

# STATE OF DELAWARE



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

## DEPARTMENT OF TRANSPORTATION

### BID PROPOSAL

for

### CONTRACT T201401101.01

FEDERAL AID PROJECT NO. ESTP-N356 (14)

CFDA NO. 20.205

SR72, Advanced Utility Relocation from McCoy Road to SR71

New Castle County

ADVERTISEMENT DATE: October 8, 2018

COMPLETION TIME: 719 Calendar Days

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

Bids will be received in the Bidder's Room at the Delaware Department of Transportation's Administration Building, 800 Bay Road, Dover, Delaware prior to 2:00 P.M. local time **October 30, 2018**

**Contract No.T201401101.01**  
**Federal Aid Project No. ESTP-N356 (14)**

**SR72, Advanced Utility Relocation from McCoy Road to SR71**  
New Castle County

**GENERAL DESCRIPTION**

LOCATION

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

DESCRIPTION

The improvements consist of furnishing all labor and materials for this contract. This project involves improvements to widen SR 72 from one lane in each direction to two lanes in each direction. The main focus of the project is to add two-way left turn lanes. The project will also include the addition of bike lanes and a sidewalk as well as other incidental construction in accordance with the location, notes and details shown on the plans and as directed by the Engineer.

COMPLETION TIME

All work on this contract must be complete within 719 Calendar Days. The Contract Time includes an allowance for 120 Weather Days. It is the Department's intent to issue a Notice to Proceed such that work starts on or about December 10, 2018.

PROSPECTIVE BIDDERS NOTES:

1. BIDDERS MUST BE REGISTERED with DelDOT and request a cd of the official plans and specifications in order to submit a bid. Contact DelDOT at [dot-ask@state.de.us](mailto:dot-ask@state.de.us), or (302) 760-2031. Bids will be received in the Bidder's Room at the Delaware Department of Transportation's Administration Building, 800 Bay Road, Dover, Delaware prior to 2:00 P.M. local time October 30, 2018 unless changed via addendum.
2. QUESTIONS regarding this project are to be e-mailed to [dot-ask@state.de.us](mailto:dot-ask@state.de.us) no less than six business days prior to the bid opening date in order to receive a response. Please include T201401101.01 in the subject line. Responses to inquiries are posted on-line at <http://www.bids.delaware.gov>.
3. THE BID PROPOSAL incorporates a cd containing **Expedite, version 5.9a** and its installation file. Bidders are to use the cd provided to enter their bid amounts into the Expedite file. The Expedite bid file must be printed and submitted in paper form along with the cd and other required documents prior to the Bid due date and time.
4. SURETY BOND - Each proposal must be accompanied by a deposit of either surety bond or security for a sum equal to at least 10% of the bid.
5. DRUG TESTING - Regulation 4104; The state Office of Management and Budget has developed regulations that require Contractors and Subcontractors to implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds pursuant to 29 Del.C. §6908(a)(6). **Refer to the full REVISED requirements at the following link:** <http://regulations.delaware.gov/register/december2017/final/21 DE Reg 503 12-01-17.htm>

Note a few of the requirements;

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

7. No RETAINAGE will be withheld on this contract.
8. EXTERNAL COMPLAINT PROCEDURE can be viewed on DeIDOT's Website at; <http://regulations.delaware.gov/AdminCode/title2/2000/2500/2501.shtml> or you may request a copy by calling (302) 760-2555.
9. AUGUST 2016 STANDARD SPECIFICATIONS apply to this contract. The Contractor shall make himself aware of any revisions and corrections (Supplemental Specifications, if any) and apply them to the applicable item(s) of this contract. The 2016 Standard Specifications can be [viewed here](#).
- 9a. FLATWORK CONCRETE TECHNICIAN CERTIFICATION TRAINING:  
Section 501.03, 503.03, 505.03, 610.03, 701.03 and 702.03 of the 2016 Standard Specifications require contractor's to provide an American Concrete Institute (ACI) or National Ready Mix Concrete Association (NRMCA) certified concrete flatwork technician to supervise all finishing of flatwork concrete. Concrete flatwork certification will be effective starting on June 1, 2018.
10. BREAKOUT SHEETS MUST be submitted either with your bid documents; or within seven (7) calendar days following the bid due date by the lowest apparent bidder. Refer to instructions adjacent to the Breakout Sheets in this document.
11. The attached Right of Way Statement is inclusive and will be used for this project (T201401101.01), as well as Project T200601102.01.

Contract No.T201401101.01  
CONSTRUCTION ITEMS UNITS OF MEASURE

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

\*Not used for units of measurement for payment.

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

SUBCONTRACTOR LICENSE: 29 DEL. C. §6967:

(c) Any contractor that enters a public works contract must provide to the agency to which it is contracting, within 30 days of entering such public works contract, copies of all occupational and business licenses of subcontractors and/or independent contractors that will perform work for such public works contract. However, if a subcontractor or independent contractor is hired or contracted more than 20 days after the contractor entered the public works contract the occupational or business license of such subcontractor or independent contractor shall be provided to the agency within 10 days of being contracted or hired.

DIFFERING SITE CONDITIONS,

SUSPENSIONS OF WORK and SIGNIFICANT CHANGES IN THE CHARACTER OF WORK:

Differing site conditions: During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the contract or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the contract are encountered at the site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before they are disturbed and before the affected work is performed.

Upon written notification, the engineer will investigate the conditions, and if he/she determines that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the contract, an adjustment, excluding loss of anticipated profits, will be made and the contract modified in writing accordingly. The engineer will notify the contractor of his/her determination whether or not an adjustment of the contract is warranted.

No contract adjustment which results in a benefit to the contractor will be allowed unless the contractor has provided the required written notice.

No contract adjustment will be allowed under their clause for any effects caused on unchanged work.

Suspensions of work ordered by the engineer: If the performance of all or any portion of the work is suspended or delayed by the engineer in writing for an unreasonable period of time (not originally anticipated, customary or inherent to the construction industry) and the contractor believes that additional compensation and/or contract time is due as a result of such suspension or delay, the contractor shall submit to the engineer in writing a request for adjustment within 7 calendar days of receipt of the notice to resume work. The request shall set forth the reasons and support for such adjustment.

Upon receipt, the engineer will evaluate the contractor's request. If the engineer agrees that the cost and/or time required for the performance of the contract has increased as a result of such suspension and the suspension was caused by conditions beyond the control of and not the fault of the contractor, its suppliers, or subcontractors at any approved tier, and not caused by weather, the engineer will make an adjustment (excluding profit) and modify the contract in writing accordingly. The engineer will notify the contractor of his/her determination whether or not an adjustment of the contract is warranted.

No contract adjustment will be allowed unless the contractor has submitted the request for adjustment within the time prescribed.

No contract adjustment will be allowed under this clause to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided for or excluded under any other term or condition of this contract.

Significant changes in the character of work: The engineer reserves the right to make, in writing, at any time during the work, such changes in quantities and such alterations in the work as are necessary to satisfactorily complete the project. Such changes in quantities and alterations shall not invalidate the contract nor release the surety, and the contractor agrees to perform the work as altered.

If the alterations or changes in quantities significantly change the character of the work under the contract, whether or not changed by any such different quantities or alterations, an adjustment, excluding loss of anticipated profits, will be made to the contract. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made either for or against the contractor in such amount as the engineer may determine to be fair and equitable.

The term "significant change" shall be construed to apply only to the following circumstances:

- (A) When the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction or
- (B) When a major item of work, as defined elsewhere in the contract, is increased in excess of 125 percent or decreased below 75 percent of the original contract quantity. Any allowance for an increase in quantity shall apply only to that portion in excess of 125 percent of original contract item quantity, or in case of a decrease below 75 percent, to the actual amount of work performed.

CONFLICT WITH FEDERAL STATUTES OR REGULATIONS:

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

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

FEDERAL LABOR AND EMPLOYMENT REQUIREMENTS

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

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

CONVICT PRODUCED MATERIALS:

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

TO REPORT BID RIGGING ACTIVITIES:

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

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

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

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

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

Goals for Minority Participation In  
Each Trade

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

Goals for Female Participation In  
Each Trade

6.9% (Entire State)

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

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

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

REV. 11-3-80

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

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

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

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

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

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

\* \* \* \* \*

#### TRAINING SPECIAL PROVISIONS

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

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

The number of trainees to be trained under the special provision will be 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 10 % 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 Finance, DelDOT, 800 Bay Road, Dover, Delaware 19901, and Email a copy to [dot-ask@state.de.us](mailto:dot-ask@state.de.us). The reconsideration official will not have played any role in the original determination that the bidder did not document sufficient good faith efforts.

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

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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 contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.
4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

## **VI. SUBLETTING OR ASSIGNING THE CONTRACT**

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

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

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

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

## **VII. SAFETY: ACCIDENT PREVENTION**

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

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

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

### **VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS**

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

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

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

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

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

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

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

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

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

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

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

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

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

### **1. Instructions for Certification – First Tier Participants:**

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

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

\* \* \* \* \*

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

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

**2. Instructions for Certification - Lower Tier Participants:**

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

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

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

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

\* \* \* \* \*

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

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

\* \* \* \* \*

**XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

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

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

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

\* \* \* \* \*

### **CARGO PREFERENCE ACT**

#### Requirements in the Federal-aid Highway Program

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

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

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

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

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

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

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

**NOTE:**

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

\* \* \* \* \*

### **BUY AMERICA**

#### Requirements in the Federal-aid Highway Program

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

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

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

\* \* \* \* \*

## APPENDICES TO THE TITLE VI ASSURANCE

### APPENDIX A

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

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

**APPENDIX E**

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

**Pertinent Non-Discrimination Authorities:**

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

The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970,(42 U.S.C. § 460 D), (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 Part27;

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 AgeDiscrimination Act of 1975and Section 504 of the Rehabilitation Act of 1973,by expanding the defrnition 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. S 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 7618200

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

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

PREVAILING WAGES FOR HIGHWAY CONSTRUCTION EFFECTIVE MARCH 15, 2018

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

CERTIFIED: 08/02/2018

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

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

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

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

PROJECT: T201401101.01 SR72 Advanced Utility Relocation From McCoy Rd to SR71, New Castle County

GENERAL DECISION: DE180005 07/27/2018 DE5

State: DELAWARE

Construction Type: HIGHWAY

COUNTY: New Castle County in Delaware

HIGHWAY CONSTRUCTION PROJECTS

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

Modification Number	Publication Date	
0	07/27/2018	
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SUDE2018-002	03/15/2018	
	Rates	Fringes
Bricklayer	53.89	
Carpenter	54.62	
Cement Mason/Concrete Finisher	34.63	
ELECTRICIAN		
Electrician	68.70	
Line Worker	24.02	
Ironworker	63.68	
Laborer	43.30	
Millwright	17.20	
Painter	68.79	
Power Equipment Operator:		
Piledriver	70.92	
Power Equipment Operator	45.46	
Sheet Metal Worker	24.30	
Truck Driver	36.49	

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.  
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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](http://www.dol.gov/whd/govcontracts).

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

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

#### Union Rate Identifiers

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

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

#### Survey Rate Identifiers

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

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

#### Union Average Rate Identifiers

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

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

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

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

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

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

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

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

END OF GENERAL DECISION

APPLICABILITY OF DAVIS-BACON LABOR STANDARD PROVISIONS TO FLAGGERS

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

\* \* \* \* \*

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

GUIDELINES

HIGHWAY CONSTRUCTION

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

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

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

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

# **SPECIAL PROVISIONS**

**401502 - ASPHALT CEMENT COST ADJUSTMENT**

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

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

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

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

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

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

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

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

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

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

**NOTE:**

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

5/05/15

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

**.01 Description**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

<b>Table 4 - PWL Pay Adjustment Factors</b>		
<b>PWL</b>	<b>Pay Adjustment Factor (%) Column B</b>	<b>Pay Adjustment Factor (%) Column C</b>
100	+5	0
99	+4	-1
98	+3	-2
97	+2	-3
96	+1	-4
95	0	-5
94	-1	-6
93	-2	-7

92	-3	-8
91	-4	-9
PWL<91	PWL - 100	PWL - 100

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

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

- Degree of compaction of the in-place material

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

1. Calculate the core bulk specific gravity values from the subplot tests values, to the nearest 0.001 unit. Obtain the Theoretical maximum Specific Gravity values from the corresponding laboratory subplot tests.
2. Calculate the Degree of Compaction:  
Degree of Compaction =  
((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%.

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

<b>Table 5A: Compaction Price Adjustment Other<sup>1</sup> Locations</b>		
Degree of Compaction	Range	Pay Adjustment Factor (%)
>= 97.0	>= 96.75	-100*
96.5	96.26 – 96.74	-5
96.0	95.75 – 96.25	-3
95.5	95.26 – 95.74	-2
95.0	94.75 – 95.25	0
94.5	94.26 – 94.74	0
94.0	93.75 – 94.25	0
93.5	93.26 – 93.74	1
93.0	92.75 – 93.25	3
92.5	92.26 – 92.74	1
92.0	91.75 – 92.25	0
91.5	91.26 – 91.74	0
91.0	90.75 – 91.25	0
90.5	90.26 – 90.74	0
90.0	89.75 – 90.25	0
89.5	89.26 – 89.74	0
89.0	88.75 – 89.25	-1
88.5	88.26 – 88.74	-3
88.0	87.75 – 88.25	-5
87.5	87.26 – 87.74	-10
87.0	86.75 – 87.25	-15
86.5	86.26 – 86.74	-20
86.0	85.75 – 86.25	-25

85.5	85.26 – 85.74	-30
85.0	84.75 – 85.25	-40
84.5	84.26 – 84.74	-50
=< 84.0	=<84.25	-100*

\* or remove and replace at Engineer's discretion

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

**.04 Dispute Resolution.**

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

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

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

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

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

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

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

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

**Description.**

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

**Materials and Equipment.**

The following material shall be available to complete this work:

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

The following equipment shall be available to complete this work:

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

**Construction Method.**

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

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

**Performance Requirements.**

The Engineer will judge the patch on the following basis:

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

**Basis of Payment.**

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

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

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

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

**Structural Number Calculations**

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

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

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

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

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

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

**Example:**

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

Calculation:

For the Type B lift the calculation would be:

Existing HMA	$2 * 0.32 = 0.64$
GABC	$7 * 0.14 = \underline{0.98}$
	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	$7 * 0.14 = \underline{0.98}$
	2.52

06/05/14

**707500 - CHANNEL BED FILL**

**Description:**

This work consists of salvaging, stockpiling and placing natural channel bed fill (on-site material) or the furnishing, hauling, and placing similar natural channel bed fill (off-site material) in accordance with the notes and details on the Plans, the Special Provisions, and as directed by the Engineer.

**Materials and Construction Methods:**

The plan quantity includes the total volume of material necessary for Channel Bed Fill at the locations and dimensions as shown on the plans. This volume will be provided from on-site material, off-site material or a combination thereof. However, all on-site material must be utilized as Channel Bed Fill before any off-site material may be used. Off-site material shall not be used without the approval of the Engineer. It is the Contractor's responsibility to determine if sufficient quantity of Channel Bed Fill will be available on-site and to furnish additional materials as needed.

The material to be used for Channel Bed Fill shall be determined from the native channel bed material present at the project site and in portions of the existing stream immediately upstream and downstream. The existing natural channel bed material may consist of, but not limited to, natural sediments, silt, sand, gravel, pebbles, small stones and all like material and shall constitute the on-site material to be used as Channel Bed Fill. Any existing riprap material shall be excluded from use as Channel Bed Fill. The depth of material acceptable as Channel Bed Fill shall be determined in the field. The existing natural channel bed material shall be excavated from the existing channel bottom within the project limits prior to the removal of any existing substructure elements. Excavation shall be paid under its respective item, but completed in accordance with this item. On-site channel bottom materials shall be stockpiled on-site and kept separate from all other excavation or borrow materials. All stockpiles shall be properly stabilized.

If the volume of on-site material is inadequate, additional off-site material to be utilized as Channel Bed Fill shall have a coloration, shape and gradation similar in appearance to the native channel bed material. Any stone or gravel materials shall be naturally rounded riverbed material or gravel and shall be uncut. If gradation requirements are not provided in the Plans, the Contractor shall have a sieve analysis performed on a sample of the existing streambed material. This sample shall be taken from a location either directly upstream or downstream from each site where the Channel Bed Fill is to be placed and shall be a sample of the streambed surface armoring material, not an augered sample. The new stone shall match as closely as possible to the Dmin, D50, D90, and Dmax of the taken sample. The sample size shall consist of a minimum of 200 pieces of the existing streambed surface armoring materials. The results of the sieve analysis and the proposed gradation and sources of additional off-site material shall be submitted to the Engineer for approval.

