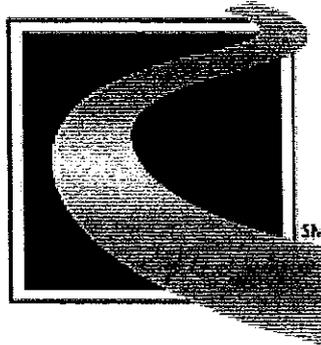


MARYLAND TRANSPORTATION AUTHORITY
Baltimore, Maryland
Invitation for Bids

William Preston Lane, Jr. Memorial Bridge



Maryland
Transportation
Authority

Contract No. BB-972-000-006

Route 50 Dynamic Message Signs Replacement

Queen Anne's County

JULY 2010



TABLE OF CONTENTS

	<u>Page No.</u>
Notice to Bidders/Offerors.....	1-2
Important Information Regarding MBE Utilization and Bidding Requirements	3-
Dual Certification Procurement Information.....	6
National Cooperative Highway Research Program.....	7-8
Occupying Wetlands.....	9
High Visibility Safety Apparel Policy.....	10-11
Apprenticeship Training Fund.....	12-16
Invitation for Bids.....	17
Special Provisions.....	18-25
Revisions to General Provision.....	26-34
Revisions to Terms and Conditions.....	35-46
Revisions to Technical Requirements:	
Section 103 Engineers Office.....	47-49
SP 2-1 General Requirements.....	50-54
SP 2-2 Installation of Dynamic Message Signs and Controllers.....	55-61
SP 2-3 Field Equipment Cabinets and Mini Power Centers.....	62-76
SP 2-4 Testing.....	77-82
SP 2-5 Maintenance, Spare Parts and Warranties	83-86
SP 2-6 Maintenance of Traffic (“TCP”).....	87-91
SP 2-7 Construction Sequencing.....	92



	<u>Page No.</u>
SP 2-8 Miscellaneous Repairs and/or Construction	93
SP 2-9 Removal of Structure	94-95
SECTION 308 – Erosion and Sediment Control	96-99
SECTION 800-9 Sign Structure Identification Number Label	100-101
SECTION 820 – General Electrical Work and Testing	102-109
SECTION 897 Telephone and Electrical Services	110-111
SECTION 898 – Measurement and Payment	112-113
SECTION 950 – Traffic Materials	114-123
Wage Rates	124-130
Contractor Affirmative Action Program.....	131-147
Affirmative Action Requirements Utilization of Minority Business Enterprises for Straight State Contracts.....	148-154
Proposal Form.....	155
Schedule of Prices.....	156-162
Contract Time and Bonding.....	163
Buy American Steel Act.....	164-166
MDOT MBE FORMS – State-Funded Contracts (Bids Only) Certified MBE Utilization and Fair Solicitation Affidavit	167-177
Bid/Proposal Affidavit.....	178-188
Proposal Guaranty.....	189
Bid Guarantee.....	190-191
Bid Bond.....	192-194

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.
- Minority Business Enterprise Attachments A and B must be completed and submitted with your bid. If either of these attachments is missing your bid is non-responsive. Attachments C and D **should not** be submitted at time of bid.
For additional information on how to complete the MBE Attachments, please see the insert named "Important Information regarding MBE Utilization and Bidding Requirements" located in the IFB.
- 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.

IMPORTANT INFORMATION REGARDING MBE UTILIZATION AND BIDDING REQUIREMENTS

The Maryland Transportation Authority (MDTA) has been forced to reject many recent bids/proposals due to bid submissions that were not in strict compliance with the stipulated MBE rules and regulations. The following checklist has been developed to highlight certain critical components of the MBE program requirements. This listing is not all-inclusive and the bidder **must** comply with all MBE rules and regulations listed throughout this entire bid/proposal book.

Please read all of the instructions provided on Attachment A, B, C, & D in its entirety before completing the forms.

Attachment A (Certified MBE Utilization and Fair Solicitation Affidavit) & Attachment B (MBE Participation Schedule) must be included with the submittal of the bid or offer. If the bidder or offeror fails to submit these forms with the bid/offer as required, the Procurement Officer **shall deem the bid non-responsive** or shall determine that the **offer is not reasonably susceptible** of being selected for award.

MBE Prime Contractors must achieve the established MBE goal with other certified MBE contractors. A Prime MBE Contractor **can not** count itself as an MBE to obtain the goal.

ATTACHMENT A

When filling out Attachment A, make sure you complete the following:

- If the Prime Contractor can achieve the established overall goal and subgoals, you must check the appropriate box.
- If after making good faith efforts, you determine you can not achieve the established overall goal or subgoals, you must request a waiver by checking the appropriate box.
- If you do not request the waiver at time of bid and you **are not** meeting the established goal(s), your bid/offer will be considered **non-responsive or not reasonably susceptible of being selected for award.**
- Attachment A must be signed and dated.

ATTACHMENT B

When filling out Attachment B, make sure you have included the following:

- Prime Contractor's name, address and phone number.
- Project description
- Project number/Solicitation number.
- List the minority firm name (column 1), certification number and MBE Classification (column 2), NAICS Codes of the services to be performed or products to be supplied (column 3) and total subcontract dollar amount (column 4).
- It is the Contractor's responsibility to ensure that the proposed subcontractors are certified to perform the proposed work. All Contractors are to submit an approvable MBE plan at time of bid. Approvable means, the subcontractors are certified in the applicable SIC/NAIC Codes through MDOT and can perform the proposed work for the required participation goal. Contractors pending MBE certification at time of bid are **not** eligible for participation. If you submit a firm that is not certified to perform the proposed work and your contract falls short of the established MBE goal, your firm will be considered **non-responsive or not reasonably susceptible of being selected for award**.
- Prime Contractors are strongly encouraged to check the MDOT database at www.mbe.md.state.md.us to see if the subcontractor(s) is certified to perform the services and to make sure the subcontractor(s) has not graduated from the listed NAICS codes. If you have questions after checking the data base, you may contact the MDTA MBE Office at 410-537-7832 for further assistance.

If you are using a supplier, the 60% rule applies. Please refer to the MBE Manual for the description of the 60% rule.

Please provide details on how you arrived at the 60% on Attachment B (Column 4) (i.e. – \$150,000.00 X 60% = \$90,000.00)

- If you are requesting a third tier relationship, you must state that request on the Attachment B (column 1). Please note: Third Tier MBE/DBE subcontracting will be approved by MDTA only when MDTA is satisfied that there is no way except by Third Tier contracting that an MBE/DBE goal can be achieved. Specifics as to why a Third Tier contracting agreement must be included.
- Attachment B must be signed and dated.

- If you are the apparent low bidder, you will receive a letter from MDTA requesting your MBE Attachment C (Outreach Efforts Compliance Statement) and Attachment D (Subcontractor Project Participation Affidavit). You will have ten (10) working days to submit the attachments to MDTA. If you requested a waiver at time of bid, all of the back up documentation that complies with COMAR 21.11.03.11, must be submitted within the ten working days with Attachments C & D.
- If the apparent low bidder fails to return the required documentation within the allotted 10 days, the Procurement Officer may determine that the apparent low bidder is not responsible and therefore not eligible for contract award.

Dual Certification Procurement Information

Effective on October 1, 2009, Minority Business Enterprise (MBE) firms may elect to be dually certified as woman-owned businesses and as members of an ethnic or racial category. For purposes of achieving any gender or ethnic/racial MBE participation subgoals in a particular contract, an MBE firm that has dual certification may participate in the contract either as a woman-owned business or as a business owned by a member of a racial or ethnic minority group, **but not both**.

WARNING – PLEASE READ:

- ◆ **A firm must be listed in the MDOT MBE/DBE Directory with the gender category in order to be used to meet the gender subgoal.**
- ◆ **A firm must be listed in the MDOT MBE/DBE Directory with an ethnic/racial category in order to be used to meet the ethnic/racial subgoal.**
- ◆ **A firm must be listed in the MDOT MBE/DBE Directory with both the gender and ethnic/racial categories in order for a contractor to have the option of selecting which of those categories it will use for the firm on a State contract.**
- ◆ **Contractors should designate whether the MBE firm will be used as a woman-owned business or as a business owned by a member of a racial/ethnic group before calculating the percentage of MBE participation goals and subgoals they intend to meet.**

Maryland's MBE/DBE Directory will reflect the dual certification status beginning October 1, 2009. You can access the MBE/DBE Directory at <http://mbe.md.state.md.us>. Firms with dual certification will now be listed as follows:

Example:

ABC Corporation, Inc.
123 Corporate Circle
Hanover, MD 21076
Female/African American
00-000



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.

**CONTRACT PROVISIONS
(NCHRP) REPORT 350 IMPLEMENTATION SCHEDULE**

CONTRACT NO. BB-972-000-006

2 of 2

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 (TMA) Trailer truck Mounted Attenuators (TMMAs) (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>



**CONTRACT PROVISIONS
OCCUPYING WETLANDS**

CONTRACT NO. BB-972-000-006

1 of 1

OCCUPYING WETLANDS

The Contractor is hereby alerted to the importance of preserving wetland areas. The Authority, 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 Administration 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 Administration employees and all other persons who work on Administration highways and rights-of-way. All workers shall wear, at a minimum, Class 2 ANSI/ISEA 107/2004 apparel.

- (a) For Administration employees, this apparel shall have a fluorescent yellow-green background material color and be the outermost garment worn.
- (b) Retro-reflective material color for Administration 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-Administration 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-Administration 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 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 Administration highways and rights-of-way.
- (b) Highways – All roads owned by the Maryland Department of Transportation and maintained by the Administration.
- (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.



**CONTRACT PROVISIONS
APPRENTICESHIP TRAINING FUND**

CONTRACT NO. BB-972-000-006
1 of 5

**CONTRACT PROVISIONS
APPRENTICESHIP TRAINING FUND**

Effective October 1, 2009, State Law requires all contractors and subcontractors working on State prevailing wage projects with prevailing wage determinations to register (Apprenticeship Training Fund Site) with the Division of Labor and Industry Prevailing Wage Unit prior to the commencement of work and to make certain contributions toward improving and expanding apprenticeship programs in the State. In addition, registered apprenticeship programs and organizations that have registered apprenticeship programs that have been selected by contractors and subcontractors for contributions also are required to register with the Division of Labor and Industry Prevailing Wage Unit.

The following information concerning the requirements of the apprenticeship training fund program are being provided for informational purposes only. It is the contractor's responsibility to contact the Maryland Department of Labor, Licensing and Regulation (DLLR), prior to commencement of any work, to determine how these provisions are being implemented and enforced by DLLR.

Definitions. The following terms have the meanings indicated.

(a) Terms Defined.

- (1) "Approved apprenticeship program" means an apprenticeship program or an organization with an apprenticeship program which has been registered with, and approved by, the Maryland Apprenticeship and Training Council or the United States Department of Labor.
- (2) "Commissioner" means the Commissioner of Labor and Industry.
- (3) "Covered craft" means a classification of workers listed in the prevailing wage determination applicable to a prevailing wage project.
- (4) "Fund" means the State Apprenticeship Training Fund.
- (5) "Monthly Certified Verification Report" means the monthly report that details contractor and subcontractor contributions for that month available on the Division of Labor and Industry's website.
- (6) "Public body" means a unit of State government as defined in § 17-201(I), State Finance and Procurement Article, Annotated Code of Maryland.
- (7) "Unit" means the Division of Labor and Industry, Prevailing Wage Unit and the public body that awarded the procurement contract.



CONTRACT PROVISIONS
APPRENTICESHIP TRAINING FUND

CONTRACT NO. BB-972-000-006
2 of 5

(8) “Yearly Certified Verification Report” means the yearly report that details contractor and subcontractor contributions for the preceding year available on the Division of Labor and Industry’s website.

Contractor/Subcontractor Registration. Contractors and subcontractors awarded a procurement contract on a public work contract subject to the Maryland Prevailing Wage Law shall register on the Division of Labor and Industry’s website at www.dllr.state.md.us/labor prior to the commencement of work.

Contractor/Subcontractor Project Management. Upon registration under Contractor/Subcontractor Registration of this Chapter, contractors and subcontractors are required to provide information to the Division of Labor and Industry on its website at www.dllr.state.md.us/labor about each public work contract including the following:

- (a) The prevailing wage project number for each prevailing wage project the contractor or subcontractor is performing work on; and
- (b) The contract value for each prevailing wage project the contractor or subcontractor is performing work on.

Contractor/Subcontractor Notification to Subcontractors. Contractors and subcontractors who hire subcontractors on a public work contract subject to the Maryland Prevailing Wage Law shall provide all subcontractors with written notice of the following requirements:

- (a) Subcontractors are required to register on the Division of Labor and Industry’s website at www.dllr.state.md.us/labor prior to the commencement of work;
- (b) After registration, subcontractors are required to enter certain information about each prevailing wage project on the Division of Labor and Industry’s website; and
- (c) Subcontractors performing work on a prevailing wage project valued at \$100,000 or more are required to make payments to approved apprenticeship programs or to the Fund for workers in classifications listed on the prevailing wage determination, or both.

Contractors and subcontractors shall retain a copy of the written notice required in §A of this Regulation that was provided to all subcontractors for inspection and review by the Commissioner for three years.

Contributions to the Fund. *Currently not being enforced*

Contributions to Approved Apprenticeship Programs. *Currently not being enforced*



CONTRACT PROVISIONS
APPRENTICESHIP TRAINING FUND

CONTRACT NO. BB-972-000-006
3 of 5

Contractor/Subcontractor Obligations Relating to Approved Apprenticeship Program.

- (a) Contractors and subcontractors are required to complete and to file on the Division of Labor and Industry's website at www.dlir.state.md.us/labor the Monthly Certified Verification Report which shall include the following:
- (1) A list of the contributions to each approved apprenticeship program during the last month;
 - (2) A statement signed by the contractor or subcontractor that the information is correct and that the contractor or subcontractor has complied with the requirements of Subtitle 6, Title 17, State Finance and Procurement Article, Annotated Code of Maryland.
- (b) Contractors and subcontractors are required to submit the Monthly Certified Verification Report by the 30th calendar day of each month for the previous month.
- (c) Contractors and subcontractors are required to complete and to file on the Division of Labor and Industry's website at www.dlir.state.md.us/labor the Yearly Certified Verification Report which shall include the following:
- (1) A summary of monthly contributions with total annual contributions; and
 - (2) A statement signed by the contractor or subcontractor that the information is correct and that the contractor or subcontractor has complied with the requirements of Subtitle 6, Title 17, State Finance and Procurement Article, Annotated Code of Maryland.
- (d) Contractors and subcontractors shall post a copy of their Yearly Certified Verification Report in a prominent and easily accessible place in the workplace near where work is performed.

Notification to Division of Labor of Changes to Designated Approved Apprenticeship Programs or Fund. Contractors and subcontractors shall provide the Commissioner with written notice of each approved apprenticeship program or the Fund to which it will make contributions. If a contractor or subcontractor changes their designation, it shall notify the Division of Labor and Industry 30 days prior to the change in designation.

Approved Apprenticeship Program Obligations. Upon notification from the Division of Labor and Industry that the approved apprenticeship program has been designated for contributions by a contractor or subcontractor, the approved apprenticeship program shall register on the Division of Labor and Industry's website at www.dlir.state.md.us/labor.



CONTRACT PROVISIONS
APPRENTICESHIP TRAINING FUND

CONTRACT NO. BB-972-000-006
4 of 5

After registering under §A of this Regulation, an approved apprenticeship program will receive a summary of contractor and subcontractor contributions from the Division of Labor and Industry on a monthly basis and shall comply with the following:

- (a) Review and certify that the contribution amounts are correct;
- (b) Certify that all funds received are used solely for the purpose of improving or expanding apprenticeship training in the State; and
- (c) File a response within 30 days of receipt of the Division of Labor and Industry's summary.

Enforcement Procedures.

- (a) The Commissioner may investigate whether Subtitle 6 of Title 17 of the State Finance and Procurement Article, Annotated Code of Maryland, has been violated:
 - (1) On the Commissioner's own initiative;
 - (2) On receipt of a written complaint; or
 - (3) On referral from another State agency.
- (b) The Commissioner may require a contractor, subcontractor, or an approved apprenticeship program to produce records as part of its investigation.
- (c) The Commissioner may enter a place of business to:
 - (1) Interview individuals; or
 - (2) Review and copy records.
- (d) If after an investigation, the Commissioner determines that there is a violation of Subtitle 6, Title 17 or a regulation adopted to carry out the title, the Commissioner shall issue a citation that shall:
 - (1) Describe in detail the nature of the alleged violation;
 - (2) Cite the provision of law or regulation that is alleged to have been violated; and
 - (3) State the penalty, if any.



