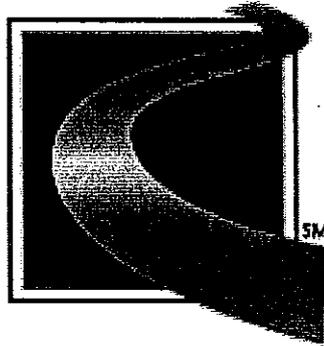


MARYLAND TRANSPORTATION AUTHORITY
Baltimore, Maryland

Invitation for Bids

BALTIMORE HARBOR TUNNEL



**Maryland
Transportation
Authority**

Contract No. MA 2260-000-002

**NETA ELECTRICAL TESTING
ELECTRICAL EQUIPMENT SERVING TUNNEL
MACHINERY AT VARIOUS FACILITIES**

BALTIMORE CITY



TABLE OF CONTENTS

	<u>Page No.</u>
Notice to Bidders/Offerors.....	1-2
National Cooperative Highway Research Program.....	3-4
Occupying Wetlands.....	5
High Visibility Safety Apparel Policy.....	6-7
Invitation for Bids.....	8
Special Provisions.....	9-16
Revisions to General Provision.....	17-24
Revisions to Terms and Conditions.....	25-32
Revisions to Technical Requirements:	
Category 800:	
Section 820 General Electrical Work and Testing.....	33-41
Section 831 Miss Utility.....	42
Section 889 High Voltage Cable Testing.....	43-44
NETA Electrical Testing.....	45-49
Appendix.....	50-52
Testing Restrictions.....	53-55
AS – BUILT.....	56
Baltimore Gas and Electric Company Customer Owned Substation.....	57-64



Wage Rates	65
Contractor Affirmative Action Program.....	66-82
Affirmative Action Requirements Utilization of Minority Business Enterprises for Straight State Contracts.....	83-89
Bid/Proposal Form.....	90
Schedule of Prices.....	91-92
Contract Time and Bonding.....	93
Buy American Steel Act.....	94-96
Bid/Proposal Affidavit.....	97-106
Escrow Account For Retained Funds.....	107
Proposal Guaranty.....	108
Bid Guarantee.....	109-110
Bid Bond.....	111-113

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 acknowledgment pages.
- 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). Don't 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.



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).
- (b) Temporary Barrier.
 - (1) Concrete Barrier.
 - (2) Traffic Barrier W Beam and Water Filled Barrier.
 - (3) Steel/Aluminum Barrier.
- (c) Temporary End Treatments.

Category 4 Devices

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

CONTRACT PROVISIONS
(NCHRP) REPORT 350 IMPLEMENTATION SCHEDULE

Contract No. MA2260-000-002

2 of 2

004

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



CONTRACT PROVISIONS
OCCUPYING WETLANDS

Contract No. MA2260-000-002

1 of 1

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.



Maryland
Transportation
Authority

CONTRACT PROVISIONS
HIGH VISIBILITY SAFETY APPAREL POLICY

Contract No. MA2260-000-002

1 of 2

NOTICE TO ALL HOLDERS OF THIS CONTRACT DOCUMENT

HIGH VISIBILITY SAFETY APPAREL POLICY

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

STATEMENT OF POLICY.

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

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

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



Maryland
Transportation
Authority

CONTRACT PROVISIONS
HIGH VISIBILITY SAFETY APPAREL POLICY

Contract No. MA2260-000-002

2 of 2

- (d) Retro-reflective material color for non-Authority employee apparel shall either be orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors, and be visible at a minimum distance of 1,000 feet. The retro-reflective safety apparel shall be designed to clearly recognize and differentiate the wearer from the surrounding work environment.

REFERENCES.

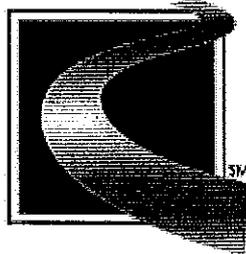
- (a) ANSI/ISEA 107/2004 standard – American National Safety Institute/International Safety Equipment Association
- (b) MUTCD 2003 – Manual for Uniform Traffic Control Devices - Sections 6D.03B and 6E.02
- (c) Visibility Research – The VCTR 1989 report concludes that fluorescent colors, when compared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

DEFINITIONS.

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

MARYLAND TRANSPORTATION AUTHORITY
Baltimore, Maryland
Invitation for Bids

Baltimore Harbor Tunnel



**Maryland
Transportation
Authority**

Contract No. MA 2260-000-002

**NETA ELECTRICAL TESTING
ELECTRICAL EQUIPMENT SERVING TUNNEL MACHINERY
AT VARIOUS FACILITIES**

Baltimore City

March 2010

NOTICE TO BIDDERS

A "Pre-Bidding Session" for the purpose of answering or obtaining answers to questions of parties interested in constructing the work relative to Right-of-Way, Utilities, Design, and Construction Details will be conducted at 10:00am on April 13, 2010, in the Conference Room, ^{1st} Floor of Francis Scott Key Bridge Engineering Building at 300 Authority Drive in Dundalk, Maryland. While attendance at the Pre-Bid conference is not mandatory, this is the offeror's opportunity to raise questions and/or issues of concern regarding the project.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA2260-000-002

Page 1 of 8

SP 1-1 PROJECT DESCRIPTION

CONTRACT NO.: MA2260-000-002

TITLE: NETA ELECTRICAL TESTING, ELECTRICAL EQUIPMENT SERVING TUNNEL MACHINERY AT VARIOUS FACILITIES

FACILITY: Baltimore Harbor Tunnel East & West Ventilation Buildings

LOCATION: Baltimore City

ADVERTISED: March 30, 2010

PRE-BID MEETING: **April 13, 2010 at 10:00 a.m** in the Conference Room at the Maryland Transportation Authority, 300 Authority Drive, ^{1st} Floor, Engineering Building, Baltimore, MD 21222

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

BIDS DUE: **12:00 Noon, May 4, 2010** in the Bid Box on the 1st floor of the Maryland Transportation Authority, Engineering Building, 300 Authority Drive, Baltimore, MD 21222

CLASSIFICATION: Class A (Up to \$ 100,000)

CONTRACT TIME: Ninety (90) Calendar Days

LIQUIDATED DAMAGES: **\$ 800.00 per Calendar Day**

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

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



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA2260-000-002

Page 2 of 8

SP 1-1 DESCRIPTION

The work to be performed under this contract is located at Baltimore Harbor Tunnel facilities in Baltimore City.

The Authority is requiring a licensed contractor to provide system testing and inspection services of several pieces of large electrical equipment in use at the Baltimore Harbor Tunnel East & West Ventilation Buildings.

Overall Project construction would be expected to take Ninety (90) days from the Notice to Proceed.

SP 1-2 SPECIFICATIONS

All work on this project shall conform to the ANSI/NETA MTS-2007, American National Standard Specifications entitled, "Standard for Maintenance Testing Specifications for Electrical Power Distribution Equipment and Systems" dated 2007, revisions thereof, or additions thereto, and the Special Provisions included in this Invitation for Bids. "In addition, all terms and conditions of the Standard Specifications for Construction and Materials dated July 2008, revisions thereof, or additions thereto shall apply to this IFB unless specified herein."

SP 1-3 ORIGINAL FACILITY PLANS AND SITE VISITS

The original facility plans are on file at the Engineering/Finance Building of the Francis Scott Key Bridge and will be made available for inspection to prospective bidders. Parties interested in viewing the plans should contact Mr. Kataw Say, at (410) 537-7853. Parties interested in visiting the site should contact Mr. Jeff Robson at (410) 537-1274.

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.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA2260-000-002

Page 3 of 8

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

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

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

SP 1-5 WORK HOURS

Refer to Technical Section, "Restriction Schedule" for equipments testing and inspection. Work shall be generally performed inside the existing buildings during normal business working hours of 7:00 a.m. to 4:00 p.m., Monday through Friday, except as authorized by the owner.

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.