In areas to receive Channel Bed Fill, the voids of the proposed riprap shall be filled using Borrow Type B prior to the placement of any Channel Bed Fill. The voids shall be filled such that the tops of some individual riprap stones are still visible. Borrow Type B shall be paid under its respective item. Once complete, Channel Bed Fill shall be placed at the locations and dimensions as shown on the plans.

**Method of Measurement:**

The quantity of Special Borrow for Channel Bed Fill will be measured by cubic yards of material placed and accepted.

**Basis of Payment:**

The quantity of Channel Bed Fill will be paid for at the Contract unit price per cubic yard. Price and payment will constitute full compensation for salvaging, stockpiling, maintenance of any stockpiles, furnishing, hauling, and installing all materials; for all sample gathering, sieve analysis and submittals associated with use of off-site material; and for all labor, equipment and other incidentals necessary to complete the work. Excavation of all natural streambed material shall be paid under its respective item. Furnishing and placement of Borrow Type B shall be paid under its respective item.

7/30/2018

**711501 - SANITARY SEWER SYSTEM**

**Description:**

Furnish, transport, provide bypass pumping, install, backfill using type C borrow, and test a sanitary sewer system in accordance with the Contract Documents, these Special Provisions, DeLDOT Standard Specifications, and requirements of the Standard Specifications of the Utility Owner (New Castle County). This work includes but is not limited to construction via open trench and jack and bore of gravity sewer pipe and sewer casing pipe, backfill using type C borrow, installation and adjustment of manholes, bypass pumping, pumping and hauling, gravity laterals, lateral cleanouts, and sewer plugs.

In case of any conflict between the notes and details on the Plans; Special Provisions; Standards and Specifications of the Utility Owner; the Standards and Specifications of the Utility Owner shall prevail. The Contractor shall obtain the Standards and Specifications of the Utility Owner and study for materials cost before submitting the bids. The Utility Owner of the sanitary sewer is New Castle County.

**General Requirements:** All work shall be subject to inspection and subsequent approval/disapproval of the engineer and the representative of the Utility Owner; and the contractor shall be required to correct the discrepancies at his/her expense.

Included in this work are the connections of all existing commercial, industrial, and residential sanitary sewer services to the new sanitary sewer system. All modifications to such services, as required by the present Standards and Specifications of the Utility Owner and all relocations of such services necessary to avoid conflicts with utilities and highway drainage facilities are included in the work. Since the exact locations of the conflicts cannot be determined prior to trench excavation operations, the Contractor must coordinate and schedule any required relocation efforts of each sanitary sewer connection on an individual basis with the Utility Owner and the property owner. The Contractor shall be responsible for locating all services and determining whether each service is active or abandoned. Locations shown on drawings were provided by the utility owner and may or may not reflect actual field conditions. All costs associated with determining locations and active/abandon status of the service laterals will be incidental to the contract. Coordinate all sanitary sewer construction activities with the Owner including, but not limited to, requests for system shut downs and inspections. Provide the Owner with reasonable time to respond to requests for information and coordination. Submit (3 weeks prior to beginning any Work) for approval of a plan describing the logical sequence for sanitary sewer shut-downs and tie-ins.

It is of prime importance that the Contractor, in the performance of his/her work, does not disrupt the operation of the existing sanitary sewer facilities in any manner or at any time, without the expressed prior approval of the Utility Owner. The Contractor shall construct, maintain and remove, following construction, such temporary bypasses as may be required during construction to maintain sanitary sewer facilities in service. In addition, Contractor shall pump and haul sewage as required to maintain sanitary sewer service. No separate payment will be made for such temporary bypasses or pumping and hauling.

The Contractor shall provide at least two (2) telephone numbers where his designated personnel can be reached 24 hours a day in case of an emergency. The Contractor shall provide temporary lighting for maintenance and repairs at night. The Contractor shall provide adequate standby equipment installed and ready for immediate operation and use in the event of an emergency or breakdown. One standby bypass pump system for each pump system utilized shall be installed at the bypass location ready for use in the event of primary pump system failure. Each stand-by pump system shall have an automatic start/stop control. The bypass pumping system shall be capable of bypassing the flow around the work area for satisfactory performance of work.

All lateral connections will be treated in the same manner as mainline sewers. Each will have a temporary sump, pump and stand-by pump to transfer flows to a mainline manhole. It is essential to the operation of the existing sanitary sewer system that there be no interruption in the flow of sanitary sewer throughout the duration of the project. To this end, the Contractor shall provide, maintain and operate all temporary facilities such as dams, plugs, pumping equipment (both primary and back-up units as required), conduits, all necessary power, and all other labor and equipment necessary to intercept the sewage flow before it reaches the point where it would interfere with his work, carry it past his work and return it to the existing sewer downstream of his work. Sewage shall be pumped from existing upstream manholes to downstream manholes.

The design, installation and operation of the bypass pumping system shall be the Contractor's responsibility. The bypass pumping system shall meet the requirements of all codes and regulatory agencies having jurisdiction. The Contractor shall provide all necessary means to safely convey the sewage around the work area. The Contractor will not be permitted to stop or impede the main flows under any circumstances. The Contractor shall maintain sanitary sewer flow around the work area in a manner that will not cause surcharging or damage of the existing sewer system and that will protect public and private property from damage and flooding.

Any and all emergency repairs required during the period of this Contract shall be the responsibility of the Contractor. In the event the Utility Owner is unable to contact the Contractor for the immediate emergency repair items of work, or in the event the Contractor does not take action when contacted within 24 hours, the Utility Owner reserves the right to attend to any and all emergency repair work items and to resubmit the costs directly to the Contractor for complete payment.

The installation requirements for the sanitary sewer system include both open-cut and jack and bore methodology for gravity sewers.

The contractor shall furnish all labor, supervision, material, tools, equipment, supplies, and services; and shall perform all Work necessary for the installation of a casing pipe by bore and jack methods. The casing pipe shall be constructed in accordance with the Contract Documents and the applicable laws, rules, ordinances, standards of New Castle County Special Services, the State of Delaware, Federal Government, OSHA 29CFR 1926, building codes, applicable criteria of ANSI A10.16-1995(r2001) (Safety Requirements for Tunnels, Shafts, and Caissons), and regulatory agencies, and specifications of the Owner.

#### **Materials:**

The requirements for the materials as applicable to the Contract are as noted below, unless otherwise stated on the Plans and/or required by the Utility Owner of the sewer system. The Contractor shall verify the compatibility of these materials specifications with the Utility Owner before placing order for the Contract. The Owner will have right to inspect Materials and reject any Materials that do not meet the applicable standards and specifications.

Provide all Materials to complete the Work including pipe, fittings, manholes, cleanouts, fill, plugs, and all other appurtenances necessary to make permanent connections to existing utility facilities of whatever material type encountered.

#### **Piping**

The Polyvinyl Chloride Pipe (PVC pipe) suitable for non pressure drainage of sewage and fittings shall be of SDR 26 of the nominal size required by the Plans or as required/approved by the Utility Owner.

All PVC pipe and fittings shall be manufactured in accordance with the latest version of the following ASTM Specifications:

1. ASTM D3034, "Standard Specification for Type PSM PVC Sewer Pipe and Fittings."
2. ASTM F679, "Standard Specification for PVC Large-Diameter Plastic Gravity Sewer Pipe and Fittings."
3. ASTM F1336, "Standard Specification for PVC Gasketed Sewer Fittings."
4. ASTM D3212, "Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals."

All PVC pipe joints shall be gasketed, bell-and-spigot, push-on type. Gaskets shall be part of a complete pipe section and furnished as such. Gaskets may be factory installed or field installed as recommended by the pipe manufacturer. Lubricant shall be as recommended by the pipe manufacturer. Provide elastomeric gasket joints in accordance with ASTM F477. All PVC non-pressure sewer pipe shall have a maximum standard dimension ratio (SDR) of 26. All PVC non-pressure sewer pipe shall have a pipe stiffness that equals or exceeds 115 lbs/in<sup>2</sup> (PSI).

Each pipe shall be marked at intervals of five (5) feet or less to designate compliance with applicable ASTM or AWWA specification. The pipe shall be as uniform as commercially practicable in color, capacity, density and other physical properties and provided by a single Contractor.

Lateral connection fittings shall be made using a manufactured "wye" connection, constructed of the same class and material as the gravity main to which they are connected.

Unless shown otherwise on the Plans or required by the owner, all commercial, industrial, and residential connections shall be constructed of the same class of material as the sewer mains to which they are connected. Minimum grade and size of the lateral pipes shall be as required by the Owner's Standards and Specifications.

### Pipe Appurtances

All pipe and lateral repair couplings suitable for non-pressure sewer repairs shall be manufactured in accordance with the following requirements:

Gaskets shall be accordance with the following requirements:

1. ASTM D 5926 - Standard Specification for Poly Vinyl Chloride (PVC) Gaskets for Drain, Waste, and Vent (DWV), Sewer, Sanitary, and Storm Plumbing Systems
2. ASTM C 1173 - Standard Specification for Flexible Transition Couplings for Underground Piping Systems
3. Hardness, Shore "A," Inst.  $\pm 5$ .....65
4. Tensile Strength, Min. psi .....1000
5. Elongation at Rupture, Min. %.....250
6. Tear Strength, Min.....150 lb/in.
7. Brittleness Temperature.....-40°F

Clamps shall be in accordance with the following requirements:

1. Manufactured to the requirements of CSA B602
2. Clamp Housing- 301 Stainless Steel
3. Clamp Band - 301 Stainless Steel
4. Clamp Screw - 305 Stainless Steel
5. Installation torque - 60 inch-pounds

Shear Rings shall be in accordance with the following requirements:

1. 0.012" Thick, 300 Series Stainless Steel
2. Width manufactured according to coupling width (1.50 inches, 2.13 inches, or 4.0 inches)
3. Length manufactured according to coupling diameter
4. Clamps spot welded in place

Coupling shall be in accordance with the following requirements:

1. ASTM C 1173 - standard specification for flexible transition couplings for underground piping systems
2. Maximum test pressure: 4.3 PSI
3. Maximum operating temperature: 140° F non-consistent

Sewer Plugs shall be in accordance with the following requirements:

1. Maximum test pressure: 4.3 PSI
2. Maximum operating temperature: 140° F non-consistent

### Backfill and Trenching

All trenching and backfill materials, including those not listed herein shall be included under this item.

Trench material shall match those shown on Contract Drawings and New Castle County Standard Details.

Use Borrow, Type C for backfilling conforming to the Contract Drawings and DelDOT Standard Details. For sewer bedding, aggregate material shall be in accordance with AASHTO M43 and shall be used where specified on the Drawings or as required by the Engineer. Aggregate material shall be furnished from a specific source or sources approved by the Engineer.

Warning tape for sanitary sewer shall be printed polyethylene plastic tape with a metallic core, manufactured specifically for warning and identification of buried utility lines. The tape shall be of a roll type, 6" minimum width, and color-coded for sewer (green), with warning and identification imprinted in bold black letters continuously and repeatedly over entire length of tape. The code and letter color shall be permanent and unaffected by moisture and other substances contained in trench backfill materials. Imprinted on the tape shall be "Caution, Buried Sewer Line Below", or a similar message as approved by the Engineer.

### Sanitary Sewer Manholes

Pre-cast manholes shall be provided as specified herein and as depicted on the Contract Drawings. References of specific product manufacturers may be used to depict a material style and quality expected for this project.

The quality of all materials, the process of manufacture, and the finished precast manhole or structure is subject to inspection by the Engineer. The Owner or Engineer may make such inspection at the place of manufacture, on the work after delivery or at both places. The Owner or Engineer may reject any precast manholes or structures at any time on account of failure to meet any of the specifications' requirements even though sample manhole sections may have been accepted as satisfactory at the place of manufacture.

The Owner reserves the right to core manholes either at the job site or point of delivery to validate strength of concrete and placement of steel. If cores fail to demonstrate the required strength and/or indicate incorrect placement of reinforcing steel, the Owner reserves the right to reject all sections not previously tested until conformance to these requirements is substantiated. Additional core testing will not result in an increase to the Contract Amount.

Locations, sizes, penetrations, depths and all other attributes of each manhole shall be confirmed by the Contractor prior to ordering. Provide manholes of 4,000 psi concrete, cementitious materials, aggregates and steel reinforcement conforming to ASTM C 478 for sewer manholes.

Manhole benches of new manholes shall be made at the manufacturing site using concrete conforming to the requirements for precast sections. At the discretion of the Engineer, manhole benches may be constructed in the field using concrete conforming to the requirements for precast sections or sewer brick and mortar. The manhole bench shall be smooth and sloped toward the channel at one inch per foot. The bench shall be coated with a cementitious crystalline waterproofing sealant.

Manhole channels of new manholes shall be precast, with a smooth, semicircular bottom that extends upward to the height of the pipe crown. At the discretion of the Engineer, manhole channels may be constructed in the field using sewer brick and mortar.

Manhole riser and/or base sections shall include properly located penetrations for making connections to sewer pipes. Unless otherwise depicted or permitted by the Engineer, provide 6 inches minimum distance between a joint in a manhole section and the nearest edge of an opening for a connecting sewer. The diameter of such openings shall not be more than 4 inches larger than the outside diameter of the pipe to be connected.

### Manhole Appurtenances

Manhole O-ring Gaskets and Sealing Compound shall be in accordance with the following requirements:

1. Joints between manhole sections shall be sealed with a flexible, watertight gasket that meets or exceeds ASTM C443.
2. Joints shall also include a joint sealing compound that meets or exceeds ASTM C990 and AASHTO M-198.
3. Provide trowelable grade butyl-rubber base backplaster material to seal exterior manhole joints and adjusting rings that meets or exceeds ASTM C990.

Pipe to Manhole Connectors shall be in accordance with the following requirements:

1. The design of the connector shall provide a flexible, watertight seal between the pipe and concrete structure and shall be integrally cast into the manhole unless otherwise specified.
2. The connector shall be made from materials that conform to Section 4, "Materials and Manufacture" of ASTM C-923 and F-2510 "Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures and Laterals", and the overall design will meet or exceed Section 7, "Test Methods and Requirements" of ASTM C-923.

3. The connector shall be sized specifically for the type of pipe being used and shall be installed in accordance with the recommendations of the manufacturer.
4. Any metal elements of the connector shall be non-magnetic Series 300 stainless steel.
5. "Boot-type" connectors shall not be used unless specified or reviewed by the Engineer.

Grade Adjustment Rings shall be in accordance with the following requirements:

1. Grade adjustment rings used in the public road right of way must be approved by DELDOT.
2. Precast concrete adjusting rings shall meet or exceed ASTM C478.
3. Rubber composite adjustment rings shall meet or exceed the following:
  - a) Density - 64 lbs/ft<sup>3</sup>, ASTM D3574-05 Test A
  - b) Durometer Hardness - 77 A ± 5, ASTM D2240-05
  - c) Tensile Strength - Not less than 145 psi, ASTM D412-06
  - d) Heat Ages Properties - 70 hours @ 158 °F, 3 hours @ 300 °F, ASTM D573-04
4. Expanded polypropylene adjustment rings shall meet or exceed ASTM D3575.
5. High density polyethylene (HDPE) adjustment rings shall meet or exceed ASTM D4976 and ASTM D1248.

#### Manhole Frames and Covers

Provide New Castle County standard manhole frames and covers conforming to ASTM A 48, Class 35B.

#### Manhole Steps and Ladders

Provide manhole steps or ladders as depicted on the Contract Drawings as conforming to ASTM C478. Unless otherwise specified, provide polypropylene steps with a reinforced 3/8- inch minimum diameter reinforcing steel, grade 60. Do not use cast iron steps.

#### Jack and Bore

Casing Pipe shall be welded steel pipe, minimum 3/8-inch wall thickness, meeting the requirements of ASTM A 139, Grade B of the nominal diameter and length depicted on the Drawings. Casing pipe shall include a bituminous asphaltic coating on the exterior of the casing pipe applied at the manufacturing facility and re-applied as needed in the field if damaged during delivery or installation. Steel casing sections shall be connected by seam welding a butt joint. Field welding shall be performed in accordance with AWWA C206, Field Welding of Steel Water Pipe.

