

## Internal Routing Slip

Subject: Award of Comprehensive Agreement and Guaranteed Maximum Price (GMP) between East Entrance LLC (the Developer), a Joint Venture between JBG Smith Properties LP and Clark Construction, and the Arlington County Board for the Final Design and Construction of the Crystal City Metrorail Station East Entrance Project.

### Background information:

The Interim Agreement with JBG Smith to develop 30% design documents for the Crystal City East Entrance was executed on 7/22/20 and completed in May 2023. County Board approval in July 2023 of the Comprehensive Agreement and Guaranteed Maximum Price (GMP) for the final design and construction for the Crystal City East Entrance. Attached is the Comprehensive Agreement contract.

Is this document time-sensitive? YES

Is this document related to a Board action? YES

If yes, indicate the date of Board approval. July 15, 2023

### Reviewed:

 DS	Tim Brulle	Date: <u>8/2/2023</u>
 DS	Robin McElhenny	Date: <u>8/2/2023</u>
 DS	Lynn Rivers	Date: <u>8/3/2023</u>
 DS	Mike Moon	Date: <u>8/3/2023</u>
 DS	Lynne Porfiri	Date: <u>8/4/2023</u>

### Notes:

**Execution Version**

**COMPREHENSIVE AGREEMENT  
RELATING TO  
A NEW EAST ENTRANCE  
TO THE CRYSTAL CITY METRORAIL STATION**

**BY AND BETWEEN**

**THE ARLINGTON COUNTY BOARD OF ARLINGTON COUNTY, VIRGINIA,  
a political subdivision of the Commonwealth of Virginia**

**AND**

**EAST ENTRANCE LLC,  
a Virginia limited liability company**

**DATED AS OF  
AUGUST 1, 2023**

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## COMPREHENSIVE AGREEMENT

THIS COMPREHENSIVE AGREEMENT (“**Agreement**”), dated as of August 1, 2023 (the “**Effective Date**”) is made by and between THE ARLINGTON COUNTY BOARD OF ARLINGTON COUNTY, VIRGINIA, a political subdivision of the Commonwealth of Virginia (the “**County**”) and EAST ENTRANCE LLC, a Virginia limited liability company (the “**Developer**”). Each of the County and the Developer may be referred to in this Agreement individually as a “**Party**” or collectively as the “**Parties**,” as the context requires, in relation to development of the proposed East Entrance to the Crystal City Metrorail Station (the “**Project**”).

### RECITALS

WHEREAS, on May 29, 2019 the County received an unsolicited proposal from the Developer (the “**Proposal**”) under the Virginia Public-Private Education Facilities and Infrastructure Act of 2002, VA. Code Ann. 56-575 et. seq. (the “**PPEA**”) and the County’s PPEA Guidelines as adopted by the County Board as part of the County’s Purchasing Resolution (“**Guidelines**”) to design and construct the Project; and

WHEREAS, on June 27, 2019, the County Manager, in accordance with the PPEA and the Guidelines, issued a determination that the Proposal met the Guidelines definition of a qualifying project that served a public purpose; and

WHEREAS, the Project is included in the County’s FY19-28 Capital Improvement Plan as part of the Arlington Transit Program, entitled the Crystal City Metrorail Station East Entrance project; and

WHEREAS, on July 15, 2019, the County accepted the Proposal for publication and conceptual-phase consideration; and

WHEREAS, after public notice on July 19, 2019, no other proposals were received within the 45-day posting period; and

WHEREAS, on November 22, 2019, the County requested that Developer submit a Detailed Proposal per the PPEA and the Guidelines, and Developer submitted a Detailed Proposal on January 10, 2020; and

WHEREAS, after review of the Developer’s Detailed Proposal, the County and the Developer successfully negotiated the terms of an interim agreement to further develop the design and support the efficient and comprehensive evaluation of the Project; and

WHEREAS, the Arlington County Board after a public hearing approved the terms of said interim agreement on July 18, 2020; and

WHEREAS, the Parties entered into said interim agreement on July 22, 2020 (the “**Interim Agreement**”); and

WHEREAS, performance under the Interim Agreement has been completed and the Parties have come to agreement on the final scope and schedule and price of the Project to complete the full design and to construct the Project as set forth in this Agreement;

NOW THEREFORE, in consideration of the mutual covenants, promises and undertaking set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the County and the Developer agree as follows:

**1. Comprehensive Agreement; Project Scope; Purpose and Scope of Services, Basic Roles and Responsibilities.**

a. Comprehensive Agreement. This Agreement is a “comprehensive agreement” (as that term is used under the PPEA and the Guidelines) between the County and the Developer in regard to the Project.

b. Project Scope. The Project primarily consists of the design and construction of a new east entrance to the Crystal City Metrorail Station at the northwest corner of the 18th Street and Crystal Drive intersection. The new entrance will consist of a new, at-grade structure with fare payment area, vending machines, attendant kiosk and restrooms and will connect to the existing station via stairs and elevators as more particularly described in **Exhibit A – Scope of Services**. The County is responsible for the design and construction of the new entryway and then will turn the Project over to Washington Metropolitan Area Transit Authority (“**WMATA**”) ownership.

c. Purpose and Scope of Services. The purpose of this Agreement is for the County to engage the Developer to prepare the final design of the Project, to construct the Project, and to produce certain deliverables for the Project, all as more specifically described in **Exhibit A – Scope of Services**, subject to the assumptions and exclusions referenced therein.

d. Design-Build Delivery; Easements and Licenses. The Parties understand and acknowledge that:

(i) the Project will be delivered by the Developer through a design-build delivery method;

(ii) the Developer intends to subcontract the majority of the design-build work to a design-build subcontractor (the “**Design-Build Subcontractor**”);

(iii) the Project will be delivered by the Developer in phases, with earlier phases being designed and constructed before the design of later phases is commenced or matured;

(iv) the Developer will cause all private property easements necessary for design and construction of the Project to be provided by the relevant property owner(s) through separately-memorialized commitments to the County. However, in the event that the Developer is ready to proceed with construction activities and the private property easements have not been obtained by Developer, then Developer may cause temporary property licenses to be granted by the relevant property owner(s) in favor of the County and the Developer as may be necessary for the Developer to proceed with initial design

and construction activities; however, Developer still has an obligation to replace the temporary property licenses with private property easements through separately-memorialized commitments to the County; and

(v) construction activities will commence, and the construction of certain earlier-phase elements of the Project will be partially or fully completed, before the Project is fully designed.

e. Interim Design Documents. The Developer shall design and construct the Project consistent with (i) the 30% design documents developed pursuant to the Interim Agreement (the “**Interim Design Documents**”) that are made a part of **Exhibit A – Project Scope** and (ii) the remainder of the Contract Documents. In performing pursuant to this Agreement, the Developer shall be entitled to rely upon the Interim Design Documents and the contents thereof in their entirety consistent with the intended purpose of the Interim Design Documents.

f. Monitoring. The County shall have the right to monitor the Developer’s performance of the Work (as defined in Section 4(a) below) so long as the County does so in a reasonable manner and does not unreasonably interfere with the Developer’s business or performance.

**2. Exhibit List; Construction and Interpretation of Agreement.** This Agreement and the exhibits hereto (each an “**Exhibit**” and collectively the “**Exhibits**”) constitute the entire agreement between the Parties. The Exhibits are:

Exhibit A – Project Scope

Exhibit B – Special Conditions

Exhibit C – County DES General Conditions (Amended)

Exhibit D – Compensation

Exhibit E – Baseline Project Schedule

Exhibit F.1 – Developer Project Team

Exhibit F.2 – County Project Team

Exhibit G – WMATA Insurance Requirements

Exhibit H – County Insurance Requirements

Exhibit I – FTA Clauses

Exhibit J – WMATA Specifications Manual Division 1 (Crystal City East Metro Entrance, Design-Build Services)

Exhibit K – Performance Bond Form

Exhibit L – Payment Bond Form

The sections of this Agreement and the Exhibits are intended to be (i) complementary and consistent and (ii) read together as a complete agreement. (For avoidance of doubt, the term “**Agreement**” includes all Exhibits.) To the extent of any conflict, ambiguity or inconsistency between or among (A) the sections of this Agreement (exclusive of the Exhibits) and (B) the Exhibits, the conflict, ambiguity or inconsistency will be resolved by applying the following order of document precedence, from highest to lowest:

- (1) Change orders and amendments to this Agreement;
- (2) The sections of this Agreement;
- (3) Exhibit A in the following order:
  - (i) A.1 – Assumptions and Exclusions
  - (ii) A.2 – Scope of Services
  - (iii) A.3 – Interim Design Documents; and
- (4) Exhibits B through L.

To the extent of any conflict, ambiguity or inconsistency between or among **Exhibit B – Special Conditions, Exhibit C – County DES General Conditions (Amended) and Exhibit J – WMATA Specifications Manual Division 1 (Crystal City East Metro Entrance, Design-Build Services)**, the conflict, ambiguity or inconsistency will be resolved by applying the following order of document precedence, from highest to lowest:

- (1) Exhibit B – Special Conditions;
- (2) Exhibit C – General Conditions; and
- (3) Exhibit J – WMATA Specifications Manual Division 1 (Crystal City East Metro Entrance, Design-Build Services).

Subject to the foregoing:

a. Any provision that establishes a more stringent standard or specification with respect to performance of the Work will prevail unless: (i) the Parties agree otherwise; or (ii) terms applicable to the relevant subject matter are modified via a subsequent change order or amendment to this Agreement, in which case the terms of the subsequent change order or amendment will prevail;

b. Any standard or specification with which the Developer is required to comply by a provision of this Agreement will be the specific edition or version identified, and the Developer will not be required to comply with any newer, updated or revised edition or version unless the Parties so agree or the Developer is directed by the County as a County Change; and



- c. The terms of the WMATA Agreement (defined in Section 32 below):
  - (i) will apply to the design and construction of the Project as contemplated by this Agreement; and
  - (ii) are intended to be read in concert with this Agreement.

Subject to its rights and obligations under this Agreement, the Developer, acting in a commercially reasonable manner, will refrain from taking any action or failing to take any action that materially impedes or interferes with the County's performance under the WMATA Agreement.

d. As used in **Exhibit J – WMATA Specifications Manual Division 1 (Crystal City East Metro Entrance, Design-Build Services)**, the term “Design-Builder” shall mean the Developer.

e. The term “**Contract Documents**” means this Agreement and all change orders and amendments to this Agreement.

**3. Term.** The term of this Agreement (the “**Term**”) becomes effective as of the Effective Date and continues in effect until the earlier of such date as (a) the Work under this Agreement is completed and final payment has been made; (b) Agreement is terminated upon agreement of the Parties upon terms acceptable to both Parties, including termination costs; or (c) termination by the County for Developer Default (as defined in Section 24(a) below); (d) termination by the Developer for County Default (as defined in Section 24(b) below); or (e) termination for convenience by the County. Upon termination of this Agreement for any reason other than Developer Default in accordance with Section 24(a) below, the County shall pay the Developer for Work performed and expenses incurred prior to the effective date of termination, and any other amounts as otherwise set forth in this Agreement.

**4. Design and Construction of the Project.**

a. Scope of Services. The scope of services for the final design and construction of the Project to be performed by the Developer is described in **Exhibit A – Project Scope** (the “**Work**”). The Developer's performance of the Work will be subject to the all of the Exhibits (as applicable).

b. Performance of Work and Schedule. Performance of the Work, including provision of any deliverables, shall be managed by the Developer and performed consistent with the baseline schedule (“**Schedule**”) set forth in **Exhibit E - Baseline Project Schedule**, as such Schedule may be modified pursuant to the terms of this Agreement and/or as otherwise modified by the Parties.

c. Liquidated Damages.

(i) The County and the Developer agree that damages for failure to achieve Substantial Completion by the Substantial Completion Deadline are not susceptible to exact determination but that \$3,660.00 per calendar day is in proportion to the actual loss the County would suffer from such delay. Therefore, the Developer will pay the County as liquidated damages \$3,660.00 per calendar day for each and every day beyond the date that

is thirty (30) days after the Substantial Completion Deadline (as such deadline may be extended pursuant to the terms of this Agreement) that Substantial Completion has not been achieved. The County and the Developer also agree that damages for failure to achieve Final Completion by the Final Completion Deadline are not susceptible to exact determination but that \$2,840.00 per calendar day is in proportion to the actual loss the County would suffer from such delay. Therefore, the Developer will pay the County as liquidated damages \$2,840.00 per calendar day for each and every day beyond the date that is thirty (30) days after the Final Completion Deadline (as such deadline may be extended pursuant to the terms of this Agreement) that Final Completion has not been achieved.

(ii) For purposes of this Agreement:

(1) “**Substantial Completion**” and “**Final Completion**” shall have the respective meanings set forth in the Special Conditions;

(2) “**Substantial Completion Deadline**” means the date that is one thousand three hundred thirteen (1,313) calendar days after the Effective Date, as such date may be extended from time to time for Delay Events or as otherwise permitted in accordance with the terms of this Agreement;

(3) “**Final Completion Deadline**” means the date that is thirty (30) calendar days after the Substantial Completion Deadline, as such date may be extended from time to time for Delay Events or as otherwise permitted in accordance with the terms of this Agreement; and

(4) “**Time for Completion**” means, collectively, the Substantial Completion Deadline and the Final Completion Deadline.

(iii) The County will be entitled to deduct unpaid liquidated damages against any sums owed by the County to the Developer under this Agreement. The Developer hereby waives any defense as to the validity of any liquidated damages on grounds that such liquidated damages are void as penalties or are not reasonably related to actual damages. Liquidated damages shall be the County’s sole remedy for Developer’s delay.

d. Reports and Meetings. The Developer and its designees, as its project managers for the Project (the “**Developer’s Project Principals**”), along with its other principal development team members, consultants and subcontractors (collectively the “**Developer’s Project Team**”) as appropriate, will host regular meetings with all or a portion of the County’s designees, as its management team for the Project, including representatives from WMATA (collectively the “**County Project Team**”). For purposes of the Contract Documents, the terms “**County Project Officer**” and “**County Quality Assurance Manager**” shall mean the persons identified as such on **Exhibit F.2 – County Project Team**.

e. Standard of Care. The County is entering into this Agreement in reliance on the Developer and the Developer’s Project Team’s experience and abilities with respect to performing the services hereunder. In performing the Work, the Developer and its agents, employees and subcontractors will perform the services consistent with the skill and care ordinarily exercised by members of the applicable profession currently practicing under similar conditions in the same

locality (“**Customary Standard of Care**”). With respect to any professional services being provided under this Agreement, no other representations to the County, express or implied, and no warranty or guarantee (including but not limited to fit-for-purpose and free-from-defect type warranties) are included or intended in this Agreement, or in any report, opinion, construction document, or otherwise. The Developer will re-perform, without additional compensation, any services not meeting this Customary Standard of Care.

The Developer will be responsible for the quality, completeness, technical accuracy and coordination, consistent with this Customary Standard of Care, of all designs, drawings, specifications, cost estimates, and other services or materials provided, regardless of whether such drawings and documents are prepared by the Developer or the Developer’s Project Team.

Additionally, the Developer is responsible for completing the design work and administering the construction of the Project in accordance with all applicable federal, state, and/or local regulatory requirements.

The County’s review, approval or acceptance of or payment for any services required under this Agreement does not release the Developer from any liability for breach of this Customary Standard of Care.

**5. Developer Compensation and Reimbursements; Payments; Limitations.**

a. Compensation. The Parties agree that the guaranteed maximum price for the Project is \$117,203,017, as such amount may be adjusted pursuant to the terms of this Agreement (the “**GMP**”). The GMP is the full and complete compensation for Developer’s complete performance under this Agreement, including but not limited to Final Completion of the Work, and all fees, compensation, and reimbursements to the Developer.

b. GMP Components. The GMP is comprised of the following components (the “**GMP Components**”):

(i) the Cost of the Work, as defined in **Exhibit D – Compensation**, in the amount of \$85,351,678, subject to subsection (c) below;

(ii) [Not used];

(iii) the County’s Allowances, as defined in **Exhibit D – Compensation**, in the amount of \$3,167,000);

(iv) the Developer’s Allowances , as defined in **Exhibit D – Compensation**, in the amount of \$0;

(v) the Developer’s Development Fee, as defined in **Exhibit D – Compensation**, in the amount of \$15,139,497; and

(vi) the General Conditions Fee, as defined in **Exhibit D – Compensation**, in the amount of \$13,544,842.

The sum of the GMP Components shall not exceed the GMP. The Developer may reallocate funds between the Cost of the Work and General Conditions Fee categories in order to complete construction of the Project within the GMP.

c. Cost of Electrical Scope. The Developer shall bid the electrical trade package no later than 45 days after the Notice to Proceed (NTP). In the event the Parties, pursuant to Section 1.23 of Exhibit A.1, agree to a reduction of the cost of the electrical scope (such reduction, the “**Electrical Adjustment**”), then the amount in subsection 5b(i) (Cost of the Work) above shall be reduced by the amount of the Electrical Adjustment.

d. General Conditions Fee. The Developer’s “**General Conditions Fee**” shall be paid in equal monthly installments over the period of performance of the Work. The General Conditions Fee shall not be increased or decreased as a result of change orders unless such changes (i) extend the Time for Completion; or (ii) the Developer can demonstrate to the reasonable satisfaction of the County that such additional costs of General Conditions are reasonable, necessary, and not due to any fault of the Developer or its subcontractors.

e. Development Fee. The Developer’s “**Development Fee**” will be paid on a monthly basis in amounts proportionate to the percentage of Cost of the Work earned in that period.

f. Changes to the Development Fee. The Development Fee shall not be increased or decreased as a result of change orders unless the County makes adjustments to the scope of the Work that either individually or in the aggregate cause the GMP to increase, subject to Section 23(b). For purposes of this Section 5(f), change orders related solely to any delays carved out of the definition of Delay Event in Section 23(f)(1)(B) and any events carved out of the definition of Compensation Event in Section 23(f)(2)(B) shall not be considered an adjustment to the scope of the Work for this calculation.

g. Payments. The Developer will present an invoice to the County monthly for the Costs of the Work performed the prior month, and the proportionate share of the General Conditions Fee and the proportionate share of the Development Fee; provided, however, that costs associated with mobilization may be invoiced by the Developer immediately upon incurrence of such costs. Each invoice must certify that the invoice submitted is a true and accurate accounting of the work performed and goods and/or services provided and must be signed and attested to by the Developer or its authorized designee. The County will (a) notify the Developer within 10 days after receipt of an invoice of the County’s rejection for non-compliance with the terms of this Agreement of any portion of the invoice or the Work performed that would prevent timely payment in full and (b) pay the Developer within forty-five (45) days after receipt of the invoice for the non-rejected portion of the invoice and Work performed in accordance with the terms of this Agreement. The County shall be permitted to withhold (y) only those amounts for which the County has notified the Developer pursuant to clause (a) above that a specified portion of the Work is subject to a good faith dispute and (z) any such amount only for so long and to the extent such good faith dispute remains unresolved. Any late payment will be subject to interest at a rate of one percent (1%) per month.

h. Retainage. Five percent (5%) of each progress payment made will be retained by the County, except that there shall be no retainage on portions of progress payments relating to (i)

design and other professional services, (ii) Developer's Contingency or (iii) Development Fee. Fifty percent (50%) of all such retainage shall be released by the County to the Developer at Substantial Completion, and the balance of all retainage shall be released at Final Completion; provided, however, that:

1. Retainage on early-start work activities shall be released upon completion of each such activity, provided that such early-start work activities shall, for this purpose, be limited to support of excavation, dewatering, excavation, deep foundations, monitoring, waterproofing and concrete; and

2. Retainage held between Substantial Completion and Final Completion shall equal no more than four (4) times the reasonably estimated cost of resolving all punch list items.

All material and Work covered by partial payments will become the property solely of the County at the time the partial payment is made. However, the Developer will retain responsibility, care and custody for all materials and Work upon which payments have been made until Substantial Completion, subject to the rights of the County, WMATA, and other governmental agencies having jurisdiction over the Project.

**6. Additional Obligations of County.** In addition to performance of its other obligations as set forth in this Agreement, the County will make all payments to the Developer as and when they are due under this Agreement.

**7. Audit.** The Developer must retain all books, records and other documents related to this Agreement for at least five (5) years after the final payment and must allow the County or its authorized agents, including WMATA, the Northern Virginia Transportation Authority, and the Virginia Department of Rail and Public Transportation, to examine the documents during this period and during the Agreement term. The Developer must provide to the County any such documents as may be reasonably requested by the County for examination within 15 days of the request, at the Developer's expense; provided, however, the County agrees that any rates, multipliers, or fixed fees and amounts it has agreed the Developer may charge are subject to audit rights only for the County to confirm that the same have been charged in accordance with this Agreement, and that the composition of such rates, multipliers, or fixed fees are not subject to audit. If the Developer wishes to destroy or dispose of any records related to this Agreement (including confidential records to which the County does not have ready access) within five years after the final payment, the Developer must give the County at least 30 days' notice and must not dispose of the documents if the County objects.

**8. Designated Project Personnel.**

a. Developer. The Developer's Project Principals and the other members of the Developer's Project Team are listed on **Exhibit F.1 – Project Principals/Project Team**. While this Agreement is in effect, the Developer will cause each of the Developer's Project Principals and the other members of the Developer's Project Team to devote sufficient time and attention to (i) directing and overseeing the Developer's performance under this Agreement, (ii) participating in meetings and conferences to the extent specified in the Schedule or required under this Agreement, (iii) interacting with members of the County's Project Management Team and any

County consultants and representatives for purposes of this Agreement and (iv) ensuring fulfillment of the Developer's obligations under this Agreement. The Developer may change the composition of the Developer's Project Principals or the other members of the Developer's Project Team only upon receiving the prior written consent of the County, which consent shall not be unreasonably withheld, conditioned or delayed.

b. County. The County Project Officer and the members of the County's Project Team are all listed on **Exhibit F.2 - County Team**. While this Agreement is in effect, the County will cause all the County's Project Team to devote sufficient time and attention to (i) directing and overseeing the County's performance under this Agreement, (ii) participating in meetings and conferences to the extent specified in the Schedule or required under this Agreement, (iii) interacting with the Developer's Project Principals and the other members of the Developer's Project Team for purposes of this Agreement and (iv) ensuring fulfillment of the County's obligations under this Agreement.

**9. Accuracy of Proposal; Representation & Warranties.** The Developer represents and warrants to the County that (i) to the best of the Developer's knowledge and belief as of the date of this Agreement all factual statements made in the Developer's submissions to the County regarding the Project (including those pertaining to prior experience and expertise) are true, accurate, and not misleading in any material respects; (ii) the Developer and its Project Team have the expertise and capacities to perform its obligations under this Agreement; and (iii) the Developer has full power and authority to enter into this Agreement, and the person signing this Agreement on behalf of the Developer has/have full power and authority to bind the Developer under this Agreement. The Developer represents and warrants to the County that the Developer's Operating Agreement between its members, dated as of August 1, is in full force and effect as of the date of this Agreement.

**10. Indemnification.** The Developer covenants for itself, its employees, its Project Team, and its subcontractors to save, hold harmless and indemnify the County and all of its elected and appointed officials, officers, current and former employees, departments, agencies, boards and commissions (collectively the "County Indemnitees") from and against any and all claims made by third parties for any and all losses, damages, injuries, fines, penalties and costs (including court costs and reasonable attorneys' fees) to the extent caused by the Developer's negligent acts or omissions, including the negligent acts or omissions of its employees, Project Team, and/or subcontractors, in performance or nonperformance of this Agreement, provided that such claim attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property. This duty to save, hold harmless and indemnify will survive the termination of this Agreement. If the Developer fails or refuses to fulfill its obligations contained in this section, the Developer must reimburse the County for any and all resulting payments and expenses, including reasonable attorneys' fees. The Developer must pay such expenses upon demand by the County, and failure to do so may result in the County withholding such amounts from any payments to the Developer under this Agreement.

Additionally, only to the extent required pursuant to Section [6.1] of the WMATA Agreement:

a. Developer covenants for itself and its subcontractors to indemnify and hold harmless WMATA and WMATA's officers, officials, and employees against any liability and claims for

injury, including personal injury to or death of person or persons, and for loss or damage occurring in connection with the Project. The indemnity described herein is a contractual undertaking that is not limited by the limits of insurance provided in relation to Section 18 of this Agreement.

b. In relation to paragraph (a) above, if any suit, action or proceeding is brought, or any other claim is made, against WMATA, its employees, or agents by reason of any such claim, Developer, upon notice from County following County's receipt of notice from WMATA, shall cause its subcontractors to defend the same with counsel reasonably satisfactory to WMATA, provided, WMATA shall have the right to engage its own counsel which shall be at the expense of WMATA unless WMATA reasonably determines that counsel for Developer cannot adequately represent the interests of WMATA.

To the extent permitted by applicable law, the County will be responsible for the actions, inactions or violations of its officers, employees, and agents in connection with this Agreement, but nothing contained herein shall be construed as a waiver of the County's sovereign immunity; provided, however, that, for the avoidance of doubt, sovereign immunity shall not bar an action to enforce the terms of this Agreement.

**11. Intellectual Property Indemnification.** The Developer warrants and guarantees that in providing services under this Agreement neither the Developer nor any subcontractor is infringing on the intellectual property rights (including, but not limited to, copyright, patent, mask and trademark) of third parties.

If the Developer or any of its employees or subcontractors uses any design, device, work or material that is covered by patent or copyright, it is understood that the Developer's compensation includes all royalties, licensing fees, and any other costs arising from such use in connection with the work under this Agreement, except with regard to designs, devices, work or material that is required by the County subsequent to execution of this Agreement, provided that the Developer perform appropriate due diligence and provide notice of any known royalties, licensing fees, and other costs.

The Developer covenants for itself, its employees and its subcontractors to save, hold harmless, and indemnify the County Indemnitees, as defined above, from and against any and all claims, losses, damages, injuries, fines, penalties, costs (including court costs and reasonable attorneys' fees), charges, liability or exposure for infringement of or on account of any trademark, copyright, patented or unpatented invention, process or article manufactured or used in the performance of this Agreement, unless the Developer was directed to use the subject trademark, copyright, invention, process or article by one or more of the Indemnified Parties (and provided that the Developer performs appropriate due diligence and provides notice of any known royalties, licensing fees, and other costs directly applicable to use of the subject trademark, copyright, invention, process or article). This duty to save, hold harmless and indemnify will survive the termination of this Agreement. If the Developer fails or refuses to fulfill its obligations contained in this section, the Developer must reimburse the County for any and all resulting payments and expenses, including reasonable attorneys' fees. The Developer must pay such expenses upon demand by the County, and failure to do so may result in the County withholding such amounts from any payments to the Developer under this Agreement.

**12. Environmental Services Indemnification.** Developer covenants for itself, its employees, its Project Team and subcontractors to save, hold harmless and indemnify the County and all its elected and appointed officials, officers, current and former employees, departments, agencies, board, and commissions (collectively the “County Indemnities”) from and against any and all claims for any and all losses, damages, injuries, fines, penalties, costs (including court costs and attorneys’ fees), charges, liability, demands or exposure resulting from, arising out of or in any way connected with the Developer’s environmental remediations, fines, penalties, and clean-up costs which may be asserted against or imposed upon, or incurred by County arising from the Developer’s discharge or disposal of any hazardous or toxic materials, trash, debris, refuse, waste or other materials (“**Materials**”) related in any way to Developer’s operations herein. Developer agrees that it will dispose of all Materials in strict compliance with local, County, state, and federal statutes, laws, ordinances, codes, rules, regulations, orders, or decrees, and shall provide evidence of such disposal satisfactory to County on a weekly basis to County’s designated representative.

In the event that Developer fails to comply with this paragraph, and upon discovery of a failure or violation related to its disposal operations, Developer shall immediately report such failure or violation to all applicable governmental agencies having jurisdiction, and to the County, and Developer shall, at its sole cost and expense, promptly commence and diligently pursue any required investigation, assessment, cleanup, remediation, restoration, and monitoring of any waters and lands affected by Developer’s failure to comply, and to restore the damaged water and/or land to the condition existing immediately prior to the occurrence which caused the damage.

For purposes of clarity and notwithstanding the indemnification provisions herein, the County shall be liable for any and all losses, damages, injuries, fines, penalties, costs (including environmental assessments, evaluations, remediations, clean-up, court costs and attorneys’ fees), charges, liability, demands or exposure resulting from, arising out of or in any way connected to the discovery of any Materials on, in, under or emanating from the site of the Project present at concentrations or in quantities that (a) may present a safety or health hazard to individuals or the environment or (b) are required to be removed or remediated by law or in accordance with the requirements of any governmental authority, but only to the extent (i) such Materials are present at the site of the Project as of the Effective Date or the County has generator status with respect to such Materials and (ii) the negative effects of any such Materials are not exacerbated by the negligence, recklessness or willful misconduct of the Developer.

**13. Independent Contractors.** The Developer is an independent entity and neither the Developer, nor its employees, the Developer’s Project Team and subcontractors will be considered employees, servants or agents of the County. The County will not be responsible for any negligence or other wrongdoing by the Developer or its employees, servants or agents. The County will not withhold payments to the Developer for any federal or state unemployment taxes, federal or state income taxes or Social Security tax or for any other benefits. The County will not provide to the Developer any insurance coverage or other benefits, including workers’ compensation.

**14. No Liability of Officials, Employees or Agents.** No officer, official, employee, agent or representative of the County is, or will be, personally liable to the Developer or any of the Developer’s Project Team, or any successor in interest of any of them, as a consequence of any default or breach by the County for any sum that may become due to the Developer, any of the Developer’s Project Team, or any successor in interest of any of them, or on any obligation



incurred under this Agreement. No officer, official, employee, agent or representative of the Developer or the Developer's Project Team is, or will be, personally liable to the County or any of the County's Project Team, or any successor in interest of any of them, as a consequence of any default or breach by the Developer for any amount which may become due to the County, any of the County's Project Team, or any successor in interest of any of them, or on any obligation incurred under this Agreement.

**15. Confidential Information.** The Developer and its employees, agents and subcontractors will hold as confidential all County information obtained under this Agreement except as necessary for the performance of services hereunder or as required pursuant to any statutory, regulatory or judicial requirement or other legal compulsion of law. Confidential information includes, but is not limited to, nonpublic personal information; personal health information (PHI); social security numbers; addresses; dates of birth; other contact information or medical information about a person; and information pertaining to products, operations, systems, customers, prospective customers, techniques, intentions, processes, plans and expertise. Confidential Information shall not include information that: (i) was lawfully known to the recipient prior to the date of this Agreement; (ii) was lawfully obtained by the recipient from a third party without any obligation of confidentiality; (iii) is or becomes part of the public domain, except by breach of this Agreement; or (iv) is possessed or developed by the recipient independently and apart from this Agreement. The Developer must take reasonable measures to ensure that all of its employees, agents and subcontractors are informed of and abide by this requirement.

**16. Ownership of Work Product.**

a. This Agreement does not confer on the Developer any ownership rights or rights to use or disclose the County's data or inputs except for rights to use and disclose such data and inputs as necessary for performance of the Work.

b. All work product, in any form, that results from this Agreement (a) is the property of the County upon the County's payment to the Developer of amounts due under this Agreement for such work product or portion thereof and (b) must be provided or returned to the County upon termination of this Agreement. Notwithstanding the preceding sentence, (x) work product will not be construed to include anything to which the Developer or the Developer's Project Team does not have ownership (e.g., software); (y) the Developer will retain ownership rights to preexisting intellectual property and standard conventions and details; and (z) the use of the work product provided to the County in the event of termination is at the County's sole risk without liability or legal exposure to the Developer or anyone working by or through the Developer. The Developer will not use or allow others to use the work product for any purpose other than performance of this Agreement without the written consent of the County.

c. The work product is confidential, and the Developer may neither release the work product nor share its contents. The Developer will refer all inquiries regarding the status of any work product to the County. At the County's request by written notice to the Developer, the Developer will deliver all work product, including hard copies of electronic files, to the County and will destroy all electronic files except those files (a) required to be kept for compliance purposes or pursuant to applicable law, court order or regulatory directive, or applicable professional standards; or (b) created automatically or in the ordinary course pursuant to applicable

document retention, archiving, back-up, security, or disaster recovery systems, policies or procedures.

d. The Developer must include the provisions of subsections (a), (b) and (c) of this Section 16 as part of any contract or agreement related to this Agreement into which it enters with subcontractors or other third parties.

e. All work products (whether in hard or electronic form) prepared by the Developer pursuant to the Agreement are instruments of service with respect to the Project and are not authorized, intended or represented to be suitable for reuse by the County or others on extensions of the Project or on any other Project. Any reuse by the County or a third person or entity authorized by the County without written verification or adaptation by the Developer for the specific application will be at the County's sole risk and without liability or legal exposure to the Developer.

f. The provisions of this Section 16 will survive any termination or cancellation of this Agreement.

**17. County Insurance Requirements.** The Developer must carry the insurance coverages set forth on **Exhibit H – County Insurance Requirements**. The Developer must provide to the County a certificate of insurance indicating that the Developer has in force the stated coverages. The Developer must maintain this coverage until the completion of this Agreement.

a. Additional Insured. The County and its officers, elected and appointed officials, employees and authorized agents must be included as additional insureds on all General Liability policies except workers compensation and automotive and professional liability; and the additional insured endorsement must be provided with the certificate.

b. Cancellation. If there is a cancellation of any of the above coverages during the Agreement term, the insurance company shall endeavor to notify the County in writing not less than thirty (30) days before such cancellation, except for cancellation due to non-payment of premium, and in such instance the Developer must, with no lapse in coverage, obtain replacement coverage that is consistent with the terms of this Agreement. Not having the required insurance throughout this Agreement is grounds for termination of the Agreement.

c. Claims-Made Coverage. Any "claims made" policy must remain in force, or the Developer must obtain an extended reporting endorsement, until the applicable statute of limitations for any claims has expired.

d. Additional Insurance Requirements.

(i) The Developer shall be solely responsible for any deductible or self-insurance component of any of the required policies.

(ii) The County may request additional information to determine if the Developer has the financial capacity to meet its obligations under a deductible.

(iii) The County's acceptance or approval of any insurance will not relieve the Developer from any liability or obligation imposed by this Agreement.

(iv) The Developer assumes all risks for direct damage or injury to the property used or persons employed in connection with its work on the Project pursuant to this Agreement and for of all direct damage or injury to any person or property, wherever located, resulting from any action, omission, commission or operation under this Agreement or in connection in any way whatsoever with its work. Policies affording additional insured status shall be the primary non-contributory insurance for any work performed under this Agreement.

(v) The Developer is as fully responsible to the County for the acts and omissions of its subcontractors and of persons employed by them as it is for acts and omissions of persons whom the Developer employs directly.

**18. WMATA Insurance Requirements.** The Developer shall be subject to the terms of **Exhibit G – WMATA Insurance Requirements.** The Developer and its subcontractors of every tier to shall have all insurance policies required by the Agreement endorsed to waive the insurance company's rights of recovery against WMATA and the WMATA Board of Directors. Coverage shall be provided on an endorsement that is acceptable to WMATA. The terms of this section shall survive the expiration or earlier termination of this Agreement.

**19. NVTA Insurance Requirements.** The Project is funded in part by grants from the Northern Virginia Transportation Authority (NVTA). The Developer shall name NVTA and its Bond Trustee as an additional insured on any insurance policy (except workers compensation and automotive and professional liability) issued for work to be performed for the project and present NVTA with satisfactory evidence thereof before any work on the Project commences or continues.

**20. DRPT Contract Provisions.**

a. The Developer, their agents and employees shall comply with all covenants and provisions of the Virginia Department of Rail and Public Transportation (DRPT) Master Agreement for the Use of Commonwealth Transportation Funds with the County Board of Arlington County VA dated July 1, 2020 (the "**DRPT Agreement**"), and shall be made expressly a part of any subcontracts executed by the Developer and shall be binding on all subcontractors, vendors, their agents and employees. The County represents and warrants that the DRPT Agreement remains in its original form and has not been amended in any fashion by either or both parties thereto.

b. The Developer shall name Commonwealth of Virginia, DRPT, the Virginia Department of Transportation and their officers, employees and agents as additional insureds on any insurance policy (except workers compensation and automotive and professional liability) issued for the Work to be performed, and present satisfactory evidence of insurance coverage before commencing with any Work, so that they are protected for losses to the extent caused by the negligence or willful misconduct of such entity or person, from third party claims that are directly related to or arise out of: (a) any failure by the Developer to comply with, to observe or to perform in any material respect any of the covenants, obligations, agreements, terms or conditions

in this Project, or any breach by the Developer of its representations or warranties in this Project; (b) any actual or willful misconduct or negligence of Developer its employees or agents in direct connection with the Work; (c) any actual or alleged patent or copyright infringement or other actual or alleged improper appropriation or use of trade secrets, patents, proprietary information, know-how, trademarked or service-marked materials, equipment devices or processes, copyright rights or inventions by the Developer in direct connection with the Work; (d) inverse condemnation, trespass, nuisance or similar taking of harm to real property committed or caused by the Developer, its employees or agents in direct connection with the Work; or (e) any assumed liabilities.

## **21. Performance and Payment Bonds.**

a. Performance Surety. A fully completed and properly executed original Performance Bond in the amount of 100% of the GMP will be required of the Developer as a condition of this Agreement to ensure satisfactory completion of the Work. The bond shall be a corporate surety bond substantially in the form of **Exhibit L – Performance Bond Form** issued by a surety company authorized to do business in the Commonwealth of Virginia and acceptable to the County. Where applicable, the Performance Bond shall be renewable annually in the original amount through the completion of the Agreement, including all warranty and guarantee periods.

b. Payment Bond. A fully completed and properly executed original Payment Bond in the amount of 100% of the GMP, will be required of the Developer as a condition of this Agreement ensure payment of all persons who have and fulfill contracts for the Developer for performing labor, providing equipment, or providing material in the performance of the Work provided for in this Agreement. The bond shall be a corporate surety bond substantially in the form of **Exhibit M – Payment Bond Form** issued by a surety company authorized to do business in the Commonwealth of Virginia and acceptable to the County. Where applicable, the Payment Bond shall be renewable annually in the original amount for the duration of this Agreement.

## **22. Changes.**

a. The County may request a proposal for a change in the Work from the Developer. Any agreed-upon change will be reflected in a change order to be executed by both Parties. In the event no change is agreed upon, the County shall reimburse the Developer for its reasonable third-party costs incurred in preparing a requested proposal.

b. If the Developer's design of the Project deviates from the Interim Design Documents or if the Developer foresees such a deviation and the Developer demonstrates, to the County, a lack of technical viability of one or more aspects of the Interim Design Documents, then the Developer, after demonstrating to the County that the deviation is a reasonable one:

(1) Shall be entitled to a change in the Time for Completion or the GMP (or both), as applicable, pursuant to an agreement between the Parties; or

(2) Shall be entitled to request, from the County, a change in the Time for Completion or the GMP (or both), as applicable.

c. The County shall review requests by the Developer for changes in the Work, including adjustments to the GMP and the Time for Completion. The Developer's requests shall

include supporting information to permit the County to make a reasonable determination as to whether the change is warranted. Any agreed-upon change will be reflected in a change order to be to be executed by both Parties.

### **23. Relief Events.**

a. Delay Events. In the event of a Delay Event, the Developer shall be excused from performance of the Work that is delayed and entitled to a day-for-day extension of the Time for Completion to the extent that the Developer demonstrates a delay in the Critical Path. Any extension of the Time for Completion arising from a Delay Event shall be reflected on an updated Schedule. “**Critical Path**” shall mean the longest sequence of activities for the Project and thereby establishes the minimum length of time for the accomplishment of the Project. A delay in the Critical Path is therefore an event or events which causes an increase in the minimum length of time for completion of the Project.

b. Compensation Events. In the event of a Compensation Event, the Developer shall be entitled to compensation in the form of an adjustment to one or more of the following GMP Components, but only to the extent such GMP Component is affected by the Compensation Event: (i) the Cost of the Work, (ii) the Development Fee, and (iii) the General Conditions Fee. The calculation of each adjustment to the Cost of the Work shall be based upon the difference in the projected cost related to the Project immediately prior to the occurrence of the Compensation Event and the projected cost related to the Project after taking into account the impact of the Compensation Event. The calculation of each adjustment to the Development Fee shall be based upon the proportion of the Development Fee to the overall GMP, notwithstanding the provisions of Section 5(f) above. The calculation of each adjustment to the General Conditions Fee shall be based upon the rates set forth in **Exhibit D – Compensation**.

c. Mitigation. The Developer will be obligated to make reasonable efforts to mitigate the effects of any Delay Events and Compensation Events and the resulting delays, costs and damages.

d. Notice and Request. If the Developer believes it is entitled to relief pursuant to paragraph (a) or (b) above, it must provide written notice to the County at the time of the occurrence giving rise to the request for relief at the inception of the Delay Event or Compensation Event, and in no event later than ten (10) days after the inception of the event, or after the Developer reasonably should have recognized the occurrence giving rise to the request, whichever is later; provided, however, that notwithstanding the notice period referenced above, notice of circumstances described in subsections (f)(1)(A)(vi) and (f)(2)(A)(iv) below must be provided via ebuilder no later than the next business day following the Developer’s receipt of test results revealing or confirming the presence of a Hazardous Substance on, in, under or emanating from the site of the Project that is present at concentrations or in quantities that (1) may present a safety or health hazard to individuals or the environment or (2) are required to be removed or remediated by law or in accordance with the requirements of any governmental authority. For clarity, a “**Hazardous Substance**” means a substance listed under the federal Comprehensive Environmental Response Compensation and Liability Act, P.L. 96-510, or any other substance that is regulated by any governmental authority. Following its delivery of notice, the Developer must submit a written request to the County stating the basis for such relief within thirty (30) days after

the cessation of the occurrence giving rise to the request for relief. Such request shall include sufficient information and documentation to advise the County of the facts and circumstances giving rise to the request, the specific contractual adjustment or relief requested, and the basis for the Developer's entitlement to the adjustment or relief. The Parties shall negotiate in good faith and as expeditiously as possible the appropriate adjustment or relief, if any, for the relevant Delay Event or Compensation Event, with any such adjustment or relief to be reflected in a change order. No request for a Delay Event or Compensation Event will be allowed unless the Developer has given the written notice required.

e. Other Claims. Any other claims by the Developer for additional compensation or time not covered above may be submitted in writing to the Project Officer for consideration, provided the Developer gave written notice to the County at the time of the occurrence and presents a complete claim submittal as soon as the basis for the claim ceases, but in no event later than thirty (30) days. A complete claim submittal must include sufficient information and documentation to advise the County of the facts and circumstances giving rise to the claim.

f. Relief Event Definitions. For purposes of this Agreement:

(1) **Delay Event:**

(A) means, with respect to any time between the Effective Date and the Final Completion Date, the occurrence of any of the following:

(i) a County-Caused Delay;

(ii) a WMATA-Caused Delay;

(iii) a Force Majeure as defined in Section 36(b) of this Agreement;

(iv) a physical condition at the site of the Project discovered or encountered during performance of the Work that (1) adversely impacts the performance of the Work by the Developer and (2) was not visible or differs materially from the reasonably anticipated conditions;

(v) an unusually severe weather condition at the Project site, provided that time extensions for weather delays during a given month will be allowed only for actual working days in excess of the numbers listed below (based on a five-day work week) and only when those excess days of delay affect the current Critical Path leading to specified completion or milestone dates;

<b>Month</b>	<b>Working Days</b>
January	4
February	4
March	4
April	5

<b>Month</b>	<b>Working Days</b>
May	5
June	2
July	2
August	3
September	2
October	3
November	4
December	4

(vi) the discovery of a Hazardous Substance on, in, under or emanating from the site of the Project that is present at concentrations or in quantities that (1) may present a safety or health hazard to individuals or the environment or (2) are required to be removed or remediated by law or in accordance with the requirements of any governmental authority;

(vii) [Not Used];

(viii) issuance by a court of competent jurisdiction of an injunction or other order enjoining or estopping either the County or the Developer from the performance of its obligations or exercise of its rights under the Agreement;

(ix) a change in law that imposes one or more changed or additional requirements that directly and adversely impact the performance of the Work by the Developer and that could not have been reasonably anticipated by a reasonable developer or contractor;

(x) with regard to any parcel owned by the County as of the Effective Date for which entry or occupancy by Developer is necessary or reasonably convenient to Developer's performance of its obligations hereunder, the County's lack of the right to so enter or occupy such parcel;

(xi) a strike, labor dispute or other labor protest involving any person retained, employed or hired by the Developer (at any tier) to supply materials or services for or in connection with the Project, to the extent not within the control of either the Developer or the Design-Build Subcontractor, provided that such strike, dispute or protest is not directed specifically at the Developer or the Design-Build Subcontractor;

(xii) a delay attributable to (1) a utility owner's refusal to enter or delay in entering into an agreement on terms customary for a utility provider affected by projects of a similar size and scope despite the Developer's exercise of diligent efforts to obtain the

utility owner's acceptance or (2) a utility owner's failure to perform its obligations in accordance with the terms of such an agreement following the Developer's diligent efforts to obtain the utility owner's cooperation; or

(xiii) the discovery of a utility which could not have been reasonably discovered pursuant to, or the existence of which could not have been reasonably inferred from, the Developer's reasonable investigations and inspections undertaken prior to the Effective Date; and

(B) does not include any delay to the extent caused primarily by:

(i) the fault, negligence, recklessness or willful misconduct of the Developer, including but not limited to delays resulting from defective work, rejected work which must be corrected, or submittals that are reasonably rejected by the County;

(ii) any act or omission by the Developer in breach of the provisions of this Agreement;

(iii) a failure on the part of the Developer to (a) provide submittals to the County or any other governmental authority with jurisdiction over the Project within required timeframes or (b) meet WMATA's requirements for the Project as provided in the WMATA Agreement; or

(iv) any dispute between the members of the Developer.

(2) **Compensation Event** means:

(A) with respect to any time between the Effective Date and the Final Completion Date, the occurrence of any of the following:

(i) a County-Caused Delay provided that, with regard to one or more of the events set forth in subsection (a) of the definition of County-Caused Delay, the cumulative impact on the Critical Path exceeds 10 days;

(ii) a WMATA-Caused Delay;

(iii) a physical condition at the site of the Project discovered or encountered during performance of the Work that (1) adversely impacts the performance of the Work by the Developer and (2) was not visible or differs from the reasonably anticipated conditions;



(iv) the discovery of a Hazardous Substance on, in, under or emanating from the site of the Project that is present at concentrations or in quantities that (1) may present a safety or health hazard to individuals or the environment or (2) are required to be removed or remediated by law or in accordance with the requirements of any governmental authority;

(v) [Not Used];

(vi) a change in law that imposes one or more changed or additional requirements that directly and adversely impact the performance of the Work by the Developer and that could not have been reasonably anticipated by a reasonable developer or contractor; or

(vii) with regard to any parcel owned by the County as of the Effective Date for which entry or occupancy by Developer is necessary or reasonably convenient to Developer's performance of its obligations hereunder, the County's lack of the right to so enter or occupy such parcel (with the understanding that the Parties are currently unaware of the existence any such parcel); and

(B) which under clause (A) above results in documented additional cost in the performance by the Developer of any obligation under the Agreement, provided that the Compensation Events do not include any events to the extent the additional cost is caused by:

(i) the fault, negligence, recklessness or willful misconduct of the Developer, including but not limited to delays resulting from defective work, rejected work which must be corrected, or submittals reasonably rejected by the County; or

(ii) any act or omission by the Developer in breach of the provisions of this Agreement; or

(iii) any dispute between the members of the Developer.

