

STATE OF DELAWARE

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DeIDOT in order to bid.



DEPARTMENT OF TRANSPORTATION

BID PROPOSAL

for

CONTRACT T201706102.01

FEDERAL AID PROJECT NO. ESTP-N271(05)

CFDA NO. 20.205

Rehabilitation of Centre Road - Route 141

New Castle County

ADVERTISEMENT DATE: July 31, 2017

COMPLETION TIME: **763564 - SPECIAL BIDDING PROCEDURES**

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 until 2:00 P.M. local time **August 29, 2017**

Contract No.T201706102.01
Federal Aid Project No. ESTP-N271(05)

Rehabilitation of Centre Road - Route 141
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 consists of the full width reconstruction and rehabilitation of Centre Road - Route 141, 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 in accordance with the date as determined by Special Provision 763564 - SPECIAL BIDDING PROCEDURES. It is the Department's intent to issue a Notice to Proceed such that work starts on or about on or about October 2, 2017.

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 until 2:00 P.M. local time August 29, 2017 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 T201706102.01 in the subject line. Responses to inquiries are posted on-line at <http://www.bids.delaware.gov>.
3. THE BID PROPOSAL incorporates a cd containing **Expedite, version 5.9a** and its installation file. Bidders are to use the cd provided to enter their bid amounts into the Expedite file. The Expedite bid file must be printed and submitted in paper form along with the cd and other required documents prior to the Bid due date and time.
4. SURETY BOND - Each proposal must be accompanied by a deposit of either surety bond or security for a sum equal to at least 10% of the bid.
5. DRUG TESTING - Regulation 4104; The state Office of Management and Budget has developed regulations that require Contractors and Subcontractors to implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds pursuant to 29 Del.C. §6908(a)(6). **Refer to the full requirements by following the below link:** <http://regulations.delaware.gov/register/september2015/final/19%20DE%20Reg%20207%2009-01-15.htm>
Please note a few of the requirements listed below;
 - * At bid submission - submit with the bid a signed affidavit certifying that the Contractor has in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for their Employees that complies with this regulation;
 - * Upon DBE participation submission - submit a separate signed affidavit from each DBE Subcontractor certifying they have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for their Employees that complies with this regulation;
 - * Two business days prior to contract execution - The awarded Contractor shall provide to DelDOT copies of the Employee Drug Testing Program for the Contractor and each participating DBE firm;
 - * 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;
 - * Testing Report Forms shall be submitted to DelDOT monthly (forms will be provided).
 - * Penalties for non-compliance are specified in the regulation.

6. **DBE PROGRAM REQUIREMENTS** under **49CFR §26.53(b)(3)(i)(B)** change effective January 1, 2017. **Submission of DBE participation information is now required from the lowest apparent bidder no later than five (5) calendar days after bid opening (formerly 7 days).**
7. No RETAINAGE will be withheld on this contract.
8. EXTERNAL COMPLAINT PROCEDURE can be viewed on DelDOT's Website at; <http://www.deldot.gov/information/business/>, 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](#).
10. **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 March 1, 2018.
11. This contract contains an A+B bidding process and form used for the selection of this project, Special Provision 763564. The form MUST be fully completed and submitted with the bid.
12. This project contains an Incentive/Disincentive provision. See Special Provisions 763564 - Special Bidding Procedure.
13. SECTION 501 – PORTLAND CEMENT CONCRETE PAVEMENT, of the August 2016 Standard Specifications has been replaced for this project ONLY, and is contained in the Special Provisions section.

Contract No.T201706102.01
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
HOURL	Hour	N/A	h	Hour	HOURL
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.

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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 shall obtain a 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).

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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 **0**. 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.

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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 15 % 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.

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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.

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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 Administration, DelDOT, P. O. Box 778, Dover, Delaware 19903. 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.

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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 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 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 (NEW)

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 (NEW)

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) 451-3423

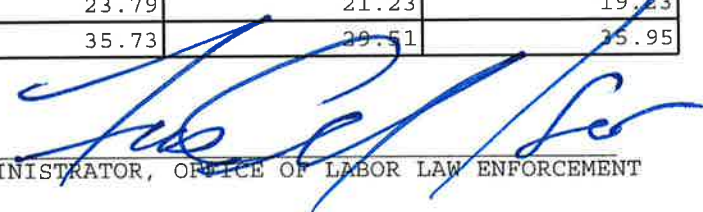
Mailing Address:
225 CORPORATE BOULEVARD
SUITE 104
NEWARK, DE 19702

Located at:
225 CORPORATE BOULEVARD
SUITE 104
NEWARK, DE 19702

PREVAILING WAGES FOR HIGHWAY CONSTRUCTION EFFECTIVE MARCH 15, 2017

CLASSIFICATION	NEW CASTLE	KENT	SUSSEX
BRICKLAYERS	51.99	51.99	15.17
CARPENTERS	53.48	53.81	42.77
CEMENT FINISHERS	33.91	34.12	27.13
ELECTRICAL LINE WORKERS	23.52	45.39	22.22
ELECTRICIANS	66.85	66.85	66.85
IRON WORKERS	62.35	24.95	26.50
LABORERS	43.30	39.85	39.12
MILLWRIGHTS	16.84	16.34	14.11
PAINTERS	67.07	67.07	67.07
PILEDRIVERS	69.44	24.83	28.17
POWER EQUIPMENT OPERATORS	42.91	41.41	37.92
SHEET METAL WORKERS	23.79	21.23	19.23
TRUCK DRIVERS	35.73	39.51	35.95

CERTIFIED: 07/20/2017

BY: 

ADMINISTRATOR, OFFICE OF LABOR LAW ENFORCEMENT

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

CLASSIFICATIONS OF WORKERS ARE DETERMINED BY THE DEPARTMENT OF LABOR. FOR ASSISTANCE IN CLASSIFYING WORKERS, OR FOR A COPY OF THE REGULATIONS OR CLASSIFICATIONS, PHONE (302) 451-3423.

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

PROJECT: T201706102.01 Rehabilitation of Centre Road - Route 141 , New Castle County

GENERAL DECISION: DE170020 01/06/2017 DE20

Superseded General Decision Number: DE20160020

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 \$10.20 for calendar year 2017 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 \$10.20 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 2017. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number

Publication Date

0

01/06/2017

SUDE2016-002

04/23/2015

Rates

Fringes

Bricklayer

50.49

Carpenter

52.81

Cement Mason/Concrete Finisher

31.10

ELECTRICIAN

Electrician

65.10

Line Worker

23.23

Ironworker

43.56

Laborer

33.59

Millwright

16.63

Painter

63.14

Power Equipment Operator:

Piledriver

68.57

Power Equipment Operator

41.90

Sheet Metal Worker

23.49

Truck Driver

34.02

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

PORTLAND CEMENT CONCRETE PAVEMENT (PCCP)**SECTION 501****DIVISION 500 – RIGID PAVEMENT****SECTION 501 - PORTLAND CEMENT CONCRETE PAVEMENT (PCCP)**

DELETE STANDARD SPECIFICATION SECTION 501 IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

501.01 Description.

Construct a Portland cement concrete pavement (PCCP) on a prepared subgrade or base course.

501.02 Materials.

Provide Materials as specified below:

Portland Cement	Section 1022
Ground Granulated Blast Furnace Slag (GGBFS)	Section 1020
Fly Ash	Section 1020
Fine Aggregate	Section 1003
Coarse Aggregate	Section 1004
Air-Entraining Admixtures	Section 1022
Chemical Admixtures	Section 1022
Water	Section 1021
Curing Materials	Section 1022
Reinforcing Steel	Section 611 & Section 1037
Embedded Hardware:	
Load-Transfer Devices	Section 1037
Tie Bars	Section 1037
Coated Dowel Bars	Section 1037
Tie Bolts (Hook Bolts and/or W-Bolts)	Section 1037
Insulation Materials	Section 610.03.D.3.d
Joint/Crack Sealant Material	Section 1042
Joint Backup Material	Section 1043

501.03 Construction.

Provide an American Concrete Institute (ACI) or National Ready Mix Concrete Association (NRMCA) certified concrete flatwork technician to supervise all finishing. Provide proof of the flatwork certification to the Engineer prior to concrete placement.

Slip-form or conventionally form the pavement unless otherwise specified. If slip-form is selected, small, irregular, or areas inaccessible to the paver may be constructed with fixed forms. These areas may be hand-finished, but must still meet all Performance Measures, Section 501.03.9. No portions of pavement shall be formed to produce a “point.” Unless otherwise approved, no formed dimension shall be less than 2 feet.

At least ten (10) Calendar Days prior to paving, schedule a “Pre-paving Meeting” with representatives from the Engineer, Contractor, and other interested parties in attendance.

Submit on or before the date of the “Pre-paving Meeting,” a “Means and Methods” plan. The plan shall include, but not be limited to, the Contractor’s proposed:

- A. Method of concrete placement and concrete delivery schedule

- B. Proposed width of paving pulls
- C. Installation methods for all embedded hardware
- D. Typical locations of longitudinal sawed and construction joints
- E. Method of transverse construction joint installation
- F. Joint locations if different than shown on the plans
- G. Procedure, including the finishing screed, for forming and constructing small or irregular shaped portions of pavement
- H. Safety edge construction method
- I. Method of installing and securing load transfer devices [Contractor to also provide a template for use by the Engineer]
- J. Procedure for final texturing the pavement surface
- K. Location of the concrete delivery trucks in relation to the paving area and the proposed haul route from the concrete plant
- L. Hand finishing procedures and tools, including a misting or fogging device
- M. Contingency plan and protective covering for rain events
- N. Proposed subcontractors
- O. Proposed Thermal Protection Plan for extreme hot and cold concrete placement

501.03.1 Mix Design. Prepare and submit for approval by the Engineer, prior to pre-paving meeting, a mix design as specified in Section 1022 Concrete Production; Class B/SF for slip form paving and Class B for fixed form paving.

501.03.2 Slip-Form Paving.

501.03.2.1 Equipment – Furnish and maintain all Equipment and tools for concrete batching, placement, finishing, curing, and texturing operations.

- A. Batch Plant and Central Plant Equipment – Section 1022.06.2
- B. Place concrete with a track operated, self-propelled, slip-form paver that can independently, or in conjunction with an advance concrete spreader:
 - 1. Strike-off
 - 2. Screed
 - 3. Adjust to produce the specified cross slope and pavement width
 - 4. Operate using electronic grade controls for both horizontal and vertical alignment
 - 5. Provide a vertical pavement edge with slump off not exceeding 1/4 inch, exclusive of edge rounding, when checked under a 10 foot straightedge
 - 6. Vibrate and consolidate the concrete for the full width being placed. Vibrators are to be attached to the paving Equipment or mounted on a separate carriage. Vibrators shall not contact load transfer devices, embedded hardware, or forms. The Contractor is responsible for the number and frequency setting of the vibrators to achieve uniform consolidation of the concrete throughout the entire slab thickness and width. Vibration must automatically stop when forward movement of the unit is interrupted.
 - 7. Provide a smooth, uniform concrete surface finish requiring minimal or no floating or hand finishing
 - 8. A paver equipped with a Dowel Bar Inserter (DBI) may be utilized if approved in advance by the Engineer.
- C. Concrete Saws – Provide mechanical saws capable of producing the specified joint details. The Contractor shall determine the number of saws needed based on weather, temperature, and amount of pavement

placed. Backup Equipment and lighting (if necessary) must be on site prior to beginning concrete placement.

- D. Work Bridge(s) – Provide platforms spanning the full width of the paving pull so that workers can perform necessary finishing, texturing, and/or curing. The work bridge(s) shall not come in direct contact with the pavement surface.
- E. Texturing – Provide independently powered, self-propelled texturing Equipment capable of adjusting the depth of tine penetration to produce the specified pavement surface texture. For formed pavement, the texturing Equipment shall ride on the forms or rails.
- F. Curing – Provide mechanically powered Equipment to place curing compound at the specified rate to the pavement surface and all exposed edges. Use a fully atomized mechanical sprayer equipped with a tank agitator and wind guard.
- G. Diamond Grinding – Provide self-propelled machines equipped with gang mounted diamond blades having a minimum cutting head width of 3 feet, capable of producing a “corduroy type” pavement surface texture consisting of parallel grooves between 3/32 inch and 5/32 inch wide and 1/16 inch deep. Fifty (50) to sixty (60) diamond blades per foot of cutting head are required.

