

CHESAPEAKE BAY

BRIDGE and TUNNEL DISTRICT



BID PROPOSAL AND CONTRACT

REPLACE ELEVATOR IN FOUR (4) VENT BUILDINGS

PROJECT NO.: 4040.4013

BID NO.: M-24-001

INSTRUCTION TO BIDDERS

SCOPE OF WORK

Project will generally consist of:

1. Upgrade/Modernize four (4) existing elevators, one each in four (4) ventilation buildings.
 - a. Current Hollister Whitney Machine
 - b. Current GAL components
2. Refurbish existing cabs, leave existing rails
3. Refurbish door frame entrances and door operating equipment
 - a. Concrete Sill and Door Frame work on various stops
4. New Elevator Controls, motor, brake, governor, ropes, etc.
5. Add New Elevator Landing
 - a. New elevator access door at new landing.
 - b. New 6" landing concrete slab over Geofoam System.
 - c. New Access Door into lower plenum.

For more Project details, please go to <https://www.cbbt.com/requests-for-proposals/>

All bids will be received no later than 2:00 p.m. on Thursday, May 2, 2024, in the office of the Director of Maintenance, CBBTD, 32386 Lankford Highway, Cape Charles, Virginia 23310, Attention: Mr. Timothy R. Holloway, at which time the bids will be publicly opened.

PRE-BID INFORMATION

A **mandatory** pre-bid conference will be held on April 2, 2024 at 10:00 am. It will be held at the Chesapeake Bay Bridge and Tunnel District Administration Building, located at the North Toll Plaza, U.S Route 13, Northampton County, VA. The pre-bid conference is open to all interested potential contractors, subcontractors and/or suppliers. Interested parties should contact Mr. Timothy R. Holloway, Director of Maintenance, by phone at (757) 331-2960 at least two days in advance of the conference date in order to arrange for toll free passage.

NOTE: Attendance at the pre-bid conference and field visit is **mandatory** for Bidders and a prerequisite for submitting a bid. Bidders shall register in writing with the District at the pre-bid conference. Failure on the part of a Bidder to attend the pre-bid conference for this project and to register their attendance with the District will be cause for their bid to be rejected. Such bids will not be opened, but will be returned to the Bidder. Please bring a Hard Hat and Safety Vest for the mandatory site visitation portion of the pre-bid conference. Please wear appropriate closed toe shoes and pants.

PROJECT SCHEDULE REQUIREMENTS

All project work shall be completed within 730 calendar days from the Notice of Proceed.

PLANS AND SPECIFICATIONS

Plans and Specifications for this project are available on the District's website at <https://www.cbbt.com/requests-for-proposals/> . To bid you must complete the required **Fillable Bid Document** that may be obtained on the District's webpage at <https://www.cbbt.com/requests-for-proposals/> . All addenda (if applicable) will be posted on the District's webpage at <https://www.cbbt.com/requests-for-proposals/> , no later than 10 calendar days prior to the date of bid submittal, to allow Bidders to contact their prospective subcontractors and suppliers prior to submission of the Bid. It is the responsibility of the Bidder to provide all appropriate plans, specifications, addenda (if applicable), and all other contract documents to proposed subcontractors and suppliers.

TOLLS

Bidders shall **not** include payment of Chesapeake Bay Bridge and Tunnel tolls in their Bid. The District will furnish passes to the successful contractor for his use, as needed, during the time limit set forth in the Contract.

INTERPRETATION OF DOCUMENTS

Any comments or questions concerning specifications or other provisions of this Request for Bid shall be directed via email to Mr. Michael T. Crist, Deputy Executive Director at mcrist@cbbt.com and shall be received at least 15 days prior to receipt of bid, April 15, 2024 with an answer to be given at least 10 days prior to bid, April 22, 2024, The District is not responsible for any explanation, clarification or approval made or given in any manner except by addendum. A copy of each addendum (if applicable) will be posted on the District's webpage at <https://www.cbbt.com/requests-for-proposals/> . Any Addenda so issued are to be considered part of this bid, please insert date of any addenda on the Acknowledgement of Revisions page, which is included in the **Fillable Bid Document**.

SUBMITTAL REQUIREMENTS

The Bidders' attention is directed to the points noted herein. Compliance with the below provisions is **mandatory** to be considered a responsive bidder.

TO BID THIS PROJECT – PLEASE PERFORM THE FOLLOWING STEPS:

1. Download and read the project specifications: <https://www.cbbt.com/requests-for-proposals/>
2. Open and complete the **Fillable Bid Document**: <https://www.cbbt.com/requests-for-proposals/>
3. Print completed **Fillable Bid Document** and sign in the appropriate locations.

4. All responses on all the forms in the Fillable Bid Document package must be typed or written in ink.
5. The Bidder shall also submit along with all the Fillable Bid Documents:
 - a. Executed Certificate of Insurance, conforming to Section 103.06 of the General Provisions.
 - b. Executed Bid Bond, in the amount of five (5) percent of the value of the bid, conforming to Section 102.07 of the General Provisions.
 - c. The bid shall be accompanied by a work plan.
6. Unless otherwise specified or permitted in the bid, prices must be submitted on all items in the bid.
7. Bids conditioned by the Bidder with proposed alternates, other than those specified, will **not** be considered.
8. Erasures or alterations in the Bidder's entries in the bid must be initialed by an authorized representative of the firm.
9. A bid total must be shown in each space provided for same.
10. Joint Venture bids must show the name of each party and be signed in ink by an authorized representative of each party of the joint venture.
11. The bid shall be prepared in accordance with all the requirements of the project Specifications in their entirety.

Bids must be submitted with the project number, bid number, name of Bidder, and the opening date clearly marked on the outside face of the package; otherwise, your bid will be opened upon receipt in order to determine the inquiry to which it is applicable. The project number for this project is 4040.4013, and the Bid number for this project is M-24-001.

Sealed bids for this project will be received until 2:00 p.m. on May 2, 2024 in the office of the Director of Maintenance, Chesapeake Bay Bridge and Tunnel District, 32386 Lankford Highway, Cape Charles, Virginia 23310, Attention: Mr. Timothy R. Holloway, at which time the bids will be publicly opened and read. The common overnight delivery services, including priority mail, do not guarantee delivery to the lower Eastern Shore (Cape Charles area) by 2:00 p.m. Use of these services to deliver a bid may result in delivery to the District after the submittal deadline and the bid being returned to you unopened.

AWARD OF CONTRACT

The District reserves the right to reject or cancel this solicitation and any or all bids, waive any information and irregularities in the bidding; to accept or reject any or all items of bid; and to accept other than the lowest bid should it be deemed to be in the best interest of the District.

The award of the contract, if it is awarded, will be made to the lowest responsible and responsive Bidder. In determining the lowest responsible and responsive Bidder, the following factors shall be considered:

1. The Bidder's total bid price to complete the work for said bid price.
2. Ability, capability, and skills of the Bidder to perform the contract work.
3. Proof that the Bidder can perform the contract work promptly and within the time frame specified.
4. Character, integrity, reputation, judgment, experience, and efficiency of the Bidder and his proposed subcontractors.
5. The quality of performance of previous contracts.
6. The financial resources and ability of the Bidder to perform the contract work.
7. Ties between two lowest responsible and responsive Bidders will be decided by lot.
8. Within 15 days after Notice of Award, the successful bidder shall provide the following:
 - Payment and Performance Bonds per the General Provisions, Section 103.05.
 - A signed Contract, which is included after the Instructions to Bidder section of the Specifications.
 - A draft Schedule of Values
 - A draft Project Schedule

CONTRACT

This **Contract**, dated this ____ day of _____ 2024, by and between the **Chesapeake Bay Bridge and Tunnel District** hereinafter called the Owner; and _____ (a corporation, or an unincorporated organization organized and existing under the laws of the State/ Commonwealth of Virginia or, an individual trading under the above name) hereinafter called the Contractor.

WITNESSETH: The Owner and Contractor, for the consideration stated herein, agree as follows:

A. Scope of Work

Project will generally consist of:

1. Upgrade/Modernize four (4) existing elevators, one each in four (4) ventilation buildings.
 - a. Current Hollister Whitney Machine
 - b. Current GAL components
2. Refurbish existing cabs, leave existing rails
3. Refurbish door frame entrances and door operating equipment
 - a. Concrete Sill and Door Frame work on various stops
4. New Elevator Controls, motor, brake, governor, ropes, etc.
5. Add New Elevator Landing
 - a. New elevator access door at new landing.
 - b. New 6" landing concrete slab over Geofoam System.
 - c. New Access Door into lower plenum.

For more Project details, please go to <https://www.cbbt.com/requests-for-proposals/>

B. Guarantee

All materials and equipment, furnished by the Contractor, and all construction involved in this Contract are hereby guaranteed by the Contractor to be free from defects owing to faulty materials or workmanship for a period as follows:

Either two (2) years after date of Completion of the work or as specified in the Special Provisions, whichever is more stipulative. All work that proves defective, by reason of faulty material, workmanship or as specified in the special provisions within said period, shall be replaced by the Contractor free of cost to the Owner.

These guarantees shall not operate as a waiver of any of the Owner's rights and remedies for default under or breach of the Contract which rights and remedies may be exercised at any time within the period of any applicable statute of limitations.

C. Contract Price

The Owner shall pay the Contractor as just compensation for the satisfactory performance of the Work, subject to any additions or deductions as provided in the Contract Documents,

the unit and/or lump sum price as contained in the Bid Schedule attached hereto.
The Contract Price is _____ (\$_____) based upon unit
and/or lump sum prices extended as herein contained.

D. Payments

The Chesapeake Bay Bridge Tunnel District will pay the Contract Price to the Contractor in the manner and at such times as set forth in the approved Progress Schedule, found in General Provision 108.03.

E. Time

The undersigned Contractor agrees to complete all work under this Contract within the specified timelines found in the Instruction to Bidders, Project Schedule Requirements.

F. Applicable Law/Compliance

1. Applicable Law

This Contract shall be deemed to be a Virginia contract and shall be governed as to all matters of validity, interpretations, obligations, performance, or otherwise, exclusively by the laws of the Commonwealth of Virginia, and all questions arising with respect thereto shall be determined in accordance with such laws. Regardless of where actually delivered and accepted, this Contract shall be deemed to have been delivered and accepted by the parties in the Commonwealth of Virginia.

2. Compliance with all Laws

Contractor shall comply with all Federal, state and local statutes, ordinances, and regulations, now in effect or hereafter adopted, in the performance of work set forth herein. Contractor represents that it possesses all necessary licenses and permits required to conduct its business and will acquire any additional license and permits necessary for performance of this Contract prior to the initiation of work. Contractor shall at all times observe all health and safety measures and precautions necessary for the sanitary and safe performance of the contract work.

3. Venue

Any and all suits for any claims or for any breach or dispute arising out of these Contract Documents shall be maintained in the appropriate court of competent jurisdiction in Northampton County, Virginia.

4. Environmental Considerations

Any cost or expense associated with environmentally related violations of the law, the creation or maintenance of a nuisance, or releases of hazardous substance, including but not limited to, the cost of any cleanup activities, removals, remediation, responses, damages, fines, administrative or civil penalties or charges

imposed on the Owner, whether because of actions or suits by any governmental or regulatory agency or by any private party, as a result of the release of any hazardous substances, or any noncompliance with or failure to meet any Federal, state or local standards, requirements, laws, statutes, regulations or the law of nuisance by the Contractor (or its agents, officers, employees, subcontractors, consultants, sub-consultants, or any other persons, corporations, or legal entities employed, utilized, or retained by the Contractor) in the performance of this Contract or related activities, shall be paid by the Contractor.

5. Non-Discrimination/Drug-Free Workplace Provisions

- a. Employment discrimination by Contractor shall be prohibited. Contractor agrees to comply with all Federal and State Laws. Furthermore, during the performance of this Contract, Contractor agrees as follows:
 - i. Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification/consideration reasonably necessary to the normal operation of Contractor.

Contractor will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Act of 1975, as amended, where applicable, the Virginians With Disabilities Act, the Americans With Disabilities Act, and the Code of Virginia § 2.2-4311.

If the award is made to a faith-based organization, the organization shall not discriminate against any recipient of goods, services, or disbursements made pursuant to the Contract on the basis of the recipient's religion, religious belief, refusal to participate in a religious practice, or on the basis of race, age, color, gender or national origin and shall be subject to the same rules as other organizations that contract with public bodies to account for the use of the funds provided; however, if the faith-based organization segregates public funds into separate accounts, only the accounts and programs funded with public funds shall be subject to audit by the public body.

Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

- ii. Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that Contractor is an equal opportunity employer.
- iii. Notices, advertisements and solicitations placed in accordance with

Federal law, rule or regulations shall be deemed sufficient for the purpose of meeting the requirements of this section.

- iv. Contractor will include the provisions of the foregoing subsections (i) and (ii), and (iii) in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor
- b. During the performance of this Contract, Contractor agrees as follows:
 - i. Contractor will provide a drug-free workplace for Contractor's employees.
 - ii. Contractor will post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition.
 - iii. Contractor will state in all solicitations or advertisements for employees placed by or on behalf of Contractor that Contractor maintains a drug-free workplace.
 - iv. Contractor will include the provisions of the foregoing subsections (i), (ii) and (iii) in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.
 - v. For the purposes of this section, "Drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a Contractor, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession, or use of any controlled substance or marijuana during the performance of the contract."

G. Liquidated Damages

The damage and loss to the Owner resulting from failure of the Contractor to complete the Work within the time specified in this Contract, plus any extension of time granted, shall be as stipulated in Section 108.06 of the General Provisions, unless otherwise stated in the Special Provisions.

H. Component Parts of the Contract

This Contract includes all completed components of the Bid and Contract Documents as defined in Section 103.06 of the *General Provisions*. Certain portions of the project are revised by the Project Special Provisions included in the Contract Documents. Project Special Provisions shall control over all other Specifications, plans, and standard drawings.

I. Ownership of Documents

All data, sketches, charts, calculations, plans, specifications, electronic files, correspondence and other documents created or collected under the terms of the Contract Documents shall be considered "works for hire" for which the District owns the copyright. Design Documents shall become the District's property upon preparation; Construction Documents shall become the District's property upon delivery to the District; and other documents prepared or obtained by the Contractor in connection with the performance of its obligation under the Contract Documents, including studies, manuals, Record Drawings, technical and other reports and the like, shall become property of the District upon the Design Builder's preparation or receipt thereof. Copies of Design Documents and Construction documents shall be furnished to the District upon preparation or receipt thereof by the Contractor.

J. Binding

This Contract shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

K. Changes to the Contract

No provision of this Contract shall be changed, amended, modified, waived, or discharged except as agreed to in writing by the Chesapeake Bay Bridge and Tunnel District and the Contractor.

IN WITNESS WHEREOF, the parties hereto have caused this Contract to be executed as of the day and first above written in (_____) counterparts each of which shall for all purposes be deemed an original.

<u>Chesapeake Bay Bridge and Tunnel District</u>	_____
<i>Owner</i>	<i>Contractor</i>
By: <u>Jeffrey B. Holland</u>	By: _____
<i>Name</i>	<i>Name</i>
Signature: _____	Signature: _____
Title: <u>Executive Director</u>	Title: _____
Attest: _____	Attest: _____
Address: _____	Address: _____
Contractor's Registration No.: _____ (Corporate Seal)	

(If Contractor is a corporation or an unincorporated organization, attach evidence of authority to sign)

**CHESAPEAKE BAY
BRIDGE and TUNNEL DISTRICT**



FILLABLE BID DOCUMENT

PROJECT DESCRIPTION:

RMF NO.: 4040.4013

**REPLACE ELEVATOR IN FOUR (4) VENTILATION
BUILDINGS**

BID NUMBER: BID-24-001

(Name of Individual, Firm or Corporation)

CHESAPEAKE BAY BRIDGE AND TUNNEL DISTRICT

ACKNOWLEDGEMENT OF ADDENDA

Acknowledgement shall be made of receipt of any and all addenda pertaining to the above designated project which are issued by the District prior to the bid opening date shown herein. Failure to include this acknowledgement in the bidding may result in the rejection of your bid.

By signing this bid, the Bidder acknowledges receipt of the following addenda to the bid and/or plans for the above designated project which were issued under cover letter(s) of the date(s) shown hereon:

1. Cover Letter of _____
(Date)
2. Cover Letter of _____
(Date)
3. Cover Letter of _____
(Date)

CHESAPEAKE BAY BRIDGE AND TUNNEL DISTRICT

WORK REFERENCES

The Bidder shall list at least three (3) similar projects performed in the past five (5) years. Each listed project shall include the name, address, contact person(s) and the telephone number of the Owner and Owner's representative for whom the work was performed, the description and value of the portion of the project with work of a similar nature. Each listed project shall also include the project location, completion date and the names of the Bidder's project manager and superintendent(s). If for any of the listed projects, the Bidder's participation was that of a subcontractor, the value of the subcontracted work performed by the Bidder shall be included. In such cases, the Owner of the project is the General Contractor.

Project Name: _____

Date of Project: _____ Project Value: _____

Contact Person: _____ Telephone Number: _____

Description of Work Performed:

Project Name: _____

Date of Project: _____ Project Value: _____

Contact Person: _____ Telephone Number: _____

Description of Work Performed:

Project Name: _____

Date of Project: _____ Project Value: _____

Contact Person: _____ Telephone Number: _____

Description of Work Performed:

CHESAPEAKE BAY BRIDGE AND TUNNEL DISTRICT

NON-COLLUSION AFFIDAVIT

THIS FORM must be completed, signed, notarized and returned with Bid; and failure to do so, may result in the rejection of your Bid. A separate form must be submitted by each principal of a joint venture Bid.

1. In preparing and submitting this Bid, I, the firm, corporation or officers, agents or employees thereof did not, either directly or indirectly, enter into any combination or arrangement with any person, firm or corporation or enter into any agreement, participate in any collusion, or otherwise take any action in the restraint of free, competitive bidding in violation of the Sherman Act (15 U.S.C. Section 1) or Article 1.1 or Chapter 12 of Title 18.2 (Virginia Governmental Frauds Act), Sections 59.1-9.1 through 59.1-9.17 or Sections 59.1-68.6 through 59.1-68.8 of the Code of Virginia.

2. I, the firm, corporation or officers, agents or employees thereof have neither directly nor indirectly entered into any combination or arrangement with any person, firm or corporation or entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this Contract, the effect of which is to prevent competition or increase the cost of construction of this Contract.

During the preceding 12 months, I (we) have been a member of the following Highway Contractor's Associations, as defined in Section 33.1-336 of the Code of Virginia (1970). (If none, so state).

Name

Location of Principal Office

3. The undersigned is duly authorized by the Bidder to make the foregoing statements to be filed with Bids submitted on behalf of the Bidder for this Project.

Signed at _____, this _____ day of _____, 20 _____.

Name of Organization

By:

(Signature and Title)

State of

To-wit:

County (city) of _____,

I, _____, a Notary Public in and for the State and County (City) aforesaid, hereby certify

that this day _____ personally appeared before me and made oath that he is duly authorized to make the above statements and that such statements are true and correct:

Subscribed and sworn to before me this _____ day of _____, 20 _____.

Notary Public

My commission expires _____.

CHESAPEAKE BAY BRIDGE AND TUNNEL DISTRICT

BID SHEET

<u>Item</u>	<u>Description</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total Price</u>
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1. REPLACE ELEVATOR IN FOUR (4) VENTILATION BUILDINGS:

1	LS			\$	_____
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2. CONCRETE REPAIR, (Elevator Landing Sills and top of Ships Ladder):

60	SF	\$	_____	\$	_____
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TOTAL BID				\$	_____
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By: _____
(Please Print or Type)

Signature: _____

Title: _____

Company: _____

Address: _____

_____	_____
City/State	Zip Code

Phone No.: _____ Date: _____

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E001	-	Legends, Notes and Abbreviations	010010-1
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1964 AS BUILT Drawings

1962 Elevator Shop Drawings

SPECIAL PROVISIONS

SP-1 SUBMITTALS

Contractor's submittals, including working plans and construction record drawings, shall be in accordance with Section 105.10 of the General Provisions, the Technical Specifications associated with this project, and the following:

1. The Contractor shall submit to the District, within 30 days after Notice to Proceed, a schedule of specific dates for submission of working and shop drawings required by the General Provisions, the Technical Specifications, and these Special Provisions. In addition, this submittal shall also include a progress schedule in accordance with Section 108.03 of the General Provisions for the District's review and approval.
2. The Contractor shall submit one (1) electronic copy and three (3) hard copies of each submittal to the District for review and approval. Each submittal shall have been reviewed by the Contractor prior to submittal to the District and shall bear the Contractor's stamp of approval. All plan submittals shall be prepared in either 22" x 34" format with a 2-inch border on the left side, or 11" x 17" format with a 1-inch border on the left.
3. The District will review for conformance with Contract Documents each submittal and shall return one (1) print duly marked within thirty (30) calendar days after receipt from the Contractor. The Contractor shall revise and resubmit any submittal returned to him for correction after review by the District. Upon receipt by the District of a resubmittal with required corrections, the District shall return one (1) print to the Contractor duly marked "Approved".

All submittals shall be sent to the District:

Chesapeake Bay Bridge and Tunnel District
32386 Lankford Highway
Cape Charles, Va. 23310
Attention: Mr. Timothy R. Holloway, Director of Maintenance

SP-2 LIMITATIONS OF OPERATIONS

All vehicles crossing the facility to deliver equipment, materials or supplies for this project shall comply fully with the limitations stated in the current edition of the Virginia Department of Transportation publication entitled *Size, Weight and Equipment Requirements for Trucks, Trailers and Towed Vehicles*. Any vehicles that are scheduled to be used, which do not meet these criteria may be used only with the written permission of the District. In requesting permission from the District to use non-complying vehicles, the Contractor shall specify whether the non-complying equipment will enter the facility from the south or north end. The District may require that any non-complying vehicles be accompanied by an escort, the cost of which will be borne by the District. The vertical clearance in both tunnels is 13 feet-6 inches.

The Contractor shall consider construction loads during the planning and prosecution of the work. Construction loads include but are not limited to the weight of all equipment, trucks and other heavy construction or material delivery equipment, as well as the delivery or storage of materials placed on or adjacent to the structure or parts thereof during the various stages (phases) of the work in accordance with the Contractor's proposed work plan. The Contractor shall consider the effect(s) of construction loads on the loading capacity of these type structure(s) in his sequencing of the work and operations, including phase construction. The bridge and tunnel roadway structures were designed for an AASHTO HS-20-44 live loading. At the District's request, the Contractor shall be prepared to discuss or review his proposed operations with the District with regard to construction loads to demonstrate he has taken such into consideration in the planning and execution of the work. At the District's request, the Contractor shall submit design calculations and other pertinent backup information for the proposed loading to the tunnel roadway slabs, showing that the slabs are capable of carrying such loadings. These calculations shall be signed and sealed by a Professional Engineer licensed in the State of Virginia and shall be submitted to the District for review and approval. These tasks shall be considered incidental to other portions of the Work and shall be completed at no additional cost to the District.

SP-3 PROGRESS MEETINGS

The District will establish and conduct monthly progress meetings with representatives of the Contractor. More frequent or less frequent meetings shall be held to the extent that the District reasonably determines that construction conditions make it advisable to do so. These meetings will be onsite and maintained throughout the entire construction period until final Project inspection by the District and for the primary purposes of assessing the progress of the

Contractor's work, recommending such remedial actions as are necessary to maintain its progress within the Project schedule, and discussing the Contractor's and its subcontractors' respective safety performance. Unless otherwise directed by the District, on site attendance shall include the following Contractor personnel (and, if necessary, its corresponding subcontractors' personnel): Project Manager, designated Safety Representative, and Superintendents as may be appropriate to meet agenda requirements.

SP-4 CONSTRUCTION RECORD DRAWINGS

The Contractor shall maintain, in readable condition at the project, one complete set of plans, specifications and working drawings for his work including all shop drawings. Such drawings and specifications shall be available for use by the District or his authorized representative.

As the work progresses, the Contractor shall keep a complete record of any and all variations between actual Project installations and Contract Plans and Specification requirements. Upon the completion of the Project, two sets of drawings and specifications shall be marked in red to show all such variations and shall be **submitted** to the District **within 30 days of final acceptance.**

SP-5 ON-SITE TEMPORARY STORAGE

The District will provide space on #3 Island or #4 Island, for storage of materials and equipment. The Contractor will not be allowed, under any circumstances, to store any materials or equipment in any of the ventilation buildings or in the tunnels. The materials and equipment must be securely stowed in the storage area to prevent their movement by high winds. Furthermore, all materials and equipment must be removed from the storage area at least 5 days in advance of any time for which the National Weather Service predicts winds within a 20-mile radius of the storage site to exceed a speed of 75 mph. If a portal island is utilized, a two-lane width (24-ft minimum) travel-way for vehicular traffic must also be maintained around the storage area along the length of the portal island and through the security gates.

SP-6 WORK AROUND EXISTING UTILITIES

The Contractor shall immediately notify the District Representative of any damage done to the existing or newly installed utilities (equipment, conduits, wiring, cabling, cable trays, etc.) during any portion of the work. If utility service is interrupted due to Contractor activity, repair work shall be continuous until service is restored. All repair work shall be done in accordance with District specifications and requires approval by the District prior to commencing the repair work. The Contractor shall be responsible for any damage to any utilities that are attributable to his neglect or methods of performing the work and make appropriate repairs, as approved by the District, at no additional cost to the District.

SP-7 PROTECTION OF EXISTING FACILITY

During the progress of the work, the Contractor shall provide temporary protection as is determined appropriate to protect the existing facility and equipment from damage due to Contractor activity. All costs associated with this Work shall be considered as incidental to other items of Work.

The Contractor shall immediately notify the District Representative of any damage done to the facility or equipment during any portion of the work. If damage does occur, repair work shall be continuous until service is restored. All repair work shall be done in accordance with District specifications and requires approval by the District prior to commencing the repair work. The Contractor shall be responsible for any damage to any facility components that are attributable to his neglect or methods of performing the work and shall make appropriate repairs, as approved by the District, at no additional cost to the District.

The Contractor shall contain all materials used during construction and the cleaning process, as well as all materials removed from the structures. The Contractor shall not allow any of the materials to run or be drawn into or rest upon any existing electrical equipment, onto the portal island surface, or into the Chesapeake Bay. The Contractor shall be responsible for clean-up of spills and uncontained construction material and debris at no additional cost to the District. Containment Plans shall be developed and included in the General Work Plan, considering all methods/stages of construction, including demolition, cleaning, preparation and repair and shall be submitted to the District for approval.

Contractor shall be responsible for the repair or replacement of any damages caused by the demolition and construction activities. Particular focus shall be taken to prevent:

- Damage to existing equipment in the Ventilation Buildings.
- Any concrete dust generated during the Contract work from entering the ventilation system or other electrical/mechanical equipment.

If the Contractor fails to keep construction materials or debris out of the building, tunnel drains or out of existing mechanical and electrical equipment, the Contractor shall perform any clean up necessary and/or make appropriate repairs, including possible equipment rebuilding or replacement, as approved by the District, at no additional cost to the District. The Contractor shall take all appropriate measures to assure that dust, debris, liquid and particulate resulting from demolition or any other Contract work, will not come into contact with switchgear and/or any other electrical/mechanical equipment.

SP-8 ACCESS TO CONSTRUCTION

During the progress of the work, the Contractor shall provide for the District, and all authorized visitors, means of ready access to all parts of the work, such as scaffolds, ladders, transportation and any other required aids to facilitate the inspection of the work.

SP-9 PROJECT CLOSEOUT

General

- a. The requirements set forth herein are in addition to and shall be considered as complementary to the balance of Specifications and the Contract Drawings.
- b. Compliance with the requirements of this Section is a condition precedent to the issuance of Final Payment.

Final Cleanup

- a. Perform final cleaning prior to Final Completion, as applicable, including but not limited to the following activities:
 1. Leave the work area(s) and storage site(s) ready for use by the District and without the need of further cleaning of any kind.
 2. Remove all tools, appliances, equipment, waste, surplus materials, and rubbish.
 3. Remove all temporary construction equipment and materials.
 4. Perform final grading and seeding to all disturbed laydown areas, if applicable.

Certification

- a. Prior to acceptance of Work, submit a written notification to the District certifying that:
 1. Work has been completed in accordance with these Specification and Drawings.
 2. Work has been inspected for compliance with these Specification and Drawings.
 3. Work is completed and ready for final inspection.
- b. The District will inspect to verify the status of completion after receipt of such certification.
- c. Should the District consider that the Work is incomplete or defective:
 1. The District will notify the Contractor in writing, by form of a punch list, listing the incomplete or defective Work.

2. The Contractor shall take immediate steps to remedy the stated deficiencies and send a second or subsequent written certification to the District stating that the Work is complete.
 3. The District will re-inspect the Work.
- d. Upon completion of the Work, the District will direct the Contractor to submit closeout documents.

Closeout Documentation

- a. Acceptance Test results from the third party, Qualified Elevator Inspector.
- b. Documentation of Performance Test results, per section 142123.13, 3.5, D.
- c. The Certificates of Operation shall be installed inside each elevator cab and a copy of each unit will be provided to the District.
- d. All data and manuals affecting the elevator modification, including “AS-INSTALLED” circuit and control wiring diagrams.
- e. Operation and Maintenance Manuals.
- f. All Training Materials per section 142123.13, 3.7, A.

Final Application for Payment

- a. Upon Final Completion of the Work, as determined by the District, the Contractor may request Final Payment in accordance with the Contract Terms and Conditions.

SP-10 SUBSTITUTIONS

1. The Contractor may recommend substitutions for certain materials after the bid has been awarded. This should not be perceived as an allowance to bid on a different system/product than what is described in the Specifications. Recommendations shall be based on one or both of the following:
 - a. Alternative materials to improve quality, schedule or pricing.
 - b. Exceptions to the Specifications covering materials, manner of application, or other details.
2. To recommend substitutions regarding the above subjects the Contractor shall:
 - a. Submit a written description of proposed changes or modifications to the District for review. In accordance with SP-1 Submittals, the District requires 30 days for review of proposed substitutions.

- b. Include catalog data sheets as a minimum and shop drawings, samples and other supportive information as necessary for the District to evaluate the proposed materials.
- c. The District will review any substitution requests and will be the sole judge in determining whether the proposed item meets is considered equal to the specified item. The Districts' decision regarding the proposed substitution shall be final.
- d. It is the Contractor's responsibility to notify and receive written approval from the District for substitutions that deviate from contract documents.
- e. Do not proceed with proposed changes or modifications until authorized to do so by the District in writing. The cost of work performed on proposed changes or modifications without the District's written approval will be at the Contractor's expense, as well as any cost for correcting such unauthorized work.

SP-11 PAYMENT AND UNIT PRICES

The bulk of this Project is Lump Sum Bid. Concrete repairs have been broken out as a separate line item, per square foot, as these quantities may vary once a repair is opened up and reinforcement steel section loss is determined. An estimate on square footage has been provided for this line item based on visual inspection prior to project bid. The per square foot price will be based on a repair made to 1" below the first layer of steel as shown on drawing S501, Typical Concrete Slab Repair Detail. The square foot bid price will remain the same, no matter the actual quantity performed, which is an exception to GP 104.02, (b), 2.

Payment for each line item on the bid sheet shall constitute a full compensation for any and all labor, material and equipment costs associated with providing a fully completed, functional pay item. Compensation for incidental items not specifically called for herein or on project plans, but are necessary for the successful completion of a pay item in accordance with applicable codes, standards and project requirements, shall be included in the compensation for that pay item.

Division I
GENERAL PROVISIONS

SECTION 101—DEFINITIONS OF ABBREVIATIONS, ACRONYMS, AND TERMS

101.01—Abbreviations and Acronyms

In these Specifications and other Contract Documents, the following abbreviations and acronyms shall be interpreted as follows:

AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
ABS	Acrylonitrilebutadienestyrene (an elastomer)
AC	Alternating current
ACI	American Concrete Institute
ADT	Annual average daily traffic
AED	Associated Equipment Distributors
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
APA	Engineered Wood Association
API	American Petroleum Institute; American Pipe Institute
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWG	American wire gage
AWPA	American Wood Preservers Association
AWS	American Welding Society
AWWA	American Water Works Association
BOCA	Building Officials and Code Administrators
C	Celsius, when preceded by “degree(s)”
CABB	Contractor Advertisement Bulletin Board
CBR	California bearing ratio
CRSI	Concrete Reinforcing Steel Institute
DBE	Disadvantaged Business Enterprise
DC	Direct current
DHV	Design hourly volume
ECTC	Erosion Control Technology Council
EEL	Edison Electric Institute
EEO	Equal employment opportunity
EIA	Electronic Industries Alliance
EPA	Environmental Protection Agency
EPDM	Ethylenepropylenedienemonomer (an elastomer)
ESCCC	Erosion and Sediment Control Contractor Certification
F	Fahrenheit, when preceded by “degree(s)”
F/A	Filler/asphalt ratio
FAT	Field Acceptance Test

FHWA	Federal Highway Administration
FOOH	Field Office Overhead
FS	Federal Specifications, General Services Administration
HOOH	Home Office Overhead
ICEA	Insulated Cable Engineers Association
IMSA	International Municipal Signal Association
ITE	Institute of Transportation Engineers
LCD	Liquid crystal display
LPG	Liquid petroleum gas
MEKP	Methyl ethyl ketone peroxide
MIL	Military specifications
MSDS	Materials Safety Data Sheet
MUTCD	<i>Manual on Uniform Traffic Control Devices for Streets and Highways</i> and the Virginia Supplement to same
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NIST	National Institute of Standards and Technology
NOAA	National Oceanic and Atmospheric Administration
NRC	Nuclear Regulatory Commission
PCI	Precast / Prestressed Concrete Institute
PE	Polyethylene
PTL	Plywood Testing Laboratory
PVC	Polyvinylchloride
PVF	Polyvinylfluoride
SAE	Society of Automotive Engineers
SAT	System Acceptance Test
SOR	Schedule of Record
SP	Special Provision
SPCN	Special Provision Copied Note
SPIB	Southern Pine Inspection Bureau
SS	Supplemental Specification
SSPC	Society for Protective Coatings
SWaM	Small, Women-Owned, and Minority-Owned Businesses
SWPPP	Storm Water Pollution Prevention Plan
TAPPI	Technical Association of the Pulp and Paper Industry
TFE	Polytetrafluoroethylene
TIE	Ticket Information Exchange (Miss Utility)
TOCIT	Traffic Operations Center Integration Test
UL	Underwriters' Laboratories, Inc.
VAC	Volts alternating current
VDC	Volts direct current
VDOT	Virginia Department of Transportation
VEP	Value engineering proposal

VFA Voids filled with asphalt
VMA Voids in mineral aggregate
VOSH Virginia Occupational Safety and Health
VTM Virginia Test Methods; voids in total mix
VWAPM..... Virginia Work Area Protection Manual

101.02—Terms

In these Specifications and other Contract Documents, the following terms and pronouns used in place of them shall be interpreted as follows:

-A-

Adjustment. An increase or decrease in the Contract amount or in the Contract time, unless the context dictates otherwise.

Advertisement, Notice of. A public announcement, as required by law, inviting bids for work to be performed or materials to be furnished that indicates, among other terms and conditions, approximate quantities of work to be performed, location of work to be performed, character and quantity of materials to be furnished, and time and place for opening bids.

Affiliate. Any business entity that is closely associated to another business entity so that one has the power to control the other either directly or indirectly; or, where one business entity systematically shares resources, officers, and/or other management with another business entity to the extent that a business relationship legally exists or is publicly perceived to exist; or, when a third party has the power to control both; or, where one business entity has been so closely allied with another through an established course of dealings, including but not limited to the lending of financial wherewithal or engaging in joint ventures, so as to cause a public perception that the two firms are one entity.

Alkali Soil. Soil in which total alkali chlorides calculated as sodium chloride are more than 0.10 percent based on total solids.

Award. The decision of the Commission to accept the bid of the lowest responsive and responsible bidder for the Work or such other criteria set forth in the solicitation. The award of the Contract is subject to the execution and approval of a satisfactory Contract for the Work, and such other approvals and conditions as may be specified or required by law.

Award Date. The date on which the decision is made by the Commission to accept the bid or proposal of the lowest responsive and responsible bidder or such other criteria set forth in the solicitation.

-B-

Backfill. Material used to replace or the act of replacing material removed during construction; may also denote material placed or the act of placing material adjacent to structures.

Balance Point. The approximate point, based on estimated shrinkage or swell, where the quantity of earthwork excavation and borrow, if required, is equal to the quantity of embankment material plus any surplus excavation material.

Base Course. A layer of material of specified thickness on which the intermediate or surface course is placed.

Base Flood. The flood or tide having a one percent chance of being exceeded in any given year.

Bid. The offer of a bidder, submitted by electronic proposal (or on paper if so specified in the Proposal) to perform the Work and furnish the materials, equipment, and labor at the prices set forth therein; valid only when properly signed and guaranteed.

Bidder. Any individual, partnership, corporation, limited liability company, or joint venture that formally submits a bid for the work contemplated, or for any portion thereof, acting directly or through a duly authorized representative.

Bids, Invitation for. See **Advertisement, Notice of. Board.** Commonwealth Transportation Board.

Borrow. Suitable material not available from designated Regular Excavation or other sources of useable materials on-site that is used primarily for embankment.

Brackish Water. Water in which total alkali chlorides calculated as sodium chloride are more than 0.10 percent based on total solids.

Bridge. A structure, including supports, that is erected over a depression or an obstruction, such as water, a highway, or a railway, that has a track or passageway for carrying traffic.

Bridge Lift. A layer of fill material placed in excess of standard depth over an area that does not support the weight of hauling equipment and for which compaction effort is not required.

Business. Any corporation, partnership, limited liability company, joint venture, firm, association, individual, or sole proprietorship operated for profit.

-C-

Calendar Day. Any day shown on the calendar, including Saturday and Sunday, beginning at 12:01 a.m. and ending at midnight.

Camber. A vertical curvature induced or fabricated into beams or girders and a deck slab or slab span formwork; a vertical curvature set in the grade line of a pipe culvert to accommodate differential settlement.

Change Order. A written order (Form C-10) signed by the Engineer to incorporate changes, alterations or other modifications into the Contract. A Change Order may be used to add, modify, or delete: pay items, Contract time, Contract Documents, or other terms of the Contract. Change Orders

may be issued on a bilateral or unilateral basis. The term change order means bilateral Change Order, except where the Change Order is designated or understood from the context as being a unilateral Change Order.

Change Order, Bilateral. A written change order signed by both the Engineer and the Contractor where the Engineer and Contractor agree upon the scope, the cost, and the time adjustment for the proposed change, alteration, or other modification to the Contract. Form C-10 shall be used to modify the Contract to include the approved change. This type of change order is what is typically meant when the term change order is used elsewhere in Department publications.

Change Order, Unilateral. A written change order signed only by the Engineer used to effect a change, alteration, or other modification to the Contract when the Engineer and the Contractor cannot agree upon the scope, the cost, or the time estimation of the proposed change, alteration, or other modification to the Contract or where due to issues of emergency, safety, environmental damage, or other similar critical factors the District must act quickly and unilaterally to effect the change. In these cases, the District must act unilaterally to establish a scope, cost, or time adjustment for, the change, alteration, or other modification to the Contract. Form C-10 shall be used to modify the Contract to include the approved change.

Channel. A watercourse or drainage way.

Claim. The Contractor's written request or demand for an adjustment to the Contractor's compensation or to the Contract time, for costs, expenses, or other damages, adjustment of the Contract terms, or for any entitlement available under the Contract, made within the time, in the form, and pursuant to the provisions for claims specified in the Contract Documents.

Commissioner. The Chief Executive Officer of the Chesapeake Bay Bridge Tunnel District.

Commonwealth. Commonwealth of Virginia.

Completion Date. The date specified in the Contract, on Form C-7, by which the Contractor shall achieve Final Acceptance according to Section 108.09.

Completion Date, Substantial. The date on or before which the project is complete such that it can be safely and effectively used by the public without delays, disruption, or other impediments and only clean up and Work of a minor nature, as agreed to by the Engineer, remains to be finished.

Composite H. A graph showing the mean daily discharge versus the calendar day, indicating trends in high and low flow for a one-year period.

Construction Area. The area where authorized construction occurs.

Construction Limits. (On-Site). The disturbed area required for the construction of a Project including the intersection of side slopes with the original ground, plus slope rounding and slopes for drainage ditches, bridges, culverts, channels, temporary or incidental construction, and identified by the surface planes as shown and/or described within the Contract Documents.

Contract. The written agreement executed by and between the District and the Contractor that sets forth the obligations of the parties thereunder. The documents that make up the Contract are specified in Section 103.06. Oral agreements, representations or promises will not be considered a part of the Contract.

Contract Amount. The sum stated as the bid total in the executed Proposal (Form C-7), as adjusted according to the Contract.

Contract Engineer. See **State Construction Contract Engineer.**

Contract Execution Date. The date on which the Contract is signed by the Executive Director.

Contract Item, Bid Item, or Pay Item. A specifically described unit of work for which a price is provided in the Contract Schedule of Items.

Contract Time. The time allowed in the Contract for final completion of the Work, including all authorized time extensions, beginning on the notice to proceed date and ending at the Contract time limit.

Contract Time Limit. The date, whether set by a number of calendar days or fixed calendar date, for final completion of the Work prescribed in the Contract, including all authorized time extensions.

Contractor. The business that has a direct contract with the District, which is in writing and signed by the Executive Director, to perform the prescribed Work as an independent contractor and not as an agent for the District or Commission.

Confirmation Of Verbal Instructions. (COVI) - Contractor-requested written confirmation of the District's instructions concerning the Work. When time and/or costs are or will be impacted, the Contractor must comply with the requirements applicable to requests for adjustments of the Contract amount or Contract time.

Controlling Item Of Work. See **Critical Path Work.**

Contractor Change Requests. (CCR) - Requests where the Contractor asks the District to make an adjustment to the Contract because of excusable and/or compensable events, instructions that have or have not been given, or other work requiring time and/or cost beyond that specified or envisioned within the Contract.

Corporation. A business entity organized and existing under the laws of the Commonwealth or other jurisdiction by virtue of articles of incorporation, amendment, or merger.

Critical Activity. Any activity on the critical path.

Critical Path. The longest continuous sequence of work or chain of activities throughout the project that defines the overall time needed to complete the project.

Critical Path Work. Any work on the critical path. A delay to any critical path work is expected to delay completion of the project.

Culvert. A structure that is not classified as a bridge which provides an opening under any roadway.

Cut. When used as a noun with reference to earthwork, that portion of a roadway formed by excavating below the existing surface of the earth and limited by design or the direction of the Engineer.

Cut Slope. See also **Fill Slope.** A surface plane generally designated by design or the direction of the Engineer which is formed during excavation below existing ground elevations that intersects with existing ground at its termini.

-D-

Day. A Calendar Day, unless specifically stated otherwise.

Deflection. The vertical or horizontal movement occurring between the supports of a bridge superstructure, guardrail, other structure, or the components (beams, girders, and slabs) thereof that results from their own weight and from dead and live loads. Although all parts of a structure are subject to deflections, usually only those deflections that occur in the superstructure are of significance during construction.

Design Flood. The magnitude of flood that a given structure can convey without exceeding a designated flood level.

Detour. The removal of traffic from one roadway or highway to an alternate roadway or highway.

Digital Identification. (I.D.) An encrypted signature that is the legal equivalent of a written signature thus allowing for the digital signing of the bid.

Direct Costs. Project-specific costs the Contractor incurs in the performance of the Work, consisting of labor; material; ownership cost, operating expense, or invoiced rental rates of equipment; and job-site general and administrative overhead.

Disincentive. If provided for in the Contract, an agreed monetary sum that the District deducts from compensation due or to become due to the Contractor if a specified milestone is not satisfactorily completed on or before the specified milestone date.

Disposable Material. Material generally found to be unsuitable for roadway construction or surplus material that is to be placed in a disposal area, unless specified otherwise.

Disposal Areas. Areas generally located outside of the Construction Limits identified in the Contract where unsuitable or surplus material is deposited.

Disqualification. The suspension or revocation of a bidder's prequalification privileges.

District. The Chesapeake Bay Bridge and Tunnel District

Diversion. A traffic shift that temporarily moves an existing Road to a new alignment.

Drainage Ditch. An artificial depression constructed to carry off surface water.

-E-

Earthwork. The work consisting of constructing roadway earthwork in conformity with the specified tolerances for the lines, grades, typical sections, and cross sections shown on the plans or as established by the Engineer. Earthwork shall include regular, borrow, undercut and minor structure excavation; constructing embankments; disposing of surplus and unsuitable material; shaping; grading; compaction; sloping; dressing; and temporary erosion control work.

Easement. A grant of the right to use property for a specific use.
Electronic Bid Submittals

Embankment. A structure of soil, soil aggregate, soil-like materials, or broken rock between the existing ground and subgrade.

Employee. Any person working on the project who is under the direction or control of or receives compensation from the Contractor or subcontractor at any tier.

Engineer. The District Deputy Director, Infrastructure, as designated by the Commission, who acts directly or through his duly authorized representative(s) and who is responsible for highway design, construction, and maintenance. The Engineer and his representative(s) act within the scope of the particular duties or the authority given to them by the Commission, these Specifications, and the Contract Documents.

Equipment. Machinery, tools, and other apparatus, together with the necessary supplies for upkeep and maintenance, that are necessary for acceptable completion of the work.

Excavation. (Excavate) The act of creating a man-made cavity in the existing soil for the removal of material necessary to obtain a specific elevation or to install a structure, material, component, or item necessary to complete a specific task or form a final surface or subsurface.

Extra Work. Any work that was not provided for or included in the Contract as awarded but the Engineer determines is essential to the satisfactory fulfillment of the Contract within its intended scope and is identified in an authorized change order for its execution subject to the limitations, exceptions and provisions in Sections 104.02, 104.03, and 109.05.

-F-

Falsework. A temporary framework used to support work in the process of constructing permanent structural units.

Federal Agencies or Officers. An agency or officer of the federal government and any agency or officer succeeding in accordance with the law to the powers, duties, jurisdictions, and authority of the agency or officer mentioned.

Fill Slope. See also **Cut Slope.** A surface plane formed during embankment above existing ground elevations that intersects with existing ground at its termini.

Final Acceptance. Acceptance of the project after Final Completion of all the Work specified in the Contract, as determined by and contingent on a final inspection by the Engineer.

Firm. A commercial partnership of two or more persons formed for the purpose of transacting business.

Flood Frequency. A statistical average recurrence interval of floods of a given magnitude.

Force Account Work. A type of extra work for which the Contractor is compensated as specified in Section 109.05 (b) Payment by Force Account pursuant to an executed Force Account authorization (Form C-1 15), for use when the scope or quantity of the extra work is undefined.

Formwork. A temporary structure or mold used to retain the plastic or fluid concrete in its designated shape until it hardens. Formwork shall be designed to resist the fluid pressure exerted by plastic concrete and additional fluid pressure generated by vibration and temporary construction loads.

-G-

Gage. U.S. Standard Gage.

Grade Separation. Any structure that provides a traveled way over or under another traveled way or over a body of water.

-H-

Highway. The entire right of way reserved for use in constructing or maintaining the roadway and its appurtenances.

Historical Flood Level. The highest flood level that is known to have occurred at a given location.

Holidays. The days specifically set forth in Section 105.14 or in the Contract Documents.

Hydrologic Data Sheet. A tabulation of hydrologic data for facilities conveying a 100-year discharge equal to or greater than 500 cubic feet per second.

-I-

Incentive. If provided for in the Contract, an agreed monetary sum that the District pays to the Contractor if a specified milestone or condition is satisfactorily completed or achieved, and accepted by the District on or before the specified milestone date.

Inspector. The District's authorized representative who is assigned to make detailed inspections of the quality and quantity of the work and its conformance to the requirements and provisions of the Contract.

Invert. The lowest point in the internal cross-section of a pipe or other drainage structure.

-J, K-

Joint Venture. Two or more businesses that join together in the nature of a partnership for the purpose of bidding on and constructing a project, for which they are all jointly and individually liable to the District.

-L-

Laboratory. The testing laboratory of the District or any other testing laboratory that may be designated by provisions in the Contract or by the District.

Liquidated Damages. As used in Section 108.06, the agreed damages the Contractor owes to the District when the Contractor fails to complete the project within the specified Contract time limit. These damages include, but are not limited to, additional costs associated with administration, engineering, supervision, and inspection of the project, and other expenses.

-M-

Major Item. Any pay item specifically indicated as such in the Schedule of Items included in the Contract.

Material. Any substance that is used in the Work specified in the Contract.

Median. The portion of a divided highway that separates the traveled ways.

Milestone. An event or a date that marks the start or completion of a specified portion of the Work. If provided for in the Contract, milestones are used to specify when the Work or a specified portion thereof must be completed in accordance with the Contract Documents. The Contract may provide for one or more Completion milestone.

Minimum Plan Concept Project. A project of a very limited scope and duration that requires few details to describe the proposed work.

Minor Item. Any pay item that is not specified as being a Major Item in the Schedule of Items included in the Contract.

-N-

Non-Contract Item. Item(s) of work that is required to permit completion of the specified work in an acceptable manner, located within the Limits of Construction, but is not included in the Contract Documents and will be completed by others prior to or during the construction of the Project.

