MARYLAND TRANSPORTATION AUTHORITY
Baltimore, Maryland

Invitation for Bids

Baltimore Harbor Tunnel
Fort McHenry Tunnel

Maryland
Transportation
Authority

Contract No. MA-951-000-002

Lighting Renovations at the I-95/I-395 and I-95/I-895 Interchanges

Baltimore City, Baltimore County and Howard County

March 2010

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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 (the "Authority") 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 proposal book.

Please read all of the instruction 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 sub goals, 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.

Updated
2/23/2009

ATTACHMENT B Part 2

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), Total sub contract dollar amount (Column 3) and NAICS Codes of the services to be performed or products to be supplied (Column 4)
- Clarify for each sub-contractor if it will provide services, is a supplier or will supply and install (Column 5)
- 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 NAICS Codes through MDOT and can perform the proposed services 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 services 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.mdot.state.md.us to see if the subcontractor is certified to perform the services and to make sure the subcontractor has not graduated from the listed NAICS codes. If you have questions after checking the data base, you may contact the Authority MBE Office at 410-537-1048 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 5) (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 form (Column 1). Please note: 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. Specifics as to why a Third Tier contracting agreement must be included.

Updated
2/23/2009

- Attachment B must be signed and dated.

- If you are the apparent low bidder, you will receive a letter from the Authority 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 the Authority. 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 ten (10) days, the Procurement Officer may determine that the apparent low bidder is not responsible and therefore not eligible for contract award.

Updated
2/23/2009

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.mdot.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.

WORK ZONE DEVICES	IMPLEMENTATION SCHEDULE TO CONFORM TO NCHRP REPORT 350 CRITERIA
CATEGORY 1 Cones, tubular markers, flexible delineator posts, and drums (all without any accessories or attachments)	All devices shall conform to NCHRP Report 350 criteria.
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)	All devices shall conform to NCHRP Report 350 criteria.
CATEGORY 3 (a) Truck Mounted Attenuators (TMAs); Trailer Truck Mounted Attenuators (TTMAs) (b) Temporary Barriers (1) Concrete Barrier (2) Traffic Barrier W Beam and Water Filled Barrier (3) Steel/Aluminum Barrier (c) Temporary End Treatments	All devices shall conform to NCHRP Report 350 criteria.
CATEGORY 4 Portable trailer mounted devices including area lighting supports, arrow panels, and changeable message signs	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.

OCCUPYING WETLANDS

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

(a) Prior to performing any work on the project, the areas of wetland will be identified and marked as directed by the Administration. All personnel of the Contractor or sub-contractors shall be alerted to these designated areas.

(b) The Contractor or sub-contractors shall not impact any wetland or waterway, whether it be permanently or temporarily unless otherwise stipulated in the permit application and approved as an authorized action by the appropriate regulatory agency. No fill shall be placed in these areas without a permit.

(c) If a Contractor or sub-contractor has to impact a wetland or waterway that is not covered by an existing wetland permit, they shall immediately notify the Engineer. The Engineer will notify the Environmental Programs Division to determine the extent of any permit modification. At that time the Environmental Programs Division will request a permit modification or submit a permit application.

(d) If the Contractor impacts any wetland or waterway for which they do not have a wetland permit, they shall be responsible for restoring the wetland areas and possibly mitigating the wetland impacts to the full satisfaction of the environmental agencies, which could include monetary compensation.

(e) The cost of restoration and mitigation of the impacted areas shall be at no additional cost to the Administration.

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

NOTICE TO ALL HOLDERS OF THIS CONTRACT DOCUMENT

HIGH VISIBILITY SAFETY APPAREL POLICY

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

STATEMENT OF POLICY.

(a) The High Visibility Safety Apparel Policy provides a standardized apparel program.

(b) The program seeks to improve the visibility of all persons who work on 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.

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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 **10:00 a.m.** on **April 15, 2010** , in the Conference Room, at the Maryland Transportation Authority, 300 Authority Drive, 1st floor, Baltimore, Maryland 21222. 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.

Maryland Transportation Authority

SP 1-1 PROJECT DESCRIPTION

CONTRACT NO.:	MA-951-000-002
TITLE:	Lighting Renovations at the I-95/I-395 and I-95/I-895 Interchanges
FACILITY:	Fort McHenry Tunnel (FMT) and Baltimore Harbor Tunnel (BHT)
LOCATION:	Baltimore City, Baltimore County and Howard County
ADVERTISED:	**March 30, 2010**
PRE-BID MEETING:	**April 15, 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, May 6, 2010,** in the Bid Box on the 1st floor of the Maryland Transportation Authority, Engineering Building, 300 Authority Drive, Baltimore, MD 21222
CLASSIFICATION:	Class – E ($2,500,001 – $5,000,000)
CONTRACT TIME:	Three Hundred Fifteen (315) Calendar Days
LIQUIDATED DAMAGES:	**$500.00 per Calendar Day**
MINIMUM MBE GOALS:	Overall 30% 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 6:00 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.

SP 1-1 DESCRIPTION

This project is located on the Fort McHenry Tunnel and Baltimore Harbor Tunnel Thruway Facilities of the Maryland Transportation Authority. The Maryland Transportation Authority ("Authority") desires to renovate roadway lighting at the I-95/I-395 and I-95/I-895 Interchanges.

The proposed renovation includes replacing under viaduct and low level lighting on I-95 and I-395 from the I-95/I-395 Interchange to the Russell Street crossing under I-95. In addition, all low level lighting at the I-95/I-895 interchange shall be replaced with high mast lighting. The contractor shall properly dispose of all materials they remove. Renovation will also require coordination of work with and some permits from the City of Baltimore, Stadium Authority and Maryland Transit Administration Light Rail. All work and materials necessary to provide complete and functioning systems shall be included.

Outages or interruptions requiring lane closures shall be scheduled in accordance with Authority Maintenance of Traffic (MOT) standard requirements (SP104).

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:

Mr. David Roehmer, Facility Administrator at (410) 537-1310

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 pursing 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 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, release or non-renewed except upon thirty (30) days prior written notice, registered mail to the Authority. All Contractors' insurance policies, with the exception of the Worker's Compensation and Employer's Liability, shall be endorsed to provide as additional insureds the Maryland Transportation Authority and the State of Maryland.

2. The Contractor shall purchase and maintain such insurance as is specified herein which will provide the Authority, its members, employees and agents, as well as the Contractor from claims which may arise out of or as a result of the Contractor's operations under this contract, whether such operations be by the Contractor, by any subcontractor, by anyone directly or indirectly employed by any of them or by anyone whose acts any of them may be liable. This insurance shall be maintained in full force until the Contract has been accepted by the Authority and final payment is made.

3. The Authority requires the following minimum levels of insurance coverage for this contract:

   a) <u>Worker's Compensation and Employer's Liability</u>

      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; and

5. Upon acceptance of a bid, provide the Authority with a list of Minority Businesses with whom the Contractor negotiated, including price quotes from Minority and Non-minority firms.

In order to publicize contracting opportunities to Minority Business firms, the contractor may attend pre-bid meetings or other meetings scheduled by the Maryland Transportation Authority ("Authority").

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 on the transportation facility projects 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 Contractor's 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.

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, CPPB
Chief of Engineering Procurement
Maryland Transportation Authority
300 Authority Drive
Baltimore, MD 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.

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.

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 RESPOND TO 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 PROCEED WITH CORRECTIONS TO UNSATISFACTORY MAINTENANCE 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 RESPOND TO unsatisfactory maintenance 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 10 percent per annum beginning on the 31st day.

TERMS AND CONDITIONS
TC SECTION 4
CONTROL OF WORK

TC 4.01 - SHOP PLANS AND WORKING DRAWINGS

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

ADD:

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

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

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

equipment specified, all working drawings shall conform to the following requirements, conditions, and procedures:

1. Substitution of equipment or materials other than those specified will be considered, providing, in the opinion of the Engineer, such equipment or material is equal to, or better than specified. The decision of the Engineer with respect to approval or disapproval of any material or equipment proposed to be substituted as an "or equal" is final. The Contractor shall have no claim of any sort by reason of such decision.

2. If the Contractor proposes to substitute materials or equipment as "or equal" to those specified, it shall be his responsibility to furnish, in addition to the information discussed above, a point by point comparison of the material or equipment specified under the Contract and that proposed to be substituted. The burden of responsibility in furnishing this information is with the Contractor.

3. If the substitute material or equipment requires any re-design or affects other aspects of the project, the Contractor shall be responsible to provide such re-design including details and to adjust elements as necessary to achieve the re-design at no additional cost to the Administration. Cost saving re-designs will be considered under the value engineering specifications.

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

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

The working drawings shall be prepared on sheets no smaller than 8.5" x 11" and no larger than 22" 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:

(b) The working drawings shall be submitted electronically as files (FAXES are NOT acceptable). Electronic submission may be made via email for small submissions. Email is the preferred submission method. The email submissions shall be made to the email addresses provided by the Administration upon notice to proceed of the project and shall include 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 five (5) copies of the media shall be provided for in-house distribution. The address to mail such media transfers is:

   Maryland Transportation Authority
   Engineering Division
   300 Authority Drive
   Baltimore, MD 21222
   ATTN: David Dabkowski

ADD:

(c) 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.

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:

(d) 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.

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:

(e) 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 prorata share of the lump sum price bid for Maintenance of Traffic or an amount prorated from the Engineer's estimate, whichever is more. The amount prorated will be the per diem amount established by using the working days (based upon calendar dates when required) divided into the total value of the bid item or the Engineer's estimate of that item, whichever is more.

The above noted deduction will be assessed on the next progress 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

100-01 MAINTENANCE OF RAILROAD TRAFFIC

100-01.01 DESCRIPTION. This Section describes the Contractor's obligations and other pertinent information relative to the various interfaces between the Contractor, the Maryland Transportation Authority (Authority), Maryland Transit Administration (MTA), and CSX Transportation, Inc. (CSXT), and describes the work to maintain railroad traffic in accordance with the requirements specified herein for work performed in or near Railroad property.

There are several locations as indicated on the plans where light poles are to be replaced, and Railroad tracks are within a possible 'fall zone' of the light pole. The Contractor shall coordinate with the Railroad in order to determine required safety precautions including flagmen, and complete the construction in accordance with requirements of the Railroad for construction over or near tracks.

There are underviaduct luminaires indicated for removal located over MTA Light Rail tracks and associated over head electrical lines. The Contractor shall coordinate with the MTA to enter the property and have the overhead electric lines de-energized for access to the luminaires. All personnel to enter MTA property shall attend the MTA Railroad Protection Training class prior to entering track right-of-way.

100-01.01.01 Railroad Interfaces. The Contractor shall coordinate directly with the appropriate Railroad. A copy of all written correspondence and a memorandum of all verbal communication between the Contractor and the Railroad shall be forwarded to the Engineer.

A. The Contractor is alerted that elements of the work under this Contract are to be performed on, over, under, and adjacent to existing operating railroad facilities. The term 'Railroad' used throughout this Section shall mean the MTA and CSXT, their operations, facilities, and representatives.

B. The Contractor shall identify the normal operating schedule of the Railroad lines possibly affected by the work identified in the construction documents. The construction work activities shall be organized and executed in such a way as to pose no interruption of train traffic, unless other arrangements can be made with the operating railroads.

C. Work Between Train Movements

1. Establishing suitable working relationships with railroad operating officers responsible for the movement of trains over the track covered by this Contract:

2. Determining from an officer of the operating railroad the designated times of train movements, as scheduled and as adjusted in the face of operating requirements.

3. Scheduling the work so as to allow for clearance of track left in serviceable condition at times and places needed for passage of trains.

D. Clearance of Track for Train Movements

1. Track-mounted equipment shall clear track in advance of approaching trains and shall be moved to an authorized location a minimum of 15 feet from centerline of operational track in sufficient time so as not to interfere with railroad operations.

2. The track shall be left free of any small equipment, tools, debris or construction materials. It shall also be left in a condition capable of safely sustaining the expected load from passing trains.

3. Full responsibility for the timely and safe movement of the Contractor's track-mounted equipment shall reside at all times with the Contractor, who shall comply with railroad operating rules.

4. The Contractor shall notify the designated Railroad representative a minimum of fourteen (14) days before the start of construction. *A schedule of work sequence and anticipated working time must be submitted for approval prior to beginning of work.*

E. Flagging/Inspection Services

1. The Railroad has the sole authority to determine the need for flagging required to protect both MTA light rail train and CSXT freight operations. In general, the requirements of such services will be required whenever the Contractor's personnel or equipment will be working, or are liable to be working, within the specified track clearance envelope or over tracks.

2. The Contractor shall notify the Railroad a minimum of thirty (30) days in advance of required flagging service. No work shall be undertaken until the assigned flagman or flagmen are at the job site.

3. The MTA and CSXT shall have rights to assign inspectors to inspect the work as may be considered necessary. The costs for such inspections will

be borne by the Authority. Inspection of the work shall not relieve the Contractor from his contractual liability.