(3) **County-Caused Delay** means:

(A) any of the following, but only to the extent of a demonstrated impact on the Critical Path:

(i) a failure by the County to issue an approval, authorization, notice or permit, provide comments or a response, furnish a deliverable, or take any other act within the applicable time period provided in this Agreement or beyond the time period allowed by state or local code, whichever is later;

(ii) a failure by the County in performing any of its obligations, not due to a Force Majeure event, pursuant to this Agreement;

(iii) interference with or interruption of the Developer's prosecution of the Work attributable to the County or its employees, agents, representatives or separate contractors; or

(iv) a suspension of the Work by the County pursuant to **Exhibit C – County DES General Conditions (Amended)** that is not due to the fault of the Developer; or

(B) damage to the Work attributable to the County or its separate contractors.

(4) **WMATA-Caused Delay** means:

(A) any of the following, but only to the extent of a demonstrated impact on the Critical Path, separately or together with one or more other WMATA-Caused Delays, in excess of 15 days:

(i) a failure by WMATA to issue an approval, authorization, notice or permit, provide comments or a response, furnish a deliverable, or take any other act within the applicable time period provided in the WMATA Agreement;

(ii) interference with or interruption of the Developer's prosecution of the Work attributable to WMATA or its employees, agents, representatives or separate contractors, except as expressly permitted pursuant to the WMATA Agreement;

(iii) a suspension of the Work by WMATA, whether pursuant to the WMATA Agreement or otherwise, except to the extent due to (A) issuance of a stop work order by WMATA pursuant to Section 3(a) of **Exhibit B – Special Conditions**, (B) an exercise of authority by WMATA's inspector pursuant to 23(b) of **Exhibit B – Special Conditions**, or (C) the fault of Developer; or

(iv) unscheduled operation of WMATA's Metrorail system or a full or partial closure of the Crystal City Metrorail Station, which operation or closure adversely impacts the Developer's prosecution of the Work; or

(B) Damage to the Work attributable to WMATA or its employees, agents, representatives or separate contractors, except as expressly permitted pursuant to the WMATA Agreement.

However, in the event that WMATA does not issue a certificate of Final Completion to the County and Developer has satisfied all the criteria for WMATA to issue a certificate of Final Completion then WMATA's failure to issue a certificate of Final Completion shall be a WMATA-Caused Delay (and, accordingly, only a Delay Event under this Agreement). In the event a dispute exists between WMATA, the Developer and the County as to whether the criteria for WMATA to issue a certificate of Final Completion have been satisfied then WMATA's failure to issue a certificate of Final Completion to the County shall not be a Delay Event under this Agreement.

#### **24. Default; Remedies; Limitations.**

a. Default by the Developer. If the Developer fails to diligently prosecute the Work, or fails to act in good faith, or fails to perform any of its obligations under this Agreement, or otherwise breaches a material term of this Agreement (a "**Developer Default**"), the County is entitled to give notice to the Developer, which must specify the Developer Default and demand of performance. The Developer must cure the specified Developer Default within ten (10) calendar days after it receives the notice of the Developer Default unless such breach cannot be cured or remedied within (10) calendar days in which case the period for remedy or cure shall be extended for a reasonable time (not to exceed an additional thirty (30) days or longer period as the County agrees to) provided the Developer has made and continues to make a diligent effort to effect.

b. Default by County. If the County fails to provide the Developer with assurance of full funding for the Work under this Agreement, or fails to act in good faith, or fails to perform any of its obligations under this Agreement, or otherwise breaches a material term of this Agreement (a "**County Default**"), the Developer is entitled to give notice to the County which must specify the County Default and demand of performance. The County must cure the specified County Default within ten (10) calendar days after it receives the notice of County Default unless such breach cannot be cured or remedied within ten (10) calendar days in which case the period for remedy or cure shall be extended for a reasonable time (not to exceed an additional thirty (30) days or longer period as the Developer agrees to) provided the County has made and continues to make a diligent effort to effect; provided, however, that with regard to a County Default involving the payment of undisputed money (a "**County Payment Default**"), the cure period shall be no more than fifteen (15) calendar days after the County receives the notice of the County Default.

c. County Remedies for Developer Default. If the Developer does not cure the Developer Default within the specified period, the County will be entitled to terminate this Agreement in whole or in part immediately by giving notice of termination to the Developer, and at the County's option, either (i) receive payment from Developer for any reasonably anticipated additional costs to be incurred by the County to reprocur the terminated services, with such payment to be made within 30 days after notification by the County of such additional costs; or (ii) pursue all other available remedies at law, or in equity, subject to the pre-conditions and limitations specified in this Agreement. Upon receipt of a notice of termination, the Developer (y) must not place any further orders or enter into any additional subcontracts for materials, services or facilities; and (z) must terminate all vendors and subcontracts as soon as reasonably practicable, except as are reasonably necessary or convenient for the completion of any portion of the Work that the County did not terminate.

d. Developer Remedies for County Default.

(i) If the County does not cure the County Default within the specified period, the Developer will be entitled to terminate this Agreement immediately by giving notice of the termination to the County, and at the Developer's option, either (i) receive payment for all Work performed and expenses incurred prior to the date of termination and any other reasonable termination costs; or (ii) pursue all other available remedies at law, or in equity, subject to the pre-conditions and limitations specified in this Agreement. The Developer must submit any request for termination costs, with all supporting documentation, to the County Project Officer within 30 days after the termination date.

(ii) In addition to the Developer's rights as set forth in subsection 24(d)(i) above and without limiting any of the Developer's other rights under this Agreement, if the County does not cure a County Payment Default within the specified period, the Developer will have the option to suspend its performance of the Work immediately (without terminating the Agreement) by giving notice of the suspension to the County. In the event the Developer exercises this option, it will be entitled to (i) an equitable adjustment in the GMP and the Time for Completion reflecting the period of such suspension and associated costs and (ii) commence demobilizing its operations fourteen (14) days after it suspended its performance.

e. Limitations. Notwithstanding anything in this Agreement, neither the County nor the Developer will be liable to the other Party for any punitive, indirect, or consequential damages arising in connection with this Agreement (including lost profits, opportunity costs, or any other damages).

f. Deliverables.

(i) Upon any termination, all deliverables then made or in production, including any work product, plans, projections, design concepts and other items ("**Deliverables**") delivered or due to be delivered to the County on or before the date of termination, will become property of the County upon delivery or the date of termination, whichever is earlier, except to the extent the County has failed to pay for such Deliverables after being appropriately invoiced by the Developer.

(ii) In the event of an uncured County Default or an uncured County Payment Default, the Developer will not be obligated to deliver or release to County any Deliverables for which the Developer has not been paid in full.

**25. Termination for Convenience.** The County may terminate this Agreement in whole or in part in the event the County determines that termination is in the County's best interest, provided that the County gives the Developer at least 15 days' prior notice in writing. The notice must specify the extent to which the Agreement is terminated and the effective date of the termination. Except as otherwise provided in the notice, the Developer must stop work on the effective date of the termination as reflected in the notice. Notwithstanding any termination, the County shall pay the Developer for all completed or partially completed work in accordance with the terms of this Agreement plus any other reasonable amounts. The Developer must submit any request for

termination costs, with all supporting documentation, to the County Project Officer within 30 days after the termination date.

**26. Dispute Resolution.** The Parties agree to the following dispute resolution procedure. Any disputes arising out of this Agreement shall first commence with good-faith dispute resolution between the County Project Officer and the Developer's Project Executive. Any dispute that cannot be resolved by the Project Executive shall be formally referred to the second level reviewers, who shall be Hui Wang, Director of Transportation, for the County and Joe Abidin for the Developer. If the dispute cannot be resolved by the second level of review, then the matter shall be presented to the Arlington County Manager and Mo Hosseini, Director, for the Developer. In the event such efforts are ineffective in resolving a dispute, jurisdiction for the pursuit of remedies at law or in equity shall lie in the Circuit Court of Arlington County, subject to Va. Code Section 15.2-1243 et seq. Pending final resolution of any dispute, each Party will continue to fulfill its respective obligations under this Agreement. **THE COUNTY AND THE DEVELOPER SPECIFICALLY WAIVE ANY RIGHT TO A TRIAL BY JURY IN ANY COURT WITH RESPECT TO ANY CONTRACTUAL, TORTIOUS OR STATUTORY CLAIM, COUNTERCLAIM OR CROSS-CLAIM AGAINST THE OTHER ARISING OUT OF OR CONNECTED IN ANY WAY TO THE PROJECT OR THIS AGREEMENT BECAUSE THE PARTIES HERETO, BOTH OF WHOM ARE REPRESENTED BY COUNSEL, BELIEVE THAT THE COMPLEX COMMERCIAL AND PROFESSIONAL ASPECTS OF THEIR DEALINGS WITH ONE ANOTHER MAKE A JURY DETERMINATION NEITHER DESIRABLE NOR APPROPRIATE.**

**27. Notices.** All written notices and other communications required by this Agreement are deemed to have been given when either (a) delivered in person; (b) delivered by an agent, such as a delivery service; or (c) deposited in the United States mail, postage prepaid, certified or registered and addressed as follows:

**TO THE COUNTY:** Lynn Rivers, Transit Bureau Chief  
Arlington County  
2100 Clarendon Blvd, Suite 900  
Arlington, VA 22201

With a copy to: MinhChau Corr  
County Attorney  
Arlington County  
2100 Clarendon Blvd., Suite 403  
Arlington, VA 22201

**TO THE DEVELOPER:** Jay Corbalis, Vice President  
c/o JBG SMITH  
4747 Bethesda Avenue, Suite 200  
Bethesda, MD 20814

and

John O'Keefe, President

c/o Clark Construction Group, LLC  
7900 Westpark Drive  
McLean, VA 22102

With copies to:

Aaron Herman, Deputy General  
Counsel and CCO  
c/o JBG SMITH  
4747 Bethesda Avenue, Suite 200  
Bethesda, MD 20814

and

Grey Callaham, Senior Vice President  
c/o Clark Construction Group, LLC  
7900 Westpark Drive  
McLean, VA 22102

**28. Employment Discrimination by the Developer Prohibited.** During the performance of its work pursuant to this Agreement: (i) the Developer will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age or disability or on any other basis prohibited by state law. the Developer agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause; (ii) notices, advertisements and solicitations placed in accordance with federal law, rule or regulation will be deemed sufficient for meeting the requirements of this section; (iii) the Developer will state in all solicitations or advertisements for employees that it places or causes to be placed that such the Developer is an Equal Opportunity Employer; (iv) the Developer will comply with the provisions of the Americans with Disabilities Act of 1990 (“ADA”), which prohibits discrimination against individuals with disabilities in employment and mandates that disabled individuals be provided access to publicly and privately provided services and activities; and (v) the Developer must include the provisions of the foregoing paragraphs in every subcontract or purchase order of more than \$10,000.00 relating to this Agreement so that the provisions will be binding upon each subcontractor or vendor.

**29. Employment Of Unauthorized Aliens Prohibited.** In accordance with §2.2-4311.1 of the Code of Virginia, as amended, the Developer must not during the performance of this Agreement knowingly employ an unauthorized alien, as that term is defined in the federal Immigration Reform and Control Act of 1986.

**30. Drug-Free Workplace To Be Maintained By the Developer.** During the performance of this Agreement, the Developer must: (i) provide a drug-free workplace for its employees; (ii) 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 the workplace and specifying the actions that will be taken against employees for violating such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the Developer that the Developer maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of more than \$10,000.00 relating to this Agreement so that the provisions will

be binding upon each subcontractor or vendor. For the purposes of this section, “workplace” means the site(s) for the performance of the work required by this Agreement.

**31. Sexual Harassment Policy.** The Developer shall (i) provide annual training on the Developer’s sexual harassment policy to all supervisors and employees providing services in the Commonwealth, except such supervisors or employees that are required to complete sexual harassment training provided by the Department of Human Resource Management, and (ii) post the Developer’s sexual harassment policy in (a) a conspicuous public place in each building located in the Commonwealth that the Developer owns or leases for business purposes and (b) the Developer’s employee handbook.

**32. WMATA Agreement.** The County, as of the Effective Date, hereby represents and warrants to the Developer that:

(i) the County will enter into that certain agreement titled “Project Construction Coordination Agreement” between the County and WMATA, , in relation to the Project (the “**WMATA Agreement**”);

(ii) the WMATA Agreement will be duly authorized, executed and delivered by the County and by WMATA;

(iii) the WMATA Agreement will be in full force and effect in accordance with its terms and constitutes a valid and legally binding obligation of the parties thereto enforceable by each such party against the other in accordance with its terms;

(iv) the WMATA Agreement will remain in its original form and has not been amended, terminated, voided or revoked in any fashion by either or both parties thereto; and

(v) Once executed, the County will deliver to the Developer a complete copy of the WMATA Agreement (including all exhibits and attachments thereto) in electronic form.

**33. Incorporation of Federal Transit Administration (FTA) Terms.** This Project is partially funded with FTA funds and therefore this Agreement is subject to certain provisions required by the U.S. Department of Transportation, as set forth in FTA Circular 4220.1.F, which is attached as **Exhibit I – FTA Clauses**. The use of the word “Contractor” or “Proposer” in the FTA provisions shall mean the Developer. All FTA-mandated terms control in the event of a conflict with any other provisions of this Agreement. The Developer must not perform any act, fail to perform any act or refuse to comply with any County requests if doing so would cause the County to violate the FTA terms and conditions.

The Developer must include this clause without modification in each subcontract that is financed in whole or in part by the FTA.

**34. Dispute Resolution between the Members of the Developer.** If a dispute between the various members of the Developer arises, the Developer agrees that the Work described in this Agreement shall continue while the members seek to resolve their dispute. In the event the

Developer stops the Work described in this Agreement due to a dispute between the members of the Developer, then this shall be considered a Developer Default as described in Section 24(a).

**35. [Not Used].**

**36. Various Agreement Matters.**

a. Governing Law; Forum; Venue; Binding Contract; Waiver. This Agreement is governed in all respects by the laws of the Commonwealth of Virginia; and the jurisdiction, forum and venue for any litigation concerning the Agreement or the Work is in the Circuit Court for Arlington County, Virginia, and in no other court. This Agreement is binding upon and inures to the benefit of each of the Parties and their respective permitted legal successors and permitted assigns. The failure of a Party to demand strict performance of any provision, or to exercise any right conferred, under this Agreement is not, and is not be construed as, a waiver of relinquishment of that Party's right to assert or rely on that provision or right in the future. Either Party, however, may elect to waive any right or benefit to which it is entitled under this Agreement.

b. Force Majeure. Neither Party will be held responsible for failure to perform the duties and responsibilities imposed by this Agreement if such failure is due to a fire, riot, rebellion, natural disaster, pandemic, war, act of terrorism or act of God or other cause that is beyond the control of the Party and that makes performance impossible or illegal (each a "Force Majeure"), unless otherwise specified in the Agreement.

c. Assignment. The Developer may not assign, transfer, convey or otherwise dispose of any award or any of its rights, obligations or interests under this Agreement without the prior written consent of the County, which shall not unreasonably be withheld, conditioned or delayed.

d. Entire Agreement; Amendment; Counterparts. This Agreement constitutes the entire agreement of the Parties as to the Project. This Agreement may only be amended or modified by a writing signed on behalf of each of the Parties. This Agreement may be signed in any number of counterparts, and, so long as each Party signs at least one counterpart, each signed counterpart evidences an original Agreement, but all signed counterparts together constitute but one Agreement.

e. Ambiguities. The Parties and their counsel have participated fully in the drafting of this Agreement; and any rule that ambiguities are to be resolved against the drafting Party does not apply. The language in this Agreement is to be interpreted as to its plain meaning and not strictly for or against any Party.

f. [Not Used]

g. Nonexclusivity of Remedies. All remedies available to the Parties under this Agreement are cumulative, and no remedy will be exclusive of any other at law or in equity.

h. Severability. The sections, paragraphs, clauses, sentences, and phrases of this Agreement are severable; and if any section, paragraph, clause, sentence or phrase of this Agreement is declared invalid by a court of competent jurisdiction, the rest of the Agreement will remain in effect.



i. No Waiver of Sovereign Immunity. Notwithstanding anything herein to the contrary, nothing in this Agreement shall constitute a waiver of the County's sovereign immunity; provided, however, that, for the avoidance of doubt, sovereign immunity shall not bar an action to enforce the terms of this Agreement. This subsection shall survive any termination or cancellation of this Agreement.

j. Time. With respect to all time periods contained in this Agreement, it is expressly understood that time shall be of the essence.

k. Authority. Each Party represents and warrants to the other that it: (i) possesses full legal right, power and authority to enter into this Agreement and to fulfill its obligations hereunder; (ii) has received all required approvals and authorizations needed to enter into this Agreement; and (iii) each of the individuals whose signature appears below has full authority to execute this Agreement on behalf of the Party on whose behalf he or she has affixed his or her signature.

*[Signatures on following page]*

**IN WITNESS WHEREOF**, the Parties hereto have executed this Agreement as of the day and year shown below.


**COUNTY BOARD OF ARLINGTON COUNTY, VIRGINIA**

Date: 8/4/2023

By:  3B97A255DD9741F...

Mark Schwartz  
County Manager

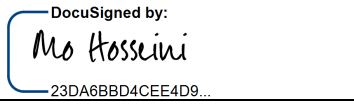
Approved as to Form:

By:  E84AACFCC1EA400...

County Attorney

**EAST ENTRANCE LLC**

Date: 8/4/2023

By:  23DA6BBD4CEE4D9...

Mo Hosseini, Director

## EXHIBIT A – PROJECT SCOPE

Exhibit A.1 – Assumptions and Exclusions

Exhibit A.2 – Scope of Services

Exhibit A.3 – Interim Design Documents

## **Exhibit A.1 – Assumptions and Exclusions**

# 1.0 Assumptions

- 1.1 Budget is based upon Davis Bacon General Decision Number VA20220035 dated 03/24/23. For trade classifications not included in Davis Bacon General Decision Number VA20220035, we have carried the rate from Davis Bacon General Decision Number VA20210013, dated 01/13/23 per direction received from the County.
- 1.2 This budget is based upon receiving approvals and permits in accordance with the milestones shown in the Exhibit E – Baseline Project Schedule prior to starting construction. The construction duration will begin after receipt of all permits necessary to the work.
- 1.3 Major work items inside the train room are budgeted per the Exhibit E – Baseline Project Schedule during multiple 56-hour weekend shutdowns. We do not include the design submission for a full station Authorized Construction Site (ACS) as our price and schedule is based on the 56-hour weekend shutdowns. The major work items included are as follows:
- › Precast Parapets
  - › Structural steel
  - › Metal decking
  - › Fireproofing
  - › Cast-in-place concrete
  - › Anchor bolts
  - › Selective demolition
  - › Ceiling grid/ceiling
  - › Portions of mechanical, electrical, plumbing and fire protection

- 1.4 All work outside of the train room is assumed to take place during normal daytime hours with the exception of the demolition through existing station wall.
- 1.5 Budget estimate assumes that adequate spare power capacity exists at the station to accommodate the new station elements as confirmed by WMATA.
- 1.6 We assume the separate WMATA AC Switchgear replacement project will be completed prior to the start of our CCEE work per WMATA Procure RFI #73: Updating Timing of Crystal City East AC Switchboard Project.
- 1.7 Budget estimate has been developed assuming the closure of traffic lanes and sidewalks on 18th Street and Crystal Drive in accordance with the Maintenance of Traffic plans provided in the CCEE Construction Approach and Maintenance of Traffic (MOT) Memorandum, dated 04/28/23. Our price is based on closing the north lane and sidewalk of 18th Street from the east end of the loading dock to Crystal Drive for the duration of the Project. Additionally, our price is based on closing the west lane and sidewalk on Crystal Drive from the south end of the existing vent shaft and future patio limits to the north lane of 18th Street for the duration of the project. We will install jersey barriers with a 5' fence on top to separate our work area from the public street/sidewalks. Rolling gates will be installed for access to the project site. We also assume that the project will be able to have full lane closures on 18th Street as necessary to complete the paving and utilities identified in Package #3 design documents. We understand there may be limited access to the north end of the site through JBG Smith's driveway to 1770 Crystal Dr, only if approved by JBG Smith. We will coordinate and gain approval from JBG Smith prior to utilizing the JBG Smith driveway to access the site.
- 1.8 We do not include any cost for providing temporary emergency egress path/life safety corridor during the south platform stair demolition and mezzanine construction.
- 1.9 We have included six and two panel folding doors at the glass windscreen for entry into the station; therefore, the WMATA standard station entrance gate has not been included.
- 1.10 It is assumed that the signage modifications will be based on the 2022 WMATA Standard Signage manual specifications for symbol and lettering modifications.
- 1.11 We have assumed certified WMATA and DDOT DBE subcontractors are eligible contributions towards meeting the County's Disadvantaged Business Enterprise (DBE) goal for this project. We have included 21.4% DBE participation with our proposal.
- 1.12 It is assumed that the design of the proposed egress stairs is acceptable to WMATA and will not need to be validated again, therefore we have not included an egress analysis or pedestrian modeling for this project.

- 1.13 The 30% design assumes a micropile system will meet WMATA differential settlement requirements. Change to the proposed structural system or its parameters are not included.
- 1.14 The Amendment 2 Memorandum states that the grade level metro pylon will be provided under the Metro Mark Square Project.
- 1.15 Our approach and schedule are based on submitting the Civil Engineering Plans (CEP) at the 60% design stage. The CEP submission will include the Minimum Acceptance Criteria (MAC) requirements for the CEP Plan submission.
- 1.16 We have included costs for Low Iron Fully Tempered glass in lieu of the Windborne-Debris-Impact Resistance (listed in 08 80 00 specification) at the windscreen.
- 1.17 We have assumed that a temporary WMATA Real Estate Permit can be obtained from WMATA for the construction of the Project in accordance with the submitted schedule. For the temporary WMATA Real Estate Permit we have assumed that the Arlington County Site Plan #90 will satisfy the requirements for Article 7.h of the WMATA Application for Real Estate Permit.
- 1.18 We assume the structural design provided will allow enough headroom at the platform level, or that a WMATA waiver will be approved.
- 1.19 We assume adequate depth and clearance for the North Platform elevator pit without demolition and modifications to the existing invert slab, except as shown for the elevator sump pit.
- 1.20 We have included the cost for applicable sales tax.
- 1.21 In accordance with the direction provided by the County at the Electrical Scope Review on 6/8/23 meeting, we are carrying EMT conduits for the above grade conduits for the fiber optic relocation within JBGS loading dock and parking garage.
- 1.22 In accordance with the design discussions between JBGS and the County, we have included spray foam fireproofing in lieu of Intumescent Fireproofing for areas that are not exposed to public view based on discussions with Arlington County and WMATA.
- 1.23 The submitted GMP for the electrical scope of work, which is defined in Exhibit A-2 Scope for Services Section 3.6.16 to 3.6.18 (excluding cathodic protection, and duct banks), were established based on C3M Power Systems LLC's estimate dated 06/06/23. The overall GMP for the electrical scope of work is based on \$13,346,000 (\$9,743,000 - Division 26, \$2,269,000 - Division 27, and \$1,334,000 – Division 28).

The Developer shall make a good faith effort to compete and receive bids from electrical contractors with experience in performing the work following the Notice to Proceed (NTP) but no later than 45 days after the NTP.

The parties agree to this path forward in an effort to establish the most current market pricing. After the close of the bid(s) the Developer will provide the County with a recommended award (inclusive of factors of DBE participation, schedule, relevant experience, and ability to provide the scope as detailed in Exhibit A 3.6.16 to 3.6.18). The Developer and the County will collectively decide, based on bid documentation received, if the GMP electrical estimate has been validated or if the GMP amount for the electrical scope needs to be reduced to match market pricing.

**1.24 For mobilization we assume that 10% of the General Conditions fee will be paid within 45 days of receipt of the first monthly payment application and that 5% of the General Conditions fee will be paid within 45 days of receipt of the second monthly payment application.**

**1.25 Not Used**



## 2.0 Exclusions

- 2.1 We include Computational Fluid Dynamics/Subway Environment Simulation (CFD/SES) modeling and simulation analysis for smoke evacuation; however, we do not include any construction costs for modification to the existing smoke evacuation system within the station or tunnel as this work isn't anticipated as being required and it would be infeasible to quantify prior to the analysis.
- 2.2 Budget includes Quality Control services with a designated Quality Control Manager and 3rd Party Testing and Inspection Firm for construction, but does not include construction Quality Assurance services, special inspections or a Quality Assurance Manager since these are to be provided by the County.
- 2.3 Budget does not include adjustments to or relocation of the existing WMATA dome relief or vent shafts as no work is anticipated for these. We have included protecting the WMATA dome relief vent in-place.
- 2.4 No work is planned for the Automatic Train Control (ATC) system or platform edge lights; therefore, no costs are included in the estimate.
- 2.5 We do not include any cost with maintaining the pressurization of the existing station and plenums during our construction period.
- 2.6 We do not include any costs associated with WMATA Joint Development and Adjacent Construction fees or WMATA Cost Account expenses (engineering, reviews, escorts, inspectors, bus bridges, etc.) as it is assumed these are all covered under the County-WMATA agreement separately. **We have included the \$3,500 fee for a temporary WMATA Real Estate Permit.**
- 2.7 The CCEE project does not anticipate any work related to AC switchgear or traction power, therefore, this budget estimate does not carry any costs for those items, or any Supervisory Control and Data Acquisition (SCADA) systems related to these.
- 2.8 No Art in Transit improvements have been identified for the CCEE project; therefore, no costs have been included in this budget estimate.
- 2.9 We have not included any costs for providing a temporary emergency egress path or life safety corridor during the south platform back-of-house stairwell demolition and mezzanine construction.

- 2.10 We have excluded costs associated with LEED Certification based on WMATA and County acceptance of the project approach as approved in WMATA Procore Submittal #18: Project Sustainability Narrative on December 5, 2022. **We have included Envision verification.**
- 2.11 We have not included costs for any plantings, trees, shrubs, perennials, or irrigation in the Division 32 costs as none are anticipated.
- 2.12 We have not included costs for metal bollards and guard chains as listed on Specification Section 05 50 00, Sections 2.17 and 2.19 as none are shown in around the access hatch.
- 2.13 We have not included the cost for fare collection equipment or design as these are to be provided by WMATA. We have included costs for raceways and wiring to the fair collection equipment.
- 2.14 We exclude all headend software systems and software integration, which we believe WMATA will provide for this project, or already has active in their station.
- 2.15 We do not include a new ridership study as we assume the ridership figures used in the "Egress Analysis and Future Ridership Demand and Pedestrian Simulation Results" in the County's Basis of Concept Report (BOCR) and in the Fire Life Safety Report are acceptable to WMATA.
- 2.16 We do not include any scope of services relating to zoning, entitlements, right of ways, air emission approval, system availability fees, front footage charges, public inconvenience fees, permanent public space fees, loss of use charges, utility tap fees, utility right of ways, utility company permanent charges, permanent telephone, WMATA Agreements, WMATA Real Estate Permit (permanent), assessments, or Real Estate taxes.
- 2.17 In accordance with the Amendment 2 Memorandum the emergency communications phone is excluded.
- 2.18 We do not include upgrading or replacing existing WMATA systems to meet current code requirements.

- 2.19 We have not included costs for ballistic safety glazing at the station manager's kiosk. This aligns with the design of the station manager's kiosk at the Potomac Yard Station.
- 2.20 We have not included costs for any catch basins within Crystal Drive or 18th Street sidewalk curbs, as none are indicated.
- 2.21 We do not include the cost of upgrading the existing UPS systems. We assume that the UPS System replaced under AC Switchgear project will have adequate capacity.
- 2.22 We have not included design of tunnel ventilation improvements as these would be completed by WMATA under a separate project.

# Exhibit A.1.A – Project Cost Summary

<b>EAST ENTRANCE, LLC</b>			
<b>CRYSTAL CITY METRORAIL STATION</b>			
<b>EAST ENTRANCE PROJECT</b>			
<b>DATE: JUNE 20, 2023</b>			
<b>Item</b>	<b>Description</b>		
<b>A.</b>	<b>COST OF WORK</b>		
	Design Completion Services & Design During Construction Services		\$ 16,372,100
	Permit Fees		\$ 355,428
	Testing & Inspection		\$ 235,862
	Trade Costs		
	<b>Division 02 Existing Conditions</b>		<b>\$ 2,065,254</b>
	Demolition	\$2,036,504	
	Hazardous Material Testing	\$28,750	
	<b>Division 03 Concrete</b>		<b>\$ 9,544,272</b>
	Cast-In-Place Concrete	\$8,896,517	
	Precast Concrete	\$647,756	
	<b>Division 04 Masonry</b>		<b>\$ 1,419,494</b>
	Masonry	\$228,120	
	Granite	\$1,191,374	
	<b>Division 05 Metals</b>		<b>\$ 5,110,860</b>
	Structural Steel	\$2,515,430	
	Misc Metals	\$865,401	
	Ornamental Metals	\$1,730,029	
	<b>Division 06 Wood, Plastics, Composites</b>		<b>\$ 750,561</b>
	Rough Carpentry	\$750,561	
	<b>Division 07 Thermal &amp; Moisture Protection</b>		<b>\$ 3,472,310</b>
	Waterproofing	\$1,250,000	
	Roofing	\$730,887	
	Fireproofing	\$182,948	
	Joint Sealants	\$283,264	
	Wall Panels	\$1,025,211	
	<b>Division 08 Openings</b>		<b>\$ 2,788,848</b>
	HM Doors	\$359,688	
	Louvers	\$15,750	
	Glass & Glazing	\$2,413,410	
	<b>Division 09 Finishes</b>		<b>\$ 2,643,774</b>
	Drywall	\$596,831	
	Tile, Ceramic & Paver	\$913,645	
	Metal Ceilings	\$891,397	
	Painting	\$241,901	
	<b>Division 10 Specialties</b>		<b>\$ 746,507</b>
	Signage	\$689,259	
	Misc Accessories	\$38,308	
	10 Bird Control	\$18,941	
	<b>Division 11 Equipment</b>		<b>\$ 499,886</b>
	Station Kiosk	\$499,886	
	DIV 12 Furnishings	\$0	
	DIV 13 Special Construction	\$0	
	<b>Division 14 Conveying Equipment</b>		<b>\$ 3,766,104</b>
	Elevators	\$3,766,104	
	<b>Division 21 Fire Suppression</b>		<b>\$ 214,500</b>
	Fire Protection	\$214,500	
	<b>Division 22 Plumbing</b>		<b>\$ 1,830,120</b>
	Plumbing	\$1,830,120	
	<b>Division 23 HVAC</b>		<b>\$ 1,372,590</b>
	Heating, Ventilating and Air Conditioning	\$1,372,590	
	DIV 25 Integrated Automation		\$ -
	<b>Division 26 Electrical</b>		<b>\$ 10,672,376</b>
	Electrical	\$9,945,347	
	Cathodic Protection	\$352,694	
	Ductbank	\$374,335	
	<b>Division 27 Communications</b>		<b>\$ 2,314,380</b>
	Communications	\$2,314,380	
	<b>Division 28 Electronic Safety &amp; Security</b>		<b>\$ 1,360,680</b>
	Electronic Safety & Security	\$1,360,680	
	<b>Division 31 Earthwork</b>		<b>\$ 8,380,045</b>
	Geotechnical Instrumentation	\$761,255	
	Earthwork	\$2,160,072	
	Dewatering	\$517,500	

	SOE	\$2,662,695	
	Micropiles	\$2,278,522	
	<b>Division 32 Exterior Improvements</b>		<b>\$ 1,030,612</b>
	Asphalt	\$341,900	
	Site Concrete	\$395,667	
	Pavement Markings	\$57,570	
	Landscaping	\$74,341	
	Fencing	\$99,813	
	Covrit Fencing	\$61,320	
	<b>Division 33 Wet Utilities</b>		<b>\$ 909,590</b>
	Wet Utilities	\$909,590	
	Gross Receipts Tax		<b>\$ 189,362</b>
	Insurances and Bond		<b>\$ 5,116,164</b>
	Program Management Services		<b>\$ 2,190,000</b>
	<b>Subtotal Section A - Cost of Work</b>		<b>\$85,351,678</b>
<b>B.</b>			
	Developer's Contingency		<b>w/ Trades</b>
	<b>Subtotal Section B - Developer's Contingency</b>		<b>\$0</b>
<b>C.</b>	<b>COUNTY ALLOWANCES</b>		
1	Relocation of Plenum and Back-Of-House Cables and Raceways		<b>\$ 1,700,000</b>
2	Relocate Existing Utilities		<b>\$ 130,000</b>
3	Contaminated Soil		<b>\$ 72,000</b>
4	Maintainence of Existing Mechanical System		<b>\$ 265,000</b>
5	Concrete Repair		<b>\$ 175,000</b>
6	Traffic Signals		<b>\$ 150,000</b>
7	Design For Lighting at Canopy Level		<b>\$ 50,000</b>
8	Waterproofing Repair Allowance		<b>\$ 250,000</b>
9	Relocate FDC/flow test pipes at SW corner of 1770 building		<b>\$ 60,000</b>
10	Fiber Optic Utility Design & Fee		<b>\$ 315,000</b>
11	Fire Command Center Allowance		<b>\$ -</b>
	<b>Subtotal Section C - County Allowances</b>		<b>\$3,167,000</b>
<b>D.</b>	<b>DEVELOPER ALLOWANCES</b>		
	None		<b>\$ -</b>
	<b>Subtotal Section D - Developer Allowances</b>		<b>\$ -</b>
<b>E.</b>	<b>DEVELOPER FEE</b>		
	Developer's Fee		<b>\$ 15,139,497</b>
	<b>Subtotal Section E - Developer Fee</b>		<b>\$ 15,139,497.08</b>
<b>F.</b>	<b>GENERAL CONDITIONS FEE</b>		
	General Conditions		<b>\$ 11,760,453</b>
	General Requirements, not including Testing & Inspection		<b>\$ 1,359,026</b>
	Construction Field Office (3400 SF)		<b>\$ 425,363</b>
	<b>Subtotal Section F - General Conditions Fee</b>		<b>\$13,544,842</b>
	<b>DESIGN BUILD TOTAL</b>		<b>\$117,203,017</b>
<b>G.</b>	<b>ALTERNATES</b>		
1	Add Fire Alarm Command Center Allowance		<b>\$ 700,000</b>
	<b>Subtotal Section G - Alternates</b>		<b>\$700,000</b>

## **Exhibit A.2 – Scope of Services**

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# Scope of Services

## 1.0 Background

The East Entrance, LLC team, which is a Joint Venture between Clark Construction Group, LLC (Clark) and JBG SMITH (JBGS) Team (Clark-JBGS Team), have prepared this comprehensive Scope of Services for the Crystal City Metrorail Station East Entrance Project. This scope is based on the *Interim Design Documents* that accompany the Comprehensive Agreement between Arlington County (County) and the JBGS-Clark Team and are summarized in the Interim Design Documents Memorandum.

### 1.1 Project Description

The County, in coordination with the Washington Metropolitan Transit Authority (WMATA), is proposing a new Crystal City Metrorail Station East Entrance (CCEE). The proposed second entrance will provide additional capacity to accommodate more riders as the region continues to grow. The CCEE will be located at the east end of the existing station at the northwest quadrant of 18th Street S and Crystal Drive and will provide easier access from Crystal Drive, the Virginia Railway Express station, and the Metroway transit station.

The recommended at-grade entrance will construct a standalone structure along 18th Street S with faregates, ticket machines, and station manager's kiosk. Passenger entrances will serve 18th Street S on the south side and the future Metro Market Square (MMS) public space envisioned in the Crystal City Sector Plan on the north side. Three new elevators, a new mezzanine structure over the tracks, and stair access will be constructed to support vertical circulation into and out of the station.

## 2.0 Work Packages

The Scope of Services is based upon the delivery of a phased design and construction project through the four (4) separate work packages as described below. This approach also requires phased approvals such that the entire design is not complete prior to the start of some construction phases as further outlined below. It will be important that all stakeholders involved in the review and approval process have a clear understanding of the phased approach given design durations, review periods, permit issuances, and material fabrication will each have critical path milestones requiring timely inputs and reviews in order to be successful.

### 2.1 Package 1 – Enabling Work (Site Prep, MOT, SOE, Utility Relocation)

The first package includes all enabling work such as site/civil preparation, maintenance of traffic, support of excavation, utility relocation, and fiber optic cutovers. It will also include the deep foundations since they need to be installed prior to excavation. The purpose of breaking this early work out into its own package is to expedite these design items to allow for an early construction start.

This package will exclude final plumbing work for sewer, sanitary and domestic water, and fire protection. Final design for plumbing and fire protection service will be part of Design Package 3.

The remainder of the design in Packages 2-4 can be completed while the construction associated with these early activities in Package 1 progress in the field. This phased design and construction approach saves substantial time in the overall construction schedule.

This is the package that will allow for multiple WMATA and County permits to be executed.

## 2.2 Package 2 – Train Room, Station Back-of-House Temporary/Permanent Work

This package includes the design for all work on the inside of the existing train room and the back of house areas including substantial existing condition surveys and documentation. Once surveys are compiled, the relocations and cutover designs will be completed to facilitate the installation of the new construction elements. Since this is an active station, the relocations and cutovers will need to be designed and executed in a way that minimizes impacts to the existing systems, particularly systems associated with Life Safety. This will require continuous coordination with WMATA team members.

## 2.3 Package 3 – New Entrance Outside Existing Station and Pedestrian Passageway

This package contains the entirety of the design for the new entrance outside of the existing train room. Prior to starting wholesale design efforts, we will implement multi-day design partnering workshops to review the final 30% preconstruction design effort, discuss any questions or concerns, and ultimately establish the overall basis of design in partnership with key County and WMATA team members. The multi-day meetings will ensure goal alignment across stakeholders while promoting a culture of collaboration and trust among team members. At the completion of this design, the Commercial Building Permit can be executed.

## 2.4 Package 4 – Site Restoration, Civil, Lighting, and Landscaping

This package is the final restoration of the project site and includes final civil, lighting, and landscaping for the completion of the site surrounding the new entrance. Budget Estimate

## 3.0 Project Scope

There are three categories of services outlined under this document and described further below:

1. Program Management Services
2. Design Services
3. Construction Services

### 3.1 Program Management Services

Overall management of the project will be shared between the Clark-JBGS Team and the County Construction Manager (CM)/Quality Assurance Manager (QAM). In general, the Clark-JBGS Team will be responsible for day-to-day management, while the CM/QAM will serve as the County's representative providing oversight, technical expertise, reviewing and evaluating requests to ensure the design and construction team are fulfilling their obligations, and providing independent Quality Assurance and materials testing and inspections. The County CM/QAM will be hired separately by the County and be independent of the Clark-JBGS Team.

A detailed breakdown of these services are provided under **Attachment A – Program Management Scope of Services** with a summary of tasks as follows:

- › Overall day-to-day management of design and construction services
- › Manage and obtain all Easements and Licenses
- › Provide guidance and support to County staff for public outreach, organizing public meetings and preparing materials for the county website
- › Coordinate design and schedules with the County's adjacent projects, specifically the Metro Market Square and 18th Street Improvement Projects
- › Facilitate use of County e-Builder project management software system as well as WMATA Procore software for record-keeping, document control, and requests for information.
- › Organize, attend, and document project-related meetings
- › Assist in third-party coordination with adjacent Arlington County projects, private development projects, utility companies, and other stakeholders.
- › Assist in notification of affected property owners and coordination for sidewalk and/or lane closures
- › Develop outreach strategy and communications plan, including timeline, that comports with Arlington County requirements and WMATA's Public Participation Plan
- › Develop and maintain Project website content, including project renderings, documentation, updates, schedule information, events, public meeting announcements, and/or interactive media/webinars to solicit feedback should traditional public meetings be affected by social distancing requirements. Conduct online dialogues and interactive forums as part of the public engagement process.
- › Coordinate stakeholder meetings with partner agencies, including Arlington County Transit (ART), Arlington County Department of Economic Development, Virginia Department of Rail and Public

Transportation (DRPT), Virginia Passenger Rail Authority (VPRA), Virginia Railway Express (VRE), and WMATA.

- › Assist County in engaging with local community organizations, such as the Crystal City Civic Association, condo and apartment building representatives, and the National Landing Business Improvement District (BID) during construction. The project team will assist the County in responding to community comments during design and construction.

Additional information on program management scope of services can be found in Appendix A.

## 3.2 Design Services

Design services provided under this category are described in **Attachment B – Design Scope of Services**.

### Submission Milestones

There are four major design submission milestones scheduled for the project with 60%, 90%, 100%, and Issued for Construction (IFC) submittals.

A breakdown of interim milestones for each major submission is outlined below. The design team will prepare separate 60-90-100-IFC submissions for each of the four work packages described above. Packages and each submittal will include necessary plans, reports, calculations, and specifications to demonstrate compliance with relevant design criteria. Each of the 60-90-100-IFC submittals will be managed separately for the four work packages, with separate cover sheets, indexes, and other required custom content, for a total of twelve (16) submissions, four (4) for each Submittal Milestone.

#### 60% Design Submittal

- › Prepare & Submit 60% Design for Internal Review
- › Design-Builder Review
- › Design Team Updates
- › Design-Builder Backcheck
- › Design Team Updates
- › County-WMATA Review
- › Design-Build Team Response to County-WMATA Comments
- › County-WMATA Comment Resolution Meeting (CRM)

#### 90% Design Submittal

- › Prepare & Submit 90% Design for Internal Review
- › Design-Builder Review
- › Design Team Updates
- › Design-Builder Backcheck
- › Design Team Updates

- › County-WMATA Review
- › Design-Build Team Response to County-WMATA Comments
- › County-WMATA Comment Resolution Meeting (CRM)

#### 100% Design Submittal

- › Prepare & Submit 100% Design for Internal Review
- › Design-Builder Review
- › Design Team Updates
- › Design-Builder Backcheck
- › Design Team Updates
- › County-WMATA Review
- › Design-Build Team Response to County-WMATA Comments
- › County-WMATA Comment Resolution Meeting (CRM)

#### IFC Design Submittal

- › Design Team Prepare IFC Documents
- › Issue IFC Design Submittal

The above IFC submission will be made after all 100% comments have been resolved to the satisfaction of the County and WMATA.

## 3.3 Construction

The construction Scope of Services provides a summary of the labor, equipment, and materials required to perform all work outlined in the Comprehensive Agreement. These services are outlined under the following major categories that align with project pricing:

1. General Conditions Fee
2. Construction Trades
3. Allowances

## 3.4 General Conditions Fee

This category covers scope and budget for General Terms and Conditions as described in the Comprehensive Agreement between the County and Clark-JBGS Team.

## 3.5 General Requirements

This section provides scope and budget coverage for General Requirements incorporated into the Comprehensive Agreement between the County and Clark-JBGS Team.

## 3.6 Construction Trades

This section provides the Project Scope consistent with the applicable WMATA Division Specification section construction items with additional specification-specific clarifications summarized below. In accordance with various specification sections, we are including an off-site exterior mock-up of the canopy.

### 3.6.1 Division 2 Existing Conditions

This section captures existing conditions work such as pre-construction and site preparation tasks, site assessments and investigations, removal and restoration of existing facilities, demolition and partial of structures, and the remediation of groundwater.

#### Geophysical Investigations/Utility Locating

- › Provide subsurface utility locating test pits.
- › Test pitting procedure includes the coring and removing of any concrete surfaces, exposure of the subsurface pipe or conduit by use of vacuum truck, recording the pipe elevations/properties, filling in the test pit with appropriate backfill, and patching the concrete surface with rapid-setting concrete.
- › A subsurface utility report will be provided.

#### Demolition

- › Ground Penetrating Radar (GPR) scanning will be completed for all walls, floors, and slabs prior to demolition.
- › Engineered drawings and temporary shoring will be provided for demolition and temporary bracing needs during construction.
- › Partial removal of concrete floor slabs in back-of-house rooms for construction of inbound platform single elevator.
- › Partial removal of concrete wall between existing train room and back of house rooms on inbound and outbound platform sides for access to newly constructed mezzanine.
- › Removal of interior walls leading to new penetration for entrance into back of house rooms.
- › Removal of existing service stairs.
- › Partial removal of exterior wall to create new entrance into station
- › Partial removal of interior walls to accommodate new inbound platform single elevator and elevator machine room.
- › Partial removal of floor slab to accommodate inbound platform single elevator and sump pit.
- › Partial Removal of floor slabs at inbound and outbound platforms to accommodate new mezzanine and staircase supports.
- › Demolition operations will take place during 56-hour track outages with use of a hi-rail vehicle to transport equipment and materials to and from station.

#### Hazardous Material Abatement

- › Testing only of hazardous materials from surfaces, after pre-work inspections, including lead paint, brake dust, asbestos, and PCB ballasts.

### 3.6.2 Division 3 Concrete

#### Cast-In-Place Concrete

- › Includes furnishing and installing foundation concrete elements, including grade beams and slabs.
- › Furnish and install all concrete elements within new station, including slab on grade at new mezzanine and platform levels, new interior walls, roof slab, retaining wall, and concrete curbs.
- › Furnish and install concrete pedestals between existing tracks for new mezzanine support columns.
- › Set embedded items such as anchor bolts, steel plates, trench frames, steel bollards, corner guards, sleeves, angles, and stair nosing.
- › Provide board form finish in the elevator lobbies at the mezzanine and platform level.
- › Install hydrophilic grout tube system at all concrete joints at the breakthrough into the station per Note 9 on C09-S-101, Note 7 on C09-S-102, and Note 1 on C09-S-305. This Division will include furnish and installation of bentonite membrane assembly and hydrophilic grout.
- › Provide waterproofing injection hose system at contraction joints where required.
- › Based upon the as-built plans provided by WMATA, we've assumed adequate depth and clearance exists for the inbound single elevator sump pit without requiring demolition or modifications to the existing tunnel invert slab, except as shown in drawings for the elevator sump pit detail.
- › Provide a reinforced concrete pad for an offsite mock-up for architectural trades.

#### Precast Concrete

- › Includes delegated design along with furnishing and erecting precast parapet walls at the mezzanine.
- › Precast units will be set during 56-hour outages and transported to the station with hi-rail vehicle.
- › Steel connection materials and embedments along with grouting for the precast units.
- › Handrails and baseplates at top of parapet wall are provided under Division 5.

### 3.6.3 Masonry

- › Furnish and install concrete masonry units, masonry mortar, grout and masonry accessories.
- › Dowels and reinforcing steel required for the masonry work.
- › Fire stopping at penetrations in masonry is included in MEP trades.
- › Grouting of hollow metal doors and frames.
  - Includes delivering of material to station through use of hi-rail vehicle.