501.03.2.2. Construction Methods.

- A. Place and grade base course to the tolerance specified under the applicable Specification. No hardware may be placed on the grade until the Engineer has given approval.
- B. Furnish and install load transfer devices. Clearly mark, on both sides of the pavement, the center of each assembly using paint, stakes, or other agreed upon method so that the transverse sawed joints can be properly located. Construct load transfer assemblies in accordance with the Contract Documents. Apply a graphite coating to each dowel just prior to concrete placement if they are AASHTO M254, Type B (fusion bonded epoxy). No additional coating is required, if the approved dowels are AASHTO M254, Type A. Locate dowels at a pavement depth of $T/2$, (T = pavement thickness). Securely stake or otherwise fasten, in accordance with the [Standard Construction Details](#), the load transfer device to the subgrade to prevent movement during concrete placement. Cut the tie wires on the dowel bar basket assembly. Do not use load transfer assemblies that are damaged in any way. Verify horizontal and vertical alignment of the devices not to exceed the tolerances as defined in the [Standard Construction Details](#). Check initial dowel placement on grade with a template or other approved tool supplied by the Contractor for use by the Engineer.
- C. Furnish Hook Bolts (or W-Bolts) for use when lanes will longitudinally abut the pavement being placed, and #5 standards rebar for tie bars used under longitudinal sawed joints or for tying into concrete lanes placed under previous contracts. Install these items during or prior to concrete placement. The method of installation must be approved prior to beginning concrete placement.
- D. Install lines, wires, or other devices as needed for electronic grade control.
- E. Placing Concrete
 - 1. Minimize or eliminate stopping the forward movement of the paver. Sufficient number and proper scheduling of concrete delivery trucks is required in this regard.
 - 2. Maintain a vertical pavement edge. If necessary, use extra finishers, temporary forms, or trailing forms as part of the paver.
 - 3. Maintain a uniform level of concrete feeding the paver screed, allowing sufficient concrete to completely fill the void under the screed for the entire width of pavement placed. A roll of concrete covering approximately half of the distributing augers is desirable. Spreaders in advance of the paver may be used to control the concrete supplied to the paver.
 - 4. Wet the base course just prior to contact by the concrete using a hose or other spray device for uniform water application. The application rate should not cause any pooling of water on the grade.
 - 5. As the concrete is being placed, install tie bars under longitudinal sawed joints and Hook or W-Bolts along longitudinal pavement edges requiring abutting pavement to be placed in the future.

6. Build a transverse construction joint at the end of the day's paving run in accordance with the previously approved details.
7. Prior to placing adjoining concrete paving lanes or shoulders, seal the previously sawed joint opening along the edges of the existing concrete using duct tape, caulk, or other approved material to prevent stones or grout from entering the saw cut.
8. When placing concrete in lanes adjoining previously constructed pavement, locate the full width of the paver tracks over the pavement with no overhang across the edge, in order to prevent breaking. Use rubber facing, wood, or other approved protection if the paver tracks will be in contact with the existing pavement surface. Concrete in the completed lane must have achieved a compressive strength of at least 2,000 pounds per square inch prior to placing any adjoining pavement.
9. For small, irregular sections, or areas of pavement inaccessible to the paver:
 - a. Use wooden or steel forms. Depth of the forms must be at least that of the required pavement thickness. Form faces shall not deviate from a true plane by any more than 1/8 inch in 10 feet. Provide pins or other bracing to prevent movement of the forms under the weight of the concrete.
 - b. Place concrete directly onto a previously approved, moistened grade. Consolidate with hand vibrators paying particular attention to not dislodge the load transfer devices or have the vibrator come in contact with the forms.
 - c. Finish with a pre-approved screed. Hand float or otherwise finish any areas as necessary. Pull a damp burlap drag longitudinally along the placement area. Texture and cure in accordance with Sections 501.03.4 and 501.03.5.
 - d. If forms are stripped prior to five (5) Calendar Days following concrete placement, apply curing compound or extend other curing methods immediately, after patching any "honey-combed" areas, to completely cure the exposed edge. Forms must remain in place at least 12 hours following initial concrete placement, except for areas immediately adjacent to saw cut transverse joints. Forms at these joints must be removed when required in order to complete the saw cut through the entire pavement surface. Maintain curing methods in place until the full five (5) Days has elapsed or the compressive strength of the concrete has reached 2,000 pounds per square inch.
10. Safety Edge – Construct a safety edge as specified in the Contract Documents. The safety edge is required longitudinally along the pavement edges (generally an interior and exterior shoulder) on all mainline and ramp paving unless otherwise approved by the Engineer.

F. Finishing

1. Produce a smooth, uniform, concrete surface with the paver screed conforming to the specified pavement cross slope and width.
2. Hand finishing is limited to sealing any surface tears, supporting any non-vertical pavement edges, and to assist in the surface finish of small, irregular, or other areas inaccessible to the paver. No steel trowels will be allowed for finishing surfaces.
3. Finish all longitudinal pavement edges with a 1/4 inch, rounded edging tool where safety edge is not required.
4. Do not add surface water as an aid to finishing. If absolutely necessary, an evaporation retardant may be added through the use of a misting or fogging device approved prior to beginning paving operations. Water shaken from brushes or applied through a hose is not permitted.
5. Finish the final pavement surface prior to texturing by pulling a wet burlap drag in the longitudinal direction. Keep the burlap in a moist condition throughout the paving operation in order to prevent surface tearing.
6. Texture and cure the pavement per Sections 501.03.4 and 501.03.5.

501.03.3 Fixed Form Paving.

501.03.3.1 Forms.

- A. Use straight, metal forms having adequate strength to support the Equipment. Each section shall be a minimum of 10 feet in length. Use forms with a depth equal to or greater than the prescribed edge thickness of the concrete, a base width at least equal to the depth of the forms, but not required to exceed 8 inches for deeper forms, and without a horizontal joint. Use flexible or curved forms of proper radius for curves of 150 foot radius or less, except approved straight forms of 5 foot lengths may be used for curves of a radius from 75 to 150 feet. Flexible or curved forms must be approved by the Engineer. The Engineer may approve the use of wood forms in areas requiring hand finishing [see Section 501.03.2.2.e.9)]. Secure the forms in place to withstand the impact and vibration of the consolidating and finishing Equipment without visible spring or settlement. Extend flange braces outward on the base a minimum of $\frac{2}{3}$ the height of the form. Remove forms with battered top surfaces or bent, twisted, or broken forms. Do not use repaired forms until they have been inspected and approved by the Engineer. Do not use buildup forms, except where the total area of pavement of any specified thickness on the project is less than 2,000 square yards. Do not vary the top face of the form from a true plane more than $\frac{1}{8}$ inch in 10 feet, and do not vary the vertical face of the form by more than $\frac{1}{4}$ inch. Make provisions for locking the ends of abutting form sections together tightly, and for secure setting.
- B. Supplementary Rails
 - 1. Provide suitable metal rails capable of being securely attached to the top of the side forms to provide a track that will allow spreading, finishing, and curing Equipment to back over the end of the previous day's run.
 - 2. Ensure metal rail length is sufficient to accommodate all Equipment that must be backed out of the way. Also, ensure the rails are of such a height that all wheels and flanges of wheels will clear the previously placed concrete by at least 1/2 inch.
- C. Base Support - Provide a foundation under the forms so that the whole length of the form will be set firmly in contact with the grade.
- D. Form Setting - Set forms sufficiently in advance of the point where concrete is being placed so that line and grade may be checked. Stake forms into place with a minimum of 3 pins for each 10 foot section. Place a pin at each side of every joint. Tightly lock form sections to be free from play or movement in any direction. Do not deviate the form from true line by more than $\frac{1}{4}$ inch at any point. No excessive settlement or springing of forms is permitted from the weight of the finishing machine. Clean and oil forms before the placing of concrete.
- E. Grade and Alignment - Check the alignment and grade elevations of the forms immediately before placing the concrete and make any necessary corrections. When any form has been disturbed or any grade has become unstable, reset and recheck the form.
- F. Removing Forms - Do not remove forms from freshly placed concrete until it has set for a minimum of 12 hours, except for auxiliary forms used temporarily in widened areas and forms against transverse saw cut joint locations. Remove forms carefully to avoid damage to the pavement.

501.03.3.2. Equipment - Furnish and maintain all Equipment and tools for concrete batching, placement, finishing, curing, and texturing operations.

- A. In addition to the Equipment included in this Section, all Equipment listed under Section 501.03.2.1 is required except that Section 501.03.2.1.b is replaced with the following for fixed form paving:
- B. Place concrete with a finishing machine designed for fixed form paving that can ride on previously set forms and can independently, or in conjunction with an advance concrete spreader:
 - 1. Strike-off
 - 2. Screed
 - 3. Adjust to produce the specified cross slope and pavement width
 - 4. Provide a smooth, uniform concrete surface finish requiring minimal or no floating or hand finishing

C. Vibration

Vibrate and consolidate the concrete for the full placement width. Vibrators are to be attached to the paving Equipment or mounted on a separate carriage. Only operate the vibrators when the machine on which they are mounted is moving forward. Do not operate hand vibrators more than 10 seconds, or less than 5 seconds in any one location unless approved otherwise by the Engineer. Place vibrators in and withdraw from concrete vertically in a slow deliberate manner. In order to obtain concrete consolidation in the vicinity of joint assemblies, the Engineer may require that these areas be hand vibrated with an immersion spud vibrator. Vibrators shall not contact load transfer devices, embedded hardware, or forms. The Contractor is responsible for the number and frequency setting of the vibrators to achieve uniform consolidation of the concrete throughout the entire slab thickness and width.

D. Form Line Excavating Machine

Excavate form lines for all forms supporting mechanical finishing Equipment to line and grade by a machine designed for this purpose and approved by the Engineer, or an approved machine that concurrently trims the subgrade or subbase to grade.

- E. If, during the operation of paving Equipment, it is necessary to operate one or both sets of wheels or tracks on previously placed concrete, adjust or alter the wheels or tracks so that the bearing on the concrete will not be closer than 3 inches from the pavement edge. When operating with one side of the machine on pavement and the other side on forms, the wheels operating on the forms may be double flanged. Use flangeless, rubber faced wheels on the pavement. When operating over the edge of concrete less than 2 months old, support the ends of the finishing machine screeds with an approved device to provide from 1/16 to 1/8 inch clearance between the screed and previously placed pavement.

501.03.3.3. Construction Methods.

- A. Place and grade base course to the tolerance specified under the applicable Specification. No hardware may be placed on the grade until the Engineer has given approval.
- B. Furnish and install load transfer devices. Clearly mark, on both sides, the center of each assembly using paint, stakes or other agreed upon method so that the transverse sawed joints can be properly located. Unless otherwise specified in the Contract Documents, construct load transfer assemblies in accordance with the Standard Construction Details. Apply a graphite coating to each dowel just prior to concrete placement if they are AASHTO M254, Type B (fusion bonded epoxy). No additional coating is required, if the approved dowels are AASHTO M254, Type A. Locate dowels at a pavement depth of $T/2$, (T = pavement thickness). Securely stake or otherwise fasten, in accordance with the [Standard Construction Details](#), the load transfer device to the subgrade to prevent movement during concrete placement. Do not use load transfer assemblies that are damaged in any way. Verify horizontal and vertical alignment of the devices not to exceed the tolerances as defined in the [Standard Construction Details](#). Check initial dowel placement on grade with a template or other approved tool supplied by the Contractor for use by the Engineer.
- C. Furnish Hook Bolts (or W-Bolts) for use when lanes will longitudinally abut the pavement being placed, and #5 standard rebar for tie bars used under longitudinal sawed joints or for tying into concrete lanes placed under previous contracts. Install these items prior to or during concrete placement. The method of installation must be approved prior to beginning concrete placement.
- D. Placing Concrete
1. Minimize or eliminate stopping the forward movement of the paver. Sufficient number and proper scheduling of concrete delivery trucks is required in this regard.
 2. Maintain a uniform level of concrete feeding the paver screed, allowing sufficient concrete to completely fill the void under the screed for the entire width of pavement placed. Spreaders in advance of the paver may be used to control the concrete supplied to the paver.
 3. Wet the base course just prior to contact by the concrete using a hose or other spray device for uniform water application. The application rate should not cause any pooling of water on the grade.