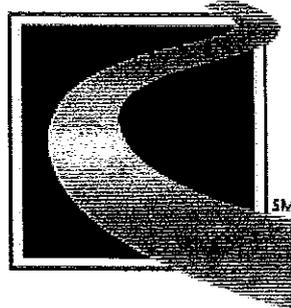
CONTRACT PROVISIONS
APPRENTICESHIP TRAINING FUND

CONTRACT NO. BB-972-000-006
5 of 5

- (e) Within a reasonable amount of time after the issuance of the citation, the Commissioner shall send a copy of the citation to the alleged violator by certified mail with notice of the opportunity to request a hearing.
- (f) Within 15 days after the alleged violator receives the citation, the employer may submit a written request for a hearing on the citation and proposed penalty.
- (g) If a hearing is not requested within fifteen days, the citation, including any penalties, shall become a final order of the Commissioner.
- (h) If there is a request for a hearing, the Commissioner may delegate the hearing to the Office of Administrative Hearings in accordance with Title 10, Subtitle 2 of the State Government Article, Annotated Code of Maryland.
- (i) A proposed decision of an administrative law judge shall become a final order of the Commissioner unless, within 15 days of the issuance of the proposed decision:
 - (1) The Commissioner orders review of the proposed decision; and
 - (2) The alleged violator submits to the Commissioner a written request for review of the proposed decision.
- (j) After review of the proposed decision under Subsection I, with or without a hearing on the record, the Commissioner shall issue an order that affirms, modifies or vacates the proposed decision.

MARYLAND TRANSPORTATION AUTHORITY
Baltimore, Maryland
Invitation for Bids

William Preston Lane, Jr. Memorial Bridge



**Maryland
Transportation
Authority**

Contract No. BB-972-000-006

Route 50 Dynamic Message Signs Replacement

Queen Anne's County

July 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 August 4, 2010, in the Conference Room, 1st Floor of Francis Scott Key Bridge Engineering/Finance 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.



SP 1-1 PROJECT DESCRIPTION

CONTRACT NO.: **BB 972 - 000 - 006**

TITLE: Route 50 Dynamic Message Signs Replacement

FACILITY: William Preston Lane, Jr. Memorial Bridge

LOCATION: Queen Anne's County

ADVERTISED: **July 20, 2010**

PRE-BID MEETING: **August 4, 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: David Dabkowski (410) 537-7852
Contract Administration: Ms. Maggie Johnson (410) 537-7807

BIDS DUE: **12 Noon, August 19, 2010**, in the Bid Box on the 1st floor of the Maryland Transportation Authority, Engineering Building, 300 Authority Drive, Baltimore, MD 21222

CLASSIFICATION: Class - C (\$500,001-\$1,000,000)

CONTRACT TIME: Three Hundred Fifteen (315) Calendar Days

LIQUIDATED DAMAGES: **\$500.00 per Calendar Day**

MINIMUM MBE GOALS: Overall 22%
No subgoals

BID DOCUMENTS: **\$25.00** - 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.



Maryland
Transportation
Authority

SP 1-1 DESCRIPTION

This project is located on US 50 in Queen Anne's County, Maryland. The Maryland Transportation Authority ("Authority") desires to remove one existing dynamic message sign and install two new dynamic message signs ("DMS") at two locations on westbound US Route 50, in advance of the Chesapeake Bay Bridge. First location is at US 50/301 west bound at Cox Creek, west of the Kent Narrows Bridge. The second location is at US 50 west bound between MD 213 (Centreville Road) and MD 404 (Queen Anne Highway).

The two DMS installations located on US 50 include:

- Remove existing DMS and support structure 870 as shown on the plans;
- Refurbish and reuse the existing cabinet for new sign installation;
- Replace removed DMS with a new DMS on a new overhead structure on westbound US 50, about 400 ft. west of the Kent Narrows Bridge; and
- Install new DMS and new overhead structure on westbound US 50, about 0.6 miles west of MD 213.

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 specification for construction and materials dated July 2008, revisions thereof, or additions there to 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 David Dabkowski at (410) 537-7852. Parties interested in visiting the site should contact the following:

William Preston Lane, Jr. Memorial Bridge – Mr. Ken Cimino, Facility Administrator at (410) 295-8157



SP 1-4 - PROMPT PAYMENT TO SUBCONTRACTORS

The prime Contractor is responsible for making timely payments to all Subcontractors and Suppliers and provide 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 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 Director of Construction of the dispute. The Director 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 Director of Construction if this payment is not made. Upon receipt of notification, the Director 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 in “Maintenance of Traffic” 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.

Except for the above restrictions, the Contractor will be permitted to work 24 hours a day, 7 days a week. However, no lane or bridge closures will be permitted during high winds (greater than 25 mph), rain, snow or other precipitation event, when ice or snow is on the roadway or the potential for fog, as determined by the Authority.

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, released 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.

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**

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;
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;
5. In order to publicize contracting opportunities to Minority Business firms, attend prebid meetings scheduled by the Maryland Transportation Authority (“Authority”); and
6. 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/offeror is unable to achieve the specified overall Contract goal or subgoals for each certified MBE classification, the bidder/offeror 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 109 of the Standard Specifications.

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 Assessments and Taxation website 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 times.

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. 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.



**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.



**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.



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.



**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 he 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 Administrations 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. Linda McGill
Chief of Engineering Procurement
Maryland Transportation Authority
300 Authority Drive
Baltimore, Maryland 21222



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

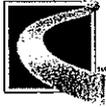
GP 2.23 - BID PROTESTS

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.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. BB 972-000-006

Page 1 of 1

**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.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. BB 972-000-006

Page 1 of 1

**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's 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.



**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.



**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 (9) percent per annum beginning on the 31st day.

TC 4 CONTROL OF WORK

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 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:



SPECIAL PROVISIONS

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 its 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.

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.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

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 ddabkowski@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 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: David Dabkowski

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:

1. The Contract number.
2. The 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.



SPECIAL PROVISIONS

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:
 1. The first five characters must be the first five characters of the contract number. For example, for contract MA435-000-006, the first five characters of the file name must be MA435.
 2. The sixth character must be a dash.
 3. The seventh through ninth 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 tenth character must be a dash.
 5. The eleventh through thirteenth characters must be the submittal number, e.g., 001.
 6. In the event of a re-submittal, the 14th character will be an R followed by the re-submittal number.



SPECIAL PROVISIONS

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. MA435-SUB-001-Conduit.pdf
 - ii. MA435-SUB-001R2-Conduit.pdf
 - iii. MA434-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.



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 estimate 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 pro-rata 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 estimate 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.



**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



TERMS AND CONDITIONS
TC SECTION 7
PAYMENT

29 **DELETE:** TC-7.02 PAYMENT ALLOWANCES FOR STORED MATERIALS in its entirety.

INSERT: The following.

TC-7.02 PAYMENT ALLOWANCES FOR STORED MATERIALS.

When the Contractor requests payment allowance for materials, the following terms and conditions shall apply:

- (a) For superstructure members delivered on the project site, an allowance of 100 percent of the material cost plus freight charges as invoiced may be made provided the cost does not exceed 90 percent of the Contract price of the applicable Contract item. The allowance will be based upon validated invoices or bills for material including freight charges, and a copy thereof shall be made a part of the documented records for the project.
- (b) For reinforcement steel, piling, pipe, traffic barrier, signs and sign assemblies, and other nonperishable material in storage on the project, but excluding aggregates, cement, seed, plants, fertilizer or other perishable items, an allowance of 100 percent of the invoiced cost of the material plus freight charges to the Contractor may be made provided the cost does not exceed 90 percent of the Contract price of the applicable Contract item. Such material shall be delivered and stock-piled at the project site, and have been tested by the Administration and found to have conformed to the Specifications or have been accepted under an approved certification program prior to the allowance.
- (c) No allowance will be made for fuels, form lumber, falsework, temporary structures or other materials of any kind which will not become an integral part of the finished construction.

No payment for stored material will be made if it is anticipated that the material will be incorporated into the work within thirty (30) days of the written request.

Only end product manufactured material or fully fabricated products that are awaiting installation or incorporation into the finished work are eligible for prepayment. Components, elements, or ingredients of a finished product are not eligible for prepayment.

- (d) Material for which an allowance is requested shall be stored in an approved manner in areas within the State of Maryland where damage is not likely to occur. If any of the stored materials are lost or become damaged in any manner, the Contractor shall be responsible for repairing or replacing the damaged materials. The value of the lost or damaged material will be deducted from the Contractor's subsequent



estimates until replacement has been accomplished. The request for allowances for any materials stored on private property within the State of Maryland shall be accompanied by a release from the owner and/or tenant of such property agreeing to permit the removal of the materials from the property without cost to the State of Maryland.

The material shall be clearly marked with the Administration's Contract number on individual units. If the material is normally shipped to the project in bundles or other forms of packaging, the Administration's Contract number shall be clearly marked or affixed to the package. When the material is not stored at the actual project site, the material shall be physically separated by fencing or equivalent barrier from other materials stored at the same site. The material shall be accessible to the Administration at all times.

When it is considered impractical to store materials on the actual project, the Engineer may approve storage areas in the vicinity of the actual project which will be considered at the project site.

When storage of the materials within the State of Maryland is not practical, approval shall be obtained from the District Engineer for storage elsewhere. Storage of materials outside the State of Maryland will be subject to the conditions set forth in this provision and limited to materials exceeding Twenty-Five Thousand Dollars (\$25,000.00), which are designed and fabricated exclusively for use on a specific project.

- (e) Material for which payment has been made, either wholly or partially, shall not be removed from the approved location until such time that it is to be incorporated into the work unless authorized by the Engineer.
- (f) The Contractor shall submit a written request for payment to the District Engineer at least two (2) weeks prior to the estimate cutoff date established by the District Engineer. The following items shall accompany the written request for payment:
 - (1) Consent of surety specifying the material type and the item(s) in which the material is to be used.
 - (2) Validated invoices with the signature of an officer of the company supplying the material showing actual cost.
 - (3) A notarized statement from the Contractor attesting that the invoices as submitted do not include charges or fees for placing, handling, erecting or any other charges or markups other than the actual material cost, sales tax(es), if applicable, and freight charges.
 - (4) Bills of lading showing delivery of the material. The request for allowances for any materials stored on property outside the State of Maryland shall be accompanied by a release from the owner or tenant of such property agreeing to permit verification by the Inspector that the material is stored at the approved location, and to permit the removal of the materials from the property without cost to the State of Maryland.



- (5) Inspection test reports, certifications and/or a written statement from the Inspector attesting to the inspection and approval of the material.

Upon receipt of the above by the District Engineer and verification by the Inspector that the material is stored at the approved location, the District Engineer will authorize payment.

- (6) A statement explaining why the material can not be stored on the project, if the Contractor is requesting to store material at a location other than the project site. The statement shall include the methods of storage, separation, and identification to be used by the Contractor. The Contractor shall provide a method of inventory control and withdrawal satisfactory to the Administration which shall be used by the Contractor to monitor materials not stored on the project.

- (7) A breakdown of the Contract line item bid unit price showing the relationship of the cost of the stored material to the costs of all other materials, labor, and components of the work included in the Contract line item unit price bid by the Contractor.

Upon receipt of the above by the District Engineer and verification by the Inspector that the material is stored at the approved location, the District Engineer will authorize payment.

The Contractor shall pay the material provider the amount shown on the invoice within ten (10) calendar days of receipt of payment from the Administration. Evidence of payment shall be provided to the Administration. Failure to make invoice payments as specified will be cause to deduct the monies from future estimates and/or deny future stored materials payment requests.

Copies of all pertinent data shall be made by the Contractor and distributed to the Inspector for retention as part of the documented records for the project.

TC-7.03 FORCE ACCOUNT WORK.

(e) Subcontracting.

- 35 **ADD:** The following to the end of the paragraph.

"or five hundred dollars (\$500) which ever sum is greater."

DELETE: TC-7.05 PROGRESS PAYMENTS Subsection (a) (3) Variable Retainage

INSERT: The following.

- (3) **VARIABLE RETAINAGE.** The Contract will be subject to a variable retainage based upon the Authority's performance evaluations of the Contractor.



Those qualifying may have retainage reduced upon request of the Contractor with consent of surety. This request must be processed through the Construction Manager. If at any time during the performance of the project, the evaluation of the Contractor changes, retainage reduction may be reconsidered.

Contractors with "A" evaluations for the last two years may be reduced from 5 percent to 2.0 percent upon request after 15 percent project completion. Project completion percentage will be based upon actual work completed (excluding monies paid for stored materials). An interim evaluation of the current project must be completed and must be an "A". Contractors with "A" evaluations for the last two years may petition to have all retainage at that point released upon completion of a significant milestone. Retainage will continue at 2.0 percent until the next milestone of completion of the Contract.

Contractors with "B" evaluations or any combination of "A" and "B" evaluations for the last two years may be reduced from 5 percent to 2.5 percent at 50 percent project completion and remain at that level until released upon final payment. Project completion percentage will be based upon actual work completed (excluding monies paid for stored materials). An interim evaluation of the current project shall be completed and shall be an "A" or "B".

Contractors with "C" evaluations or any combination of "C" and "D" evaluations for the last two years will begin and remain at 5 percent for the life of the project. An interim evaluation of the current project shall be completed and shall be a "C" or better rating.

Contractors with a "D" evaluation for the last two years will begin at 5 percent. Project performance will be evaluated monthly. Should the contractor performance remain at the "D" level, to protect the State's interest 10 percent of the progress payment will be withheld until performance improves to a "C".

New Bidders. Contractors who have not been previously rated by the Authority may be eligible for a reduction in retainage. To be eligible, their past performance on highway and bridge work shall be documented by the government agency with whom they had a contract and their performance shall be documented on Authority forms.

All other Contractors who do not fit into the above criteria would require a 5 percent retainage throughout the life of the Contract.



**TC SECTION 7
PAYMENT**

TC-7.06 FINAL ACCEPTANCE AND FINAL PAYMENT

128 **DELETE:** (b) in its entirety.

INSERT: The following.

(b) The Contractor shall then have a period of 30 days, dating from the date upon which he received the aforementioned tabulation from the Administration, in which:

(1) To decide whether or not he will accept final payment upon such a basis, and

(2) To notify the Administration, in writing, of his decision. The Contractor may request an additional period up to 30 days in which to notify the Administration of his decision. In the event the Contractor notifies the Administration that he protests final payment on such a basis, that notification shall outline the reasons for said protest.



**CATEGORY 100
PRELIMINARY**

SECTION 103 — ENGINEERS OFFICE

103.03 CONSTRUCTION.

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

INSERT: The following.

103.03.06 Microcomputer System for all Offices.

(a) Desktop Unit.

- (1) IBM compatible with an Intel Pentium 4 or AMD processor.
- (2) Minimum microprocessor speed of 3.0 GHz.
- (3) Minimum hard drive storage of 80 GB (gigabyte).
- (4) Minimum of 2.0 GB RAM (Random Access Memory).
- (5) Enhanced 101 key keyboard with wrist rest.
- (6) Super Video Graphics Accelerator (“SVGA”) with minimum 64MB memory.
- (7) Modem 56K BPS, ITU V.92 compliant – required for remote dial-in to the computer to provide MCMS system administration
- (8) Full Duplex Sound Card (Sound Blaster Pro & Windows Compatible)
- (9) Audio Speakers
- (10) Mouse with mouse pad.
- (11) One CDRW/DVDRW combo drive. Min Speed = 48X
- (12) One Parallel Port, One Serial Port, Two USB Ports

(b) Operating System. Minimum Microsoft® Windows XP.

(c) Video Monitor. Color Super VGA monitor conforming to Energy Star requirements with a minimum screen size of 17-inch flat panel.

(d) Printer. HP Compatible Laser Jet Printer with minimum resolution of 1200 DPI (dots per in.) and a minimum of 8 MB of RAM. Officejets and Bubblejets will not be accepted. Printer shall have a minimum print speed of 10 PPM (pages per minute) network capable.



(e) Software.

- (1) Microsoft® Office 2000/XP Professional for Windows™ or later.
- (2) Antivirus software shall be installed and configured to perform an automatic update when the microcomputer system connects to the Internet.

(f) Internet Access. The microcomputer system shall be provided with unlimited DSL/Broadband or better Internet access approved by the Engineer.

(g) Accessories.

- (1) Uninterruptible power supply (“UPS”).
- (2) Standard computer workstation with minimum desk space of 60 X 30 in. and a swivel type office chair, padded with arm rests.
- (3) 8-1/2 X 11 in. xerographic paper to be supplied as needed.
- (4) Toner or ink as needed for printer.
- (5) Maintenance agreement to provide for possible down time.
- (6) Physical security system to deter theft of computer components.
- (7) Blank recordable CD-R media for re-writable CD-ROM drive to be supplied as needed.
- (8) One – USB 2.0 Flash Drive (1GB of Memory)

(h) Notes.

- (1) The microcomputer system shall be completely set up ready for use on or before the day the Engineer’s Office is to be occupied.
- (2) All software stated above shall be supplied on original disks with manuals and be retained in the construction field office for the duration of the Contract.
- (3) If for any reason the system fails to operate, the system shall be replaced or repaired within forty-eight (48) hours.
- (4) When the microcomputer system is no longer required, the Construction Management software system including original user/operator guide manuals, program disks, and all data files will be removed by the Engineer and delivered to the District Engineer and become the property of the Administration. The remaining microcomputer system shall remain the property of the Contractor.



MEASUREMENT AND PAYMENT

When specified in the Contract Documents, ENGINEERS OFFICE TYPE C will be measured and paid for at the Contract lump sum.