F. Before proceeding with any construction or work within or adjacent to Railroad property, a pre-construction meeting shall be held with the Contractor specific to this work. The Contractor's staging plans and methods or procedures for construction work and protection of rail operations shall be discussed in detail and modified if necessary, at the sole discretion of the Engineer.

G. All equipment to be used by the Contractor shall be in first-class condition so as to fully prevent failures of defective equipment that might cause delay in the operation of trains or damage to Railroad facilities. All equipment shall be equipped with an operating yellow flashing light. This equipment shall not be placed or put into operation adjacent to tracks without first obtaining access permission from the Railroad. Under no circumstances shall any equipment or materials be placed or stored within fifteen (15) feet from the centerline of the track, unless approved by the Engineer.

H. Materials and equipment belonging to the Contractor shall not be stored on Railroad property. The Contractor shall keep the tracks adjacent to the site clear of all refuse and debris that may accumulate from its operations, and shall leave the Railroad property in the condition existing before the start of its operation. The Contractor shall also be liable for any damages to Railroad property or facilities caused by the storage, failure, vandalism, etc., of stored material or equipment.

I. Upon completion of the Work, and before final payment is made, the Contractor shall remove from within the limits of the Railroad right-of-way all machinery, equipment, surplus materials, falsework, rubbish, and temporary buildings and other property of the Contractor, and shall leave the right-of-way in a condition satisfactory to Railroad.

100-01.01.02 Insurance. The Contractor shall purchase and maintain for the length of the project the following insurance policies in addition to those required in the Specifications and in other sections of these Special Provisions for work over, under, on and adjacent to Railroad property.

The insurance requirements listed below for work over, under, on and adjacent to the Railroad right-of-way are the maximum limits required for this project as listed by any one railroad. The insurance limits listed below shall be obtained unless otherwise indicated in the CSX Public Projects Manual includes insurance requirements for CSXT included in Appendix A.

1. Commercial General Liability Insurance: Limits not less than Five Million Dollars ($5,000,000.00) in combined single limits for bodily injury and property damage per occurrence naming each railroad as the insured.

2. Commercial General Liability Insurance: If any part of the work is to be performed by a Subcontractor, the prime Contractor shall carry in the Contractor's own behalf, insurance of same limits as set forth in paragraph 1, above.

3. Statutory Worker's Compensation and Employers Liability Insurance with limits of not less than One Million Dollars ($1,000,000.00), which insurance must contain a waiver of subrogation against the Railroad and its affiliates.

4. Commercial automobile liability insurance with limits of not less than Five Hundred Thousand Dollars ($500,000.00) combined single limit for bodily injury and/or property damage per occurrence, and such policies shall name the Railroad as an additional named insured.

5. Railroad Protective Public Liability and Property Damage Insurance:

This policy shall name the respective "Railroad" as "The Insured" and shall be written on the form prescribed by the United States Department of Transportation, Federal Highway Administration, in the Federal Air Highway Program Manual, Volume 6, Chapter 6, Section 2, Subsection 2 Railroad-Highway Insurance Protection Required for Contractors.

Limits of liability shall be in the amount of Five Million Dollars ($5,000,000.00) for bodily injury and property damage per occurrence with an aggregate of Ten Million Dollars ($10,000,000.00) per annual policy period.

The limits stated herein have been established after reviewing the work listed in the Contract. Should the Contractor be otherwise using Railroad property (e.g., temporary grade crossing) it may be subject to other requirements. The Contractor is required to communicate with the Railroad and provide for complying with all their requirements.

The original of policy (5) must be furnished to and approved by the Railroad.

For (1) and (2), Certifications are to be furnished to the Maryland Transportation Authority ("Authority") and to the Railroad on request. In all instances, the Contractor must furnish evidence to the Authority and the Railroad that the insurance has been

purchased and is in force until the Contract is completed and accepted. The Contractor will not be permitted on Railroad property until Insurance Policy(s) have been approved.

Policies, notices of cancellation or change, etc., are to be sent by the Contractor directly to the Railroad's Engineer listed above. The Contractor and the Contractor's insurance representatives must reconcile all policy requirements to the satisfaction of the Railroad and the Engineer.

100-01.02 MATERIALS. None.

100-01.03 CONSTRUCTION. Railroad traffic shall be maintained at all times with safety and continuity within the limitations stated above, and the Contractor shall conduct all operations on, over, and adjacent to the Railroad's property fully within the rules, regulations, and requirements of the Railroad. The Contractor shall be responsible for acquainting himself with such requirements as the Railroad may demand.

100-01.03.01 Before proceeding with any construction work on, over, or adjacent to the Railroad's property, the Contractor shall submit plans and a detailed description of the method of procedure which will be followed for work in these areas for the approval of the Engineer and the Railroad; however, such approval shall not serve in any way to relieve the Contractor's responsibility for the adequacy and safety of the method of procedure.

100-01.03.02 Since the work in the field will not be permitted to proceed until the plans and method of procedure have been approved by the Engineer and the Railroad, it shall be the responsibility of the Contractor to submit his plans and method of procedure promptly so that unnecessary delays in construction operations will be avoided.

100-01.03.03 The Contractor shall be required to submit to the Railroad a written safety program prepared by the Contractor for the education and protection of his employees. This program shall address the hazards and safety considerations in working in the vicinity of the Railroad's property and operation.

100-01.03.04 No work shall be performed on these portions of the project until such times as all Insurance policies, and other requirements of the Railroad have been complied with and their approval, in writing.

100-01.03.05 All construction performed on, under, adjacent to, or over Railroad property will be subject to the inspection and approval of the Railroad.

100-01.03.06 At least fourteen (14) days advance notice shall be given to the Railroad, prior to entering upon or commencing any work on Railroad property.

100-01.03.07 Scheduling of the Contractor's operations that may affect the Railroad shall be coordinated through the Railroad. Scheduling or permission to occupy the track shall be made through the appropriate flagman for the respective Railroad.

100-01.03.08 All work herein provided to be done on, over, and adjacent to the Railroad's property shall be performed by the Contractor in a manner satisfactory to the Railroad, and shall be performed at such times, and in such a manner, as not to interfere with the movements of trains or traffic upon the tracks of the Railroad. The Contractor shall use all reasonable care and precaution in order to avoid accidents, damage, delay, or interference with the Railroad's trains or other property.

100-01.03.09 The Contractor shall consult the Railroad in order to determine the type of protection to ensure safety and continuity of Railroad traffic incident to the particular methods of operation and equipment to be used on the work.

100-01.03.10 The Railroad will furnish such qualified flagmen, signalmen, or protection men other than crossing watchmen, as may be required, to ensure complete protection of train operations and Railroad facilities. The need for this type of service will be determined on the basis of Railroad regulations and the Contractor's approved construction schedule. No work shall proceed without proper protection on the site. The providing of watchmen and guards, or any other precautionary and protective services by the Railroad, shall not relieve the Contractor from liability for payment of damages caused by or in consequence of the Contractor's operations.

100-01.03.11 All expenses incurred in connection with protection of Railroad facilities by Railroad employees will be borne by the Maryland Transportation Authority ("Authority"). Billings for such services or expense will be made directly to the Authority by the Railroad.

100-01.03.12 It shall be expressly understood that this Contract includes no work for which the Railroad is to be billed by the Contractor, and it shall be further understood that the Contractor is not to bill the Railroad for any work which he may perform, unless the Railroad gives written permission that such work be performed at the Railroad's expense.

100-01.03.13 Any work performed by the Railroad at the Contractor's request, other than protective services and work specifically designated in these Special Provisions, shall be paid for by the Contractor immediately upon presentation of the bills by the Railroad.

100-01.03.14 Final settlement by the Authority with the Contractor shall be contingent upon: (a) the Contractor showing proof that the Railroad's property has been cleared of all machinery, equipment, surplus materials, false work, rubbish, temporary buildings, and other property in a condition satisfactory to the Railroad; (b) the Contractor showing proof that no bills are owed by the Contractor to the Railroad in connection with the work performed on this project.

100-01.03.15 The Contractor shall secure permission from the Railroad Engineer, listed above, in writing, for the erection of any temporary structures, scaffolding, rigging on, over, or adjacent to the Railroad's property. Forms for concrete, false work, and bracing on, or over the Railroad's property shall be approved by the Railroad with respect to any reduction of existing clearance. All work on or over the Railroad's property shall be approved by the Railroad with respect to any reduction of existing clearance. All work on or over the Railroad's property shall be performed under the supervision of the Railroad.

100-01.03.16 Approved minimum temporary construction clearances from the Railroad tracks are 23.00 ft. vertically from the top of the rail (or maintain existing), and 18.00 ft. horizontally from the centerline of the track. Approval for clearances less than noted must be obtained by the Contractor through the Engineer from the Railroad and from the regulatory agency having jurisdiction over Railroad clearances in the State of Maryland before beginning any work involving such clearances.

100-01.03.17 The Contractor shall be held responsible to see that his employees enter upon Railroad or other property through points of access designated by the property owner.

100-01.03.18 Should the Contractor require a temporary grade crossing of the Railroad tracks, the Contractor shall be required to apply for and execute the standard private grade crossing agreement for each crossing required. Application for the crossing shall be made to the Railroad at least six weeks before the crossing is required. A letter size plan showing location and size of crossing should accompany the letter of application. The letter should state the purpose for which the crossing is needed and the expected life of the crossing. The Contractor shall pay all construction, maintenance, removal, protection, and other costs. The roadbed shall be restored to its original condition.

100-01.03.19 The Contractor shall furnish and maintain during all construction work, lights, barricades, fences, and other appropriate protection as, in the opinion of the Railroad, shall be necessary for the protection of all persons having access to property and facilities of the Railroad.

100-01.03.20 Every bidder is required to ascertain from the Railroad its rules, regulations, and requirements and what, if any, delays that he shall be subjected to, or scheduled days when work would be permitted, in connection with the supporting of tracks, and in connection with other Railroad operations, and every bidder will be assumed to have included in his bid price, all costs and expenses and all risks of loss and damage to him, due to such delays, rules, regulations, and requirements.

100-01.03.21 Should any damage occur to Railroad property as a result of the Contractor's operations, the Railroad may repair such damage and perform any work for protection of its property it may deem necessary and the actual cost for such work shall be borne by the Contractor.

100-01.03.22 The Contractor will not be permitted to use Railroad personnel for the Contractor's purposes when such personnel are required at the immediate site of project construction by the Railroad solely for the safe operations of the Railroad.

100-01.03.23 Any approvals given by the Railroad will not be considered as a release from responsibility for any damage to the Railroad by the acts of the Contractor, its subcontractors, or those of the Contractor's or subcontractor's employees.

100-01.03.24 Construction Procedures Specifically for CSXT Approval. Appendix A contains CSXT Insurance Requirements and CSXT Special Provisions and must be adhered to during construction. All construction related correspondence shall be coordinated with the following:

Mr. Carl A. Roe, Jr., P.E.
Principle Engineer Public Projects
500 Water Street (J-301)
Jacksonville, FL 32202
(904) 359-4042

Mr. Jeff Konrad
Manager, Construction Services
AECOM
260 South Broad Street, Suite 1500
Philadelphia, Pennsylvania 19102
(215) 966-4804

The Contractor shall provide authorization for CSXT to incur costs. The authorization may be a letter or e-mail to the office AECOM specifically "authorizing CSXT to incur

costs". This enables AECOM time to develop the Right-of Entry Agreement and estimate and handle executing the Agreement.
The Contractor shall provide contact information for the person that will be signing the agreements as well as the contact for day to day project coordination. The state of incorporation for the company is also required.

Once this information is received a Right-of Entry Agreement between CSXT and the Contractor will be developed and forwarded to the Contractor for execution. However, please note that no work may begin on, over or adjacent to CSXT right-of-way or that could potentially impact CSXT until:

- A fully executed Right-of Entry Agreement is in place with the appropriate parties.
- The contractor furnishes CSXT authorization to proceed with its force account work to this office in accordance with Right-of Entry Agreement.
- All insurance requirements (Included with Appendix A) have been reviewed and approved by CSXT Risk Management.
- The prepayment check has been received.
- A preconstruction meeting has been held with CSXT personnel present.
- A CSXT flagman is scheduled and is on-site.
- The Contractors' means and methods submittal has been reviewed with no exceptions taken by CSXT or its consultant.

The prospective Contractors should be aware that all costs incurred by CSXT to support this project are covered by the Contractor under the terms of the Right-of Entry Agreement. A flagman typically costs $1,000 per day for a standard 10 hour shift. Work on nights or weekends or in excess of the standard shift is subject to overtime rates. In addition, the Contractor can expect approximate $5,000 of administrative and engineering costs in conjunction with the project.