4. As the concrete is being placed, install tie bars under longitudinal sawed joints and Hook or W-Bolts along longitudinal pavement edges requiring abutting pavement to be placed in the future.
 5. Build a transverse construction joint at the end of the day's paving run in accordance with the previously approved details.
 6. Prior to placing adjoining concrete paving lanes or shoulders, seal the previously sawed joint opening along the edges of the existing concrete using duct tape, caulk, or other approved Material to prevent stones or grout from entering the saw cut.
 7. When placing concrete in lanes adjoining previously constructed pavement, the paver tracks must be fully in contact with the completed pavement surface to prevent breaking of the edge. Use rubber facing, wood, or other approved protection if the paver tracks will be in contact with the existing pavement surface. Concrete in the completed lane must have achieved a compressive strength of at least 2,000 pounds per square inch prior to placing any adjoining pavement.
 8. For small, irregular sections, or areas of pavement inaccessible to the paver:
 - a. Use wooden or steel forms. Depth of the forms must be at least that of the required pavement thickness. Form faces shall not deviate from a true plane by more than 1/8 inch in 10 feet. Provide pins or other bracing to prevent movement of the forms under the weight of the concrete.
 - b. Place concrete directly onto a previously approved, moistened grade. Consolidate with hand vibrators, paying particular attention not to dislodge the load transfer devices or come in contact with the forms.
 - c. Finish with a pre-approved screed. Hand float or otherwise finish any areas as necessary. Pull a damp burlap drag longitudinally along the placement area. Texture and cure in accordance with Sections 501.03.4 and 501.03.5.
 - d. When forms are stripped following concrete placement prior to five (5) Calendar Days following placement, apply curing compound or extend other curing methods immediately after patching any "honey-combed" areas to completely cure the exposed edge. Forms must remain in place at least 12 hours following initial concrete placement, except for areas immediately adjacent to saw cut transverse joints. Forms at these joints must be removed when required in order to complete the saw cut through the entire pavement surface. Maintain the curing in place until a full five (5) Days has elapsed or the compressive strength of the concrete has reached 2,000 pounds per square inch.
 9. Safety Edge – Construct a safety edge as specified in the Contract Documents. The safety edge is required longitudinally along the pavement edge (generally an inside and outside shoulder) on all mainline and ramp paving unless otherwise approved by the Safety Program Manager or Designee.
- E. Finishing
1. The paver screed shall produce a smooth, uniform concrete surface conforming to the specified pavement cross slope and width.
 2. Limit hand finishing to sealing any surface tears, supporting any non-vertical pavement edges, and to assist in the surface finish of small, irregular, or other areas inaccessible to the paver. No steel trowels will be allowed for finishing surfaces.
 3. Finish all longitudinal pavement edges with a 1/4 inch, rounded edging tool where safety edge is not required.
 4. Do not add surface water as an aid to finishing. If absolutely necessary, add an evaporation retardant through the use of a misting or fogging device approved prior to beginning paving operations. Water shaken from brushes or applied through a hose is not permitted.
 5. Create a final pavement surface prior to texturing by pulling a wet burlap drag in the longitudinal direction. Keep the burlap in a moist condition throughout the paving operation in order to prevent surface tearing.

6. Texture and cure the pavement per Sections 501.03.4 and 501.03.5.

501.03.4 Texturing.

- A. Texture the finished pavement for the entire placement width with an approved tining device. Flat steel wire tines are required and shall be 3/32 inches wide and 5 to 6 inches in length unless otherwise approved, having a 3/4 inch spacing between the tines. The tines shall form rectangular shaped grooves 1/16 inch to 3/16 inches in depth. Do not texture portions of the pavement that will receive permanent pavement markings. In these areas, maintain a 10 inch wide flat surface to accommodate the striping and/or raised pavement markers. The burlap drag finish is acceptable for these areas
- B. The Contractor may elect to diamond grind all surfaces of concrete pavement to create a final texture. If so, do not perform the grinding until the concrete has obtained a compressive strength of at least 3,500 pounds per square inch.
- C. Pull the tining in the longitudinal direction, parallel to the centerline of the pavement, in one pass without dragging or tearing the mortar.
- D. The Contractor is responsible to determine the proper time to install the tining. The tining should not pull excessive mortar or aggregate from the pavement (too early) or fail to penetrate the surface by the minimum 1/16 inch (too late).
- E. Make available hand tining devices at least 4 feet in width, equipped with tines identical to those specified above, for use in areas inaccessible to the mechanical device.
- F. Immediately follow the tining operation with approved curing.

501.03.5 Curing – Use one of the methods listed below.

- A. White Membrane Curing Compound
 - 1. Spray the curing Material on the pavement surface and all exposed edges immediately following the texturing operation.
 - 2. Continuously agitate the curing Material during application to keep it thoroughly mixed.
 - 3. Uniformly apply 2 applications of spray to the entire surface at a rate covering no more than 200 square feet (22.2 square yards) per gallon per each of the 2 applications. Apply the first coat immediately following the tining operation and the second coat no more than 30 minutes after the first.
 - 4. If necessary, use hand sprayers for pavement edges or small and irregular areas inaccessible to the larger mechanical applicator. The rate of application remains no more than 200 square feet per gallon per each of the 2 applications.
 - 5. No Equipment or traffic (other than joint saws and foot traffic) is permitted on the pavement until the compressive strength has reached at least 2,000 pounds per square inch.
- B. Polyethylene Film
 - 1. Extend the polyethylene beyond the slab edges by at least twice the pavement thickness and add weight to secure the material against wind and weather.
 - 2. Maintain the polyethylene in place for at least 5 Calendar Days or until the concrete compressive strength has reached at least 2,000 pounds per square inch. At sawed joint locations, remove as little polyethylene as possible just prior to the sawing operation. Re-cover the area over the sawed joint immediately upon completion of the sawing operation and maintain for the remainder of the curing period.

501.03.6 Quality Control Plan.

Develop and submit a Quality Control Plan in accordance with Section 610.03.A, except as modified herein.

501.03.6.1 Temperature Limitations.**A. Cold Weather –**

1. Do not place concrete when the ambient air temperature in the shade, and away from artificial heat, is less than 35 degrees Fahrenheit. Resume placement when the ambient air temperature is 35 degrees Fahrenheit and rising.
2. Do not place concrete on frozen grade.
3. Maintain temperatures of not less than 50 degrees Fahrenheit surrounding the concrete pavement for a curing period of five (5) Calendar Days following placement of the concrete. Provide all necessary monitoring devices (High-Low thermometers or other tools) and a plan for monitoring the temperature during the five (5) Day period ensuring placed concrete is not damaged by the temperatures. Use of insulating blankets, straw, polyethylene, or other protection subject to the approval of the Engineer, must be addressed in the plan.

B. Hot Weather

1. If plastic concrete temperatures reach 80 degrees Fahrenheit, give additional attention to dampening the subgrade immediately in advance of the concrete placement. Perform finishing, texturing, and curing operations as soon as possible. Should the pavement surface dry out to the extent that it cannot be sealed without the application of surface water, paving shall be suspended.
2. No concrete may be placed when the temperature of the plastic concrete exceeds 90 degrees Fahrenheit at the production facility.
3. Regardless of the protection methods selected, the Contractor is responsible to protect the concrete from freezing or other thermal damage. Any removal, replacement, and/or repairs resulting from thermal damage will be made at the Contractor's expense.

501.03.7 Joints.**A. Transverse Sawed Joints**

1. Saw the joints at the specified spacing to a depth of $T/3 + 1/4$ inch (T = Pavement Thickness) and a width of $3/8$ " inch.
2. Begin joint sawing as soon as the concrete can support the saw and operator with no damage to the pavement surface.
3. Time the sawing so that the concrete does not ravel behind the blade and so that random cracking does not occur.
4. Determine the timing of the saw cutting based on weather, temperature, and his/her judgment. Center the saw cuts over the load transfer dowels. Following transverse saw cutting, provide crack-free pavement except for the cracks under the designed saw cut joints.
5. All Transverse joints in the finished concrete pavement shall be sealed with hot-poured joint sealant conforming to Section 1042 and as shown in the plans. All sawed joints to be sealed with hot-poured joint sealant shall utilize a backup material that conforms to Section 1043, is sufficiently heat resistant to develop the required sealant shape and depth.
6. Construction joints shall be tooled and sealed as shown on the Plans. Immediately prior to installation of the backer rod and joint sealant, each joint shall be air blown, clean and dry. Hot-poured joint sealant shall be placed in conformance with the manufacturer's recommendations concerning joint cleaning, application, and safe heating temperature. For rounded or beveled joints, the sealant shall be installed to a depth as shown in the Detail.
7. The sealing material shall be applied to each joint opening in accordance with the details shown on the Plans or as directed. Application shall be done in such a manner that the material will not be spilled on the exposed surfaces of the concrete. All excess material on the surface of the concrete pavement shall be removed immediately, and the pavement surface cleaned. Hot-poured joint sealing material shall

not be placed when the air temperature in the shade is less than 50° F, unless approved by the Engineer.

B. Longitudinal Sawed Joints

1. Following the transverse joint saw cutting, perform longitudinal saw cutting on pavement placed in multi-lane (or lane and shoulder) pulls. Saw the joints to a depth of $T/3 + 1/4$ inch and to a width of $1/4$ inch.
2. Determine the timing of the saw cutting based on weather, temperature, and his/her judgment. Center the saw cuts over the tie-bars. Following longitudinal saw cutting, provide crack-free pavement except for the cracks under the designed saw cut joints.
3. All Longitudinal joints in the finished concrete pavement shall be sealed with hot-poured joint sealant conforming to Section 1042 and as shown in the plans. All sawed joints to be sealed with hot-poured joint sealant shall utilize a backup material that conforms to Section 1043, is sufficiently heat resistant to develop the required sealant shape and depth.
4. Construction joints shall be tooled and sealed as shown on the Plans. Immediately prior to installation of the backer rod and joint sealant, each joint shall be air blown, clean and dry. Hot-poured joint sealant shall be placed in conformance with the manufacturer's recommendations concerning joint cleaning, application, and safe heating temperature. For rounded or beveled joints, the sealant shall be installed to a depth as shown in the Detail.
5. The sealing material shall be applied to each joint opening in accordance with the details shown on the Plans or as directed. Application shall be done in such a manner that the material will not be spilled on the exposed surfaces of the concrete. All excess material on the surface of the concrete pavement shall be removed immediately, and the pavement surface cleaned. Hot-poured joint sealing material shall not be placed when the air temperature in the shade is less than 50° F, unless approved by the Engineer.

C. Transverse Construction Joints

1. Construct this joint at the end of a day's paving run.
2. Prior to beginning paving operations, provide a formed bulkhead for use in an emergency necessitating a non-planned paving stoppage exceeding 30 minutes.
3. Submit for approval the proposed method of building the transverse construction joint. The resulting joint must create a vertical face perpendicular to the pavement conforming to the designed cross slope having load transfer dowels spaced the same as the load transfer devices. Finish the top edge with a $1/4$ inch rounded edging tool. If the proposed construction method involves drilling and grouting load transfer dowels, they must be of the same Material and dimensions as those provided as part of the load transfer devices. Drilling and grouting procedures and related Materials must accompany the submission, if applicable. Provide a grout retainer ring if dowels will be installed by drilling and grouting.
4. When placing concrete pavement abutting the transverse construction joint, use a $1/4$ inch rounded edging tool to finish the top edge of the concrete in contact with the previously constructed joint. If tying into a non-rounded edge of existing pavement, saw cut a $1/4$ inch bevel on the existing pavement edge prior to placing the new adjoining concrete pavement.