SP 1-6 INSURANCE

TC-5.01 INSURANCE

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

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

a) Worker's Compensation and Employer's Liability

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

b) Comprehensive General Liability Insurance

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



Liability Broad Form Endorsement and indicate explosion, collapse, and underground damage coverage.

c) Comprehensive Automobile Liability Insurance

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

d) Additional Insurance

The Contractor shall also procure and keep in effect:

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

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

**SP 1-7 MINORITY BUSINESS ENTERPRISE REGULATIONS GOVERNING
CONSTRUCTION CONTRACTS IN EXCESS OF \$50,000
EFFECTIVE JULY 1, 2001
FOR INFORMATIONAL PURPOSES ONLY**

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

MBE participation goal for this contract is as indicated in these Special Provisions.
The Contractor shall:

1. Identify specific work categories appropriate for subcontracting;



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

Third Tier Subcontracting:

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

Waivers:

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

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

Criminal Fraud Provisions:

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

SP 1-8 PROGRESS SCHEDULE REQUIREMENTS

Refer to Section 110 of the Standard Specifications.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA2260-000-002

Page 7 of 8

SP 1-9 CORPORATE REGISTRATION

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

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

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

SP 1-10 CONTRACTOR'S EMPLOYEE IDENTIFICATION

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

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

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

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

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



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA2260-000-002

Page 8 of 8

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

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

SP 1-12 ESTIMATED QUANTITIES

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



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA2260-000-002

Page 1 of 1

**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.

For Erosion Sediment Control (ESC) (SHA SECTION 308):

MdTA Point of Contact as the ESC Quality Assurance Inspector for the Office of Engineering and Construction is Mr. Timothy Plume @ 443-790-8975 and Tplume@mdta.state.md.us. As specified in Section 308.01.03 Quality Assurance Ratings, the project scores will be reported on corresponding MdTA Form 00C61 (SHA Form No. 00C61)

The Maryland Department of Environment (MDE) Water Management Administration (WMA) requires the Contractor shall provide notification to both agencies (MDE & MdTA) seven days before commencing any land disturbing activities, and they are required to hold an ESC Pre-construction meeting. The Engineer will notify Mr. Plume; the MDE (WMA) ESC Inspector at (410)-537-3510; the Contractor’s certified Erosion and Sediment Control Manager (ESCM) and superintendent for attendance at the Pre-Construction ESC Meeting. This is required by the permitting agency,



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA2260-000-002

Page 1 of 1

**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.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA2260-000-002

Page 1 of 1

GENERAL PROVISIONS
GP SECTION 2
BIDDING REQUIREMENTS AND CONDITIONS

GP-2.06 PREPARATION OF THE BID

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

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

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

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

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

Sample forms shall be submitted to:

Ms. Linda McGill, CPPB
Chief of Engineering Procurement
Maryland Transportation Authority
300 Authority Drive
Baltimore, Maryland 21222



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA2260-000-002

Page 1 of 1

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

GP-2.23 BID PROTESTS

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

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

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

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



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA2260-000-002

Page 1 of 1

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

GP-4.10 WARRANTY OF CONSTRUCTION

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

Delete: The first paragraph in its entirety.

Insert: The following:

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



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA2260-000-002

Page 1 of 1

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

GP-5.12 FAILURE TO MAINTAIN ENTIRE PROJECT

Delete Section GP-5.12 in its entirety

Insert: Revise the paragraph to read as follows:

Failure on the part of the Contractor, at any time, to 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.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA2260-000-002

Page 1 of 1

**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.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA2260-000-002

Page 3 of 5

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 ksay@mdta.state.md.us. Where electronic submittals are larger than email can support (currently about 8MB), the submission may be made using one or more of the following alternatives:

1. Posted on a contractor supported FTP server, or other via another service that may be accessed by the administration as long as an email notice is made with the 'cover' sheet.
2. Copied onto a CD, DVD, or other supported data media and submitted to the Administration via standard mail. At least five (5) copies of the media shall be provided for in-house distribution. The address to mail such media transfers is:

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

ADD:

(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:



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA2260-000-002

Page 4 of 5

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

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

ADD:

- (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:



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA2260-000-002

Page 5 of 5

1. The first six characters must be the first six characters of the contract number. For example, for contract MA2260-000-006, the first six characters of the file name must be MA2260.
2. The seventh character must be a dash.
3. The eighth through tenth characters shall be the text "SUB," which is short for submittal. Which is used to indicate that the file is a submittal from a Contractor.
4. The eleventh character must be a dash.
5. The twelfth through fourteenth characters must be the submittal number, e.g., 001.
6. In the event of a re-submittal, the 15th character will be an R followed by the re-submittal number.
7. The remaining filename characters may be any short descriptive characters that may be useful to identify the nature of the submittal (fewer than 40 additional characters).
8. Examples of filenames:
 - i. MA2260-SUB-001-Conduit.pdf
 - ii. MA2260-SUB-001R2-Conduit.pdf
 - iii. MA2260-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
300 Authority Drive
Baltimore, Maryland 21222



**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.



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 820.03.

820.03.04 Testing Fiber Optic Cables

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

- (a) All cables shall have ST connectors installed prior to testing. All testing, for purposes of acceptance of the system, shall be conducted on fully installed and assembled fiber optic cables.
- (b) Upon completion of testing, replace or repair any failed cable(s) with a new fiber or cable, and test the new cable to demonstrate acceptability.
- (c) Insertion loss testing shall be performed.
- (d) These tests shall be measured in dB.
- (e) These tests shall use 850 nm and 1300 nm light sources for multimode fiber and 1300 and 1550 nm for single mode fiber.



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

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

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

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

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.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA2260-000-002

Page 7 of 9

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

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

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



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA2260-000-002

Page 8 of 9

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

(To be filled out after installation is complete)

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

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

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

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

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

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

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

Splice Loss (SL) = 0.3 db each

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

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



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA2260-000-002

Page 9 of 9

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
1650 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: _____



Maryland
Transportation
Authority

SPECIAL PROVISIONS
831- MISS UTILITY

Contract No. MA2260-000-002

Page 1 of 1

**CATEGORY 800
UTILITIES**

SECTION 831 – MISS UTILITY

831.01 DESCRIPTION.

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

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

831.03 CONSTRUCTION.

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

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

Name	Phone	Fax
Dave Roehmer, BHT	410-537-1310	410-537-1304
Dave Roehmer, FMT	410-537-1310	410-537-1304
Charles Raycob, FSK	410-537-7513	410-537-7503
Gary Jackson, HWN	410-537-6807	301-259-0411
George Fish, JFK, TJH	410-537-1101	410-537-1105
Ken Cimino, WPL	410-295-8156	410-295-8151

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

831.04 MEASUREMENT AND PAYMENT.

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



SECTION 889 – HIGH VOLTAGE CABLE TESTING

889.01 DESCRIPTION

889.01.01 This work shall consist of testing existing, service-aged, high voltage shielded cable.

889.01.02 In the Baltimore Harbor Tunnel, all 4 sets of cross connecting 13KV feeder cables shall be tested. These cables connect one vent building to the other via a cable set that transverses the tunnel. East cable set consists of 3 wires, one for each phase. All three wires of each cable set shall be tested.

889.02 METHOD

889.02.01 Cable shall be tested using test methods specified and described in IEEE Std 400-2001™. The specific test used shall be the Dissipation factor testing described in section 9.

889.02.02 All testing shall be non-destructive.

889.02.03 Analysis of results shall include a review and comparison to previous tests. The previous test reports will be provided by the MDTA for review and comparison.

889.03 CONSTRUCTION

889.03.01 The contractor shall contact the MdTA project engineer and coordinate access and testing of the cables. Work hour restrictions and access restrictions described in other sections apply.

889.03.02 The contractor shall conduct all tests. The contractor shall de-energize and disconnect cables at both ends to facilitate testing. The contractor shall reconnect and re-energize cables at the conclusion of the testing.

889.03.03 Only one feeder cable may be de-energized at any time. The duration of the outage for each cable shall be kept to a minimum, not to exceed 24 hours to complete the tests. Outages shall not proceed when thunder storms or other weather is predicted during the course of the outage that is likely to cause service interruptions.

889.03.04 A final report shall be provided. The report shall contain an executive summary of 1-2 pages with results and recommendations. The body shall discuss each test and a comparison to previous test results. The appendix shall contain the test results. The report shall be in APA format. The report shall be neat, professional, free of grammatical, typographical, or



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA 2260-000-002

Page 2 of 2

spelling errors. The report shall be delivered in electronic (PDF) format as well as 2 copies in hardcopy format.

889.04 MEASUREMENT AND PAYMENT

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

8003 Lump Sum of High Voltage Cable Testing

The testing shall be paid as a lump sum as "High Voltage Cable Testing". Maximum payment of 60% of the bid price may be made upon completion of the tests and re-energizing all cables to operational condition. The remaining 40% will be paid upon satisfactory submittal and review of the final report.



NETA Electrical Testing

Electrical Equipment Serving Tunnel Machinery at Various Facilities

INTRODUCTION:

This document shall be used to acquire professional testing services for the maintenance of several pieces of large electrical equipment in use at the Baltimore Harbor Tunnel East and West Vent Buildings.