PVC Sewer Pipe shall have with joint restraints and otherwise match the stated requirements in this specification.

Casing Spacer shall be in accordance with the following requirements:

1. Spacers shall be as shown on Contract Documents.
2. Spacers shall be stainless steel.
3. Spacers shall be bolt on style with a two-piece shell made from T-304 Stainless Steel of a minimum 14-gauge thickness.
4. Shell shall be lined with a ribbed PVC sheet of a 0.090-inch thickness that overlaps the edges.
5. Runners made from UHMW polymer, shall be attached to risers at appropriate positions to properly locate the carrier within the casing and to ease installation.
6. Risers to be made from T-304 Stainless Steel of a minimum 14-gauge thickness and shall be attached to the shell by MIG welding.
7. All welds shall be fully passivated.
8. All fasteners shall be made from T-304 Stainless Steel.
9. Model CCS as manufactured by Cascade Waterworks Manufacturing Company, Yorkville, IL. Or approved Equal.

Casing End Seals shall be in accordance with the following requirements:

1. Casing end seals shall be installed to create a barrier from water and debris.
2. The minimum thickness of seals shall be 1/8" of ethylene propylene diene monomer (M-Class) (EPDM) rubber, which conforms to ASTM Standard D-1418.
3. The tensile strength shall be no less than 1,000 PSI.
4. Bands shall be T-304 Stainless Steel.
5. Acceptable manufacturers:

- a. Advance Products and Systems
- b. Pipeline Seal and Insulator, Inc.
- c. Approved Equal

Grout shall be in accordance with the following requirements:

1. Cement: ASTM C150, Type I or Type II.
2. Sand: ASTM C404, Size No. 1.
3. Voids between Casing and Existing Ground: Minimum compressive strength of 100 psi, attained within 24 hours, and sufficiently fluid to inject through lining and fill voids, with prompt setting to control grout flow.
4. For Carrier Pipe Bedding and Filling Annular Space between Casing Pipe and Carrier Pipe: 3 parts ASTM C144 sand, to 1-part ASTM C150 cement.

### Bypass Pumping

A dual pump system shall be used with each pump provided capable of handling the full flow required. The bypass pumping system shall have sufficient capacity to pump the peak flow provided by the County. This flow number is based on best available information at the time. Contractor should perform independent evaluation prior to beginning work. The Contractor shall provide all pipeline plugs, pumps of adequate size to pump peak flow, and temporary discharge piping to ensure that the total flow of the sanitary sewer can be safely diverted around the work.

Bypass pumping systems will be required to operate 24 hours per day. During overnight operation, an auto-dialer and automatic alarm activation shall be provided. All pumps shall be fully automatic, self-priming or submersible units that do not require foot-valves or vacuum pumps in the priming system. The pumps may be electric motor driven or diesel powered. All pumps used must be constructed to allow dry running for long periods of time to accommodate the cyclical nature of sanitary sewer flow

The Contractor shall provide the necessary stop/start controls for each pump. The controls shall include automatic start up on a high level and stop on a low level. The Contractor shall include one stand-by pump system of equal capacity for each temporary bypass pump system to be maintained on site.

Each stand-by pump shall have a separate backup discharge pipe, for a total of two (2) discharge pipes. These discharge pipes shall be protected from flooding. In order to prevent the accidental spillage of flows all discharge systems shall be constructed of steel pipe utilizing quick-disconnect joints, or fused, high-density polyethylene pipe. Under no circumstances will aluminum "irrigation" type piping or glued PVC pipe be allowed. Discharge hose will only be allowed in short sections and by specific permission from the County or their representative. The piping will provide an easily moved system to facilitate the work progress of the Contractor's schedule.

The Contractor shall provide equipment with residential mufflers and sound baffles for overnight operation near residences. Sound levels five (5) feet from operating pumps shall be no greater than 70 dBA.

### **Construction Methods:**

#### Open Trench

The excavation and backfill for the pipe shall be performed in accordance with the applicable requirements including backfill requirements of Section 612 of the Delaware Standard Specifications, unless otherwise modified on the Plans, or in conflict with the requirements of the Utility Owner. If there is a conflict between the Delaware Standard Specifications (including these Special Provisions) and the Specifications of the Utility Owner, the latter will prevail. The Contractor is advised to obtain and be fully acquainted with the applicable specifications of the Utility Owner. The pipe shall be installed at the locations and to the lines, grades, and dimensions shown on the Plans or as directed by the Engineer.

During backfill of the sewer main the Contractor shall install the specified warning tape at a depth of 8" to 12" below finished grade or as directed and approved by the Engineer/Owner. Lengths of pipes shown in the Contract Documents are estimated only. The Contractor is responsible to layout the tie-in areas in the field and fabricate the bends and pipe lengths required to properly tie-in to other pipes, fittings and/or manholes as required and approved by the Engineer. Thoroughly clean all pipes and connecting Materials before placement. Keep all pipes and connecting Materials clean until the completed Work is accepted.

No pipe shall be laid upon a foundation into which frost has penetrated nor at any time when the Engineer shall deem that there is danger of the formation of ice or the penetration of frost at the bottom of the excavation, unless the minimum length of open trench and promptness of refilling are observed.

The Contractor shall build all future service connections to the existing houses, businesses, and others, complete to the property line, right-of-way lines or other designated points. The ends of all such service connections shall be closed with plugs as directed and approved by the Engineer/Owner.

Sheeting and bracing required for trenches shall be removed to the elevation of the conduit, but no sheeting will be allowed to be pulled, removed, or disturbed below the conduit. Sheeting and bracing shall meet OSHA requirements.

Before lowering into the trench, the pipe shall be inspected for defects. All cracked, chipped, or broken pipe shall be discarded. The ends and interior of the pipe shall be clean. Belled ends shall be laid upgrade. Handling of the pipe shall be accomplished in a manner that will not damage the pipe. The joint shall be made in the manner recommended by the manufacturer. Care shall be taken not to buckle or disturb previously laid pipe.

Pipe jointing shall be as specified herein, and per manufacturer's recommendation for the pipe material used for this project. Bell and spigot and/or push-on joints and gaskets shall be thoroughly cleaned and lubricated in accordance with manufacturer's recommendations. The Contractor shall ensure that the pipe is sufficiently joined as to create a water tight seal. Whenever a pipe requires cutting to fit into the line or to bring it to the required location, the work shall be done in a satisfactory manner so as to leave a smooth end without extra compensation.

Each joint shall be inspected to ensure that it is properly made before backfilling is done. Care shall be taken to prevent any dirt or foreign matter from entering the open end of the pipe. Where it is necessary to cut pipe, such cuts shall be neatly made in an approved manner. The laid pipe shall be true to line and grade and, when completed, the sewer shall have a smooth and uniform invert. No section of gravity sewer, including service connections shall have an adverse grade which would pond water in the invert or any other portion of the sewer.

The Contractor shall lay pipeline starting at the lower elevation of a run and proceed upgrade unless otherwise specified or directed by the Engineer. Lay all pipe with bells (if present) pointing upstream. Lay all pipelines in trench excavations on bedding as specified, concrete cradle or other foundations as shown on the Contract Drawings or directed by the Engineer.

Carefully place each pipe and check for alignment and grade. Make adjustments to bring pipe to line and grade by scraping away or filling in bedding material under the barrel of the pipe. Support by wedging or blocking the pipe barrel is not permitted. Bring the faces of the spigot ends and the bells of pipes into fair contact and firmly and completely push the pipe together. Shape bell holes in the bedding material for each joint as required allowing the joint to be properly made and allow the barrel of the pipe to have full bearing throughout its length.

As the work progresses, clean the interior of pipelines of all dirt and superfluous materials. Properly secure the pipe against movement and make the pipe joints in the excavation as required. Carefully grade and compact pipe bedding by hand around the pipe, ensuring pipe haunches are properly supported.

Provide temporary bulkheads at the ends of sections where adjoining pipelines have not been completed and are not ready to connect.

Pipe shall be laid accurately to the staked line and grade. All service connections shall be installed as indicated on the Drawings right-of-way. Where existing service sewers are to be connected, suitable fittings and adapters shall be provided by the Contractor.

Pipe shall be cleaned of all foreign matter, and water shall be kept out of trenches until joints have been completed. When work is not in progress, open ends of pipe and fittings shall be securely closed to keep foreign matter and animals from entering.

Connections to existing pipe shall be made with Fernco Strongback Coupling or approved equal. Connectors must be approved by the Engineer prior to installation.

The Contractor shall determine the location of existing sewer services prior to installation of the mainline pipe in such a way that the service wyes can be installed in the proper location as the mainline pipe is being installed. The Contractor shall be responsible to verify the locations of the lateral in the field and determine if the lines are active or abandoned. Inactive lines or abandoned lines will not be replaced as approved by the Utility Owner. No service saddles will be permitted, unless approved by the Engineer.

Connections to existing sewer mains, service connections, and manholes shall be made in such a manner so as to not damage the existing facility. Such connections shall be made so that no projections or rough surfaces occur within the pipe.

Prior to constructing the tie-ins, coordinate with the Owner and, if required by the Owner, be prepared with tanker trucks and pumps to handle any excess flow during the transition. The Owner must be satisfied with the Equipment and tanker trucks provided on site before allowing the actual tie-in. Pump all excess flow into the tankers and properly dispose of the excess flow at an approved location.

Locations of the sewer laterals are approximate and may be changed by the Engineer. Relocating of the sewer lateral will not add extra cost to the Utility Owner or State, unless either of the following conditions result:

1. The relocation results in an increase in the length of the lateral; or,
2. A change in construction methods is required from the change in lateral location

If the Contractor believes that the work at the new location(s) will result in a substantive change, the Contractor shall notify the Engineer prior to beginning the changed work. The Engineer will evaluate the request and if the relocation is warranted, the change in work shall be authorized. Lateral connections shall be laid such that flow from the lateral shall be in the same direction as the gravity main.

The Contractor shall reconnect all active service connections as approved by the Utility Owner. Service connections shall be reconnected to the pipe by using connectors approved by the pipe manufacturer and in conformance with the specified installation procedure.

Connections to the existing service pipe shall be made using flexible couplings. All flexible couplings shall conform to ASTM C425. Joint deflection limits and lateral connections shall meet the maximums indicated in ASTM C12 and C425.

The slope of the existing lateral toward the newly installed sewer main shall be maintained at the existing percent. For reconstructed laterals, a minimum slope of two percent (2%) or as specified by the Utility Owner is required.

Lateral connections to existing sewer mains shall not obstruct flow.

Maintain a minimum of 18 inches of vertical clearance where the water main or storm sewer crosses over the sanitary sewer or lateral; otherwise, a minimum of ten (10) foot long concrete encasement (centered at the crossing point) shall be provided around the sanitary sewer or lateral as per the standard detail. 6 inches of 3,500 psi concrete shall be provided all around the pipe.

### Sanitary Sewer Manholes

The Contractor shall take every precaution to prevent damage to the manhole sections and appurtenances during transportation and unloading. Unload manhole sections using skids, pipe hooks, rope slings, or suitable power equipment, if necessary, and keep the sections under control at all times. Do not allow the manhole sections to be dropped, dumped or dragged under any conditions.

Prior to being installed, each precast manhole or structure shall be carefully inspected. Reject those not meeting the specifications and replace at the Contractor's expense.

If any manhole section is damaged in the process of transportation or handling, the Contractor shall reject and immediately remove such sections from the site and replace the damaged manhole sections at his own expense.

Perform trench excavation and backfill in accordance with the Utility owner's specifications.

No manhole base section shall be placed before the subgrade or bedding has been reviewed by the Engineer. If an existing manhole is to be removed and replaced by a new manhole, the Contractor shall ensure temporary bypass pumping and all appurtenances required to continue service is in place and ready for operation.

Unless otherwise specified, the Contractor shall cut and remove a portion of the existing pipe(s) in order to place the new manhole. The Contractor shall insert a pipe stub in the new manhole, place the manhole and align with the existing pipe. A pipe repair coupling as specified herein shall be used to join the existing pipe with the new pipe stub.

The Contractor shall place the manhole base section at the location, elevation and orientation depicted on the Drawings. The base section shall be level and plumb.

The Contractor shall connect all pipes utilizing the pre-cast openings and pipe to manhole gaskets. After proper placement of the manhole base section, the Contractor shall place subsequent sections.

Doghouse-type manholes shall be installed as specified on the Contract Drawings.

Install sufficient sealing compound so as to show a "squeeze-out" on the outside of the joint.

Apply trowelable grade butyl rubber backplaster material one-quarter (1/4) inch minimum thickness, when dry, on the outside of the manhole at each joint, extending six (6) inches above and below the joint. Apply butyl rubber backplaster on the outside of the chimney from three (3) inches below the bottom adjustment ring on the cone section to, and covering, the adjustment rings just below the casting. Next, apply shrink wrap or visquine to the outside of each joint to further seal manhole.

Set cones or flattops as determined by the depth of the manhole, so that no more than 12 inches of reinforced concrete adjusting rings are required to adjust the top of the manhole casting to grade.

Provide a soil-tight seal between the precast manhole and adjusting ring, and each adjoining adjusting ring, and between the adjusting ring and casting by the use of two (2) rows of 1/2 inch extrudable preformed gasket material or trowelable grade butyl rubber or an approved equal. After butyl rubber is applied to exterior of adjustment rings, install exterior chimney seal if specified.

Set manhole frame on 1/2 inch extrudable preformed gasket material or trowelable grade butyl rubber or an approved equal. In paved areas, match top of casting with finished grade; in unpaved/grassy areas, install casting so that the top extends at least six inches above finished grade, and grade surface to provide positive surface drainage away from manhole.

Locate manhole steps to one side of the manhole, not directly above the inlet or outlet pipes, granting access to the bench. Install steps with non-shrink mortar or epoxy grout.

The Contractor shall restore all manholes and associated surface areas to their original condition or as required by the Utility Owner and specified in the description of work. The newly installed pipe shall be restrained and sealed at the manhole in accordance with the manufacturers recommended procedures and with a material approved by the Utility Owner.

Restoration of the bottom of the Manhole shall be done as follows:

1. For restorations less than or equal to three inches grout shall be used. The grout design mix shall meet or exceed 500 psi compressive strength at 28 days. The Contractor may, with the approval of the Utility Owner, incorporate grout additives to improve flow properties, provided that the minimum compressive strength requirements are met.
2. For restorations greater than three inches concrete shall be used. Concrete shall be as specified in the Contract Documents.

### Jack and Bore

The pipe, whether casing or carrier, installed by means of Tunneling shall be installed to the line and grade specified on the Contract Drawings. Initial control information will be established prior to the initiation of work. As Tunneling proceeds, line and grade will be furnished on a scaled drawing at intervals not exceeding

twenty (20) feet by the Contractor. The Contractor shall use this information to project the alignment ahead until subsequent references can be set.

If a pilot hole is to be tunneled, the pilot hole shall not deviate greater than 5% of depth over the length of the tunnel unless previously agreed to by the Engineer. In the event that the pilot hole does deviate greater than required, the Engineer may require the Contractor to pull back and re-tunnel from the location along the path prior to deviation.

Bore so as not to interfere with, interrupt, or endanger surface and activity thereon. Minimize subsidence of surface, structures, and utilities above and in vicinity of bore. Support ground continuously to prevent loss of ground and keep perimeters stable. Be responsible for settlement resulting from operations. Repair and restore damaged property to its original condition before being disturbed at no cost to the OWNER.

The approach and receiving trenches shall be excavated, and the pipe placed at the elevation and grades specified, in accordance with the Drawings and Contract Documents. Boring shall be performed in the downstream direction.

Boring shall be installed to grade and line indicated on the contract documents. Jack and bore operation shall be monitored via censoring devices to ensure correct grade and line installation. There shall be a 1-inch tolerance for grade elevations of the casing and carrier pipes.

The casing pipe shall be pushed in to the ground with a boring auger rotating within the pipe to remove the spoil. The cutting head shall not be advanced ahead of the casing pipe except for that distance necessary to permit the cutting teeth to cut clearance the pipe.

The overcut of cutting head shall not exceed more than ½ inch. If unstable soil is encountered during the boring procedure, the cutting head shall be retracted into the casing to maintain a balance between the pushing pressure and the ratio of pipe advancement to quality of soil. The Contractor shall use a steering system to ensure grade is met, on a single pass. Pilot tube guided boring is not acceptable.