LINE ITEM 1003 ENGINEERS OFFICE TYPE C LUMP SUM



Maryland
Transportation
Authority
SPECIAL PROVISIONS

CONTRACT NO. BB-972-000-006
Route 50 Dynamic Message Signs
Replacement
Section 2-1 General Requirements
Page 1 of 5

SP 2-1 GENERAL REQUIREMENTS

This project is located on US 50 in Queen Anne's County, Maryland. The Maryland Transportation Authority ("Authority") desires to remove one existing dynamic message sign and install two new dynamic message signs ("DMS") at two locations on westbound US Route 50, in advance of the Chesapeake Bay Bridge. First location is at US 50/301 west bound at Cox Creek, west of the Kent Narrows Bridge. The second location is at US 50 west bound between MD 213 (Centreville Road) and MD 404 (Queen Anne Highway).

The two DMS installations located on US 50 include:

- Remove existing DMS and support structure 870 as shown on the plans;
- Refurbish and reuse the existing cabinet for new sign installation;
- Replace removed DMS with a new DMS on a new overhead structure on westbound US 50, about 400 ft. west of the Kent Narrows Bridge; and
- Install new DMS and new overhead structure on westbound US 50, about 0.6 miles west of MD 213.

SP 2-1.1 Existing DMS System Equipment

The existing DMS system equipment includes:

- Authority Operations Center (AOC) components.
- Field components including an existing DMS sign located 400 ft west of the Kent Narrows Bridge
- Communications components

SP 2 -1.1.1 Operations Center Components

The existing AOC components consist of a primary and secondary traffic computer, which support asynchronous serial communications to existing proprietary field controllers and Remote Communications Units ("RCU") located in field cabinets where DMS are mounted.

At all times during execution of this contract, the Contractor shall coordinate any and all work associated with the new DMS units, communications, control/status signals with the Authority Operations Center personnel or the MdTA Project Engineer, as directed.



Maryland
Transportation
Authority
SPECIAL PROVISIONS

CONTRACT NO. BB-972-000-006
Route 50 Dynamic Message Signs
Replacement
Section 2-1 General Requirements
Page 2 of 5

SP 2 -1.1.2 Field Components

The existing field components consist of an existing DMS sign installed over a cantilever structure located 400 ft west of the Kent Narrows Bridge, existing field cabinet adjacent to the sign structure, device server/controller located in the field cabinet, and the communications components. The existing DMS sign and the cantilever structure holding the sign are to be removed and disposed of under this contract. The existing field cabinet adjacent to existing structure will be refurbished and reused for the new DMS sign installation. The existing system controller or device server will be replaced by a new device server/controller under this contract.

SP 2 – 1.1.3 Existing Communications

For the new DMS signs installed under this contract, the communications scheme will be modified to use Integrated Services Digital Network (ISDN) system network to link new DMS signs with the operations center. The contractor shall salvage and submit all the existing communications components to the Authority.

SP 2 – 1.2 Staff and System at the Operations Center

The operators at the AOC are responsible for DMS operations. Operational procedures for DMS sign message displays are well-defined using predefined messages, as well as tailored modifications configured using the DMS software, which permit development of custom display messages as per Authority's need.

SP 2 – 1.3 General Scope of the Project

The scope of the project includes, but is not limited to:

- Removal of existing structure 870, as indicated on plans, including existing DMS sign, mounting brackets, bars and clamps, conduits and cabling, etc. mounted on the structure;
- Refurbishing of the existing Type A cabinet to "like-new" condition to be reused for the new sign installation on a new overhead structure S-1 (8870);
- Installation of wiring and conduits between new DMS (1) and the existing cabinet to be refurbished by the contractor, as shown on the Plans;
- Installation of two new overhead sign structures, S-1 (8870) and S-2 (8201), as shown on the plans including mounting brackets, bars and clamps, and cabling, etc. needed for installation of new DMS signs;
- Procurement of two new DMS Type I signs to be furnished through the MA727-000-02 Contractor for installation under this contract;



SPECIAL PROVISIONS

- Installation of new DMS (2), as shown on the Plans, including cabinet, conduit, and wiring on new overhead structures S-1 (8870) and S-2 (8201);
- Furnishing and installing conduits, pull boxes, wiring, junction boxes, AC breaker panels, AC disconnects, all connections, interfaces, and incidental items necessary to integrate new DMS signs with existing and new field components, to provide a complete, functional DMS signs system, in accordance with the Plans and Special Provisions;
- For the two new DMS signs installed under this contract, the communications scheme will be designed to use Integrated Services Digital Network (ISDN) service to link new DMS signs with the operations center. The contractor will be responsible for coordinating the new service connection for this purpose;
- Thorough testing of all installed components at the sign, controller, and system integration level; and
- Provide "As-Built" drawings for any new equipment installations and/or any modifications to existing equipment installations that changes control wiring, AC wiring, and physical plant layout and/or facilities.

The Plans and Special Provisions do not necessarily include or define everything necessary for a complete and operational system. When required, the Contractor shall provide any modifications, fabrications, extra hardware, and equipment necessary for the satisfactory installation and operation of DMS signs installed under this contract. The Contractor shall also be responsible for cleaning and restoring the impact areas due to the installation of new DMS units and removal of the existing DMS unit.

Equipment deployed for this project will be subjected to environmental extremes, such as vehicle exhaust, seasonal temperature extremes, rust, salt, fog, etc. All equipment used shall be hardened and capable of handling environmental extremes in accordance with State and Authority specifications. Lightning and surge suppression shall be required for all modems, controllers, and any other equipment to be exposed to potential power surges provided by the Contractor. All conduits and electrical wiring shall be in accordance with the State and Authority specifications and the recommendations as per National Electric Code (NEC). All electrical conduits must be sealed to avoid water penetration. All the equipment deployed for this project shall be submitted for and approved by the Authority Engineer before installation.

SP 2 – 1.4 Safety and Protection

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work. The Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:



SPECIAL PROVISIONS

- All persons on the work site or who may be affected by the work.
- All of the work, materials, and equipment to be incorporated therein, whether in storage on or off the site.
- Other property at the site or adjacent thereto, including trees, shrubs, pavements, roadways, structures, utilities, and underground facilities not designated for removal, relocation, or replacement in the course of construction.

The Contractor shall not load, nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall the Contractor subject any part of the work or adjacent property to stresses or pressures that will endanger it.

The Contractor shall be responsible for applying for and obtaining all necessary permits before initiating work.

SP 2 – 1.5 Codes and Regulations

In addition to the requirements of these plans and specifications, material and work shall conform to the latest requirements of NFPA No. 70, National Electrical Code, and ANSI C2, National Electrical Safety Code, the Standards of IEEE, NFPA, ASTM, ANSI, NEMA, RMA, MUTCD, OSHA, UL, ITE, IMSA, EIA, TIA, and Belcore, except where superseded by applicable laws. The term code, as referred to in this document, shall be the NFPA No. 70, National Electrical Code, and ANSI C2, National Electrical Safety Code.

Except as otherwise noted on these Plans and Specifications all work shall be in accordance with the Maryland State Highway Administration's ("MSHA") Book of Standards for Highways and Incidental Structures, current edition, available online at:

<http://www.sha.state.md.us/businesswithsha/bizStdsSpecs.asp?id=B157+B159> .

Except as otherwise specified in these special provisions, specifications or plans, all conduit supplied shall not exceed the fill requirements for AC conductors as specified in the National Electrical Code (latest revision). Additionally, all communications signal lines or cabling shall be placed in separate conduit from that carrying AC conductors. All conduit used outside shall be Galvanized rigid steel. Refer to the specific sections (i.e. DMS) for conduit sizes required. No conduit shall be used on this project that is below the size of 3/4 inch.

Installation shall comply with all applicable local, State, and federal government rules, regulations, codes, and laws.



SPECIAL PROVISIONS

SP 2-1.6 Excavation

Prior to any excavation at either DMS location, the contractor shall notify "Miss Utility", Telephone number 800-257-7777 and wait for the service to mark any underground utility locations. The contractor shall also notify MdTA Utilities' Mr. Boby Wojcik (410) 537-6669 and SHA Utilities' Mr. Barry Clothier (410) 810-3275 prior to starting any excavation work.

SP 2 – 1.7 Measurement and Payment

Payment for General Requirements will not be measured, but the cost will be incidental to each dynamic message sign installed, each field equipment cabinet furnished installed, or refurbished, and shall include all items necessary for the installation, testing, and acceptance of new DMS signs, as specified in these Special Provisions. Costs for all electrical material needed under this contract will be incidental to the items stated in this document.



SP 2-2 INSTALLATION OF DYNAMIC MESSAGE SIGNS AND CONTROLLERS

This work shall consist of installing two new overhead structures S-1 (8870) at DMS (1) and S-2 (8201) at DMS (2), two new Dynamic Message Signs (DMS) and Controllers at locations as shown on the plans. This equipment has been purchased by the Authority under separate contract and will be provided to the contractor as required. The contractor will be required to coordinate and schedule ordering of the equipment with the Authority. There is a minimum 12 weeks lead time for delivery of the equipment to the site after placement of order. The contractor will be responsible for coordinating and working with the DMS Manufacturer (Daktronics, Inc.) representative during delivery, installation, commissioning, and final acceptance of the DMS and controllers.

SP 2-2.1 GENERAL REQUIREMENTS

This item consists of installing new overhead structures at DMS (1) and DMS (2), Dynamic Message Signs and Sign Controllers and replacing existing DMS and controller, respectively, in accordance with the Plans and Special Provisions, or as directed by the Engineer. The DMS and Controllers shall operate as part of an integrated Traffic Control System, including the central system, new communications network, and field cabinets.

The DMS Manufacturer will be responsible for providing the following:

- Supplying the Dynamic Message Sign (ready for installation);
- Supplying the DMS Controller with latest software/firmware;
- Supplying the communications cable from the controller cabinet to the DMS (The DMS Manufacturer shall supply up to 150 feet of fiber optic cabling for controller to DMS communications);
- Providing the final connections and testing of communications cable;
- Means to disconnect sign power at the DMS;

The Contractor will be responsible for providing the following:

- Providing all information necessary for the DMS order 12 weeks prior to the date when the DMS is needed on site. The information shall include but not be limited to contact information for the contractor's representative responsible for site delivery coordination, the location within Maryland to which the DMS shall be delivered, the DMS number or other plan reference, the proposed delivery date to the site, and a signed order form. The delivery date may not be delayed more than 30 calendar days from the originally proposed delivery date.



SPECIAL PROVISIONS

- Providing a final delivery date 30 days prior to the originally proposed delivery date and arranging to take possession of the DMS on the final delivery date. The final delivery date may be up to 30 days after the originally proposed date. Once the final delivery date is set, it may not be changed. If the contractor does not provide a final delivery date, the DMS will be delivered on the originally proposed date and the contractor MUST arrange to take possession and store the DMS per Manufacturer's instructions for storage requirements.
- Removal of existing DMS sign and refurbishing the existing cabinet to "like-new" condition to be used for the new sign as shown on the plans.
- Delivering any existing DMS and controllers that are noted as "to be salvaged" on the plans to a designated storage area to be determined by the Authority. Existing DMS that are not intended for salvage shall be disposed of by the contractor.
- Installing the new DMS (excluding only work items identified above for the DMS manufacturer).
- Arranging reasonable access to the delivered signs for final assembly of miscellaneous items such as visors by the DMS supplier, when the DMS is delivered.
- Installing the communications cable into the conduits. The cable shall run from the controller location to the DMS communications connection within the DMS.
- Furnishing and installing all power cables from the controller cabinet to the DMS.
- Salvaging and turning over to the State the modems or telephone equipment contained within the existing enclosures.
- Installation of (2) 1 1/2" Galvanized conduits for power and communications from the controller cabinet to the DMS housing for power and communications cabling. The conduit containing the power conductors shall also have a separate ground wire installed and sized per the NEC.
- Grounding the DMS and traffic cabinet shall be in accords with provision outlined in Articles 250 and 600 of the National Electrical Code with the exception that the ground shall not exceed 10 ohms. Verify and measure the ground system resistance to ensure that it is 10 Ohms or less for the earth ground to be used for the DMS. In the event that the earth ground is not adequate, not present or in excess of 10 Ohms, the Contractor shall install an earth ground system to meet the noted requirements. Additionally, a



SPECIAL PROVISIONS

separate ground wire shall be installed from the DMS to a ground rod and shall present a maximum resistance of 10 ohms to ground.

- Supplying all power wiring for the DMS and associated traffic cabinet installation. All wiring for AC Conductors shall be sized appropriately per the NEC and shall have insulation rated as THHN as a minimum. Neutral conductors shall be 200% rated. Feeder breaker for DMS and wire sizes shall be as specified below.

Sign type	Maximum Power Draw	Minimum Breaker size
1	35	2P50

Breaker Size	#8AWG	#6AWG	#4AWG	#2AWG	#1AWG
50A	Not allowed	Up to 203ft	Up to 313ft	Up to 493ft	Up to 606ft
60A	Not allowed	Not Allowed	Up to 261ft	Up to 411ft	Up to 505ft

- Supplying communications cable per the DMS supplier's specification if the cable distance from the controller to the DMS exceeds 150'. The DMS manufacturer provides only 150' of communication cable.
- Connection of the utility power from the utility demarcation to the DMS traffic cabinet. The Contractor shall provide all conduit required for the DMS and traffic cabinet installation. The Contractor shall install pull rope in the conduits supplied for this project. Conduit that is exposed shall be galvanized rigid steel and shall be sized to meet the DMS requirements.
- All coordination with Authority and DMS Manufacturer, including any necessary maintenance of traffic required for power and communication inspections conducted by the Authority or Authority's designated agency, and commissioning and testing conducted by the DMS Manufacturer. The contractor will be required to provide a bucket truck for use by the commissioning contractor during the DMS commissioning and testing. The Contractor will also be responsible for obtaining necessary lane or shoulder closure permits from the Authority or State Highway Administration as necessary for the installation and testing of new DMS signs.
- Since copper line telecommunications service (ISDN) is specified, the contractor shall furnish and install the telecommunications circuits prior to installation of the DMS. The state will supply pre-configured ISDN modems as needed and the contractor shall install.
- If wireless or cellular communications is specified, the state will supply the pre-configured cellular modem. The contractor shall receive the modem and antenna and install into the cabinet as directed at the same time the DMS is installed. The installation



shall include external mounting of the antenna and water proof penetration of the control box for the antenna cable.

- A power and communication inspection shall be preformed by the Authority or designated agency of MdTA prior to commissioning of the DMS. This inspection shall verify that the DMS site is ready for commissioning and shall test all of the power, grounding and communications (ISDN or Wireless) at the DMS locations. All power and communications issues must be fully resolved prior to scheduling commissioning of the DMS at each location.
- All power and communications required to make the DMS fully functional shall be installed and ready for final connections prior to the installation of the DMS. Final connections, commissioning, and rendering of the DMS operational within the CHART system must occur within 1 week of erection of a DMS.

SP 2-2.2 DYNAMIC MESSAGE SIGN INSTALLATION

The Contractor shall install new Dynamic Message Signs on proposed overhead sign structures. The DMS Manufacturer will provide horizontal Z-bar mounting hardware mounted to the DMS sign, and vertical W4x13 members for connection to the overhead/cantilever sign structure. The contractor shall be responsible for field drilling the holes in both the horizontal Z-bar and vertical W4x13 members, and making connections of these members with hardware supplied by DMS Manufacturer. Contractor shall supply 3M™ Polyethylene Protective Tape 8179, or approved equal, to place between horizontal Z-bar and vertical W4x13 members. Contractor shall be responsible for supplying u-bolts and all hardware to connect the vertical W4x13 to the overhead/cantilever sign structure, and making these final connections. The contractor shall notify the Authority seven days in advance of the installation. No DMS units shall be installed until power and communication systems have been installed to the control cabinet, inspected and approved. Commissioning of the DMS shall be completed within two (2) weeks of installation.

SP 2-2.3 ELECTRICAL DISTRIBUTION

The power distribution shall be through a panel board with overload protection consisting of thermal magnetic circuit breakers. Power shall be supplied through the ground mounted control cabinet utilizing 15 and 20 amp branch circuits to connect devices within the cabinets. The DMS is powered by a breaker and feeder as described above. Contractor shall uncover the grounding electrode to allow the DMS Manufacturer to test the grounding of the DMS and structure at the time of commissioning.

Within the traffic control cabinet the Contractor shall ensure that a minimum of two GFCI outlets are installed on a single electrical circuit.



SPECIAL PROVISIONS

Within the DMS, the following minimum loads shall be identified and provided by an electrical panel that was furnished and installed by the DMS supplier as part of the construction of the DMS. The contractor shall connect the feeder coming from the ground mounted control cabinet to the electrical panel within the DMS to complete the electrical distribution system.

- 1) Heating loads shall be on separate circuits.
- 2) The ventilation system shall be on separate circuits.
- 3) The DMS power supplies shall have dedicated circuits.
- 4) Any communications devices, interface boards, or other microprocessor-controlled devices shall have a dedicated circuit.
- 5) A circuit shall be provided for sign convenience outlets.
- 6) A circuit shall be provided for interior lighting, and other miscellaneous devices.