QUALIFICATIONS:

A party qualifying for this contract must be an independent testing agency, with at least 5 years experience and capability to conduct the testing indicated. Each onsite crew leader shall hold a current certification, Level III or higher, in electrical testing. This certification shall be in accordance with ANSI/NETA ETT-2000, *Standard for Certification of Electrical Testing Personal*. It shall be a member company of the National Electrical Testing Association or be a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7 that is acceptable to authorities having jurisdiction. The testing agency must provide a field supervisor to perform/oversee testing who is currently certified by the InterNational Electrical Testing Association or the National Institute for Certification in Engineering Technologies to supervise on-site testing as specified in this document.

EQUIPMENT LIST:

The following pieces of equipment at the **Baltimore Harbor Tunnel West Vent Building** shall be included in the contract:

Substation #1

Medium Voltage Switchgear Section (**refer to image #1 in appendix**)
13.8KV, 3 phase, 1200A incoming C/B BGE Feeder 13752

Medium Voltage Transformer (**refer to image #2 in appendix**)
13.8KV Primary, 600/346V Wye Connected Secondary 2000KVA Capacity
Silicone Fluid Filled



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA 2260-000-002

Page 2 of 5

Secondary Substation 600/346V 3 Phase, 4 Wire (**refer to image #3 in appendix**)
Main Circuit Breaker "Feeder 3" BGE 13752 - 3000A
EE13 C/B - 1000A
EB13 C/B - 1000A
WB13 C/B - 1000A
WE13 C/B - 1000A
Tie C/B - 3000A
EB14 - 1000A
EE14 - 1000A
WB14 - 1000A
WE14 - 1000A
Main Circuit Breaker "Feeder 4" BGE 13960 - 3000A

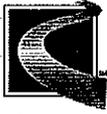
Medium Voltage Transformer
13.8KV Primary, 600/346V Wye Connected Secondary 2000KVA Capacity
Silicone Fluid Filled

Substation #2

Medium Voltage Transformer
13.8KV Primary, 600/346V Wye Connected Secondary 2000KVA Capacity
Silicone Fluid Filled

Secondary Substation 600/346V 3 Phase, 4 Wire
Main Circuit Breaker "Feeder 2" BGE 13962 - 3000A
EB12 C/B - 1000A
EE12 C/B - 1000A
WE12 C/B - 1000A
WB12 C/B - 1000A
Tie C/B - 3000A
EB11 - 1000A
EE11 - 1000A
WE11 - 1000A
WB11 - 1000A
Main Circuit Breaker "Feeder 1" BGE 13961 - 3000A

Medium Voltage Transformer
13.8KV Primary, 600/346V Wye Connected Secondary 2000KVA Capacity
Silicone Fluid Filled



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA 2260-000-002

Page 3 of 5

The following pieces of equipment at the **Baltimore Harbor Tunnel East Vent Building** shall be included in the contract:

Substation #1

Medium Voltage Switchgear Section

13.8KV, 3 phase, 1200A incoming C/B BGE Feeder 13960

Medium Voltage Transformer

13.8KV Primary, 600/346V Wye Connected Secondary 2000KVA Capacity
Silicone Fluid Filled

Secondary Substation 600/346V 3 Phase, 4 Wire

Main Circuit Breaker "Feeder 4" BGE 13960 - 3000A

EB24 C/B – 1000A

EE24 C/B – 1000A

WB24 C/B – 1000A

WE24 C/B – 1000A

Tie C/B – 3000A

EB23 – 1000A

EE23 – 1000A

WE23 – 1000A

WB23 – 1000A

Main Circuit Breaker "Feeder 3" BGE 13752 – 3000A

Medium Voltage Transformer

13.8KV Primary, 600/346V Wye Connected Secondary 2000KVA Capacity
Silicone Fluid Filled

Substation #2

Medium Voltage Switchgear Section

13.8KV, 3 phase, 1200A incoming C/B BGE Feeder 13962

Medium Voltage Transformer

13.8KV Primary, 600/346V Wye Connected Secondary 2000KVA Capacity
Silicone Fluid Filled

Secondary Substation 600/346V 3 Phase, 4 Wire

Main Circuit Breaker "Feeder 2" BGE 13962 - 3000A

WB22 C/B – 1000A



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA 2260-000-002

Page 4 of 5

WE22 C/B – 1000A
EE22 C/B – 1000A
EB22 C/B – 1000A
Tie C/B – 3000A
WB21 – 1000A
WE21 – 1000A
EE21 – 1000A
EB21 – 1000A
Main Circuit Breaker “Feeder 1” BGE 13961 – 3000A

Medium Voltage Transformer
13.8KV Primary, 600/346V Wye Connected Secondary 2000KVA Capacity
Silicone Fluid Filled

Medium Voltage Switchgear Section
13.8KV, 3 phase, 1200A incoming C/B BGE Feeder 13961

GENERAL MAINTENANCE AND TESTING REQUIREMENTS:

For testing requirements for Switch Gear refer to NETA MTS section 7.1.

For testing requirements for Medium Voltage C/B refer to NETA MTS section 7.6.3.
(vacuum type) and 7.6.1.3 (air insulated type).

For testing requirements for Medium Voltage Vacuum Switches refer to NETA MTS
section 7.5.3.

For testing requirements for Medium Voltage Transformers refer to NETA MTS sections
7.2.1.2 (dry-type) and 7.2.2 (liquid filled).

For testing requirements for air low voltage power C/B refer to NETA MTS section
7.6.1.2.

For testing requirements for air insulated-case/molded-case C/B refer to NETA MTS
section 7.6.1.1.

For testing requirements for Motor Control Centers (MCC) refer to NETA MTS section
7.16.2.1. As directed, also refer to sections 7.1, 7.5.1.1, 7.6.1.1, 7.16.1.1.

For testing requirements for Low Voltage Air Insulated Switches refer to NETA MTS
section 7.5.1.1.



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA 2260-000-002

Page 5 of 5

Perform each visual and mechanical inspection and electrical test stated in the NETA Maintenance Testing Specifications listed above (and additional specification sections as required). Include all optional tests. Coordinate both with BGE and MdTA for all outages required for any tests and should be notified Baltimore City Fire Department prior to testing.

Certify compliance with test parameters. If test parameters cannot be met, label as defective. Pricing shall be provided as a lump sum per test per site.

Prepare test and inspection reports, including a certified report that identifies each specific piece of equipment in the lists above, including all enclosed controllers, switches and circuit breakers.

To be included in the report:

- The test procedures used.
- Test results that comply with requirements.
- Test results that do not comply with requirements.
- Report of visual issues such as rodents, water, etc.

MEASUREMENT AND PAYMENT

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

8001 Lump Sum of Maintenance for Electrical Equipment Serving Tunnel Machinery at BHT West Ventilation Building

8002 Lump Sum of Maintenance for Electrical Equipment Serving Tunnel Machinery at BHT East Ventilation Building

Maintenance for Electrical Equipment Serving Tunnel Machinery will not be measured but will be paid for at the Contract lump sum price. This price shall be full compensation for all materials, labor, equipment and all other incidentals as necessary. This item shall include testing all equipment listed and providing the final written report.

For all testing, a maximum of 60% of the bid amount may be paid upon completion of the field testing. The remaining 40% would be paid upon submission and acceptance of the test report(s) associated with the testing.



