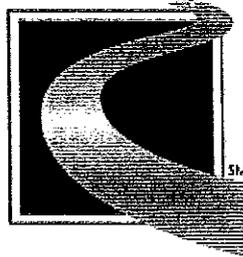


MARYLAND TRANSPORTATION AUTHORITY
Baltimore, Maryland
Invitation for Bids

JOHN F. KENNEDY MEMORIAL HIGHWAY



**Maryland
Transportation
Authority**

Contract No. KH 2048-000-002R

**I-95 SB – Truck Weigh & Inspection Station
Perryville, Maryland
Drainage Improvement for Existing Electrical Boxes**

Cecil County

November 2010



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. KH 2048-000-002R

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NOTICE TO BIDDERS/OFFERORS
SMALL BUSINESS RESERVE PROCUREMENT

This is a Small Business Reserve Procurement as defined in **COMAR 21.11.01.06**, for which award will be limited to certified small business vendors. Only businesses that meet the statutory requirements set forth in State Finance and Procurement Article, §§14-501 —14-505, Annotated Code of Maryland, and that are registered with the Department of General Services Small Business Reserve Program are eligible for award of a contract.

For the purposes of a Small Business Reserve Procurement, a small business is a for-profit business, other than a broker, that meets the following criteria:

- It is independently owned and operated;
- It is not a subsidiary of another business;
- It is not dominant in its field of operation;
- Its **wholesale** operations did not employ more than 50 persons, and its gross sales did not exceed an average of \$4,000,000 in its most recently completed 3 fiscal years;*
- Its **retail** operations did not employ more than 25 persons, and its gross sales did not exceed an average of \$3,000,000 in its most recently completed 3 fiscal years;*
- Its **manufacturing operations** did not employ more than 100 persons, and its gross sales did not exceed an average of \$2,000,000 in its most recently completed 3 fiscal years;*
- Its **service operations** did not employ more than 100 persons, and its gross sales did not exceed an average of \$10,000,000 in its most recently completed 3 fiscal years;*
- Its **construction operations** did not employ more than 50 persons, and its gross sales did not exceed an average of \$7,000,000 in its most recently completed 3 fiscal years;* and
- The **architectural and engineering** services of the business did not employ more than 100 persons and the gross sales of the business did not exceed an average of \$4,500,000 in its most recently completed 3 fiscal years.

* If a business has not existed for 3 years, the employment and gross sales average or averages shall be the average for each year or part of a year during which the business has been in existence.

Further information on the certification process is available at www.dgs.state.md.us and click on the Small Business Reserve hyperlink.

NOTICE TO BIDDERS

Please review the checklist prior to submitting your bid on this Contract.

- When submitting your completed bid, do not separate the book. Submit the whole book including all addenda.
- Make sure that all addenda letters are attached outside of the front cover of the bid book.
- If the addendum has revised the Schedule of Prices, make sure that you have included the revised pages in your bid. Your price should reflect any and all changes.
- Prices must be written numerically and in words, unless approved substitute forms are used (Refer to GP-2.06). Do not leave any items blank.
- When tabulating your final price, make sure all your calculations are correct.
- The Bid/Proposal Affidavit must be completely filled out and signed by all the parties as indicated.
- If Escrow is being offered in a contract, the contractor must indicate whether or not they wish to utilize an Escrow Account for Retained Funds on the provided form.
- A bid bond must accompany all bids of One Hundred Thousand Dollars (\$100,000.00) or more. The bid bond document must be completely filled out and have an original Power of Attorney form attached.
- If the document is too large for the envelope that we have provided, you can place the document in another form of packaging that can be sealed and submitted. If the document is too large for the bid box, you should alert the receptionist.
- Make sure that your company's name, address, the contract number and the bid date appears on the front of the packaging.
- When submitting bid packages via US Mail, Federal Express, DHL, UPS or any other delivery service it is your responsibility to make sure that the bid reaches the bid box before the time deadline. It may be in your best interest to send the package 24 hours in advance of the deadline. Also, when sending packages this way, make sure that the labeling specifies that it is a bid submission.

Notice to Bidders/Offerors

eMaryland Marketplace Fee

In order to take advantage of Maryland State and Local government contracting opportunities, vendors/contractors are encouraged to register with eMaryland Marketplace. The free registration provides a means for businesses to receive e-mail notification of upcoming contracting opportunities in their specified areas of interest and expertise.

For registration requirements, visit:
www.eMarylandMarketplace.com.



NOTICE TO ALL HOLDERS OF THIS CONTRACT DOCUMENT

**NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP)
REPORT 350 IMPLEMENTATION SCHEDULE FOR DEVICES USED IN THE
MAINTENANCE OF TRAFFIC**

Except as otherwise specified in this Section, all items for the maintenance of traffic, including those listed under the following categories, shall be crashworthy in conformance with Level 3 or other Level as specified by the Engineer in conformance with the safety crash testing and performance criteria published in the National Cooperative Highway Research Program (NCHRP) Report 350, "Recommended Procedures for the Safety Performance Evaluation of Highway Features." When conformance with NCHRP Report 350 is required, the Contractor shall provide the Engineer with the manufacturers' certifications that the devices comply with the specified criteria.

Unless specifically waived by an attachment to these Contract Provisions, devices must be approved by the Office of Traffic and Safety.

Category 1 Devices

These devices are cones, tubular markers, flexible delineator posts, and drums, all without any accessories or attachments, which are used for channelization and delineation.

Category 2 Devices

These devices are Type I, II, and III barricades; portable sign supports with signs; intrusion alarms; and drums, vertical panels, and cones, all with accessories or attachments.

Category 3 Devices

- (a) Truck Mounted Attenuators (TMAs) and Trailer Truck Mounted Attenuators (TTMAs).
- (b) Temporary Barrier.
 - (1) Concrete Barrier.
 - (2) Traffic Barrier W Beam and Water Filled Barrier.
 - (3) Steel/Aluminum Barrier.
- (c) Temporary End Treatments.

Category 4 Devices

These devices are area lighting supports, arrow panels, and portable variable message signs that are usually portable or trailer-mounted.



Maryland Department of Transportation
State Highway Administration

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CONTRACT PROVISIONS
(NCHRP) REPORT 350 IMPLEMENTATION SCHEDULE

WORK ZONE DEVICES	IMPLEMENTATION SCHEDULE TO CONFORM TO NCHRP REPORT 350 CRITERIA
<p>CATEGORY 1 Cones, tubular markers, flexible delineator posts, and drums (all without any accessories or attachments)</p>	<p>All devices shall conform to NCHRP Report 350 criteria.</p>
<p>CATEGORY 2 Type I, II, and III barricades; portable signs supports with signs; intrusion alarms; and drums, vertical panels, and cones (all with accessories or attachments)</p>	<p>All devices shall conform to NCHRP Report 350 criteria.</p>
<p>CATEGORY 3 (a) Truck Mounted Attenuators (TMAs); Trailer Truck Mounted Alternators (TTMAs) (b) Temporary Barriers (1) Concrete Barrier (2) Traffic Barrier W Beam and Water Filled Barrier (3) Steel/Aluminum Barrier (c) Temporary End Treatments</p>	<p>All devices shall conform to NCHRP Report 350 criteria.</p>
<p>CATEGORY 4 Portable trailer mounted devices including area lighting supports, arrow panels, and changeable message signs</p>	<p>The Contractor may use devices that do not conform to NCHRP Report 350 criteria, until compliance dates are established. Use of these devices shall comply with the provisions of Part 6 of the MUTCD.</p>



OCCUPYING WETLANDS

The Contractor is hereby alerted to the importance of preserving wetland areas. The Administration, in conjunction with the various environmental agencies, has developed these Contract Documents so as to minimize or eliminate disturbance and damage to existing wetland areas. In order to accomplish this, the following must be rigidly adhered to:

- (a) Prior to performing any work on the project, the areas of wetland will be identified and marked as directed by the Administration. All personnel of the Contractor or sub-contractors shall be alerted to these designated areas.
- (b) The Contractor or sub-contractors shall not impact any wetland or waterway, whether it be permanently or temporarily unless otherwise stipulated in the permit application and approved as an authorized action by the appropriate regulatory agency. No fill shall be placed in these areas without a permit.
- (c) If a Contractor or sub-contractor has to impact a wetland or waterway that is not covered by an existing wetland permit, they shall immediately notify the Engineer. The Engineer will notify the Environmental Programs Division to determine the extent of any permit modification. At that time the Environmental Programs Division will request a permit modification or submit a permit application.
- (d) If the Contractor impacts any wetland or waterway for which they do not have a wetland permit, they shall be responsible for restoring the wetland areas and possibly mitigating the wetland impacts to the full satisfaction of the environmental agencies, which could include monetary compensation.
- (e) The cost of restoration and mitigation of the impacted areas shall be at no additional cost to the Administration.

The importance of not abusing the wetland areas cannot be overemphasized. Abuse of wetland areas could jeopardize the operation of the total Contract and could be cause for a shut-down. If a shut-down occurs because of the Contractor's failure to secure the required permits (i.e. the Contractor's method of work includes impacts not approved by previously acquired permits), the Contractor's negligence or operations, all costs and damages to the Contractor and to the State will be at no additional cost to the Administration. Noncompliance with these requirements will not be considered for an extension of Contract time.



NOTICE TO ALL HOLDERS OF THIS CONTRACT DOCUMENT

HIGH VISIBILITY SAFETY APPAREL POLICY

BACKGROUND. Research indicates that high visibility garments have a significant impact on the safety of employees who work on highways and rights-of-way. In addition, high visibility garments may help to prevent injuries and accidents and to make highway workers more visible to the motoring public, which ultimately improves traffic safety.

STATEMENT OF POLICY.

- (a) The High Visibility Safety Apparel Policy provides a standardized apparel program.
- (b) The program seeks to improve the visibility of all persons who work on Authority highways and rights-of-way.
- (c) All apparel shall contain the appropriate class identification label.
- (d) Compliance with this policy is retroactive and becomes effective immediately. All affected employees shall receive high visibility apparel awareness training.

APPLICABILITY. This policy applies to all Authority employees and all other persons who work on Authority highways and rights-of-way. All workers shall wear, at a minimum, Class 2 ANSI/ISEA 107/2004 apparel.

- (a) For Authority employees, this apparel shall be either fluorescent orange-red or fluorescent yellow-green background material color and be the outermost garment worn.
- (b) Retro-reflective material color for Authority employee apparel shall be silver or white and be visible at a minimum distance of 1,000 feet. The retro-reflective safety apparel shall be designed to clearly recognize and differentiate the wearer from the surrounding work environment. The retro-reflective material may be contrasted by fluorescent orange background material not exceeding one and one half inches on either side of the retro-reflective material.
- (c) For non-Authority employees, this apparel shall be either fluorescent orange-red or fluorescent yellow-green background material color and be the outermost garment worn.
- (d) Retro-reflective material color for non-Authority employee apparel shall either be orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors, and be visible at a minimum distance of 1,000 feet. The retro-reflective safety



CONTRACT PROVISIONS
HIGH VISIBILITY SAFETY APPAREL POLICY

CONTRACT NO. KH 2048-000-002R

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apparel shall be designed to clearly recognize and differentiate the wearer from the surrounding work environment.

REFERENCES.

- (a) ANSI/ISEA 107/2004 standard – American National Safety Institute/International Safety Equipment Association
- (b) MUTCD 2003 – Manual for Uniform Traffic Control Devices - Sections 6D.03B and 6E.02
- (c) Visibility Research – The VCTR 1989 report concludes that fluorescent colors, when compared with non-fluorescent colors, enhance the daytime conspicuity of worker clothing.

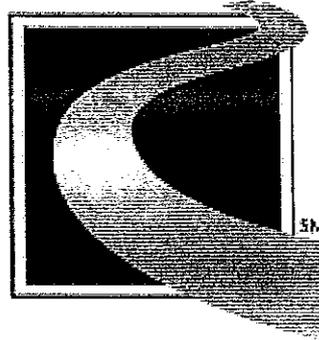
DEFINITIONS.

- (a) Apparel – The outermost high-visibility garment worn by employees who work on Authority highways and rights-of-way.
- (b) Highways – All roads owned by the Maryland Department of Transportation and maintained by the Authority.
- (c) High Visibility – The ability for workers to be distinguishable as human forms to be seen, day and night, at distances that allow equipment operators and motorists to see, recognize, and respond.

MARYLAND TRANSPORTATION AUTHORITY
Baltimore, Maryland

Invitation for Bids

JOHN F. KENNEDY MEMORIAL HIGHWAY



**Maryland
Transportation
Authority**

Contract No. KH 2048-000-002R

**I-95 SB – Truck Weigh & Inspection Station
Perryville, Maryland
Drainage Improvement for Existing
Electrical Boxes**

Cecil County

November 2010

NOTICE TO BIDDERS

A "Pre-Bidding Session" for the purpose of answering or obtaining answers to questions of parties interested in constructing the work relative to Right-of-Way, Utilities, Design, and Construction Details will be conducted at 10:00am on November 23, 2010, in the Conference Room, 1st Floor of Francis Scott Key Bridge Engineering Building at 300 Authority Drive in Dundalk, Maryland. While attendance at the Pre-Bid conference is not mandatory, this is the offeror's opportunity to raise questions and/or issues of concern regarding the project.