100-01.03.25 Construction Procedures Specifically for MTA Approval. See Appendix B for additional requirements and approval forms for coordination with MTA. All construction related correspondence shall be coordinated with the following:

Mr. Paul Kraught
MTA Light Rail Red Tag Coordination Division
(410) 454-7655

Mr. Jim Benton
MTA Railroad Protection Training

(410) 454-7665

100-01.04 MEASUREMENT AND PAYMENT. Work on Railroad property during the life of the Contract and all incidental costs imposed on the Contractor due to the operations of the Railroad will not be measured for payment, but the cost thereof shall be included in the Contract lump sum price for MOT. The payment will be full compensation for the costs of railroad insurance and permits and charges incurred from the Railroad for such items as review fees. Copies of invoices of costs of insurance and permits shall be submitted by the Contractor to be paid for the same under this item.

APPENDIX A

CSXT CONSTRUCTION REQUIREMENTS

INSURANCE REQUIREMENTS

I. Insurance Policies:

Company and Contractor, if and to the extent that either is performing work on or about CSXT's property, shall procure and maintain the following insurance policies:

1. Commercial General Liability coverage at their sole cost and expense with limits of not less than $5,000,000 in combined single limits for bodily injury and/or property damage per occurrence, and such policies shall name CSXT as an additional named insured.

2. Statutory Worker's Compensation and Employers Liability Insurance with limits of not less than $1,000,000, which insurance must contain a waiver of subrogation against CSXT and its affiliates.

3. Commercial automobile liability insurance with limits of not less than $500,000 combined single limit for bodily injury and/or property damage per occurrence, and such policies shall name CSXT as an additional named insured.

4. Railroad protective liability insurance with limits of not less than $5,000,000 combined single limit for bodily injury and/or property damage per occurrence and an aggregate annual limit of $10,000,000, which insurance shall satisfy the following additional requirements:

   a. The insurer must be financially stable and rated B+ or better in Best's Insurance Reports.

   b. The Railroad Protective Insurance Policy must be on the ISO/RIMA Form of Railroad Protective Insurance - Insurance Services Office (ISO) Form CG 00 35.

   c. CSX Transportation must be named as the named insured on the Railroad Protective Insurance Policy.

   d. Name and Address of Contractor and Company must be shown on the Declarations page.

   e. Description of operations must appear on the Declarations page and must match the Project description, including project or contract identification numbers.

   f. Authorized endorsements must include the Pollution Exclusion Amendment - CG 28 31, unless using form CG 00 35 version 96 and later.

   g. Authorized endorsements may include:

      (i). Broad Form Nuclear Exclusion - IL 00 21
      (ii) 30-day Advance Notice of Non-renewal or cancellation
      (iii) Required State Cancellation Endorsement
      (iv) Quick Reference or Index - CL/IL 240

h. Authorized endorsements may not include:

(i) A Pollution Exclusion Endorsement except CG 28 31
(ii) A Punitive or Exemplary Damages Exclusion
(iii) A "Common Policy Conditions" Endorsement
(iv) Any endorsement that is not named in Section 4 (f) or (g) above.
(v) Policies that contain any type of deductible

5. Such additional or different insurance as CSXT may require.

II. Additional Terms

1. Contractor must submit its original insurance policies and two copies and all notices and correspondence regarding the insurance policies to:

Donna W. Melton
Manager – Insurance
CSX Transportation, Inc.
500 Water Street - C907
Jacksonville, FL 32202
Phone: 904-359-1247
Fax: 904-245-2833

2. Neither Company nor Contractor may begin work on the Project until it has received CSXT's written approval of the required insurance policies.

CSXT SPECIAL PROVISIONS

I. AUTHORITY OF CSXT ENGINEER

The CSXT Representative shall have final authority in all matters affecting the safe maintenance of CSXT operations and CSXT property, and his or her approval shall be obtained by the Agency or its Contractor for methods of construction to avoid interference with CSXT operations and CSXT property and all other matters contemplated by the Agreement and these Special Provisions.

II. INTERFERENCE WITH CSXT OPERATIONS

A. Agency or its Contractor shall arrange and conduct its work so that there will be no interference with CSXT operations, including train, signal, telephone and telegraphic services, or damage to CSXT's property, or to poles, wires, and other facilities of tenants on CSXT's Property or right-of-way. Agency or its Contractor shall store materials so as to prevent trespassers from causing damage to trains, or CSXT Property. Whenever Work is likely to affect the operations or safety of trains, the method of doing such Work shall first be submitted to the CSXT Representative for approval, but such approval shall not relieve Agency or its Contractor from liability in connection with such Work.

B. If conditions arising from or in connection with the Project require that immediate and unusual provisions be made to protect train operation or CSXT's property, Agency or its Contractor shall make such provision. If the CSXT Representative determines that such provision is insufficient, CSXT may, at the expense of Agency or its Contractor, require or provide such provision as may be deemed necessary, or cause the Work to cease immediately.

III. NOTICE OF STARTING WORK

Agency or its Contractor shall not commence any work on CSXT Property or rights-of-way until it has complied with the following conditions:

A. Notify CSXT in writing of the date that it intends to commence Work on the Project. Such notice must be received by CSXT at least ten business days in advance of the date Agency or its Contractor proposes to begin Work on CSXT property. The notice must refer to this Agreement by date. If flagging service is required, such notice shall be submitted at least thirty (30) business days in advance of the date scheduled to commence the Work.

B. Obtain authorization from the CSXT Representative to begin Work on CSXT property, such authorization to include an outline of specific conditions with which it must comply.

C. Obtain from CSXT the names, addresses and telephone numbers of CSXT's personnel who must receive notice under provisions in the Agreement. Where more than one individual is designated, the area of responsibility of each shall be specified.

IV. WORK FOR THE BENEFIT OF THE CONTRACTOR

A. No temporary or permanent changes to wire lines or other facilities (other than third party fiber optic cable transmission systems) on CSXT property that are considered necessary to the Work are anticipated or shown on the Plans. If any such changes are, or become, necessary in the opinion of CSXT or Agency, such changes will be covered by appropriate revisions to the Plans and by preparation of a force account estimate. Such force account estimate may be initiated by either CSXT or Agency, but must be approved by both CSXT and Agency. Agency or Contractor shall be responsible for arranging for the relocation of the third party fiber optic cable transmission systems, at no cost or expense to CSXT.

B. Should Agency or Contractor desire any changes in addition to the above, then it shall make separate arrangements with CSXT for such changes to be accomplished at the Agency or Contractor's expense.

V. HAUL ACROSS RAILROAD

A. If Agency or Contractor desires access across CSXT property or tracks at other than an existing and open public road crossing in or incident to construction of the Project, the Agency or Contractor must first obtain the permission of CSXT and shall execute a license agreement or right of entry satisfactory to CSXT, wherein Agency or Contractor agrees to bear all costs and liabilities related to such access.

B. Agency and Contractor shall not cross CSXT's property and tracks with vehicles or equipment of any kind or character, except at such crossing or crossings as may be permitted pursuant to this section.

VI. COOPERATION AND DELAYS

A. Agency or Contractor shall arrange a schedule with CSXT for accomplishing stage construction involving work by CSXT. In arranging its schedule, Agency or Contractor shall ascertain, from CSXT, the lead time required for assembling crews and materials and shall make due allowance therefore.

B. Agency or Contractor may not charge any costs or submit any claims against CSXT for hindrance or delay caused by railroad traffic; work done by CSXT or other delay incident to or necessary for safe maintenance of railroad traffic; or for any delays due to compliance with these Special Provisions.

C. Agency and Contractor shall cooperate with others participating in the construction of the Project to the end that all work may be carried on to the best advantage.

D. Agency and Contractor understand and agree that CSXT does not assume any responsibility for work performed by others in connection the Project. Agency and Contractor further understand and agree that they shall have no claim whatsoever against CSXT for any inconvenience, delay or additional cost incurred by Agency or Contractor on account of operations by others.

VII. STORAGE OF MATERIALS AND EQUIPMENT

Agency and Contractor shall not store their materials or equipment on CSXT's property or where they may potentially interfere with CSXT's operations, unless Agency or Contractor has received CSXT Representative's prior written permission. Agency and Contractor understand and agree that CSXT will not be liable for any damage to such materials and equipment from any cause and that CSXT may move, or require Agency or Contractor to move, such material and equipment at Agency's or Contractor's sole expense. To minimize the possibility of damage to the railroad tracks resulting from the unauthorized use of equipment, all grading or other construction equipment that is left parked near the tracks unattended by watchmen shall be immobilized to the extent feasible so that it cannot be moved by unauthorized persons.

VIII. CONSTRUCTION PROCEDURES

A. General

1. Construction work on CSXT property shall be subject to CSXT's inspection and approval.

2. Construction work on CSXT property shall be in accord with CSXT's written outline of specific conditions and with these Special Provisions.

3. Contractor shall observe the terms and rules of the CSXT Safe Way manual, which Agency and Contractor shall be required to obtain from CSXT, and in accord with any other instructions furnished by CSXT or CSXT's Representative.

B. Blasting

1. Agency or Contractor shall obtain CSXT Representative's and Agency Representative's prior written approval for use of explosives on or adjacent to CSXT property. If permission for use of explosives is granted, Agency or Contractor must comply with the following:

a. Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of Agency or Contractor.

b. Electric detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way train radios.

c. No blasting shall be done without the presence of an authorized representative of CSXT. At least 10 days' advance notice to CSXT Representative is required to arrange for the presence of an authorized CSXT representative and any flagging that CSXT may require.

d. Agency or Contractor must have at the Project site adequate equipment, labor and materials, and allow sufficient time, to (i) clean up (at Agency's expense) debris resulting from the blasting without any delay to trains; and (ii) correct (at Agency's expense) any track misalignment or other damage to CSXT's property resulting from the blasting, as directed by CSXT Representative, without delay to trains. If Agency's or Contractor's actions result in delay of any trains, including Amtrak passenger trains, Agency shall bear the entire cost thereof.

e. Agency and Contractor shall not store explosives on CSXT property.

2. CSXT Representative will:

   a. Determine the approximate location of trains and advise Agency or Contractor of the approximate amount of time available for the blasting operation and clean-up.

   b. Have the authority to order discontinuance of blasting if, in his or her opinion, blasting is too hazardous or is not in accord with these Special Provisions.

IX. MAINTENANCE OF DITCHES ADJACENT TO CSXT TRACKS

Agency or Contractor shall maintain all ditches and drainage structures free of silt or other obstructions that may result from their operations. Agency or Contractor shall provide erosion control measures during construction and use methods that accord with applicable state standard specifications for road and bridge construction, including either (1) silt fence; (2) hay or straw barrier; (3) berm or temporary ditches; (4) sediment basin; (5) aggregate checks; and (6) channel lining. All such maintenance and repair of damages due to Agency's or Contractor's operations shall be performed at Agency's expense.

X. FLAGGING / INSPECTION SERVICE

A. CSXT has sole authority to determine the need for flagging required to protect its operations and property. In general, flagging protection will be required whenever Agency or Contractor or their equipment are, or are likely to be, working within fifty (50) feet of live track or other track clearances specified by CSXT, or over tracks.

B. Agency shall reimburse CSXT directly for all costs of flagging that is required on account of construction within CSXT property shown in the Plans, or that is covered by an approved plan revision, supplemental agreement or change order.

C. Agency or Contractor shall give a minimum of 10 days' advance notice to CSXT Representative for anticipated need for flagging service. No work shall be undertaken until the flag person(s) is/are at the job site. If it is necessary for CSXT to advertise a flagging job for bid, it may take up to 90-days to obtain this service, and CSXT shall not be liable for the cost of delays attributable to obtaining such service.

D. CSXT shall have the right to assign an individual to the site of the Project to perform inspection service whenever, in the opinion of CSXT Representative, such inspection may be necessary. Agency shall reimburse CSXT for the costs incurred by CSXT for such inspection service. Inspection service shall not relieve Agency or Contractor from liability for its Work.

E. CSXT shall render invoices for, and Agency shall pay for, the actual pay rate of the flagpersons and inspectors used, plus standard additives, whether that amount is above or below the rate provided in the Estimate. If the rate of pay that is to be used for inspector or flagging service is changed before the work is started or during the progress of the work, whether by law or agreement between CSXT and its employees, or if the tax rates on labor are changed, bills will be rendered by CSXT and paid by Agency using the new rates. Agency and Contractor shall perform their operations that require flagging protection or inspection service in such a manner and sequence that the cost of such will be as economical as possible.

XI. UTILITY FACILITIES ON CSXT PROPERTY

Agency shall arrange, upon approval from CSXT, to have any utility facilities on or over CSXT Property changed as may be necessary to provide clearances for the proposed trackage.

XII. CLEAN-UP

Agency or Contractor, upon completion of the Project, shall remove from CSXT's Property any temporary grade crossings, any temporary erosion control measures used to control drainage, all machinery, equipment, surplus materials, falsework, rubbish, or temporary buildings belonging to Agency or Contractor. Agency or Contractor, upon completion of the Project, shall leave CSXT Property in neat condition, satisfactory to CSXT Representative.