No Plan Project. Generally, a project of a very limited scope and duration that requires no plans to describe proposed work.

Notice to Proceed. Written notice to the Contractor authorizing the prosecution of work.

-O-

Ordinary High Water. A water elevation based on analysis of all daily high waters that will be exceeded approximately 25 percent of the time during any 12- month period.

-P, Q-

Pavement Structure. The combination of select or stabilized materials, subbase, base, and surface courses, described in the Typical Pavement Section in the Plans that is placed on a subgrade to support the traffic load and distribute it to the roadbed.

Pay Item. See Contract item.

Phase Inspection. The inspection of work at predetermined stages in lieu of continuous inspection.

Plans. The approved project plans and profiles, which may include but are not limited to survey data, typical sections, summaries, general notes, details, plan and profile views, cross-sections, special design drawings, computer output listings, supplemental drawings or exact reproductions thereof, and all subsequently approved revisions thereto which show the location, character, dimensions, and details of the Work specified in the Contract.

Prequalification. The procedure for qualifying a contractor or subcontractor to bid or work on District contracts, as specified in the Department's Rules Governing Prequalification Privileges.

Profile Grade. The line of a vertical plane intersecting the top surface of the proposed wearing surface, usually along the longitudinal centerline of the roadbed.

Project. The designated section of highway, roadway, or property including all work to be performed according to the Contract Documents.

Project Showing. The scheduled event at which the District's representative meets with prospective bidders to describe and answer questions regarding the proposed work.

Proposal (Bid Proposal). The District documents in the Notice of Advertisement for Bids that contain the project requirements and other information upon which a bid is to be based. The Proposal includes the plans, Specifications, Special Provisions, Supplemental Specifications, referenced Standards, addenda, revisions, all other documents referred to therein, whether or not attached, and the electronic forms on which the District requires bids to be submitted.

-R-

Ramp. A connecting roadway between two highways or traveled ways or between two intersecting highways at a grade separation.

Requests For Information. (RFI) - Requests where either the Contractor or the District asks that the other party supply information to provide better understanding of or to clarify a certain aspect of the Work.

Requests for Department Action. (RDA) - Requests where the Contractor asks the District to take certain action that the Contractor feels is required for proper completion of all or a portion of the Work.

Right of Way. A general term denoting the District's land, property, or interest therein, that is acquired for or devoted to a highway or other transportation facilities. As used herein, the term does not denote the legal nature of the District's ownership.

Road. A general term denoting a public way for purposes of vehicular travel including the entire area within the right of way; the entire area reserved for use in constructing or maintaining the roadway and its appurtenances.

(VDOT) Road and Bridge Specifications 2016. The standard specifications applicable to contracts awarded by the Commission.

Roadbed. The graded portion of a highway within the top and side slopes that is prepared as a foundation for the pavement structure and shoulders.

Roadbed Material. The material below the subgrade in cuts, embankments, and embankment foundations that extends to a depth and width that affects the support of the pavement structure.

Roadside. A general term that denotes the area within the right of way that adjoins the outer edges of the roadway; extensive areas between the roadways of a divided highway.

Roadside Development. Items that are necessary to complete a highway that provide for the preservation of landscape materials and features; rehabilitation and protection against erosion of areas disturbed by construction through placing seed, sod, mulch, and other ground covers; and such suitable plantings and other improvements as may increase the effectiveness and service life and enhance the appearance of the highway.

Roadway. The portion of a highway within the limits of construction and all structures, ditches, channels, and waterways which are necessary for the correct drainage thereof.

Rootmat. Any material that, by volume, contains approximately 60 percent or more roots.

-S-

Schedule Impact Analysis. (SIA) A process of analyzing a schedule to determine the impact on the project schedule of a change in the Work or condition, or of a delay event, for the purposes of quantifying and apportioning the effects to the party responsible for the impact.

Schedule Of Record. (SOR) The most recent baseline progress schedule accepted by the Engineer. Upon acceptance by the Engineer, the initial baseline progress schedule or a subsequently revised baseline progress schedule shall be the SOR. The SOR is the agreed, official and only baseline schedule with which all work required to complete the project will be planned and executed, on which all subsequent schedule updates shall be based, and against which progress of the Work will be evaluated.

Seawater. Water in which total alkali chlorides calculated as sodium chloride are more than 0.10 percent of total solids.

Select Borrow. Borrow material that has specified physical characteristics.

Select Material. Material obtained from roadway cuts, borrow areas, or commercial sources that is designated or reserved for use as a foundation for the subbase, subbase material, shoulder surfacing, or other specified purposes designated in the Contract Documents.

Shoulder. The portion of the roadway contiguous with the traveled way that is for the accommodation of stopped vehicles, emergency use, and lateral support of the base and surface courses.

Sidewalk. The portion of the roadway constructed primarily for the use of pedestrians.

Skew. The acute angle formed by the intersection of a line normal to the centerline of the roadway with a line parallel to the face of the abutments or, in the case of culverts, with the centerline of the culverts.

Special Provision. (SP) Specifications or requirements for a particular project that add to or modify the standard specifications.

Special Provision Copied Note. (SPCN) Specific specifications or requirements, usually limited in scope, for a particular project.

Specialty Item. A Contract item designated as a "Specialty Item" in the Proposal that requires highly specialized knowledge, abilities, craftsmanship, or equipment not ordinarily provided by contractors pre-qualified to bid on the Contract as a whole. Specialty Items are usually limited to minor components of the overall Contract.

Specifications. A general term that includes all directions, provisions, and requirements, necessary for the proper fulfillment of the Contract. Specifications are found in the following Contract Documents:

Standard Drawings. Unless otherwise specified, applicable drawings in the VDOT Road and Bridge Standards and such other standard drawings as are referred to on the plans.

State. Commonwealth of Virginia.

State Construction Contract Engineer. The Chief Engineer's authorized representative for administering the Notice of Advertisement for Bids, receiving bids for such, and awarding contracts for the Department.

Station. When used as a definition or term of measurement, 100 linear feet.

Storm Sewer System. A drainage system consisting of a series of at least two interconnecting pipes and structures (minimum of two drop inlets, manholes, junction boxes, etc.) designed to intercept and convey storm water runoff from a specific storm event without surcharge.

Street. A general term denoting a public way for purposes of vehicular travel including the entire area within the right of way; the entire right of way reserved for use in constructing or maintaining the roadway and its appurtenances.

Structures. Bridges, culverts, catch basins, inlets, retaining walls, cribs, manholes, end walls, buildings, steps, fences, sewers, service pipes, underdrains, foundation drains, and other features that may be encountered in the work and are not otherwise classed herein.

Subbase. A layer(s) of specified or selected material of designed thickness that is placed on a subgrade to support a base course.

Subcontract. A contract between the Contractor and any other business to perform part of the Contract subject to the requirements of the Contract Documents including, but not limited to, Sections 102.01 and 105.06.

Subcontractor. Any business that has a subcontract, including any business that provides on-site labor, but not any business that furnishes or supplies only materials or equipment for the Project.

Subgrade. The top earthwork surface of a roadbed, prior to application of Select or Stabilized material courses, shaped to conform to the typical section on which the pavement structure and shoulders are constructed, or the surface that must receive an additional material layer, such as Topsoil, Stone or other Select Material.

Subgrade Stabilization. The modification of roadbed soils by admixing with stabilizing or chemical agents that will increase the load bearing capacity, firmness, and resistance to weathering or displacement.

Sublet. See **Subcontract**.

Submittals. Documents required by the Contract that the Contractor must submit for the District's review, acceptance, or approval. Submittals may include shop drawings, working drawings, material test reports, material certifications, project progress schedules, and schedule updates. The Contractor shall provide submittals as early as practicable so as not to delay review, acceptance, or approval of the Work.

Substructure. The part of a structure that is below the bearings of simple and continuous spans, skew-backs of arches, and tops of footings of rigid frames, together with the back walls, wingwalls, and wing protection railings.

Superintendent. The Contractor's Project representative who is authorized to receive and fulfill instructions from the Engineer and who supervises and directs the Work on the Contractor's behalf.

Superstructure. The portion of a structure that is above the substructure.

Supplemental Specifications.(SS) Additions and revisions to the Road and Bridge Specifications.

Supplier. Any business who manufactures, fabricates, distributes, supplies, or furnishes materials or equipment, but not on-site labor, for use in performing the Work on or for the project according to the requirements of the Contract Documents including, but not limited to, Sections 102 and 106.

Surety. A business bound with and for the Contractor for full and complete fulfillment of the Contract and for payment of debts pertaining to the Work. When applied to the proposal guaranty, it refers to the business that engages to be responsible in the execution by the bidder, within the specified time, of a satisfactory Contract and the furnishing of an acceptable payment and contract bond.

Surface Course. One or more top layers of a pavement structure designed to accommodate the traffic load, which is designed to resist skidding, traffic abrasion, and disintegrating effects of weather. Also see wearing course.

Surplus Material. Material that is present on a project as a result of unbalanced earthwork quantities, excessive swell, slides, undercutting, or other conditions beyond the control of the Contractor, or is designated as surplus material in the Contract Documents.

Suspension. A written notice issued by the Engineer to the Contractor that orders the Work on a project to be stopped wholly or in part as specified. The notice will include the reason for the suspension.

-T-

Temporary Structure. Any structure that is required to maintain traffic while permanent structures or parts of structures specified in the Contract are constructed or reconstructed. The

temporary structure shall include earth approaches.

Theoretical Maximum Density. The maximum compaction of materials that can be obtained in accordance with the values established VTM-1.

Tidewater, Virginia. Areas within the Commonwealth as defined in the Department of Conservation and Recreation Erosion and Sediment Control Manual.

Time Impact Analysis. (TIA) A forward-looking, prospective schedule impact analysis method that adds a modeled delay to the current schedule in place at the time of a change or delay to determine the possible time impact of the change or delay to project completion.

Ton. A short ton; 2,000 pounds avoirdupois.

Top of earthwork. The uppermost surface of the regular or embankment excavation, not including select material, which is shaped to conform to the typical section shown in the plans or directed by the Engineer.

Topsoil. The uppermost original layer of material that will support plant life and contains more than five (5) percent organic material reasonably free from roots exceeding one (1) inch in diameter, brush, stones larger than three (3) inches in the largest dimension, and toxic contaminants.

Traveled Way. The portion of the roadway for the movement of vehicles, not including shoulders.

-U-

Unsuitable Material. Any material which contains more than five (5) percent by weight organic matter, or which has unstable bearing capacity, excessive moisture content, plasticity indexes or liquid indexes, or other characteristics defined by the Engineer or the Contract Documents as unsuitable for the use intended.

Utilities. Private, county, city, municipal or public facility, structure, or infrastructure, designed, owned and maintained for public use or to provide a public service such as electricity, water, sanitary sewer, storm sewer, drainage culverts, telecommunications, conduits, gas, oil, fiber optics, cable television, that is not identified as a Pavement Structure, Roadway, Highway, Street or Traveled Way.

-V-

VDOT. Virginia Department of Transportation

Vouchered. The action of approval by the Department; constitutes the date of release to the State Comptroller for payment.

-W,X,Y,Z-

Wearing Course. (See **Surface course**) The top and final layer of any pavement.

Work. The furnishing of all materials, labor, tools, equipment, and incidentals necessary or convenient for the successful completion of the project and the carrying out of the duties and obligations specified in the Contract.

Working Drawings. Stress sheets, shop drawings, erection plans, falsework plans, framework plans, cofferdam plans, bending diagrams for reinforcing steel, or any other supplementary plans or similar data the Contractor is required to submit to the Engineer for review.

SECTION 102— BIDDING REQUIREMENTS AND CONDITIONS

102.01—Prequalification of Bidders

- (a) All prospective bidders, including all members of a joint venture, shall be prequalified with the Virginia Department of Transportation (VDOT) and shall have received a certification of qualification in accordance with the Rules Governing Prequalification Privileges prior to bidding. This requirement may be waived by a project-specific provision in the Proposal. The Rules Governing Prequalification Privileges may be found on VDOT's website at www.virginiadot.org/business/const/prequal.asp.

All subcontractors shall be prequalified prior to performing any work on the Contract, except that prequalification will not be required for subcontractors when all of the pay items on which they are working fit one of the following descriptions: items denoted in the Proposal as "Specialty Items;" items that the District declares during the Advertisement period to be Specialty Items; or an item that is otherwise indicated in the Proposal as having a waiver of prequalification.

When an individual is prequalified to bid jointly only with a specific company, the joint venture will be considered a unified entity for qualification purposes.

102.02—Content of Proposal

- (a) Standard Proposal - The Proposal will be defined in the Instructions to Bidders.

102.03—Not Used

102.04—Examination of Site of Work and Proposal

- (a) **Evidence of Examination of Site of Work and Proposal**

The submission of a bid will be considered conclusive evidence that the bidder has (1) conducted a reasonable examination of the site of the proposed Work, the Proposal and other documents referenced therein, and the plans before submitting a bid, (2) is satisfied as to the nature, character, qualities, quantities, and conditions to be encountered in performing the Work and the requirements specified in the Proposal, and (3) has taken such matters into consideration when submitting the bid. A reasonable site investigation may include investigating the project site, borrow sites, disposal areas, and hauling routes related to the performance of the Work.

- (b) **Subsurface Data**

Subsurface data may be included in the Proposal or may be made available for review by the bidder in the office of the District. . Data not included in the Proposal are not part of the Contract, but are made available to the bidder in good faith to notify the bidder of information in possession of the District. The District does not warrant any data not included

in the Proposal or Contract, or any conclusions drawn from such data, either expressly or by implication. The bidder shall make his own interpretation of the subsurface data that may be available and satisfy himself with regard to the nature, condition, and extent of the material to be excavated, graded, or driven through. The submission of a bid will be considered conclusive evidence that the bidder is satisfied with regard to the subsurface conditions to be encountered in the work and has taken such conditions into consideration when submitting the bid.

(c) Notice of Alleged Ambiguities, Conflicts, Errors or Omissions

If a bidder has any questions or doubts about a word, phrase, clause, specification, or any other portion of the Proposal or alleges an ambiguity, conflict, error, or omission, the bidder shall submit a question about the ambiguity, conflict, error, or omission not later than 10 days prior to the due date of receipt of bids and request an interpretation thereof. Authorized interpretations will be issued by the District to each person who received a Proposal, and will be posted on the District Website. The District will not be responsible for any other explanations or interpretations of the alleged ambiguities, conflicts, errors or omissions.

The bidder shall not take advantage of obvious or apparent ambiguities, conflicts, errors, or omissions in the Proposal. If the bidder fails to submit a question and requests an interpretation of an obvious or apparent ambiguity, conflict, error, or omission within the specified time, the bidder shall waive any right it may have had to its own interpretation of the ambiguity, conflict, error, or omission. Further, if awarded the Contract the bidder waives any claims and shall not be entitled to any additional compensation or time, or entitled to sue the District based on such obvious or apparent ambiguity, conflict, error, or omission.

It is recognized that the bidder's review of the Proposal is made in the bidder's capacity as a contractor and not as a licensed design professional unless otherwise specifically provided in the Contract. The bidder is not required to ascertain that the Contract is in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations, but any non-conformity discovered by or made known to the bidder shall be reported promptly to the District.

(d) Utilities

In general, the bid proposal will indicate the various utility items known to exist, will indicate items to be adjusted or improvements proposed by the respective owners and will designate any items that are to be adjusted by the Contractor. Information contained in the bid proposal regarding utility locations is advisory only and shall not be construed as being a representation of completeness or accuracy. The bidder shall contact the owners of the various utilities to determine the exact location of the utilities and the owner's schedule of work. Unless otherwise noted, all utility adjustments will be performed by the Utility or its representative. The Contractor shall cooperate with the owners of any utilities in their adjustment operations. Prior to preparing a bid, the bidder shall contact known utility owners to determine the nature, extent, and location of existing, adjusted, or proposed new utility facilities within the areas of construction. It is understood and agreed that the Contractor (1) has considered in his bid all of the permanent and temporary utility appurtenances in their present and relocated positions and, any proposed utility capital improvements, and (2)

the Contractor has contacted the utility owner with regard to the Contractor's proposed schedule of work. The Contractor shall include in his proposed schedule the amount of time to make utility adjustments, from time estimates furnished by the utility owners. Any costs associated with contacting, and coordinating with the utilities shall be reflected in the bid price for other items in the Contract. In the event the utility owners are non-responsive to the Contractor's efforts to contact them, the Contractor shall notify the District prior to submitting a bid.

102.05—Preparation of Bid

(a) General

The bidder shall submit its bid by approved electronic media, unless otherwise provided for in the Proposal. The bidder shall furnish a unit or lump sum price as called for in the Proposal, in numerical figures, for each pay item listed. The bidder shall also show the products of the unit prices and quantities in numerical figures in the column provided for that purpose and the total amount of the bid.

If a unit or lump sum price is omitted, the bid will be rejected. If there is a discrepancy between the unit price and its extension, the unit price will govern. In the event there is a discrepancy between the bidder's electronically generated Proposal form and the official Proposal form as furnished by the District, the official Proposal form will govern.

Bids will be considered irregular and may be rejected for any of the reasons stated in Section 102.06.

The bidder shall submit a proposal guaranty in accordance with Section 102.07.

A bid will be rejected and the bidder disqualified for any of the reasons stated in Section 102.08.

(b) Design Options

Except as otherwise specified in the Proposal, when regular and alternate design options are shown in the Proposal, the bidder shall submit a bid price for at least one design option. The District may award the Contract to the responsive and responsible bidder who submitted the lowest bid for the regular design option or the lowest bid for the alternate design option, whichever is deemed to be in the best interest of the District.

(c) Debarred Suppliers

The bidder is cautioned against utilizing price quotes for materials for use in the preparation of bids from suppliers or vendors that are debarred by VDOT. VDOT's Engineer will not approve for use any material furnished by a supplier debarred by VDOT. The bidder shall ascertain from VDOT's listings which suppliers are debarred. Lists of approved suppliers can be found on VDOT's website at www.virginiadot.org/business/resources/Materials/Approved-Lists

If a previously debarred supplier is reinstated to eligibility subsequent to the award of a contract, the Engineer may approve the use of the supplier when requested by the Contractor.

(d) **Required Certifications**

A bidder who makes a false certification on the Bidder Certification of Prequalification Classification will be subject to forfeiture of his proposal guaranty or disqualification from bidding on future work for a 90-day period, or both. The Executive Director will determine the imposition and extent of such sanctions. A sworn statement shall be executed by the bidder or his agent certifying that the bidder has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action to restrain free competitive bidding in connection with the Proposal. The sworn statement shall be part of the electronic bid or in the form of an affidavit furnished by the Department and shall be sworn to before a person who is authorized by the laws of the Commonwealth to administer oaths. The electronic bids shall contain the identical sworn statement. For the purpose of this Section, affixing a Digital ID to the bid will be considered by the Department conditional evidence of signing before a person who is authorized by the laws of the Commonwealth to administer oaths.

(e) **Acknowledgement of Addenda**

The bidder shall acknowledge all addenda to the Proposal documents issued prior to receipt of bids by entering the date of any Addenda on the Acknowledgement of Revisions page included in the bid package. Bidders are responsible for checking the District's website to ensure that they have seen and considered all addenda before submitting a bid. Failure to acknowledge any addendum by the method outlined above may result in the bid being rejected as non-responsive and irregular.

(f) **Signing the Bid**

Bids shall be signed with a digital identification. The names of persons authorized to sign bids shall be on file with the Department. A name will be considered to be on file if it appears as that of an officer, a partner, a member, a manager or an owner on the current Contractor's Prequalification Application. Requests by the bidder to revise the list of persons authorized to sign bids on their behalf shall be submitted in writing and approved prior to the date bids are opened. A bid signed by someone whose name is not on file as someone authorized by the bidder may be rejected. If the individual signing the bid for a joint venture is not previously identified as authorized to sign a bid, the firm of record is responsible for the bid.

102.06—Irregular Bids

Bids will be considered irregular and may be rejected for any of the reasons below.

- (a) The bidder fails to comply with Sections 102.05 and 102.07.

- (b) The bidder adds any provisions reserving the right to accept or reject an award or enter into a contract pursuant to an award except as otherwise permitted in these Specifications.
- (c) The bidder fails to provide Certification of Prequalification Classification.
- (d) The bid is not properly signed.
- (e) The bidder fails to acknowledge all addenda.
- (f) There are unauthorized additions, conditional or alternate bids, or irregularities of any kind that may make the bid incomplete, indefinite, or ambiguous.
- (g) The prices in the bid are obviously mathematically and materially unbalanced, either in excess or below the cost analysis values as determined by the District. A mathematically unbalanced bid is a bid containing lump sum or unit price items that do not include reasonable labor, equipment, and material costs plus a reasonable proportionate share of the Bidder's overhead costs, other indirect costs, and anticipated profit. A materially unbalanced bid is when the Department determines that an award to the Bidder submitting a mathematically unbalanced bid will not result in the lowest ultimate cost to the District.
- (h) The bidder fails to submit a Non-Collusion Affidavit
- (i) The bid submitted identifies a project different than the project for which the bid is submitted.
- (j) The bid is not totaled or is totaled incorrectly.
- (k) Erasures or alterations in the bidder's entries on paper bids, when allowed, are not initialed by the bidder.
- (l) Attachments included in the bid are detached or altered when the bid is submitted except as otherwise provided for herein.
- (m) The bidder, if required, fails to register or obtain authorization to transact business in Virginia from the State Corporation Commission prior to bidding.

102.07—Proposal Guaranty (Bid Bond)

A bid in excess of \$250,000.00 will be rejected unless accompanied by a proposal guaranty, also known as a bid bond, made payable to the District. The amount of the proposal guaranty shall be 5 percent of the total bid. The proposal guaranty shall be accompanied by a certified copy of the power of attorney for the surety's attorney-in-fact.

When the principal is a joint venture, each member of the joint venture shall be named and shall execute the proposal guaranty. Each surety to the proposal guaranty shall be named, and shall execute

the proposal guaranty, and shall provide a certified copy of the power of attorney for the surety's attorney-in-fact.

102.08—Disqualification of Bidder

- (a) Any of the reasons set out in the Rules Governing Prequalification Privileges may be considered sufficient for the disqualification of a bidder or the rejection of a bid, or both. Such reasons for disqualification are not exclusive and disqualification may occur based on other requirements in these Specifications.
1. The bidder does not have sufficient financial ability to perform the Contract. If a bond is required to ensure performance of a Contract, evidence that the bidder can acquire a surety bond from a corporation included on the U. S. Treasury Listing of Approved Sureties in the amount and type required by the public body will be sufficient to establish the financial ability of the bidder to perform the Contract.
 2. The bidder or any current officer, director, owner, project manager, procurement manager, or chief financial official thereof has been convicted of, or pled guilty or nolo contendere within the past 10 years to a crime related to governmental or nongovernmental construction or contracting, including, but not limited to, a violation of (i) Ethics in Public Contracting statutes, § 2.2-4367 et seq. of the Code of Virginia, (ii) the Virginia Governmental Frauds Act, § 18.2-498.1 et seq. of the Code of Virginia, (iii) Conspiracy to Rig Bids to Government statutes § 59.1-68.6 et seq. of the Code of Virginia, (iv) any substantially similar law of the United States or another state, or (v) any criminal offense indicating a lack of moral or ethical integrity as may reasonably be perceived to relate to or reflect upon the bidder's business practices.
 3. The bidder or any officer, director or owner thereof is currently debarred pursuant to an established debarment procedure from bidding or contracting by any public body, agency of another state, or agency of the federal government.
 4. The bidder failed to respond to the District's request for clarifying information requested by the District relevant to the preceding paragraphs 1 through 3.
 5. The bidder fails to register and participate in the E-Verify program as required by § 2.2-4308.2 of the Code of Virginia.
 6. The bidder or any officer, director, or owner thereof has had a judgment entered against them for violation of the Virginia Fraud Against Taxpayers Act (Code of Virginia § 8.0 1- 216.1, et seq.).
 7. More than one bid for the same work is submitted by an individual, partnership, corporation or joint venture under the same or different name. A bid submitted by an affiliate of an individual, partnership, corporation, or any party of a joint venture will be considered as more than one bid submitted for the same work. Affiliate as used herein shall conform to the definition in Section 101.02 - Terms.

8. Evidence of collusion among bidders; participants in such collusion will not be considered for future bids until new applications for prequalification are approved according to the Rules Governing Prequalification Privileges.
 9. Incompetency or inadequate machinery, plants, or other equipment as revealed by the bidder's financial and experience statements required by these Specifications and the Rules Governing Prequalification Privileges.
 10. Unsatisfactory workmanship or unsatisfactory progress toward timely completion of the Work as described within Sections 102.01, 102.08, 105.05, 108.03, 108.07, or other applicable Specifications as demonstrated by performance records of current or past work for the District, other agencies or departments of the Commonwealth, other public bodies in the Commonwealth, or agencies or departments of other states in the United States or federal government.
 11. Uncompleted work under contract with the District that in the judgment of the Engineer might hinder or prevent prompt completion of additional work if awarded.
 12. Failure to promptly pay or settle satisfactorily all undisputed bills for materials, labor, equipment, supplies, or other items specified in contracts in force at the time the new work comes before the Commission for award.
 13. Failure to comply with any prequalification rule or regulation of the District.
 14. Failure to cooperate properly with representatives of the Commonwealth inspecting, monitoring or administering construction or disorderly conduct toward any such representative in contracts.
 15. Default under a previous contract with the Commonwealth.
 16. Failure to pay amounts owed to the District, as specified in Section 109.10, on other contracts.
 17. Making materially false statements in a bid or certified statement submitted to the District.
- (b) Temporary disqualification of a bidder as provided herein will result in the temporary disqualification of each member of a joint venture and any affiliate of the bidder having substantially the same operational management or drawing from the same equipment or labor resource pool. Temporary disqualification will also result in disqualification of the bidder, each member of a joint venture, and affiliates as defined herein, for performance of work as subcontractors that in the opinion of the District, could adversely affect other work under contract to the District.

102.09—Withdrawal of Bid

A bidder may withdraw a bid in accordance with the following.

- (a) **Standard Withdrawal:** Bids may be withdrawn until bid closing. A bidder may withdraw a bid provided the request for the withdrawal is written and signed by a person(s) who qualifies to execute the bid in accordance with Section 102.05.

102.10—Not Used

102.11—Public Opening of Bids

Electronic bids, along with all other bids will be opened and read publicly at the time and place specified in the Instruction to Bidders. Interested parties are invited to be present at the opening or can find the results on the District website at: www.cbbt.com. The as read results will be posted on this website as soon as possible on the day of the reading.

102.12—Not Used

SECTION 103—AWARD AND EXECUTION OF CONTRACTS

103.01—Consideration of Bids

After bids have been opened and read, the District will evaluate bid submittals to determine whether all requirements of Section 102 and the Proposal have been met. Bids not submitted in accordance with Section 102 and the Proposal will be rejected.

Bids will be compared on the basis of the summation of the products of the quantities shown in the bid schedule and the unit bid prices.

The District may correct arithmetical errors in the bid prior to such comparison, in accordance with Section 102.05. The results of the comparisons will be available to the public after the determination has been made to award the Contract.

The District reserves the right to reject any or all bids, waive informalities, advertise for new bids, or proceed to do the Work otherwise if it deems that the best interest of the District would be promoted thereby.

The District may, as part of its deliberations toward award of a contract, enter into a Memorandum of Understanding (MOU) with the apparent lowest responsive and responsible bidder if any of the following is determined to be necessary:

- (a) Provide and document further clarification of a specification or drawing.

- (b) Establish an order of priority (ranking) where there are conflicting specification requirements.
- (c) Ensure proper understanding of the intent\meaning of a specification or drawing.
- (d) Document the inclusion of inadvertently excluded pages from the Contract.
- (e) Document the correct unit of measurement where a conflict exists within the bid documents.
- (f) Document the elimination of an item(s).
- (g) Limit the District's exposure to contract overruns or potential unbalancing of a bid item.

This listing is not to be interpreted as all inclusive, but is provided to give examples of the types of issues that may be addressed in such an agreement. The MOU is not intended to be used to negotiate "as bid" unit prices/quantities or to renegotiate bid requirements with the apparent lowest responsive and responsible bidder, but merely to address intent, clarify points of confusion or limit the possible future effects of such issues on project budget. If the terms of the MOU are acceptable to both parties, the District and the apparent lowest responsive and responsible bidder will document their acceptance of the terms of the MOU by both parties' signatures. The MOU will be added to and become part of the executed Contract.

103.02—Award of Contract

If the Contract is awarded, the award will be made to the lowest responsive and responsible bidder without discrimination on the grounds of race, color, gender, or national origin. In the event of tie bids, preference will be given to the lowest responsive and responsible bidder who is a resident of Virginia otherwise the tie will be decided by lot.

Whenever any bidder is a resident of any other state and such state under its laws allows a resident contractor of that state a preference, a like preference may be allowed to the lowest responsive and responsible bidder who is a resident of Virginia. The award date will not be later than midnight on the 60th day after the opening of bids. If the Commission; where permitted by law, has not awarded the Contract within this period, the bidder may withdraw his bid without penalty or prejudice unless the time limit is extended by mutual consent.

103.03—Cancellation of Award

The Commission, where permitted by law, may cancel the award of any contract at any time before the execution of the Contract by all parties without liability to the District.

103.04—Forfeiture of Proposal Guaranty

The apparent low bidder's proposal guaranty shall be subject to forfeiture if the apparent low bidder withdraws his bid prior to award, or fails to sign and return the Contract. The proposal guaranty shall be

forfeited according to the forfeiture provisions in Code of Virginia (§ 2.2-4336) and the proposal guaranty. The apparent low bidder's refusal to sign a Memorandum of Understanding shall not be grounds for proposal guaranty forfeiture.

103.05—Requirements of Contract Bond

Within 15 calendar days after notification of award of the Contract the successful bidder shall furnish the following bonds for contracts in excess of \$100,000.00:

- (a) A performance bond in the sum of the Contract amount, conditioned upon the faithful performance of the Contract in strict conformity with the plans, Specifications and conditions of the Contract, and.
- (b) A payment bond in the sum of the Contract amount, conditioned upon the prompt payment for all labor, materials, public utility services and rental of equipment used in the prosecution of the work for the Contract.

Bidders will not be awarded an unbonded contract when their bid plus the balance of other unbonded contracts exceeds \$100,000.00 or as otherwise limited by their current prequalification status.

The bonds shall be made on Standard AIA forms and shall be executed by the bidder and a surety company carrying a minimum "Best Rating" of "B +" and authorized to do business in Virginia in accordance with the laws of Virginia and the rules and regulations of the State Corporation Commission. To be considered properly executed, the bonds shall include authorized signatures and titles.

103.06—Contract Documents

The Contract shall include the following documents unless otherwise specified by Special Provisions or Special Provision Copied Notes:

- (a) **Contract:** The Contract shall include:
 - The fully executed Proposal including all addenda or revisions thereto issued prior to the bid date; the Schedule of Items showing the prices submitted by the bidder; and any Supplemental Specifications, Special Provisions, Special Provision Copied Notes, and attachments issued with the Proposal.
 - These Specifications.
 - The Plans.
 - The edition of the Road and Bridge Standard Drawings cited on the title sheet of the Plans including all addenda or revisions thereto issued prior to the bid date.

- Any Memoranda of Understanding agreed to between the Engineer and the Contractor conforming to Section 103.01.
 - Any change orders that the Engineer issues after the Contract execution date.
- (b) **Contract Performance and Payment Bonds:** Contract bonds shall conform to Section 103.05.
- (c) **Affidavits and Documents:** Affidavits and documents shall include those required to be made a part of the Contract by any federal or state law in effect on the date of the Notice of Advertisement.
- (d) **Workers' Compensation Insurance Certificate:** The Contractor shall procure and continue to maintain for the duration of the Work until final acceptance, Workers' Compensation and Employers' Liability Insurance for all of its employees engaged in the Work in an amount not less than the minimum required by Code of Virginia (§ 2.2-4332), and the Virginia Workers' Compensation Act, Code of Virginia §65.2-100 et seq. When any of the Work is sublet, the Contractor shall require each subcontractor to provide similar Workers' Compensation and Employers' Liability Insurance for all of the subcontractor's employees engaged in the Work.

Within 15 days after the date of the notice of award of the Contract, the bidder shall submit a Certificate of Insurance, verifying Workers' Compensation coverage using the Department's forms (Form C-73). The certificate shall be executed by an approved and authorized insurance company as required by state law and shall cover the Contract. The Contractor shall likewise obtain a Certificate of Insurance for Workers' Compensation coverage from each subcontractor prior to performance of work and shall provide a copy to the District.

The Contractor shall notify the District in writing at least 30 days prior to the cancellation or reduction of the bonds or insurance required under this Section. The Contractor shall cease all operations on the effective date of the cancellation or reduction unless and until new bonds or insurance are in force and the same evidence of bonds or insurance are provided to the District.

- (e) **Progress Schedule:** The Contractor shall submit a progress schedule in accordance with Section 108.03 or as specified in the Contract.
- (f) **Contractor's Bodily Injury and Property Damage Liability Insurance Certificate:** The Contractor shall procure and maintain at his own expense, for the duration of the Work until final acceptance, insurance of the kinds and in the amounts specified herein. The minimum limits of liability for this insurance shall be as follows:

A Combined Single Limit for Bodily Injury Liability and Property Damage Liability

\$1,000,000	Each Occurrence
\$2,000,000	Aggregate

Within 15 days after the date of the notice of award of the Contract, the bidder shall submit Certificates of Insurance showing compliance with the above using the Department's form (Form C-73). The certificates shall be executed by an approved and authorized insurance company authorized to do business in Virginia and with a minimum "*Best Rating*" of "*B+*", and shall cover the Contract it accompanies.

The Contractor's Bodily Injury and Property Damage Liability Insurance shall cover liability of the Contractor for damage because of bodily injury to, or death of persons and damage to, or destruction of property, that may be suffered by persons other than the Contractor's own employees as a result of the negligence of the Contractor in performing the Work.

Insurance provided in compliance with this Section shall include liability of the Contractor for damage to or destruction of property that may be suffered by persons other than the Contractor's own employees as a result of blasting operations of the Contractor in performing the work covered by the Contract of any part of the Work is sublet, insurance meeting the same requirements shall be provided by or on behalf of the subcontractors and evidence of such insurance shall be submitted with the sublet request.

Insurance coverage in the minimum amounts set forth herein shall not be construed to relieve the Contractor or subcontractor(s) of liability in excess of such coverage, nor shall it preclude the District from taking such actions as are available to it under any other provision of this Contract or otherwise in law.

103.07—Failure to Furnish Bonds or Certificate of Insurance

The successful bidder's failure to furnish to the District acceptable bonds, workers' compensation insurance certificates or the Contractor's Bodily Injury and Property Damage Liability Insurance certificates within 15 days after the date of Award Letter shall be considered just cause for cancellation of the award and forfeiture of the proposal guaranty. In such event, the proposal guaranty shall become the property of the District, not as a penalty but in liquidation of damages sustained. The Contract may then be awarded to the next lowest responsive and responsible bidder, or the Work may be re-advertised or constructed otherwise, as determined by the District.

103.08—Contract Audit

The Contractor shall permit the District to audit, examine, and copy all documents, computerized records, electronic mail, or other records of the Contractor during the life of the Contract and for a period of not less than five years after the date of final payment, or the date the Contractor is declared in default of Contract, or the date of termination of the Contract. The documents and records shall include, but not be limited to:

- (a) Those that were used to prepare and compute the bid, prepare all schedules used on the project, record the progress of work on the project, accounting records, purchasing records, personnel payments, or records necessary to determine employee credentials, vendor payments, and written policies and procedures used to record, compute, and analyze all costs incurred on the project, including those used in the preparation or presentation of claims to the District.
- (b) Records pertaining to the project as the District may deem necessary in order to permit adequate evaluation and verification of Contractor's compliance with Contract requirements, compliance with the District's business policies, and compliance with provisions for pricing change orders or claims submitted by the Contractor or the Contractor's subcontractors, insurance agents, surety bond agents, and material suppliers shall be made available to the auditor(s) at the District's request. The Contractor shall make his personnel available for interviews when requested by the District.
- (c) Upon request, the Contractor shall provide the District with data files on data disks or other suitable alternative computer data exchange format. Data furnished by the Contractor that cannot be verified will be subject to a complete audit by the District.

The Contractor shall ensure that the requirements of this provision are made applicable to his subcontractors, insurance agents, surety bond agents, and material suppliers. The Contractor shall cooperate and shall cause all related parties to furnish or make available in an expeditious manner all such information, materials, and data.

The Contractor shall provide immediate access to records for the audit and provide immediate acceptable facilities for the audit. Failure on the part of the Contractor to afford the District immediate access or proper facilities for the audit will be considered failure to cooperate and will result in disqualification as a bidder in accordance with Section 102.08.

Upon completion of the Contract audit, any adjustments or payments the Contractor owes to the District as a result of the audit shall be made to the District within 60 days from presentation of the District's findings to the Contractor. Failure on the part of the Contractor to make such payment may result in disqualification as a bidder in accordance with Section 102.08.

If the Contractor disagrees with the findings of the District's audit, the Contractor may dispute the findings in accordance Section 105.19 or the Code of Virginia as amended and as applicable, except that if the time provided for the Contractor to submit a claim within 60 days after final payment has expired, the Contractor shall instead submit a written claim to dispute the findings to the Engineer within 60 days from the date the Contractor received the findings. Failure on the part of the Contractor to submit a claim disputing the District's findings within such 60-day period shall constitute a waiver and release of any claim disputing the District's findings.

103.09—Execution of Contract

- (a) **The bid as submitted**, including the Contract Documents specified in Section 103.06 shall

constitute the Contract upon submittal of the Contract bond, Contractor's bodily injury and property damage liability insurance certificates, and workers' compensation insurance certificate and the District's final execution of the Contract. After the District has recommended the bid for award, the apparent low bidder shall be required to sign and return a paper copy of the Contract to the District. Failure to sign and return the Contract will result in cancellation of the award and forfeiture of the proposal guaranty. If the Contract is not awarded within the time limit specified in Section 103.02, the bidder may withdraw his bid without penalty or prejudice unless the time limit is extended by mutual consent. The District will execute the Contract upon receipt of the Contractor's signed Contract. The Contract shall be considered binding and effective only when it has been fully executed by all parties.

- (b) **Notice of Contract execution.** The Engineer will notify the Contractor of the date that the District has executed the Contract. The Engineer or his designee will confirm the Contract execution date in such notice. The notice will identify the Engineer's authorized representative responsible for written directives and changes to the Contract, who will contact the Contractor to arrange a pre-construction and scheduling conference.
- (c) **Unbonded Contracts**
In the event the successful bidder on an unbonded contract is unwilling or unable to fulfill the Contract and fails to notify the District prior to the District's execution of the Contract, the bidder will be declared in default in accordance with Section 108.07.

In the event the bidder, on an unbonded contract, notifies the District prior to the District's execution of the Contract of such unwillingness or inability to fulfill the Contract, the bidder will be enjoined from bidding on unbonded contracts for a period of no less than 90 days from the date of notice by the District.

A bidder who has never been enjoined or defaulted on an unbonded contract and who notifies the District prior to the District's execution of the Contract of such unwillingness or inability to fulfill the Contract will not be enjoined for the first occurrence; however, said bidder will not be permitted to rebid or perform work on that specific Contract.

103.10—Assignments, Transfers, or Assumptions of the Contract

The Contractor shall not assign, transfer, convey, or allow any person or business to assume or take over, in whole or in part, the Contract, the Contractor's duties, or performance obligations, arising under, from or relating to the Contract, except for subcontracting as provided in Section 105.06 or the rights of a surety issuing a performance bond for the Contract, without the Engineer's specific written authorization. Any such unauthorized assignment, transfer, conveyance, assumption, or take over agreement shall be void and shall constitute a material breach of the Contract. No assignment, transfer, conveyance, assumption, or take over agreement shall relieve the Contractor from its duties and obligations under the Contract, or release the Contractor of any liability under the Contract bonds.

SECTION 104—SCOPE OF WORK

104.01—Intent of Contract

The intent of the Contract is to provide for completion of the Work specified therein in accordance with the Contract for the Contract amount and within the Contract time limit. Further, it is understood that the Contractor shall perform the Work under the Contract as an independent contractor and not as an agent of the District or the Commission.

104.02—Changes in Quantities or Alterations in the Work

(a) General

The Engineer reserves the right to make, in writing, at any time during the Work, such changes in quantities and such alterations in the work as are necessary to complete the project satisfactorily. Such changes in quantities and alterations shall not invalidate the Contract or release the surety, and the Contractor shall agree to perform the Work as altered. No change alteration or modification in or deviations from the Contract, or the giving by the District of any extension of time for the performance of the Contract, or the forbearance on the part of the District shall release or exonerate in whole or in part either the Contractor or any surety on the obligations of any bond given in connection with the Contract. Neither the District nor the Contractor shall be under any obligation to notify the surety or sureties of any such alteration, change, extension or forbearance, notice thereof being expressly waived. Any increase in the Contract amount shall automatically result in a corresponding increase in the penal amount of the bonds without notice to or consent from the surety, such notice and consent being hereby waived. Decreases in the Contract amount shall not, however, reduce the penal amount of the bonds unless specifically provided in any change order as authorized in accordance with Section 109.05 decreasing the scope of the work.

(b) Significant Changes in the Character of Work

The work or changes in quantities, significantly change the character of the work under the Contract, an adjustment, excluding anticipated profits for reduced or eliminated work, may be made to the Contract. The basis for the adjustment shall be agreed upon prior to the performance of the affected Work. If a basis cannot be agreed upon, an adjustment will be made either for or against the Contractor in such amount as the Engineer may determine to be fair and equitable.

The Engineer may, at his option, direct the Contractor to accomplish the change or alteration on a force account basis when the circumstances meet the requirements for force account work under Section 109.05.

If the Engineer's changes or alterations do not result in a significant change in the character of the Work, the changed or altered work will be paid for at the Contract price for

the actual quantities of work performed.

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

1. When the character of the Work, as changed or altered, differs materially in kind or nature from that involved or included in the original proposed construction.
2. When the actual quantity of a Major Item of work, as defined elsewhere in the Contract, increases or decreases more than 25 percent of the original Contract quantity. Any adjustment for an increase or decrease in cost due to an increase in quantity of more than 25 percent shall be calculated only on that quantity in excess of 125 percent of the original pay item quantity. Any adjustment for an increase or decrease in cost due to a decrease in quantity to less than 75 percent of the original pay item quantity shall apply to the actual amount of work performed.

(c) **Value Engineering Proposals**

The Contractor may submit to the Engineer, written Value Engineering Contractor Proposals (VECP) for modifying the plans, Specifications, or other Contract requirements for the purpose of reducing the total cost and/or Contract time without reducing the design capacity or quality of the finished product. If the District accepts the VECP, the District and the Contractor will equally divide the net savings or Contract time, or both. When an accepted VECP includes Contract time savings, one-half of such time savings shall be used to reduce the Contract time and the remaining one-half of such time savings shall be used exclusively by the Contractor as extra time. The Contractor shall identify in the SOR, a VECP contractor float activity for each accepted VECP that includes Contract time savings. The VECP extra time may be used by the Contractor to mitigate its delays on the project.

Each VECP shall result in a net savings over the Contract cost or Contract time, or both, without impairing essential functions and characteristics of the item(s) or of any other part of the project, including, but not limited to, service life, reliability, economy of operation, ease of maintenance, aesthetics, and safety. At least the following information shall be submitted with each VECP:

- Statement that the proposal is submitted as a VECP.
- Statement concerning the basis for the VECP benefits to the District and an itemization of the pay items and requirements affected by the VECP.
- Detailed estimate of the cost or Contract time, or both, under the existing Contract and under the VECP.
- Proposed specifications and recommendations as to the manner in which the VECP changes are to be accomplished.
- Statement as to the time by which a Contract change order adopting the VECP must

be issued so as to obtain the maximum cost-effectiveness.

The District will process the VECP in the same manner as prescribed for any other proposal that would necessitate issuance of a change order. The District may accept a VECP in whole or part by issuing a change order that will identify the VECP on which it is based. The District will not be liable to the Contractor for failure to accept or act on any VECP submitted pursuant to these requirements or for delays in the work attributable to any VECP. Until a VECP is put into effect by a change order, the Contractor shall remain obligated to the terms and conditions of the existing Contract. If an executed change order has not been issued by the date on which the Contractor's proposal specifies that a decision should be made or such other date as the Contractor may subsequently have specified in writing, the VECP shall be deemed rejected.

The change order effecting the necessary modification of the Contract will establish the net savings agreed on, and provide for adjustment of the Contract prices or Contract time, or both. The Contractor shall absorb all costs incurred in preparing a VECP. Costs for reviewing and administering a VECP will be borne by the District. The District may include in the agreement any conditions it deems appropriate for consideration, approval, and implementation of the VECP. The Contractor's 50 percent share of the net savings or Contract time, or both, shall constitute full compensation to him for effecting all changes pursuant to the VECP change order.

Unless specifically provided for in the change order authorizing the VECP, acceptance of the VECP and performance of the work thereunder will not change the Contract time limit.

The District may adopt a VECP for general use in contracts the Department administers if it determines that the VECP is suitable for application to other contracts. VECPS identical with or similar to previously submitted VECPS will be eligible for consideration and compensation under these provisions if the District has not previously adopted the VECPS for general application to other contracts the District administers. When a VECP is adopted for general use, compensation pursuant to these requirements will be applied only to those awarded contracts for which the VECP was submitted prior to the date of adoption of the VECP.

Proposed changes in the basic design of a bridge or pavement type or those changes that require different right of way limits will not normally be considered an acceptable VECP. If a VECP is based on or is similar to a change in the plans, Specifications, or Special Provisions the District has adopted prior to submission of the VECP, the Engineer will not accept the VECP.

The Engineer will be the sole judge of the acceptability of a VECP. The requirements herein apply to each VECP initiated, developed, and identified as such by the Contractor at the time of its submission to the Engineer. However, nothing herein shall be construed as requiring the Engineer to approve a VECP.

Subject to the provisions herein, the District or any other public agency shall have the right to use all or part of an accepted VECP without obligation or compensation of any kind to the

Contractor.

If the District accepts a VECP, Section 104.02(b) herein, which pertains to the adjustment of Contract unit prices attributable to alterations of Contract quantities, will not apply to the items adjusted or deleted as a result of putting the VECP into effect by a change order.

104.03—Differing Site Conditions

Type I: During the progress of the Work, if subsurface or latent physical conditions differing materially from those indicated in the Contract are encountered at the site, the Contractor shall promptly notify the Engineer in writing of the specific differing conditions before the site is disturbed further and before the affected work is performed.

Type II: During the progress of the Work, if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the Contract, are encountered at the site the Contractor shall promptly notify the Engineer in writing of the specific differing conditions before the site is disturbed further and before the affected work is performed.

Upon receipt of such written notification, the Engineer will acknowledge receipt and investigate the conditions. If it is determined by the Engineer that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the Contract, an adjustment, excluding anticipated profits, will be made and the Contract may be modified in writing accordingly. The Engineer will notify the Contractor of the determination whether or not an adjustment of the Contract is warranted.

No adjustment that results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice.

SECTION 105—CONTROL OF WORK

105.01—Notice to Proceed

Unless otherwise indicated in the Contract, the Notice to Proceed date will be the date selected by the Contractor on which the Contractor intends to begin the work. That date shall be no earlier than 15 nor later than 30 calendar days after the date of Contract execution. The District will contact the Contractor on the date of Contract execution to inform him that the Contract has been executed. The District will also confirm this date in the Letter of Contract Execution. Within 10 calendar days after the date of Contract execution the Contractor shall submit to the Engineer written notice of the date he has selected as his Notice to Proceed date. If the Contractor fails to provide written notice of his selected Notice to Proceed Date within 10 calendar days of Contract execution, the selected Notice to Proceed Date will become the date 15 calendar days after the date of Contract execution. The Contractor shall begin work no later than 10 calendar days after the date he has selected as his Notice to Proceed date, unless the Notice to Proceed date is otherwise indicated in the Contract, in which case the Contractor shall begin work within 10 calendar days after the specific Notice to Proceed date indicated in

the Contract.

Contract Time will commence on the date of the Notice to Proceed. The Letter of Contract Execution will identify the District's authorized representative, hereafter referred to as the Engineer, who is responsible for written directives and changes to the Contract. The Engineer will contact the Contractor after notice of award to arrange a pre-construction conference.

In the event the Contractor, for matters of his convenience, wishes to begin work earlier than 15 calendar days or later than 30 calendar days after the date of Contract execution, he shall make such a request in writing to the Engineer within 10 calendar days of the date of Contract execution or once a Notice to Proceed Date has been established, if he wishes to begin work more than 10 calendar days after his selected Notice to Proceed date or the Notice to Proceed Date indicated in the Contract, he shall make such a request to the Engineer in writing no later than 5 calendar days after the Notice to Proceed date. If this requested start date is acceptable to the District, the Contractor will be notified in writing; however, the Contract Completion Date will not be adjusted but will remain binding. The Contractor's request to adjust the start date for the work on the Contract will not be considered as a basis for claim that the time resulting from the Contractor's adjusted start date, if accepted by the Engineer, is insufficient to accomplish the work nor shall it relieve the Contractor of his responsibility to perform the work in accordance with the scope of work and Contract requirements. In no case shall work begin before the District executes the Contract or prior to the Notice to Proceed date unless otherwise permitted by the Contract or authorized by the Engineer. The Contractor shall notify the Engineer at least 24 hours prior to the date on which he will begin the work.