D. Longitudinal Construction Joints

1. Construct these joints directly over Hook Bolts or W-Bolts installed in a previously placed run of pavement. If tying into concrete placed under a previous contract, drill and grout tie-bars (#5 rebar) into the existing concrete pavement if so noted in the Contract Documents.
2. Form the joint by finishing the concrete abutting the existing concrete with a $1/4$ inch rounded edging tool. If tying into a non-rounded edge of existing pavement, saw cut a $1/4$ inch bevel on the existing pavement edge prior to placing the new adjoining concrete pavement.

501.03.8 Opening the Road to Traffic.

When the compressive concrete strength has reached 3,500 pounds per square inch.

501.03.9 Performance Measures.

Acceptance and final payment for this Item will be based on the Contractor's ability to acceptably construct a concrete pavement meeting the following criteria:

- A. Alignment and cross-slope
 - 1. Maintain a pavement edge within 0.15 feet of the specified horizontal alignment. Pavement width provided must be no less than that specified.
 - 2. Provide the cross-slope at the specified percent plus or minus 0.5%.
- B. Consolidation as verified by visual observation of pavement edges, pavement cores, and/or other non-destructive testing as determined by the Engineer.
- C. Thickness as verified by cores. Payment to be adjusted in accordance with Section 501.05.
- D. Ride quality as specified in Section 501.05 with payment adjustments as specified therein.
- E. Pavement free of random cracks – Any uncontrolled random cracks must be repaired or removed and replaced prior to Final Acceptance and payment. Submit repair or replacement procedure and details for approval by the Engineer.
- F. Provide a vertical pavement edge having no more than 1/4 inch edge slump, exclusive of rounding of the finishing tool, when measured under a 10 foot straight edge.
- G. Provide load transfer dowels located as specified in Section 501.03.2.2.b. Verify specification compliance of load transfer dowel bar locations and alignment using non-destructive testing devices.
- H. Provide concrete meeting the required compressive strength requirements subject to payment Adjustment as outlined in Section 501.05.

501.03.10 Tolerance in Pavement Thickness.

For the purpose of establishing an adjusted Unit Price for pavement lanes, the following is considered:

- A. The Engineer will divide the PCC Pavement for the entire Contract into 1,000 square yard lots, determine the random core locations, drill the cores, determine pavement thickness according to AASHTO T 148, and patch the resulting holes in the PCC Pavement.
- B. Uneven lots less than 1,000 square yards may occur due to the pavement geometry. If this is the case, these irregular lots will be considered a complete lot when evaluating the pavement thickness, regardless of their actual size.
- C. If a random core measurement is deficient by more than 0.20 inch when compared to the Plan pavement thickness, 2 additional randomly selected cores will be taken within the same lot. Cores measuring 0.20 inch or more in excess of the Plan pavement thickness will be considered to measure exactly 0.20 inch greater than the planned thickness when computing the average of the 3 cores. The average thickness of the 3 cores will be considered the pavement thickness for the lot being evaluated. This lot thickness will be used to determine payment for the entire lot in accordance with Table 501.05.1.

Remove and replace the entire lot represented by the short cores when any average lot thickness is deficient by more than 1 inch when compared to the Plan pavement thickness. The Engineer will provide the limits of the lot in question.

501.03.11 Pavement Smoothness Testing.

501.03.11.1 General Description. Test finished surfaces of concrete pavements, Bridge decks, approach slabs, and transition slabs in accordance with the Contract Documents.

501.03.11.2 Straight Edge Surface Testing. Surface testing will be performed with a rolling straight edge or a conventional straight edge furnished by the Contractor. Finished concrete pavement and/or Bridge surfaces will be tested by the Contractor and witnessed by the Engineer for trueness in each wheel lane at the completion of the required curing or protection period. Test the surface with a rolling 10 foot straight edge, or a 10 foot straight edge placed parallel to the center line of the pavement, parallel to the grade line and touching the surface. Surface variations of the pavement measured by the 10 foot rolling straight edge, or measured from the base of the straight edge to the surface of the pavement, shall not exceed 0.25 inch. An approved 10 foot long straight edge shall be available at all times during concrete paving operations.

501.03.11.3 Surface Corrections. Use diamond grinding to remove deviations exceeding 0.25 inch in 10 feet and/or to improve ride quality. Submit, for review by the Engineer, similar types of work performed with the proposed Equipment, including references if requested.

501.04 Method of Measurement.

The quantity will be measured as the actual square yards placed and accepted. Pavement width measurement not to exceed that shown on the Plans unless otherwise approved. Longitudinal dimension measured along the centerline of pavement.

Areas requiring repairs due to random cracking or failure to meet other performance measures will not be measured for payment until the repairs have been successfully completed. In these cases, the actual repair area (dimensions of the patch or other repair) will be the quantity withheld from payment.

501.05 Basis of Payment.

Payment includes furnishing all Equipment, Materials, and incidentals; placing, finishing, texturing, and curing concrete pavement meeting the performance measures outlined in Section 501.03.9. Incidental to the Item are the following, but not limited to:

- A. Repairs to random crack areas.
- B. Repairs required to meet performance measures.
- C. Furnishing a "Thermal Plan" and any accompanying testing Equipment.
- D. Furnishing inertial profiling system, operator, and straight edge for smoothness testing; providing specified results for same.
- E. Performing diamond grinding for Specification compliance and/or ride quality improvement.
- F. Sawing, drilling, grouting, and constructing all pavement joints.
- G. Sealing sawed joints along the completed pavement edge prior to placing adjoining pavement.
- H. Constructing safety edge.
- I. Cold weather curing Materials if necessary.
- J. Lighting in order to perform Work, if needed.
- K. Template or other approved device for checking dowel bar assembly installation prior to concrete placement. This to be supplied to the Engineer for use during paving operations and returned to the Contractor at the conclusion of paving.
- L. Maintenance of traffic, if required for smoothness testing.
- M. Polyethylene covering and transverse bulkhead for protecting concrete during a rain event or other emergency.
- N. Verifying load transfer dowel bar location and alignment using non-destructive testing devices.
- O. Wire Reinforcement
- P. Dowels
- Q. Tie Bars

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- R. Hook Bolts
- S. Load Transfer Devices
- T. Cleaning
- U. Sawing
- V. Tooling and Sealing of Joints
- W. Any other incidental Items mentioned in the body of this Specification.

501.05.1 Pavement Thickness Adjustments.

- A. For thickness deficiencies, the Department will adjust the Contract Unit Price according to the schedule provided in Table 501.05-A.

Table 501.05-A
Price Adjustments for Concrete Pavement Thickness Deficiency

<i>Deficiency in Average Pavement Thickness Determined by Cores</i>	<i>Proportional Part of Contract Unit Bid Price (%)</i>
0.00 to 0.20 inches	100
0.21 to 0.30 inches	80
0.31 to 0.40 inches	72
0.41 to 0.50 inches	68
0.51 to 0.75 inches	57
0.76 to 1.00 inches	50
Greater than 1.00 inch	Remove and Replace

- B. No additional payment over the Contract Unit Price will be made for any pavement with an average thickness in excess of that shown on the Plans. The maximum pavement thickness value used in this chart for a 1,000 square yard lot will be the Plan pavement thickness.

501.05.2 Pavement Smoothness Acceptance and Payment.

Apply any incentive/disincentive pay Adjustments as established by this Specification and in accordance with the Contract Documents.

501.05.3 Price Adjustment for Low Strength Concrete.

Concrete which fails to reach full 28-day design strength (f'_c) shall be subject to remedial action and prorated payment as specified in Categories A and B of Section 610.03.M of the Standard Specifications. Make prorated payment in accordance with Section 610.03.M. Concrete having compressive strength of 500 pounds per square inch or more below the designed f'_c of the pavement shall be removed and replaced at no cost to the Department.

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
501001	PORTLAND CEMENT CONCRETE PAVEMENT, 8"	SY
501002	PORTLAND CEMENT CONCRETE PAVEMENT, 9"	SY
501004	PORTLAND CEMENT CONCRETE PAVEMENT, 10"	SY
501005	PORTLAND CEMENT CONCRETE PAVEMENT, 11"	SY
501006	PORTLAND CEMENT CONCRETE PAVEMENT, 12"	SY
501012	PORTLAND CEMENT CONCRETE PAVEMENT, 14"	SY

401502 - ASPHALT CEMENT COST ADJUSTMENT

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

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

5/05/15

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 401.03 I 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
		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
		2.52

10/5/16

**501580 - RIDE QUALITY OF PORTLAND CEMENT AND PRECAST CONCRETE
PAVEMENTS**

Description:

The Contractor is responsible for providing smoothness characteristics meeting Contract requirements. The Contractor is responsible for providing equipment, maintenance of traffic (MOT) as required by the Delaware MUTCD, and performing testing according to this special provision. Costs for testing and MOT are incidental to this item.

The purpose of this Special Provision is to define the methods for pavement surface smoothness data collection and the parameters for acceptance. The International Roughness Index and a 10' straightedge are used to determine pavement smoothness quality.

Definitions:

Deviation - a hump or depression found within a 10' straightedge

ERD File - a file storing numbers in tabular form for plotting and processing purposes developed by the Engineering Research Division of the University of Michigan Transportation Institute (UMTRI)

Inertial Profiler - a high speed or lightweight device used to measure the pavement profile with an accelerometer to form an inertial reference and a height sensor to measure pavement height relative to that reference.

International Roughness Index (IRI) - a statistic, based on computations from a measured longitudinal profile using a quarter-car simulation, calculated to represent the amount of roughness in a pavement surface.

Equipment:

The contractor must provide an inertial profiling system meeting AASHTO M-328 that is capable of simultaneously collecting data in both wheelpaths of the travel lane. The system must contain an on-board computer system capable of calculating the IRI and deviation locations. Longitudinal spacing for the data collection sensors must be 6" or less.

Prior to testing the contractor must provide to the Engineer:

1. Manufacturer, Make, and Model of the profiler,
2. Equipment Owner,
3. Relevant Certifications
4. Manufacturer Calibration Procedures, and
5. Relevant Operator Training Information.

Equipment Calibration:

The Contractor is required to perform calibration of the equipment per manufacturer's calibration procedure in the presence of the Engineer. Vertical and longitudinal calibrations must be performed. If the equipment does not pass the calibration procedure it will not be permitted for use.

Pavement Testing:

Notify the Engineer at least three (3) working days prior to data collection.

Test the final surface of concrete pavements, bridge decks, approach slabs, transition slabs, and precast panels using the Inertial Profiler for IRI and deviations. Testing must be performed in the direction of proposed traffic flow.

Testing should be performed according to manufacturer's recommendation and the following:

1. Clean the Roadway surface of all debris and other loose material. Ensure that the roadway surface is dry and free of any standing water.
2. Locate the start of the project limits and mark them to enable automatic start sensors to be activated.
3. Locate the end of the project limits and mark them to enable automatic stop sensors to be activated.
4. Establish a pre-test length (150' or the manufacturer's recommended pre-test length, whichever is greater) prior to the start of the project limits.
5. Position the left wheelpath sensor three feet (3') from the left edge marking of each lane tested.
6. Attain a test speed that is within the manufacturer's recommendation for the equipment and maintain that speed throughout the test.

Perform each test in each lane and direction 3 times.

Data Reporting Requirements:

Submit to the Engineer one profile plot per lane tested and a summary report containing IRI values and deviations analyzed in 528' sections for each of the three test runs performed in each lane and direction within 5 days of the completion of testing. Results not received within the allotted time frame will be assessed a charge of \$1,000.00 per day.

Wavelengths exceeding 300' may be removed using long wavelength filters.

Submitted reports must contain the following information clearly printed on the document:

1. Profiling Company Name
2. Date of Paving
3. Date of Test
4. Parameters used in the calculation
5. Data file name
6. Testing Personnel
7. Description of area tested (Road, lane, etc.)

Submit an electronic copy of each ERD file to the Engineer. The nomenclature of the ERD files must be as follows:

TXXXXXXXXXLocL#DIRR#

where: TXXXXXXXXX = the contract number
 Loc = the location description (number, road, etc)
 L# = the lane tested, lane numbers should be assigned from left to right starting at the median / centerline for each direction tested.
 DIR = the direction of the tested lane, for example: EB, WB, NB, SB
 R# = the run number, for example: R1, R2...

