 740 (1.7 GHz) or better with integrated USB 2.0 and IEEE 1394 ports (firewire) and wireless networking included,

Minimum 1.0 GB RAM with expansion capability to at least 3.0 GB and clock/calendar card equivalent, and

Microsoft "Windows® XP Professional" operating system;

Memory (Storage)

CD/DVD +/- RW with double layer write capability, and 100GB hard drive minimum, integrated Ethernet 10/100, and internal modem. Included software shall support double layer media writing and automatic backup of data;

Monitor (Cathode Ray Tube)

Monitor for docking station and docking station - Super Video Graphics Adapter (SVGA) minimum. 19" minimum diagonal visual area flat panel with .26 dot pitch capable of multiple frequency 256 color graphics and at least 1024 pixel resolution. Swivel base with low radiation and eyestrain protection, brightness and contrast control and

Laptop - shall have 15.4" display minimum;

Color Graphics Card

Card must be SVGA AGP interface with 64 MB onboard video memory having maximum resolution of at least 1280x720 with at least 16 bit color and video control hardware and software;

Keyboard

Keyboard shall be ergonomic, enhanced layout minimum with keyboard interface cable;

Printers

LaserJet HP 2550N network capable printer or latest model with 64 MB minimum total memory having up to 600 dpi resolution and using HPL6 printer language with all necessary software and cables for proper operation; and a HP Desk Jet color printer or latest model with photo quality print capability and with all necessary software, equipment, and cables for general operation as well as connection and sharing on a local network;

Scanner

A HP6100 color scanner with HP5770 ScanJet ADF (or equivalent brand) with all necessary software, equipment, and cables for general operation as well as connection and sharing on a local network;

Software

The latest version programs for application management (operating system), word processing, spreadsheet, and anti-virus shall be provided with all user manuals. Upgrades, maintenance, and full technical support by the manufacturer shall be provided for the length of the Contract. The required software will enable the Department to synchronize accounting and record keeping functions between the project, District, and Department offices. A list of programs to be provided shall be submitted to the Engineer for approval. Software, other than for application management and anti-virus, is to be delivered unopened to the Department's administrative office. All software is to be compatible with and for use to run on "Windows® XP Professional". The required applications software follows and is to be latest version unless noted:

office suite - "Microsoft® Office XP Professional",
antivirus - "McAfee® Total Protection for Small Business",
software supporting creation of DVD +/- R/RW disks (supporting double layer media writing) and DVDR and DVDRW disks using DVDRW drive, for example: Ahead Nero, Roxio DVD/CD Creator, or some equivalent product. Note: software commonly included as part of the standard CDRW upgrade/standalone package is acceptable if included with the unit;

Related Equipment

Wireless networking hub/router (802.11g or better) with all associated hardware (adapters, cables, etc) and soft to enable wireless networking and internet connection sharing for all office computers and printers,

An electrical outlet with dedicated circuit for the main computer unit,

An optical mouse with proper driving software having complete Microsoft emulation,

An internal 56/28.8/14.4 fax modem with MNP5 error checking and complete Hayes emulation having high-speed 14.4 fax capability and regular data transmission between 2400 and 56 baud, with the latest version proper driving software,

Necessary cables for proper operation,

An uninterruptible power supply (UPS) units for protection from power loss or fluctuation, minimum of 6 outlets, adequate to provide a minimum of 30 minutes backup power for an orderly shut down of the computer system with software and connections for automatic system shutdown,

24 bit Sound Blaster compatible PCI soundcard with quality desktop speakers,

A combination surge, spike, and noise protection device with receptacles for all peripherals (may be in combination with the UPS power supply),

A wrist rest suitable for use with the furnished keyboard,

Cleaning kits for disk drives,

An anti-glare filter with grounding wire suitable for use with the furnished monitor, and

All cards, hardware, and operating, anti-virus, and equipment software to be fully installed and operational;

Maintenance and Service

Maintenance of all specified equipment and components shall be provided for by a validated service agreement for the length of the Contract. Maintenance (upgrades, replacement, full technical support) for each software application shall be provided for by validated maintenance agreement for the length of the Contract. These agreements shall allow an authorized project person to deal directly with the service organization to request repair or the maintenance organization to request assistance; and

Supplies

Consumables as required to manage the business of the project shall be provided for the Microcomputer Systems for the length of the Contract. These consumables shall be furnished on request and include but not be limited to 3-1/2" double sided high density micro floppy diskettes, compatible diskettes for provided digital cameras and memory stick media, DVDR and DVDRW media compatible supporting operational minimum to maximum speed of the DVD/RW drive unit, cut sheet paper and labels compatible with the printers, hardware and screen cleaners, and toner cartridges.

Maintenance of the field office including its adjacent parking area, for the time required, shall consist of maintenance and/or replacement of all provided items, security system, furniture and equipment, computer systems, providing lavatory supplies, providing trash containers and waste baskets, providing entrance mats at each door, providing replacement items for lighting fixtures, maintaining all utilities, providing satisfactory and sanitary janitorial and waste disposal services twice a week, providing cleanup of trash and debris on the parking lot and landscaped area once a week, and shall be included in the monthly unit cost.

The Contractor shall provide and deliver a current copy of all validated field office, equipment, and computer maintenance, service, assistance and/or monitoring agreements and/or contracts as mentioned hereinabove to the Department's administrative office on or before the first day the field office is ready for use.

Method of Measurement:

This item will not be measured but will be paid for on a monthly basis. Partial months will be paid at the rate of 0.033 months per day.

Basis of Payment:

The field office will be paid for on a unit price bid per month, which price shall be full compensation for performing the work specified and the furnishing of all materials, labor, tools, equipment and incidentals necessary to maintain the field office and its adjacent parking area and restore the field office area and adjacent parking area to match the original site condition. No separate payment will be made for costs involved for removing hazardous material or underground tanks to install these offices or the parking area.

Payment will be made only for the actual number of months that the office is acceptably provided by the Contractor.

The field office shall be ready for use not later than thirty (30) calendar days after the date of the fully executed Contract and before construction operations begin.

3/3/08

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.

5/17/17

813501 - TEMPORARY SIDEWALK – TYPE 2 (BOARDWALK)

Description:

Furnish, place, maintain, and remove a temporary wooden sidewalk with siderails in accordance with the requirements of the Americans with Disabilities Act, locations, notes and details in the Plans and as directed by the Engineer.

Materials:

Exterior Grade lumber and associated hardware as shown on the Plan Details.

Construction Methods:

Construct a temporary wooden walkway in accordance with the plan details as needed to maintain pedestrian traffic through the work zone.

1. Remove the temporary sidewalk, restore the area when it is no longer needed and dispose of all materials in accordance with Subsection 106.07.

Method of Measurement:

The quantity of Temporary Sidewalk – Type 2 will be measured as the number of linear feet of walkway acceptably constructed, installed, maintained, removed and completed as specified.

Basis of Payment:

Linear Foot price and payment will constitute full compensation for furnishing all materials, constructing, placing, and maintaining the temporary sidewalk, and for removal and disposal of the temporary sidewalk when it is no longer needed. Also included is the restoration and seeding of any disturbed area to its original configuration, and the furnishing of all labor, equipment, tools and incidentals required to complete the work. Topsoil, if required, will be paid for under Item 908001.