Appendix

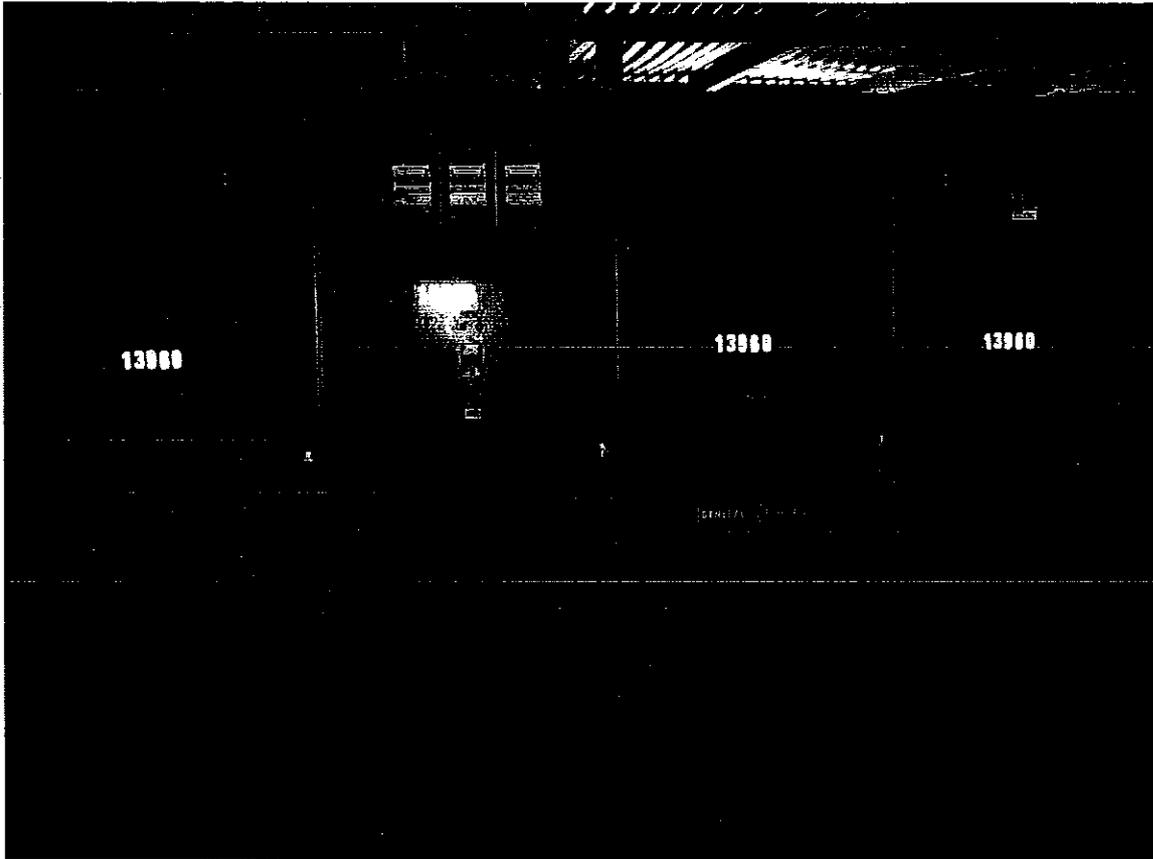


Image #1

Typical Medium Voltage C/B section of Switchgear at
Baltimore Harbor Tunnel East & West Vent Buildings



Maryland
Transportation
Authority

SPECIAL PROVISIONS

Contract No. MA 2260-000-002

Page 2 of 3

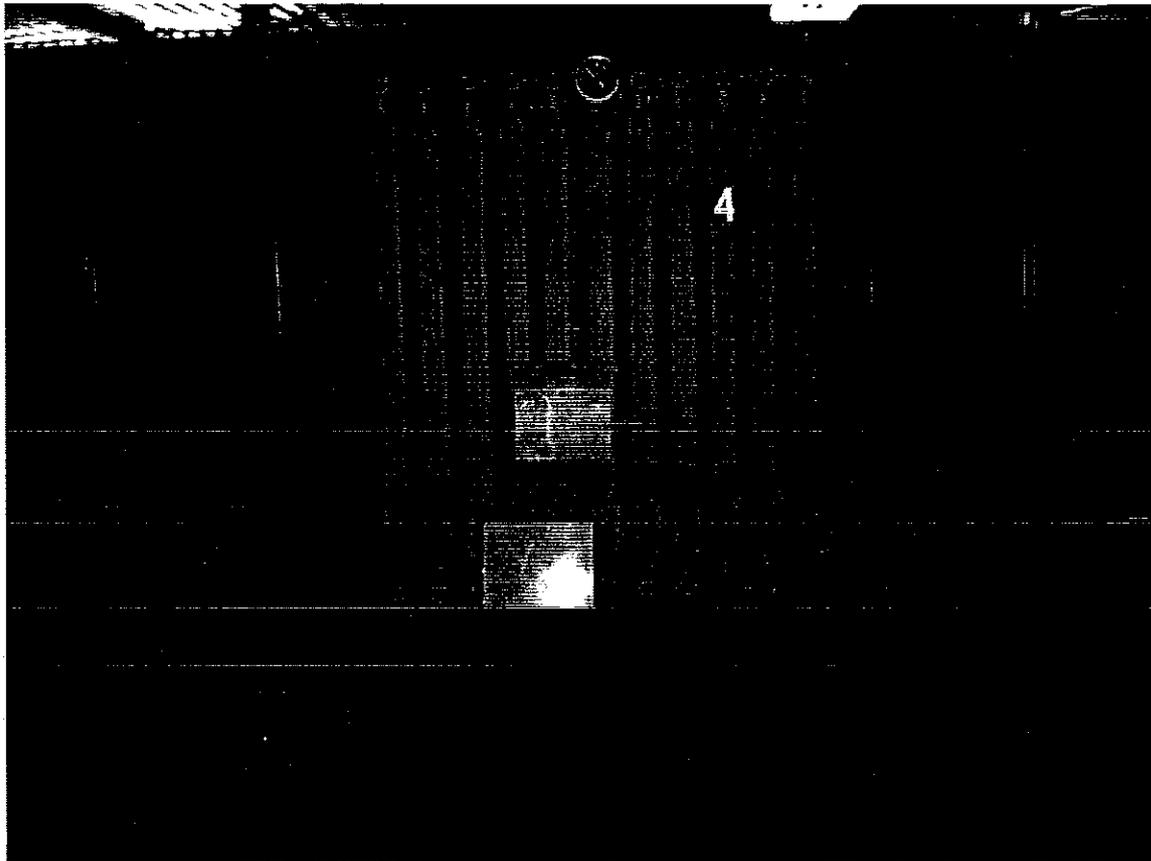


Image #2

Typical Medium Voltage Transformer (liquid filled) Section of Substation at
Baltimore Harbor Tunnel East & West Vent Buildings

051



Image #3

Typical Secondary Substation Switchgear Line Up at
Baltimore Harbor Tunnel East & West Vent Buildings



TESTING RESTRICTIONS

DESCRIPTION:

Work restrictions as listed below must followed by the Contractor. Contractor must provide for sufficient notification of the Engineer prior to testing. A minimum of fourteen (14) calendar days notice shall be provided so that the Engineer or MdTA inspector can be present during the testing.

RESTRICTIONS:

1. The Contractor is permitted to test ONLY one (1) testing group at a time, see restriction schedule.
2. The maximum outage is eight (8) hours on any half section of gear.
3. While testing, no two (2) exhaust Fans or blower Fans in the same bore may be out at a time.
4. No testing permitted when the tunnel is in two-way traffic.
5. No outages are permitted if a thunder storm in the area or is forecast with the next two (2) hours. Hearing thunder or seeing lighting shall qualify as "in the area".
6. No testing may begin if any feeder other than the scheduled feeder is experiencing on outage or partial outage.
7. If a feeder other than one being worked experiences an outage or partial outage, all work shall be stopped and the feeder being worked restored as soon as possible.

CANCELATIONS:

1. If an outage or work period is cancelled by either the MdTA or the contractor with at least two (2) hours notice prior to the scheduled work. There shall be no reimbursement to the contractor for lost time.
2. If an outage or portion of an outage is cancelled by MdTA with less than two (2) hours notice a maximum reimbursement of two (2) hours of time for a normal crew (not to exceed 4 employees) shall be reimbursed based on force account standards.