Acceptance and Payment:

Deviations in the transverse and longitudinal direction equal to or greater than 0.25" within a 10' straightedge at any point in the pavement surface must be corrected.

IRI values will be assessed an incentive / disincentive according to the following table.

IRI per 0.1 mile section (in/mi)	Payment Adjustment
40.0 and under	103
40.1 – 55.0	101
55.1 – 65.0	100
65.1 – 75.0	99
75.1 – 99.9	96
≥ 100	Corrective actions required

Payment will be calculated using the Unit Price bid for the respective component of the pavement and the following calculation.

$$\text{IRI Incentive/Disincentive} = \text{Surface Area (Square Yds)} * \text{UP} * (\text{PA}-100)/100$$

Where: UP = Contract Unit Price per Square Yard
PA = Pay Adjustment from Above Table

Total pay adjustment for paving work done on each location will be the sum of all Incentive / Disincentives for each section on the project.

5/25/17

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

Description:

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

Materials:

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

1. If the pavers specified are concrete unit pavers, they shall have an average compressive strength of 8000 psi (55 MPa) with no single paver having a compressive strength less than 7200 psi (52 MPa) at the time of delivery to the project. The pigment loading shall be a minimum of 3% and the pigmentation shall be uniform throughout the paver.
2. If the pavers specified are clay brick, the pavers shall meet the requirements of ASTM C902, Class SX, Type I.

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

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

Sample pavers shall be submitted for approval and if requested by the Engineer, 3' x 3' (0.9 m x 0.9 m) sample panels shall be constructed for approval.

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

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

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

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

Construction Methods:

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

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

Spread a leveling course of bedding sand 1 to 1 1/2 inches (25 to 38 mm) thick, taking care that moisture is constant and the density is loose until the unit pavers are set and compacted. Place a material such as geotextile, or other approved material at curb joints to prevent sand from bleeding through.

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

Vibrate the pavers into the sand leveling course with a low amplitude plate vibrator capable of a 3,500 to 5,000 pound (1,600 to 2,300 kg) compaction force. Perform at least 3 passes across paving with vibrator. Protect paver face and edges by spreading a cushion of sand over the surface. Be careful not to destroy edges.

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

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

Method of Measurement:

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

Basis of Payment:

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

5/10/17

705528 - TEMPORARY CURB RAMP

Description:

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

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

Materials and Construction Methods:

The Temporary Curb Ramps shall be used as required during maintenance of traffic and pedestrians during construction as directed by the Engineer. Curb ramps must be provided wherever an accessible pedestrian route crosses a curb or experiences a change of grade requiring a temporary curb ramp. The smallest possible slope should be used for all ramps and the maximum slope is 1:12. Transitions from ramps to walks or streets should be flush without abrupt changes. The adjoining landing areas, within three (3) feet of temporary curb ramps, shall not exceed 1:20. Temporary curb ramps must have a minimum width of 36", exclusive of flared sides. Temporary curb ramp surfaces must be stable and slip resistant. Changes in surface level up to ¼ inch may be vertical without edge treatment. Changes in surface level greater than ¼ inch must use a ramp. If a curb ramp is located where pedestrians must walk across the ramp or where the ramp is not shielded by handrails or guardrails, it must have flared sides. The maximum slope of the flare shall be 1:10.

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

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

Method of Measurement:

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

Basis of Payment:

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

3/2/17

763501 - CONSTRUCTION ENGINEERING

1) 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.

2) 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.

3) 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 subcontracting 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:

4) 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 $0.035 \text{ ft} \times [\text{Square root of number of miles in the level run}]$ ($0.01 \text{ m} \times [\text{square root of number of kilometers}]$). The Horizontal Control precision ratio shall have a minimum precision of 1:20,000 feet (1 meter per 20,000 meters or 1:20,000) 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 (3.0-meter) 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 (6.1 meter) intervals through wetland areas. In open field and yard areas that have been identified as wetlands, 3 foot (one meter) wooden grade stakes shall be driven into the ground at approximate 20 foot (6.1 meter) intervals and tied with the flagging.
 - 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 stakes 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.

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

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

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

Machine Control Grading

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

Description:

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

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

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

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

Materials:

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

Construction:

a. DelDOT Responsibilities:

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

- c. The Department will develop and provide electronic data to the Contractor for their use as part of the contract documents in a format as indicated in the General Notes. The Contractor shall independently ensure that the electronic data will function in their machine control grading system.
4. The Files that are provided were originally created with the computer software applications MicroStation (CADD software) and INROADS (civil engineering software). The data files will be provided in the native formats and other software formats described below. The contractor shall perform necessary conversion of the files for their selected grade control equipment. The Department will furnish the Contractor with the following electronic files:
 - a. CAD files
 - i. Inroads -Existing digital terrain model (.DTM)
 - ii. Inroads -Proposed digital terrain model (.DTM)
 - iii. Microstation -Proposed surface elements - triangles
 - b. Alignment Data Files:
 - i. ASCII Format
5. The Engineer shall perform spot checks of the Contractor's machine control grading results, surveying calculations, records, field procedures, and actual staking. If the Engineer determines that the work is not being performed in a manner that will assure accurate results, the Engineer may order the Contractor to redo such work to the requirements of the contract documents, and in addition, may require the Contractor to use conventional surveying and staking, both at no additional cost to the Department.

B. Contractor's Responsibilities

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

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

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

Contract Control Plan:

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

1. A control network diagram of all existing horizontal and vertical control recovered in the field as contract control.
2. Include a summary of the calculated closures of the existing control network, and which control has been determined to have been disturbed or out of tolerance from its original positioning.
3. An explanation of which horizontal and vertical control points will be held for construction purposes. If necessary include all adjustments which may have been made to achieve required closures.

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

Method of Measurement:

The quantity of Construction Engineering will not be measured.

Basis of Payment:

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

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

10/5/16

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

763564 - SPECIAL BIDDING PROCEDURE

SPECIAL BIDDING PROCEDURE

The Department of Transportation is using a special bidding procedure for this project for selecting the bidder to perform work.

The process for bidding will take into account not only the price offerings of the bidder but also the speed with which the Contractor can provide a usable facility to the traveling public.

1. Preparation of Proposal Form

The bidder shall establish the number of calendar days that they will require to complete the work through phase 4 as detailed in the plans, in accordance with the Plans and Specifications. This calendar day number shall be indicated in the Proposal Form of this Invitation for Bids. The product of this number of calendar days times the average Road User Cost of \$45,000.00 per day shall be included in the Contractor's total bid price for this proposal. The Total sum will be the amount used as a basis of comparison of bids in establishing the successful bidder.

2. Consideration of Bids

The total submitted bid shall consist of two parts, Part A and Part B.

Part A = the total dollar amount for all work to be performed.

Part B = The total number of calendar days proposed by the bidder to complete the required worktimes a Road User Cost of \$45,000.00/Calendar Day according to the following formula.

Part B = Proposed Calendar Days X \$45,000.00/Calendar Day

***The maximum number of calendar days that can be utilized in the calculation of this part of the bid is 375.

The total submitted bid will be the sum of Part A and Part B subject to all other governing requirements of the Standard Specifications or Special Provisions.

Total Submitted Bid = Part A + Part B

The successful bid will be determined by the Department as the lowest total submitted bid of all responsive/responsible bidders after bid review. The determination of a responsible/responsive bidder includes a rigorous review of the bid proposal for unbalanced bidding. The lowest responsible/responsive bidder must be prepared to demonstrate that the "B" portion of the bid is reasonable, rational, and achievable without incurring Liquidated Damages.

The preceding formula shall only be used as a basis of comparison to determine the successful bidder and shall not be used to determine the award amount nor final payment to the Contractor when the project is completed. Only the unit prices bid and the quantities required to complete the project and any incentive or disincentive due shall be used to determine final payment to the Contractor.

3. Incentive/Disincentive Amount

The Contractor will be paid \$45,000.00 for each Calendar Day the work required in this Contract is completed prior to the number of Calendar Days stated by the Contractor on the Proposal Guaranty, Part B, Proposed calendar days. The total number of Calendar Days for payment incentive will not exceed thirty calendar (30) days or \$1,350,000.00. Payment of the incentive will be made after the Completion of Work has concluded.

The Department will assess the Contractor a disincentive for failure to complete the work within the established number of Calendar Days stated by the Contractor on the Proposal Guaranty, Part B, Proposed calendar days. The disincentive will be \$45,000.00 for each Calendar Day the work remains incomplete after the expiration of the work days established by the Contractor. The disincentive payment will not exceed thirty calendar (30) days or \$1,350,000.00. The assessment maybe deducted from any monies due or to become due to the Contractor.

4. Proposal Guaranty

The proposal guaranty shall be based on 10% of the Contractor's total bid price as resulting from the summation of the unit bid prices on the Bid Proposal Forms. **(Price of work proposed, Item A in Formula.)**

5. Reduction and Extension of Contract Time

Contract time will be on the calendar day basis proposed by the successful bidder. In the event that contract changes affect the critical path for all work to be performed under the original proposal, contract time will be shortened or lengthened based on the Engineer's approval. The Construction Engineer shall be the sole judge as to what and whether a time extension shall be considered justifiable and each extension granted shall be documented in writing by the Construction Engineer with reason for extension. The Contractor is advised that in order to complete the work on or before the number of calendar days proposed in their bid, it will be necessary to provide multiple crews, work extended hours, overtime and or weekends and holidays, without additional cost to the Department.

COMPLETION AND SUBMITTAL OF THE 'SPECIAL BIDDING PROCEDURE' FORM WITH YOUR BID IS REQUIRED (The form follows the Bid Pages contained within this document).

7/7/17

759599 - FIELD OFFICE, SPECIAL II

Description:

This Field Office, Special II item is a field office complex the work of which consists of erecting, furnishing, equipping, maintaining, and removing one (1) double wide modular field office unit, its entrance, and its adjacent parking area and one (1) single wide modular field office unit, its entrance, and its adjacent parking area. These field office units may be situated in different locations. The Contractor shall submit a specific location layout drawing and construction details for each field office, its entrance, and its parking area for approval by the Engineer. Each field office and its parking area shall be for the exclusive use of Department Officials, Engineers, Consultants, and Inspectors.

Each field office structure shall be free of asbestos and/or other hazardous materials. Each field office, its entrance, 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 each field office, its entrance, and its parking area. The costs of obtaining such licenses and permits are to be incidental to the "Field Office, Special II" Item. Each field office shall be available for use by the Department continuously throughout the duration of the project.

Construction of and Equipment for the Field Offices:

The double wide field office shall be new and have a minimum floor space of 1,200 square feet with minimum exterior dimensions of 50'-0" length by 24'-0" width and the single wide 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 of each field office shall be nominal 8'-0". The exterior walls, ceiling, and floor of each field office shall be insulated. Each 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 each 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 each field office of at least 6000 square feet and having a minimum of 12 functional parking spaces striped for full size cars. An entrance shall be constructed to each field office from its point of access to its parking area as determined by its approved location layout drawing and construction details, the cost to be incidental to the "Field Office, Special II" Item. All weather pathways from the parking area to the entrances of each 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 entrance, the parking area, and the entrance pathways of each 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 II" Item.

The ground area 30'-0" from around the perimeter of each 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 is incidental to the "Field Office, Special II" Item.

Each field office shall have full carpeting, kitchenette facilities, and interior and exterior paneling, lighting, and plumbing fixtures. Each 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 of each field office shall be insulated or have

storm doors. Each field office shall have a minimum of six (6) windows, each window having a minimum glass area of 1,150 square inches and a horizontal mini-blind covering the full glass area. The windows of each field office shall be insulated or have storm windows, shall be equipped with a locking device, and shall have screens installed and repaired when damaged.

At least two (2) outside water service connections shall be provided at each 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.

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

Each field office shall have satisfactory lighting, electrical outlets, heating equipment, and 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 for each field office 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 of the field offices. 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 in each field office.

The Contractor shall provide an alarm system in each field office for security with electronic, direct connection to a security service provider. The security systems shall have interior motion, window, and entrance detectors and built in manual fire alarms. All windows of each 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 for each field office. 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 in each field office 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 for each field office. When separate facilities for men and women are not available or required, a sign with the wording "Rest Room" {letter heights of 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.