2/28/2018

830501 - JUNCTION BOX ON STRUCTURE

Description:

The item shall consist of furnishing and installing junction boxes on bridge piers as detailed on the contract documents and as specified herein for Contract T200809001.

Materials and Construction Methods:

Unless noted otherwise on the Plans, the junction box shall be cast iron and hot-dipped galvanized and installed as specified in the contract documents and in accordance with manufacturers recommendation. Units shall be surface-mounted to structure and held in place as recommended by the manufacturer. The unit shall be U.L. listed and NEMA 4. The size of the junction box can be modified only with approval of the Engineer.

Method of Measurement:

The number of junction boxes to be measured under this item shall be the actual number of installed junction boxes in accordance with these specifications.

Basis of Payment:

The number of junction boxes, as determined above, shall be paid for at the contract unit price bid per Each junction box installed on the structure. Price and payment shall constitute full compensation for furnishing and installing of the box, and other related hardware, for all labor, tools, equipment and necessary incidentals to complete the work.

1/29/2018

850504 - UNDERPASS LIGHT FIXTURE (LED)

Description:

This work consists of furnishing and installing underpass lighting fixtures in accordance with these specifications and as shown on the Plans for Contract T200809001.

Materials and Construction Methods:

The complete underpass light fixture shall have a heavy-duty die-cast aluminum housing with a powder coat white finish, hinged refractor, continuous one piece silicone rubber gasket, semi-specular anodized aluminum reflector, and glass lens. The ballast shall be capable of operating the lamp down to 0 degree F. The fixture and components shall meet the following criteria:

1. Lamps: 75 Watt (Minimum)
2. Voltage: 120V - 277V
3. CRI: 70 (Minimum)
4. Lamp Lumens: 8,000 (Minimum)
5. Average Lamp Life: 50,000 Hours (Minimum)
6. Color Temperature: 4,000K

All underpass luminaries and lamps shall be furnished and installed as specified in the contract documents and in accordance with manufacturer's recommendations.

After installation has been completed and prior to performance test, refractors and reflectors shall be cleaned with a product approved for use by the manufacturer.

Method of Measurement:

The quantity of underpass light fixtures will be measured as the actual number of fixtures provided complete in place and accepted.

Basis of Payment:

The quantity of underpass light fixtures will be paid for at the Contract unit price per Each. Price and payment will constitute full compensation for furnishing all materials, labor, tools, equipment, testing and incidentals necessary to complete the item installation.

7/5/2018

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 on poles, in accordance with these specifications and as shown on the Plans.

Materials:

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: 250 Watt Maximum
3. Voltage: 120V - 277V
4. CRI: 70 Minimum
5. Lumens: 27,000 to 31,000
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: 850mA 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 below.

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.

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

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.

The following installation requirements shall be followed:

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.

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.

Warranty:

Luminaire to be free from defects and operate as indicated for a period of 5 years from the date of delivery.

Method of Measurement:

The quantity of LED Light Fixtures will be measured as the actual number of luminaires provided complete in place and accepted.

Basis of Payment:

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

5/08/18



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

JENNIFER COHAN
SECRETARY

FINAL UTILITY STATEMENT

6/26/2018

State Contract No. T200809001

PROJECT ID#04-00582

I-95, N213 CARR RD AND SR3 MARSH RD

INTERCHANGE IMPROVEMENTS

New Castle County

The following utility companies maintain facilities within the project limits:

Delmarva Power – Electric Distribution
City of Wilmington Water
New Castle County Sewer
Verizon of Delaware
The Zayo Group
Comcast Cable Communications, Inc.
Windstream

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

Delmarva Power – Electric Distribution

The Delmarva Power – Electric Distribution Company maintains aerial and underground facilities throughout the project limits.

The Delmarva Power – Electric Distribution Company proposes the following adjustments and/or relocations to be performed during the project construction to its existing facilities:

1. Six (6) existing poles will be adjusted within the project limits at the following locations:
 - a. Sta. 2009+90 offset left 31' on Marsh Rd: Existing utility pole to remain; proposed 12' cobrahead lighting mast arm to be added; proposed LED luminaire – 400W HPS equivalent, cutoff, Type II distribution luminaire (American Electric Number Autobahn Series, #ATB2-80BLEDE85-MVOLT-R2 or approved equal)



- to be installed at 25' above roadway surface and provide 120/240V service to the proposed Rectangular Rapid Flashing Beacon.
- b. Sta. 2011+45 offset left 30' on Marsh Rd: Existing utility pole to remain; proposed 12' cobrahead lighting mast arm to be added; proposed LED Luminaire – 400W HPS equivalent, cutoff, Type II distribution luminaire (American Electric Number Autobahn Series, #ATB2-80BLEDE85-MVOLT-R2 or approved equal) to be installed at 25' above roadway surface.
 - c. Sta. 2029+49 offset left 13' on Marsh Rd: Existing utility pole to remain; provide 277/480V service to the proposed lighting equipment. **(Service upgrade is reimb.)**
 - d. Sta. 210+71 offset right 31' on Marsh Rd: Existing utility pole to remain; proposed 12' cobrahead lighting mast arm to be added; proposed LED luminaire – 400W HPS equivalent, cutoff, Type II distribution luminaire (American Electric Number Autobahn Series, #ATB2-80BLEDE85-MVOLT-R2 or approved equal) to be installed at 25' above roadway surface.
 - e. Sta. 2024+68 offset left 31' on Marsh Rd: Existing utility pole to remain; provide 120/240V service to the proposed signal and ITMS equipment.
 - f. Sta. 505+30 offset right 62' on Carr Road: Existing utility pole to remain; provide 120/240V service to the proposed signal and ITMS equipment.
2. ***In advance of the project***, one (1) existing pole and associated guy wires will be relocated within the project limits at the following location:
- a. Sta. 2013+58 offset left 30' to Sta. 2013+46 offset left 52' on Marsh Rd: Provide 120/240V service to the proposed signal equipment.
3. ***In advance of the project***, One (1) new utility pole will be installed at a proposed location as follows:
- a. Sta. 2012+11 offset left 37' on Marsh Rd: Provide 277/480V service to the proposed lighting equipment. **(Service upgrade for lighting is reimbursable)**
4. Three (3) existing manholes will be adjusted within the project limits at the following locations:
- a. Sta. 2015+32 offset left 15'.
 - b. Sta. 2019+24 offset left 15'.
 - c. Sta. 2023+25 offset left 15'.
5. Temporary de-energization of the existing aerial line is anticipated along Carr Road for the installation of traffic signal equipment to be installed at approximate station 505+32 offset 55' right. **(This temporary work for outage is reimbursable. Outage can only be taken during certain load periods and as system conditions allow per our System Operations Department.)**

Delmarva Power Delivery would require (50) calendar days to complete the proposed distribution work following 30 calendar days' advance notice of completion of clearing and grubbing, cuts and fills made, staking of rights-of-way and back of curbs, the installation of

drainage and completion of the Utility Pre-Construction Meeting for this contract scheduled by DelDOT North District Construction Department, the procurement of any easements / P.E. by DelDOT.

Delmarva Power Delivery would require (14) calendar days to complete the proposed manhole adjustments as required during each phase of construction. Adjustments will be performed following 30 calendar days' advance notice of completion of clearing and grubbing, cuts and fills made, staking of rights-of-way and back of curbs.

No existing electric facilities can be taken out of service.