### Granite

- › Furnish and install granite for stair landings and treads.
- › Furnish and install granite cladding at exterior and interior concrete walls where indicated on IDD.
- › Furnish and install granite cladding at the bases of the windscreen, elevator headhouse, and station entrance pylon.
- › Includes delivering of material to station through use of hi-rail vehicle.

## 3.6.4 Division 5 Metals

### Structural Steel

- › Includes furnishing and installing all structural steel for new station mezzanine including all beams/girders, columns, parapet wall connection steel, new mezzanine stair support steel, plates, angles, columns, and connection hardware needed for a complete installation.
- › Includes furnishing and installing architecturally exposed structural steel for the elevator headhouse.
- › Includes furnishing and installing all structural steel for new canopy including galvanized roof decking.
- › Includes furnishing and installing all composite metal floor deck at back of house rooms within the station.
- › Includes furnishing and installing all anchor bolts, embedded plates and connections to framing system for attachments to existing structural walls, including moment and shear connections.
- › Structural Steel to be set during 56-hour outages and transported to the station using a hi-rail vehicle.
- › Grouting of base plates is provided under Division 3 CIP Concrete.

### Miscellaneous Metals

#### *Furnish:*

- › Sump pit grating, steel angle supports, angle frames, and embedded plates for Elevators 1 and 2.
- › Installation of all above items are provided under Division 3 CIP Concrete.

#### *Furnish & Install:*

- › Floor trench drains with covers (TD-1) at new platform and mezzanine levels.
- › Underlit stainless steel handrail for stairs from street level to new mezzanine.
- › Bronze railings to match existing railings and base plates for precast concrete parapet walls at mezzanine.
- › Bronze railings to match existing for enclosure of columns underneath new stair from platform to mezzanine level.
- › Stainless steel railings to match existing at faregates.
- › Removable guardrail at new passageway.
- › Steel grate within the light bed of trackway at new track-level columns.



- › 1/2" steel plate lintels located at either side of wall over proposed mechanical run at grade level.
- › Metal sleeves for stair railing posts, weld to stair stringers.
- › Metal pan treads for new stairs from platform to new mezzanine.
- › Elevator pit ladders for Elevators 1, 2, and 3.
- › Pit access ladder in Ejector Room.
- › Parapet wall angles and embedment for attachment to structural steel.
- › Steel lintels for the new door shaft for the Ejector Pit Room. Ref. Appendix A Basis of Design Report (BOD), Section 4.2.3.
- › Structural metal gratings at the proposed entrance to the ejector pit room. Ref. Basis of Design Report, Section 4.2.3.
- › Bar gratings at platform and mezzanine level at pipe shaft in the new east entrance structure.
- › Stainless steel cladding on exterior face of architecturally exposed structural steel at elevator headhouse.
- › Steel cladding with baked enamel finish on interior of architecturally exposed structural steel at elevator headhouse.

### 3.6.5 Division 6 Wood, Plastics, Composites

- › Furnish and install 3/4" thick AC grade fire rated plywood backboard at Electric, Communications, Mechanical, and Elevator Machine rooms.
- › Furnish, install, and remove temporary plywood barricades at the two platform-level storage areas (8' wide x 14' long x 8' high). Provide 4'x8' fire-rated plywood panels, 2'x4' wood nailers, orange safety/snow fence, and all hardware required for a complete installation, including Kwik bolts for anchoring. Furnish and install WMATA Art-in-Transit (AIT) graphics on the temporary platform barricades.
- › Furnish, install, and remove temporary plywood barricades along the edge of the new train room mezzanine (140' long x 10' high).
- › Furnish and install furring strips for upper and lower cabinet in break room.
- › Furnish plastic laminate cabinets, countertops, and backsplash.
- › Furnish and install temporary elevator cab protection for all three elevators.
- › Furnish and install temporary (removable) safety barricades and toe boards at the elevator shaft openings. Toe boards shall be 2x4 wood nailers at the perimeter of the elevator shaft opening. Include 42" tall wood posts at corners of openings.
- › Furnish and install temporary protection of ceramic tile in the bathrooms and break room.
- › Furnish and install protection of existing dome relief shaft.
- › Install hollow metal doors, frames, and hardware.
- › Furnish 6'x10' galvanized steel access hatch. Install by Division 3 CIP Concrete.
- › Install toilet accessories for two bathrooms, including soap dispensers, 42" grab bars, toilet cover dispenser, toilet paper dispensers, mirrors, etc.
- › Installation of fire extinguishers and fire extinguisher cabinets.

- › Furnish and install temporary Fire Department Connection (FDC) signs on the site temporary fencing.
- › Furnish and install refrigerator (32" depth, black finish, and 20.5 cu. ft. capacity).
- › Furnish and install 2'x2' grey fiberglass gratings at the sump pits. Include all frames, supports, and fasteners, such as anchors, bolts, and nuts.
- › Furnish and install blast-mitigating blast resistant trash receptacles at street level.
- › Furnish and install plywood at the face of existing planters, located on Crystal Drive.
- › Furnish and install a Knox box at street level.
- › Salvage and reinstall existing bike racks, located on Crystal Drive.
- › Remove, store, and reinstall existing trash receptacle at the corner of Crystal Drive and 18<sup>th</sup> Street.
- › Relocate existing Emergency Tunnel Evacuation Carts (ETECs).
- › Remove and install existing garage entry sign to West side of garage entry. Install concrete footing as required. Excavate as required for installation.
- › Furnish and install metal lockers. Include attic stock for hooks, identification plates, and locks.

### 3.6.6 Division 7 Thermal and Moisture Protection

#### Waterproofing

- › Basis of Design: Preprufe 800PA Waterproofing Membrane.
- › Furnish and install Preprufe waterproofing system at the new station slab, walls, and roof.
- › Furnish and install protection board at new mezzanine perimeter surface. Furnish and install insulation and drainage board as required. Below-grade insulation shall be 25 psi and under slab insulation shall be 40 psi.
- › Furnish and install crystalline waterproofing at elevator pits and sump pits.
- › Include comebacks as required during the construction period to maintain watertight conditions on waterproofing system including patching and repairs at sheeting and shoring connection points.
- › Cover expansion joints with 4'-0" wide strip of bentonite composite waterproofing membrane installed on exterior concrete surfaces.
- › Furnish and install self-adhering foundation waterproofing to repair waterproofing at the fiber optic duct bank penetrations.
- › Furnish and install waterproofing repair at the existing dome relief shaft.
- › Furnish and install waterproofing at the new access hatch at Crystal Drive.
- › Furnish and install Dowsil Allguard silicone elastomeric coating for the exterior concrete retaining wall.

#### Composite Wall Panels

- › Basis of Design: Stonewood Architectural Panels.
- › Furnish and install composite wall panels at canopy, including canopy ceiling.
- › Furnish and install soffit panels required for installation of composite wall panels.

- › Furnish and install cold formed metal sub-framing and aluminum composite metal panels at exterior concrete columns at the canopy level.
- › Provide all clips, angles, and miscellaneous metal connections required for a complete installation.
- › Manufacturer's warranty on composite panel system: 10 years from date of Substantial Completion.

#### Roofing

- › Base bid product: Morin SLR 16" Module.
- › Furnish and install standing seam roofing system, including all anchorage required.
- › Furnish and install aluminum gutter, underlayment, roof drain, and fasteners as required.
- › Furnish and install downspout and snow guards.
- › Furnish and install all terminations, sealants, flashing, and counterflashing.
- › Provide 30-year warranty of the standing seam roofing system as stated in 3.4.6.4 in the WMATA Manual of Design Criteria.
- › Roof coverings and roofing materials shall be fire retardant and comply with UL Class A.
- › Furnish and install 4" roofing insulation and ice/water shield as required for a complete installation.
- › Furnish and install EPDM roof at Station Manager's Kiosk. Provide manufacturer's standard 10-year warranty

#### Intumescent Fireproofing

- › .
- › Furnish and install spray foam fireproofing on columns.
- › Furnish and install spray foam fireproofing on mezzanine beams.
- › Furnish and install spray foam fireproofing on stair stringer.
- › Clean and prep structural steel as required for fireproofing application.

#### Joint Sealants

- › Furnish and install site caulking.
- › Furnish and install interior caulking.
- › Furnish and install exterior caulking.
- › Furnish and install all expansion joints at the transition of the new mezzanine and existing mezzanine.

### 3.6.7 Division 8 Openings

#### Hollow Metal Doors, Frames and Hardware

- › Furnish and install HMMA 867 single doors, double doors, and associated hardware sets for each. Include mop plates at all doors.
- › Provide 3% attic stock.
- › The fire doors shown at the passageways at both mezzanine and platform level are 1.5-hour fire rated.

WMATA does not require electromagnetic locks, therefore they are not included in the hardware sets. We included the hardware sets specified in the IDD's. It is our experience that the quoted and specified hardware sets are what are required by WMATA; however, they are not Buy-America compliant.

#### Glass/Glazing/Curtainwall

- › Furnish and install illuminated bronze railings, including glass paneling at the staircases within station.
- › Furnish and install curtain wall system for elevator headhouse between street and mezzanine level, with 1/2" frosted laminated glass. Provided with anodized finish.
- › Furnish and install a 10' high glass windscreen system around exterior of station entrance. Furnish and install clear low-iron fully tempered glass in lieu of debris impact resistant laminated glass. Furnish and install 2-panel and 6-panel folding door within the windscreen.
- › Furnish and install clear laminated glass for elevator between mezzanine and platform level, with 1/2" clear tempered glass.

### 3.6.8 Division 9 Finishes

#### Drywall

- › Furnish and Install 2 hr fire rated drywall ceiling at back of house rooms on mezzanine level and platform level.
- › Furnish and install cementitious, water-resistant gypsum board at bathroom walls.
- › Furnish and install cold formed metal framing as the sub-framing system for the canopy level composite wall panel and ceiling panel system. Include water-resistive barrier and sheathing.
- › Furnish and install GFRC cladding and cold formed metal framing over the new columns on the platform level.
- › Furnish and install GFRC soffit at steel stringer at the new stairs of the mezzanine.
- › Furnish and install cold formed metal framing, sheathing, and blocking for the internal gutter at the canopy.

#### Tile

- › Furnish and install ceramic wall tile at employee restroom, customer restroom, cleaners room and breakroom.
- › Furnish and install quarry tile on street level at employee restroom, customer restroom, and breakroom.
- › Furnish and install paver tile on street level, mezzanine level and platform level.
- › Remove and replace paver tile at new columns on platform level.
- › Furnish and install crack isolation membrane.

#### Metal Ceilings

- › Furnish and install metal panel ceiling systems, including suspension grid system and accessories required for a complete installation. Areas include break room, employee restroom, customer

restroom, and hallway on street level, elevator lobby, new passageway, and north elevator area on mezzanine level, and elevator lobby, passageway, underneath mezzanine, and north elevator exit area on platform level.

#### Painting

- › Field-finish hollow metal doors, transoms, and frames. Doors to receive paint on all exposed sides.
- › Furnish and install concrete floor sealer at back-of-house rooms where floor finishes are not specified.
- › Furnish and install latex paint at interior station masonry and concrete walls including but not limited to break room, elevator machine rooms, AC room, etc.
- › Furnish and install latex paint on gypsum board ceiling at the platform level and mezzanine level for back of house rooms.
- › Furnish and install paint at exposed electrical conduits, exposed plumbing pipes, and at exposed fire suppression pipes.

### 3.6.9 Division 10 Specialties

#### Signage

- › Scope includes the furnish and install of all new station signage at the mezzanine and platform levels per the attached Updated Signage Schedule.
- › Scope includes the modification of existing signage within the station. The signage modifications listed in RFI #6 from 10/27/2022 will be based on the 2022 WMATA Standard Signage manual specifications for symbol and lettering modifications.
- › Scope includes furnish and install of all new above-ground signage at the street mezzanine level including DCIDs.
- › The letters for the exterior "Crystal City Metro Station" are ½" thick flat cut aluminum 12" tall pin mounted.

#### Miscellaneous Accessories

- › Furnish all toilet accessories, including mirrors, grab bars, soap dispensers, toilet paper dispensers, seat cover dispensers, waste receptacles, warm-air dryers, and paper towel dispensers. Install scope is under Div 6 Rough Carpentry.
- › Furnish fire extinguishers and cabinets. Install scope is under Div 6 Rough Carpentry.

#### Bird Control

- › Furnish and install bird deterrent systems at the station kiosk roof, info cube, and space above the elevator headhouse and underside of the roof canopy structure.

### 3.6.10 Division 11 Equipment

#### Station Kiosk

- › Furnish and install station manager kiosk. MEP work is under the Division 22-28 trades.

### 3.6.11 Division 12 Furnishings

- › See Division 06 Rough Carpentry for the furnishing and installation of the blast resistant trash receptacles listed in Specification 12 93 00. The other specified furnishings are not shown on the drawings and do not apply to the CCEE scope.

### 3.6.12 Division 13 Special Construction

No Scope.

### 3.6.13 Division 14 Conveying Equipment

- › In accordance with the Basis of Design Report we have not included any costs for escalators.
- › Furnish and install two, 4,500-pound rated, in-ground hydraulic elevators within a duplex hoistway, complete.
- › Furnish and install one, 3,500-pound rated, single-stage dual jack hole-less elevator, complete.

### 3.6.14 Division 21 Fire Protection

- › Schedule 40 black steel piping shall be used for all sprinkler systems.
- › Provide 4" fire riser from platform level up to street level and connect to 4" standpipe. Coordinate with site utilities and plumbing to split 6" combined water service into 2" domestic water and 4" fire water standpipe.
- › Provide wet sprinkler system (Light Hazard Classification) in break room (Room #03), employee restroom (Room #04), and customer's restroom (Room #05) at street level.
- › Provide wet sprinkler system (Ordinary Hazard Classification) in mechanical room (Room #06), and elevator machine room (Room #08) at mezzanine level.
- › Provide wet sprinkler system (Ordinary Hazard Classification) in elevator machine room (Room #09), ejector room (Room #10), cleaners room (Room #11), corridor (Room #59), and inbound north elevator egress area at platform level.
- › Provide sprinkler coverage in the elevator pit. Locate 18" above the bottom of the elevator pit (provide control valve with TS and inspector test drain).
- › Cathodic protection and bonding of fire line.

### 3.6.15 Division 22 Plumbing

#### Plumbing Scope of Work

- › Provide a sanitary waste system, consisting of sanitary waste and vent piping (connected to plumbing fixtures, floor drains, trench drains, and equipment).
- › All sanitary piping from fixtures and equipment located within the new east entrance platform and mezzanine levels will drain by gravity to a new sewage ejector and basin located in the new ejector room on the platform level. Sanitary vent piping serving plumbing fixtures at the street level will join the ejector discharge and flow via gravity to the city sanitary system via a new connection.

- › Stormwater roof drain system (collecting at the low point of the roof) with gutter, roof drains, and downspouts will be provided under Division 7. Plumbing scope of work to include connection to storm leaders which will be drained by gravity to the city storm water system.
- › Provide 50 gpm capacity sump pumps in each new elevator hoistway. Sump pumps will discharge into the sanitary sewer system for the hoistways in the new entrance structure. The single inbound platform elevator on the north side of the tracks will discharge into the existing track drainage system on the north side of the tracks. Include oil sensing technology (disabling pumps in the presence of oil) for each sump pump.
- › Provide 2" domestic water line to the new entrance structure from new 2" water meter. 2" water meter provided under separate division. Coordinate with site utilities and fire suppression to split 6" combined water service into 2" domestic water and 4" fire water standpipe.
- › Provide hose bibs with water supply where indicated on the redline revisions of drawings C09-P-111 and C09-P-112.
- › Provide piston type water hammer arrestors to absorb hydraulic shock in the new domestic water piping system.
- › Plumbing fixtures and trim specified to be commercial quality. Fixtures shall comply with WMATA, Uniform Federal Accessibility Guidelines (UFAS) and Americans with Disabilities Act (ADA) standards. Flow restrictors for low water consumption shall be provided.
- › Floor drains are to be provided with American Society of Safety Engineers (ASSE) 1072 compliant barrier seals below the floor drain strainer to prevent hydrogen sulfide gas from entering the facility.
- › Provide all backflow preventers, plumbing fixtures (including connections), and drains in accordance with Contract Documents. Refer schedules on sheet C09-P-601 for further information and quantities. Trench drains with cover (TD-1) are provided under Division 5.
- › Provide domestic hot water heater (HWH-1), mounting shelf, and safe pan with 2-gallon expansion tank. Provide controls & thermostatic mixing valve per drawing sheet C09-P-602 notes and requirements.
- › Flush existing station plumbing drainage piping.
- › Replace the existing pneumatic ejector system with new electric pumps and mop basin to allow space for the new elevator serving the platform. Remove and dispose of existing equipment that is to be replaced.
- › All Plumbing Systems will be in compliance with WMATA design criteria and applicable Arlington County codes.
- › Tagging and identification of systems, equipment, and piping.
- › Furnish rated and non-rated access panels required to service concealed work by this scope.
- › Provide mock-ups as required by the drawings and specifications.
- › Assume responsibility for plumbing piping to 5' outside of the building walls including connections, cleanouts, flushing, sleeves, and link seals.

### Plumbing and HVAC Demolition and Temporary Scope of Work

- › Cut, cap, and make safe, lower to the ground, demolish and remove all existing HVAC & Plumbing systems shown to be demolished in the drawings and specifications. Demolition and removal are included by this Division.
- › Temporary cooling and exhaust system is carried under Allowance 3.7.4 - Maintenance of Existing Mechanical Systems.
- › After commissioning HVAC equipment, allow for the use of permanent HVAC equipment to provide the new addition with a conditioned space until final completion. Include all necessary temporary filters and maintenance until the project reaches final completion.
- › Provide wet utility connections (domestic and sanitary) for a construction field office. Insulate and heat trace all temporary lines during cold weather months. Power connections by the electrical.

## 3.6.16 Division 23 Heating, Ventilation, and Air Conditioning

### HVAC Scope of Work:

- › Provide HVAC system for new entrance structure such that all passenger areas do not exceed a maximum of 85 degrees Fahrenheit dry bulb. Provide required ventilation and exhaust to all passenger and service areas.
- › Provide year-round conditioning for the communications room, elevator machine rooms, and the main electrical room. Fan coil units will be used to serve these specific spaces. Fan coils will have chilled water coil using chilled water from the new air-cooled chiller. Utilize propylene glycol solution for freeze protection.
- › Provide air handling unit (AC-3) in mechanical room (06). Furnish unit with economizer, mixing box, filter MERV 8 & MERV 12. Mount unit on concrete pad. Concrete equipment pad by others. Unit shall be double wall.
- › Provide AC-4, AC-5, AC-6, and AC-7 units in the Communications Room (12), Electrical Room (13), Elevator Machine Room (08), and Elevator Machine Room (09).
- › Provide glycol cooling coil (3000 CFM) integral to AC-3.
- › Provide air cooled chiller (ACC-1) at street level (outside of the new entrance) with equipment rails. This includes all required components of the chilled water system including expansion tank (ET-1), Air Separator, Chemical Pot Feeder, valves, etc. for a completed cooling system.
- › Provide pumps (P-1 & P-2) in mechanical room (06) to serve the air handling units. Mount pumps on concrete pad.
- › Provide 600 CFM packaged terminal air conditioning unit (PTAC-1) to be mounted in kiosk. Support for this equipment should be provided by this Division. Indoor units shall be powered from this unit. AC units shall be provided with wired programmable thermostats. Thermostat should have 7-day programmable functionality. Provide condensate pump (hard piped).
- › Disconnect existing AC-1 and AC-2 and provide in-place protection while they are out of service during demolition operations to ensure units are in good working condition at the time of reinstallation.
- › Reinstall existing AC-1 & AC-2 units shown on the Mezzanine Level.



- › Provide fans (F-1, F-2, F-3, F-4, F-5, F-6 & F-15) in mechanical room (06). Provide vibration isolator hanging rods. Fan shall be rated per UL-555S for smoke extract (300F for 30 minutes). Provide flexible duct connections.
- › Provide all controls, controls conduit and programming required for the new and reconfigured systems. All control wiring in ceiling shall be plenum rated cable.
- › Provide supply & return/exhaust diffusers, grilles, and registers.
- › Provide all volume and fire dampers.
- › All HVAC Systems will be in compliance with WMATA design criteria and applicable Arlington County codes.
- › Commission all parts of the installed HVAC system including reinstalled AC-1 and AC-2.
- › Tagging and identification of systems, equipment, and piping.
- › Furnish rated and non-rated access panels required to service concealed work by this scope.
- › Duct detectors will be provided on new HVAC equipment larger than 2000 CFM. Mechanical sub to mount/Install duct smoke detectors. Duct smoke detectors to be furnished and wired by electrical.

### 3.6.17 Division 26 Electrical, Ductbank, Cathodic Protection

#### Electric and Communications Systems

##### *General*

- › Multiple mobilizations to meet the schedule and phasing requirements.
- › Protection of work from unsuitable weather or construction conditions prior to and during installation. Protection will be maintained until structure is weathertight.
- › Provide all required factory and field testing.
- › Provide start up and commissioning of all required systems. Pre-functional and functional testing of equipment and systems as required.
- › Provide core drilling, GPR or X-ray scanning for penetration in existing structure, fire stopping and caulking, and coordinate cut over and outages with WMATA.

##### *Temporary Power*

- › Temporary lighting throughout the project duration in all spaces.
- › Provide temporary electric distribution throughout site as required including all conduit, pathways and wiring.
- › Power outlets on all floors for operation of small tools with extension cords no longer than 75 feet.
- › Power to 7 230V, 23-amp Deep Wells, including wiring of pumps to control box, junction box and monitoring light.
- › Power to 2 Winterization Deep Wells (120 V, 20 amp) with receptacle at each well head.
- › Power to 15-amp 208/22 volt, 3 phase Spider Box.
- › Power to 15-amp, 220-volt Spider Box.
- › Power to 20-amp, 120-volt Spider Box.
- › Power to 30-amp, 120-volt Spider Box.

- › Lighting for Clark and owner signs.
- › One line drawing and site layout for all temporary services prior to start of work.
- › Remove temporary electric work as required.

*Scope of Work - Division 26, Power Distribution:*

- › Disconnect, remove, relocate existing Tie Feeder.
- › Provide temporary feeder during demolition and new construction free of splices and terminators.
- › Demolish all lighting fixtures in rooms set to be demolished (C09-E-102).
- › Provide temporary cabling for impacted plenum-level systems (C09-E-103).
- › Furnish and install all lighting fixtures and controls associated with the new entrance, complete.
- › Rerouting of plenum conduit and wire to accommodate new elevator shaft and mezzanine structure.
- › Street level lighting raceways and supports.
- › Conduit routing from disconnect switches to controllers for elevator cabs, fire suppression controls and plumbing/HVAC equipment.
- › Power and disconnect to Elevator.
- › Power and disconnects to all mechanical, plumbing, and fire protection equipment.
- › Power connection to electrical driven equipment.
- › Raceways outside elevator pits.
- › Lighting in elevator machine rooms and elevator shafts.
- › Cut, cap and make safe mechanical equipment to be removed or relocated.
- › Install temp cable mounts.
- › Existing power and lighting conduits on southeast train room wall to be relocated. Intercept and extend wiring for using new pathway to back of house spaces.
- › Cut, cap and make safe site level electrical fixtures (junction boxes, light posts, etc.).
- › Demolition of light fixtures and receptacles.
- › Power hookup for new mechanical equipment.
- › Power for sump pumps in Elevators #1, #2, #3.
- › Power to signage and displays, illuminated handrails, fare collection equipment and kiosk.
- › Power to the exterior station pylon at plaza entrance. Installation of new breaker, and shutdown required for installation.
- › Power to all Comms and Security Systems (Fire alarms, video cameras, intercom, etc.).
- › Outdoor conduit from station to ACC-1 and outlet in retaining wall.
- › Furnish and install underfloor power ducts (C09-E-12) for power to kiosks and faregates
- › Grounding and Bonding, complete including, power utility transformers, electrical room, all building equipment, communications, security and fire alarm systems.
- › Raceways and supports for this scope.

### Electrical and Communications Duct Banks

- › Relocate existing streetlight conduits from the 1900 development per note 4 on C09-U-102.
- › Provide excavation, trenching, rebar, concrete, backfill, spacers, conduits, and grounding wires as required.
- › Construct new fiber optic duct bank, including stub-outs, up to the point of termination within loading dock.
- › Core drill through foundation wall for new fiber optic path.
- › Disconnection of existing fiber optic line as indicated
- › Duct banks for new fiber optic line including up to adjacent garage foundation wall.
- › Protect in-place all fiber optic lines not indicated to be removed.
- › Protect in-place of all electrical lines not indicated to be removed.
- › For connections outside of the security fence or any permanent Maintenance of Traffic (MOT) phase, sawcut existing concrete paving, provide temporary flaggers/MOT, temporary steel plates, and temporary pavement cold patch and return the existing traffic to normal at the end of the work shift.
- › We assume no design review and revisions are necessary to the Automatic Train Control (ATC) system and the platform edge lights.
- › We assume no work is required for SCADA related to the AC Switchgear or traction power.

### Cathodic Protection and Corrosion Control Systems

- › System design.
- › Corrosion protection of micro-piles and soldier piles.
- › Bonding of Rebar.
- › Pre and post concrete placement rebar continuity testing.
- › Bonding of fire line is provided under Division 21.
- › Underground piping cathodic protection.

### 3.6.18 Division 27 Communications

- › Furnish and install telephone and information systems.
- › Install communication fare control systems and wiring.
- › Furnish and install network switched, configured by WMATA.
- › Public address and intercom systems.
- › Provide all ENC enclosures.
- › Provide intercoms, strobe and Sonalert unit at kiosk.
- › Provide connections to new informational displays.
- › Provide all card readers.
- › Door rough-in and connection to door hardware.
- › Provide horn/strobe status indicator for swing gate.
- › Provide crash bar and mag lock operability via card readers or gate controller.
- › Telephone line connection to elevators, #1, #2, #3.
- › Raceways and supports.
- › Provide racks and cable feeder trays.
- › Fiber Optic Conduit from underground duct bank through adjacent garage to reconnection to existing service (C09-U-102).
- › Honeywell card reader licenses (1 per card reader).

### 3.6.19 Division 28 Electronic Safety and Security

- › Furnish and Install fire alarm system.
- › Furnish duct smoke detectors and connections. Install of detector by HVAC.
- › Fire alarm connection to new elevators.
- › Flow switch hookup for new sprinkler system.
- › Furnish and Install video surveillance system and intrusion detection system.
- › Furnish and install access control system.
- › Connection to existing intrusion detection system and station fire alarm system.

### 3.6.20 Division 31 Earthwork

#### Geotechnical Instrumentation

- › Furnish and install automatic monitoring total stations which include structural monitoring points on the Support of Excavation (SOE) system, adjacent street buildings, inside the WMATA tunnel structure, on the WMATA tracks, etc.
- › Furnish and install strain gauges and vibration monitoring during the wire cutting of the two (2) new opening connections to the existing WMATA tunnel.

- › Furnish and install strain gauges and vibration monitoring during penetration of bulkhead walls at mezzanine and platform level and concrete slab for new elevator at mezzanine level, inside the WMATA tunnel.
- › Include remote data capture and equipment monitoring. Include dataloggers, wiring, antennas, communication equipment, etc. as required to monitor instruments remotely.
- › Provide equipment layout, monitoring plans, and contingency plan for the work of this Agreement.
- › Provide field technicians to take field readings, update data logs, maintain equipment, and provide monitoring services. Include pre and post installation acceptance testing for all equipment to determine acceptability of readings provided.
- › Provide manufacturer and/or factory calibrations, testing reports, warranties, and certifications for each instrument.
- › Survey/report data shall be uploaded into digital portal within 24 hours of completion of all readings.
- › Establish baseline readings one week prior to start of any construction on site.
- › Include mobilization. and demobilizations.
- › Include power supply for all instruments.
- › Instrumentation and monitoring program in accordance with Section 4 of the latest ACPM (Adjacent Construction Project Manual) and submitted for review and approval by WMATA.
- › Instrumentation selection, design, layout, and data analysis will be performed by a registered Professional Engineer specializing in geotechnical engineering with experience in soil stability and geotechnical design.
- › Design, installation, maintenance and decommission of geotechnical instrumentation.
- › Provide field and office management for monitoring of installed equipment and results.

### Deep Foundations

- › Design, furnish and install micropiles.
- › Micro-piles will be designed for an allowable design capacity of 100 tons
- › Micro-piles shall not settle more than 3/8" and have been designed to withstand corrosion.
- › Management of drilling materials and stock piling of drill spoils in a central location.
- › Micro-piles shall be designed by a Professional Engineer registered in Virginia.
- › Installing of micro-piles to the desired cut-off elevation.
- › Perform pre-construction verification load test that will be conducted on a sacrificial pile that won't be part of the permanent foundation.

### Earthwork

#### *Scope of Work at Grade-Level:*

- › Provide daily cleanup and protection of excavations.
- › Maintain positive drainage of rainwater to sump locations.
- › Remove and dispose of existing trees and vegetation.
- › Cut and cap storm and irrigation lines as noted on the utility plan demolition.

- › Remove existing utilities and connected structures such as storm water pipe, Irrigation pipe, electrical lines, fiber optic line, and light poles as noted on the utility demolition plan.
- › Removal of precast electrical boxes, precast fiber optic junction boxes.
- › Removal and legal offsite disposal of surplus excavated material, rubble and debris.
- › Removal and legal offsite disposal of drill spoils of micro-piles.
- › Removal and legal offsite disposal of spoils generated by Division 33.
- › Site and building cuts, fills, and grading to within +/-0.2' of design subgrade for sidewalk paving and heavy-duty paving.
- › Site cuts, fills, and grading to within +/-0.2' of design subgrade for slab on grade and grade beams around the micro piles.
- › Excavation, backfill, and compaction to finish grade, including spoil removal.
- › Excavation for proposed retaining wall and backfill/compact with suitable material.
- › Furnish and install Silt fence (SF), Super Silt Fence (SSF), Inlet Protection (IP) and stabilized construction entrance (SCE).
- › Furnish and install 6 inches of #57 stone and filter fabric under grade beam/slab on grades.

*Scope of Work at below-Grade-Level:*

- › Interior excavation of the SOE System in coordination with the SOE Subcontractor.
- › Furnish and install 6 inches of #57 stone and filter fabric under grade beam/slab on grades prior mud mat installation.

Dewatering

*Water Treatment:*

- › Design, furnish, install, a sedimentation tank to remove soils and silts from water and groundwater.
- › Furnish and install all piping, as well as permanent and consumable materials to facilitate discharge of water meeting standards for discharge into public storm/sanitary drain system.
- › All storage containers and site pads necessary for this work.
- › Decommission and remove sedimentation tank from site.

*Dewatering:*

- › Develop a temporary dewatering plan per the Geotechnical Report.
- › Include deep wells including pumps, and discharge piping outlined in the temporary dewatering plan. Coordinate the well locations with the SOE design, existing obstructions, existing utilities, mat slab design, and all deep pit locations.
- › Include observation well and pumping wells as per specification. Perform excavation and include erosion sediment control measures as needed to perform this work.
- › Provide observational analysis after dewatering system is installed to determine if additional wells are required.
- › Provide baseline readings once the dewatering system is installed.
- › Include pipe sleeves for discharge lines under ramps for excavation.

- › Provide ball and check valves, and flow meters. Flow meters to be installed in line with discharge header at point of discharge between dewatering system into groundwater treatment system.
- › Main power supply (120V) to be provided under the Division 26 Electrical subcontract. Electrical cables from the main power source to pumps. Final connection of electrical cable to the power supply will be by the Division 26 subcontractor.
- › Provide winterization for the dewatering system to include heat trace, insulation, and concrete blankets.
- › Perform operation and maintenance of the system.
- › Dewatering to maintain a water level at minimum of 4 ft below planned foundation excavation as noted on Geotechnical Report.
- › Maintain water level so that no damage to structures can occur. Design and install backup measures and ensure a supply of surplus equipment to ensure 100% pumping capacity at all times.
- › Design of all system elements, including wells and discharge piping.
- › Stockpile spoils in a central location with covers as part of the erosion and sediment control requirements.
- › Observe, record, and submit observation data for the elevation of groundwater and other metrics.
- › All collected water from dewatering operations will be filtered and cleaned before being discharged to a point specified in the contract documents.
- › During backfill operations, the extent of dewatering may be reduced when approved, provided water level does not result in uplift pressure in excess of 80 percent of downward pressure produced by weight of structure and backfill in place.

#### Excavation Support

- › Shop drawings, calculations, and qualification data will be signed and sealed by a Licensed Professional Engineer in the Commonwealth of Virginia.
- › Locate utilities that are shown within the line of work. Notify and obtain clearances from "Miss Utility", appropriate governing authorities, and service providers.
- › Braced soldier pile and wood lagging system shall be designed for 1/2" of deflection and shall not encroach on the permanent East Entrance concrete structure.
- › Furnish, install, and remove two points of access from grade level to the bottom of the new entrance excavation.
- › Furnish and install all elements of the SOE System.
- › Removal in accordance with concrete construction sequence.
- › Coordinate with waterproofing trade to ensure a watertight waterproofing system can be installed.
- › Soldier piles cannot encroach into permanent CIP concrete wall but shall not be set back off the outside face of wall greater than 3".
- › Space internal wale bracing at least 12" from inside face of CIP concrete wall.
- › SOE system design to include a 600 psf surcharge at top of shoring and a 1200 psf surcharge at locations necessary for the concrete services crane.

The support of excavation system design and shop drawings includes a contingency plan with details of corrective action to be taken if ground or structure movement exceeds the limits.

### 3.6.21 Division 32 Exterior Improvements

#### Site Concrete

- › Furnish and install site concrete to match existing site conditions

#### Pavement Markings

- › Primer and thermoplastic paint for the work.
- › Permanent markings, including but not limited to, bike lane markings, stop lines, traffic centerline striping.
- › Temporary markings, including but not limited to bike lane arrows and lane arrows per phasing. requirements shown on the MOT plans. The temporary markings included for the phased operations will be made of paint, not thermoplastic markings. The final markings will be thermoplastic markings.

#### Fence

- › Furnish and install 8'-0" tall Ameristar Impasse II Anti-Scale security fence with a 3'-0" swing gate and concrete footings at each post, spaced every 2'-0".
- › Furnish and install 5'-0" CL Fencing on top of 6'-0" long concrete barriers.
- › Furnish and install 8'-0" post driven fencing.
- › Furnish and install 12' rolling entrance gates.
- › Furnish and install 17' rolling entrance gate.
- › Furnish and install slatted privacy mesh screen panels on the face of all fencing panels.
- › Include attachments, anchors, clips, etc. as required.
- › Spoils removal as required at the post driven fence.

#### Covrit Wall System

- › Furnish and install Covrit wall system at site retaining wall.
- › Install Covrit wall system on coordinated embed locations. Include epoxy anchors, hardware, and other attachments necessary for complete installation.

#### Landscaping

- › Furnish and install 4" of topsoil and new sodding in exterior areas.

### 3.6.22 Division 33 Wet Utilities

- › Excavation, backfill, compaction, and trench support including pumping of water and stockpile of spoils.
- › Support and protect existing utilities as required to install work.
- › Furnish and install storm manholes, precast catch basin including 24" RCP, 15" RCP, 8" PVC utility systems.
- › Assumed 6 inch of bedding material, bedding to be extended to 1/2 of pipe size for RCP installation.



- › Furnish and install bioretention level 2, non-woven geotextile bottom and sides, 12" of gravel, 3" pea stone, 36" filter media, 3" of mulch, up to 55 LF of 6" PVC underdrain and five (5) cleanouts.
- › Furnish and install Precast Stormwater quantity vault.
- › Furnish and install 55 LF of 6" PVC underdrain from the bioretention, passing through the precast vault and connecting to D-10 storm manhole.
- › Furnish and install sanitary sewer manholes including 4" DIP, 4" PVC utility system.
- › Furnish and install fire water line, fire hydrants, 6" pipeline, 6"x12" cut-in tee, 6" gate valve.
- › Furnish and install domestic water line including, 12" DIP, 6"x6" cut-in tee, 6" gate valve, 6" plugs, 12" plugs, and precast utility vault.
- › Stockpile spoils at the center of the project.
- › Water, fire line, and sewer line connections to the existing system. In case the connections lay outside of the security fence or any permanent MOT phase, sawcut existing concrete paving, , provide temporary steel plates, and temporary pavement cold patch to complete scope.
- › Connections to existing structures and reset existing catch basin to grade.
- › Utility acceptance including passing hydrostatic test and bacteriological test.
- › All water mains shall be flushed after the acceptance of the hydrostatic test and before bacteriologic testing.
- › Perform cleaning of proposed storm and sewer line prior inspection.
- › Perform CCTV Inspection on proposed storm and sanitary sewer lines.
- › Combined water service shall maintain a minimum of 6ft of cover.

## 4.0 County Allowances

### 4.1 Relocation of Cables and Raceways

Survey, identification and relocation of existing but unidentified raceways and cable networks, including below the platform, behind the platform parapet, on and within the train room endwall, and within the back-of-house ancillary spaces (i.e. Train Control Room, Mechanical Room, Sewage Ejector Room). This includes existing conduits embedded within the concrete structure. The aforementioned work scopes may be needed to support the demolition and construction of the new work within the existing station. This allowance includes Design, Management, Supervision, Labor, Material, Equipment, Indirect Costs and any Subcontracts as well as insurances, bonds, overhead, and profit.

### 4.2 Relocate Existing Utilities

Re-route and/or relocate Sanitary, Storm Drainage, Water, Irrigation, Fiber Optic, Lighting, and Electric/Communications utilities that are not identified on the Package #3 Amendment 2 documents, as well as any other utility relocations or work that is in the future identified or required by utility stakeholders as part of the project review and approval process. This allowance includes Design, Management, Supervision, Labor, Material, Equipment, Indirect Costs and any Subcontracts as well as insurances, bonds, overhead, and profit.

### 4.3 Contaminated Soils

Removal and disposal of contaminated soils, if encountered on site. This allowance includes Management, Supervision Labor, Material, Equipment, Indirect Costs and any Subcontracts as well as insurances, bonds, overhead, and profit.

### 4.4 Maintenance of Existing Mechanical Systems

This allowance covers all costs with sequencing for the mechanical work installation or outage constraints. This allowance includes costs for maintaining the existing system(s) during construction and/or temporary re-routing of existing mechanical work to enable construction phasing. This allowance includes Design, Management, Supervision, Labor, Material, Equipment, Indirect Costs and any Subcontracts as well as insurances, bonds, overhead, and profit.

### 4.5 Concrete Repair

Repair of concrete surfaces within the existing WMATA facility, concealed and not concealed. This allowance includes all Design, Management, Supervision, Labor, Material, Equipment, Indirect Costs and any Subcontracts as well as insurances, bonds, overhead, and profit.

### 4.6 Traffic Signal & Streetlight Work

Per pre-bid RFI #94, changes to the existing traffic light(s) at 18th St S and Crystal Drive are excluded. This allowance covers the cost to relocate or install new traffic signals, pedestrian signage, and/or street light systems, based on final traffic configurations. This allowance includes all Design, Management, Supervision, Labor, Material, Equipment, Indirect Costs and any Subcontracts as well as insurances, bonds, overhead, and profit.

### 4.7 Design of Lighting at Canopy Level

The lighting design at the canopy, which is shown on the Package #3 Amendment 2 documents, is incomplete. In the base price, Clark has included costs for the lighting shown on the Package #3 Amendment 2 documents. This allowance includes any lighting features beyond what is shown. This allowance includes Management, Supervision, Labor, Material, Equipment, Indirect Costs and any Subcontracts as well as insurances, bonds, overhead, and profit.

### 4.8 Waterproofing and Finish Repairs at Existing Structures

This allowance is to account for any waterproofing or finish repairs to the 1770 Crystal Drive and the underground parking garage and loading dock walls and any waterproofing or finish repairs needed to the WMATA underground structure where the new entrance ties-in to it. This also includes waterproofing repairs that may potentially be needed at the existing vent shaft and the new access hatch at the new station entrance. This allowance includes Design, Management, Supervision, Labor,

Material, Equipment, Indirect Costs and any Subcontracts as well as insurances, bonds, overhead, and profit.

#### 4.9 Relocate FDC/flow test pipes at SW and SE corners of 1770 building

This allowance is for costs associated with the relocation and temporary access to the existing FDC's located at the SW and SE corners of the 1770 Crystal Drive building, including temporary piping. This allowance also includes any work associated with the temporary access/egress to the 1770 Crystal Drive building. This allowance includes Design, Management, Supervision, Labor, Material, Equipment, Indirect Costs and any Subcontracts as well as insurances, bonds, overhead, and profit.

#### 4.10 Fiber Optic Utility Design & Fees

This allowance is for all the costs associated with the design and utility scope for the fiber optic utility relocation. This allowance includes Design, Management, Supervision, Labor, Material, Equipment, Indirect Costs, utility charges/fees, and any Subcontracts as well as insurances, bonds, overhead, and profit.

### 5.0 Add Alternate 1 - New Fire Command Center Allowance

At the County's option, the following alternate may be included in this Agreement by change order for the stated amounts.

Add an allowance for a new fire command center for seven hundred thousand dollars (\$700,000.00) This allowance includes the cost associated with the installation of a Fire Command Center at the existing Crystal City station per Item 27 in the Amendment #2 Memo. The required features of the Fire Command Center are assumed to be consistent with Section 911 of the IBC/NFPA 72 as instructed in 2018 Virginia Construction Code. It is assumed that space will be available in a room already proposed in the current design, at the street level entrance. This allowance includes Labor, Material, Equipment, and any Subcontracts as well as insurances, bonds, overhead, and profit.



# **Exhibit A.2 Attachment A - Program Management**

# 1.0 Program Management

Overall management of the project will be shared between the JV Team and the County Construction Manager (CM)/Quality Assurance Manager (QAM). In general, the JV Team shall be responsible for day-to-day management, while the County CM/QAM will serve as the County's representative providing oversight, technical expertise, reviewing and evaluating requests to ensure the design and construction team are fulfilling their obligations, and Quality Assurance and materials testing and inspections. The County CM/QAM will be independent of the JV Team, hired separately by the County and will report to the County Project Officer. The JV Team will perform the following tasks

- › Manage and obtain all Easements and Licenses
- › Ensure the County project staff is kept apprised of Work in progress, unusual disruptions, changes in schedules, etc.
- › Provide support to County staff for and preparing materials for the county website.
- › Monitor and advise County of any potential disputes and recommend mitigations.
- › The County uses e-Builder as a project management software system and WMATA requires use of Procore software. Contractor shall utilize the e-Builder system, which will be provided to the Contractor by the County at no cost to the Contractor. Tasks anticipated to be performed in the e-Builder software system include, but not limited to the following:
  - Pay applications,
  - Potential Change Orders,
  - Change Orders;
  - Requests for Information (RFI's);
  - Meeting minutes;
  - Construction schedules,
  - Daily construction reports;
  - Action items;
  - Punch lists, and incident reports.
- › Meetings:
  - Organize, attend and document (where required)project-related meetings, as described in:
    - Section 21 of the Special conditions.
    - Minutes: see Section 21 of Special Conditions
    - Meetings scheduled by WMATA
- › Third Party Coordination:
  - Assist in third-party coordination with adjacent Arlington County projects, private development projects, utility companies, and other stakeholders. Assist in short-term notification of affected property owners, and the necessary coordination for closures and direct property impacts.
- › Daily and Weekly Logs:
  - Contractor to provide County with the following logs on a regular basis:
    - Weather Log

- Deficiency Log
  - Testing and Inspection Logs
  - Change Orders (Requests and Cancelations)
  - Material Tracking
  - Redline and As-Built Log
  - Three Week Look Ahead Schedule
  - Submittal log (from designer of record)
  - Visitor logs, including sub-contractors, inspectors, escorts, WMATA and Arlington County staff, and other non-regular staff
- › Reports:
- Provide monthly reports including schedule, per sections 12.b and 21 of Special Conditions. Reports should also include:
    - Summary Narrative
    - Schedule Update, including Summary Narrative, Schedule Changes, Project Milestones, and Critical Path items
    - Cost Report including Cash Flow, Detailed Budget Report, and Change Orders
    - Quality Control Report
- › Pay Applications:
- Submit monthly pay applications via ebuilder
- › Project Documentation:
- Maintain project records including RFIs, monthly reports, and change orders.
- › Outreach and Communications:
- Develop a communications plan, including timeline, that comports with Arlington County requirements and WMATA's Public Participation Plan. Expected activities under that plan are described below.
  - Support the County in preparing public communication materials
  - Provide translation in Mandarin, Spanish, and Ethiopian.
  - Develop materials to support the public communications, including factsheet(s)..
  - Coordinate with WMATA on any public-facing materials related to the Project.
  - Work with the County to maintain and develop the Project website content, including project renderings, documentation, updates, and schedule information..
  - Coordinate two (2) stakeholder meetings with partner agencies, including Arlington County Transit, Arlington County Department of Economic Development, DRPT/VPRA, VRE, and WMATA.
  - Assist the County in engaging with local community organizations, such as the Crystal City Civic Association, condo and apartment building representatives, and the National Landing BID during construction. Project team will assist the County in responding to community comments during construction.
  - Translate relevant materials into Spanish, Mandarin Chinese, and Ethiopian.

## **Exhibit A.2 Attachment B – Design**



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# Design Scope of Services

## Introduction

Arlington County (County), in coordination with the Washington Metropolitan Transit Authority (WMATA), is proposing a new Crystal City Metrorail Station East Entrance (CCEE). The proposed second entrance will provide additional capacity to accommodate more riders as the region continues to grow.

The CCEE will be located at the east end of the existing station at the northwest quadrant of 18th Street S and Crystal Drive and will provide easier access from Crystal Drive, the Virginia Railway Express station, and the Metroway transit station.

The recommended at-grade entrance will construct a standalone structure along 18th Street S with faregates, ticket machines, and station manager's kiosk. Passenger entrances will serve 18th Street S on the south side and the future Metro Market Square (MMS) public space envisioned in the Crystal City Sector Plan on the north side. Three new elevators, a new mezzanine structure over the tracks, and stair access will be constructed to support vertical circulation into and out of the station.

## Design Team

The services will be performed by a design team consisting of the firms listed below along with a general summary of services each will provide. VHB ("Designer") will enter into an agreement with JBG SMITH and Clark Construction Group, LLC ("Design-Builder"). Each of the supporting firms will enter into a sub-agreement with VHB to deliver their individual services for the project.