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SP 1-1 PROJECT DESCRIPTION

CONTRACT NO.: KH 2048-000-002R

TITLE: I-95 SB – Truck Weigh & Inspection Station, Perryville, Maryland
Drainage Improvement for Existing Electrical Boxes

FACILITY: John F. Kennedy Memorial Highway

COUNTY: Cecil County

ADVERTISED: November 9, 2010

PRE-BID MEETING: **November 23, 2010 at 10:00 a.m** in the Conference Room at the
Maryland Transportation Authority, 300 Authority Drive, 1st Floor,
Engineering Building, Baltimore, MD 21222

PROJECT CONTACT: Project Manager: Mr. Kataw Say at (410) 537-7853
Contract Administration: Ms. Maggie Johnson at (410) 537-7807

BIDS DUE: **12:00 Noon, December 21, 2010**, in the Bid Box on the 1st floor of
the Maryland Transportation Authority, Engineering Building, 300
Authority Drive, Baltimore, Maryland 21222.

CLASSIFICATION: Class B (\$100,001 to \$500,000)

CONTRACT TIME: One Hundred eighty (180) Calendar Days

LIQUIDATED DAMAGES: Eight Hundred Dollars (\$800.00) per Calendar Day

MBE GOALS: Overall 0%
Women owned businesses 0%
African - American owned businesses 0%

SMALL BUSINESS RESERVE PROCUREMENT

BID DOCUMENTS: **\$50.00** Bid documents can be purchased between 7:30 a.m. and 3:30
p.m., Mondays, Wednesdays, Thursdays and Fridays and between
10:00 a.m. and 4:00 p.m. on Tuesdays at the Ticket Office located at
the Francis Scott Key Bridge, Maryland Transportation Authority,
Administration Building, 303 Authority Drive, Baltimore, Maryland
21222.



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The work to be performed under this contract is located at the John F. Kennedy Memorial Highway facility in Cecil County.

This project consists of cleaning out the existing sediment from the bottom of the handhole and installing an underdrain pipe in order to drain the water. Trenching and backfilling for the underdrain pipe is required. Contractor must contact Miss Utility and test pit at all locations for exact position of cables, conduits, and other underground utilities. MDTA notification to Mr. Dan Sawyers (MDTA Utilities Coordinator) at 410-537-1118 shall be given 72 hours in advance of working in the area of the specific utility.

Overall project construction would be expected to take One Hundred Eighty (180) days from the Notice to Proceed.

SP 1-2 SPECIFICATIONS

All work on this project shall conform to the Maryland Department of Transportation, State Highway Administration's Specifications entitled, "Standard Specifications for Construction and Materials" dated July 2008, revisions thereof, or additions thereto, and the Special Provisions included in this Invitation for Bids. In addition, all terms and conditions of the Standard Specifications for Construction and Materials date July 2008, revisions thereof, or additions thereto shall apply to this IFB unless specified herein.

SP 1-3 ORIGINAL FACILITY PLANS AND SITE VISITS

The original facility plans are on file at the Engineering/Finance Building of the Francis Scott Key Bridge and will be made available for inspection to prospective bidders. Parties interested in viewing the plans should contact Mr. Kataw Say, at (410) 537-7853. Parties interested in visiting the site should contact Mr. Dan Sawyers at (410) 537-1118.

SP 1-4 PROMPT PAYMENT TO SUBCONTRACTORS

The prime Contractor is responsible for making timely payments to all Subcontractors and Suppliers and provides written certification as required in Section 17-106 of the State Finance and Procurement Article of the Annotated Code of Maryland, as amended.

This contract requires the Contractor to make payment to all Subcontractors within ten (10) days of receiving payment from the Authority.

Each month, the construction Project Engineer will review the current pay items with the prime Contractor and all involved Subcontractors to ensure that all work satisfactorily completed within specifications is included in the monthly progress payment. For payment purposes, the same



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quantity totals used to compute the payment to the prime Contractor will be the basis for payment to the Subcontractor.

If the Subcontractor does not receive payment within the required ten (10) days, the Subcontractor shall notify the Project Engineer in writing of the amount in dispute including the item numbers and payment quantity for each. The Project Engineer will then notify the Chief of Construction of the dispute. The Chief of Construction or his representative will verbally contact the prime Contractor within 48 hours to ascertain whether or not a performance dispute exists which necessitates non-payment to the Subcontractor. If a performance dispute exists, the prime Contractor must demonstrate that there is a valid basis to withhold payment from the Subcontractor. If the prime Contractor withholds payment from a Subcontractor, the prime Contractor shall provide to the Subcontractor written notice of the withholding of payment. The notice shall detail the reasons for withholding payment as well as the amount. A copy of the notice shall be provided to the Surety and the Authority. If no valid dispute exists, the prime Contractor will be directed to make immediate payment to the Subcontractor. The Subcontractor will be responsible for notifying the Chief of Construction if this payment is not made. Upon receipt of notification, the Chief of Construction will schedule a meeting with the Contractor and Subcontractor to verify and discuss the non-payment issue. This meeting will be held at the Authority's offices within two (2) working days of the Authority's contact with the Subcontractor. If it is determined that the prime Contractor has withheld payment to the Subcontractor without cause, further progress payments to the prime Contractor will be withheld until the Subcontractor is paid. In addition, the Authority may order a suspension of work or other administrative actions as it sees fit.

If an action is taken as stated above the Contractor shall notify the Authority's Project Engineer when payment is made. After the Authority's Project Engineer verifies that payment has been made to the Subcontractor the Authority shall release withheld progress payments.

Nothing in this Special Provision shall be construed to prevent the Subcontractor from pursuing a claim with the surety under the prime Contractor's payment bond at any time.

SP 1-5 WORK HOURS

Refer to Section 104, "Maintenance of Traffic" for times permitted for lane closures and other work hour restrictions.

The Contractor shall cooperate with any other Contractors that are on site during the term of the project, as stated in GP-5.06 of the Standard Specifications.



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SP 1-6 INSURANCE

TC-5.01 INSURANCE

Section TC 5.01 of the Standard Specifications is supplemented as follows:

1. The Contractor shall not commence work under this contract until it has obtained all of the minimum amounts of insurance required by these Special Provisions and the insurance has been approved by the Engineer. The Contractor shall furnish to the Maryland Transportation Authority ("Authority") duly executed certification of all required insurance on forms satisfactory to the Authority. The certificates of insurance shall state that it is in force and cannot be cancelled, release or non-renewed except upon thirty (30) days prior written notice, registered mail to the Authority. All Contractors' insurance policies, with the exception of the Worker's Compensation and Employer's Liability, shall be endorsed to provide as additional insureds the Maryland Transportation Authority and the State of Maryland.
2. The Contractor shall purchase and maintain such insurance as is specified herein which will provide the Authority, its members, employees and agents, as well as the Contractor from claims which may arise out of or as a result of the Contractor's operations under this contract, whether such operations be by the Contractor, by any subcontractor, by anyone directly or indirectly employed by any of them or by anyone whose acts any of them may be liable. This insurance shall be maintained in full force until the Contract has been accepted by the Authority and final payment is made.
3. The Authority requires the following minimum levels of insurance coverage for this contract:

a) Worker's Compensation and Employer's Liability

The Contractor shall, at all times, maintain and keep in force such insurance as will protect him from claims under the Worker's Compensation Act of the State of Maryland and maintain and keep Employer's Liability Insurance at a limit of One Hundred Thousand Dollars (\$100,000.00). The Contractor shall also maintain United States Long Shore and Harbors Act coverage, if such exposure exists.

b) Comprehensive General Liability Insurance

The Contractor shall maintain Comprehensive General Liability Insurance in the amount of at least One Million Dollars (\$1,000,000.00) Combined Single Limit for Bodily Injury Liability and Property Damage Liability Insurance per occurrence and in the aggregate. Such insurance shall specifically include the Comprehensive General Liability Broad Form Endorsement and indicate explosion, collapse, and underground damage coverage.



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c) Comprehensive Automobile Liability Insurance

The Contractor shall maintain Comprehensive Automobile Liability Insurance (including all automotive equipment owned, operated, rented, or leased), in the amount of at least Five Hundred Thousand Dollars (\$500,000.00) Combined Single Limit for bodily injury and property damage.

d) Additional Insurance

The Contractor shall also procure and keep in effect:

Excess liability (umbrella coverage) in excess of and applicable to the coverage in the Comprehensive General Public Liability and Property Damage Insurance, "X, C, U" and Comprehensive Automobile Insurance in the amount of at least Two Million Dollars (\$2,000,000.00) for each occurrence.

4. Accident Notification - The Contractor shall send a written report to the Engineer and to the Maryland Transportation Authority within twenty-four (24) hours of any accident or other event arising in any manner from the performance of the Contract which results in or might result in personal injury or property damage.
5. Failure to comply with these Special Provisions may lead to termination for default or convenience.
6. There will be no special payment for the insurance as required by this contract and all costs incidental thereto shall be included in the Lump Sum for "Mobilization", (refer to Section 108), or if the Contract does not include such an item, the insurance costs are to be included in pay items for the Proposal.

**SP 1-7 MINORITY BUSINESS ENTERPRISE REGULATIONS GOVERNING
CONSTRUCTION CONTRACTS IN EXCESS OF \$50,000
EFFECTIVE JULY 1, 2001
For Informational purposes only**

GP – 7.29 of the General Provisions is supplemented as follows:

MBE participation goal for this contract is as indicated in these Special Provisions.

The Contractor shall:

1. Identify specific work categories appropriate for subcontracting;



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2. At least ten (10) days before bid opening, solicit Minority Business Enterprises, through written notice that:
 - a) Describe the categories of work; and
 - b) Provide information regarding the type of work being solicited and specific instructions on how to submit a bid.
3. Attempt to make personal contact with Minority Business firms;
4. Assist Minority Business Enterprises to fulfill bonding requirements or to obtain a waiver of these requirements; and
5. Upon acceptance of a bid, provide the Maryland Transportation Authority ("Authority") with a list of Minority Businesses with whom the Contractor negotiated, including price quotes from Minority and Non-minority firms.

Third Tier Subcontracting:

Third Tier MBE/DBE Subcontracting will be approved by the Authority only when the Authority is satisfied that there is no way except by Third Tier contracting that an MBE/DBE goal can be achieved. The Contractor's written request must be submitted prior to Contract award and contain specifics as to why a Third Tier contracting agreement is being requested.

Waivers:

If for any reason the bidder/offerer is unable to achieve the specified overall contract goal or subgoals for each certified MBE classification, the bidder/offerer must request, in writing, on Attachment A, (Certified MBE Utilization and Fair Solicitation Affidavit), a waiver at the time of bid.

Strict adherence regarding documentation of the rationale for the waiver request and documentation of "Good Faith Efforts" of the Contractor are required for consideration of any waiver. For additional information on waivers, please see **COMAR 21.11.03.11**

Criminal Fraud Provisions:

All Contractors are reminded that Criminal Fraud Provision and Administrative Sanctions may be imposed for failure to achieve and maintain established MBE/DBE goals.

SP 1-8 PROGRESS SCHEDULE REQUIREMENTS

Refer to Section 110 of the Standard Specifications.



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SP 1-9 CORPORATE REGISTRATION

A foreign corporation is any corporation not incorporated under the laws of the State of Maryland. All foreign corporations, prior to performing any services for the Authority, must register with the Maryland State Department of Assessment and Taxation in compliance with Subtitle 2, Title 7, of the Corporations and Associations Article of the Annotated Code of Maryland. Compliance is required of the successful vendor as well as the proposed subcontractors.

To accomplish the required registration, a foreign corporation must request and complete "Qualification Application Forms" which can be obtained from the Department of Assessment and Taxation, State Office Building, Room 803, 301 West Preston Street, Baltimore, Maryland 21201. Forms can be obtained via the Maryland Department of Assessment and Taxation web site at www.dat.state.md.us.

The Contractor will be responsible for documenting compliance with the aforesaid. This documentation will be required prior to the execution of a contract with the successful bidder.

SP 1-10 CONTRACTOR'S EMPLOYEE IDENTIFICATION

The Contractor shall provide to the Authority, a list containing the following for Contractor and all sub-contractors that would be working at the site. This shall include trucking companies who would come to the site on a repetitive basis for supply or removal of materials:

- Name of Company
- Name and title of contact person
- Address of the Company
- Phone number
- Facsimile number
- E-Mail address of contact person (if any)

All Contractor's employees, including employees of subcontractors, on this project, present at the site, shall be in possession of a valid employee identification card provided by the Employer, which shall contain a photograph and identify the employee by name and job title. The employee must produce the said identification if required by the Engineer or the Authority Police.

When working in or around the Authority's buildings, said employees identification shall be displayed at all time.

While working in the Tunnels or on one of the major bridges of the Authority, Contractor's personnel shall have an ID decal displayed on their hardhat. These decals will be provided by the Authority. All of the Contractors' vehicles shall have a parking decal, attached to the rear view mirror. These parking decals will also be provided by the Authority and a distribution list will be maintained. At the time of project completion these decals shall be returned to the Authority.



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Requests for hardhat and rearview mirror decals shall be made to the Construction Section before the beginning of construction and should include the number required of each type of decal.

All costs associated with identification cards will not be paid for separately and shall be incorporated under other items of payment in the Contract.

SP 1-11 ESTIMATED QUANTITIES

All construction items and quantities in these Special Provisions are provided in the Contract for use when and as directed by the Engineer. The quantities for these items are established for the purpose of obtaining a bid price. The quantities for these items may be increased or decreased without any adjustment to the Contract Unit Price for the item(s) or they may be deleted entirely from the Contract by the Engineer without negotiation. The Contractor will not be allowed to submit a claim against the Authority for any adjustment to the Contract Unit Price should the item(s) be increased, decreased, or eliminated.



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**GENERAL PROVISIONS
GP SECTION 1
DEFINITIONS AND TERMS**

GP-1.03 ORGANIZATIONAL DEFINITIONS

Revise the definitions of Administration to read as follows:

Administration – The word “Administration” shall mean “Maryland Transportation Authority”.

Except for Office of Materials and Technology all references to the Maryland State Highway Administration’s offices and positions shall mean the Authority’s corresponding offices and positions.