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

City of Wilmington Water

City of Wilmington maintains the following facilities within the project limits:

1. 8" cast iron water main that runs throughout the project limits on the easterly side of existing Marsh Rd. An 8" cast iron water main crosses Marsh Rd at Sta. 212+75 and continues on the southerly side of Carr Rd throughout the project limits.

The following adjustments and/or relocations to the City of Wilmington's existing water line are proposed to be performed by the State's contractor:

- a. Water valve at Sta. 210+74 offset left 10' to be adjusted.
 - b. Water valve at Sta. 212+16 offset right 12' to be adjusted.
 - c. Water valve at Sta. 212+17 offset right 26' to be adjusted.
 - d. Water valve at Sta. 212+74 offset right 12' to be adjusted.
 - e. Water valve at Sta. 223+51 offset right 15' to be adjusted.
 - f. Water valve at Sta. 225+30 offset right 11' to be relocated.
 - g. Water valve at Sta. 226+88 offset right 5' to be adjusted.
 - h. Water valve at Sta. 228+09 offset right 3' to be adjusted.
 - i. Water valve at Sta. 228+22 offset right 1' to be adjusted.
 - j. Water valve at Sta. 2013+16 offset left 34' to be adjusted.
 - k. Fire hydrant at Sta. 2013+13 offset left 40' to be adjusted.
 - l. Fire hydrant at Sta. 212+22 offset right 26' to be adjusted.
 - m. The existing 8" CIP line is to be relocated from station 215+76 offset 18' right to station 222+02 offset 13' right to avoid conflict with proposed barrier structure and drainage piping.
2. All water main construction, unless otherwise noted, shall be in accordance with the City of Wilmington Water details, standards, and specifications, and all subsequent revisions, details and supplements. All valves, bends and fittings must be properly restrained per City of Wilmington Water specifications. Operation of any valves shall be coordinated with the City of Wilmington Water Department prior to operation.

The State's contractor will complete these changes.

New Castle County Sewer

New Castle County maintains the following facilities within the project limits:

1. 10" PVC sanitary sewer main enters the project limits from manhole that is offset right 48' of Sta. 212+51 crossing Marsh Rd. to manhole at Sta. 2012+49 offset left 29' then to a 21" sewer main manhole located at Sta. 507+34 offset right of Carr Rd. 171'.
2. Two (2) 21" PVC sanitary sewer mains cross Carr Rd from manhole at Sta. 507+34 connecting to manhole at Sta. 508+85 and from manhole at Sta. 507+39 to manhole at Sta. 508+40 then crossing I-95 and Ramp B to Sta. 809+21 offset left 93'.

New Castle Country proposes the following adjustments and/or relocations to its existing facilities:

1. Adjust manhole on Carr Rd at Sta. 508+31 offset right 65'.
2. Adjust manhole on Carr Rd at Sta. 508+84 offset left 14'.
3. Adjust manhole on Carr Rd at Sta. 508+40 offset 0'.
4. Adjust manhole on Carr Rd at Sta 908+15 offset 17'

The State's contractor will complete these changes.

Verizon of Delaware

Verizon of Delaware maintains the following facilities within the project limits:

1. Underground conduits along the easterly side of Marsh Rd throughout the project limits.
2. Underground conduits along the northerly side of Ramp B.
3. Aerial facilities throughout the project limits.

Verizon of Delaware proposes the following adjustments and/or relocations to its existing facilities:

- a. Adjust manhole at Sta. 210+52 offset right 16'.
- b. Adjust manhole at Sta. 216+00 offset right 21'.
- c. Adjust manhole at Sta. 220+43 offset right 18'.
- d. Adjust manhole at Sta. 223+92 offset right 18'.
- e. Adjust manhole at Sta. 226+00 offset right 15'.
- f. Adjust manhole at Sta. 228+23 offset right 7'.
- g. Relocate duct from Sta. 216+01 to Sta. 220+42.

Verizon of Delaware will relocate the duct bank from Sta. 216+01 to Sta. 220+42 during Phase 2 of the project. The relocation work will begin once the State's contractor has removed the existing roadway and provided necessary Select Borrow for backfill. Verizon of Delaware

relocations/adjustments are expected to take approximately **90** calendar days to complete after the Company has been given a minimum **30** calendar days' advance notice that work shall begin, and the right-of-way and proposed work has been laid out by the State's contractor.

Manhole adjustments will occur during project construction as required for each phase. Each relocation/adjustment is expected to take approximately **2** calendar days to complete after the Company has been given a minimum **10** calendar days' advance notice that work shall begin, and the right-of-way and proposed work has been laid out by the State's contractor.

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.

Manhole covers will adjusted at the time of final pavement based upon elevations provided by the State's contractor.

ZAYO Group

ZAYO Group maintains facilities crossing over Marsh Rd at Sta. 222+88 on the CSX Rail Bridge.

There is no conflict with ZAYO Group existing facilities and the project construction.

No existing Zayo facilities can be taken out of service.

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

Comcast Cable Communication

Comcast Cable Communication maintains facilities between Sta. 2023+50 and Sta. 2031+40 on the westerly side of Marsh Rd.

There is no conflict with Comcast Cable Communication existing facilities and the project construction.

No existing Comcast facilities can be taken out of service.

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

Windstream

Windstream maintains aerial and underground facilities within the project limits:

4. Underground conduits along the southeasterly side of the Marsh Rd. exit unto Carr Rd. heading east.
5. Aerial facilities on Delmarva Power poles.

In advance of the project, Windstream proposes the following adjustments and/or relocations to its existing facilities:

- a. Relocate to new Delmarva pole replacing existing pole #49796/??581 once Delmarva has set the new pole and transferred the existing power lines.

Windstream will complete these relocations/adjustments and they are expected to take approximately five (5) calendar days to complete after the Company has been given a minimum 30 calendar days' advance notice that work shall begin, and the right-of-way and proposed work has been laid out by the State's contractor.

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

General Utility Notes

Outside of the companies and facilities discussed above, no additional utility involvement is anticipated. Should any conflicts be encountered as a result of the contractor's means and methods during construction requiring adjustment and/or relocation, the necessary relocation work shall be accomplished by the respective utility company and funded by the State's Contractor as directed by the District Engineer. The State Contractor shall coordinate any potential conflicts with utility companies and provide adequate notice prior to performing work. Any utility conflicts that are not readily discernable shall be coordinated by the State Contractor once the conflict is recognized. The time to complete any relocations/adjustments found to be necessary during construction of the highway project will depend on the nature of the work.

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

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

General Notes

1. The Contractor's attention is directed to Section 105.09 Utilities, Delaware Standard Specifications, August 2001. The Contractor shall contact Miss Utility (1-800-282-8555) two working days prior to any excavation. The Contractor is responsible for the support and protection of all utilities when excavating. The Contractor is responsible for ensuring proper clearances, including safety clearances, from overhead utilities for construction

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

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

Harry Sheppard	Windstream	Harry.Sheppard@windstream.com	(302) 224-7121
Joanne Liao	City of Wilmington	jliao@wilmingtonde.gov	(302) 576-3074
Keith Allridge	Comcast	keith@americomm-llc.com	(717) 713-7586
Angel Collazo	Delmarva Power Electric – Distr.	angel.collazo@delmarva.com	(302) 454-4370
Chris Riciutti	The Zayo Group	Chris.Riciutti@zayo.com	(484) 696-3903
George Zang	Verizon Delaware Inc.	george.w.zang@verizon.com	(302) 422-1238
David Clark	New Castle County Dept. of Spec. Svcs	dclark@nccde.org	(302) 395-5705

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 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.