XIII. FAILURE TO COMPLY

If Agency or Contractor violate or fail to comply with any of the requirements of these Special Provisions, (a) CSXT may require Agency and/or Contractor to vacate CSXT Property; and (b) CSXT may withhold monies due Agency and/or Contractor; (c) CSXT may require Agency to withhold monies due Contractor; and (d) CSXT may cure such failure and the Agency shall reimburse CSXT for the cost of curing such failure.

APPENDIX B

MTA CONSTRUCTION REQUIREMENTS

I. Subject:

Standard Operating Procedure for Contractors Working on the Baltimore Central Light Rail Line (CLRL).

II. Purpose:

The purpose of this procedure is to ensure that all contractor personnel working on, fouling, or having the potential to foul the Central Light Rail Line's tracks, catenary, or right-of-way, are conversant with the MTA's Operating and Railroad Worker Protection (RWP) safety rules, policies, procedures, regarding **Work Block / Red Tags.**

III. Responsibilities:

A. It is the responsibility of any contractor working on, fouling, or having the potential to foul the CLRL to have the proper authorization to do so, in addition to adhering to all MTA's Operating and RWP safety rules, policies, and procedures.

B. It is the responsibility of any contractor working on, fouling, or having the potential to foul the CLRL to attend RWP training before working on or near the CLRL.

C. It is the responsibility of the Light Rail Work Block / Red Tag Coordinator to review and authorize or not authorize all Work Block / Red Tag request forms submitted by contractors working on the CLRL. It is also this individual's responsibility to advise contractors of approved Work Blocks / Red Tags, maintain, update, and disseminate the General Order.

D. It is the responsibility of all Light Rail management personnel to ensure that contractors working on the Central Light Rail Line are in compliance with this procedure.

IV. Definitions:

A. Fouling A Track
The placement of an individual or equipment in such proximity to a track that the individual or equipment could be struck by a moving train or on-track equipment. In any case within 7.5 feet from the outside edge of the rail (10 feet of the center line of track).

B. General Order
Order issued by authority of the Superintendent of Transportation, which contains changes in rules, speed restrictions and list any work block or red tag activities.

C. On Site Coordinator (OSC)

A trained and qualified employee that communicates with LRC, designates the working limits, the type of On-Track Safety to be used, the assigning and positioning of Flagmen or Watchmen. The OSC also conducts the job briefing before any railroad worker fouls a track.

D. On-Track Safety
A state of freedom from the danger of being struck by a moving train or other rail mounted equipment, provided by operating rules and RWP Safety rules that govern track occupancy by personnel, trains and on track equipment.

E. Red Tag
The written authorization designed to convey rights to de-energize catenary power or signal power between specified points and for a specified period of time.

F. Restricted Speed
Prepared to stop within half the range of vision, short of vehicle, obstruction, or switch improperly aligned, looking out for broken rail, but not exceeding twenty (20) miles per hour outside of interlocking limits, and (15) mile per hour within interlocking limits. Speed applies to entire movement.

G. Work Block
A segment of track that is being fouled, for maintenance or repair.

H. Work Block Authorization
The written authorization designed to convey rights to obstruct or use a designated section of track between specified points and for a specified period of time without the removal of catenary power or signal power.

I. Working Limits
A segment of track with definite boundaries established in accordance with the rules upon which trains and locomotives may move only as authorized by the railroad worker having control (OSC) over that defined segment of track. Working limits may be established through Exclusive Track Occupancy (ETO), Inaccessible Track (IT), Foul Time (FT) or Train Coordination (TC) as defined in the MTA Light Rail RWP Manual.

V. Procedure:

A. General

1. The **Light Rail Control Center** (LRC) monitors and controls the operation of the Entire CLRL. LRC is in direct communication, via radio, with all Light Rail Vehicle Operators. LRC is also in direct Communication, via radio or a working Cell Phone, with all On Site Coordinators. All parties working within the fouling space or working with the potential to foul the tracks do so under strict control of LRC and are to obey all orders generated by LRC.

   a. The Central Light Rail Line's hours of operation are:
      - Mainline: Monday – Saturday…3:59 am until 1:20 am
        Sunday - Sunday…9:39 am until 9:35 pm
      - Contractors requesting Work Block / Red Tags must submit all requests to the Light Rail Work Block / Red Tag Coordinator based on these hours.

b. There will be occasions when the hours of operations may be extended due to Special events, or weather conditions. In case of both normal and extended service, Work Block / Red Tags previously granted may be canceled or delayed at the sole discretion of Light Rail Operations.

c. Prior to any work on the MTA's Central Light Rail Line, Contractor personnel must complete and pass the MTA's Railroad Worker Protection Training Course. This course is provided at no cost to the contractor.

d. Any section of track removed from service for maintenance, modification, repair, Construction, or recovery activities will incorporate a Work Block to the nearest Fixed Signal or Chain Marker.

e. All Work Block / Red Tags will have one qualified individual designated as the On Site Coordinator (OSC). The OSC will have all the responsibilities as defined in the RWP Manual.

f. All train movement through Work Blocks will be done at Restricted Speed.

g. Possession of a valid Red Tad Tag for power outage does not in itself establish working limits or On-Track Safety. Movement of non-revenue vehicles should be expected. All activities will be monitored and controlled by LRC.

2. All requests to work on or foul the CLRL property, including main line tracks, right-of-ways, and the Catenary System must be submitted on a Work Block / Red Tag Request form (refer to form #1). Requests submitted less than one (1) week in advance are subject to rejection. The submittal of a request does not constitute its approval. Workblock coordinator office number is 410.454.7655.

3. All approved Work Block / Red Tags will be included in the General Order (refer to form #2), which is distributed to each department at the North Avenue facility and the Cromwell facility (Operations, Systems, Maintenance, Catenary, Maintenance of Way, and Rail Car Maintenance). Contractor notification is communicated by the Light Rail Work Block / Red Tag Coordinator.

4. Contractors requesting Red Tag Power Outages must be aware that a Red Tag Authorization form (LRTP-1) will be generated (refer to form #3). The LRTP-1 is a 3-page document (white, yellow, and pink). Once completed, the white copy is held in LRC, the yellow copy is held by the Maintenance Department, and pink copy is distributed as follows:

   a. Once the Red Tag has been fully implemented by MTA personnel, the yellow and pink copy will be delivered to the On Site Coordinator (OSC) at the location specified on the

LRTP-1 from (Deliver Red Tag to Location). It serves as a guarantee to the contractor that power has been removed from the effected area, and all safety devices, including ground straps and grade crossing cutouts have been installed, as required.

b. The On Site Coordinator (OSC) must sign the LRTP-1 on the "Accepted By" line and clearly print their work phone number and their home phone number.

c. The MTA personnel will then separate the yellow and pink copies and give the pink copy to the OSC. MTA personnel will maintain possession of the yellow copy and the OSC must maintain possession of the pink copy.

d. It is imperative that the OSC be on location for the entire duration of the work period.

e. The OSC is responsible for the timely return of the pink copy as specified on the LRTP-1 form (Red Tag Ending Date & Time).

f. On or near the scheduled termination time of the Red Tag, MTA Maintenance personnel will return to the work site and contact the OSC to retrieve the LRTP-1.

g. When the OSC returns the pink copy he/she must ensure that the work is complete and all personnel and equipment are not fouling the CLRL or the Catenary wire. This is a guarantee, upon its return to MTA personnel, that all contractor personnel and equipment have cleared the main line track areas.

h. It must be absolutely understood that Power restoration cannot be performed until the pink copy of the LRTP-1 is returned to MTA personnel.

i. It is further understood for operational purposes, MTA may require an early stoppage of work and the termination of the Red Tag.

j. If the work is completed earlier than anticipated, the OSC must contact LRC for further instructions.

5. In addition to the Work Block / Red Tag request form, contractors may be required to submit:

a. A Work Plan or Time Line (refer to form #4) for review by the MTA. This document should detail the length of time required, exact nature of the work, and any equipment to be used during the work.

b. A detailed set of drawings and / or plans showing the exact nature and location of any excavations, etc. Prior to the start of any excavation on the MTA's right-of-way, it must be determined by the contractor if any cable or other equipment is buried in the area, and to submit detailed plans as to their methods of excavation.

c. A detailed list of emergency contact telephone numbers for the appropriate contractor personnel.

d. A manpower and equipment request form, including a Test Procedure (refer to Form #5), for review and approval by the MTA.

B. Establishment of On-Track Safety:

1. Before any work begins, RWP track safety must be established. All RWP On-Track Safety must be established in accordance with the MTA Light Rail RWP Manual.
2. Prior to starting work under an approved Work Block request, the On Sight Coordinator must contact LRC and request permission to begin work.
   a. Obtain permission from Light Rail Control to begin work by performing the following:

      Call LRC via radio or cell phone (410 454-7590) and give your:

      1) Name and company name and the number of the employees working with you.
      2) That you are requesting permission to enter the mainline.
      3) The type of RWP On-Track Safety you will be using.
      4) Your working limits by chain marker or station.
      5) Description of the work you will be performing.
3. LRC will advise the contractor to stand-by until all trains operating in the effected area have been contacted and advised of the location and nature of the work.
4. On receipt and confirmation of the information by each operator, the contractor will be provided with the current time, reminded of the movement of trains in both directions, and instructed to notify LRC when their work is completed and all personnel in their work crew is clear of the main line track area.
5. The OSC must conduct a Job Briefing before anyone fouls the tracks.
6. Once On-Track Safety has been established, <u>the work crew must work only within the authorized limits of the On-Track Safety.</u>
7. Failure to do so will result in the immediate stoppage of work, and ejection from MTA's property.

C. High-Rail Equipment

1. If the contractor's work requires the use of High-Rail Equipment, MTA's maintenance Personnel must serve as the pilot. They will observe and supervise the mounting and dismounting of the High-Rail Equipment onto the main line tracks, and control required switch movement, while in direct communication with LRC.

VI. <u>Attachments and Forms:</u>

1. Work Block / Red Tag Request Form (form # 1)
2. General Order (form #2)
3. Red Tag Outage Form…LRTP-1 (form # 3)
4. Contractor's Work Plan / Time Line Form (form #4)

5. Request for MTA Manpower and Equipment Form (form #5)

VII. Distribution:

Light Rail Control, Light Rail Supervision, Office of Safety and Risk Management, Light Rail Transportation, Light Rail Operators, Office of Training & Development.

VIII. Revision History:

Example 1

WORKBLOCK/RED TAG REQUEST FORM

COMPANY:_____ **NAME:**_____

OFFICE PHONE:_____ **HOME PHONE:**_____

WORK SCHEDULED:_____

LOCATION OF WORK:_____

WILL WORK INVOLVE USE OF HI-RAIL VEHICLE: YES NO

STARTING WORK DATE:_____ **TIME:**_____

ENDING WORK DATE:_____ **TIME:**_____

Be aware that actual WORKBLOCK & RED TAG start and ending times may vary according to the revenue service schedule. Contact the Light Rail Control Supervisor on duty (410) 333-7643 for confirmation of WORKBLOCK & RED TAG scheduling times.

WORK CREW CONTACT PERSON:_____

RADIO CALL ID:_____ *(If previously assigned)*

PAGER:_____ **CELL PHONE:**_____

WORK CREW IS REQUIRED TO CONTACT LIGHTRAIL CONTROL TO REQUEST AUTHORITY TO ENTER MAINLINE. COMMUNICATION MUST ALSO BE MAINTAINED THROUGHOUT THE WORKBLOCK DURATION, AND UPON COMPLETION OF ALL WORK, THE WORKPARTY MUST REPORT CLEAR OF MAINLINE TRACK AREA. CONTACT LIGHTRAIL CONTROL TO SIGN-OUT RADIOS AND CALL IDENTIFICATION.