- › **KGP** - Architecture, Visualizations, Building Information Modeling (BIM), Architectural Lighting via sub: Claude Engle, Wayfinding (via KGP sub)
- › **VHB** - Lead Designer, Civil, Building Structural, Utilities, Stormwater, Erosion & Sediment Control, Permitting, Maintenance of Traffic (MOT), Transportation Engineering, Wayfinding, Site Lighting, Sustainability, and other services, responsibilities, and deliverables as noted below. VHB will also serve as the overall design coordinator for the project, facilitator between the design team and various entities including the Design-Builder, and when delegated by Design-Builder, WMATA and Arlington County. VHB will facilitate all commercial issues, final negotiations, and Design RFI's that may be required for design team. VHB will also be the Construction Phase Coordinator for the design team when the project reaches that phase which will include being the direct line of communication between the Design Builder and the design team. VHB will oversee the process of receiving, storing, organizing, and distributing all construction phase services documentation for the Design Team and returning reviewed documentation back to the Design-Builder. This will include construction RFIs, submittals, shop drawings, material certifications, product approvals, design change notices, and approved design changes.
- › **KGP** - Architecture, Visualizations, Building Information Modeling (BIM), Architectural Lighting via sub: Claude Engle, Wayfinding (via KGP sub)
- › **EXP** - Mechanical, Electrical, Fire Alarm, Plumbing, Communications, Fire Protection, BIM Support, QC/QC Support, Construction Phase Services, and As-Builts
- › **Jensen Hughes** - Egress Analysis, Smoke/Ventilation Analysis, and Fire Protection/Life Safety

- › **Apple Designs** – wayfinding signage
- › **Clyde R. Engel (CRE)** – station lighting consultation
- › **Schnabel** - Exploratory Excavation of existing SOE, Soil Borings, Geotechnical Engineering, Structural Monitoring and Instrumentation Plan/Specifications, and Observation of Micropile Load Testing and Installation
- › **AULtec** - Internal Station/Mech Room Surveys, Adjacent Underground Parking Garage Survey, Topographic Survey, Utility Locating (via AULtec sub)
- › **Parsons Transportation Group** - Systems Integration, Safety and Security Certification, and Fire-Life Safety Compliance, Vertical Transportation

## 1.0 Design Packages

The design management plan will divide the scope of design efforts into four separate packages as outlined below. Confirmation of the specific contents and requirements of each design package listed below, as well the schedule that each package is due for submittal, will be clarified and confirmed with the Design-Builder prior to NTP issuance to design team members.

### 1.1 Package 1 - Enabling Work (*Site Prep, MOT, SOE, Utility Relocation, Fiber Optic Relocation*)

The first package includes all enabling work such as site/civil preparation, maintenance of traffic, support of excavation, utility relocation, and fiber optic cutovers. It will also include the deep foundations since they need to be installed prior to excavation. The purpose of breaking this early work out into its own package is to expedite these design items to allow for an early construction start. This package will exclude final plumbing work for sewer, sanitary and domestic water, and fire protection. Final design for plumbing and fire protection service will be part of Design Package 3.

The remainder of the design in Packages 2-4 can be completed while the construction associated with these early activities in Package 1 progress in the field. This phased design and construction approach saves substantial time in the overall construction schedule.

It will be critically important that all stakeholders have complete buy in to this concept as design durations, review periods, permit issuances, and material fabrication durations will need to be met for the phased approach to be successful.

This is the package that will allow for multiple WMATA and County permits to be executed. The design team has assumed that contract drawings, at their various stages of completion and in the required WMATA standard CADD format, will be the only supporting documentation required for permit applications. Preferential formatting of the drawings developed per WMATA standards or additional extraneous tables, notes, etc., requested by the permitting authority are excluded from scope.

## 1.2 Package 2 – Interior Train Room Work, Station Back-of-House Temporary/Permanent Work

This package includes the design for all work on the inside of the existing train room and the back of house areas including substantial existing condition surveys and documentation. Once surveys are compiled, the relocations and cutover designs will be completed to facilitate the installation of the new construction elements. Since this is an active station, the relocations and cutovers will need to be designed and executed in a way that minimizes impacts to the existing systems, particularly systems associated with Life Safety. This will require continuous coordination with WMATA team members.

## 1.3 Package 3 – New Entrance Outside Existing Station and Pedestrian Passageway

This package contains the entirety of the design for the new entrance outside of the existing train room. Prior to starting wholesale design efforts, we will implement multi-day design partnering workshops to review the final 30% preconstruction design effort, discuss any questions or concerns, and ultimately establish the overall basis of design in partnership with key County and WMATA team members. The multi-day meetings will ensure goal alignment across stakeholders while promoting a culture of collaboration and trust among team members. At the completion of this design, the Commercial Building Permit can be executed.

## 1.4 Package 4 – Site Restoration, Civil, Lighting, and Landscaping

This package is the final restoration of the project site and includes final civil, lighting, and landscaping for the completion of the site surrounding the new entrance.

# 2.0 Submission Requirements

There are four major design submission milestones scheduled for the project with 60%, 90%, 100%, and Issued for Construction (IFC) submittals.

A breakdown of interim milestones for each major submission is outlined below. The design team will prepare separate 60-90-100-IFC submissions for each of the four work packages described in Section 3.0 Design Packages and each submittal will include necessary plans, reports, calculations, and specifications to demonstrate compliance with relevant design criteria. It is assumed each milestone will be subjected to additional submittals based on the final form of Design Packages 1 through 4. The design team will assume that each of the submittals may include up to four parts (for each design package) with separate cover sheets, indexes, and other required custom content, for a total of sixteen (16) submissions, four (4) for each Submittal Milestone.

VHB will develop all common sheets required for these submittals, including title sheets, index sheets, specification reference sheets, and any other sheets not specifically related to any one discipline. VHB will also obtain clean and QC'ed submittal documents from all team members and compiling them into final set for all review submittals.

Over-the-shoulder meetings will be utilized with the Design-Builder, County, and WMATA to facilitate design progression.

Additional detail on the timing and durations for submission milestones are provided in **Attachment A - Project Schedule**.

#### 60% Design Submittal

- › Prepare & Submit 60% Design for Internal Review
- › Design-Builder Review
- › Design Team Updates
- › Design-Builder Backcheck
- › Design Team Updates
- › County-WMATA Review
- › Design-Build Team Response to County-WMATA Comments
- › County-WMATA Comment Resolution Meeting (CRM)

#### 90% Design Submittal

- › Prepare & Submit 90% Design for Internal Review
- › Design-Builder Review
- › Design Team Updates
- › Design-Builder Backcheck
- › Design Team Updates
- › County-WMATA Review
- › Design-Build Team Response to County-WMATA Comments
- › County-WMATA Comment Resolution Meeting (CRM)

#### 100% Design Submittal

- › Prepare & Submit 100% Design for Internal Review
- › Design-Builder Review
- › Design Team Updates
- › Design-Builder Backcheck
- › Design Team Updates
- › County-WMATA Review
- › Design-Build Team Response to County-WMATA Comments
- › County-WMATA Comment Resolution Meeting (CRM)
- › Comment Closure Period

## IFC Design Submittal

- › Design Team Prepare IFC Documents
- › Issue IFC Design Submittal

The design team will coordinate the schedule for design submittals with the Design-Builder's Project Schedule and develop a draft Design Submittal Schedule within 45 days of the design team's NTP. The draft Design Submittal Schedule will be updated monthly throughout the design process.

The design team will develop Submittal Log within 45 Days after the effective date of NTP that lists all submittals anticipated at NTP stage and will then update log periodically as the design progresses. The log will include description of the item, date for initial submittal, review deadlines, and will highlight submittals that are on the critical path requiring expedited review to meet the schedule.

The design team will make all submittals to the County's representative after Design-Builder approval. The County's representative will manage and oversee submissions directly to all County and WMATA reviewers through each of their preferred software systems (Procore, eBuilder, etc.).

## 2.1 Design Changes

County, WMATA, and Design-Builder participation in the design process will be key to overall efficiency and effectiveness of the project delivery process for all levels of design. Design-Builder insight on construction methodology, materials, staging, sequencing, and other construction related expertise all contributes to accelerating the schedule, quality, and implementation of the design. However, there is a point within the design where changes requested by the Design-Builder can adversely affect the design development process, especially if the requests result in rework after significant design effort has been completed. In an effort to avoid these challenges, the Design Team will agree to make changes at the request of the Design Builder up through completion of the 60% CRM milestone and submittal updates. After the 60% submittal process is complete, any major changes requested by the Design-Builder that result in significant rework (defined as more than 16 hours of design labor), may result in a Design Change Order request being submitted to the Design-Builder to recoup design rework costs.

## 2.2 Drawing Stamping

The Design Manager will coordinate submittals as the overall Engineer-of-Record (EOR) for the Project.

Each technical discipline lead will also obtain and maintain their proper professional engineering license (PE) in the Commonwealth of Virginia for the duration of the project and EOR for that discipline.

EOR's will be active participants in all phases of the Project, including the construction phase, for review of submittals, coordination of the work for their respective disciplines with other disciplines, and periodic site visits to verify conformance with the approved design.

VHB will be responsible for developing the cover sheet of each IFC Design Package Set and coordinating EOR digital licenses, signatures, and names for completion of each submittal.



## 2.3 Project Schedule

This scope of services has been developed consistent with the attached Attachment A Project Schedule with major milestones summarized in Table 5-1 Major Milestones below.

Table 1 Major Milestones

Activity	Start	Finish	Duration
Design NTP	Aug 2023	Aug 2023	NA
Total Design-Build Phase	Aug 2023	April 2027	44 months
Design and Permitting	Aug 2023	Feb 2025	18 months
Construction	Aug 2024	April 2027	32 months
Commissioning, Testing, Punchlist	July 2026	Nov 2026	4 months

## 2.4 Review Periods

The design schedule duration set for this project is accelerated and successful delivery within targeted milestones is dependent on the duration of time taken for review of design documents by the Design-Builder, Arlington County, WMATA, and other stakeholders. If the review period allotted to any reviewing entity exceeds the agreed upon durations, that time will extend the design schedule and will impact subsequent submission milestones.

# 3.0 Project Management

## 3.1 Overall Design Management, Subconsultant Management, Administration

Design Management - The Project Management (PM) Team will be responsible of overseeing all work completed across the team and managing subconsultant activities while keeping the Design-Builder regularly informed of project performance and resource needs and allocations. The PM Team will manage all interdisciplinary coordination, constructability, and other reviews and technical input from design and construction team members during the design phase.

Each Sub-Consultant Design Manager will serve as the Project Manager for that specific Design Team Member Firm and will be responsible for all facets of the project for their firm, including managing the firm's work, design team, submittal development, meeting coordination, budgetary responsibilities, notice of change orders, and contractual or commercial term discussions.

Each Technical Discipline Lead will serve as the technical expert and lead designer for the discipline and firm that are serving. Their participation will be required in a multitude of meetings with the team, Client, and other external groups. They will also be required to develop and maintain the require Risk Register as outlined in this scope of services as design develops from 30% through IFC milestones.

**Correspondence** - Email correspondence, letters, memoranda, reports, and other major communications relating to the project will be shared with Design-Builder with verbal correspondence summarized in notes and distributed. Daily design coordination between disciplines will not be documented in formal notes with the exception of major design decisions or action items.

**County and WMATA Coordination** - The PM Team will work with Design-Builder to manage County and WMATA coordination with remainder of the team supporting those efforts with technical information and expertise.

**SharePoint Collaboration Site** - VHB will provide a SharePoint project collaboration website for the storing, distribution, and sharing of documents between team members. This site will also be used to store project files for team reference and use throughout the project life and will include data collected, submittals, permits, reports, updated schedules, drawing files, and other pertinent information. The SharePoint collaboration site is the only acceptable method for the design team members to transfer information. Emails with attachments, markups, sketches, or submittals that serve to provide direction to the design team should not be used. Only documents posted to the SharePoint site are to be used as design direction to keep document control accurate. In addition, the design team will be directed to only use information that is posted to the collaboration site. VHB will manage the accuracy of items posted to the site through assistance and coordination with the Design-Builder and design team members.

**Progress Reporting** - Monthly progress reports will be provided throughout the life of the project. These will be decreased to an as-needed basis when little to no design activities are taking place during construction. Formal progress reporting to the Design-Builder will be the sole responsibility of VHB based upon the technical discipline leads or the Sub-Consultant Design Manager inputs each month.

**Project Invoicing** - Invoices will be prepared and submitted monthly and will accompany the monthly progress reports as noted above.

**Design Phase Critical Path Method (CPM) Schedule** - The design team will work closely with the Design-Builder to develop and maintain a detailed CPM schedule for design tasks as the basis for the design team's workplan. VHB will be responsible for managing the Design Team's CPM schedule. Sub-Consultant Design Managers will provide input, report schedule updates/revisions, and coordinate with their discipline team and firm to set expectations and monitor progress for deliverables to meet schedule requirements.

The CPM schedule will set detailed timelines for all interim design team deliverables that roll up to the major milestones listed above and as shown in the attached Baseline Schedule. The Sub-Consultant Design Managers will ensure the CPM schedule aligns with overall milestone dates in the Design-Builder's master schedule. The design CPM schedule milestones will be maintained as a live document by VHB on the project SharePoint site with unrestricted access for all team members.

Using this independent CPM schedule allows design team to quickly identify and adjust key tasks and workflows that could potentially delay deliverables and implement recovery procedures to maintain the Design-Builder's master schedule. The CPM schedule will be reviewed in design team meetings by the discipline leads and Sub-Consultant Design Managers to ensure each discipline manager understands short- and long-term schedule goals and in-turn, will distribute any schedule updates or changes to the remainder of their discipline team.

**WMATA Badging and Railroad Worker Protection (RWP) Training** - the design team will coordinate required badging and RWP training and certification processes for design team members to include managing a Badging Log to track certification status, coordinating with WMATA for badging requirements, attending WMATA facilities for badge pickup and RWP testing, and keeping Design-Builder informed of team status with log.

## 3.2 Adjacent Project Coordination (*18th St S, MMS, Crystal Drive, 1770 Patio*)

The VHB PM Team and all Sub-Consultant Design Managers will keep abreast of adjacent project schedules and design development while monitoring any potential impacts, adjustments, or risks associated with CCEE project. The PM Team will work with design-builder for coordination with other Arlington County project teams for 18th Street South and Metro Market Square, as well as with the 1770 Patio JBG SMITH project team. This coordination will include coordination with County departments, separate design teams, integrating necessary design inputs into the CCEE design, and sharing status updates across projects to ensure the CCEE team is informed with the ability to react and adapt as necessary.

## 3.3 Meetings

In all cases the Technical Discipline Leads and Sub-Consultant Design Managers will attend meetings as described in this scope. If for any reason a lead individual cannot attend, they will delegate one (1) qualified individual within the same discipline or firm to take their place at the meeting. Additional technical staff from each discipline or firm may be added to any meeting where it is deemed necessary by the Design-Builder, Design Manager, Technical Discipline Lead, or Sub-Consultant Design Manager. For in-person attendance, all travel expenses, including flights, taxi, Uber/Lyft, public transportations, fare cards, lodging, meals, and other incidentals will be covered by expenses under design fees for each firm.

### 3.3.1 Kickoff Meetings

Multiple team kickoff meetings (aka Pre-Design Conferences) will be held with various entities 90 days after receiving Notice-to-Proceed (NTP). Note that no work will be performed in advance of NTP Issuance beyond scope and fee development unless otherwise requested in writing by Design-Builder. The design team will prepare for, facilitate, document, and conduct follow up for three (3) three-hour design kickoff meetings to discuss new team members, roles, scope, schedule, work plan, budget, deliverables, risks, data sources, QA/QC, document control, project protocols, and communications while answering questions from attendees.

The kickoff meetings will be sequenced as follows:

1. Design Team
2. Design-Builder
3. Design-Builder, County, and WMATA

Prior to meeting #3 above, the design team, in close coordination with the Design-Builder, will perform a scope validation review for the Project and identify any potential conflicts amongst the design requirements, assumptions, field conditions, WMATA Manual of Design Criteria and jurisdictional codes that may impact scope, cost schedule, or quality of work. The design team will notify the Design-Builder of any findings of potential conflicts for direction on whether the potential conflict becomes a meeting agenda topic or is handled separately with County team.

These meetings are intended to be virtual for those that are not local to the meeting location. VHB will set up audio and video conferencing for remote attendees and may request that attendees participate using the video capabilities while on the call.

### 3.3.2 Partnering Workshops

Informal partnering workshops will be utilized as a non-binding process for all parties to voluntarily agree at the design-build phase to adopt a cooperative, team-based approach to design development and problem resolution with overall goal to eliminate or reduce conflicts.

These workshops will be in-person meetings at the location designated by VHB and the Design-Builder. Travel expenses, including flights, taxis, Ubers/Lyft, public transportations fees, fare cards, and hotel stays will be covered by expenses covered in proposal fees for each Firm.

The format for CCEE partnering workshops will be split up over two days with an initial segment focused on building positive relationships across stakeholders through the promotion of open lines of communication, commitment to solve problems together, trust, and a common focus on the project purpose and goals. This will be followed by a review of the Basis of Design criteria, approach to overall design development, and any outstanding questions or comments from Design-Build team members or stakeholders.

Key elements of the CCEE partnering process will include:

- › Obtaining strong commitment by top management of each organization
- › Development of mutual goals and objectives for engagement
- › Continuous evaluation of the process from design through construction
- › Agreement on method for achieving timely response to concerns, solving conflicts at lowest levels, and promoting transparency
- › Consensus on the Basis of Design criteria and approach to advancing 60% design

The partnering workshops will be with key members of the Design-Build team, County, and WMATA staff over the course of a one-or-two-day period after the initial kickoff meetings to set the stage for the remainder of the project. The design team will prepare for, facilitate, and document workshops discussions with Design-Builder guidance.

### 3.3.3 Design-Builder Weekly Progress Meetings

Weekly design progress meetings will be scheduled between Design-Builder and the design team throughout the design and construction phases (44 months x 4.35 weeks/month = 191 total @ 1 hr. each). The design team will prepare for, facilitate, document, and follow up on action items identified during progress meetings throughout the design. These meetings are virtual for those that are not

local to the meeting location. VHB will set up audio and video conferencing for these meetings and may request that attendees participate using the video capabilities while on the call.

### 3.3.4 Design Team Weekly Coordination Calls

Internal design team check-in calls will be held weekly throughout the design process (18 months x 4.35 weeks/month = 78 total @ 1 hr. each). The VHB Team will prepare for, facilitate, document, and conduct follow up for the team weekly design-team-only check-in calls. These meetings are virtual for those that are not local to the meeting location. VHB will be responsible for setting up audio and video conferencing for these meetings and may request that attendees participate using the video capabilities while on the call.

### 3.3.5 County/WMATA Submittal Meetings

The design team will coordinate closely with the Design-Builder to schedule design submission meetings with County and WMATA shortly after each major design package milestone submission to communicate submittal content and intent to County and WMATA reviewers while providing clarification or answering any initial questions.

### 3.3.6 County/WMATA Over-the-Shoulder (OTS) Meetings

OTS meetings will be scheduled throughout the design process to include updates on design progress, OTS reviews, and comment resolution (2/month x 18 mo. Design = 36 total @ 1.5 hr. each). The VHB team will prepare for, facilitate, document, and conduct follow up for miscellaneous team meetings. These meetings will be required to be in-person meetings, at the location designated by VHB.

### 3.3.7 Arlington County Adjacent Project Coordination Meetings

Adjacent project coordination meetings will be held with the County teams developing the 18th Street and Metro Market Square projects adjacent to the site ( quarterly over 18 mo. = 6 total @ 1.5 hr. each). The VHB Team will prepare for, facilitate, document, and conduct follow up for the adjacent project coordination meetings. These meetings are intended to be virtual for those that are not local to the meeting location. VHB will set up audio and video conferencing for these meetings and may request that attendees participate using the video capabilities while on the call.

### 3.3.8 Not Used

### 3.3.9 WMATA Structural Workshops

In addition to the above County/WMATA OTS meetings, the design team will schedule additional workshops with WMATA Structures during the design process given the typical need for more coordination with this group (4 total @ 1.5 hr. each). The design team will prepare for, facilitate, document, and conduct follow up for the structural workshops. These meetings are virtual for those that are not local to the meeting location. VHB will be responsible for setting up audio and video conferencing for these meetings and may request that attendees participate using the video capabilities while on the call.

### 3.3.10 WMATA Mechanical, Electrical, Plumbing (MEP), Communications, and Fire Protection Workshops

In addition to the above County/WMATA OTS meetings, the design team will schedule additional workshops with WMATA MEP disciplines during the 30% design process (6 total @ 1.5 hr. each). The design team will prepare for, facilitate, document, and conduct follow up for the MEP workshops. These meetings are virtual for those that are not local to the meeting location. VHB will be responsible for setting up audio and video conferencing for these meetings and may request that attendees participate using the video capabilities while on the call.

### 3.3.11 Comment Resolution Meetings

The design team will coordinate with Design-Builder to schedule comment resolution meetings after receipt of County, WMATA, and stakeholder comments on each design submittal with the intent to resolve any outstanding comment responses not already in agreement with reviewer comments. The CRM will be chaired by the Design-Builder and supported by the Design Manager and other representatives of the design team.

The design team will document discussions in the form of meeting notes, update design responses, and distribute copies to attendees for each meeting. The Design-Builder will have an opportunity to review and approve draft documents before distribution.

### 3.3.12 I'm Arlington County Permitting Meetings

County permitting meetings will be scheduled throughout the design process to expedite permitting and approval process (6 total @ 1 hr. each). The design team will prepare for, facilitate, document, and conduct follow up for the permitting team meetings. These meetings are intended to be virtual for those that are not local to the meeting location. VHB will set up audio and video conferencing for these meetings and may request that attendees participate using the video capabilities while on the call.

### 3.3.13 Miscellaneous Team Meetings

Miscellaneous team meetings will be scheduled when requested by the Design-Builder or various stakeholders throughout the design process (11 total @ 1 hr. each). The design team will prepare for, facilitate, document, and conduct follow when asked to lead miscellaneous team meetings. These meetings are virtual for those that are not local to the meeting location. VHB will set up audio and video conferencing for these meetings and may request that attendees participate using the video capabilities while on the call.

### 3.3.14 County/WMATA Bi-Weekly Progress & Look Ahead Meetings

Bi-Weekly progress meetings will be scheduled by the County throughout the design and construction phases ( $44 \text{ months} \times 4.35 \text{ weeks/month} / 2 = 95$  total @ 1 hr. each). The design team will attend virtually throughout the design and construction phases. The County CM/QAM will be responsible for leading these meetings in preparing agendas, facilitating the meetings, and documenting and distributing meeting minutes to all attendees.

## 4.0 Project Management Plan (PMP)

The design team will prepare a PMP to outline roles, responsibilities, protocols, and procedures for internal and external coordination and all management-related operations.

The PMP will include protocols for design and schedule coordination with the Design-Builder and will be updated and submitted to Design-Builder by VHB whenever significant changes are required. Design Team firms will review the PMP draft and provide feedback when requested by VHB.

This task includes initial coordination Design-Builder, WMATA and the County management teams to ensure consistency between this PMP and other program level PMP documents for compliance with funding requirements.

## 5.0 Design Risk Management

The design team will prepare and maintain a design phase Risk Register to identify, analyze, assess, monitor, and mitigate potential risks associated with the design phase of the project. The Risk Register will be the responsibility of each Firms Technical Discipline Leads

After the initial kickoff meetings and partnering workshops, the design team will prepare an initial Risk Register to:

- › Identify potential design risks
- › Identify the entity responsible for each risk
- › Identify parties other than the risk owner that are affected by each risk
- › Evaluate each risk based on probability and severity
- › Periodically review with Design-Builder in weekly meetings and incorporate avoidance and/or mitigation strategies into design deliverables where applicable
- › Provide quarterly updates to Risk Register as design progresses

Between the development of the 60% and 90% package submissions, the design team will hold two (2) formal design risk assessment workshops, first with the Design-Builder and then with the addition of the County and WMATA. The workshops will include a rigorous discussion of probability, cost, assignment, and schedule impacts, as well as mitigation strategies to manage risks. The Risk Register living document will be supported and hosted by VHB and access will be granted to the Technical Discipline Leads for each firm. Each firm will be required to provide input on potential risks associated with their specific scope(s) of work.

## 6.0 Existing Conditions Surveys, Data Collection, Site Visits

Extensive background information will be collected for incorporation into design development activities and permitting strategies. This will include numerous sources for background information include a series of site visits with County and WMATA representation and design team technical

specialists to capture features potentially impacted by the project. Costs for site visits required by team members who require out-of-state travel are covered by the expense budgets submitted with this scope of services.

The Design Team will limit those who require valid WMATA Badges and Railroad Worker Protection Training (RWP) to those individuals who require it to perform their design services.

## 6.1 Data Collection Coordination, MOT, Permitting, and Approvals

VHB will complete required station access coordination, MOT, coordination for RWP training & certification, and access permitting with Design-Builder, County, and WMATA as required for the completion of final design field visits, data collection, topographic survey, existing conditions structure surveys, utility locating, soil borings, utility test pitting, and exploratory excavations.

## 6.2 Data Collection

This task includes both desktop reviews and site visits to obtain additional data for final design and construction.

Coordination will take place with WMATA escorts and technical discipline leads for access to all areas of the station to complete data collection activities and will include multiple nighttime (11 PM to 5 AM) station site visits during non-revenue hours.

Pavement, curb, driveway, and structure sufficiency information will be collected for use in refining access alternatives with the Design-Builder.

Review access route sidewalks, roadways, existing traffic control devices, signage, lighting, drainage, access control, and adjacent roadways and ensure all features are accurately reflected by survey within BIM model.

Measurements will be taken of existing facilities, utility setbacks, and features within the ROW and verified for the final design base plans.

Traditional still photos, 360-degree photos, and videos will be taken and logged throughout the design as well as inclusion in the design documentation, permitting applications, and reports.

The design team will request current facility inspection reports and sufficiency ratings, turning movement data, available traffic counts, pedestrian counts, and bicycle counts for use in design efforts.

## 6.3 Existing Station & Parking Garage Conditions Survey and Documentation

The design team will complete inspections of the existing station, adjacent underground parking garage, and site features to confirm existing conditions. Design team members will provide surveyor their requests for specific additional survey points/features needed in the field as well as specific station and garage components needing additional survey.



Design team inspections will note obvious deficiencies and conditions in or adjacent to the station, structures, garage, and drainage facilities that may place constraints on any permitting or design criteria or need to be included in structure instrumentation and monitoring specifications and drawings.

## 6.4 Property Research, Boundary Survey, Topographic Survey

The updated topographic, station, and garage survey will be completed shortly after the above data collection site visits in order to allow technical specialists to identify additional features and survey points of critical resources for incorporation into BIM model to best inform design development activities.

This task includes additional topographic and existing train room and back-of-house room survey beyond that obtained during the Preliminary Engineering (PE) Phase, existing parking garage survey, confirmation of previous subsurface utility designation and subsurface utility locating, and the addition of subsurface utility test pit investigations. All PE Phase and new data will be incorporated into final design base plans with identified property boundaries and Right-of-Way limits obtained during the previous PE Phase.

This task includes the necessary Design-Builder, County, and WMATA access coordination, railroad worker protection training and certification, and other requirements for obtaining survey access.

The Consultant will develop the survey and mapping needed to achieve final design level survey for this project including, but not limited to, the following:

- › Establish horizontal and vertical control including construction/survey control.
- › Base mapping to be completed using one Coordinate Datum
- › Perform conventional topographic survey at scale 1" = 20'
- › Locate subsurface utility designated lines and include on base topographic survey
- › Boundary survey for impacted lots
- › Survey sanitary and storm sewer structures within the Project limits to obtain pipe sizes, pipe material, invert into structure, invert out of structure, direction of flow, etc.
- › Perform structure surveys for adjacent structures
- › Develop survey control sheets
- › Coordinate with Title Company to compile property ownership information from local databases, Title searches for existing third-party agreements, and easements for properties adjacent to, or potentially impacted by the planned project work
- › Research existing as-builts and survey for prior projects within project limits
- › Locate soil boring locations as identified by geotechnical engineer
- › Compute and establish survey baseline with monumentation for design reference
- › Tie survey into WMATA datums
- › Develop up to ten (10) legal descriptions with sketches for ROW takings/easements on impacted properties
- › Support tree survey requirements

It is assumed that the survey data will be provide in AutoCAD format.

## 6.5 Utility Records Research

The design team will conduct utility records research to assist in the identification of utility owners likely to own assets within the project limits both inside existing station and outside the station and will contact and request documentation of subsurface utilities from these sources. Gathered materials will be evaluated for validity and indications of other available records and then used to inventory and identify the probable number, type, size, and material of utilities located at the project site. Record data will not be used as a substitute for actual geophysical location unless the utility system cannot be verified electronically using industry standard techniques for this level of investigation. Provide all record information to the Design-Builder with final deliverables.

## 6.6 Subsurface Utility Locating

The design team will conduct a thorough field investigation of each utility system identified in the utility inventory both inside the existing station and outside the station within the project limits and perform utility locating services to a Quality Level B outside. The initial field and station investigation will utilize active and passive type utility detection equipment that detects induced or naturally occurring energy fields present on conductive utilities. All investigated utilities will be targeted and marked on the ground at the interpreted position of each subsurface utility and then topographic survey will be completed to record those markings.

The design team will conduct utility test pitting at up to ten (10) locations within the project impact limits with specific locations to be determined once utility coordination, ground markings, and design developed has been advanced sufficiently to effectively identify potential impacts and desired test pit locations. These services also require maintenance of traffic deployment to support these services in the vicinity of roadways and pedestrian access locations as well as access permitting by the various agencies, which shall be covered under the above subtasks as noted.

The design team will schedule utility coordination meetings with utility owners as necessary to obtain and coordinate utility information for final design baseplans (six (6) meetings total @ 60 min. each).

The design team will ensure team members are using the latest BIM files and following project processes and protocols throughout the design phase. Design team members will be trained appropriately in team expectations, standards, and file management practices to ensure successful use and structure of design information across all disciplines.

## 6.7 Structural - Existing Conditions Survey and Documentation (*station, parking garage*)

The design team will conduct pre- and post-construction surveys of the WMATA Crystal City Metro station structure and the underground parking garage structure at 241 18th Street South. The area of the parking garage to be observed will be limited to about 200-foot wide section of walls, slabs, and ceilings adjacent to the area of construction, on each of the three below-grade levels, about 1 bay deep.

The design team will coordinate scheduling the pre-construction survey in the WMATA station with WMATA security personnel.

- › Our team inspecting the station will consist of two inspectors plus a WMATA representative.
- › The parking garage will also be observed by two inspectors.

The design team inspectors will conduct a visual survey of the interior and exterior walls, slab, beams, columns, and ceilings of the station and parking garage structure. The observed conditions will be documented with written notes, sketches, and photographs.

The written notes, measurements, sketches, and photographs for the inspected structures will be presented in individual reports. Two copies of the reports will be submitted in digital format.

Upon completion of the project, the structures will be re-examined (Post-Construction Survey) to determine whether there are changes from the pre-construction conditions detailed in the survey reports. Updated reports will be submitted.

## Assumptions

The visual surveys will be completed in readily accessible areas of the structures. The surveys will not include areas covered by vegetation, stored materials or other obstructions, areas with insufficient light, accessing crawl spaces or rooftops. The design team reserves the right to refuse to enter the premises if, in the opinion of our inspector, the structure appears unsafe to enter.

WMATA will provide personnel to accompany us through the station and tunnel and access to all the electrical/mechanical rooms.

We will mobilize for these surveys once and all of the surveys will be performed from start to finish during that one visit.

## 6.8 Existing Station and Parking Garage Monitoring/Instrumentation Specs/Drawing

Prepare Instrumentation and Monitoring Specification for the existing Station and Parking Garage Structure.

Prepare drawing showing monitoring locations and detailing as necessary.

# 7.0 Envision Coordination, Checklist, Sustainability

During final design and construction, the design team will document the efforts taken by it and by the Contractor to take reasonable efforts to meet sustainability goals in the Project's implementation. This documentation will take the form of an updated Sustainability Narrative that lists sustainable design features incorporated and sustainable construction methods confirmed, and also will update the Envision checklist completed at 30% design. In refining the checklist and documentation, the design

team will coordinate with Clark-JBG SMITH to confirm the sustainable construction practices that will be incorporated into the project.

This sustainability narrative will be used to inform a formal Envision verification process. The design team assumes that Verification Pathway A: Design + Post-Construction will be employed. This pathway includes verification at final design and confirmation following construction. Verification costs are incorporated at the Non-Member, \$100-\$250 million category.

## 8.0 Permitting

The design team will lead the site access permitting process for the design investigation activities and for the ultimate construction of the project in coordination with the Design-Builder.

The design team will complete permit submissions for design investigation activities that include geotechnical borings and test pitting, survey work within the station, and subsurface utility exploration and test pitting.

Permits required for the East Entrance construction are as indicated in the Permit Matrix.

The design team assumes that permit submissions can be made at the 60% design stage for all relevant Arlington County permits.

Excluded from the design team permits is the Certificate of Occupancy, which is expected to be requested by the Design-Builder.

No additional environmental permitting beyond the requirements mentioned here are anticipated to be required or included in this scope of services.

## 9.0 Geotechnical

The design team will provide a geotechnical engineering analysis of the Project site as outlined in the subtasks below.

### 9.1 Field Engineering

The design team will perform tasks to prepare for proposed subsurface exploration activities to include:

- › Perform site reconnaissance and approximate boring stakeout
- › Prepare a preliminary boring location plan and work plan to support VHB's permit applications to WMATA and Arlington County.
- › Contact Miss Utility prior to mobilizing drilling equipment to the Project site
- › Retain a private utility locator to sweep a 25-foot radius around the borehole locations
- › Obtain Maintenance of Traffic (MOT) as necessary to perform test borings
- › Obtain necessary permits from WMATA and Arlington County to perform test borings and infiltration testing

## 9.2 Exploratory Excavation (*locate existing SOE at station, define dome shaft geometry*)

The design team will observe and document test pit excavations performed by Clark of the abandoned SOE at the station and the station dome. Where encountered in the test pit excavations, the location and condition of the various elements encountered will be photographed and documented.

- › Clark will perform the test pit excavations including all necessary permitting, E&S controls, temporary shoring, backfilling with compacted fill, and site restoration.
- › The design team has included scope to be onsite for 5 days to observe the test pit excavations.

## 9.3 Subsurface Exploration

The design team will perform a subsurface exploration program that includes up to two (2) additional test borings to depths of 100 feet to support the SOE and foundation design, and one (1) boring to a depth of 15 ft to support the SWM BMP design. The borings will be drilled to the depths indicated or to prior auger or sampler refusal. The design team will perform up to two (2) stormwater infiltration tests in offset holes adjacent to the shallow boring in accordance with Virginia requirements. The design team will collect bulk samples of soil, up to four 3-inch diameter Shelby tube samples, and grout boreholes upon completion and dispose of drilling spoils offsite.

Actual boring locations will be selected as necessary to avoid existing structures, roadways, subsurface and overhead utilities, and other obstructions to drill rig access.

Boring locations will be accessible with truck-mounted equipment

Concrete coring will not be required at the boring locations

Borings will be backfilled with grout and excess spoil removed from site

Field activities will generally be performed between the hours of 7 AM and 5 PM, Monday through Friday. No weekend work or night drilling is anticipated in this scope of services.

All investigation derived wastes (drill cuttings, grout and groundwater) from the borings will be placed into drums for temporary storage on the site. Schnabel will arrange for a waste disposal contractor to remove the drums and perform any laboratory testing needed to determine the appropriate method of disposal. The results of the laboratory testing will be immediately sent to Arlington County. Before removal of the drums, it will be necessary for the Owner of the site to sign a manifest or similar documentation as required by the waste disposal contractor. Schnabel will not take responsibility for ownership of any materials removed from the site.

Disposal of up to 7 drums in this proposal. These drums will be left on site until arrangements are made for them to be picked up. We have assumed that subsurface materials are not hazardous wastes and do not contain PCBs. Please note that this fee assumes that the on-site material is within the allowable limits, is not hazardous waste and does not contain PCBs, as restricted by the planned receiving facility. If the contamination levels exceed these restrictions, then additional fees for testing and alternate disposal means will apply.

Given the site is a previously-excavated-fill condition, this proposal assumes subsurface materials are free of environmental contaminants and that the materials the design team will encounter will not require personal protective equipment beyond OSHA Level D. The design team has also assumed that no special handling of samples will be required.

If environmentally contaminated materials are encountered, the design team will advise the Design-Builder on alternatives for the Project to manage soils under a separate assignment or amendment to this contract.

## 9.4 Laboratory Testing

Samples collected with borings will undergo the following laboratory tests:

- › 20 Moisture Content, ASTM D2216
- › 2 Natural Density and Moisture Content
- › 10 Grain Size Distribution, ASTM D422 (and/or D1140)
- › 10 Liquid Limit, Plastic Limit, and Plasticity Index of Soils, ASTM D4318
- › 2 Moisture-Density (Proctor) Relationships, VTM 1
- › 2 California Bearing Ratio Test, VTM 8
- › 2 Consolidated-undrained Triaxial Shear Test, ASTM D4767
- › 2 Corrosion Potential Test Series (pH, Reduction-Oxidation Potential, Resistivity, Qualitative Test for Sulfides, Water-soluble Sulfate and Chloride Test)

## 9.5 Final Geotechnical Engineering Analysis and Report

The design team will prepare a final geotechnical engineering report using data and information gathered in the prior tasks including:

- › Estimated subsurface profiles and groundwater levels within the area explored based on data collected in the subsurface exploration
- › Recommended Seismic Site Class and Seismic Site Coefficients ( $F_a$  and  $F_v$ ) in accordance with IBC 2016 for use in foundation design based on data collected in the subsurface exploration
- › Evaluation of the shrink/swell potential of the soils encountered in the exploration
- › Earthwork recommendations for construction of load-bearing fill including an assessment of on-site soils for use as fill, subgrade preparation, and compaction criteria.
- › Final foundation recommendations including foundation systems, bearing pressures, capacities, estimated tip grades, lateral capacities, and settlement
- › Recommended asphaltic concrete pavement sections based on traffic loading to be provided to us by others.
- › Recommended earth pressures for all below-grade structures and site retaining walls
- › Recommendations for permanent subdrainage design and construction dewatering
- › Comments about potential impacts to adjacent structures due to the proposed excavation and foundation construction

- › Construction considerations related to the implementation of all recommendations

## 10.0 Architectural Station Design

This scope of work involves advancement of the station design to IFC level of design. The design will be based on the 30% design documents as approved by WMATA and the County. The design will conform to applicable codes, WMATA Manual of Design Criteria (MDC), and requirements established by the County. Proposed code and MDC deviations, if any, will be discussed with WMATA (or other AHJs) and documented in the Basis of Design Report.

The Architectural Station Design will consist of three parts based on the existing 30% drawing set and the four work packages: First, Package 2 – Interior Train Room Work, Station Back-of-House Temporary/Permanent Work, Second, Package 3 – New Entrance Outside Existing Station and Pedestrian Passageway, Third, – Package 3a Architectural Roof and Façade Design (see section below). Design drawings including plans, sections and details will be produced using the BIM Model as a base.

**Package 2.** Modification of the existing underground station includes checking and modifying the 30% design and updating the model of the new mezzanine, stairs, and an inbound elevator. This work includes laying out re-arranged service rooms and puncturing through the station end wall at the platform level on both sides and the new mezzanine level. Also included are detailing the new mezzanine parapet, stairs, floors, ceilings, column covers, and the new openings cut through the concrete walls. Door schedules, finish schedules and a basis of design report will be created. Egress paths will be established on drawings. Coordination with all disciplines will take place. Code compliance will be verified.

**Package 3.** New design and construction drawings outside the existing station box will include checking and modifying the 30% design drawings, specifications and updating the model for the new stairs, elevators, and new service rooms. Details will be created for the stairs, railings, walls, ceiling structure layout, acoustic panels, floor tiles, floor joints and drainage. Door and finish schedules will be laid out.

The at grade mezzanine will be laid out following the WMATA Design Manuel and Standards with typical layout and sequence of events, proper queuing spaces and relationships. The mezzanine will be enclosed with glass panels providing wind and rain protect for the patrons and the fare equipment.

All drawings will be updated in the BIM model on a regular basis.

All aspects of the new station entrance will be designed to meet ADA standards. ADA access will be mapped out in the drawing set.

Signage and Wayfinding will be laid out and designed with approvals from the WMATA using their Signage Design Manuel as guide. PID's will also be located and designed as required by WMATA

### Station Wayfinding Signage

Design team will provide signage for new and modified entrance locations for the following station areas:

1. Faregates
2. Ticket machines

3. Station Manager's kiosk
4. Passenger entrances
5. Elevators
6. Stairs
7. Mezzanine/platform area

Designed signage will adhere to applicable codes and regulations and will match existing sign standards.

Wayfinding signage deliverables incorporated into drawings will include the following for each of the four submissions related to Work Package 2 and 3:

1. Sign Location Plans
2. Sign Layouts Concepts
3. Installation Notes
4. Infrastructure Notes

## 11.0 Architectural Roof and Façade Design

The new entrance mezzanine Roof and Façade will be developed further through focused engagements with the County and WMATA in up to three dedicated meetings regarding the design. The design process and drawings will be advanced to 60% design with the BIM model updated and details resolved. A 60% design package including drawings and specifications will be produced as part of the overall mezzanine package with roofing material, color, drainage details, and glass enclosure details and specifications completed.

In order to develop an efficient design within the expected schedule, the design team will closely coordinate with Design-Builder on the timing and completion of this task as the accuracy and advancement of final design will rely on this being completed first.

It will be imperative that the architectural design of the station envelope be defined early with conceptual iterations complete and aesthetic design changes set a minimum of four-weeks (20 business days) prior to the first Design-Builder review of the 60% design submittal. Failure of meeting this internal milestone due to County or WMATA inputs will delay the submittal of the 60% Submittal, thus the design team will highlight this be a #1 priority upon design NTP.

## 12.0 Building Information Modeling (BIM)

The design team will manage the BIM model throughout the design and construction phase and make files and information available to Design-Builder and subcontractors as needed throughout the project. As-built redlines from contractor will be incorporated into final model under construction support services below.

VHB will provide the overall BIM/CADD Manager for the duration of design services to support all discipline BIM efforts. Each subconsultant firm will provide their individual BIM Manager to support their internal design staff, which will include loading software, setting up licensing and credentials,



aiding in initial REVIT model set up, providing layer support, and providing support as add-ins and library updates are required. Each firm's BIM/CADD Manager will also interface and coordinate with VHB's BIM Manager to provide BIM 360 support to the full team, push through required updates, and aid in solving BIM related problems as they arise.

## 13.0 Urban Design

The design team will conduct a tree survey following design NTP to inform the tree protection plan during construction.

As part of Package 4, the design team will develop plans and drawings to inform final site restoration, hardscaping, and landscaping within the areas of Project responsibility. Based on Arlington County direction, the site restoration, hardscaping, and landscaping design work in this task will support the "leave-behind" interim condition.

## 14.0 Structural

### 14.1 New Exterior Entrance Structure

VHB will perform structural design of the new exterior entrance structure from the 30% design previously completed to Issue for Construction (IFC) level. VHB will provide design documents that will include calculations, detailed design drawings, and specifications for the proposed new exterior entrance structure. Structural elements will include the following:

1. Foundation grade beams on micropiles
2. Mat foundation on micropiles
3. Concrete walls, beams, columns, and slabs
4. Steel roof deck, beams, columns, base plates, and anchor bolts
5. Elevator shaft steel framing, and anchorage to concrete foundations
6. Coordinate curtain wall supporting elements
7. Steel stair framing and support

VHB will perform structural design from the 30% design previously completed to Issue for Construction (IFC) level. VHB will provide design documents that will include calculations, detailed drawings, and specifications for the proposed work inside the existing WMATA station. The structural design for the proposed work inside the existing station will include following:

1. Steel beams, concrete slab on metal deck, columns, base plates, and anchor bolts for the proposed mezzanine in the train room
2. Steel stair framing and support in the train room
3. Reinforcement of the proposed opening at the station wall to connect with the proposed exterior structure.
4. Support framing around new openings on walls and floor slab (at BOH) other than the opening in item three above

## 14.2 Interior Station Improvements

VHB will perform structural design for improvements inside the existing back-of-house and train room spaces from the 30% design previously completed to Issue for Construction (IFC) level. VHB will provide design documents that will include calculations, detailed design drawings, and specifications for the proposed new exterior entrance structure. Structural elements will include the new mezzanine, wall penetrations, stairs, and structural supports for each.

## 14.3 Elevator shaft steel framing, (*inbound track side*)

Demolition plans for walls and slabs The Design-Builder will be responsible for selecting the methodology, required bracing and temporary support of structure needed during demolition. The design team will evaluate the selected methodology for any change in structural load path and provide results to Design-Builder.

Geotechnical Group will review the structural plans and specifications to verify the plans conform to the recommendations included in the project geotechnical report, at the 60%, 90%, 100%, and IFC submission and will draft the micropile specification for the project.

## 14.4 Structural - Retaining Wall

The design team will prepare structural analysis, calculations, detailed drawings, and specifications for the proposed retaining wall retaining soil at the adjacent chiller yard. This scope does not include retaining walls associated with the adjacent Metro Market Square Project. This scope does not include a structural evaluation of the existing elevated concrete deck over the garage entrance and loading dock.

## 14.5 Waterproofing Design/Detailing

VHB structures will provide waterproofing details per WMATA standard for the below grade concrete structure. The General Contractor will choose the waterproofing manufacturer who will provide the most appropriate waterproofing system for the project that will meet WMATA standards. The waterproofing manufacturer will provide waterproofing details to VHB Structures for coordination and to be included in the structural concrete detail drawings.

# 15.0 Civil (requires County Civil Engineering Process)

Design Team will prepare and submit plans in accordance with the Arlington County Civil Engineering Plan (CEP) Review and Approval process. This process will include a pre-submission meeting with required documents outlined in the County Minimum Acceptance Criteria (MAC) Checklist and Guidelines.

Design plans will be developed in conformance with the CEP Criteria and MAC Checklist and sent to the key County reviewers.

Erosion and Sediment Control Plans and Maintenance of Traffic Plans will be prepared and submitted to the County on a separate, but concurrent track.

Geotechnical Group will review the civil plans and specifications to verify the plans conform to the recommendations included in our geotechnical report, at the 60%, 90%, 100%, and IFC submission, for all four packages.

## 16.0 Demolition

The design team will prepare site and utility demolition plans consistent with Design-Builder construction sequencing in accordance with the County MAC Checklist.

Demolition plans will include selective demolition inside Train Room as shown in the 30% documents including openings in end wall for passageways, openings in the platform for the east mezzanine structural supports, north elevator openings in floor and platform/platform slabs, and back of house stairs, walls, and existing equipment.

## 17.0 Utility Coordination and Relocation (wet)

Design team will prepare utility plans and profiles showing site water and sanitary sewer building connection laterals and public water and sewer relocations. It is assumed these connections will terminate within 5' of the building walls or at such a point that is coordinated with the plumbing plans. Wet utilities will be designed in accordance with County standards and shall comply with the MAC checklist for all CEP Submissions. This task includes services related to required notes, plans, details, and specifications needed for construction.

Utility Relocations for utilities conflicting with elements of the proposed new Crystal City East Entrance outside of the existing Train Room.

## 18.0 Utility Coordination and Relocation (dry)

Design team will prepare dry utility plans in accordance with the County MAC Checklist. This includes a colorized dry utility plan for both existing and proposed dry utilities.