If voids should develop greater than the outside diameter of the pipe by approximately one (1) inch, the Contractor shall fill the voids with approved pressurized grout material.

When augers and cutting heads or similar devices are used for advancing the casing pipe, the front of the pipe shall be provided with mechanical arrangements or devices that will prevent the auger and cutting head from leading the pipe (so that there will be no unsupported excavation ahead of the pipe). The auger and cutting head arrangement shall be removable from the pipe in the event an obstruction is encountered.

The operation shall be continuous until the casing is installed.

Direction of jack and bore shall be monitored via sensing devices to ensure correct grade and line installation. A thrust wall shall be constructed normal to the proposed line thrust. The thrust load shall be imparted to the pipe through a suitable thrust ring that is sufficiently rigid to ensure distribution of the thrust load on the pipe. The thrust wall and jacking system shall be designed to carry the thrust of the jacks to the soil without excessive soil deflection and in such a manner as to avoid any disturbance of adjacent structures or utilities.

Dewatering shall be performed by the Contractor in compliance with all applicable local, State and Federal rules, regulations and ordinances. Surface drainage shall be diverted away from the execution through the use of dikes, ditches, pipes, sumps, or other means. When water is encountered, develop and maintain dewatering system of sufficient capacity to remove water continuously, keeping excavations free of water until backfill operation is in progress.

Keep removal of soil to a minimum. Dewater in accordance to Contract Documents. Observe settlement or displacement of surface facilities due to dewatering. Should settlement or displacement be detected, notify Engineer immediately and act to maintain safe conditions and prevent damage.

Carrier pipe shall be installed in the casing pipe with restrained joints, and as illustrated on the Contract Drawings. The carrier shall be supported within the casing so that no external loads are transmitted to the carrier pipe. The ends of the casing pipe shall be sealed to provide a barrier against debris and seepage. After carrier pipe and spacers are installed, the annular space shall be filled with grout.

### Bypass Pumping

The Contractor shall remove manhole sections or make connections to the existing sewer and construct temporary bypass pumping structures as may be required to provide adequate suction conduit.

Plugging or blocking of sewage flows shall incorporate a primary and secondary plugging device. When plugging or blocking is no longer needed for performance and acceptance of work, it is to be removed in a manner that permits the flow of sewage to slowly return to normal without surge to prevent surcharging or causing other major disturbances downstream.

When working inside manhole or sewer line, the Contractor shall exercise caution and comply with OSHA requirements when working in the presence of sewer gases, combustible or oxygen-deficient atmospheres, and confined spaces.

The Contractor shall obtain all rights and permits prior to the installation of the bypass pipelines if such lines are outside the Limit of Disturbance. When the bypass pipeline crosses local streets and private driveways, the Contractor must place the bypass pipelines in trenches and cover with plating or temporary pavement. Upon completion of the bypass pumping operations, and after the receipt of written permission from the County or their representative, the Contractor shall remove all the piping, restore all property to previously existing condition and restore all pavement. The Contractor is responsible for obtaining any approvals for placement of the temporary pipeline within public ways from the agency with jurisdiction.

### **Construction Requirements:**

The Contractor is solely responsible for bypass pumping quality assurance during the length of the project. The contractor is responsible for any costs associated with corrective measures required to replace or repair items not meeting the quality standards specified by the Utility Owner or Engineer.

### Submittals

The Contractor shall submit the following items for review and approval by the Utility Owner or Engineer in accordance with the Contract Documents. Approval of the submittals by the Utility Owner or Engineer shall be obtained prior to ordering pipe materials and/or the start of the pipe replacement process.

1. Detailed construction procedures, and layout plans to include sequence of construction.
2. Sewer bypass plans, methods and list of equipment to be utilized.
3. Description of the method to remove and dispose of the host pipe, if required.
4. The safety plan in conformance with the Contract Documents and OSHA regulations.
5. Traffic control plans.
6. Project schedule.
7. Pipe appearances, including gaskets, clamps, shear rings, couplings, and plugs. Include evidence of compliance with ASTM standards
8. Piping, including certified test results from the manufacturer demonstrating compliance with the requirements.
9. Detailed drawings and data on pipe, fittings, joints, gaskets and appurtenance. Include certified test results from the manufacturer demonstrating compliance with the requirements.
10. Certified test results from the manufacturer demonstrating compliance with the requirements of this section.
11. Pipe layouts and schedules.
12. Precast manholes and structures including evidence of compliance with ASTM standards, and a table or chart showing the specific sections and orientation of penetrations for each manhole supplied.
13. Manhole appurtenances, including but not limited to O-ring gasket and joint sealant, resilient connector, manhole frame and cover, and manhole step.
14. Provide manufacturer's written confirmation that all reinforced pre-cast concrete manhole sections contain an inorganic copolymer waterproofing admixture in compliance with manufacturer's application instructions.
15. Sewer Lateral Cleanouts

16. Shop drawings for casing pipe showing size and hold down assemblies or casing spacers for carrier pipe.
17. Working drawings, shop drawings (drawn to scale), catalog cut sheets, technical data, and written procedures describing in detail proposed bore and jack method and entire operation to be used, for information only, including but not limited to:
18. Provide a construction schedule for approval that includes the sequence of installation of the casings and pipelines. Provide a laying schedule (on the Drawings) that shows necessary deviations from the Drawings due to specific utility conflicts discovered during required exploratory excavations. Include a description of the proposed construction methods, including methods to establish and maintain vertical and horizontal alignment.
19. Working and receiving shafts.
20. Dewatering Plan.
21. Method of removing soils and installation of casing and carrier pipe.
22. Size, capacity, and arrangement of equipment.
23. Pipe closure system.
24. Certified Welders Certificate.
25. Backstop.
26. Shaft base material.
27. Type of cutter head.
28. Method of monitoring and controlling the line and grade.
29. Detection of surface movement.
30. Procedure for installing pipe supports, anchor, or placement of grout between carrier pipe and casing pipe.
31. Bulkhead details and proposed positive method of anchoring carrier pipe to prevent floatation.
32. Catalog data for casing spacers when used for temporary support during construction.
33. Procedure for monitoring line and grade.
34. Certification shall be in the form of a letter or company-standard form containing all required data and signed by an officer of the manufacturing, fabricating, or supply company.

Other Utilities:

The Utility Owner or as shown on the drawings shall provide the Contractor with available information relating to the location of utilities adjacent to the pipe to be replaced. The Contractor shall, prior to starting work, verify the location of all adjacent utilities. The minimum clearance from other utilities shall be approximately 18-inches. The Utility Owner may at its discretion reduce the minimum clearance.

The Contractor shall expose all interfering and crossing utilities by spot excavating at the planar intersection of the pipe and removing the soil from around the utility. The cost of exposing these utilities shall be borne by the Contractor.

Emergency Repairs to Damaged Utilities:

Known or Field Located Utilities - In the event that the Contractor or his Subcontractor during the execution of the work breaks any known or field located pressure or gravity main causing the disruption of service and/or an eminent hazard, it shall be the responsibility of the Contractor/Subcontractor to immediately notify the Utility Owner at the designated emergency telephone number and immediately undertake measure to repair the damaged utility. To that effect, the Contractor/Subcontractor shall ascertain prior to initiating the work that the necessary repair parts, tools, equipment, and labor are on ready and available onsite to complete the repair work without delays. The Utility Owner personnel and Engineer shall witness the repair work.

If the Contractor/Subcontractor estimates or determines that he is not going to be able to restore service within a less than two-hour period, the Contractor shall immediately contact the Utility Owner's manager to initiate repair.

The Utility Owner will undertake the repair work and will back charge the Contractor. The Utility Owner will submit an itemized bill within 30 calendar days from the occurrence of the event. Unknown or Inaccurately Located Utilities - If the utility was not field located or it was inaccurately located in accordance with the prescribed procedures under the One-Call guidelines and the Contractor/Subcontractor cause a line break during the execution of the work, the same notification procedure as above must be followed. The Utility Owner will undertake the repair work at no cost to the Contractor.

**Acceptance Testing**

After the existing pipe is completely replaced the Contractor and Utility Owner shall perform inspections of the pipe. The newly installed pipe shall be visibly free of defects, which may affect the integrity or strength of the pipe. If in the opinion of the Utility Owner such defects exist, the pipe shall be repaired or replaced at the Contractor's expense.

Any section of the pipe with a gash, blister, abrasion, nick, scar, or other deleterious fault greater in depth than ten percent (10%) of the wall thickness shall not be used and must be removed from the site.

Cooperate and furnish all assistance necessary to perform the tests as specified herein and as further required and directed by the Engineer and the representative of the Owner. Furnish all Equipment and personnel to conduct the tests specified herein and/or any proposed by the Owner of the utility.

The Contractor shall not make connections to existing sanitary sewers until after the final inspection and all tests have been accepted.

**Leakage Tests for Sewer Pipes**

**Low-Pressure Air Test - Gravity Sewer**

1. All sewer pipes above the groundwater line with a diameter of 39 inches or less, or as directed by the Engineer, will be tested by the "Low-Pressure Air Test."
2. This test will be made by plugging all branch fittings and ends of lateral stubs to withstand internal pressure. The section of line being tested shall also be securely plugged at each manhole. All stoppers shall be adequately braced when required.
3. Air shall slowly supplied to the plugged pipe line until the internal air pressure reaches 4.0 pounds per square inch (PSI) greater than the average back pressure of any groundwater that may submerge the pipe. At least two minutes shall be allowed for temperature stabilization before proceeding further.
4. The rate of air loss shall then be determined by measuring the time interval required for the internal pressure to decrease from 3.5 to 2.5 PSI. The line shall be considered acceptable if the amount of time is not less than the following formula:

$T = 0.0850DK/Q$ , where

K = 0.000419DL, but not less than 1.0

Q = rate of loss of 0.003 CFM per square foot of internal surface

D = Pipe diameter, inches

L = Length of pipe being tested, feet

Minimum Holding Time Required For Pressure To Drop From 3.5 To 2.5 Psig For Size And Length Of Pipe Indicated For Q = 0.003

Pipe Diameter (inches)	Minimum Time (min:sec)	Length for Minimum Time (feet)	Time for Longer Length (secs)	Specific Time for Length							
				100 feet	150 feet	200 feet	250 feet	300 feet	350 feet	400 feet	450 feet
4	1:53	597	0.190L	1:53	1:53	1:53	1:53	1:53	1:53	1:53	1:53
6	2:50	398	0.427L	2:50	2:50	2:50	2:50	2:50	2:50	2:51	3:12
8	3:47	298	0.760L	3:47	3:47	3:47	3:47	3:48	4:26	5:04	5:42

**Leakage Test for Manholes and Structures**

Manholes, vaults and similar structures constructed may be tested by the Vacuum Test. This test shall be performed in accordance with ASTM C 1244. Testing prior to backfilling is highly recommended to facilitate corrective measures in case of test failure.

1. The Contractor shall plug all pipe openings, taking care to securely brace the plugs and inflate the compression band to 40 psi to bring about a seal between the vacuum tester base and the manhole frame.
2. A vacuum to 10 inches of mercury (10" Hg) shall be drawn and the valve closed.
3. Manholes and similar structures shall be considered acceptable if the vacuum remains at 10" Hg or drops to 9" Hg in a time greater than 1 minute.

#### Manhole Rehabilitation Acceptance

A visual inspection of all manhole repairs and rehabilitation shall be performed by the Engineer. The Contractor shall provide labor and materials required for inspection. There shall be no signs of infiltration, spalling, loss of adhesion, cracks or any other defects in the Contractor's work.

Acceptance is also dependent satisfactory results of field compressive strength testing, if performed.

All manholes that have been rehabilitated shall be re-inspected prior to Final Acceptance, but no less than 12 weeks after Conditional Acceptance. The Engineer shall schedule this reinspection with the Contractor, providing a minimum of 2 weeks' notice. Re-inspection shall include a visual confirmation that no infiltration, spalling, loss of adhesion, cracks or any other defects have formed in the work performed since Conditional Acceptance. Any defects found shall be corrected by the Contractor in accordance with the manufacturer's recommendation at no additional cost to the County.

Re-inspection shall include at least 20% of the manholes rehabilitated. The Engineer will select the manholes to be re-inspected, the Contractor shall provide all labor and materials required for re-inspection, including traffic control.

If more than 10% of the manholes re-inspected fail a visual inspection, an additional 20% of the manholes rehabilitated shall be re-inspected. If more than 10% of the second group of manholes re-inspected fail, all manholes rehabilitated shall be re-inspected.

The Contractor shall pay the Engineer's expense in addition to all other expenses, for re-inspection of manholes rehabilitated beyond the first 20%. The Engineer's expense shall be the same dollar amount as the liquidated damages identified in the Contract Documents.

#### Other Acceptance Testing

The Engineer reserves the right to perform other testing as they deem necessary, depending on several factors, including but not limited to failed acceptance tests, site and weather conditions, post-construction CCTV inspection and observances during construction. These tests may include the following:

**Pipe Alignment Test (Lamp Test):** Pipe alignment testing consists of visually examining the inside of the pipe between two consecutive manholes with the aid of a light and mirror. A mirror is held at the invert of the pipe and adjusted so the light and barrel of pipe can be seen. The barrel of the pipe shall have no vertical or horizontal deflection.

**Ovality/Deflection Test (Mandrel Test):** Ovality/Deflection testing consists of pulling a mandrel, appropriately sized for the pipe diameter(s) constructed, through the constructed pipe sections. The size of the mandrel shall be based on the ovality/deflection requirements specified within the Contract. The mandrel shall pass through all pipe segments without meeting resistance.

#### Failed Acceptance Test

If any test results indicate the presence of a defect, whether caused by defective materials, improper workmanship or damage to the materials, the Contractor shall, locate and repair the defect at his own expense. The means and methods of repair shall be discussed with the Engineer prior to execution.

If defective portions cannot be located, remove and reconstruct as much of the original work as necessary to obtain piping that meets the leakage requirements specified herein and retest, all at no addition to the Contract Price.

The failed test shall be re-performed until the results are within acceptable limits.

CCTV Inspections

The Contractor shall perform post installation internal television inspections of the installed sanitary main. Each reach of sewer shall have audio description with appropriate stationing of services indicated. The data and stationing are to be on the video. All such inspections shall be performed by personnel trained in locating breaks, obstacles and service connections by closed circuit color television.

Post construction video tapes are to be submitted to the Engineer and Utility Owner for review prior to final payment. Should any portion of the inspection tapes be of inadequate quality or coverage, as determined by the Utility Owner, the Contractor will have that portion video-taped at no additional expense to the State or Utility Owner. All original video tapes remain property of the Utility Owner. The Contractor may, at the discretion of the Utility Owner retain second copy.

Do not make connections to existing sanitary sewers until after the final inspection and tests have been approved. Furnish all Material and labor required for tests, including caps and plugs and the cost thereof included in the prices bid for installing sanitary pipe. Furnish water required for leakage test at no additional cost to the Department.

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

Price and payment for sanitary sewer system shall be lump sum under item 711501.

Item 711501 includes furnishing, transporting, and installing the Materials; testing of the sanitary sewer system; including manholes; connecting to existing sanitary sewer systems and services; maintaining service as required; excavating; disposing of excess excavated Material; backfilling, including Type C borrow required specifically for filling the sewer trench; furnishing Material for backfilling; furnishing and placing warning tape; aggregate pipe bedding, sheeting and shoring, temporary support of existing Utilities, dewatering, furnishing and using tanker trucks for excess flow, constructing and operating a bypass pumping system, temporary bypass pumping and hauling, disposing of excess flow at an approved location; cutting and capping new or existing lines and for all labor, Equipment, tools and necessary incidentals to achieve and accept an operational sanitary sewer system.

Abandonment of all manholes and sewer shall be paid for under Section 211.

All lump sum pay items will be prorated for each pay estimate. A percentage of the lump sum item will be paid, on a monthly basis, based upon the amount of work completed and accepted by the Engineer.

7/30/2018

**763501 - CONSTRUCTION ENGINEERING**

**Description:**

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

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

The Engineer will only establish the following:

- (a) Original and final cross-sections for borrow pits.
- (b) Final cross-sections for all excavation items.
- (c) Line and grade for extra work added on to the project plans.