RED TAG REQUIRED: YES NO

MTA should deliver RED TAG to work crew at:_____
(specify location: Chain marker or station, etc)

GROUNDING STRAPS: Contractor to provide _____

MTA requested to provide _____

SPECIAL NOTES: *(grade crossing cut-outs, escorts, test trains, etc.)*

Example 2

CLRL GENERAL ORDER

Date: 7/16/2007 No. 06-150

This General Order is in effect from 11:59pm Monday 7/16 until 11:59pm Friday 7/20

1. General Items:

RAIL DUTY OFFICER: Mon. 7/16 thru Fri. 7/20 S.Levy 410-331-8096 Safety 7/16/07 to 7/29/07
D.Rafferty pgr. 410-476-9970 Bus Duty Mon. 7/16 thru Fri. 7/20 C.Neal pgr. 410-909-6343

2. Special Items:

a) Timonium Fairground Fri. 7/20 Lacrosse Tourament

b) Baltimore Convention Center Wed. 7/18 Thur. 7/19 Fri. 7/20 Otakon 2007

c) Meyerhoff Symphony Hall Fri. 7/20 Concert 7:35pm

d) 1st Mariner Arena : No Events Mon. 7/16 thru Fri. 7/20

e) M&T Bank Stadium No Events Mon. 7/16 thru Fri. 7/20

f) Camden Yards No Event's Mon. 7/16 thru Fri. 7/20

g)

Speed Restrictions Until Further Notice *All Speed Restrictions Apply To Entire Train*

LIMITS	MAX. SPEED TRACK0	MAX. SPEEDTRACK1	MAX. SPEED TRACK2
N/B ML#1 - CM 90+75S to CM 81+97S Signs Posted	—	5 MPH	—
ML#1&2 - Mt. Royal to North Avenue/Track Condition	—	10MPH	10MPH
—	—	—	—
—	—	—	—
—	—	—	—

Paul C. Krout

Paul Krout, Red Tag/Work Block Coordinator

Example 3

MTA CLRL TRACTION & SIGNAL POWER
EQUIPMENT RED TAG REQUEST AUTHORIZATION
LR-TP1

Date/Time Received:_____ Request Number: _____

Requester/Company:_____ Office# _____ Home#:_____

Red Tag Start-Date:_____ Time:_____ Red Tag Ending-Date:_____ Time:_____

Type of Power Affected: (check) ☐ Catenary Power ☐ 5KV Signals *Power* ☐ Both

Grade Crossings CUT-OUT: (check) NO ☐ YES ☐ *if YES, refer to* CUT-OUT *Authorization*_____

Area Affected: _____

Work Scheduled: _____

Work Block Supervisor:_____ Cell Number or Radio ID:_____

MTA to Install Ground Straps (check) YES ☐ NO ☐ Deliver Red Tag to Location:_____

SUB	BREAKER	RED TAG #	PWR off By/Time	PWR on By/Time	DEVICE	TO BE OPEN OR CLOSED	RED TAG #	Open or Closed By/Time	Open or Closed By/Time

Reviewed and Approved: _____ **Date:** _____ **Time:** _____

RED TAG ACCEPTANCE

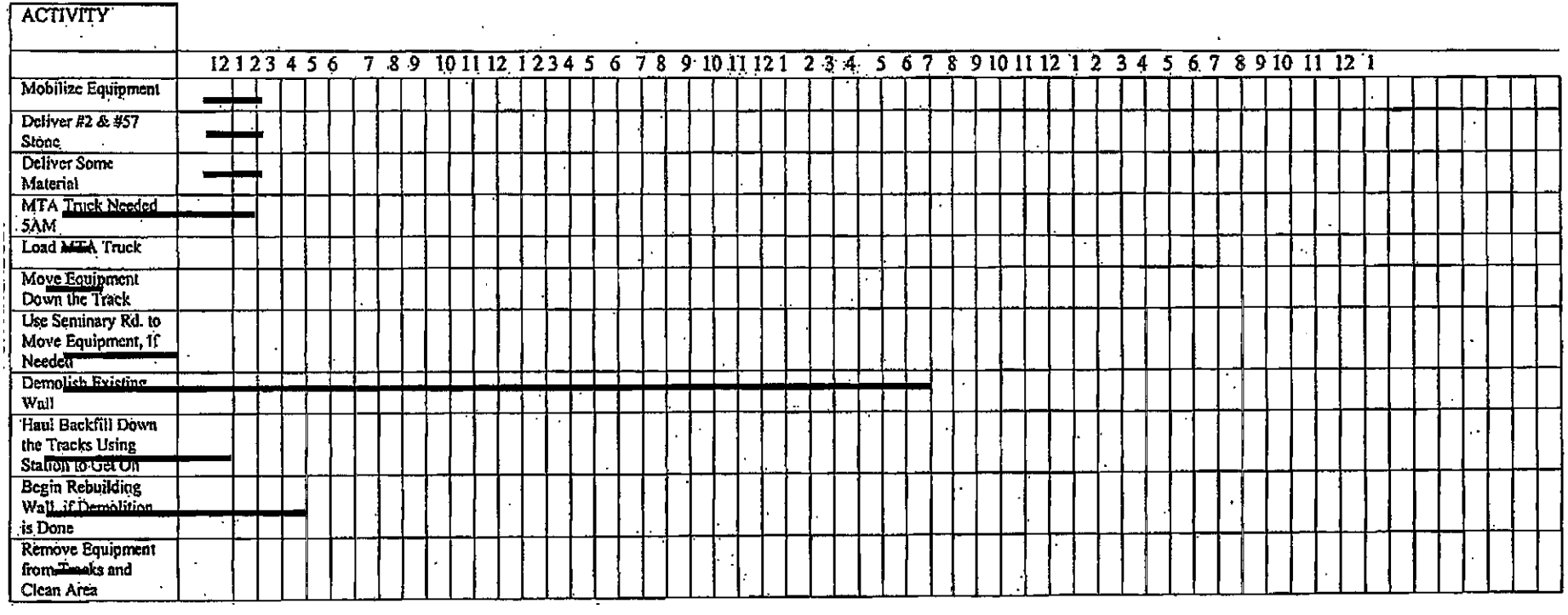
Possession of this red tag is affirmation that the above listed equipment is locked out. Access to ONLY the area affected above is granted. This form must be returned prior to the end of the work period. Before returning, the holder agrees to verify the affected area s clear of personnel and/or foreign objects. Acceptance of this form constitutes an agreement to the form's conditions

Accepted by:_____ **Work Phone:**_____ **Home Phone:** _____

Ground Straps: Installer & Locations:_____ Removed By:_____

EXAMPLE # 4

MTA LIGHT RAIL RETAINING WALL



A schedule for the weekend of 2/26-2/29 will be sent next week.

Example 5
Request Process for MTA Manpower and Equipment to Support Contractor Testing

1. Contractor submits request two weeks in advance to MTA Operations Coordinator with the following items: Note all requests for that test week should be submitted at that time

   - Test procedures and plans
   - Restrictions (if applicable)
   - Analysis of inspection (of proposed work area)
   - MTA Manpower requirements such as

     i. Maintenance
     ii. Operations
     iii. Police
     iv. Engineering
     v. Other departments

   - Time Duration and Dates
   - MTA Equipment required (number/type/configuration)
   - Confirmation of Safety requirements for testing purposes
   - Notification to Local Municipalities and/or Agencies (if required)
   - Communications Requirements

2. Request is reviewed by the MTA. The following department's supervisors are notified by MTA Operations Coordinator of the impending request to determine if it can be supported:

   i. Maintenance
   i. Operations
   ii. Safely
   iii. Engineering
   iv. Police
   v. Any other MTA Departments if required
   vi. Traction and OCS Resident Engineer
   vii. Signal Resident Engineer
   viii. Construction Manager

3. Request is forwarded to Safety Review Board to ensure:
   - Compliance to the MTA Certification Program
   - Other applicable safety Issues

4. Request is approved/disapproved

5. Signed documentation is forwarded to MTA Operations Coordinator for distribution.

6. MTA Operations Coordinator will notify all departments that the request has been approved and will schedule a coordination meeting prior to the test to discuss specific test elements.

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 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.

CATEGORY 100
PRELIMINARY

104 – MAINTENANCE OF TRAFFIC

104.00 GENERAL.

INSERT: The following:

This project is for the removal of low-level lighting and installation/replacement of high-mast roadway lighting at various locations within the vicinity of the I-95/I-395 interchange (City of Baltimore) and the I-95/I-895 interchange (Howard County). Maintenance of Traffic (MOT) tables and notes developed for this work identify temporary lane, shoulder and partial ramp closures to accommodate the inspection of lighting structure foundations, rehabilitation of foundations and set-up and mobilization for lighting-related work including performing electrical connections. MOT tables and notes also detail primary and secondary intermittent roadway closures that consider lighting structure "fall zones" and are to be implemented during removal and installation of lighting structures and all incidental work within the fall zones. Custom traffic protection measures should be used where required for lighting replacement for the designated fall zones.

The schedules shown in the Traffic Control Plan (TCP) provide guidance for when the work will be permitted; however, any number of events may cause schedule changes. The contractor will have no claims for delays in gaining access to the work areas and must request permits for access wherever lane, shoulder or partial ramp closures or temporary roadway closures are required. The contractor will not be assessed damages or liquidated damages for any delays caused by denied or cancelled permits.

At sites requiring lane, shoulder, or partial ramp closure or temporary roadway closure, the Contractor shall coordinate with MdTA and apply for permits from MdTA, State Highway Administration (SHA), City of Baltimore, Maryland Transit Administration (MTA) or CSX Transportation, Inc. (CSXT) as applicable, and shall provide temporary MOT and work area protection in accordance with the respective MOT standards noted on the plan set as a minimum. MOT for lighting installations that deviate from standard applications are located in the plan details and shall be applied by the Contractor as noted therein. The furnishing and correct implementation of arrow panels and truck-mounted attenuator meeting MdTA requirements shall be included for all work areas.

Immediately following bid award (within 10 business days), the Contractor shall contact the appropriate MdTA, SHA, Maryland Transit Administration (MTA), City of Baltimore and CSXT personnel (see table below) to arrange pre-construction meetings and coordinate work to be performed under this contract with existing construction projects.

AGENCY CONTACTS

Pre-construction and Existing Contract Coordination

CONTACT	TITLE	PHONE NUMBER
David L. Roehmer	Tunnel Administrator (FMT & BHT), MdTA	(410) 537-1200
Jeff Robson	Maintenance Supervisor	(410) 537-1274
William Mentzer	Construction, MdTA	(410) 537-7802
David Dabkowski	Project Design Engineer, MdTA	(410) 537-7851
David Dikes	Chief of Electronics, MdTA	(410) 537-1096
Roxane Y. Mukai	Traffic Manager, MdTA	(410) 537-7848
George Hill	MTA (Light Rail)	(410) 767-3768
Carl A. Roe	Principal Engineer Public Projects, CSX	(904) 359-1036
Alfred H. Foxx	Director, City of Baltimore (Dept of Transportation)	(410)396-6802
Paul Kraught	MTA (Light Rail) Red Tag Coordination Division	(410)454-7655
Jim Benton	MTA Railroad Protection Training	(410)454-7665

CATEGORY 100
PRELIMINARY

104 – MAINTENANCE OF TRAFFIC

104.02 MAINTENANCE OF TRAFFIC (MOT)

104.02.01 DESCRIPTION.

INSERT: The following:

Work Restrictions. On Monday of each week, the Contractor shall provide the Engineer with a complete list of anticipated lane, shoulder and partial-ramp closures for the following two weeks, allowing the Authority a minimum of 14 calendar days or 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/partial-ramp 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/partial-ramp closure or other Permits from all affected agencies that require permits for work on their right of way, including SHA and 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. When work is necessary above railroad tracks, coordination with CSX and/or MTA is required to ensure that no work is performed above tracks during the scheduled passage of a train. Sufficient time shall be allowed for review and approval of the permit application.

TEMPORARY LANE, SHOULDER OR PARTIAL-RAMP CLOSURE SCHEDULE			
ROADWAY	**# LANE(S) / SHOULDER CAN BE CLOSED**	**DAY OF THE WEEK**	**CLOSURE PERIOD (TIME OF DAY)**
I-95, I-395, I-895 Also including but not limited to Martin Luther King Blvd, Russell Street, Conway Street, McComas Street and any other local roadway that might need traffic control measures.	1 – Shoulder	Monday – Thursday	9:00 AM – 3:00 PM
	1 – Shoulder	Friday	9:00 AM – 12:00 NOON
	1 – Lane	Monday – Thursday	10:00 AM – 2:00 PM
	1 – Lane	Friday	10:00 AM – 12:00 NOON
	Partial-ramp	Monday – Thursday	10:00 AM – 2:00 PM
	Partial-ramp	Friday	10:00 AM – 12:00 NOON
I-95 in Howard County	1 – Lane	Monday – Thursday	12:01 AM – 5:00 AM 10:00 AM – 2:00 PM 7:00 PM – 12:00 AM
	1 – Lane	Friday	No Daytime Closures 8:00 PM to 12:00 AM
	1 – Shoulder	Monday – Thursday	12:01 AM – 5:00 AM 10:00 AM – 2:00 PM 7:00 PM – 12:00 AM
	1 – Shoulder	Friday	No Daytime Closures 8:00 PM to 12:00 AM

Note: *Where temporary roadway closures are required on, or impacting I-95, they shall be initiated only during times of minimal traffic volume, between the hours of 12:00 AM and 5:00 AM for a maximum duration of fifteen (15) minutes.*

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 (third Monday in January)
- ☒ President's Day (third Monday in February)
- ☒ Good Friday
- ☒ Easter Weekend
- ☒ Memorial Day (last Monday in May)
- ☒ Independence Day (July 4)
- ☒ Labor Day (first Monday in September)
- ☐ Columbus Day (second Monday in October)
- ☐ Veteran's Day (November 11)
- ☒ Thanksgiving Day (fourth Thursday in November)
- ☒ Christmas Day (December 25)

If a holiday falls during a weekend or on the day preceding and/or following a weekend, no work will be allowed on that weekend or on the day preceding or following that weekend.