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**GENERAL PROVISIONS
GP SECTION 1
DEFINITIONS AND TERMS**

GP-1.05 DEFINITIONS

Add the following definitions:

Highway Standards - The official Book of Standards for Highway and Incidental Structures, edited by the State Highway Administration, with the latest incorporated revisions issued on or before the date of advertisement on the Contract.



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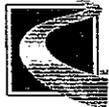
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**GENERAL PROVISIONS
GP SECTION 2
BIDDING REQUIREMENTS AND CONDITIONS**

GP-2.04 SITE INVESTIGATION

Revise the paragraph to read as follows:

The Contractor acknowledges that it has investigated and satisfied itself as to the conditions affecting the work, including but not restricted to those bearing upon transportation, disposal, handling, and storage of materials; availability of labor, water, electric power, roads; uncertainties of weather, river stages, tides, or similar physical conditions at the site; and confirmation and conditions of the ground, the character of equipment and facilities needed preliminary to and during prosecution of the work. The Contractor further acknowledges that it has satisfied itself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as the information is reasonably ascertainable from an inspection of the site, including all exploratory INFORMATION IN POSSESSION OF THE STATE, as well as from information presented by the drawings and Specifications made part of this contract. Any failure by the Contractor to acquaint itself with the available information may not relieve it from responsibility for estimating properly the difficulty or cost of successfully performing the work. The State assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the State.



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GENERAL PROVISIONS
GP SECTION 2
BIDDING REQUIREMENTS AND CONDITIONS

GP-2.06 PREPARATION OF THE BID

GP9 **ADD:** After paragraph (a), the following.

The Contractor may elect to submit its bid on forms it has generated in the development of its bid. These may be submitted in lieu of the schedule of prices bid forms furnished by the Administration in the Invitation for Bids. These forms shall emulate the forms currently furnished by the Administration and, as a minimum, contain the following information.

- (1) State Contract No.;
- (2) State Item Nos.;
- (3) State's Proposed Quantities;
- (4) Description of Items;
- (5) Unit Price;
- (6) Total Cost of Each Item; and
- (7) Total Bid Amount.

The document shall be 8-1/2 x 11 inches, and oriented in a landscape format. The font size shall be no less than 10 point with horizontal lines dividing each item. Any addendum which revised items or quantities shall be noted on all affected schedule of prices sheets. Any special bid requirements that are noted in the schedule of prices shall also be listed on the form.

Should the Contractor elect to submit bids on the Contractor's own forms, the Contractor shall submit a sample of the form to the Administration at least two (2) weeks prior to the scheduled opening of bids. The use of Contractor generated forms shall be approved, in writing, prior to their use. If the Contractor's forms were previously approved in writing on another Administration project and have not changed, they need not be resubmitted for this project.

Sample forms shall be submitted to:

Ms. Sandra E. Clifford
Chief of Engineering Procurement
Maryland Transportation Authority
300 Authority Drive
Baltimore, Maryland 21222



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**GENERAL PROVISIONS
GP SECTION 2
BIDDING REQUIREMENTS AND CONDITIONS**

GP-2.23 BID PROTESTS

Section GP 2.23 of the General Provisions is supplemented as follows:

The Board of Public Works does not have the jurisdiction to consider protests relating to this solicitation or an award of this contract under this solicitation.

All protests relating to this solicitation, the selection, and/or award must be filed in writing with the Authority's Procurement Officer, within the time limitations set forth in COMAR 21.10.07 and 21.10.02. Bid protests shall be filed not later than seven (7) days after the basis for protest is known, or should have been known, whichever is earlier. Oral protests will not be considered.

The specific details of the protest procedures shall be followed by aggrieved actual or prospective bidders or offerors are contained in COMAR 21.10.



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**GENERAL PROVISIONS
GP SECTION 4
SCOPE OF WORK**

GP-4.10 WARRANTY OF CONSTRUCTION

GP-4.10 of the Standard Specifications is revised to read as follows:

Delete: The first paragraph in its entirety.

Insert: The following:

The Warranty as defined under paragraphs (a) through (g) in GP 4.10 "Warranty of Construction" shall apply to this Maryland Transportation Authority Contract unless specified elsewhere in this Invitation for Bids.



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**GENERAL PROVISIONS
GP SECTION 5
CONTROL OF WORK**

GP-5.12 FAILURE TO MAINTAIN ENTIRE PROJECT

Delete Section GP-5.12 in its entirety

Insert: Revise the paragraph to read as follows:

Failure on the part of the Contractor, at any time, to comply with the provisions of GP 5.11 above, will result in the procurement officer immediately notifying the Contractor to comply with the required maintenance provisions. In the event that the Contractor fails to COMPLETE CORRECTIONS SO AS TO CONFORM TO THE PROVISIONS OF GP 5.11 within four (4) hours of receipt of such notice, the procurement officer MAY NOTIFY THE CONTRACTOR TO SUSPEND ALL OTHER WORK ON THE CONTRACT UNTIL SUCH TIME AS THE UNSATISFACTORY MAINTENANCE IS CORRECTED. In the event that the Contractor fails to COMPLY WITH GP 5.11 within four (4) hours after receipt of such notice, the procurement officer will immediately proceed with adequate forces and equipment to maintain the project, and the entire cost of this maintenance will be deducted from monies due the Contractor ON THE NEXT MONTHLY ESTIMATE.



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**GENERAL PROVISIONS
GP SECTION 8
PROSECUTION AND PROGRESS**

GP 8.09 - LIQUIDATED DAMAGES

Delete: Section GP 8.09 in its entirety

Insert: Time is an essential element of the Contract and it is important that the work be vigorously prosecuted until completion.

For every calendar day that the contract remains uncompleted after the expiration of the contract time specified herein, or amended by extra work authorization, change orders or supplemental agreements, the Contractor will be liable for Liquidated Damages. The amount of Liquidated Damages shall be as specified in Contract Time and Bonding. This amount shall be deducted from any money due the Contractor, not as a penalty, but as Liquidated Damages. Damages in excess of any retained percentage shall be paid to the Authority by the Contractor.

Refer to Contract time and Bonding sheet contained elsewhere herein. See Table of Contents.



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**GENERAL PROVISIONS
GP SECTION 9
PAYMENT**

GP-9.05 LATE PAYMENTS

ADD the following:

- (e) Payments will be made within thirty (30) days of the date when the Contract amount becomes due and payable or the date of receipt of a proper invoice, whichever is later. The State's failure to remit payment within forty-five (45) days from that date may entitle the Contractor to interest at the rate of nine percent (9%) per annum beginning on the 31st day.



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**TERMS AND CONDITIONS
TC SECTION 4
CONTROL OF WORK**

TC 4.01 – SHOP PLANS AND WORKING DRAWINGS

DELETE SECTION (a) IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING

ADD:

- (a) General. The Plans will be supplemented by working drawings, catalog cuts, schematics, material data, installation plans and manuals, user manuals, and other data necessary to demonstrate to the Engineer adequate control of the work, proper installation and handling, conformance to the specifications, and that the proposed materials and equipment is suitable for the intended use. All authorized alterations affecting the requirements and information given on the working drawings shall be in writing to the Engineer. Any deviations from the Specifications, Special Provisions, or Plans shall be clearly highlighted and explained. When reference is made to the working drawings, the interpretation shall be the working drawings as affected by all authorized alterations then in effect. When reference is made to the working drawings, the interpretation shall be that working drawings include working drawings, catalog cuts, schematics, material data, installation plans and manuals, user manuals, and other data necessary to demonstrate to the Engineer adequate control of the work, proper installation and handling, conformance to the specifications, and that the proposed material or equipment is suitable for the intended use.

Working drawings will show details of all structures, lines, grades, typical cross section of roadway, general cross sections, location and designation of all units and elements. Cabinet drawings shall be to-scale showing the location of all equipment proposed to be mounted within the cabinet. One-line diagrams and schematics shall be provided for equipment cabinets showing the interconnection of all devices located therein. Equipment layouts shall include rack-level elevation views as well as floor plans for all equipment racks. All working drawings, regardless if submitted as specified or submitted as equal substitutes, shall be furnished with complete, specific, detailed information from the manufacturer or supplier for the material or equipment the Contractor proposes to furnish, in which the requirements of the Specifications and Special Provisions shall be clearly shown to be met.

When any article is specified by trade name of manufacturer with or without the clause "or equal," it is intended to establish the quality of the article. If the Contractor proposes



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to use material or equipment of another manufacturer as an "or equal" to the material or equipment specified, all working drawings shall conform to the following requirements, conditions, and procedures:

1. Substitution of equipment or materials other than those specified will be considered, providing, in the opinion of the Engineer, such equipment or material is equal to, or better than specified. The decision of the Engineer with respect to approval or disapproval of any material or equipment proposed to be substituted as an "or equal" is final. The Contractor shall have no claim of any sort by reason of such decision.
2. If the Contractor proposes to substitute materials or equipment as "or equal" to those specified, it shall be his responsibility to furnish, in addition to the information discussed above, a point by point comparison of the material or equipment specified under the Contract and that proposed to be substituted. The burden of responsibility in furnishing this information is with the Contractor.
3. If the substitute material or equipment requires any re-design or affects other aspects of the project, the Contractor shall be responsible to provide such re-design including details and to adjust elements as necessary to achieve the re-design at no additional cost to the Administration. Cost saving re-designs will be considered under the value engineering specifications.

If incomplete or irrelevant data is submitted as evidence of compliance with Specifications, Special Provisions, or Plans, the data will be returned and the request for approval of working drawings will be denied.

The Contractor shall provide, at no additional cost to the Administration, all required working drawings and shall have them adequately checked, after which they shall be submitted to the Engineer for review. The Engineer may reject working drawings and return them for revisions, in which case the Contractor shall submit revised working drawings as required. No items involving working drawings shall be incorporated into the work until working drawings have been accepted by the Engineer, however, acceptance shall not relieve the Contractor of any responsibility in connection with the working drawings.

The working drawings shall be prepared on sheets no smaller than 8.5" x 11" and no larger than 24" x 36". The sheet size and scale of the drawings shall be appropriate for the work depicted.



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All working drawings shall be submitted by the Contractor, no working drawings submitted directly by subcontractors, fabricators, suppliers, etc. shall be accepted. Acceptance of a material source or equipment source by the Engineer or Administration shall NOT constitute approval of the material or equipment nor approval of the materials or equipment as a substitute or an "equal" product.

ADD:

- (c) The working drawings shall be submitted electronically as files (FAXES are NOT acceptable). Electronic submission may be made via email for small submissions. Email is the preferred submission method. The email submissions shall be made to the email addresses provided by the Administration upon notice to proceed of the project and shall include ksay@mdta.state.md.us. Where electronic submittals are larger than email can support (currently about 8MB), the submission may be made using one or more of the following alternatives:
1. Posted on a contractor supported FTP server, or other via another service that may be accessed by the administration as long as an email notice is made with the 'cover' sheet.
 2. Copied onto a CD, DVD, or other supported data media and submitted to the Administration via standard mail. At least five (5) copies of the media shall be provided for in-house distribution. The address to mail such media transfers is:

Maryland Transportation Authority
Engineering Division
300 Authority Drive
Baltimore, MD 21222
ATTN: Kataw Say

ADD:

- (d) Electronic Submittal Format. All electronic submittals shall be in a format readable by the Administration. The submittals shall be in Adobe portable document format (PDF) compatible with version 6.0 of Adobe Acrobat.

Each submittal shall be a single file. Multi-file submittals shall not be accepted.

The first page of each submittal shall be a cover page. The cover page must be in the 8.5 x 11" sheet format. The cover page must include:



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1. Contract number.
2. Contract title.
3. Submittal Number. For each project (Contract), a sequential number starting with number 1 shall be used. Where a submittal is rejected, or otherwise requires resubmittal or replacement, the Submittal number shall be appended with an "R" followed by the revision number.
4. The Contractor's name, mailing address, contact phone number, contact email address.
5. The relevant line items in the contract that the submittal is associated with.
6. A brief description of the materials or data represented in the submittal package.
7. The date of the submittal.
8. The manufacturer's name, web site address, mailing address, and contact phone number, if applicable.
9. The vendor's or reseller's name, web site address, mailing address, and contact phone number if applicable.
10. The cover page must contain a 6" x 3" blank space where engineering stamps may be placed (electronically) without covering data in the page.

The electronic file must not be secured. The review process for electronic submittals will place electronic stamps and may include electronic comments in the electronic submittals by the Contractor. Any security or compatibility problems that prevent the use of the electronic stamps or electronic commenting will render the submittal unacceptable. The returned file may be secured to prevent accidental changes.

ADD:

- (e) File Naming Conventions and rules. It is necessary and required that file naming conventions and rules be followed to lend to organization and reduce confusion regarding the electronic submissions. Submittals that do not follow the file naming conventions described herein will be rejected without review. Strict adherence to the file naming rules is required. The file names for electronic submissions shall follow these rules:



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1. The first six characters must be the first six characters of the contract number. For example, for contract KH2048-000-002, the first five characters of the file name must be KH2048.
2. The seventh character must be a dash.
3. The eighth through tenth characters shall be the text "SUB," which is short for submittal. Which is used to indicate that the file is a submittal from a Contractor.
4. The eleventh character must be a dash.
5. The twelfth through fourteenth characters must be the submittal number, e.g., 001.
6. In the event of a re-submittal, the 15th character will be an R followed by the re-submittal number.
7. The remaining filename characters may be any short descriptive characters that may be useful to identify the nature of the submittal (fewer than 40 additional characters).
8. Examples of filenames:
 - i. KH2048-SUB-001-Conduit.pdf
 - ii. KH2048-SUB-001R2-Conduit.pdf
 - iii. KH2048-SUB-015-Fiber Optic Cable.pdf
9. After the submittal has been reviewed, the text 'SUB' will be replaced by the text 'TRN' by the administration and the electronic file with electronic stamps and possibly containing electronic comments will be returned to the contractor via email, CD, DVD, or similar electronic file transfer.