**Equipment:**

The Contractor shall use adequate equipment/instruments in a good working order. He/she shall provide written certification that the equipment/instrument has been calibrated and is within manufacturer's tolerance. The certification shall be dated a maximum of 9 months before the start of construction. The Contractor shall renew the certification a minimum of every 9 months. The equipment/instrument shall have a minimum measuring accuracy of [3mm+2ppmxD] and an angle accuracy of up to 2.0 arc seconds or 0.6 milligons. If the Contractor chooses to use GPS technology in construction stakeout, the Contractor shall provide the Engineer with a GPS rover 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. 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. The Contractor may utilize GPS equipment to perform the excavation and embankment for the project as indicated on the plans. Use of this procedure and equipment is intended for grading the subgrade surface only; it is not intended for use in constructing final surface grades. GPS technology and machine control technology shall not be used in the construction of bridge or structures such as, but not limited to, curb, drainage inlets, manholes, junction boxes, pole bases and pipe inverts.

**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:**

**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 check the accuracy of given control points. Establishing plan coordinates and elevations 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 0.05 ft times [Square root of number of miles in the level run] (0.01 m times [square root of number of kilometers]). The Horizontal Control accuracy ratio shall not exceed an error of closure of 1 foot per 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 shall 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 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, 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 advanced utility relocation, which will be performed by others, 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.

**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 and other records necessary to accomplish the work shall be made available to the Department in a neat and organized manner at anytime 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.

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.
- (e) Description of newly established benchmarks with location, elevation and closed loop survey field notes.
- (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 borrow 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.

**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.

6/11/2012

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

**Description:**

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 “2<sup>nd</sup> Draft”, “3<sup>rd</sup> 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.

3/28/14

**763515- UTILITY MARKING SYSTEM**

**Description:**

This work shall consist of furnishing and installing utility radio frequency identification (RFID) ball markers and pendants and furnishing an electronic as-built information to the Department in accordance with these special provisions and as shown on the plans or as directed by the Engineer.

**Materials:**

Handheld GPS Devices: The contractor shall use a handheld GPS device to provide a data base of electronic markers and matched GPS coordinates of each marker with sub-foot accuracy. The handheld GPS devices shall have integrated software to facilitate mapping the marker template information in DGN for as an overlay to the MicroStation Plans, ESRI Shape Files for ARCGIS, KML using Google Earth/Map as the base mapping then copied as a PDF format or other as required by the Engineer. This electronic as-built information will be provided to the Department within 10 days of the completion and acceptance of the utility system. The handheld GPS devices shall include the components as required.

Central Mapping Software: A Central Mapping Software shall be used by the Department to import data from the handheld GPS devices that contains data collected from the field operations. The specific software and format will be determined by the Engineer.

RFID Ball Markers/Near Surface Peg Markers: The electronic markers shall be RFID "Programmable" markers. The markers shall be the 4" round ball type, 5ft depth for read/locate/depth or the near surface marker pendant type, 3ft depth for read/locate/depth.

Marker Types/Frequencies:

RFID Ball Marker Telecommunications (orange), 101.4khz to be used for copper and fiber optic cable systems that connect to the telephone facilities

RFID Ball Marker Power (red), 169.8khz to be used for all electrical power systems

RFID Ball Marker Water (blue), 145.7khz to be used for all water mains and services as well as all appurtenances

RFID Ball Marker Wastewater (green), 121.6khz to be used for all mains and services.

RFID Ball Marker Gas (yellow), 83khz to be used for natural gas and liquefied petroleum mains and services.

RFID Ball Marker Cable TV and communications (black/orange), 77khz to be used for copper and fiber optic cable systems that are independent communications system.

RFID Ball Marker General purpose and reclaimed water (purple), 66.35khz to be used to identify abandoned facilities and signs as well as other underground and/or above ground facilities that are to be mapped or inventoried.

RFID Near Surface Peg Marker, Telecommunications (orange), 101.4khz

RFID Near Surface Peg Marker, Power (red), 169.8khz

RFID Near Surface Peg Marker, Water (blue), 145.7khz

RFID Near Surface Peg Marker, Wastewater (green), 121.6khz

RFID Near Surface Peg Marker, Gas (yellow), 83khz

RFID Near Surface Peg Marker, Cable TV and communications (black/orange), 77khz

RFID Near Surface Peg Marker, General purpose and reclaimed water (purple), 66.35khz

The uses of the specific near surface marker pendants shall be the same as the ball markers. The near surface markers are to be used to record the horizontal and vertical location of facilities that are installed by the use of a directional drill or case boring operations.

Type 1 Electronic Marker Locator for Locate/Read/Write: The locator shall have the capability to write template data into the markers, locate the electronic markers, and read the template data from the electronic markers. Information such as a pre-programmed unique identification number, facility data, owner information, and application type from up to 100 markers shall be stored with date/time stamp, and transmitted back to the user's PC through a standard RS232 serial port. The necessary software shall be included with each electronic marker locator. The electronic marker locator shall include an optional carry bag.

The electronic marker locator shall have the capability of interfacing with handheld GPS devices. The electronic marker locator shall command the GPS/GIS device for real-time mapping of GPS coordinates and electronic marker template data.

Specifications:

Operating temperature	-4° F to 122° F
Storage temperature	-4° F to 158° F
Marker compatibility	All RFID markers (telephone, gas, communication, power, water, wastewater and general purpose)
Dual marker mode	Any two marker frequencies simultaneously
Detection range	Exceeds maximum marker depth specifications
Marker read range	(5 ft.) to all RFID ball markers, (3 ft.) to all RFID near surface markers (peg markers)
Marker write range	(1 ft.)
RFiD Marker depth measurement accuracy specifications	+/- 10% +/- 2 in. up to marker depth
Memory storage with date/time stamp	Read marker records 100, Written marker records 100, User defined ID templates 32
Marker depth memory storage	Five with date/time stamp
Power Battery type:	Eight AA size, alkaline. Typical battery life: 25 hours
Display	Large graphic high-contrast LCD with backlight
Speaker	0.25W
Headphone jack	Standard mini-jack
Serial port	Standard RS232 serial with DB9 connector

Type 2 Locator for Cable/Pipe/Electronic Marker: The cable/pipe/electronic marker locator shall have the capability to locate, using the portable battery operated transmitter, all types of underground pipes and cables. The locator shall also have the capability to write template data into the markers, locate the electronic markers, and read the template data from the electronic markers. Information such as a pre-programmed unique identification number, facility data, owner information, and application type from up to 100 markers shall be stored with date/time stamp, and transmitted back to the user's PC through a standard RS232 serial port. The software shall be included with each electronic marker locator. The electronic cable/pipe/marker locator shall include an optional carry bag. The cable/pipe/electronic marker locator shall have the capability of interfacing with handheld GPS devices. The cable/pipe/electronic marker locator interface shall command the GPS/GIS device for real-time mapping of GPS coordinates and electronic marker template data.

Electrical Specifications:

Receiver:

Frequencies:	Trace and tone modes, Active: 577Hz, 8kHz, 33kHz, and 200kHz
Passive power:	50L, 50H, 100, 60L, 60H, 120
Passive (other):	CATV 31.5kHz (LF 9?30 kHz)
	Auxiliary: 560, 512, 460, 400, 393, 340, 333, 273Hz
	User defined: up to four frequencies (50~999Hz)
Display resolution	0.1 dB
Depth display range	0 to 30 ft
Depth units	inch, ft.-in.

Depth accuracy*	+/- 2% +/- 3 in.	0 to 60 in.
	+/- 6% +/- 3 in.	61 to 120 in.
	+/- 10% +/- 3 in.	121 to 180 in.
Cable current display	0.1 dB resolution or 0.01 mA resolution, Units: dB and mA	
Power Battery type:	Eight AA size, alkaline	
Typical battery life:	30 hours - M-iD units	
Transmitter:		
Output frequencies:	Trace mode 577Hz, 8kHz, 33kHz, 200kHz Tone mode 577Hz and 200kHz pulsed at 8Hz Induction mode 33kHz, 200kHz	
Tone Normal setting:	10 Vrms, high setting: 60 Vrms	
Output power Normal setting:	Limited to 0.5W	
High setting:	Limited to 3W, or 5W with external DC power	
Output protection	240 Vrms	
Power Battery type:	Six C size, alkaline (LR14) cells;	
External DC:	9-18V DC (1A) (5-watt units only) Typical battery life	
High output level:	Normal output level: 50 hours 10 hours	

\*Note: Locators are tested in model field conditions with no adjacent signals. Actual operating conditions may result in decreased depth accuracy due to outside signal

Operating temperature	-4° F to 122° F
Storage temperature	-4° F to 158° F
Marker compatibility	All RFID markers (telephone, gas, communication, power, water, wastewater and general purpose)
Dual marker mode	Any two marker frequencies simultaneously
Detection range	Exceeds maximum marker depth specifications
Marker read range	(5 ft.) to all RFID ball markers, (3 ft.) to all RFID near surface markers (peg markers)
Marker write range	(1 ft.)
RFiD Marker depth measurement accuracy	+/- 10% +/- 2 in. up to marker depth specifications
Memory storage with date/time stamp defined ID templates	32 Read marker records 100, Written marker records 100, User
Marker depth memory storage	Five with date/time stamp
Power Battery type:	Eight AA size, alkaline. Typical battery life: 25 hours
Display	Large graphic high?contrast LCD with backlight
Speaker	0.25W
Headphone jack	Standard mini-jack
Serial port	Standard RS232 serial with DB9 connector

**Construction Methods:**

The RFID markers are placed at 25' increments, when there is a horizontal/vertical line change, change in pipe size or number of conduits. They will also be placed at bends, 22/5 degrees and larger, crossings of existing utilities, ends of casings, at valves, one foot north or west of the valve over the main line, specified fittings and as determined by the Engineer. The ball markers will be placed during the backfill operation of the facility with a 3' minimum cover for roadway applications and a 5' maximum depth; near surface markers are placed at the end of every other rod length for directional drilling operations with a minimum depth of 1' in non?roadway applications and a maximum depth of 3' in roadway crossings. During the test pitting for the directional drilling operation, ball markers will be placed on the existing utility crossings. Ball/near surface markers will be placed on conduit sweeps at 10' increments which is the minimum spacing for all types of markers of the same frequency.

The frequency of the RFID Marker is based upon the specific utility that is being installed as identified in Materials Section.

The contractor shall certify in writing that electronic markers are in place, prior to pavement over any of the marker locations. Electronic markers that are found to be missing shall be installed at the contractor's expense.

The information that is programmed into the RFID attribute of the ball or near surface marker will be established and agreed upon by the specific Utility Company and/or the Department prior to installation.

**Method of Measurement:**

The measurement of payment shall be for furnishing and installation of the materials listed in the breakout sheet in accordance with the units indicated as Each installed in place, complete and accepted.

**Basis of Payment:**

The quantity of Utility RFID marking and GPS based utility as-built mapping system will be paid for at the Contract lump sum. Price and payment shall constitute full compensation for furnishing Handheld GPS Device, Type 1 Electronic Marker Locator for Locate/Read/Write, Type 2 Locator for Cable/Pipe/Electronic Marker, Central Mapping Software and for furnishing and installing Marker Balls and Near Surface Peg Markers as broken down in the break-out sheet.

A breakout sheet attached to the Bid Proposal lists the different elements of work or materials involved in completing this item. The Contractor shall fill in a unit price for each item and the cost (unit price times the proposed quantity). The Lump Sum cost for Item 763515, shall be derived from the total sum of the cost of all items listed. The breakout sheet shall be attached to the Bid Proposal. Failure to submit the breakout sheet with the Bid Proposal will result in the bid being declared nonresponsive and rejected.

The Department reserves the right to delete from the Contract one or more items listed and the right to add or subtract from the quantity of each item. The total price to be paid will be adjusted in accordance with the Contractor's unit prices as required above. There will be no extra compensation or increase in unit prices in the breakout sheet if such additions and/or deletions are made to the quantities.

7/11/2018

**763598 - FIELD OFFICE, SPECIAL I**

**Description:**

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

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

**Construction and Equipment:**

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

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

The Contractor shall construct and maintain an all weather parking area adjacent to the office of at least 2500 square feet and having a minimum of 10 functional parking spaces striped for full size cars. All weather pathways from the parking area to the entrances of the field office shall also be constructed and maintained. This parking area and entrance pathways shall have a minimum of 2" type "C" hot mix on top of minimum 6" graded aggregate subbase. Snow and/or ice shall be removed from the parking area and from the entrance pathways to the field office within 12 hours after each occurrence. Costs for furnishing, placing, and maintaining the aggregate base and hot mix, and for snow and/or ice removal, to be incidental to the Field Office, Special" Item.

The ground area 30'-0" from around the perimeter of the field office to the field office shall be landscaped and maintained. If the earthen grounds do not have a stand of weed free grass, the surface of this area shall be loosened to a depth of 4" and a satisfactory seedbed shall be prepared free of debris and extraneous matter. The area shall be seeded to a healthy stand of grass or sodded, after which the area shall be watered, mowed, and trimmed a minimum of three times a month during the growing seasons. Cost for this landscaping and maintenance to be incidental to the "Field Office, Type I Special" Item.

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

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

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

The field office shall have satisfactory lighting, electrical outlets, heating equipment, exhaust fan, and air-conditioning connected to an operational power source. Plan and drawing areas shall have individual fluorescent lights situated over their worktables. Replacement fluorescent lights shall be furnished as required. Electrical current, water, and any fuel for heating equipment shall be furnished and the cost of such shall be borne by the Contractor. Maintenance of the heating, exhaust fan, and air-conditioning equipment shall be provided for by validated service contracts for the length of the Contract. These service contracts shall allow a Department authorized project person to deal directly with the service organization to request repair.

The Contractor shall furnish and maintain two fire extinguishers and provide one lighted "Exit" sign for each exterior passage door. Fire extinguisher(s) may be chemical or dry power and shall be UL Classification 10-B:C(min.) and shall be suitable for Types A:B:C fires. A commercial or industrial type first aid and safety kit suitable for project conditions and hazards (including snakebite) shall be provided and maintained to full capacity on a monthly basis.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

2 digital cameras with minimum 1/2.7" 4.0 mega pixel, 3X optical / 6X precision digital zoom, 12-bit DXP A/D conversion, 2.5" 123K pixel LCD display, 5-mode program AE and each with dual media slots, SXGA/XGA/VGA image resolution, E-mail mode. Also intelligent flash with red-eye protection, MPEG movie mode, clip motion, light metering, TEXT mode (GIF), playback zoom and resize, white balance, lithium battery system and in-camera picture effects, memory stick/card (minimum 256MB) capability, and storage case.

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

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

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

Central Processing Unit (CPU) – Lap Top

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

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

Microsoft "Windows® XP Professional" operating system;

Memory (Storage)

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

Monitor (Cathode Ray Tube)

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

Laptop - shall have 15.4" display minimum;

Color Graphics Card

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

Keyboard

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

Printers

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

Scanner

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

Software

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

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

Related Equipment

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

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

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

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

Necessary cables for proper operation,

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

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

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

A wrist rest suitable for use with the furnished keyboard,

Cleaning kits for disk drives,

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

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

Maintenance and Service

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

Supplies

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

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

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

**Method of Measurement:**

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

**Basis of Payment:**

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

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

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

3/3/08

## UTILITY STATEMENT

7/27/2018

State Contract No. T201401101

SR 72, Advanced Utility Relocation from McCoy Road to SR 71  
New Castle County

The following utility companies maintain facilities within the project limits:

**Artesian Water Company**  
**Comcast Cable Company**  
**Delmarva Power – Electric Distribution**  
**Delmarva Power – Gas Distribution**  
**Eastern Shore Natural Gas Company**  
**New Castle County – Sanitary Sewer**  
**Verizon of DE**  
**SUEZ Water Company**

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

### Artesian Water Company

The Artesian Water Company maintains the following facilities within the project limits:

1. A 12" Ductile Iron pipe running along the easterly side of existing Willamette Drive, bending onto the northerly side of SR 72 and is capped at approx. Sta. 963+82, offset left. There is an existing 2" and 1" service crossing SR 72 at Sta. 962+54 and Sta. 963+30 respectively.
2. A 2" plastic pipe running along the southerly side of SR 72 from Sta. 977+07 to Sta. 977+75, at which point the line bends 90 degrees and crosses SR 72 and continues north. An 8" ductile iron pipe feeds from Jester Street into the 2" plastic line at approximate Sta. 977+07.
3. A 12" Ductile Iron Pipe running along the easterly side of SR 71 from Sta. 5+16, crossing SR 72 to Sta. 9+04 at which point the line crosses SR 71 to the westerly side and continues north along SR 71. Existing service lines ranging from ¾" to 1" exist off the main as well as fire hydrant connections.
4. A 16" Ductile Iron Pipe, connects to the 12" DIP along SR 71 at Sta. 8+61, and continues east along the northerly side of SR 72 until Sta. 1021+18. The 16" DIP line reduces to an 8" DIP line at approximately Sta. 997+25. The 8" line continues north on Fieldstone Crossing Drive at Sta. 1021+18. Existing service lines ranging from ¾" to 1" exist off the main, as well as fire hydrant connections

The Artesian Water Company proposed the following adjustments and/or relocations to its existing facilities.