No lane or shoulder closures are permitted 2 hours before, during or 2 hours after major traffic generating events in downtown Baltimore or during stadium events.

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, shoulder and partial-ramp 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, shoulder or ramp 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.

ADD: The following after the last paragraph, "Any monetary savings...and the Administration."

The Contractor must provide a means of communication to the MdTA Police detachment during roadway closures as a safety requirement. Acceptable forms of communication shall consist of a

mobile telephone, citizens band or portable two-way radio.

When closing or opening a lane on freeways, expressways, and roadways with posted speed ≥ 45 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, shoulder or partial-ramp 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.

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/partial-ramp closure may be placed on the shoulder of the roadway by workers no earlier than 15 minutes prior to actual time lane/shoulder/partial-ramp 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/partial-ramp closure or restriction is permitted.

All temporary lane, shoulder or partial-ramp 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 the *Standard Specifications for Construction and Materials*, Section TC-4.02.

ELAPSED TIME (MINUTES)	DEDUCTION
1 – 5	$ 75.00
Over 5	$ 75.00 per minute (in addition to the original 5 minutes)

104.02.04 MEASUREMENT AND PAYMENT.

INSERT: The following:

Maintenance of Traffic will not be measured but will be paid for at the Contract lump sum price. The payment will be full compensation for all labor (including Traffic Manager), material and equipment (for which a bid item has not been established), and any incidentals necessary to complete the work. Protection vehicles which include a TMA and arrow panel, portable variable message signs (PVMS) as well as Lane Closures (including all associated material and equipment) are not incidental to the lump sum MOT price and shall be measured and paid for as separate bid items in accordance to the *Standard Specifications* and *Book of Standards*.

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.

CATEGORY 100
PRELIMINARY

150 - BRIDGE LIGHTING STRUCTURE FOUNDATION REPAIRS

150.01 DESCRIPTION. This work consist of repairing existing deteriorated bridge lighting structure foundations at locations specified in the Contract Documents or as directed by the Engineer.

150.01.01 Quality Control.

150.01.01.01 Installer Qualifications: Post-installed anchors shall be installed by an installer with a minimum of five years experience performing similar installations.

150.01.01.02 Installer Training: Conduct thorough training with the manufacturer or the manufacturer's representative for the installer on the Project. Training shall consist of a review of the complete installation process for drilled-in anchors including, but not limited to, the following:

A. Hole drilling procedure
B. Hole preparation and cleaning technique
C. Anchor element type, material, diameter, and length
D. Proof loading/torquing

150.01.01.03 Certifications: Unless otherwise directed by the Engineer, anchors shall have one of the following certifications:

A. ACI 355.2 Evaluation Report
B. ASTM Certification
C. ICC-ES Evaluation Report indicating conformance with applicable ICCES AC193

150.01.01.04 Acceptance Criteria: A post-installed anchor is acceptable if the test load specified herein is attained without:

A. Slippage of more than 2.5-percent of the embedded length, rounded to the nearest 1/16-inch for mechanical anchors
B. Bolt failure
C. A sign of damage in the surrounding concrete

150.02 MATERIALS.

Curing Materials	902.07.03

Concrete Mix No. 6	902.10.03
Reinforcement Steel	908.01
Anchor Bolts	909.08
Conduit	921.07
Galvanizing for Hardware	A 153

150.03 CONSTRUCTION. Construction shall conform to 405.03, 406.03 and 420.03, except as modified herein.

150.03.01 Inspection. The Contractor shall perform an inspection of the foundation structure for each existing light pole identified for replacement in the Contract Documents or as directed by the Engineer. The Contractor shall provide an inspection report including photographs and repair recommendations for each foundation that requires refurbishing to be submitted to the MdTA for approval.

150.03.02 Refurbish Pole Base. Upon approval from the MdTA for a recommendation to refurbish an existing pole base, the Contractor shall replace anchor bolts and repair concrete.

150.03.02.01 The Contractor shall replace, at a minimum, the top 4" layer of concrete of the existing pole base, and all anchor bolts. The bolt circle shall match the bolt circle of the pole to be provided. Removal of existing anchors for replacement may be performed by using a bolt extractor as manufactured by Drillco Devices, Ltd., or approved equal.

150.03.02.02 Top of foundation shall be sloped to drain and shall have a broomed finish. Exposed edges of concrete shall be chamfered ¾" by ¾" minimum.

150.03.03 Concrete. Refer to 420. Concrete shall be mix no. 6 in accordance with 902.10.03.

150.03.04 Anchor Bolts. Anchor bolts shall be installed in accordance with ACI 318 Appendix D. Anchor bolts shall be fastened with cementitious grout. The cementitious grout shall meet or exceed the strength of existing surrounding concrete. The anchor bolt shall be placed in a corrugated sleeve or an internally-roughened hole that fully develops tensile strength of anchor.

The type of drill and bit for drilling the hole, the hole condition, and the spacing of the anchor bolts shall conform to the recommendations of the anchor bolt manufacturer.

150.03.04.01 Installer Training: Implement a training and/or qualification program for installers of post-installed anchors. Anchor installers shall be trained and made fully familiar with the manufacturer's installation procedures including additional requirements as specified or as directed.

150.03.04.02 Examination/Site Verification of Conditions:

A. The use of anchors shall be restricted to the applications and installations as indicated on the Contract Drawings.

B. Post-installed anchors may only be installed in sound concrete. Surfaces showing obvious distress by way of porosity, disintegration, carbonation, and cracks over 0.02-inch in width and 12-inches or longer and within the distance of the embedment length shall be reported to the Engineer for evaluation.

150.03.04.03 Preparation:

A. Existing reinforcement shall be exposed to establish the reinforcement pattern before drilling.

B. No cutting of reinforcement will be permitted without prior written approval from the Engineer. Multi-cutting of the same bar is considered as one cut.

C. Reinforcement will be considered to be cut if:

1. For No. 4 through No. 7: Cuts, nicks, or drill into bar body are greater than 1/16-inch
2. For No. 8 and Larger: Cuts, nicks, or drill into bar body are greater than 1/8-inch

D. When installing anchors through cut reinforcement, the anchoring mechanism shall be located at least two anchor diameters beyond the cut reinforcement.

150.03.04.04 Cast-In-Place Anchors: Use templates to locate bolts accurately and securely in formwork.

150.03.04.05 Post-installed anchors shall be installed in accordance with the ICC-ES reports and manufacturer's installation instructions. Where installation criteria differ, the order of precedence from highest to lowest is 1) this Specification; 2) the ICC-ES reports; 3) the manufacturer's installation instructions.

150.03.04.06 Holes for post-installed anchors shall be drilled with carbide-tipped bits using rotary hammer drills meeting the requirements of ANSI B212.15 unless ICC-ES AC193 or ICC-ES AC308 testing demonstrates that using percussive drilling or another type(s) of bit, including core drills, is acceptable. Drilled holes shall be cleaned of chips, dust, loose material, and water prior to anchor installation. The hole diameters and depths shall be as recommended in the manufacturer's instructions. The hole diameter shall be checked every ten holes for conformance to the hole tolerances specified in ICC-ES AC308 for adhesive anchors, ICC-ES AC193 or ACI 335.2 for mechanical anchors. Verify depth of the concrete member before drilling holes. The embedment depth of the post-installed anchor shall not exceed the greater of 2/3 of the concrete member thickness or the concrete member thickness minus 4-inches. Contact the Engineer if these requirements cannot be met based on the actual member thickness.E. Anchors shall be installed perpendicular to the concrete surface within a plus or minus 5-degree tolerance. Post-installation

verification of this criterion may be satisfied by visual inspection to verify proper seating of the nut and washer.

150.03.04.07 In areas where concrete has been removed, the minimum anchor embedment shall be measured from the surface of sound concrete.

150.03.04.08 Bending and welding of post-installed anchors is not permitted.

150.03.04.09 The nut thread engagement for the anchors (studs) shall be such that the bolt threads project past the outside face of the nut when completely installed.

150.03.04.10 The length identification code on the head of the anchor shall not be damaged during installation. Anchor projection may be cut-off subject to the approval of the Engineer and documentation of the location, embedment, and length code.

150.03.04.11 Care shall be exercised to avoid bending anchors to match base plate holes, or loosening of anchors by prying sideways after tightening. Care shall also be exercised to ensure that the cone nut of an undercut anchors does not become loose from the stud during the setting or tensioning operation.

150.03.04.12 Non-grouted base plates may have a maximum 1/8-inch gap as evidenced under exterior edges around the plate provided that 1) the plate exhibits bearing contact within its interior against the concrete surface; and 2) the uneven bearing does not prevent application of the prescribed torque. If an unacceptable bearing contact condition exists, one of the following procedures shall apply:

A. The concrete surface shall be reworked to obtain a proper fit.

B. For gaps of up to 1-inch, the base plate may be grouted instead using the following technique:

1. Insert post-installed anchors and set the base plate.
2. Insert nuts to finger-tight condition.
3. Install shims positioned no more than 1/2-inch away from the anchors to reduce gaps between base plate shims to 1/8-inch or less at anchor locations.
4. Apply tightening torque. The bolt tightening shall not be performed when interior shims under the base plates have been placed away from anchors so that downward bending of the base plate would result upon tightening. Shims shall be moved as close as possible to the anchors before applying the installation torque.
5. Fill the gap with non-shrink grout leaving the shims in place. For base plates on walls where grouting is not feasible, the gap may be filled with shim plates. The shims may be stacked but no more than four shims shall be stacked.

150.03.04.12 Relocating Holes within Base Plates: The base plate with bolts may be relocated no more than 1-inch in any direction with respect to the attachment principal axis.

150.03.04.13 All anchors shall be visually inspected in order to verify and document that they have been installed as specified herein. As a minimum, inspection attributes for post-installed anchors shall comply with the special inspection section of the applicable ICC-ES report (with the exception of validating the strength of existing concrete) plus additional attributes imposed by this Specification. These attributes of inspection shall be identified in the inspection report documentation.

150.03.04.14 If visual inspection reveals that the installed anchor does not meet the specified requirements, the anchor shall be relocated as permitted by this Specification, or shall be removed and replaced by another anchor, or referred to the Engineer for evaluation.

150.03.04.15 Testing of post-installed anchors shall be witnessed by the Inspector. Test of post-installed anchors is mandatory.

150.03.04.16 Testing Method: Post-installed anchors shall be tested by the direct tension method as follows:

A. Direct Tension Method: A tensile load as defined herein below is applied. If the tension load is applied by jacking against the concrete, the jacking pressure is to be distributed outside of an area having its center at the postinstalled anchor and its diameter, or least dimension, equal to the required anchor spacing as given in the ICC ES report. Post-installed anchors tested by this method shall be retightened by applying the installation torques.

B. Testing shall be in accordance with ACI 355.2 and ASTM E488.

150.03.04.17 Test (Proof) Load: Tension test (proof) load shall be as indicated on the approved shop drawings. For post-installed mechanical anchors, the test load shall be a tensile load equal to 80-percent of the specified nominal yield strength of the anchor bolt material times the tensile area of the bolt.

150.03.04.18 Test Frequency: All anchors shall be tension-tested.

150.03.04.19 Remove and replace misplaced or malfunctioning anchors. Fill empty anchor holes and patch failed anchor locations with high-strength non-shrink, nonmetallic grout. Anchors that fail to meet proof load or installation torque requirements shall be regarded as malfunctioning.

150.03.04.20 Abandoned holes shall be grouted with non-shrink grout. When post-installed anchors fail to meet the acceptance criteria under inspection and testing, the following repairs may be undertaken:

A. When failure is due to excessive anchorage pullout, contact the Engineer to evaluate the damage and approve a repair method. If approved, the anchor may be reset once prior to redrilling the hole and installing an anchor of equal size. Use the minimum spacing embedment depth, and installation torque required for the original anchor.

B. When failure is due to breaking of the anchor, slippage or loosening, bending, improper installation or poor attachment, remove the defective anchor, redrill the hole, and install the same diameter anchor if the integrity of surrounding concrete has not been disturbed.

C. For cases where excessive slippage upon torquing is experienced, or usage of the same hole is not possible, fill the existing hole with non-shrink grout and relocate the anchor location.

D. When failure is due to breakout of concrete around the anchor, the Engineer will develop an appropriate repair. Contact the Engineer to evaluate the damage and repair method. Local spalling of the concrete around the anchor, up to a maximum depth of 1/4-inch, is not considered a concrete breakout failure.

E. Mislocated anchors may be cut flush with concrete surface, and need not be removed if they do not interfere with subsequent installations.

F. Removal of installed anchors for inspection or replacement may be performed by using a bolt extractor as manufactured by Drillco Devices, Ltd., or approved equal.