BALTIMORE HARBOR TUNNEL FAIRFIELD CANTON VENTILATION BUILDING
 CONTRACT NUMBER 60-000-002
 RESTRICTION SCHEDULE

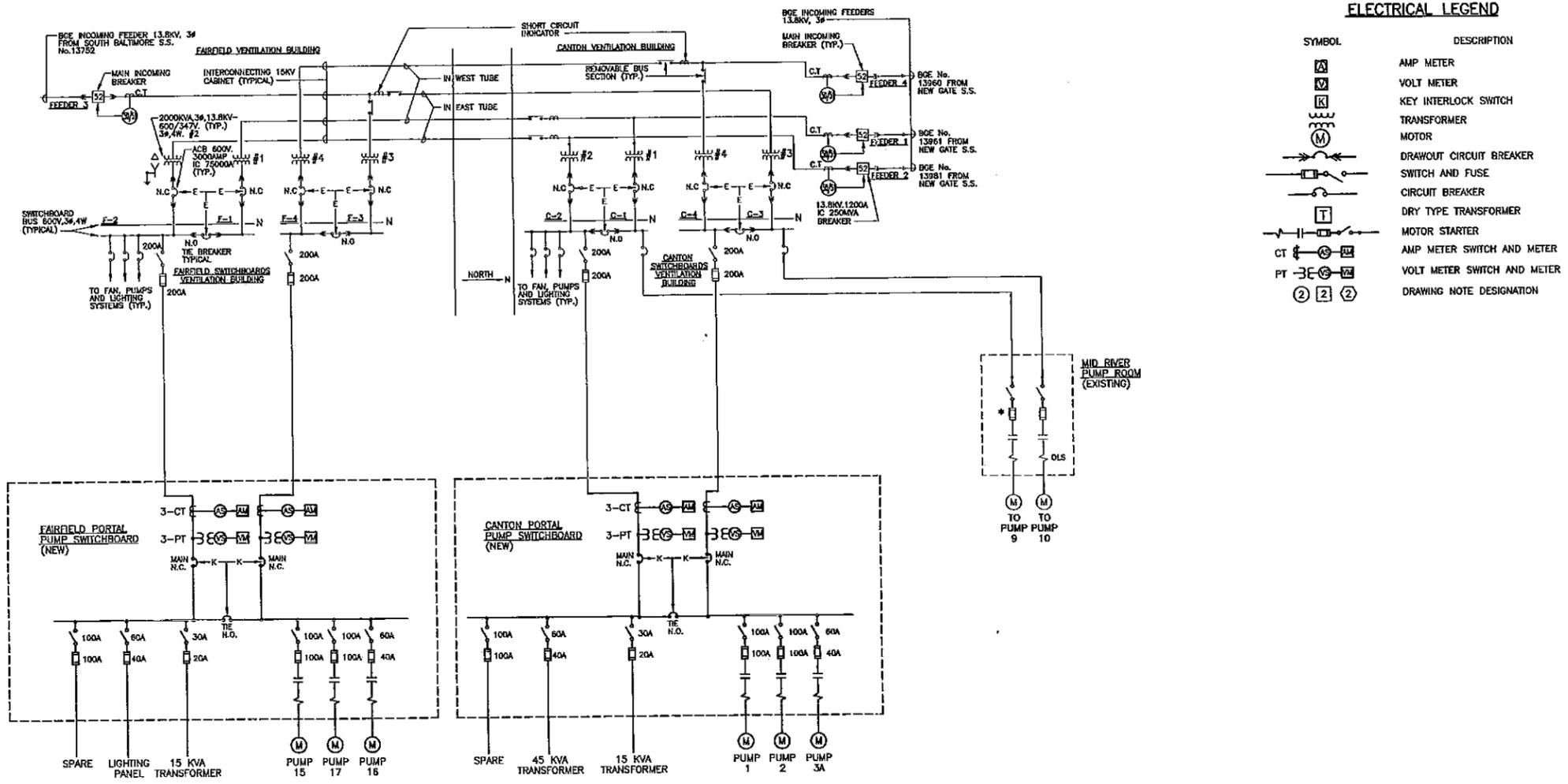
054

Substation	Building Locations	Testing Groups	Restriction Notes
Medium Voltage Switchgear Section 13.8KV, 3 Phase, 1200A incoming C/B BGE Feeder 13752	Fairfield		While testing Main Circuit Breaker and Primary gear use Tie Breaker to Feed Fans EE13, EB13, WB13, WE13, WB23, WE23, EE23, EB23 & Other systems
Medium Voltage Transformer 13.8KV Primary, 600/346V Wye Connected Secondary 2000KVA Capacity Silicone Fluid Filled	Fairfield		
Secondary Substation 600/346V, 3 Phase, 4 Wire Main Circuit Breaker "Feeder 3" BGE 13752 - 3000A	Fairfield	1	
Medium Voltage Transformer 13.8KV Primary, 600/346V Wye Connected Secondary 2000KVA Capacity Silicone Fluid Filled	Canton		
Main Circuit Breaker "Feeder 3" BGE 13752 - 3000A	Canton		
EE13 C/B - 1000A	Fairfield	2	
EB13 C/B - 1000A	Fairfield		
WB13 C/B - 1000A	Fairfield		
WE13 C/B - 1000A	Fairfield		
Tie C/B - 3000A	Fairfield	3	While testing, "Feeder 3" & "Feeder 4" must be live and active. No outage of Fans.
EB14 C/B - 1000A	Fairfield	4	
EE14 C/B - 1000A	Fairfield		
WB14 C/B - 1000A	Fairfield		
WE14 C/B - 1000A	Fairfield		
WB23 C/B - 1000A	Canton	5	
WE23 C/B - 1000A	Canton		
EE23 C/B - 1000A	Canton		
EB23 C/B - 1000A	Canton		
Tie C/B - 3000A	Canton	6	While testing, "Feeder 3" & "Feeder 4" must be live and active. No outage of Fans.
WE24 C/B - 1000A	Canton	7	
WB24 C/B - 1000A	Canton		
EE24 C/B - 1000A	Canton		
EB24 C/B - 1000A	Canton		
Main Circuit Breaker "Feeder 4" BGE 13960 - 3000A	Fairfield	8	While testing Main Circuit Breaker and Primary gear use Tie Breaker to Feed Fans EE14, EB14, WB14, WE14, WB24, WE24, EE24, EB24 & Other systems
Medium Voltage Transformer 13.8KV Primary, 600/346V Wye Connected Secondary 2000KVA Capacity Silicone Fluid Filled	Fairfield		
Secondary Substation 600/346V, 3 Phase, 4 Wire Main Circuit Breaker "Feeder 4" BGE 13960 - 3000A	Canton		
Medium Voltage Transformer 13.8KV Primary, 600/346V Wye Connected Secondary 2000KVA Capacity Silicone Fluid Filled	Canton		
Medium Voltage Switchgear Section 13.8KV, 3 Phase, 1200A incoming C/B BGE Feeder 13960	Canton		

BALTIMORE HARBOR TUNNEL FAIRFIELD CANTON VENTILATION BUILDING
 CONTRACT NUMBER 60-000-002
 RESTRICTION SCHEDULE

055

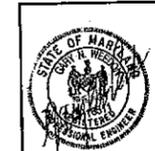
Substation #2	Building Locations	Testing Groups	Restriction Notes
Medium Voltage Transformer 13.8KV Primary, 600/346V Wye Connected Secondary 2000KVA Capacity Silicone Fluid Filled	Fairfield	9	While testing Main Circuit Breaker and Primary gear use Tie Breaker to Feed Fans EB11, EE11, WE11, WB11, EB21, EE21, WE21, WB21 & Other systems
Main Circuit Breaker "Feeder 1" BGE 13961 - 3000A	Fairfield		
Secondary Substation 600/346V, 3 Phase, 4 Wire	Canton		
Main Circuit Breaker "Feeder 2" BGE 13962 - 3000A	Canton		
Medium Voltage Transformer 13.8KV Primary, 600/346V Wye Connected Secondary 2000KVA Capacity Silicone Fluid Filled	Canton	10	
Medium Voltage Switchgear Section 13.8KV, 3 Phase, 1200A incoming C/B BGE Feeder 13962	Canton		
EB12 C/B - 1000A	Fairfield		
EE12 C/B - 1000A	Fairfield		
WE12 C/B - 1000A	Fairfield	11	While testing, "Feeder 1" & "Feeder 2" must be live and active. No outage of Fans.
WB12 C/B - 1000A	Fairfield		
Tie C/B - 3000A	Fairfield		
EB11 - 1000A	Fairfield		
EE11 - 1000A	Fairfield	12	
WE11 - 1000A	Fairfield		
WB11 - 1000A	Fairfield		
EB21 - 1000A	Canton		
EE21 - 1000A	Canton	13	
WE21 - 1000A	Canton		
WB21 - 1000A	Canton		
Tie C/B - 3000A	Canton		
EB22 C/B - 1000A	Canton	14	While testing, "Feeder 1" & "Feeder 2" must be live and active. No outage of Fans.
EE22 C/B - 1000A	Canton		
WE22 C/B - 1000A	Canton		
WB22 C/B - 1000A	Canton		
Secondary Substation 600/346V, 3 Phase, 4 Wire Main Circuit Breaker "Feeder 2" BGE 13962 - 3000A	Fairfield	15	
Medium Voltage Transformer 13.8KV Primary, 600/346V Wye Connected Secondary 2000KVA Capacity Silicone Fluid Filled	Fairfield		
Secondary Substation 600/346V, 3 Phase, 4 Wire Main Circuit Breaker "Feeder 2" BGE 13962 - 3000A	Canton		
Medium Voltage Transformer 13.8KV Primary, 600/346V Wye Connected Secondary 2000KVA Capacity Silicone Fluid Filled	Canton		
Medium Voltage Switchgear Section 13.8KV, 3 Phase, 1200A incoming C/B BGE Feeder 13962	Canton	16	While testing Main Circuit Breaker and Primary gear use Tie Breaker to Feed Fans EB12, EE12, WE12, WB12, EB22, EE22, WE22, WB22 & Other systems
Medium Voltage Transformer 13.8KV Primary, 600/346V Wye Connected Secondary 2000KVA Capacity Silicone Fluid Filled	Canton		
Medium Voltage Transformer 13.8KV Primary, 600/346V Wye Connected Secondary 2000KVA Capacity Silicone Fluid Filled	Canton		
Medium Voltage Switchgear Section 13.8KV, 3 Phase, 1200A incoming C/B BGE Feeder 13962	Canton		



POWER DISTRIBUTION ONE LINE DIAGRAM
NEW SWITCHBOARDS - CANTON AND FAIRFIELD PORTAL PUMP ROOMS

NO SCALE
MOTORS CONTROLLED BY FLOAT SWITCHES

AS-BUILT THIS PLAN IS PROVIDED FOR REFERENCE PURPOSES ONLY. MDTA NOT RESPONSIBLE FOR ACCURACY OF CONTENTS.