1. A 12" Ductile Iron Pipe encased in a 20" steel casing from Sta. 962+33, offset left 72' to offset right 72' to be directionally drilled under SR 72. The line will then continue east parallel to SR 72 from Sta. 962+26 to Sta. 981+72. 6" fire hydrant connections will be made at approx. Sta. 962+19, Sta. 970+92, and Sta. 979+42. Existing services will be replaced in kind.
2. A 2" plastic pipe will cross SR 72 at Sta. 977+73 offset right 61' to offset left 61' and at Sta. 978+00 offset right 61' to offset left 61'. Existing services will be replaced. A 12" x 8" tee will be installed at Sta. 977+11 to connect the existing 8" line running along Jester Street to the new 12" DIP main.
3. A 12" Ductile Iron Pipe from Sta. 981+72 along SR 72 will bend 45-degrees around the southwest corner of the SR 72 and SR 71 intersection to Sta. 6+29, offset left 35' and continue south along SR 71 until Sta. 5+80 at which point the line will be directionally drilled under SR 71 until offset right 56'. The line will then continue north along SR 71 to Sta. 6+44, offset right 56' at which point it bends 45-degrees around the southeast corner of the intersection of SR 72 and SR 71 until Sta. 984+34. The line will then continue east along SR 72 until Sta. 985+20, offset right 64'. The line will then be directionally drilled in a 20" steel casing under SR 72 at Sta. 985+20, offset right 63' to offset left 53'. A 16" x 12" tee will be placed here to connect to 16" ductile iron pipe referenced below.
  - a. A 16" DIP line will continue from the tee connection west to Sta. 984+68, offset left 53' and bend around the northeast corner of the SR 72 and SR 71 intersection to Sta. 9+24, the line will then continue northwest to Sta. 9+74, at which point it bends north along the easterly side of SR 71 until Sta. 10+98, offset right 30'.
    - i. A 16" x 12" tee will be placed along the 16" DIP at Sta. 9+94, 10+32, and 10+93. At these stations a 12" DIP will be directionally drilled in a 20" steel casing under SR 71 until offset left 41', 40', and 30' respectfully. The third 12" DIP line will be connected to the existing 12" line at Sta. 11+07, offset left 21'. Existing services will be replaced in kind, a 6" fire hydrant connection will be installed at approx. Sta. 10+78, offset right 46'.
4. A 16" Ductile Iron pipe will be placed from the tee referenced in Note 3 at Sta. 985+20, offset left 53', run along SR 72 until Sta. 998+20, offset left 56'. The line will be reduced to an 8" Ductile Iron Pipe via a 16" x 8" reducer at approx. Sta. 998+00 and the 8" pipe will continue east to Sta. 1018+34, offset left 60' at which point it turns northeast to 1018+63, offset left 77' where it turns east again to Sta. 1021+15, offset left 75'.
  - a. Off the 8" line a 4" service line will be directionally drilled under SR 72 at Sta. 1008+17, offset left 59' to offset right 65' in a 12" steel casing.
  - b. Additionally a 6" ductile iron pipe off the 8" main line will be directionally drilled under SR 72 at Sta. 1017+89 offset left 60' to offset right 41', and turn southwest to connect to the existing 6" ductile iron pipe running south along Copples Lane.
  - c. 6" fire hydrant connections will be made along the 16" DIP in Note 4 at Sta. 988+01, Sta. 997+88, Sta. 1008+00, and Sta. 1017+70.

5. Artesian Water Company shall remove and install their pole, overhead cable, underground electric and communications, and perform all related connections to their existing facilities within the project limits as shown on the construction plans. The pole will be located at Sta. 997+47.34, offset left 72'.

Additionally the relocations will be directionally drilled under roadways and business entrances as denoted on the construction plans at Sta. 991+78 offset left 55' to offset right 75', Sta. 994+48 offset left 55' to offset right 75', Sta. 996+72 offset left 56' to offset right 75', Sta. 999+41 offset left 57' to offset right 75', Sta. 1001+44 offset left 57' to offset right 75', Sta. 1002+43 offset left 57' to offset right 75', Sta. 1003+35 offset left 58' to offset right 75', Sta. 1006+09 offset left 58' to offset right 75', Sta. 1007+16 offset left 58' to offset right 75', Sta. 1010+14 offset left 59' to offset right 75', Sta. 1010+98 offset left 59' to offset right 68', Sta. 1015+37 offset left 60' to offset right 67'.

The Artesian Water Company will complete these changes. These relocations/adjustments are expected to take approximately 140 calendar days to complete after the Company has been given a minimum 30 calendar days advance notice that work shall begin and the right-of-way and proposed work has been laid out by the State's contractor.

#### **Comcast Cable Company**

Comcast Cable Company maintains aerial and underground facilities throughout the project limits.

The company shall relocate their existing aerial facilities to the new utility poles within the project limits as shown on the construction plans.

The following underground cable line relocations will take place:

1. Sta. 1006+56, offset right 57'
2. Sta. 1008+13, offset right 57'
3. Sta. 1013+82, offset left 58'
4. Sta. 1017+86, offset left 62'
5. Sta. 1019+82, offset right 64'
6. Sta. 1029+14, offset right 64'
7. Sta. 1032+83, offset right 66'

The Comcast Cable Company will complete these changes. These relocations/adjustments are expected to take approximately 30 calendar days to complete after the Company has been given a minimum 14 calendar days advance notice that work shall begin and the right-of-way and proposed work has been laid out by the State's contractor.

#### **Delmarva Power - Electric Distribution**

Delmarva Power - Electric maintains aerial and underground facilities throughout the project limits.

The Company shall remove and install their poles and overhead cables, and perform all related connections to their existing facilities within the project limits as shown on the construction plans. The new pole locations are as follows:

1. Sta. 973+79 offset right 69'
2. Sta. 976+72 offset right 63'
3. Sta. 981+87 offset right 72'
4. Sta. 982+28 offset left 51' (Pole needs to be held during Eastern Shore Natural Gas – 16" gas main construction)
5. Sta. 983+59 offset right 149'
6. Sta. 984+06 offset right 76'
7. Sta. 984+18 offset left 104'
8. Sta. 983+08 offset left 206'

Note: Poles #3 through #8 listed above need to be installed at a sufficient height to accommodate a 34' high signal pole configuration as part of future contract T200601102

9. Sta. 986+20 offset right 64'
10. Sta. 988+30 offset right 62'
11. Sta. 990+43 offset right 62'
12. Sta. 992+05 offset right 62'
13. Sta. 993+56 offset right 62'
14. Sta. 995+21 offset right 62'
15. Sta. 996+93 offset right 62'
16. Sta. 997+33 offset right 62'
17. Sta. 998+82 offset right 62'
18. Sta. 1000+66 offset right 62'
19. Sta. 1002+48 offset right 60'
20. Sta. 1004+82 offset right 58'
21. Sta. 1004+85 offset left 69'
22. Sta. 1006+55 offset right 59'
23. Sta. 1008+10 offset right 59'
24. Sta. 1010+23 offset right 59'
25. Sta. 1012+04 offset right 59'
26. Sta. 1013+81 offset right 59'
27. Sta. 1013+81 offset left 66'
28. Sta. 1015+72 offset right 59'
29. Sta. 1017+22 offset right 145'
30. Sta. 1017+86 offset right 63'
31. Sta. 1017+60 offset left 69'
32. Sta. 1019+82 offset right 59'
33. Sta. 1021+93 offset right 59'
34. Sta. 1021+93 offset left 61'

35. Sta. 1023+69 offset right 61'
36. Sta. 1025+61 offset right 59'
37. Sta. 1025+74 offset left 61'
38. Sta. 1026+84 offset right 58'
39. Sta. 1029+10 offset right 60'
40. Sta. 1030+89 offset right 61'
41. Sta. 1032+83 offset right 63'

Note: Poles #40 through #41 listed above need to be installed at a sufficient height to accommodate a 22' high signal pole configuration as part of future contract T200601102

The following underground electric line relocations will take place:

1. Sta. 970+77, offset right 69'
2. Sta. 973+79, offset right 69'
3. Sta. 975+43, offset left 51'
4. Sta. 981+65, offset left 43' to Sta. 982+28, offset left 51'
5. Sta. 986+20, offset right 64'
6. Sta. 996+38, offset right 65' to Sta. 997+33, offset right 62'
7. Sta. 1000+66 offset right 62' to Sta. 1001+32 offset right 72'
8. Sta. 1006+56, offset right 59'
9. Sta. 1008+10, offset right 57' to Sta. 1008+56 offset right 58'
10. Sta. 1013+81, offset left 66'
11. Sta. 1017+61, offset left 69' to Sta. 1017+10, offset left 69'
12. Sta. 1017+61, offset left 69' to Sta. 1019+51, offset left 84'
13. Sta. 1019+82, offset right 59'
14. Sta. 1021+93, offset left 61'
15. Sta. 1029+10, offset right 60' to Sta. 1029+20, offset left 63'
  - a. Switchgear and transformer to be relocated to private property by Delmarva Power - Electric
16. Sta. 1032+83, offset right 63'

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

### **Delmarva Power - Gas Distribution**

The Delmarva Power – Gas Distribution Company maintains the following facilities within the project limits:

1. A 8" plastic line running along the southerly side of SR 72 from west of the beginning of the project limits, approx. Sta. 956+00 to approx. Sta. 982 +75 at which point the line bends 90 degrees at the SR 72 and SR 71 intersection and runs along the westerly side of SR 71 through the project limits.

2. An 8" plastic line crosses SR 71 at approx. Sta. 5+25, and then bends 90 degrees and runs along the easterly side of SR 71 until approx. Sta. 7+10. The line then bends around the southeast corner of the SR 72 and SR 71 intersection and runs along the southerly side of SR 72 until Sta. 984+90, at which point the line crosses SR 72, and ties into the existing 8" main, offset 48' left.

3. A 8" plastic line running along the easterly side of SR 71 from north of the project limits, continues south and bends around the northeast corner of the SR 72 and SR 71 intersection, at which point the lines runs along the northerly side of SR 72 to approx. Sta. 1009+25. The line then bends and heads in a northerly direction out of the project limits. The 8" line continues east outside the project limits before turning south and entering the project limits again at approx. Sta. 1017+75 and running along the northerly side of SR 72 through the east project limits.

- a) A 2" plastic line runs north from the 8" main on either side of the Fieldstone Crossing Drive at approx. Sta. 1020+75 and Sta. 1021+25.
- b) A 4" Plastic line runs south from the 8" main and crosses SR 72 at approx. Sta. 1018+50 and continues south outside the project limits.
- c) A 4" Plastic line runs south from the 8" main and crosses SR 72 at approx. Sta. 1033+25 and continues along the westerly side of Wilson Road out of the project limits.

The Delmarva Power – Gas Distribution Company proposes the following adjustments and/or relocations to its existing facilities

1. A 8" plastic line running along the southerly side of SR 72 tying into the existing facility at Sta. 962+39, offset right 48', continuing east along SR 72 until Sta. 978+50, offset right 48' where it bends southeast to Sta. 979+41, offset right 61' at which point it will bend to the east and continue to Sta. 982+64, offset right 61' tying to the existing 8" plastic gas main.
2. A 8" plastic line running along the northerly side of SR 72 from Sta. 984+91, offset left 48', and continuing east until approx. Sta. 1008+89, offset left 53' tying to the existing 8" plastic gas main. .
3. A 8" plastic line running along the northerly side of SR 72 from Sta. 1020+69, offset left 55', and continuing east until approx. Sta. 1040+22, offset left 53', at which point the line will bend 90 degrees and be directionally drilled under SR 72 until offset right 70'. At this point the line will be capped and left as a stub for future connection down McCoy Road.

Furthermore, the relocations will be directionally drilled under roadways and business entrances as denoted on the construction plans.

The Delmarva Power – Gas Company will complete these changes. These relocations/adjustments are expected to take approximately 221 calendar days to complete after the Company has been given a minimum 30 calendar days advance notice that work shall begin and the right-of-way and proposed work has been laid out by the State’s contractor.

**Eastern Shore Natural Gas Company**

The Eastern Shore Natural Gas Company maintains the following facilities within the project limits:

1. A 6” Steel gas main running along the northerly side of SR 72 from west of the project limits continues along the northerly side of SR 72 and continues through the east project limits.
2. A 10” Steel gas main running along the southerly side of SR 72 from west of the project limits continues along the southerly side of SR 72 until Sta. 1039+80 where the line bends 90 degrees and crosses under SR 72 to the northerly side and continues east through the project limits.

The Eastern Shore Natural Gas Company proposes the following adjustments and/or relocations to its existing facilities:

1. At the west project limits approx. Sta. 956+41, the 16” line is to be continued west crossing the railroad corridor. Eastern shore is solely responsible for all work west of Sta. 956+41 including installation, permitting, right of way, and easement acquisitions related to the railroad corridor. The 16’ relocation will take place along the northerly side of SR 72 from approx. Sta. 956+41, offset left 47’ and continue east until approx Sta. 1036+39, offset left 48’, at which point the 16” line will turn 90-degrees and tie-into existing facilities at Sta. 1039+74, offset 70’ left.
2. The 10” line relocations will take place along the northerly side of SR 72 from approx. Sta. 956+56, offset 26’ at which point it continues to Sta. 956+40, offset 38’ and begins running parallel to the 16” relocated line and continue east along SR 72 until approx. Sta. 1039+85, offset left 39’, at which point the 10” line will tie-into the existing facilities

Furthermore, the relocations will be directionally drilled under roadways and business entrances as denoted on the construction plans.

The Eastern Shore Natural Gas Company will complete these changes. These relocations/adjustments are expected to take approximately 252 calendar days to complete after the Company has been given a minimum 30 calendar days advance notice that work shall begin and the right-of-way and proposed work has been laid out by the State’s contractor.

## New Castle County – Sanitary Sewer

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

1. A 2” HDPE force main crossing SR 72 at Sta. 978+59 that continues north outside the project limits.
2. A 10” PVC force main running along the easterly side of SR 71, that comes in from south of the project limits, and bends around the southeast corner of the SR 72 and SR 71 intersection to approx. Sta. 983+98, offset right 41’ and then crosses SR 72 to a manhole at approx. Sta. 984+01, offset left 31’. The line then becomes a 15” PVC line out that manhole and runs north and intersects with a 15” PVC gravity main at manhole at approx. Sta. 984+11, offset left 63’.
3. A 15” PVC gravity main runs along the northerly side of SR 72 from a manhole at Sta. 984+11, offset left 63’, and continues east until Sta. 1001+24, offset left 50. The line then heads north outside the project limits.
4. Existing 4” and 6” PVC force mains run along the southerly side of SR 72 from manhole at approx. Sta. 1020+93, offset right 44’ and the 4” continues to approx. Sta. 1037+12, offset right 72’. The 6” PVC line comes to a manhole at Sta. 1033+31, offset right 58’ and exits the manhole heading south down Wilson Road outside the project limits.

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

1. No relocations of the 2” HDPE force main are anticipated at this time.
2. No relocations of the 10”PVC force main are anticipated at this time.
3. An 8” PVC gravity system will be relocated on the northerly side of SR 72 from approx. Sta. 961+59 to approx. Sta. 964+29.
  - a. Install four (4) new 48” precast manholes, SM-1, SM-2, SM-3, and SM-4.
  - b. Install approx. 122’ of 8” PVC (SP-1) from SM-1 to SM-2 via directional drilling.
    - i. A 6” stub will be placed at SM-1 and SM-2.
  - c. Install approx. 131’ of 8” PVC (SP-2) from SM-2 to SM-3 via open trenching.
  - d. Install approx. 63’ of 8” PVC (SP-3) from SM-3 to SM-4 via open trenching.
  - e. Install approx. 215’ of 8” PVC (SP-4) from SM-4 to existing manhole 364-187 via open trenching.
4. A 15” PVC gravity system will be relocated on the northerly side of SR 72 from approx. Sta. 981+67 to approx. Sta. 1001+33.
  - a. Install nine (9) new 60” precast manholes, SM-5, SM-19, SM-20, SM-6, SM-7, SM-8, SM-30, SM-9, and SM-10.
  - b. Install approx. 259’ of 8” PVC (SP-5) from SM-19 to SM-20 via jack and bore with 24”x3/8”x159’ steel casing pipe.