ADD:

- (f) Upon completion of the project, all electronic files that have been transmitted to the Contractor (TRN's) shall be transferred to CD's, DVD's or other media by the Contractor and provided to the Administration along with as-built data. Data provided shall include any original files in original format, used to generate the PDF submittals, these may include CADD, Visio, Word, Excel, MathCad, Access/DataBase, HTML, JPG/Pictures, Power point, or any other format that may have been used as the originating document. Provide three (3) copies of all media.



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ADD:

(g) Requests for Information (RFI) shall be submitted by the contractor in electronic format PDF. A sample blank RFI form can be supplied by the Authority. Each RFI shall consist of a single question or set of questions closely related to a single issue. Each RFI shall be uniquely numbered starting with RFI#001, then RFI#002, RFI#003, etc... Numbering shall be sequential to aid in the identification of missing or lost RFI's. (RFI and submittals are not on the same numbering system so there will be an RFI#1 as well as Submittal #1.)

Each RFI shall identify:

1. The Contract number.
2. The Contract title.
3. RFI Number.
4. The Contractor's name, mailing address, contact phone number, contact email address.
5. The relevant line items in the Contract that the RFI is associated with. The relevant plan sheet numbers, specification page numbers, or other reference documents that the RFI is associated with.
6. Any relevant facts, figures, issues that impact the RFI.
7. The question to be answered.
8. The date of the RFI.

Allow up to 20 business days for response to RFIs. If particular RFI's require action sooner to prevent delays or impacts, identify such RFI's; however answers cannot be guaranteed any faster. Submit RFI's using the same process identified in (c) above.

Filename convention for RFI's shall be as follows:

1. The first six characters must be the first six characters of the contract number. For example, for contract KH2048-000-002, the first six characters of the file name must be KH2048.
2. The seventh character must be a dash.



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3. The eight through tenth characters shall be the text "RFI," which is short for Request For Information. Which is used to indicate that the file is a Request For Information from a Contractor.
4. The eleventh character must be a dash.
5. The twelve through fourteenth characters must be the RFI# number, e.g., 001.
6. The Fifteenth character shall be a dash.
7. The Sixteenth character shall begin a short description of the RFI. (E.g.: Question about wire colors)

The answered RFI will be returned with the 'RFI' text changed to 'ANS' to indicate that an answer is provided.



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**TERMS AND CONDITIONS
TC SECTION 4
CONTROL OF WORK**

TC-4.02 FAILURE TO ADEQUATELY MAINTAIN PROJECT.

16 **ADD:** To the existing paragraph.

Additionally, an appropriate deduction will be made from the Contractor's next progress payment for each day or portion thereof that Maintenance of Traffic deficiencies exist, and will continue until the deficiencies are satisfactorily corrected and accepted by the Engineer. Any portion of a day will be assessed a full day deduction. The deduction will be equal to a prorata share of the lump sum price bid for Maintenance of Traffic or an amount prorated from the Engineer's estimate, whichever is more. The amount prorated will be the per diem amount established by using the working days (based upon calendar dates when required) divided into the total value of the bid item or the Engineer's estimate of that item, whichever is more.

The above noted deduction will be assessed on the next progress payment if:

The Contractor does not take action to correct the deficiencies and properly assume the responsibilities of maintaining the project (as determined by the Engineer) within four (4) hours of receiving a notice to comply with the required maintenance provisions.

The deduction will be equal to the daily prorated share of the lump sum price bid for Maintenance of Traffic or One Thousand Dollars (\$1,000.00) per day, whichever is more for each day or portion thereof that the deficiencies exist, and will continue until the deficiencies and proper assumption of the required maintenance provisions are satisfactorily corrected and accepted by the Engineer. The amount of monies deducted will be a permanent deduction and are not recoverable. Upon satisfactory correction of the deficiencies, payment of the Maintenance of Traffic lump sum item will resume.



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**TERMS AND CONDITIONS
TC SECTION 5
LEGAL RELATIONS AND PROGRESS**

TC-5.01 INSURANCE.

17 **DELETE:** The first three paragraphs under TC-5.01 in their entireties.

INSERT: The following.

The requirement of GP-7.14 (Liability Insurance) to submit Certificate of Insurance prior to starting work is modified for Administration Contracts to require the certificate of insurance to be submitted prior to the execution of the Contract.

The Contractor shall maintain in full force and effect third party legal liability insurance necessary to cover claims arising from the Contractor's operations under this agreement which cause damage to the person or property of third parties. The insurance shall be under a standard commercial general liability ("CGL") form endorsed as necessary to comply with the above requirements; or other liability insurance form deemed acceptable by the State. The State of Maryland shall be listed as an additional named insured on the policy. The limit of liability shall be no less than One Million Dollars (\$1,000,000.00) per occurrence/ Two Million Dollars (\$2,000,000.00) general aggregate. The insurance shall be kept in full force and effect until all work has been satisfactorily completed and accepted. The policies shall be endorsed to provide thirty (30) days notice of cancellation or non-renewal to:

Director of Construction
Maryland Transportation Authority
304 Authority Drive
Baltimore, Maryland 21222



SECTION 101 — CLEARING AND GRUBBING

101.01 DESCRIPTION. This work shall consist of clearing and grubbing within the limits specified in the Contract Documents.

101.01.01 Definitions.

- (a) **Clearing.** Clearing within the construction area includes removing and disposing of trees, brush, shrubs, vegetation, rotten wood, rubbish, fences and structures not specified in the Contract Documents for removal and disposal. Clearing outside the construction area is the removing and disposing of rubbish.
- (b) **Grubbing.** Grubbing is removing from the ground and disposing of all stumps, roots and stubs, brush and debris.
- (c) **Limits.** Limits of clearing and grubbing include the construction area and all ditch areas and stream or channel change areas. Limits of clearing may include the area between the construction area and the right-of-way or easement lines.
- (d) **Clearing and Grubbing Unit.** A clearing and grubbing unit is the area of erodible earth material exposed at one time, not to exceed 20 acres.
- (e) **Disturbed Area.** Any erodible material exposed by construction activities.
- (f) **Stabilization.** Providing vegetation or structural measures (seed, temporary or permanent mulch, soil stabilization matting, riprap, stone aggregate, and paving by asphalt or concrete) that will prevent erosion. The placement of one or more of these temporary or permanent stabilization measures as directed by the Engineer shall satisfy the requirements to proceed with the next grading unit or operation.
- (g) **Stabilized.** An area covered with erosion resistant material such as grass cover, seed and mulch, soil stabilization matting, riprap, stone aggregate, or paving by asphalt or concrete.

101.02 MATERIALS. Not applicable.

101.03 CONSTRUCTION.

101.03.01 Erosion and Sediment Control. Unless otherwise specified in the Contract Documents or as directed by the Engineer, the clearing and grubbing area shall be limited to a 20 acre grading unit per grading operation. Once this first unit is half graded, the Contractor will be allowed to proceed with the second 20 acre grading unit. With the permission of the Engineer, the Contractor will be allowed to exceed the one grading unit requirement to balance earth work



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or when grading interchanges. Erosion and sediment control shall conform to the Contract Documents and Section 308.

A grading operation is defined as the Contractor's ability to provide adequate resources to perform the grading in a timely manner and provide and maintain the proper erosion and sediment control measures. The Engineer will be the final authority in this determination. A grading unit need not be 20 contiguous acres. When wet soil conditions are encountered, the Contractor will be allowed to clear and grub and grade another unit providing the initial unit has been properly stabilized. No more than two grading units shall be active at any time.

101.03.02 Vegetation. The Engineer will designate and mark any trees, shrubbery and plants that are to remain in place, and the Contractor shall protect them from any damage as specified in GP-7.11. Branches of trees overhanging the roadway shall be cut and properly trimmed to maintain a vertical clearance of 16 ft. All trimming shall be done under the supervision of a tree expert employed by the Contractor and licensed by the State of Maryland, including trimming of trees by the Contractor for any other reason. Trimming and repair of cuts and scars shall conform to Section 712.

101.03.03 Fences. All fences within the right-of-way shall be removed and disposed of unless otherwise specified in the Contract Documents.

101.03.04 Mailboxes. All mailboxes within the limits of construction shall be removed and reset as directed by the Engineer.

101.03.05 Grubbing.

- (a) **Excavation Areas.** Within areas to be excavated, all embedded stumps and roots shall be removed to a depth of not less than 3 ft below the subgrade or slope surfaces. All depressions made below the subgrade or slope surfaces by the removal of stumps shall be refilled with materials suitable for embankment and shall be compacted as specified in Section 204.
- (b) **Low Embankments.** Areas where the total depth of the embankment is less than 3 ft shall be grubbed.
- (c) **High Embankments.** Areas where the embankment is 3 ft or more in depth, trees and stumps shall be cut off as close to the ground as is practical but shall not exceed 1 ft above the ground surface. Near the toe of embankment slopes, stumps or trees are prohibited within 1 ft of the slope surfaces.

101.03.06 Stream and Channel Changes. Stream or channel change areas shall be cleared and grubbed 5 ft beyond the top of the cut slopes.



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101.03.07 Disposal.

- (a) **Burning.** When perishable material is burned, it shall be burned under the constant care of a watchperson. Burning shall conform to the applicable laws and ordinances of respective jurisdictions.
- (b) **Disposal Locations.** Materials and debris that cannot be burned and perishable materials shall be removed from the right-of-way and disposed of by the Contractor. The Contractor shall make all necessary arrangements to obtain suitable disposal locations and shall furnish the Engineer with a copy of resulting agreements.
- (c) **Wood Disposal.** Disposal of wood to the general public shall be accomplished off the job site. Any plan for disposal in this manner shall be submitted to and approved by the District Engineer prior to beginning the clearing and grubbing operation.

101.03.08 Destroying Trees or Wetlands, Beyond Clearing Limits.

The Contractor shall not damage nor destroy any trees or wetland areas that exist beyond the clearing limits specified in Section 107.

The Contractor shall be responsible for all damage to trees and wetlands located beyond the clearing limits due to the Contractor's operations. The Contractor shall restore, to the satisfaction of the Engineer, any trees that have been damaged or destroyed at no additional cost to the Administration. Replacement of trees shall be in conformance with Section 710.

Mitigation of wetland impact shall be in conformance with the Occupying Wetlands provisions contained in the Contract Documents.

Replacement trees shall be of the same species as those damaged or destroyed unless otherwise directed by the Engineer. The replacement size shall be the same as the damaged or destroyed trees when the trees measure less than 4 in. diameter at breast height (DBH). Damaged trees 4 in. DBH or greater shall be replaced with 2 in. caliper trees in conformance with the following:



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SIZE OF DAMAGED OR DESTROYED TREES in. DBH	NUMBER OF 2 in. CALIPER REPLACEMENT TREES
4	5
6	8
8	10
10	13
12	15
16	20
20	25
24	36
32	48
40	80
60	135
80	200
120 or Greater	360

NOTE: DBH shall be measured at 4.5 ft above the ground. Caliper shall be measured at 6 in. above the ground

Replacement trees shall be planted within the limits of the project whenever possible, as determined by the Engineer. If not possible, a suitable location will be determined by the Engineer.

All work shall require a replacement period as specified in Category 700 of Standard Specifications. In case of failure on the part of the Contractor to restore or replace the damaged tree or wetland at the start of the next appropriate planting season, the Contractor will have 48 hours to begin corrective action, after notification by the Engineer. If the Contractor has not taken the corrective actions within the specified time, the Engineer may proceed with corrective measures. The cost of the corrective measures will be deducted from any monies due under the Contract.

101.04 MEASUREMENT AND PAYMENT. Clearing and Grubbing will not be measured but will be paid for at the Contract lump sum price. The payment will be full compensation for the removal and disposal of fences, removal and resetting of mailboxes, selective tree trimming and scar repair, and removal and disposal of existing buildings when not covered as a specific pay



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item in the Contract Documents, and for all material, labor, equipment, tools, and incidentals necessary to complete the work.

The pay item(s) for this section include(s):

1001 Clearing and Grubbing -- per lump sum



**CATEGORY 100
PRELIMINARY**

SECTION 103 — ENGINEERS OFFICE

103.03 CONSTRUCTION.

103.03.05 Requirements for all Offices.

144 **ADD:** the following after (v).

- (w) One paper shredder capable of shredding at least 10 sheets (20 lb bond) at a time. Throat width of at least 12 in. Speed of at least 20 feet per minute. Auto reverse or auto stop for paper jams. Power of at least 115V.

144 **DELETE:** 103.03.06 Microcomputer System for all Offices in its entirety.

INSERT: The following.

103.03.06 Computer System. Furnish 1 desktop computers and 0 laptop computers or as directed by the Engineer.

General Requirements.

- (a) IBM compatible with an Intel or AMD processor.
 - (b) Minimum hard drive storage of 80 GB (gigabyte).
 - (c) One CD-RW drive (re-writable CD-ROM).
 - (d) Operating System. Minimum Microsoft® Windows XP PRO SP2. Must be a 32-bit operating system. (A 64-bit operating system is not compatible with some SHA software.) The computer system will not be acceptable unless all Microsoft Windows Critical Updates are installed.
 - (e) Printer. When an Engineers Office is specified, furnish a B&W laser jet printer with a minimum resolution of 1200 DPI (dots per in.), at least 8 MB of RAM, and a print speed of at least 15 PPM (pages per minute). Inkjets will not be accepted. (Note: A separate color inkjet printer shall be required if a digital camera is specified, refer to SP-Section 113).
 - (f) Software. Supply all manuals and software on original disks for retention in the Engineers Office or Administration facility for the duration of the Contract.
- (1) Microsoft® Office 2007 Professional for Windows™ or later.