	<i>July 2018</i>	<i>Aug 2018</i>	<i>Sep 2018</i>	<i>Oct 2018</i>	<i>Nov 2018</i>	<i>Dec 2018</i>	<i>Jan 2019</i>	<i>Feb 2019</i>	<i>March 2019</i>	<i>April 2019</i>
<i>Delmarva Power Electric Distribution</i>	Advanced Work				MH Adjustments/Lighting - Phase 1 Construction				Lighting - Phase 2 Construction	
<i>City of Wilmington Water</i>								Relocation of Main - Phase 2 Construction		
<i>New Castle County Sewer</i>					MH Adjustments - Phase 1 and Phase 2 Construction					
<i>Verizon of Delaware</i>							Relocation - Phase 2 Construction			
<i>Windstream</i>		Advanced Work								

NOTE: Coordination and cooperation among the utilities and the State's Contractor are of prime importance, therefore, the Contractor is directed to contact the following Utility Representatives with any questions in regard to this work prior to submitting bids and work schedules. Proposed work schedules should reflect the Utility Companies' proposed relocations.

Prepared and Recommended by:


Kendall L. Robinson/Century Engineering

 6/27/2018
EMAIL DATE

Approved as to form by:


Utilities Section, DelDOT

 June 26, 2018
EMAIL DATE

cc. Deborah Kukulich, DelDOT Utilities
Jon Hermes, CEI
Jim Howlett, CEI
Tom Brooks, DelDOT PD North
Tom Lawless, DelDOT PD North

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

CERTIFICATE OF RIGHT-OF-WAY STATUS

STATE PROJECT NO. T200809001

F.A.P. NO. EIM-N213(001)

**HSIP, NCC, I-95, N213 CARR ROAD & N23 MARSH ROAD
INTERCHANGE IMPROVEMENTS**

NEW CASTLE COUNTY

Certificate of Right-of-Way Status – 100%

Status - LEVEL 1

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

All necessary real property interests have been acquired in accordance with current FHWA/State directives covering the acquisition of real property; and,

All necessary rights-of-way, including control of access rights when pertinent, have been acquired including legal and physical possession; and,

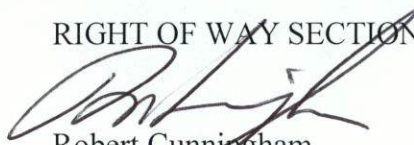
All project rights of way are currently available in accordance with the project right-of-way plans; and,

Any residential displaced individuals or families have been relocated to decent, safe and sanitary housing, or adequate replacement housing has been made available in accordance with the provisions of the current Federal Highway Administration (FHWA) directive(s) covering the administration of the Highway Relocation Assistance Program; and,

All occupants have vacated the lands and improvements; and,

The State has physical possession and the right to remove, salvage, or demolish any improvements acquired as part of this project, and enter on all land.

RIGHT OF WAY SECTION



Robert Cunningham
Chief of Right of Way

March 27, 2017



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

JENNIFER COHAN
SECRETARY

March 26, 2018

ENVIRONMENTAL REQUIREMENTS

FOR

State Contract No. T200809001

Federal Aid No.: EIM-N213(001)

Contract Title: HSIP NCC, I-95, N213 Carr Road & Marsh Road

In accordance with the procedural provisions for implementing the National Environmental Policy Act of 1969, as amended, the referenced project has been processed through the Department's Environmental Review Procedures and has been classified as a Level C/ Class II Action.

PERMIT REQUIREMENTS:

The proposed construction work for this project requires permit approval from the agencies listed below. It is the responsibility of the contracting agency -- the Delaware Department of Transportation, Division of Transportation Solutions -- to obtain the necessary permits to ensure that the contractor complies with the requirements and conditions established by the regulatory agencies. Written authorization from the permitting agencies is required and paperwork for on-site posting is anticipated. The proposed work for this project will be authorized under the permits listed below:

REQUIRED PERMITS AND APPROVAL STATUS:

- U.S. Army Corps of Engineers (USACE) – Nationwide Permit #3(a) and (c) with no Pre-Construction Notification (FYI Email Sent March 16, 2018), Expires March 18, 2022
- Delaware Department of Natural Resources and Environmental Control (DNREC) Wetlands & Subaqueous Lands Section (WSLS) – Project is consistent with Delaware Code Chapter 72, Section 7217, Special Exemption (b) (concurrence received March 23, 2018), No expiration

- Delaware Coastal Zone Management (CZM) – Issued – Project is not located in a Critical Resource Water
- DNREC Water Quality Certification (WQC) - Issued – Project is not located in a Critical Resource Water
- New Castle County Floodplain – None (Maintenance activity)

SPECIFIC REQUIREMENTS:

Compliance with all requirements of the permits is the responsibility of the contractor, who will follow all special conditions or requirements as stated within those permits. The contractor will be subject to penalties, fines, and the risk of shut down as mandated by laws governing permitting agencies if such conditions and requirements are violated or ignored. Therefore, all special conditions, general requirements, and/or other required provisions specified within the permits must be followed. Those obligations are indicated or listed within the permit package, which can be obtained from the DelDOT Contract Administration Office.

Additional requirements by DelDOT not specified within the permits, but listed below, are also the responsibility of the contractor. Noncompliance with these requirements may result in shut down of the project at the contractor's expense.

1. The contractor shall employ measures during construction to prevent spills of fuels or lubricants. If a spill should occur, efforts shall be undertaken to prevent its entry into wetlands, aquatic, or drainage areas. Any spills entering wetlands, aquatic, or drainage areas shall be removed immediately. The Division of Water Resources (DNREC), Wetlands & Aquatic Protection Branch, 302-739-4691, shall be notified of any spill(s) within six (6) hours of their occurrence. That office will determine the effectiveness of spill and contamination removal and specify remediation efforts as necessary.
2. All construction debris, excavated material, brush, rocks, and refuse incidental to the work shall be placed either on shore above the influence of flood waters or on some suitable disposal site approved by the department.
3. The disposal of trees, brush, and other debris in any stream corridor, wetland surface water or any drainage ditch is prohibited.
4. There shall be no stockpiling of construction materials or temporary fills in wetlands or subaqueous lands unless otherwise specified on project plans and approved by permitting agencies that govern them. It is the contractor's responsibility to coordinate and secure those additional permits/amendments in deviating from the plan.
5. Construction debris shall be kept from entering adjacent waterways, wetlands, ground cover, or drainage areas. Any debris that enters these areas shall be removed immediately. Netting, mats, or establishing confined work areas in stages may be necessary to address these issues.

6. Refuse material resulting from routine maintenance of worker equipment and heavy machinery is prohibited from being disposed or deposited onto or into the ground. All used oils and filters must be recycled or disposed of properly.
7. Use of harmful chemical wash water to clean equipment or machinery is discouraged. If undertaken, the residue water and/or material must be collected or contained such that it will be disposed of properly. It shall not be deposited or disposed of in waterways, streams, wetlands, or drainage areas.
8. The contractor shall follow all requirements as indicated in the Environmental Compliance Sheet. It is be the contractor's responsibility to ensure that workers also follow this requirement. As part of the restrictions, please note the timetables reflected in the contract for the in-stream/water work for endangered species protection.
9. Fill material shall be free of oil and grease, debris, wood, general refuse, plaster and other pollutants, and shall contain no broken asphalt.