All panels shall have 200 percent neutral busses due to the heavy use of switching power supplies common to the DMS design. The neutral conductor from the ground-mounted cabinet to sign shall be 200 percent rated. A cover plate shall be provided and installed on panel boards. It shall not be possible to make inadvertent contact with the bus bars. All circuits must be labeled (Typed or printed labeling) and the phases of the electrical circuit shall be balanced. Devices that introduce harmonic distortion or sudden load changes shall be located on one phase and microprocessor-controlled devices on the other phase of the 240V/120V circuit.

The sign and traffic cabinet must be grounded according to the provisions outlined in Articles 250 and 600 of the National Electrical Code. An earth ground wire must be connected from either the earth ground buss on the inside of the panel board (load center) inside the sign or the ground lug on the outside rear of the sign housing, to an earth ground rod or rods at the base of the sign or sign structure. The earth ground rod or rods should be located as close to the base of the sign as possible, and must be within at least 10 feet of the base of the sign. Under no circumstances, shall the sign support structure be utilized for earth grounding of the DMS.

A ground resistance of 10 Ohms or less must be achieved. This shall be checked and recorded immediately upon completion of the installation of the sign and connection to the grounding system (if installed) or upon installation of the grounding system if not present or if the current grounding exceeds 10 Ohms. The Wire used shall be at least 8 AWG. The quantity and size of the ground rod(s) should be at least as specified in the National Electrical Code. Terminate wires at the ground rod(s) using brass or copper connections at a minimum. Wire terminating on ground rods shall be made with exothermic welding to prevent bi-metallic and earth salts corrosion from disrupting low resistance electrical connection over time.

If a traffic cabinet is used with the sign, an earth ground conductor shall be included in the power cable or wires from the power source to the traffic cabinet, and in the power cable or wires from the traffic cabinet to the sign. If no ground or pole mounted traffic cabinet is used with the sign, an earth ground conductor shall be included in the power cable or wires from the power source to



Maryland
Transportation
Authority

SPECIAL PROVISIONS

CONTRACT NO. BB-972-000-006
Route 50 Dynamic Message Signs
Replacement

Page 6 of 7

the sign.

Earth ground rods or grounding systems that exceed the above resistance limit may require the contractor to use corrosion proof grounding systems, such as those offered from Lyncole (www.lyncole.com) or equal.

The contractor shall also supply an industry standard surge protector(s), with appropriately warranted voltage range protection, within the field cabinet to provide surge protection. The Contractor shall submit cut sheets of the proposed surge protector to Authority's engineer for approval before installation.

SP 2-2.4 MEASUREMENT AND PAYMENT

Removal of Existing Dynamic Message Signs (DMS) will be measured per each. Work will include removal of DMS, removal of DMS support structure, all incidentals, and delivery to and from site as determined by the Authority.

Purchase and Installation of the two overhead structures S-1 (8870) and S-2 (8201) will be measured per each. The payment shall be full compensation for all materials, labor, equipment and all other incidentals necessary to complete this work. The Authority will make payment for the above items only upon completion of the installation of the structures.

Installation of Dynamic Message Signs Type I with Integrated Controllers will be measured per each. The payment shall be full compensation for all materials, labor, equipment and all other incidentals necessary to complete this work. The Authority will make payment for the above items only upon completion of the installation, commissioning and testing of the DMS and acceptance by the Authority.

Payment for furnishing and installing other items associated with this work including static sign panels, sign structure, catwalks, spacer frames, hardware and maintenance of traffic will be measured and paid under the pertinent bid items in the contract.

The payment shall be full compensation for all materials, labor, equipment and all other incidentals necessary to complete this work. The Authority will make payment for the following items only upon completion of the installation and commissioning of the DMS and acceptance by the Authority.

Item 8001	REMOVE EXISTING DYNAMIC MESSAGE SIGN	Each
Item 8002	INSTALL TYPE I DYNAMIC MESSAGE SIGNS WITH INTEGRATED CONTROLLERS AND FURNISH AND INSTALL CATWALKS	Each
Item 8004	INSTALL NEW OVERHEAD STRUCTURE S-1 (8870)	Each
Item 8005	INSTALL NEW OVERHEAD STRUCTURE S-2 (8201)	Each

SP 2 – 3 FIELD EQUIPMENT CABINETS AND MINI POWER CENTERS

SP 2 – 3.1 Description

This work shall consist of furnishing, installing, and refurbishing ground mounted, wall-mounted or pole-mounted field equipment cabinets and furnishing and installing mini power centers as required at locations shown on the plans. This work shall include all materials, labor, necessary hardware, and electrical connections.

All components furnished under this functional specification shall be current production equipment and of recent manufacture. To ensure overall system compatibility, all field equipment cabinets shall be from the same manufacturer.

SP 2 – 3.2 Materials

Electrical/electronic equipment, cabinets, and all component parts shall meet the requirements as specified in Section 820 and the standards as set forth in these special provisions.

- 1) Anchor bolts/Bolts/Nuts/Washers
- 2) Cabinets and doors
- 3) Mounting hardware
- 4) Conduit and weatherproof wire trough
- 5) Power service conditioning and distribution equipment
- 6) Electrical wires, harnesses, and connectors
- 7) Ground rods or grounding system as defined below.
- 8) Environmental control equipment

SP 2 – 3.3. Construction.

SP 2 – 3.3.1 Electronic Equipment

Any additional electronic equipment (controllers, multiplexers, etc.) to be installed in the field cabinets and mini power centers (breaker boxes) shall be as specified.

SP 2 – 3.3.2 Cabinets: General

- 1) Serial numbers and model numbers, if available, shall be permanently engraved on all removable components and hardware.



Maryland
Transportation
Authority
SPECIAL PROVISIONS

- 2) The serial number and model number shall be etched, stamped, or molded.
 - a. The use of adhesive backed labels is not acceptable.
 - b. Mainframe serial numbers and model numbers shall be readable without disassembly or removal of any part of the cabinet or components located within the cabinet and located on the front face of the mainframe unit.
- 3) All cabinets/enclosures shall meet or exceed the requirements of a NEMA 3R rating and shall be UL listed.
- 4) All mounting hardware and cabinet bracing shall also be made from aluminum.
- 5) All external welds shall be made using the Tungsten Inert Gas ("TIG") welding method.
- 6) Detailed cabinet drawings and material catalog cuts shall be submitted to the Authority for review and approval prior to ordering cabinets. Drawings shall include, at a minimum, dimensions, equipment placement layout, and cabinet wiring schematics.
- 7) Cabinets shall be equipped with a snow shields covering vents and other openings to prevent penetration of snow and ice. The shield shall not impact the environmental functions of the cabinet. Additionally, snow shields shall be installed on the top of each cabinet door to prevent snow and ice accumulation. For more details refer to the plan sheets.

SP 2 – 3.3.3 Cabinets: Electrical

- 1) All conductor wire runs shall be continuous with no splices.
- 2) All wiring harnesses shall be encased in a continuous sheath. The use of cable ties to arrange wiring harnesses is not acceptable. The use of adhesive backed wire holders is also not acceptable.
- 3) All cabinet back and panel harness wiring shall be soldered at its destination point as specified.
- 4) Cabinet internal mounting panels shall have a grounding conductor to the cabinets main ground bar/lug.
- 5) All conductors shall be labeled. Labels shall be either attached to each end of the conductor and indicate the destination of the other end of the conductor, or shall be a continuous,

permanent identification of the conductor's function and located every six inches along the conductor.

- 6) All conductors used in the controller cabinet wiring shall conform to the following color code requirements.
 - a. AC Neutral conductors shall be identified by a continuous white color.
 - b. AC Ground conductors shall be identified by a continuous green color.
 - c. AC Positive conductors shall be identified by a continuous black or red color depending on phase.
 - d. All other conductors shall be identified by any color not previously specified.
- 7) All bolts used for electrical connections shall be fabricated from stainless steel.
- 8) All hardware used for electrical connections and terminal facilities shall be fabricated using cadmium-plated brass.
- 9) Terminal blocks shall be screw-down compression type, DIN rail mount type acceptable.
- 10) All fuse holders shall be of the encased type.
- 11) All switches shall be encased, environmentally sealed, and rated for one hundred and twenty-five percent of capacity. Switches and thermostats shall break the "hot" side of the line.
- 12) All welds shall be neatly formed and free of cracks, blow-holes, and other irregularities.
- 13) All inside and outside edges of the cabinet shall be free of burrs.
- 14) All access door openings shall have a double flange on all four sides.
- 15) All field cabinets (ground-mount or pole-mount) shall be earth grounded properly as described below.
- 16) All AC wiring that exits the cabinet shall utilize wire insulation THHW at a minimum.
- 17) Separate AC disconnect (fused) with enclosure shall be provided and shall be mounted

beside or opposite the field cabinet. The AC disconnect should be of the type that has replaceable fuses for the incoming AC circuit, and make use of the "knife" type switch, which must be in the "OFF" position for the enclosure to be opened. Additionally, the enclosure shall front access and accommodate a padlock.

SP 2 – 3.3.4 Pull Boxes and Junction Boxes

- 1) Furnish junction boxes made by an approved cast iron manufacturer and having a hot dipped zinc coating. The covers shall be heavy duty, with a hot dip zinc coating, and equipped with watertight neoprene gasket and recessed, hex head, stainless steel cover bolts. Junction boxes shall be UL listed for application.
- 2) Furnish grounding lugs, mechanical connectors that are UL listed and approved for copper wire. Use stainless steel for both inside and outside mechanical connections to the junction box. Provide engineer-approved protection that totally and permanently seals connections with neoprene gasketing, using silicone or rubberized caulking compound if necessary.
- 3) Coordinate with the engineer factory knockouts for conduit entrance to the pull box. Knockouts shall not negate boxes UL listing.
- 4) Minimum 14 gauge thickness shall be provided for all boxes. All edges and corners shall be rounded and without burrs.
- 5) Minimum NEMA rating of 3X shall be provided for all boxes.

SP2 – 3.4 Field Equipment Cabinets:

I. Mechanical

- 1) **Size.** All Type A cabinets shall be pole or ground mounted NEMA TS-2, size 6. The size 6 cabinets shall be a minimum of fifty-five inches in height by thirty-eight inches in width by twenty-six inches in depth (55 in. H x 38 in. W x 26 in). The top of the cabinet shall have a depth of twenty-eight inches to provide the necessary ventilation opening.
- 2) **Equipment Racks.** The Contractor shall furnish and install a removable E.I.A. 19-rack-mount assembly in all NEMA size 6 cabinets furnished and installed under this contract. The rack(s) shall be installed on the left side of the cabinet, facing the door. All power distribution equipment shall be mounted on the right inside wall, opposite the rack assembly. The Contractor shall provide all hardware associated with the mounting of equipment in the rack assembly.



- a. Features:
 - i. Forty-two (42) inches vertical space (24 rack spaces);
 - ii. All welded 16 gauge carbon steel tubing construction;
 - iii. Four point leveling;
 - iv. Modular construction; and
 - v. ASA 61 Gray color.
 - b. Accessories:
 - i. One (1) Patch Panel Frame 48" High (Color Gray);
 - ii. Two (2) 48-inch, 14-gauge, zinc-plated carbon steel mounting rails; and
 - iii. Three (3) sliding, ventilated shelves: gray color.
- 3) **Fan-Forced Ventilation.** A thermostatically controlled cooling fan shall be provided for all cabinets.
- a. The fan and thermostat shall be mounted at the top of the cabinet.
 - b. The fan and thermostat shall be rated for one hundred and twenty-five percent of capacity.
 - c. The thermostat shall be manually adjustable, within a ten-degree range, from seventy degrees Fahrenheit to one hundred and sixty degrees Fahrenheit.
 - d. The fan bearing mechanism shall be of ball bearing design.
 - e. The fan shall have a minimum rated capacity of one hundred cubic feet per minute (100 CFM) airflow.
 - f. The fan shall have a minimum rated design life of one hundred thousand hours (100,000 hrs).
- 4) **Natural Ventilation.** The cabinets shall be designed for continuous operation over an outside temperature range of -13° F to +113° F (-25° C to +45° C) without requiring fans, in the event the cabinet cooling system fails.
- a. All cabinets shall be provided with louvered vents in the front door with a removable air filter. Louvers shall satisfy the NEMA Rod Entry Test for a 3R



rated ventilated enclosure.

- b. Three extra filters shall be supplied for each cabinet installed.
 - c. The filter shall cover the vents and be held firmly in place with top and bottom brackets and a spring loaded upper clamp.
 - d. Exhaust air shall be vented out of the cabinet between the top of cabinet and the main access door.
 - e. The exhaust area shall be screened with a material having a maximum hole diameter of one eighth of an inch (1/8").
- 5) **Water Runoff.** All cabinets shall have a sloped top surface to prevent the accumulation of water on the cabinet.
- 6) **Finish.** All outside surfaces of the cabinets shall have a smooth, uniform, natural aluminum finish.
- 7) **Access Door.** All cabinets shall have a single access door located on the front of the cabinet.
- a. The door opening shall be a minimum of eighty percent of the front surface area of the cabinet.
 - b. All doors shall be provided with a gasket conforming to the physical properties listing in UL508 Table 21.1 and be such that the gasket forms a weather tight seal between the door and the cabinet.
 - c. All doors shall be hinged on the left side as viewed facing the cabinet.
 - d. All doors shall have vent openings protected with snow shields.
 - e. Hinges shall be of a single, continuous design utilizing a fixed hinge pin.
 - f. All hinging shall be bolted to the cabinet and door utilizing 1/4-20 stainless steel carriage bolts and nylon lock nuts.
 - g. All hinge pins shall be capped at the top and bottom by weld to render the pin tamper proof.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

- h. All cabinets shall have hinges fabricated from 0.093 in. stainless steel, using a 0.250 in. diameter stainless steel hinge pin and provide a three-inch open width.
- i. All cabinets shall include a door restraint to restrict the door to a maximum one hundred and thirty-five degrees (135°) of swing.
- j. The restraint mechanism shall provide latching positions at ninety degrees (90°) and at one hundred and thirty-five (135°) degrees.
- k. All cabinets shall be equipped with a lock (compatible with the State's existing cabinet locks - dead bolt type) and keyhole cover, which shall be keyed for a number 2 key. The Offeror shall provide the State with a minimum of one key each per cabinet.

II. Electrical

- 1) **Interior Lighting.** A 1100 lumens light output rated Compact Fluorescent ("CFL") bulb with 0 degrees Fahrenheit start mounted to the inside a non-corrosive metal cage, top front portion of the cabinet. A door-activated switch shall be installed to turn the cabinet light on when the front door is opened. The door switch shall be on a separate circuit by itself and used only to turn on the cabinet light.
- 2) **Internal Heating.** The cabinet shall be equipped with a 250 watt resistance type heater. The heating element shall be controlled by a thermostat, having a set point of which is manually adjustable.
- 3) **Electrical Power.** The control cabinet shall be equipped with a metal-encased, split-phase load center, equipped with main breakers rated at 60 amperes for all cabinets. The Contractor shall label all breaker boxes and all cables for breaker boxes.
 - a. **Main Breakers.** The main breakers shall be double-pole type, switching a single phase power feed, so that an overload on either phase will disconnect the entire power cabinet/panelboard from the line.
 - b. **Branch Circuit Breakers.** All branch circuit breakers shall be molded case single or double-pole, 120/240 volts AC, 10 000-ampere interruption capacities, supplied in a Q.O.U. mounting system. Circuit breakers shall be provided in all panel spaces as follows:
 - i. 15 or 20-ampere single pole circuit breakers shall be provided for each side of



- the load center.
- ii. If panelboard breaker space allows, cabinets shall have one double-pole 50-ampere breaker and four 15-ampere single-pole breakers (two per phase).
 - iii. All Breakers shall have typed or machine printed labels provided for the breaker panel. Hand written labeling shall not be acceptable.
- c. **GFI.** One convenience Ground Fault Interrupter dual electrical outlet shall be provided inside the cabinet power panel. This outlet shall be wired to remain energized at all times on dedicated 1-pole branch circuit breaker.
- d. **Grounding.** The cabinet shall be furnished with ground bars, capable of accepting 4 to 14 gauge stranded wire, to provide the following:
- i. Two AC to Neutral - Minimum of thirty-six positions.
 - ii. Chassis ground - Minimum of eighteen positions.
 - iii. An earth ground wire shall be connected from either from the earth ground buss on the inside of the panel board (load center) inside the traffic cabinet or the ground lug on the inside of the cabinet, to an earth ground rod or rods at the base of the sign. The earth ground rod or rods should be located as close to the base of the traffic cabinet as possible, and must be within at least ten feet of the base of the cabinet. The wire used should be at least 8 AWG. The quantity and size of the ground rod(s) shall be as specified in the National Electrical Code. Wires shall terminate at the ground rod(s) using brass or copper connectors.
 - iv. Conduit grounding collars of conduits that enter the base of a ground-mounted traffic cabinet shall also be connected into the earth grounding system.
 - v. A ground resistance of 10 Ohms or less must be achieved. This shall be verified and tested immediately upon completion of installation of the cabinet or the grounding system in order to prevent rework during final testing.
- f. **Wiring Harnesses and Terminals.** All wiring harnesses shall be of sufficient length to allow for the placement of the electronic equipment as specified on the Plans.