G. Retest all replaced anchors as specified herein.

150.04 MEASUREMENT AND PAYMENT. Bridge Lighting Structure Foundation Repairs will be measured and paid for at the Contract unit price per each. The payment will be full compensation for inspection services, forms and form removal, reinforcement steel, curing and misting, grooving, electrical work, and all material, labor, equipment (including safety equipment), testing, tools and incidentals necessary to complete the work.

DESCRIPTION OF ITEM	UNIT
POLE BASE EVALUATION REPORT	EACH
REFURBISH POLE BASE	EACH

CATEGORY 300
DRAINAGE

308 – SEDIMENT AND EROSION CONTROL

DELETE: 308.01.03 Quality Assurance Ratings in its entirety.

INSERT: The following.

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

SCORE RATING

SCORE	RATING
≥ 90	A
80 – 89.9	B
70 – 79.9	C
60 – 69.9	D
<60	E

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 reinspected 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.

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,

(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 require 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.

CATEGORY 800
TRAFFIC

805 – ELECTRICAL CONDUIT AND FITTINGS

627 **ADD:** The following sections:

805.03.11 Pull Cord. Pull cord shall be placed in all conduit runs (whether occupied or spare) for future use.

805.03.12 Conduit Type. All outdoor trenched conduits, unless otherwise noted, shall be PVC. All bored conduits under pavement structures shall be HDPE. All above ground or exposed conduits shall be rigid galvanized steel. All transitions to RGS are to be a minimum of 18" below finished grade.

805.03.13 Conduit Ends. The Contractor shall seal all conduit ends with an approved compression fitting.

CATEGORY 800
TRAFFIC

808 - LIGHTING STRUCTURES

634 **808.02 MATERIALS**

ADD:
Highmast Lighting Structures 963

808.03 CONSTRUCTION

ADD:
Painting of galvanized steel materials shall be as specified in the Steel Painting Council (SSPC) Painting System Specification No. 2.05. Highmast poles used as replacement poles in systems consisting of weathering steel poles shall be painted brown.

The area around the foundation of a highmast pole shall be cleared of debris to facilitate the raising and lowering of the luminaire ring. All branches and vegetation that might interfere with the raising and lowering of the luminaire ring shall be removed.

Remove portions of existing highmast pole, including baseplate, as required to facilitate erection of the new/replacement pole.

Perform work so as not to damage existing wiring, foundation, or anchor bolts.

Remove portions of grout as required around leveling nuts to facilitate leveling of the new pole. Leave space open, ie: do not re-grout, so that air may circulate and water may exit the pole base.

Anchor Bolts. Construction of cast-in-place anchor bolts shall comply with requirements of Section 150.03.04.

808.04 MEASUREMENT AND PAYMENT

ADD:
808.04.05 Highmast lighting structures will be measured and paid for at the Contract unit price for each highmast lighting structure complete and in place and fully operational by height of highmast lighting structure. The payment shall be full compensation for all material, including but not limited to, anchor bolts, luminaries, winch assembly, cables, wiring, terminal board, junction box, electrical connectors, circuit breaker, lamps, pulleys, structural steel, welding, inspection, testing, certification, engineering,

calculations; labor including but not limited to assembly, erection, electrical connection, and testing; tools; equipment; and incidentals necessary to complete the work. This item does not include the highmast foundation.

808.04.06 Electric winch assembly furnished and tested and found acceptable for high mast poles shall be included per each high mast pole.

808.04.07 Painting of poles, where required, shall be paid per each high mast pole.

CATEGORY 800
TRAFFIC

809 – TRENCHING AND BACKFILLING

634 **809.03 CONSTRUCTION**

CHANGE: Text which reads: '...reads "CAUTION: ELECTRICAL LINE BURIED BELOW," repeated every 36 in.'
TO: '...reads "BURIED ELECTRICAL LINE," or other approved message, repeated every 36 inches and buried to a depth of at least 6" and not more than 12" below finished grade. The tape shall be terminated above grade and shall be secured to the same conduit or cable it is identifying. Securing shall be by sunlight resistant cable tie or other approved means. If terminating at a handhole or manhole the detector tape shall be brought 6" above grade along side the handhole or manhole.'

ADD: the following paragraphs before the "Cable Treatment" paragraph:

"Miss Utility". Where trenching and backfilling for the placement of conduits, splice boxes, handholes and handboxes is required, the contractor must contact "Miss Utility". "Miss Utility" shall be notified 48 hours in advance of any work under the contract and test pit all marked locations for exact position of cables, conduits, and other underground utilities.

Depth. Unless otherwise specified on the contract drawings, trenches shall be excavated to a depth such that all conduits, wires, and duct cable in trench is at a finished elevation at least 24" below the final grade. Where trenches are placed on slopes, cover shall be measured from the outside jacket of the duct cable or conduit to the nearest top of grade. This measurement will generally be perpendicular to the slope of the grade.

Where proper trench depth cannot be obtained, and improper depth presents a hazard to the cables, or conduit, the Engineer may direct that lengths of 4" galvanized rigid steel conduit be installed as a sleeve. The sleeve length shall be in intervals of 10'. The contractor must bend conduit to conform to the line and grade of the trench. Additionally, the Engineer may require concrete cover in shallow trench, on slopes, or where other conditions indicate the need.

Width. Unless otherwise specified on the contract drawings, trenches shall be excavated to a width such that all conduits, wires, and duct cables in the trench are placed with at least 3" of backfilled material between the outside edge of the conduits, wires, and duct cables and undisturbed earth.

Stake Out. Stake out trenches prior to trenching and review the exact placement with the

Engineer. Generally, keep trenches at least 3' behind guardrail and curb, and out of drainage ditches, gutters, culverts etc.. Run trenches in as straight a line as possible and parallel to the nearest roadway.

Guardrail. Where guardrail is to be placed, reset, removed, or otherwise worked in any manner, that tends to disturb the earth, place conduits and wiring only after such work is complete so as to avoid damage to the electrical work by the guardrail work.

Curb and Gutter. Where curb or gutter work is to be done in close proximity to electrical work, perform the work in the order and fashion necessary to minimize the risk of damaging either of the two types of works.

Unsuitable Materials in Trench. Remove any objects or projections into a trench, which may damage the wire or cable duct. These may include rocks, debris, glass, old cables, concrete, etc.. Alternatively, provide a galvanized rigid steel sleeve with grommets where projections into the trench cannot be removed.

809.04 MEASUREMENT AND PAYMENT

DELETE: Text in its entirety.

INSERT: The following.

Trenching and backfilling will not be measured but the cost will be incidental to the Contract unit price for the installation of the pertinent conduit, detector tape, wire, or duct cable.

Trenching and backfilling shall include construction stake out and coordinations, all excavation, backfill, trench marking tape, tamping, seeding, mulching, testing as specified in the Special Provisions and Specifications, etc. as required.

820 GENERAL ELECTRICAL WORK AND TESTING

See Section 820 of the SHA's *Standard Specifications for Construction and Materials* in conjunction with the changes shown in this Section.

820.01 DESCRIPTION

ADD: The following.

(a) This work includes contacting, coordinating and cooperating with BG&E (or other local utility company) for the changes and additions to the electrical service.

(b) The Plans show only diagrammatic locations of cables, conduits, and other underground utilities. They are approximate and do not show every detail. The Contractor shall provide working drawings, shop drawings, and catalog cuts, etc., which show final details of the installation.

820.01.01 Codes, Standards, Inspection, and Documentation

(a) All work shall be performed in accordance with the codes and standards listed below. In addition, materials and construction methods shall meet the minimum requirements and recommendations of the listed codes, standards, and organizations. Unless otherwise stated, the latest edition, revision, or supplement, as of the date of advertisement, of the specified codes shall be used.

- ANSI - American National Standards Institute
- ASTM - American Society for Testing and Materials
- IEEE - Institute of Electrical and Electronic Engineers
- NEC - National Electrical Code (NFPA70)
- NECA - National Electrical Contractors Association (NECA 1-2006)
- NEMA - National Electrical Manufacturers Association
- NESC - National Electrical Safety Code
- NFPA - National Fire Protection Association
- UL - Underwriters' Laboratories
- TIA - Telecommunications Industry Association

(b) All materials supplied by the contractor shall be new and UL listed, where such listing is possible. Submit catalog cuts for all materials in accordance with Shop Plans & Working Drawings in SPECIAL PROVISIONS (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.

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

820.03 CONSTRUCTION

820.03.01 GENERAL

ADD: The following.

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

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

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

ADD: The following just prior to paragraph 820.04.

820.03.04 Testing Fiber Optic Cables

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

(a) All cables shall have ST connectors installed prior to testing. All testing, for purposes of acceptance of the system, shall be conducted on fully installed and assembled fiber optic cables.

(b) Upon completion of testing, replace or repair any failed cable(s) with a new fiber or cable, and test the new cable to demonstrate acceptability.

(c) Insertion loss testing shall be performed.

(d) These tests shall be measured in dB.

(e) These tests shall use 850 nm and 1300 nm light sources for multimode fiber and 1300 and 1550 nm for single mode fiber.

(f) Test shall be documented for all wavelengths as noted above.

(g) Test results shall be documented on paper and stored on a computer diskette and shall be turned over to the electrical inspector after testing is complete. Attachment 820-A to this Section shows a sample fiber optic test report.

(h) An optical time domain reflectometer (OTDR) approved by the Engineer shall be used to conduct testing. The OTDR shall be calibrated to sheath (jacket) length, not optical length, by adjusting the unit's index of refraction. Properly trained technicians shall conduct tests.

(i) All OTDR traces shall maximize both the vertical and horizontal scales to the greatest extent possible and still fit the entire trace on the screen.

(j) A cable segment shall be deemed a failure if the total loss exceeds the calculated loss for that length of cable as indicated in Attachment 820-A. A cable segment shall fail if any individual splice loss is greater than 0.3dB, or if any mated connector pair loss is greater than 1.0dB, or if there is any point loss (over less than 1' of cable) of more than 1.0dB.

(k) After the circuit test, a functional test shall be performed. This test shall consist of allowing the system to operate as normal for 30 consecutive days. Any failures shall be repaired by the Contractor at his own expense, and the test restarted.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

820.03.19 Construction Stakeout and Coordination

(a) The Contractor shall coordinate this work with the work of other trades to avoid conflicts. Electrical cables and equipment damaged by the execution of work of other trades shall be completely removed and replaced with new.

(b) The Contractor shall keep an up-to-date set of as-built red lined drawings on the job site. Submit as-built drawings upon completion of the work. The Contractor shall note the exact location of trenches at 100-foot intervals on the as-built drawings by station, and offset from the roadway. The Contractor shall show only the work that is part of the final project on as-built drawings.

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

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

ATTACHMENT 820-A

SAMPLE FIBER OPTIC CABLE TEST REPORT

(To be filled out after installation is complete)

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

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

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

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

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

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

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

Splice Loss (SL) = 0.3 db each

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

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

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:** _____

CATEGORY 800
SECTION 850

MISCELLANEOUS ELECTRICAL REPAIRS AND/OR CONSTRUCTION

850.01 DESCRIPTION

A contingent allowance of one hundred eighty thousand dollars ($180,000.00) has been included in the Proposal Form for miscellaneous electrical 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.

850.02 CONSTRUCTION. Construction shall conform to 804, 805, 810, and 811 except as modified herein.

850.02.01 Inspection. The Contractor shall perform an inspection of the existing exposed raceway system for each existing light pole and under viaduct luminaire identified for replacement in the Contract Documents or as directed by the Engineer. The Contractor shall provide an inspection report including photographs and repair recommendations for each section of raceway that requires refurbishing to be submitted to the MdTA for approval.

850.02.02 Electrical Repairs. Upon approval from the MdTA for a recommendation to refurbish an existing raceway, the Contractor shall replace conduit, cable, and/or junction box. All junction boxes to be replaced shall be replaced with NEMA 4X junction boxes.

850.03 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 NUMBER	DESCRIPTION OF ITEM	UNIT
Item 829	MISCELLANEOUS ELECTRICAL REPAIRS AND/OR CONSTRUCTION	ALLOWANCES

CATEGORY 800
TRAFFIC

880 – MEASUREMENT AND PAYMENT

880.01 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.