ENVIRONMENTAL COMPLIANCE SHEET:

The contractor shall pay special attention to specific construction requirements as indicated in the US Army Corps of Engineer and DNREC Subaqueous Lands Permit as well as the Environmental Compliance (EC) Note and Plans.

1. Specifically, please note the environmental requirements as indicated in the following notes:
 - **Fisheries** – No in-water work between March 1 and June 30 to protect diadromous fish. See EC note 2B.
 - **Cultural Resources** – See miscellaneous note 20 on sheet 4.
 - **Protection of Resources** – See the EC sheet.
2. 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.: T200809001

Federal Aid No.: EIM-N213(001)

Project Title: HSIP NCC, I-95, N213 Carr Road & N3, Marsh Road, Interchange 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"/> Delaware Coast Line | <input type="checkbox"/> Wilmington & Western |
| <input type="checkbox"/> East Penn | <input checked="" type="checkbox"/> None |

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

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

- ☒ No Railroad involvement.
- ☐ Railroad Agreement unnecessary but railroad flagging required. The contractor shall follow requirements stated in the DelDOT Maintenance of Railroad Traffic Item in the Special Provisions. Contractor shall coordinate railroad flagging with DelDOT's Railroad Program Manager at (302) 760-2183.
- ☐ Railroad Agreement required. The necessary railroad agreement, attached, is complete and fully executed. Railroad related work to be undertaken and completed as required for proper coordination with physical construction schedules. The Contractor shall follow requirements stated in the DelDOT Maintenance of Railroad Traffic Item in the Special Provisions. Contractor shall coordinate railroad flagging with DelDOT's Railroad Program Manager at (302) 760-2183.

Approved As To Form:


Robert A. Perrihe
DelDOT Railroad Program Manager

28 June, 2016
DATE

BID PROPOSAL FORMS
CONTRACT T200809001.01
FEDERAL AID PROJECT EIM-N213(001)

UNLESS OTHERWISE DIRECTED, SUBMIT ALL FOLLOWING PAGES TO:

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

Identify the following on the outside of the sealed envelope:

- Contract Number T200809001.01
- Name of Contractor

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 1
DATE:

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

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

SECTION 0001 ROAD

0010	201000 CLEARING AND GRUBBING	LUMP	LUMP			
0020	202000 EXCAVATION AND EMBANKMENT	10118.000 CY				
0030	202001 ROCK EXCAVATION FOR ROADWAY	50.000 CY				
0040	202002 ROCK EXCAVATION FOR UTILITY TRENCHES	100.000 CY				
0050	204000 TEST HOLE	3.000 CY				
0060	207000 STRUCTURAL EXCAVATION	50.000 CY				
0070	207010 ROCK EXCAVATION FOR STRUCTURES	300.000 CY				
0080	207021 STRUCTURAL BACKFILL, (BORROW TYPE C)	50.000 CY				
0090	209001 BORROW, TYPE A	450.000 CY				
0100	209004 BORROW, TYPE C	1671.000 CY				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 2
DATE:

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0110	209005 FURNISHING BORROW, TYPE C FOR PIPE AND UTILITY TRENCH BACKFILL	CY 1068.000				
0120	209006 BORROW, TYPE F	CY 100.000				
0130	211000 REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LUMP	LUMP			
0140	211001 REMOVAL OF PORTLAND CEMENT CONCRETE PAVEMENT, CURB AND SIDEWALK	SY 21400.000				
0150	301001 GRADED AGGREGATE BASE COURSE, TYPE B	CY 2609.000				
0160	301002 GRADED AGGREGATE BASE COURSE, TYPE B, PATCHING	CY 1006.000				
0170	302002 DELAWARE NO. 3 STONE	TON 40.000				
0180	302003 DELAWARE NO. 8 STONE	TON 63.000				
0190	401005 SUPERPAVE TYPE C, PG 64-22 (CARBONATE STONE)	TON 2290.000				
0200	401021 SUPERPAVE TYPE BCBC, PG 64-22	TON 141.000				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 3
DATE:

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0210	401030 SUPERPAVE TYPE B, PG 64-22, PATCHING	2338.000 TON				
0220	401031 SUPERPAVE TYPE BCBC, PG 64-22, PATCHING	3247.000 TON				
0230	401036 SUPERPAVE TYPE C, PG 64-22, WEDGE	120.000 TON				
0240	501001 PORTLAND CEMENT CONCRETE PAVEMENT, 8"	18157.000 SY				
0250	501502 DIAMOND GRINDING PORTLAND CEMENT CONCRETE PAVEMENT AND PRECAST PAVEMENT	34633.000 SF				
0260	501503 PRECAST CONCRETE PAVEMENT PANELS	95.000 SY				
0270	503001 PATCHING PORTLAND CEMENT CONCRETE PAVEMENT, 6' TO 15', TYPE A	161.000 SY				
0280	503006 DOWEL BARS	504.000 EACH				
0290	504001 CRACK AND JOINT SEALING LESS THAN 3/4 INCH WIDE	5048.000 LF				
0300	504002 CRACK AND JOINT SEALING, 3/4 INCH TO 1 3/4 INCH WIDE	1907.000 LF				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 4
DATE:

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0310	505000 PORTLAND CEMENT CONCRETE PATCHING, PARTIAL DEPTH	22.000 SYN				
0320	601001 CLEANING DRAINAGE PIPE, GREATER THAN 24" DIAMETER	232.000 LF				
0330	601004 PRESSURE GROUTING PIPE JOINTS, GREATER THAN 24" DIAMETER	13.000 EACH				
0340	601011 REINFORCED CONCRETE PIPE, 15", CLASS III	425.000 LF				
0350	601012 REINFORCED CONCRETE PIPE, 18", CLASS III	1323.000 LF				
0360	601013 REINFORCED CONCRETE PIPE, 21", CLASS III	648.000 LF				
0370	601014 REINFORCED CONCRETE PIPE, 24", CLASS III	104.000 LF				
0380	601018 REINFORCED CONCRETE PIPE, 36", CLASS III	199.000 LF				
0390	601019 REINFORCED CONCRETE PIPE, 42", CLASS III	61.000 LF				
0400	601032 REINFORCED CONCRETE PIPE, 15", CLASS IV	218.000 LF				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE:
DATE:

5

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0410	601033 REINFORCED CONCRETE PIPE, 18", CLASS IV	30.000 LF				
0420	601039 REINFORCED CONCRETE PIPE, 36", CLASS IV	138.000 LF				
0430	601053 REINFORCED CONCRETE PIPE, 15", CLASS V	116.000 LF				
0440	601141 REINFORCED CONCRETE FLARED END SECTION, 15"	3.000 EACH				
0450	601142 REINFORCED CONCRETE FLARED END SECTION, 18"	1.000 EACH				
0460	601191 PVC PIPE, 6"	267.000 LF				
0470	602003 DRAINAGE INLET, 34" X 24"	12.000 EACH				
0480	602004 DRAINAGE INLET, 48" X 30"	7.000 EACH				
0490	602005 DRAINAGE INLET, 48" X 48"	9.000 EACH				
0500	602007 DRAINAGE INLET, 66" X 48"	1.000 EACH				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE:
DATE:

6

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0510	602008 DRAINAGE INLET, 66" X 66"	2.000 EACH				
0520	602011 DRAINAGE INLET, 72" X 72"	2.000 EACH				
0530	602013 DRAINAGE INLET, SPECIAL	LUMP	LUMP			
0540	602031 MANHOLE, 48" X 48"	4.000 EACH				
0550	602033 MANHOLE, 66" X 48"	2.000 EACH				
0560	602034 MANHOLE, 66" X 66"	1.000 EACH				
0570	602035 MANHOLE, ROUND	1.000 EACH				
0580	602064 JUNCTION BOX, 66" X 66"	1.000 EACH				
0590	602100 REPLACE DRAINAGE INLET GRATE(S)	3.000 EACH				
0600	602130 ADJUSTING AND REPAIRING EXISTING DRAINAGE INLET	8.000 EACH				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE:
DATE:

7

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0610	602502 CONVERTING EXISTING CATCH BASIN TO MANHOLE	1.000 EACH				
0620	606004 DRILLED SHAFT, 60"	108.000 LF				
0630	607500 SOIL NAIL WALL	LUMP	LUMP			
0640	610005 PORTLAND CEMENT CONCRETE MASONRY, SUBSTRUCTURE, CLASS A	5.000 CY				
0650	610008 PORTLAND CEMENT CONCRETE MASONRY, PARAPET, CLASS A	3.000 CY				
0660	610016 PORTLAND CEMENT CONCRETE MASONRY, CLASS D	25.000 CY				
0670	611001 BAR REINFORCEMENT, EPOXY COATED	4400.000 LB				
0680	613001 SILICONE-BASED ACRYLIC CONCRETE SEALER	5000.000 SF				
0690	617000 STEEL SIGN STRUCTURE, TUBULAR ARCH, CANTILEVER	LUMP	LUMP			
0700	617515 HEADWALL	2.000 EACH				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 8
DATE:

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0710	628040 SHALLOW SPALL REPAIR	2.000 CF				
0720	628041 DEEP SPALL REPAIR	4.000 CF				
0730	701010 PORTLAND CEMENT CONCRETE CURB, TYPE 1-2	154.000 LF				
0740	701011 PORTLAND CEMENT CONCRETE CURB, TYPE 1-4	728.000 LF				
0750	701012 PORTLAND CEMENT CONCRETE CURB, TYPE 1-6	5308.000 LF				
0760	701013 PORTLAND CEMENT CONCRETE CURB, TYPE 1-8	214.000 LF				
0770	701014 PORTLAND CEMENT CONCRETE CURB, TYPE 2	1422.000 LF				
0780	701026 PORTLAND CEMENT CONCRETE MONOLITHIC MEDIAN	222.000 LF				
0790	702000 TRIANGULAR CHANNELIZING ISLANDS	12810.000 SF				
0800	705001 PORTLAND CEMENT CONCRETE SIDEWALK, 4"	7016.000 SF				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE:
DATE:

9

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0810	705002 PORTLAND CEMENT CONCRETE SIDEWALK, 6"	3254.000 SF				
0820	705005 PORTLAND CEMENT CONCRETE SIDEWALK, 8"	2920.000 SF				
0830	705007 SIDEWALK SURFACE DETECTABLE WARNING SYSTEM	730.000 SF				
0840	705008 CURB RAMP, TYPE 1	880.000 SF				
0850	705009 CURB RAMP, TYPE 2, 3, AND/OR 4	810.000 SF				
0860	705010 CURB RAMP, TYPE 5	2868.000 SF				
0870	707001 RIPRAP, R-4	137.000 SY				
0880	707015 RIPRAP, R-4	2.000 TON				
0890	707016 RIPRAP, R-5	99.000 TON				
0900	708003 GEOTEXTILES, RIPRAP	402.000 SY				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 10
DATE:

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0910	709001 PERFORATED PIPE UNDERDRAINS, 6"	2804.000 LF				
0920	710002 ADJUST WATER VALVE BOXES	9.000 EACH				
0930	710003 ADJUST FIRE HYDRANTS	2.000 EACH				
0940	710038 FURNISHING AND INSTALLING WATER MAINS AND FITTINGS	699.000 LF				
0950	710040 FURNISHING AND INSTALLING GATE VALVE AND VALVE BOXES	1.000 EACH				
0960	711500 ADJUST AND REPAIR EXISTING SANITARY MANHOLE	4.000 EACH				
0970	720021 GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	2126.000 LF				
0980	720022 GALVANIZED STEEL BEAM GUARDRAIL, TYPE 2-31	100.000 LF				
0990	720028 CURVED GUARDRAIL SECTION	19.000 LF				
1000	721001 GUARDRAIL END TREATMENT, TYPE 1-31, TEST LEVEL 3	4.000 EACH				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 11
DATE:

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1010	721002 GUARDRAIL END TREATMENT, TYPE 2-31, TEST LEVEL 2	1.000 EACH				
1020	721004 GUARDRAIL END TREATMENT, TYPE 3-31	2.000 EACH				
1030	721006 END ANCHORAGE 31	7.000 EACH				
1040	721009 GUARDRAIL TO BARRIER CONNECTION (EXIT TYPE 31)	1.000 EACH				
1050	721010 GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 1-31	2.000 EACH				
1060	723001 PORTLAND CEMENT CONCRETE SAFETY BARRIER, PERMANENT, SINGLE FACE, 32"	90.000 LF				
1070	723002 PORTLAND CEMENT CONCRETE SAFETY BARRIER, PERMANENT, DOUBLE FACE, 32"	97.000 LF				
1080	723502 PORTLAND CEMENT CONCRETE SAFETY BARRIER, PERMANENT, SINGLE FACE, 54"	408.000 LF				
1090	724004 PERMANENT IMPACT ATTENUATOR, TYPE 4	2.000 EACH				
1100	727000 CHAIN LINK FENCE	1488.000 LF				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 12
DATE:

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1110	727006 TEMPORARY CONSTRUCTION FENCE	550.000 LF				
1120	760003 BIKE-FREINDLY RUMBLE STRIPS, CONCRETE	2595.000 LF				
1130	760010 PAVEMENT MILLING, BITUMINOUS CONCRETE PAVEMENT	21079.000 SYIN				
1140	762000 SAW CUTTING, BITUMINOUS CONCRETE	6658.000 LF				
1150	762001 SAW CUTTING, CONCRETE, FULL DEPTH	9689.000 LF				
1160	763000 INITIAL EXPENSE/DE-MOBILIZATION	LUMP	LUMP			
1170	763501 CONSTRUCTION ENGINEERING	LUMP	LUMP			
1180	763503 TRAINEE	416.000 HOUR	0.80000		332.80	
1190	763508 PROJECT CONTROL SYSTEM DEVELOPMENT PLAN	LUMP	LUMP			
1200	763509 CPM SCHEDULE UPDATES AND/OR REVISED UPDATES	14.000 EAMO				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 13
DATE:

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1210	763598 FIELD OFFICE, SPECIAL I	14.000 EAMO				
1220	801000 MAINTENANCE OF TRAFFIC	LUMP	LUMP			
1230	802003 ARROW PANELS TYPE C	1017.000 EADY				
1240	803001 FURNISH AND MAINTAIN PORTABLE CHANGEABLE MESSAGE SIGN	1610.000 EADY				
1250	804001 FURNISH AND MAINTAIN PORTABLE LIGHT ASSEMBLY (FLOOD LIGHTS)	63.000 EADY				
1260	805001 PLASTIC DRUMS	113220.000 EADY				
1270	806001 TRAFFIC OFFICERS	1075.000 HOUR	75.00000		80625.00	
1280	808001 FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE I	110.000 EADY				
1290	810001 TEMPORARY WARNING SIGNS AND PLAQUES	59359.000 EADY				
1300	811001 FLAGGER, NEW CASTLE COUNTY STATE	375.000 HOUR				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 14
DATE:

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1310	811013 FLAGGER, NEW CASTLE COUNTY, STATE, OVERTIME	75.000 HOUR				
1320	813001 TEMPORARY BARRICADES, TYPE III	75435.000 LFDY				
1330	813500 PEDESTRIAN CHANNELIZING BARRICADE SYSTEM	165.000 LFDY				
1340	813501 TEMPORARY SIDEWALK, TYPE 2 (BOARDWALK)	166.000 LF				
1350	817002 PERMANENT PAVEMENT STRIPING, SYMBOL/LEGEND, ALKYD-THERMOPLASTIC	1996.000 SF				
1360	817006 PERMANENT PAVEMENT STRIPING, ALKYD-THERMOPLASTIC, 12"	2566.000 LF				
1370	817009 TEMPORARY MARKINGS, TAPE, 4"	2172.000 LF				
1380	817012 RETROREFLECTIVE PREFORMED PATTERNED MARKINGS, SYMBOL/LEGEND	4013.000 SF				
1390	817013 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, WHITE/YELLOW, 5"	114492.000 LF				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 15
DATE:

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1400	817014 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, WHITE/YELLOW, 10"	415.000 LF				
1410	817015 PREFORMED RETROREFLECTIVE THERMOPLASTIC MARKINGS, BIKE SYMBOL	4.000 EACH				
1420	817018 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, BLACK, 3"	8010.000 LF				
1430	817019 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, BLACK, 5"	645.000 LF				
1440	817020 RETROREFLECTIVE PREFORMED PATTERNED MARKINGS, 5"	145.000 LF				
1450	817022 RETROREFLECTIVE PREFORMED PATTERNED MARKINGS, 8"	120.000 LF				
1460	817024 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, BLACK, 9"	2355.000 LF				
1470	817025 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, BLACK, 14"	95.000 LF				
1480	817027 RAISED/RECESSED PAVEMENT MARKER	187.000 EACH				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 16
DATE:

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1490	818001 SUPPLY OF FLAT SHEET ALUMINUM SIGN PANEL, TYPE IV, RETROREFLECTIVE SHEETING	SF 1135.000				
1500	818006 SUPPLY OF EXTRUDED ALUMINUM SIGN PANEL, TYPE XI, RETROREFLECTIVE SHEETING	SF 1535.000				
1510	819016 INSTALLATION OF 4" DIAMETER HOLE, LESS THAN OR EQUAL TO 6" DEPTH	EACH 11.000				
1520	819017 INSTALLATION OF 4" DIAMETER HOLE, GREATER THAN 6" DEPTH	EACH 6.000				
1530	819018 INSTALLATION OR REMOVAL OF TRAFFIC SIGN(S) ON SINGLE SIGN POST	EACH 305.000				
1540	819019 INSTALLATION OR REMOVAL OF TRAFFIC SIGN(S) ON MULTIPLE SIGN POSTS	SF 409.000				
1550	820001 REINFORCED CONCRETE MASONRY SIGN FOUNDATION, W-6	EACH 10.000				
1560	820002 REINFORCED CONCRETE MASONRY SIGN FOUNDATION, W-8	EACH 8.000				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 17
DATE:

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1570	820008 SUPPLY OF BREAKAWAY I-BEAM SIGN POSTS, W-6	165.000 LF				
1580	820009 SUPPLY OF BREAKAWAY I-BEAM SIGN POSTS, W-8	156.000 LF				
1590	820014 SUPPLY AND INSTALLATION OF BOLT KIT FOR BREAKAWAY COUPLING	18.000 EACH				
1600	820015 SUPPLY AND INSTALL OF HINGE PLATE FOR BREAKAWAY COUPLING	18.000 EACH				
1610	820016 SUPPLY AND INSTALLATION OF BREAKAWAY COUPLING SYSTEM	18.000 EACH				
1620	820017 INSTALLATION OF BREAKAWAY I-BEAM SIGN POSTS	18.000 EACH				
1630	820018 REMOVAL OF BREAKAWAY I-BEAM SIGN POSTS	22.000 EACH				
1640	820019 INSTALL SIGN PANEL ON BREAKAWAY I-BEAM SIGN SUPPORT	855.000 SF				
1650	820020 REMOVE SIGN PANEL ON BREAKAWAY I-BEAM SIGN SUPPORT	1190.000 SF				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 18
DATE:

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1660	822002 INSTALLATION OF SIGN ON/OVER HIGHWAY STRUCTURE	745.000 SF				
1670	822009 REMOVAL OF SIGN ON/OVER HIGHWAY STRUCTURE	890.000 SF				
1680	824001 BARRIER MOUNTED DELINEATOR	12.000 EACH				
1690	825001 TUBULAR MARKERS	35.000 EACH				
1700	830001 CONDUIT JUNCTION WELL, TYPE 1, 20" X 20" PRECAST CONCRETE	62.000 EACH				
1710	830002 CONDUIT JUNCTION WELL, TYPE 4, 20" X 42-1/2" PRECAST CONCRETE	45.000 EACH				
1720	830003 CONDUIT JUNCTION WELL, TYPE 5, 24" X 16" PRECAST CONCRETE	6.000 EACH				
1730	830004 CONDUIT JUNCTION WELL, TYPE 7, 36" X 60" PRECAST POLYMER CONCRETE	11.000 EACH				
1740	830501 JUNCTION BOX ON STRUCTURE	4.000 EACH				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 19
DATE:

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1750	831001 FURNISH AND INSTALL UP TO 3" FLEXIBLE METALLIC-LIQUID TIGHT CONDUIT	LF 80.000				
1760	831002 FURNISH AND INSTALL UP TO 4" SCHEDULE 80 HDPE CONDUIT (BORE)	LF 3585.000				
1770	831003 FURNISH AND INSTALL UP TO 4" SCHEDULE 80 PVC CONDUIT (OPEN CUT)	LF 55.000				
1780	831004 FURNISH AND INSTALL UP TO 4" SCHEDULE 80 PVC CONDUIT (TRENCH)	LF 17200.000				
1790	831005 FURNISH AND INSTALL UP TO 4" SCHEDULE 80 PVC CONDUIT (ON STRUCTURE)	LF 35.000				
1800	831006 FURNISH AND INSTALL UP TO 4" GALVANIZED STEEL CONDUIT (TRENCH)	LF 4030.000				
1810	831007 FURNISH AND INSTALL UP TO 4" GALVANIZED STEEL CONDUIT (BORE)	LF 855.000				
1820	831009 FURNISH AND INSTALL UP TO 4" GALVANIZED STEEL CONDUIT (ON STRUCTURE)	LF 100.000				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 20
DATE:

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1830	832006 FURNISH AND INSTALL 1-CONDUCTOR #2 AWG STRANDED COPPER, TYPE USE-2	330.000 LF				
1840	832008 FURNISH AND INSTALL 1-CONDUCTOR #6 STRANDED COPPER, TYPE USE-2	56420.000 LF				
1850	832035 REMOVAL OF CABLE FROM CONDUIT OR TRAFFIC /LIGHTING POLE	53280.000 LF				
1860	834001 POLE BASE, TYPE 3	8.000 EACH				
1870	834005 POLE BASE, TYPE 4A	13.000 EACH				
1880	834006 POLE BASE, TYPE 6	61.000 EACH				
1890	835001 CABINET BASE TYPE F	1.000 EACH				
1900	835003 CABINET BASE TYPE P	3.000 EACH				
1910	835004 CABINET BASE TYPE R	2.000 EACH				
1920	842006 FURNISH AND INSTALL EMBEDDED METERED SERVICE PEDESTAL (100 AMP)	2.000 EACH				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE:
DATE:

21

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1930	846001 FURNISH AND INSTALL LOOP WIRE 1-CONDUCTOR #14 AWG ENCASED IN 1/4" FLEXIBLE TUBING IN A LOOP SAWCUT	2175.000 LF				
1940	847002 INSTALL OR REMOVAL OF BASE OR PAD MOUNTED CABINET	4.000 EACH				
1950	847006 LIGHTING CONTROL CABINET - 100A	2.000 EACH				
1960	850011 REMOVAL OF LUMINAIRE	83.000 EACH				
1970	850504 UNDERPASS LIGHT FIXTURE (LED)	8.000 EACH				
1980	850522 LUMINAIRE (LED), 400 WATTS, HPS EQUIVALENT	59.000 EACH				
1990	851001 ALUMINUM LIGHTING STANDARD WITH SINGLE DAVIT ARM, 30' POLE	26.000 EACH				
2000	851003 ALUMINUM LIGHTING STANDARD WITH SINGLE DAVIT ARM, 40' POLE	35.000 EACH				
2010	905001 SILT FENCE	1850.000 LF				
2020	905002 REINFORCED SILT FENCE	80.000 LF				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 22
DATE:

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2030	905004 INLET SEDIMENT CONTROL, DRAINAGE INLET	8.000 EACH				
2040	905005 INLET SEDIMENT CONTROL, CURB INLET	43.000 EACH				
2050	905006 INLET SEDIMENT CONTROL, CULVERT INLET	1.000 EACH				
2060	906001 PORTABLE SEDIMENT TANK	2.000 EACH				
2070	907017 COMPOST FILTER LOGS	286.000 LF				
2080	908004 TOPSOIL, 6" DEPTH	25478.000 SY				
2090	908010 TOPSOILING, 6" DEPTH	2808.000 SY				
2100	908014 PERMANENT GRASS SEEDING, DRY GROUND	28286.000 SY				
2110	908017 TEMPORARY GRASS SEEDING	28286.000 SY				
2120	908020 EROSION CONTROL BLANKET MULCH	2828.000 SY				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 23
DATE:

CONTRACT ID: T200809001.01

PROJECT(S): EIM-213(001)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
2130	908023 STABILIZED CONSTRUCTION ENTRANCE	110.000 TON				
2140	909001 SANDBAG DIKE	215.000 CF				
2150	909002 SANDBAG DIVERSION	245.000 CF				
2160	909004 TURBIDITY CURTAIN, FLOATING	10.000 LF				
2170	909005 STREAM DIVERSION	LUMP	LUMP			
2180	909006 STILLING WELL	3.000 CY				
	SECTION 0001 TOTAL					
	TOTAL BID					

BREAKOUT SHEET INSTRUCTIONS

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

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

BREAKOUT SHEETS MAY BE SUBMITTED;

VIA E-MAIL TO: DOT-ASK@STATE.DE.US
SUBJECT: **T200809001.01** Breakout Sheet

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

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

BREAKOUT SHEET - 1				CONTRACT NO. T200809001	
Item 617000 - STEEL SIGN STRUCTURE, TUBULAR ARCH, CANTILEVER					
ITEM NO.	APPROX. QTY.	UOM	DESCRIPTION	UNIT PRICE	AMOUNT
SC1243 023	1	EA	STEEL SIGN STRUCTURE, TUBULAR ARCH, CANTILEVER	\$	\$
SC1244 023	1	EA	STEEL SIGN STRUCTURE, TUBULAR ARCH, CANTILEVER	\$	\$
SC1245 213	1	EA	STEEL SIGN STRUCTURE, TUBULAR ARCH, CANTILEVER	\$	\$
TOTAL ITEM 617000 - STEEL SIGN STRUCTURE, TUBULAR ARCH, CANTILEVER \$ (LUMP SUM BID PRICE FOR ITEM 617000 - STEEL SIGN STRUCTURE, TUBULAR ARCH, CANTILEVER)					

"ATTENTION"

TO BIDDERS

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

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

BREAKOUT SHEETS MAY BE SUBMITTED;

VIA E-MAIL TO: DOT-ASK@STATE.DE.US
SUBJECT: **T200809001.01** Breakout Sheet

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

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



**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. T200809001.01
Federal Aid Project No. EIM-N213(001)

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.

Bidder's Certification Statement [US DOT Suspension and Debarment Regulation (49 CFR 29)]:

NOTICE: All contractors who hold prime contracts (Federal Aid) with DelDOT are advised that the prime contractor and subcontractors are required to submit to DelDOT a signed and notary attested copy of the Bidder Certification Statement for each and every subcontract that will be utilized by the prime contractor. This Certification must be filed with DelDOT prior to written approval being granted for each and every subcontractor. Copies of the Certification Form are available from the appropriate District Construction Office.

Under penalty of perjury under the laws of the United States, that I/We, or any person associated therewith in the capacity of (owner, partner, director, officer, principal, investigator, project director, manager, auditor, or any position involving the administration federal funds):

- a. am/are not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any federal agency;
- b. have not been suspended, debarred, voluntarily excluded or determined ineligible by any federal agency within the past 3 years;
- c. do not have a proposed debarment pending; and,
- d. have not been indicted, convicted, or had a civil judgement rendered against (it) by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted, indicate below to whom it applies, initiating agency, and dates of action. Providing false information may result in criminal prosecution or administrative sanctions.

(Insert Exceptions)

DBE Program Assurance:

NOTICE: In accordance with 49 CFR Part 26 the undersigned, a legally authorized representative of the bidder listed below, must complete this assurance.

By its signature affixed hereto, assures the Department that it will attain DBE participation as indicated:

Disadvantaged Business Enterprise _____ percent (blank to be filled in by bidder)

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.

By submission of this proposal, each person signing on behalf of the 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: _____

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

Name of Bidder (Organization)

Corporate
Seal

By: _____
Authorized Signature

Attest _____

Title

SWORN TO AND SUBSCRIBED BEFORE ME this ____ day of _____, 20____.

Notary
Seal

Notary

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____
of _____ in the County of _____ and State of _____ as
Principal, and _____ of _____ in the County of
_____ and State of _____ as **Surety**, legally authorized to do business in the State of
Delaware ("**State**"), are held and firmly unto the **State** in the sum of _____
_____ Dollars (\$ _____), or _____ percent not to exceed _____

_____ Dollars (\$ _____) of amount of bid on
Contract No. T200809001.01, 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