105.02—Pre-Construction Conference

After notification of award and prior to the Notice to Proceed date the Contractor shall attend a pre-construction conference scheduled by the Engineer to discuss the Contractor's planned operations for prosecuting and completing the Work in accordance with the Contract. At the pre-construction Conference the Engineer and the Contractor will identify in writing the authorities and responsibilities of project personnel for each party. The Contractor and the District shall also come prepared to discuss key issues and project specific requirements necessary for preparation and submittal of the baseline progress schedule; unless a separate Scheduling Conference is otherwise scheduled as mutually agreed to by the Engineer and the Contractor, in accordance with Section 108.03 and other applicable Contract provisions.

The Engineer will be responsible for setting the conference agenda, conducting discussions, and ensuring that minutes of the conference are taken and later timely distributed to all attendees. The pre-construction conference will be the time to review the Contract plans and documents. To that end, the conference agenda may include but not be limited to discussions on the general sequence of work, including the expected primary work tasks as defined by the Contractor, and proposed means and methods for the entire scope of work, potential problems or impacts, constructability issues, special considerations such as limitations and access issues, agreements with local agencies or governments, utility impacts or relocations including railroads, coordination with schedules of the utilities and subcontractors and associated work, sources and delivery of critical materials, submittals required by Contract including shop drawings, location of field office, labs, etc., environmental

concerns including permits and erosion and siltation efforts and maintenance of traffic issues.

The Contractor shall provide the Engineer with a list of all equipment available for use in the prosecution of the Work on the Contract at the pre-construction conference or no later than one week prior to the first monthly progress estimate. The make, model, size, capacity, and year of manufacture shall be listed for each piece of equipment. Where possible the Contractor shall provide this list in an electronic format. This list may take the form of the Contractor's fleet list of equipment. The Contractor shall provide the Engineer an updated list of equipment as changes occur.

105.03—Authorities of Project Personnel, Communication and Decision Making

(a) Authority of Engineer

During prosecution of the Work, the Engineer will answer all questions that may arise as to the quantity, quality, and acceptability of materials furnished and work performed; rate of progress of the Work; interpretation of the plans and Specifications; the Contractor's acceptable fulfillment of the Contract; disputes and mutual rights between contractors; and the Contractor's compensation.

The Engineer has the authority to suspend the Work wholly or in part if the Contractor has created conditions that are unsafe or fails to correct conditions that are unsafe for workers or the general public or fails to carry out the provisions of the Contract. The Engineer may also suspend the Work for such periods as he may deem necessary because of catastrophic or extraordinary weather as defined in Section 108.04, conditions considered unsuitable for prosecution of the Work, or any other condition or reason deemed to be in the public interest.

The Engineer may issue written clarifications or directives that either enhance or alter the Contract. The Engineer may issue written orders for such work as may be necessary to complete the Contract satisfactorily.

(b) Authority of Inspector

Inspectors representing the District are authorized to inspect all work performed and materials furnished. Inspection may extend to all or any part of the Work and to the preparation, fabrication, and manufacture of the materials to be used. The Inspectors are not authorized to alter or waive the provisions of these Specifications or make changes in the plans.

The Inspectors are not authorized to make final acceptance of the project, approve any operation or item, or act as foreman for the Contractor. However, the Inspectors will have the authority to reject defective work and material and suspend work that is being improperly performed, subject to the concurrence of the Engineer. Such inspections shall not relieve the Contractor of any obligation to furnish acceptable materials or provide completed construction that is in accordance with the Contracts requirements. The Inspectors will exercise only such additional authority as the Engineer may delegate. The Engineer will advise the Contractor in writing of delegations of authority that will affect his operations.

(c) **The Contractor**

The Contractor shall not construe reviews, approvals, or inspections by the District, the Engineer, or the District's inspectors, agents, and employees as a waiver, release, warranty, or assumption of liability on the part of the District. The Contractor understands and agrees that reviews, approvals, and inspections are for the District's sole use and benefit. Any such reviews, approvals, and inspections shall not relieve the Contractor of its contractual duties and obligations or be conclusive as to the acceptability of the Contractor's performance.

(d) **Communication and Decision Making**

1. **Description** The intent of this provision is to establish procedures, processes and guidelines for making decisions and managing communications regarding the Work. The information contained herein is not meant to be all inclusive but to serve as a minimal general framework for promoting efficient and effective communication and decision making at both the project and, if needed, executive administrative level. It is also not meant to override the decision-making processes or timeframes of specific Contract requirements.

2. **Definitions**

- a. **Confirmation Of Verbal Instructions (COVI)** - Contractor-requested written confirmation of the District's instructions concerning the Work. When time and/or costs are or will be impacted, the Contractor must comply with the requirements applicable to requests for adjustments of the Contract amount or Contract time.
- b. **Requests for District Action (RDA)** - Requests where the Contractor asks the District to take certain action that the Contractor feels is required for proper completion of all or a portion of the Work.
- c. **Contractor Change Requests (CCR)** - Requests where the Contractor asks the District to make an adjustment to the Contract because of excusable and/or compensable events, instructions that have or have not been given, or other work requiring time and/or cost beyond that specified or envisioned within the Contract.

3. **Process for Decision Making**

- a. Project teams composed of the Contractor's and the District's representatives, who are directly responsible for the administration, prosecution, and inspection of the Work, shall define and agree upon the field decision-making process during the pre-construction conference. This process should be written down and distributed to all affected parties once it is established. Where there are responsibilities, authority or personnel changes associated with this process, such changes shall be distributed to all affected parties as quickly as practicable after they are effective so as not to delay or impede this process.

105.04—Gratuities

The Contractor and its subcontractors and suppliers shall not offer, give or confer upon any of the District's employees or personnel any gifts, gratuities, payments, loans, subscriptions, advances, deposits of money, services, favors, or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value is exchanged.

The Contractor shall not employ any personnel of the District for any services without the Engineer's prior written consent.

If the Engineer determines after investigation that the Contractor or the Contractor's employees, representatives, or agents of any person acting in his behalf have violated this Section, the Engineer may, at his discretion, disqualify the Contractor from bidding on future contracts with the District for a period of 6 months from the date of the Engineer's determination of such violation. Any implicated employees, agents, or representatives of the Contractor may be prohibited from working on any contract the District awards for the period of the Contractor's disqualification.

105.05—Character of Workers, Work Methods, and Equipment

(a) Workers

Workers shall have sufficient skill and experience to perform properly the Work assigned to them. Workers engaged in special or skilled work shall have sufficient experience in such work and in the operation of equipment required to perform it properly and satisfactorily. The term "workers" means the Contractor's employees, its subcontractors at any tier, or any of their respective employees.

The Contractor shall immediately remove from the Project any workers who, in the Engineer's opinion, do not perform their work in a proper, skillful and satisfactory manner or are intemperate or disorderly. The Engineer shall direct the Contractor to do so in writing and such workers shall not be employed again on any portion of the Work without the Engineer's written approval. If the Contractor fails to immediately remove the workers, or furnish suitable and sufficient workers for satisfactory prosecution of the Work, the Engineer may withhold all monies that are or may become due the Contractor and may suspend the Work until the Contractor has complied with the Engineer's directive.

(b) Equipment

Equipment shall be of sufficient size and quantity, and in such good mechanical condition as to comply with the Contract requirements and to produce a satisfactory quality of work. Equipment shall be such that no damage to the roadway, adjacent property, other highways, or no danger to the public, will result from its use. The Engineer may order the removal and require replacement of unsatisfactory equipment.

(c) **Work Methods**

When methods and equipment to be used by the Contractor are not prescribed in the Contract, the Contractor is free to use whatever methods or equipment he feels will accomplish the Work in conformity with the Contract requirements.

When the Contract specifies that construction be performed by the use of particular methods and equipment, they shall be used unless others are authorized by the Engineer. If the Contractor desires to use a different method or type of equipment, he may request permission from the Engineer to do so. The request shall be in writing and shall include a full description of the methods and equipment he proposes to use and an explanation of the reasons for desiring to make the change. If permission is not given, the Contractor shall use the specified methods and equipment. If permission is given, it will be on the condition that the Contractor shall be fully responsible for producing construction work in conformity with Contract requirements. If, after trial use of the substituted methods or equipment, the Engineer determines that the work produced does not strictly conform to the Contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining construction with the specified methods and equipment. The Contractor shall remove any deficient work and replace it with work of the specified quality or take such other corrective action as the Engineer may direct. No change will be made in the basis of payment for the construction items involved or the Contract time limit as the result of authorizing or denying a change in methods or equipment under these provisions.

105.06—Subcontracting

- (a) No portion of the Contract shall be subcontracted or otherwise disposed of without the written consent of the Engineer. The Contractor shall notify the Engineer of the name of the firm to whom the work will be subcontracted, and the amount and items of work involved. Such notification shall be made and verbal approval given by the Engineer prior to the subcontractor beginning work.
- (b) The Contractor shall perform with his own organization work amounting to not less than 30 percent of the total original Contract amount, excluding any specialty items designated by the District. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original Contract amount before computing the amount of work required to be performed by the Contractor's own organization.

The term "perform work with its own organization" refers to workers employed or leased by the Contractor, and equipment owned or rented by the Contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the Contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the Contractor meets all of the following conditions:

1. The Contractor maintains control over the supervision of the day-to-day activities of the leased employees;
 2. The Contractor remains responsible for the quality of the work of the leased employees;
 3. The Contractor retains all power to accept or exclude individual employees from work on the project; and
 4. The Contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.
- (c) The Contractor shall not subcontract any part of the Contract work to a contractor who is not prequalified with VDOT in accordance with Section 102.01, unless otherwise indicated in the Contract. This restriction does not apply to Contract specialty items, service providers, engineers, consultants, manufacturers, suppliers, or haulers. Consent to subcontract or otherwise dispose of any portion of the Contract work shall not relieve the Contractor of any responsibility for the satisfactory fulfillment of the entire Contract. All subcontracts shall be evidenced by written binding agreements that shall be available to the Department upon request, before, during, and after their approval.

105.07—Cooperation of Contractor

The Contractor shall give the Work the constant attention necessary to facilitate quality and progress, and shall fully cooperate with the Engineer, Inspector, and other contractors involved in the prosecution of the Work. If any portion of a project is located within the limits of a municipality, military installation, or other federally owned property, the Contractor shall cooperate with the appropriate officials and their agents in the prosecution of the Work to the same extent as with the District.

The Contractor shall have on the project at all times during prosecution of the Work a competent Superintendent who is capable of reading and understanding the plans and Specifications, experienced in the type of work being performed, and who shall receive instructions from the Engineer or his authorized representatives. The Superintendent shall have full authority to execute the orders and directions of the Engineer without delay and supply promptly such materials, equipment, tools, labor, and incidentals as may be required.

105.08—Cooperation With Regard to Utilities

The adjustment of utilities consists of the relocation, removal, replacement, rearrangement, reconstruction, improvement, disconnection, connection, shifting, or altering of an existing utility in any manner.

Existing utilities within the District's knowledge at the design stage of the project will be indicated on the plans. Where possible, the District will make arrangements for adjusting these utilities prior to project construction. The utility owner will adjust existing private and public utilities that require adjustment, unless the Contract requires the Contractor to perform such adjustment as a pay item. The new location of such utilities will not normally be shown on the plans. Some utilities may remain or be adjusted within the construction limits simultaneously with project construction operations.

The Contractor shall coordinate project construction with planned utility adjustments and take all necessary precautions to prevent disturbance of the utilities. The Contractor shall report to the Engineer any failure on the part of the utility owner to cooperate or proceed with the planned utility adjustments.

The Contractor shall perform Contract utility work in a manner that will cause the least inconvenience to the utility owner and those being served by the utility owner.

The Contractor shall protect existing, adjusted, or new utilities that are shown on the plans, marked by Miss Utility, or otherwise known to the Contractor that are to remain within the right of way so as to prevent disturbance or damage resulting from construction operations. If during prosecution of the work the Contractor encounters an existing utility that requires adjustment, he shall not interfere with the utility but shall take the proper precautions to protect the utility and shall promptly notify the Engineer of the need for adjustment.

If the Contractor desires the temporary or permanent adjustment of utilities for his own benefit, he shall conduct all negotiations with the utility owners and pay all costs in connection with the adjustment.

The Contractor shall promptly notify the Engineer in writing if the Contractor encounters utilities that are not shown on the plans, marked by Miss Utility, or otherwise known to the Contractor before the site is disturbed further and before the affected work is performed. Upon receipt of the Contractor's written notification, the Engineer will acknowledge receipt and investigate the conditions. The Engineer will notify the Contractor whether or not an adjustment to the Contract is warranted. Adjustments will be made according to Sections 108.04 and 109.05, as applicable.

No adjustment that results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice.

105.09—Cooperation among Contractors

The District may at any time contract or approve concurrent Contracts for performance of other work on, near, or within the same geographical area of the work specified in an existing Contract. Contractors shall not impede or limit access to such work by others.

When separate Contracts are awarded within the limits of one project, contractors shall not hinder the work being performed by other Contractors. Contractors working on the same project shall cooperate with each other. In the case of dispute, all Contractors shall proceed as directed by the Engineer.

When Contracts are awarded to separate Contractors for known concurrent construction in a common area, the Contractors, in conference with the Engineer, shall establish a written joint schedule of operations. The schedule shall be based on the limitations of the individual Contracts and the joining of the work of one Contract with the others. The schedule shall set forth the approximate dates and sequences for the several items of work to be performed and shall ensure completion within the respective Contract time limit. The schedule shall be submitted to the Engineer for review and approval no later than 30 days after the award date of the later Contract and prior to the first monthly progress estimate. The schedule shall be agreeable to, signed by, and binding on each Contractor. The Engineer may allow modifications of the schedule when benefit to the Contractors and the District will result.

Any modification of the schedule shall be in writing, mutually agreed to and signed by the contractors, and shall be binding on the contractors in the same manner as the original agreement.

If the contractors fail to agree on a joint schedule of operations, they shall submit their individual schedules to the Engineer, who will prepare a schedule that will be binding on each Contractor.

The joint schedule and any modification thereof shall become a part of each Contract involved. The failure of any Contractor to abide by the terms of the joint schedule will be justification for declaring the Contractor in default of his Contract.

Each Contractor shall assume all liability, financial or otherwise, in connection with his Contract and shall protect and save harmless the District from any and all damages and claims that may arise because of any inconvenience, delay, or loss he experiences as a result of the presence and operations of other contractors working in or near the work covered by his Contract. He shall also assume all responsibility for any of his work not completed because of the presence or operation of other Contractors.

The District will not assume any responsibility for acts, failures, or omissions of one Contractor that delay the work of another except as provided herein.

105.10—Plans and Working Drawings

(a) General

The Contractor will be supplied with two copies of the executed Contract. The VDOT's Road and Bridge Specifications and the VDOT's Road State and Bridge Standards are available on VDOT's website.

(b) Plans

Plans will be furnished to the Contractor, in electronic format, without charge.

The Contractor shall keep one complete set of plans, standard drawings, Contract assemblies, and Specifications available on the project at all times. For maintenance projects, certain sign projects, and other projects having no field office or on which the Contractor has no office, the Contractor shall keep one complete set of plans, Contract assemblies, and

Specifications with him while prosecuting the work. In the event items of work are required as per the Standard Drawings, the Contractor shall also keep the appropriate Standard Drawings on the project during the performance of that work.

Plans consisting of general drawings and showing such details as are necessary to give a comprehensive understanding of the work specified will be furnished by the District. Except as otherwise shown on the plans, dimensions shown on the plans are measured in the respective horizontal or vertical planes. Dimensions that are affected by gradients or vertical curvatures shall be adjusted as necessary by the Contractor to accommodate actual field conditions and shall be specifically denoted as "field adjusted" on the working drawings. Failure on the part of the Contractor to so denote field adjustments on the working drawings shall not relieve the Contractor of the responsibility to accommodate and incorporate such existing conditions into the finished work.

(c) Working Drawings

The Contractor shall furnish nine sets of detailed working drawings to the extent and with the details required by the Contract Documents unless otherwise indicated in the Contract documents. Working drawings and submittals shall be identified by the complete state project and job designation number, as well as the federal project number if applicable. Items or component materials shall be identified by the specific Contract item number and Specification reference in the Contract. Any changes from the requirements of the Contract shall be specifically denoted, together with justification, and submitted to the Engineer for review. Working drawings shall be submitted in sufficient time to allow for review, discussion and correction prior to the beginning of the work they reference and avoid causing any delay to the Work. Work shall not be performed or materials ordered prior to the completion of the District's review of the working drawings.

Reviewed working drawings will be returned to the Contractor within 30 days from the date of receipt by the District. If a railroad, municipality, or other entity as specified in the Contract or on the plans is required to review the working drawings, the reviewed working drawings will be returned within 45 days from the date of receipt by the District. If the working drawings are not returned by the time specified, no additional compensation will be allowed except that an extension of time in accordance with Section 108.04 will be considered if the work element detailed by the working drawings is on the project's critical path or involves a controlling item of work. Three sets of working drawings marked with any suggested modifications or comments will be returned to the Contractor. The other sets will be retained by the District.

The District's review of the Contractor's working drawings will be limited to evaluation for conformance with the Contract requirements. The District's review will not relieve the Contractor from responsibility for errors in the working drawings or from complying with the Contract requirements for a fully functional finished work item as specified or designed. Deviations from the Contract requirements initiated by the Contractor shall be requested in writing and clearly identified on the working drawings. Explicit supporting justification shall be furnished specifically describing the reason for the requested deviations, as well as

any impact such deviations shall have on the schedule of work. Failure to address time or other impacts associated with the Contractor's request will be cause for rejection of the Contractor's request. Deviations from the Contract requirements shall not be made unless authorized by the Engineer. Such authorization shall not relieve the Contractor from the responsibility for complying with the Contract requirements for a fully functional finished work item as specified or designed.

If working drawings detailing change(s) initiated by the Contractor require more than two resubmissions or revisions, the cost of additional reviews by the District or its designated representative(s) will be assessed to the Contractor.

The Contractor shall submit as-built working drawings upon completion of the Work, if required by the Contract.

The cost of working drawings furnished by the Contractor shall be included in the cost of appropriate Contract items.

The Contractor may authorize the fabricator in writing to act for him in matters relating to working drawings. Such authorization shall have the force and effect of any other representative of the Contractor's organization.

Provide working drawings according to the following:

1. Steel Structures

Working drawings for steel structures, including metal handrails, shall consist of shop detail, erection, and other working drawings showing details, dimensions, sizes of units, and other information necessary for the fabrication and erection of metal work.

2. Falsework

Working drawings for falsework supporting a bridge superstructure shall be signed and sealed by a Professional Engineer, holding a valid license to practice engineering in the Commonwealth of Virginia.

3. Concrete Structures and Prestressed Concrete Members

Working drawings for concrete structures and prestressed concrete members shall provide such details as required for the successful prosecution of the work and which are not included in the plans furnished by the District. Drawings shall include plans for items such as prestressing strand details and elongation calculations, location of lift points, falsework, bracing, centering, form work, masonry, layout diagrams, camber management plan for prestressed members, and bending diagrams for reinforcing steel when necessary or when requested. Such drawings shall be signed and sealed by a Professional Engineer, holding a valid license to practice engineering in the Commonwealth of Virginia.

4. Lighting, signal and pedestal poles, overhead and bridge mounted sign structures, breakaway support systems, anchor bolts, framing units, panels, and foundations

Prior to fabrication or construction, the Contractor shall submit for review one original and six copies of each working drawing and design calculation for lighting, signal and pedestal poles, overhead and bridge mounted sign structures, breakaway support systems, anchor bolts, framing units, panels, and foundations. All sheets of these submittals shall include the Professional Engineer's signature and seal. Certification for foundations will be required only when the designs are furnished by the Contractor. The designs shall be in accordance with the specific editions of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals as required in Section 700. Such designs shall be signed and sealed by a Professional Engineer, holding a valid license to practice engineering in the Commonwealth of Virginia.

5. Reinforced Concrete Pipe

When specified, and prior to manufacture of reinforced concrete pipe, the Contractor shall furnish to the District a certification of the acceptability of the design of such pipe, as determined from a review that has been signed and sealed by a Professional Engineer holding a valid license to practice engineering in the Commonwealth of Virginia. Such certification shall cover all design data, supporting calculations and materials. Pipe designs previously certified or approved by the District will not require recertification.

105.11—Conformity with Plans and Specifications

All materials to be used in the Work shall conform to the qualities, technical requirements, values or range of values specified in the Contract. Less than complete conformity may be permitted if obtaining exact or complete conformity would not be feasible and if authorized in writing by the Engineer.

Permissible tolerances for the elevation of subgrade and finished grade and for the thickness of the various courses of pavement structure are specified in the Contract. If permissive tolerances are exceeded, or if consistent deviations from the plans or abrupt changes in grade occur, even though within the tolerances, the affected areas shall be reconstructed to conform to the specified tolerance and provide a smooth riding surface. When it is not feasible to reconstruct the areas, payment will be made in accordance with the applicable specification for each material placed or adjusted in accordance with Section 105.18.

When the plans require the finished surface to tie into any structural item whose elevation is fixed, the elevation of the finished surface must coincide with the elevation of the structural item.

105.12—Coordination of Plans, General Provisions, Special Provisions and Technical Specifications

The plans, General Provisions, Special Provisions, Technical Specifications and other Contract Documents defined in Section 103.06 are parts of the Contract. A requirement occurring in one Contract Document shall be as binding as though occurring in all. The Contract Documents are

intended to be complementary, and to include, describe and provide all items necessary for the Contractor's proper and complete performance of the Work.

In case of a discrepancy, the following order of priority will apply, with the highest governing item appearing first and the least governing item appearing last:

- (a) Special Provision will govern over the Plans, General Provisions and the Technical Specifications.
- (b) Plans will govern over the General Provisions and Technical Specifications.
- (c) Technical Specifications will govern over the General Provisions.
- (d) Calculated dimensions, unless obviously incorrect, will govern over scaled dimensions.

The Contractor shall not take advantage of any obvious or apparent ambiguity, conflict, error or omission in the plans or the Contract. If after beginning work the Contractor discovers an ambiguity, conflict, error, or omission in the Contract, he shall immediately notify the Engineer and before proceeding further with the affected work. The Engineer will then make such corrections and interpretations as may be deemed necessary for fulfilling the intent of the Contract.

105.13 – Not Used

105.14—Maintenance during Construction

(a) Traffic Control for Projects in the Roadway

The Contractor shall have a Superintendent on the project site during all work operations. This person shall be responsible for the oversight of work zone traffic control within the project limits in compliance with the Contract requirements, the VWAPM, and the MUTCD. This person's duties shall include the supervision of the installation, adjustment (if necessary), inspection, maintenance, and removal when no longer required, of all work zone traffic control devices on the project.

(b) Maintenance of Traffic

1. The Contractor shall prosecute the Work so as to avoid obstructions to traffic to the greatest extent practicable. The Contractor shall provide for the safety and convenience of the general public and residents along the roadway, and for the protection of persons and property.

Highways closed to traffic shall be protected by barricades and other warning devices as required by the Contract, the VWAPM, and the MUTCD. Barricades and warning devices shall be illuminated where required during periods of darkness and low visibility. The Contractor shall erect warning devices in advance of a location on the project where

operations or obstructions may interfere with the use of the road by traffic and at all intermediate points where the new work crosses or coincides with an existing roadway. The Contractor shall maintain sign faces and reflective surfaces of warning devices in a clean and visible condition. The Contractor shall cover or remove signs when the messages thereon are not applicable. Barricades, warning signs, lights, temporary signals, and other protective devices shall conform to Section 512.

2. The road shall be kept open to all traffic while undergoing improvements, unless otherwise permitted in the Contract. The Contractor shall keep the portion of the project being used by public, pedestrian, and vehicular traffic in such condition that all such traffic will be safely and adequately accommodated. However, removal of snow and control of ice on roads open to public travel will be performed by the District.

The Contractor shall keep the portions of the road being used by the public free from irregularities and obstructions that could present a hazard or annoyance to traffic. Holes in hard surface pavements shall be filled with approved asphalt patching material. Where such work is not specified in the Contract and determined to be required by the Engineer, and not the result of any failure or fault of the Contractor and due to causes beyond the Contractor's control, the cost to remedy such hazards will be handled according to Section 109.05.

If any damage is sustained by an accepted unit or portion of the project attributable to causes beyond the control of the Contractor, the Engineer may authorize the Contractor to make the necessary repairs. These repairs will be paid for at the Contract price for the items requiring repair. In the absence of Contract prices covering the items of repair, the repair work will be paid for in accordance with Section 109.05.

3. **Holidays:** No Lane Closures shall be permitted on the following holidays, as well as the normal workday preceding and following these holidays, without permission of the Engineer:
 - a) New Year's Eve Day
 - b) New Year's Day
 - c) Martin Luther King, Jr. Day
 - d) Presidents Day
 - e) Easter
 - f) Mother's Day
 - g) Memorial Day
 - h) Juneteenth Day
 - i) July 4th
 - j) Labor Day
 - k) Columbus Day
 - l) Veterans Day
 - m) Thanksgiving Day
 - n) Day after Thanksgiving
 - o) Christmas Day

If any of these holidays occurs on a Sunday, the following Monday shall be considered the holiday. If occurring on a Saturday, the preceding Friday will be considered as the holiday.

If the Holiday occurs on a Sunday or Monday: from noon on the preceding Friday to Noon on the following Tuesday.

The District may waive, with written request within 72 hours, the restriction of working on days preceding and following the above listed holidays when the Contractor's operations have no effect on vehicular traffic, when determined by the District.

4. **Tunnel Lane Closures:** Work that requires a lane closure in the open approach or tunnel shall only be completed at night from 9:00 p.m. through 6:00 a.m. on Monday through Thursday. Closure must be scheduled with the District one week prior and the Maintenance of Traffic shall be provided by the District.
5. **Restrictions:** Lane closures on the approach roadways and trestles shall not be permitted on Friday, Saturday or Sunday from May 1st through September 30th, unless approved in writing by the District.

Lane Closures on the approach roadways and trestles shall be permitted October 1st through April 30th, Sunday through Saturday, except for holidays as noted above.

6. **Maintenance of Traffic During Suspension of Work:** During any suspension of work, the Contractor shall temporarily open to traffic such portions of the project and temporary roadways as may be agreed upon by the Contractor and Engineer.
7. **Minimizing Traffic Delays:** Two-way traffic shall be maintained at all times unless the Contract or the Engineer permits one-way traffic. The Contractor shall not stop traffic without the Engineer's permission.
8. **Connections and Entrances:** Connections with other roads and public and private entrances shall be kept in a reasonably smooth condition at all times. Stabilization or surfacing material shall be applied to connections and entrances. The Contractor shall schedule construction operations so that approved continuous access is provided for all property adjacent to the construction when the property is shown on the plans to require access.

The Contractor shall not disturb connections or entrances until necessary. Once disturbed, the Contractor shall maintain and complete connections or entrances as follows:

- a. **Connections:** Connections that had an original paved surface shall be brought to a grade that will smoothly and safely accommodate vehicular traffic through the intersection, using temporary pavement as soon as practicable after connections are disturbed. Connections that had an original unpaved surface shall be brought to a grade

that will smoothly and safely accommodate vehicular traffic through the intersection, using either the required material or a temporary aggregate stabilization course that shall be placed as soon as practicable after connections are disturbed.

If there are delays in prosecution of work for connections, connections that were originally paved shall have at least two lanes maintained with a temporary paved surface. Those that were not originally paved shall be maintained with a temporary aggregate stabilization course.

- b. **Entrances:** Entrances shall be graded concurrently with the roadway with which they intersect. Once an entrance has been disturbed, it shall be completed as soon as is practicable, including placing the required base and surface course or stabilization. If the entrance must be constructed in stages, such as when there is a substantial change in the elevation of the roadway with which it intersects, the surface shall be covered with a temporary aggregate stabilization course or other suitable salvaged material until the entrance can be completed and the required base and surface or stabilization course can be placed.
6. **Obstruction Crossing Roadways:** Where the Contractor places obstructions such as suction or discharge pipes, pump hoses, steel plates, or any other obstruction that must be crossed by vehicular traffic, they shall be bridged as directed by the Engineer at the Contractor's expense. Traffic shall be protected by the display of warning devices both day and night. If operations or obstructions placed by the Contractor damage an existing traveled roadway, the Contractor shall cease operations and repair damages to the roadway at no additional cost to the District.
7. **Temporary Structures:** The Contractor shall construct, maintain, and remove temporary structures and approaches necessary for use by traffic. Unless otherwise specified in the Contract, the cost of these operations shall be included in pay items for the new structure. After new structures have been opened to traffic, temporary structures and approaches shall be removed. The materials contained therein shall remain the property of the Contractor.

The proposed design of temporary structures shall be submitted to the Engineer prior to the beginning of construction in accordance with Section 105.10.
8. **Haul Route:** The Contractor shall select haul routes between the project and material source(s) that will minimize disturbance to the community. The Contractor shall furnish to the Engineer, for review, his plan for the haul route and for minimizing the adverse effects of hauling operations on persons who reside adjacent to the haul route or persons who otherwise use a portion of the haul route for ingress or egress to their residential or work area. The District may select alternate haul routes, divide the hauling traffic over several routes, and impose other restrictions deemed necessary to minimize the impact of the hauling operation on local residents.

9. **Opening Sections of Projects to Traffic**

Certain sections of the Work may be opened to traffic when specified in the Contract or

when directed by the Engineer. Such opening shall not constitute acceptance of the Work or any part thereof or a waiver of any provision of the Contract.

On any section of the Work opened by order of the Engineer where the Contract does not provide for traffic to be carried through the Work, the Contractor will not be required to assume any expense entailed in maintaining the road for traffic. The District will pay such expense or will compensate the Contractor in accordance with Section 109.05. Repair of slides and repair of damage attributable to traffic will be compensated for in accordance with Section 109.05. Slides shall be removed by the Contractor in accordance with Section 303.

On any section of the Work opened by order of the Engineer where the Contract does not provide for traffic to be carried through the Work, any additional cost incurred to complete other items of work solely because of the changed working conditions will be compensated according to Section 109.05.

If the Contractor is not continuously prosecuting the Work to the Engineer's satisfaction as determined by the Schedule of Record, the Contractor shall not be relieved of the responsibility for maintenance of the completed work during the period that the section of the Work is opened to traffic prior to final acceptance. The Contractor shall be responsible for any expense resulting from the opening of such portions of the Work under these circumstances, except for slides. The Contractor shall conduct the remainder of the construction operations so as to cause the least obstruction to traffic.

(c) Maintenance of Work

1. The Contractor shall maintain the Work, the project site, construction area and roadway from the beginning of construction operations until final acceptance with adequate equipment and forces to keep the roadway and structures in a safe and satisfactory condition at all times and to ensure the continuous and effective day by day prosecution of the Work. The District will perform maintenance of items outside of the scope of work of the Contract. As determined by the Engineer, where maintenance is necessary within the project limits but does not affect Contract work, and not the result of any failure or fault of the Contractor and due to causes beyond the Contractor's control, the cost to perform such maintenance will be handled according to Section 109.05.
If any damage is sustained by an accepted unit or portion of the project attributable to causes beyond the control of the Contractor, the Engineer may authorize the Contractor to make the necessary repairs. These repairs will be paid for at the Contract price for the items requiring repair. In the absence of Contract prices covering the items of repair, the repair work will be paid for in accordance with Section 109.05.
2. Where the Contract specifies placing a course on another course or subgrade of embankment, base, subgrade, concrete, asphalt pavement, or other courses previously constructed, the Contractor shall maintain the courses or subgrades previously constructed in accordance with the Contract requirements when placing such course. This maintenance includes, but is not limited to draining, re-compacting, re-grading, or,

- if unacceptable or destroyed, the removal of work the District previously accepted.
- (d) **Grading Operations:**

When the Contractor elects to complete the rough grading operations for the entire project or exceed the length of one full day's surfacing operations, the rough grade shall be machined to a uniform slope from the top edge of the existing pavement to the ditch line.

When the surface is to be widened on both sides of the existing pavement, construction operations involving grading or paving shall not be conducted simultaneously on sections directly opposite each other.

The surface of pavement shall be kept free from soil and other materials that might be hazardous to traffic. Prior to opening of new pavement to traffic, shoulders shall be roughly dressed for a distance of 3 feet from the edge of the paved surface.

- (e) **Maintenance Cost**

The Contractor shall bear all costs of performing maintenance work before final acceptance, and of constructing and maintaining necessary approaches, crossings, intersections, and other features without direct compensation except as provided for herein. When the Contractor confines his operation to the surface of the roadway and reasonable width of the shoulder and the surface is disturbed or damaged by his operations or equipment, he shall be responsible for the restoration and maintenance of the surface that is disturbed or damaged.

- (f) **Failure to Maintain Roadway or Structures:**

If the Contractor fails to remedy unsatisfactory maintenance immediately after receipt of a notice by the Engineer, the Engineer may proceed with adequate forces, equipment, and material to maintain the project. The cost of the maintenance, plus 25 percent for supervisory and administrative personnel, will be deducted from monies due the Contractor for the project.

105.15—Removing and Disposing of Structures and Obstructions

The Contractor shall remove and dispose of or store, as directed by the Engineer, fences, buildings, structures, or encumbrances within the construction limits unless separate pay items for this work are included in the Contract. Payment for these operations will be in accordance with Section 301.03. Materials so removed, including existing drains or pipe culverts, shall become the property of the Contractor, with the exception of those materials to be stored or delivered to the District or others as designated in the Contract.

- (a) **Signs:** The Contractor shall relocate all signs within the construction limits that conflict with construction work as approved by the Engineer. Signs that are not needed for the safe and orderly control of traffic during construction as determined by the Engineer shall be removed and stored at a designated location within the project limits. The removed signs

shall be stored above ground in a manner that will preclude damage and shall be reinstalled in their permanent locations prior to final acceptance. If any of the removed signs are not to be reinstalled, the Contractor shall notify the Engineer at the time the signs have been properly stored. Such signs will be removed from the storage area by the District. Any sign that is damaged or lost because of the fault of the Contractor shall be repaired or replaced at his expense. Costs for removing, storing, protecting, and reinstalling such signs shall be included in the price bid for other items in the Contract, and no additional compensation will be made.

105.16—Cleanup

Removal from the project of rubbish, scrap material, and debris caused by the Contractor's personnel or construction operations shall be a continuing process throughout the course of the Work. The work site shall be kept in a neat, safe and orderly condition at all times.

Before final acceptance, the highway, borrow pits, quarries, disposal areas, storage areas, and all ground occupied by the Contractor in connection with the Work shall be cleaned of rubbish, surplus materials, and temporary structures, except where the Contractor owns or controls the property. All parts of the Work shall be left in a neat, safe and orderly condition.

Within 30 days after final acceptance, the Contractor shall remove his equipment, materials and debris from the right of way and from property adjacent to the project that he does not own or control.

105.17—Inspection of Work

Inspection will be performed at critical stages. However, all stages, materials, and details of the Work are subject to inspection. The Contractor shall provide the Engineer and Inspectors full and safe access to all parts of the Work. The Contractor shall furnish the Engineer and Inspectors such information and assistance as required to make complete, timely and detailed inspections. The Engineer, Inspectors and their appointed representatives shall have ready access to machines, plants and plant equipment used in processing or placing materials.

Prior to the beginning of operations, the Engineer will meet with the Contractor to establish an understanding of the critical stages of work that shall be performed in the presence of the Inspector. In order for the District to schedule inspection of the critical stages of work, the Contractor shall keep the Engineer informed of planned operations in accordance with Section 108.03. The Contractor shall advise the Engineer at least 24 hours in advance of any changes in the Contractor's planned operations or critical stage work requiring District inspection.

If the Engineer requests it, the Contractor shall remove or uncover such portions of the finished work as may be directed at any time before final acceptance. The Contractor shall restore such portions of the finished work to comply with the appropriate Contract specification requirements. If the work exposed is acceptable, the uncovering or removing and replacing the covering or making good the parts removed will be paid for as extra work in accordance with Section 104.02. If the work is unacceptable, the cost of uncovering or removing and replacing the covering or making

good the parts removed shall be borne by the Contractor.

If materials are used or work is performed without inspection by an authorized representative of the Department, the Contractor may be ordered to remove and replace such work or material at his own expense unless the District's representative failed to inspect the work or material after having been given reasonable notice in writing that the material was to be used or the work was to be performed.

If an inspection reveals that work has not been properly performed, or materials used are unacceptable, the Contractor will be so advised and he shall immediately inform the District of his schedule for correcting such work and materials, and the time when a re-inspection can be made.

105.18—Removal of Unacceptable and Unauthorized Work

Work that does not conform to the Contract requirements, whether the result of unacceptable workmanship, use of unacceptable materials, damage through carelessness, or any other cause within the Contractor's control, will be considered unacceptable work.

Unacceptable work shall be remedied or removed as determined by the Engineer and replaced in an acceptable manner at the Contractor's expense. The Engineer may accept the unacceptable work at a reduced price when acceptance is considered to be in the best interest of the District.

Work that is done contrary to the instructions of the Engineer, contrary to the requirements of the Contract, beyond the lines shown on the plans or as designated by the Engineer except as specified herein, or without authority will be considered unauthorized and will not be paid for. The Engineer may order the Contractor to remove or replace unauthorized work at the Contractor's expense.

The Contractor shall not perform destructive sampling or testing of the work without written authorization of the Engineer. Unauthorized destructive sampling or testing will cause the work to be considered unacceptable.

In the event the Contractor is granted authorization to perform destructive sampling or testing, the Contractor shall obtain the approval of the Engineer for the method and location of each test prior to beginning such sampling or testing. In addition, destructive sampling and testing shall be performed in the presence of the Engineer.

If the Contractor fails to comply immediately with any order of the Engineer made under this Section, the Engineer will have the authority to cause unacceptable or unauthorized work to be removed and replaced and to deduct the cost of such removal and replacement, plus 25 percent for supervisory and administrative personnel, from any monies due or to become due the Contractor.

105.19—Submission and Disposition of Claims

(a) Notice of Intent to File a Claim

Early or prior knowledge by the District of an existing or impending claim for damages could alter the plans, scheduling, or other District action or result in mitigation or elimination of the basis for the claim. Therefore, the Contractor shall submit a written statement

describing the act of omission or commission by the District or its agents that allegedly caused damage to the Contractor and the nature of the claimed damage to the Engineer at the time of each and every occurrence that the Contractor believes to be the basis of a claim or prior to the beginning of the work upon which a claim and any subsequent action will be based. "Occurrence" includes, but is not limited to the Engineer's denial of the Contractor's timely request for time extension, additional compensation, change order, adjustment, or other request under the Contract, or any other decision, instruction, directive, or order that the Contractor believes will result in a claim. The written statement shall clearly state that it is a "notice of intent to file a claim." If such damage is deemed certain in the opinion of the Contractor to result from his acting on an order from the Engineer, he shall immediately take written exception to the order. Submission of a notice of intent to file a claim as specified shall be mandatory. Failure to submit such notice of intent shall be a conclusive waiver to such claim for damages by the Contractor. An oral notice or statement will not be sufficient nor will a notice or statement after the event. Oral statements recorded in meeting minutes also will not be sufficient.

In addition, at the time of each and every occurrence that the Contractor believes to be the basis of a claim or prior to beginning the work upon which a claim and any subsequent action will be based, the Contractor shall furnish the Engineer an itemized list of materials, equipment, and labor for which additional compensation will be claimed. The Contractor shall afford the Engineer every facility for keeping an actual cost record of the work. The Contractor and the Engineer shall compare records and bring them into agreement at the end of each day. Failure on the part of the Contractor to afford the Engineer proper facilities for keeping a record of actual costs will constitute a waiver of a claim for such extra compensation except to the extent that it is substantiated by the District's records. The filing of such notice of intent by the Contractor and the keeping of cost records by the Engineer shall in no way establish the validity of a claim.

(b) Time for Submittal of Claim

Upon completion or termination of the Contract, the Contractor may, within 60 days after the final estimate date established by the District pursuant to Code of Virginia § 33.2-1101, deliver to the District a certified written claim, which must be a signed original claim document, along with an electronic copy of the claim document as a Portable Document Format (PDF) file, for the amount he deems he is entitled to under the Contract. For the purpose of this Section, the final estimate date shall be that date set forth in a letter from the Department to the Contractor sent by certified mail and shall be considered as the date of notification of the District's final estimate. Regardless of the manner of delivery of the claim, the Engineer must receive and have physical possession of the Contractor's written claim within the 60-day period that commences with the final estimate date. Submittals received by the District either before the final estimate date or after the 60-day period shall not have standing as a claim.

(c) Content of Claim

The Contractor's certified written claim shall set forth in detail the facts upon which the

claim is based, including but not limited to the following:

1. A detailed statement of the facts upon which the claim is based providing items of work affected and included in each claim, and the date(s) on which actions or events resulting in the claim occurred or conditions resulting in the claim became evident; and
2. All pertinent data, documents, and correspondence that may substantiate the claim. The District shall have the right, at its expense, to review and copy all of the Contractor's non-privileged project files and documents, both electronic and paper, for use in analyzing the claim; and
3. Identification of the provisions of the Contract that the District allegedly breached, and the acts or omissions constituting such breach.
4. A detailed statement of the amount of the actual cost for materials, labor and equipment sought in the claim.
5. A copy of the notice(s) of intent to file a claim that the Contractor submitted to the District for the claim(s).

(d) **Certification of Claim.**

The Contractor shall submit with the claim a written certification of the claim in the following form:

Pursuant to the Code of Virginia, I hereby certify that this Contract claim submission for Chesapeake Bay Bridge Tunnel District Project No. in Northampton County, Virginia, is a true and accurate representation of additional costs, expenses, damages and/or delays incurred by (Contractor) or its subcontractors or suppliers in the performance of the required Contract work. Any statements, representations, writings, or documents, made or used and known to be false, shall be considered a violation of the Virginia Governmental Frauds Act, punishable as allowed by the Code of Virginia for a Class 6 Felony, and shall be considered a violation of the Virginia Fraud Against Taxpayers Act, subject to the civil penalties allowed by the Code of Virginia.

By: _____
(Contractor)

As officer or duly appointed agent of _____ (Contractor)

Title: _____ Date: _____

State Of: _____ City/County of _____, to Wit:

I, the undersigned, a Notary Public in and for the City/County and State aforesaid, do hereby

certify that _____, Whose name is signed to the foregoing

instrument, bearing the date of the ____ day of _____ 20____, has this day

acknowledged the same before me in my city/county and State aforesaid.

Given under my hand this _____ day of _____, 20____.

Notary Public: _____

Notary Registration No.: _____

My Commission Expires: _____

Claims submitted by the Contractor for itself or its subcontractors or suppliers during the statutory period for submitting Contract claims that are submitted without the Contractor's certification described above shall not have standing as a claim and shall not be considered by the District.

(e) Review of Claim

Within 90 days from the receipt of the claim, the District will make an investigation and notify the Contractor by certified mail of its decision. However, by mutual agreement, the District and Contractor may extend the 90-day period for another 30 days.

If the Contractor is dissatisfied with the District's decision, within 30 days from receipt of the decision the Contractor shall notify the Executive Director in writing that it desires to appear before the Executive Director, whether in person or through counsel, and present additional facts and arguments in support of its claim. The Executive Director will schedule and meet with the Contractor within 30 days after receiving the request. However, the Executive Director and Contractor, by mutual agreement, may schedule the meeting to be held after 30 days but before the 60th day from the receipt of the Contractor's written request. Within 45 days from the date of the meeting, the Executive Director will investigate the claim, including the additional facts presented, and notify the Contractor in writing of his decision. However, the Executive Director and Contractor, by mutual agreement, may extend the 45-day period for another 30 days. If the Executive Director deems that all or any portion of a claim is valid, he shall have the authority to negotiate a settlement with the Contractor subject to any approvals required by the Code of Virginia.

Any monies that become payable as the result of claim settlement after payment of the final estimate will not be subject to payment of interest unless such payment is specified as a condition of the claim settlement.

(f) Compensation for Claims

The Engineer will determine time extension according to Section 108.04 and compensation according to Section 109.05 if the District concludes that the Contractor has established entitlement to compensation or a time extension for the claim.

SECTION 106—CONTROL OF MATERIAL

106.01—Source of Supply and Quality Requirements

The materials used throughout the Work shall conform to the requirements of the Contract. The Contractor shall regulate his supplies so that there will be a sufficient quantity of tested material on hand at all times to prevent any delay of work. Except as otherwise specified, materials, equipment, and components that are to be incorporated into the finished Work shall be new and fit for their intended purpose. Within 30 days after notification of award of the Contract, but not later than 7 days prior to the beginning of construction operations under the Contract, the Contractor shall submit a statement of the known origin, composition and manufacture of all materials to be used in the work, including optional or alternate items. Material requirements not previously reported shall be submitted at least 60 days prior to their use on the project, but not less than 2 weeks prior to delivery. The Contractor's statement shall be electronically submitted by use of Form C-25 and shall be identified by the complete project number, and all items or component materials shall be identified by the specific Contract item number and the Specification reference shown in the Contract.

At the option of the Engineer, materials may be approved at the source of supply. If it is found during the life of the Contract that previously approved sources of supply do not supply materials or equipment conforming to the Contract requirements, do not furnish the valid test data required to document the quality of the material or equipment, or do not furnish documentation to validate quantities to document payment, the Contractor shall change the source of supply and furnish material or equipment from other approved sources. The Contractor shall notify the District of this change, and provide the same identifying information noted in this Section, at least 60 days prior to their use on the project, but not less than 2 weeks prior to delivery.

Materials shall not contain toxic, hazardous, or regulated solid wastes or be furnished from a source containing toxic, hazardous or regulated solid wastes.

When optional materials are included in the Contract, the Contractor shall advise the Engineer in writing of the specific materials selected. Thereafter, the Contractor shall use the selected materials throughout the project unless a change is authorized in writing by the Engineer. However, when the Contractor has an option as to the type of pipe that may be used, he may use any of the approved types for each size of pipe, but he shall use the same type for a particular line. The Engineer may authorize other types and sources in an emergency that will not unreasonably delay delivery of the selected material.

Equipment and material guaranties or warranties that are normally given by a manufacturer or supplier, or are otherwise required in the Contract, shall be obtained by the Contractor and assigned to the District in writing. The Contractor shall also provide an in-service operation guaranty on all mechanical and electrical equipment and related components for a period of at least 12 months, beginning on the date of partial acceptance of that specific item(s) or final acceptance of the project.

106.02—Material Delivery

The Contractor shall advise the Engineer at least 2 weeks prior to the delivery of any material from

a commercial source. Upon delivery of any such material to the project, the Contractor shall provide the Engineer with one copy of all invoices (prices are not required). The following materials shall also comply with Section 109.01: asphalt concrete; dense graded aggregate, to include aggregate base, subbase, and select material; fine aggregate; open graded coarse aggregate; crusher run aggregate; and road stabilization aggregate. The printed weights of each load of these materials, as specified in Section 109.01, shall accompany the delivery, and such information shall be furnished to the Inspector at the project.

106.03—Local Material Sources (Pits and Quarries)

The requirements set forth herein apply exclusively to non-commercial pits and quarries from which materials are obtained for use on contracts awarded by the District.

- (a) Local material sources shall be concealed from view from the completed roadway and any existing public roadway. Concealment shall be accomplished by selectively locating the pit or quarry and spoil pile, providing environmentally compatible screening between the pit or quarry site and the roadway, or using the site for another purpose after removal of the material, or restoration equivalent to the original use (such as farm land, pasture, turf, etc.). The foregoing requirements shall also apply to any pit or quarry opened or reopened by a subcontractor or supplier. However, the requirements will not apply to commercial sand and gravel and quarry operations actively processing material at the site prior to the date of the Notice of Advertisement.
- (b) The Contractor shall furnish the Engineer a statement signed by the property owner in which the property owner agrees to the use of his property as a source of material for the project. Upon completion of the use of the property as a material source, the Contractor shall furnish the Engineer a release signed by the property owner indicating that the property has been satisfactorily restored. The requirements for a signed statement and release will not apply to commercial sources, sources owned by the Contractor, and sources furnished by the District.
- (c) Local material pits and quarries that are not operated under a local or State permit shall not be opened or reopened without authorization by the Engineer. The Contractor shall submit for approval a site plan, including, but not limited to, the following:
 - 1. The location and approximate boundaries of the excavation;
 - 2. Procedures to minimize erosion and siltation;
 - 3. Provision of environmentally compatible screening;
 - 4. Restoration;
 - 5. Cover vegetation;
 - 6. Other use of the pit or quarry after removal of material, including the spoil pile;

7. The drainage pattern on and away from the area of land affected, including the directional flow of water and a certification with appropriate calculations that verify all receiving channels are in compliance with Minimum Standard 19 of the Virginia Erosion and Sediment Control Regulations;
8. Location of haul roads and stabilized construction entrances if construction equipment will enter a paved roadway;
9. Constructed or natural waterways used for discharge;
10. A sequence and schedule to achieve the approved plan; and
11. The total drainage area for temporary sediment traps and basins shall be shown. Sediment traps are required if the runoff from a watershed area of less than three acres flows across a disturbed area. Sediment basins are required if the runoff from a watershed area of three acres or more flows across a disturbed area. The Contractor shall certify that the sediment trap or basin design is in compliance with VDOT Standards and Specifications, and all local, state, and federal laws. Once a sediment trap or basin is constructed, the dam and all outfall areas shall be immediately stabilized.