- i. The cabinet shall be wired to permit the utilization of all of the specified functions and capabilities of all electronic equipment contained therein.
- ii. All back panel or rack wiring is to be complete in such a way that no additional hardware or wiring shall be necessary to utilize all functions of the electronic equipment.
- iii. All terminal facilities shall be readily accessible for field connection without requiring the removal of any of the equipment installed inside the cabinet.
- iv. All wires not utilized shall be terminated and labeled as a terminal strip. The practice of tying back of unused wires is unacceptable.

III. Mini Power Center

A fully enclosed, pre-wired power distribution / panelboard enclosure shall be considered acceptable if required to reduce incoming AC voltage from 480VAC to 240/120VAC for the DMS. Power distribution and panel enclosure shall be comprised of and adhere to the following:

- a. Integral step-down distribution transformer with 180°C class insulation.
 - i. Nominal primary voltage: 480V - single phase – 60Hz.
 - ii. Secondary voltage: 240/120V, three-wire split-phase neutral.
 - iii. Transformer shall reside in a separate compartment from the panelboard within the enclosure.
- b. Site grounding electrode conductor shall terminate at the enclosure ground bar. The ground rod/bar for the Mini Power Center shall be 10 Ohms or less to earth ground. This shall be verified/tested and documented when the Mini Power Center is installed.
- c. Secondary neutral shall be bonded to the ground bar.
- d. Panelboard shall have a main 2-pole breaker to protect the transformer primary and conductors.
- e. Panelboard shall have a secondary 2-pole breaker to protect the transformer secondary and conductors, and provide main feed to the branch circuit breakers.



- f. Panelboard shall be capable of accommodating a GFCI breaker.
- g. Spare branch circuit breakers: provide (1) 1-pole breaker and (1) 2-pole breaker in the panelboard.
- h. Complete mini power center enclosure and panelboard shall be UL Listed for outdoor operation.
- i. Conduit fittings into enclosure (knockouts) shall be UL Listed raintight.
- j. Wiring area and Panelboard compartment shall have front access shall accommodate a padlock.
- k. Wall mounted power enclosures- secure to new wall-fastened 1-5/8" Unistrut (stainless steel) using new SS hardware. Do not mount enclosure directly to wall, and remove and discard any existing enclosure mounting hardware.
- l. Stainless steel cabinet/enclosure construction shall be a minimum 304SS grade, maintaining the rated NEMA 3R raintight protection.
- m. Zone Power Panel shall be Acme Electric Panel-Tran® or engineer approved equivalent.

If the mini power center is required, a separate AC disconnect (fused) shall be provided and shall be mounted either beside or opposite from the mini power center enclosure. The AC disconnect should be of the type that has replaceable fuses for incoming AC circuit.

IV. Certification

The following must accompany all electrical and mechanical components supplied:

- a. Instruction manuals.
- b. Maintenance manuals.
- c. Descriptive parts list with industry standard part numbers where applicable.
- d. Three (3) complete sets of wiring and schematic diagrams. Schematics shall include a list of tests points with the following information provided for each



Maryland
Transportation
Authority
SPECIAL PROVISIONS

point:

- i. Nominal operating voltage.
- ii. Wave form and all pertinent information regarding the wave form at each test point.
- iii. Integrated circuit schematics.
- iv. Connection and I/O diagrams.

SP 2 – 3.6 Refurbish Existing Field Equipment Cabinets

This work shall consist of refurbishing the cabinets as indicated on plans to “like-new” condition. This work shall include all materials, labor and necessary hardware to complete refurbishing. All components furnished under this functional specification shall be current production equipment and of recent manufacture.

Existing cabinets shall be refurbished to “like-new” condition per specifications provided. Contractor shall replace, at a minimum, heaters, fans, light bulbs and air filters. All replaced equipment shall meet specifications noted below. Cabinets shall be vacuumed and wiped out to provide a clean appearance.

1) Fan-Forced Ventilation

Contractor shall remove existing and replace all existing thermostatically controlled cooling fan.

- a. The fan and thermostat shall be mounted at the top of the cabinet.
- b. The fan and thermostat shall be rated for one hundred and twenty-five percent of capacity.
- c. The thermostat shall be manually adjustable, within a ten degree range, from seventy degrees Fahrenheit to one hundred and sixty degrees Fahrenheit.
- d. The fan bearing mechanism shall be of ball bearing design.
- e. The fan shall have a minimum rated capacity of one hundred cubic feet per minute (100 CFM) air flow.
- f. The fan shall have a minimum rated design life of one hundred thousand hours (100,000 hrs).

2) Natural Ventilation

- a. Contractor shall replace all removable air filters on all cabinets.
- b. Three extra filters shall be supplied for each cabinet relocated.
- c. The filter shall cover the vents and be held firmly in place with top and bottom brackets and a spring loaded upper clamp.

3) Interior Lighting

Contractor shall install a corrosion-resistant fluorescent light fixture rated at 1100 lumens light output.

4) Internal Heating

Contractor shall replace all existing 250 watt resistance type heaters.

5) Transformer

Contractor shall replace 7.5 KVA transformer and support hardware, as required by the Authority.

6) General Maintenance

Contractor shall provide electrical equipment maintenance and insulation resistance testing of interior and exterior power wiring.

7) Ground Rod/Bar or Grounding system shall present a resistance of 10 Ohms or less to earth.

8) Surge suppressors shall be replaced if the units can not provide sufficient capacity for the maximum load to be present in the refurbished cabinet. These shall be of the same type as used in the new field cabinets.

9) New breakers shall be installed if required to handle the expected load of the Type I DMS. Specifically, the breaker for the DMS shall be a 2P50 amp breaker. The breakers in the existing cabinet may be reused if they are acceptable for the load to be provided for a circuit and they are in good condition.

I. Conduit.

- a. The Contractor shall replace old conduit with new conduit from the field equipment cabinet to the dynamic message sign as required above.
- b. New electrical or fiber optic wire or cable shall be installed in new conduit or raceway by the Contractor.
- c. All conduit wire/cable pulls shall have a pull rope installed beside installed conductors.
- d. Once removed to loosen conduit, existing conduit fittings shall not be re-used.
- e. Construction and materials – refer to MdDOT Standard Specification Sections 805 “Electrical Conduit and Fittings” and 921.07 for further conduit and raceway details.

II. Wire & Cable.

- a. Panelboard (Breaker Box) enclosure: determinate and remove existing wiring that terminates at the enclosure.
 - i. Tag conductors with new sleeve tag using the sign number as the conductor label identification. Affix wire tag at panelboard and sign ends for each conductor.
 - ii. Label AC circuits as required and described above for the specific sign / circuit assignment (wire tag) labels.
 - iii. New sign power wiring from panelboard circuit breaker shall be sized per the NEC for the maximum load required for the Type 1 DMS.
- b. Refurbished DMS cabinet: new power wiring from panelboard circuit breaker shall be the minimum required to meet all NEC standards for the branch circuits used.
- c. Pulling lubricants shall be used during the pull to reduce friction. The Contractor shall use approved pulling compound or lubricant compatible with the cable, as approved by the Designer. The pulling lubricant shall be non-petroleum based



and of the highest quality. The lubricant shall be used in ample quantity to reduce friction and applied in such a manner that the cable is lubricated throughout the entire length being pulled through the conduit. Residue shall be cleaned from conductors, boxes, and equipment after the pull is made.

- d. Wire insulation class shall be THHW minimum.

SP 2 – 3.7 Measurement and Payment

Furnishing and installing Field Equipment Cabinets will be measured and paid for at the contract unit price. Work will include all labor, materials, including all lenses, housing, door, gasket, visor, reflector, wiring, and lamp socket, and complete, operational and incidental connections and testing, in order to assure operation as approved by the Authority and development of shop drawings as required.

Refurbishing Field Equipment Cabinets will be measured and paid for at the contract unit price per each. Work will include all labor, materials, including all lenses, housing, door, gasket, visor, reflector, wiring, and lamp socket, and complete, operational and incidental connections and testing, in order to assure operation as approved by the Authority and development of shop drawings as required.

Installation of new conduit will be measured per linear foot. Work will include removal of the existing conduit and installation of new conduit as indicated on the plan sheets. Payment includes labor for removal and installation and material.

Grounding measurement data for all cabinets and DMS units shall be provided to the Authority Project Engineer when the final Field Cabinet/Refurbished Field Cabinet is installed. This data shall also be provided when the final Mini Power Center is installed.

A power and communication inspection shall be performed by the Authority or designated agency of MdTA prior to commissioning of the DMS. This inspection shall verify that the DMS site is ready for commissioning and shall test all of the power, grounding and communications (ISDN or Wireless) at the DMS location. All power and communications issues must be fully resolved prior to scheduling commissioning of the DMS at each location.

Payment shall be full compensation for all materials, labor, equipment and all other incidentals including removable racks, electronic equipment, including all incidentals necessary to complete the work. The Authority will make payment for the following items only upon completion of refurbishing the Field Equipment Cabinets acceptance by the Authority.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Payment shall be full compensation for all materials, labor, equipment, and all other incidentals, including removable racks, electronic equipment, including all incidentals necessary to complete the work necessary to complete this work. The Authority will make payment for the following items only upon completion of the installation and commissioning of the Field Equipment Cabinets acceptance by the Authority:

Item 8006	FURNISH AND INSTALL BASE MOUNTED CABINET.	Each
Item 8007	REFURBISH EXISTING FIELD EQUIPMENT CABINET	Each
Item 8008	FURNISH AND INSTALL NEW GRS CONDUIT	Linear Foot
Item 8009	FURNISH AND INSTALL MINI POWER CENTER WITH 480VAC to 240/120VAC TRANSFORMER (if required)	Each



Maryland
Transportation
Authority

SPECIAL PROVISIONS

CONTRACT NO. BB-972-000-006
Route 50 Dynamic Message Signs
Replacement

Page 1 of 6
November 15, 2009

SP 2 – 4 TESTING

The Contractor shall configure and test each component of the overall system for functionality and provide complete, in place, operational subsystem components as described in the plans and these specifications.

The Contractor shall obtain the services of the manufacturer for technical installation assistance, field testing, system startup, and commissioning, as required.

The Contractor shall perform/organize the following tests:

- DMS Procurement Checklist, Commissioning, and Integration Testing
- Field Cabinet Tests
- Mini Power Center (Breaker Box) Tests
- AC Control Box Tests
- Reliability Test

SP 2 – 4.1 Organization of Tests

SP 2 – 4.1.1 Test Procedures

Prior to each phase of testing, the Contractor shall submit detailed test procedures to the Authority for approval. These procedures shall provide a step-by-step test script that will demonstrate that all the site components are installed and operate correctly. Specification sections and manufacturers specific features shall be referenced by the test script. The test script will be optimized to accomplish the maximum level of testing with the fewest steps (tasks). The script will contain step numbers, space for a date, time, pass/fail designation, and comments along with the task. The test procedures shall be submitted to the Authority for review and approval at least four (4) weeks prior the start of the first tests for each phase.

SP 2 – 4.1.2 Test Schedule

The Contractor shall prepare a schedule for conducting tests and give a minimum of two (2) weeks advance notice to the Authority before conducting them. The notice shall clearly identify the type of test and exact location of the equipment to be tested. The Contractor shall coordinate with the MA-727-000-002 Contractor or the Authority for scheduling testing at structures DMS(1) and DMS(2).



Maryland
Transportation
Authority

SPECIAL PROVISIONS

CONTRACT NO. BB-972-000-006
Route 50 Dynamic Message Signs
Replacement

Page 2 of 6
November 15, 2009

SP 2 – 4.1.3 Witnessing of Tests

Tests conducted by the Contractor shall be witnessed by the Authority or a representative of the Authority.

SP 2 – 4.1.4 Test Reports

Following completion of each test, the Contractor shall provide a written report detailing all test results and a proposed course of action for resolving any anomalies.

In the event of a requirement deficiency requiring repair or replacement of a component, the Authority will require a full test to be repeated.

The Contractor shall not commence Integration and Reliability Tests without satisfactorily passing the previous phase of tests and without written approval to commence testing from the Authority.

SP 2 – 4.2 DMS Procurement and Commissioning Checklist

The contractor shall work with the MA727-000-02 Contractor and Authority's designated agency to arrange for the Dynamic Message Signs delivery to the site for installation. The Authority's designated agency has a pre-approved checklist to sign-off on dynamic message sign deliveries. The contractor shall work with the Authority's designated agency to ensure that checklist items are complied with and detailed documentation of the sign procurement is established.

Prior to delivery and installation of DMS sign on-site, the Contractor shall ensure that power and communication services are furnished and installed. The contractor is responsible to order new service lines for power and communications (ISDN Service) and ensure that the new services are connected before installation of the DMS sign. The Contractor shall work with the Authority and Authority's designated agency to schedule power and communication inspections for the DMS (1) and DMS (2) prior DMS delivery.

Upon installation of the sign at the locations shown on the plans, and completion of all field Cabinet Tests, Breaker Box Tests, and AC Control Box Tests, the contractor shall work with the MA727-000-02 Contractor and the Authority's designated agency to commission and integrate the newly installed sign. The purpose of the commissioning shall be to demonstrate to the satisfaction of the Authority that the proposed Dynamic Message Sign is in operation and can be successfully integrated, controlled and monitored. The Integration Tests shall include all the wiring and field cabinet installations and connections installed for the two new signs installed on the new



structures S-1 (8870) and S-2 (8201) and all other tests for these structures as directed by the Authority.

This integration test shall be witnessed by Authority Engineer and designated representatives for independent approval. A The Contractor's Installation procedure shall clearly define the proposed equipment configuration necessary to conduct this Test.

SP 2 – 4.3 Field Cabinet Tests

Field Cabinet Tests shall thoroughly test all required functionality. These tests shall also verify the correct installation and operation of all features of the field Cabinet, including cabinet lighting, ventilation/cooling systems, heating systems, and emergency power disconnect functions.

The Contractor shall prepare a detailed checklist of items required for full and proper installation of new field cabinets or refurbishment of existing cabinets. This checklist shall be submitted to the Authority two weeks in advance of the field Cabinet Tests. The checklist shall be reviewed and verified on-site with the Contractor, as part of the field Cabinet Tests.

Field Cabinet testing shall be included in the respective pay items described in Section SP 2 - 3.

SP 2 – 4.4 Mini Power Center (Breaker Box) Tests

Breaker Box Tests shall thoroughly test all required functionality. These tests shall also verify the correct installation and operation of all features of the Breaker Box.

The Contractor shall prepare a detailed checklist of items required for full and proper installation of the Breaker Box. This checklist shall be submitted to the Authority two weeks in advance of the Breaker Box Tests. The checklist shall be reviewed and verified on-site with the Contractor as part of the Breaker Box Tests.

Breaker Box testing shall be included in the respective pay items described in Section SP 2 -3.

SP 2 – 4.5 AC Control Box Tests

AC Control Box Tests shall thoroughly test all required functionality. These tests shall also verify the correct installation and operation of all features and inside equipment of the AC Control Box.

The Contractor shall prepare a detailed checklist of items required for full and proper installation of the AC Control Box including the inside equipment. This checklist shall be submitted to the Authority two weeks in advance of the AC Control Box Tests. The checklist shall be reviewed and verified on-site with the Contractor as part of the AC Control Box Tests.

SP 2 – 4.6 Reliability Test

Following satisfactory completion of the Integration Tests, Dynamic Message Signs shall undergo a 90-day Reliability Test. During this Test, the Dynamic Message Signs shall operate normally, 24-hours per day, seven days per week. Authority and Police personnel shall operate the system during this period.

SP 2 - 4.7.1 Requirements for Successful Completion

During the Reliability Test, all equipment (hardware and firmware) furnished and installed by the Contractor shall operate with the specified level of functionality and reliability, and operate to the satisfaction of the Authority without unresolved, intermittent, or sporadic failures.

Successful completion of the Reliability Test will occur at the end of ninety (90) continuous days of operation without signs system failure attributable to software or hardware furnished under this project, or ninety (90) days from successful completion of the Integration Tests, whichever is later. Should the system operate successfully for sixty (60) days and then fail, it would then have to operate successfully for ninety (90) consecutive days to complete a successful Reliability Test -- sixty (60) days beyond the original ninety (90) day period.

SP 2 – 4.7.2 System Failures

System failure is defined as a condition under which the system is unable to function as a whole or in significant part to assist the traveling public as designed. While a single component failure may not constitute a system failure, chronic failure of that component or component type or subsystem will be sufficient to be considered a system failure. The Authority will determine if failures experienced in the Reliability Test constitute a system failure. General communication failure due to hardware or software furnished under this project or failure of ten (10) percent or more of the system is considered a system failure in any case. Communication failure due to a minor component may not be a system failure. Faults affecting all of an area or type of component are considered to be system failures. Specifically exempted are failures caused by acts of God or external forces



Maryland
Transportation
Authority

SPECIAL PROVISIONS

CONTRACT NO. BB-972-000-006
Route 50 Dynamic Message Signs
Replacement

Page 5 of 6
November 15, 2009

beyond the control of the Contractor. The Authority will advise the Contractor in writing when it considers that a system failure has occurred or chronic failure exists.