- (2) Install and configure antivirus software to perform an automatic update when the microcomputer system connects to the internet. Antivirus software approved for Administration web email: *Norton, McAfee, Sophos, or ETrust.

(*Norton Internet Security includes Antivirus and a Personal Firewall).

- (g) Internet Access. Provide unlimited internet service approved by the Engineer. Where available, provide internet high-speed service (DSL or cable). With DSL or cable internet service, provide an external router device. Provide firewall software to protect the computer from security intrusions.

(h) Accessories.

- (1) When an Engineers office is specified, provide a standard computer workstation with minimum desk space of 60 X 30 in. and a padded swivel type chair with armrests.
- (2) 8-1/2 X 11 in. xerographic paper as needed.
- (3) Toner or ink for the printer as needed.
- (4) Maintenance agreement to provide for possible down time.
- (5) Physical security system to deter theft of the computer and components.
- (6) Three 4-GB USB flash drive storage devices.
- (7) Blank recordable CD-RW media as needed.

Desktop Specific Requirements.

- (a) Minimum processor speed of 3.0 GHz.
- (b) Minimum of 2 GB RAM (Random Access Memory).
- (c) Enhanced 101 key keyboard with wrist rest.
- (d) Super video graphics accelerator (SVGA).
- (e) Mouse and mouse pad.
- (f) Flat-panel LCD monitor (19 in. minimum) meeting Energy Star requirements.
- (g) Uninterruptible power supply (UPS).



Laptop Specific Requirements.

- (a) Must meet military standard of durability MIL-STD 810G
- (b) Minimum processor speed of 2.4 GHz.
- (c) Minimum 2 GB SDRAM.
- (d) Minimum 15" 1024x768 (XGA), daylight-readable, 500nits (cd/m²) LCD display.
- (e) Power Supply. Two lithium ion battery packs with overcharge protection, an AC adaptor, and a vehicle DC power adaptor that operates the laptop and simultaneously charges the laptop's internal battery.
- (f) Carrying Case.
- (g) Printer. When an Engineers Office is not specified, furnish a portable printer that meets the requirements specified above.
- (h) Internet Service. If an Engineers office is not specified, furnish the laptop with an internal wireless broadband card and broadband internet service.

Have the computer system completely set up and ready for use on or before the day the Engineers office is to be occupied. When an Engineers office is not specified, have the computer system furnished complete and ready for use at least five days prior to beginning any work on the project.

If for any reason the system fails to operate, is stolen, or is otherwise unavailable for use, it shall be replaced or repaired within 48 hours.

When the computer system is no longer required, the Construction Management software system including original user/operator guide manuals, program disks, and all data files (including those stored on USB flash drives, CD-R's, etc.) will be removed by the Engineer and delivered to the District Engineer and become the property of the Administration. The remaining computer systems shall remain the property of the Contractor.

146 **DELETE:** 103.03.09 Recyclable Materials (Paper, Bottles, Cans, Etc.) in its entirety.

INSERT: The following.

103.03.09 Recycling. Recycling of recyclable paper (bond, newsprint, cardboard, mixed paper, packaging material and packaging), bottles (glass and plastic), and aluminum cans will be required at the Engineer's Office and the Contractor's facilities for the project.

Furnish approved containers, and remove the material from the site on an approved schedule or as directed. All material shall be taken to an authorized recycling facility.



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Maintain a log for the duration of the project documenting the type of materials recycled. The log shall include the types of material, date, time, location of facility, and signature line. Furnish a copy of the log at the completion of the project and upon request.

The Contractor shall be considered the owner of any profit and be responsible for all incurred costs.

103.04 MEASUREMENT AND PAYMENT.

147 **ADD:** The following as a fourth paragraph.

Computer. The computer system will not be measured but the cost will be incidental to the Contract price for the Engineers Office item. If an item for Engineers Office is not specified, the cost of the computer system will be incidental to the payment for Mobilization. In absence of either item, payment will be incidental to the other items specified in the Contract Documents.

ADD: The following after a fourth paragraph.

The pay item(s) for this section include(s):

1002 Engineer's Office -- per lump sum



**CATEGORY 100
PRELIMINARY**

SECTION 104 — MAINTENANCE OF TRAFFIC

104.01 TRAFFIC CONTROL PLAN (TCP).

104.01.01 DESCRIPTION.

149 **DELETE:** The fourth paragraph sentence “Refer to contract Documents for Work Restrictions.” in its entirety.

INSERT: The following.

The work to be performed under this contract is located at John F. Kennedy Memorial Highway facility in Cecil County.

This project consists of cleaning out the existing sediments from the bottom of the conduit box and installing an underdrain pipe in order to drain the water.

AGENCY CONTACTS

CONTACT	TITLE	PHONE NUMBER
John Lohmeyer	Administrator, MdTA	(410) 537-1107
Eric Morris	Maintenance Supervisor, MdTA	(410) 537-8153
Dan Sawyers	Utility Coordinator, MdTA	(410) 537-1118
Roxane Y. Mukai	Traffic Manager, MdTA	(410) 537-7848
Kataw Say	Project Engineer, MdTA	(410) 537-7853

Work Restrictions. On Monday of each week, the Contractor shall provide the Engineer with a complete list of anticipated lane and shoulder closures for the following two weeks, allowing the Authority a minimum of fourteen (14) calendar days or ten (10) working days notification. The Engineer shall then notify the affected facilities, the Engineering Division’s Traffic Section and other appropriate offices. No lane closures shall be made without prior written approval of the Engineer in the form of an Authority lane/shoulder closure permit. The Authority is not responsible for lost workdays resulting from the Contractor failing to submit schedules or providing notification of maintenance of traffic requirements in a timely manner. Other contractors may be actively working in or around the vicinity of this project. The Contractor shall cooperate with and coordinate work activities with contractors in adjoining or overlapping work areas.



The Contractor is responsible for obtaining lane/shoulder closure or other Permits from all affected agencies that require permits for work on their right of way, including those listed in this Special Provision. The Contractor shall make contact with the representative from the affected agency, through the Project Engineer and provide a copy of all coordination correspondence to the Authority. Sufficient time shall be allowed for review and approval of the permit application.

**ALLOWABLE LANE CLOSURE SCHEDULES
JOHN F. KENNEDY MEMORIAL HIGHWAY**

TIME OF DAY	DAYS OF THE WEEK	ALLOWED CLOSURES
Continuous	Monday - Sunday	Shoulder Closure
9:00AM – 3:00PM	Monday – Thursday	Single Lane Closure
7:00 PM – 5:00 AM	Monday – Thursday in three lane sections	Single Lane Closure Northbound
9:00PM – 5:00AM	Monday – Thursday in four lane sections	Single Lane Closure Northbound
7:00 PM – 5:00 AM	Monday – Thursday	Single Lane Closure Southbound
Thanksgiving through New Years 9:00 PM – 5:00 AM	Monday – Thursday south of the Little Gunpowder River	Single Lane Closure Southbound
9:00AM – 12:00Noon	Friday	Single Lane Closure
9:00 PM – 5:00 AM	Monday – Thursday in three lane sections	Double Lane Closure Northbound
11:00PM – 5:00AM	Monday – Thursday in four lane sections	Double Lane Closure Northbound
9:00PM – 5:00AM	Monday – Thursday	Double Lane Closure Southbound
Thanksgiving through New Years 10:PM – 5:00 AM	Monday – Thursday south of the Little Gunpowder River	Double Lane Closure Southbound
Midnight – 5 AM	Monday – Thursday in four lane sections	Triple Lane Closure Northbound
11:00PM -- 4:00AM	Monday – Thursday in four lane sections	Triple Lane Closure Southbound



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No lane closures are permitted on Holidays, or the day preceding and following the Holidays indicated below:

New Years Day
Good Friday
Easter Sunday
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

If a holiday happens to fall on a Thursday, Friday, or Monday, no closures will be permitted during that weekend.

The Contractor will not be permitted to use any portions of the existing roadway or interfere with or impede the free flow of traffic in any manner during prohibited hours.

The Traffic Control Plan (TCP) for work consists of a staged Maintenance of Traffic (MOT) Plan (included in the contract drawings) which will be employed to perform all work in the contract. The Engineer reserves the right to modify or expand the methods of traffic control or working hours as specified in the Contract Documents. Any request from the Contractor to modify the work restrictions shall be in writing and shall require written approval from the Engineer at least seventy-two (72) hours prior to implementing the change. The Contractor shall submit a copy of the original work restrictions with the written request.

As directed by the Engineer, temporary lane and shoulder closures will not be permitted during periods of falling precipitation, in heavy fog or otherwise poor visibility, or in the event of emergencies such as serious traffic accidents or unusually severe traffic congestion. In the event that a temporary lane or shoulder must be reopened as directed by the Engineer or authorized Authority staff, the Contractor shall evacuate all equipment, materials and personnel from the lane within 30 minutes.

When a temporary lane or shoulder closure is in effect, work shall begin within one hour after the lane or shoulder is closed. Any delay longer than one hour with no work in progress shall require the Contractor to remove the lane or shoulder closure at no additional cost to the Authority. The Contractor's Traffic Manager shall attend pre-construction meetings and shall discuss traffic control and the Traffic Control Plan (TCP) including procedures to be implemented for lane/shoulder closures.

All closures shall be in conformance with the approved TCP and under the direction of the Contractor's Certified Traffic Manager and the Engineer. No travel lanes shall be reduced to less than eleven (11) feet (3.4 meters).



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Workers and equipment, including temporary traffic control devices needed for setting up a lane closure or restriction, are prohibited in the lane or shoulder to be closed or restricted before the time permitted in the Contract work restrictions unless otherwise noted below or approved by the Engineer.

Temporary traffic control devices to be used for lane/shoulder closure may be placed on the shoulder of the roadway by workers no earlier than 15 minutes prior to actual time lane/shoulder closure or restriction is permitted. Temporary traffic signs may be displayed to traffic at this time.

Workers shall not enter a lane open to traffic. Workers may be present on shoulders to prepare for a lane shoulder closure setup no earlier than 15 minutes prior to the actual time lane/shoulder closure or restriction is permitted.

When closing or opening a lane on freeways, expressways and roadways with posted speeds greater than or equal to 50 mph, a work vehicle shall be closely followed by a protection vehicle (PV) during installation and removal of temporary traffic control devices. The PV shall consist of a work vehicle with approved flashing lights, approved truck-mounted attenuator (TMA) with support structure designed for attaching the system to the work vehicle, and approved arrow panel (arrow mode for multilane roadways and caution mode on two-lane, two-way roadways.) The work vehicle size and method of attachment shall be as specified in the TMA manufacturer's specifications as tested under NCHRP 350 Test Level 3.

Prior to opening the closed lane or shoulder, the Contractor shall clear the lane or shoulder of all material, equipment, and debris.

Failure to restore full traffic capacity within the time specified will result in a deduction being assessed on the next progress estimate in conformance with the following. This is in addition to the requirements specified in TC-4.02.

ELAPSED TIME, MINUTES	DEDUCTION
1 - 5	\$ <u>75.00</u>
Over 5	\$ <u>75.00</u> per Minute (In addition to the Original 5 minutes)



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104.01.04 MEASUREMENT AND PAYMENT.

INSERT: The following:

Maintenance of Traffic will not be measured but will be paid for at the Contract lump sum price. The payment will be full compensation for all labor (including Traffic Manager), material and equipment (for which a bid item has not been established), and any incidentals necessary to complete the work.

The cost shall include all required equipment and set ups shown on the maintenance of traffic standards, as well as removal of all traffic control set-ups.

The pay item(s) for this section include(s):

1003 Maintenance of Traffic -- per lump sum



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SECTION 301 — CLASS 3 EXCAVATION FOR INCIDENTAL CONSTRUCTION

301.01 DESCRIPTION. This work shall consist of excavation below the planned elevation as specified in the Contract Documents or as directed by the Engineer.

301.02 MATERIALS. Not applicable.

301.03 CONSTRUCTION. The area to be excavated shall be the size, depth and location as authorized by the Engineer. Backfill shall conform to Section 302. Refer to 402.03.01 for excavated material.

301.04 MEASUREMENT AND PAYMENT. Class 3 Excavation for Incidental Construction will be measured and paid for at the Contract unit price per cubic yard. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the work.

Backfill. Backfill will be measured and paid for as specified in 302.04.

The pay item(s) for this section include(s):

3001 Class 3 Excavation for incidental Construction -- per cubic yard



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SECTION 302 — SELECTED BACKFILL

302.01 DESCRIPTION. This work shall consist of placing selected backfill material as specified in the Contract Documents or as directed by the Engineer.

302.02 MATERIALS.

No. 57 Aggregate	901.01
Crusher Run Aggregate CR-6	901.01

302.03 CONSTRUCTION. Unsuitable foundation material shall be replaced as directed by the Engineer. Refer to Section 210 for compaction.

302.04 MEASUREMENT AND PAYMENT. Selected Backfill using No. 57 Aggregate or Selected Backfill using Crusher Run Aggregate CR-6 will be measured and paid for at the Contract unit price per cubic yard. The payment will be full compensation for compaction and for all material, labor, equipment, tools, and incidentals necessary to complete the work.

The pay item(s) for this section include(s):

3002 Selected Backfill Using AASHTO No. 57 Aggregate -- per cubic yard



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SECTION 306 — UNDERDRAINS, SUBGRADE DRAINS, AND SPRING CONTROL

306.01 DESCRIPTION. This work shall consist of constructing underdrains, subgrade drains, underdrain for spring control, underdrain pipe outlets, and blind drains using pipe, geotextile, and granular material as specified in Section 306 Standard Specifications or as directed by the Engineer. Cleaning existing underdrain outlets is also included in this work.