Design team will also prepare utility relocation plans for utilities conflicting with elements of the proposed work outside of the existing Train Room.

## 19.0 Stormwater Management

Design team will prepare and plans, notes, details, and calculations in accordance with County requirements and necessary for construction. At a minimum, MAC Checklist will require the following plan sheets, supporting documents, and supporting calculations:

- › Pre-Development Drainage Divide Map
- › Post-Development Drainage Divide Map
- › Pre-Development Land Cover Map
- › Post-Development Land Cover Map
- › Arlington County Soils Map
- › Stormwater Management Overview Plan
- › Stormwater Management Computation Sheets
- › Stormwater Management Details
- › Virginia Runoff Reduction Method Spreadsheets and Reports
- › Water Quality Details and Calculations
- › Stormwater Report
- › Stormwater Pollution Prevention Plan
- › Stormwater Facility Maintenance and Monitoring Agreement
- › WQIA Plan/Narrative/Checklist

## 20.0 Erosion and Sediment Control

Design team will prepare Erosion and Sediment Control plans, narrative, and details in accordance with County standards and MAC Checklist and Virginia Erosion and Sediment Control Handbook.

## 21.0 Site Lighting

Lighting services team will work with design team to provide a coordinated lighting concept for the entire project to include evaluation of how internal lighting enhances the external appearance of the architecture while simultaneously meeting the WMATA design criteria for each area. The initial schematic lighting concept will define the quality and quantity of light for all elements and areas of the project for WMATA and County to seek approval prior during 60% design. The team will develop a hierarchy of light levels for the project and define how the central concept applies to the different spaces as well as how the different spaces inform the design concept of the building.

Design team will provide lighting design services for the following project areas:

### 1. Work Package 2

- Escalator Way
- Passage Way
- Train Room Mezzanine
- Platform under Mezzanine lighting
- All back of house spaces

## 2. Work Package 3

- Above Ground Station
- All Public Areas
- Kiosk

## 3. Work Package 4

- Site lighting around above ground station
- Exterior lighting of above ground station

# 60% Design Phase

1. Develop a coordinated lighting concept for the entire project. Study how the internal lighting enhances the external appearance of the architecture while simultaneously meeting the WMATA design criteria for all areas. The schematic lighting concept will define the quality and quantity of light for all elements and areas of the project.
2. Develop a hierarchy of light levels for the project, and how the central concept of the project applies to the different spaces or how the different spaces inform the design concept of the building.
3. Define Lighting Concepts for all areas listed above. This will come in the form of lighting diagrams, photometric calculations, and black-and-white renderings of the lighting where helpful for understanding the lighting design. The diagrams will show target illumination levels for those areas illustrated and target power densities per area type. The calculations will show how we meet those target levels.
4. Design and prepare lighting layouts for all of the spaces listed above.
5. Update the BIM model on a regular basis.
6. Prepare a complete study of photometric calculations of all interior spaces both horizontal and vertical. Target lux levels and brightness levels will be described in a diagrammatic form or list format of the project areas. Also map out how much energy is being used and a projection for the maintenance of the fixtures.
7. Prepare a lighting specification for all the lighting fixtures in all of the packages. Keeping an eye on ease of maintenance, try to keep the variety of lighting fixtures to a minimum and make sure they are all accessible.
8. All this information will be integrated into the lighting sections of the 60% Design for Package 2, 3 & 4.
9. The submittals will also contain 60% lighting layouts of lighting systems in plan and reflected ceiling plan for all areas listed above.
10. The outline specification is the beginning of a performance specification, but at this stage it will include fixture cuts to aid in any pricing exercises. Where needed, the specification will include drawings showing how they are installed.

## 90% Design Phase

1. Based on the approved lighting concepts, develop lighting systems for each area listed above designed to achieve the developed concepts. This includes working with the design team to develop integration of lighting systems into the architecture.
2. These will be documented as Master Lighting Plans indicating the locations, types and wattages of each fixture.
3. Help develop any natural lighting systems and its coordination with the electric lighting systems.
4. Update drawings in the BIM model on a regular basis.
5. Where the control of the lighting is critical to maintaining the overall image and quality of light for the project, we will prepare lighting control logic plans that show lighting groups and how they are controlled. These diagrams are intended for the project engineers for developing their branch circuiting, developing the electrical system and control specifications.
6. Prepare a written description of the lighting control system explaining the logic of the control system and indicating the locations of photo sensors, occupation sensors and where local control is necessary.
7. With the development of lighting systems we will update the photometric calculation report. We will certainly provide IES files for the BIM model should that be required. Keep the lighting updated in the BIM Revit Model
8. Prepare a performance lighting specification with fixture drawings describing the performance and appearance of the lighting systems for inclusion in the contract documents. This is intended to be the technical portion of a "stand alone " tender document.
9. Work with the project electrical engineers to resolve emergency lighting systems.
10. Where required, develop designs for mockups to be built by others of exterior façade lighting. Participate in the review and evaluation of these mockups and prepare the technical portions of any reports.
11. Incorporate any comments from or changes requested by the Client into a revised final 90% Design Reports.

## 100% Design Submittal

1. Work with the design team to develop lighting details for inclusion in the architectural contract documents.
2. Work with manufacturers in developing the technical details of light fixtures, mounting details and optical systems.
3. Work with the Design team to coordinate the lighting with all other systems to ensure that there are no clashes.
4. Work with the Design team to ensure the lighting meets all local electrical and environmental codes.
5. Work with the Design team for the integration of the Master Lighting Plans into the architectural reflected ceiling plans and architectural plans.
6. Update the lighting layouts and objects in the BIM Revit Model.

7. Work with the project electrical engineers to resolve emergency lighting systems. We will rely on the engineers to determine local emergency codes and to do any required calculations and representations to local authorities.
8. Finalize the performance lighting specification with fixture drawings describing how the fixtures are installed, how they perform, and their appearance lighting systems for inclusion in the contract documents. This is intended to be the technical portion of a "stand alone " tender document.
9. Finalize the performance lighting control specification for the architectural and landscape lighting with lighting layouts articulating the lighting control groups for inclusion in the contract documents. This is intended to be the technical portion of a "stand alone " tender document.
10. Where required, develop designs for mockups to be built by others of exterior or interior lighting. Participate in the review and evaluation of these mockups and prepare the technical portions of any report

## Contract Administration Phase

1. Participate in tender and procurement of the lighting systems. We will recommend the best qualified manufacturers for each lighting system and help define where the fixture ends and the next trade begins.
2. Review tender proposals and make recommendations on their acceptance.
3. Should there be any further mockups that involve lighting we will develop designs for those mockups to be built by others. Participate in the review and evaluation of these mockups and prepare the technical portions of any reports.
4. Review 3 lighting submittals from the distributor, which shall be submitted as single, entire packages. Any further submission reviews from the distributor shall be billed at senior designer rates as an extra.
5. Work with approved manufacturers from the lighting submission process reviewing their shop drawings and samples to develop the lighting systems for final acceptance.
6. Provide on-going replies to field questions during the construction.
7. Make visits to the site during construction.
8. Review the final installation, provide a punch list and give directions for the focusing of the lights and the programming of all the light scenes.
9. Follow through with focus charts & cataloguing of control logic and programmed scenes.

## 22.0 Maintenance of Traffic (Roadway/ Bike-Ped/Curb Relocations)

Design team will prepare Maintenance of Traffic Plans in accordance with Arlington County standards and the Arlington County MAC Checklist. A Maintenance of Traffic Plan will be provided for each phase of work as previously determined with the 30% plans.

Traffic signal phasing/timing adjustments and any temporary changes to existing signals, such as signage or bagging, will be provided for temporary MOT conditions during construction.

## 23.0 Mechanical

Design team will perform mechanical design from the 30% design level previously completed to IFC level documents. Mechanical engineers will develop design details on existing system demolition within the existing Crystal City Station spaces. Conditioning equipment and layouts will be further developed as rooms and elevator shaft spaces within the new portion of the station entrance are finalized at street, mezzanine, and platform levels. Mechanical engineers will advise architecture on mechanical space requirements as they are further developed and finalized, as well as confirm final duct or pipe routing locations, sizes, equipment, etc. The mechanical design effort will also coordinate with architecture and the vertical transportation consultant to finalize elevator shaft support areas. Relocation and/or demolition of existing HVAC systems, as well as how those systems will be staged to maintain conditioned service is included in the work.

The mechanical design will include all notes, plans, details, and sections required for the Design-Builder to complete construction. The design will also include review of standard WMATA specifications, authoring of missing sections or sections that require supplemental information, or revisions to match the scope and work as required, as well as all supporting calculations for the design. The mechanical engineering effort will include implementation and enforcement of the DQP on all deliverable items of work. General duct and pipe installation and support details will be provided in the final design documents. However, the specific hardware and detailed connection methodology between sheet metal ducts, pipe or support brackets will be the responsibility of the Design-Builder and their mechanical subcontractors.

Mechanical engineers will also support the Design-Builder team by attending required meetings, resolving comments made at various submittal milestones, supporting construction phase services during construction, and aid in development of as-builts drawings at project close.

All mechanical design plans will be developed in Revit through BIM 360 hosted by VHB. Submittals will be made in PDF format, printed from sheets generated from Revit sheet views.

Exclusions/Assumptions:

Details for any required house-keeping pads to support mechanical equipment is not included.

## 24.0 Electrical

The design team will perform electrical design from the 30% design level previously completed to IFC level documents. Electrical engineers will continue work developing electrical design and provide further developed details on existing system demolition within the existing Crystal City Station spaces and installation of new systems for the new stationhouse. Electrical design including power equipment and devices, circuiting, Electrical conduit routing, lighting, grounding, and fire alarm (coordinated with intrusion detection system and tied into the existing stationhouse equipment), will be further developed the new portion of the station entrance are finalized at street, mezzanine, and platform levels. Electrical work required within the plenum to re-route cables temporarily and permanently will be finalized. Power plans for the kiosk, fare vending, and fare gates will be finalized as well as station grounding. Electrical engineers will advise architecture on changes to space requirements for electrical rooms, as they are further developed and finalized, as well as conduit routing and supporting panels. The electrical design effort will also coordinate with architecture and the vertical transportation



consultant to finalize elevator shaft support areas, confirm elevator equipment dimensions, clearances, and placement, and supply power to mechanical equipment which requires it. Coordination with structural for housekeeping pads, trenching and embedded conduits / devices will also be completed. Single line diagrams, equipment layouts, and electrical schedules will also be finalized.

The electrical design will include all notes, plans, details, and sections required for the Contractor to complete construction work. The design will also include review of standard WMATA specifications, authoring of missing sections or sections that require supplemental information, or revisions to match the scope and work as required, as well as all supporting calculations for the design. The electrical engineering effort will include implementation and enforcement of the DQP on all deliverable items of work.

Area lighting that is not attached to the new station entrance (site lighting), and platform edge lighting is excluded from the scope.

Electrical engineers will also support the Design-Builder by attending required meetings, assisting in ongoing conduit tracing efforts, and resolving comments made at various submittal milestones, supporting construction phase services during construction, and aid in development of as-builts drawings at project close.

All electrical design plans will be developed in Revit through BIM 360 hosted by VHB. Submittals will be made in PDF format, printed from sheets generated from Revit sheet views.

**Exclusions/Assumptions:**

Area lighting that is not attached to the new station entrance (site lighting), and existing platform edge lighting is excluded from the scope.

- › A third-party lighting designer will review and refine the 30% lighting design and provide direction to complete the design. It is assumed that electrical engineers will maintain the electrical Revit model and incorporate the lighting designer's inputs into the final product and will run photometric analysis to ensure required light levels are met, including the areas refined by the 3rd party lighting designer.
- › It is assumed that the design-build team, in the early stages of the 60% design will discuss and finalize how the final packages will be organized / subdivided.
- › It is assumed that WMATA input for new switchboard design, existing FACP / Intrusion detection systems will be provided.

## 25.0 Plumbing

The design team will perform plumbing design from the 30% design level previously completed to IFC level documents. Plumbing engineers will continue work developing the design to provide plumbing system equipment selection and piping layout and routing details for the new station entrance and within the existing Crystal City Station back-of-the-house areas as required. The new sewage ejector pump and room configuration will require plumbing design based on unresolved issues that arose near the completion of the 30% design. That design will be reviewed, coordinated with the required design team disciplines, and revised and finalized. Sump pump discharge within the elevator shafts along with new plumbing systems for sanitary, domestic, and storm water will be finalized. Trench drains within the station, and well as storm leaders from the proposed roof of the station will also be

further developed and detailed. Plumbing design engineers will advise on chase and equipment access space requirements as equipment selection and pipe routing is further developed and finalized. The plumbing design effort will coordinate with architecture, structural, and the vertical transportation consultant to finalize elevator support areas and sumps.

The plumbing design will include all notes, plans, details, schedules, and sections required for the Contractor to complete construction work. The design will also include review of standard WMATA specifications and revisions to match the scope and work as required, authoring of missing sections or sections that require supplemental information, as well as all supporting calculations for the design. The plumbing engineering effort will include implementation and enforcement of the DQP on all deliverable items of work.

General pipe installations, equipment piping details, support details, pipe penetration and fire proofing details will be provided in the final design documents. However, the specific hardware and materials used in those details will be the responsibility of the Design-Builder and their subcontractors.

Plumbing engineers will also support the Design-Builder team by attending required meetings, resolving comments made at various submittal milestones, supporting construction phase services during construction, and aid in development of as-builts drawings at project close.

All plumbing design plans will be developed in Revit through BIM 360 hosted by VHB. Submittals will be made in PDF format, printed from sheets generated from Revit sheet views.

**Exclusions/Assumptions:**

- › Plumbing scope terminates 5-feet after it exits the exterior face of the new station entrance or existing station.
- › Connection to any and all utility mains, including storm, sanitary and water are excluded from this scope.
- › Invert elevations where service connects to utility mains will be the responsibility of the civil engineer and will be provided by them, if required.

## 26.0 Communications

The design team will perform communications design from the 30% design level previously completed to IFC level documents. Communication engineers will continue work developing the design and provide further developed details on existing system demolition, relocation, and temporary work within the existing Crystal City Station spaces, as well as installation of new systems for the new stationhouse. Communications design including backbone structured cabling, access control and intrusion detection for back-of-the house spaces; public address, intercom, and telephone systems; information displays; elevator and fare control monitoring; SCADA; and video surveillance will be finalized. Communications engineers will coordinate with the electrical design to ensure proper power supplies are provided to support communications equipment both inside public areas and in the communications room and for proper integrations with fire alarm system.

The communications engineer will advise architecture on changes to space requirements for the communications room, as they are further developed and finalized, as well as any space that may be required for conduit routing or panel mounting. Additionally, the communications design will final connections to the customer kiosks, fare gates, fare vendors, network equipment and SCADA.

Coordination with structural for support of overhead cable racks and routing of conduit through or underneath concrete slabs will also be performed.

The communications design will include all notes, plans, details, and sections required for the Contractor to complete construction work. The design will also include review of standard WMATA specifications, authoring of missing sections or sections that require supplemental information, or revisions to match the scope and work as required, as well as all supporting calculations for the design. The engineering effort will include implementation and enforcement of the DQP on all deliverable items of work.

Communications engineers will also support the Design-Builder by attending required meetings, assisting in ongoing conduit tracing efforts, and resolving comments made at various submittal milestones, supporting construction phase services during construction, and aid in development of as-builts drawings at project close.

All communication design plans will be developed in Revit through BIM 360 hosted by VHB. Submittals will be made in PDF format, printed from sheets generated from Revit sheet views.

**Exclusions/Assumptions:**

- › The design team will work with WMATA Comms engineers to identify backbone network and cabling requirements as well as to confirm integrations with the existing stations systems in the existing communications room and kiosk. The design team requires WMATA expertise for upgrades to identify the specific requirements for connection.
- › The design team will work with WMATA Radio engineers for requirements to relocate existing CWS neutral host cabinet. The WMATA cabinet has multiple carriers within it. For risk purposes, WMATA and carriers will dictate what items are acceptable to modify and/or replace, as well as provide guidance on how long any items can be out of service for, whom, would need notified of an outage to perform work, and which JOC contractors will be authorized to perform the work.
- › Per coordination with WMATA radio engineers, modifications, or expansions to the existing mobile radio system coverage at the station is not anticipated.
- › EXP excludes design for any modifications to existing Automatic Train Control (ATC) or traction power requirements.

## 27.0 Fire Protection

The design team will perform fire protection design from the 30% design level previously completed to IFC level documents. Fire protection engineers will continue work developing the wet standpipe and automatic sprinkler system design to provide fire protection equipment, standpipe location, and sprinkler and piping layout for the new station entrance and within the existing Crystal City Station back-of-the-house areas as required. Based on discussions after the 30% submission it was determined that new 6" fire water main will enter the building separate from the domestic water line. A new fire department connection located at the east entrance will serve the standpipe.

Fire protection design engineers will advise on chase and equipment access space requirements as the design is further developed and finalized. The fire protection design effort will coordinate with architecture, civil, structural, electrical, and the vertical transportation consultant to finalize sprinkler layout and pipe routing.

The fire protection design will include all notes, plans, details, and schedules required for the Contractor to complete construction work. The design will also include review of standard WMATA specifications and revisions to match the scope and work as required and authoring of missing sections or sections that require supplemental information. The fire protection engineering effort will include implementation and enforcement of the DQP on all deliverable items of work.

General pipe routing locations and sprinkler piping details will be provided in the final design documents. However, the specific hardware and materials used in those details will be the responsibility of the Design Builder and their subcontractors. Connection to the water utility main is included in the Civil design scope With invert elevations where water service connects to utility main provided by the civil engineer. EXP fire protection engineers will also support the Design-Builder team by attending required meetings, resolving comments made at various submittal milestones, supporting construction phase services during construction, and aid in development of as-builts drawings at project close.

All fire protection design plans will be developed in Revit through BIM 360 hosted by VHB. Submittals will be made in PDF format, printed from sheets generated from Revit sheet views.

## 28.0 Vertical Transportation

Design team will provide Vertical Transportation design services. The Vertical Transportation (VT) lead will work in coordination with Architecture and MEP to advance the design of the three (3) station elevators. Activities will include:

- › Confirmation of Basis of Design for VT systems
- › Coordination with Architecture, Structure, and MEP regarding the size and layout of Hoistway, including pit and sump pit.
- › Coordination with MEP and Communications regarding elevator systems and Machine Room layout.
- › Coordination with Architecture on aesthetic elements of the elevator design
- › Coordination with WMATA ELES regarding design waivers.

## 29.0 Systems Integration (PHA, TVA, CIL, Initial Commissioning Plan)

### 29.1 Systems Integration and Safety and Security Certification

Design team will provide WMATA-prescribed Systems Integration and Safety and Security Certification services needed to support the new Crystal City East Entrance, including:

- › Preparation and management of the systems integration plan;
- › Finalization of the Preliminary Hazard Analysis begun during the 30% design phase,
- › Completion of the required TVA,
- › Development and management of the Critical Items List (CIL), and

- › Development of the initial Commissioning plan.

## 29.2 Egress Analysis

Design team will provide a final Egress Analysis to evaluate how timed-egress requirements are met for the new station entrance. The FLS lead will coordinate with WMATA and Arlington County reviewers to confirm code compliance and/or any required waivers.

Egress analyses includes the following four scenarios:

- › AM No-Build
- › PM No-Build
- › AM One Build, and
- › PM One Build

## 29.3 Smoke/Ventilation Analysis

Design team will provide a smoke/ventilation analysis using computational fluid dynamics (CFD) to perform a tenability analysis for the new station elements.

## 29.4 Fire Life Safety (FLS) Analysis and Report

Design team will provide a final Fire and Life Safety Report that updates the FLS Report conducted during the 30% design. The final FLS Report will address:

- › Applicable FLS codes and standards
- › Classification of improvements: alterations/additions
- › Construction type: fire protection of structure
- › Compartmentation: fire separations
- › Classification of finishes
- › Means of egress, including timed-egress analyses, as performed in Task 34.2 above
- › Accessible means of egress
- › Fire detection and alarm; emergency communications
- › Automatic sprinkler and standpipe systems
- › Emergency power and lighting

The FLS Lead will work with the other Design team disciplines to confirm the inputs to the FLS Report based on station design, code requirements, and the analyses and AHJ coordination conducted under Task 34.

# 30.0 Construction Administration

VHB will serve as the overall design coordinator for the project, facilitator between the design team and various entities including the Design Build Contractor for the construction phase when the project

reaches construction. This role will include being the direct line of communication between the Design Builder and the design team. They have the responsibility of receiving, storing, organizing, and distributing all construction phase services documentation for the Design Team and returning reviewed documentation back to the Contractor. This will include but is not limited to construction RFIs, submittals, shop drawings, material certifications, product approvals, design change notices, approved design changes, Non-Conformance Reports, etc. Details as to how documentation and communications lines will be handled will be detailed by VHB in the DCP.

## 30.1 Construction Support Services

Construction support services will be provided during the construction period including submittal review and approval, RFI reviews and responses, modifications details, and development of solutions for problems encountered in the field.

Site visits will be provided for review and approval of construction progress and to provide guidance against defects and deficiencies.

Design and construction services and compensation provided in this proposal includes all travel, printing, image production, and reimbursable expenses.

The design team will participate in establishment of construction administration processes to ensure submittal submissions, reviews, and approvals are efficient and in accordance with the Contract.

A representative of the Geotechnical Engineer of Record from the design team will observe and document micropile load testing, proof testing, and production pile installation for an assumed 2 month installation period. Installation logs from each micropile will be provided. Micropile load testing is assumed to be performed by a specialty contractor retained by others. Materials testing is assumed to be performed by the specialty contractor or others.

## 30.2 As-Built Documentation

VHB will serve as the overall design coordinator for the project, facilitator between the design team and various entities including the Design-Builder for the construction phase when the project reaches construction. This role will include being the direct line of communication between the Design-Builder and the design team. VHB will have the responsibility of receiving, storing, organizing, and distributing all construction phase services documentation for the Design Team and returning reviewed documentation back to the Contractor. This will include but is not limited to construction RFIs, submittals, shop drawings, material certifications, product approvals, design change notices, approved design changes, Non-Conformance Reports, etc. Details as to how documentation and communications lines will be handled will be detailed by VHB in the Design Quality Plan (DQP).

The Design-Builder will maintain a record set of As-Built Documentation as annotated by Design-Builder construction personnel and subcontractors to identify all changes incorporated in the field as work progresses.

"As-Built Documentation" represents the unified set of drawings, specifications, studies, and reports depicting the Project as constructed. The drawings and specifications will be redlined and clouded to show field changes with a clean version also provided with the final submittal. As-Built documents will

also include all approved shop drawings and change orders with final As-Built Documentation complying with the Adjacent Construction Project Manual requirements.

Upon receipt of final annotated As-Built Drawings and Specifications from Design-Builder, the design team will develop final drawings in AutoCAD and bookmarked-by-discipline Adobe (.PDF) formats and complete the following processes for final as-built drawings and specifications:

1. One draft submission for Design-Builder review
2. One design team and Design-Builder comment resolution meeting
3. Second draft for County and WMATA review
4. County and WMATA comment resolution meeting
5. Final submission after all comments and responses are closed out

All other As-Built documentation defined above will be supplied by the Design-Builder.

## 31.0 Assumptions

1. This proposal has been prepared based upon the VHB's recommendations for the services required to complete final design and construction services. If additional services are needed beyond those outlined in this proposal, VHB, at the request of Design-Builder, will respectfully submit an updated scope and cost proposal at that time.
2. The Design-Builder will be responsible for all permit fees.
3. Conduit tracing for electrical and systems relocation design will be completed by Design-Builder subcontractor(s).
4. Design-Builder will provide overall instrumentation and monitoring plan with VHB Team developing required specifications for the work.
5. Design-Builder will install micropiles and perform necessary micropile load testing. Design Team will observe micropile load testing and production pile installation and provide installation logs for each pile. Design-Builder or County will perform necessary materials testing.
6. Design-Builder will be responsible for selecting the waterproofing manufacturer. The manufacturer will be responsible for providing waterproofing design and details that the Design Team will incorporate in their design drawings.

## 32.0 Exclusions

1. This proposal has been prepared without the benefit of a review of the Project Construction Agreement (PCA) between Arlington County and WMATA as that has not been provided. Any additional criteria provided in the PCA that was not available using the fully executed Ballston West Project PCA dated 10/21/2020 is specifically excluded.
2. Civil work related to the adjacent sites or County projects (responsibility of other projects)
3. Hazardous Materials Abatement (assumed not required)
4. Rendered landscape architecture perspectives (have not been requested/assumed not required)
5. Temporary dewatering design (design-builder responsibility)

6. Delegated design of final structural precast elements and connections, steel framing connections, stair elements, light gauge elements and connections, curtainwall systems, and fire sprinkler system distribution and head layout (below 1.5" diameter piping) (design-builder subcontractor responsibilities)
7. Design for relocation of cellular cabinet (assumed to be cellular carrier responsibilities)
8. Design of AC Switchgear replacement (not in scope of this project)
9. Design of Tunnel ventilation improvements (not in scope of this project)
10. Fare Collection Design (WMATA furnished equipment and design responsibility)
11. Design of new traffic signals (not in scope of this project)
12. Materials testing or inspection during construction (County responsibility)
13. Environmental sampling or testing (assumed not required)
14. Temporary Support of Excavation design (design-builder responsibility)



## **Exhibit A.3 – Interim Design Documents**

The purpose of this exhibit is to document the work conducted on the Crystal City Metrorail Station East Entrance Project (the Project) in the 30% design phase as provided in the **Interim Design Documents (IDDs)**. The Interim Design Documents (IDDs) were transmitted to Arlington County electronically on May 19, 2023 and include the following items:

1. 30% Design Drawings
2. 30% Design IDD Technical Memorandum (this document)
3. Specifications Table of Contents and Supporting Specification Information
4. Response to WMATA & County Final Package #3 Comments
5. 30% Basis of Design Report
6. Geotechnical Data Report
7. Geotechnical Engineering Report
8. Conduit Tracing Technical Memorandum
9. Fiber Optic Relocation Technical Memorandum
10. Train Room Mezzanine Structure Type Technical Memorandum
11. Neutral Host Cell Cabinet Technical Memorandum
12. 56-Hour Track Shutdown Technical Memorandum
13. Allowable Activities over Live Tracks Technical Memorandum
14. Temporary Works on Platforms Technical Memorandum
15. Structural Details Technical Memorandum
16. Fire and Life Safety Technical Memorandum
17. Lighting Technical Memorandum
18. Final National Environmental Policy Act (NEPA) Documentation
19. Final National Historic Preservation Act of 1966 Section 106 Documentation
20. Washington Metropolitan Area Transit Authority (WMATA) Environmental Evaluation
21. Phase I Environmental Site Assessment and Hazardous Materials Report
22. WMATA Compact Hearing Documentation

23. Arlington County Public Outreach Documentation
24. Final WMATA Request for Information (RFI) Responses
25. Final WMATA Design Waiver List
26. Formal Approvals Documentation
27. Property Easement and Acquisition Technical Memorandum
28. Adjacent Projects Memorandum
29. Street-to-Platform Elevators Memorandum
30. Maintenance of Traffic (MOT) Memorandum
31. Bid Documentation
32. Fire Flow Test Results
33. Permit Matrix
34. Support of Excavation Package
35. Electronic Design Files

## EXHIBIT B – SPECIAL CONDITIONS

**SPECIAL CONDITIONS**

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**1. EXISTING WMATA SURFACE OPERATIONS**

The existing Crystal City Metrorail Station, Metrobus/ART at the station shall remain in full operation at all times during the design and construction of the Project unless approved by the County and WMATA.

**2. SCOPE OF WORK**

The Developer shall furnish all labor, materials, equipment, and permits for the design and construction of the new entrance for the Crystal City Metrorail station in accordance with the description of the scope of Work for this design-build Project, which is fully set forth in Exhibit A to the Agreement. (For purposes of these Special Conditions, the term "Work" shall have the meaning given to it in the Agreement.)

The Developer shall perform the Work so that it is complete, in place, tested, and ready for continuous service. After the Work has been completed, the Project shall be accepted by WMATA, since the new entrance will be owned, operated, and maintained by WMATA.

For purposes of these Special Conditions, the term "County Project Officer" shall include the County Project Officer's designee.

**3. DESIGN AND CONSTRUCTION DOCUMENTS**

The Developer shall prepare the design and construction documents (the "Design and Construction Documents") in accordance with the "WMATA Design and Construction Standards" which includes the Adjacent Construction Project Manual, the WMATA Station Site and Access Planning Manual, the WMATA Manual of Design Criteria, WMATA CAD Standards, the WMATA survey datum, and the WMATA Sign and Graphics Manual in effect on the date of the Agreement.

- a. *WMATA Approval Predicate.* The sequencing of drawing packages/submittals for this design-build delivery shall be managed by the Developer and performed consistent with the Project Schedule (as defined in Section 10 below), as such Project Schedule may be modified pursuant to the terms of the Agreement. The Parties agree that, prior to engaging in any particular aspect of construction work in relation to this design-build Project, Developer must obtain WMATA's written approval of the Design and Construction Documents for that particular aspect of construction work. In the event that the Developer performs construction work prior to such time as WMATA approves the Design and Construction Documents for that particular aspect of construction work, such work shall be at the Developer's risk, the Developer shall pay all costs for any rework required by WMATA, WMATA shall have the right to issue a Stop Work Order at WMATA's discretion if the work is suspected to be or in fact is impacting safety or operations of any

WMATA Facilities, and WMATA shall retain all approval rights for the final Design and Construction Documents for any particular aspect of construction work. (For purposes of these Special Conditions, the term “WMATA Facilities” shall have the meaning given to it in the “WMATA Agreement” referenced in the Agreement.)

- b. *Contents.* The Design and Construction Documents for any particular aspect of construction work shall include, but not be limited to, the following:
- (i) The Project Schedule (as defined below).
  - (ii) A schedule-based submittal plan listing the relevant submissions to be made to WMATA for review and approval.
  - (iii) A written description and graphical representation of the physical impact that such construction work will have on WMATA Facilities. The description must list all penetrations, borings and planned modifications at or near any portion of WMATA Facilities.
  - (iv) A list of any and all WMATA Facilities to be affected, altered, and/or removed during such construction work and procedures to be used for protection, restoration, and/or replacement of the WMATA Facilities affected, removed, and/or altered.
  - (v) Progressive stages of design, including 60%, 90% and 100%, and “release for construction” submittals, including an outline of the critical construction procedures (including but not limited to procedures concerning the interface with the WMATA Facilities) and all temporary construction work (including supportive excavation, shoring, false work and form work), state proposed means and methods and the approximate duration of each activity. The intent of the 100% design submittal is for the County and WMATA to ensure that the 90% design submittal comments have been satisfactorily addressed.
  - (vi) To the extent applicable to such construction work, a plan for tying in the work to the WMATA Facilities.
  - (vii) To the extent applicable to such construction work, a construction phasing plan and a “Maintenance of Traffic Plan.” If appropriate, phasing plans shall include all information necessary for submission, review and approval of Site-Specific Work Plans (SSWP) and the General Orders and Track Rights (GOTRS) switch order requests discussed in Section 16 below.
  - (viii) The quality control and quality assurance plans for such construction work as required to be developed and implemented by the Developer or its subcontractors, consistent with the Developer’s quality assurance obligations which are set forth in Exhibit A to the Agreement and in other relevant Contract Documents.



- (ix) The procedures to be used for commissioning start up, testing, and demonstrating the Project, to the extent applicable.
  - (x) A detailed plan for addressing all scheduled service outages, to the extent applicable.
- c. *Submissions to WMATA for Approval.* To obtain WMATA’s approval of any submittal, Developer must submit to the County at least one electronic (.pdf) copy of the proposed submittal. Developer shall submit such electronic copies for review into the County’s e-Builder electronic data management system. The County will submit such electronic copies for review into WMATA’s Procore system.
- (i) *Submissions Must Be Approved.* Prior to each submission to the County and WMATA, the Developer’s quality control manager(s) for design and construction must approve the submittal. The County Quality Assurance Manager, who shall oversee delivery by the Developer of its quality assurance obligations (or, in the absence of the County Quality Assurance Officer, the County Project Officer), both of whom are identified in Exhibit F.2 to the Agreement, must approve the submittal (for the purpose of confirming (1) that the submittal is complete and likely to be approved by WMATA and (2) adherence to the quality control plan). Reviews by the County Quality Assurance Manager (or, in the absence of the County Quality Assurance Officer, the County Project Officer) shall be conducted within 14 calendar days of receipt of the submittal.
  - (ii) *Submission Compliance.* All submissions to WMATA shall comply with the WMATA Design and Construction Standards, as set forth in Section 2.1(b) of the Project Construction Coordination Agreement between WMATA and the County (the “PCA”), which is referenced in the Agreement and defined therein as the “WMATA Agreement”, and all Applicable Law. (For purposes of these Special Conditions, the term “Applicable Law” shall have the meaning given to it in the PCA.)
    - a. If Developer knows that portions of any submission are at variance with the WMATA Design Criteria and Standards, the Adjacent Construction Project Manual, or any Applicable Law (other than variances noted in the Interim Design Documents), Developer shall inform County and WMATA in writing upon discovery of the variance and in all events effect corrections in a manner satisfactory to WMATA. (For purposes of these Special Conditions, the term “Interim Design Documents” shall have the meaning given to it in the Agreement.)

- b. If Developer wishes to design and construct any portion of the Project at variance from the WMATA Design Criteria and Standards and/or the Adjacent Construction Project Manual (other than variances noted in the Interim Design Documents), Developer must submit such request by the means identified above and obtain WMATA's prior written approval of each variance. WMATA will respond to such request within fifteen (15) Business Days or such other period as mutually agreed upon. For purposes of these Special Conditions, "Business Day" shall mean any day that the County is open for general business.
- (iii) *Design Submissions.* All design submissions must comply with the following:
- a. Developer shall submit each submission to the County. The Quality Assurance Manager (or, in the absence of the Quality Assurance Manager, the County Project Officer) shall have three (3) Business Days to review each submission for completeness, then shall submit (simultaneously) to the County and WMATA for review with a design review log for recording WMATA responses. The County and WMATA will have thirty (30) calendar days to review and comment on each submission.
  - b. Developer will respond to County's and WMATA's comments in the parties' design review log after receiving comments on the Design and Construction Documents related to "60% design," "90% design," and "100% design," whether in relation to a particular aspect of the Project or its entirety.
  - c. After Developer has provided said responses to the County and WMATA, the County may schedule an in-person meeting with the Developer and WMATA to discuss.
  - d. Developer hereby acknowledges that WMATA previously provided as-built drawings, existing survey data, property boundaries, and other related information of the existing infrastructure of the station and around the Project site; however, WMATA agrees to provide any updates and/or additional information related to the foregoing at or before the Notice to Proceed. The Developer shall not have the benefit of, and shall not rely upon, any information provided by WMATA under this paragraph. If WMATA has provided, or hereafter provides, any documents, opinions or work product

of its own or of consultants, surveyors, architects, engineers, title companies, governmental authorities or any other persons or entities, WMATA has done so or hereafter does so only for the convenience of the Developer to help the Developer perform its own evaluations and not so that the Developer may legally rely upon them; the provision of such documents, opinions or work product shall not create or give rise to any liability of or against WMATA or its directors, officers, employees, consultants, surveyors, architects, engineers, title companies or any other persons or entities. Notwithstanding the foregoing or any term or provision of these Special Conditions or any of the other Contract Documents to the contrary, the Developer shall have the full benefit of relying upon the Interim Design Documents as set forth in Section 1(e) of the Agreement. (For purposes of these Special Conditions, the term "Contract Documents" shall have the meaning given to it in the Agreement.)

- (iv) *Construction Submittals.* To obtain WMATA's approval of any construction submittal, the Developer shall submit to the County Quality Assurance Manager an electronic (.pdf) copy of the proposed submittal. The Developer shall submit such electronic copies for review using the County's electronic data management system, e-Builder.
  - (i) *Submissions Must Be Certified.* Prior to each submission to WMATA, the County shall cause the Developer's designer of record to stamp their approval on such submission to certify that the submission is complete and complies with the terms of this Agreement. The County shall cause the Developer's designer of record to stamp such submission as evidence of its approval of them.
  - (ii) *Quality Assurance Manager Review and Approval.* Prior to submission to WMATA the County shall cause its Quality Assurance Manager to review and approve such submission confirming that the submission is complete and complies with the terms of this Agreement. The Quality Assurance Manager will submit the electronic copies to WMATA for review using WMATA's Procore system or other mutually agreed software. Reviews by the County Quality Assurance Manager shall be conducted within 14 Calendar Days of receipt of the submittal.

- (iii) *Submission Compliance.* All submissions to WMATA shall comply with the WMATA Design and Construction Standards, as set forth Section 2.1(b) of the PCA, and all Applicable Laws.
  - a. If the Developer knows that portions of any submission are at variance with the WMATA Design Criteria and Standards, the Adjacent Construction Project Manual, or any Applicable Laws, the Developer shall inform the County and WMATA in writing upon discovery of the variance and in all events effect corrections in a manner satisfactory to WMATA.
  - b. If the Developer wishes to design and construct any portion of the Project at variance from the WMATA Design Criteria and Standards and/or the Adjacent Construction Project Manual, the Developer must submit such request by the means identified above and obtain WMATA's prior written approval of each variance. WMATA will respond to such request within fifteen (15) Business Days or such other period as mutually agreed upon.
- (v) *WMATA Time for Review.* WMATA shall have thirty (30) calendar days to review any submission. WMATA's time for review shall not begin to toll until the complete work package, as determined by WMATA, has been submitted. If a submittal is received after 2:00 pm, then WMATA's allotted time for review will not begin to run until the following Business Day. WMATA shall provide its approval, rejection, or comments, qualifications, and objections on each submission within 30 calendar days. The Developer will incorporate agreed upon design changes and comments into the approved Construction Documents whether in relation to a particular aspect of the Project or its entirety. Developer must obtain the County's and WMATA's approval of each such submission before proceeding further with relevant design.
- (vi) *Additional Information.* Developer shall provide the County and WMATA with any additional information in its possession or control that the County and WMATA may reasonably request to assist WMATA in evaluating any submission. Review time shall be held until the additional information is received.
- (vii) *Changes to Approved Submissions.* Once WMATA has approved a submission, WMATA may require changes only to comply with a safety issue and/or legal or regulatory mandate. Developer shall not change

an approved submission without WMATA's prior written consent. Developer shall submit any proposed change(s) to the approved submission, including but not limited to change orders and shop drawings, to the County and WMATA for review. To ensure that WMATA is able to evaluate how the proposed change is incorporated into the Project, Developer shall submit a complete and comprehensive change proposal package (which must include all parts of the Project and/or WMATA Facilities to be impacted by such proposed change) when seeking a change under this Section. WMATA shall review and provide written approval or rejection of the proposed change. When a previously-approved submission is being re-submitted because of a change thereto, WMATA's approval rights shall be limited to only matters not previously approved by WMATA; provided, however, all previous approvals are conditional and subject to WMATA's receipt of additional information, enhanced detail provided at subsequent stages of design or development, and/or changes to the Project which change the matter previously approved.

- (viii) *County Time for Review.* The County shall have thirty (30) calendar days to review any design submission. Such review shall run concurrently with WMATA's review described in Section 3.c.v. The County shall provide its approval, rejection, or comments, qualifications, and objections on each submission within the thirty (30) calendar days. The County Quality Assurance Manager shall ensure such feedback is coordinated with WMATA feedback. The Developer will incorporate design changes and comments agreed upon by the County, WMATA and the Developer into the next design submission whether in relation to a particular aspect of the Project or its entirety. To the extent that the County and WMATA's comments conflict, WMATA's comments shall govern unless otherwise specified.
- (ix) *Additional Information.* Developer shall provide the County with any additional information in its possession or control that County may reasonably request to assist the County in evaluating any submission.
- (x) *Changes to Approved Submissions.* Once the County has approved a submission, the County may require changes only to comply with a safety issue and/or legal or regulatory mandate, subject to WMATA concurrence. Developer shall not change an approved submission without County's prior written consent. Developer shall submit any proposed change(s) to the approved submission, including but not limited to change orders and shop drawings, to County for review. To ensure that County can evaluate how the proposed change is incorporated into the Project, Developer shall submit a complete and

comprehensive change proposal package (which must include all parts of the Project) when seeking a change under this Section. The County shall review and provide written approval or rejection of the proposed change. When a previously-approved submission is being re-submitted because of a change thereto, the County's approval rights shall be limited to only matters not previously approved by the County; provided, however, all previous approvals are conditional and subject to the County's receipt of additional information, enhanced detail provided at subsequent stages of design or development, and/or changes to the Project which change the matter previously approved.

**4. PLANNING AND COORDINATION**

Developer shall be solely responsible for the coordination of the Work. The Developer shall supervise, direct and cooperate with all sub-contractors, manufacturers, fabricators, suppliers, distributors, installers, testing agencies, and all others whose services, materials, or equipment are required to ensure completion of the Work within the Substantial Completion Deadline and Final Completion Deadline (in accordance with the terms of the Agreement).

Developer shall coordinate the Work with the County Project Officer, WMATA, and all other contractors performing work at the Site, including but not limited to utility service companies, to effect proper coordination and progress to complete the Project on schedule and in the proper sequence. (For purposes of these Special Conditions, the term "Site" shall have the meaning given to it in Exhibit C to the Agreement.)

To the extent there is other construction in progress at the Site that may impact the Work, the Developer shall plan and coordinate the Work in coordination with the work of other contractors (although the County acknowledges that no such construction on behalf of either the County or WMATA is known to the County as of the date of the Agreement except for the Metro Market Square and the 18<sup>th</sup> Street Streetscape projects). The Developer shall conduct and arrange its Work so as not to (i) impede or interfere with WMATA except as otherwise approved in advance by WMATA, (ii) impede or interfere with the adjacent property owner including the Metro Market Square and 18<sup>th</sup> Street Streetscape Projects, or (iii) unreasonably impede or interfere with the work of other contractors working at the Site in the same or adjacent areas.

Developer shall allow the County, WMATA, their other contractors or their representatives, reasonable access to the Developer's work areas to complete any work necessary for the regular operation of the Project and the completion of other contractor's work (subject to, on the part of all such persons, (a) compliance with all safety and security plans and protocols applicable to the Work and the Site and (b)

reasonable cooperation with the Developer and its sub-contractors and suppliers). A 24-hour notice will be provided to the Developer for non-emergency situations whenever possible.

For purposes of clarity:

- With respect to fare gates and vending machines, (i) Developer shall provide electrical rough-in and (ii) WMATA (or its separate contractors) shall be responsible for all other work associated with obtaining and installing fare gates and vending machines.
- With respect to network switches, (i) WMATA shall be responsible for providing network switch replacements, (ii) Developer shall obtain the switches and provide to WMATA, (iii) WMATA shall configure switches and deliver to Developer, and (iv) Developer shall install switches provided by WMATA.
- With respect to relocation of cell cabinet equipment, (i) Developer shall relocate cell cabinet equipment and (ii) WMATA's third-party partners responsible for the equipment shall inspect the relocation work, confirm approval and start-up the relocated equipment.

Developer shall report on the progress of all Work and compliance with progress schedules to the County and WMATA at the bi-weekly progress meetings.

Any failure of the Developer to properly coordinate the Work shall not cause additional costs to the County nor increase the contract time.

For any inspections or tasks requiring WMATA, the Developer shall notify WMATA in writing, with a copy to the County Project Officer, at least fifteen (15) calendar days in advance of the date of inspection and milestone.

Developer shall notify the County Project Officer via e-builder on project coordination matters requiring County attention sooner than would otherwise happen at the bi-weekly meetings, excluding those where specific notification requirements are provided elsewhere in the Agreement, within three (3) Business Days.

For avoidance of doubt, the terms of Section 23 of the Agreement shall apply in all circumstances where such terms are relevant, notwithstanding any provision of these Special Conditions or any other Contract Document.

## **5. CONSTRUCTION OBLIGATIONS**

The Developer covenants to construct the Project in accordance with the following:

- a. *No Adverse Effects to WMATA.* Developer shall plan, schedule, and perform its obligations under the Agreement so as to integrate the Project with the existing WMATA Facilities and so as to not adversely affect the operations, safety, or security of any WMATA Facilities in any respect, unless otherwise approved by WMATA in its sole and absolute discretion.
- b. *Equipment, Material, and Articles.* All equipment and material incorporated into the Project shall be in accordance with the approved Construction Documents. Notwithstanding, materials installed or used in the construction relating to the Project without the prior written approval of WMATA shall be at the risk of subsequent rejection by WMATA, with removal, replacement, and any related costs to be borne solely by Developer.
- c. *Coordination.* Until Final Completion, Developer shall be responsible for coordinating construction of the Project, including but not limited to (i) controlling circulation and movement of vehicular and pedestrian traffic on, about and around Construction Site during construction in accordance with the approved Maintenance of Traffic Plan and (ii) determining means and methods of construction access, staging and storage. (For purposes of these Special Conditions, the term "Construction Site" shall have the meaning given to it in the "WMATA Agreement" referenced in the Agreement.)
- d. *Safe Project Area.* During the course of constructing the Project, Developer shall maintain the Construction Site in a safe manner and in compliance with all Applicable Law. Developer shall take all actions and implement all protections necessary to ensure that its construction-related activities and all equipment, materials and substances used, generated or brought onto WMATA's property pose no threat to the safety of persons, the environment, or property of WMATA, including, without limitation, providing and maintaining barricades, fences, signs, lighting and other safety devices necessary for employee and public safety.
- e. *Safety and Security Certification Plan.* Prior to the commencement of construction, Developer shall develop for the County's and WMATA's review and approval, and thereafter execute, a Safety and Security Certification Plan for the Project. (For purposes of these Special Conditions, the term "Safety and Security Certification Plan" shall have the meaning given to it in the "WMATA Agreement" referenced in the Agreement.)
- f. *Monitoring.* Developer shall implement a monitoring and contingency plan in accordance with the Adjacent Construction Project Manual. As part of such plan, Developer shall conduct a preconstruction survey of all WMATA Facilities on or adjacent to the Construction Site prior to the start of any construction related activity (this survey shall serve as a baseline survey) and perform monitoring of the facilities during construction.



- g. *Damage.* Developer shall repair all damage to WMATA Facilities and/or operations, and/or the property of others arising from or attributable to Developer's actions or omissions (and/or the actions or omissions of its sub-contractors, consultants, employees, agents, representatives, or invitees) at no cost or expense to the County or WMATA, excluding, however, any loss, damage or injury that results solely from the acts or omissions of WMATA or the County, or any of their respective employees, business invitees, or contractors. Any such repair work must comply with the WMATA Design and Construction Standards.
- h. *Americans with Disabilities Act.* The Project shall be designed and constructed in compliance with the then current Americans with Disabilities Act Standards for Transportation Facilities adopted by the U.S. Department of Transportation (2006) (as updated and amended from time to time) and the U.S. Department of Justice's 2010 Americans with Disabilities Act Standards (as updated and amended from time to time), subject to Section 23 of the Agreement.
- i. *Storm Sewer/Water/Electrical Systems.* Except as may be set forth in the Design and Construction Documents, Developer shall not use WMATA's storm sewer, storm water management facilities, water supply or electrical systems without the prior written permission of WMATA.
- j. *Discharge Permits.* Developer shall review and comply with any applicable discharge permits so the design and construction methods chosen will avoid potential violations.
- k. *Explosives.* Developer shall not use explosives for the performance of the Project without prior written approval from WMATA. Due to the proximity of WMATA Facilities, WMATA may withhold its approval in its sole and absolute discretion.
- l. *Fire Protection.* Developer shall ensure all work complies with the latest version of NFPA 130. All fire protection system components shall be subject to the approval of WMATA's Fire Marshal.
- m. *Construction Signage.* Developer shall display information signs approved by the County and WMATA at the Construction Site clearly indicating the identity of the party responsible for the work being performed.