SP 2 – 4.7.3 Repairs During The Reliability Test

The Contractor's warranty for the equipment supplied under this project shall provide that in the event of a malfunction during the Reliability Test, the defective component, card, module, subassembly or auxiliary device shall be replaced with a working component at no cost to the Authority.

Any component of the system which, in the opinion of the Authority fails three or more times prior to the expiration of the Reliability Test, shall be judged as unsuitable, and with the Authority approval, shall be replaced by the Contractor at its expense with a new component of the same type. The unsuitable component shall be permanently removed from the system.

All diagnosis and repairs during the Reliability Test shall be performed by a qualified and authorized representative from the manufacturer of the respective equipment. The Contractor shall furnish a letter to the Authority signed by the equipment manufacturer designating the authorized representative of the equipment manufacturer, whom will be used by the Contractor to perform warranty and maintenance work.

Any repair, routine maintenance or other work conducted by the Contractor during the Reliability Test shall be documented and reported in writing to the Authority.

SP 2 – 4.8 Traffic Operations During Testing

All installation and testing activities shall be designed to have the least impact on traffic operations and shall be conducted in close coordination with Authority Operations Center personnel. All installation and testing activities shall be performed by the Contractor and in accordance with Maintenance of Traffic requirements specified in Section SP 2 – 6.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

CONTRACT NO. BB-972-000-006
Route 50 Dynamic Message Signs
Replacement

Page 6 of 6
November 15, 2009

SP 2 – 4.10 Measurement and Payment

Measurement for System Integration and Reliability Testing will be based on successful completion of these activities as described in Sections above. All other testing shall be measured and paid as stipulated in Sections above.

Payment will be made for System Integration Testing and Reliability Testing based on lump sum amounts upon successful completion of the tests and related repairs required to fulfill the operational requirements of these Specifications.

Item 1001	System Integration Testing.	Lump Sum
Item 1002	Reliability Testing.	Lump Sum



SPECIAL PROVISIONS

SP 2 – 5 MAINTENANCE, SPARE PARTS AND WARRANTIES

SP 2 – 5.1 Maintenance

The Contractor shall be responsible for maintenance of all equipment purchased and installed under this project until there is satisfactory completion of the Reliability Test and acceptance of the Dynamic Message Signs by the Authority.

SP 2 - 5.1.1 General Requirements

Maintenance shall include corrective maintenance of the purchased and installed equipment required to maintain the Dynamic Message Signs in a fully operational state, with minimum down time for system components and disruption to the traveling public. Authority personnel may accompany the Contractor's Maintenance staff during maintenance activities to continue their training on the installed equipment.

All maintenance activities shall be conducted in close coordination with Authority Operations Center (AOC) personnel. Following written acceptance of the Dynamic Message Signs by the Authority, responsibility for maintenance of equipment purchased and installed under this project shall be transferred to the Authority.

SP 2 – 5.2 Spare Parts

The Contractor shall provide to the Authority the number of new replacement parts (System Spares) for the equipment purchased and installed under this project.

SP 2 – 5.2.1 Spare Parts List

The Contractor shall submit a spare parts list, which shall include the following information for each item listed:

- Manufacturer;
- Manufacturer's part number;
- Manufacturer's reference number (i.e. number used to identify an item of production or number used either by itself or in conjunction with other reference numbers to identify an item of supply);
- Name;
- Description (include gender if applicable and indicate if the item is a standard off the shelf part, or if certain characteristics of an item make it unique because of tolerance, fit, test, or other requirements that affect its identifications);



SPECIAL PROVISIONS

- Unit of measure (e.g. each, pair);
- Current price; and
- Quantity.

The list shall contain a column indicating parts delivery time in excess of sixty (60) days.

The Contractor shall provide the Spare Parts List to the Authority prior to commencement of the Reliability Test.

SP 2 - 5.2.2 Minimum Spare Part Quantities

Minimum spare part quantities for certain critical system components shall be as follows:

- Relays and Load Switches used in field Cabinets – 10 percent of installed quantities.
- Other Assemblies installed within the field Cabinet - 2.
A kit shall include minimum the following:
 1. Fan
 2. Air Filter
 3. Seventy-five watt rough service bulb
 4. Resistance type heater
 5. 7.5 KVA transformer and support hardware
 6. Equipment rack
 7. Thermostat

These quantities shall be reflected in the overall quantities for the components to be provided. At least one of each critical replaceable component not listed above shall be provided.

SP 2 – 5.3 Warranties

SP 2 – 5.3.1 Contractor’s Warranty

The Contractor shall warrant:

- That all services performed hereunder shall conform to the requirements of this contract and shall be performed by qualified personnel in accordance with the highest professional standards;



SPECIAL PROVISIONS

- That all items furnished hereunder shall conform to the requirements of the Contract Documents and shall be free from defects in design materials and workmanship; and
- That it has ownership and/or marketing rights for all items provided pursuant to the Contract Documents.

There shall be no maintenance charges for the period up to successful completion of the Reliability Test. The Contractor agrees that they will, at their own expense, provide all labor and parts required to remove, repair or replace, and reinstall any such defective workmanship and/or materials, which become or are found to be defective, during the period up to successful completion of the Reliability Test.

Upon successful completion of the Reliability Test as defined herein, the Authority will issue a final acceptance of the system.

SP 2 – 5.3.2 Manufacturer’s Warranties

The Contractor shall transfer and assign to the Authority all of its rights, under any and all warranties, guaranties, and any similar provisions from the manufacturers or vendors of equipment supplied under this project or any component or part thereof, and shall take all steps necessary to ensure that said manufacturer or vendor recognizes the Authority as a beneficiary of any such warranty, guarantee, etc.

Warranties are required for system components where documented in these Special Provisions and the Contractor shall provide documentation to the Authority to that effect for each of the items warranted.

SP 2 – 5.4 Measurement and Payment

Maintenance of the purchased and installed equipment under this contract will not be measured and associated costs will be incidental to the DMS installation. Measurement for Spare Parts shall be based on the minimum spare part quantities specified or Lump Sum, as applicable.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

CONTRACT NO. BB-972-000-006
Route 50 Dynamic Message Signs
Replacement

Page 4 of 4

Payment will be made for Spare Parts upon successful completion of the Reliability Testing.

8010 OTHER ASSEMBLIES INSTALLED WITHIN THE FIELD CABINET Each

8011 SPARE RELAYS AND LOAD SWITCHES Each



**CATEGORY 100
PRELIMINARY**

SP 2-6 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.

Project Description.

This project to install new Dynamic Message Signs will require coordination with the Maryland Transportation Authority (“Authority”). The Contractor will be responsible for providing traffic control for all lane and shoulder closures for this project. The contractor will also be responsible to obtain all permits for lane or shoulder closures from respective authorities, Authority or State Highway Administration, as necessary. The Contractor shall submit all necessary lane or shoulder closure approvals to the Authority Engineer prior to beginning any construction. The following sections summarize work restrictions and lane closure information.

It is necessary to plan and coordinate the Construction and Maintenance of Traffic (MOT) sequencing schedule of this project with that of previously advertised projects.

AGENCY CONTACTS

Pre-Construction / Existing Contract Coordination:

CONTACT	TITLE	PHONE NUMBER
Ken Cimino	LMB Administrator, MdTA	(410) 295-8157
Gordon Garrettson	LMB Deputy Administrator	(410) 537-6659
Maurice Saxon	LMB Chief Facility Maintenance Officer	(410) 537-6651
William Mentzer	ITS Construction Manager	(410)-538-5730
Bobby Wojcik	NMB and LMB Special Trades Supervisor	(410) 537-6669
Roxane Y. Mukai	Traffic Manager, MdTA	(410) 537-7848



David Dabkowski	Design Engineer, MdTA	(410) 537-7852
Carrie DeBoy	IT Operations, MdTA	(410) 537-1352
Jeffrey Wentz	Engineer Traffic, SHA District 2	(410) 810 3240

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

TIME OF DAY	DAYS OF THE WEEK	ALLOWED CLOSURES
8:00 P.M. – 5:00 A.M.	Monday – Thursday	North or Southbound

Work is not permitted on the holidays, or work day preceding and following holidays indicated below with an "X":

- New Year's Day, January 1
- Martin Luther King's Birthday, the third Monday in January
- President's Day, the third Monday in February
- Good Friday
- Easter Weekend
- Memorial Day, the last Monday in May
- Independence Day, July 4



- Labor Day, the first Monday in September
- Columbus Day, the second Monday in October
- Veteran's Day, November 11
- Thanksgiving Day, the fourth Thursday in November
- Christmas Day, December 25

If a holiday happens to fall on a Thursday, Friday or Monday, no closures will be permitted during that weekend. No lane closures are permitted two days prior to and following the Thanksgiving and Christmas Day holidays.

104.02.04 MEASUREMENT AND PAYMENT

104.02.04.02 When specified in the Contract Documents, Maintenance of Traffic will be measured and paid for at lump sum.

Item 1005 MAINTENANCE OF TRAFFIC LUMP SUM

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 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 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 require written approval from the Engineer at least 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 thirty (30) minutes.

- 149 **ADD:** The following after the last paragraph, “Any monetary savings...and the Administration.”

When a temporary lane or shoulder closure is in effect, work shall begin within one (1) 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 TCP including procedures to be implemented for lane/shoulder closures.

When closing or opening a lane on freeways, expressways, and roadways with posted speed ≥ 55 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, a truck-mounted attenuator (TMA) with support structure designed for attaching the system to the work vehicle, and 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 manufacture’s specification as tested under NCHRP Test Level 3.

When a temporary lane or shoulder closure is in effect, work shall begin within one hour after the lane is closed. Any delay greater than one hour with no work in progress shall require the Contractor to remove the lane closure at no additional cost to the Administration. The Contractor's Traffic Manager shall attend Pre-Construction and Pre-Paving Meetings and shall discuss traffic control and the Traffic Control Plan including procedures to be implemented for lane 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. The Contractor shall be responsible to obtain all the lane or shoulder closure permits as necessary.

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 as 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 lane closure setup no earlier than 15 minutes prior to actual time lane/shoulder closure or restriction is permitted.

All temporary lane or shoulder closures shall be restored at the end of the closure period and no travel lane shall be reduced to less than 11 ft. 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)



Maryland
Transportation
Authority

SPECIAL PROVISIONS

CONTRACT NO. BB-972-000-006
Route 50 Dynamic Message Signs
Replacement

Page 1 of 1
November 15, 2009

SP 2 – 7 CONSTRUCTION SEQUENCING

SP 2 – 7.1 General

All installation, testing, and other activities undertaken by the Contractor, shall be designed to have the least impact on traffic operations and shall be conducted in close coordination with MdTA Police, Operations personnel, and the MA727-000-002 and MA328-000-06 Contractors. Restrictions related to Maintenance of Traffic shall be as stipulated in Section 104 of the Special Provisions as amended in these Specifications.

SP 2 – 7.2 Order of Construction

Order of construction shall be as follows:

1. Removal of existing DMS sign and the overhead structure 870.
2. Installation of new overhead structures S-1 and S-2.
3. Installation of new or refurbished field cabinets and other roadside elements such as wiring, conduits, etc.
4. Installation of two new DMS signs.
5. The Contractor may conduct work at one or more sites concurrently.



SECTION 2-8

MISCELLANEOUS REPAIRS AND/OR CONSTRUCTION

899.01 DESCRIPTION

A contingent allowance of Sixty Thousand Dollars (\$60,000.00) has been included in the Proposal Form for miscellaneous repairs and/or construction that may be deemed necessary by the Engineer during the construction period.

This work shall be performed only upon written direction of the Engineer. Upon the direction from the Engineer, the Contractor shall submit a written time and material cost for this task, for the Engineer's review prior to commencing any work. The Contractor shall allow two (2) weeks for the review and notice of approval or rejection of the proposal. If the proposal is rejected, the Contractor shall have no claim for time, materials, or other costs associated with the preparation of the proposal. If the proposal is approved, the costs, if any, associated with preparation of the proposal shall be incidental to the proposal.

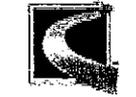
In lieu of a proposal, the Engineer may direct the Contractor to perform the work in accordance with the requirements of "Force Account Work" Section GP9.02 of the Specifications.

899.02 METHOD OF MEASUREMENT AND BASIS OF PAYMENT

All work performed under this item will be paid for on the basis of approved price proposals and/or force account records submitted in accordance with section GP9.02 of the Specifications and with the authorization of the Engineer.

The Approved amounts shall be full compensation for all labor, equipment, materials, and incidentals complete and in place as directed by the Engineer. The agreed upon or documented costs, only, shall be paid from a lump sum amount as specified in the schedule of prices.

Item 8012	MISCELLANEOUS REPAIRS AND/OR CONSTRUCTION	ALLOWANCES
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Maryland
Transportation
Authority

SPECIAL PROVISIONS

SECTION 2-9

REMOVAL OF STRUCTURE

CATEGORY 400 STRUCTURES

SECTION 400-01 REMOVAL OF EXISTING STRUCTURES

400-01.01 DESCRIPTION. This work shall consist of the removal and disposal or removal and salvage of existing structures and related features to the limits indicated on the Plans, in accordance with the requirements of these Special Provisions and as may be directed by the Engineer.

400-01.02 MATERIALS. – Not applicable.

400-01.03 CONSTRUCTION. Before removal operations commence, the Contractor shall prepare and submit to the Engineer for review and approval a complete list of all equipment to be utilized in the removal of existing structures including the proposed method of removal as an official shop drawing submittal. Materials obtained from the removal operations shall become the property of the Contractor and shall be removed promptly off site, unless noted otherwise.

If any damage results to roadway, utilities, and other facilities in the vicinity of the existing structure as a result of the Contractor's operations, areas damaged shall be repaired or replaced as required by the Engineer in an acceptable manner at no additional cost to the Authority. If the damage is a result of the Contractor's method of removal, the Contractor shall submit a revised method of removal to the Engineer for review and approval. In this event, all removal operations may be temporarily discontinued until such approval of his alternate method is submitted and approved. No extension in Contract time will be given to the Contractor for delays caused by the repair of damage or during a temporary work stoppage resulting from unacceptable removal methods and/or the required submittal of an alternate removal method.

400-01.04 Removal and Disposal of Existing Features. In addition to the removal of the existing structure, other associated existing features shall be removed and disposed of as indicated on the Plans including mounting brackets hardware, bars and clamps, conduits, cabling, etc. mounted on the existing structure. After removal, these features shall become the property of the Contractor and removed promptly off the site and properly disposed, unless noted otherwise. The hardware used to attach these features to the existing structure shall be discarded.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

400-02.01 MEASUREMENT AND PAYMENT. The Removal of the Existing Structure will be measured and paid for at the contract unit price per each for the various pertinent Removal of Existing Structure items specified in the Contract and indicated on plans. The payment will be full compensation for the removal of existing structure to the limits shown on the Plans including mounting bracket hardware, bars and clamps, conduits and cabling, etc. and for all material, labor, equipment, tools, and incidentals necessary to complete the work.

The removal and salvage of any existing features will be incidental to the pertinent Removal of Existing Structure items specified in the Contract.

Item 8003	Remove Existing Overhead Structure	EACH
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Maryland
Transportation
Authority

**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 MdTA Office of Engineering and Construction Erosion and Sediment Control (ESC) Quality Assurance Inspector is Mr. Timothy Plume @ 443-790-8975 and Tplume@mdta.state.md.us. 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 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 \$1,000.00 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 \$ 2,000.00 per day.

308.03 CONSTRUCTION.

DELETE:308.03.01 Contractor Responsibilities in its entirety.

INSERT: The following.

Prior to beginning any earth disturbance activity, the Contractor with the approval of the Engineer shall,

- (a) Determine extent of area only which can be disturbed and stabilized within a complete working day.
- (b) Determine extent of excavation from which the waste material can be disposed properly, or stabilize per approved Erosion and Sediment Control approach, within a complete working day.

Construction activities conducted per day are limited to the extent defined in (a) and (b) above.

DELETE: 308.03.02 references to Erosion and Sediment Control Plan (E & S Plan)

DELETE: 308.03.04 Schedule in its entirety.

INSERT: The following.

Within 14 days after the Notice of Award, submit an Erosion and Sediment Control approach schedule which indicates the sequence of construction, implementation and maintenance controls, temporary and permanent stabilization,



and the various stages of earth disturbance. Any changes to the MDE approved Erosion and Sediment Control approach requires concurrence from MDE in addition to the Engineer's approval. At a minimum the following shall be included:

- (a) Clearing and grubbing of areas necessary for excavation and construction activities specified in the Contract Documents.
- (b) Implementation of same day stabilization controls specified in the Contract Documents.
- (c) Roadway or other re-grading (including off-site work).
- (d) If applicable, utility installation and whether storm drains will be used or blocked after construction.
- (e) Final grading, landscaping, and stabilization.

Work is prohibited on-site and off-site until the Erosion and Sediment Control schedules and methods of operation have been accepted by the Engineer and MDE.

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.

INSERT: The following.