306.04 MEASUREMENT AND PAYMENT. The payment will be full compensation for all excavation, pipe, coupling bands, aggregate, backfill, geotextile, video inspection and for all material, labor, equipment, tools, and incidentals necessary to complete the work.

The pay item(s) for this section include(s):

3003	6 Inch Perforated Circular PVC Underdrain Pipe --	per linear foot
3004	6 Inch Non-Perforated Circular PVC Underdrain Pipe --	per linear foot
3005	6" x 6" PVC Tee --	per each
3006	6" x 6" PVC Bend --	per each
3007	Underdrain Outfall --	per each
3008	Geotextile for Underdrain --	per square yard
3009	Mix No.2 Concrete for Misc. Structure --	per cubic yard



**CATEGORY 300
DRAINAGE**

**SECTION 308 — EROSION AND SEDIMENT
CONTROL**

DELETE: 308.01.03 Quality Assurance Ratings in its entirety.

INSERT: The following.

308.01.03 Quality Assurance Ratings. A Quality Assurance Inspector will inspect each project every 2 weeks to ensure compliance with the approved Erosion and Sediment Control Plan. The scores will be reported on Form No. ESC1, Erosion and Sediment Control Field Investigation Report. The Quality Assurance Inspector will use the scores to determine the following ratings:

SCORE	RATING
≥ 90	A
80 - 89.9	B
70 - 79.9	C
60 - 69.9	D
< 60	F

Rating A. The project is in compliance. Minor corrective action may be necessary.

Rating B. The project is in compliance; however, corrective action is necessary.

Rating C. The project is in compliance; however, deficiencies noted require corrections. Shutdown conditions described elsewhere herein could arise quickly. Project will be re-inspected within 72 hours.

Rating D. The project is in non-compliance. The Administration will shut down all earthwork operations. All work efforts shall focus on correcting erosion and sediment control deficiencies. The project will be re-inspected within 72 hours. All required corrective actions shall be completed within the 72 hour period for the project to be upgraded to a 'B' rating. Failure to upgrade the project from a 'D' to a 'B' or better rating will result in the project being rated an 'F'. Noncompliance penalty will be imposed for each day the project has a 'D' rating. Refer to Shutdown elsewhere in this Specification for additional requirements.

Rating F. The project is in non-compliance. An 'F' rating indicates a score less than 60 or the appropriate permits and approvals have not been obtained; or that the limit of disturbance has been exceeded, or that wetlands, wetland buffers, Waters of the United States (WUS), floodplains, and tree preservation areas as specified in Section 107 have been encroached upon; or that work is not proceeding according to the approved Erosion and Sediment Control Plan and schedules. The Administration will shut down the entire project until the project receives a 'B' or better rating. All work efforts shall focus on correcting erosion and sediment control



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deficiencies. Noncompliance penalties will be imposed for each day the project has an 'F' rating.

Shutdowns. If a project is rated 'C', correct all deficiencies within 72 hours. The project will be re-inspected at the end of this period. If the deficiencies have not been satisfactorily corrected, the project will be rated 'D' and all earthwork operations will be shut down until the project is rated 'B' or better.

If consecutive 'C' ratings are received, the Contractor will be alerted that their overall effort is marginal and a shut down of all earthwork operations is imminent if erosion and sediment control efforts do not substantially improve within the next 72 hours. The project will be re-inspected at the end of this period. If the deficiencies are not satisfactorily corrected or other deficiencies are identified that result in a score of less than 80 and not below 60 on Form No. ESC1, a 'D' rating will be given and all earthwork operations will be shut down.

If disregard for correcting these deficiencies is evident, an 'F' rating will be given and the entire project will be shut down until the project receives a 'B' or better rating. When degradation to a resource could occur, or if the Contractor is unresponsive, the Administration may elect to have these corrective actions performed by another contractor or by Administration maintenance staff. All costs associated with this work will be billed to the original Contractor in addition to noncompliance penalties.

Noncompliance Penalty. Whenever a project is rated 'D' or 'F', the Administration will assess Noncompliance Penalties. Noncompliance Penalties shall be paid within 30 days from the date of notification to the Contractor. Payments will not be allowed to accrue for consideration at final project closeout.

The second time that a project is rated 'F', the Erosion and Sediment Control Training Certificate issued by the State Highway Administration will be immediately revoked from the project superintendent and the Erosion and Sediment Control Manager for at least a six month period and until successful completion of the State Highway Administration's Erosion and Sediment Control Certification Program. Neither the project superintendent nor the Erosion and Sediment Control Manager will be allowed to oversee the installation and maintenance of erosion and sediment controls during the period the certification is revoked on any project of the Authority. Replace the project superintendent and the Erosion and Sediment Control Manager with certified personnel. Work may not commence until the certified personnel are in place.

DELETE: 308.01.04 Incentive Payments and Liquidated Damages in its entirety.

INSERT: The following.

308.01.04 Noncompliance Penalty Payments. For each day that the project has a 'D' rating, the Contractor and/or his surety shall be liable for noncompliance penalties in the amount of \$ 500.00 per day. Failure to upgrade the project to a minimum of a 'B' rating within 72 hours will result in the project being rated 'F'.

For each day that the project has an 'F' rating, the Contractor and/or his surety shall be liable for noncompliance penalties in the amount of \$1,000.00 per day.



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308.03 CONSTRUCTION.

308.03.08 Stabilization Requirements.

INSERT: The following as the last paragraph.

Any disturbed area not draining to an MDE approved sediment trapping device must be stabilized at the end of each working day. Suitable stabilization methods include, but not limited to: Seed and mulch, stone, impervious sheeting properly secured by sandbags or stones.

308.04 MEASUREMENT AND PAYMENT.

DELETE: 308.04 in its entirety.

308.04 MEASUREMENT AND PAYMENT.

INSERT: The following:

The pay item(s) for this section includes:

3010 Silt Fence -- per linear foot

3011 Inlet Protection -- per each

All costs of Erosion and Sediment Control excluding the above two items, when required by MDE and Engineer, shall be incidental to the cost of excavation, grading and final stabilization practices. All material, labor, equipment, tools, installation, maintenance, repair, resetting, any temporary stabilization and final removal of all erosion and sediment control devices and shall also be incidental to the cost of excavation, grading and final stabilization practices.



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**CATEGORY 700
LANDSCAPING**

SECTION 701 — TOPSOIL AND SUBSOIL

701.01 DESCRIPTION. This work shall consist of salvaging topsoil and subsoil, placing salvaged topsoil and subsoil, and placing furnished topsoil and subsoil as specified in the Section 701 Standard Specifications or as directed by the Engineer.

701.04 MEASUREMENT AND PAYMENT. Placing topsoil and subsoil will be measured and paid for at the Contract unit price per square yard. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the work.

The pay item(s) for this section include(s):

7001 Placing Furnished Topsoil 4 Inch Depth -- per square yard



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**CATEGORY 700
LANDSCAPING**

SECTION 704 — TEMPORARY SEEDING AND TEMPORARY MULCHING

704.01 DESCRIPTION. This work shall consist of preparing soil, furnishing and applying temporary seed and temporary mulch and other disturbed areas that cannot be shaped and permanently vegetated for a period of time as specified in the Section 704 Standard Specifications or as directed by the Engineer.

704.04 MEASUREMENT AND PAYMENT. Temporary Seeding and Temporary Mulching will be measured and paid for at the Contract unit price for the items as specified in the Contract Documents. Payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the work. After acceptance, any areas requiring repair or replacement will be paid for at the contract unit price as additional work as directed by the Engineer.

704.04.01 Temporary Seeding will be measured and paid for at the Contract unit price per pound of seed.

704.04.02 Temporary Mulching will be measured and paid for at the Contract unit price per square yard.

The pay item(s) for this section include(s):

7002 Temporary Seeding -- per pound

7003 Temporary Mulch -- per square yard



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**CATEGORY 700
LANDSCAPING**

SECTION 705 — TURFGRASS ESTABLISHMENT

705.01 DESCRIPTION. This work shall consist of preparing soil and establishing turfgrass as specified in Section 705 Standard Specifications or as directed by the Engineer.

705.04 MEASUREMENT AND PAYMENT.

ADD: The following:

The pay item(s) for this section include(s):

7004 Turfgrass Establishment -- per square yard



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**CATEGORY 700
LANDSCAPING**

SECTION 708 — TURFGRASS SOD ESTABLISHMENT

708.01 DESCRIPTION. This work shall consist of preparing soil and installing turfgrass sod as specified in Section 708 Standard Specifications or as directed by the Engineer.

708.04 MEASUREMENT AND PAYMENT. Turfgrass sod establishment will be measured and paid for at the Contract unit price per square yard. The payment will be full compensation for all material, labor, equipment and incidentals necessary to complete the work.

ADD: The following:

The pay item(s) for this section include(s):

7005 Turfgrass Sod Establishment — per square yard



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SECTION 709 — SOIL STABILIZATION MATTING

709.01 DESCRIPTION. This work shall consist of furnishing, placing and securing matting on seeded areas, as specified in Section 709 Standard Specifications or as directed by the Engineer.

709.04 MEASUREMENT AND PAYMENT. Soil stabilization matting will be measured and paid for at the Contract unit price per square yard. The payment will be full compensation for all matting furnished and placed, staples, fasteners, and for all material, labor, equipment, tools, and incidentals necessary to complete the work.

ADD: The following:

The pay item(s) for this Section include(s):

7006 Soil Stabilization Matting -- per square yard



820 - GENERAL ELECTRICAL WORK AND TESTING

SEE SECTION 820 OF THE SHA'S *STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS* IN CONJUNCTION WITH THE CHANGES SHOWN IN THIS SECTION.

820.01 DESCRIPTION

ADD: The following.

- (a) This work includes contacting, coordinating and cooperating with BG&E for the changes and additions to the electrical service.
- (b) The Plans show only diagrammatic locations of cables, conduits, and other underground utilities. They are approximate and do not show every detail. The Contractor shall provide working drawings, shop drawings, and catalog cuts, etc., which show final details of the installation.

820.01.01 Codes, Standards, Inspection, and Documentation

- (a) All work shall be performed in accordance with the codes and standards listed below. In addition, materials and construction methods shall meet the minimum requirements and recommendations of the listed codes, standards, and organizations. Unless otherwise stated, the latest edition, revision, or supplement, as of the date of advertisement, of the specified codes shall be used.
 - ANSI - American National Standards Institute
 - ASTM - American Society for Testing and Materials
 - IEEE - Institute of Electrical and Electronic Engineers
 - NEC - National Electrical Code (NFPA70)
 - NEMA - National Electrical Manufacturers Association
 - NESC - National Electrical Safety Code
 - NFPA - National Fire Protection Association
 - UL - Underwriters' Laboratories
 - TIA - Telecommunications Industry Association
- (b) All materials supplied by the contractor shall be new and UL listed, where such listing is possible. Submit catalog cuts for all materials in accordance with Shop Plans & Working Drawings in SPECIAL PROVISIONS (TC 4.01).
- (c) The MDTA Chief Electrical Inspector or his appointed representative will inspect the entire installation. The Contractor shall contact the Electrical Inspector at least 48 hours before needed inspections. All trenches shall be inspected before backfilling.



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All equipment, conduits, etc. shall be inspected at rough in and prior to concealment. All work shall be inspected prior to power-up. Contact the Chief Electrical Inspector, Douglas Evans, at 410-977-2687 or devans3@mdta.state.md.us to arrange necessary inspections.

- (d) All rough-in work shall be documented via a digital camera prior to concealment. Camera shall be color, minimum of 5 mega pixels, and images shall be clear and readable to the naked eye. All color photos shall be time stamped with the date of the picture. Filename or other label shall identify project number and general location of the picture. All pictures shall be submitted on a CD or DVD at the conclusion of the project, however, electronic copies shall be made available at any time by request to the project engineer, inspector, and/or electrical inspector.
- (e) Special attention is directed to the fact that the Standard Specifications For Construction and Materials dated July 2008 and published by the Maryland Department of Transportation, State Highway Administration, also governs this work, and is referenced frequently herein as the "Specifications."
- (f) All work shall be performed in accordance with NECA 1-2006 (Standard for Good Workmanship in Electrical Construction) or latest revision.
- (g) Unless clearly specified otherwise, all voltages indicated are AC (alternating current), shall be at 60 Hz, and stated as RMS values.

820.01.02 Quality Assurance and Quality Control

The contractor shall inspect all materials furnished or installed under this contract and shall bring any damage, failure, or other problem to the attention of the project inspector prior to incorporation into the work. The contractor shall provide his own quality assurance and quality control for the work performed in the contract. The inspectors operating on behalf of the state are not a replacement for contractor's management and the contractor's own quality assurance and quality control.

Prior to final inspections/punch list development the contractor shall conduct his own inspections. The use of inspection checklists and quality control documents is required as evidence that inspections have been completed.



820.03 CONSTRUCTION

820.03.01 GENERAL

ADD: The following.

For the purpose of this specification, "direct supervision" shall mean that the qualified Master Electrician shall be at the job site at all times electrical work is performed. The Master Electrician shall be the single point of contact for inspection and quality control issues related to electrical work and shall be able to effectively manage the electrical work force.

The contractor must provide qualified labor to perform installation. Where licenses or certifications are available or required by local jurisdictions, state jurisdictions, or federal jurisdictions for certain skilled trades, such as electrical, mechanical, plumbing, welding, etc. The skilled trade workers shall have current versions of the appropriate license or certification prior to working the associated specialty and shall provide copies to the Project Engineer or Inspectors upon request.