The Contractor's design and restoration shall be in accordance with the Contract requirements and in accordance with the requirements of the federal, state, and local laws and regulations.

If the approved plan provides for the continued use or other use of the pit or quarry beyond the date of final acceptance, the Contractor shall furnish the District a bond made payable to the Chesapeake Bay Bridge Tunnel District in an amount equal to the Engineer's estimate of the cost of performing the restoration work. If the pit or quarry is not used in accordance with the approved plan within eight months after final acceptance, the Contractor shall perform restoration work as directed by the Engineer, forfeit his bond, or furnish the Engineer with evidence that he has complied with the applicable requirements of the State Mining Law.

- (d) Topsoil on District owned or furnished borrow sites shall be stripped and stockpiled as directed by the Engineer for use as needed within the construction limits of the project or in the reclamation of borrow and disposal areas.
- (e) If payment is to be made for material measured in its original position, material shall not be removed until Digital Terrain Model (DTM) or cross-sections have been taken. The material shall be reserved exclusively for use on the project until completion of the project or until final DTM or cross-sections have been taken.
- (f) If the Contractor fails to provide necessary controls to prevent erosion and siltation, if such efforts are not made in accordance with the approved sequence, or if the efforts are found

to be inadequate the District will withdraw approval for the use of the site and may cause the Contractor to cease all contributing operations and direct his efforts toward corrective action. If the Contractor does not perform such work, the cost of performing the work, plus 25 percent for supervisory and administrative personnel, will be deducted from monies due or to become due the Contractor.

- (g) Costs for applying seed, fertilizer, lime, mulch, and for restoration drainage, erosion and siltation control, regrading haul roads, and screening shall be included in the Contract price for the type of excavation or other appropriate Contract items.
- (h) If the Contractor fails to fulfill the provisions of the approved plan for screening or restoring material sources, the District may withhold and use for the purpose of performing such work any monies due the Contractor at the time of the final estimate. The Contractor shall be liable for penalties, fines, or the District's costs or damages that result from his failure to prevent erosion or siltation and take restorative action.
- (i) After removing all the material needed from the local material sources, the Contractor shall remove metal, lumber, and other debris resulting from his operations and shall shape and landscape the area in accordance with the approved plan for such work.

106.04—Disposal Areas

The Contractor shall dispose of unsuitable or surplus material shown on the plans according to Contract requirements. The Contractor shall dispose of unsuitable or surplus material off the right of way. The Contractor shall obtain the necessary rights to property to be used as a disposal area.

The Contractor shall handle and dispose of the materials specified in this Section in accordance with the following requirements.

(a) Disposal Areas

The Contractor shall dispose of materials not used on the project off the right of way. If an approved disposal area is not designated in the Contract, the Contractor shall obtain the necessary rights to property to be used as an approved disposal area. Prior to the District approving the Contractor's proposed disposal area, the Contractor shall submit a site plan that shall show:

1. The location and approximate boundaries of the disposal area.
2. Procedures to minimize erosion and siltation.
3. Provision of environmentally compatible screening.
4. Restoration.
5. Cover vegetation.

6. Other use of the disposal site.
7. The drainage pattern on and away from the area of land affected, including the directional flow of water and a certification with appropriate calculations that verify all receiving channels are in compliance with Minimum Standard 19 of the Virginia Erosion and Sediment Control Regulations.
8. Location of haul roads and stabilized construction entrances if construction equipment will enter a paved roadway.
9. Constructed or natural waterways used for discharge.
10. A sequence and schedule to achieve the approved plan.
11. The total drainage area for temporary sediment traps and basins shall be shown. Sediment traps are required if the runoff from a watershed area of less than three acres flows across a disturbed area. Sediment basins are required if the runoff from a watershed area of 3 acres or more flows across a disturbed area. The Contractor shall certify that the sediment trap or basin design is in compliance with VDOT Standards and Specifications, all local, state, and federal laws. Once a sediment trap or basin is constructed, the dam and all outfall areas shall be immediately stabilized.

Disposal areas shall be cleared but need not be grubbed. The clearing work shall not damage grass, shrubs, or vegetation outside the limits of the approved area and haul roads thereto. After the material has been deposited, the area shall be shaped to minimize erosion and siltation of nearby streams and landscaped in accordance with the approved plan for such work or shall be used as approved by the Engineer. The Contractor's design and restoration shall conform to the Contract requirements and federal, state, and local laws and regulations.

If the Contractor fails to provide and maintain necessary controls to prevent erosion and siltation, if such efforts are not made in accordance with the approved sequence, or if the efforts are found to be inadequate, the District will withdraw approval for the use of the site and may cause the Contractor to cease all contributing operations and direct his efforts toward corrective action, or may perform the work as determined by the Engineer and deduct the cost of performing the work, plus 25 percent for supervisory and administrative personnel, from monies due or to become due the Contractor.

The Contractor shall furnish the Engineer a statement signed by the property owner in which the owner agrees to the use of his property for the deposit of material from the project. Upon completion of the use of the property as an approved disposal area, the Contractor shall furnish the Engineer a release signed by the property owner indicating that the property has been satisfactorily restored. This requirement will not apply to commercial sources, sources owned by the Contractor, and sources furnished by the District.

(b) Materials encountered by the Contractor shall be handled and disposed of as follows:

1. Unsuitable material for the purpose of this Specification is defined as material having poor bearing capacity, excessive moisture content, extreme plasticity or other characteristics as defined by the Engineer that makes it unacceptable for use in the Work and shall be disposed of at an approved disposal area, landfill licensed to receive such material, or as the Engineer directs in writing.
2. Surplus material as shown on the plans shall be disposed of by flattening slopes, used to fill in ramp gores and medians, or if not needed, disposed of at an approved disposal area, a landfill licensed to receive such material, or as the Engineer directs in writing. Surplus material stockpile areas on the right of way shall be cleared but need not be grubbed. The clearing work shall not damage grass, shrubs, or vegetation outside the limits of the approved area and the haul roads thereto. Placement of fill material shall not adversely affect existing drainage structures. If necessary, modified existing drainage structures, as approved by the Engineer, shall be paid for in accordance with Section 109.05. Within 7 days after the material has been deposited, the area shall be shaped and stabilized to minimize erosion and siltation.
3. Organic materials such as, but not limited to, tree stumps and limbs (not considered merchantable timber), roots, rootmat, leaves, grass cuttings, or other similar materials shall be chipped or shredded and used on the project as mulch, given away, sold as firewood or mulch, burned at the Contractor's option if permitted by local ordinance, or disposed of at a facility licensed to receive such materials. Organic material shall not be buried in state rights-of-way or in an approved disposal area.
4. Inorganic materials such as brick, cinder block, broken concrete without exposed reinforcing steel, or other such material may be used in accordance with Section 303.04 or shall be disposed of at an approved disposal area or landfill licensed to receive such materials. If disposed of in an approved disposal area, the material shall have enough cover to promote soil stabilization in accordance with Section 303 and shall be restored in accordance with other provisions of this Section.

Concrete without exposed reinforcing steel, may be crushed and used as rock in accordance with Section 303. If approved by the Engineer, these materials may be blended with soils that meet AASHTO M57 requirements and deposited in fill areas within the right of way in accordance with the requirements of Section 303 as applicable.

5. Excavated rock in excess of that used within the project site in accordance with Section 303 shall be treated as surplus material.
6. Other materials such as, but not limited to, antifreeze, asphalt (liquid), building forms, concrete with reinforcing steel exposed, curing compound, fuel, hazardous materials, lubricants, metal, metal pipe, oil, paint, wood or metal from building demolition, or similar materials shall be disposed of at a landfill licensed to receive such material.

7. Coal or other valuable materials uncovered during prosecution of the Work that are not specifically addressed by the Contract shall be disposed of as the Engineer directs in writing.

106.05—Rights For and Use of Materials Found on Project

With the approval of the Engineer, the Contractor may use in the project any materials found in the excavation that comply with the requirements of the Specifications. Unless otherwise specified, the Contractor will be paid for both the excavation of such materials at the Contract unit price and for the Contract item for which the excavated material is used. However, the Contractor shall replace at his own expense with other acceptable material the excavation material removed and used that is needed for use in embankments, backfills, approaches, or otherwise. The Contractor shall not excavate or remove any material from within the construction limits that is not within the grading limits, indicated by the typical section, slope and grade lines shown in the plans without written authorization by the Engineer. The Contractor shall not own and shall not have the right to sell, trade or exchange, any coal or other valuable materials uncovered during the prosecution of the work without the Engineer's specific written authorization.

106.06—Samples, Tests, and Cited Specifications

Materials will be inspected and tested by the Engineer before or during their incorporation in the Work. However, the inspection and testing of such material shall not relieve the Contractor of the responsibility for furnishing material that conforms to the Specifications. The District may retest all materials that have been accepted at the source of supply after delivery and will reject those that do not conform to the requirements of the Specifications. Stored material may be re-inspected prior to use. Work in which untested materials are used without the written permission of the Engineer may be considered unacceptable.

Unless reference is made to a specific dated Specification, references in these Specifications to AASHTO, ASTM, VTM, and other standard test methods and materials requirements shall refer to either the test specifications that have been formally adopted or the latest interim or tentative specifications that have been published by the appropriate committee of such organizations as of the date of the Notice of Advertisement. Unless otherwise indicated, tests for compliance with specification requirements will be made by and at the District's expense except that the cost of retests, exclusive of the first retest, shall be borne by the Contractor. Samples shall be furnished by the Contractor at his expense, and those that are not tested by the Contractor will be tested by a representative of the District.

The inspection cost of structural steel items fabricated in a country other than the continental United States shall be borne by the Contractor. Inspection of structural fabrication shall be performed in accordance with the requirements of the appropriate VTM by a commercial laboratory approved by the District. Additional cleaning or repair necessary because of environmental conditions in transit shall be at the Contractor's expense.

In lieu of testing, the Engineer may approve the use of materials based on the receipt of the manufacturer's certification furnished by the Contractor. However, furnishing the certificate shall not relieve

the Contractor of the responsibility for furnishing materials that conform to the Specifications or the Contract requirements.

Materials requiring an MSDS will not be accepted at the project site for sampling or at the District's laboratories for testing without the document.

106.07—Plant Inspection

If the Engineer inspects materials at the source, the following conditions shall be met:

- (a) The Engineer shall have the cooperation and assistance of the Contractor and producer of the materials.
- (b) The Engineer shall have full access to parts of the plant that concern the manufacture or production of the materials being furnished.
- (c) For materials accepted under a quality assurance plan, the Contractor or producer shall furnish equipment and maintain a plant laboratory at locations approved for plant processing of materials. The Contractor or producer shall use the laboratory and equipment to perform quality control testing.

The laboratory shall be of weatherproof construction, tightly floored and roofed, and shall have adequate lighting, heating, running water, ventilation, and electrical service. The ambient temperature shall be maintained between 68 degrees F and 86 degrees F and thermostatically controlled. The laboratory shall be equipped with a telephone, intercom, or other electronic communication system connecting the laboratory and scale house if the facilities are not in close proximity to each other. The laboratory shall be constructed in accordance with the requirements of local building codes.

The Contractor or producer shall furnish, install, maintain, and replace, as conditions necessitate, testing equipment specified by the appropriate ASTM, AASHTO method or VTM being used and provide necessary office equipment and supplies to facilitate keeping records and generating test reports. The Contractor or producer's technician shall maintain current copies of test procedures performed in the laboratory. The Contractor shall calibrate or verify all balances, scales and weights associated with testing performed as specified in AASHTO R18. The Contractor or producer shall also provide and maintain an approved test stand for accessing truck beds for the purpose of sampling and inspection. The District may approve a single laboratory to service more than one plant belonging to the same Contractor or producer.

For crushed glass, the plant equipment requirements are waived in lieu of an independent third-party evaluation and certification of crushed glass properties by an AASHTO Materials Reference Laboratory (AMRL)-accredited commercial soil testing laboratory demonstrating that the supplied material conforms to Section 203. Random triplicate samples will be evaluated and analyzed for every 1,000 tons of material supplied to the project. The averaged results will be used for evaluation purposes. Suppliers of crushed glass shall maintain third party certification records for a period of 3 years.

106.08—Storing Materials

Materials shall be stored in a manner so as to ensure the preservation of their quality and fitness for the Work. When considered necessary by the Engineer, materials shall be stored in weatherproof buildings on wooden platforms or other hard, clean surfaces that will keep the material off the ground. Materials shall be covered when directed by the Engineer. Stored material shall be located so as to facilitate their prompt inspection. Approved portions of the right of way may be used for storage of material and equipment and for plant operations. However, equipment and materials shall not be stored within the clear zone of the travel lanes open to traffic.

The Contractor shall provide additional required storage space at his expense. Private property shall not be used for storage purposes without the written permission of the owner or lessee. The Contractor shall furnish copies of the owner's written permission to the Engineer. Upon completion of the use of the property, the Contractor shall furnish the Engineer a release signed by the property owner indicating that the property has been satisfactorily restored.

Chemicals, fuels, lubricants, bitumens, paints, raw sewage, and other harmful materials as determined by the Engineer and the *VPDES General Permit for Discharge of Stormwater from Construction Activities* shall not be stored within any floodplain unless no other location is available and only then shall the material be stored in a secondary containment structure(s) with an impervious liner. Also, any storage of these materials in proximity to natural or man-made drainage conveyances or otherwise where the materials could potentially reach a waterway if released under adverse weather conditions, must be stored in a bermed or diked area or inside a container capable of preventing a release. Double-walled storage tanks shall meet the berm/dike containment requirement except for storage within flood plains. Any spills, leaks or releases of such materials shall be addressed in accordance with Section 107.16(b) and (e). Accumulated rain water may also be pumped out of the impoundment area into approved dewatering devices. All proposed pollution prevention measures and practices must be identified by the Contractor in his Pollution Prevention Plan as required by the Specifications, other Contract documents and/or the *VD PES General Permit for Discharge of Stormwater from Construction Activities*.

106.09—Handling Materials

Materials shall be handled in a manner that will preserve their quality, integrity and fitness for the Work. Aggregates shall be transported in vehicles constructed to prevent loss or segregation of materials.

106.10—Unacceptable Materials

Materials that do not conform to the Contract requirements shall be considered unacceptable. Such materials, whether in place or not, will be rejected, and shall be removed from the site of the work and replaced at no cost to the District. If it is not practical for the Contractor to remove rejected material immediately, the Engineer will mark the rejected material for identification. Rejected material whose defects have been corrected shall not be used until the Engineer gives written approval for its use. Upon the Contractor's failure to comply promptly with any order of the Engineer made under this Section, the Engineer may, in addition to other rights and remedies, have the unacceptable

material removed and replaced, and deduct the cost of such removal and replacement from monies due or to become due the Contractor.

106.11—Material Furnished by the Department

The Contractor shall furnish all materials required to complete the Work except those specified to be furnished by the District.

Material furnished by the District will be delivered or made available to the Contractor at the locations specified in the Contract. The cost of handling and placing materials after delivery to the Contractor shall be included in the Contract price for the Contract item with which they are used.

After receipt of the materials, the Contractor shall be responsible for material delivered to him, including shortages, deficiencies, and damages that occur after delivery, and any demurrage charges.

106.12—Critical Materials

Raw or manufactured materials or supplies that are necessary for the fabrication, construction, installation, or completion of any item of work that is or becomes in extremely short supply regionally or nationally as substantiated by recognized public reports such as news media, trade association journals, or government reports, due to catastrophic events of nature, needs of national defense, or industrial conditions beyond the control of the District or Contractor, will be declared critical materials by the District.

When the supply of materials becomes critical, the provisions of this Section will become applicable to the Contract.

When all items of work involving noncritical materials have been completed by the Contractor or have progressed to a point where no further work is practicable prior to receipt of critical materials, a complete suspension of work will be granted by the District. Requests for partial suspension orders because of delays attributable to non-receipt of critical materials will be considered on the basis of merit in each case.

The District reserves the right to substitute critical materials or methods by means of a change order.

Contractors, via their manufacturers or suppliers, that request relief due to critical shortage of materials as specified in this Section shall immediately supply information and other supporting data to permit the District an opportunity to assess possible alternatives or methods to avoid undue delay or expenditure.

SECTION 107— LEGAL RESPONSIBILITIES

107.01—Laws to Be Observed

The Contractor shall keep fully informed of federal, state, and local laws, bylaws, ordinances, orders, decrees, and regulations of governing bodies, courts, and agencies having any jurisdiction or authority that affects those engaged or employed on the Work, the conduct of the Work, or the execution of any documents in connection with the Work. The Contractor shall observe and comply with such laws, ordinances, regulations, orders, or decrees and shall defend, indemnify, and hold harmless the Commonwealth and its agents, officers, or employees from and against any claim for liability, fine, penalty, or cost, including attorney's fees, arising from or based on their violation, whether by himself, his agents, employees, or subcontractors. The Contractor shall execute and file the documents, statements, certifications, and affidavits required under any applicable federal or state law or regulation required by or affecting his bid, or the Contract, or prosecution of the Work thereunder. The Contractor shall permit examination of any records made subject to such examination by any federal or state law or by regulations promulgated thereunder by any state or federal agency charged with enforcement of such law.

107.02—Permits, Certificates, and Licenses

(a) General

The Contractor shall conform to the permit conditions as shown in the Contract. Construction methods shall conform to the stipulations of the permit or certification conditions, or both. The Contractor shall assume all obligations and costs incurred as a result of complying with the terms and conditions of the permits and certificates.

If any of the permits listed below are applicable to the project, the Contract will indicate such and the applicable permit stipulations or conditions will be considered a part of the Contract.

1. **Department of the Army, Corps of Engineers Nationwide Permits:** A nationwide permit is issued to the District by the U.S. Army Corps of Engineers to place fill or dredge material in waters of the United States including wetlands.
2. **Virginia Marine Resources Commission – Virginia General Permit (VGP-1):** A VGP-1 permit is issued to the District by the Virginia Marine Resources Commission and is required on projects that cross in, on, or over state-owned land which is submerged below low water (channelward of the mean low water line), in tidal areas, including tidal wetlands, or below ordinary high water anywhere in the Commonwealth of Virginia.
3. **Virginia Water Protection Permit (VWPP):** The VWPP is issued to the District by the Virginia Department of Environmental Quality, Water Division and is required for activities that result in a discharge to surface waters and wetlands. The VWPP is issued as an individual or general permit.

4. **Virginia Department of Environmental Quality – VPDES General Permit For Discharge of Stormwater From Construction Activities (VPDES Construction Permit):** All construction activities undertaken by or for the District involving land disturbances equal to or exceeding one acre must be covered by the VPDES Construction Permit.
 5. The Contractor shall be responsible for all costs to obtain VPDES Construction Permit coverage for all support facilities (both on-site and off-site) not included in the construction plans or Contract for the project. The District will not be responsible for any inconvenience, delay, or loss experienced by the Contractor as a result of his failure to gain access to any support facility areas at the time contemplated.
 6. **Coastal Zone Management (CZM) Consistency Concurrence:** This clearance is issued to the District by the Virginia Department of Environmental Quality for projects in navigable waters requiring a U.S. Coast Guard bridge permit.
 7. **U.S. Coast Guard Bridge Permit:** This permit is required for bridge projects over navigable waters. The District is responsible for acquiring these permits.
 8. **Other Permits, Certificates and Licenses:** Except as otherwise specified herein, the Contractor shall procure all necessary permits, certificates or licenses that have not been obtained by the District. The Contractor shall pay all charges, fees, and taxes and shall comply with all conditions of the permits, certificates or licenses.
- (b) The Contractor shall not stockpile materials (including fill, construction debris, and excavated and woody materials) within the waterway or wetlands. The Contractor shall construct cofferdams, stream channel retaining structures, and all necessary dikes using non-erodible materials or, if specified in the permit(s), faced with coarse non-erodible materials. If faced with non-erodible material, filter cloth shall be placed between the granular fill and riprap in accordance with Sections 204, 245, 303.03, and 414. Temporary structures shall be removed from the waterway with minimal disturbance of the streambed. Discharge of dredge or fill material shall be placed in accordance with the best management practice, project permits, and all applicable laws and regulations. Dredged or fill material shall be removed to an approved, contained, upland location in accordance with Section 106.04. The disposal area will be of sufficient size and capacity to properly contain the dredge material, to allow for adequate dewatering and settling of sediment, and to prevent overtopping. The disposal area shall be stabilized prior to placement of dredge material.
- (c) The Contractor's activities shall not substantially disrupt the movement of those species of aquatic life indigenous to the water body including those species that normally migrate through the area. The Contractor, to the maximum extent practicable, shall not permanently restrict or impede the passage of normal or expected high flows or cause the relocation of the water. The Contractor shall avoid and minimize all temporary disturbances to surface waters during construction. The Contractor shall remove any temporary fill in its entirety and return the affected areas to their preexisting elevation conditions within 30 days of completing work, which shall include re-establishing pre-construction contours and

planting or seeding with appropriate wetland vegetation according to cover type (emergent, scrub/shrub, or forested). The Contractor shall perform all work activities during low-flow conditions and shall isolate the construction area via the implementation of non-erodible cofferdams, sheet piling, stream diversions, or similar structures.

- (d) The Contractor shall accomplish all construction, construction access (e.g., cofferdams, sheet piling, and causeways) and demolition activities associated with this project in a manner that minimizes construction or waste materials from entering surface waters. Access roads and associated bridges or culverts shall be constructed to minimize the adverse effects on surface waters. Access roads constructed above preconstruction contours and elevations in surface waters must be bridged or culverted to maintain surface flows. All utility line work in surface waters shall be performed in a manner that minimizes disturbance, and the area shall be returned to its original contours and restored within 30 days of completing work in the area.
- (e) The Contractor shall 1) stockpile excavated material in a manner that prevents reentry into the stream, 2) restore original streambed and streambank contours, 3) revegetate barren areas, and 4) implement strict erosion and sediment control measures throughout the project period.
- (f) The Contractor shall provide fill material that is clean and free of contaminants in toxic concentrations or amounts in accordance with all applicable laws and regulations. The Contractor shall comply with all applicable FEMA-approved state or local floodplain management requirements.
- (g) The Contractor shall adhere to any time-of-year restriction conditions as required by state and federal permitting agencies. No in-stream work shall be permitted during in-stream time-of-year restriction.
- (h) The Contractor shall prohibit wet or uncured concrete from entry into surface waters. The Contractor shall not dispose of excess or waste concrete in surface waters and prevent wash water from discharging into surface waters. The Contractor shall employ measures to prevent spills of fuels or lubricants into state waters. All pollution prevention measures and practices proposed by the Contractor shall be identified in the Contractor's Pollution Prevention Plan as required by the Specifications, other Contract documents and/or the *VPDES General Permit for Discharge of Stormwater from Construction Activities*.
- (i) The Contractor shall not violate the water quality standards as a result of the construction activities. The Contractor shall not alter the physical, chemical, or biological properties of surface waters and wetlands or make them detrimental to the public health, to animal or aquatic life, to the uses of such waters for domestic or industrial consumption, for recreation, or for other uses.
- (j) The Contractor shall not proceed with work covered by a permit until the work is released in writing by the Engineer.

- (k) If the District has not released work covered by a U.S. Army Corps of Engineers permit and the Contractor has completed all other work within the limits of the project, the Contractor shall so advise the Engineer in writing. Upon receipt of the notification, the Engineer will evaluate the status of the project and advise the Contractor within 45 days of the portion of the project that is acceptable under Section 108.09. If the Engineer determines that all of the work except that encumbered by the permit application is acceptable under Section 108.09, the Contractor will be notified accordingly. The District or the Contractor may then elect to continue or terminate the remaining portion of the Contract.
- (l) The party electing to terminate the Contract shall so advise the other party in writing after the 45-day period. The terms of Contract termination will be in accordance with Section 108.08. No compensation will be made for delays encountered or for work not performed except for an extension of time as determined in accordance with Section 108.04.
- (m) The Contractor shall submit a request to the Engineer in writing if he wants to deviate from the plans or change his proposed method(s) regarding any proposed work located in waterways or wetlands. Such work may require additional environmental permits. If the Engineer determines that the activities are necessary for completion of the work, the Contractor shall furnish the Engineer all necessary information pertaining to the activity. The Contractor shall be responsible for designing and supplying all plans, sketches and notes necessary to acquire any permit modification required for changes in the proposed construction methods. Such information shall be furnished at least 180 days prior to the date the proposed changed activity is to begin. For other than the *VPDES General Permit for Discharge of Stormwater from Construction Activities*, the District will apply for the necessary permits modifications to the permits obtained by the District. The Contractor shall not begin the activity until directed to do so by the Engineer. Additional compensation will not be made for delay to the work or change in the Contractor's proposed methods that result from jurisdiction agency review or disapproval of the Contractor's proposed methods.
- (n) If additional permits are required to perform dredging for flotation of construction equipment or for other permanent or temporary work as indicated in the Contractor's accepted plan of operation, but have not been obtained by the District, the Contractor shall furnish the Engineer, at least 75 days prior to the proposed activity, all necessary information pertaining to the proposed activity in order for the Department to apply for the permits. The Contractor shall not begin the proposed activity until the additional permits have been secured and the Engineer has advised the Contractor that the proposed activity may proceed.
- (o) The Contractor shall permit representatives of state and federal environmental regulatory agencies to make inspections at any time in order to insure that the activity being performed under authority of the permit(s) is in accordance with the terms and conditions prescribed herein.

107.03—Not Used

107.04 – Not Used

107.05 - Patented Devices, Materials, and Processes

If the Contractor employs any design, device, material, or process covered by a patent or copyright outside the Contract requirements he shall provide for its use by obtaining a legal agreement with the patentee or owner. The Contractor and the surety shall defend, indemnify, and save harmless the District, any affected third party, or political subdivision from and against any and all claims, lawsuits, or legal actions for infringement because of such use. The Contractor shall indemnify the District for costs, expenses, or damages, including attorneys' fees, resulting from infringement during prosecution or after completion of the Work.

107.06—Personal Liability of Public Officials

In carrying out any of the provisions of these Specifications or in exercising any power or authority granted to them by or within the scope of the Contract, there shall be no liability upon the Commission, Executive Director, Engineer, or their authorized representatives, either personally or as officials of the District. In all such matters, they act solely as agents and representatives of the District.

107.07—No Waiver of Legal Rights

The District shall not be precluded or estopped by any measurement, estimate, approval, acceptance, or certificate made either before or after final acceptance of the Work, or payment therefor, from showing (1) the true amount and character of the work performed and materials furnished by the Contractor, (2) that any such measurement, estimate, acceptance, certificate or payment is untrue or incorrectly made, or (3) that the work or materials do not comply with the Contract requirements. The District shall not be precluded or estopped, notwithstanding any such measurement, estimate, approval, acceptance, certificate, or payment in accordance therewith, from recovering from the Contractor or his surety, or both, such cost or damage as the District may sustain by reason of the Contractor's failure to comply with the Contract requirements. The District's acceptance of the whole or any part of the Work, or the District's payment for the whole or any part of the Work, or the District's granting of any extension of time, or the District's taking any possession of any part of the Work, shall not operate as a waiver of any portion of the Contract or of any right or power herein reserved, or of any right to costs or damages. The District's express written waiver of any breach of the Contract shall not be held to be a waiver of any other or subsequent breach.

107.08—Protecting and Restoring Property and Landscape

The Contractor shall preserve property and improvements along the boundary lines of and adjacent to the Work unless their removal or destruction is specified in the Contract. The Contractor shall use suitable precautions to prevent damage to such property.

When the Contractor finds it necessary to enter on private property, beyond the limits of the construction easement shown on the plans, he shall secure from the owner or lessee a written permit

for such entry prior to moving thereon. An executed copy of this permit shall be furnished to the Engineer.

The Contractor shall be responsible for any damage or injury to property during the prosecution of the work resulting from any act, omission, neglect, or misconduct in the Contractor's method of executing the work or attributable to defective work or materials. This responsibility shall not be released until final acceptance of the project and a written release from the owner or lessee of the property is obtained.

When direct or indirect damage is done to property by or on account of any act, omission, neglect, or misconduct in the Contractor's method of executing the Work or in consequence of the non-execution thereof on the part of the Contractor, the Contractor shall restore such property to a condition similar or equal to that existing before such damage was done by repairing, rebuilding, or restoring, as may be directed by the Engineer, or shall make a settlement with the property owner for such property damage. The Contractor shall secure from the owner a written release from any claim against the District without additional compensation therefor. A copy of this release shall be furnished the Engineer.

107.09—Contractor's Responsibility for Utility Property and Services

At points where the Contractor's operations are on or adjacent to the properties of any utility, including railroads, and damage to which might result in expense, loss, or inconvenience, work shall not commence until arrangements necessary for the protection thereof have been completed.

The Contractor shall cooperate with owners of utilities so that removal and adjustment operations may progress in a timely, responsible, and reasonable manner, duplication of adjustment work may be reduced to a minimum, and services rendered by those parties will not be unnecessarily interrupted.

If any utility service is interrupted as a result of accidental breakage or of being exposed or unsupported, the Contractor shall promptly notify the proper authority and shall cooperate fully with the authority in the restoration of service. If utility service is interrupted, repair work shall be continuous until service is restored. No work shall be undertaken around fire hydrants until provisions for continued service have been approved by the Engineer. The Contractor shall be responsible for any damage to utilities that, in the investigation and determination of the Engineer, is found to be attributable to the Contractor's neglect, means or methods of performing the work.

Nothing in this Section shall be construed to be in conflict with Section 107.08.

The Contractor shall comply with all requirements of the Virginia Underground Utility Damage Prevention Act (the Miss Utility law). The Contractor shall not make or begin any excavation or demolition without first notifying the Miss Utility notification center for the area where the project is located. The Contractor shall wait to begin its excavation or demolition until 7:00 a.m. on the third working day following the Contractor's notice to the notification center, unless the underground utilities cannot be marked within that time due to extraordinary circumstances. The Contractor may commence excavation or demolition work only if confirmed through the Ticket Information

Exchange (TIE) System, or the Contractor is notified directly, that all applicable utilities have either marked their underground line locations or reported that no lines are present in the work vicinity.

107.10—Restoration of Work Performed by Others

The District may construct or reconstruct any utility service within the construction limits or grant a permit for the same at any time. The Contractor shall not be entitled to any damages occasioned thereby other than a consideration of an extension of time, unless the Contractor's Work is damaged, altered or impeded by the condition.

When authorized by the Engineer, the Contractor shall allow any person, firm, or corporation to make an opening in the highway within the limits of the project upon presentation of a duly executed permit from the District or any municipality for sections within its corporate limits. When directed by the Engineer, the Contractor shall satisfactorily repair portions of the work disturbed by the openings. The work for such repairs as authorized and directed by the Engineer will be paid for in accordance with Section 109.05 and shall be subject to the same conditions as the original work performed.

107.11 – Not Used

107.12—Responsibility for Damage Claims

- (a) The Contractor shall defend, indemnify, and save harmless the Commonwealth, the Commission, and their respective officers, agents, and employees, from and against any suits, actions, or claims for costs, expenses or damages, including attorneys' fees, brought for or on account of any injuries or damages received or sustained by any persons or property resulting from or arising out of the following:

1. the Work performed by the Contractor;
2. by or in consequence of any neglect in safeguarding the Work by the Contractor;
3. through the use of unacceptable materials in the construction or the improvement; or
4. resulting from any act, omission, neglect, or misconduct of the Contractor.

The Executive Director may retain as much of the monies due or to become due the Contractor under and by virtue of his Contract as the District considers necessary to ensure that a fund will be available to pay a settlement or judgment of such suits, actions, or claims. If no monies are due, the Contractor's surety and insurers will be held accountable until all such suits, claims and actions have been settled and suitable evidence to that effect has been furnished the Commission. Any extension of time granted the Contractor, in which to complete the Contract shall not relieve him or his surety of this responsibility.

- (b) It is not intended by any of the provisions of any part of the Contract to establish the public or any member thereof as a third party beneficiary of the Contract, or to authorize anyone

not a party to the Contract to enter into a suit for personal injuries or property damage pursuant to the terms or provisions of the Contract.

- (c) The Contractor shall comply with all requirements, conditions, and terms of the Contract, including but not limited to, environmental permits, commitments identified in the Contract, and applicable environmental laws and regulations. The Contractor shall not cause damage, except as allowed under the terms of the Contract, or as allowed under applicable permits or laws, to the air, water, soil, or other natural resources, or cause damage to adjacent or off-site property. When any act, omission, or work performed or neglected by other action of the Contractor occurs, that violates the requirements, conditions, or terms of the Contract, and affects the health, safety, or welfare of the public or natural resources, the Engineer will direct the Contractor to take prompt action to repair, replace, or restore the damage or injury within a time frame established by the Engineer, and to comply with Section 107.01. If the Contractor fails to make such repair, replacement, or restoration within the established time frame, the Engineer will have the damage or injury repaired, replaced, or restored and will deduct the cost of such repair, replacement, or restoration from monies due or to become due the Contractor.
- (d) If the District determines by its own investigation that injury or damage has occurred as a result of an act, omission, or work performed or neglected by the Contractor, the District may suspend the Contractor from future bidding for a period of time commensurate with the severity of the injury or damage as determined by the Engineer. Injury is defined as harm or impairment to persons, property or natural resources. Damage is defined as the loss or harm resulting from an injury. In addition, the District may recover either (i) the loss or damage that the District suffers as a result of such act, omission or other action or (ii) any liquidated damages established in such Contract; plus (iii) reasonable attorney's fees, expert witness fees, staff salaries, incidental and equipment charges associated with any investigation.

Upon the District's determination that injury or damage has occurred as a result of an act, omission, or work performed or neglected by the Contractor, the Contractor shall be responsible for and shall reimburse the District for all expenses associated with the injury or damage. Expenses include, but are not limited to: costs for investigating the injury or damage, financial penalties incurred by the District as a result of the injury or damage, salary and expenses incurred by employees or consultants of the District, road user expenses as determined by the District due to damage or loss of use of the project area, attorneys' fees, and expert witness fees. The District may deduct the reimbursement of expenses from any payments due or to become due the Contractor.

Upon determination by the District of willful, flagrant, or repetitious acts, omissions, or work performed or neglected by the Contractor related to injury or damage as provided in this Section, the Contractor shall in addition to reimbursing the District for all expenses as provided herein, be subject to other appropriate sanctions, as permitted by law, policy, and Specifications, including but not limited to, suspension of work, termination for default, and removal from the bidders' list.

If the Contractor disputes the District's determination in any respect, the Contractor, may submit a claim in accordance with Section 105.19.

107.13 – Not Used

107.14 – Not Used

107.15 – Not Used

107.16—Environmental Stipulations

By signing the bid, the bidder shall have stipulated (1) that any facility to be used in the performance of the Contract (unless the Contract is exempt under the Clean Air Act as amended [42 U.S.C. 1857, et seq., as amended by P.L. 91-604], the Federal Water Pollution Control Act as amended [33 U.S.C. 1251 et seq. as amended by P.L. 92-500], and Executive Order 11738 and regulations in implementation thereof [40 C.F.R., Part 15]) is not listed on the EPA's List of Violating Facilities pursuant to 40 C.F.R. 15.20; and (2) that the bidder shall promptly notify Department prior to the award of the Contract if the bidder receives any communication from the Director, Office of Federal Activities, EPA, indicating that a facility to be used for the Contract is under consideration to be listed on the EPA's List of Violating Facilities.

No separate payment will be made for the work or precautions described herein except where provided for as a specific item in the Contract or except where provision has been made for such payment in these Specifications.

- (a) **Erosion and Siltation:** The Contractor shall exercise every reasonable precaution, including temporary and permanent soil stabilization measures, throughout the duration of the project to control erosion and prevent siltation of adjacent lands, rivers, streams, wetlands, lakes, and impoundments. Soil stabilization and/or erosion control measures shall be applied to erodible soil or ground materials exposed by any activity associated with construction, including clearing, grubbing, and grading, but not limited to local or on-site sources of materials, stockpiles, disposal areas, and haul roads.

The Contractor shall comply with Sections 301.02 and 303.03. Should the Contractor as a result of negligence or noncompliance, fail to provide soil stabilization in accordance with these specifications, the cost of temporary soil stabilization in accordance with Section 303 shall be at the Contractor's expense. If the delay in stabilizing an exposed area of land is due to circumstances beyond the Contractor's control, the District will be responsible for the expense.

Temporary measures shall be coordinated with the work to ensure effective and continuous erosion and sediment control. Permanent erosion control measures and drainage facilities shall be installed as the work progresses.

For projects that disturb 2,500 square feet or greater the Contractor shall have within the limits of the project during land disturbance activities, an employee certified by VDOT in

erosion and sediment control who shall inspect erosion and sediment control and pollution prevention practices, devices and measures for proper installation and operation and promptly report their findings to the Inspector. Failure on the part of the Contractor to maintain appropriate erosion and sediment control or pollution prevention devices in a functioning condition may result in the Engineer notifying the Contractor in writing of specific deficiencies. Deficiencies shall be corrected immediately or as otherwise directed by the Engineer. If the Contractor fails to correct or take appropriate actions to correct the specified deficiencies within 24 hours (or as otherwise directed) after receipt of such notification, the District may do one or more of the following: require the Contractor to suspend work in other areas and concentrate efforts towards correcting the specified deficiencies, withhold payment of monthly progress estimates, or proceed to correct the specified deficiencies and deduct the entire cost of such work from monies due the Contractor. Failure on the part of the Contractor to maintain a VDOT certified erosion and sediment control employee within the project limits when land disturbance activities are being performed will result in the Engineer suspending work related to any land disturbance activity until such time as the Contractor is in compliance with this requirement.

(b) **Pollution:**

1. **Water:** The Contractor shall exercise every reasonable precaution throughout the duration of the project to prevent pollution of rivers, streams, and impoundments. Pollutants such as, but not limited to, chemicals, fuels, lubricants, bitumens, raw sewage, paints, sedimentation, and other harmful material shall not be discharged into or alongside rivers, streams, or impoundments or into channels leading to them. The Contractor shall provide the Engineer a contingency plan for reporting and immediate actions to be taken in the event of a dump, discharge, or spill within 8 hours after he has mobilized to the project site.

Construction discharge water shall be filtered to remove deleterious materials prior to discharge into state waters. Filtering shall be accomplished by the use of a standard dewatering basin or a dewatering bag or other measures approved by the Engineer. Dewatering bags shall conform to Section 245. During specified spawning seasons, discharges and construction activities in spawning areas of state waters shall be restricted so as not to disturb or inhibit aquatic species that are indigenous to the waters. Neither water nor other effluence shall be discharged onto wetlands or breeding or nesting areas of migratory waterfowl. When used extensively in wetlands, heavy equipment shall be placed on mats. Temporary construction fills and mats in wetlands and flood plains shall be constructed of approved non-erodible materials and shall be removed by the Contractor to natural ground when the Engineer so directs.

If the Contractor dumps, discharges, or spills any oil or chemical that reaches or has the potential to reach a waterway, he shall immediately notify all appropriate jurisdictional state and federal agencies in accordance with Sections 107.01 and 107.16(e) and the VP-DES *General Permit For Discharge of Stormwater From Construction Activities* and shall take immediate actions to contain, remove, and properly dispose of the oil or chemical.

Solids, sludges, or other pollutants removed in the course of the treatment or management of pollutants shall be disposed of in a manner that prevents any pollutant from such materials from entering surface waters in compliance with all applicable state and federal laws and regulations.

Excavation material shall be disposed of in approved areas above the mean high water mark shown on the plans in a manner that will prevent the return of solid or suspended materials to state waters. If the mark is not shown on the plans, the mean high water mark shall be considered the elevation of the top of stream banks.

Constructing new bridge(s) and dismantling and removing existing bridge(s) shall be accomplished in a manner that will prevent the dumping or discharge of construction or disposable materials into rivers, streams, or impoundments.

Construction operations in rivers, streams, or impoundments shall be restricted to those areas where identified on the plans and to those that must be entered for the construction of structures. Rivers, streams, and impoundments shall be cleared of falsework, piling, debris, or other obstructions placed therein or caused by construction operations. Stabilization of the streambed and banks shall occur immediately upon completion of work or if work is suspended for more than 14 days.

The Contractor shall prevent stream constriction that would reduce stream flows below the minimum, as defined by the State Water Control Board, during construction operations.

If it is necessary to relocate an existing stream or drainage facility temporarily to facilitate construction, the Contractor shall design and provide temporary channels or culverts of adequate size to carry the normal flow of the stream or drainage facility. The Contractor shall submit a temporary relocation design to the Engineer for review and acceptance in sufficient time to allow for discussion and correction prior to beginning the work the design covers. Costs for the temporary relocation of the stream or drainage facility shall be included in the Contract price for the related pipe or box culvert, unless specifically provided for under another Pay Item. Stabilization of the streambed and banks shall occur immediately upon completion of, or during the work or if the work is suspended for more than 14 days.

2. **Air:** The Contractor shall comply with Section 107.01 and the State Air Pollution Control Law and Rules of the State Air Pollution Control Board, including notifications required therein.

Asphalt mixing plants shall be designed, equipped, and operated so that the amount and quality of air pollutants emitted will conform to the rules of the State Air Pollution Control Board.

3. **Noise:** The Contractor's operations shall be performed so that exterior noise levels measured during a noise-sensitive activity shall not exceed 80 decibels. Such noise level measurements shall be taken at a point on the perimeter of the construction limit that is closest to the adjoining property on which a noise sensitive activity is occurring.

A noise-sensitive activity is any activity for which lowered noise levels are essential if the activity is to serve its intended purpose and not present an unreasonable public nuisance. Such activities include, but are not limited to, those associated with residences, hospitals, nursing homes, churches, schools, libraries, parks, and recreational areas.

The District may monitor construction-related noise. If construction noise levels exceed 80 decibels during noise sensitive activities, the Contractor shall take corrective action before proceeding with operations. The Contractor shall be responsible for costs associated with the abatement of construction noise and the delay of operations attributable to noncompliance with these requirements.

The District may prohibit or restrict to certain portions of the project any work that produces objectionable noise between 10 PM and 6 AM. If other hours are established by local ordinance, the local ordinance shall govern.

Equipment shall in no way be altered so as to result in noise levels that are greater than those produced by the original equipment.

When feasible, the Contractor shall establish haul routes that direct his vehicles away from developed areas and ensure that noise from hauling operations is kept to a minimum.

These requirements shall not be applicable if the noise produced by sources other than the Contractor's operation at the point of reception is greater than the noise from the Contractor's operation at the same point.

- (c) **Forest Fires:** The Contractor shall take all reasonable precautions to prevent and suppress forest fires in any area involved in construction operations or occupied by him as a result of such operations. The Contractor shall cooperate with the proper authorities of the state and federal governments in reporting, preventing, and suppressing forest fires. Labor, tools, or equipment furnished by the Contractor upon the order of any forest official issued under authority granted the official by law shall not be considered a part of the Contract. The Contractor shall negotiate with the proper forest official for compensation for such labor, tools, or equipment.
- (d) **Archeological, Paleontological, and Rare Mineralogical Findings:** In the event of the discovery of prehistoric ruins, Indian or early settler sites, burial grounds, relics, fossils, meteorites, or other articles of archeological, paleontological, or rare mineralogical interest during the prosecution of work, the Contractor shall act immediately to suspend work at the site of the discovery and notify the Engineer. The Engineer will immediately notify the proper state authority charged with the responsibility of investigating and evaluating such finds. The Contractor shall cooperate and, upon the request of the Engineer, assist in protecting, mapping, and removing the findings. Labor, tools, or equipment furnished by the Contractor for such work will be paid for in accordance with Section 104.03. Findings shall become the property of the Commonwealth unless they are located on federal lands, in which event they shall become the property of the U.S. government.

When such findings delay the progress or performance of the work, the Contractor shall notify the Engineer in accordance with Sections 108.03 and Section 109.05.

(e) **Storm Water Pollution Prevention Plan and VPDES General Permit for the Discharge of Stormwater from Construction Activities**

A Stormwater Pollution Prevention Plan (SWPPP) identifies potential sources of pollutants which may reasonably be expected to affect the stormwater discharges from the construction site and any on-site or off-site support facilities located on District rights of way and easements. The SWPPP also describes and ensures implementation of practices which will be used to minimize or prevent pollutants in such discharges.

The SWPPP shall include, but not be limited to, the approved Erosion and Sediment Control (ESC) Plan, the approved Stormwater Management (SWM) Plan (if applicable), the approved Pollution Prevention Plan and all related Specifications, Standards, and notes contained within all Contract documents and shall be required for all land-disturbing activities that disturb 2,500 square feet or greater.

Land-disturbing activities that disturb one acre or greater require coverage under the Department of Environmental Quality's VPDES General Permit for the Discharge of Stormwater from Construction Activities (hereafter referred to as the VPDES Construction Permit). The Contractor shall be responsible for securing VPDES Construction Permit coverage and complying with all permit conditions.

The required contents of a SWPPP for those land disturbance activities requiring coverage under the VPDES Construction Permit are found in Section II of the permit.

While a SWPPP is an important component of the VPDES Construction Permit, it is only one of the many requirements that must be addressed in order to be in full compliance with the conditions of the permit.

The Contractor and all other persons that oversee or perform activities covered by the VPDES Construction Permit shall be responsible for reading, understanding, and complying with all of the terms, conditions, and requirements of the permit and the project's SWPPP including, but not limited to, the following:

1. **Project Implementation Responsibilities**

The Contractor shall be responsible for the installation, maintenance, inspection, and, on a daily basis, ensuring the functionality of all erosion and sediment control measures and all other stormwater runoff control and pollution prevention measures identified within or referenced within the SWPPP, the construction plans, the specifications, all applicable permits, and all other Contract documents.

The Contractor shall be solely responsible for the temporary erosion and sediment control protection and permanent stabilization of all borrow areas and soil disposal areas.

The Contractor shall prevent or minimize any stormwater or non-stormwater discharge that will have a reasonable likelihood of adversely affecting human health or public and/ or private properties.

2. Unauthorized Discharges and Reporting Requirements

The Contractor shall not discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances nor shall he otherwise alter the physical, chemical, or biological properties of such waters that render such waters detrimental for or to domestic use, industrial consumption, recreational, or other public uses.

a. Notification of non-compliant discharges

The Contractor shall immediately notify the Engineer upon the discovery of or the potential of any unauthorized, unusual, extraordinary, or non-compliant discharge from the land construction activity or any of support facilities located on District right of way or easement. Where immediate notification is not possible, such notification shall be not later than 24 hours after said discovery.

b. Detailed report requirements for non-compliant discharges

The Contractor shall submit to the Engineer within 5 days of the discovery of any actual or potential non-compliant discharge a written report describing details of the discharge to include a description of the nature and location of the discharge; the cause of the discharge; the date of occurrence; the length of time that the discharge occurred, the volume of the discharge; the expected duration and total volume if the discharge is continuing; a description of any apparent or potential effects on private and/or public properties and state waters or endangerment to public health; and any steps planned or taken to reduce, eliminate, and prevent a recurrence of the discharge.

3. Changes and Deficiencies

The Contractor shall report to the Engineer when any planned physical alterations or additions are made to the land disturbing activity or deficiencies in the project plans or Contract are discovered that could significantly change the nature of or increase the potential for pollutants discharged from the land disturbing activity to surface waters and that have not previously been addressed in the SWPPP.

4. Amendments, Modifications, Revisions and Updates to the SWPPP

- a. The Contractor shall amend the SWPPP whenever site conditions, construction sequencing or scheduling necessitates revisions or modifications to the erosion and

sediment control plan, the pollution prevention plan, or any other component of the SWPPP for the land disturbing activity or onsite support facilities.

- b. The Contractor shall amend the SWPPP to identify any additional or modified erosion and sediment control and pollution prevention measures implemented to correct problems or deficiencies identified through any inspection or investigation process.
- c. The Contractor shall amend the SWPPP to identify any new or additional person(s) or Contractor(s) not previously identified that will be responsible for implementing and maintaining erosion and sediment control and pollution prevention devices.
- d. The Contractor shall update the SWPPP to include:
 - 1) A record of dates when major grading activities occur, construction activities temporarily or permanently cease on a portion of the site, and stabilization measures are initiated.
 - 2) Documentation of replaced or modified erosion and sediment control and pollution prevention controls where periodic inspections or other information have indicated that the controls have been used inappropriately or incorrectly.
 - 3) Identification of areas where final stabilization has occurred and where no further SWPPP or inspection requirements apply.
 - 4) The date of any prohibited discharges, the discharge volume released, and what actions were taken to minimize the impact of the release.
 - 5) A description of any measures taken to prevent the reoccurrence of any prohibited discharge.
 - 6) A description of any measures taken to address any issues identified by the required erosion and sediment control and pollution prevention inspections.
- e. The Contractor shall update the SWPPP no later than 7 days after the implementation and/or the approval of any amendments, modifications, or revisions to the erosion and sediment control plan, the pollution prevention plan, or any other component of the SWPPP.
- f. The record set of plans shall be maintained with other SWPPP documents on the project site or at a location convenient to the project site where no onsite facilities are available.