- c. Install approx. 190' of 15" PVC (SP-6) from SM-20 to SM-5 via open trenching and using 30"x3/8"x21' steel casing pipe.
    - i. A 6" PVC cleanout stub will be placed at Sta. 985+74.
  - d. Install approx. 44' of 15" PVC (SP-19) from SM-20 to existing manhole via open trenching and using 30"x3/8"x44' steel casing pipe.
  - e. Install approx. 298' of 15" PVC (SP-7) from SM-5 to SM-6 via open trenching.
  - f. Install approx. 158' of 15" PVC (SP-8) from SM-6 to SM-30 via open trenching.
  - g. Install approx. 140' of 15" PVC (SP-30) from SM-30 to SM-7 via open trenching.
    - i. An 8" PVC plug will be placed at both SM-30 and at SM-7.
  - h. Install approx. 300' of 15" PVC (SP-9) from SM-7 to SM-8 via open trenching.
    - i. An 8" PVC plug will be placed at SM-8.
  - i. Install approx. 300' of 15" PVC (SP-10) from SM-8 to SM-9 via open trenching.
  - j. Install approx. 198' of 15" PVC (SP-11) from SM-9 to SM-10 via open trenching.
    - i. Install approx. 16' of 6" PVC (SP-20) from SM-9 to SA-3 (A 6" cleanout) at Sta. 998+24, offset left 51'.
    - ii. A 6" PVC with a cleanout will be placed at 999+46, offset left 70'.
    - iii. An 8" PVC Plug will be placed at SM-10.
5. An 8" PVC gravity system will be relocated on the northerly side of SR 72 from approx. Sta. 1010+71 to approx. Sta. 1020+95.
- a. Install eight (8) new 48" precast manholes, SM-11, SM-12, SM-13, SM-18, SM-14, SM-15, SM-16, and SM-17.
  - b. Install approx. 45' of 8" PVC (SP-18) from SM-18 to SM-13 via open trenching.
    - i. Install a 6" PVC pipe with a cleanout at both SM-18 and SM-13.
  - c. Install approx. 110' of 8" PVC (SP-12) from SM-11 to SM-12 via open trenching.
    - i. Install a 6" PVC pipe with a cleanout at both SM-11 and SM-12.
  - d. Install approx. 123' of 8" PVC (SP-13) from SM-13 to SM-12 via jack and bore with 24"x3/8"x118" steel casing pipe.
  - e. Install approx. 252' of 8" PVC (SP-14) from SM-13 to SM-14 via open trenching.
    - i. Install a 6" PVC pipe with a cleanout along SP-14 at Sta. 1012+66.
  - f. Install approx. 294' of 8" PVC (SP-15) from SM-14 to SM-15 via open trenching.
    - i. Install a 6" PVC pipe with a cleanout along SP-14 at Sta. 1014+58.
    - ii. Install a 6" PVC pipe with a cleanout at SM-15.
  - g. Install approx. 143' of 8" PVC (SP-16) from SM-15 to SM-16 via open trenching.
  - h. Install approx. 289' of 8" PVC (SP-17) from SM-16 to SM-17 via open trenching.

The State's contractor will complete these changes. The contractor must be approved by the language set forth in the Specification for Item 711501, Sanitary Sewer System. These relocations/adjustments are expected to take approximately 40 calendar days to complete after 30 calendar days advance notice that work shall begin and the right-of-way and proposed work has been laid out.

## Verizon of DE

Verizon of DE maintains aerial and underground facilities throughout the project limits.

The Company shall remove and install their poles and overhead cables, and perform all related connections to their existing facilities within the project limits as shown on the construction plans. The new pole locations are as follows:

1. Sta. 961+07 offset right 65'
2. Sta. 962+73.offset left 53'
3. Sta. 964+16 offset left 50'
4. Sta. 965+84 offset left 49' (Pole needs to be held during Eastern Shore Natural Gas – 16" gas main construction)
5. Sta. 967+02 offset left 48' (Pole needs to be held during Eastern Shore Natural Gas – 16" gas main construction)
6. Sta. 968+99 offset left 50'
7. Sta. 970+52 offset left 52'
8. Sta. 970+77 offset right 69'
9. Sta. 972+07 offset left 52'
10. Sta. 973+69 offset left 51'
11. Sta. 975+42 offset left 51'
12. Sta. 976+85 offset left 51'
13. Sta. 978+57 offset left 50'
14. Sta. 980+67 offset left 50'

The following underground cable line adjustments will take place.

1. Along the northerly side of SR 72 Verizon maintains 2 – 4" PVC conduit and 2 Buried cables from Sta. 959+50 to 1034+50 that will be abandoned.
2. Along the southerly side of SR 72, Verizon maintains sixteen (16)-4" conduits in a 4x4 square arrangement running parallel along the shoulder throughout the project limits. Verizon will adjust their conduits as follow.
  - a. Flare the top 2 rows of conduits down beside the bottom 2 rows of conduits to create a 2x8 conduit structure. Pour a 6" encasement of Class B, high-early strength concrete on top of the 2x8 conduit structure. The encasement will provide protection from the future roadway box as proposed as part of Contract T200601102. The encasement shall lie entirely below the bottom of the proposed roadway box at the following approximate station ranges. This work is to be completed Saturday 8am to Monday 6am pending 10 days advanced notification to the project engineer and approval from the project engineer.
    - i. Sta. 992+25 to 993+75
    - ii. Sta. 1026+00 to 1027+50

- b. Open cut the roadway and flare the top 2 rows of conduits down beside the bottom 2 rows of conduits to create a 2x8 conduit structure at the flowing approximate station ranges.
    - i. Sta. 962+50 to Sta. 963+50
    - ii. Sta. 970+50 to Sta. 971+50
    - iii. Sta. 991+50 to Sta. 994+50
    - iv. Sta. 1025+50 to Sta. 1027+50.
3. Verizon proposes to place 2-4" conduit at sta. 982+00, from MH-45 for 30' to the new pole at Sta. 981+87 and place 2-4" for 257' from MH-45 to the new pole at Sta. 5+05 Red Lion Rd.
4. At the completion of all adjustments, backfill and patch the roadway as necessary to complete the adjustments.

Verizon will relocate cables at the following intersections: Wilmette Drive at Wrangle Hill Rd. Red Lion Rd North & South at Wrangle Hill Rd, Connell Drive at Wrangle Hill Rd, Copples Lane at Wrangle Hill Rd, Fieldstone Crossing Rd at Wrangle Hill Rd and Sunnyside Lane at Wrangle Hill Rd.

The Verizon of DE Company will complete these changes. These relocations/adjustments are expected to take approximately 135 calendar days to complete after the Company has been given a minimum 30 calendar days advance notice that work shall begin and the right-of-way and proposed work has been laid out by the State's contractor.

### **SUEZ Water Technologies**

SUEZ Water Technologies maintains the following facilities within the project limits:

1. An 8" plastic water line water line running along the westerly side of Sunnyside Lane coming into the project limits begins at Sta. 1025+08, offset right 96' and continues north to Sta. 1025+21, offset right 45' at which point it turns and continues east along the southerly side of SR 72 outside the project limits.

SUEZ Water Technologies proposes the following adjustments and/or relocations to its existing facilities:

1. A new 12" plastic line from the existing water valve at approximately Sta. 1028+10, offset right 49', bending 45 degrees to Sta. 1028+35, offset right 64'. The line continues east until Sta. 1028+99, offset right 64'. The 12" plastic line bumps out it's alignment from offset right 64' to 66' at Sta. 1029+10 and Sta. 1030+89 to provide adequate horizontal clearance around the proposed DP-E pole. The line will continue east offset 64' until Sta. 1032+63. The line will bend 45 degrees to Sta. 1032+78, offset right 67' and continue east to Sta. 1033+11, offset right 67'. The line will then bend 45 degrees in a northerly direction until Sta. 1033+21, offset right 60', and then again bend 45 degrees in the northerly direction tying into the existing 12" line at Sta. 1033+20, offset right 56'.

The Suez Water Company will complete these changes. These relocations/adjustments are expected to take approximately 14 calendar days to complete after the Company has been given a minimum 30 calendar days advance notice that work shall begin and the right-of-way and proposed work has been laid out by the State's contractor.

### **GENERAL UTILITY NOTES**

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

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

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

1. The Contractor's attention is directed to Section 105.09 Utilities, Delaware Standard Specifications, August 2016. The Contractor shall contact Miss Utility (1-800-282-8555) two working days prior to any excavation. The Contractor is responsible for the support and protection of all utilities when excavating. The Contractor is responsible for ensuring proper clearances, including safety clearances, from overhead utilities for construction equipment. The Contractor is advised to check the site for access purposes for his equipment and, if necessary, make arrangements directly with the utility companies for field adjustments for adequate clearances.
2. The information shown in the Contract Documents, including the Utility Statement and the Utility Schedule contained herein, concerning the location, type and size of existing and proposed utilities, their locations, and construction timing has been compiled by the preparer based on information furnished by each of the involved Utility Companies. It

shall be the responsibility of the State's Contractor to verify all information and coordinate with the Utility Companies prior to and during construction, as specified in Section 105.09 of the Standard Specifications.

3. It is understood and agreed that the Contractor has considered in his bid all permanent and temporary utility appurtenances in their present and relocated positions as shown on the plans or described in the Utility Statement or are readily discernible and that no additional compensation will be allowed for any delays, inconvenience, or damage due to any interference from the utility facilities and appurtenances or the operation of moving them, except that the Contractor may be granted an equitable extension of time. The contractor's means and method of construction are not taken into account when known utility conflicts are identified. If the Contractor's means and method of construction create a utility conflict the Utility Statement will prevail in discussions with the utility and the Contractor. The State's Contract shall be responsible for any costs associated with any temporary outages; holding, bracing and shielding of utility facilities; temporary relocations; or permanent relocations that are not specifically identified in this utility statement or shown in the contract plan set.
  
4. Coordination and cooperation among the Utility Companies and the State's Contractor are of prime importance. Therefore, the Contractor is directed to contact the following Utility Company representatives with any questions regarding this work prior to submitting bids and work schedules. Proposed work schedules should reflect the Utility Companies' proposed relocations. The Utility Companies do not work on weekends or legal holidays.

NAME	COMPANY	PHONE	EMAIL
Wayne Tyler, Jr	Artesian Water Company, Inc.	(302) 453-6987	<a href="mailto:WTyler@artesianwater.com">WTyler@artesianwater.com</a>
Keith Allridge	Comcast Cable Communications, Inc.	(717) 776-1073	<a href="mailto:keith@americomm-llc.com">keith@americomm-llc.com</a>
Angel Collazo	Delmarva Power – Electric Distribution	(302)-454-4370	<a href="mailto:angel.collazo@delmarva.com">angel.collazo@delmarva.com</a>
Kristin Stanfill	Delmarva Power – Gas	(302) 429-3364	<a href="mailto:kristin.stanfill@delmarva.com">kristin.stanfill@delmarva.com</a>
Mark Parker	Eastern Shore Natural Gas	(302) 213-7270	<a href="mailto:mcparker@esng.com">mcparker@esng.com</a>
David C. Clark	New Castle County Department of Special Services	(302) 395-5705	<a href="mailto:dccclark@ncede.org">dccclark@ncede.org</a>
Ted Harris	SUEZ Water of Delaware	(302) 633-5905	<a href="mailto:ted.harris@suez-na.com">ted.harris@suez-na.com</a>
George Zang	Verizon Delaware, LLC	(302) 422-1238	<a href="mailto:george.w.zang@verizon.com">george.w.zang@verizon.com</a>

5. As outlined in Chapter 3 of the DelDOT Utilities Manual, individual utility companies are responsible for obtaining all required permits from municipal, State and federal government agencies and railroads. This includes but is not limited to water quality permits/DNREC Water Quality Certification, DNREC Subaqueous Lands/Wetlands permits, DNREC Coastal Zone Consistency Certification, County Floodplain permits (New Castle County only), U.S. Coast Guard permits, US Army Corps 404 permits, sediment and erosion permits, and railroad crossing permits.

6. Individual utility companies are required to restore any areas disturbed in conjunction with their relocation work. If an area is disturbed by a utility company and is not properly restored, the Department may have the highway contractor perform the necessary restoration. Any additional costs incurred as a result will be forwarded to the utility company.
7. 16 Del. C. § 7405B requires notification to and mutually agreeable measures from the public utility operating the electric line for the any person intending to carry on any function, activity, work or operation within dangerous proximity of any high voltage overhead electric lines. All contractors/other utilities must also maintain a distance of 10'-0" from all energized lines.
8. Any existing facilities that are comprised of hazardous materials will be removed by the Utility Company unless otherwise outlined in the contract documents or language above. Any existing facilities containing hazardous materials will be purged by the Utility Company unless otherwise outlined in the contract documents or language above.

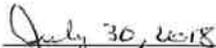
**Prepared and Recommended by:**

  
\_\_\_\_\_  
Bradley Herb, PE / JMT

  
\_\_\_\_\_  
DATE

**Approved as to form by:**

  
\_\_\_\_\_  
Utilities Section, DelDOT

  
\_\_\_\_\_  
DATE

cc. Eric Cimo, DelDOT Utilities

T201401101 SR 72, Advanced Utility Relocation from McCoy Road to SR 71  
**CONSTRUCTION SCHEDULE**

UTILITY ACTIVITY	Nov-2018	Dec-2018	Jan-2019	Feb-2019	Mar-2019	Apr-2019	May-2019	Jun-2019	Jul-2019	Aug-2019	Sep-2019	Oct-2019	Nov-2019	Dec-2019	Jan-2020	Feb-2020	Mar-2020	Apr-2020	May-2020	Jun-2020	Jul-2020	Aug-2020	Sep-2020	Oct-2020	Nov-2020	
State's General Contractor																										
Artesian Water Company																										
Comcast Cable Company																										
Delmarva Power - Electric Distribution																										
Delmarva Power - Gas Distribution																										
Eastern Shore Natural Gas Company																										
New Castle County - Sanitary Sewer																										
Verizon of DE																										
SUEZ Water Company																										

SR 72, Advanced Utility Relocation  
 from McCoy Road to SR 71  
 DelDOT Proj. No. T201401101

State Contract No. T201401101  
 SR 72, Advanced Utility Relocation from McCoy Road to SR 71  
 New Castle County

T201401101 Construction Bar Chart.xls

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

CERTIFICATE OF RIGHT-OF-WAY STATUS

STATE PROJECT NO. T200601102

FAP Number: ESTP-356(7)

SR72 McCOY ROAD TO SR71

NEW CASTLE COUNTY

Certificate of Right-of-Way Status - Conditional

Status - Level 3

**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:**

The acquisition or right of occupancy and use of some remaining parcels is not complete, but all occupants of the residences on such parcels have had replacement housing made available to them in accordance with 49 CFR 24.204. The parcels which are not available are:

**See attached list.**

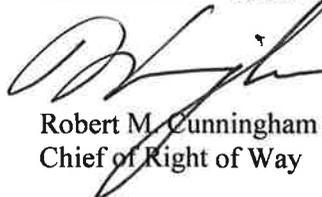
All necessary real property interests have been or shall be acquired in accordance with current FHWA/State directives covering the acquisition of real property.