For each field office 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 telephone system for the field offices shall have a total of 9 lines consisting of 8 direct single lines with call forward busy feature and 1 dedicated facsimile line and have 8 key sets consisting of 1 master key set having privacy feature, and 7 six-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. Location of telephone lines shall be as directed by the Engineer. 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. The Contractor shall arrange for the installation and initial setup of the specified telephone system. Initial installation and setup costs shall be the responsibility of the Contractor as well. All

subsequent monthly billings, after initial installation and setup, for each field office telephone system shall be received and paid by the Contractor. A copy of each of these subsequent bills shall be forwarded to the Project Resident for reimbursement on the contract pay estimate and 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 interiors 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 complex. Placement of these furnishings shall be as directed by the Engineer. These furnishings consist of 4 drafting tables with sufficient drawers for standard size plans, either attached to the tables or in cabinet form, each drafting table to have an ergonomic design spring back stool with five leg base having wheel casters, 9 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, 4 folding tables minimum 6'-0" by 3'-0" each with ergonomic design straight back chair with armrests, 1 work table, 1 supply cabinet, 1 or more clothes closets of ample size to meet inspection manpower requirements, 4 rough plan racks, 4 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 stackable steel flat file cabinets for 43" by 32" size plan sheets each cabinet having 5 drawers with full suspension, rear hood, and hinged front depressor, 2 book shelves minimum 3'-6" by 4'-6" each, 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 3' by 2'. These office furnishings will remain the property of the Contractor at the conclusion of the project.

For each field office, the Contractor shall also furnish new and maintain the following office equipment, all which are to be approved by the Engineer prior to installation. 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 Muratec MFX-2855D or Toshiba e-STUDIO 2330c or approved equal all-in-one copier which includes scanner, printer, and fax. Copier to have high speed wireless and network capability. Copier shall have all necessary software and cables for proper operation and shall be connected to high speed wireless and connected for use to share on a local network. Copier to have zoom and preset reduction and enlargement features, automatic two (2) sided copying, automatic document feeder with minimum 30 sheet capacity with automatic stapling capacity;

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 (minimum 256MB) capability, and storage case.

Consumables as required to manage the business of the project for each field office 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 in each field office 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.

Computer Requirements for Each Field Office:

Each field office shall have two (2) IBM compatible Microcomputer Systems both which will be furnished and maintained by the Contractor for use by the Engineer, the cost to be incidental to the "Field Office, Special II" Item. 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, unless otherwise determined by the Engineer. In each field office both 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 80GB 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

2 HP Color LaserJet CP3525n or Xerox Phaser 6280 or approved equal color printers with high speed wireless and network capability. Printers shall have all necessary software and cables for proper operation and shall be connected to high speed wireless and connected for use to share 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:

spreadsheet - "Lotus 1-2-3®",
suite - "Microsoft® Office XP Professional",
tracking - "Expedition®",
antivirus - "Norton Systemworks™ 2004, and
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, (or other high speed internet access) with all associated hardware (adapters, cables, etc) and software to enable wireless networking (or other high speed internet access) 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 in each field office 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 Requirements for Each Field Office:

Maintenance of each field office including its entrance and 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 vermin and pest control by professional exterminator(s), 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 for each field office 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 each 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 complex 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 each field office, their entrance, and their adjacent parking area and restore each field office area, entrance, and adjacent parking area to match their original site condition. No separate payment will be made for costs involved for removing hazardous material or underground tanks to install these field offices, their entrances, and their parking areas. One (1) unit of payment will constitute erecting, furnishing, equipping, maintaining, and removing one (1) double wide field office and one (1) single wide field office and their entrances and parking areas.

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

The field offices, their entrances, and their parking areas shall be ready for use not later than forty-five (45) calendar days after the date of the fully executed Contract and before construction operations begin.

1/19/10

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 106.08.

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.

6/29/12

817500 - PREFORMED THERMOPLASTIC DECORATIVE PAVEMENT SYSTEM

Description:

This work consists of preparing the application area, supplying and placing sealer and the preformed thermoplastic material with the specified color and pattern at the location(s) shown on the Plans and as directed by the Engineer.

Materials:

The material must be a resilient preformed thermoplastic product, where the top surface contains nonskid/non-slip material. The material must be resistant to the detrimental effects of motor fuels, lubricants, hydraulic fluids etc. The material shall be capable of being installed on bituminous and/or portland cement concrete pavements by the use of an infrared heater or a blue-flame radiant heater. The use of a compactor or similar equipment shall not be permitted.

The material must be capable of conforming to pavement contours, breaks and faults through the action of traffic at normal pavement temperatures. It shall not be necessary to use a grid template or to make pattern grooves or other indentations in the asphalt or concrete surface prior to installing the material. The final product shall have strong adhesion to the underlying pavement, and be durable and abrasion resistant.

The individual pieces in each material segment (typically 24 in. by 36 in.) must be factory assembled with a compatible material and interconnected so that in the field it is not necessary to assemble the individual pieces within a material segment. The material must be able to be applied in temperatures down to 45°F without any special storage, preheating or treatment of the material before application

The material must be able to be applied to asphalt and concrete surfaces without preheating the application surface to a specific temperature. The material must be capable of being affixed to green concrete (concrete that has set but not appreciably hardened) and not require the portland cement concrete application areas to be cured or dried out. The material must be capable of being affixed to bituminous and/or portland cement concrete pavements by the use of the heat of an infrared heater or blue-flame heater. Heating indicators must be evenly distributed on the surface of the material in order to ensure correct application. The material must cover the entire application area. Once applied, no part of the pavement surface must be visible in the application area.

Specifications:

The Material must be composed of an ester modified rosin impervious to degradation by motor fuels, lubricants etc. in conjunction with aggregates, pigments, binders, and non-skid/non-slip material. Pigments and non-skid/nonslip material must be uniformly distributed throughout the material. The thermoplastic material conforms to AASHTO designation M249-98, with the exception of the relevant differences due to the material being supplied in a preformed state, being non-reflective, and potentially being of a color different from white or yellow.

Pigments:

White: The material shall be manufactured with sufficient titanium dioxide pigment to meet FHWA Docket No. FHWA-99-6190 Table 5 and Table 6 as revised and corrected. Red, Blue, and Yellow: The material shall be manufactured with sufficient pigment to meet FHWA Docket No. FHWA-99-6190 Table 5 and Table 6 as revised and corrected. The pigment system must be heavy-metal free.

Other Colors: The pigment system must be heavy-metal free.

Miscellaneous Specifications:

Heating indicators: The top surface of the material shall have regularly spaced indents. These indents shall act as a visual cue during application that the material has reached a molten state so satisfactory adhesion and proper embedment of non-skid/non-slip material has been achieved, and a post-application visual cue that the application procedures have been followed.

Skid Resistance: The surface of the preformed thermoplastic material shall contain factory applied non-skid material with a minimum hardness of 7 (Mohs scale). Upon application the material shall provide a minimum skid resistance value of 55 BPN when tested according to ASTM E 303.

Slip Resistance: Upon application the material shall provide a minimum static friction of coefficient of 0.6 when tested according to ASTM C 1028 (wet and dry), and a minimum static coefficient of friction of 0.6 when tested according to ASTM D 2047.

Thickness: The material must be supplied at a minimum thickness of 125 mil (3.18 mm).

Environmental Resistance: The material must be resistant to deterioration due to exposure to sunlight, water, salt or adverse weather conditions and impervious to oil and gasoline.

The Contractor shall submit industry or manufacturer/supplier technical information available for the material and system proposed for use. This information should include material recommendations, certifications and installation instructions as appropriate for the proposed system based on environmental and traffic conditions.

Construction Methods:

A manufacturer's representative shall be present on-site during the placement of the system.

The system shall be placed only within the Plan designated areas. These areas shall be prepared by air lancing the surface to remove dirt, loose particles, and any other substance that may reduce the system's ability to adhere to the existing surfaces. Once clean, the surface shall be heated by an infrared heater or a blue-flame radiant heater to remove any moisture within the existing pavement. It is imperative that the surface be dry in order for the adhesive to function properly.

Once the installation area has been prepped a sealant shall be placed on the substrate, per the manufacturer's specifications, and the material placed over the sealant. The material shall be applied using an infrared heater as recommended by the manufacturer. The system may be constructed only when environmental conditions meet the requirements of these specifications, or of the material manufacturer/supplier, whichever is more stringent. The following conditions must be met:

- Air temperature, both current and that forecast throughout the cure time shall be above 45°F.

The contractor shall ensure that the edge of the material is flush with the adjacent pavement so that it will not have a lip that could be caught by snow plow or other maintenance activities.

The final texture, color and pattern of the surface shall conform to the Plan details. A 24 inch by 36 inch color sample and pattern shall be supplied to the Department for approval prior to installation

The constructed area shall be closed to traffic until the system has cured and cooled sufficiently to resist damage to the system. Cure time shall be one (1) hour or as directed by the Engineer or manufacturer's representative.

Method of Measurement:

The quantity of preformed thermoplastic decorative pavement system will be measured as the actual number of square feet of preformed thermoplastic decorative pavement system placed and accepted in conformance with the Plans, Specifications and manufacturer's recommendation.

The Engineer will not measure areas of correction for payment.

Basis of Payment:

The quantity of preformed thermoplastic decorative pavement system will be paid for at the Contract unit price per square foot. Price and payment will constitute full compensation for preparing the area; supplying and placing the sealant and thermoplastic pavement markings; and for all labor, equipment, and incidentals required to complete the work.

4/22/16

UTILITY STATEMENT
Construction Contract Number T201706102
Rehabilitation of Centre Road – SR141
New Castle County
April 14, 2017

The following utility companies maintain facilities within the project limits:

City of Wilmington (Water)
Delmarva Power & Light-Electric Distribution
Delmarva Power (Gas)
DelDOT (Fiber Optic)
Verizon (Cable)
Verizon (Fiber Optic)

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

City of Wilmington (Water)

City of Wilmington maintains an eight inch water and twelve inch water line within the project limits.

Statement of work to be completed:

The following water valve adjustments shall be made by the contractor and coordinated with the City of Wilmington:

- | | | |
|--------------------------|-------|----|
| • Station N223+56.35 | 13.45 | RT |
| • Station N225+94.71 | 24.29 | RT |
| • Station N226+56.27 | 57.77 | RT |
| • Station 411+43.48 (KD) | 4.13 | LT |
| • Station 411+47.88 (KD) | 5.19 | RT |

Should any additional conflicts be encountered during construction requiring adjustment and/or relocation to the aforementioned utility's existing facilities, the necessary relocation work shall be completed by the contractor, as directed by the Engineer.

Delmarva Power & Light-Electric Distribution

Delmarva Power & Light maintains aerial facilities along the length of the project.

There are no adjustments or relocations anticipated to be required for the facility described in item 1 above. If an adjustment or relocation is found to be required, the length of time required for the work will vary depending on the nature of the adjustment or relocation. This work would also be reimbursable to the utility company and require a notice to proceed by DelDOT prior to the utility company performing any work.

Any existing facilities that are comprised of hazardous materials will be removed by the company. Any existing facilities containing hazardous materials will be purged by the company.

Delmarva Power - Gas

Delmarva Power – Gas maintains facilities along the outside of SR141 in the northbound and southbound direction. There are two crossings of SR141 as follows:

1. At approximately Station N245+60.20 enclosed in a 12" casing. The cover in the area of the crossing is less than four feet. The contractor shall use caution when excavate in this area.
2. At approximately Station N261+50.00 there is an uncased 6" crossing.

There are no adjustments or relocations anticipated to be required for the facility described in item 1 above. If an adjustment or relocation is found to be required, the length of time required for the work will vary depending on the nature of the adjustment or relocation. This work would also be reimbursable to the utility company and require a notice to proceed by DelDOT prior to the utility company performing any work.

Any existing facilities that are comprised of hazardous materials will be removed by the company. Any existing facilities containing hazardous materials will be purged by the company.