107.17—Construction Safety and Health Standards

- (a) In the performance of this Contract the Contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The Contractor, subcontractors at any tier, and their respective employees, agents and invitees, shall at all times while in or around the project site comply with all applicable laws, regulations, provisions, and policies governing safety and health under the Virginia Occupational Safety and Health (VOSH) Standards adopted under the Code of Virginia, and any laws, regulations, provisions, and policies incorporated by reference including but not limited to the Federal Construction Safety Act (Public Law 9 1-54), 29 CFR Chapter XVII, Part 1926, Occupational Safety and Health Regulations for Construction, and the Occupation Safety and Health Act (Public Law 9 1-596), 29 CFR Chapter XVII, Part 1910 Occupational Safety and Health Standards for General Industry, and subsequent publications updating these regulations.
- (b) The Contractor shall provide all safeguards, safety devices and protective equipment, and take any other needed actions as it determines, or as the Engineer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public, and to protect property in connection with the performance of the Work. The Contractor shall be responsible for maintaining and supervising all safety and health protections and programs to ensure compliance with this Section. The Contractor shall routinely inspect the project site for safety and health violations. The Contractor shall immediately abate any violations of the safety and health requirements or duties at no cost to the District.
- (c) It is a condition of this Contract, and shall be made a condition of each subcontract, which the Contractor enters into pursuant to this Contract, that the Contractor and any subcontractor shall not permit any employees, in performance of the Contract, to work in surroundings or under conditions which are unsanitary, hazardous, or dangerous to their health or safety, as determined by the Virginia Work Area Protection Manual or under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).
- (d) VOSH personnel, on all Federal-aid construction contracts and related subcontracts, pursuant to 29 CFR 1926.3, the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out their duties.

107.18—Sanitary Provisions

The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of employees as may be necessary to comply with the requirements of the state and local Board of Health or other bodies or tribunals having jurisdiction.

107.19—Railway-Highway Provisions

If the Contractor's work requires hauling materials across the tracks of a railway, he shall make arrangements with the railway for any new crossing(s) required. Access to existing rail crossings with off-road heavy equipment shall also be arranged by the Contractor. Charges made by the railway company for the construction or use of new or existing crossings and their subsequent removal and for watchperson or flagger service at such crossings shall be reimbursed by the Contractor directly to the railway company under the terms of their separate individual arrangements before final acceptance.

Work to be performed by the Contractor in construction on or over the railway right of way shall be performed at times and in a manner that will not unnecessarily interfere with the movement of trains or traffic on the railway track. The Contractor shall use care to avoid accidents, damage, or unnecessary delay or interference with the railway company's trains or other property. If any interruption of railway traffic is required by the Contractor's actions, he shall obtain prior written approval from the railway company.

The Contractor shall conduct operations that occur on or over the right of way of any railway company fully within the rules, regulations, and requirements of the railway company and in accordance with the requirements of any agreements made between the District and the railway company that are a part of the Contract. Said agreements are included within the Contract.

- (a) **Flagger or Watchperson Services:** Flagger or watchperson services required by the railway company for the safety of railroad operations because of work being performed by the Contractor or incidental thereto will be provided by the railway company. The cost for such services as required for work shown on the plans will be borne by the District. Any cost of such services resulting from work not shown on the plans or for the Contractor's convenience shall be borne by the Contractor and shall be paid directly to the railway company(s) under the terms of their separate individual agreement.

No work shall be undertaken on or over the railway right of way until the watchpersons or flaggers are present at the project site. The Contractor shall continuously prosecute the affected work to completion to minimize the need for flagger or watchperson services. Costs for such services that the Engineer determines to be unnecessary because of the Contractor's failure to give notice as required herein before; initially starting, intermittently continuing, or discontinuing work on or over the railway right of way shall be borne by the Contractor and will be deducted from monies due him.

- (b) **Approval of Construction Methods on Railway Right of Way:** The Contractor shall submit to the District a plan of operations showing the design and method of proposed structural operations and shall obtain its approval before performing any work on the railway company's right of way unless otherwise indicated in the railroad agreement. The plan shall be clear and legible, and details shall be drawn to scale. The plan shall incorporate any stipulations or requirements the railroad may impose for the evaluation of the Contractor's contemplated operations. The plan shall show, but not be limited to, the following:

1. Proximity of construction operations to tracks.

2. Depth of excavation with respect to tracks.
3. Description of structural units.
4. Vertical and horizontal clearances to be afforded the railroad during installation and upon completion of excavation.
5. Sheeting and bracing.
6. Method and sequence of operations.

Approval shall not relieve the Contractor of any liability under the Contract. The Contractor shall arrange the work so as not to interfere with the railway company's operation except by agreement with the railway company.

- (c) **Insurance:** In addition to insurance or bonds required under the terms of the Contract, the Contractor shall carry insurance covering operations affecting the property of the railway company. The original railroad protective liability insurance policy and certificate of insurance showing insurance carried by the Contractor and any subcontractors shall be submitted to the railway company for approval and retention.

Neither the Contractor nor any subcontractor shall begin any work affecting the railway company until the railway company has received the insurance.

Notice of any material change in or cancellation of the required policies shall be furnished the District and the railway company at least 30 days prior to the effective date of the change or cancellation. The insurance shall be of the following kinds and amounts:

1. **Contractor's public liability and property damage insurance:** The Contractor shall furnish evidence to the District with respect to the operations to be performed that he carries regular contractor's public liability insurance. The insurance shall provide for a limit of at least the dollar value specified in the Contract for all damages arising out of bodily injuries to or the death of one person, and subject to that limit for each person, a total limit of at least the dollar value specified in the Contract for all damages arising out of bodily injuries to or death of two or more persons in any one occurrence, and regular contractor's property damage insurance providing for a limit of at least the dollar value specified in the Contract for all damages arising out of bodily injury to or destruction of property in any one occurrence, and subject to that limit per occurrence, a total or aggregate limit of at least the dollar value specified in the Contract for all damages arising out of injury to or destruction of property during the policy period. The Contractor's public liability and property damage insurance shall include explosion, collapse, and underground damage coverage. If the Contractor subcontracts any portion of the work, he shall secure insurance protection in his own behalf under the Contractor's public liability and property damage insurance policies to cover any liability imposed on him by law for damages because of bodily injury to, or death of persons and injury to, or destruction of property as a result of work undertaken by the subcontractors. In addition,

the Contractor shall provide similar insurance protection for and on behalf of any subcontractors to cover their operation by means of separate and individual contractor's public liability and property damage policies. As an alternative, he shall require each subcontractor to provide such insurance in his own behalf.

2. **Railroad protective insurance and public liability and property damage:** The policy furnished the railway company shall include coverage for contamination, pollution, explosion, collapse, and underground damage. The policy shall be of the type specified hereinafter and shall be expressed in standard language that may not be amended. No part shall be omitted except as indicated hereinafter or by an endorsement that states an amendment or exclusion of some provision of the form in accordance with the provisions of a manual rule. The form of the endorsement shall be approved as may be required by the supervising authority of the state in which the policy is issued. A facsimile of the Policy Declarations form as shown in the proposal shall be made a part of the policy and shall be executed by an officer of the insurance company. The several parts of the requirements and stipulations specified or inferred herein may appear in the policy in such sequence as the company may elect.

a. For a policy issued by one company:

NAME AND LOCATION OF INDEMNITY COMPANY, a Type of Company, Insurance Company, herein called the Company, agrees with the insured named in the Policy Declarations made a part hereof, in consideration of the payment of the premium and in reliance upon the statements in the Policy Declarations made by the named insured and subject to all of the terms of his policy.

For a policy issued by two companies:

NAME AND LOCATION OF INDEMNITY COMPANY and NAME AND LOCATION OF INDEMNITY COMPANY, each Insurance Company, Type of Company, herein called the Company, severally agree with the insured named in the Policy Declarations made a part hereof, in consideration of the payment of the premium and in reliance upon the statements in the Policy Declaration made by the named insured and subject to all of the terms of this policy, provided the named Indemnity Company shall be the insured with respect to Coverage and no other and the named Insurance Company shall be the insurer with respect to Coverage _____ and no other.

b. Insuring agreements:

- 1) **Coverages: Coverage A—Bodily injury liability:** To pay on behalf of the insured all sums that the insured shall become legally obligated to pay as damages because of bodily injury, sickness, or disease including death at any time resulting therefrom (hereinafter called bodily injury) either (1) sustained by any person arising out of acts or omissions at the designated job site that are related to or are

in connection with the work described in Item 6 of the Policy Declarations; or (2) sustained at the designated job site by the Contractor, any employee of the Contractor, any employee of the governmental authority specified in Item 5 of the Policy Declarations, or any designated employee of the insured, whether or not arising out of such acts or omissions.

Coverage B—Property damage liability: To pay on behalf of the insured all sums the insured shall become legally obligated to pay as damages because of physical injury to or destruction of property, including loss of use of any property because of such injury or destruction (hereinafter called property damage) arising out of acts or omissions at the designated job site that are related to or are in connection with the work described in Item 6 of the Policy Declarations.

Coverage C—Physical damage to property: To pay for direct and accidental loss of or damage to rolling stock and other contents, mechanical construction equipment, or motive power equipment (hereinafter called loss) arising out of acts or omissions at the designated job site that are related to or are in connection with the work described in Item 6 of the Policy Declarations; provided such property is owned by the named insured or is leased or entrusted to the named insured under a lease or trust agreement.

- 2) **Definitions:** *Insured* means and includes the named insured and any executive officer, director, or stockholder thereof while acting within the scope of his duties as such. *Contractor* means the Contractor designated in Item 4 of the Policy Declarations and includes all subcontractors of the Contractor but not the named insured. *Designated employee* of the insured means (1) any supervisory employee of the insured at the job site; (2) any employee of the insured while operating, attached to, or engaged on work trains or other railroad equipment at the job site that is assigned exclusively to the Contractor; or (3) any employee of the insured not within (1) or (2) who is specifically loaned or assigned to the work of the Contractor for prevention of accidents or protection of property, the cost of whose services is borne specifically by the Contractor or governmental authority. *Contract* means any contract or agreement to carry a person or property for a consideration or any lease, trust, or interchange contract or agreement respecting motive power, rolling stock, or mechanical construction equipment.
- 3) **Defense and settlement supplementary payments:** With respect to such insurance as is afforded by this policy under Coverages A and B, the Company shall defend any suit against the insured alleging such bodily injury or property damage and seeking damages that are payable under the terms of this policy, even if any of the allegations of the suit are groundless, false, or fraudulent. However, the Company may make such investigation and settlement of any claim or suit as it deems expedient.

In addition to the applicable limits of liability, the Company shall pay (1) all expenses incurred by the company, all costs taxed against the insured in any

such suit, and all interest on the entire amount of any judgment therein that accrues after entry of the judgment and before the Company has paid or tendered or deposited in court that part of the judgment that does not exceed the limit of the Company's liability thereon; (2) premiums on appeal bonds required in any such suit and premiums on bonds to release attachments for an amount not in excess of the applicable limit of liability of this policy, but without obligation to apply for or furnish any such bonds; (3) expenses incurred by the insured for first aid to others that shall be imperative at the time of the occurrence; and (4) all reasonable expenses, other than loss of earnings, incurred by the insured at the Company's request.

- 4) Policy period and territory:** This policy applies only to occurrences and losses during the policy period and within the United States, its territories or possessions, or Canada.

c. Exclusions: This policy does not apply to the following:

- 1) Liability assumed by the insured under any contract or agreement except a contract as defined herein.
- 2) Bodily injury or property damage caused intentionally by or at the direction of the insured.
- 3) Bodily injury, property damage, or loss that occurs after notification to the named insured of the acceptance of the work by the governmental authority, other than bodily injury, property damage, or loss resulting from the existence or removal of tools, uninstalled equipment, and abandoned or unused materials.
- 4) Under Coverage A(1), B, and C, to bodily injury, property damage, or loss, the sole proximate cause of which is an act or omission of any insured.
- 5) Under Coverage A, to any obligation for which the insured or any carrier as his insurer may be held liable under any workers' compensation, employment compensation, or disability benefits law or under any similar law; provided that the Federal Employer's Liability Act, U.S. Code (1946) Title 45, Sections 5 1-60, as amended, shall for the purpose of this insurance be deemed not to be any similar law.
- 6) Under Coverage B, to injury to or destruction of property owned by the named insured or leased or entrusted to the named insured under a lease or trust agreement.
- 7) Under any liability coverage, to injury, sickness, disease, death, or destruction (1) with respect to which an insured under the policy is also an insured under a nuclear energy liability policy issued by the Nuclear Energy Liability Insurance Association, Mutual Atomic Energy Liability Underwriters, or Nuclear Insurance Association of Canada or would be an insured under any such policy

but for its termination upon exhaustion of its limit of liability; or (2) resulting from the hazardous properties of nuclear material and with respect to which any person or organization is required to maintain financial protection pursuant to the Atomic Energy Act of 1954 or any law amendatory thereof or the insured is (or had this policy not been issued would be) entitled to indemnity from the United States or any agency thereof under any agreement entered into by the United States, or any agency thereof, with any person or organization.

- 8) Under any Medical Payments Coverage or any Supplementary Payments provision relating to immediate medical or surgical relief or to expenses incurred with respect to bodily injury, sickness, disease, or death resulting from the hazardous properties of nuclear material and arising out of the operation of a nuclear facility by any person or organization.
- 9) Under any liability coverage, to injury, sickness, disease, death, or destruction resulting from the hazardous properties of nuclear material if (1) the nuclear material is at any nuclear facility owned or operated by or on behalf of an insured or has been discharged or dispersed therefrom; (2) the nuclear material is contained in spent fuel or waste at any time possessed, handled, used, processed, stored, transported, or disposed of by or on behalf of an insured; or (3) the injury, sickness, disease, death, or destruction arises out of the furnishing by an insured of services, materials, or parts for equipment in connection with the planning, construction, maintenance, operation, or use of any nuclear facility; if such facility is located in the United States, its territories or possessions, or Canada, this exclusion applies only to injury to or destruction of property at such nuclear facility.
- 10) Under Coverage C, to loss attributable to nuclear reaction, nuclear radiation, or radioactive contamination or to any act or condition incident to any of the foregoing.
- 11) As used in exclusions (7), (8), and (9), the following definitions apply:

Disposable material means material containing byproduct material and resulting from the operation by any person or organization of any nuclear facility included in the definition of nuclear facility under (i) or (ii) below.

Hazardous properties include radioactive, toxic, or explosive properties.

Injury or destruction with respect to injury to or destruction of property, includes all forms of radioactive contamination of property.

Nuclear facility means:

- a) Any nuclear reactor.

- b) Any equipment or device designed or used for separating the isotopes of uranium or plutonium; processing or utilizing spent fuel; or handling, processing, or packaging waste.
- c) Any equipment or device designed or used for the processing, fabricating, or alloying of special nuclear material if at any time the total amount of such material in the custody of the insured at the premises where such equipment or device is located consists of or contains more than 25 grams of plutonium or uranium 233 (or any combination thereof) or more than 250 grams of uranium 235.
- d) Any structure, basin, excavation, premises, or place prepared or used for the storage or disposal of waste (includes the site on which any of the foregoing is located, all operation conducted on such site, and all premises used for such operations).

Nuclear material means source material, special nuclear material, or byproduct material.

Nuclear reactor means any apparatus designed or used to sustain nuclear fission in a self-supporting chain reaction or to contain a critical mass of fissionable material.

Source material, special nuclear material, and byproduct material have the meanings given them in the Atomic Energy Act of 1954 or in any law amendatory thereof.

Spent fuel means any fuel element or fuel component (solid or liquid) that has been used or exposed to radiation in a nuclear reaction.

d. Conditions: The following conditions, except conditions (3) through (12), apply to all coverages. Conditions (3) through (12) apply only to the coverage noted thereunder.

- 1) **Premium:** The premium bases and rates for the hazards described in the Policy Declarations are stated therein. Premium bases and rates for hazards not so described are those applicable in accordance with the requirements of the manuals used by the Company. The term "Contract cost" means the total cost of all work described in Item 6 of the Policy Declaration. The term "rental cost" means the total cost to the Contractor for rental or work trains or other railroad equipment, including the remuneration of all employees of the insured while operating, attached to, or engaged thereon. The advance premium stated in the Policy Declarations is an estimated premium only. Upon termination of this policy, the earned premium shall be computed in accordance with the Company's rules, rates, rating plans, premiums, and minimum premiums applicable to this insurance. If the earned premium thus computed exceeds the estimated advance

premium paid, the Company shall look to the Contractor specified in the Policy Declarations for any such excess. If the earned premium is less than the estimated advance premium paid, the Company shall return to the Contractor the unearned portion paid. In no event shall payment or premium be an obligation of the named insured.

- 2) **Inspection:** The named insured shall make available to the Company records of information relating to the subject matter of this insurance. The Company shall be permitted to inspect all operations in connection with the work described in Item 6 of the Policy Declarations.
- 3) **Limits of liability, Coverage A:** The limit of bodily injury liability stated in the Policy Declarations as applicable to “each person” is the limit of the Company’s liability for all damages (including damages for care and loss of services) arising out of bodily injury sustained by one person as the result of any one occurrence. The limit of such liability stated in the Policy Declarations as applicable to “each occurrence” is (subject to the provision respecting each person) the total limit of the Company’s liability for all such damage arising out of bodily injury sustained by two or more persons as the result of any one occurrence.
- 4) **Limits of liability, Coverages B and C:** The limit of liability under Coverages B and C stated in the Policy Declarations as applicable to “each occurrence” is the total limit of the Company’s liability for all damages and all loss under Coverages B and C combined arising out of physical injury to, destruction of, or loss of all property of one or more persons or organizations, including the loss or use of any property attributable to such injury or destruction under Coverage B, as the result of any one occurrence. Subject to the provision respecting “each occurrence”, the limit of liability under Coverages B and C stated in the Policy Declaration as “aggregate” is the total limit of the Company’s liability for all damages and all loss under Coverages B and C combined arising out of physical injury to, destruction of, or loss of property, including the loss or use of any property attributable to such injury or destruction under Coverage B. Under Coverage C, the limit of the Company’s liability for loss shall not exceed the actual cash value of the property, or if the loss is a part thereof, the actual cash value of such part, at time of loss, nor what it would then cost to repair or replace the property of such part thereof with other of like kind and quality.
- 5) **Severability of interests, Coverages A and B:** The term the insured is used severally and not collectively. However, inclusion herein of more than one insured shall not operate to increase the limits of the Company’s liability.
- 6) **Notice:** In the event of an occurrence or loss, written notice containing particulars sufficient to identify the insured and also reasonably obtainable information with respect to the time, place, and circumstances thereof and the names and addresses of the injured and of able witnesses shall be given by or for the insured to the Company or any of its authorized agents as soon as is practicable. If a

claim is made or a suit is brought against the insured, he shall immediately forward to the Company every demand, notice, summons, or other process received by him or his representative.

- 7) **Assistance and cooperation of the insured, Coverages A and B:** The insured shall cooperate with the Company and upon the Company's request attend hearings and trials and assist in making settlements, securing and giving evidence, obtaining the attendance of witnesses, and conducting suits. Except at his own cost, the insured shall not voluntarily make any payment, assume any obligations, or incur any expense other than for first aid to others that shall be imperative at the time of an accident.
- 8) **Action against Company, Coverages A and B:** No action shall lie against the Company unless as a condition precedent thereto the insured shall have fully complied with all the terms of this policy, nor until the amount of the insured's obligation to pay shall have been finally determined either by judgment against the insured after actual trial or by written agreement of the insured, the claimant, and the Company. Any person or organization or the legal representative thereof who has secured such judgment or written agreement shall thereafter be entitled to recover under this policy to the extent of the insurance afforded by this policy. No person or organization shall have any right under this policy to join the Company as a part to any action against the insured to determine the insured's liability. Bankruptcy or insolvency of the insured or of the insured's estate shall not relieve the Company of any of its obligations hereunder.
- 9) **Action against Company, Coverage C:** No action shall lie against the Company unless as a condition precedent thereto there shall have been full compliance with all the terms of this policy nor until 30 days after proof of loss is filed and the amount of loss is determined as provided in this policy.
- 10) **Insured's duties in event of loss, Coverage C:** In the event of loss, the insured shall protect the property, whether or not the loss is covered by this policy. Any further loss attributable to the insured's failure to protect shall not be recoverable under this policy. Reasonable expenses incurred in affording such protection shall be deemed incurred at the Company's request.

The insured shall also file with the Company, as soon as practicable after loss, his sworn proof of loss in such form and including such information as the Company may reasonably require and shall, upon the Company's request, exhibit the damaged property.

- 11) **Appraisal, Coverage C:** If the insured and the Company fail to agree as to the amount of loss, either may demand an appraisal of the loss within 60 days after the proof of loss is filed. In such event the insured and the Company shall each select a competent appraiser, and the appraisers shall select a competent and disinterested umpire. An award in writing or any two shall determine the amount

of loss. The insured and the Company shall each pay his chosen appraiser and shall bear equally the other expenses of the appraisal and umpire. The Company shall not be held to have waived any of its rights by any act relating to appraisal.

- 12) **Payment of loss, Coverage C:** The Company may pay for the loss in money, but there shall be no abandonment of the damaged property to the Company.
- 13) **No benefit to bailee coverage:** The insurance afforded by this policy shall not enure directly or indirectly to the benefit of any carrier or bailee (other than the named insured) liable for loss to the property.
- 14) **Subrogation:** In the event of any payment under this policy, the Company shall be subrogated to all of the insured's rights of recovery therefor against any person or organization. The insured shall execute and deliver instruments and papers and do whatever else is necessary to secure such rights. The insured shall do nothing after loss to prejudice such rights.
- 15) **Application of insurance:** The insurance afforded by this policy is primary insurance. If the insured has other primary insurance against a loss covered by this policy, the Company shall not be liable under the policy for a greater proportion of such loss than the applicable limit of liability stated in the Contract bears to the total applicable limit of all valid and equitable insurance against such loss.
- 16) **3-year policy:** A policy period of 3 years is comprised of three consecutive annual periods. Computation and adjustment of earned premium shall be made at the end of each annual period. Aggregate limits of liability as stated in this policy shall apply separately to each annual period.
- 17) **Changes:** Notice to any agent of knowledge possessed by any agent or by any other person shall not affect a waiver or a change in any part of this policy or stop the Company from asserting any right under the terms except by endorsement issued to form a part of this policy signed by *provided, however, changes may be made in the written portion of the Policy Declaration by *when initialed by such *or by endorsement issued to form a part of this policy signed by such [*Insert titles of authorized company representatives.]
- 18) **Assignment:** Assignment of interest under this policy shall not bind the Company until its consent is endorsed hereon.
- 19) **Cancellation:** This policy may be cancelled by the named insured by mailing to the Company written notice stating when the cancellation shall become effective. This policy may be cancelled by the Company by mailing to the named insured, Contractor, and governmental authority at the respective addresses shown in this policy written notice stating when such cancellation shall be effective (not less than 30 days thereafter). The mailing of notice shall be sufficient proof of notice. The effective date and hour of cancellation stated in the notice shall

become the end of the policy period. Delivery of such written notice either by the named insured or the Company shall be equivalent to mailing. If the named insured cancels, the earned premium shall be computed in accordance with the customary short rate table and procedure. If the Company cancels, the earned premium shall be computed pro rata. The premium may be adjusted either at the time cancellation is effected or as soon as practicable after the cancellation becomes effective, but payment or tender of unearned premium is not a condition of cancellation.

- 20) **Policy Declarations:** By acceptance of this policy, the named insured agrees that such statements in the Policy Declarations as are made by him are his agreements and representations, that his policy is issued in reliance on the truth of such representations, and that this policy embodies all agreements existing between himself and the Company or any of its agents relating to this insurance.

e. For a policy issued by one company:

In witness whereof the Indemnity Company has caused this policy to be signed by its president and a secretary at _____ and countersigned on the Policy Declarations page by a duly authorized agent of the Company.

(Facsimile of Signature)
Secretary

(Facsimile of Signature)
President

For a policy issued by two companies:

In witness whereof the Indemnity Company has caused this policy with respect to Coverages and such other parts of the policy as are applicable thereto to be signed by its president and a secretary at _____ and countersigned on the Policy Declarations page by a duly authorized agent of the Company.

(Facsimile of Signature)
Secretary

(Facsimile of Signature)
President

- f.) **Submitting Copies of Insurance Policies:** Prior to beginning construction operations on or over the railway right of way, the Contractor shall submit to the Department evidence of the railway company's approval and a copy of the required insurance policies. The Commonwealth will not be responsible for any claims from the Contractor resulting from delay in the acceptance of any of these policies by the railway company other than consideration of an extension of time. If the delay is caused by the failure of the Contractor or his insurer to file the required insurance policies promptly, an extension of time will not be granted.
- g.) **Beginning Construction:** Preliminary contingent work or other work by the railway company may delay the starting or continuous prosecution of the work by the

Contractor. The Contractor shall be satisfied as to the probable extent of such work and its effect on the operations prior to submitting a bid for the work. The Commonwealth will not be responsible for any claims by the Contractor resulting from such delays except that an extension of time may be considered.

h.) Arranging for Tests:

- 1. Railroad specifications:** When ordering materials that are to conform to railroad specifications, the Contractor shall notify the railway company, who will arrange for tests. The Contractor shall specify in each order that the materials are to be tested in accordance with the requirements of the railroad specifications and not those of the Department.
- 2. Highway Specifications:** When ordering materials that are to conform to highway Specifications, the Contractor shall specify in each order that the materials are to be tested in accordance with the requirements of Department Specifications.

107.20 – Not Used

107.21—Size and Weight Limitations

- (a) Hauling or Moving Material and Equipment on Public Roads Open to Traffic:** The Contractor shall comply with legal size and weight limitations in the hauling or moving of material and equipment on public roads open to traffic unless the hauling or moving is covered by a hauling permit.

Furnishing Items in Component Parts of Sections: If the size or weight of fabricated or manufactured items together with that of the hauling or moving vehicle exceeds the limitations covered by hauling permit policies and other means of transportation are not available, permission will be given to furnish the items in component parts of sections with adequately designed splices or connections at appropriate points. Permission for such adjustments shall be requested in writing, and approval in writing shall be secured from the

District prior to fabrication or manufacture of the items. The request shall state the reasons for adjustment and shall be accompanied by supporting data, including working drawings where necessary.

- (b) Construction Loading of Structures:** In the construction, reconstruction, widening, or repair of bridge, culvert, retaining wall, and other similar type structures including approaches, the Contractor shall consider construction loads during the planning and prosecution of the work. Construction loads include but are not limited to the weight of cranes, trucks, other heavy construction, or material delivery equipment, as well as the delivery or storage of materials placed on or adjacent to the structure or parts thereof during the various stages (phases) of the work in accordance with the Contractor's proposed work plan. The Contractor shall consider the effect(s) of construction loads on the loading

capacity of these type structure(s) in his sequencing of the work and operations, including phase construction. At the Engineer's request the Contractor shall be prepared to discuss or review his proposed operations with the Engineer with regard to construction loads to demonstrate he has taken such into consideration in the planning and execution of the work.

SECTION 108—PROSECUTION AND PROGRESS OF WORK

108.01—Prosecution of Work

The Contractor shall provide sufficient labor, materials, equipment, and tools; and shall prosecute the Work with such means and methods and with such diligence as is required to attain and maintain a rate of progress necessary to ensure completion of the project within the Contract time limit in accordance with the plans, specifications, and other requirements of the Contract.

Once the Contractor has begun work, the Contractor shall prosecute the Work continuously and to the fullest extent possible except for suspensions authorized or ordered by the Engineer according to Section 108.05. If approval is given to suspend the work temporarily, the Contractor shall notify the Engineer at least 24 hours in advance of resuming operations.

The Contractor shall notify the Engineer at least 24 hours in advance of any changes in the Contractor's planned operations or work requiring inspection.

108.02—Limitation of Operations

(a) General

The Contractor shall conduct the work in a manner and sequence that will ensure its expeditious completion with the least interference to traffic and shall have due regard for the location of detours and provisions for handling traffic. The Contractor shall not open any work to the prejudice or detriment of work already started. The Engineer may require the Contractor to finish a section of work before work is started on any other section.

108.03—Progress Schedule

Unless otherwise indicated in the Contract, the Contractor shall, at a minimum, be governed by the following:

(a) General Requirements

The Contractor shall plan and schedule the work and shall submit his overall work plan in the form of a written Progress Schedule, as described herein, for the Engineer's review and acceptance. The accepted Progress Schedule will be used by the Engineer for planning and coordination of the District activities, resources, and expenditures, and for evaluation of the Contractor's rate of progress and the effects of time-related impacts on the project. When preparing the Progress Schedule, the Contractor shall consider all known constraints and

restrictions such as holidays, seasonal, weather, traffic, utility, railroad, right-of-way, environmental, permits, or other known or specified limitations to the work.

At the Pre-Construction Conference the Contractor shall be prepared to discuss his planned or contemplated operations relative to the Contract requirements.

Delays resulting from the Contractor's failure to provide the Progress Schedule will not be considered just cause for extension of the Contract time limit or for additional compensation.

(b) Progress Schedule Submission Requirements

The Contractor shall submit to the Engineer three (3) copies of the written Baseline Progress Schedule at least 7 calendar days prior to beginning work. The Progress Schedule shall represent the Contractor's overall work plan to accomplish the entire scope of work in accordance with the requirements of the Contract. The Progress Schedule shall include all work including, as applicable, the work to be performed by sub-contractors, the District, or others. The Progress Schedule submittal shall consist of a written Narrative to:

- Describe the Contractor's proposed general sequence to accomplish the work;
- Indicate the general schedule of work to be completed each month in terms of the major operations, routes, or segments of work as delineated in the Contract or in the absence of such delineations, as agreed to by the Contractor and the Engineer. A bar-chart schedule may be substituted at the Contractor's option.

The Progress Schedule, including the Initial and any subsequent Revised Progress Schedules requested by the Engineer or originated by the Contractor, will not be measured or paid for separately. All associated costs to prepare, update, revise, and/or furnish the Progress Schedule in accordance with the requirements herein shall be considered incidental to the work.

1. Two Week Look-ahead (TWLA) Progress Schedule.

At least 7 calendar days prior to beginning work, the Contractor shall submit to the Engineer, an initial written TWLA Progress Schedule for any work planned for the first two weeks. Every week thereafter, on a day agreed to by the Contractor and the Engineer, the Contractor shall submit to the Engineer, a written TWLA Progress Schedule for the following two-week period. The TWLA schedule shall provide a detailed list of operations to indicate the type of operation, locations of the work, proposed working days and hours, and the start and finish dates for any work planned, started, in progress, or scheduled for completion during the two-week period. The TWLA Progress Schedule shall also indicate any critical stages of work requiring District oversight or inspection. The Contractor shall submit 3 copies of the TWLA Progress Schedule to the Engineer in any legible format.

The Contractor may revise his TWLA Progress Schedule at his discretion. However,

the Contractor shall notify the Engineer at least 48 working hours in advance of any changes in the Contractor's planned operations or critical stage work requiring District oversight or inspection. In the event of extenuating circumstances deemed by the Engineer to be beyond the Contractor's control, the Engineer may grant verbal concurrence of changes in the Contractor's planned operations with less advance notice, as the need arises.

- 2. Progress Schedule Revisions.** The Contractor may revise his overall plan of operations at any time; however, the Contractor shall submit a Revised Progress Schedule to reflect any changes in his overall sequence of operations or general schedule. The Contractor may be required, as determined by the Engineer, to submit a Revised Progress Schedule. Circumstances that may prompt the Engineer's decision to request a Revised Progress Schedule may include deviations from the overall sequence of operations or if the actual progress of work varies by one month or more from the currently accepted Progress Schedule.

When required by the Engineer, the Revised Progress Schedule shall be submitted within 7 calendar days of receipt of the Engineer's written request. The Revised Progress Schedule shall be submitted in the form of the Progress Schedule as defined herein, to reflect the changes in the Contractor's overall work plan. The accepted Revised Progress Schedule will replace any previously accepted Progress Schedule for the remainder of the work.

(c) Submittal and Reporting Format

If requested by the Engineer, the Contractor shall submit its progress schedule in the following manner.

1. A transmittal letter to the Engineer listing the items, date, and number of copies of items being submitted.
2. Three printed legible paper copies of the progress schedule and progress schedule narrative.
3. Electronic "PDF" copies of the progress schedule, progress schedule narrative, and an electronic back-up file copy of the working progress schedule. Each electronic file submittal shall have a unique file name indicating the Contract ID, submission number, submittal type, and data date of the submission (e.g. C00012345C01_B01_Narrative_6-04-12.pdf).

(d) Engineer's Review and Acceptance

The Engineer will review the Baseline or subsequent Revised Progress Schedule submittals for acceptance within 7 calendar days of receipt of the Contractor's complete submittal.

Review and acceptance by the Engineer will be based on conformance with the requirements

of this provision and the Contract.

Review and acceptance by the Engineer will not constitute a waiver of any Contract requirements and will in no way assign responsibilities of the work plan, scheduling assumptions, and validity of the work plan or schedule to the District. Failure of the Contractor to include in the Progress Schedule any element of work required by the Contract for timely completion of the Contract shall not excuse the Contractor from his contractual obligations.

(e) Failure to Comply with Progress Schedule Submission Requirements

With the exception of project start-up activities approved in writing by the Engineer, the Contractor shall not commence work, until 7 days after the date the Contractor submits a complete Baseline Progress Schedule, unless otherwise approved by the Engineer in writing.

If the Contractor fails to comply with any of the Progress Schedule submissions within the time and in the manner specified, the Engineer may withhold approval of the Contractor's ensuing monthly progress estimates until the Contractor has satisfied the submission requirements. If the Contractor fails to submit the Final As-Built Schedule in the time and manner required, the Engineer may withhold approval of the final payment until the Contractor satisfies the submission requirement.

The District shall not be responsible for any delays, costs or damages resulting from the Contractor's failure to submit the schedule submittals in accordance with the requirements of the Contract.

108.04—Determination and Extension of Completion Date

The District will specify the Completion Date in the Contract. The District will not consider any request for an extension of time that is based on a claim that the Completion Date as originally established is insufficient to complete the Work.

When Contract execution is not within 60 calendar days after the opening of bids, or when the Contractor is unable to commence work because of any failure of the District, the Contractor will be given an extension of time based on the number of days delayed beyond the 60 calendar days. No time extension will be allowed for a delay in the date of Contract execution when the delay is the fault of the Contractor.

The Engineer will determine if an extension of the Contract time limit for completion is warranted by additions to the Contract. The Contractor shall inform the District, in writing, of a request for time extensions in his Work Order in accordance with the applicable portion(s) of Section 104 or 109. The Contractor shall provide written supporting data for any request for extension of time due to quantity additions and or additional or altered work.

During prosecution of the work, the Contractor shall identify the causes for any delays attributable to conditions he deems to be beyond his control and shall identify the particular construction operations affected, their criticality to project milestones or overall Contract completion, and the

significant dates that encompass the periods of delay. The Contractor shall furnish all such information necessary for the District to make an adequate evaluation of any request received from the Contractor for an extension of the Contract time limit within 3 days of experiencing such a delay.

- (a) **Fixed Date:** Unless otherwise indicated in the Contract, the Contract time limit will be specified as a fixed date for completion. The Contractor shall take into consideration normal conditions considered unfavorable for the prosecution of the work, and shall place sufficient workers and equipment on the project to complete the work in accordance with the specified Contract time limit.

If the Contract identifies a contract-specific Notice to Proceed date and the Contract is not executed by that date, the Contractor will receive an extension of time equal to the number of days between the contract-specific Notice to Proceed date and the eventual date of Contract execution.

If the Notice to Proceed date is selected by the Contractor and after prior approval the Engineer directs the Contractor not to begin work on that date, the Contractor will receive an extension of time equal to the number of days between the Contractor's selected Notice to Proceed date and the eventual date the Engineer informs the Contractor that he may commence the work.

The Engineer may give consideration for extension of time when a delay occurs due to unforeseen causes beyond the control of or without the fault or negligence of the Contractor. However, consideration will not be given to extensions of time attributable to normal adverse weather conditions or conditions resulting from normal adverse weather.

For the purposes of this Section normal adverse weather is defined as that which is not considered extraordinary or catastrophic and is not reasonably conducive to the Contractor progressively prosecuting critical path work under the Contract. Weather events considered extraordinary or catastrophic include, but are not limited to tornados, hurricanes, earthquakes, and floods that exceed a 25-year storm event as defined by National Oceanic and

Atmospheric Administration (NOAA) for the NOAA data gathering location that is nearest the project site.

If there is a delay in the progress of the work due to unforeseen causes described within these Specifications, and the delay extends the Contract time limit into the period between November 30 of one year and April 1 of the following year and working conditions during such period are unsuitable for the continuous prosecution or completion of the work, then consideration may only be given to granting an extension of time that will encompass a suitable period during which such work can be expeditiously and acceptably performed.

108.05—Suspension of Work Ordered by the Engineer

- (a) If the Engineer orders the Contractor in writing to suspend performance of all or any portion of the Work for an unreasonable period of time (not originally anticipated, customary, or

inherent to the construction industry) and the Contractor believes that additional compensation or Contract time is due as a result of such suspension, the Contractor shall submit to the Engineer a written request for adjustment according to Section 108.04 within 7 days after receipt of the notice to resume work. The Contractor's request shall set forth the reasons and support for such adjustment.

- (b) Upon receipt, the Engineer will review the Contractor's documentation and evaluate the Contractor's request. If the Engineer agrees that the cost or time required for the performance of the Contract has increased as a result of such suspension and the suspension was caused by conditions beyond the control of and not the fault of the Contractor, his suppliers, or subcontractors at any tier, and was not caused by weather, the Engineer will make an adjustment (excluding profit and consequential damages) and modify the Contract in writing accordingly. The Engineer will notify the Contractor of the determination regarding whether or not an adjustment of the Contract is warranted.
- (c) No Contract adjustment will be allowed unless the Contractor has submitted the request for adjustment within the time and in the manner prescribed.
- (d) No Contract adjustment will be allowed under this Section to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided for or excluded under any other term or condition of the Contract.

108.06—Failure to Complete on Time

(a) General

For each calendar day that any work remains incomplete after the Contract time limit specified for the completion of the work, the District will assess liquidated damages against the Contractor. Liquidated damages will be assessed at the rate applicable to the Contract in accordance with the Schedule of Liquidated Damages, Table I-1, or as otherwise specified in the Contract provisions. Liquidated damages will be deducted from any monies due the Contractor for each calendar day of additional time consumed until final completion and acceptance of the Work, subject to such adjustments as provided in accordance with the requirements of Section 108.04, not as a penalty, but as liquidated damages. The Contractor waives any defense as to the validity of any liquidated damages stated in the Contract or these Specifications and assessed by the District against the Contractor on the grounds that such liquidated damages are void as penalties or are not reasonably related to actual damages.

(b) Liquidated Damages

Liquidated damages of \$1,000 per day, representing the cost of administration, engineering, supervision, inspection and other expenses, will be charged against the Contractor for each calendar day beyond the Contract time limit that the Contract remains in an incomplete state:

108.07—Default of Contract

The Contractor may be declared in default if he does any one of the following:

- (a) Fails to begin the Work within 10 days after the notice to proceed date, except as otherwise permitted by specific Contract language, or the provisions of Section 105.01 or Section 108.02;
- (b) fails to perform the Work with sufficient workers and equipment or with sufficient materials to ensure prompt completion of the Work;
- (c) performs the Work in such manner that it is unacceptable, or fails, neglects or refuses to promptly remove and replace materials or work that are unacceptable;
- (d) discontinues prosecution of the Work without an order to do so from the Engineer;
- (e) fails to resume work that has been discontinued within a reasonable time after notice to do so;
- (f) becomes insolvent, is declared bankrupt, or commits any act of bankruptcy or insolvency;
- (g) allows any final judgment to stand against him unsatisfied for a period of 10 days;
- (h) makes an assignment for the benefit of creditors;
- (i) fails for any other cause whatsoever to carry on the work in accordance with the Contract or to perform contractual obligations in an acceptable manner;
- (j) disregards laws, regulations, ordinances, the Engineer's written instructions, or otherwise remains in substantial violation of any provision of the Contract.

If any of these conditions exists, the Engineer will give notice in writing to the Contractor and his surety of the delay, neglect, or default. If within 10 days after the date of such notice the Contractor or his surety has not taken measures that will, in the judgment of the Engineer, ensure satisfactory progress of the work or give assurances satisfactory to the Engineer that the provisions of the Contract will be fully carried out and instructions complied with, the Executive Director may then, or at any time thereafter, declare the Contractor in default. Without violating the Contract, the Executive Director may call upon the Contractor's surety for the satisfactory and expeditious completion of all work under the Contract, the removal and replacement of any unacceptable or unauthorized work, or may otherwise terminate the Contract in accordance with the provisions of Section 108.08. If the Executive Director declares the Contractor in default, payments to the Contractor will be withheld and may be made directly to the Contractor's surety. Further negotiations regarding the remaining work will be conducted with the Contractor's surety.

If the Contractor's surety fails or refuses to proceed in accordance with the Executive Director's instructions, the Commissioner will appropriate and use any or all materials and equipment on the project site that are suitable and acceptable and will enter into an agreement with others for the

completion of the work, or he will use such other methods as he deems necessary to ensure the completion of the work.

Costs and charges incurred by the District, including the cost of completing the Work under the Contractor the cost of removal and replacement of any unacceptable or unauthorized work, will be deducted from any monies due or that will become due the Contractor and his surety. If the expense incurred by the District is less than the sum that would have been payable under the Contract had the work been completed by the Contractor, the Contractor and his surety will be entitled to receive the difference. If the expenses exceed the sum that would have been payable under the Contract, the Contractor and his surety shall be liable for and shall pay to the District the amount of the excess.

108.08—Termination of Contract

(a) **Conditions for Termination:** The District may terminate the Contract or any portion thereof because of any of the following conditions:

1. Default.
2. National emergency.
3. Action by the Commonwealth, U.S. government, or court order.
4. Conditions beyond the control of the District.
5. For the convenience of the District.

Termination of the Contract or a portion thereof shall not relieve the Contractor of his responsibilities for completed Work, nor shall it relieve his surety of its obligation for and concerning any just claims arising out of the Work performed or remaining to be performed.

Termination for Convenience: The Engineer will deliver to the Contractor and surety written notice of termination for convenience specifying the extent of the termination and the effective date. A termination for convenience may be directed at any time after the notice of award of the Contract. Termination for convenience will be accomplished in accordance with the following:

1. **Procedure:** The Contractor shall immediately upon receipt of the notice of termination do the following:
 - a. Stop work as directed in the notice.
 - b. Promptly place disturbed areas in an acceptable condition as directed by the Engineer.
 - c. Place no further subcontracts or orders for materials, services, or equipment, unless

necessary for any part of the Work not terminated or to protect any part of the Work completed.

- d. Terminate all subcontracts or orders to the extent related to the terminated work, unless instructed otherwise by the District.
- e. Settle all outstanding liabilities with subcontractors and suppliers arising from the termination.
- f. Transfer title and deliver to the District any work in progress, completed work, materials, supplies, equipment, drawings, plans, information, warranties, or other property that were purchased, acquired, fabricated, produced, supplied, or constructed for the Work, whether completed or terminated, and would be required to be furnished to the District on completion of the Contract.
- g. Complete performance of Work not terminated, if any.
- h. Inventory along with the Engineer any acceptable materials obtained, but not incorporated into the Work.
- i. Take any action necessary or that the Engineer may direct for the protection and preservation of the site or other property that is in the Contractor's possession or control in which the District has or may acquire an interest.

2. Payment

Within 30 days after the Contractor receives the District's notice of termination for convenience, or within such time as the Contractor and the Engineer mutually agree, the Contractor shall submit a request for payment due for work performed through the effective date of termination and as a result of the termination for convenience. The

Contractor shall submit with the request sufficient cost records to substantiate the payment amount requested.

The District shall pay and the Contractor shall accept, as full payment for all work and materials provided, a sum mutually agreed to by the Contractor and the District determined as follows:

- a. Work on Contract pay items performed prior to termination for which the Contractor has not been paid will be paid at the Contract price according to Section 109.03, or in the absence of Contract unit prices, in accordance with the requirements of Section 109.05 (Extra and Force Account Work). Items eliminated entirely by termination will be paid for as provided in Section 109.07. No claim for loss of anticipated profits will be considered, and the provisions of Section 104.02 will not apply for costs that are then incurred as a result of the termination.

- b. Reimbursement for organizing the Work when not specified in the Contract and moving equipment to and from the project site will be considered where the volume of work completed is too small to compensate the Contractor for these expenses under the Contract unit prices.
 - c. At the option of the Engineer, materials the Contractor obtains for the Work that have been inspected, tested, and accepted by the Engineer and that have not been incorporated in the Work may be purchased from the Contractor at actual costs as shown by receipted bills, purchase orders, bills of lading, paid invoices, or other similar actual cost records at such points of delivery as will be designated by the Engineer.
 - d. The Contractor shall be reimbursed for any actual costs incurred to terminate sub contracts or purchase orders, as shown by receipted bills, bills of lading, paid invoices, or other similar actual cost records at such points of delivery as will be designated by the Engineer.
 - e. If a sum cannot be agreed upon, the Contractor shall be paid by unilateral change order and may seek recourse for the disputed amount in accordance with Section 105.19.
 - f. When requested by the District, the Contractor shall furnish itemized statements of the cost of the work performed and shall give the District (and/or the District's Auditors) access to any and all financial and/or project records and documents, relating thereto. Unless the Contractor, when requested to do so, furnishes such itemized statements and access to any and all financial and/or project records and documents, the Contractor shall not be entitled to payment for work for which such information is sought by the District.
3. The Contractor shall incorporate the provisions of this Section as provisions in its contracts with each of their subcontractors.

(c) Termination for Default:

In the event the Executive Director declares the Contractor in default as provided in Section 108.07, the District may terminate the Contract in accordance with the following:

1. Upon such termination becoming effective, the District shall provide written notice to the surety confirming that the Contract is terminated, and that the District is proceeding to finish the Work as set forth in the Contract performance bond, Form C-1 8A, and the terms and conditions therein if the Surety declines to complete the project. The District will also take possession of the project site and of all materials purchased for the project thereon. If the expense of completing the Work, including compensation for additional managerial and administrative services, exceeds the unpaid balance of the Contract amount and the penal amount of the Contract performance bond, the Contractor shall pay the difference to the District, together with any other costs and expenses of

terminating the Contract and having it completed by others.

2. If it should be judicially determined that the District's termination for default was improper or in error, then the termination shall be deemed to be a termination for convenience and the Contractor's rights and remedies shall be limited exclusively to those provided under Section 108.08(b).
3. Termination for default as provided herein is in addition to and without prejudice to the District's other rights or remedies. Any of the District's actions permitted herein shall not be deemed a waiver of any other right or remedy of the District under the Contract or under the law. The District may offset any claims it may have against the Contractor against the amounts due or to become due to the Contractor under any other contract the Contractor may have with the District. The provisions of this Section shall survive termination of the Contract.
4. When the Contractor is terminated for default, any claims timely identified in a written notice of intent may be submitted in accordance with provisions of Section 105.19 or the Code of Virginia as amended and as applicable, except that the Contractor shall submit the required claim within 60 days after the District's notice of termination for default to the Contractor. Failure on the part of the Contractor to submit a claim within such 60-day period shall constitute a waiver and release of such claim.

108.09—Acceptance

- (a) Contractor's Responsibility for Work:** Until final acceptance of the work by the Engineer in accordance with the requirements of this Section, the Contractor shall have charge and care thereof and shall take every precaution against damage to any part thereof by action of the elements or from any other cause. The Contractor shall rebuild, repair, restore, and make good on damage to any portion of the work occasioned by any of the foregoing causes before final acceptance and shall bear the expense thereof. The District may reimburse the

Contractor for repair of damage to work attributable to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor as determined by the Engineer.

In case of suspension of work, the Contractor shall be responsible for the project and shall take such precautions as may be necessary to prevent damage to the work, provide for erosion control and drainage, and erect any necessary temporary structures, signs, or other facilities as determined by the Engineer. During the suspension of work, the Contractor shall properly and continuously maintain in an acceptable growing condition all living material in newly established plantings, seedings, and soddings furnished under the Contract and shall take adequate precautions to protect new tree growth and other important vegetation against damage.

- (b) Partial Acceptance:** If at any time during the prosecution of the project the Contractor completes a unit or portion of the project, such as a structure, an interchange, slopes, pavement, or a section of a roadway in its entirety, he may ask the Engineer to make final

inspection of such work. If the Engineer finds upon inspection that the work conforms to the requirements of the Contract and that acceptance is in the best interest of the public, he may accept the work as being completed, and the Contractor will be relieved of further responsibility for the work. Partial acceptance shall in no way void or alter any terms of the Contract.

If any damage is sustained by an accepted unit or portion of the project attributable to causes beyond the control of the Contractor, the Engineer may authorize the Contractor to make the necessary repairs. These repairs will be paid for at the Contract price for the items requiring repair. In the absence of Contract prices covering the items of repair, the repair work will be paid for in accordance with the requirements of Section 109.05.