**6. CONSTRUCTION STANDARDS**

All above-grade work shall conform, to the extent applicable, to the following (as each is in effect as of the date of the Agreement) (together, the "Above-Grade

Standards and Specifications”). County will provide Developer these documents as requested.

- a. **The Arlington County Department of Environmental Services (DES) Construction Standards and Specifications.**
- b. **The Arlington County Department of Environmental Services (DES) Traffic Signal & Streetlight Specifications May 2014.**

In addition, all Work shall conform, to the extent applicable, to the following (as each is in effect as of the date of the Agreement), and County will provide Developer these documents as requested:

- a. **The Virginia Department of Transportation (VDOT) Road and Bridge Standards and Specifications.**
- b. **The Virginia Work Area Protection Manual (WAPM).**
- c. **The Virginia Department of Transportation Work Zone Pedestrian and Bicycle Guidance.**
- d. **Manual on Uniform Traffic Control Devices (MUTCD).**
- e. **The Arlington County Department of Environmental Services (DES) Dechlorination and Disposal Procedures.**
- f. **National Fire Protection Association (NFPA) standards.**
- g. **Arlington County Noise Control Ordinance.**
- h. **Arlington County Street Light Policy and Planning Guide Instructions for Developers.**
- i. **Washington Metropolitan Area Transit Authority JDAC Adjacent Construction Project Manual - The Metro Office of Joint Development and Adjacent Construction Project Manual.**
- j. **The 2018 International Building Code (IBC).**
- k. **WMATA Safety and Security Certification Plan – Available online.**
- l. **WMATA Construction Safety and Environmental Manual.**
- m. **WMATA Computer-Aided Drafting (CAD) Standards Manual.**
- n. **WMATA Manual of Design Criteria.**

o. **WMATA Division 01 Specifications as Amended for this Project.**

To the extent of any conflict, ambiguity or inconsistency between the Above-Grade Standards and Specifications, on the one hand, and the other authorities referenced above, on the other, the Parties agree that the standards and specifications of the entity that has or will have ownership of the asset(s) shall control.

The Developer shall have a copy of the County and WMATA standards and specifications referenced in these Special Provisions, a copy of the Contract Documents, Drawings, Specifications, and a copy of the appropriate permits available at the Project site at all times when construction activity is occurring.

**7. FIELD OFFICE FACILITY**

The Developer shall establish a field office at the Project site (the "Field Office"). Space at the Field Office shall be provided for the County and its on-site representative(s).

**Field Office at the Project Site.**

The Developer shall be responsible for telephone systems, copiers, computer systems and equipment including any maintenance contracts related thereto, cost of supplies (paper for printers/copiers, ink cartridges, etc.), consumables (paper towels, pens, pencils, tape, etc.) and incidentals described elsewhere in these Special Conditions to permit the efficient and uninterrupted operation of the portion of the Field Office at the Project site.

The Developer shall provide appropriate space to accommodate the on-site field oversight personnel of the County consistent with the operations of a field office. All costs of the Developer's offices at the Field Office shall be borne by the Developer.

At the completion of the Project, the Developer shall restore the Field Office site to its pre-Project landscaped condition.

**The County's Space Requirements.**

The Developer shall provide fully-equipped dedicated office space in the Field Office including a copier, plan table, desk and proper lighting for the County's construction oversight and quality assurance personnel.

- a. 2 offices @ minimum 100 sf each with lockable doors;
- b. Lockable storage space at 15 sf.

**Facility Specifications.**

The Developer shall provide space adequate for its intended purpose to include:

- a. Access and security lighting in immediate areas of and exterior to the Field Office, including but not limited to walkways, hallways and entrances;
- b. Appropriate restroom facilities with cold and hot water;
- c. A HVAC system for adequate heating and air conditioning throughout the general working areas, office spaces, and conference rooms, thermostatically controlled to ensure an even temperature distribution;
- d. Appropriate furnished and installed office furnishings (new or refurbished and in good condition) for the County identified spaces, including desks, chairs, bookshelves, file cabinets, etc.; and
- e. Telephone systems with independent service for up to four (4) County personnel.

**Computer Systems Requirements.**

The Developer shall provide a connection between the Field Office and the Internet. The minimum bandwidth required 1.544 mbps synchronous data rate. Developer shall comply with all necessary security requirements of the County and provide a minimum firewall, wireless router, local area network (LAN) switching equipment.

The Developer shall provide two (2) standard desktop computers with MicroSoft office functionality, one (1) multi-function color wi-fi enabled printer/scanner capable of printing 11x17 inch documents, software and associated media and supplies for County personnel to support construction oversight and quality assurance. This equipment and software should be comparable to the computer systems and supporting equipment required for the Developer personnel to manage and execute this Project.

**Replacement.**

In case of fire, theft or breakdown, all Field Office site furnishings and equipment involved shall be repaired if replaced by the Developer within five (5) days of the incident. If the Field Office facility at the site is destroyed or rendered unusable for any reason, the Developer shall coordinate with the County with the intent of replacing (temporarily and/or permanently) the facility furnishing equipment and functions as soon as practical.

**8. MOBILIZATION**

Developer shall mobilize all construction equipment, temporary facilities, materials, supplies, appurtenances, staffed and ready for commencing and prosecuting the Work; and the subsequent demobilization and removal from the Site of said equipment, appurtenances, and the like upon completion of the Work.

Mobilization shall also include assembly and delivery to the Site of plant, equipment, materials, and supplies necessary for the prosecution of work, which are not

intended to be incorporated in the Work; the clearing of and preparation of the Developer's work area; the complete assembly, in working order, of equipment necessary to perform the required work; personnel services preparatory to commencing actual work; and all other preparatory work required to permit commencement of the actual work on construction items for which payment is provided under the Contract.

Delivery to the jobsite of construction tools, equipment, materials, and supplies shall be accomplished in conformance with local governing ordinances and regulations.

#### **TOOLS AND SUPPLIES**

The Developer shall provide construction tools, equipment, materials, and supplies of the types and quantities that will facilitate the timely execution of the Work.

The Developer shall provide personnel, products, construction materials, equipment, tools, and supplies at the jobsite at the time they are scheduled to be installed or utilized.

#### **PLANT LOCATION**

The Developer shall locate plant or plants appropriately close to the portion of the Work for which it will be used.

#### **DEMOBILIZATION**

Upon completion of the Work, the Developer shall (i) remove construction tools, apparatus, equipment, unused materials, and supplies, plant, temporary facilities, and personnel from the jobsite; and (ii) restore all areas utilized for the Developer's temporary facilities and staging purposes to their original, natural state or, when called for in the Contract Documents, complete such areas as indicated.

### **9. WORK HOURS AND SCHEDULE OF WORK**

The Developer shall perform no construction activities within the jurisdiction of the County, except for construction worker arrival to and departure from the Construction Site and indoor or subgrade construction activity, earlier than 7:00 A.M. and later than 9:00 P.M. on weekdays and will commence construction activities no earlier than 10:00 A.M. and no later than 9:00 P.M. on Saturdays and Sundays.

The Developer shall place a minimum of one sign per street front around the Construction Site, indicating the permissible hours of construction and provide written copy to all sub-contractors, place one additional sign within the construction trailer containing the same information, and provide a written copy of the permissible hours of construction to all sub-contractors.

In addition, the County reserves the right to restrict working days and hours to accommodate special site conditions as required, subject to Section 23 of the Agreement.

In relation to Work performed within the jurisdiction of WMATA and requiring the presence of WMATA personnel, the core hours of work for WMATA personnel are Monday to Friday 8:00 A.M. to 2:00 P.M.

The Developer shall provide County Project Officer seven (7) days advance notice prior to changing shift hours and 48 hours advance notice for planned work shifts outside the established work week and workday.

However, within the limitations of these specifications, the Developer shall work such hours per shift, as many shifts per day, as many shifts per week and as many days per week as necessary to complete the Project Work within the construction schedule dates specified. The exception is that Developer work within the existing station structure will be during hours of non- revenue Metrorail service, except as otherwise agreed to in advance by WMATA. WMATA has posted the hours of revenue Metrorail service at

<http://www.wmata.com/rail/schedules.cfm>

## **10. PROJECT SCHEDULE**

The Developer is responsible for scheduling and implementing the various phases of the Work.

The preparation and updating of the Project Schedule shall be an incidental activity of the Developer. No separate payment shall be made for this work.

- a. *Project Schedule.* The Developer will maintain the project schedule which sets forth the commencement, milestone, and completion activities for the design and construction of the Project ("Project Schedule"). The Project Schedule must delineate all work packages ("Work Packages"), as well as submittals and activities involving WMATA, including, but not limited to, all testing and commissioning. The Project Schedule must document the critical path based on predecessor and successor activities as appropriate with the exception of the Notice to Proceed and Project completion.

The Project Schedule must show the order in which the Developer proposes to carry out the design and construction Work, with dates for starting and completing the various activities of the Work represented by milestones in the baseline project schedule. The schedule must provide sufficient detail to show durations for design and review periods, permitting, material procurement, inspections, long lead items and other items necessary to complete the Project. The Developer shall schedule the construction work so

that once construction begins on the Site, the Work is pursued continuously and without idle time or shutdowns unless approved by the County Project Officer.

The approved schedules shall be used by the Developer to ensure adequate planning, scheduling, managing, and executing of the Work, and to enable the County to evaluate work progress and progress payments. These approved schedules shall not be revised without the prior approval or direction of the County Project Officer. Schedules shall include the following:

1. Initial 180-Day Schedule;
  2. Project Schedule;
  3. Monthly updates of the Project Schedule;
  4. 90-Day Schedule; and
  5. Five-Week Work Plan.
- b. *Updated Project Schedule.* The Developer must submit an update to the Project Schedule monthly with the request for partial payment. Review and acceptance by the County of the Developer's updated Project Schedule shall in no way relieve the Developer of its responsibility to complete the Work within the contract time. If the Work falls more than ten (10%) percent behind the original approved Project Schedule, the County may require the Developer to prepare and submit, at no extra cost to the County, a recovery project schedule indicating by what means the Developer intends to regain compliance with the Project Schedule. The recovery schedule must be submitted to the County for review in a timely fashion.

The Project Schedule submittal, all subsequent schedule updates, and time extension requests shall also include the following sub-net schedules:

- a. Successor Report: This report shall contain all activities shown on the graphic network diagram listed in ascending order of activity ID based on successor relationships.
- b. Predecessor Report: This report shall contain all activities shown on the graphic network diagram listed in descending order of activity ID based on their predecessor relationships.
- c. Float Report: This report shall contain all activities shown on the graphic network diagram listed in order of ascending total float values and, where float values are equal, in chronological order of the early start date.

- d. Late Finish Report: This report shall contain all activities as shown on the graphic network diagram listed in chronological order of the late finish date.
- c. *No Changes Without Approval.* Dates shown on the Project Schedule that relate to the WMATA Facilities and/or operations shall not be changed unless the change is reviewed and approved initially by the County and then WMATA.
- d. The County Project Officer and WMATA Representative will review and return the Developer's schedule with comments according to the following schedule from the date of receipt:

Initial 180-Day Schedule 7 Days

Project Schedule 21 Days

Five -Week Work Plan 3 Days

The Developer shall make all corrections to the schedule requested by the County Project Officer and resubmit the schedule for approval. If the Developer does not agree with the County Project Officer's comments, the Developer shall provide written notice of disagreement within 5 Days from the receipt of the County Project Officer's comments for the Project Schedule, County Project Officer's comments to the Initial 180-Day Schedule, Project Schedule, and Five-Week Work Plans with which the Developer disagrees shall be resolved in a meeting held for that purpose.

- e. Resubmittals shall conform to the same requirements as original submittals.
- f. The Project Schedule shall clearly show the sequence and interdependence of activities and shall list separately:
  - 1. Interim milestone completion dates as specified and staging of the Work shall be prominently identified.
  - 2. Design development and County and WMATA review of design submittals.
  - 3. Acquisition of permits, and Jurisdictional Authority and Utility approvals.
  - 4. Submittals and WMATA review of construction submittals.
  - 5. Procurement, fabrication, delivery, installation, and testing of major materials and equipment.



6. Delivery of WMATA-furnished equipment, if any.
7. Interfacing, coordination, and dependencies with preceding, concurrent, and follow-on contractors.
8. Work to be performed by WMATA, which affect the schedule, if any.
9. Manpower, material, and equipment restrictions, if any.
10. Inspection of the Work including Punch List and Acceptance.
11. The progressive delivery of As-Built Documents as major sections of the work is completed, for example completion of foundation piling or completion of underground utility work.

**11. HAZARDOUS MATERIALS**

Flammable Materials- WMATA's Fire Marshal prohibits the use of oxygen-acetylene welding/cutting equipment or flammable materials anywhere in the Metrorail system during hours of system operation. After each work shift, all flammable materials must be removed from the Project site and WMATA property or secured in appropriate location.

**12. EMBEDDED ITEMS**

When reinforcing steel or other items embedded in the concrete are encountered in a drilling or coring operation, the operation shall be stopped. The County Project Office shall be notified, and determination made by him/her whether the embedded item may be cut through. If it is not permissible to cut through the embedded item, the holes shall be drilled in another location and the original holes patched to the County's and/or WMATA's satisfaction.

**13. PROJECT MANAGEMENT SOFTWARE**

The County has implemented e-Builder as a project management software system. The Developer shall utilize the e-Builder system and the tasks anticipated to be performed in the e-Builder include but are not limited to: processing submittals, pay applications, potential change orders, change orders, requests for information (RFI), meeting minutes, daily construction reports, action items, construction schedules, punch lists, and incident reports. WMATA utilizes Procore and County's CM team will submit all information requiring WMATA's review and approval into Procore.

**14. RED-LINE DRAWINGS:**

The Developer shall maintain and update a red-line set of drawings of the work performed to date on a regular basis. The red-line drawings shall be located on the jobsite and shall be made available to the County Project Officer (or, if directed by

the County Project Officer, his/her identified representative) and WMATA upon demand. Red-line drawings shall be reviewed during the bi-weekly progress meetings to ensure the red-line drawings are being updated and accurately depict the as-built conditions. These drawings shall supplement the Contract Documents and shop drawings as required to coordinate the work of the various trades. The red-line drawing set shall be submitted along with the As-Built Drawings as a PDF.

Drafting shall be performed by skilled drafters and shall match original drawings in CAD layers, line weights, symbols and lettering style, and size.

- The Developer shall submit three (3) hard copy print sets of the draft As-Built Drawings for Arlington County's and WMATA's respective review and approval at Substantial Completion.
- The Developer shall incorporate additions and corrections based on the County Project Officer's and WMATA's review. The Developer shall submit the As-Built Drawings in compliance with the WMATA Adjacent Construction Project Manual, not later than thirty (30) calendar days after receipt of review comments.
- Completed As-Built Drawings shall bear the signature of an Officer of the Developer's organization certifying compliance with as-built conditions, having the information shown below:

AS - BUILT
DATE:
I CERTIFY THAT THIS DRAWING ACCURATELY DEPICTS THE WORK AS CONSTRUCTED
AN OFFICER OF THE
DEVELOPER: _____

The final As-Built Drawings shall be submitted prior to the final payment. The final As-Built Drawings intend to provide the County and WMATA with a post-construction field survey of the Project area. Final As-Built Drawings must comply with Arlington County requirements in Arlington County's Construction Standards and Specifications and WMATA requirements.

**15. PERMITS**

Expected permits necessary for the Project are referenced in Exhibit A to the Agreement.

Approved construction drawings and specifications shall be required to acquire the permits. The Developer shall obtain and pay fees for the building construction permit and occupancy permit, WMATA permits, sheeting and shoring and trade permits, and right-of-way. Information on permit requirements and fees is available on the County website: <http://building.arlingtonva.us>. The Developer shall prepare documentation as required by the permit issuer.

**16. WORK ON WMATA PROPERTY**

The Developer shall fully comply with the WMATA Adjacent Construction Project Manual, the WMATA System Safety Program Plan, Metrorail Safety Rules and Procedures Handbook (for contracts in which work is performed on, or interfaces with the Metrorail System); and the Department of Bus Service Employee Handbook (for contracts in which work is performed on, or interfaces with the metrobus System or facilities). Where the Manual, Contract Drawings, or Contract Specifications differ, the more restrictive will apply.

The Developer shall comply with the following documents:

WMATA Adjacent Construction Project Manual:

<https://www.wmata.com/business/adjacent-construction/index.cfm#main-content>.

WMATA Construction Safety and Environmental Manual:

<https://www.wmata.com/business/procurement/upload/Construction-Safety-and-Environmental-Manual-CSEM-2013.pdf>.

Access to WMATA's property for purposes of constructing the Project is governed by the terms of a separate Real Estate Permit executed by WMATA and the party seeking to access WMATA's property.

Work within WMATA's right-of-way or other operational areas will require a WMATA Real Estate Permit and individually approved Site-Specific Work Plan(s) (SSWP). Electrical tie-ins to WMATA equipment will additionally require an approved WMATA Switch Order. Access to WMATA tracks will require approved General Orders and Track Rights (GOTRS) before such work can begin. Such work includes, but is not limited to, any work that requires operational adjustments (e.g., shut-downs, bus bridges, or single-tracking), access to WMATA track area, or reconfiguration of power or other similar operational systems. Developer acknowledges that WMATA's approval of SSWP and/or GOTRS requests may take up to, but typically no longer than, 30 Calendar Days, depending on which areas will be affected and complexities of the work. Developer acknowledges GOTRS requests should be submitted to WMATA 21 days in advance of the work period being requested. WMATA cannot guarantee access to WMATA Facilities; WMATA operations, maintenance and emergencies take priority.

The Developer shall coordinate with the WMATA Representative to obtain WMATA badges prior to working on WMATA Facilities and if required by WMATA. Any personnel that requires access to the track will additionally need to complete WMATA's right-of-way safety training course. The Developer acknowledges that WMATA will require a background check to be provided to WMATA on each person applying for a WMATA badge. The cost for the Developer's and sub-contractors' employees assigned to this Project to attend the training shall be incidental to the cost of the Project.

**17. RFIs AND SUPPLEMENTAL INSTRUCTIONS**

Requests for Information (RFIs) shall be submitted in writing by the Developer or the Developer's design-build subcontractor using the e-Builder system.

RFIs shall only be used to request interpretation or clarification of apparent issues or problems found within the Contract Documents. The party submitting the RFI shall identify details of the issue and provide its interpretation within the RFI. Upon receipt of the RFI, the County and / or the County Project Officer shall respond using the e-Builder within fifteen (15) Business Days.

The following are not considered RFIs and may be rejected by the County if submitted as an RFI by the Developer:

- a. Routine Project correspondence
- b. Material or shop drawing submittals
- c. Substitution requests
- d. Change orders
- e. Responses to non-conformance notices
- f. Similar project communications

RFIs shall not be construed to be a change order. The County may initiate a change to the Contract by noting in the RFI response that a change order will be required. If the Developer considers an RFI response to be a change to the Agreement, then the Developer must notify the County Project Officer in writing with reasonable promptness under the circumstances.

**18. COORDINATION MEETINGS AND PROGRESS REPORTS**

*Regular Meetings:* Within 30 days of receiving Notice to Proceed, Developer shall participate in bi-weekly progress and "look-ahead" meetings. The exact schedule of these meetings shall be determined in coordination with WMATA and the County Project Officer. These meetings shall occur regularly throughout the Project. These meetings will, at a minimum, cover the following topics: permits, safety, schedule including a Five-Week Work Plan, errors and omissions, old business, work performed this reporting period, schedule of future work to be performed, utility

coordination issues, adjacent project coordination issues, new business, quality control/quality assurance, community outreach, submittal status, RFI status, PCO/CO status, and upcoming meetings. Additionally, discussions will address administrative and technical issues of concern, determining resolutions, and development of deadlines for resolution within allowable time frames. The County Project Officer, or his/her designee, will record meeting minutes and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

In addition to the bi-weekly progress and “look ahead” meetings the Developer shall participate in the following meetings and shall provide meeting minutes to the County within eight (8) Calendar Days after any meeting relating to the Project or three (3) Calendar Days before the next meeting, whichever occurs first.

*Design Meetings.* The Developer will schedule design review meetings within 10 days after receipt of review comments on the design submittals and will be chaired by the Developer and its Key Staff, with the County Project Officer, and other representatives of the County and WMATA in attendance.

The Developer shall update design review comment forms and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting. The Developer shall initiate whatever actions are necessary to incorporate the agreed to required changes and additions into the Design Drawings and Design Specifications.

*Preconstruction Meetings.* The Developer shall conduct pre-construction meetings at the Site prior to the start of construction activities requiring special coordination, as described further in Subsection B below. The Developer shall notify the County Project Officer and WMATA in advance of the date, time, location, and topics for review and discussion at each pre-construction meeting. Ensure that other attendees are properly notified. Topics that may require pre-construction meetings include, but are not limited to the following:

1. Installation of equipment or systems
2. Items that require connection to existing Authority equipment or systems as applicable
3. Other pre-installation meetings as may be called by the Design-Builder or the WMATA Representative or the County Project Officer.

*System Integration Progress Meetings.* Progress Meetings shall be held by the Developer monthly, or as agreed to by the Developer, WMATA and Arlington County, starting 10 Days after receipt of the Developer’s written responses to the design review comments on the intermediate Systems Integration Design. The purpose of

these meetings will be to clarify the comments, update County and Authority personnel on the systems integration issues, resolve interface definitions or systems integration issues, and exchange ideas and information. Meeting intervals can be revised by the County Project Officer, if deemed appropriate. All interface problems shall be identified at the earliest possible opportunity, with a list of problem interfaces along with an assessment of the project impact and potential resolutions to be discussed at each progress meeting.

*Change Meetings.* Separate meetings will be held by either County and the Developer, on an ad hoc basis with WMATA attendance, to discuss and resolve change order issues as they arise during the course of design and construction.

*Meetings Scheduled by WMATA.* WMATA has the right to schedule meetings on five (5) Business Days' notice to County and Developer that are deemed to require a separate meeting because of the technical and/or safety related nature of the issue. The Developer shall be prepared to discuss the topic of the meeting.

*Progress Reports.* The Developer shall provide the County with a written monthly status report regarding matters covered by the Agreement. The status report shall summarize the progress of the Project, compare the state of the Project to the Project Schedule (including any explanation of any delays), and provide such other information as may be customarily reported on projects of similar size and scope.

**19. ARLINGTON COUNTY BUS STOP/OPERATIONS**

The Developer shall notify Arlington County Bus Stop/Operations Management team in writing and by phone at a minimum of four (4) weeks prior to any work that will impact the existing bus service so that the County can arrange closure and/or relocation of the bus stops. The Developer shall contact Diane Trent, email: [dtrent@arlingtonva.us](mailto:dtrent@arlingtonva.us), phone: 703-228-3049 and Edwin Montano, email: [emontano@arlingtonva.us](mailto:emontano@arlingtonva.us), Phone: 703-228-3392.

Arlington County Transit Bureau Staff will be responsible for providing signage and notification of service disruptions. Any deviations from the plans must be submitted to Arlington County's Bus Stop/Operations Management team four (4) weeks prior to the scheduled service interruption.

**20. SIGNS FOR CONSTRUCTION SITE**

The Developer shall install County provided project information signs (size - 36"x 48") in English, Spanish, Mandarin Chinese and Amharic at two (2) different locations for the Construction Site. The Developer shall provide signposts and incidentals needed for a complete installation of the signs. Signs shall be installed at least 21 days prior to the start of the construction to notify the public of construction related activities

in and around the station. The Developer shall coordinate the location of the signs with the County Project Officer.

After the Project has been completed, the Developer shall remove and return the signs to the County Project Officer. The cost for this work shall be considered incidental to other items within the Contract, and no separate payment will be made.

**21. TRAFFIC SIGNALS AND STREETLIGHTS**

Materials and construction of the communications conduit, streetlights, and traffic signals shall abide by the latest versions (unless otherwise specified) of the [Arlington County Traffic Signal & Streetlight Specifications and the latest Arlington County Government Street Light Policy and Planning Guide Instructions for Developers]<sup>1</sup>. All materials for these areas shall be approved by Arlington County Transportation Engineering and Operations Bureau. The County Project Officer will facilitate the material specification submissions for review by the Transportation Engineering and Operations Bureau.

Prior to removal of the existing streetlight equipment and materials, the Developer shall meet with the Arlington County Transportation Engineering and Operations Bureau representative to verify which equipment will be returned to the County, when and where the returned equipment will be delivered, and which equipment will be disposed. The Developer shall contact (703) 228-3523 to set up this meeting. All costs associated with the coordination meetings and disposal shall be incidental to other items in the Agreement.

**22. MAINTENANCE OF TRAFFIC (MOT)**

The Developer shall develop a maintenance of traffic ("MOT") plan signed and sealed by a licensed engineer, and it shall submit such MOT plan for approval by the County and WMATA. If the Developer proposes to deviate from the approved MOT plan (the "Approved MOT Plan") for a County road, it shall be the Developer's responsibility to coordinate and obtain approval directly from the County prior to implementing any changes, and this work shall be at no cost to the County. The MOT plan shall be prepared with the preservation of pedestrian access along the corridor and minimizing the disturbance of the various bus routes along the corridor.

Failure of the Developer to correct any MOT deficiency promptly upon notification may result in the Project being shut down until the deficiency is corrected. Repeated violations of this provision may result in contract termination.

Payment for MOT will be made monthly in equal amounts over the course of the Agreement. The Developer shall not be entitled to any additional payment for

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<sup>1</sup> County to confirm titles of these documents.

changes to MOT which are the result of the Developer's work schedule or resource allocation, weather delays, or other factors not controlled by the County except as otherwise provided in the Contract Documents.

**23. SITE ACCESS**

The Developer shall confine operations to right-of-way (per issued right-of-way permits) and all easement areas only and shall not work outside of LOD approved plan unless otherwise approved by the County Project Officer.

Subject to the terms of Section 23 of the Agreement:

- a. *Access.* During construction of the Project, WMATA's personnel shall have:  
(1) reasonable daily access to such Project for the purpose of determining whether such construction operations pose a safety risk to the public or to any other Project or WMATA Facilities, and to confirm that the construction of the Project conforms with the WMATA Design and Construction Standards and the approved Construction Documents, including relevant architectural, structural, electrical, mechanical, sheeting and shoring, excavation and utility drawings and (2) uninterrupted access to WMATA Facilities (other than the Project being constructed).
- b. *Stop Work Order.* WMATA's inspector(s) shall have the absolute authority to stop Developer's construction of the Project if in his/her reasonable opinion, the Developer or sub-contractors(s) is/are working (1) in a manner that interferes with WMATA's operations, (2) in a dangerous or unsafe manner that could affect WMATA Facilities, WMATA's operations, WMATA's customers or the general public, (3) not in conformance with the WMATA Design and Construction Standards or the WMATA-approved Construction Documents, or (4) in a manner that is not consistent with the terms of the Agreement. Such inspector(s) shall also have the right to issue corrective notices to County and Developer for work that is dangerous or unsafe or that is not in conformance with the above referenced documents, and Developer shall promptly undertake and complete the corrective action identified in such notice.
  - (i) In the event of an emergency, as determined by WMATA in its sole discretion, WMATA shall have the immediate right to issue a "stop work order." County shall comply, and shall cause Developer, its sub-contractors and other service providers to comply with any such stop work order.
  - (ii) In the event of a non-emergency, as determined by WMATA in its sole discretion, WMATA shall first provide the County and the Developer with Notice of noncompliance. The Developer shall have three (3) Business Days to cure such noncompliance before WMATA may issue



a “*stop work order.*” County shall comply, and shall cause Developer, its sub-contractors and other service providers to comply with any such stop work order.

(iii) WMATA shall further have the right to seek a court injunction, directive, or similar relief in order to enforce WMATA’s rights described in this Section.

c. *Remedial Action.* Upon WMATA issuing a stop work order, the parties shall meet promptly to remedy the issue. Developer shall execute such agreed upon remedy at its sole cost.

**24. GENERAL SITE CONTROLS**

The Developer is responsible for the safety and security of their work area.

The Developer shall provide, erect, and maintain barricades, fences, and/or signage as required to protect the public, workers, and adjoining properties at no additional cost to the County.

The Developer shall take all necessary and appropriate precautions to ensure the safety of the public and Developer’s employees on the job to prevent accidents or injury to any persons on, about, or adjacent to the premises where the Work is being performed. The Developer shall comply with all Applicable Law relative to health, safety, and the prevention of accidents.

**25. WMATA FACILITY – PRE-CONSTRUCTION INSPECTION**

Independent of the requirements of the WMATA Adjacent Construction Project Manual in regard to WMATA Facilities and operations, an inspection of the condition of the following buildings or structures will be performed by the Developer: parking garage and building located at 1770 Crystal Drive. Such inspections shall be limited to the visual observations of existing conditions to include identifying any existing damage such as cracks in walls, and the County will inform the owners of such properties of the inspection.

Prior to beginning excavation, the Developer shall inform the County of buildings or structures on which it intends to perform work or which performance of the Project Work will affect.

**26. PHOTOGRAPHS**

As soon as the construction operations have been initiated at the Work site, the Developer shall take a series of digital photographs, in jpeg format, of progress and/or problems that affect the performance throughout the Project until Substantial Completion.

The Developer shall take and submit a minimum of twenty (20) photos required to be submitted per month; however, the actual number of photos and locations shall be based on the amount of progress/and or problems encountered each month. The photos need to be coordinated with the County Project Officer to ensure proper coverage or areas.

For informational purposes, each stage of work shall be photographed to include significant work areas and activities in progress. The photographs are to be uploaded by the Developer to e-Builder within ten (10) days after being taken.

Digital photos shall be submitted to the County monthly via e-Builder to the County Project Officer or as directed. Each photo print shall be identified on a permanent file so that the following data is recorded for each photo to include: the specific contract number, photo number, job location such as survey stationing, to include looking north, south, east or west, date of the photo, progress or problems identified in the lower right-hand corner of the photo or on a separate file.

The data shall be typewritten and arranged, similar to the data listed below:

- a. Arlington County Contract No.:
- b. Contract Title:
- c. Developer:
- d. Date photo was taken:
- e. Photograph No.:
- f. Identify job location, area, elev., facing North, South, etc. on each photo:
- g. Description of work in progress:
- h. Problems encountered:

**27. CONSTRUCTION STAGING AND STORAGE**

The Developer is responsible for the staging and storage of materials. The County will provide no space outside of LOD shown on the approved plan.

The Developer is responsible for securing all land and facilities necessary for construction staging, including but not limited to the protection of materials, disposal of waste, and temporary utilities at no additional cost to the County. The Developer shall secure the work zone areas at all times.

**28. UTILITIES**

The Developer is required to locate, identify, and maintain in operation all existing utilities encountered within the limits of work.

The Developer shall notify all local utility companies and hire a private utility locator (with regards to WMATA Facilities) and mark the location of any utility lines prior to commencing any work on the Site or the Project.

The Developer shall pay all charges for utilities used, constructed, or modified in connection with the construction and completion (but not operation) of the Project and shall be liable for any interference, harm or disruption of any utility service to WMATA arising from or attributable to Developer's construction-related activities.

Existing utility services to WMATA Facilities must remain in place and shall not be utilized by the Developer during the construction of the Project except and to the extent shown on the approved Construction Documents.

Proposed utilities for this Project shall not tie into existing services for its needs. This Project's utility needs shall be provided via new service feeds or equipment in new facilities located either above or underground.

**29. ELECTRICAL SERVICE CONNECTIONS**

The electrical service connection is to be made by the Developer by tying into the existing WMATA electrical panels per the approved and permitted electrical plans. An approved Site-Specific Work Plan (SSWP), Switch Order, and WMATA escort is required for WMATA electrical service connection activities.

**30. TEMPORARY UTILITY AND ELECTRICAL SERVICES**

The Developer shall determine its needs for the temporary utility services and shall make arrangements with utility companies and governmental agencies to secure such services.

The Developer shall provide temporary electrical service of sufficient capacity to serve its requirements during the life of the Agreement. The source of temporary power for testing may be the temporary service, portable generator or other approved system which will deliver power at the voltage and other characteristics required to accomplish testing as specified. Circuits and construction for temporary systems shall suit the needs of the Work and comply with NEC and the codes and regulations of the jurisdictional authorities and the requirements of the County's Inspection Services Division.

Temporary services shall be furnished, installed, connected, and maintained by the Developer in an approved manner. Prior to completion of the Work, the Developer shall remove all temporary services and restore affected areas as approved.

Shop drawings for temporary utility and electrical services shall be submitted for approval. The power supply shall be of such quantity and type required to perform the Work. Maximum primary voltage shall be 600 volts, unless otherwise approved. Lighting equipment shall be of the type and quantity needed to provide illumination of all Project areas. Materials for and installation of temporary services shall comply

with OSHA requirements and with the minimum requirements of the technical specifications.

**31. WMATA FUNCTIONAL OPERATIONS TEST**

An operational test of the Project will be conducted after it has been fully installed by the Developer. This test is conducted to determine whether individual components are installed and integrated to operate on a system level per the design intent and the manufacturer's specifications. Such test must take place with WMATA's personnel present.

**32. WMATA WARRANTY**

Developer warrants to the County and WMATA that:

- a. The Work shall meet all the requirements of the Contract Documents; and
- b. Equipment and materials furnished under the Contract Documents shall be of first-class quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects, and that the Work will conform to the requirements of the Contract Documents. required by the Contract.

The Developer warrants and guarantees the Work for one (1) year after Final Completion. This includes a warranty against any and all defects in material and/or workmanship which may appear during said one (1) year period, by repairing (or replacing with new items or new materials, if necessary) any such defect at no cost to the County, within a reasonable period of time, and to the County's satisfaction.

The Developer must furnish all special warranties required by the Contract Documents no later than Final Completion. The County may require additional special warranties in connection with the approval "Or-Equals" or Substitutions.

Notwithstanding the above, the expiration of the applicable warranty period does not bar WMATA's claim for any latent defect in the Work that could not have been reasonably discovered prior to the expiration of said warranty period. For avoidance of doubt, any references to service life of equipment and materials in the Contract Documents shall be constructed as a standard of quality and shall not be constructed as a warranty or an increase in the duration of the warranty period.

**33. TIME FOR COMPLETION; SUBSTANTIAL COMPLETION; AND FINAL ACCEPTANCE**

- a. Time of Essence.

Time is of the essence for the performance of the applicable work by the Substantial Completion Deadline (as defined in the Agreement).

b. Substantial Completion.

The Developer shall work diligently to achieve Substantial Completion and Final Completion. Whether or not Substantial Completion or Final Completion has been achieved shall be determined by the County and WMATA.

The Developer shall create and maintain, throughout the construction of the Project, a list of work items that have commenced but have not yet been completed (the "Work List"). The Work List will eventually serve as a basis for the Punch List. The Developer shall provide the County with the most up-to-date version of the Work List upon request from the County. (For purposes of these Special Conditions, the term "Punch List" shall have the meaning given to it in the "WMATA Agreement" referenced in the Agreement.)

**Conditions of Substantial Completion**

Substantial Completion shall be deemed to have occurred upon satisfaction of the following conditions:

- (i) The Developer has delivered and installed all equipment and materials required for commencing operations, and all such equipment and materials have passed all testing and inspections required under the Contract Documents;
- (ii) The Developer has received all applicable regulatory approvals which Developer is obligated under the Contract Documents to obtain for use and operation of the Project;
- (iii) The Developer has successfully completed all inspections and tests required by the Contract Documents;
- (iv) The County has received, in reasonably acceptable form, all documentation, including as-built information, required by the Contract Documents to be submitted prior to Substantial Completion;
- (v) The Developer has purchased and delivered to WMATA, free and clear of liens, spare parts, spare equipment and materials in accordance with the Contract Documents;
- (vi) The Developer has completed all training of personnel in accordance with the Contract Documents;
- (vii) All defects that materially adversely impact the operation of the Project have been corrected;
- (viii) The Developer has submitted, in reasonably acceptable form, all the required operations and maintenance plans, procedures, rules, schedules and manuals required by the Contract Documents;
- (ix) The Developer has delivered to the County copies of the Developer's final WMATA Safety/Security Certification Report and Certificate, as defined by the Developer's WMATA Safety/Security Certification Management Plan (the format of the Safety/Security Certification

- Report and Certificate shall be developed and agreed upon by the County and the Developer at a reasonable time prior to the expected date of Substantial Completion);
- (x) The Developer has provided a Use and Occupancy Permit or a temporary Use and Occupancy Permit;
  - (xi) The Developer has provided certificates of inspection and approval required by the Contract Documents for use and occupancy;
  - (xii) The Developer has provided the County Fire Marshal's approval;
  - (xiii) The Developer has provided approvals from all utilities;
  - (xiv) The Developer has provided all documents and verification of training required in accordance with any quality control or commissioning plan required by the Contract Documents;
  - (xv) The Developer has delivered to WMATA two (2) clean, complete and legible copies of all warranties and guaranties of equipment, installation or materials, together with duly executed instruments assigning them to WMATA, together with all technical materials needed to maintain the effectiveness of such warranties and guaranties;
  - (xvi) The Developer has completed preparation of the Punch List, and has prepared a schedule for completion of all Punch List items that is reasonably acceptable to the County;
  - (xvii) The Developer has provided evidence reasonably satisfactory to the County that all conditions required for Substantial Completion outlined in the Project Construction Coordination Agreement between WMATA and the County have been satisfied.

### **Substantial Completion Certificate**

The Developer shall submit to the County and WMATA a duly-executed and completed "Substantial Completion Certificate," which certificate shall set forth the date that Substantial Completion is deemed to have occurred as described above. WMATA and County will countersign the Substantial Completion Certificate indicating approval that Substantial Completion has occurred.

### **Work to be Performed after Substantial Completion**

Upon the Developer providing the Substantial Completion Certificate, the County Project Officer will promptly invite the County and WMATA to perform an inspection of the Work, and any deficiencies or incomplete items not indicated on the Developer's Punch List but noted by the County or WMATA will be added. All Punch List items, whether generated by the Developer, the County or WMATA, shall be completed within thirty (30) days

of the date of Substantial Completion, unless otherwise agreed to by the County due to seasonal or other extenuating circumstances.

In addition to completion of Punch List items, Developer shall satisfy all of its other obligations under the Contract Documents necessary to achieve Final Completion, including ensuring that the Project has been completed and all components have been properly adjusted and tested in accordance with the Contract Documents.

c. Final Completion.

Final Completion shall be deemed to have occurred when all of the following have occurred:

- (i) Substantial Completion has been achieved;
- (ii) WMATA shall have received in acceptable form: (i) all design documents, including drawings, calculations and specifications; (ii) all final Project record documents and record deliverables in accordance with the Contract Documents; (iii) the most currently updated Project Schedule; (iv) all Project right-of-way maps, surveys and survey maps; and (v) all other deliverables under the Contract Documents;
- (iii) All of Developer's personnel, supplies, equipment and materials, waste materials, rubbish and temporary facilities shall have been removed from the Site;
- (iv) Defects involving electromagnetic interference, if any, have been corrected;
- (v) Developer shall have delivered to the County satisfactory evidence that there are no outstanding Claims, liens or stop notices of Developer or any sub-contractor, or laborer, including utility owners, with respect to the Work, other than any previously submitted unresolved Claims of Developer or a sub-contractor or laborer being contested by Developer (in which event Developer shall provide a certification listing all such matters with such detail as is requested by County and, with respect to all sub-contractor and laborer Claims and Claims of third parties, shall include a representation of Developer that it is diligently and in good faith contesting such matters by appropriate action, including legal proceedings which shall operate to prevent the enforcement or collection of the same). For purposes of such certificate, the term "Claim" shall include all matters or facts which may give rise to a Claim;
- (vi) The Punch List items shall have been completed in accordance with the Contract Documents;

- (vii) All warranties and manufacturer certificates and contact information for parties providing warranties have been delivered to the County Project Officer;
- (viii) All of Developer's other obligations under the Contract Documents (other than obligations which by their nature are required to be performed after Final Completion) shall have been satisfied in full or waived.
- (ix) To the extent required, any State or County inspections and/or certifications have been successfully completed such that the facilities can be placed in service for their full use and function;
- (x) The delivery to the County (or, at the County's direction, to WMATA) of ownership of the Design and Construction Documents, specifications and shop drawings, together with the Design and Construction Documents, specifications and shop drawings themselves;
- (xi) The delivery to the County (or, at the County's direction, to WMATA) of an as-built survey of the Project complying with the then-current standards of the American Land Title Association and the American Congress of Surveying and Mapping (or such professional organizations as may replace them from time to time to set standards for land surveys);
- (xii) The delivery to the County (or, at the County's direction, to WMATA) of a final certificate of completion on the then-current form promulgated by the American Institute of Architects (or such other professional organization that may succeed to its role of promulgating industry-standard forms of this type) from the architect or engineer for the Project;
- (xiii) The issuance by WMATA of a Certificate of Final Completion, with the decision to issue (or not) to be determined by WMATA.

#### **WMATA Final Acceptance Certificate**

The Developer shall submit to the County (or, at the County's direction, to WMATA) a duly executed and completed "Final Acceptance Certificate," which certificate shall set forth the date that Final Completion is deemed to have occurred as described above.



EXHIBIT C – COUNTY DES GENERAL CONDITIONS (AMENDED)

**III. ARLINGTON COUNTY CONSTRUCTION GENERAL CONDITIONS (AMENDED)**

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**A. INTRODUCTION TO TERMS**

For purposes of these General Conditions:

- 1) The term "Agreement" or "Contract" means the Comprehensive Agreement to which these General Conditions are an exhibit.
- 2) The term "Business Day" shall refer to any day that the County is open for general business.
- 3) The term "Calendar Day" means any day of twenty-four hours measured from midnight to the next midnight. Included are weekends and holidays. When the term "Day" is used it shall be assumed to refer to a Calendar Day unless otherwise specified.
- 4) The term "Change Order" means a written order to the Contractor, signed by the Project Officer and the Contractor, which authorizes a change in the Work, and/or adjustment to the Contract Amount and/or an adjustment to the Time for Completion. A Change Order once signed by all the parties is incorporated into and becomes part of the Contract.
- 5) The term "Commencement Date" means the date on which the Time for Completion will commence for the Contractor to begin to perform his obligations under the Contract Documents as provided in the Notice to Proceed.
- 6) The term "Construction Change Directive" means a written order issued by the County directing a change in the Work prior to agreement on adjustment, if any, in the Contract Amount or Contract Time, or both.
- 7) The term "Contract Amount" means GMP as defined in the Agreement.
- 8) The term "Contract Documents" is defined in the Agreement.
- 9) The term "Contract Time" means Time for Completion as defined in the Agreement.
- 10) The terms "County" and "Contractor" shall mean the respective parties to the Contract. They shall be treated throughout the Contract Documents as though each were of the singular number and masculine gender. Only one Contractor is recognized as a party to this Contract.
- 11) The term "Contractor" means the Contractor as defined in the Agreement.
- 12) The term "County Project Officer" is defined in the Agreement.
- 13) The term "Critical Path Method" or "CPM" means a step-by-step project management technique for process planning that defines critical and non-critical tasks with the goal of preventing time-frame problems and process bottlenecks. An activity on the critical path cannot be started until its predecessor activity has been completed. If an activity on the critical path is delayed then the entire project is delayed.

- 14) The term "Delay" means an event or condition that results in a work critical path activity starting or being completed later than originally planned.
- 15) The term "Drawings" means all drawings pertaining to the Contract which show and describe the locations, character, dimensions, and details of the Work to be performed under the Contract.
- 16) The "Effective Date" is defined in the Agreement.
- 17) The term "Field Order" is a written order to the Contractor, authorized by the Project Officer, which acknowledges a change in the Work that does not adjust the Contract Amount and does not adjust the Time for Completion.
- 18) The term "Final Completion" is defined in the Agreement.
- 19) The term "Float" shall represent the amount of time that a task in a project network or sequence can be delayed without causing a delay. Float shall be a resource available to both the County and the Contractor.
- 20) The term "Interim Design Documents" is defined in the Agreement.
- 21) The term "Limits of Disturbance (LOD)" shall represent the area within which land disturbing activities take place. Land disturbing activities include all actions that expose bare soil during construction.
- 22) The term "Limits of Work (LOW)" shall represent the area within which construction activities take place, including but not limited to the Limits of Disturbance (LOD) area.
- 23) The term "Notice to Proceed" shall mean a written notice issued by the County to the Contractor stating the Commencement Date.
- 24) The term "Project" is defined in the Agreement.
- 25) The term "Project Officer" means the County Project Officer.
- 26) The term "Punch List" means unfinished items of the Work, which unfinished items of Work are minor or insubstantial details of the Work remaining to be performed, the non-completion of which would not materially affect use of the Project, and which are capable of being completed within the time specified for Final Completion after Substantial Completion has been achieved.
- 27) The term "Request for Information" (RFI) means a request originated by the Contractor requesting clarification or additional information from the County concerning information relating to the Project where the Contractor believes there is insufficient information or a conflict in the documents. RFI's shall be submitted by the Contractor sufficiently in advance of the Work to provide time for assessment and response without delay of the Work. Responses to RFI's shall not be construed as authorization for a Change Order.

- 28) The term "Schedule of Values" means a listing of the Contractor's total contract value by Construction Specifications Institute (CSI) divisions, including Division 1, Contractor's General Conditions.
- 29) The term "Site" refers to that portion of the property on which the Work is to be performed or which has otherwise been set aside for use by the Contractor.
- 30) The term "Special Conditions" means the written statements modifying or supplementing the General Conditions for requirements or conditions peculiar to the Agreement. The Special Conditions are set forth in Exhibit B to the Agreement.
- 31) The term "Specifications" means and shall include the Special Conditions and all written agreements pertaining to the performance of the Work.
- 32) The term "Subcontractor" shall include only those having a direct contract with the Contractor for performance of Work.
- 33) The term "Substantial Completion" is defined in the Agreement.
- 34) [NOT USED]
- 35) The term "Time for Completion" is defined in the Agreement.
- 36) The term "Work" is defined in the Agreement.