Verizon-Communications

Verizon Communications maintains the following facilities within the project limits:

1. A 12-4" CNDT Bank from Sta. N218+00 to N266+50.
2. Verizon maintain a 12-4" CNDT Bank, 6-4" CNDT Bank, 8-4" CNDT Bank, and two 4-4" CNDT Bank along SR48.
3. An aerial fiber west of the roadway from Sta. S264+00 to Sta S266+00
4. Two copper cables that cross under SR141 around Sta. N269+00. The cables continue under the multi-use path from Sta. N265+00 to SR52.
5. Along SR52 there is a 20-4" CNDT duct bank along with two 4-4" CNDT Bank.

Verizon Communications proposes the following adjustments and/or relocation to its existing facilities:

1. Verizon manhole located at Sta. N226+91.27 offset 58.52 right will need to be adjusted this will completed by Verizon crews as part of phase 5.
2. Verizon manhole located on SR48 Sta. 26+36.09 offset 16.51 right will need to be adjusted this will completed by Verizon crews as part of phase 5.

Adjustments should be arranged with Verizon by the Contractor during the construction of the project.

There are no additional anticipated conflicts with the proposed work. Should any additional conflicts be encountered during construction requiring adjustment and/or relocation to the aforementioned utility's existing facilities, the necessary relocation work shall be accomplished by the respective company's forces, as directed by the Engineer. If an adjustment or relocation is found to be required, the length of time required for the work will vary depending on the nature of the adjustment or relocation.

Any existing facilities that are comprised of hazardous materials will be removed by the company. Any existing facilities containing hazardous materials will be purged by the company.

DelDOT Fiber Optics

DelDOT maintains the following facilities within the project limits:

1. Fiber Optic lines along the right side of SR141 from Sta. N218+00 to approximately Sta. N296+00 where it cross under the roadway and continues under along the outside of the roadway from Sta. 295+75 to limit of the project.
2. There is an additional fiber crossing of SR141 at approximately

Statement of work to be completed:

In advance of Phase 3 and the placement of the haul road the contractor will need to temporarily relocate the DelDOT Fiber Optic Lines aerially from Station N228+00 to Station N255+00. Upon removal of the haul road the contractor will need to relocate the fiber optic lines underground. Prior to the beginning of the contractor will need to contact DelDOT Traffic 30 days in advance of the start of work.

The following junction box adjustments shall be made by the contractor and coordinated with DelDOT Traffic:

- Station N255+61.21 58.288 RT
- Station N259+50.65 45.08 RT
- Station N262+95.52 46.34 RT
- Station N266+74.05 40.75 RT
- Station N268+77.61 41.45 RT
- Station N270+49.47 41.83 RT
- Station N273+72.92 41.38 RT

Should any additional conflicts be encountered during construction requiring adjustment and/or relocation to the aforementioned utility's existing facilities, the necessary relocation work shall be completed by the contractor, as directed by the Engineer.

General Notes

1. The Utility Company's forces will perform any additional relocations/adjustments that may be necessary during construction of the project. The time to complete any additional relocations/adjustments will depend upon the nature of the work, the required advance notice to the Utility Company, the need for the Department's Contractor to stake out the right of way or proposed work, and any work that needs to be done by the Department's Contractor in advance of the utility relocation/adjustment.
2. 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 purposes for his equipment and, if necessary, make arrangements directly with utility companies for field adjustments for adequate clearances.

UTILITY STATEMENT

Contract Number T201706102

April 14, 2017

Page 4 of 5

3. It is understood and agreed that the contractor has considered in his bid all permanent and temporary utility appurtenances in their present or relocated positions as shown on the plans or described in the utility statement and/or are readily discernible and that no additional compensation will be allowed for any delays, inconvenience, or damage sustained by him/her to any interference from the utility facilities and appurtenances or the operation of moving the utilities, except that the contractor may be granted an equitable extension of time.
4. The Department's Contractor is responsible for rough grading as required by the roadway construction prior to the utility companies placing their proposed facilities unless indicated on the plans and/or outlined elsewhere in these specifications.
5. The Contractor shall follow all requirements of the Delaware Code, Title 26, Chapter 8. Underground Utility Damage Prevention And Safety. Chapter 8 includes, among other requirements, Section 806. Duties of Excavators which contains the requirement for the Contractor to excavate prudently and carefully and to take all reasonable steps necessary to properly protect, support and backfill underground utility lines. This protection shall include, but may not be limited to, hand digging within the limits of the planned excavation or demolition, starting 2 feet of either side of the extremities of the underground utility line for other than parallel type excavations and at reasonable distances along the line of excavation for parallel type excavations.
6. The Contractor shall note that the Delaware Code, Chapter 74B, Section 7405B requires notification to and mutually agreeable measures from the public utility for any person intending to carry on any function, activity work or operation within dangerous proximity of any high voltage overhead line.
7. As outlined in Chapter 3 of the DelDOT Utilities Manual, utilities are responsible for obtaining all required permits from municipal, State and federal government agencies and railroads. This includes but is not limited to water quality permits/DNREC Water Quality Certification, DNREC Subaqueous Lands/Wetlands permits, DNREC Coastal Zone Consistency Certification, County Floodplain permits (New Castle County only), U.S. Coast Guard permits, US Army Corps 404 permits, sediment and erosion permits, and railroad crossing permits.
8. Utility companies are required to restore any areas disturbed in conjunction with their relocation work. If an area is disturbed by a utility company and is not properly restored, the Department may have the highway contractor perform the necessary restoration. Any additional costs incurred as a result will be forwarded to the utility company.

NOTE: Coordination and cooperation among the utilities and the Department'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.

NAME	COMPANY	PHONE
Carmen Hunter	Artesian Water Company	302-453-7153

Ted Waugh	Delmarva Power - GAS	302-429-3706
James Bunting	DelDOT Traffic	302-222-5970
Mr. Mike Foster	Lighttower Fiber Networks	585-743-1731
David Burgin	PSE&G	856-339-1595
Angel Collazo	Delmarva Power – Electric Distribution	302-454-4370
Mr. George Zang	Verizon	302-422-1238
David Beattie	City of Wilmington	302-576-3082

Prepared and Recommended by:


Joseph Hofstee/AECOM

5/9/17
DATE

Approved as to form by:


Utilities Section, DelDOT

5/8/17
DATE

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

CERTIFICATE OF RIGHT-OF-WAY STATUS

STATE PROJECT NO. T201706102

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

**PAVE & REHABILITATION, CENTRE ROAD
SR 141 FROM LANCASTER PIKE TO KENNETT PIKE**

NEW CASTLE COUNTY

Certificate of Right-of-Way Status – 100%

Level 1

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

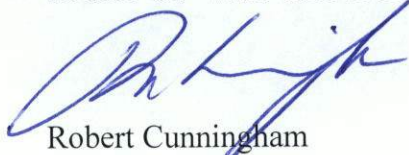
All project construction or work shall be performed within existing rights of way and permanent easements; and,

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

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

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

RIGHT OF WAY SECTION


Robert Cunningham
Chief, Right of Way

May 18, 2017



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

JENNIFER COHAN
SECRETARY

July 7, 2017

ENVIRONMENTAL REQUIREMENTS

FOR
State Contract No. T201706102
Federal Aid No.: ESTP-N271(05)

Contract Title: Rehabilitation of Centre Road – Route 141

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.

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

GENERAL REQUIREMENTS:

1. All construction debris, excavated material, brush, rocks, and refuse incidental to such work shall be placed either on shore above the influence of flood waters or on some suitable dumping ground.
2. That effort shall be made to keep construction debris from entering adjacent waterways or wetlands. Any debris that enters those areas shall be removed immediately.
3. The disposal of trees, brush, and other debris in any stream corridor, wetland, surface water, or drainage area is prohibited.



4. DelDOT Environmental Studies Section (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.: T201706102

Federal Aid No.: ESTP-N271(05)

Project Title: Rehabilitation of Centre Road - Route 141

The following railroad companies maintain facilities within the contract limits:

- | | |
|--|---|
| ☐ Amtrak | ☐ Maryland & Delaware |
| ☐ CSX | ☐ Norfolk Southern |
| ☐ Delaware Coast Line | ☐ Wilmington & Western |
| ☐ East Penn | ☒ 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. Perrine
DelDOT Railroad Program Manager

8May,2017

DATE

BID PROPOSAL FORMS
CONTRACT T201706102.01
FEDERAL AID PROJECT ESTP-N271(05)

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 T201706102.01

- Name of Contractor

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 1
DATE:

CONTRACT ID: T201706102.01 PROJECT(S): ESTP-N271(05)

All figures must be typewritten.

CONTRACTOR :

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

0010	201000 CLEARING AND GRUBBING	LUMP	LUMP	
0020	202000 EXCAVATION AND EMBANKMENT	8000.000 CY		
0030	202001 ROCK EXCAVATION FOR ROADWAY	40.000 CY		
0040	202003 UNDERCUT EXCAVATION	1185.000 CY		
0050	202004 UNDERCUT EXCAVATION, PATCHING	1185.000 CY		
0060	204000 TEST HOLE	60.000 CY		
0070	209001 BORROW, TYPE A	2335.000 CY		
0080	209005 FURNISHING BORROW, TYPE C FOR PIPE AND UTILITY TRENCH BACKFILL	921.000 CY		
0090	209006 BORROW, TYPE F	3635.000 CY		

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS CTS	BID AMOUNT DOLLARS CTS
0100	211000 REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LUMP	LUMP	
0110	211001 REMOVAL OF PORTLAND CEMENT CONCRETE PAVEMENT, CURB AND SIDEWALK	83455.000 SY		
0120	301001 GRADED AGGREGATE BASE COURSE, TYPE B	7929.000 CY		
0130	301002 GRADED AGGREGATE BASE COURSE, TYPE B, PATCHING	186.000 CY		
0140	401005 SUPERPAVE TYPE C, PG 64-22 (CARBONATE STONE)	701.000 TON		
0150	401029 SUPERPAVE TYPE C, PG 64-22, PATCHING	38.000 TON		
0160	401030 SUPERPAVE TYPE B, PG 64-22, PATCHING	58.000 TON		
0170	401031 SUPERPAVE TYPE BCBC, PG 64-22, PATCHING	114.000 TON		
0180	401046 SUPERPAVE TYPE C, PG 76-22 (NON-CARBONATE STONE)	3464.000 TON		
0190	402000 BITUMINOUS CONCRETE PATCHING	42722.000 SYIN		

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS CTS	BID AMOUNT DOLLARS CTS
0200	501006 PORTLAND CEMENT CONCRETE PAVEMENT, 12"	77258.000 SY		
0210	503001 PATCHING PCC PAVEMENT, 6' TO 15', TYPE A	471.000 SY		
0220	503006 DOWEL BARS	407.000 EACH		
0230	601033 REINFORCED CONCRETE PIPE, 18", CLASS IV	156.000 LF		
0240	602002 DRAINAGE INLET, 34" X 18"	16.000 EACH		
0250	602003 DRAINAGE INLET, 34" X 24"	1.000 EACH		
0260	602009 DRAINAGE INLET, 72" X 24"	1.000 EACH		
0270	602067 CONVERTING DRAINAGE INLET TO JUNCTION BOX	25.000 EACH		
0280	602100 REPLACE DRAINAGE INLET GRATE(S)	144.000 EACH		
0290	602130 ADJUSTING AND REPAIRING EXISTING DRAINAGE INLET	152.000 EACH		

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 4
DATE:

CONTRACT ID: T201706102.01 PROJECT(S): ESTP-N271(05)

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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS CTS	BID AMOUNT DOLLARS CTS
0300	602132 ADJUSTING AND REPAIRING EXISTING MANHOLE	2.000 EACH		
0310	701012 P.C.C. CURB, TYPE 1-6	8875.000 LF		
0320	701014 P.C.C. CURB, TYPE 2	5237.000 LF		
0330	701015 I.P.C.C. CURB AND GUTTER, TYPE 1-2	138.000 LF		
0340	701017 I.P.C.C. CURB AND GUTTER, TYPE 1-6	12801.000 LF		
0350	701022 I.P.C.C. CURB AND GUTTER, TYPE 3-6	1128.000 LF		
0360	702000 TRIANGULAR CHANNELIZING ISLANDS	8135.000 SF		
0370	705001 PCC SIDEWALK, 4"	12862.000 SF		
0380	705002 PCC SIDEWALK, 6"	2633.000 SF		
0390	705007 SIDEWALK SURFACE DETECTABLE WARNING SYSTEM	622.000 SF		