Installation, splicing, terminating, and testing of fiber optic cable shall be performed by a trained and qualified fiber optic cable technician. Copies of certifications and experience shall be submitted to the Engineer prior to starting work.

ADD: The following just prior to paragraph 820.03.

820.03.04 Testing Fiber Optic Cables

Circuit tests shall be performed to verify that each fiber is connected to the proper circuit, and that it is continuous with no breaks, or damaged sections, in the fiber. All strands shall meet current EIA/TIA-568 specifications. Dark fibers and excessive attenuation due to breaks, bends, bad splices, defective connectors and bad installation practices shall not be accepted and shall be corrected. For fiber optic testing standards, see EIA-455-171 (FOTP-171), EIA 526-14.

- (a) All cables shall have ST connectors installed prior to testing. All testing, for purposes of acceptance of the system, shall be conducted on fully installed and assembled fiber optic cables.
- (b) Upon completion of testing, replace or repair any failed cable(s) with a new fiber or cable, and test the new cable to demonstrate acceptability.
- (c) Insertion loss testing shall be performed.
- (d) These tests shall be measured in dB.



- (e) These tests shall use 850 nm and 1300 nm light sources for multimode fiber and 1300 and 1550 nm for single mode fiber.
- (f) Test shall be documented for all wavelengths as noted above.
- (g) Test results shall be documented on paper and stored on a computer diskette and shall be turned over to the electrical inspector after testing is complete. Attachment 820-A to this Section shows a sample fiber optic test report.
- (h) An optical time domain reflectometer (OTDR) approved by the Engineer shall be used to conduct testing. The OTDR shall be calibrated to sheath (jacket) length, not optical length, by adjusting the unit's index of refraction. Properly trained technicians shall conduct tests.
- (i) All OTDR traces shall maximize both the vertical and horizontal scales to the greatest extent possible and still fit the entire trace on the screen.
- (j) A cable segment shall be deemed a failure if the total loss exceeds the calculated loss for that length of cable as indicated in Attachment 820-A. A cable segment shall fail if any individual splice loss is greater than 0.3dB, or if any mated connector pair loss is greater than 1.0dB, or if there is any point loss (over less than 1' of cable) of more than 1.0dB.
- (k) After the circuit test, a functional test shall be performed. This test shall consist of allowing the system to operate as normal for 30 consecutive days. Any failures shall be repaired by the Contractor at his own expense, and the test restarted.

820.03.05 All switches and breakers shall be operational and the operation of the devices they control verified. That is, the Contractor shall test switches and breakers in the presence of the MDTA electrical inspector to prove and assure that the device (or devices) specified is (are) controlled and no other device (or devices) is (are) controlled. All panel schedules shall be accurate and reflect the final installation.

820.03.06 All GFI protected outlets shall be tested with a suitable tester in the presence of the MDTA electrical inspector. The tester shall be a device that plugs into the outlet and indicates proper wiring of the outlet. A switch on the tester shall be utilized to introduce a ground fault that must trip the GFI device.

820.03.07 All Uninterruptible Power Supplies shall be tested by removal of power sources. Verify proper transfer to battery and backup time consistent with the manufacturers load vs. time data for the particular model of UPS. Restore normal power and verify that batteries are charged and normal operation commences.



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820.03.08 All PVC conduit fittings, except threaded fittings, shall be glued and water tight. All GRSC fittings shall be tight fit.

820.03.09 All photo electric controls shall be tested by applying a temporary shade to simulate photometric changes intended to activate the controls. Such testing shall be performed by the contractor in the presence of the MDTA electrical inspector.

820.03.10 All three phase panels, loads, motors, generators, UPS's, and ATS's shall be checked for proper phase rotation and consistent phase termination between termination points. I.e: Phase A is the same Phase at all Phase A termination points and the phase rotation is the same at all points. Such testing shall be performed by the contractor and witnessed by the electrical inspector.

820.03.11 Flexible metal conduit (Greenfield) and liquid tight flexible metal conduit (seal tight), and liquid tight flexible non-metallic conduit may be used as follows. Flexible fabric innerduct and innerduct used for low-voltage and fiber optic systems is not covered by this requirement.

(a) Lengths not exceeding 3' shall be used to connect transformers over 5KVA and motors.

(b) Lengths not exceeding 6' may be used for the final connection of light fixtures used in ceilings.

(c) Lengths not exceeding 6" may be used for the final connection devices that may be subject to minor vibration or minor movement perhaps from temperature expansion and contraction.

(d) Other lengths as clearly specified on the plans or as approved by the Engineer.

820.03.12 Conduit/Cable labeling. Interior cable and raceways shall be permanently labeled at a minimum of every 50 feet, every 25 feet when view is obstructed, and within 5' of any wall or floor/ceiling penetration at all junction boxes, terminations, and within 12" of electrical panel. Label color shall be Safety Orange with Black Letters and shall follow ANSI (ASME) A13.1 for location and size.

820.03.13 Unless specifically shown otherwise on the plans, wiring derived from different system voltages shall be installed in separate conduits. Wiring of different voltages derived from the same system (i.e. Control wiring) may be permitted to be installed in the same conduit or junction box provided that all requirements of the NEC are maintained.

820.03.14 No wiring other than the primary voltage indicated shall be installed in electrical panels and Safety/Disconnect Switches. Exception may be granted for wiring that terminates on a device within the panelboard or safety/disconnect switch that is integral to the operation of that device. Enclosures for switches or overcurrent devices shall not be used as junction boxes,



auxiliary gutters, or raceways for conductors feeding through or tapping off to other switches or overcurrent devices.

820.03.15 Branch Circuits: Any circuits supplying more than 50% non-linear loads shall have a dedicated neutral conductor

820.03.16 Conduit or tubing 1" and larger shall be provided with a suitable insulating bushing.

820.03.17 Panel Board Labeling. All circuits installed or modified by the contractor in any way shall be properly labeled in the associated panel board panel schedule. This work shall include verifying that the existing load on the affected circuit(s) is also correctly identified. The label shall identify the type of load(s) served (e.g.: receptacles, lighting, appliances, motors, pumps, etc..) and the location (e.g.: room 103, sump pit#1, etc...). Where changes are minor (e.g. Two circuits or less being changed), the existing panel schedule may be modified as approved by the Electrical Inspector. Larger changes shall require a new panel schedule typed, neat in appearance. The new schedule may copy the identifying labels of the old schedule provided that the contractor has not made any changes to those circuits. To clarify, replacing a panel board, moving circuits within a panel board, or similar changes shall be considered modifying the circuit and shall require testing to verify the connections of all such circuits and coordinating the panel schedule with the existing conditions.

820.03.18 Fire Stopping. All penetrations into fire walls or core holes between floors and walls must be properly fire-stopped in accordance NEC requirements for fire stopping. Penetrations into the surface of any firewall or presumed firewall should be only slightly larger than the conduit, cable or cables that will need to pass through it. This will make fire stopping easier and allow the wall to maintain a better overall structural integrity.

820.03.19 Construction Stakeout and Coordination

- (a) The Contractor shall coordinate this work with the work of other trades to avoid conflicts. Electrical cables and equipment damaged by the execution of work of other trades shall be completely removed and replaced with new.
- (b) The Contractor shall keep an up-to-date set of as-built red lined drawings on the job site. Submit as-built drawings upon completion of the work. The Contractor shall note the exact location of trenches at 100-foot intervals on the as-built drawings by station, and offset from the roadway. The Contractor shall show only the work that is part of the final project on as-built drawings.

820.03.20 Boxes and Cabinets. Unless specified otherwise, junction boxes, pull boxes, disconnect switches, cabinets, and other boxes installed outdoors and above ground shall be NEMA4X rated; except cabinets and boxes requiring ventilation which shall be NEMA3X rated.



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820.03.21 Rodent stopping. All conduits that connect to exterior mounted cabinets shall be stuffed with copper mesh at the cabinet end point to deter rodent egress through the conduit. The copper mesh shall be installed after all wires and cables have been installed. The mesh shall be removable and the mesh and installation and removal technique shall not damage wires or cables.

820.03.22 Conduit Fill. All conduit, new or existing, shall not exceed conduit fill requirements as specified in ANSI/NECA/BICSI-568-2006. Discrepancies shall be brought to the attention of the engineer prior to incorporation into the work.

820.03.23 Existing Conduits. Where existing empty conduits are used, the conduit shall be cleaned by pulling a mandrel of at least 80% conduit fill and a swab through the empty conduit. Any existing pull strings used (empty or partially used conduits) shall be replaced by pulling a new pull string with the new electrical or communications cables.

820.03.24 Bending Radius and Pulling Tension: Wires, Cables, Coaxial Cable, Fiber Optic Cables, and other communications and electrical cables shall be installed and handled in such a way so as not to exceed the manufacturers specified bending radius and pulling tension limits. Where the manufacturer provides installation and handling guidelines, such guidelines shall be followed.



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**ATTACHMENT 820-A
SAMPLE FIBER OPTIC CABLE TEST REPORT**

(To be filled out after installation is complete)

Job Name: Job ID:	Fiber Cable:
Location (A):	Location (B):

ANSI/EIA/TIA 568A: Cable Loss Factor (CLF); 1km=3280.83 feet

3.75 db/km (**0.00114 db/ft**) @ 850 nm for 62.5/125 μm MM

0.50 db/km (**0.00045 db/ft**) @ 1300 nm for 62.5/125 μm MM

0.50 db/km (**0.00015 db/ft**) @ 1310 nm and 1550 nm for OSP SM

1.0 db/km (**0.00030 db/ft**) @ 1310 nm and 1550 nm for ISP SM

0.5 Connector Loss (CL) = 0.75 db per pair of connectors

Splice Loss (SL) = 0.3 db each

To calculate ACCEPTABLE LOSS (db): Multiply cable length x (CLF) + (CL) + (SL) = DB margin: _____

Cable Length	Strand No.	A to B	B to A	Fiber ID
Feet	1			Blue
850 NM MM	2			Orange
dB	3			Green
	4			Brown
	5			Slate
	6			White
	7			Red
	8			Black
	9			Yellow
	10			Violet
	11			Rose
	12			Aqua



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Cable Length	Strand No.	A to B	B to A	Fiber ID
Feet	1			Blue
1300 NM MM	2			Orange
dB	3			Green
	4			Brown
	5			Slate
	6			White
	7			Red
	8			Black
	9			Yellow
	10			Violet
	11			Rose
	12			Aqua

Cable Length	Strand No.	A to B	B to A	Fiber ID
Feet	1			Blue
1550 NM MM	2			Orange
dB	3			Green
	4			Brown
	5			Slate
	6			White
	7			Red
	8			Black
	9			Yellow
	10			Violet
	11			Rose
	12			Aqua

Technician: _____ Date: _____



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831- MISS UTILITY

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**CATEGORY 800
UTILITIES**

SECTION 831 - MISS UTILITY

831.01 DESCRIPTION.

This work shall consist of contacting Miss Utility as required by Law and providing evidence of Miss Utility Marking of the construction area.

This work shall include written notification to the Maryland Transportation Authority at least seventy-two (72) hours in advance of excavation for each site.

831.03 CONSTRUCTION.

The Contractor shall contact Miss Utility and assure that all construction areas are marked where excavation or other work affecting or possibly affecting underground utilities will take place. The Contractor shall maintain the markings. The Contractor shall pay any Miss Utility fees. The Contractor shall submit copies of Miss Utility tickets to the Engineer as evidence of this work.

The Contractor shall provide a written notification of intent to excavate or disturb the earth in an area to the Maryland Transportation Authority at least seventy-two (72) hours in advance of such activity. The Maryland Transportation Authority is not a subscriber to utility marking services. This notification shall permit the Authority to mark any Authority owned utilities within the excavation or disturbance area. The written notification shall be provided to the Authority's Project Manager and a copy provided to the Administrator at the affected facility as indicated below:

Name	Phone	Fax
Martara Hannah, BHT	410-537-1250	410-537-8378
Martara Hannah, FMT	410-537-1250	410-537-8378
Charles Raycob, FSK	410-537-7513	410-537-7503
Gary Jackson, HWN	410-537-6807	301-259-0411
John Lohmeyer, JFK, TJH	410-537-1107	410-537-1105
Ken Cimino, WPL	410-295-8156	410-295-8151

The Contractor shall maintain markings of utilities until excavation and disturbance work is complete. Existing marked utilities shall not be damaged or disturbed without permission of the owner of the utility.

831.04 MEASUREMENT AND PAYMENT.

This work will not be measured or paid separately, but shall be considered incidental to other work on the project.

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**CATEGORY 900
MATERIALS**

SECTION 905 — PIPE

694 **DELETE:** SECTION 905 — PIPE in its entirety.