**B. DRAWINGS, SPECIFICATIONS, RELATED DATA AND RECORDS KEEPING**

1. INTENT OF THE DRAWINGS AND SPECIFICATIONS

- a. It is understood that, except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, water haulage, light power, transportation, superintendence, temporary construction of all kinds, and other services and facilities of every nature whatsoever that are necessary to execute and deliver the Work, complete and usable within the scope of the Contract with all parts in working order, and all connections properly made.
- b. [NOT USED]
- c. Where "as shown", "as indicated", "as detailed", or words of similar import are used, it shall be understood that direction, requirements, permission, or review of Project Officer or designee is intended unless stated otherwise. As used herein with respect to elements of construction, "provide" shall be understood to mean "provide complete in place", that is, "furnish and install."
- d. Unless otherwise specifically noted, the word "similar" where it occurs in the Drawings, shall be interpreted in its general sense and not as meaning identical, and all details shall be worked out in relation to their locations and their connection with other parts of the Work.

- e. Materials or work described in words which, so applied, have a well-known technical, construction industry, or trade meaning, shall be held to refer to the recognized technical or trade meaning.
- f. The Contract Documents are complementary, and what is called for by any one document shall be as binding as if called for by all documents; provided, however, that in the event of conflicting variance between the Contract Documents, the order of precedence stated in the Agreement shall govern. Figured dimensions on the plans shall be used; drawings shall not be scaled.
- g. Unless otherwise specifically noted or modified pursuant to the terms of the Contract Documents, construction tolerances shall be to the numerical precision presented in the Drawings.

2. DISCREPANCIES AND ERRORS

If the Contractor discovers any discrepancies between the Drawings and Specifications and the Site conditions or any errors or omissions in the Drawings or Specifications, the Contractor shall at once, but in no event later than three Calendar Days after discovery of the discrepancy or error, report them in writing to the Project Officer or designee. If the Contractor proceeds with any work that may be affected by such discrepancies, errors, or omissions, after their discovery, but before a clarification is provided, such work shall be at the Contractor's risk and expense. Issues affecting critical path activities shall be made known to the Project Officer or designee within four business days after discovery.

3. DIFFERING SITE CONDITIONS

The terms of Section 23 of the Agreement shall govern a physical condition at the Site of the Project discovered or encountered during performance of the Work that (1) adversely impacts the performance of the Work by the Contractor and (2) was not visible or differs from the reasonably anticipated conditions.

For the avoidance of doubt, the terms of Section 23 of the Agreement shall apply in all circumstances where such terms are relevant, notwithstanding any provision of these General Conditions to the contrary.

4. COPIES FURNISHED

Except as provided for otherwise, copies of the Interim Design Documents and other documents, material and information reasonably necessary for the execution of the Work will be furnished to the Contractor. One electronic copy of the Interim Design Documents will be provided by the Project Officer or designee to the Contractor.

5. USE OF CADD FILES

The Contractor may request electronic CADD files related to the Work or the Project. The CADD files will be provided by the County only if the Contractor completes the Arlington County Electronic CADD Drawing Release Form, which form is then incorporated by reference into the Contract. Use of CADD files is at the Contractor's own risk and in no

way alleviates Contractor's responsibility for the Work to conform to the requirements of the Contract Documents.

6. DOCUMENTS ON THE JOBSITE

The Contractor shall keep on the Site of the Project a copy of the Drawings and Specifications updated to include all authorized revisions and RFI responses, and shall at all times give the County and its authorized representatives access thereto. The Contractor shall mark up the Drawings on a daily basis in red. The as-built drawings shall be submitted to the County as required by the Special Conditions.

7. [NOT USED]

8. [NOT USED]

9. SAMPLES

The Contractor shall submit to the Project Officer or designee, all samples required by the Specifications or requested by the Project Officer or designee. Samples shall be submitted in single units only, unless the Contractor desires additional units for the Contractor's own use. Each sample shall bear a label indicating what the material represented, the name of the producer and the title of the Project. Acceptance of a sample shall be only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents, and only for the characteristics or use named in such acceptance. Such acceptance shall not be construed to change or modify any Contract requirements or the Contract Price. Materials and equipment incorporated in the Work shall match the accepted samples. The Contractor shall be responsible for researching the availability of the specified product in the dimensions and colors specified at no additional cost. Failure of the Contractor to identify specified products that are not commercially produced within the timer required for submittal transmittal in order to meet the Project schedule shall not be entitled to additional time or compensation except as expressly provided in the Contract Documents.

10. TESTS

Any specified tests of materials and finished articles shall be made by bureaus, laboratories or agencies approved by the Project Officer or designee and the certified reports of such tests shall be submitted to the Project Officer or designee. All tests shall be in compliance with the Specifications. All costs in connection with the testing and test failures shall be borne by the Contractor. Failure of any material to pass the specified tests or any test performed by the Project Officer or designee, will be sufficient cause for refusal to consider, under this Contract, any further materials of the same brand or make of that material. Samples of various materials delivered on the Site or in place may be taken by the Project Officer or designee for testing. Samples failing to meet the Contract requirements will automatically void previous acceptance of the items tested. The Contractor will not be compensated for additional time and/or cost incurred in finding an acceptable replacement or the removal and replacement of the defective item.



11. MATERIALS AND EQUIPMENT LIST

- a. Unless otherwise specified in the Specifications, within thirty (30) days of the later of the Commencement Date and the date of commencement of a certain phase of construction, the Contractor shall submit to the Project Officer or designee a complete list of materials and equipment proposed for use in connection with the relevant phase of construction. Partial lists submitted from time to time will not be considered unless specifically approved by the Project Officer or designee.
- b. After any material or piece of equipment has been approved through the submittal process, no change in brand or make will be permitted unless satisfactory written evidence is presented to prove that the manufacturer cannot make scheduled delivery of the accepted material, or that material delivered has been rejected and the substitution of a suitable material is an urgent necessity, or that other conditions have become apparent which indicate that acceptance of such other material is in the best interest of the County. The Contractor is solely responsible for the cost and time required to obtain and install a suitable replacement.

12. STANDARDS, SUBSTITUTIONS

- a. Any material specified by reference to the number, symbol or title of a specific standard, such as a commercial standard, a Federal specification, a trade association standard, or other similar standard, shall comply with the requirements in the version of the standards or specification and any amendment or supplement in effect as of the Effective Date. The standard referred to, except as modified in the Specifications, shall have full force and effect as though printed in the Specifications.
- b. Reference in the Specifications or on the Drawings to any article, device, product, material, fixture, form or type of construction by name, make or catalog number shall be interpreted as establishing a standard of quality and shall not be construed as eliminating from competition other products of equal or better quality by other approved manufacturers. Otherwise, applications for acceptance of substitutions for the specified items will be considered only upon request of the Contractor, not of individuals, trades or suppliers, and only for a specific purpose; no blanket acceptance will be granted. No acceptance of a substitution shall be valid unless it is in written form and signed by the Project Officer or designee.
- c. If any proposed substitution will affect a correlated function, adjacent construction or the work of other contractors, then the necessary changes and modifications to the affected work shall be considered as an essential part of the proposed substitution, to be accomplished by the Contractor without additional expense to the County or an extension of the Contract Time, if and when accepted. Detail drawings and other information necessary to show and explain

the proposed modifications shall be submitted with the request for acceptance of the substitution.

13. SURVEYS AND CONTROLS

Unless otherwise specified, the Contractor shall establish all baselines for the location of the principal component parts of the Work, establish a suitable number of benchmarks adjacent to the Work, and develop all detail surveys necessary for construction by a professional land surveyor licensed in the Commonwealth of Virginia. The Contractor shall carefully preserve benchmarks, reference points and stakes, and in the case of destruction thereof by the Contractor or due to the Contractor's negligence or the negligence of any subcontractor or supplier, the Contractor shall be responsible for expense and damage resulting therefrom and shall be responsible for any mistakes that may be caused by the loss or disturbance of such benchmarks, reference points and stakes. The Contractor shall within 30 days of NTP perform a full site survey to verify all control points shown on the drawings against existing conditions within the Site limits. Any discrepancies found during this effort shall be made known immediately to the Project Officer. Failure to perform this survey and provide proof and acceptance of Project datum, control points, and existing benchmarks will not give rise to any extensions to Contract Time or amount. The cost of all necessary surveying services shall be considered incidental to the Work and, unless otherwise specified, shall be included in the cost of the Work.

14. [NOT USED]

15. [NOT USED]

**C. COUNTY, COUNTY PROJECT OFFICER, AND CONTRACTOR RELATIONS**

1. STATUS OF COUNTY PROJECT OFFICER OR DESIGNEE

The Project Officer or designee shall be the County's representative during the construction period. All Contractor instructions or requests shall be issued from or submitted through the Project Officer or designee. The Project Officer or designee shall have authority to suspend the Work whenever such suspension may be necessary in the responsible opinion of the Project Officer or designee to ensure the proper execution of the Contract. The Project Officer or designee shall also have authority to reject all Work and materials that do not conform to the Contract and to decide questions that arise in the execution of the Work. The County Project Officer or designee will, within a reasonable time, make decisions on all matters relating to the execution and progress of the Work.

2. LIMITATION ON COUNTY'S RESPONSIBILITIES

The County shall not supervise, direct, or have control or authority over, nor be responsible for: The Contractor's means, methods, techniques, sequences or procedures of construction; the safety precautions and programs related to safety, or the Contractor's failure to perform or furnish the Work in accordance with the Contract Documents.

3. DISPUTES

All disputes arising under this Contract or its interpretation, whether involving law or fact or both, or extra work, and all claims for alleged breach of contract shall be resolved as set forth in Section 26 of the Agreement.

4. [NOT USED]

5. INSPECTION OF MATERIALS

All articles, materials, and supplies purchased by the Contractor for the Work are subject to inspection upon delivery to the Site and during manufacturing or fabrication. The County reserves the right to return for full credit, at the risk and expense of the Contractor, all or part of the articles, materials, or supplies furnished contrary to Specifications and instructions. Nothing in this section shall abrogate or otherwise limit or relieve the Contractor's independent duty to inspect materials.

6. EXAMINATION OF COMPLETED WORK

If the Project Officer or designee requests it, the Contractor, at any time before acceptance of the Work, shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the Specifications. Should the work thus exposed or examined prove acceptable, then the uncovering or removing, and the replacing of the covering or making good of the parts removed shall be paid for by the County as extra work (and extra time to the extent of a demonstrated impact on the critical path), but should the work so exposed or examined prove unacceptable, then the uncovering, removing and replacing shall be at the Contractor's expense.

7. RIGHT TO SUSPEND WORK

The County shall have the authority to suspend the Work, in whole or in part, for such periods and such reasons as the County may deem necessary or desirable. Any such suspension shall be in writing to the Contractor and the Contractor shall obey such order immediately and not resume the Work until so ordered in writing by the County. If the suspension of Work is caused by the County's good-faith belief that non-conforming work is being installed, and subsequent investigation proves that the work upon which such belief was directed was non-conforming, the Contractor shall not be awarded additional time or costs.

8. RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a 10-day period after receipt of written notice from the County or such shorter time as may be reasonable under the circumstances, to commence and continue correction of such default or neglect with diligence and promptness, the County may, without prejudice to other remedies the County may have,

correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including the County's expenses, and any additional architect or engineering costs necessary by Contractor's default, neglect or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the County upon demand.

9. CONTRACTOR MANAGEMENT PERSONNEL

The Contractor shall keep a competent superintendent and any necessary assistants on the Site at all times during progress of the Work and such persons shall be reasonably satisfactory to the Project Officer or designee. The superintendent or project manager shall not be changed except with the Project Officer or designee's consent, which consent shall not be unreasonably withheld, conditioned or delayed. If the Project Officer determines that the superintendent or project manager is no longer reasonably satisfactory, then the superintendent or project manager must be replaced within 15 days of the Project Officer's written notice with a replacement superintendent or project manager with equal or superior qualifications and subject to the Project Officer's reasonable approval.

The superintendent project manager shall represent the Contractor and all directions given to such persons shall be as binding as if given to the Contractor. The Contractor shall at all times enforce strict discipline and good order among the workers performing under this Contract, and shall not employ on the Work any person not reasonably proficient in the Work assigned. Persons permitted to perform Work under Contractor, or any subcontractor, or sub-subcontractor, shall meet all employment eligibility, safety training, security or drug/alcohol testing requirements required by law or by County ordinance. Any person not complying with all such requirements shall be immediately removed from the Site.

The Contractor shall have a qualified and experienced person who can clearly communicate technical matters regarding the subject project. This person shall be available via phone to respond to emergency situations on the project 24 hours a day.

10. DRUG-FREE POLICY

The Contractor is responsible for ensuring that the Site remains a drug-free site. Contractor will require that employees undergo random drug/alcohol screening on a quarterly interval. Any employee who fails the test must be removed from the Site immediately. Random screening shall be performed by a third party licensed to do so in the Commonwealth of Virginia. The Contractor shall provide its random testing policy and schedule to the Project Officer within 30 days of Notice to Proceed. The Contractor will include this provision in every subcontract relating to this Contract. Any infraction by an employee of the drug-free policy shall be reported to the Project Officer within 24 hours.

11. LANDS BY COUNTY

The County shall provide access to the lands shown on the Drawings upon which the Work under the Contract is to be performed and to be used for rights of way and for access. In case all the lands, rights-of-way or easements have not been obtained as herein contemplated before construction begins, then the Contractor shall begin its work on such lands and rights-of-way that the County has acquired access to.

Contractor shall verify the acquisition of all off-site easements and Rights-of-Way prior to the start of off-site construction. Contractor shall restore all off-site easements to the conditions existing prior to the start of work.

The Contractor shall confine all activities at the Site associated with construction activities, to include storage of equipment and or materials, access to the work, formwork, etc. to within the designated Limits of Disturbance (LOD).

12. LANDS BY CONTRACTOR

If the Contractor requires additional land or lands for temporary construction facilities and for storage of materials and equipment other than the areas available on the Site or right-of-way, or as otherwise furnished by the County, then the Contractor shall provide such other lands and access thereto entirely at the Contractor's own expense and without liability to the County. The Contractor shall not enter upon private property for any purpose without prior written permission of all of the persons and entities who own the property. The Contractor shall provide copies of all agreements to the County. Upon termination of the agreement, the Contractor shall provide to the County a fully executed release from the property owner.

13. PROTECTION OF WORK AND PROPERTY

- a. The Contractor shall continuously maintain and protect all of its Work from damage and shall protect the County's property under its control from damage or loss arising in connection with this Contract until Substantial Completion. To the extent feasible and practicable, after Substantial Completion, the maintenance or protection of any incomplete or remedial Work identified on the punch list that requires maintenance or protection in order to allow for the final completion of such Work shall be the responsibility of the Contractor until the earlier of (i) completion of such incomplete or remedial Work or (ii) Final Completion. Failure to adequately protect the Work shall not be grounds for additional compensation for any maintenance and/or repairs to such Work.
- b. The Contractor shall not place upon the Work, or any part thereof, any loads which are not consistent with the design strength of that portion of the Work.
- c. The Contractor shall be responsible for the preservation of all public and private property, trees, monuments, etc., along and adjacent to the street and/or right-of-way, and shall use every precaution to prevent damage to pipes,

conduits and other underground structures, curbs, pavements, etc., except those to be removed or abandoned in place and shall protect carefully from disturbance or damage all monuments and property marks until an authorized agent has witnessed or otherwise referenced their location and shall not remove them until directed. Any damage which occurs by reason of the operations under this Contract, whether shown or not on the approved construction plans, shall be completely repaired or replaced to the County's satisfaction by the Contractor at the Contractor's expense. The Contractor shall be responsible for all damages caused by their construction activities.

- d. Prior to commencing construction activity at the Site, the Contractor shall videotape the Site and an additional fifty (50) feet outside the perimeter of the Site. Contractor shall submit a copy of high resolution digital recording on a DVD or flash drive to the County. The recording shall be stable, continuous, and contain all items within the Limits of Work (LOW). Submission of the DVD to the County shall be a condition precedent to any obligation of the County to consider an application for payment. The DVD shall be the property of the County, and the County shall be permitted to reproduce such DVD's and use the same for any purpose without limitation or claim of ownership or compensation from any party. Contractor shall include the cost of the preconstruction survey in the Cost of the Work (as defined in the Agreement), as applicable. No additional payment will be made by the County.
- e. The Contractor shall shore, brace, underpin, secure, and protect, as may be necessary, all foundations and other parts of existing structures adjacent to, adjoining, and in the vicinity of the Site that may be affected in any way by excavations or other operations connected with the work required under this Contract. The Contractor shall be responsible for giving any and all required notices to owners or occupants of any adjoining or adjacent property or other relevant parties before commencement of any work. Contractor shall provide all engineering (signed and sealed) for items listed in this section per the Specifications.
- f. In an emergency affecting the safety of life or of the Work, or of adjoining property, the Contractor, without special instruction or authorization from the Project Officer or designee, or the County, is hereby permitted to act, at the Contractor's discretion, to prevent such threatened loss or injury, and the Contractor shall so act without appeal, if so instructed or authorized.
- g. The Contractor shall contact "Miss Utility" at 811 for marking the locations of existing underground utilities (i.e. water, sewer, gas, telephone, electric, and cable tv) at least 72 hours prior to any excavation or construction. The Contractor is required to identify and protect all other utility lines found in the work site area belonging to other owners that are not members of "Miss Utility". Private water and/or sewer laterals will not be marked by "Miss Utility" or the County. The Contractor shall locate and protect these services during construction.

- h. Except to the extent otherwise contemplated by the Contract Documents, the Contractor shall repair all damage to WMATA Facilities and/or operations, and/or the property of others arising from or attributable to the Contractor's actions or omissions (and/or the actions or omissions of its sub-contractors, consultants, employees, agents, representatives, or invitees) at no cost or expense to WMATA, excluding, however, any loss, damage or injury that results solely from the acts or omissions of WMATA, its employees, business invitees, or contractors. Any such repair work must comply with the WMATA Design and Construction Standards.

14. SEPARATE CONTRACTS

- a. The County reserves the right to let other contracts in connection with this Project. The Contractor shall afford other contractors reasonable access to the Project including storage of their materials and the execution of their work, and shall properly connect and coordinate its work with the work of other such contractors.
- b. If any part of the Contractor's work depends, for proper execution or results, upon the work of any other contractor, the Contractor shall inspect and promptly report to the Project Officer or designee any defects in such work that renders it unsuitable for such proper execution and results. The Contractor's failure to so inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of the Contractor's work, except as to defects which may develop in other contractor's work after its execution.
- c. If the Contractor or any of the Contractor's subcontractors or employees cause loss or damage to any separate contractor on the Work, the Contractor agrees to settle or make reasonable efforts to settle or compromise with such separate contractor. If any such separate contractor or any of its subcontractors or employees cause loss or damage to any of the Work, the County shall cause such separate contractor to settle or make reasonable efforts to settle or compromise with the Contractor.
- d. In case of a dispute arising between two or more separate contractors engaged on adjacent work as to the respective rights of each under their respective contracts, the Project Officer shall determine the rights of the parties, except that the dispute resolution provisions of Section 26 of the Agreement shall control with respect to disputes between the County and the Contractor.

15. SUBCONTRACTS

- a. Unless otherwise specified, the Contractor shall, within fifteen (15) Calendar Days after the execution of the Contract by the County, provide to the Project Officer or designee, in writing, the names of all subcontractors proposed for the principal parts of

Project Officer or designee, and shall not employ any subcontractors that the Project Officer or designee may object to as incompetent or unfit after an appropriate determination of the subcontractor's ability. No proposed Subcontractor will be disapproved except for cause.

- b. The Contractor shall make no substitutions for any subcontractor previously selected/approved unless first submitted to the County for approval.
- c. The Contractor shall be as fully responsible to the County for the acts and omissions of the Contractor's subcontractors as the Contractor is for the acts and omissions of persons directly employed by the Contractor.
- d. The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the Work to bind subcontractors to the Contractor by the terms of these General Conditions, the Special Provisions (Exhibit B to the Agreement) and other Contract Documents comprising the Contract insofar as such documents are applicable to the work of subcontractors.
- e. Nothing contained in the Contract shall be construed to create any contractual relation between any subcontractor and the County, nor shall it establish any obligation on the part of the County to pay to, or see to the payment of any sums to any subcontractor. The County will not discuss, negotiate or otherwise engage in any contractual disputes with any subcontractor.
- f. If requested by the County (but only for cause), the Contractor shall replace any subcontractor at no cost to the County within 30 days of the Project Officer's written notice or as otherwise specified. No additional time or compensation will be provided in the event a subcontractor is removed due to non-compliance of the requirements outlined within the Contract.

16. ELIMINATED ITEMS

If any item(s) in the Contract are determined to be unnecessary for the proper completion of the Work contracted, the Project Officer or designee may, upon written notice to the Contractor, eliminate such item(s) from the Contract. Payment will not be made for such item(s) so eliminated; except that the Contractor will be compensated for the actual cost of any work performed and the net cost of materials purchased before the item(s) was eliminated from the Contract, including freight and tax costs, as evidenced by invoice. No additional compensation will be made for overhead or anticipated profit. The County will receive the full unit price credit for work eliminated prior to engineering, submittals, production or installation.



17. COUNTY ORDINANCES

The Contractor shall comply with all applicable County ordinances, including but not limited to: the *Noise Control, Erosion & Sediment Control, Storm Water Management, and Chesapeake Bay Preservation ordinances (Chapters 15, 57, 60, and 61 of the County Code)*.

D. MATERIALS AND WORKMANSHIP

1. MATERIALS FURNISHED BY THE CONTRACTOR

Unless otherwise specified, all materials and equipment incorporated in the Work under the Contract shall be new. All work shall be accomplished by persons qualified in the respective trades.

2. IBC AND VUSBC REQUIREMENTS

The Contractor certifies that all material supplied or used under this Contract meets all current International Building Code (IBC) requirements and the requirements of the Virginia Uniform Statewide Building Code (VUSBC); and further certifies that, if the material delivered or used in the performance of the work is found to be deficient in any of the applicable state or national code requirements, all costs necessary to bring the material into compliance with the requirements shall be borne by the Contractor. The County shall be entitled to offset such costs against any sums owed by the County to the Contractor under this Contract.

3. ADA COMPLIANCE

The Contractor shall ensure that all Work performed under this Agreement is completed in accordance with the Contract Documents, including Work intended to meet the accessibility requirements of the Americans with Disabilities Act (ADA).

The Contractor is not required to ascertain whether the Contract Documents meet ADA design standards and guidelines. However, should the Contractor discover any non-conformity with such requirements, the Contractor shall immediately inform the County and its design consultant, if applicable, to allow for corrective action.

The Contractor shall be responsible for all costs related to permitting delays, redesign, corrective Work, and litigation relating to such any non-compliance in relation to the obligations of this subsection.

4. MANUFACTURER'S DIRECTIONS

Manufactured articles, material, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturer's directions as accepted by the Project Officer or designee, unless herein specified to the contrary.

5. WARRANTY

All material provided to the County shall be fully guaranteed by the Contractor against manufacturing defects within the period of the manufacturer's standard warranty. Such defects shall be corrected by the Contractor at no expense to the County. The Contractor shall provide all manufacturers' warranties to the Project Officer by the date of Final Completion.

All Work is guaranteed by the Contractor against defects resulting from the use of inferior or faulty materials. The Contractor warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects or inferior or faulty workmanship, or work not in accordance with the Contract Documents for one (1) year from the date of Substantial Completion or as set forth in the Specifications of the work by the County in addition to and irrespective of any manufacturer's or supplier's warranty.

No date other than Substantial Completion or as set forth in the Specifications shall govern the effective date of the Warranty, unless that date is agreed upon by the County and the Contractor in advance and in a signed writing.

The Contractor shall promptly correct any defective work or materials after receipt of a written notice from the County to do so. If the Contractor fails to proceed promptly or use due diligence to complete such compliance as quickly as practicable, the County may have the materials or work corrected and the Contractor and its sureties shall be liable for all expenses and costs incurred by the County.

Nothing contained in this section shall be construed to establish a period of limitations with respect to other obligations the Contractor may have under this Contract.

6. INSPECTION AND ACCEPTANCE OF MATERIALS

Inspection and acceptance by the County will be at the work site in Arlington County, Virginia and within ten (10) Calendar Days of delivery unless otherwise provided for in the Contract Documents. The County will not inspect, accept, or pay for any materials stored or delivered off-site by the Contractor, except as provided by the Payment for Stored Materials clause of these General Conditions and other requirements of the Contract Documents. The County's right of inspection shall not be deemed to relieve the Contractor of its obligation to ensure that all articles, materials and supplies are consistent with Specifications and instructions and are fit for their intended use. The County reserves the right to conduct any tests or inspections it may deem appropriate before acceptance. The Contractor shall be responsible for maintaining all materials and supplies in the condition in which they were accepted until they are used in the work.

The Contractor is to coordinate its work and request inspections in such a manner as to minimize the cost to the County without impacting the overall schedule of the Project within reason. All costs associated with re-inspection shall be borne by the Contractor.

7. CONTRACTOR'S TITLE TO MATERIALS

No materials or supplies for the work shall be purchased by the Contractor or any subcontractor subject to any chattel mortgage or under a conditional sale or other agreement by which an interest is retained by the seller. The Contractor warrants that it has good title to, and that it will require all subcontractors to warrant that they have good title to, all materials and supplies for which the Contractor invoices for payment. The County may request proof of title or payment prior to acceptance of the Contractor's invoice.

8. TITLE TO MATERIALS AND WORK COVERED BY PARTIAL PAYMENTS

All material and work covered by partial payments made by the County will become the property solely of the County at the time the partial payment is made. However, risk of loss or damage to all items under the Contractor's control shall be the responsibility of the Contractor until Substantial Completion. This provision will not be construed as relieving the Contractor from having sole responsibility for all materials and work upon which payments have been made and for the restoration of any damaged work or replacement or repair at the County's option of any damaged materials. This provision will not be construed as a waiver of the County's right to require fulfillment of all terms of the Agreement, including full rights under the terms of the Warranty provisions of the Agreement, nor shall payment indicate acceptance of the materials or work.

9. CONNECTING WORK

The Contractor shall do all cutting, patching, or digging of the Contractor's work that may be required to make its several parts come together properly and fit it to receive or be received by work of other contractors as shown upon or reasonably implied by the Drawings and Specifications for the completed Project and shall make good after them as the Project Officer or designee may direct. This work will be performed in a workmanlike manner utilizing proper care and equipment to achieve proper line and grade. The Contractor shall not endanger any work by cutting, patching, or digging, or otherwise, and shall not cut or alter the work of any other contract except with the prior written consent of the Project Officer or designee.

10. REJECTED WORK AND MATERIALS

- a. Any of the Work or materials, goods, or equipment which do not conform to the requirements of the Contract Documents, or are not equal to samples accepted by the Project Officer or designee, or are in any way unsatisfactory or unsuited to the purpose for which they are intended, shall be rejected and replaced immediately so as not to cause delay to the Project or work by others. Any defective work, whether the result of poor workmanship, use of defective materials, damage through carelessness or any other cause, shall be removed and the work shall be re-executed by the Contractor at the Contractor's expense. The fact that the Project Officer or designee may have previously overlooked such defective work shall not constitute acceptance of any part of it.

If the Contractor fails to proceed at once with the replacement of rejected material and/or the correction of defective workmanship when notified to do so by the Project Officer or designee, the County may, by contract or otherwise, replace such material or correct such workmanship and charge the cost to the Contractor. This clause applies during the Contract and during any warranty or guarantee period.

- b. The Contractor shall be responsible for managing, addressing within a timely manner, and formally closing out all notices of non-compliance issued by the inspector of record or Arlington County Inspection Services. The Contractor shall be solely liable for any costs or time associated with the corrective action to address any notices of non-compliance. The Contractor must work directly with the entity issuing the notice of non-compliance.
- c. If the Project Officer or designee deems it expedient not to require correction of work which has been damaged or not done in accordance with the Contract, an appropriate adjustment to the Contract Price may be made.

11. PROHIBITION AGAINST ASBESTOS CONTAINING MATERIALS

No goods or equipment provided to the County or construction material installed shall contain asbestos. If a Contractor or supplier provides or installs any goods, equipment, supplies, or materials that contain asbestos in violation of this prohibition, the Contractor shall be responsible for all costs related to the immediate removal and legal disposal of the goods, equipment or materials containing asbestos and replacement with County-approved alternate. The Contractor shall be responsible for all goods, equipment, supplies or materials installed or provided by any of its employees, agents or subcontractors in connection with the work under this Contract. The Contractor shall also reimburse to the County all costs of such goods, equipment, supplies or materials installed if not corrected by the Contractor.

E. LEGAL RESPONSIBILITY AND PUBLIC SAFETY

1. SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK

The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and locations of the work of the Contract, and that it has investigated and satisfied itself as to the general and local conditions and factors which can affect the Work or its cost, including but not limited to:

- a. conditions bearing upon transportation, disposal, handling, and storage of materials;
- b. the availability of labor, water, electric power, and roads;
- c. uncertainties of weather, river stages, tides, or similar physical conditions at the Site;
- d. the information and conditions of the ground; and

- e. the character of equipment and facilities needed before and during work performance.

The Contractor, by executing the Contract, represents that it has reviewed and understands the Contract Documents. During the Contract, the Contractor must promptly notify the County in writing of any apparent errors, inconsistencies, omissions, ambiguities, construction impracticalities or code violations discovered as a result of the Contractor's review of the Contract Documents including any differences between actual and indicated dimensions, locations and descriptions, and must give the County timely notice in writing of same and of any corrections, clarifications, additional Drawings or Specifications, or other information required to define the Work in greater detail or to permit the proper progress of the Work. The Contractor must provide similar notice with respect to any variance between its review of the Site and physical data and Site conditions observed. If the Contractor performs any Work involving an apparent error, inconsistency, ambiguity, construction impracticality, omission or code violation in the Contract Documents of which the Contractor is aware, without prompt written notice to the County and request for correction, clarification or additional information, as appropriate, the Contractor does so at its own risk and expense and all related claims are specifically waived.

The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from a visual inspection of the Site, as well as from the Drawings and Specifications made a part of this Contract. Unless otherwise specified, all existing structures, materials and obstructions that interfere with the new construction shall be removed and disposed of as part of this Contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the Work without additional expense to the County.

The locations of existing utilities, including underground utilities, which may affect the Work, are indicated on the Drawings or in the Specifications insofar as their existence and location were known at the time of preparation of the Drawings. However, nothing in these Drawings or Specifications shall be construed as a guarantee that such utilities are in the location indicated or that they actually exist, or that other utilities are not within the area of the operations. The Contractor shall make all necessary investigations to determine the existence and locations of such utilities. Should uncharted or incorrectly charted utilities be encountered during performance of the Work, the Contractor shall promptly notify the Project Officer or designee for instructions. The Contractor will be held responsible for any damage to and maintenance and protection of existing utilities and structures, of both public and private ownership. However, if it is determined that such existing utility lines or structures require relocation or reconstruction or any other work beyond normal protection, then such additional work will be ordered under the terms of the clause entitled "Changes in Work." At all times, the Contractor shall cooperate with the County and utility companies to keep utility services and facilities in operation.

The County assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the County. The County assumes no responsibility for any understanding reached or representation made concerning conditions which can affect the Work by any of its officers or agents before the execution of this Contract, unless that understanding or representation is expressly stated in this Contract.

2. PUBLIC CONVENIENCE

The Contractor shall at all times so conduct its Work as to ensure the least possible obstruction to traffic (vehicular, bicycle and pedestrian) and inconvenience to the general public, County employees, and the residents in the vicinity of the Work. Traffic shall be maintained in accordance with the approved maintenance of traffic (MOT) plan. No road, street or sidewalk shall be closed to the public except with the permission of the Project Officer or designee or proper governmental authority. Fire hydrants on or adjacent to the Work shall be kept accessible to firefighting equipment at all times. Temporary provisions shall be made by the Contractor and included in the cost of the Work to ensure the use of sidewalks, trails, and transit facilities compliant with all applicable ADA and other regulations, as well as the proper functioning of all gutters, drainage inlets, drainage ditches, and irrigation ditches, which shall not be obstructed except as approved by the Project Officer or designee.

The Contractor is responsible for securing its work area for safety and security. The Contractor shall confine its construction and presence to the Limits of Work (LOW), unless otherwise approved by the County Project Officer.

3. SAFETY AND ACCIDENT PREVENTION

The Contractor shall comply with, and ensure that the Contractor's employees and subcontractors comply with, all current applicable local, state and federal policies, regulations and standards relating to safety and health, including, by way of illustration and not limitation, the U.S. Department of Labor's Occupational Safety and Hazard Administration (OSHA) Construction Industry Regulations, the standards of the Virginia Occupational Safety and Health program of the Department of Labor and Industry for General Industry and for the Construction Industry, the Federal Environmental Protection Agency Standards and the applicable standards of the Virginia Department of Environmental Quality.

The Contractor shall provide, or cause to be provided, all technical expertise, qualified personnel, equipment, tools and material to safely accomplish the Work specified to be performed by the Contractor and subcontractor(s).

The Contractor shall identify to the County Project Officer at least one on-site person who is the Contractor's competent, qualified, and authorized safety officer on the worksite and who is, by training or experience, familiar with and trained in policies, regulations and

standards applicable to the work being performed. The competent, qualified and authorized person must be capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees, shall be capable of ensuring that applicable safety regulations are complied with, and shall have the authority and responsibility to take prompt corrective measures, which may include removal of the Contractor's personnel from the work site.

The Contractor shall provide to the County, within 7 days of issuance of the Notice to Proceed, a copy of the Contractor's written safety policies and safety procedures applicable to the scope of work. Failure to provide this information within may result in cancellation of the Contract.

The Contractor shall exercise proper precaution at all times for the protection of persons and property and shall be responsible for all injury to persons and damage to property either on or off the Site, which occur as a result of the Contractor's prosecution of the Work.

The Contractor shall take or cause to be taken such additional safety and health measures as the County may determine to be reasonably necessary. Machinery, equipment, and all hazards shall be guarded in accordance with the safety provisions of the current version of "Manual of Accident Prevention" published by the Associated General Contractors of America, Inc., to the extent that such provisions are not in conflict with applicable local laws. The Contractor is directed to the "Rules and Regulations Governing Construction, Demolition and All Excavation" and adopted by the GC.E3. Codes Commission of Virginia, 1966, or latest edition, covering requirements for shoring, bracing, and sheet piling of trench excavations.

Prior to the commencement of construction, the Contractor shall develop for the County and WMATA's review and approval, and thereafter execute, a "Safety and Security Certification Plan" for the Project.

4. HAZARDOUS MATERIALS

Arlington County is subject to the Hazard Communication Standard, 29 CFR §1910.1200 (Standard). The Contractor agrees that it will provide or cause to be provided Safety Data Sheets (SDS) required under the Standard for all hazardous materials supplied to the County or used in the performance of the work. Such SDS shall be delivered to the County no later than the time of actual delivery of any hazardous materials to the County or use of such material in the performance of work under the Contract by the Contractor or its subcontractors, whichever occurs first. Container labeling meeting the requirements of the Standard shall be appropriately affixed to the shipping or internal containers. The County reserves the right to refuse shipments of hazardous materials not appropriately labeled, or when SDS have not been received prior to or at the time of receipt of the shipment for use by the County or for use by the Contractor in the performance of the Contract, or whenever the material is delivered in a manner inconsistent with any applicable law or regulation. Any expenses incurred due to the refusal or rejection of SDS are the responsibility of the Contractor. The Contractor shall comply with all federal, state, and local laws governing the storage, transportation, and use of toxic and

hazardous materials. The Contractor shall maintain onsite an up to date SDS binder for all material used and delivered to the Project. The County Project Officer or his designee shall be allowed access to the SDS book at all times.

5. HAZARDOUS WASTE

Hazardous Waste Generator/Hazardous Waste Disposal: The County Board of Arlington County, Virginia shall be listed as the generator of any pre-existing hazardous materials. The Contractor shall assist the County in preparing the Waste Shipment Record (“WSR”) and manifest. The County shall reimburse the Contractor for any and all costs incurred as a result of pre-existing hazardous materials, except to the extent the hazardous condition is caused or exacerbated by the negligence, recklessness or willful misconduct of the Contractor.

Delayed Waste Shipment Records: The Contractor shall report in writing to the EPA Region III office within 45 days if an executed copy of the WSR is not received from the operator of the disposal site. The report to the EPA regional office shall include a copy of the original WSR and a cover letter signed by the Contractor stating the efforts taken to locate the hazardous waste shipment and the results of those efforts.

Temporary Hazardous Waste Storage Prohibited: The Contractor shall not temporarily store hazardous waste unless pre-approved by the County in writing. If so approved, hazardous waste stored off-site in a temporary facility shall be monitored and records shall be kept on the number of containers, size, and weight. The Contractor shall inform the County when the hazardous waste is to be transported to the final disposal site. The County has the right to inspect the temporary site at any time. The Contractor shall submit copies of all relevant manifests, Waste Shipment Record(s), and landfill receipts to the County Project Officer prior to the request for final payment. All paperwork shall be signed by the Contractor and disposal site operator as required.

6. ASBESTOS

Whenever and wherever during the course of performing any work under this Contract the Contractor discovers the presence of asbestos or suspects that asbestos is present, the Contractor shall stop work immediately, secure the area, notify the County Project Officer immediately and await positive identification of the suspect material. During the downtime in such a case, the Contractor shall not disturb any surrounding surfaces but shall protect the area with suitable dust covers. Work shall not proceed without an Asbestos-Related Work Authorization executed by the County Asbestos Program Manager.

7. CROSSING UTILITIES

When construction crosses highways, railroads, streets, waterways, or utilities under the jurisdiction of State, County, City, or other public agency, public utility, or private entity, the Contractor shall secure written permission where necessary the proper authority before executing such new construction. A copy of such written permission



must be filed with the County before any work is started. The Contractor shall be required to furnish a release from the proper authority before Final Completion.

8. OVERHEAD HIGH VOLTAGE LINES SAFETY ACT

If any work required herein will be performed within ten feet of an overhead high voltage line, the provisions of Virginia Statute 59.1-406, et. seq., "Overhead High Voltage Line Safety Act" (Act) shall apply. The "person or contractor responsible for the work to be done", as that term is used in the Act, will be interpreted to mean the Contractor. The Contractor shall notify the owner or operator of the high voltage line in the manner prescribed in Section 59.1-411 of the Act in sufficient time prior to the time work is to be commenced to avoid any delays in the work. The County will not pay for lost time, profits, or permit any extension of the work for any delays caused by the failure of the Contractor to make such arrangements in a timely manner. All costs for the work shall be paid by the Contractor. The County shall reimburse the Contractor for the actual reasonable cost paid to the owner or operator of the high voltage line by the Contractor on presentation to the County by the Contractor of original invoices from the owner or operator of the high voltage line in the same manner as for other Contractor invoices submitted for work performed. Retention, if applicable to the Contract, shall not be withheld from the payment to the Contractor by the County for this work. No processing, administrative, or other charges above the actual amount charged by the owner or operator of the high voltage line shall be paid to the Contractor by the County.

9. SANITARY PROVISIONS

The Contractor shall provide and maintain such sanitary accommodations for the use of the Contractor's employees and those of its subcontractors as may be necessary to comply with the requirements and regulations of OSHA and of the local and State departments of health.

10. SITE CLEAN-UP AND WASTE DISPOSAL

The Contractor shall frequently remove and properly dispose of all refuse, rubbish, scrap materials, and debris from the Site resulting from the Contractor's operations during the performance of this Contract. The Contractor shall ensure the work site presents a neat and orderly appearance at all times. The Contractor shall isolate any and all dumpsters, trash cans and recycling bins provided for the Project from public use until Final Completion.

Unless otherwise stated, the Contract Amount and any unit prices shall include all costs and fees for removal and disposal of all waste and debris, whether disposed of at a County site or at any other location.

The Contractor shall remove all surplus material, false work, temporary structures including foundations thereof, and debris resulting from the Contractor's operations at work completion and before Final Completion. The County shall reserve the right to remove the surplus material, false work, temporary structures including foundations and debris. The County will restore the Site to a neat, orderly condition if the Contractor fails

to do so. The County shall be entitled to offset such cost against any sums owed by the County to the Contractor under this Contract.

11. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

When the Project includes an approved SWPPP, the Contractor shall strictly abide by this plan which includes: a Pollution Prevention (P2) Plan, an Erosion and Sediment Control (E&S) Plan, and a Stormwater Management Plan. If the Contractor proposes to deviate from this approved plan, it shall be the Contractor's responsibility to coordinate and obtain approval from the County Project Officer prior to implementing any changes.

No separate payment shall be made by the County for SWPPP implementation, with the exception of E&S items as specified on the E&S plans or listed as pay items. The Contractor shall not be entitled to any additional payment for changes to the SWPPP which are the result of the Contractor's work schedule or resource allocation, weather delays, or other factors not controlled by the County.

**F. PROGRESS AND COMPLETION OF THE WORK**

1. NOTICE TO PROCEED

The Contractor shall be given written Notice to Proceed with the Work. Such Notice to Proceed shall state the date on which the Work is to be commenced, and every Calendar Day thereafter shall be counted in computing the actual Time for Completion. Absent Contractor fault, under no circumstances shall (a) the County issue the Notice to Proceed later than September 30, 2023, or (b) the Commencement Date set forth in the Notice to Proceed be later than September 30, 2023.

2. TIME FOR COMPLETION

It is hereby understood and mutually agreed by and between the Contractor and the County that the Commencement Date, the rate of progress, and the Time for Completion of the Work to be done hereunder are essential conditions of the Contract. The Contractor agrees that the Work shall be started promptly upon receipt of a written Notice to Proceed in accordance with the accepted schedule. The Work shall be prosecuted regularly, diligently, and uninterruptedly at a rate of progress that will ensure full completion of the Project within the Time for Completion specified in the Contract Documents.

3. [NOT USED]

4. [NOT USED]

5. USE OF COMPLETED PORTIONS

The County shall have the right to take possession of and use any completed or partially completed portions of the Work with independent utility, notwithstanding that the time for completing the entire Work or such portions may not have expired; but taking such possession and use shall not be deemed an acceptance of any work not done in

accordance with the Contract Documents. If the Contractor claims that such prior use increases the cost or delays, the completion of remaining work, or causes refinishing of completed work, the Contractor may submit a claim for compensation or extension of time, or both.

**G. MEASUREMENT AND PAYMENT**

1. PAYMENTS TO CONTRACTOR

The County will make partial payments, less applicable retainage, to the Contractor monthly on the basis of the Contractor's written estimate of the work performed during the preceding calendar month as approved by the Project Officer or designee.

The Contractor's application for payment shall indicate the amount of work completed. The Contractor shall provide to the Project Officer a Schedule of Values, and the application for payment will reflect the Schedule of Values and the amount of work completed.

In addition to the amount of work completed to date, the application for payment shall indicate the aggregate of all previous payments for each line item, the retainage previously withheld, and the total payment requested this period.

The Contractor's application for payment will not be processed unless an updated schedule is attached. The pay application shall also contain a certification by the Contractor that due and payable amounts have been paid by the Contractor, including payments to subcontractors, for work which previous payment was received by the Contractor from the County.

2. PAYMENT FOR STORED MATERIALS

Payment allowances may be made for material secured for use on the Project and secured at the project Site or at other locations reasonably acceptable to the County. Upon request by the County, the Contractor shall provide photographs of materials stored offsite, bills of sale, and proof of insurance on the premises at which off-site materials are stored with the application for payment.

3. PAYMENTS WITHHELD

The Project Officer or designee may withhold or, on account of subsequently discovered evidence, nullify the whole or a part of any certificate for payment to the extent necessary to protect the County from loss on account of defective work not remedied or withhold payment for violation of any contract term or condition not remedied after sufficient notice given to the Contractor.

Any such withholding shall not result in any liability to the Contractor for damages.

4. [NOT USED]

5. [NOT USED]

6. [NOT USED]

7. RELEASE OF LIENS

The County, before making final payment, shall require the Contractor to furnish a complete release of all liens arising out of this Contract, contingent only upon receipt of all payments due. The Contractor may, if any subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the County, to indemnify him against any lien. If any lien remains unsatisfied after all payments have been made, the Contractor shall refund to the County all money that the latter may be compelled to pay in discharging such lien. However, the County may make payments in part or in full to the Contractor without requiring the releases or receipts, and the payments so made shall not impair the obligations of any Surety or Sureties on any bond or bonds furnished under this Contract.

8. FINAL PAYMENT

After the Contractor has completed all work and corrections to the satisfaction of the Project Officer or designee and delivered all maintenance and operating instructions, schedules, quantities, bonds, certificates of inspection, maintenance records, As-Built Drawings, and other items required as final payment submittal documents, the Contractor may make application for final payment following the procedure for progress payments. The final application for payment shall be accompanied by all documents required in the Contract, including a complete and signed and notarized copy of the Final Payment Release Form as follows:

**RELEASE AND REQUEST FOR FINAL PAYMENT**

CONTRACT NUMBER: \_\_\_\_\_ CONTRACTOR NAME: \_\_\_\_\_

FINAL PAYMENT AMOUNT: \_\_\_\_\_

The Contractor hereby requests final payment in the amount indicated on the above referenced Contract. The Contractor agrees that its acceptance of final payment releases and forever discharges Arlington County and its officers, employees, servants and agents from any and all actions, claims, demands and liability of whatever nature now existing or which may hereafter arise as a result of or in connection with the above referenced Contract.

The Contractor certifies that all of the debts for labor, materials, and equipment incurred in connection with the above referenced Contract have been fully paid

AUTHORIZED SIGNATURE DATE: \_\_\_\_\_

COMMONWEALTH OF VIRGINIA

COUNTY OF ARLINGTON

On this the \_\_\_\_ day of \_\_\_\_\_, 20\_\_, before me, personally appeared \_\_\_\_\_, who acknowledged himself/herself to be \_\_\_\_\_ in the above instrument, and that he/she, as such \_\_\_\_\_, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing his/her name by himself/herself as \_\_\_\_\_.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

## **SUPPLEMENT TO THE GENERAL CONDITIONS**

These Conditions modify the attached, amended version of the Arlington County Construction General Conditions. All provisions that are not modified or deleted by these Supplemental Conditions shall remain in full force and effect.

The address system used in these Supplemental Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto

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### **Article B – Drawings, Specifications, and Related Data**

#### **SC-B.2 – Discrepancies and Errors**

*Delete this portion of Paragraph B.2:*

Issues affecting critical path activities shall be made known to the Project Officer or designee within one business day after discovery.

*And replace with the following language:*

Issues affecting critical path activities shall be made known to the Project Officer or designee within four days after discovery.

#### **SC-B.11- Materials and Equipment List**

*Remove this portion of 11.a:*

. . . later of the Commencement Date and the . . . .

*Add this to 11.a:*

. . . materials and equipment proposed for use in connection with the relevant *phase of* construction.

#### **SC-B.13 – Surveys and Controls**

*Remove this portion of B.13:*

. . . within 30 days of NTP . . . ."

### **Article C-County, County Project Officer, and Contractors Relations**

#### **SC-C.9 – Contractor Management Personnel**

*Remove the following from C.9, second paragraph:*

" . . . superintended and . . . ."

*Add the following to C.9, second paragraph*

“ . . . project manager shall represent the Contractor and all *written* directions . . . .”

**SC-C.11 – Lands by County**

*Delete the following from the first paragraph*

“No additional time or compensation shall be awarded to the Contractor for modifying work location and sequence provided other locations are available for work.