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

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DATE:

CONTRACT ID: T201706102.01 PROJECT(S): ESTP-N271(05)

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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS CTS	BID AMOUNT DOLLARS CTS
0400	705504 BRICK AND/OR BLOCK SIDEWALK	3544.000 SF		
0410	705528 TEMPORARY CURB RAMP	11.000 EACH		
0420	708001 GEOTEXTILES, STABILIZATION	11589.000 SY		
0430	708002 GEOTEXTILES, SEPARATION	12245.000 SY		
0440	709001 PERFORATED PIPE UNDERDRAINS, 6"	15030.000 LF		
0450	710002 ADJUST WATER VALVE BOXES	5.000 EACH		
0460	720021 GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	4156.000 LF		
0470	720022 GALVANIZED STEEL BEAM GUARDRAIL, TYPE 2-31	158.000 LF		
0480	720023 GALVANIZED STEEL BEAM GUARDRAIL, TYPE 3-31	319.000 LF		
0490	720031 GUARDRAIL MOUNTED RAILING	2185.000 LF		

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

PAGE: 6
DATE:

CONTRACT ID: T201706102.01 PROJECT(S): ESTP-N271(05)

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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS CTS	BID AMOUNT DOLLARS CTS
0500	721000 GUARDRAIL END TREATMENT, TYPE 1-31, TEST LEVEL 2	10.000 EACH		
0510	721004 GUARDRAIL END TREATMENT, TYPE 3-31	2.000 EACH		
0520	721006 END ANCHORAGE 31	10.000 EACH		
0530	722001 HIGH TENSION CABLE BARRIER	1771.000 LF		
0540	722002 HIGH TENSION CABLE BARRIER END TERMINAL	2.000 EACH		
0550	727000 CHAIN LINK FENCE	935.000 LF		
0560	760002 BIKE-FRIENDLY RUMBLE STRIPS, BITUMINOUS PAVEMENT	1286.000 LF		
0570	760003 BIKE-FREINDLY RUMBLE STRIPS, CONCRETE	10920.000 LF		
0580	760007 RUMBLE STRIPS, CONCRETE	13177.000 LF		
0590	760010 PAVEMENT MILLING, BITUMINOUS CONCRETE PAVEMENT	53996.000 SYIN		

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

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CONTRACT ID: T201706102.01 PROJECT(S): ESTP-N271(05)

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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0600	762000 SAW CUTTING, BITUMINOUS CONCRETE	1371.000				
		LF				
0610	762001 SAW CUTTING, CONCRETE, FULL DEPTH	2032.000				
		LF				
0620	763000 INITIAL EXPENSE/DE-MOBILIZATION	LUMP	LUMP			
0630	763501 CONSTRUCTION ENGINEERING	LUMP	LUMP			
0640	763508 PROJECT CONTROL SYSTEM DEVELOPMENT PLAN	LUMP	LUMP			
0650	763509 CPM SCHEDULE UPDATES AND/OR REVISED UPDATES	19.000				
		EAMO				
0660	763599 FIELD OFFICE, SPECIAL II	19.000				
		EAMO				
0670	801000 MAINTENANCE OF TRAFFIC	LUMP	LUMP			
0680	802003 ARROW PANELS TYPE C	1826.000				
		EADY				
0690	803001 FURNISH AND MAINTAIN PORTABLE CHANGEABLE MESSAGE SIGN	494.000				
		EADY				

DELAWARE DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

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CONTRACT ID: T201706102.01 PROJECT(S): ESTP-N271(05)

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS CTS	BID AMOUNT DOLLARS CTS
0700	804001 FURNISH AND MAINTAIN PORTABLE LIGHT ASSEMBLY (FLOOD LIGHTS)	557.000 EADY		
0710	805001 PLASTIC DRUMS	128129.000 EADY		
0720	806001 TRAFFIC OFFICERS	2160.000 HOUR	75.00000	162000.00
0730	808002 FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	180.000 EADY		
0740	809001 INSTALL TEMPORARY IMPACT ATTENUATOR	7.000 EACH		
0750	809004 FURNISH TEMPORARY IMPACT ATTENUATOR - NON-GATING, REDIRECTIVE, TEST LEVEL 2	5.000 EACH		
0760	809006 RELOCATE TEMPORARY IMPACT ATTENUATOR	2.000 EACH		
0770	810001 TEMPORARY WARNING SIGNS AND PLAQUES	60115.000 EADY		
0780	811007 FLAGGER, NEW CASTLE COUNTY, FEDERAL	12192.000 HOUR		
0790	811016 FLAGGER, NEW CASTLE COUNTY, FEDERAL, OVERTIME	3048.000 HOUR		

DELAWARE DEPARTMENT OF TRANSPORTATION
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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS CTS	BID AMOUNT DOLLARS CTS
0800	813001 TEMPORARY BARRICADES, TYPE III	36672.000 LFDY		
0810	813500 PEDESTRIAN CHANNELIZING BARRICADE	390246.000 LFDY		
0820	813501 TEMPORARY SIDEWALK, TYPE 2 (BOARDWALK)	237.000 LF		
0830	817002 PERMANENT PAVEMENT STRIPING, SYMBOL/LEGEND, ALKYD-THERMOPLASTIC	719.000 SF		
0840	817003 TEMPORARY MARKINGS, PAINT, 4"	59639.000 LF		
0850	817004 TEMPORARY MARKINGS, PAINT, SYMBOL/LEGEND	509.000 SF		
0860	817005 PERMANENT PAVEMENT STRIPING, ALKYD-THERMOPLASTIC, 5"	126.000 LF		
0870	817006 PERMANENT PAVEMENT STRIPING, ALKYD-THERMOPLASTIC, 12"	1314.000 LF		
0880	817007 RETROREFLECTIVE PREFORMED PATTERNED MARKINGS, 12"	178.000 LF		
0890	817009 TEMPORARY MARKINGS, TAPE, 4"	31616.000 LF		

DELAWARE DEPARTMENT OF TRANSPORTATION
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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS CTS	BID AMOUNT DOLLARS CTS
0900	817010 TEMPORARY MARKINGS, TAPE, WORDS/SYMBOLS	166.000 SF		
0910	817012 RETROREFLECTIVE PREFORMED PATTERNED MARKINGS, SYMBOL/LEGEND	819.000 SF		
0920	817013 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, WHITE/YELLOW, 5"	59482.000 LF		
0930	817014 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, WHITE/YELLOW, 10"	3037.000 LF		
0940	817015 PREFORMED RETROREFLECTIVE THERMOPLASTIC MARKINGS, BIKE SYMBOL	12.000 EACH		
0950	817018 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, BLACK, 3"	17610.000 LF		
0960	817019 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, BLACK, 5"	3100.000 LF		
0970	817020 RETROREFLECTIVE PREFORMED PATTERNED MARKINGS, 5"	36.000 LF		
0980	817024 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, BLACK, 9"	2589.000 LF		

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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS CTS	BID AMOUNT DOLLARS CTS
0990	817025 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, BLACK, 14" LF	212.000		
1000	817027 RAISED/RECESSED PAVEMENT MARKER	400.000		
		EACH		
1010	817031 REMOVAL OF PAVEMENT STRIPING	19824.000		
		SF		
1020	817032 REMOVAL OF PAVEMENT MARKING TAPE	16637.000		
		SF		
1030	817500 PREFORMED THERMOPLASTIC DECORATIVE PAVEMENT SYSTEM	7609.000		
		SF		
1040	819016 INSTALLATION OF 4" DIAMETER HOLE, LESS THAN OR EQUAL TO 6" DEPTH	32.000		
		EACH		
1050	819017 INSTALLATION OF 4" DIAMETER HOLE, GREATER THAN 6" DEPTH	1.000		
		EACH		
1060	819018 INSTALLATION OR REMOVAL OF TRAFFIC SIGN(S) ON SINGLE SIGN POST	368.000		
		EACH		
1070	819019 INSTALLATION OR REMOVAL OF TRAFFIC SIGN(S) ON MULTIPLE SIGN POSTS	459.000		
		SF		

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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1080	825001 TUBULAR MARKERS	520.000				
	EACH					
1090	830001 CONDUIT JUNCTION WELL, TYPE 1, 20"X20"	1.000				
	PRECAST CONCRETE	EACH				
1100	830002 CONDUIT JUNCTION WELL, TYPE 4, 20"X42"	4.000				
	1/2" PRECAST CONCRETE	EACH				
1110	830004 CONDUIT JUNCTION WELL, TYPE 7, 36"X60"	3.000				
	PRECAST POLYMER CONCRETE	EACH				
1120	830005 CONDUIT JUNCTION WELL, TYPE 11, PRECAST/POLYMER	7.000				
	LID-FRAME	EACH				
1130	830006 CONDUIT JUNCTION WELL, TYPE 14, PRECAST CONCRETE/POLYMER	1.000				
	LID-FRAME	EACH				
1140	830007 CONDUIT JUNCTION WELL, TYPE 15, PRECAST CONCRETE/ POLYMER	8.000				
	LID-FRAME	EACH				
1150	830008 ADJUST OR REPAIR EXISTING CONDUIT JUNCTION WELL	12.000				
		EACH				
1160	830011 FURNISH & INSTALL FRAME AND LID FOR JUNCTION WELL, TYPE 1	2.000				
		EACH				

DELAWARE DEPARTMENT OF TRANSPORTATION
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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS CTS	BID AMOUNT DOLLARS CTS
1170	831003 FURNISH & INSTALL UP TO 4" SCHEDULE 80 PVC CONDUIT (OPEN CUT)	450.000 LF		
1180	831004 FURNISH & INSTALL UP TO 4" SCHEDULE 80 PVC CONDUIT (TRENCH)	2881.000 LF		
1190	831006 FURNISH & INSTALL UP TO 4" GALVANIZED STEEL CONDUIT (TRENCH)	313.000 LF		
1200	831007 FURNISH AND INSTALL UP TO 4" GALVANIZED STEEL CONDUIT (BORE)	192.000 LF		
1210	833001 BONDING & GROUTING EXISTING JUNCTION WELL	22.000 EACH		
1220	834005 POLE BASE, TYPE 4	12.000 EACH		
1230	846001 FURNISH & INSTALL LOOP WIRE 1-CONDUCTOR #14 AWG ENCASED IN 1/4" FLEXIBLE TUBING IN A LOOP SAWCUT	11077.000 LF		
1240	905001 SILT FENCE	11297.000 LF		
1250	905004 INLET SEDIMENT CONTROL, DRAINAGE INLET	65.000 EACH		
1260	905005 INLET SEDIMENT CONTROL, CURB INLET	118.000 EACH		

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CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
1270	907017 COMPOST FILTER LOGS	54.000 LF				
1280	908002 TOPSOIL	176.000 SY				
1290	908004 TOPSOIL, 6" DEPTH	57371.000 SY				
1300	908014 PERMANENT GRASS SEEDING, DRY GROUND	57371.000 SY				
1310	908017 TEMPORARY GRASS SEEDING	2913.000 SY				
1320	908020 EROSION CONTROL BLANKET MULCH	10873.000 SY				
1330	908023 STABILIZED CONSTRUCTION ENTRANCE	355.000 TON				
	SECTION 0001 TOTAL					
	TOTAL BID					

SPECIAL BIDDING PROCEDURE

THE BELOW FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID

Contractor: _____

The dollar amount for all work to be performed under the proposal. A = _____
(Total Bid Amount of Section 0001)

Total number of calendar days (including adverse Weather Days). _____

Number of calendar days above multiplied by \$45,000.00 B = \$ _____

Price for comparison of bids - TOTAL \$ _____
TOTAL OF "A" ABOVE, PLUS "B" ABOVE

Total number of calendar days proposed by the bidder for the anticipated adverse weather included within the total number of calendar days specified in part B. _____

**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 that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor 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.

CERTIFICATION

Contract No. T201706102.01
Federal Aid Project No. ESTP-N271(05)

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.

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

By submission of this proposal, each 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. T201706102.01, 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