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

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

Anticipated clearance for all parcels is November 16, 2018

REAL ESTATE SECTION



Robert M. Cunningham  
Chief of Right of Way

July 30, 2018

**PROJECT NO. T200601102**

**SR 72, MCCOY ROAD TO SR 71**

**Status of Parcels for a Stipulated Level 3 Certification**

<u>Parcel No</u>	<u>Owner</u>	<u>Status</u>	<u>Availability</u>
Parcel 3-L	Long & Bailey	In settlement	10/15/18
Parcel 4-L	Klerlein Properties, LLC	Meeting scheduled for 8/6 to bring to closure	11/1/18
Parcel 5-L	Bowman	In negotiations	11/1/18
Parcel 7-L	JGW Two, LLC	In negotiations/getting close	10/1/18
Parcel 14-L	Morelli	In settlement	9/15/18
Parcel 15-L	Morelli	In settlement	9/15/18
Parcel 16-L	Bowen	In settlement	10/15/18
Parcel 20-L	Hammond	Meeting next week for signatures	10/1/18
Parcel 33-L	Catalyst Trading	Agreed on offer preparing docs & working on relocation of trailers	10/15/18
Parcel 1-R	Sheet Metal Contracting	In settlement	10/15/18
Parcel 2-R	Patro	Probable Condemnation	11/16/18
Parcel 6-R	Traditions at Jester Crossing Maintenance	In settlement	10/15/18
Parcel 12-R	House of Refuge	In settlement	9/15/18
Parcel 16-R	Rogers	In settlement	9/15/18
Parcel 19-R	Ghione/Ambrosino	In settlement	9/15/18
Parcel 25-R	Haworth Corp	In settlement	10/15/18
Parcel 26-R	Haworth Corp	In settlement	10/15/18
Parcel 27-R	Kramer	In settlement	8/15/18

**PREVIOUS CONDEMNATIONS ADJUSTED ACCORDING TO REVISION  
WITH PREVIOUS ORDER OF POSSESSIONS**

Parcel 29-R Lester



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

JENNIFER COHAN  
SECRETARY

August 21, 2018

ENVIRONMENTAL REQUIREMENTS

FOR

State Contract No. T201401101  
Federal Aid No.: ESTP-N356(14)

Contract Title: SR 72, Advanced Utility Relocation from McCoy Road to SR 71

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

PERMIT REQUIREMENTS:

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

REQUIRED PERMITS AND APPROVAL STATUS:

- U.S. Army Corps of Engineers (USACE) – Nationwide Permit #23 (sent 8/1/18) –CENAP-OP-R-2018-658-85 **expires 3/18/2022**
- Delaware Department of Natural Resources and Environmental Control (DNREC) Wetlands & Subaqueous Lands Section (WLSL) – This project is consistent with Delaware Code Chapter 72, § 7217, Special Exemption (a) – (fyi email sent 7/31/18) - approved
- Delaware Coastal Zone Management (CZM) – Issued – Project is not located in a Critical Resource Water
- DNREC Water Quality Certification (WQC) - Issued – Project is not located in a Critical Resource Water

## SPECIFIC REQUIREMENTS:

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

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

1. The contractor shall employ measures during construction to prevent spills of fuels or lubricants. If a spill should occur, efforts shall be undertaken to prevent its entry into wetlands, aquatic, or drainage areas. Any spills entering wetlands, aquatic, or drainage areas shall be removed immediately. The Division of Water Resources (DNREC), Wetlands & Aquatic Protection Branch, 302-739-4691, shall be notified of any spill(s) within six (6) hours of their occurrence. That office will determine the effectiveness of spill and contamination removal and specify remediation efforts as necessary.
2. All construction debris, excavated material, brush, rocks, and refuse incidental to the work shall be placed either on shore above the influence of flood waters or on some suitable disposal site approved by the department.
3. The disposal of trees, brush, and other debris in any stream corridor, wetland surface water or any drainage ditch is prohibited.
4. There shall be no stockpiling of construction materials or temporary fills in wetlands or subaqueous lands unless otherwise specified on project plans and approved by permitting agencies that govern them. It is the contractor's responsibility to coordinate and secure those additional permits/amendments in deviating from the plan.
5. Construction debris shall be kept from entering adjacent waterways, wetlands, ground cover, or drainage areas. Any debris that enters these areas shall be removed immediately. Netting, mats, or establishing confined work areas in stages may be necessary to address these issues.
6. Refuse material resulting from routine maintenance of worker equipment and heavy machinery is prohibited from being disposed or deposited onto or into the ground. All used oils and filters must be recycled or disposed of properly.
7. Use of harmful chemical wash water to clean equipment or machinery is discouraged. If undertaken, the residue water and/or material must be collected or contained such that it will be disposed of properly. It shall not be deposited or disposed of in waterways, streams, wetlands, or drainage areas.

8. The contractor shall follow all requirements as indicated in the Environmental Compliance Sheet. It is the contractor's responsibility to ensure that workers also follow this requirement. As part of the restrictions, please note the timetables reflected in the contract for the in-stream/water work for endangered species protection.
9. Fill material shall be free of oil and grease, debris, wood, general refuse, plaster and other pollutants, and shall contain no broken asphalt.

ENVIRONMENTAL COMPLIANCE SHEET:

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

1. Specifically, please note the environmental requirements as indicated in the following notes:
  - Stream Restoration and Riprap Treatment – See EC note 3
  - Protection of Resources – See EC note 4. Note that mats are required when traversing wetlands; sandbags or compost filter log is to be used to secure silt fence at areas adjacent to wooded uplands/all wetlands in lieu of trenching; trees to be removed shall be marked with paint prior to the erosion and sediment control meeting; impacts to the adjacent forest are to be minimized, as it is a key wildlife habitat.
  - EC note 5 referencing the limit of construction (LOC) of the project is the same LOC as Contract T200601102. All impacts on the EC sheets cover both contracts (T200601102 and T201401101)
  - Mitigation – See EC note 6.
2. DelDOT Environmental Studies Section (302) 760-2264 must be notified if there are any changes to the project methods, footprint, materials, or designs, to allow the Department to coordinate with the appropriate resource agencies (COE, DNREC, and SHPO), for approval.



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

JENNIFER COHAN  
 SECRETARY

**RAILROAD STATEMENT**

**For**

**State Contract No.:** T201401101

**Federal Aid No.:** ESTP-N356(14)

**Project Title:** SR 72, Advanced Utility Relocation from McCoy Road to SR 71

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

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

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

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

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

**Approved As To Form:**

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

2May18  
 \_\_\_\_\_  
 DATE

**BID PROPOSAL FORMS**  
**CONTRACT T201401101.01**  
**FEDERAL AID PROJECT ESTP-N356 (14)**

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 T201401101.01
- Name of Contractor

CONTRACT ID: T201401101.01

PROJECT(S): T201401101

All figures must be typewritten.

CONTRACTOR :

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

SECTION 0001 UTILITIES

0010	201000 CLEARING AND GRUBBING	LUMP		LUMP		
0020	202000 EXCAVATION AND EMBANKMENT	CY	16013.000			
0030	209004 BORROW, TYPE C	CY	60.000			
0040	209005 FURNISHING BORROW, TYPE C FOR PIPE AND UTILITY TRENCH BACKFILL	CY	15500.000			
0050	209006 BORROW, TYPE F	CY	3819.000			
0060	209008 BORROW, TYPE B	TON	16.000			
0070	211000 REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LUMP		LUMP		
0080	301002 GRADED AGGREGATE BASE COURSE, TYPE B, PATCHING	CY	385.000			
0090	302005 DELAWARE NO. 57 STONE	TON	42.000			

CONTRACT ID: T201401101.01

PROJECT(S): T201401101

All figures must be typewritten.

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

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0100	401029 SUPERPAVE TYPE C, PG 64-22, PATCHING	247.000 TON				
0110	401030 SUPERPAVE TYPE B, PG 64-22, PATCHING	709.000 TON				
0120	401031 SUPERPAVE TYPE BCBC, PG 64-22, PATCHING	143.000 TON				
0130	601011 REINFORCED CONCRETE PIPE, 15", CLASS III	112.000 LF				
0140	601014 REINFORCED CONCRETE PIPE, 24", CLASS III	25.000 LF				
0150	601055 REINFORCED CONCRETE PIPE, 21", CLASS V	64.000 LF				
0160	601100 REINFORCED CONCRETE ELLIPTICAL PIPE, 14" X 23", CLASS III	40.000 LF				
0170	601101 REINFORCED CONCRETE ELLIPTICAL PIPE, 19" X 30", CLASS III	126.000 LF				
0180	601130 REINFORCED CONCRETE ELLIPTICAL PIPE, 14"X23", CLASS V	74.000 LB				
0190	601141 REINFORCED CONCRETE FLARED END SECTION, 15"	8.000 EACH				

CONTRACT ID: T201401101.01

PROJECT(S): T201401101

All figures must be typewritten.

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

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0200	601143 REINFORCED CONCRETE FLARED END SECTION, 21"	2.000 EACH				
0210	601144 REINFORCED CONCRETE FLARED END SECTION, 24"	1.000 EACH				
0220	601170 REINFORCED CONCRETE FLARED END SECTION, 14" X 23"	3.000 EACH				
0230	601171 REINFORCED CONCRETE FLARED END SECTION, 19" X 30"	2.000 EACH				
0240	602005 DRAINAGE INLET, 48" X 48"	4.000 EACH				
0250	610019 HIGH EARLY STRENGTH CONCRETE	54.000 CY				
0260	701013 PORTLAND CEMENT CONCRETE CURB, TYPE 1-8	81.000 LF				
0270	701014 PORTLAND CEMENT CONCRETE CURB, TYPE 2	25.000 LF				
0280	701019 INTEGRAL PORTLAND CEMENT CONCRETE CURB AND GUTTER, TYPE 2	10.000 LF				
0290	705002 PORTLAND CEMENT CONCRETE SIDEWALK, 6"	713.000 SF				
0300	707001 RIPRAP, R-4	128.000 SY				

CONTRACT ID: T201401101.01

PROJECT(S): T201401101

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0310	707500 CHANNEL BED FILL	300.000 CY				
0320	711501 SANITARY SEWER SYSTEM	LUMP	LUMP			
0330	760010 PAVEMENT MILLING, BITUMINOUS CONCRETE PAVEMENT	10667.000 SYIN				
0340	762000 SAW CUTTING, BITUMINOUS CONCRETE	2807.000 LF				
0350	762001 SAW CUTTING, CONCRETE, FULL DEPTH	385.000 LF				
0360	763000 INITIAL EXPENSE/DE-MOBILIZATION	LUMP	LUMP			
0370	763501 CONSTRUCTION ENGINEERING	LUMP	LUMP			
0380	763508 PROJECT CONTROL SYSTEM DEVELOPMENT PLAN	LUMP	LUMP			
0390	763509 CPM SCHEDULE UPDATES AND/OR REVISED UPDATES	23.000 EAMO				
0400	763515 UTILITY MARKING SYSTEM	LUMP	LUMP			

CONTRACT ID: T201401101.01

PROJECT(S): T201401101

All figures must be typewritten.

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

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0410	763598 FIELD OFFICE, SPECIAL I	23.000 EAMO				
0420	801000 MAINTENANCE OF TRAFFIC	LUMP	LUMP			
0430	802003 ARROW PANELS TYPE C	5.000 EADY				
0440	805001 PLASTIC DRUMS	155234.000 EADY				
0450	808002 FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	1058.000 EADY				
0460	810001 TEMPORARY WARNING SIGNS AND PLAQUES	6160.000 EADY				
0470	811001 FLAGGER, NEW CASTLE COUNTY STATE	320.000 HOUR				
0480	811013 FLAGGER, NEW CASTLE COUNTY, STATE, OVERTIME	80.000 HOUR				
0490	817002 PERMANENT PAVEMENT STRIPING, SYMBOL/LEGEND, ALKYD-THERMOPLASTIC	336.000 SF				
0500	817013 PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, WHITE/YELLOW, 5"	110979.000 LF				

CANNOT BE  
USED FOR  
BIDDING

CONTRACT ID: T201401101.01 PROJECT(S): T201401101

All figures must be typewritten.

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

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0510	817031 REMOVAL OF PAVEMENT STRIPING	46577.000 SF				
0520	905001 SILT FENCE	16790.000 LF				
0530	905004 INLET SEDIMENT CONTROL, DRAINAGE INLET	7.000 EACH				
0540	905006 INLET SEDIMENT CONTROL, CULVERT INLET	4.000 EACH				
0550	906003 SUMP PIT	1.000 EACH				
0560	907017 COMPOST FILTER LOGS	248.000 LF				
0570	908004 TOPSOIL, 6" DEPTH	42336.000 SY				
0580	908014 PERMANENT GRASS SEEDING, DRY GROUND	42336.000 SY				
0590	908017 TEMPORARY GRASS SEEDING	42336.000 SY				
0600	908019 STREAMBANK SEED MIX, SEEDING	895.000 SY				

CONTRACT ID: T201401101.01

PROJECT(S): T201401101

All figures must be typewritten.

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0610	908020 EROSION CONTROL BLANKET MULCH	4123.000 SY				
0620	909002 SANDBAG DIVERSION	240.000 CF				
0630	909006 STILLING WELL	2.000 CY				
	SECTION 0001 TOTAL					
	TOTAL BID					

CANNOT BE  
USED FOR  
BIDDING

# BREAKOUT SHEET INSTRUCTIONS

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

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

BREAKOUT SHEETS MAY BE SUBMITTED;

VIA E-MAIL TO: [DOT-ASK@STATE.DE.US](mailto:DOT-ASK@STATE.DE.US)  
SUBJECT: **T201401101.01** Breakout Sheet

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

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

<b>SECTION 1</b>	<b>BREAKOUT SHEET - 1</b>	<b>CONTRACT NO. T201401101</b>
<b>ITEM 711501 - Sanitary Sewer System</b>		

ITEM NO.	APPROX. QTY.	UOM	DESCRIPTION	UNIT PRICE	AMOUNT
1	123	LF	6" SDR-26 PVC	\$	\$
2	2086	LF	8" SDR-26 PVC	\$	\$
3	1728	LF	15" SDR-26 PVC	\$	\$
4	122	EA	16" STEEL CASING PIPE (JACK AND BORE)	\$	\$
5	318	LF	24" STEEL CASING PIPE (JACK AND BORE)	\$	\$
6	132	EA	30" STEEL CASING PIPE	\$	\$
7	8	EA	8" PVC MANHOLE PLUG	\$	\$
8	13	EA	6" CLEANOUT	\$	\$
9	11	EA	48" ROUND MANHOLE	\$	\$
10	1	EA	48" ROUND DOGHOUSE MANHOLE	\$	\$
11	8	EA	60" ROUND MANHOLE	\$	\$
12	1	EA	60" ROUND DOGHOUSE MANHOLE	\$	\$
13	2	EA	CONCRETE SEWER TO EXISTING MANHOLE	\$	\$
14	4	CY	CONCRETE ENCASEMENT	\$	\$
15	1	LS	BYPASS PUMPING	\$	\$

Total Bid for Item 711501 - Sanitary Sewer System \$ \_\_\_\_\_  
(LUMP SUM BID PRICE FOR ITEM 711501 )

SECTION 1		BREAKOUT SHEET - 2		CONTRACT NO. T201401101	
ITEM 763515 - Utility Marking System					
ITEM NO.	APPROX. QTY.	UOM	DESCRIPTION	UNIT PRICE	AMOUNT
1	2	EA	Handheld GPS Device	\$	\$
2	2	EA	Type I Electronic Marker Locator for Locate/Read/Write	\$	\$
3	2	EA	Type 2 Locator for Cable/Pip/Electronic Marker	\$	\$
4	1	EA	Central Mapping Software	\$	\$
5	1400	EA	Marker Balls	\$	\$
6	200	EA	Near Surface Pendants	\$	\$
Total Bid for Item 763515 - Utility Marking System \$ _____ (LUMP SUM BID PRICE FOR ITEM 763515 )					

# "ATTENTION"

# TO BIDDERS

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

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

BREAKOUT SHEETS MAY BE SUBMITTED;

VIA E-MAIL TO: [DOT-ASK@STATE.DE.US](mailto:DOT-ASK@STATE.DE.US)  
SUBJECT: **T201401101.01** Breakout Sheet

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

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



**AFFIDAVIT  
OF  
EMPLOYEE DRUG TESTING PROGRAM**

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

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

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

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

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

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

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

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

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

**THIS PAGE MUST BE SIGNED, NOTARIZED, AND RETURNED WITH YOUR BID.**  
**(This form is required from the prime contractor only, not required from subcontractors)**

**CERTIFICATION**

Contract No. T201401101.01  
Federal Aid Project No. ESTP-N356 (14)

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.

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(Insert Exceptions)

**DBE Program Assurance:**

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

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

**Disadvantaged Business Enterprise \_\_\_\_\_ percent (blank to be filled in by bidder)**



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

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

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

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

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

No.	Date								
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**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. T201401101.01, 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