- (c) **Final Acceptance:** Upon receipt of a written notice from the Contractor of presumptive completion of the entire project, the Engineer will make an inspection. If all work specified in the Contract has been completed, the inspection will constitute the final inspection and the Engineer will make the final acceptance. The Contractor will be notified in writing, of the determination of final acceptance within five days of the date of the Engineer's final acceptance.

If the Engineer's inspection discloses that any work, in whole or in part, is incomplete or unacceptable, the Contractor shall immediately correct the deficiency. A written list of deficiencies will be provided to the Contractor by the Engineer. Upon completion or correction of the work, another inspection will be made of the deficient work. If the work is then satisfactory, the Engineer will notify the Contractor in writing within 5 days of the Engineer's final acceptance. In any event, the Contractor shall be responsible for and maintain the project until final acceptance except under conditions that may be specifically exempted by the Specifications or other Contract documents.

108.10—Termination of Contractor's Responsibilities

The Contract will be considered fully complete upon final acceptance. The Contractor's responsibility for the Work will then cease except as set forth in his bonds, and Sections 107.12, 109.08, 109.10, and other provisions of the Contract that extend the Contractor's responsibility beyond final acceptance.

SECTION 109—MEASUREMENT AND PAYMENT

109.01—Measurement of Quantities

- (a) **General:** Work specified in the Contract will be measured by the Engineer in accordance with U.S. Standard Measure. The methods of measurement and computations to be used to determine quantities of material furnished and work performed will be those generally recognized as conforming to good engineering practice.

Specific methods of measurement shall be as indicated in the specific Section for the

Contract item.

Longitudinal measurements for surface area computations will be made along the surface, and transverse measurements will be the surface measure shown on the plans or ordered in writing by the Engineer. Individual areas of obstructions with a surface area of 9 square feet or less will not be deducted from surface areas measured for payment.

Structures will be measured in accordance with the neat lines shown on the plans.

Items that are measured by the linear foot will be measured parallel to the base or foundation upon which they are placed.

Allowance will not be made for surfaces placed over an area greater than that shown on the plans or for any material moved from outside the area of the cross-section and lines shown on the plans.

When standard manufactured items are specified and are identified by weights or dimensions, such identification will be considered nominal. Unless more stringently

controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.

- (b) **Measurement by Weight:** Materials that are measured or proportioned by weight shall be weighted on accurate scales as specified in this Section. When material is paid for on a tonnage basis, personnel performing the weighing shall be certified by the District and shall be bonded to the Commonwealth of Virginia in the amount of \$10,000 for the faithful observance and performance of the duties of the weighperson required herein. The bond shall be executed on a form having the exact wording as the Weighpersons Surety Bond Form furnished by the District and shall be submitted to the District prior to the furnishing of the tonnage material.

The Contractor shall have the weighperson perform the following:

1. Furnish a signed weigh ticket for each load that shows the date, load number, plant name, size and type of material, project number, schedule or purchase order number, and the weights specified herein.
2. Maintain sufficient documentation so that the accumulative tonnage and distribution of each lot of material, by Contract, can be readily identified.
3. Submit by the end of the next working day a summary of the number of loads and total weights for each type of material by Contract.

Trucks used to haul material shall be equipped with a cover suitable to protect the material and to protect the traveling public.

The truck tare to be used in the weighing operation shall be the weight of the empty truck

determined with full tank(s) of fuel and the operator seated in the cab. The tare weight of trucks shall be recorded to the nearest 20 pounds. At the option of the Contractor, a new tare may be determined for each load. When a new tare is obtained for each load, the requirement for full tank(s) of fuel will be waived.

Net rail shipment weights may be used for pay quantities when evidenced by railroad bills of lading. However, such weights will not be accepted for pay quantities of materials that subsequently pass through a stationary mixing plant.

Scales shall conform to the requirements for accuracy and sensitivity as set forth in the National Institute of Standards and Technology Handbook No. 44 for Specification Tolerances and Requirements for Commercial and Weighing Devices. Scales used in the weighing of materials paid for on a tonnage basis shall be approved and sealed in accordance with the requirements of the policies of the Bureau of Weights and Measures of the Department of Agriculture and Consumer Services, or other approved agencies, at least once every six months and upon being moved. Hopper and truck scales shall be serviced and tested by a scale service representative at least once every six months. Hopper scales shall be checked with a minimum 500 pounds of test weights and truck scales shall be checked with a minimum 20,000 pounds of test weights.

Copies of scale test reports shall be maintained on file at the scale location for at least 18 months, and copies of all scale service representative test reports shall be forwarded to the Department.

The quantity of materials paid for on a tonnage basis shall be determined on scales equipped with an automatic printer. Truck scale printers shall print the net weight and either the gross or tare weight of each load. Hopper scale printers shall print the net weight of each load. The weigh ticket shall also show the legal gross weight for material weighed on truck scales and the legal net weight for material weighed on hopper scales.

If the automatic printer becomes inoperative, the weighing operation may continue for 48 hours provided satisfactory visual verification of weights can be made. The written permission of the District Materials Engineer shall be required for the operation of scales after 48 hours.

If significant discrepancies are discovered in the printed weight, the ultimate weight for payment will be calculated on volume measurements of the materials in place and unit weights determined by the Engineer or by other methods deemed appropriate to protect the interests of the Commonwealth.

- (c) **Measurement by Cubic Yard:** Material that is measured by the cubic yard, loose measurement or vehicular measurement, shall be hauled in approved vehicles and measured therein at the point of delivery. Material measured in vehicles, except streambed gravel, silt cleanout, or other self-consolidating material will be allowed at the rate of 2/3 the volume of the vehicle. The full volume of the vehicle will be allowed for streambed gravel. Such vehicles may be of any size or type acceptable to the Engineer

provided the body is of such shape that the actual contents can be readily and accurately determined. Unless all approved vehicles are of uniform capacity, each vehicle shall bear a plainly legible identification mark indicating the specific approved capacity. Each vehicle shall be loaded to at least its water level capacity.

When approved by the Engineer in writing, material specified to be measured by the cubic yard may be weighed and such weights converted to cubic yards for payment purposes. Factors for conversion from weight to volume measurement will be determined by the Engineer and shall be agreed to by the Contractor before they are used.

(d) Measurement by Lump Sum: When used as an item of payment, the term lump sum will mean full payment for completion of the corresponding item of work described in the Contract. When a complete structure or structural unit is specified as a Contract item, the unit of measurement will be lump sum, and shall include all necessary fittings and accessories. The quantities may be shown on the plans for items for which lump sum is the method of measurement. If shown, the quantities are approximate and are shown for estimating purposes only and no measurement of quantities will be made for payment. Items that are to be measured as complete units will be counted by the Inspector in the presence of a representative of the Contractor.

(e) Excavation, embankment, and borrow: In computing volumes of excavation, embankment, and borrow, methods having general acceptance in the engineering profession will be used. When the measurement is based on the cross-sectional area, the average end area method will be used.

109.02 – Not Used

109.03—Scope of Payment

Payments to the Contractor will be made for the actual quantities of Contract items performed in accordance with the plans and the requirements of the Specifications and other Contract documents. If, upon completion of the Work, the actual quantities vary, either by an increase or decrease from the estimated quantities shown in the Contract, the Contract unit prices shall prevail and payment will be made for actual quantities performed at such unit prices, unless the unit prices have been modified by written change orders according to Sections 104 and 109.04, as determined by the Engineer.

Quantities appearing on the Proposal are estimated quantities for the basic design shown on the plans. With the Engineer's approval, the Contractor may furnish other design(s) that may involve changes in quantities or the use of different materials. However, payment will be made for the original quantities listed in the Contract only and in the units of measure given in the Contract for the basic design unless the dimensions for the basic design are changed by an authorized change order to conform to field conditions encountered. In this event, the original quantities listed will be modified based on the change in dimension, and the modified quantities will be used for pay quantities at Contract unit prices for the items listed on the Proposal.

The Contractor shall accept the compensation provided for in the Contract as full payment for the

following:

- (a) Furnishing all materials, labor, tools, equipment, and incidentals necessary to complete the Work according to the Contract.
- (b) Performing all work specified in the Contract.
- (c) All loss or damage arising from the nature of the Work or from action of the elements or any other unforeseen difficulties that may be encountered during prosecution of the Work and until its final acceptance.
- (d) Any license, use, or infringement of a patent, trademark, or copyright.
- (e) The completion of the work in accordance with the Contract requirements.

If the payment clause in the Specifications relating to any unit price in the Contract requires that the unit price cover and be considered compensation for certain work or material essential to the item, the work or material will not be measured or paid for under any other item except as provided in Section 106.05.

The payment of any partial estimate, the final estimate, or any retainage shall in no way affect the obligation of the Contractor to repair or replace any unacceptable, unauthorized or defective work or materials, or to be responsible for all damages attributable to such unacceptable, unauthorized or defective work or materials.

109.04—Payment for Non-Significant Changes and Additional Units of In-scope Work

When the accepted quantities of work vary from the estimated quantities set forth in the Contract, whether or not there have been any alterations in the plans, the quantities of work, or the character of work, the Contractor shall accept as payment in full, so far as Contract items are concerned, payment at the original Contract unit prices for the accepted quantities of work performed, except where such variance is a significant change as set forth in Section 104.02. No allowance or other adjustment except as provided for a significant change in Section 104.02 will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor resulting directly from such variance, or from the Contractor's unbalanced allocation among the Contract items of overhead expense and subsequent loss of expected reimbursements therefor, or from any other cause.

109.05—Payment for Contract Changes

The District will pay the Contractor for adjustments to the Contract amount based on one of the following methods.

- (a) **Payment for Extra Work**

The District may add any extra work that in the judgment of the Engineer is necessary for the satisfactory fulfillment of the Contract within its intended scope. Extra work may be accomplished by change order if the scope is defined as provided in this Section (a), or on a force account basis, if the scope is not defined as provided in Section 109.05(b). Where possible, the District and Contractor will each proceed to secure any information, documentation, or plans to assist in detailing the extent and character of such work, if known, in sufficient detail to define, analyze, and estimate the cost and time required to perform such work. Extra work does not include overruns of Contract items according to 104.02.

1. The Engineer may notify the Contractor in writing that extra work is necessary. When no such notice is given, but the Contractor believes extra work is necessary, he shall notify the Engineer in writing within 2 days of such a determination or before performing any such work. If the Engineer agrees with the Contractor, the Engineer will notify the Contractor that extra work is necessary. Within 7 days of the Engineer notifying the Contractor of extra work, or within such time as mutually decided with the Engineer, the Contractor shall submit a proposal that includes a determination of the extent of such work, and the additional compensation and/or time he seeks, if any, relative to his determination. The Contractor's request shall be in sufficient detail to enable the Engineer to determine the basis for and extent of the Contractor's entitlement to additional compensation or time. Failure on the part of the Contractor to furnish sufficient documentation or to qualify his reason for failure to do so will delay the determination of entitlement for such work. If such delay occurs, it will in no way relieve the Contractor of his obligation to meet the contract time limits or other Contract requirements or constitute basis for a Contractor to make a delay claim.
2. If the Contractor requests a time extension based on extra work, the requested time extension will only be considered if the extra work impacts the critical path, a controlling work item, or an interim milestone established in the Contract to the extent that it extends the Completion Date of the project beyond the lattermost of the Contract Completion Date or its most recent extension. The Contractor shall submit detailed documents and information showing how the extra work or interim milestone impacted the critical path in accordance with Section 108.04. Any time extension given, including time extensions in accordance with Section 108.04, must be included in the executed change order.
3. Upon receipt and review of the Contractor's costs for the proposed extra work, if it is found that the Contractor's prices or the time differ considerably from the District's estimate, the Engineer may request the Contractor to provide support for his prices or his requested time extension. Where the District and the Contractor can determine and agree upon an accurate cost and time estimation for the proposed work, the Engineer will issue a Bilateral Change Order to authorize the work. When the Contractor and the District cannot agree upon the cost or the time estimation for the extra work after the Engineer's analysis and subsequent discussion with the Contractor, or where due to issues of emergency, safety, environmental damage, other similar critical factors as

determined by the District, the Engineer will act unilaterally and issue a Unilateral Change Order to authorize the work. The issuance of a Unilateral Change Order by the Engineer shall in no way invalidate or relinquish the Contractor's rights under Section 105.19.

(b) Payment by Force Account

The District will require the Contractor to proceed with extra work on a force account basis when neither the District nor the Contractor can firmly establish a reliable estimate for the cost of the extra work because either the scope or the quantity of work is unknown, is of such character that a price cannot be determined to a reasonable degree of accuracy, or the level of effort required to perform and complete the extra work is unknown or not quantifiable at the time of discovery or start of the extra work, and will be determined as work progresses. The compensation provided for in this Section for force account work applies only to extra work the Engineer orders in writing to be performed on a force account basis, and does not apply to any other work performed under the Contract or to claims.

The Contractor shall be paid for all labor, materials, equipment, services, supplies, taxes, overhead, profit and miscellaneous costs or expenses, for extra work performed on a force account basis in the following manner:

1. **Labor:** Unless otherwise approved, the Contractor will receive the rate of wage or scale as set forth in his most recent payroll for each classification of laborers, forepersons, and superintendent(s) who are in direct charge of the specific operation. The time allowed for payment will be the number of hours such workers are actually engaged in the work. If overtime work is authorized, payment will be at the normal overtime rate set forth in the Contractor's most recent payroll. If workers performing the class of labor needed have not been employed on the project, mutually agreed on rates will be established. However, the rates shall be not less than those predetermined for the project, if applicable. An amount equal to 45 percent of the approved force account payroll will be included in the payment for labor to cover administrative costs, profit, and benefits and/or deductions normally paid by the Contractor.
2. **Insurance and Tax:** The Contractor will receive an amount equal to 25 percent of the approved force account payroll exclusive of additives of administrative cost as full compensation for property damage and liability, workers' compensation insurance premiums, unemployment insurance contributions, and social security taxes of force account work.
3. **Materials:** The Contractor will receive the actual cost of materials accepted by the Engineer that are delivered and used for the work including taxes, transportation, and handling charges paid by the Contractor, not including labor and equipment rentals as herein set forth, to which 15 percent of the cost will be added for administration and profit. The Contractor shall make every reasonable effort to take advantage of trade discounts offered by material suppliers. Any discount received shall pass through to the

District. Salvageable temporary construction materials will be retained by the District,

or their appropriate salvage value shall be credited to the District.

4. **Equipment:** The Contractor shall provide the Engineer a list of all equipment to be used in the work. For each piece of equipment, the list shall include the serial number; date of manufacture; location from which equipment will be transported; and, for rental equipment, the rental rate and name of the company from which it is rented. The Contractor will be paid rental rates for pieces of machinery, equipment, and attachments necessary for prosecution of the work that are approved for use by the Engineer. Equipment rental will be measured by time in hours of actual time engaged in the performance of the work and necessary traveling time of the equipment within the limits of the project or source of supply and the project. Hourly rates will not exceed 1/176 of the monthly rates of the schedule shown in the Rental Rate Blue Book modified in accordance with the Rental Rate Blue Book rate adjustment tables that are current at the time the force account is authorized. Equipment rental rates not modified by the adjustment factors or rate modifications indicated in the Rental Rate Blue Book will not be considered. Hourly rates for equipment on standby will be at 50 percent of the rate paid for equipment performing work. Operating costs shall not be included in the standby rate. For the purposes herein "standby time" is defined as the period of time equipment ordered to the jobsite by the Engineer is available on-site for the work but is idle for reasons not the fault of the Contractor or normally associated with the efficient and necessary use of that equipment in the overall operation of the work at hand.

Payment will be made for the total hours the equipment is performing work. When equipment is performing work less than 40 hours for any given week and is on standby, payment for standby time will be allowed for up to 40 hours, minus hours performing work. Payment will not be made for the time that equipment is on the project in excess of 24 hours prior to its actual performance in the force account work. An amount equal to the Rental Rate Blue Book estimated operating cost per hour will be paid for all hours the equipment is performing work. This operating cost shall be full compensation for fuel, lubricants, repairs, greasing, fueling, oiling, small tools, and other incidentals. No compensation will be paid for the use of machinery or equipment not authorized by the Engineer.

The Contractor will be paid freight cost covering the moving of equipment to and from the specific force account operation provided such cost is supported by an invoice showing the actual cost to the Contractor. However, such payment will be limited to transportation from the nearest source of available equipment. If equipment is not returned to the nearest equipment storage lot but is moved to another location, the freight cost paid will not exceed the cost of return to the nearest storage lot.

The rates for equipment not listed in the Rental Rate Blue Book schedule shall not exceed the hourly rate being paid for such equipment by the Contractor at the time of the force account authorization. In the absence of such rates, prevailing rates being paid in the area where the authorized work is to be performed shall be used.

If the Contractor does not possess or have readily available equipment necessary for performing the force account work and such equipment is rented from a source other than a company that is an affiliate of the Contractor, payment will be based on actual invoice rates, to which 15 percent of the invoice cost will be added for administrative cost and profit. If the invoice rate does not include the furnishing of fuel, lubricants, repairs, and servicing, the invoice rate will be converted to an hourly rate, and an amount equal to the Rental Rate Blue Book estimated operating cost per hour will be added for each hour the equipment is performing work.

5. **Miscellaneous:** No additional allowance will be made for attachments that are common accessories for equipment as defined in the Rental Rate Blue Book, general superintendents, timekeepers, secretaries, the use of small hand held tools or other costs for which no specific allowance is herein provided. The Contractor will receive compensation equal to the cost of the bond, special railroad insurance premiums, and other additional costs necessary for the specific force account work as determined by the Department. The Contractor shall supply documented evidence of such costs.
6. **Compensation:** The compensation as set forth in this Section shall be accepted by the Contractor as payment in full for work performed on a force account basis. At the end of each day, the Contractor's representative and the Inspector shall compare and reconcile records of the hours of work and equipment, labor and materials used in the work as ordered on a force account basis. Such accounting may not include actual costs or labor rates where these are not available but shall be used to verify quantities, types of materials or labor, and number and types of equipment.

If all or a portion of the force account work is performed by an approved subcontractor, the Contractor will be paid 10 percent of the subcontract net force account costs to cover the Contractor's profit and administrative cost. The amount resulting will not be subject to any further additives. The itemized statements of costs as required below shall be submitted on a form that separates the subcontracted portions of the force account labor, materials, and equipment from the other force account costs.

7. **Statements:** Payments will not be made for work performed on a force account basis until the Contractor has furnished the Engineer duplicate itemized statements of the cost of such work detailed as follows:
 - a. payroll indicating name, classification, date, daily hours, total hours, rate, and extension of each laborer, foreperson, and superintendent.
 - b. designation, dates, daily hours, total hours, rental rate, and extension for each unit of equipment.
 - c. quantities of materials, prices, and extensions.
 - d. transportation of materials.

Statements shall be accompanied and supported by invoices for all materials used and transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices, the Contractor shall furnish an affidavit certifying that such materials were taken from his stock; that the quantity claimed was actually used; and that the price, transportation, and handling claimed represented his actual cost.

(c) Payment for Significant Changes

When the Contractor alleges that there is a significant change as defined in Section 104.02, then, within a mutually agreed upon timeframe, he shall submit a request for the additional compensation, excluding anticipated profits for reduced or eliminated work, for such significant change. The Contractor's request shall be in sufficient detail to enable the Engineer to determine the basis for and extent of the Contractor's entitlement to additional compensation.

Failure on the part of the Contractor to furnish sufficient documentation or to qualify his reason for failure to do so will delay the determination of entitlement to additional compensation. If such delay occurs, it will in no way relieve the Contractor of his obligation to meet milestone dates, the Contract time limit, or other Contract requirements, or constitute the basis for a claim of any kind.

(d) Payment for Differing Site Conditions

When the Contractor encounters a differing site condition as defined in Section 104.03, then, within a mutually agreed upon timeframe, he shall submit a written request for the additional compensation, excluding anticipated profits, he seeks as a result of such condition. The Contractor's request shall be in sufficient detail to enable the Engineer to determine the basis for and extent of the Contractor's entitlement to additional compensation.

Failure on the part of the Contractor to furnish sufficient documentation or to qualify his reason for failure to do so will delay the determination of entitlement to additional compensation. If such delay occurs, it will in no way relieve the Contractor of his obligation to meet the Contract time limits or other Contract requirements or constitute basis for a claim of any kind.

If the Engineer determines that the conditions materially differ and cause an increase or decrease in the cost required for the performance of any of the Work, an adjustment, excluding anticipated profits, will be made and the Contract may be modified accordingly.

(f) Payment for Compensable Delay

The Contractor is entitled to compensation for a compensable delay. Compensable delays are critical delays that are not the Contractor's fault or responsibility and are the District's fault or responsibility. Compensable delays may include, but are not limited to:

- Delays due to alteration of quantities or character of work according to 104.02.
- Delays due to differing site conditions according to 104.03.
- Delays due to an Engineer-ordered suspension according to 108.05.
- Delays due to the acts or omissions of the District or its failure to act in a timely manner. The following delays are not compensable:
 - Acts or omissions of the Contractor, its agents, employees, subcontractors or suppliers or causes within their control; or conditions that the Contractor could reasonably have foreseen or avoided.
 - Floods, tidal waves, tornadoes, hurricanes, lightning strikes, earthquakes, fires, epidemics, or similar natural phenomena.
 - Normal adverse weather.
 - Extraordinary, unforeseen, and unavoidable delays in material deliveries.
 - Acts of government entities other than the District.
 - Unforeseen and unavoidable industry-wide labor strikes affecting the Contractor or its subcontractors' or suppliers' workforce that are beyond the Contractor's control.
 - Actions of third parties that are not the responsibility of the Contractor or within it's or the District's control.
 - Civil disturbances or sovereign acts of the State, including but are not limited to states of emergency or epidemic or quarantine restrictions.

To request payment for a compensable delay, the Contractor shall within 14 days after the end date of a delay event, unless directed otherwise in writing by the Engineer, submit a written request for a change order for the Engineer's approval. With the request, the Contractor shall submit a Schedule Impact Analysis (SIA) and all supporting data to objectively substantiate its request. The Engineer will evaluate the Contractor's SIA and all supporting data to determine entitlement and the appropriate amount of compensation.

109.06 – Not Used

109.07—Eliminated Items

If all or a part of any Contract item is determined to be unnecessary for the proper completion of the Work, the District may, upon written notice to the Contractor and issuance of an appropriate change order, eliminate all or part of such item from the Contract. Payment will not be made for such item except that the Contractor will be compensated for the actual cost of any work performed

for such item and the net cost of materials purchased, including freight and tax costs, as evidenced by invoice. No additional compensation will be made for overhead or anticipated profit.

109.08—Partial Payments

(a) General

Partial payments will be based on a monthly progress estimate consisting of approximate quantities and value of work performed as determined by the Engineer. When the method of measurement for a Contract item is in units of each or lump sum, the value of work accomplished for partial payment will be determined on a pro rata basis. Partial payments will be made once each month for the work performed in accordance with the Contract requirements. The Contractor will be given the opportunity to review the monthly progress estimate prior to each partial payment. Upon final acceptance, one last monthly estimate will be prepared and any additional payment due will be submitted for payment.

For contracts without a payment bond, the Contractor shall submit to the Engineer a letter from each materials supplier and subcontractor involved stating that the Contractor has paid or made satisfactory arrangements for settling all bills for materials and subcontracted work that was paid on the previous month's progress estimate. The District will use the source of supply letter and approved subletting request to verify that certifications have been received for work that was paid on the previous monthly estimate. The Contractor shall furnish these and other certificates as are required as a prerequisite to the issuance of payment for the current monthly estimate.

The District may withhold the payment of any partial or final estimate voucher or any sum(s) thereof from such vouchers if the Contractor fails to make payment promptly to all persons supplying equipment, tools, or materials; or for any labor he uses in the prosecution of the Contract work. Unless otherwise provided under the terms of the Contract, interest shall accrue at the rate of one percent per month.

(b) Payment to Subcontractors

Upon District payment of the subcontractor's portion of the work as shown on the monthly progress estimate and the receipt of payment by the Contractor for such work, the Contractor shall make compensation in full to the subcontractor. For the purposes of this Section, payment of the subcontractor's portion of the Work shall mean that payment has been issued for that portion of the Work that was identified on the monthly progress estimate for which the subcontractor has performed service.

Payment to subcontractors shall be in accordance with the provisions of Code of Virginia §2.2- 4354 and § 2.2-4355. The Contractor shall take one of the following two actions within 7 days after receipt of payment from the District for the subcontractor's portion of the Work as shown on the monthly progress estimate:

1. Pay the subcontractor for the proportionate share of the total payment received from the agency attributable to the Work performed by the subcontractor; or
2. Notify the District and subcontractor, in writing, of his intention to withhold all or a part of the subcontractor's payment along with the reason for nonpayment.

In the event payment is not made as required, the Contractor shall pay interest at the rate of one percent per month, unless otherwise provided in the Contract, to the subcontractor on all amounts that remain unpaid after 7 days, except for the amounts withheld as provided in this Section. The Contractor shall include in each of its subcontracts a provision requiring each subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower tier subcontractor.

If the Contractor fails to make payment to the subcontractor within the time frame specified herein, the subcontractor shall notify the Engineer and the Contractor's bonding company.

(c) Retainage

If the Engineer determines the Contractor's progress is unsatisfactory according to Section 108.03 or other applicable Contract documents, the Engineer will send a notice of unsatisfactory progress to the Contractor advising him of such determination. This notification will also advise the Contractor that five percent retainage of the monthly progress estimate is being withheld and will continue to be withheld for each month the Contractor's actual progress is determined to be unsatisfactory.

When the Engineer determines that the Contractor's progress is satisfactory in accordance with these requirements, the 5 percent retainage previously withheld because of unsatisfactory progress will be released in the next monthly progress estimate, and the remaining monthly progress estimates will be paid in full provided the Contractor's progress continues to be satisfactory.

109.09—Payment for Material on Hand

When requested in writing by the Contractor, payment allowances may be made for materials secured for use on the project and required to complete the project. Such material payments will be made for only those actual quantities of materials identified in the Contract, approved change orders, or otherwise authorized and documented by the Engineer based on delivery tickets, bills of lading, or paid invoices. All such payments shall be in accordance with the following terms and conditions:

- (a) **Structural Steel or Reinforcing Steel:** An allowance of 100 percent of the cost to the Contractor for structural steel **or reinforcing steel** materials secured for fabrication not to exceed 60 percent of the Contract price may be made when such material is delivered to the fabricator and has been adequately identified for exclusive use on the project. The provisions of this section for steel reinforcement will only apply where the quantity of steel reinforcement is identified as a separate and distinct bid item for payment. An allowance of

100 percent of the cost to the Contractor for superstructure units and reinforcing steel, not to exceed 90 percent of the Contract price, may be made when fabrication is complete. Prior to the granting of such allowances, the materials and fabricated units shall have been tested or certified and found acceptable to the District and shall have been stored in accordance with the requirements specified herein. Allowances will be based on invoices, bills, or the estimated value as approved by the Engineer and will be subject to the retainage requirements of Section 109.08. For the purposes of this section fabrication is defined as any manufacturing process such as bending, forming, welding, cutting or coating with paint or anti-corrosive materials which alters, converts, or changes raw material for its use in the permanent finished work.

- (b) **Other Materials:** For aggregate, pipe, guardrail, signs and sign assemblies, and other nonperishable material, an allowance of 100 percent of the cost to the Contractor for materials, not to exceed 90 percent of the Contract price, may be made when such material is delivered to the project and stockpiled or stored in accordance with the requirements specified herein. Prior to the granting of such allowances, the material shall have been tested and found acceptable to the District. Allowances will be based on invoices, bills, or the estimated value of the material as approved by the Engineer and will be subject to the retainage provisions of Section 109.08.
- (c) **Excluded Items:** No allowance will be made for fuels, form lumber, falsework, temporary structures, or other work that will not become an integral part of the finished construction.

Additionally, no allowance will be made for perishable material such as cement, seed, plants, or fertilizer.

- (d) **Storage:** Material for which payment allowance is requested shall be stored in an approved manner in areas where damage is not likely to occur. If any of the stored materials are lost or become damaged, the Contractor shall repair or replace them at no additional cost to the District. Repair or replacement of such material will not be considered the basis for any extension of Contract time. If payment allowance has been made prior to such damage or loss, the amount so allowed or a proportionate part thereof will be deducted from the next progress estimate payment and withheld until satisfactory repairs or replacement has been made.

When it is determined to be impractical to store materials within the limits of the project, the Engineer may approve storage on private property or, for structural units and reinforcing steel, on the manufacturer's or fabricator's yard. Requests for payment allowance for such stored material shall be accompanied by a release from the owner or tenant of such property or yard agreeing to permit the removal of the materials from the property without cost to the District. The District must be allowed access to the materials for inspection during normal business hours.

- (e) **Materials Inventory:** If the Contractor requests a payment allowance for properly stored material, he shall submit a certified and itemized inventory statement to the Engineer no earlier than 5 days and no later than 2 days prior to the progress estimate date. The

statement shall be submitted to the District and shall be accompanied by supplier's or manufacturer's invoices or other documents that will verify the material's cost. Following the initial submission, the Contractor shall submit to the Engineer a monthly-certified update of the itemized inventory statement within the same time frame. The updated inventory statement shall show additional materials received and stored with invoices or other documents and shall list materials removed from storage since the last certified inventory statement, with appropriate cost data reflecting the change in the inventory. If the Contractor fails to submit the monthly-certified update within the specified time frame, the Engineer will deduct the full amount of the previous statement from the progress estimate.

At the conclusion of the project, the cost of material remaining in storage for which payment allowance has been made will be deducted from the progress estimate.

109.10—Final Payment

When final acceptance has been duly made by the Engineer as provided for in Section 108.09 the Engineer will prepare the final statement of the quantities of the items of work performed. Thereafter, the Contractor will be afforded 10 days in which to review the final estimate before payment. The time may be extended by mutual agreement, and the extension added to the 90-day criteria set forth within this Section.

Prior partial estimates and payments shall be subject to correction in the final estimate and payment.

For Contracts not requiring a payment bond, the Contractor shall certify to the District that he has paid or made satisfactory arrangements for settling all bills for materials, labor, equipment, supplies, and other items entering into or used on the work and shall furnish other certificates as are required by the District as a prerequisite to the issuance of final payment.

Failure by the Contractor to provide required information and certifications will extend the 90-day period for final payment by the number of days equivalent to the delay attributable to the Contractor.

Upon review of the final estimate by the Contractor and approval by the Engineer, the Contractor will be paid the entire sum due after previous payments are deducted and other amounts are retained or deducted under the provisions of the Contract. Final payment will become due within 90 days after final acceptance.

Interest will accrue on the amount the District owes to the Contractor that remains unpaid after 7 days following the 90-day payment date. The rate of interest will be the base rate on corporate loans (prime rate) at large U.S. money center commercial banks as reported daily in The Wall Street Journal. When a split rate is published, the lower of the two rates shall be used. The rate effective on the 91st day following final acceptance will be applicable throughout the period of time for which interest is paid. However, in no event shall the rate of interest paid exceed the rate of interest established pursuant to the Code of Virginia. The period subject to payment of interest will begin on the 91st calendar day after final acceptance and will extend through the date of the payment of the final estimate.

When the payment date is delayed beyond the 90-day period by the fault of the Contractor and monies are due the District, the Contractor will be assessed annual interest on the balance due the District for the time delay attributable to the Contractor. The rate of interest will be determined as specified hereinbefore. The District may deduct monies owed to the District from the final payment. If the final payment is insufficient, monies owed to the District will become due and payable within 30 days of Contractor's receipt of a certified letter giving notification of the amount owed. The Contractor will be assessed annual interest at the rate determined as specified within this Section for any balance that remains unpaid after 37 days from receipt of the letter.

SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Miscellaneous elevator equipment supports.
2. Supports for elevator door sills.
3. Elevator pit ladders.
4. Abrasive metal stair nosings.
5. Repairs for elevator door frames.

B. Related Requirements:

1. Refer to Structural Drawings for steel framing, supports, elevator machine beams, hoist beams, elevator door sill angles and elevator component mountings.

1.2 COORDINATION

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written instructions to ensure that shop primers and topcoats are compatible with one another.
- B. Coordinate installation of metal fabrications that are anchored to or that receive other work. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.3 ACTION SUBMITTALS

A. Product Data:

1. Fasteners.
2. Shop primers.
3. Abrasive metal stair nosings.

- B. Shop Drawings: Show fabrication and installation details. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide Shop Drawings for the following:

1. Miscellaneous elevator equipment supports.
2. Supports for elevator door sills.
3. Elevator pit ladders.
4. Abrasive metal stair nosings.
5. Repairs for elevator door frames.

1.4 INFORMATIONAL SUBITTALS

- A. Mill Certificates: Signed by stainless steel manufacturers, certifying that products furnished comply with requirements.

1.5 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel in accordance with the following welding codes:
 - 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."

PART 2 - PRODUCTS

2.1 METALS

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.
- B. Steel Plates, Shapes, and Bars: ASTM A36/A36M.

2.2 FASTENERS

- A. General: Unless otherwise indicated, provide 316 stainless steel fasteners.
- B. Stainless Steel Bolts and Nuts: Regular hexagon-head annealed stainless steel bolts, ASTM F593 (ISO 3506-1); with hex nuts, ASTM F594 (ASTM F836M); and, where indicated, flat washers; Alloy Group 2 (A4).
- C. Anchor Bolts: ASTM F1554, Grade 36, of dimensions indicated; with nuts, ASTM A563 (ASTM A563M); and, where indicated, flat washers.
 - 1. Hot-dip galvanize or provide mechanically deposited, zinc coating where item being fastened is indicated to be galvanized.
- D. Anchors, General: Capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing in accordance with ASTM E488/E488M, conducted by a qualified independent testing agency.
- E. Post-Installed Anchors: Torque-controlled expansion anchors.
 - 1. Material: Alloy Group 2 (A4) stainless steel bolts, ASTM F593 (ISO 3506-1), and nuts, ASTM F594 (ASTM F836M).

2.3 MISCELLANEOUS MATERIALS

- A. Shop Primers: Refer to Section 099611 "High-Performance Coatings for requirements.

2.4 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm) unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. Form exposed work with accurate angles and surfaces and straight edges.
- E. Weld corners and seams continuously to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface].
- F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.

2.5 MISCELLANEOUS ELEVATOR EQUIPMENT SUPPORTS

- A. Metal fabrications as indicated on Drawings.

2.6 SUPPORTS FOR ELEVATOR DOOR SILLS

- A. Metal fabrications as indicated on Drawings.

2.7 METAL LADDERS

- A. General:
 - 1. For elevator pit ladders, comply with ASME A17.1/CSA B44.
- B. Steel Ladders:
 - 1. Siderails: Continuous steel flat bars, size as indicated on drawings with eased edges.
 - 2. Rungs: ¾ inch round A706 reinforcing steel.
 - 3. Fit rungs in centerline of siderails; plug-weld and grind smooth on outer rail faces.
 - 4. Support each ladder with welded steel brackets as indicated on drawings.
 - 5. Galvanize ladders, including brackets after fabrication.

2.8 ABRASIVE METAL NOSINGS

- A. Cast-Metal Units: Cast aluminum, with an integral-abrasive, as-cast finish consisting of aluminum oxide, silicon carbide, or a combination of both. Fabricate units in lengths necessary to accurately fit openings or conditions.
 - 1. Source Limitations: Obtain units from single source from single manufacturer.
 - 2. Cross-hatched nosings, 4 inches (100 mm) wide, with 1/4-inch- (6-mm-) thick 1-inch (25-mm) lip, for casting into concrete.
- B. Provide anchors for embedding units in concrete, either integral or applied to units, as standard with manufacturer.
- C. Apply bituminous paint to concealed surfaces of cast-metal units.

2.9 ELEVATOR DOOR FRAME REPAIRS

- A. Metallic-coated (G60) steel sheet, minimum thickness of 0.053 inch (1.3 mm). Formed to profile of existing elevator door frame as indicated on drawings.

2.10 GENERAL FINISH REQUIREMENTS

- A. Finish metal fabrications after assembly.
- B. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

2.11 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A153/A153M for steel and iron hardware and with ASTM A123/A123M for other steel and iron products.
 - 1. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.
- B. Preparation for Shop Priming Galvanized Items: Refer to Section 099611 "High-Performance Coatings" for requirements.
- C. Shop prime iron and steel items.
 - 1. Shop prime with pre-primers and primers specified in Section 099611 "High-Performance Coatings".

PART 3 - EXECUTION

3.1 INSTALLATION OF METAL LADDERS

- A. Secure ladders to adjacent construction with the clip angles attached to the stringer and anchors as indicated on drawings.

3.2 INSTALLATION OF ELEVATOR DOOR SUPPORT

- A. Install elevator door supports as indicated on drawings.

3.3 INSTALLATION OF MISCELLANEOUS ELEVATOR EQUIPMENT SUPPORTS

- A. Anchor miscellaneous elevator equipment supports as indicated on drawings.

3.4 INSTALLATION OF ABRASIVE METAL NOSINGS

- A. Nosing to extend full width of tread unless otherwise indicated.
- B. For nosings embedded in concrete steps or curbs, align nosings flush with riser faces and level with tread surfaces.

3.5 ELEVATOR DOOR FRAME REPAIRS

- A. Saw cut and remove existing section of elevator door frames where indicated on drawings. Fabricate patch piece matching the existing door frame profile and weld patch in place. Grind weld smooth and prepare door frame for painting. Refer to section 099611 High Performance Coatings for coating requirements.

3.6 REPAIRS

- A. Touchup Painting:
 - 1. Immediately after erection, clean field welds, bolted connections, and abraded areas. Touchup paint. Refer to Section 099611 "High-Performance Coatings" for requirements.
- B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A780/A780M.

END OF SECTION 055000

SECTION 055213 - PIPE AND TUBE RAILINGS

1.1 SUMMARY

- A. Section Includes:
 - 1. Aluminum railings.

1.2 ACTION SUBMITTALS

- A. Product Data:
 - 1. Railing materials.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

1.3 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel in accordance with the following:
 - 1. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Protect finishes on exposed surfaces of railings from damage by applying a strippable, temporary protective covering before shipping.

1.5 FIELD CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with railings by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, to design railings, including attachment to building construction.
- B. Structural Performance: Railings, including attachment to building construction, withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 - 1. Handrails and Top Rails of Guards:
 - a. Uniform load of 50 lbf/ ft. (0.73 kN/m) applied in any direction.
 - b. Concentrated load of 200 lbf (0.89 kN) applied in any direction.
 - c. Uniform and concentrated loads need not be assumed to act concurrently.

2.2 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.
- B. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails unless otherwise indicated.
 - 1. Provide type of bracket with flange tapped for concealed anchorage to threaded hanger bolt or [predrilled hole for exposed bolt anchorage and that provides 1-1/2-inch (38-mm) clearance from inside face of handrail to finished wall surface.

2.3 ALUMINUM RAILINGS

- A. Aluminum, General: Provide alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than the strength and durability properties of alloy and temper designated below for each aluminum form required.
- B. Extruded Bars and Tubing: ASTM B221 (ASTM B221M), Alloy 6063-T5/T52.
- C. Plate and Sheet: ASTM B209 (ASTM B209M), Alloy 6061-T6.
- D. Castings: ASTM B26/B26M, Alloy A356.0-T6.

2.4 FASTENERS

- A. Fastener Materials:
 - 1. Aluminum Railing Components: Type 316 stainless steel fasteners.
- B. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction and capable of withstanding design loads.
- C. Post-Installed Anchors: Fastener systems with working capacity greater than or equal to the design load, according to an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC193.
 - 1. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy Group 2 (A4) stainless steel bolts, ASTM F593, and nuts, ASTM F594.

2.5 MISCELLANEOUS MATERIALS

- A. Handrail Brackets: Cast aluminum or formed aluminum, center of handrail 2-1/2 inches (63.5 mm) from face of wall.
- B. Welding Rods and Bare Electrodes: Select in accordance with AWS specifications for metal alloy welded.
 - 1. For aluminum railings, provide type and alloy as recommended by producer of metal to be welded and as required for color match, strength, and compatibility in fabricated items.

2.6 FABRICATION

- A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads].
- B. Shop assemble railings.
- C. Cut, drill, and punch metals cleanly and accurately.
 - 1. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm) unless otherwise indicated.
 - 2. Remove sharp or rough areas on exposed surfaces.
- D. Form work true to line and level with accurate angles and surfaces.
- E. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.
- F. Connections: Fabricate railings with welded connections unless otherwise indicated.
- G. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove flux immediately.
 - 4. At exposed connections, finish exposed welds to comply with NOMMA's "Voluntary Joint Finish Standards" for Finish #1 welds; ornamental quality with no evidence of a welded joint.
- H. Form changes in direction as follows:
 - 1. By flush bends or by inserting prefabricated flush-elbow fittings.
- I. Bend members in jigs to produce uniform curvature for each configuration required. Maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.
- J. Close exposed ends of hollow railing members with prefabricated cap and end fittings of same metal and finish as railings.
- K. Provide wall returns at ends of wall-mounted handrails unless otherwise indicated. Close ends of returns unless clearance between end of rail and wall is 1/4 inch (6 mm) or less.
- L. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to railing members to other work unless otherwise indicated.
- M. Provide inserts and other anchorage devices for connecting railings to concrete or masonry work.
 - 1. Fabricate anchorage devices capable of withstanding loads imposed by railings.
 - 2. Coordinate anchorage devices with supporting structure.

2.7 ALUMINUM FINISHES

- A. Mill Finish: AA-M12, nonspecular as fabricated.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Perform cutting, drilling, and fitting required for installing railings.
 - 1. Fit exposed connections together to form tight, hairline joints.
 - 2. Install railings level, plumb, square, true to line; without distortion, warp, or rack.
 - 3. Set railings accurately in location, alignment, and elevation; measured from established lines and levels.
- B. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.
 - 1. Coat concealed surfaces of aluminum that will be in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.
- C. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

3.2 RAILING CONNECTIONS

- A. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in "Fabrication" Article, whether welding is performed in the shop or in the field.

3.3 ATTACHING RAILINGS

- A. Attach handrails to walls with wall brackets. Attach handrails to floors with floor flanges.. Provide brackets with 1-1/2-inch (38-mm) clearance from inside face of handrail and finished wall surface.
 - 1. Use type of bracket with predrilled hole for exposed bolt anchorage.
 - 2. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.
- B. Secure wall brackets and floor railing end flanges to building construction as follows:
 - 1. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts.

3.4 CLEANING

- A. Clean aluminum by washing thoroughly with clean water and soap and rinsing with clean water.

3.5 PROTECTION

- A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.
- B. Restore finishes damaged during installation and construction period, so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 055213

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Urethane joint sealants.

1.2 ACTION SUBMITTALS

- A. Product Data:
 - 1. Urethane joint sealants.
- B. Samples: Manufacturer's standard color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

1.3 FIELD CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (5 deg C).
 - 2. When joint substrates are wet.
 - 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
 - 4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

- A. Obtain joint sealants from single manufacturer.

2.2 JOINT SEALANTS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by District from manufacturer's full range.

2.3 URETHANE JOINT SEALANTS

- A. Urethane, S, NS, 25, NT: Single-component, nonsag, plus 25 percent and minus 25 percent movement capability, nontraffic-use, urethane joint sealant; ASTM C920, Type S, Grade NS, Class 25, Use NT.

2.4 JOINT-SEALANT BACKING

- A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C1330, Type C (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

2.5 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
 - a. Concrete.
 - b. Masonry.
 3. Remove laitance and form-release agents from concrete.
 4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
 - a. Metal.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 1. Do not leave gaps between ends of sealant backings.
 2. Do not stretch, twist, puncture, or tear sealant backings.
 3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.
- D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 1. Place sealants so they directly contact and fully wet joint substrates.
 2. Completely fill recesses in each joint configuration.
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants in accordance with requirements specified in subparagraphs below to form

smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile in accordance with Figure 8A in ASTM C1193 unless otherwise indicated.

3.4 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 079200

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior hollow-metal doors and frames.

B. Related Requirements:

1. Section 087100 Door Hardware.
2. Section 099611 High Performance Coatings for priming and field painting of metal doors and frames.

1.2 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings in accordance with NAAMM-HMMA 803 or ANSI/SDI A250.8.

1.3 COORDINATION

- A. Coordinate anchorage installation for hollow-metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.
- B. Coordinate requirements for installation of door hardware, electrified door hardware, and access control and security systems.

1.4 ACTION SUBMITTALS

A. Product Data:

1. Interior standard hollow-metal doors and frames.

B. Product Data Submittals: For each product.

1. Include construction details, material descriptions, core descriptions, fire-resistance ratings and finishes.

C. Shop Drawings: Include the following:

1. Elevations of each door type.
2. Details of doors, including vertical- and horizontal-edge details and metal thicknesses.
3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
4. Locations of reinforcement and preparations for hardware.
5. Details of each different wall opening condition.
6. Details of accessories.

- D. Product Schedule: For hollow-metal doors and frames, prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final door hardware schedule.

1.5 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each type of fire-rated hollow-metal door and frame assembly for tests performed by a qualified testing agency indicating compliance with performance requirements.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow-metal doors and frames palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.
 - 1. Provide additional protection to prevent damage to factory-finished units.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store hollow-metal doors and frames vertically under cover at Project site with head up. Place on minimum ~~4-inch-~~ (102-mm-) high wood blocking. Provide minimum ~~1/4-inch~~ (6-mm) space between each stacked door to permit air circulation.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for fire-protection ratings indicated on Drawings, based on testing at positive pressure in accordance with NFPA 252 or UL 10C.

2.2 STEEL DOORS AND FRAMES

- A. Construct hollow-metal doors and frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.
- B. Interior Extra-Heavy-Duty Doors and Frames: ANSI/SDI A250.8, Level 3; ANSI/SDI A250.4, Level A. Doors 101 and 102.
 - 1. Doors:
 - a. Type: As indicated in the Door and Frame Schedule on Drawings.
 - b. Size: As indicated in the Door and Frame Schedule on Drawings.
 - c. Thickness: 1-3/4 inches (44.5 mm).
 - d. Face: Metallic-coated steel sheet, minimum thickness of 0.053 inch (1.3 mm).
 - e. Edge Construction: Model 1, Full Flush.
 - f. Edge Bevel: Provide manufacturer's standard beveled or square edges.

- g. Fire-Rated Core: Manufacturer's standard core for fire-rated doors.
 - h. Closer Reinforcement Channel: 14 gage minimum thickness.
 - 2. Frames:
 - a. Materials: Metallic-coated steel sheet, minimum thickness of 0.053 inch (1.3 mm).
 - b. Construction: Full profile welded.
 - 3. Exposed Finish: Prime.
 - C. Exterior Extra-Heavy-Duty Doors and Frames: District Standard. Door 103.
 - 1. Door and frame for Door 103 shall be procured from Doors On Demand the District vendor for exterior doors and frames:
 - Doors on Demand
 - 5863 Hargrove Street
 - Norfolk, VA 23502
 - Attention:
 - Tim Gates 757-537-2211
 - 2. Doors:
 - a. Type: As indicated in the Door and Frame Schedule on Drawings.
 - b. Size: As indicated in the Door and Frame Schedule on Drawings.
 - c. Thickness: 1-3/4 inches (44.5 mm).
 - d. Face: 16 gage, type 316 Stainless Steel.
 - e. Edge Condition: District Standard.
 - f. Top Edge Closures: District Standard.
 - g. Bottom Edges: District Standard
 - h. Core District Standard.
 - 3. Frames:
 - a. Materials: 16 gage, type 316 stainless steel.
 - b. Construction: Full profile welded
- 2.3 FRAME ANCHORS
- A. Jamb Anchors:
 - 1. Type: Anchors of minimum size and type required by applicable door and frame standard, and suitable for performance level indicated.
 - 2. Quantity: Minimum of three anchors per jamb, with one additional anchor for frames with no floor anchor. Provide one additional anchor for each 24 inches (610 mm) of frame height above 7 feet (2.1 m).
 - 3. Postinstalled Expansion Anchor: Minimum 3/8-inch- (9.5-mm-) diameter bolts with expansion shields or inserts, with manufacturer's standard pipe spacer.
 - B. Material-Doors 101 and 102: ASTM A879/A879M, Commercial Steel (CS), 04Z (12G) coating designation; mill phosphatized.
 - 1. For anchors built into exterior walls, steel sheet complying with ASTM A1008/A1008M or ASTM A1011/A1011M; hot-dip galvanized in accordance with ASTM A153/A153M, Class B.

- C. Material-Door 103: District Standard stainless steel.

2.4 MATERIALS-DOORS 101 AND 102

- A. Cold-Rolled Steel Sheet: ASTM A1008/A1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Hot-Rolled Steel Sheet: ASTM A1011/A1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- C. Metallic-Coated Steel Sheet: ASTM A653/A653M, Commercial Steel (CS), Type B.
- D. Inserts, Bolts, and Fasteners: Type 316 stainless steel.
- E. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.
- F. Mineral-Fiber Insulation: ASTM C665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively; passing ASTM E136 for combustion characteristics.

2.5 MATERIALS-DOOR 103

- A. District Standard..