E-7

MARYLAND TRANSPORTATION AUTHORITY
CONTRACT NO. HT-888-000-006

Gipe Associates Inc.
Consulting Engineers
Baltimore, Maryland
Easton, Maryland

MARK	DATE	REVISIONS	DESCRIPTION

SHEET TITLE:
NEW UNIT SUBSTATION
ONE LINE DIAGRAM
CANTON PUMP ROOM AND
FAIRFIELD PUMP ROOM

ELECTRICAL SWITCHGEAR UPGRADE
BALTIMORE HARBOR TUNNEL
FOR THE MARYLAND TRANSPORTATION AUTHORITY
BALTIMORE CITY, MARYLAND

PROPOSAL CONTRACT No.	HT-888-000-006
DATE:	01-19-00
DRAWN BY:	CHS/PJF
CHECKED BY:	DSS
SCALE:	AS NOTED

DSS 97064BE7.DWG
PJF 1/18/00

BALTIMORE GAS AND ELECTRIC COMPANY CUSTOMER OWNED SUBSTATION

CUSTOMER: STATE OF MARYLAND
STATE ROADS COMMISSION
HARBOR TUNNEL - FAIRFIELD
CHILDS STREET
BALTIMORE, MD. 21225

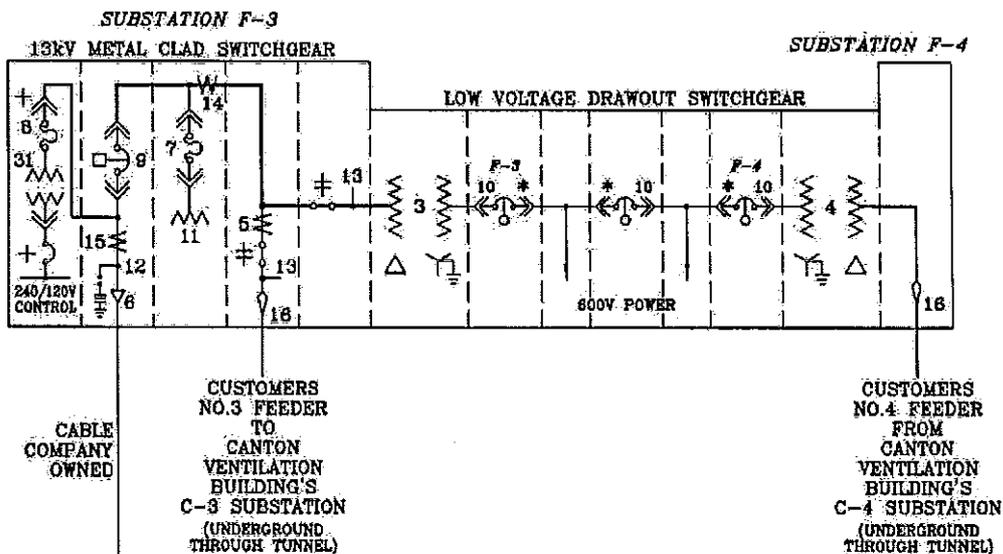
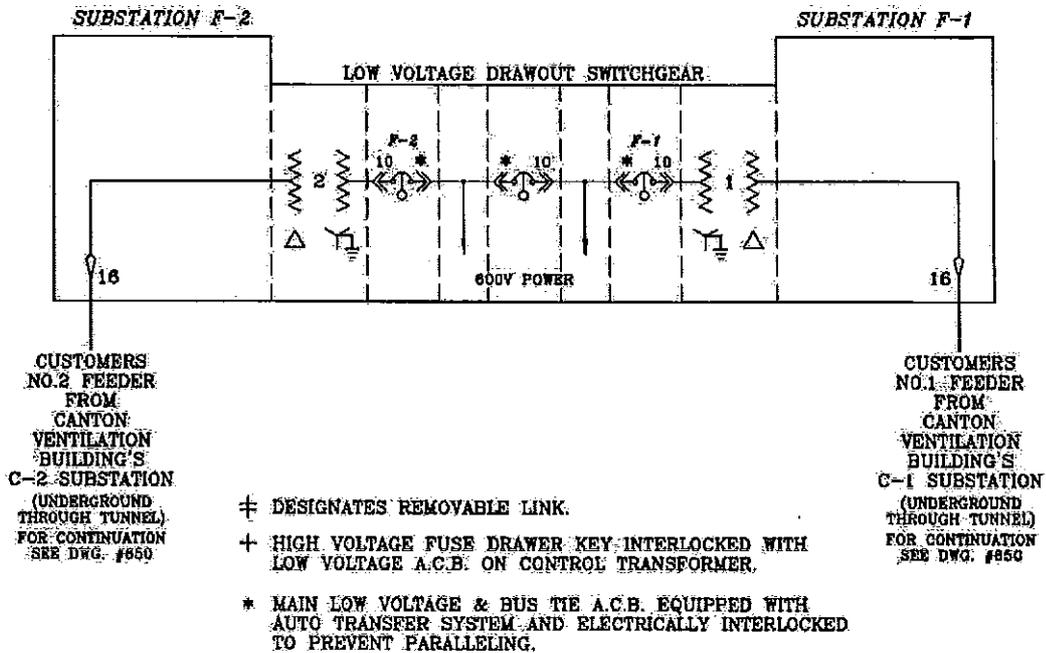
DRAWING ID. NUMBER: 651

SHEET 1 **of** 2

REVISION 9-03/03/97



GRID #	4-04 03-30 (917)
STATION TYPE	INDOOR METAL-CLAD SWITCHGEAR



#13752
FROM
SOUTH BALTIMORE
SUBSTATION
(O.H. WITH
CABLE ENTRANCE)

BALTIMORE GAS AND ELECTRIC COMPANY CUSTOMER OWNED SUBSTATION

CUSTOMER: STATE OF MARYLAND
STATE ROADS COMMISSION
HARBOR TUNNEL - CANTON
CLINTON STREET
BALTIMORE, MD. 21225

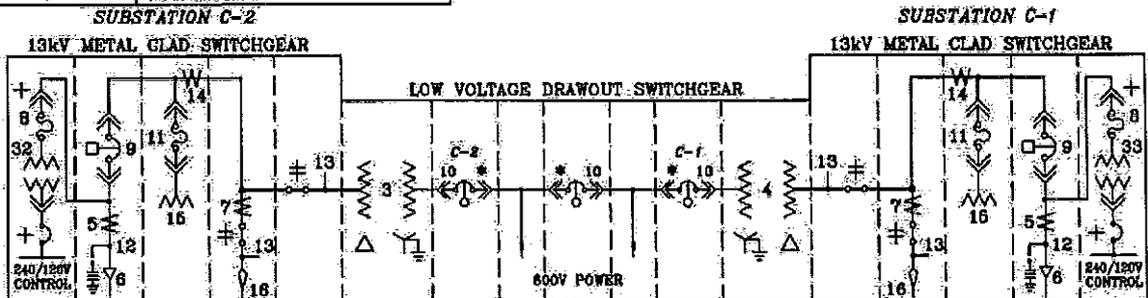
DRAWING ID. NUMBER: 650

SHEET 1 **of** 2

REVISION 10-01/04/99



GRID #	4 03 03-20 (916, 918, & 919)
STATION TYPE	INDOOR METAL-CLAD SWITCHGEAR



CABLE COMPANY OWNED

CUSTOMERS NO.2 FEEDER TO FAIRFIELD VENTILATION BUILDING'S F-2 SUBSTATION (UNDERGROUND THROUGH TUNNEL)