308.04 MEASUREMENT AND PAYMENT. Erosion and Sediment Control, when required by MDE and Engineer, is 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.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

**CATEGORY 800
TRAFFIC**

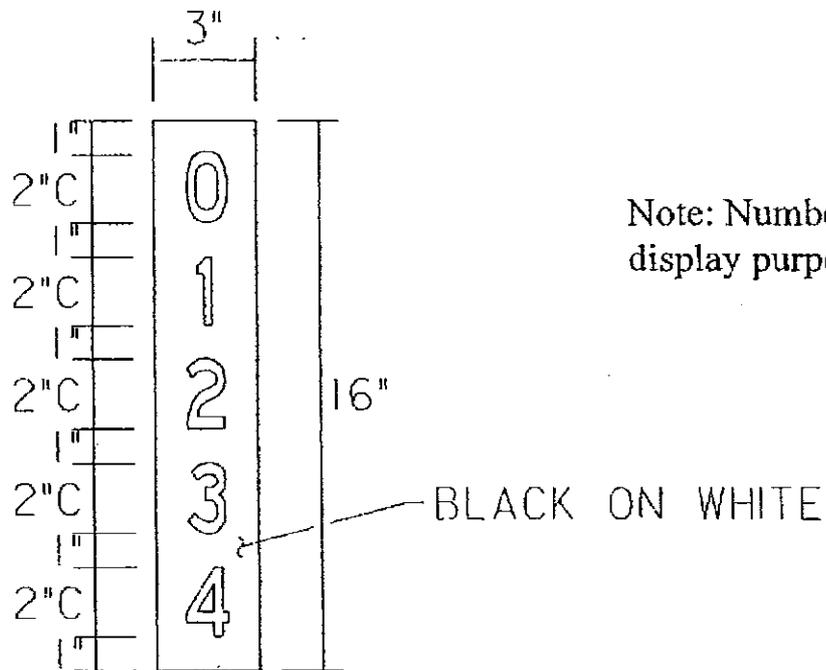
800-9 SIGN STRUCTURE IDENTIFICATION NUMBER LABEL

800-9.01 DESCRIPTION. This work shall consist of furnishing and installing a Sign Structure Identification Number Label on all Authority owned sign structures (overhead and cantilever) within the limits of the project. The contractor shall contact the Authority's Structures Manager to coordinate identification numbers for each sign structure that are owned and maintained by the Maryland Transportation Authority as detailed on the plans. Sign structures not owned and maintained by the Maryland Transportation Authority, as detailed on the plans, will not require labels.

800-9.02 MATERIALS. Sign Structure Identification Number Labels shall be fabricated of the same sheeting material for other signs in the contract as specified on Drawing No. SN-1. Reflective Sheeting per 950.03.

800-9.03 CONSTRUCTION. The Sign Structure Identification Number Label shall be installed perpendicular to traffic, at $T - 0$ " from top of roadway to bottom of Identification Number. The sheeting only shall be directly applied to the sign structure as per the manufacturer's specifications. The contractor shall prepare the surface as required by the manufacturer's specifications.

800-9.04 MEASUREMENT AND PAYMENT. Sign Structure Identification Number Labels will not be measured but the cost will be incidental to the appropriate furnish and install sign structure items in the contract. For existing sign structures, the costs will be incidental to other pertinent items in the contract. The payment will be full compensation for all materials, labor, equipment, tools and incidentals necessary to complete the work.



Note: Numbers shown for display purposes only.



SPECIAL PROVISIONS

CATEGORY 800**TRAFFIC****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.

This work includes contacting, coordinating and cooperating with BG&E for the changes and additions to the electrical service.

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)
- NECA - National Electrical Contractors Association (NECA 1-2006)
- NEMA - National Electrical Manufacturers Association
- NESC - National Electrical Safety Code
- NFPA - National Fire Protection Association



Maryland
Transportation
Authority

SPECIAL PROVISIONS

- 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 (TC4.01).
- (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. 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.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

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.

820.01.03 Fire-stopping

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

820.03 CONSTRUCTION

ADD: The following.

820.03.01 General

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.

820.03.02 Testing Fiber Optic Cables

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.

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.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

- (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.

820.03.04 All PVC conduit fittings, except threaded fittings, shall be schedule 80 and glued and water tight. All GRSC fittings shall be tight fit.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

820.03.05 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.

820.03.06 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.

820.03.07 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.

820.03.08 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.

820.03.09 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.

820.03.10 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.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

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

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

820.03.13 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 show only the work that is part of the final project on as-built drawings.

820.03.14 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.

820.03.15 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.

820.03.16 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.

820.03.17 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.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

ATTACHMENT 820-A

SAMPLE FIBER OPTIC CABLE TEST REPORT

(To be filled out after installation is complete)

Job Name:	Fiber Cable:
Job ID:	
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



Maryland
Transportation
Authority

SPECIAL PROVISIONS

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: _____



897 TELEPHONE AND ELECTRICAL SERVICES

897.01 DESCRIPTION

A contingent allowance of Five Thousand Dollars (\$5,000.00) has been included in the Proposal Form to pay costs charges by local utility companies for Electrical and Telephone Services as required in this contract and/or that may be deemed necessary by the Engineer during the construction period.

This item shall not include services for any construction trailers. All costs for the contractor's facilities or the engineer's office shall be considered covered under other applicable line items.

897.02 CONSTRUCTION

897.02.01 Electrical Services shall be furnished and installed as indicated in the plans or as directed by the Engineer. The contractor shall complete the service application, obtain local street address acceptable to the utility company, obtain any required local permits, coordinate all installation, and pay all charges and fees charged by the utility company on time. Only work required to be performed by the utility company shall be performed by the utility company.

- (a) The one-time charges for installation shall be billed to the contractor by the utility company. The MDTA shall reimburse the contractor for the one-time costs as specified in the method of measurement and basis of payment section.
- (b) The energy charges should be set up to be billed directly to the MDTA from the utility company. However, if that does not occur, energy costs may be similarly reimbursed to the contractor through this item while the account is updated to change billing of energy-costs to the MDTA.

897.02.02 Telephone Services shall be furnished and installed as indicated in the plans and special provisions. The contractor shall complete the telephone company application, obtain local E911 address if necessary, coordinate all installation and configuration, and pay all charges and fees charged by the telephone service company on time.

- (a) Telephone companies regularly change the names, terms, and conditions of rate-plans; therefore, the contractor must coordinate with the MDTA to assure that the correct rate plan is being ordered for the service needs.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

- (b) The one-time charges for installation shall be billed to the contractor by the utility company. The MDTA shall reimburse the contractor for the one-time costs as specified in the method of measurement and basis of payment section.
- (c) Usage charges shall be billed to the contractor until the communications services have been tested and the affected site or location accepted. The MDTA will reimburse usage charges similarly upon receipt of invoices. Upon acceptance of the project, the contractor shall arrange to transfer the associated telephone company account to the MDTA. In the event of temporary services, the contractor shall arrange to terminate such account as directed by the MDTA.

897.02.03 The MDTA retains the right to acquire some or all utility services directly from the utility company by providing written notice to the contractor. The contractor shall comply with written notice to stop the acquisition of services, or terminate services. The MDTA will reimburse invoiced costs from the utility company and reasonable costs after the written notice to terminate.

897.03 METHOD OF MEASUREMENT AND BASIS OF PAYMENT

All work performed under this item will be paid for on the basis of invoices received by the contractor from the associated utility provider. Copies of invoices must be delivered to the MDTA for consideration for reimbursement or payment on the next monthly estimate due to the contractor. Payment shall be based on actual invoiced amounts without markup or additional fees charged by the contractor. Payment shall not include any late fees charged by the utility company.

Item 8013 TELEPHONE AND ELECTRICAL SERVICES ALLOWANCES



**CATEGORY 800
TRAFFIC**

898 – MEASUREMENT AND PAYMENT

898.01 DESCRIPTION

All pay items shall include all materials, labor, any mobilization and equipment necessary to furnish and install a complete, operational, and acceptable system as specified herein and as shown on the plans. Payment of items shall include all testing and guarantee required by the specifications and special provisions. Any requirements of the specifications, special provisions or plans not specifically detailed or mentioned in a payment item shall be considered incidental to the pay items below.

The contractor's quality assurance and quality control responsibilities shall be incidental to the pay items below. Construction stake out and coordinations shall be incidental to the items listed below. Testing as specified in the Special Provisions and Specifications shall be incidental to the pay items listed below:

1001	SYSTEM INTEGRATION TESTING	LUMP SUM
1002	RELIABILITY TESTING	LUMP SUM
1003	ENGINEERS OFFICE TYPE C	LUMP SUM
1004	CPM TYPE A SCHEDULE (SECTION 109)	LUMP SUM
1005	MAINTENANCE OF TRAFFIC (SECTION 104)	LUMP SUM
1006	DRUMS (SECTION 104.12)	PER EACH
1007	PROTECTION VEHICLE (SECTION 104.23)	PER UNIT DAY
1008	ARROW PANEL (AP) (SECTION 104.07)	PER UNIT DAY
1009	MOBILIZATION	LUMP SUM
6001	REMOVE TRAFFIC BARRIER END TREATMENT	PER EACH
6002	REMOVE EXISTING TRAFFIC BARRIER W-BEAM	PER LINEAR FOOT
6003	FURNISH AND INSTALL TYPE 1 TRAFFIC BARRIER END TREATMENT	PER EACH



Maryland
Transportation
Authority

Maryland Transportation Authority
Route 50 Dynamic Message Signs Replacement
CONTRACT NO. BB-972-000-006

SPECIAL PROVISIONS INSERT

Page 2 of 2

6004	FURNISH AND INSTALL TYPE C TRAFFIC BARRIER END TREATMENT	PER EACH
6005	FURNISH AND INSTALL TRAFFIC BARRIER W-BEAM	PER LINEAR FOOT
8001	REMOVE EXISTING DYNAMIC MESSAGE SIGN	PER EACH
8002	INSTALL TYPE I DYNAMIC MESSAGE SIGNS WITH INTEGRATED CONTROLLERS AND FURNISH AND INSTALL CATWALKS	PER EACH
8003	REMOVE EXISTING OVERHEAD STRUCTURE 870	PER EACH
8004	INSTALL NEW OVERHEAD STRUCTURE S-1 (8870)	PER EACH
8005	INSTALL NEW OVERHEAD STRUCTURE S-2 (8201)	PER EACH
8006	FURNISH AND INSTALL BASE MOUNTED CABINET	PER EACH
8007	REFURBISH EXISTING FIELD EQUIPMENT CABINET	PER EACH
8008	FURNISH AND INSTALL NEW GRS CONDUIT	PER LINEAR FOOT
8009	FURNISH AND INSTALL MINI POWER CENTER WITH 480VAC TO 240/120VAC TRANSFORMER (IF REQUIRED)	PER EACH
8010	OTHER ASSEMBLIES INSTALLED WITHIN THE FIELD CABINET	PER EACH
8011	SPARE RELAYS AND LOAD SWITCHES	PER EACH
8012	MISCELLANEOUS REPAIRS AND/OR CONSTRUCTION	ALLOWANCES
8013	TELEPHONE AND ELECTRICAL SERVICES	ALLOWANCES



**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 · 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.



950 TRAFFIC MATERIAL

See Section 950.14 of the SHA's *Standard Specifications for Construction and Materials* in conjunction with the changes shown in this Section

REPLACE section 950.14.02 As FOLLOWS:

950.14.02 Connector Kit Components. Each cable connector kit shall be furnished with all component parts described under the various listed types. Each kit shall contain sufficient silicone compound to lubricate metal parts and the housing for each assembly along with complete installation instructions. All connector kits shall be breakaway style with fuse remaining in load side connector when separated.

- (a) All housings shall be made of water resistant EPDM rubber. Assembled unit shall be watertight and submersible.
- (b) All connections to field wiring shall utilize set-screw (mechanical) type fastener constructed of aluminum or copper.
- (d) All fuses shall be rated 600V, 100 000 amps AIC.
- (e) The line side of all connector housing shall be permanently marked "Line Side", "Line End", or other approved line indication. .
- (f) The load side of all connector housing shall be permanently marked "Load Side", "Load End", or other approved load indication.
- (g) All connector kits shall be rated 600V and 30Amps.
- (h) All connector kits shall be provided with insulating boots.
- (i) All connector kits shall be rated for Copper or Aluminum wire, stranded sizes #10-#4AWG and solid #12-#4AWG.

REPLACE section 950.14.03 As FOLLOWS:

950.14.03 Connector Types. Each cable connector kit furnished shall be one of the following types:

(a) **Type I** - Unfused, quick disconnect inline connector kit containing:

- (1) A load side copper or aluminum set screw type terminal with flanged connector for breakaway copper connector. A load side boot to seal the wire and house the terminal and copper connector.

(2) A line side copper or aluminum set screw type terminal with flanged connector for breakaway copper connector. A line side boot to seal the wire and house the terminal.

(3) Acceptable products include:

(i) Homac "Flood-seal" SDK-M or approved equal.

(b) Type II - Fused, quick disconnect inline connector kit containing:

(1) A load side copper or aluminum set screw type terminal with flanged connector for fuse. A load side boot to seal the wire and house the terminal.

(2) A line side copper or aluminum set screw type terminal with flanged connector for fuse. A line side boot to seal the wire and house the terminal and fuse.

(3) Properly rated fuse.

(4) Acceptable products include:

(i) Homac "Flood-seal" SLK-M, and Bussman fuse or approved equal.

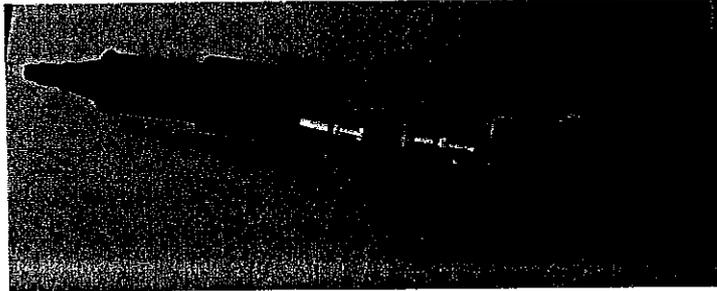


Figure 1 – Example Inline Connector Kit (unassembled).

(c) Type III - Fused, quick disconnect Y connector kit containing:

(1) A load side copper or aluminum set screw type terminal with flanged connector for fuse. A load side boot to seal the wire and house the terminal.

(2) A line side copper or aluminum set screw type terminal with multiple screws. Two screws shall be used for the two incoming line-side wires. The set-screw terminal shall be electrically connected to a flanged connector that accepts the fuse within a line side insert.

(3) A two-port line side boot used to seal the two line side connections to the set-screw terminal within the assembled kit.

(3) Properly rated fuse.

(4) Acceptable products include:

(i) Homac "Flood-seal" SLT-M, and Bussman fuse or approved equal.

(d) Type IV - Unfused, quick disconnect Y connector kit containing:

(1) A load side copper or aluminum set screw type terminal with flanged connector for copper connector. A load side boot to seal the wire and house the terminal.

(2) A line side copper or aluminum set screw type terminal with multiple screws. Two screws shall be used for the two incoming line-side wires. The set-screw terminal shall be electrically connected to a flanged connector that accepts the copper connector within a line side insert.

(3) A two-port line side boot used to seal the two line side connections to the set-screw terminal within the assembled kit.

(3) Properly rated fuse.

(4) Acceptable products include:

(i) Homac "Flood-seal" SDT-M or approved equal.

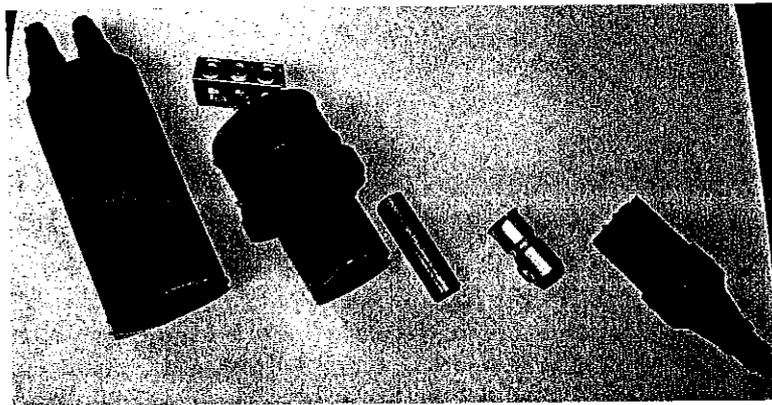


Figure 2 – Example Y connector Kit. (unassembled)

ADD:

950.14.04 Manhole and Handhole Splices. Splices in manholes, handholes, and other underground locations shall be rated for underground and buried locations. Splices shall be qualified to ANSI C119.1-1986 for underground splicing. Each splice shall consist of a conductive aluminum or copper connector rated for use on both copper and aluminum wire and sized appropriately for the wire sizes used in the connections. The connector shall utilize mechanical fasteners tightened by hex key wrench (Allen wrench) and designed to secure the wires into the connector. The connector shall be placed into a silicone gel that acts as a sealant

and high dielectric insulation. The gel and connector shall be placed into a molded cover made of UV stabilized and impact resistant polypropylene. The hinged molded cover shall close and cause the gel to seal around the cable entrances. The cover shall snap closed with positive acting snap lock to prevent accidental opening. The molded cover shall be fabricated with frangible fingers that allow adjustment of opening to suit the cable size. The entire assembly shall be rated for operation over a temperature range of -40°C to 90°C @ 1000V 60Hz AC. Use 2 port or 4 port models for inline (2 connections), Y (3 connections), or H (4 connections) splices as needed. Utilize the GTAP Splice or approved equal.