2.6 FABRICATION

- A. Hollow-Metal Frames: Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections, provide alignment plates or angles at each joint, fabricated of metal of same or greater thickness as frames.
 - 1. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 - 2. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.
 - a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
- B. Hardware Preparation: Factory prepare hollow-metal doors and frames to receive templated mortised hardware, and electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping in accordance with ANSI/SDI A250.6, the Door Hardware Schedule on Drawings, and templates.
 - 1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
 - 2. Comply with BHMA A156.115 for preparing hollow-metal doors and frames for hardware.

2.7 STEEL FINISHES

- A. Prime Finish Doors 101 and 102: Clean, pretreat, and apply primer. Refer to section 099611 for requirements.
- B. Stainless Steel finish Door 103: District Standard.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces. Touch up factory-applied finishes where spreaders are removed.
- B. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.2 INSTALLATION

- A. Install hollow-metal doors and frames plumb, rigid, properly aligned, and securely fastened in place. Comply with approved Shop Drawings and with manufacturer's written instructions.
- B. Hollow-Metal Frames: Comply with ANSI/SDI A250.11.
 - 1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces without damage to completed Work.
 - a. Where frames are fabricated in sections, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces. Touch-up finishes.
 - b. Install frames with removable stops located on secure side of opening.
 - 2. Fire-Rated Openings: Install frames in accordance with NFPA 80.
 - 3. Floor Anchors: Secure with postinstalled expansion anchors.
 - 4. Solidly pack mineral-fiber insulation inside frames.
 - 5. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
 - 6. Installation Tolerances: Adjust hollow-metal frames to the following tolerances:
 - a. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - b. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
 - c. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - d. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs at floor.
- C. Hollow-Metal Doors: Fit and adjust hollow-metal doors accurately in frames, within clearances specified below.

1. Fire-Rated Doors: Install doors with clearances in accordance with NFPA 80.

3.3 REPAIR

- A. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat. Refer to section 099611 for requirements.
- B. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint in accordance with manufacturer's written instructions.

END OF SECTION 081113

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Hardware for swinging doors.

B. Related Requirements:

1. Section 081113 "Hollow Metal Doors and Frames.

1.2 COORDINATION

- A. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

1.3 PREINSTALLATION MEETINGS

- A. Keying Conference: Conduct conference at location designated by Owner.

1. Conference participants must include Hardware Supplier/Installer and Owner. Confirm Owner requirements for keying.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction and installation details, material descriptions, dimensions of individual components and finishes

- B. Door Hardware Schedule: Prepared by Contractor. Coordinate door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Submittal Sequence: Submit door hardware schedule concurrent with submissions of product data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.
2. Format: Use same scheduling sequence and format and use same door numbers as in door hardware schedule in the Contract Documents.
3. Content: Include the following information:
 - a. Identification number, location, hand, fire rating, size, and material of each door and frame.
 - b. Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.

- c. Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
 - d. Fastenings and other installation information.
 - e. Explanation of abbreviations, symbols, and designations contained in door hardware schedule.
 - f. Mounting locations for door hardware.
 - g. List of related door devices specified in other Sections for each door and frame.
- C. Keying Schedule: Prepared by Contractor detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of door hardware to include in maintenance manuals.
- B. Schedules: Final door hardware and keying schedule.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lockup for door hardware delivered to Project site.
- B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
- C. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.
- D. Deliver keys and permanent cores to Owner as directed by Owner.

1.7 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures, including excessive deflection, cracking, or breakage.
 - b. Faulty operation of doors and door hardware.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
 - 2. Warranty Period: Manufacturer's standard.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

- A. Obtain each type of door hardware from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Fire-Rated Door Assemblies: Where fire-rated doors are indicated, provide door hardware complying with NFPA 80 that is listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure in accordance with NFPA 252 or UL 10C.
- B. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.

2.3 HINGES

- A. Hinges: ANSI/BHMA A156.1. Provide template-produced hinges for hinges installed on hollow-metal doors and hollow-metal frames.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule or equal product.

2.4 MECHANICAL LOCKS AND LATCHES

- A. Lock Functions: As indicated in door hardware schedule.
- B. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:
 - 1. Mortise Locks: Minimum 3/4-inch (19-mm) latchbolt throw.
- C. Lock Backset: 2-3/4 inches (70 mm) unless otherwise indicated.
- D. Strikes: Provide manufacturer's standard strike for each lock bolt or latchbolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.
- E. Mortise Locks: ANSI/BHMA A156.13, Operational Grade 1; stamped steel case with steel or brass parts; Series 1000.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule:
 - a. Corbin Russwin ML 2000 Series Mortise Locksets. No substitutions.

2.5 LOCK CYLINDERS & KEYING.

- A. Lock Cylinders: Provide cylinders to coordinate with facility keying requirements as directed by Owner.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule and as directed by Owner. No substitutions.

2.6 METAL PROTECTIVE TRIM UNITS

- A. Protective Trim: ANSI/BHMA A156.6; stainless steel unless otherwise indicated. With manufacturer's standard machine or self-tapping screw fasteners.

1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule or equal product.

2.7 SURFACE CLOSERS

- A. Surface Closers: ANSI/BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm. Comply with manufacturer's written instructions for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule. No substitutions.

2.8 MECHANICAL STOPS AND HOLDERS

- A. Wall and Floor-Mounted Stops: ANSI/BHMA A156.16.

1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule or comparable product.

2.9 FABRICATION

- A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rating labels and as otherwise approved by Owner.
- B. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and ANSI/BHMA A156.18.
- C. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended; however, aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware unless otherwise indicated.

1. Fire-Rated Applications:

- a. Wood or Machine Screws: For the following:

- 1) Hinges mortised to doors or frames.
- 2) Strike plates to frames.
- 3) Closers to doors and frames.

- b. Steel Through Bolts: For the following unless door blocking is provided:

- 1) Closers to doors and frames.
- 2) Surface-mounted exit devices.

2. Spacers or Sex Bolts: For through bolting of hollow-metal doors.

2.10 HARDWARE MATERIALS

- A. All hardware shall be type 316 Stainless Steel.

2.11 FINISHES

- A. Provide finishes complying with ANSI/BHMA A156.18 as indicated in door hardware schedule.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Steel Doors and Frames: For surface-applied door hardware, drill and tap doors and frames in accordance with ANSI/SDI A250.6.

3.3 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights **to comply with the following** unless otherwise indicated or required to comply with governing regulations.
 - 1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
- B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.
 - 1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
 - 2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

- C. Hinges: Install types and in quantities indicated in door hardware schedule, but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (760 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.
- D. Lock Cylinders and Cores: Install construction cores to secure building and areas during construction period.
 - 1. Replace construction cores with permanent cores as directed by Owner.
- E. Key Control System:
 - 1. Key Control: Tag keys and deliver to Owner.

3.4 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
 - 1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
 - 2. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 70 degrees and so that closing time complies with accessibility requirements of authorities having jurisdiction.

3.5 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.6 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, removal and replacement of door hardware.

3.7 DEMONSTRATION

- A. Demonstrate complete operation of doors and proper functioning of door hardware at project completion. Train Owner's maintenance personnel to adjust, operate, and maintain door hardware.

3.8 DOOR HARDWARE SCHEDULE

Hardware Group 1-Doors 101,102

Provide each Door(s) with the following:

Quantity	Description	Catalog Number	Finish	Mfr
3 Each	Hinges, Ball Bearing	T4B3786-4.5"x4.5"	B	MCK
1 Each	Mortise Lockset (Office Function)	ML2051	B	RUS.
1 Each	Cylinder	Refer to Note A.	B	RUS
1 Each	Closer	7500/with stop-no hold open	B	NOR
1 Each	Wall Stop	426	B	RKW
1 Each	Kick Plate	K1125-B4E – 6" x DW-2"	B	RKW
3 Each	Silencers	608	-	RKW

- A. Cylinder information provided by District: Key Type B, which is an L1 blank with 5 pin cut 57549. 316 Stainless Steel.
- B. 316 Stainless Steel.

Hardware Group 2-Door 103

Provide each Door(s) with the following:

Quantity	Description	Catalog Number	Finish	Mfr
3 Each	Hinges, Ball Bearing	T4B3786-4.5"x4.5"	A	MCK
1 Each	Mortise Lockset (Passage Function)	ML2010	A	RUS.
1 Each	Closer	7500/with stop-no hold open	A	NOR
1 Each	Door Bottom Sweep	321SSN	A	PMK
1 Set	Perimeter Gasketing	315SSN	A	PMK
1 Each	Kick Plate	K1125-B4E – 6" x DW-2"	A	RKW
1 Each	Door Stop with Keeper	473xEXP		RKWd

- A 316 Stainless Steel.

Designations: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware item are indicated the "Door Hardware Schedule" Products are identified by using door hardware manufacturer designations, as follows:

Basis of Design Manufacturers	
<u>Item</u>	<u>Basis of Design Manufacturer</u>
Hinges	McKinney (MCK)

Mortise Locksets	Corbin/Russwin (RUS)
Stops	Rockwood (RKW)
Closers	Norton (NOR)
Silencers	IVES (IVE)
Protective Trim	Rockwood (RKW)
Cylinders/Cores	Corbin/Russwin (RUS)
Door Bottom Sweep	Pemko
Door Perimeter Gasketing	Pemko

END OF SECTION 087100

SECTION 096519 - RESILIENT TILE FLOORING AND BASE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Vinyl floor tile.
 - 2. Rubber base.
 - 3. Removal of existing floor tile and base in each elevator.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples for Selection by Owner: Manufacturer's full range of samples for each type of floor tile and base indicated.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of floor tile to include in maintenance manuals.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Floor Tile: Furnish one box.
 - 2. Base: Not less than 10 linear feet.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store floor tile, base and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F (10 deg C) or more than 90 deg F (32 deg C). Store floor tiles on flat surfaces.

1.7 FIELD CONDITIONS

- A. Maintain ambient temperatures within range recommended by manufacturer.

PART 2 - PRODUCTS

2.1 RUBBER FLOOR TILE

- A. Basis of Design: Armstrong Flooring Imperial Texture VCT. No substitutions.
- B. Thickness: 0.125 inch.
- C. Size: 12 by 12 inch.
- D. Colors and Patterns: Blue Gray.

2.2 RUBBER BASE

- A. Product Standard: ASTM F1861, Type TS (rubber, vulcanized thermoset), Group I (solid, homogeneous) or ASTM F1861, Type TP (rubber, thermoplastic).
 - 1. Group I (solid, homogeneous).
 - 2. Style B, Cove.

2.3 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by floor tile manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by floor tile and adhesive manufacturers to suit floor tile and substrate conditions indicated.
- C. Adhesives: Water-resistant type recommended by resilient-base product manufacturer for resilient products and substrate conditions indicated

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
 - 1. Verify that finishes of substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of floor tile.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Prepare substrates according to floor tile manufacturer's written instructions to ensure adhesion of resilient products.

- B. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
- C. Do not install floor tiles until materials are the same temperature as space where they are to be installed.
 - 1. At least 48 hours in advance of installation, move resilient floor tile and installation materials into spaces where they will be installed.
- D. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient floor tile.

3.3 FLOOR TILE INSTALLATION

- A. Comply with manufacturer's written instructions for installing floor tile.
- B. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.
- C. Adhere floor tiles to substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

3.4 RESILIENT BASE INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient base.
- B. Apply resilient base to walls, areas where base is required.
- C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.
- D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
- E. Do not stretch resilient base during installation.
- F. Job-Formed Corners:
 - 1. Outside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 3 inches in length.
 - a. Form without producing discoloration (whitening) at bends.
 - 2. Inside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 3 inches in length.
 - a. Mitre or cope corners to minimize open joints.

3.5 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protecting floor tile.
- B. Perform the following operations immediately after completing floor tile installation:
 - 1. Remove adhesive and other blemishes from surfaces.
 - 2. Sweep and vacuum surfaces thoroughly.
 - 3. Damp-mop surfaces to remove marks and soil.
- C. Protect floor tile from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- D. Cover floor tile until Substantial Completion.

END OF SECTION 096519

SECTION 099611 - HIGH-PERFORMANCE COATINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes surface preparation and application of high-performance coating systems on the following substrates:
 - 1. Interior Substrates:
 - a. Steel.
 - b. Galvanized steel.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
- B. Samples for Verification: For each type of coating system and each color and gloss of topcoat indicated.
 - 1. Submit Samples on actual substrate material to be coated, 8 inches (200 mm) square.
 - 2. Apply coats on Samples in steps to show each coat required for system.
 - 3. Label each coat of each Sample.
 - 4. Label each Sample for location and application area.

1.3 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same production run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Coatings: but not less than 1 gal. (3.8 L) of each material and color applied.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
 - 1. Maintain containers in clean condition, free of foreign materials and residue.
 - 2. Remove rags and waste from storage areas daily.

1.5 FIELD CONDITIONS

- A. Apply coatings only when temperature of surfaces to be coated and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
- B. Do not apply coatings when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (-15 deg C) above the dew point; or to damp or wet surfaces.

- C. Do not apply exterior coatings in snow, rain, fog, or mist.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design Manufacturer: Sherwin Williams. No substitutions.
- B. Other Manufacturers: Subject to compliance with requirements of this section and Architect approval, paint systems by other manufacturers will be considered.

2.2 HIGH-PERFORMANCE COATINGS

- A. Material Compatibility:
 - 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
 - 3. Products shall be of same manufacturer for each coat in a coating system.

2.3 Pre-Primer: Macropoxy 920 Pre-primer Penetrating Epoxy Pre-Primer as manufactured by Sherwin Williams.

2.4 Prime Coat: Macropoxy 646FF Flake Filled Epoxy as manufactured by Sherwin Williams.

2.5 Topcoat: Hi Solids Polyurethane as manufactured by Sherwin Williams.

- A. Color: Match existing.
- B. Gloss: Match existing.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. On site painting activities: all interior on site painting activities shall be limited and performed only in a temporary sealed enclosure located in the work area and designed to prevent the migration of all dust and fumes outside the enclosure.
- B. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- C. Proceed with coating application only after unsatisfactory conditions have been corrected.
 - 1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions applicable to substrates and coating systems indicated.
- B. Clean substrates of substances that could impair bond of coatings, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
- C. Steel Substrates: Remove rust, loose mill scale, finish and shop primer if any.
 - 1. Clean using methods recommended in writing by manufacturer but not less than the following for spot or isolated areas:
 - a. SSPC-SP 11.
 - b. SSPC-SP 15.
 - 2. Clean using methods recommended in writing by manufacturer but not less than the following for metal components indicated for off site refinishing. Refer to drawings for identification of these components.
 - a. SSPC-SP 6.

3.3 APPLICATION

- A. Apply high-performance coatings in accordance with manufacturer's written instructions.
 - 1. Use applicators and techniques suited for coating and substrate indicated.
 - 2. Coat surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, coat surfaces behind permanently fixed equipment or furniture with prime coat only.
 - 3. Coat backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
 - 4. Do not apply coatings over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of the same material are to be applied. Tint undercoats to match color of finish coat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance.
- D. Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Produce sharp glass lines and color breaks.

3.4 CLEANING AND PROTECTION

- A. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- B. Protect work of other trades against damage from coating operation. Correct damage to work of other trades by cleaning, repairing, replacing, and recoating, as approved by Architect, and leave in an undamaged condition.

- C. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.

3.5 INTERIOR HIGH-PERFORMANCE COATING SCHEDULE

- A. Steel and Galvanized Steel Substrates:

- 1. Epoxy / Urethane System:
 - a. Pre-primer: Applied @ 1.0 mils DFT.
 - b. Prime-Coat: Applied @ 6.0 mils DFT.
 - c. Topcoat 1: Applied @ 4.0 mils DFT.
 - d. Topcoat 2: Applied @ 4.0 mils DFT

END OF SECTION 099611

SECTION 142123.13 - MACHINE ROOM ELECTRIC TRACTION PASSENGER ELEVATORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including the General Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This specification outlines the scope of the work required and provides general information about the existing installation. It is not intended to exempt the successful Contractor from making detailed inspections to determine existing conditions prior to submitting a bid for this work. Failure to perform an onsite inspection or performance of an inadequate inspection will not relieve the successful Contractor from full compliance with these specifications. Attach specific, written exception and/or clarification with quotation. Compliance with all provisions of Contract Documents is assumed and required in absence of written exception. If written exception is acceptable to Purchaser and Engineer, an Addendum to the specifications will be issued and authorized. Purchaser will not pay for change to building structure, structural supports, mechanical, electrical or other systems required to accommodate Provider's equipment if not identified before Contract award and authorized as stipulated above. The Contractor shall provide the necessary equipment for a complete installation of the traction passenger elevators in full compliance with ASME A17.1 and related codes and standards, including the providing of all labor, tools, appliances, materials, equipment, transportation and construction work of every kind required and incidental to the alteration of four elevators, complete and ready for continuous satisfactory operation.

Basis of design is a Hollister-Whitney machine with emergency brake, Hollister-Whitney remote set, pit mounted governor, Virginia PLC controls (VCI) with oversized drive and GAL MOVFR-II door operator. The items to be retained will be addressed later in this Section.

Work of this section include providing equipment, incidental material, transportation, all permits, all taxes, and all labor required for a complete and operable elevator installation and all related maintenance of the newly installed equipment. Where singular reference is made to elevators or elevator components, such reference shall apply to the number of elevators or components required to complete the installation. This specification provides a broad outline of required equipment and does not describe the details of design and construction. Details shall be included in shop drawings required to be submitted in this section. Elevators shall be erected, installed, adjusted, tested and place in operation by qualified elevator installers. In order to provide continuity of service and maintenance, certain products and manufacturers have been specified and substitutions will not be allowed without prior, written approval.

This Section includes the following:

- 1. Scope of Work: Alterations to four (4) geared traction passenger elevators as specified herein

2. Type of Machine: Remove and legally dispose of existing geared machines and motors, machine foundation bolts, and machine pad. Provide new machine with motor and emergency brake, machine foundation bolts, bedplate, and machine pad located in same location as existing machine. Machine room is pit mounted as shown on drawings.
3. Load (Capacity): 2000 pounds
4. Car Speed: 100 feet per minute
5. Operation: Selective collective automatic
6. Control: Provide PLC controller with absolute encoder landing control system, independent service, access switches and circuits for future emergency power. Controller shall be NEMA 4X installed in oversized cabinet. Cabinet shall be capable of having self-contained HVAC equipment attached. Landing control system and all limits/switches shall be NEMA 4/4X. Control located in machine room as located on drawings. Provide individual isolation transformers and individual choke reactors for each individual hoist motor. Provide filtering to maintain harmonic distortion below IEEE standards as measured at the elevator machine room disconnect. Elevator shall have custom Firefighters' Emergency Operation features. See 2.3 W FIREFIGHTERS' SERVICE of this section for more details.
7. Rise: New; 59' 9"
8. Number of Stops: 6 stops
Existing: 5 stops (Floors 1, 2, 3, 4, 5)
New: 1 stop (Floor 0)
9. No. of Openings: Existing: 5 openings (Front Only) – Floors 1-5
New: 1 Opening (front Only) – Floor 0
10. Maintenance: Warranty Only
11. Power Supply: Existing, 208 volts, 3 phase, 60 hertz
12. Lighting Supply: Existing, 120 volts, 1 phase, 60 hertz
13. Car Enclosure: Retain existing. Modify for new car operating panel. Clean and paint per Specification 099611, High Performance Coatings. See ENCLOSURE in Part II for details.
14. Car Aprons: Provide new collapsible 4'-0" car aprons. Provide strike plates in pits.
15. Platform: Retain Existing. Clean and paint per Specification 099611, High Performance Coatings.

- 16. Height Under Top: Retain Existing – 7' 8" finished floor to underside of car top with recessed light fixture
- 17. Entrance Size: 2' 8" wide x 7' 0" high
- 18. Entrance Type: Single-Speed, Side Slide
- 19. Hoistway Doors: Retain existing. Clean and Paint per Specification 099611, High Performance Coatings. Provide new, labeled doors for Floor 0 level entrances.
- 20. Hoistway Door Sills: Retain existing. Provide new for Floor 0 level entrances
- 21. Hoistway Door Frames: Repair damaged frames. Provide new frames in Engineer selected color for Floor 0 level entrances
- 22. Hoistway Size: Retain Existing
- 23. Pit Depth: Provide new 4' 0"
- 24. Overhead: Retain Existing
- 25. Braille Plates: Provide new Braille plates at each floor on both jambs at ADA heights
- 26. Car Doors: Retain Existing
- 27. Car Door Sills: Provide new
- 28. Car Door Operators: Provide new heavy-duty harmonic door operators
- 29. Door Restrictor: Provide new. Restrictors shall operate in conjunction with angles mounted to hoistway doors and on fascia
- 30. Door Protection: Provide new infrared door reversal device
- 31. Governor: Provide new pit mounted governor
- 32. Safeties: Provide new Type A safeties
- 33. Guide Rails: Retain existing. Provide additional brackets and supports for new Floor 0 level.
- 34. Guides: Provide new slide guides
- 35. Buffers: Provide new buffers and supports in conjunction with new Floor 0 level
- 36. Counterweights: Retain Existing. Contractor shall weigh each car and balance counterweights. Contractor shall provide additional filler weights to achieve required counterbalance. Provide counterweight guards.
- 37. Sling and Platform: Retain Existing
- 38. Cab Flooring: Provide new. Cab flooring covering shall be as selected by the District. Car sill shall be flush with finished flooring surface.

- Verify finished flooring height. See architectural finishes for details.
39. Top of Car Station: Remove and legally dispose of existing and provide new. Operating buttons shall be mounted in hand held station attached to a six-foot cord
40. Fixture Finishes: Provide new 316L stainless-steel in mill finish. Mill finish shall have a 2B surface
41. Car Fixtures: Provide car operating panel and car fixtures (mechanical, illuminating, NEMA 4x push buttons with positive metal stop, integral position/direction indicator and Braille, LED emergency car lights). Provide emergency communication devices (phones) with ability to make internal calls, separate from car operating panel.
42. Hall Fixtures: Provide call registration buttons (mechanical, illuminating, NEMA 4x push buttons with positive metal stop) in new hall fixtures. Provide stainless steel enclosure with hall button fixtures on each floor. Provide integral access key switches at top and bottom landings in upper portion of hall stations. Provide emergency communications failure notification with buzzer and key switch to silence alarm at designated landing. Provide Firefighters' Service devices and instructions in two locations (floor 4 and floor 1). Provide Elevator Corridor Call Station Pictograph signage per 3002.3 VCC adjacent to each hall button fixture.
43. Drawings: See Drawings

B. Preparatory work included in this Section

1. Contractor shall submit proposed equipment and machine room heat release data for approval within six weeks of notice of contract award.
2. Where hoistway walls or floors are penetrated by elevator fixture boxes, the hoistway wall penetrations are to be designed and constructed to provide protection and maintain the fire-resistive integrity of the hoistway walls. Provide drawings and general notes for work, if required, for cutting and patching for new signal fixtures. Surface mounted hall fixtures may be used.
3. Provide all wiring and signal fixtures. Install fixtures as indicated elsewhere in this section and on drawings. Fixtures to reuse existing penetrations.
4. Submit power confirmation form for approval with details of current characteristics before beginning work. Main line power supply is 208 volts, 3 phase, 60 hertz.
5. Provide necessary wiring between isolation transformer/choke and elevator controller VVVF drive in machine room. Submit power confirmation form for approval with details of current characteristics before beginning work.

6. Products furnished but not installed under this Section include work in the elevator control room, pits, hoistway and corridors. Provide and coordinate all work with other trades to complete the work. The Contractor shall perform all miscellaneous work, and provide wire and appurtenances required to complete the work.
7. Submit detailed shop drawings for approval of fixtures and any cutting, including cutouts to accommodate specified fixtures in locations approved by the Engineer. Submit fully dimensioned layout in accordance with ASME A17.1 requirements.
8. Remove old signal fixtures and all wiring. Install new fixtures as indicated elsewhere in this section.
9. Provide necessary wiring and appurtenances between feeders, new disconnects, car light disconnects, and new controllers.
10. Contractor to identify and remove all elevator items in the shaft and machine room which are abandoned or superseded by new work provided in this Contract. This shall include the removal and legal disposal thereof.
11. Floor level 4 shall be the designated landing for Phase 1 operation. Floor level 1 shall be the alternate landing.
12. Install disconnects and controllers in compliance with NFPA 70 (National Electric Code) required clearance in front of and below controllers and disconnects.
13. Products furnished but not installed under this Section include work in the elevator machine room, pit, hoistway and corridors and are specified in other sections and it shall be the responsibility of the Contractor to coordinate all work with other trades to complete the work. Provide and coordinate all work with other trades to complete the work. The Contractor shall perform all miscellaneous work, and provide wire and appurtenances required to complete the work.

Items below are performed by other trades and are included in this contract:

- a. Provide and install lockable, fused disconnect switches with earth ground for elevators in machine rooms.
- b. GFCI pit and machine room receptacles
- c. Provide and install lighting fixtures (pit lights) and associated brackets 4' above elevator pit floor.
- d. Provide and install light switches and associated wiring adjacent to pit ladder.
- e. Provide and install conduit, associated wiring and GFCI protected receptacles 4' above elevator pit floor.
- f. Provide and install LED lighting fixtures (machine room lights) and associated brackets in machine room. Lighting to be located to maintain minimum 7'-0" clear headroom. Provides a minimum of 19 fc in all areas of the machine room
- g. Provide and install light switch and associated wiring adjacent for machine room lights on strike jamb side of machine room door.
- h. Provide and install fused disconnect switches for elevator in machine room.
- i. Provide and install 30A fused disconnect switch for elevator car lighting in

- machine room.
- j. Enclose and protect machine rooms and pits
- k. Provide a clear hoistway plumb from top to bottom with variations not to exceed 1 in. at any point in the first 100 ft. Tolerance may increase at 1/32 in. for each additional 10ft up to a maximum displacement of 2 in.
- l. Install bevel guards at 75° on all recesses, projections or setbacks over 4" except for sills used for loading or unloading
- m. Provide a vertical ladder of non-combustible material extending 48" minimum above sill of access door.
- n. Fill and grout around entrances and sills.
- o. Provide recesses, supports, fireproofing and patching to accommodate hall button boxes, signal fixtures, hoistway entrance frames, etc.
- p. Provide supports for vertical wireways
- q. Provide repairs, fireproofing, and patching for hoistway enclosure.
- r. Provide dedicated elevator communication service line for elevator adjacent to elevator controller. Interface with the District's system.
- s. Provide supports for machinery and/or sheave beams (ASME A17.1, Section 2.9).
- t. Provide wall pockets and patching after beams are in place
- u. Provide supports for guide rail fastening at each floor and/or intermediate supports as required by ASME A17.1, Section 2.23.9
- v. Reinforce pits to sustain vertical forces from guide rails and buffers, as required. (Existing pit)
- w. Provide hoistway pit lighting that provides a minimum of 10 fc at the pit floor in all areas of the pit. The lighting switch must be located adjacent to the hoistway pit access ladder.
- x. Provide a dedicated earth ground for elevator controls
- y. Provide a separate branch circuit supplying the hoistway pit lighting and GFCI receptacles in the pit.
- z. Provide NEMA Type 4 electrical enclosures per NEMA ICS6 for all electrical equipment located less than 4 feet (1219 mm) above the pit floor. Electrical enclosures must be water-tight, dust-tight, and identified for use in wet locations in accordance with the requirements in NFPA 70
- aa. Provide a telephone line or similar means to provide for the means within the car for communications with or signaling to an accessible point outside the hoistway.
- bb. Provide conduit to remote locations for elevator communications and alarm systems
- cc. Provide guarding and protecting hoistway during construction
- dd. Provide for Metal Fabrications: sill support angles, hoisting beams, divider beams, intermediate rail supports, pit ladders, pit equipment, etc.
- ee. Provide labor for all required Independent Third-Party Elevator Inspections
- ff. For each of the following circuits, provide a separate, dedicated branch circuit with a fused disconnect or breaker. Disconnects and breakers must be designed to be lockable in the open position only.
 - 1) Elevator 120 VAC circuit for elevator cab lighting and receptacles.
 - 2) Pit & hoistway lighting
 - 3) Machine room lighting
 - 4) Pit GFCI receptacles
 - 5) Machine Room GFCI receptacles
- gg. Provide supports for guide rail fastening at each floor and/or intermediate supports as required by ASME A17.1
- hh. Entrance walls for passenger elevators shall not be constructed until door

- frames and sills are in place
 - ii. Door frames are to be anchored to walls and properly grouted in place to maintain fire rating (ASME A17.1, Section 2.11.18). The head jamb of the entrance frames shall not be used to support the weight of the wall over the frame.
 - jj. Provide support for sills the full width of hoistway, with a recess for passenger elevators and grouting after sills are set in place
- C. Contractor shall employ a professional engineer to review and certify the new equipment proposed by the Contractor. This includes checking the loads and alterations to the existing structure, checking reactions for the proposed machine and the addition of an emergency brake. Contractor shall submit layout showing reactions for proposed elevators with engineer's professional seal. Follow ASME requirements for data shown on layout. The Contractor shall make and pay for all changes and remove and dispose of existing equipment being replaced.
- D. Products previously installed but not furnished under this Section include retained equipment that shall be refurbished (see PART 2 descriptions for item refurbishing requirements) and maintained in like new condition. The following shall be retained. However, the successful Contractor has the option to provide similar new equipment, subject to the District's approval, if it is more cost effective:
 - 1. Car rails
 - 2. Counterweight rails
 - 3. Hoistway door frames (floors 1-5)
 - 4. Hoistway door panels (floors 1-5)
 - 5. Hoistway door sills and sill supports (floors 1-5)
 - 6. Car Enclosures
 - 7. Platforms
 - 8. Slings
 - 9. Counterweight frames and filler weights

1.3 REFERENCES

- A. Codes and Standards: Except as modified by governing codes and by this Division, the work shall comply with provisions of the latest editions of the following as adopted by the Commonwealth of Virginia, and in the event of conflict between these standards, the Engineer's determination shall be final.
 - 1. 2018 Virginia Uniform Statewide Building Code (VUSBC)
 - 2. 2018 Virginia Construction Code (VCC)
 - 3. 2018 Virginia Existing Building Code (VEBC)
 - 4. 2018 Virginia Maintenance Code (VMC)
 - 5. 2018 Virginia Statewide Fire Prevention Code (VSFPC)
 - 6. ASME A17.1 - 2016: The American Society of Mechanical Engineers - Safety Code for Elevators and Escalators
 - 7. ASME A17.2- Guide for Inspection of Elevators, Escalators and Moving Walks
 - 8. United States Occupational Safety and Health Standards (OSHA)
 - 9. NFPA 13 – Automatic Sprinkler Systems (2016 Edition)
 - 10. NFPA 70 - National Electrical Code (2017 Edition)

11. NFPA 72 – National Fire Alarm and Signaling Code (2016 Edition)
12. NEII-1 – Building Transportation Standards and Guidelines, including the Performance Standards Matrix for New Elevator Installation (2000 and later editions)

- B. All electrical and other apparatus furnished under this Contract shall be approved by UL or other approved testing agency and shall be so labeled or listed where such is applicable. Where custom-built equipment is specified and the UL label or listing is not applicable to the completed product, all components used in the construction of such equipment shall be labeled or listed by UL where applicable.

1.4 SYSTEM DESCRIPTION

- A. Design Requirements: Remove and legally dispose of existing elevator equipment not reused in the new installation. Provide new elevator system including PLC control without a regenerative drive. A means shall be provided for removing regenerated power from the drive power supply during dynamic braking. This power shall be dissipated in a resistor bank, which is an integral part of the controller. Failure of the system to remove the regenerated power shall cause the drive output to be removed from the hoist motor. Provide absolute encoder-type landing control system with stainless-steel tape, oversized VVVF drive, machines with AC motors and emergency brakes, deflector sheaves, hoist ropes, pit mounted governors with remote activation, hoistway switches, top and bottom access switches, interlocks, operating devices, safeties, car and hall signal fixtures as specified below using 1:1 machine with emergency brake and all wiring starting at elevator disconnects. Provide new hoistway and pit equipment, including but not limited to limits, buffers, supports and channels. Retain existing entrance frames, hoistway doors, car sling and platform. Provide complete new Floor 0 level, including but not limited to entrance frames, doors and sills. Provide new door hardware including hangars, closers, rollers, guides, and retainers. Provide door restrictors and all hardware including new door operators. Provide new infrared door reversal devices. Furnish and install all equipment to complete elevator installation in accordance with applicable governing codes.
- B. Performance Requirements: Complete installation of the electric traction passenger elevator in full compliance with ASME A17.1 and related codes and standards, including the providing of all labor, tools, appliances, materials, equipment, transportation and construction work of every kind required and incidental to the alteration of the four elevators at the Chesapeake Bay Bridge Tunnel Ventilation Buildings complete and ready for continuous satisfactory operation. The elevators shall meet the following performance standards:
1. Contract speed shall mean speed in the up direction with full capacity load in the car. Speed variation under any load condition regardless of direction shall be no more than 3 percent.
 2. The controlled rate of change of acceleration and retardation of the car shall not exceed 0.1G per second and the maximum acceleration and retardation shall not exceed 0.2G per second.

3. Starting, stopping and leveling shall be smooth and comfortable without appreciable steps of acceleration or deceleration. Stopping shall be without bumps or jars.
4. Full speed running shall be quiet and free from vibration and swaying. When car is standing at the floor with doors open, the doors shall remain firmly stopped and shall not "teeter".
5. Car shall not move from side to side during the process of opening and closing the doors.
6. Rope stretch recovery shall be provided to relevel cars at a floor, if the ropes slightly stretch.
7. Elevator control system shall be capable of starting the cars without noticeable "roll-back" of hoisting machine sheave, regardless of load condition in car or direction of travel.
8. Comply with IEEE Standard 519 to eliminate both electrical noise and audible drive noise by use of isolation transformers and line filters. Maximum Total Harmonic Distortion (THD) shall not exceed 5%.
9. Time to travel from one typical floor (3 to 4) to the next (about 13' 1") from start to stop of the elevator shall be no more than 10.5 seconds.
10. The door opening time shall be as follows: 1.8 seconds or less for 32" side slide doors. Door closing velocity shall not exceed one foot per second.
11. Cycle time shall be measured from the time the doors start to close until the car has reached the next floor level, with the car stopped within the level allowance of plus or minus ¼-inch and with the doors 75 percent (3/4) open. Times shall be not more than 15.2 seconds (Floor 3 to Floor 4) without pre-opening. The measured floor to floor time interval shall be accomplished without releveling and with a maximum advance door opening action five inches from the floor level.
12. Car door open (dwell) time shall be 3.0 seconds minimum for a car call. Time shall be adjustable to suit building management efficiency and safety observations.
13. Notification for a hall call until car door starts to close shall be 5.0 seconds minimum. Time shall be adjustable to suit building management efficiency and safety observations.
14. Nudging shall not be initiated until interruption of door reopening device has exceeded 20 seconds.
15. Performance shall meet or exceed the above minimums, including the requirements listed in 1.3 of this Section.

1.5 SUBMITTALS

- A. General: Provide submittals in accordance with Conditions of Contract and to include at a minimum:
 1. Product Data: Include capacities, sizes, performances, operations, safety features, finishes, and similar information. Include product data for car enclosures and fixtures; and operation, control, and signal systems.
 2. Shop Drawings: Include plans, elevations, sections, and large-scale details indicating service at each landing; control room layout; machine space layout;

- coordination with building structure; relationships with other construction; wiring raceway layout showing all control wiring and hookups in plan view; and locations of equipment including drawings of the car and hall fixtures, showing details of construction, fastenings to walls, location of "handsfree" telephone and emergency lighting and location of hall call equipment, etc. Show location of all equipment in inches from reference point. Include large-scale layout of car-control station. Indicate maximum dynamic and static loads imposed on building structure at points of support as well as maximum and average power demands.
3. Informational Submittals including: Qualification Data for Installer; Manufacturer Certificates signed by elevator manufacturer, certifying that hoistway, pit, and machine room layout and dimensions, as shown on Drawings, and electrical service, as shown and specified, are adequate for elevator system being provided; Sample warranty for special warranty.
 4. Detailed Schedule of Values – including all elevator components listed individually. Provide labor values for installation of individual elevator components.
 5. Other drawings as required to illustrate the proposed installation.
 6. Provide Preventative maintenance schedule and "check-in/check-out" procedures. Submit sample service ticket and preventative maintenance records. Electronic maintenance records that do not provide sufficient detail shall be modified as required to provide all necessary information. On site records are required.
 7. Key Personnel Names: Within 30 days of Notice to Proceed, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to the project.
- B. Shop Drawings: Contractor shall submit for approval Shop Drawings in accordance with the applicable requirements and information required on layout drawings per ASME A17.1. The Contractor shall submit proof of Underwriters' acceptance and code approvals for equipment furnished. Shop Drawings shall show material type and gauge, general dimensions, methods of attachment, location and size of reinforcements and openings, and a general arrangement of components. Approval thereof shall not relieve the Contractor of compliance with the specification and full compliance with ASME A17.1 and related codes and standards, unless the attention of the Engineer is called to the non-complying features in writing. Shop Drawings shall include fully dimensioned layout in plan and elevation showing the arrangement of equipment and all pertinent details of elevator including the following as applicable to the systems specified herein:
1. Driving machine, controller, VVVF drive and filter, governor and other components located in machinery space and control room space.

2. Car, counterweight, sheaves, supporting beams, guide rails, buffers and other components located in hoistway.
3. Weights of principal parts and reaction loads on structure.
 - a. Car rail bracket spacing.
 - b. Vertical forces on rails at safety application.
 - c. Forces on structure for other retarding device.
 - d. Size and weight/foot of rail reinforcement, where provided.
 - e. Impact loads imposed on machinery and sheave beams, supports and floors or foundations.
 - f. Impact loads on buffer supports at maximum permissible speed and load.
 - g. Horizontal forces imposed on the building structure stipulated by ASME A17.1 – 2.11.8 and 2.11.9
 - h. Total static and dynamic load from the governor, ropes and tension system.
4. Top and bottom clearance and overtravel of car and refuge space at top and bottom.
5. Location of circuit breaker, switchboard panel or disconnect switch, light switch and feeder extension points in machine room.
6. Location in machine room of outlets for connection of traveling cables for car light and telephone.
7. The name of manufacturer, type of style designation and any additional information called for below shall be listed on the shop drawings for each of the following items:
 - a. Elevator controller.
 - b. Wiring diagrams.
 - c. Power door operator, motor, HP, etc.
 - d. Door interlocks, electrical contacts and escutcheon plates.
 - e. Hoistway access switches, top of car operating device, etc.
 - f. Ropes (number, size, breaking strength, factors of safety).
 - g. Machine
 - h. Firefighters' Service features, details of components, instructions and signs.
 - i. Power requirements for proposed system.
 - j. Hall button fixtures, car operating panels, position indicator and intercom system.
8. Submissions (as requested by the Engineer) shall include:
 - a. See Division 142123.13 Section 1.5 A.
9. Elevator layout including Machine Room, Hoistway Plan View, and Elevation, which shall be plotted from a computer aided design package and drawn to scale. Hand drawn submissions will not be accepted. Show all adjoining and

related structures including shaft steel and/or concrete beams, columns, column lines, etc. Include the following at a minimum:

- a. Elevator car enclosure details and layout.
- b. Hoistway entrance door details complete.
- c. Fixture drawings.
- d. Car frame and car platform construction details and layouts.
- e. Machine isolation foundation fastening details (include manufacturer's data of all isolation equipment used).
- f. Shop drawings log shall be maintained by the Contractor.

D. Arrangement of Equipment:

1. Clearance around equipment located in the control room and machine space shall comply with the applicable provisions of the ASME A17.1 and the National Electrical Code.
2. Equipment in the elevator machinery space shall be so arranged that the rotating elements, sheave, etc., can be removed for repairs or replacement by conventional means, without dismantling or removing other equipment components in the machine room.
3. Elevator controller location shall be indicated on the drawings.

E. Quality Control Submittals:

1. Design Data: Include information on VVVF drive, door and landing control systems, programming instructions for communication systems and data sheets for car and hall fixtures.
2. Test Reports: After final testing and turnover, the Contractor shall provide the District with a copy of the state and local inspection certificate, a completed field and test data report, Full Load Acceptance test report, and a letter stating when the test was performed and that the equipment installed under this specification passed the inspection.
3. Provide a Maintenance Control Plan as defined in ASME A17.1
 - a. For each elevator, prepare and provide a written Maintenance Control Program (MCP) that complies with ASME A17.1 Section 8.6, including written documentation that details the test procedures for each and every test that is required to be performed by ASME A17.1. Assemble all MCP documentation, and supporting technical attachments, in a single MCP package and provide in both electronic and hard copy. Assemble entire hard copy MCP in 3-ring binders. For each elevator provided, the MCP must include only documentation and instruction that apply to the elevator specified.

Binders to include:

- Equipment and components, descriptive literature
- Performance data, model number
- Installation instructions
- Operating instructions
- Maintenance and repair instructions
- Spare parts lists and current price lists
- Lubrication instructions

- Detailed, record and as-built layout drawings
 - Detailed, simplified, one line, wiring diagrams. Provide one complete set per manual
 - Field test reports
 - Complete set of contract software
 - b. For each elevator, provide an additional, separate binder that includes all maintenance, repair, replacement, call back, and other records required by ASME A17.1/CSA B44. The records binder must be kept in the elevator machine room, maintained by elevator maintenance and service personnel, and be available at all times to authorized personnel.
 - c. Provide detailed information regarding emergency service procedures and elevator installation company personnel contact information. Provide a listing of all tools to be provided to the District as components of the elevator system.
4. Certificates:
- a. All welding performed under this Section shall be performed by experienced welders in a neat and workmanlike manner. All welding on structural steel shall be performed only by persons who are currently qualified in accordance with ANSI, certified by the American Welding Society, ASME or an approved independent testing laboratory; and each such welder shall present this certificate attesting his qualifications to the District's representative whenever requested to do so on the job.
- F. Contract Close-out Submittals:
- 1. Provide four (4) sets each of MCP, parts catalogs, maintenance instructions, complete, legible "AS-INSTALLED" field wiring diagrams (including straight line diagrams) showing all electrical circuits, for all equipment furnished. Changes made shall be noted on the drawings in adequate time to have the final drawings reproduced. All of the above shall be submitted to the District. One of the Document sets shall be electronic.
- G. Operation and Maintenance Data:
- 1. Repair Requirements: For elevator control system, provide maintenance diagnostic tools, electrical schematic wiring diagrams, and any access codes and passwords required for all maintenance functions, including diagnostics, adjustments, and parameter reprogramming. Tools may be hand held or built into the control system and shall function for the life of the equipment. Tools that require recharging or reprogramming shall not be used. Provide complete operation and maintenance manuals including diagnostics instruction for troubleshooting the system. Operating and maintenance data, tools and diagnostic equipment shall become property of the District.
 - 2. Sixty (60) days prior to the completion of the work of the contract, the Contractor shall submit to the District four (4) copies of an Operation Maintenance and Parts Manual and four (4) complete sets of as-built drawings and wiring diagrams.

These shall be reviewed, and if approved, shall become the property of the District. At a minimum, the following information relating to the elevators shall be included:

- a. Owner's Information Manual containing current data on major components, their maintenance and adjustment.
 - b. Installation and Troubleshooting Manual (Adjuster's Manual).
 - c. Description of system operating features and system installed.
 - d. Wiring diagrams needed for field troubleshooting, adjustment, repair and/or replacement of components.
 - e. Controller and landing control device including parts information on relays, printed circuit boards, reverse phase relays, switches, lamps, electrical cables, monitors, modems, diagnostic hardware, diagnostic software and overload protection devices.
 - f. Door assemblies including hangers, rollers, door motor, door operator, door clutch assembly, door closers, door drive arms, related hardware, sheaves, door guides, interlocks and infrared door reversal devices.
 - g. Signal equipment including car stations, hall stations, position indicators, direction indicators, fire service panel, smoke detectors, key switches and pushbutton assemblies.
 - h. Car top inspection stations, limit switches, solid state leveling control units, leveling switches and alarm bell.
 - i. For traction units: machine, motor, brake, emergency brake, safeties.
 - j. Include operation and maintenance instructions, parts listing with sources indicated, recommended parts inventory listing, emergency instructions, and similar information. Include adjustor's manual with diagnostic and repair information available to manufacturer's and installer's maintenance personnel.
3. All symbols shall be listed corresponding to the identity or markings on both machine room and hoistway apparatus of the system specified. Wiring diagrams shall also include values of capacitors and resistors.
 4. Maintenance Data: At the project close-out, submit maintenance data and parts lists for materials and products.
 5. Operation and Maintenance Data: For elevators to include in emergency, operation, and maintenance manuals.
 6. Submit manufacturer's/installer's job specific operation and maintenance manual, in accordance with ASME A17.1/CSA B44 including diagnostic and repair information available to manufacturer's and Installer's maintenance personnel.
 7. Inspection and Acceptance Certificates and Operating Permits: As required by authorities having jurisdiction for normal, unrestricted elevator use.

1.6 QUALITY ASSURANCE

A. Qualifications

1. Provide a designed and engineered elevator system by an elevator contractor regularly engaged in the installation of elevator systems. Elevator contractor shall have a history of at least three (3) years of successfully installing similar products to those specified.

2. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods for proper performance of the work in this section. All work shall be performed in strict compliance with the approved product manufacturer's printed instructions and the requirements of these specifications.
3. Utilize only licensed and certified elevator personnel for the installation, adjusting, testing, and servicing of the elevators.
 - a. Perform all elevator related work under the direct guidance of a state certified elevator technician (issued by the Department of Professional and Occupational Regulation) with a minimum of three years of experience in the installation of elevator systems of the type and complexity specified in the contract documents. Provide an endorsement letter from the elevator manufacturer, certifying that the elevator specialist is qualified.
4. Provide components produced by manufacturers regularly engaged in the business of manufacturing, installing, and servicing elevators of the types required by this section of these specifications, and with a history of successful production with all provided products in satisfactory use in similar service.
5. Provide elevator components from manufacturers that provide factory training and online and live telephone elevator technical support to any elevator installation, service, and maintenance contractor.
6. Provide elevator components from manufacturers that guarantee accessibility to all replacement and repair parts and components to any elevator installation, service, and maintenance contractor.

B. Certifications

1. Before accepting the elevator installation, the District shall have an authorized Qualified Elevator Inspector (QEI) witness required tests of the elevator installation. Any corrective work needed as a result of this testing shall be done by the Contractor at no cost to the District.
2. The Contractor shall coordinate all work with District's Representative and schedule the services of the Qualified Elevator Inspector (QEI) to make acceptance inspections and witness the Acceptance Tests performed by the Contractor as required by ASME A17.1 Code. All final testing shall be accomplished in the presence of the District.
3. Contractor shall submit copy of acceptance test report which includes documentation of the full load safety test and 125% brake test, including other required testing listed in SECTION 8.10.2 of ASME A17.1 and testing required by referenced standards in Section 1.3 of this Division.
4. Contractor shall submit a copy of filled out Field Test & Data Report sheets to Engineer.
5. Submit a certificate of completion upon completion of the elevator alteration, inspection and testing for the elevator machinery which indicates that the work has been tested in accordance with applicable NFPA and ASME A17.1 requirements and that the systems are operational, complete, and have no defects.
6. As a part of final acceptance of the project and in accordance with the General Conditions, the Contractor shall have the Qualified Elevator Inspector (QEI) conduct a full Acceptance Inspection and Test in accordance with ASME A17.1 before final acceptance by the District. The Contractor shall obtain from the

elevator contractor and/or manufacturer and furnish to the District all data affecting the elevator installation or modification, including 'as-installed' circuit and control wiring diagrams and maintenance manuals.

- C. Pre-Installation Conference:
 - 1. Submit delivery schedule for major components and detailed installation proposed progress schedule for each elevator.
 - 2. Attend conference to review proposed elevator installation, preparatory work and District acceptance requirements.
- D. APPLICABILITY / TERMS / DEFINITIONS
 - 1. A descriptive paragraph indicates new equipment that applies to the elevator. Provide indicates furnish and install new.
 - 2. The requirements of this division apply to all elevators unless otherwise explicitly noted for each individual elevator.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Storage and Protection: The existing premises, including the building with all grounds and appurtenances, shall be protected from damage which might be done or caused by work performed under this Contract. Any and all such damages which occur shall be repaired by approved methods so as to restore the damaged areas to their original conditions. Do not overload, or permit facilities to interfere with progress. The Contractor shall provide protective materials and coverings where necessary to protect building surfaces and building contents from damage. Cribbing, shoring, and bracing shall be provided where necessary to guard against structural damage during execution of the work herein specified. Deliver, store, and handle materials, components and equipment in manufacturer's protective packaging. Store materials, components, and equipment off of ground, under cover, and in a dry location. Protect all items against dirt and damage. The Contractor shall be held fully responsible for all damage until final acceptance. Any equipment or property of the District damaged by this Contractor or his employee's, shall be restored to its original condition or replaced without cost to the District.

The District will designate a suitable area where the Contractor may store equipment until the work is completed. All equipment shall be stored at the sole risk of the Contractor.