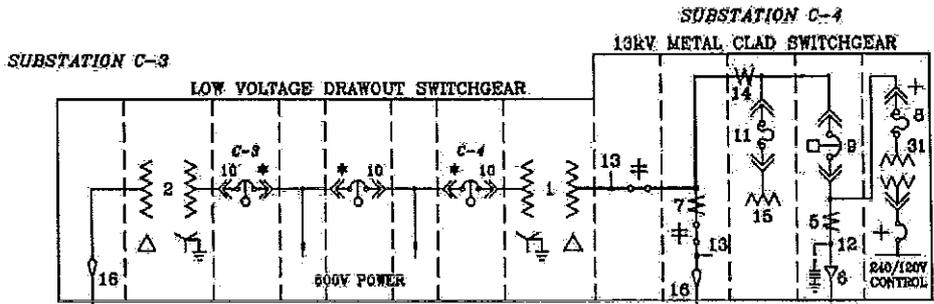
CUSTOMERS NO.1 FEEDER TO FAIRFIELD VENTILATION BUILDING'S F-1 SUBSTATION (UNDERGROUND THROUGH TUNNEL)

CABLE COMPANY OWNED

#13962 FROM NEWGATE SUBSTATION (O.H. WITH CABLE ENTRANCE)

#13961 FROM NEWGATE SUBSTATION (UNDERGROUND)

- ⊕ DESIGNATES REMOVABLE LINK.
- + HIGH VOLTAGE FUSE DRAWER KEY INTERLOCKED WITH LOW VOLTAGE A.C.B. ON EACH CONTROL TRANSFORMER.
- * MAIN LOW VOLTAGE & BUS TIE A.C.B. EQUIPPED WITH AUTO TRANSFER SYSTEM AND ELECTRICALLY INTERLOCKED TO PREVENT PARALLELING.



CUSTOMERS NO.3 FEEDER FROM FAIRFIELD VENTILATION BUILDING'S F-3 SUBSTATION (UNDERGROUND THROUGH TUNNEL)

CUSTOMERS NO.4 FEEDER TO FAIRFIELD VENTILATION BUILDING'S F-4 SUBSTATION (UNDERGROUND THROUGH TUNNEL)

CABLE COMPANY OWNED

#13960 FROM NEWGATE SUBSTATION (UNDERGROUND)

**BALTIMORE GAS & ELECTRIC COMPANY
CUSTOMER OWNED SUBSTATION**

St. of MD. - State Roads Commission HARBOR TUNNEL - CANTON ***** CLINTON STREET Baltimore, MD. 21225	CUSTOMER ID # 650 SHEET 2 of 2
---	--

ITEM #	DESCRIPTION
--------	-------------

1.	1 - Transf., G.E., 2000kVA, Class "OA", Ser. # M154317-C, 55°C Rise, Volt Rating: 13860/13455/13110/12765/12420 - 600Y/347 volts. 5.85%Imp 620 gals pyranol
2.	1 - Transf., G.E., 2000kVA, Class "OA", Ser. # M154317-B, 55°C Rise, Volt Rating: 13860/13455/13110/12765/12420 - 600Y/347 volts. 5.96%Imp 620 gals pyranol
3.	1 - Transf., G.E., 2000kVA, Class "OA", Ser. # M154317-A, 55°C Rise, Volt Rating: 13860/13455/13110/12765/12420 - 600Y/347 volts. 5.86%Imp 620 gals pyranol
4.	1 - Transf., G.E., 2000kVA, Class "OA", Ser. # M154317-D, 55°C Rise, Volt Rating: 13860/13455/13110/12765/12420 - 600Y/347 volts. 5.91%Imp 620 gals pyranol
5.	3 - Current Transf., G.E. "JS-1", 300:5A (O/C Trip)
6.	1 - Pothead, G.E. (Customer Owned)
7.	3 - Current Transf., G.E. "JS-1", 150:5A (Cust. Indication)
8.	2 - Fuses, G. E. "EJO-1", Size C, 5 E Amp., 14,400volt
9.	1 - ACB, G.E., "AM-13.8-250-3", 1200A, 13.8kV (Rect. C., AC. Trip)
10.	1 - ACB, G.E. "AK-1-75-3", 3000A, 600V (AC Mot.(Spring) Close/ AC trip)
11.	3 - Fuses, G.E. "EJ-1", Size B, ½ E Amp, 15kV (Company Meter)
12.	3 - Surge Arresters, West. "LV" Auto-Valve, 12kV, Cat. S-1198785-A (Company Owned)
13.	3 - Ground Pads
14.	2 - Current Transf., G.E. "JKM-5", 100:5A (Company Meter)
15.	2 - Potential Transf., G.E. "JE-41", 14400:120Volt (Company Meter)
16.	3 - Stress-Cones
31.	1 - Control Transf., G.E., 10kVA, Ser # 9885538, Type 9T11Y8016, 80° Rise, Volt Rating: 13860/13200/12540 - 240/120 volts
32.	1 - Control Transf., G.E., 10kVA, Ser # 9885539, Type 9T11Y8016, 80° Rise, Volt Rating: 13860/13200/12540 - 240/120 volts
33.	1 - Control Transf., G.E., 10kVA, Ser # 9885532, Type 9T11Y8016, 80° Rise, Volt Rating: 13860/13200/12540 - 240/120 volts

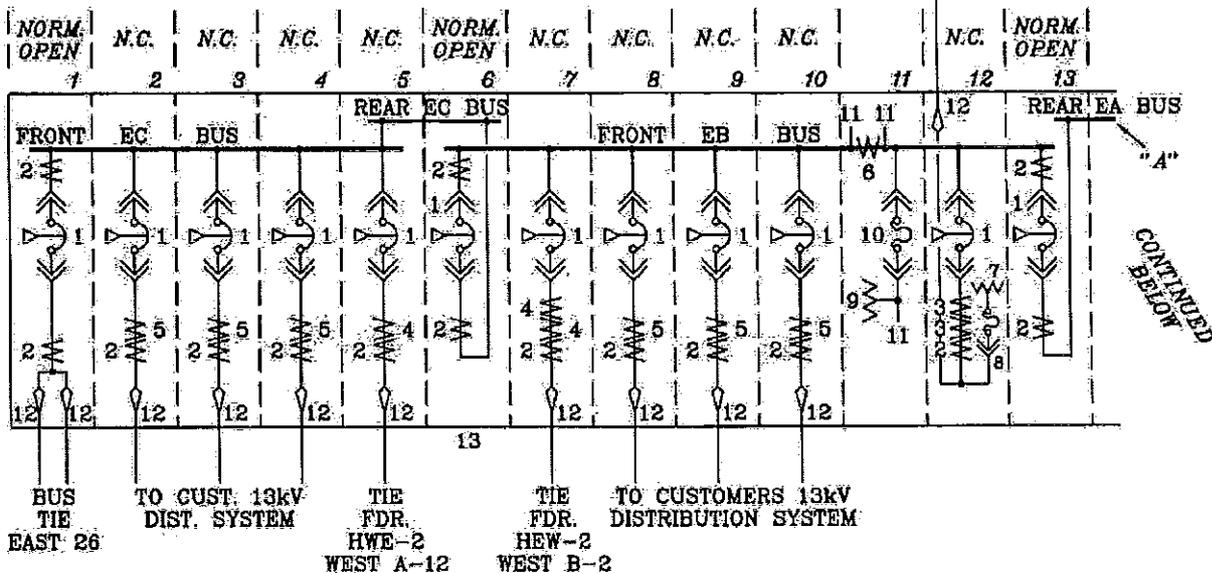
BALTIMORE GAS AND ELECTRIC COMPANY CUSTOMER OWNED SUBSTATION

CUSTOMER: STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
FORT McHENRY TUNNEL - EAST
2301 S. CLINTON STREET
BALTIMORE, MD. 21224