101	MOBILIZATION	LUMP SUM
102	CPM TYPE A SCHEDULE (SECTION 109)	LUMP SUM
103	ENGINEERS OFFICE TYPE C	LUMP SUM
104	MAINTENANCE OF TRAFFIC (SECTION 104)	LUMP SUM
105	LANE CLOSURE	PER EACH
106	PORTABLE VARIABLE MESSAGE SIGN(S) ("PVMS") (SECTION 104.19)	PER UNIT DAY
107	PROTECTION VEHICLE (SECTION 104.23)	PER UNIT DAY
108	POLE BASE EVALUATION REPORT	PER EACH
109	REFURBISH POLE BASE	PER EACH
801	2 1/2" RIGID GALVANIZED STEEL BRIDGE MOUNTED CONDUIT	LINEAR FEET
802	1" PVC SCH. 80 CONDUIT DIRECT BURIED-TRENCHED	LINEAR FEET
803	2 1/2" PVC SCH. 80 CONDUIT DIRECT BURIED-TRENCHED	LINEAR FEET
804	#4 AWG XHHW COPPER CONDUCTOR	LINEAR FEET
805	#10 AWG XHHW COPPER CONDUCTOR	LINEAR FEET

806	#6 AWG GROUND CONDUCTOR	LINEAR FEET
807	#6 AWG BARE GROUND CONDUCTOR	LINEAR FEET
808	#10 AWG GROUND CONDUCTOR	LINEAR FEET
809	2 1/2" RIGID GALVANIZED EXPANSION/DEFLECTION FITTING	PER EACH
810	TYPE I CONNECTOR	PER EACH
811	TYPE II CONNECTOR	PER EACH
812	TYPE III CONNECTOR	PER EACH
813	TYPE IV CONNECTOR	PER EACH
814	40 FT POLE W/ 18" BRACKET ARM	PER EACH
815	40 FT POLE W/ 6' BRACKET ARM	PER EACH
816	40 FT POLE W/ 2 - 18" BRACKET ARM	PER EACH
817	40 FT POLE W/ 3 - 18" BRACKET ARM	PER EACH
818	40 FT POLE W/ 4 - 18" BRACKET ARM	PER EACH
819	120 FT POLE W/ 6 - BRACKET ARMS	PER EACH
820	270W HPS ROADWAY LUMINAIRE	PER EACH
821	400W HPS HIGHMAST LUMINAIRE	PER EACH
822	400W HPS HIGHMAST LUMINAIRE W/ SHIELD, TYPE 'HM1'	PER EACH
823	400W HPS UNDERVIADUCT LUMINAIRE	PER EACH
824	GROUND ROD	PER EACH
825	HANDHOLE	PER CUBIC YARD
826	CONCRETE FOUNDATIONS	PER CUBIC YARD
827	REMOVE AND DISPOSE OF ROADWAY LIGHTING STRUCTURES (POLE MOUNTED)	PER EACH
828	REMOVE AND DISPOSE OF ROADWAY LIGHTING STRUCTURES (UNDERVIADUCT)	PER EACH
829	MISCELLANEOUS ELECTRICAL REPAIRS AND/OR CONSTRUCTION	ALLOWANCES

CATEGORY 900
MATERIALS

SECTION 950 - TRAFFIC MATERIALS

793 **950.03 REFLECTORIZATION OF SIGNS AND CHANNELIZING DEVICES.**

DELETE: 950.03.03 Type IX Retroreflective Sheeting in its entirety.

INSERT: The following.

950.03.03 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

INSERT:

950.03.07 Permanent Traffic Signs (PTS) Unless otherwise specified in the Contract Documents, retroreflective sheeting for permanent signs shall conform to 950.03.03.

SPECIAL PROVISIONS INSERT CONTRACT NO. MA-951-000-002

CATEGORY 900

MATERIALS

909 – METALS

705 **950.08 Anchor Bolts for Traffic Signals, Highway Lighting, and Signs**

REPLACE (IN ENTIRETY):

Anchor bolts shall be type 316 stainless steel and per ASTM F593, and shall conform to ACI 318 Appendix D. Nuts shall be per ASTM F594. The capacities of anchor bolts shall be determined per independent testing laboratory in accordance with ACI 355.2, and the anchor bolts shall be tested for vibration in accordance with ASTM E488-96.

SPECIAL PROVISIONS INSERT CONTRACT NO. MA-951-000-002

CATEGORY 900

MATERIALS

950 – LUMINAIRES AND LAMPS

798 **950.12.01 Luminaire Construction**

ADD:

(d) Highmast luminaries shall be 400W High Pressure Sodium as specified. Where not specified, H.P. sodium shall be used. Unless specified otherwise, the highmast luminaries shall have type I full-cutoff and cutoff distribution, Lag-type regulator (magnetic regulator) ballast operating at 277V. Reflector shall be aluminum with open optics. Luminaires shall be provided with shields, house side, to reduce light trespass.

ADD: to table in section 950.12.02

TYPE	WATTS	INITIAL LUMENS	RATED LIFE (10 hr/start)	PERCENT INITIAL LUMENS
H.P. Sodium	400	50000	24000	>0.70

CATEGORY 900

MATERIALS

963 - HIGHMAST LIGHTING STRUCTURES W/ LOWERING DEVICE

963.01 GENERAL

963.01.01 Highmast lighting structures shall be designed in accordance with the latest American Association of State Highway and Transportation Officials (AASHTO) Specification criteria for an 80 mph wind plus 30 percent gust factor. The Standard Specification for Structural Supports for Highway Signs, Luminaires and Traffic Signals will apply.

963.01.02 The pole manufacturer shall furnish the Engineer with certified inspection reports. The manufacturer shall maintain a "Traveler" on all major components. The "Traveler" will list material identification, welder identity, test results, and inspector identity.

963.01.03 Pole drawings and calculations shall be provided and certified by a registered Professional Engineer. The Contractor shall provide a certificate of compliance to prove that all products meet or exceed the specified ASTM and AASHTO requirements.

963.01.04 Highmast lighting structures shall be poles assembled using a maximum of three sections requiring no more than two telescoping joints. Poles shall be round or 18 sided tapered steel fabricated from high strength low alloy steel conforming to ASTM A 607, minimum yield strength of 60,000 psi. Higher yield strengths may be used, but 60,000psi shall be utilized for all calculations.

963.01.05 Poles shall have a minimum diameter of 6 inches O.D. at top. The pole shall have a uniform taper from top to bottom.

963.01.06 Poles shall be hot-dipped galvanized per ASTM A 123.

963.01.07 All welding shall be performed by welding operators certified using the procedures from the latest edition of the American Welding Society Structural Welding Code, AWS D1.1-84.

(a) All welding shall be done by the shielded metal-arc, gas shielded fluxcore, gas metal-arc, or submerged-arc process.

(b) There shall be a maximum of one longitudinal weld in the tapered sections of the shaft, which shall be made by automatic seam welding.

(c) The longitudinal weld seams shall have at least 60% penetration, except in the areas where the shaft section telescopes over another section. In overlapped areas, the weld penetration shall be 100%. No transverse butt welds will be acceptable in fabricating the shaft sections.

(d) Longitudinal seams within 6 inches of a slip joint area shall be complete penetration welds.

(e) Base plate, circumferential weld joining base plate, and bottom tube sections shall be complete penetration welds.

(f) The female tube ends in the area of overlapping joints shall be welded with full penetration butt weld, AWS D1.1-84, B-L1b or B-L1a-S and shall be ground smooth.

(g) Weld quality shall conform to AWS D1.1 Section 8. Records of welding procedure and welding operator test results shall be kept by the supplier and shall be available for review by the Engineer.

1. All welds shall be examined visually to insure compliance with the quality requirements.

2. Fillet welds shall be examined by magnetic particle inspection at a rate of 1' per 5' or portion thereof, of each size and location.

963.02 BASE PLATES Base plates and other miscellaneous parts shall be fabricated from ASTM A 572 having minimum yield strength of 60,000psi.

963.03 HANDHOLES

963.03.01 Handhole shall be 10" wide x 30" tall, reinforced and fabricated from the same grade steel as the pole shaft.

963.03.02 A steel winch mounting plate shall be welded inside the pole shaft, opposite the handhole.

963.03.03 A steel plate shall be welded to the top of the pole for the purpose of directly bolting the lowering device unit head-frame to the pole. Attachment of the head-frame shall be made by lock-nut and bolt (set screws are prohibited).

963.04 ANCHOR BOLTS Provide anchor bolts in accordance with Section 909.08 Anchor Bolts for Traffic Signals, Highway Lighting, and Signs.

963.05 HEAD-FRAME ASSEMBLY

963.05.01 Attach, to the top of each highmast pole, a head-frame assembly designed to support the luminaire ring with its required number of luminaries, in addition to the cable pulleys and mechanisms.

963.05.02 Mount pulleys and mechanisms on the head-frame assembly; cover with a protective non-corrodible housing.

963.05.03 Make necessary cable openings as small as practicable to prevent bird entry.

963.05.04 Provide a housing that can easily be removed from the head-frame assembly for servicing of pulleys and other mechanisms.

963.05.05 Provide a 24 inch (minimum), nickel-tip, copper lightning rod on each pole, extending at least 20 inches above the head-frame cover and located on, or near, the pole centerline. Ground lightning rod to pole top using #1/0 braided copper using adapters, cable connectors, and grounding lug designed for such purpose. Mount the lightning rod with brass or bronze hardware.

963.05.06 Provide pulleys large enough to contain the various required cables, without exceeding the manufacture or other required bending radii.

963.05.07 Fabricate pulleys of either cast steel with nylon bushing or aluminum with a bronze bushing. Pulleys shall have a type 304 stainless steel shaft. Pulleys shall be equipped with guards to prevent the cable from jumping off the pulley.

963.05.08 Furnish a head-frame that provides three point suspension and positive centering and engagement between the mating parts of the head-frame and the luminaire ring assembly.

963.05.09 Hot-dip galvanize the head frame, after fabrication, in accordance with ASTM A 123 or completely zinc-electroplate with an additional 5 mil minimum coating of approved zinc-rich epoxy powder coating.

963.06 LATCHING

963.06.01 Furnish each highmast pole assembly with a latching device. At least two latching cables shall be used to lock the luminaire ring into place.

963.06.02 A visual indicator at each cable attachment shall be provided to verify that the luminaire ring is in the fully raised position.

963.07 LUMINAIRE RING ASSEMBLY

963.07.01 Equally space 2-inch luminaire tenons, 6 inches long, around the ring for the number of luminaries required.

963.07.02 Hot-dip galvanize the entire luminaire ring assembly after fabrication in accordance with ASTM A 123.

963.07.03 Provide a weatherproof male plug wired to the terminal box for energizing the luminaries in the lowered/servicing position.

963.07.04 Provide a 30 ampere, four wire type plug to mate with the power receptacle.

963.07.05 Provide an enclosure on the ring, in accordance with section 950.13.07, to house the terminal block, fuse block, and lightning arrestor. Enclosure shall be stainless steel and rated NEMA 4X.

963.07.06 Provide guide rollers or pads to cushion excess swing during raising and lowering operations.

963.08 WINCH ASSEMBLY

963.08.01 Provide a self locking, permanently lubricated, worm gear winch assembly, enclosed within the pole mast, capable of raising and lowering the entire luminaire ring, with luminaries, at a rate of approximately 15 feet per minute, when driven by a portable electric winch drive.

963.08.02 Provide a drive unit of a size and speed determined by the load and required raising and lowering speed, without exceeding 50% of the capacity of the worm gear assembly or the drive unit.

963.08.03 Provide a winch that remains locked in any position so that the luminaire ring assembly cannot fall under its own weight if the operator interrupts the raising or lowering operations.

963.08.04 Provide a winch designed to assure proper spooling of the cable upon the drum at all times.

963.09 HOIST CABLES

963.09.01 Furnish the size and length hoist cables required, made from stainless steel aircraft cable, meeting Military Specifications MIL-C-5424A-1.

963.09.02 Attach support cables to a self-leveling yoke, to which is attached to the winch cable from the winch drum.

963.09.03 Provide guide cables or other acceptable means to prevent cable entanglements in the pole shaft.

963.10 MISCELLANEOUS HARDWARE Furnish and install miscellaneous hardware of stainless steel, ASTM A 167, type 304.

963.11 ELECTRICAL

963.11.01 Furnish and install a 30A – 3P – 480/277V Y circuit breaker, rated >24,000AIC. Install circuit breaker in base in handhole.

963.11.02 Furnish and install NEMA L22-30 locking receptacles and outlets for connection of loads, power winch, and loads when in servicing position.

963.11.03 Power cable shall be type SO, 5 conductor, 10AWG.

963.11.04 Luminaire feeds, from terminal board, shall be 3 conductor 14 AWG type SEO.

963.12 ELECTRIC WINCH DRIVE

963.12.01 Drive shall be portable, heavy duty, industrial-rated, reversible, electrical drive system.

963.12.02 Provide a drive with a torque limiter that causes drive slippage at a predetermined torque load to prevent damage to cables, winch, or other portions of the lowering device system.

963.12.03 Provide sufficient length of cable and mating plug to directly utilize the power supply within the pole.

963.12.04 Equip the drive to attach to the winch drive shaft and the pole so the drive is completely self supporting.

963.12.05 Furnish a drive that operates from a remote switch, with sufficient cable length so the operator can stand a safe distance outside the radius of the luminaire ring assembly.

963.12.06 The electric winch drive shall operate from 277V. A transformer may be used, however, no component of electrical the winch drive may exceed 50 pounds. The electric winch drive shall not be required to be disassembled into less than 5 components for storage.