If the Contractor utilizes a construction shanty or similar structure, he shall provide his own lock and key, but a duplicate key shall be furnished to the District. The assigned storage area shall be left clear and unencumbered of material or debris and shall be left in a broom-clean condition at the completion of the workday. An approved type "Fire Extinguisher" shall be provided and installed on a wall for each storage area assigned to the Contractor. The Contractor shall comply with all code requirements for construction of such shanty at his own expense (i.e., sprinklers, temporary electric, etc.).
- B. Delivery: Provide cartons and crates sufficiently strong to prevent any damage to components/materials when shipped by common carrier to the job site. Deliver all material at the job site by truck transport for unloading by the Contractor. It is understood that the storage of the materials on site will be at the entire responsibility of the Contractor.

1.8 PROJECT/SITE CONDITIONS

- A. Environmental Requirements: Collect waste daily. Comply with NFPA 241 for removal of combustible waste. Enforce requirements strictly. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose in a lawful manner. Keep facilities clean and neat. Operate in a safe and efficient manner. Take necessary fire prevention measures.
- B. Existing Conditions: The Chesapeake Bay Bridge Tunnel Ventilation Buildings are located in at Cape Charles, VA. The buildings will be in operation while the elevator work is performed. The buildings are operational 24/7/365. The normal working time for the Day Gang is 7 to 3:30PM, M-F. If activities require District personnel to be present for inspection, start up or other, a request shall be made at least one week in advance so that personnel can be scheduled accordingly. The General Contractor shall have a capable Superintendent on site at all times that work is being performed for the project. Contractor shall provide a work force to install the elevators in accordance with the construction sequence approved by the District. The machine room is reached from a stair leading from the 1st floor to the current machine room and walk in pit. Contractor shall secure new machine to the new foundation bolts. The machine room is located as shown on the drawings.
- C. Field Measurements:
 - 1. Contractor shall verify all dimensions before ordering material.
 - 2. Contractor accepts elevator components in an "as is" condition upon performance of repairs listed in the specification.
 - 3. The Contractor shall identify and describe all cutting and patching necessary for any fixtures and wiring to remote elevator devices, where required. Coordinate this preparatory work with other trades and perform new work in a timely manner. All cutting and patching in the shaft and machinery spaces for installation of elevator equipment provided under this division shall be the responsibility of this Contractor if shop drawings fail to indicate requirements.

1.9 SEQUENCE AND SCHEDULING

- A. Time of completion is of the essence.
- B. Contractor shall provide schedule information to the Engineer. Schedule shall indicate start dates and activity duration time for all elevator related activities. Schedule to include:
 - 1. Development of installation drawings and component specifications.
 - 2. Calculations.
 - 3. Review of drawings, specifications, and calculations by the Engineer.
 - 4. Project mobilization.
 - 5. Installation schedule shall indicate start dates and major component work activity duration by elevator.
 - 6. Final cleanup and testing.
 - 7. Final inspection
 - 8. Beginning of 2-year warranty

1.10 WARRANTY

General: Warranties shall be in addition to, and not a limitation of, other rights the District may have under the Contract Documents. Warranty shall be for a period of not less than two years from time of final acceptance of specified work. The Contractor shall guarantee the materials and workmanship of the apparatus furnished under these specifications and shall make good any defects which may develop within two (2) years from the date of the District's acceptance of each elevator not due to ordinary wear and tear or vandalism or improper or insufficient maintenance by others or abuse, misuse, or neglect or any other cause beyond the Contractor's control. Defects or equipment failures occurring during that two-year period shall be promptly corrected or repaired by the successful Contractor at no cost to the District.

- A. Submit warranty on letterhead of control manufacturer along with certification that installer is acceptable to the manufacturer if another manufacturer's control equipment is used.

1.11 COORDINATION

- A. Coordinate installation of elevator equipment with integral anchors, bearing plates, inserts, beams, and other items that are embedded in concrete or masonry for elevator equipment both new and existing. Furnish templates, sleeves, elevator equipment with integral anchors, additional supports and installation instructions and deliver to Project site in time for installation.
- B. Coordinate installation of structural work in other Sections.
- C. Coordinate locations and dimensions of other existing work and items specified in other Sections that relates to the elevator(s), including pit ladders; electrical service; electrical outlets, lights, and switches in hoistways, pits, and machine rooms; and all other work listed in this section
- D. Coordinate work with the work of other trades for proper time and sequence to avoid construction delays and to ensure right of way of system. Use lines and levels to ensure dimensional coordination of the work.
- E. Cooperate with all other building trades involved with this project at no added cost to the District. This cooperation includes providing access to the top of the car, pit, machinery space, control room, and hoistway for other Contractors involved in ancillary work to this project.
- F. General Contractor's Superintendent shall be on site any time work is being performed. This includes, but is not limited to, sub-contractors and deliveries.

1.12 PERMITS

- A. Upon completion of the work, and prior to final payments, tests may be made by the Engineer of all materials and appliances installed hereunder. The Contractor shall furnish all labor and materials required for such tests.
 - 1. Should the tests show that any of the materials, appliances or workmanship are not first class or not in compliance with the Specifications, the Contractor, on

written notice from the Engineer, shall remove same and promptly replace them with other materials and appliances in conformity with the Specifications.

1.13 INTENT

- A. All incidental work related to this installation, whether specifically defined or implied, that may be required shall be performed by the Contractor and is included in the scope of this work.
- B. The Contractor shall perform all work in accordance to the contract documents, specifications, applicable codes, and/or any addenda and modifications made by the District.
- C. The Contractor shall provide all engineering, labor, equipment, and necessary materials for the complete installation of new controls, drive, motor, wiring, car sling, platform, safeties, door operator, car doors, cab, and other components for the elevator(s) as listed and herein specified.
- D. Provide specified equipment for the elevator(s) unless otherwise specifically stated.
- E. All new equipment and materials furnished shall be specifically designed to operate with the original equipment being retained to assure maximum performance.
- F. Contractor shall remove and legally dispose of all existing elevator equipment and related materials and debris as required for the installation of the new elevator equipment at no additional cost to the District.
- G. Contractor shall install current model equipment with available replacement parts.
- H. All labor and materials shall be "first-class".
- I. Materials and equipment shall be installed and connected in accordance with the manufacturer's instructions and recommendations.

1.14 NOISE AND VIBRATION

- A. Any noise or vibration due to faulty equipment or workmanship shall be corrected immediately without additional charge.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Elevator controller shall be PLC based for dispatch and motor control. Subject to compliance with requirements, provide controller products, non-regenerative drives, and resistor banks of the following:
Virginia Controls – MVF PLC – VCI contact: Mike Jennings at 804-814-7729
- B. Subject to compliance with requirements, governor product of one of the following, or approved equivalent:
Hollister-Whitney
- C. Subject to compliance with requirements, machine product of one of the following:
Hollister-Whitney

- D. Subject to compliance with requirements, provide safety products of one of the following:
Hollister-Whitney
- E. Subject to compliance with requirements, provide guide products of one of the following, or approved equivalent:
Elsco
Hollister-Whitney
Elpro
- F. Subject to compliance with requirements, provide fixture products (car operating panels and hall stations) of one of the following:
Innovation – NEMA 4/4X
- G. Subject to compliance with requirements, provide hoistway door products of the following:
Columbia
- H. Refer to balance of specifications for other acceptable products or manufacturers. For approval of equivalent products, submit information at time of bid.

2.2 MATERIALS

- A. Steel
 - 1. Structural Steel Shapes and Plates: ASTM A36 and AISI 1018
 - 2. Sheet Steel for Exposed Work: Stretcher-leveled, cold-rolled, commercial quality carbon steel, complying with ASTM A366, matte finish.
 - 3. Sheet Steel for Unexposed Work: Hot-rolled, commercial quality carbon steel, pickled and oiled, complying with ASTM A569
 - 4. See related Sections.
- B. Stainless Steel
 - 1. Type 316 Series complying with ASTM A240
 - a. Supply with mill finish on fabricated work in the location shown or specified with texture and reflectivity required. Protect with adhesive plastic film or paper covering. Mill finish shall have a 2B surface finish.
- C. Aluminum: Extrusions per ASTM B221: sheet and plate per ASTM B209
- D. Paint
 - 1. Exposed steel and/or Iron: Clean metal of oil, grease, scale, and other foreign matter and paint.
 - 2. Exposed Steel: Clean exposed metal of oil, grease, scale, and other foreign matter. Eliminate any dents, scratches, or other defects that would affect the final finish and paint.
 - 3. Paint per SECTION 099611 High Performance Coatings

- E. Removal of old material
 - 1. Remove and dispose of all material from the old elevator system not used in the alteration, up to and including existing feed from power source.
- F. Fire Resistance: Treat wood components with fire-retardant treatment conforming to requires of authorities having jurisdiction and to achieve flame spread rating of 25, ASTM E84.
- G. Non-Shrink Grout: Pre-mixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing additives, capable of developing minimum compressive strength of 4000 PSI at 28 days

2.3 EQUIPMENT

- A. MACHINE – Remove and legally dispose of existing geared machines and motors. replace with new geared machine equipped with AC VVVF low slip motor, traction steel hoist 1:1 ropes with wedge type shackles and drive sheave.

The existing machine foundation bolts and supports project slightly above the machine room floor. Machine foundation bolts, supports and pad shall be replaced with new, which shall be provided by the Contractor. Secure new machine supports to structure with a sufficient number of cross beams or steel plates and adequate bolt connections. Proposed machine product data and method of fastening shall be submitted for approval prior to ordering. Contractor shall submit elevator layouts with a professional engineer stamp to certify the new connections and reactions.

Provide machine from manufacturer listed above. Provide new elevator duty AC hoisting motor that develops the required starting torque combined with a low starting current. Motor shall comply with NEMA MG1. The speed of the motor when operated with the controller in a full speed condition shall not vary more than 5% of the normal rated speed under all loads withing the capacity range of the elevator without regard to travel.

The motor horsepower rating and frame design shall be such that forced air-cooling is not required.

- 1. Color of machine to be gloss enamel manufacturer's standard color. Bedplates, and supporting steel shall be painted per Specification 099611, High Performance Coatings.
- 2. At the completion of the project, touch up and clean and paint per Specification 099611, High Performance Coatings, utilizing equipment manufacturer's recommended procedures for cleaning, surface preparation, and painting.
- 3. The machine shall be mounted on vibration sound dampeners designed to isolate the unit from the building structure. Sound isolation shall be installed to reduce vibration and noise transmission to the building structure.
- 4. Machine shall be provided with guarding. Guarding shall allow for inspection of ropes and shall be designed to minimize impact on maintenance. Guarding shall have hinged or removable panels for inspection of equipment. Guarding shall have a safety yellow powder coating.

5. If a geared machine is proposed, the following shall apply:
 - a. Drum brake with a brake monitor switch with individually adjustable contacts that will not allow the machine to run if there is a failure of the brake to properly pick or drop, if there is excessive wear of either brake shoe pad, or if there is excessive end play (worm shaft).
 - b. Stationary shaft with rotating spider assembly (timken bearings)
 - c. Traction sheave and bronze gear that are shrink fitted and bolted to the spider assembly
 - d. One-piece worm made from forged steel
 - e. Bronze gear
 - f. Back-to-back thrust bearings
 - g. Sheave guard
 - h. Standard isolation assembly
 - i. Drip pan
 - j. Motor - The motor shall be an AC VVVF flux vector drive utilizing an encoder.
- B. VVVF Drive – Provide drives of a heavy-duty design to vary the alternating current power supply to the hoist motor in order to provide sufficient current for smooth acceleration and deceleration of the elevator at rated speed with the rated load. A Variable Voltage Variable Frequency AC drive closed loop system shall be provided. Power for the system will be taken from the building's new 3-phase power supply. Motor speed and torque shall be controlled by varying the frequency and amplitude of the AC voltage. Drive shall be adjustable to achieve the required motor voltage, current, and frequency, in order to properly match the characteristics of the AC elevator hoist motor. Contractor shall provide a drive using the latest state-of-the-art technology in order to provide quiet operation. Contractor is responsible for correctly sizing the drive. The drive will be rated at 240 starts per hour full load up. The system shall be non-regenerative. Drive shall be oversized (designed for 2.5 hp greater than motor used on machine) to provide long life of equipment. Basis of design is 7.5 hp motor with a drive sized for 10 hp motor.
 1. A means shall be provided for removing regenerated power from the drive's power supply during dynamic braking. This power shall be dissipated in a resistor bank that is an integral part of the controller. Failure of the system to remove the regenerated power shall cause the drive's output to be removed from the hoist motor.
 2. The VVVF drive shall utilize encoder feedback to regulate hoist motor speed.
 3. Provide equipment grounding in accordance with equipment manufacturers' recommended practices and in conformance with all applicable codes.
 4. Provide protective devices to prevent damage on over or under voltage conditions.
- C. ELEVATOR PROTECTION FOR ASCENDING CAR OVERSPEED & UNINTENDED CAR MOVEMENT - Provide a device that will offer protection for ascending elevator overspeed and unintended car movement. The unintended movement is specifically focused on the movement of the elevator with the hoistway door not in the locked position and car door not in the closed position. This would be a result of the failure of:
 1. The electric driving machine motor, brake, coupling, shaft, or gearing.

2. The elevator control system.
3. Other components upon which the speed of the car depends, except the suspension ropes and the drive sheave of the traction machine.
 - a. The product should initiate a rope brake to stop an elevator in an ascending overspeed condition or under the unintended movement mode.
 - b. The system shall detect an ascending car overspeed condition at a speed not greater than 10% higher than the speed at which the car governor is set to trip. The system shall detect unintended car movement away from the landing with the hoistway door not in the locked position and the car door not in the closed position.
 - c. The occurrence of a single ground, or the failure of any mechanically operated or single magnetically operated switch, contactor or relay or any single solid-state device, or a software system failure, shall not render the detection means inoperative.
 - d. When an overspeed or unintended movement fault is detected, the car shall stop at or before the next landing for which a demand was registered, and shall not be permitted to restart.
 - e. Once actuated by overspeed or unintended movement fault, the detection means shall remain actuated until manually reset, and the car shall not start or run unless the detection means is reset.
 - f. The emergency brake mechanism must be independent of the driving machine brake and shall not be used to assist in providing the normal stopping of the car. The mechanism shall not require the application of electrical power for its activation, nor be rendered inoperative by the failure of any power supply.
 - g. The car retardation speed shall not exceed 9.8 m/sec squared (32.2 ft/sec Sq) during the stopping or slowdown phase during ascending car overspeed. It shall be designed to prevent appreciable damage or deformation to the ropes resulting from its activation.

The rope brake shall be provided with a marking plate indicating the range of total masses for which it is permitted to be used, the range of speeds at which it is set to operate, and the criteria such as rail lubrication requirements that are critical to the performance. Comply with ASME A17.1 requirements for emergency brake operation and testing. Provide controller circuit for rope brake unit (if provided) to allow test of fault, if caused by brake failure, by allowing a qualified technician to operate a constant pressure button for the rope brake reset, which if released prior to a designated short preset time, would then reapply the rope brake. The constant pressure button shall be provided by the rope brake manufacturer and shall include instructions for its use adjacent to the button.

- D. AUTOMATIC SELF-LEVELING - The elevators shall be provided with automatic self-leveling landing control system that shall bring the elevator cars level with the floor landings + or - 1/4" regardless of load or direction of travel. The automatic self-leveling

shall correct for overtravel or undertravel. Absolute encoder leveling devices shall be used.

- E. CAR SLING – Retain. The car sling shall be checked and adjusted for square alignment and all connections shall be checked for tightness including bracing to support the platform and car enclosure. Clean and paint per Specification 099611, High Performance Coatings.
- F. CAR SAFETIES - Provide Type A safeties. Adjust as required to stop the car should it attain excessive descending speed. Test per ASME A17.1 including the 125% overload test. Follow ASME A17.2 test procedures.
- G. GOVERNOR - Provide pit mounted governors with two-way switches. The car safety shall be operated by the centrifugal speed governor. The governor shall actuate a switch when excessive speed occurs in either direction, disconnecting power to the motor and applying the brake before application of the safety. Governor shall be capable of remote setting.
- H. WIRING – Remove existing and provide new. All wiring and electrical interconnections shall comply with the governing codes. Insulated wiring shall have flame retardant and moisture-proof outer covering, and shall be run in conduit, tubing or electrical wireways.
 - 1. Traveling cables shall be flexible and suitably suspended to relieve strain on individual conductors. Traveling cables shall have minimum of 20% spare conductors (ends to be left accessible to facilitate connections at a later date), wiring as required for the telephone and six (6) pairs of 18 gauge shielded cables, (terminating on terminal strips in the controller and in the car operating station).
 - 2. The entire wiring system shall be tested for insulation to ground. Include wiring for all hoistway electrical devices included in the scope of the elevator system, hall fixtures, pit emergency stop switch and the traveling cables for the car.
 - 3. All wiring, regardless of voltage, shall be concealed or run in rigid steel conduit, EMT, metal raceways, and junction boxes. Underground wiring, if provided, shall be encased in PCV. Flexible metal conduit may be used for short connections not subject to moisture, oil or embedded in concrete.
 - a. Conduit terminations shall have threaded connectors with steel lock nuts.
 - b. Conduit fittings shall have threaded insulation bushings on terminating points to protect the opening for the conductors.
 - c. Provide raceway connections that are free of burrs, shoulders, or other projections that will reduce internal passage area or cause abrasion to conductors. Provide rubber edging around all internal raceway edges and controller connection points.
 - d. Provide hoist motor junction boxes for wiring to motor.
 - e. Provide conduit between mainline, controller, hoist motor, and other related components.
 - f. Provide a minimum 2" displacement on electrical connections to machinery

4. Provide color coding or other suitable identification for each conductor of all single and multiple conductor cables.
 5. Run all wiring from operating switches, safety switches, and control devices directly to the controller to permit easy testing and troubleshooting.
 6. Install traveling cables so that they are free from contact with hoistway structure, car, counterweight, or other equipment. Contractor shall install shields and/or pads to prevent chafing.
 7. Provide junction boxes with terminal blocks that have indelible identification numbers for each terminal connection.
 8. Splices are not permitted except in junction boxes.
 9. Provide proper shielding where applicable.
 10. Provide a dedicated ground where required by equipment manufacturers.
 11. Provide all wiring between the mainline, controller, VVVF drive, hoist motor, and other related components.
- I. HOISTWAY OPERATING DEVICES –Provide hoistway stopping device switches and locate as required by ASME A17.1 to slow down and stop the car automatically at the terminal landings and to automatically cut off the power and apply the brake, should the car travel beyond the terminal landings. Provide additional devices for solid state drives and speed changes and emergency terminal stopping devices.
- J. PIT SWITCH - Provide emergency stop switches located in the pit 18 inches above access door, adjacent to pit ladder, accessible from the pit access door.
- K. BUFFERS – Provide spring buffers with supports for car and counterweight. Paint buffer housing. Buffer support channels shall be cleaned and painted. Paint per Specification 099611, High Performance Coatings.
- L. GUIDE RAILS – Refurbish and reuse existing steel elevator car and counterweight guide rails. Clean, refasten and realign rails as required so that rails are plumb and securely fastened to the building structure. Rail clips and bracket connections shall be checked and adjusted for square alignment and all connections shall be checked and adjusted for manufacturer's recommended tightness. Provide additional rail supports for new Floor 0 level entrance. Paint unplanned rail surfaces and components per Specification 099611, High Performance Coatings.
- M. SLIDE GUIDES – Remove and discard existing guides. Provide guide shoe assemblies with replaceable inserts (liners) equipped with adapter plates. Provide car guides to manufacturer's specified clearances and guide shoe pressure design parameters. Make adjustments necessary to obtain nominal measurement of 25 mg vertical vibration and 25 mg horizontal vibration. See National Elevator Industry, Inc. latest edition of Vertical Transportation Standards. The cars are designed for class A loading. Verify clearances before ordering guides. The car frame shall have slide-guide shoes attached at the upper and lower portions of the stiles.

- N. PLATFORM – Retain existing. Clean and paint per Specification 099611, High Performance Coatings.
- O. CAR & HOISTWAY DOOR POWER OPERATION – Remove existing and provide new car door operators. Provide high-speed, closed loop GAL MOFVR II door operators. Doors on the front of the cars operate by means of high-speed door operators mounted on top of the cars. Operators shall power the doors at 3 feet per second opening speed. Provide car door reversal device and protective devices (restrictor) to prevent doors from being opened when car is not in the landing zone. Restrictor shall be of a design compatible with interlocks. Restrictor shall operate in conjunction with angles mounted on fascia and hoistway doors. An electric contact shall be provided on the car door to prevent the operation of the elevator unless the car door is closed. Operator and restrictor shall be approved before ordering and fully comply with this specification.
 - 1. Door operation shall be automatic at each landing with door opening being initiated as the car arrives at the landing and closing taking place after expiration of adjustable time intervals. A car door electric contact and a hoistway door electric contact shall prevent starting the elevator away from the landing unless the car doors are in the closed position.
 - 2. The time interval for which the elevator doors remain open when a car stops at a landing shall be independently adjustable for response to car calls and response to hall calls.
 - 3. Provide emergency access unlocking devices for access to the hoistway at all entrances. Provide escutcheon plates on the hoistway doors.
 - 4. Provide closed loop door control for the new door operators. Maintain constant door closing force within the current ASME A17.1 elevator code standards. Utilize solid state control boards and digital feedback tach device to ensure the desired speed and smooth and accurate door operation. Closed loop servo feature, if utilized, shall have armature voltage and current feedback to obtain constant closing torque. A tool for this operator shall also be furnished.
 - 5. Provide nudging operation on horizontal passenger doors as follows: If there is either a hall call anywhere or a car call in the car in question and the doors are prevented from closing for a fixed time period, the door protective device shall be rendered inoperative, a buzzer shall sound on the car and the doors shall close at approximately half speed. Normal operation shall resume at the next landing reached by the car. Nudging shall not start before 20 seconds have elapsed.
 - 6. Emergency devices and keys for operating the doors from the landing shall be provided unless otherwise specified by local codes.
- P. CAR AND HOISTWAY DOOR EQUIPMENT – Retain tracks. Provide new hangers, closers, interlocks, gibs, clutches. Provide new hangar rollers for hoistway doors and new closers. For new Floor 0 Level, provide complete new assemblies.
- Q. DOOR INTERLOCKS – Remove existing and provide new door interlocks and adjust for quiet operation and code required clearances. The doors at each hoistway landing shall be provided with approved type hoistway door interlocks of the hoistway unit system type,

arranged for and provided with service and emergency keys as required by ASME A17.1. An electro-mechanical interlock shall be provided on each hoistway door to prevent the operation of the elevator unless all doors are closed and locked. Provide hoistway door escutcheon tubes for emergency unlocking by authorized personnel for all hoistway doors, utilizing welded or threaded support fasteners. Clip assemblies shall not be permitted. Tube finish shall match hoistway doors.

- R. CAR DOOR PROTECTIVE DEVICE - Provide multi-beam infra-red screen, car door protection device. Provide necessary circuits to accomplish the following operation on the new passenger car doors:
1. The doors shall be prevented from closing from their full open position if a person comes within the car door opening. If a person or object enters the door opening as the doors are closing, the doors shall reverse and reopen. The doors shall reclose after a minimal interval.
 2. After a stop is made, the doors shall remain open for a time interval to permit passenger transfer, after which the doors shall close automatically. This interval shall be fully adjustable and shall be less for a car call stop than for a hall call stop or a coincident car/hall call stop.
 3. If the doors are prevented from closing for an adjustable predetermined time period, the door protective device shall be rendered inoperative, a buzzer shall sound on the car and the doors shall close at approximately half speed. Normal operation shall resume at the next landing reached by the car.
- S. CAR OPERATING PANEL AND CAR SIGNALS – Remove existing and provide new. Provide NEMA 4/4X Design car stainless-steel operating panel.
- Car and hall fixtures shall be NEMA 4/4X design. Provide Innovation PB-46 buttons. Braille shall be adjacent to buttons and integral with car and hall buttons.
- Provide 2" integral digital car position indicator in upper part of car station. Panel shall contain a matching bank of mechanical illuminating buttons marked to correspond to the landings served, door open and door close buttons, and alarm bell button.
- Provide LED emergency car light with lens in car panel. Provide compartment for firefighters' devices in accordance with current code. Provide alarm bell or buzzer to be operated by the alarm bell button. Provide in-car keyed stop switch.
1. Provide keyed light switch, independent service switch, inspection/access operation switch, in a service cabinet located in the main car operating panel. When elevator is stopped and unoccupied with doors closed, lighting and cab displays are deenergized after 5 minutes and are re-energized before car doors open.
 2. Panel for cars shall have stainless steel faceplate and flush or raised vandal resistant buttons with integral illumination. Button shall have adjacent raised handicap symbols integral to the left of button unit design with Braille. Red fill shall be used for emergency buttons/key switch devices. Tactile and visual control indicators (specified above), car button size and location for the car

buttons and car controls (emergency controls at 35", maximum height of floor buttons at 48" above car floor) shall be in compliance with ASME A17.1 standard specification 407.4.9 for Car Controls. Submit design for approval.

3. Provide Firefighters' Service Phase II ASME A17.1 code-required wording per FIG. 2.27.7.2 (heading 3/8" char., instructions .125" char.) inside of Firefighters' Emergency Operation cabinet. Engrave and fill black at top most (stainless) portion of main car panels as follows:

ELEVATOR #1

(use actual car number/designation for each elevator in 1/2" char.)

2000 POUNDS CAPACITY

(use actual car capacity for each elevator in 1/2" char.)

4. Car Panel Faceplate finish shall be stainless steel.
 5. Provide duplex GFCI convenience outlet in service cabinet of car operating panel.
- T. COMMUNICATION SYSTEM – Provide wiring and appurtenances to interface with the District's provided phone with ability to make internal calls.
- U. EMERGENCY CAR LIGHTING - Emergency power units employing LEDs and a sealed rechargeable battery and totally static circuits shall be provided that shall illuminate the elevator car and provide current to the alarm bell in the event of normal power failure. The equipment shall comply with the ASME A17.1 requirements, be vandal resistant and be integral with the upper portion of the car panel. Means shall be provided to test unit from within the cab.
- V. HALL CALL BUTTONS – Remove existing and provide new surface mounted NEMA 4/4X design hall buttons.

Each hall button fixture shall have buttons initiate a call with adjustable door times. Centerline of terminal hall push button shall be centered 42 inches above finished floor. Intermediate hall push button units shall be centered 42 inches above finished floor at a point halfway between the up and down push button.

Penetrations for fixtures shall be coordinated with existing. Any proposed additional penetrations shall be dimensioned on submittals prior to work being performed.

1. At each terminal landing provide new flush push button units and at each intermediate landing provide flush "UP" push button unit above "DOWN" push button unit. Provide Up and Down arrows adjacent to corresponding push buttons at each landing. Hall fixture buttons shall match the car button design.
2. When a call is registered by momentary pressure on a landing button, an integral light in the button shall become illuminated and remain illuminated until the call is answered.
3. Provide combined fixture at the 4th floor (designated) landing with the Firefighters' Service Phase I key switch, and jewel. Provide combined fixture at

- Floor 1 landing with Firefighters' Service Phase I key switch. Provide Phase I instructions per ASME A17.1 FIG. 2.27.7.1 adjacent to Phase 1 key switches.
4. Provide access keys switches at top and bottom landings.
 5. Provide audible/visual communications failure devices.
 6. One riser of hall buttons is required for each front opening.
 7. Instructions shall be provided adjacent to each hall button fixture in accordance with ASME A17.1 corridor call station pictograph Fig. 2.27.9 as modified by the 2018 Virginia Building Code.
- W. FIREFIGHTERS' SERVICE - Firefighter's Service operation shall be provided. Firefighters' Service shall be provided with custom multi-key switch operation. Primary recall (master) key switch shall be on floor 4 and secondary recall (slave) key switch shall be on floor 1.
1. Phase I to return the elevator non-stop to a designated floor shall be initiated by key switches provided in floor 4 and floor 1 floor hall button fixtures. The recall three-position key switches shall have instructions per Fig. 2.27.7.1 adjacent to each key switch.
 2. A key switch behind a locked panel in the car shall be provided for in-car control of the elevator when on Phase II. Rear of locked panel shall have instructions for Phase II operation per Fig. 2.27.7.2.
- X. CAR LANTERNS – Not used.
- Y. TOP OF CAR INSPECTION STATION
1. On top of the car a fixture shall be provided containing continuous pressure "UP" and "DOWN" buttons, an emergency stop button, and a toggle switch. This toggle switch makes the fixture operable and, at the same time, makes the door operator and car and hall buttons inoperable. Operating buttons shall be mounted in hand held station attached to a six-foot cord.
 2. Provide minimum one (1) light with guard. Light shall be capable of being moved to illuminate any portion of the car top.
 3. Provide minimum of one (1) 110 Volt G.F.C.I. duplex work outlet.
- Z. HOISTWAY ACCESS SWITCH - The enabling key switch in the car operating panels shall render all car and hall buttons inoperative and permit operation of the elevator by means of an access key switch adjacent to the hoistway entrance at the access top and bottom landings. The movement of the car away from access landing, other than the lower terminal, by means of the access key switch at the landing shall be limited in travel and direction to that as specified for the upper landing in the latest revision of the ASME A17.1 Code.
1. Provide access key switches with faceplates matching hall buttons for the elevator at the top and bottom landings integral with the hall button fixtures.
- AA. CONTROLLER AND DRIVE

1. Elevator control equipment must be sized to fit in space indicated on drawings and comply with NFPA 70 and ASME A17.1 required clearances.
2. Elevator controllers shall be dedicated PLC controls with Selective-Collective Automatic Operation. Provide non-regenerative drive and resistor bank as part of the controller for dispatch and motor control. Provide variable voltage variable frequency alternating current (ac) drive control.
3. Enclose control equipment oversized NEMA 4x cabinets with hinged doors.
4. Control systems shall be provided to perform all of the functions of a safe elevator motion and elevator door control. This shall include all of the hardware required to connect, transfer and interrupt power, and protect the motor against overloading. The systems shall also perform car operational control of a simplex collective system with home landing feature than can be turned on and off from the controller. Include independent service.
5. The systems shall utilize a device to establish incremental car position to an accuracy of .1875 inches or better using quadrature signal for the entire length of the hoistway. Absolute floor number encoding with parity shall be provided at each floor in order to establish exact floor position to the computer. The systems shall not require movement to a terminal landing for the purpose of finding the correct car position. The hoistway landing system shall be designed to provide precise information to the controller as to the absolute position of the car in the hoistway. With the car at a landing, the landing system shall indicate to the controller the actual floor number. As a result, movement to terminal landings or specific floors shall not be necessary to establish car location within the building.
6. The systems shall utilize an automatic two-way leveling device to control the leveling of the car to within 1/4" above or below the landing sill. Overtravel, undertravel, or rope stretch must be compensated for and the car brought level to the landing sill.
7. The car controller shall have a software program that uses mathematical methods to create an idealized optimum velocity profile of car travel from any floor to any other floor, providing a smooth and stepless elevator ride. All the system motion parameters (jerk, acceleration, deceleration rates, etc.) shall be field programmable with parametric limitations for the system dynamics, and be stored on EPROM as non-volatile memory.
8. The elevator controller shall utilize a generic, non-proprietary PLC system and shall comply with ASME A17.1 safety code for elevators.
9. Dedicated permanent status indicators shall be provided on the controller to indicate when the safety string is open, when each door lock is open, when the elevator is operating at high speed, when the elevator is on independent service, when the elevator is on fire service, when the elevator out of service timer has elapsed, and when the elevator has failed to successfully complete its intended movement. In addition, a means shall be provided to display other special or error conditions that are detected by the microprocessor.

10. Provide isolation transformers or line inductors plus proper filtering to eliminate both electrical and audible noise of VVVF drives.
 11. Firefighters' Phase I emergency recall operation, alternate level Phase I emergency recall operation, and Phase 2 emergency in-car operation shall be provided according to applicable local codes.
 12. A relay panel inspection switch and an up/down switch shall be provided in the controller to place the elevator on inspection operation and allow the user to move the car in the hoistway. The car top inspection switch shall render the relay panel inspection switch inoperative.
 13. The microprocessor boards shall be equipped with on-board diagnostics for ease of troubleshooting and field programmability of specific control variables. The field changes shall be stored permanently, using non-volatile memory. The microprocessor board shall provide the features below.
 - a. On-board diagnostic switches and an alphanumeric display. These switches and displays shall provide user-friendly interaction between the mechanic and the controller.
 - b. On-board real time clock. The real time clock shall display the time and date and be adjustable by means of on-board switches.
 - c. Field programmability of specific timer values (i.e., door times)
 14. Provide maintenance diagnostic tools, electrical schematic wiring diagrams, and any access codes and passwords required for all maintenance functions, including diagnostics, adjustments, and parameter reprogramming. Tools may be hand held or built into the control system and shall function for the life of the equipment. Tools provided shall be usable throughout the life of the equipment without the requirement to return to the manufacturer. Provide complete operations and maintenance manuals including diagnostics instructions for troubleshooting the microprocessor system.
 15. VVVF DRIVE - A Variable Voltage Variable Frequency AC drive system shall be provided. Power for the system will be taken from the building's 3 phase power supply. Motor speed and torque will be controlled by varying the frequency and amplitude of the AC voltage. The system shall be non-regenerative.
- AB. INDEPENDENT SERVICE - A switch shall be provided in the car operating panels for Independent Service.
- AC. 1 CAR AUTOMATIC – OPERATION SINGLE CAR AUTOMATIC
- Provide NEMA 4/4X design landing control system for each elevator. Provide selective collective simplex operation using a controller with automatic operation by means of the car and hall buttons. Each hall button and car button initiates a separate call. Car calls and up and down hall calls can be registered at any time. All calls shall remain registered even if the emergency stop switch is opened or the power fails. The car shall answer all car calls and hall calls in the order in which the landings are reached. Car button preference shall be available to the incoming passenger. Provide an adjustable home landing feature which can be turned on or off from the controller, access key switch

operation and independent service. If all calls in the system have been answered and home landing is turned off, the car shall park at the last landing served. All calls shall remain registered even if the emergency stop switch is opened or the power fails. Car button preference shall be available to the incoming passenger. Home landing floor shall be adjustable.

AB. EMERGENCY POWER OPERATION (EPO)

1. Provide controls with necessary materials, circuitry and software for future emergency power operation with automatic car selection.

AC. ENCLOSURE

1. Clean and prepare existing enclosure for new operating panels.
2. Paint interior of enclosure per Specification 099611, High Performance Coatings.
3. Car doors shall be provided with new applied hangers, guides, and hanger rollers. The doors shall be hung on the new door hangers, and have new bottom door guides provided. There shall be two door guides per panel. A safety retainer bracket shall be provided on each door panel similar to the ones that are installed on hoistway doors. Bent down devices such as "fire tabs" will not be permitted as the sole means of bottom door retainers.
4. Provide new LED light fixture that is flush with cab ceiling. Light fixtures that extend above car top shall have a metal enclosure around the fixtures located above the car top to prevent damage to the fixtures.
5. Provide new car top safety railings as required by code.
6. Comply with ASTM D 256 for impact resistance and ASTM E 84 for flame spread and smoke developed characteristics.
7. Provide extruded aluminum car sills.
8. Cab flooring covering shall be selected in conjunction with cab interior paint finishes. Car sill shall be flush with finished flooring surface. Flooring shall not interfere with opening/access of car operating panel. Verify finished flooring height before ordering car sill. Contractor shall provide and install flooring.

AD. PASSENGER HOISTWAY ENTRANCES

Hoistway doors and frames are shown below in the following specifications:

1. Entrance Frames: Reuse existing. Repair, clean and paint in selected color per Specification 099611, High Performance Coatings. For Floor 0 Level, provide new. Fabricate from 14 gauge cold rolled furniture steel. Provide entrance assembly with UL 1-½ hour rating.
2. Hoistway Door Panels: Reused existing. Clean and paint per Specification 099611, High Performance Coatings. For Floor 0 level, provide new baked enamel hoistway door panels with semi-gloss enamel on back of doors. Engineer to select color from manufacturer's complete catalog. Doors shall be of hollow

metal flush door construction, 16-gauge furniture steel. Provide reinforcement by formed vertical sections running full height of door. Doors shall be provided with secondary retention means as required by ASME A17.1. All door panels shall be drilled and provided with escutcheon access tubes.

3. Hoistway Sills: Reuse existing. Shim as required to meet ASME A117.1 Rule 407.2.9, maximum running clearance of 1¼".
4. Car Sills: Provide new extruded aluminum
5. Fascia: Reuse existing. Provide new No. 14 gauge steel plates from pit to floor 1. Fascia shall be suitable braced to prevent deflection of ½". Clean and paint all fascia per Specification 099611, High Performance Coatings.
6. Toe Guard (Car Apron): Provide new (collapsible type with strike plate in pit, if needed due to pit depth) and paint per Specification 099611, High Performance Coatings.
7. Bottom of Car Doors: Provide heavy-duty 2 guides per panel with retainer.
8. Dust Covers: Retain existing. Where missing, provide new No. 14 gauge sheet steel. Clean, sand and paint per Specification 099611, High Performance Coatings. Provide new at floor 0 level.
9. Struts: Retain existing. Clean and paint per Specification 099611, High Performance Coatings. Provide new at floor 0 level.
10. Hangers: Provide applied with retainers. Provide top and bottom retainers and two-point suspension hangers and rollers, tracks, transmission devices, heavy duty guides and closers. Set upthrust rollers to minimum clearance.
11. Sight Guards: Reuse existing. Clean, sand and paint per Specification 099611, High Performance Coatings. Tighten all connections. Where missing, provide new No. 16 gauge furniture steel. Finish to match frames. Provide new at floor 0 level.
12. Bottom of all Hoistway Doors: Provide heavy-duty 2 guides per panel w/retainer. Provide Fire stops. Doors shall be provided with two removable, non-metallic gibs, located at the leading and trailing edge of each door panel.
13. Hoistway Door Marking: Paint, per Specification 099611, High Performance Coatings, stencil or apply decal markings on hoistway side of doors. Provide 3" high car identification number at designated landing. Submit design for approval.
14. Door Bumpers: Provide on vertical struts and sight guards at all landings.
15. Handicapped Jamb Markings: Provide stainless steel jamb marking plates for all floors on each side of hoistway jambs. Braille plates to be 60 inches from the floor to centerline of characters with 2-inch-high floor markings, contrasting colors and Braille. Submit design for approval.
16. Labels (U/L): Entrance devices provided under this contract shall be manufactured in accordance with the procedures established by Underwriters Laboratories or other approved testing laboratory and shall be so labeled.

2.4 FABRICATION

A. RUNNING CLEARANCES

1. Running clearances between the car sill and the hoistway sill shall be adjusted to provide an optimum running clearance of 1-1/4 inch per ASME A117.1 Rule 407.2.9.

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

A. VERIFICATION OF CONDITIONS:

1. Verify that hoistway, pit and machine room are ready for work of this Section.
2. Take field dimensions. Verify shaft and openings are of correct size and within tolerances. Verify, by measurements at the job site, dimensions affecting the work. Bring field dimensions which are at variance with those on the accepted shop drawings to the attention of the Engineer. Obtain the decision regarding corrective measures before the start of fabrication of items affected.
3. Examine surface and conditions to which this work is to be attached or applied, and notify the Engineer in writing if conditions or surfaces are detrimental to the proper and expeditious installation of the work. Starting the work shall imply acceptance of the surfaces and conditions to perform the work as specified. Examine conditions of substrates, supports, entrances, and other conditions under which this work is to be performed.
4. Study the Contract Documents with regard to the work as shown and required so as to insure its completeness.
5. Cooperate in the coordination and scheduling of the work of this section with the work of other sections so as not to delay job progress.

3.2 PREPARATION

A. Protection:

1. The Contractor shall construct and maintain full height barricades for all elevator work as required to keep unauthorized persons and the general public a safe distance from work and material storage areas. At no time shall barricades be arranged in such a way as to obstruct or impede safe egress from the building.
2. The Contractor shall cooperate with the District to protect the public and property and to maintain safe, secure conditions.

3.3 INSTALLATION

- A. Install system and components in accordance with specifications, drawings and ASME A17.1.
- B. Install components and connect equipment to building utilities.

- C. Arrange components in control room so equipment can be removed for repairs or replaced without dismantling or removing other equipment components.
- D. Adjust for smooth acceleration and deceleration of car so as not to cause passenger discomfort. Adjust elevator to meet the performance requirements.
- E. Adjust automatic floor leveling feature at each floor to achieve maximum 1/4 inch from flush.
- F. Sound Isolation: Mount rotating and vibrating equipment on vibration-isolating mounts to minimize vibration transmission to structure and structure-borne noise due to elevator system. Sound isolate machines and controllers from building structure.
- G. Install the elevator, using skilled workmen in strict accordance with the final accepted shop drawings and other submittals.
- H. Install elevator cab enclosures on platform plumb and align cab entrance with hoistway entrances.
- I. Remove oil, dirt and impurities and, unless indicated otherwise, paint all exposed surfaces of struts, hanger supports, covers, fascias, toe guards, dust covers, car sling, pit equipment and other ferrous metal per Specification 099611, High Performance Coatings. Clean car top and paint per Specification 099611, High Performance Coatings.
- J. Lubricate operating parts of system as recommended by the manufacturer.
- K. Comply with the code, manufacturer's instructions and recommendations.
- L. Accurately and rigidly secure supporting elements within the shaftways to the encountered construction within the tolerance established.
- M. Erect guide rails plumb and parallel to a maximum of 1/8".
- N. Install rails so that joints do not interfere with brackets.
- O. Reinforce hoistway fascias to allow not more than 1/2 inch of deflection.
- P. Arrange door tracks and sheaves so that no metal-to-metal contact exists.
- Q. Pre-hang traveling cables for at least 24 hours with ends suitably weighted to eliminate twisting.
- R. Coordinate fixture material and finishes with the Engineer.
- T. After installation, provide field touch up to surfaces of shop primed elements which have become scratched or damaged.
- U. Provide and install motors, switches, controls, safety and maintenance and operating devices in strict accordance with the submitted wiring diagrams and applicable codes and regulations having jurisdiction.

3.4 APPLICATION

- A. Interface with Other Products
 - 1. Controller shall be fully compatible with all elevator equipment provided under this contract.

B. Welding

1. Obtain the District's approval before performing any welding operations. All welding shall be oxyacetylene or electric arc. High test welding rods suitable for the material to be welded shall be used throughout. All special fittings shall be carefully laid out and joints shall be accurately matched at intersections. All welds shall be of sound metal free from laps, cold shuts, gas pockets, oxide inclusions and similar defects.
2. All necessary precautions shall be taken to prevent fire or other damage occurring as a result of welding operations. Approved fire prevention and fire management procedures shall be observed at all times. To avoid accidental or unnecessary activation of the fire alarm system, the District shall be notified prior to the commencement of cutting, burning or welding.

C. Miscellaneous Iron and Steel

1. Furnish and install all steel supports, hangers and other devices required to support and provide access to conduit, equipment, etc.
2. All work shall be cut, assembled, welded and finished by skilled mechanics. Stands, brackets, frameworks and platforms shall be properly sized and well-constructed.
3. Measurements shall be taken on the job and worked out to suit adjoining and connecting work. Members shall be straight and true and accurately fitted. Scale, rust and burrs shall be removed. Welded joints shall be ground smooth where exposed. Drilling, cutting and fitting shall be done as required to properly install the work and accommodate the work of other trades as directed by them.
4. Members shall be generally welded or riveted, except that bolting may be used for field assembly where welding or riveting would be impractical.
5. All shop-fabricated iron and steel work shall be cleaned and dried and painted on all surfaces and in all openings and crevices. All field connections shall have their surfaces thoroughly cleaned and be painted. All painting and surface preparation shall be in accord with these specifications and per Specification 099611, High Performance Coatings.
6. All structural steel shall meet the requirements of ASTM A36. Cast iron shall meet the requirements of ASTM A48, Class No. 20.

D. Hangers and Supports

1. All required hangers, supports, clamps, sleeves, etc., required for installation of the electrical work are included as a part of the work of the Contract.
2. All horizontal runs of conduit shall be properly grouped and hung to true alignment using substantial and appropriate hangers, clamps, conduit straps, etc., equal to Kindorf, Unistrut or Caddy as applicable. Hanger and support locations shall be coordinated with work of other trades and existing work to avoid conflicts. Hangers and supports shall be placed at intervals not exceeding

the spacing recommended by the NFPA 70 and NECA. Supporting rods shall be threaded only on ends, with an allowance for adjustment.

3. Wire and strap hangers will not be permitted. Conduit and fittings shall be secured by metal clips or straps using toggle bolts or lead expansion sleeves on masonry and wood screws on woodwork. Where fastened to bar joists, bulbtees and/or flange beams, wedge hangers, tap clips and flange clips as manufactured by Caddy or equal shall be used.
4. Inserts may be used in locations approved by the Engineer and shall be Phillips "Red Head" or approved equal. Explosive powder studs or detonator assisted studs or anchors will not be permitted.
5. Conduit Sleeves and Openings - Wire and Cable
 - a. All sleeves required to accommodate the work of this Contract shall be provided.
 - b. All sleeves, where required, shall be extended 1/4 inch beyond the finished surface in finished areas and 2 inches in Equipment and similar rooms. Conduits passing through fire walls and floors shall be fire-stopped with manufacturer's standard fire-stopping sealant having fire-resistant ratings for identical assemblies per ASTM E 814 by Underwriters Laboratory, Inc. System Design No. CAJ1134, CAJ1071, CAJ1142 - 2 hours, Floor & Wall Through - Penetration Firestop System.
 - c. All conductors shall be copper.

E. GROUNDING

1. Provide grounding for all electrical equipment, apparatus and devices in accordance with the applicable requirements of NFPA 70. Coordinate "earth ground" location with Contractor installing this system.

3.5 FIELD QUALITY CONTROL

A. Tests

1. Before accepting the elevator installations, the District shall hire and pay for a DPOR licensed elevator inspector to test the elevator installations. Any corrective work needed as a result of this testing shall be done by the Contractor at no cost to the District.
2. Perform tests required by ASME A17.1, a Qualified Elevator Inspector (QEI) and representative of the District.
3. Schedule tests with the District and with Engineer and Contractor present. A minimum notice of 48 hours shall be required prior to all testing. All tests shall be performed during normal business hours of the building.

4. Acceptance testing for the passenger elevator shall be in accordance with applicable requirements of ASME A17.1 and ASME A17.2 procedures in Elevator Inspector's Manual and related codes listed in Section 1.3 of this Division.
- B. Inspection
1. Schedule acceptance tests with a Qualified Elevator Inspector (QEI).
 2. Follow procedures in ASME A17.2.1 Inspector's Manual for Traction elevators.
- C. Manufacturer's Field Service
1. Obtain from the Manufacturer and furnish to the District all data affecting the elevator modification, including "AS-INSTALLED" circuit and control wiring diagrams and maintenance manuals.
- D. Performance Test
- Demonstrate to the District or the District's designated representative the operation of the elevator system. Demonstration shall include:
1. Installation compliance with specifications.
 2. Contract speed, capacity, and floor-to-floor performance compliance with specifications. For traction elevators, speed to be within 3% of rated speed in the up direction and in the down direction under any load.
 3. Stopping accuracy and car ride compliance with specifications.
 4. Operation of signal fixtures, operation of supervisory or dispatching system and fireman's service operation.
 5. Promptly remove all work rejected by the Engineer for failure to meet specifications and replace to comply with requirements at no additional cost to District. All expenses of repairing work of other Trades damaged by this replacement shall be borne by the Contractor.
 6. Rejected work which is not made good within a reasonable time, determined by the Engineer, may be corrected by the District at Contractor's expense.
 7. Upon completion of installation and before final acceptance, conduct a running speed test with full design load to verify compliance with performance requirements including Items 2 and 3.
 8. Operating Instructions: Provide instructions to the District's personnel, including safety procedures, proper operation of the equipment, routine maintenance procedures and Maintenance Control Plan.
 9. Provide four (4) sets of labeled keys per elevator for each unique key or key switch.
 10. Door opening and closing time: Adjustable (set for 3 ft/sec for opening and 1 ft/sec for closing).
 11. Door dwell times: Minimum as allowed by ADA.

3.6 CLEANING

- A. Adequately protect surfaces against accumulation of paint, mortar, mastic and disfiguration or discoloration and damage during shipment and installation.
- B. Final Cleaning
 - 1. At the completion of the work, the Contractor shall remove from the project site all tools, surplus materials, equipment, scrap debris, waste, temporary facilities, protection and barricades. All building surfaces within the construction area shall be thoroughly cleaned and have it free from discoloration, scratches, dents and other surface defects
- C. The finished installation shall be free of defects. Before final completion and acceptance of the building, repair and/or replace defective work, to the satisfaction of the Engineer and the District at no additional cost.

3.7 DEMONSTRATION

- A. Demonstrate to Engineer and the District that all systems specified are operating correctly and provide training on use and maintenance of Elevator System. On-site technical training shall be held for the purpose of familiarizing employees with maintenance, operations and troubleshooting procedures. The training shall cover all procedures and processes in the Maintenance Control Plan as defined in ASME A17.1 and this specification. Training on each type of equipment controller shall be provided by trained factory service engineers of controller manufacturers through the elevator installers. All course materials and expenses shall be included.

END OF SECTION 142123.13