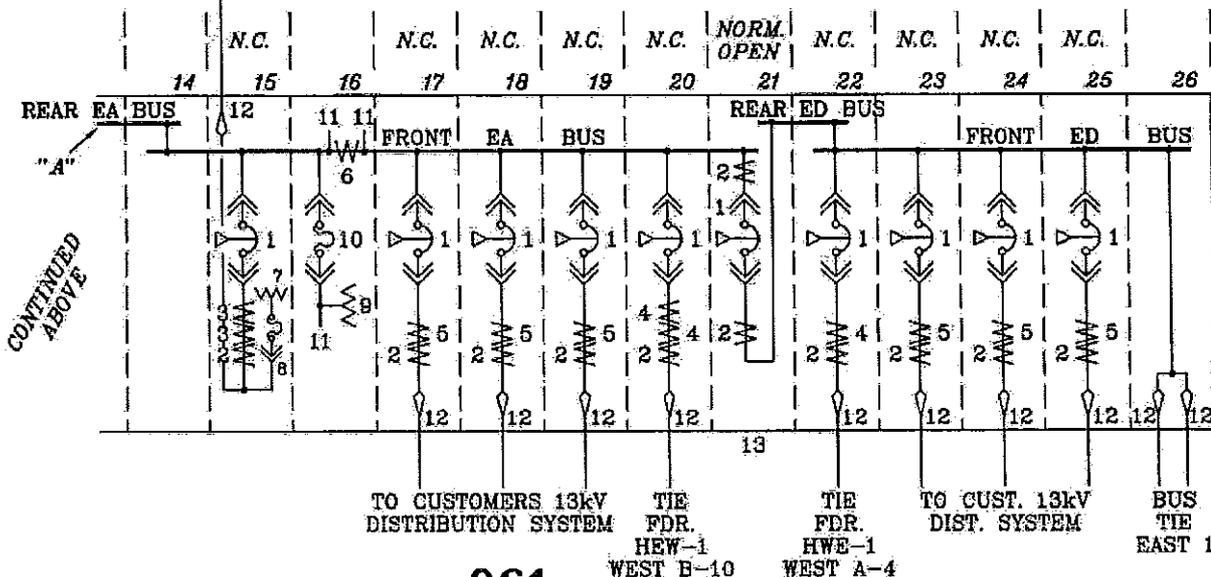
DRAWING ID. NUMBER: 216
SHEET 1 **of** 2
REVISION 5-05/08/07
ENGINEER: JOHN G. MAY

GRID #	4 03 03 20 (922 & 923)
STATION TYPE	INDOOR METAL-CLAD SWGR

#13960
FROM
NEWGATE SUBSTATION



#13961
FROM
NEWGATE SUBSTATION



BALTIMORE GAS AND ELECTRIC COMPANY CUSTOMER OWNED SUBSTATION

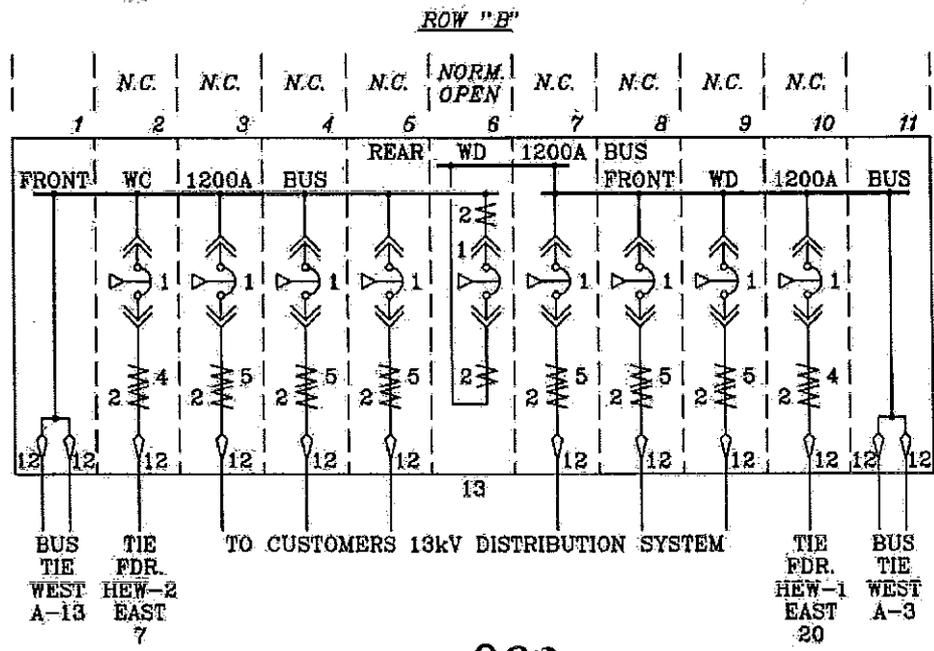
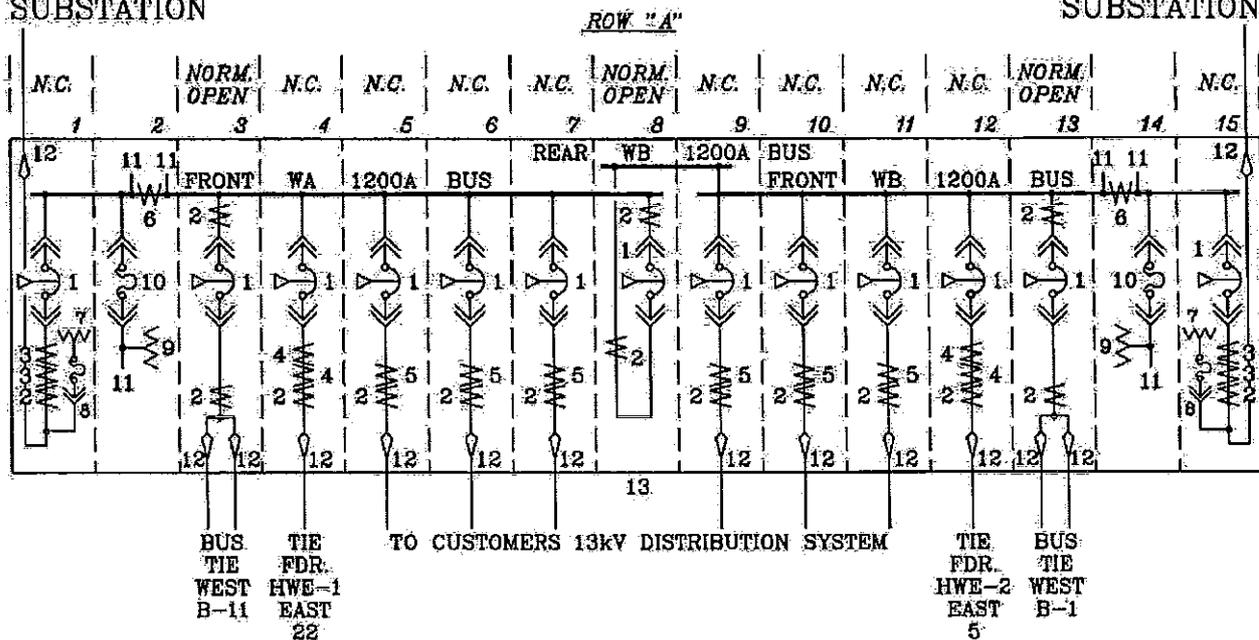
CUSTOMER: STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
FORT McHENRY TUNNEL - WEST
2200 E. McCOMAS STREET
BALTIMORE, MD. 21230

DRAWING ID. NUMBER: 217
SHEET 1 **of** 2
REVISION 4-05/08/07
ENGINEER: JOHN G. MAY

GRID #	3 07 02 40 (919 & 920)
STATION TYPE	INDOOR METAL-CLAD SWGR

#13840
FROM
GOULD STREET
SUBSTATION

#13841
FROM
GOULD STREET
SUBSTATION



BALTIMORE GAS & ELECTRIC COMPANY CUSTOMER OWNED SUBSTATION

ST. OF MARYLAND
DEPT OF TRANSPORTATION
FORT McHENRY TUNNEL-WEST

2200 E. McCOMAS STREET
BALTIMORE, MD 21230

CUSTOMER ID # 217
SHEET 2 of 2

ITEM #	DESCRIPTION
--------	-------------

1.	1 - Air Circuit Breaker, Federal Pacific, "DST2-15-500", 1200A, 13.8kV, 500MVA, 95kV BIL, (125VDC Shunt Trip, 125VDC Spring Charging Motor) Part No. 155-1C5553A
2.	3 - Current Transf., G.E., "JCS-0", 1200:5A
3.	3 - Current Transf., G.E., "JCS-0", 400:5A
4.	3 - Current Transf., G.E., "JCS-0", 200:5A
5.	3 - Current Transf., G.E., "JCS-0", 100:5A
6.	3 - Current Transf., G.E., "JKM-110", 200:5A (Co. Meter)
7.	2 - Potential Transf., G.E., "JVM-5", 14400:120V, Cat.No. 685X46
8.	2 - Fuses, G.E., "EJ-1", 1/2E Amp, 14400V, Cat. No. 9F60BHH905
9.	3 - Potential Transf., G.E., "JVM-5", 14400:120V, Cat.No. 685X19 (Co. Meter)
10.	3 - Fuses, G.E. "EJO-1", 1E Amp, 14400V, Cat. No. 9F60DMH001. (Co.Meter)
11.	3 - Ground Pads
12.	3 - Cable Terminations
13.	Metal-Clad Switchgear, Federal Pacific, 15kV, 1200A, FPE Shop Order 52-32644-1