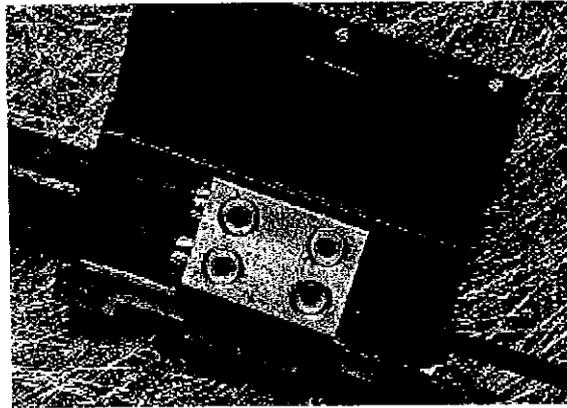


Figure 3 – Representative Splice Kit (assembled – not closed)

Maryland State Highway Administration
LANE CLOSURE PERMIT APPLICATION
District 2

Date: 5/20/09
NUMBER _____

TRACKING

Detour N/A

Route # and Mile Marker or Intersecting Route #: Rte US 50 at 2 locations: (1) 0.25 miles east of exit 40A (2) 0.6 miles east of MD 213

Type of Work: Geotechnical boring on shoulder

Permittee's Name and Address: _____

Contact Person: _____

Phone No.: _____ / _____ / _____
(Work) (Cell #) (Fax #)

LANE CLOSURE DESCRIPTION

Requested Date (s): _____ Day (s) of the Week: _____

Requested Time Period: _____

Travel Direction of Closure: N S E **W**

Closed Lanes: _____

Lt Sh #1 #2 #3 #4 #5 **Rt Sh** Other

REMARKS: _____

PLEASE ATTACH COPY OF SHA TRAFFIC CONTROL STANDARD (which can be located at www.marylandroads.com) ALONG WITH STANDARD #: 104.04-01

***Approval for lane closure must be faxed to SHA-Utility Office (410-778-0851) 48 WORKING HOURS prior to actual closure (Weekend and Monday requests must be in by Thursday)**

***Permittee must coordinate with the Project Engineer, if working within Construction Work Zone Limits in order to receive permission to work in that area**

***Permittee must call Utility Office (410-810-3274) & the State Operations Center (SOC) (1-800-543-2515) with Tracking Number (will be faxed to you after lane closure approval) 30 minutes prior to closing any SHA roadway or shoulder**

****SOC must be contacted each day the permit is in effect**

***Permittee is responsible for implementation of all traffic control devices, which must be in compliance with traffic control standards and the Manual on Uniform Traffic Control Devices (MUTCD)**

***This permit is subject to revocation at the direction of SHA**

***Permittee must have a copy of the approved permit at the work site**

Any questions call D2 Utility Office: 410-810-3274

Utility Approval _____ Date _____ Traffic Approval _____ Date _____

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

NOTES:

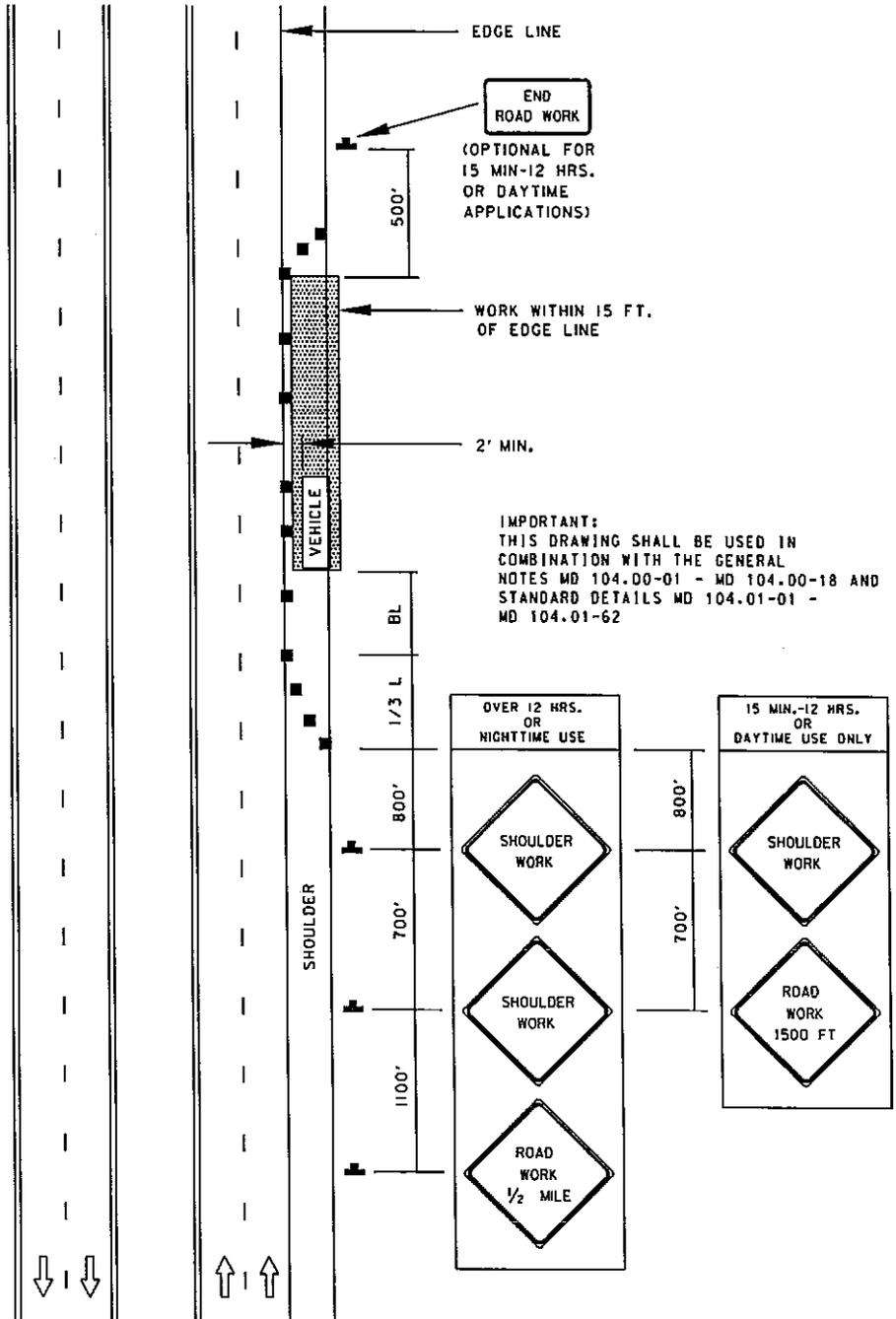
SHOULDER WORK SIGNS SHALL BE MOUNTED ON THE SIDE OF THE ROADWAY WHERE THE SHOULDER IS AFFECTED. USAGE OF SHOULDER WORK SIGNS ON THE OPPOSITE SIDE OF DIVIDED HIGHWAYS IS OPTIONAL.

SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY A PHYSICAL BARRIER REFER TO STANDARD NO. MD 104.06-14.

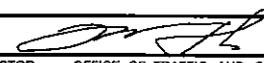
WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-11 TO MD 104.06-15.

KEY:

-  CHANNELIZING DEVICES
-  SIGN SUPPORT
FACE OF SIGN
-  DIRECTION OF TRAFFIC
-  WORK SITE



IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-62

SPECIFICATION 104	CATEGORY CODE ITEMS
APPROVED	 DIRECTOR - OFFICE OF TRAFFIC AND SAFETY
	APPROVAL • SHA REVISIONS
	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
	APPROVAL 8-20-03
	APPROVAL 9-23-03
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
SHOULDER WORK /DIVIDED UNCON.
GREATER THAN 40 MPH

STANDARD NO. MD 104.04-01

DISTRICT 2
APPLICATION FOR MARYLAND STATE HIGHWAY ADMINISTRATION
UTILITY PERMIT

DATE 5/20/09

MINIMUM REQUIREMENTS FOR UTILITY PERMIT SUBMITTAL

1. One copy of permit application
2. One copy of an 8 ½" X 11" vicinity sketch with area of work indicated with colored pen or pencil
3. Three sets of plans for work within the SHA's right-of-way showing the location in relation to the roadway.

RETURN TO BARRY CLOTHIER, DISTRICT UTILITY ENGINEER, STATE HIGHWAY ADMINISTRATION, 615 MORGNEC ROAD, P.O. BOX 299, CHESTERTOWN, MD 21620, PHONE (410) 810-3274.

STATE ROUTE NUMBER US 50/301

ROAD NAME Blue Star Memorial Highway/Ocean Gateway

CITY AND COUNTY Chester and Wye Mills, Queen Anne's County

(PLEASE PRINT) UTILITY OWNER'S NAME, ADDRESS & PHONE NO:

AUTHORIZED UTILITY OWNER'S NAME & TITLE:

(PRINTED)

(TITLE)

(SIGNATURE)

(PLEASE PRINT) TRAFFIC MANAGER'S NAME & PHONE NO.

REQUEST PERMISSION TO: Drill one boring on the westbound shoulder of Rte 50 at two locations

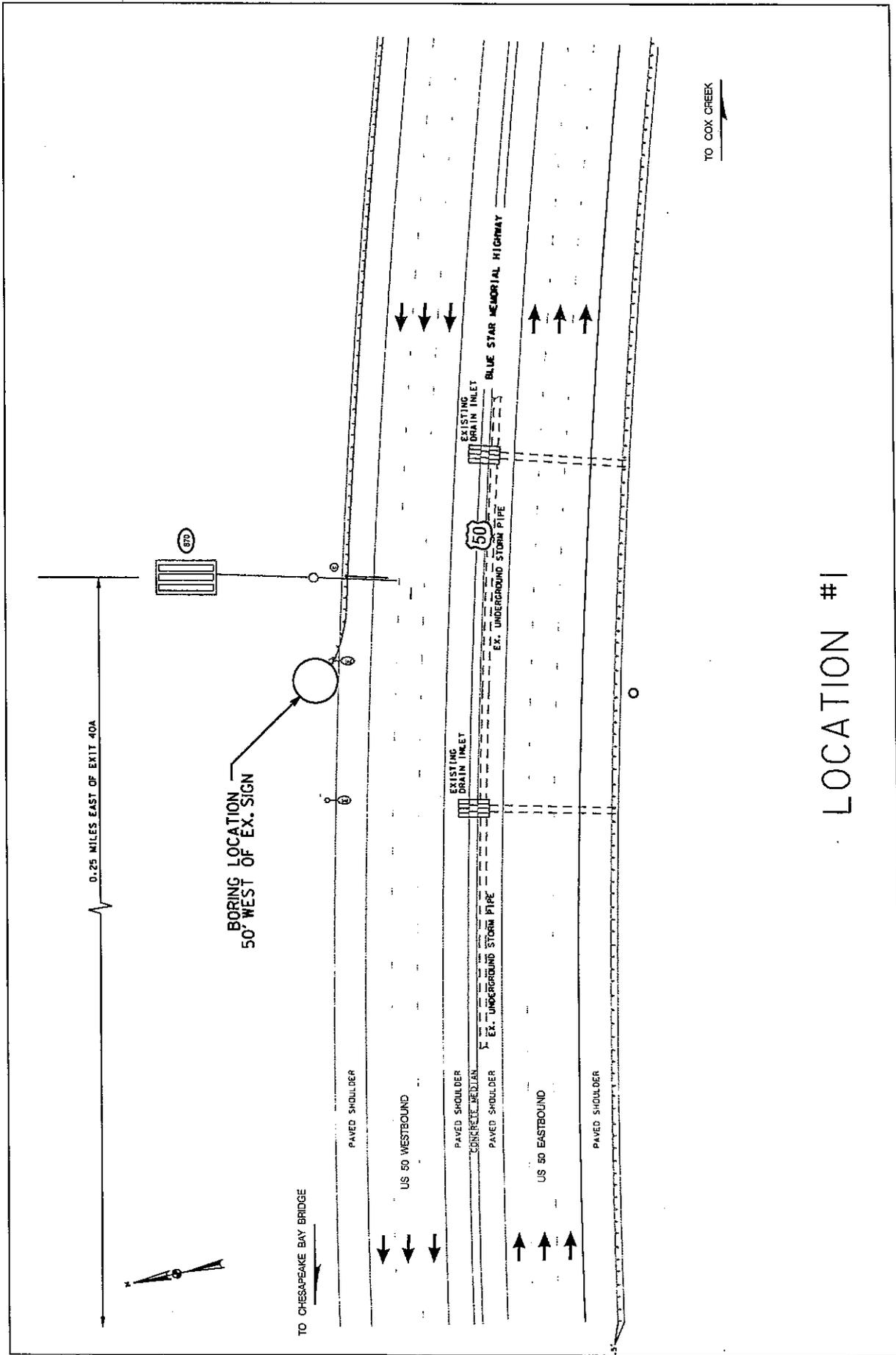
(See location plans for each location)

LOCATION OF WORK (reference to nearest road or street):

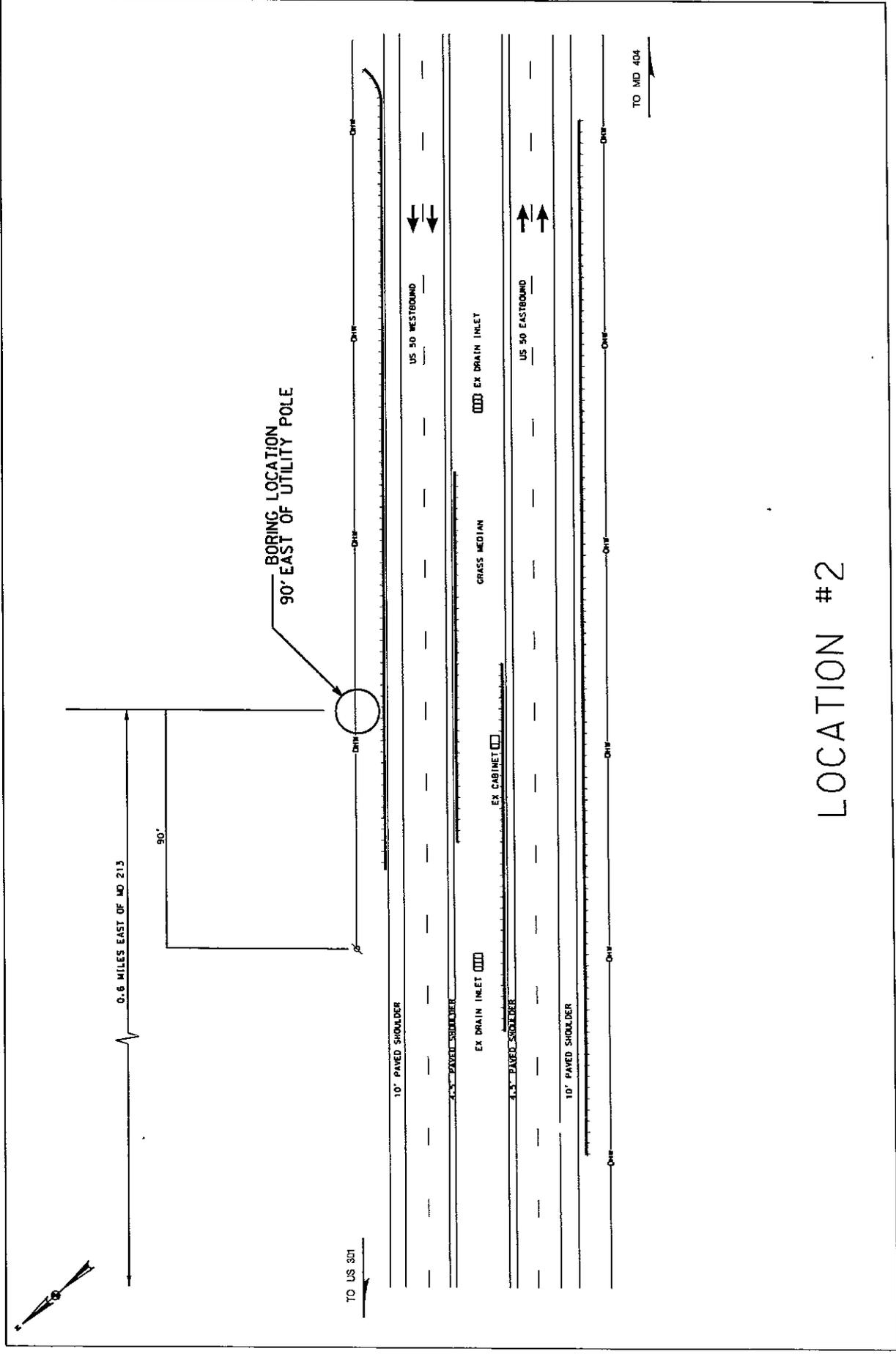
1. WB shoulder of US 50, approximately 0.25 miles east of Piney Creek Rd (Exit 40A)

2. WB shoulder of US 50, approximately 0.6 miles east of MD 213 (Centreville Rd)

ANTICIPATED STARTING AND COMPLETION DATES: _____



LOCATION #1



LOCATION #2