INSERT: The following:

905.01 CERTIFICATION. The manufacturer shall furnish certification for all pipe as specified in TC-1.02

MATERIAL	SPECIFICATION	REMARKS
Non-reinforced Concrete Pipe	M 86, Class 3	—
Reinforced Concrete Pipe (RCP)	M 170, Class 4 & 5	All sizes - load bearing option only
Concrete End Sections	M 170	Class 3 pipe reinforcement required
Reinforced Concrete Elliptical Pipe	M 207	Load bearing option Horizontal installation only.
Reinforced Concrete Arch Culvert	M 206	—
Corrugated Polyethylene Pipe	M 294	12 in. to 48 in. diameter
Corrugated Polyethylene Drainage Pipe	M 252	Perforated underdrain and underdrain outlet pipe.
Polyvinyl Chloride (PVC) Profile Wall Pipe	M 304	4 in. to 48 in. diameter
Polyvinyl Chloride (PVC) Pipe	AASHTO Bridge Section 18 PVC Ribbed Pipe	—
	M 278	Underdrain outlet pipe
	M 278 (a)	Perforated underdrain
Preformed Rubber Joint for Circular Pipe	M 198, Type A	—
Corrugated Steel Pipe, Pipe Arches & Underdrain	M 36 (b), (c)	End finish shall be annular corrugations
Corrugated Aluminum Alloy Pipe	M 196 (b)	End finish shall be annular corrugations
Structural Plate for Pipe, Pipe Arches & Arches	M 167	—
Copper Pipe	Fed Spec WW - T-799, Type K	—
Polyethylene (PE) Precoated Corrugated Steel Pipe	M 245 & M 246	Minimum thickness 10 mil on each of the surfaces.
Concrete Drain Tile	M 178	—
Non-Asbestos Fiber-Cement Storm Drain Pipe	C 1450	12 in. to 48 in. diameter
Reinforced Concrete Low-Head Pressure Pipe	C 361	Pond spillways

(a) Perforations shall meet the requirements of F 758.

(b) Bands with dimples are prohibited.

(c) All Corrugated Steel Pipe shall be aluminum-coated Type 2 per M 274 unless otherwise specified.



905.02 CERTIFIED REINFORCED CONCRETE PIPE PLANTS. RCP meeting the Specifications will be accepted on the manufacturer's certification based on the requirements outlined below. This includes the sampling, testing, documentation, and certification of the product by the manufacturer in combination with an Administration Monitoring Program.

Initial Inspection. Any plant initially setting up and starting production will be subjected to a comprehensive inspection to determine whether plant equipment and personnel meet all applicable Specifications and that suitable testing facilities are available. As a prerequisite to the comprehensive inspection the concrete pipe producer shall submit a Quality Control Plan (QCP) to the Administration for review and approval. The Administration will accept certification by a professional engineer registered in the State of Maryland that the plant facilities meet all applicable Specifications; however, final acceptance will be determined at the sole discretion of the Administration.

905.02.01 Responsibilities of the Concrete Pipe Producer. The concrete pipe producer shall be responsible for quality control of plant operations to insure that the component materials and finished product meet Specifications. The quality control process will be subject to unannounced periodic verification by representatives of the Engineer and annual comprehensive inspections. The plant's quality control personnel shall fully cooperate with the verification and annual comprehensive inspections. Failure of the plant's quality control personnel to fully cooperate with the verification and annual comprehensive inspections could result in the refusal of the Administration to accept for use or payment any of the products covered under this section.

The concrete pipe producer shall resubmit its QCP to the Engineer for approval prior to the annual comprehensive inspection. Any changes occurring after the QCP has been approved for any given year, shall be submitted as a supplement to the plan for approval before such changes may be implemented. The plan shall include the following items:

- (a) A statement that RCP shall meet the applicable portion of the pipe table under Section 905.
- (b) A thorough description of how the component materials and finished product will be stored and handled.
- (c) A description of quality control procedures that shall include the following:
 - (1) The names, qualifications, and responsibilities of the quality control personnel and the designation of a quality control manager.



- (a) The list of quality control personnel shall also identify which persons will be responsible for final inspection and stamping of finished product prior to shipment.
 - (b) Each quality control person responsible for final inspection and stamping shall be assigned an identification number that they will stamp on each unit of finished product.
 - (c) A copy of each stamp as it will appear on the finished product.
- (2) Sampling and testing methods and frequencies.
 - (3) Method used for inspecting reinforcement cages prior to and during production.
 - (4) Method of curing.
 - (5) Method of maintaining accurate quality control records.
 - (6) Samples of forms approved by the Administration.
 - (7) Patching procedure.
 - (8) Method of preparation of units for shipping.
 - (9) Method of identification of each unit as tested and approved.
 - (10) Procedures for conducting internal audits to verify that quality control personnel are adhering to QCP.

A lot is defined as a production run of concrete pipe, all being of like size, material, and strength designation and manufactured by the same process. The lot size may include up to 1000 units for 12 to 36 in., or 500 units for 42 in. and larger produced in not more than 14 days. The 14 days need not be consecutive, as long as they occur within a 30 consecutive day period and the process is not altered in any way between production days.

A three-edge bearing test to produce a 0.01 in. crack is required for each lot per M 170 section 5.1.1.

A minimum of one three-edge bearing test per year to ultimate load shall be performed on each size and class of pipe manufactured and shipped to Administration projects to verify that the applicable specified ultimate load can be achieved.

A minimum of one absorption test per year shall be performed on each size and class of pipe manufactured and shipped to Administration projects.



Additional absorption tests may be required at the sole discretion of the Engineer whenever there is a change in component material sources.

The ultimate load test and absorption test shall be completed on the first lot of the year of that size and class pipe shipped to Administration projects.

The year may commence at any time the producer chooses; said date shall be stated in the QCP and may not occur any later than 90 calendar days after conclusion of the prior year as stated in the QCP for that year.

905.02.02 Test Facilities. The producer's facilities, equipment and quality control personnel shall be capable of conducting the tests per T 280 and shall be approved by the Engineer.

The producer shall maintain yearly calibration certificates on all equipment used for testing and produce said certificates for the Engineer's representative upon request.

The producer may elect to use the services of an independent commercial testing laboratory that is acceptable to the Engineer in lieu of conducting their own tests.

905.02.03 Shipment. Pipe may be shipped to the Administration's projects when the required testing for all pipes in the lot has been completed with acceptable results and all of the pipes to be shipped are at least the age of the test specimens at testing.

Each pipe shall be marked on the inside with the following information when shipped:

- (a) Plant name.
- (b) Plant location.
- (c) Size of pipe.
- (d) Class of pipe.
- (e) Date of manufacture.
- (f) Quality control stamp.
- (g) Quality control personnel number.

The quality control stamp shall be affixed to each unit shipped.

905.02.04 Certification. A manufacturer's certification shall accompany each shipment of pipe. A copy of the certification shall be delivered to the Engineer, the administration's



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laboratory, and the Contractor for each shipment. One copy shall remain at the plant. The certification shall include the following;

- (a) The plant name, address, and location.
- (b) Size and class of the pipe.
- (c) Date of manufacture and shipment.
- (d) Number of units.
- (e) Administration Contract number.
- (f) Statement of Specification compliance.
- (g) Signature and identification number of the quality control personnel that inspected the shipment. In the event that the certification document is signed by someone other than the person(s) who stamped any of the individual units, the name and identification number of those persons shall be shown on the certification.

905.02.05 Records. All testing and inspection documents shall be maintained at the production plant for a minimum of three years from the manufactured date and shall be made available to the Administration upon request. These records shall also include all compliance certificates and mill test reports for aggregates, cement, fly ash, joint material, reinforcing steel, and any other materials intended for use in products used on Administration projects.

905.02.06 Quality Control Forms. The producer shall maintain an Administration approved quality control form for all pipe produced for use on Administration projects. Each form, for each lot shall contain the following:



PIPE DIMENSIONS	REINFORCEMENT	TESTS	GENERAL INFORMATION
Diameter Length Wall Thickness Joint Style	Size Spacing Area- Spec & Test Results Adequacy & Quality of Welds & Splices	Absorption Spec & Test Results Once per year Visual Inspection	Plant Name Technician Signature Lot Identification Production Dates Pipe Class Units Per Lot Material Sources Cement Fine Aggregate Coarse Aggregate Reinforcement
THREE EDGE BEARING			
0.01 in. Crack Strength Spec & Test Results	Ultimate Strength Spec & Test Results Once per year		

905.02.07 Responsibilities of the Administration. Verification of certification will be performed at the discretion of the Administration a minimum of once per year.

The Administration reserves the right to discontinue acceptance of reinforced concrete pipe if its verification process indicates that the component materials, test procedures or finished pipe do not comply with the Contract Documents or QCP. In the event any verification inspection finds deficiencies in the finished pipe or the performance of the QCP the Administration will provide the producer a copy of a Non-Compliance Report (NCR) detailing the deficiencies and any remedial action the Administration may require that the producer undertake to resolve those deficiencies noted. The Administration will provide a period of up to 10 business days for the producer to address any deficiencies noted in the NCR; however, the sufficiency of any remedial action on the part of the producer will be at the sole discretion of the Administration to determine.

905.03 CERTIFIED CORRUGATED POLYETHYLENE PIPE PLANTS. Pipe meeting the Specifications will be accepted on the manufacturer's certification based on the requirements outlined below. This includes the sampling, testing documentation, and certification of the product by the manufacturer in combination with an Administration Monitoring Program.

905.03.01 Responsibilities of the Corrugated Polyethylene Pipe Producer. Submit a quality control plan to the Engineer for approval. The plan shall indicate the following:



- (a) The plan may be general, but shall be site specific.
- (b) The plan shall detail how the producer proposes to control the equipment, materials, and the production methods to ensure that products produced, meets the Specifications.
- (c) The plan shall list the personnel responsible for production and quality control at the site and include information on how to contact each person.
- (d) Identification of the physical location of the plant.
- (e) The method of identification of each lot of material during manufacture, testing, storage, and shipment.
- (f) The method of sampling and testing of raw materials and of the finished product, including lot sizes, type of material tests performed, and a description of equipment modifications or equipment developed in-house to perform the tests.
- (g) A plan for dealing with quality control sample failures, that shall include how the producer plans to initiate an immediate investigation and what corrective action will be implemented to remedy the cause of the problem.
- (h) A lot is defined as a production run of polyethylene pipe, all being of like size, material, and manufactured by the same process. What determines lot size shall be stated in the Quality Control Plan (i.e. single day's production, 15 000 linear feet, etc.)

905.03.02 Test Facilities. The Certification Program requires all tests to be conducted at laboratories that are accredited by AASHTO or approved by the Administration. Each source may establish and maintain its own laboratory for the performance of quality control testing or may request to utilize an approved independent laboratory. The producer shall make a written request and have written approval from the Administration prior to having material tested off site. The equipment required for all approved laboratories shall be sufficient to perform the required test procedures as required by the applicable specification and standards such as M 252, M 294, and D 2412.

905.03.03 Certification. A manufacturer's certification shall accompany each shipment of pipe. A copy of the certification shall be delivered to the Engineer and the Contractor for each shipment. One copy shall remain at the plant. The certification shall include the following:

- (a) Plant name, address, and location.
- (b) Lot or production identification.



- (c) Date of manufacture and shipment.
- (d) Number of units of each size pipe or total linear feet of each size pipe.
- (e) Administration Contract number.
- (f) Statement of Specification compliance.
- (g) Signature of the quality control manager, or authorized representative (name shall be designated in the Quality Control Plan).

905.03.04 Records. All testing and inspection documents shall be maintained at the manufacturing facility for a minimum of three years from the manufactured date, and shall be made available to Administration personnel upon request.

905.03.05 Quality Control Forms. The manufacturer shall maintain an Administration approved quality control form for all pipe produced on Administration projects that contain the following:

GENERAL INFORMATION	TESTS
Plant Identification QC Technician's Signature Lot Identification Production Dates Tubing/Pipe Dimension Perforation Dimensions Workmanship Identification Markings	Pipe Stiffness Pipe Flattening Elongation* Environmental Stress Cracking Brittleness Low Temperature Flexibility*

*Type C or CP only.

905.03.06 Responsibilities of the Administration. The Administration will randomly conduct a minimum of one plant inspection per year with the cooperation and assistance of the producer to ensure compliance with the specifications and quality control requirements. Visual inspection will be made by the Engineer when pipe is received on the project. The Administration will verify the manufacturer's certification test results by sampling in accordance with the Administration's Frequency Guide.



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**CATEGORY 900
MATERIALS**

SECTION 950 - TRAFFIC MATERIALS

950.03 REFLECTORIZATION OF SIGNS AND CHANNELIZING DEVICES.

DELETE: 950.03 REFLECTORIZATION OF SIGNS AND CHANNELIZING DEVICES, in its entirety.

INSERT: The following.

950.03 REFLECTORIZATION OF SIGNS AND CHANNELIZING DEVICES. Unless otherwise specified in the Contract Documents, retroreflective sheeting for permanent signs shall conform to 950.03.01 and 950.03.03. Retroreflective sheeting for temporary signs and channelizing devices shall conform to 950.03.02 or 950.03.03, and 950.03.04.

950.03.01 Permanent Signs Retroreflective Sheeting. Retroreflective sheeting for permanent signs shall conform to ASTM D 4956-05, except as modified below:

MINIMUM REFLECTIVE INTENSITY VALUES FOR RETROREFLECTIVE SHEETING Minimum Coefficient of Retroreflection (R_A) $cd/(lx \cdot m^2)$ Per ASTM E-810 (Average of 0 and 90 degree orientation)									
Observation Angle°	Entrance Angle°	White	Yellow	Fluor. Yellow	Fluor. Yellow-Green	Red	Green	Blue	Fluor. Orange
0.2	-4	570	425	340	455	114	57	26	170
0.2	30	215	160	130	170	43	21	10	64
0.5	-4	400	300	240	320	80	40	18	120
0.5	30	150	112	90	120	30	15	6.8	45
1	-4	120	90	72	96	24	12	5.4	36
1	30	45	34	27	36	9	4.5	2	14

950.03.02 Temporary Traffic Signs (TTS).

- (a) All rigid temporary traffic signs shall be fluorescent orange and conform to ASTM D 4956-05, Type VII or 950.03.01.
- (b) All temporary flexible rollup signs shall be fluorescent orange and conform to ASTM D 4956-05, Type VI.

950.03.03 Black Sheeting. Black sheeting shall be nonreflective.

950.03.04 Drums for Maintenance of Traffic. All drums for maintenance of traffic shall have retroreflective white and fluorescent orange reboundable sheeting and conform to ASTM D 4956-05 Type VII.