**SC-C.14 – Separate Contracts**

*Add the following to 14.a:*

The Contractor shall afford other contractors reasonable access to the Project including storage of their materials, *to the extent feasible and practicable*, and the execution of their work, and shall properly connect and coordinate its work with the work of other such contractors. *The County shall provide notice to the Contractor at least thirty (30) Calendar Days prior to access to the Site by any separate contractor.*

**SC-C.15-Subcontracts**

*Remove section C.15, Subcontracts*

**Article D – Materials and Workmanship**

**SC-D.2-IBC and VUSBC Requirements**

*Add the following to section D.2:*

*Unless required otherwise by WMATA or WMATA design criteria*, the Contractor certifies that all material supplied . . . .

**SC-D.5-Warranty**

*Remove section D.5 and replace with the following provision:*

**5. WARRANTY**

Developer warrants to the County and WMATA that:

- a. The Work shall meet all the requirements of the Contract Documents; and
- b. Equipment and materials furnished under the Contract Documents shall be of first-class quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects, and that the Work will conform to the requirements of the Contract Documents.

The Developer warrants and guarantees the Work for one (1) year after Final Completion. This includes a warranty against any and all defects in material and/or workmanship which may appear during said one (1) year period, by repairing (or replacing with new items or new

materials, if necessary) any such defect at no cost to the County, within a reasonable period of time, and to the County's satisfaction.

The Developer must furnish all special warranties required by the Contract Documents no later than Final Completion. The County may require additional special warranties in connection with the approval "Or-Equals" or Substitutions.

Notwithstanding the above, the expiration of the applicable warranty period does not bar WMATA's claim for any latent defect in the Work that could not have been reasonably discovered prior to the expiration of said warranty period. For avoidance of doubt, any references to service life of equipment and materials in the Contract Documents shall be constructed as a standard of quality and shall not be constructed as a warranty or an increase in the duration of the warranty period.

### **Article E – Legal Responsibility and Public Safety**

#### **SC-E.1-Site Investigation and Conditions Affecting the Work**

*Remove the italicized language in Paragraph 4 of E.1:*

The Contractor shall make *all necessary* . . .

*And replace with the following language:*

The Contractor shall make reasonable . . .

#### **SC-E.3-Safety and Accident Prevention**

*Remove the italicized language in Paragraph 4 of E.3:*

The Contractor shall provide to the County, within *7 days* of issuance of the Notice to Proceed make . . .

*And replace with the following language:*

The Contractor shall provide to the County, within *21 days* of issuance of the Notice to Proceed make . . .

#### **Sc-E.7-Crossing Utilities**

*Replace the word written permission with permits in this paragraph.*



## EXHIBIT D – COMPENSATION

**Cost of the Work.** The “Cost of the Work” shall include, but not be limited to the following costs, which shall be reimbursable at cost and without mark-up of any kind:

1. Payments made by the Developer to subcontractors and suppliers, including the cost of trade subcontractor and suppliers’ payment and performance bonds, but only in accordance with the subcontracts and supply agreements;
2. Design Fee and program management services;
3. All amounts due to the Developer or the Design-Build Subcontractor for self-performed Work. If the Developer or the Design-Build Subcontractor self-performs Work, the Developer must submit three quotes by potential subcontractors validating price competitiveness of Developer’s or the Design-Build Subcontractor’s decision to self-perform. The County may, in their sole discretion, approve self-performed Work without competitive pricing submission;
4. Royalty and license fees paid for use of a design, process or product, if its use is required by this Agreement or has been approved in advance by the County;
5. Fees for obtaining all required approvals or permits associated with the abatement, demolition, utilities abandonment, and utility relocation, as well as all trade permit fees and the building permit fee;
6. All fees and other costs necessarily incurred to carry out testing and inspections required by the Agreement or applicable laws, or otherwise to maintain proper quality assurance. The costs the Developer incurs to schedule and coordinate any additional testing and inspections the County may decide to conduct itself shall be reimbursable unless the additional testing establishes that the Work tested was defective or otherwise failed to satisfy contract requirements, in which case the Developer shall pay the costs, without reimbursement;
7. All fees and other costs of out of house consultants, such as peer reviews, testing & inspection, utility locators, permit expeditors, surveying, vibration monitoring, quality control, communication managers, and commissioning;
8. All bonds to jurisdictional agencies (utilities, storm water management, land disturbance, and grading); and
9. All performance and payment bonds and insurance, attributable to the Project.

**General Condition Costs.** The General Conditions costs shall include, but not be limited to, the following:

1. The cost of all Construction Staff. The term Construction Staff shall mean the Development Managers, Project Executive, Project Managers, Summer Associates,

Design Build Managers, Business Managers, Project Engineers, Engineers, Quality Control Managers, Safety Managers, and Superintendents assigned to the Project administrative staff (but only administrative staff assigned on a full-time basis to the Project site), and all professional staff performing scheduling, cost estimating and accounting services;

2. Fringe Benefits associated with Construction Staff;
3. Payroll taxes and payroll insurance associated with Construction Staff;
4. Staff costs associated with obtaining permits and approvals;
5. The field office for the Developer including, but not limited to: (i) trailer purchase and/or rent; (ii) field office installation, relocation and removal; (iii) utility connections and charges during the Construction Implementation Stage; (iv) furniture; and (v) office supplies;
6. Office equipment including, but not limited to: (i) computer hardware and software; (ii) copying machines; (iii) telephone installation, system and use charges; and (iv) job radios;
7. Local delivery and overnight delivery costs;
8. The cost of temporary power and water necessary for construction operations. Such costs include the cost of any temporary construction necessary to provide such power and water during the Construction Implementation Stage; and
9. First aid facility.

**Non-Reimbursable Costs.** The following costs are not reimbursable as Cost of the Work:

1. Fees for any permits or licenses the Developer requires to conduct its home office general business operations;
2. Capital expenses and interest on capital employed for the Work;
3. The cost of home or regional offices, it being understood that compensation for such costs is included in the Development Fee;
4. Sales or use taxes, unless the Developer establishes that applicable law required payment of such;
5. Costs due to the errors or omissions of the Developer or its subcontractors or suppliers at all tiers, negligent or otherwise;

6. Costs dues to breach of Contract by the Developer or its subcontractors or material suppliers at all tiers, including, without limitation, costs arising from defective or damaged Work or its correction, disposal of materials or equipment erroneously supplied, and repairs to property damaged by the Developer or its subcontractors or material suppliers at all tiers; and
7. Any costs incurred in performing Work of any kind before the Notice to Proceed is issued, unless specifically authorized by the County in writing.

**Development Fee.** The “Development Fee” together with the General Conditions Fee is intended to compensate the Developer for all costs not properly reimbursable as a Cost of the Work, including, but not limited to, the Developer’s home office overhead, profit, and home office staffing costs.

**County’s Allowances.** The “County’s Allowances” shall consist of:

COUNTY’S ALLOWANCES		
1	Relocation of Plenum and Back-of-House Cables and Raceways	\$ 1,700,000
2	Relocate Existing Utilities	\$ 130,000
3	Contaminated Soil	\$ 72,000
4	Maintenance of Existing Mechanical System	\$ 265,000
5	Concrete Repair	\$ 175,000
6	Traffic Signals	\$ 150,000
7	Design for Lighting at Canopy Level	\$ 50,000
8	Waterproofing Repair Allowance	\$ 250,000
9	Relocate FDC/flow test pipes at SW corner of 1770 Building	\$ 60,000
10	Fiber Optic Utility Design and Fee	\$ 315,000
Subtotal of County Allowances		\$ 3,167,000

## EXHIBIT E – BASELINE PROJECT SCHEDULE

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	2023												2024												2025												2026												2027											
						A	J	J	A	S	D	J	F	A	J	J	A	S	N	J	F	A	J	J	A	S	N	J	F	A	J	J	A	S	N	J	F	A	J	J	A	S	N	J	F	A	J	J	A	S	N														
<b>Crystal City East Entrance 30% Package 3 Schedule - Working Baseline</b>		1139	1019	15-Aug-22 A	05-Apr-27																																																												
<b>Milestones</b>		1395	1395	08-May-23	05-Apr-27																																																												
A1000	Approval of 30% PE Design Package by Arlington County & WMATA	0	0		08-May-23	◆ Approval of 30% PE Design Package by Arlington County & WMATA																																																											
A2610	Execute Comprehensive Agreement	0	0		01-Aug-23	◆ Execute Comprehensive Agreement																																																											
A1190	Design Build Contract Notice to Proceed (CCEE)	0	0		15-Aug-23	◆ Design Build Contract Notice to Proceed (CCEE)																																																											
A3440	AC Switchgear Installation Complete By WMATA	0	0		08-Dec-23	◆ AC Switchgear Installation Complete By WMATA																																																											
A2190	Receive WMATA Real Estate Permit	0	0	11-Jul-24		◆ Receive WMATA Real Estate Permit																																																											
A1010	Receive Utility Relocation Permits	0	0		24-Jul-24	◆ Receive Utility Relocation Permits																																																											
A2670	Receive Arlington County Building Permit	0	0	13-Aug-24		◆ Receive Arlington County Building Permit																																																											
A6870	Start of Construction Work - New Entrance	0	0	30-Aug-24		◆ Start of Construction Work - New Entrance																																																											
A1930	Start of SOE	0	0	04-Dec-24		◆ Start of SOE																																																											
A4370	Start Construction Work - Existing Train Room	0	0	31-Jan-25		◆ Start Construction Work - Existing Train Room																																																											
A4400	SOE & Excavation Complete (Bottomed Out)	0	0		29-Jul-25	◆ SOE & Excavation Complete (Bottomed Out)																																																											
A1940	Start of Below Grade Concrete - New CCEE	0	0	30-Jul-25		◆ Start of Below Grade Concrete - New CCEE																																																											
A4270	Complete BOH Penetration for New CCEE Passageway	0	0		26-Feb-26	◆ Complete BOH Penetration for New CCEE Passageway																																																											
A4390	Completion of Concrete Structure - New CCEE	0	0		05-Mar-26	◆ Completion of Concrete Structure - New CCEE																																																											
A4260	Complete Penetration into Existing Train Room	0	0		16-Apr-26	◆ Complete Penetration into Existing Train Room																																																											
A5490	Patio Area Cleared	0	0		23-Apr-26	◆ Patio Area Cleared																																																											
A4330	Complete BOH Penetration into Mezzanine in Existing Train Room	0	0		15-Jun-26	◆ Complete BOH Penetration into Mezzanine in Existing Train Room																																																											
A4380	Complete Construction Work in Existing Train Room	0	0		26-Oct-26	◆ Complete Construction Work in Existing Train Room																																																											
A1270	CCEE SUBSTANTIAL COMPLETION	0	0		06-Mar-27	◆ CCEE SUBSTANTIAL COMPLETION																																																											
A4410	Crystal City East Entrance Station Opening	0	0		06-Mar-27	◆ Crystal City East Entrance Station Opening																																																											
A4660	CCEE FINAL COMPLETION	0	0		05-Apr-27	◆ CCEE FINAL COMPLETION																																																											
<b>Administration</b>		1139	1019	15-Aug-22 A	05-Apr-27																																																												
<b>30% Preconstruction Period</b>		220	100	15-Aug-22 A	15-Aug-23																																																												
<b>Design</b>		160	40	15-Aug-22 A	19-May-23																																																												
A2620	Develop and Submit 30% Design Final Package	42	0	15-Aug-22 A	10-Oct-22 A	◆ Develop and Submit 30% Design Final Package																																																											
A3230	Update and Submit 30% Design Final Package to WMATA & Arlington County	12	0	03-Oct-22 A	10-Oct-22 A	◆ Update and Submit 30% Design Final Package to WMATA & Arlington County																																																											
A3220	JBGS Internal Review of 30% Design Final Package	8	0	06-Oct-22 A	10-Oct-22 A	◆ JBGS Internal Review of 30% Design Final Package																																																											
A3240	WMATA & Arlington County Issue Amendment 2 30% Design Documents	51	0	13-Jan-23 A	27-Mar-23 A	◆ WMATA & Arlington County Issue Amendment 2 30% Design Documents																																																											
A3250	Update IDD's based on final pricing RFIs	26	26	27-Mar-23	01-May-23	◆ Update IDD's based on final pricing RFIs																																																											
A3260	Complete Final Updates and Review 30% PE Package/IDDs with Arlington County	5	5	02-May-23	08-May-23	◆ Complete Final Updates and Review 30% PE Package/IDDs with Arlington County																																																											
A5590	Milestone - Submit Final IDD's	0	0		19-May-23	◆ Milestone - Submit Final IDD's																																																											
<b>Pricing</b>		58	58	27-Mar-23	15-Jun-23																																																												
A2650	Develop & Submit GMP and Schedule to Arlington County	40	40	27-Mar-23	19-May-23	◆ Develop & Submit GMP and Schedule to Arlington County																																																											
A4280	Initial Meeting to Review Final Cost Proposal	5	5	22-May-23	26-May-23	◆ Initial Meeting to Review Final Cost Proposal																																																											
A4290	Follow-up Meeting #1	1	1	30-May-23	30-May-23	◆ Follow-up Meeting #1																																																											
A4300	Follow-up Meeting #2	2	2	31-May-23	01-Jun-23	◆ Follow-up Meeting #2																																																											
A4310	Full-Day Workshop	5	5	02-Jun-23	08-Jun-23	◆ Full-Day Workshop																																																											
A4340	Final Pricing Negotiation (Arlington County & JBGS)	5	5	09-Jun-23	15-Jun-23	◆ Final Pricing Negotiation (Arlington County & JBGS)																																																											
<b>Comprehensive Agreement</b>		100	100	27-Mar-23	15-Aug-23																																																												
A1180	Finalization of the Complete Comprehensive Agreement	40	40	27-Mar-23	19-May-23	◆ Finalization of the Complete Comprehensive Agreement																																																											
A2790	County Request Additional Funding	20	20	22-May-23	19-Jun-23	◆ County Request Additional Funding																																																											
A4350	Final Comprehensive Agreement to Arlington County Board	12	12	16-Jun-23	03-Jul-23	◆ Final Comprehensive Agreement to Arlington County Board																																																											
A4360	County Board Approval and Execution of Comprehensive Agreement	10	10	05-Jul-23	18-Jul-23	◆ County Board Approval and Execution of Comprehensive Agreement																																																											
A5600	Execute Comprehensive Agreement	10	10	19-Jul-23	01-Aug-23	◆ Execute Comprehensive Agreement																																																											

■ Remaining Level of Effort ◆ Milestone  
■ Actual Level of Effort  
■ Actual Work  
■ Critical Remaining Work  
■ Remaining Work



















Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	2023					2024					2025					2026					2027															
						A	J	J	A	S	D	J	F	A	J	J	A	S	N	D	J	F	A	J	J	A	S	N	D	J	F	A	J	J	A	S	N				
A1790	Hand Chip, Epoxy Anchor, and pour Concrete Closure pieces at Station End Wall	5	5	12-Feb-26	19-Feb-26																																				█ Hand Chip, Epoxy Anchor, and pour
A1170	Remove station end wall demolition debris	5	5	20-Feb-26	26-Feb-26																															█ Remove station end wall demolition d					
A5540	Milestone - Complete BOH Penetration for New CCEE Passageway	0	0		26-Feb-26																															◆ Milestone - Complete BOH Penetratio					
<b>Mechanical</b>		190	190	18-Nov-25	19-Aug-26																															█ Deliver/Install new AHU					
A2030	Deliver/Install new AHU	10	10	18-Nov-25	03-Dec-25																															█ Install ductwork in new CCEE					
A2050	Install ductwork in new CCEE	20	20	06-Mar-26	02-Apr-26																															█ Set Chiller					
A3680	Set Chiller	10	10	06-Mar-26	19-Mar-26																															█ MEP Connections to New Chiller					
A3710	MEP Connections to New Chiller	20	20	20-Mar-26	16-Apr-26																															█ Insulate ductwork in new CCEE					
A4680	Insulate ductwork in new CCEE	15	15	03-Apr-26	23-Apr-26																															█ Install AC and Fan Coil Units at P					
A4690	Install AC and Fan Coil Units at Platform Level	5	5	24-Apr-26	30-Apr-26																															█ Install HVAC piping					
A2060	Install HVAC piping	15	15	01-May-26	21-May-26																															█ Install louvers and grilles					
A2500	Install louvers and grilles	10	10	06-Aug-26	19-Aug-26																																				
<b>Electrical</b>		212	212	31-Dec-25	29-Oct-26																															█ Install embedded conduits and walker d					
A3400	Install embedded conduits and walker duct for kiosks and farecard machines	10	10	31-Dec-25	14-Jan-26																															█ Install Power Conduit					
A2070	Install Power Conduit	30	30	06-Mar-26	16-Apr-26																															█ Install Systems conduit					
A2080	Install Systems conduit	30	30	06-Mar-26	16-Apr-26																															█ Install Distribution panels, transform					
A2150	Install Distribution panels, transformers, & controllers in new electrical room	15	15	06-Mar-26	26-Mar-26																															█ Install communications Conduit					
A2040	Install communications Conduit	25	25	17-Apr-26	21-May-26																															█ Pull power cabling					
A2100	Pull power cabling	20	20	17-Apr-26	14-May-26																															█ Install fire alarm conduit					
A2520	Install fire alarm conduit	20	20	17-Apr-26	14-May-26																															█ Terminate power cables					
A2120	Terminate power cables	20	20	15-May-26	12-Jun-26																															█ Pull fire alarm cabling					
A2530	Pull fire alarm cabling	20	20	15-May-26	12-Jun-26																															█ Pull communications cabling					
A2090	Pull communications cabling	20	20	22-May-26	19-Jun-26																															█ Install entrance ceiling lighting					
A4770	Install entrance ceiling lighting & communications conduit	15	15	15-Jun-26	06-Jul-26																															█ Terminate communications c					
A2130	Terminate communications cables	20	20	22-Jun-26	20-Jul-26																															█ Pull systems cabling					
A2110	Pull systems cabling	20	20	07-Jul-26	03-Aug-26																															█ Install light fixtures					
A4780	Install light fixtures	20	20	09-Jul-26	05-Aug-26																															█ Terminate systems cable					
A2140	Terminate systems cables	25	25	04-Aug-26	08-Sep-26																															█ Terminate fire alarm cable					
A2540	Terminate fire alarm cables	20	20	04-Aug-26	31-Aug-26																															█ Install devices, fixtures					
A3310	Install devices, fixtures, cameras, speakers, and monitors	20	20	02-Oct-26	29-Oct-26																																				
<b>Plumbing &amp; Sanitary</b>		150	150	25-Sep-25	29-Apr-26																																				
<b>Plumbing</b>		39	39	06-Mar-26	29-Apr-26																																				
A2570	Install Cathodic protection on Domestic Water Piping	15	15	06-Mar-26	26-Mar-26																															█ Install Cathodic protection on Dome					
A3390	Install backflow preventer and make connection	5	5	06-Mar-26	12-Mar-26																															█ Install backflow preventer and make					
A2160	Install domestic water piping to bathrooms	10	10	13-Mar-26	26-Mar-26																															█ Install domestic water piping to bath					
A2470	Install domestic water piping to water fountains	5	5	27-Mar-26	02-Apr-26																															█ Install domestic water piping to wat					
A2480	Install domestic water piping to mop basins and sinks	4	4	03-Apr-26	08-Apr-26																															█ Install domestic water piping to mop					
A2490	Install domestic water piping to break rooms and kitchens	5	5	09-Apr-26	15-Apr-26																															█ Install domestic water piping to bre					
A3380	Install sinks, mop basins, and fountains	10	10	16-Apr-26	29-Apr-26																															█ Install sinks, mop basins, and fou					
<b>Sanitary</b>		146	146	25-Sep-25	23-Apr-26																																				
A3320	Install Sump Pumps in Elevator Pits	10	10	25-Sep-25	08-Oct-25																															█ Install Sump Pumps in Elevator Pits					
A3360	Install Embedded Sanitary and Vent Piping in slab	6	6	09-Oct-25	16-Oct-25																															█ Install Embedded Sanitary and Vent Piping in					
A3330	Install Sanitary and Vent Piping in mezz ceiling to Sewage Ejector	5	5	06-Mar-26	12-Mar-26																															█ Install Sanitary and Vent Piping in me					
A3340	Install Sewage Ejector in new CCEE ejector room and make connections	5	5	13-Mar-26	19-Mar-26																															█ Install Sewage Ejector in new CCEE					
A3350	Cathodically protect Sanitary Piping	15	15	27-Mar-26	16-Apr-26																															█ Cathodically protect Sanitary Piping					
A3370	Install vent and floor drain covers, cleanouts, and covers	5	5	17-Apr-26	23-Apr-26																															█ Install vent and floor drain covers,					

█ Remaining Level of Effort    ◆ Milestone  
█ Actual Level of Effort  
█ Actual Work  
█ Critical Remaining Work  
█ Remaining Work



Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	2023					2024					2025					2026					2027											
						A	J	J	A	S	D	J	F	A	J	J	A	S	D	J	F	A	J	J	A	S	N	J	F	A	J	J	A	S	N	J	F
<b>Fire Protection</b>																																					
A2170	Install fire protection mains	15	15	06-Mar-26	26-Mar-26	■ Install fire protection mains																															
A2180	Install fire protection branch lines	12	12	27-Mar-26	13-Apr-26	■ Install fire protection branch lines																															
A2560	Cathodically protect fire protection piping	20	20	27-Mar-26	23-Apr-26	■ Cathodically protect fire protection piping																															
A4710	Install sprinkler heads and escutcheons	5	5	06-Aug-26	12-Aug-26	■ Install sprinkler heads and escutcheons																															
<b>Elevators</b>																																					
<b>EMR</b>																																					
A2750	Fit out elevator machine room and make connections	50	50	06-Mar-26	14-May-26	■ Fit out elevator machine room and make connections																															
<b>Elevators 1 &amp; 2 (Platform to Street Level)</b>																																					
A2680	Set Elevator 1 & 2 Entrance Structural frame	5	5	06-Mar-26	12-Mar-26	■ Set Elevator 1 & 2 Entrance Structural frame																															
A2400	Install Elevator 1 & 2 divider beams	10	10	13-Mar-26	26-Mar-26	■ Install Elevator 1 & 2 divider beams																															
A4590	Drill / install elevator jack casings	5	5	27-Mar-26	02-Apr-26	■ Drill / install elevator jack casings																															
A4600	Frame, reinforce, pour elevator casing pour back	5	5	03-Apr-26	09-Apr-26	■ Frame, reinforce, pour elevator casing pour back																															
A2700	Install glass and glazing Elevator 1 & 2	15	15	08-May-26	29-May-26	■ Install glass and glazing Elevator 1 & 2																															
A2230	Install Elevator 1 & 2 elevator rails	20	20	01-Jun-26	26-Jun-26	■ Install Elevator 1 & 2 elevator rails																															
A2240	Install Elevator 1 & 2 elevator cabs	30	30	29-Jun-26	10-Aug-26	■ Install Elevator 1 & 2 elevator cabs																															
<b>WMATA Equipment</b>																																					
A2270	Deliver WMATA Kiosk	2	2	17-Apr-26	20-Apr-26	■ Deliver WMATA Kiosk																															
A2940	Install WMATA Kiosk	5	5	21-Apr-26	27-Apr-26	■ Install WMATA Kiosk																															
A3490	Install Temporary Kiosk Protection	2	2	28-Apr-26	29-Apr-26	■ Install Temporary Kiosk Protection																															
A2250	Install WMATA faregates (by WMATA)	15	15	18-Sep-26	08-Oct-26	■ Install WMATA faregates (by WMATA)																															
A2260	Install WMATA ticket vending machines (by WMATA)	10	10	18-Sep-26	01-Oct-26	■ Install WMATA ticket vending machines (by WMATA)																															
A3500	Remove Temporary Kiosk Protection	4	4	18-Sep-26	23-Sep-26	■ Remove Temporary Kiosk Protection																															
<b>Finishes</b>																																					
A2300	Install Stair Stringers (Platform to Mezzanine)	15	15	14-Apr-26	04-May-26	■ Install Stair Stringers (Platform to Mezzanine)																															
A2510	Install granite stair treads (Platform to Mezzanine)	10	10	05-May-26	18-May-26	■ Install granite stair treads (Platform to Mezzanine)																															
A4790	Install Stair Stringers (Mezzanine to Street)	20	20	05-May-26	02-Jun-26	■ Install Stair Stringers (Mezzanine to Street)																															
A4190	Install Guard Rail and Hand rail (Platform to Mezzanine)	10	10	19-May-26	02-Jun-26	■ Install Guard Rail and Hand rail (Platform to Mezzanine)																															
A2310	Install granite stair treads (Mezzanine to Street)	15	15	03-Jun-26	23-Jun-26	■ Install granite stair treads (Mezzanine to Street)																															
A4800	Install Guard Rail and Hand rail (Mezzanine to Street Level)	10	10	24-Jun-26	08-Jul-26	■ Install Guard Rail and Hand rail (Mezzanine to Street Level)																															
A2280	Install ceiling tiles	20	20	09-Jul-26	05-Aug-26	■ Install ceiling tiles																															
A2290	Install handrails at entrance	20	20	09-Jul-26	05-Aug-26	■ Install handrails at entrance																															
A2330	Install Setting Bed and Floor Tile - Public Areas	30	30	06-Aug-26	17-Sep-26	■ Install Setting Bed and Floor Tile - Public Areas																															
A2340	Install Setting Bed and Floor Tile and Drywall in BOH areas	20	20	06-Aug-26	02-Sep-26	■ Install Setting Bed and Floor Tile and Drywall in BOH areas																															
A2350	Install toilet accessories	10	10	18-Sep-26	01-Oct-26	■ Install toilet accessories																															
A2360	Install millwork and furniture	15	15	18-Sep-26	08-Oct-26	■ Install millwork and furniture																															
A2430	Install doors and hardware	10	10	18-Sep-26	01-Oct-26	■ Install doors and hardware																															
A2440	Paint ceilings and walls	10	10	18-Sep-26	01-Oct-26	■ Paint ceilings and walls																															
A2450	Install signage	10	10	02-Oct-26	15-Oct-26	■ Install signage																															
<b>Site Restoration/Lite Landscape</b>																																					
A3750	Backfill Site to Subgrade (+/- 36ft)	20	20	06-Mar-26	02-Apr-26	■ Backfill Site to Subgrade (+/- 36ft)																															
A4140	Backfill to Final Grade	15	15	03-Apr-26	23-Apr-26	■ Backfill to Final Grade																															
A3760	Pour Curbs	10	10	28-Jul-26	10-Aug-26	■ Pour Curbs																															
A4130	Pour sidewalks	15	15	11-Aug-26	31-Aug-26	■ Pour sidewalks																															
A4150	Excavate and Install Planting Media	5	5	01-Sep-26	08-Sep-26	■ Excavate and Install Planting Media																															
A4470	Mill and Overlay asphalt in 18th St and Crystal Drive	10	10	01-Sep-26	15-Sep-26	■ Mill and Overlay asphalt in 18th St and Crystal Drive																															

■ Remaining Level of Effort ◆ ◆ Milestone  
■ Actual Level of Effort  
■ Actual Work  
■ Critical Remaining Work  
■ Remaining Work

Crystal City East Entrance 30% Package 3 Schedule - Working Baseline  
CLARK PROJECT LAYOUT







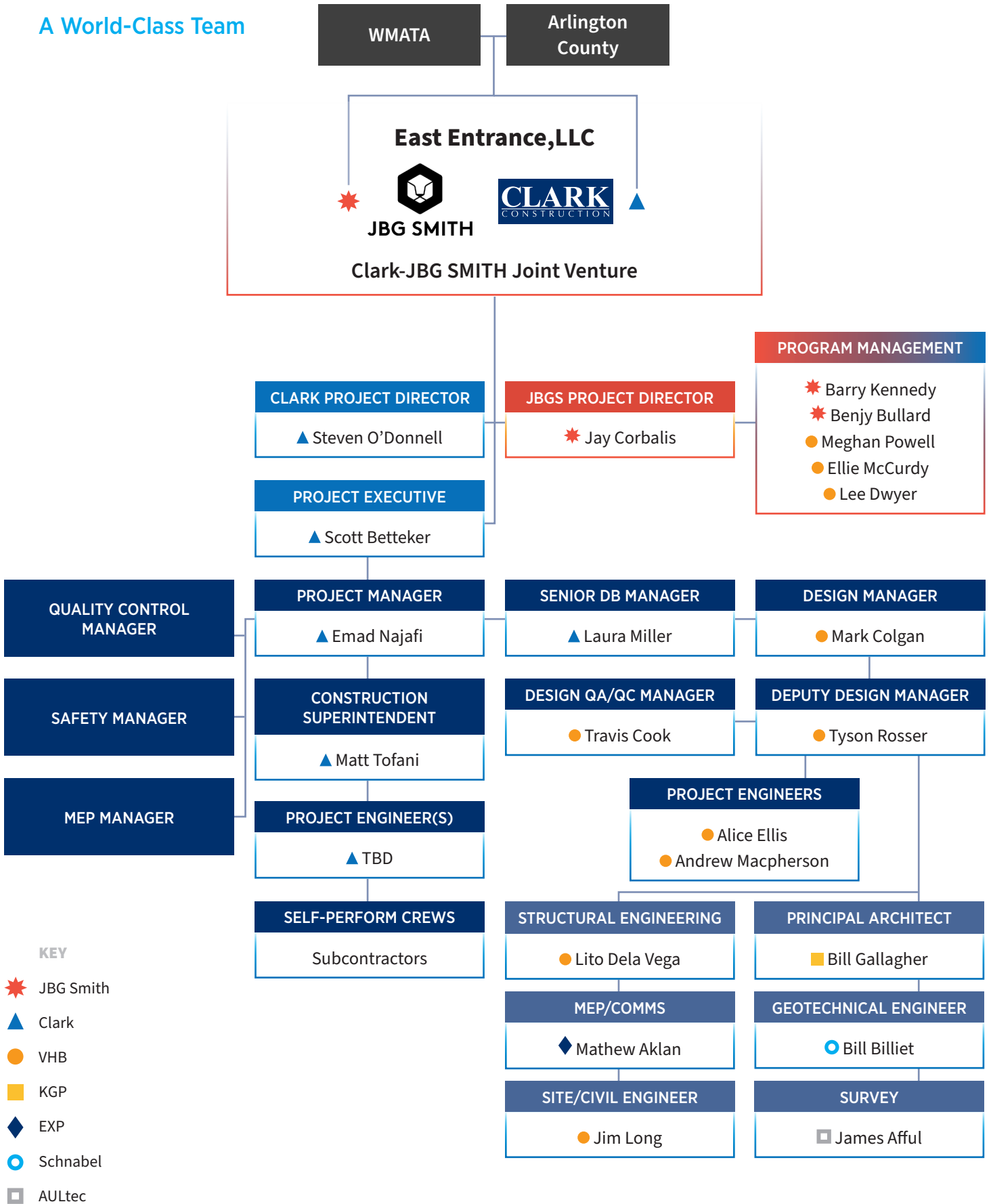




## EXHIBIT F.1 – DEVELOPER PROJECT TEAM

# Crystal City Metrorail Station **EAST ENTRANCE**

## A World-Class Team



## EXHIBIT F.2 – COUNTY PROJECT TEAM

Project Officer – Robin McElhenny, Transit Capital Program Manager, Transit Bureau

Project Manager – Tim Brulle, Senior Project Management Coordinator, Transit Bureau

Bureau Chief – Lynn Rivers, DES-Transit

Deputy Director – Hui Wang, DES

Technical Assistance – George May, FD&C

Grants Manager – David Frye, DES

Capital Projects Budget Analyst – Giovanna Calabrese, DES

Grants Compliance Specialist – Francis Tettey, DES

## EXHIBIT G – WMATA INSURANCE REQUIREMENTS

**EXHIBIT G**  
CRYSTAL CITY METRO STATION EAST ENTRANCE PROJECT

**I. MINIMUM REQUIRED INSURANCE: MINIMUM LIMITS OF INSURANCE**

<b>INSURANCE TYPE</b>	<b>LIMITS</b>	<b>BASIS</b>
<b>Workers' Compensation</b>	Statutory	
<b>Employers' Liability</b>	\$500,000	Each Accident
	\$500,000	Disease Policy Limit
	\$500,000	Disease Each Employee
<b>Commercial General Liability</b>	\$20,000,000	Each Occurrence Limit
	\$30,000,000	General Aggregate Limit
	\$20,000,000	Products-Completed Operations Limit
<b>Business Auto Liability</b>	\$1,000,000	Combined Single Limit
<b>Railroad Protective Liability Insurance (RRP)</b>	\$2,000,000	Each Occurrence Limit
	\$6,000,000	Aggregate Limit
<b>Professional Liability</b>	\$2,000,000	Each Claim
<b>Pollution Liability</b>	\$2,000,000	Each Claim

## II. **MINIMUM REQUIRED INSURANCE: MINIMUM INSURANCE COVERAGES AND COVERAGE PROVISIONS**

- A. Permittee is required to maintain the prescribed insurance outlined in this Exhibit B during the entire period of performance under this Permit. Permittee will not be allowed to begin the Project work until all required insurance has been approved by WMATA.
- B. The prescribed insurance coverage and limits of insurance are minimum required coverages and limits. Permittee is encouraged, at its sole cost and expense, to purchase any additional insurance coverages and or limits of insurance that Permittee deems prudent and necessary to manage risk in the completion of this Permit.
- C. Upon written request from WMATA, Permittee shall provide copies of any requested insurance policies, including applicable endorsements, within five (5) business days of such request.
- D. Receipt, review or communications regarding certificates of insurance (COI), insurance policies, endorsements, or other materials utilized to document compliance with these Minimum Insurance Requirements does not constitute acceptance by WMATA.
- E. Insurance companies must be acceptable to WMATA and must have an A. M. Best rating of at least A- VII.
- F. Unless otherwise noted, "Claims Made" insurance policies are not acceptable.
- G. Any insurance policy utilizing a Self-Insured Retention (SIR) requires written approval from WMATA.
- H. Permittee must incorporate these Minimum Insurance Requirements into contract requirements of all subcontractors of every tier; however, Permittee, at its sole peril, may amend these Minimum Insurance Requirements for its subcontractors, but doing so does not relieve Permittee from its respective liability to WMATA.
- I. Compliance with these Minimum Insurance Requirements does not relieve Permittee from Permittee's respective liability to WMATA, even if that liability exceeds the Minimum Insurance Requirements.

## III. **COVERAGE-SPECIFIC REQUIREMENTS**

### **A. Commercial General Liability**

- 1. Commercial General Liability (CGL) shall be written on ISO Occurrence Form CG0001 (04/13) or its equivalent. Equivalency determination shall be made in WMATA's sole and unreviewable discretion.
- 2. Required minimum limits of coverage may be achieved through a combination of the aforementioned CGL coverage form and an Umbrella/Excess Liability coverage form(s), provided that the Umbrella/Excess Liability coverage form(s) provides the same or broader coverage than the prescribed CGL coverage form.
- 3. Policy shall be endorsed with Additional Insured Endorsement(s) in compliance with the "Additional Insured" Section below.
- 4. Policy shall be endorsed with a Waiver of Subrogation Endorsement(s) in compliance with the "Waiver of Subrogation" section below.
- 5. The definition of "Insured Contract" shall be modified to provide coverage for contractual liability for any contracts involving construction or demolition



operations that are within 50 feet of a railroad. Evidence of this modification shall be provided to WMATA along with all other required documents.

6. Explosion, Collapse and Underground (XCU) activities shall be included.
7. Defense Costs (Allocated Loss Adjustment Expense) must be included and outside of the policy limits for all primary liability and Umbrella/Excess Liability policies.

**B. Business Auto Liability**

1. Business Auto Liability insurance shall be written on ISO Business Auto Coverage Form CA 00 01 (11/20), or its equivalent. Equivalency determination shall be made in WMATA's sole and unreviewable discretion.
2. Policy shall be endorsed with Additional Insured Endorsement(s) in compliance with the "Additional Insured" Section below.
3. Policy shall be endorsed with a Waiver of Subrogation Endorsement(s) in compliance with the "Waiver of Subrogation" section below.
4. Business Auto Liability minimum Combined Single Limit requirements may be obtained through the combination of a primary business auto liability policy and an Umbrella/Excess Liability policy provided that the Umbrella/Excess Liability policy complies with items 2 and 3 above.
5. MCS-90 Endorsement for work involving the transportation or disposal of any hazardous material or waste off of the jobsite. If the MCS-90 Endorsement is required, minimum auto liability limits of \$5,000,000 per occurrence are also required as is form CA 99 48, broadened coverage for pollution liability.
6. Non-Owned Disposal Site (NODS) Endorsement is required providing coverage for Permittee's legal liability arising out of pollution conditions at the designated non-owned disposal site.

**C. Railroad Protective Liability**

1. Railroad Protective Liability Insurance (RRP) is required for any work within 50 feet of WMATA railroad tracks or work within WMATA rail stations.
  - i. The RRP policy must be on a policy form and with an insurance company that is acceptable to WMATA.
  - ii. WMATA shall be the Named Insured.
  - iii. The original RRP policy shall be sent to WMATA at following address:
 

Washington Metropolitan Area Transit Authority  
Office of Risk Management  
300 7th Street, SW  
Washington, DC 20024
2. **WMATA Blanket RRP Program Option.** WMATA may offer to waive the requirement for the Permittee to procure RRP if i) the work qualifies for coverage under WMATA's blanket RRP program, and ii) Permittee prepays the RRP premium, which shall be determined by the rate schedule promulgated by the insurer in effect as of the effective date of this Permit. Permittee shall be advised of and pay the applicable premium.

**D. Professional Liability Insurance**

Permittee, any subcontractor of any tier, or any supplier providing design services or the services of a professional engineer, including, but not limited to stamping, sealing, or certifying blueprints or other related documents, are required to maintain Professional Liability Insurance as follows:

- i. Actual coverage or tail coverage must be purchased and maintained at least up to the statute of repose.
- ii. Coverage can be written on an "occurrence" or "claims-made" basis.
- iii. Coverage can be written on "non-admitted" paper.

**E. Pollution Liability Insurance**

Permittee, any subcontractor of any tier, or any supplier performing work that may in any way involve contact with, exposure to or release of hazardous materials including but not limited to construction, soil testing and demolition, is required to maintain Pollution Liability insurance as follows:

- i. Coverage can be written on an "occurrence" or "claims-made" basis.
- ii. Coverage can be written on "non-admitted" paper.
- iii. Policy shall be endorsed with Additional Insured Endorsement(s) in compliance with the "Additional Insured" section below.

**IV. ADDITIONAL INSURED**

- A. Permittee and subcontractors of every tier are required to add WMATA and WMATA Board of Directors as additional insured on all required insurance including excess liability policies with the exception of Workers' Compensation and Professional Liability.
- B. Coverage provided to Additional Insured shall be primary and non-contributory to any other insurance available to the Additional Insured, including coverage afforded to WMATA as an additional insured by subcontractors and from other third parties.
- C. Coverage provided to any Additional Insured shall be for claims arising out of both ongoing operations and products and completed operations hazard.
- D. Coverage available to any Additional Insured under the products and completed operations hazard can only be limited to the applicable statute of repose in the jurisdiction(s) where the Work takes place.
- E. Commercial General Liability and Umbrella/Excess Liability forms must provide defense coverage for additional insureds. The Additional Insured Endorsement shall provide coverage for Ongoing as well as Products and Completed Operations with no limitation on when claims can be made.

**V. WAIVER OF SUBROGATION.**

- A. Permittee and subcontractors of every tier are required to have all insurance policies except Professional Liability endorsed to waive the respective insurance company's rights of recovery against WMATA and the WMATA Board of Directors.
- B. Waiver shall be provided on an endorsement that is acceptable to WMATA.

**VI. CERTIFICATE OF INSURANCE (COI)**

- A. Permittee shall provide WMATA an ACORD Certificate of Insurance (COI) and copies of all required endorsements as evidence that the insurance requirements of this Section have been satisfied. Certificates of Insurance shall reference

Crystal City East Entrance in the "Description of Operations" box and be sent to WMATA. The Certificate Holder box should read:

Washington Metropolitan Area Transit Authority  
Office of Risk Management  
300 7th Street, SW  
Washington, DC 20024

- B. Proposed material modifications to required insurance, including notice of cancellation, must be received by WMATA in writing at least thirty (30) days prior to the effective date of such change or cancellation.
- C. WMATA's receipt of copies of any COI, policy endorsements, or policies does not relieve Permittee of the obligation to remain in compliance with the requirements of this Section at all times. Permittee's failure to comply with these insurance requirements shall constitute a material breach of the Permit.
- D. Receipt of the COI does not constitute acceptance of the insurance outlined above.

End of Document

## EXHIBIT H – COUNTY INSURANCE REQUIREMENTS

**CERTIFICATE OF INSURANCE MUST SHOW ALL COVERAGE AND ENDORSEMENTS MARKED "X".**

**COVERAGES REQUIRED**

**LIMITS (FIGURES DENOTE MINIMUMS)**

- 1. Workers' Compensation..... Statutory limits of Virginia
- 2. Employer's Liability.....\$500,000/accident, \$500,000/disease, \$500,000/disease policy limit
- 3. Commercial General Liability.....\$10,000,000 CSL BI/PD each occurrence, \$10,000,000 Million annual aggregate
- 4. Premises/Operations.....\$10,000,000 CSL BI/PD each occurrence, \$ 10,000,000 Million annual aggregate
- 5. Automobile Liability.....\$5 Million BI/PD each accident, Uninsured Motorist
- 6. Owned/Hired/Non-Owned Vehicles.....\$5,000,000 Million BI/PD each accident, Uninsured Motorist
- 7. Independent Contractors.....\$1 Million CSL BI/PD each occurrence, \$1 Million annual aggregate
- 8. Products Liability.....\$1 Million CSL BI/PD each occurrence, \$1 Million annual aggregate
- 9. Completed Operations.....\$1 Million CSL BI/PD each occurrence, \$1 Million annual aggregate
- 10. Contractual Liability (Must be shown on Certificate).....\$1 Million CSL BI/PD each occurrence, \$ 1 Million annual aggregate
- 11. Personal and Advertising Injury Liability.....\$1 Million each offense, \$1 Million annual aggregate
- 12. Umbrella\Excess Liability.....\$5 Million Bodily Injury, Property Damage and Personal Injury
- 13. Per Project Aggregate
- 14. Professional Liability
  - a. Architects and Engineers.....\$1 Million per occurrence/claim
  - b. Asbestos Removal Liability .....\$2 Million per occurrence/claim
  - c. Medical Malpractice.....\$1 Million per occurrence/claim

- d. Medical Professional Liability.....\$1 Million per occurrence/claim
- 15. Miscellaneous E&O/ Professional Liability .....\$5 Million per occurrence/claim
- 16. Motor Carrier Act End. (MCS-90) ..... \$1 Million BI/PD each accident, Uninsured Motorist
- 17. Motor Cargo Insurance
- 18. Garage Liability.....\$1 Million Bodily Injury, Property Damage per occurrence
- 19. Garagekeepers Liability.....\$500,000 Comprehensive, \$500,000 Collision
- 20. Inland Marine-Bailee's Insurance..... \$ \_\_\_\_\_
- 21. Moving and Rigging Floater.....Endorsement to CGL
- 22. Dishonesty Bond.....\$ \_\_\_\_\_
- 23. Builder's Risk.....Provide Coverage in the full amount of contract
- 24. XCU Coverage.....Endorsement to CGL
- 25. USL&H.....Federal Statutory Limits
- 26. Carrier Rating shall be Best's Rating of A-VII or better or its equivalent
- 27. Notice of Cancellation, nonrenewal or material change in coverage shall be provided to County at least thirty (30) days prior to action.
- 28. The County shall be named Additional Insured on all policies except Workers Compensation, Errors and Omissions/Professional Liability and Auto.
- 29. Certificate of Insurance shall show Bid Number and Bid Title.
- 30. Environmental Impairment Liability, including coverage of on-site clean up.....BI/PD \$3 Million per occurrence/\$6 Million Aggregate
  - a In addition to environmental impairment liability, if work requires clean up, remediation, and/or removal of bio-solids, bio-hazards waste, and any hazardous or toxic material via transportation request:
    - Business Auto Liability .....\$2 Million per occurrence with MCS-90 and CA 9948 (or equivalent endorsements specifically referenced in the certificate of insurance
- 31. Cyber insurance.....\$2 Million per occurrence/Aggregate
- 32. OTHER INSURANCE REQUIRED: \_\_\_\_\_

## EXHIBIT I – FTA CLAUSES

## **Exhibit I**

### **Required FTA Contract Clauses**

#### Contract Subject to Federal Financial Assistance/Application of Provisions and Clauses

This project is funded in whole or in part by grants from the Federal Transit Administration (FTA) of the United States Department of Transportation. The award The Contractor/Proposer is required to comply with all terms and conditions prescribed for third-party contracts by the U.S. Department of Transportation, Federal Transit Administration (FTA).

Contractor/Proposer is responsible for ensuring its compliance with all applicable FTA requirements. Additionally, Contractor/Proposer is responsible for ensuring that subcontractors, at as many tiers of the Project as required, perform in accordance with the terms, conditions and specifications of the contract, including all applicable FTA requirements.

Upon request of the County or FTA, Contractor/Proposer shall provide evidence of the steps it has taken to ensure its compliance with the FTA requirements, as well as evidence of the steps it has taken to ensure subcontractor performance, and/or submit evidence of subcontractor's compliance at all tiers.

The following provisions and required contract clauses will be incorporated by reference in the Contract. Some provisions and clauses require the contractor/proposer to execute and submit certain required certifications with the contract, which are included herein. Failure to execute and submit required certifications with the contract documents may render a contract null and void.

Clauses may not be listed in consecutive numerical order as only those provisions and required clauses that apply to this contract/project have been referenced.

**1. FLY AMERICA REQUIREMENTS**  
**49 U.S.C. § 40118**  
**41 CFR Part 301-10**

**Applicability to Contracts**

Applicable to the transportation of persons or property, by air, between a place in the U.S. and a place outside the U.S., or between places outside the U.S., when the FTA will participate in the costs of such air transportation. Transportation on a foreign air carrier is permissible when provided by a foreign air carrier under a code share agreement when the ticket identifies the U.S. air carrier's designator code and flight number. Transportation by a foreign air carrier is also permissible if there is a bilateral or multilateral air transportation agreement to which the U.S. Government and a foreign government are parties and which the U.S. DOT has determined meets the requirement of the Fly America Act.

**Flow Down Requirements**

The Fly America requirements flow down from FTA recipients and subrecipients to first tier contractors, who are responsible for ensuring that lower tier contractors and subcontractors are in compliance.

**Fly America Requirements**

- a) Definitions: As used in this clause—
  - "International air transportation" means transportation by air between a place in the United States and a place outside the United States or between two places both of which are outside the United States.
  - "United States" means the 50 states, the District of Columbia, and outlying areas.
  - "U.S.-flag air carrier" means an air carrier holding a certificate under 49 U.S.C. Chapter 411.
- b) When Federal funds are used to fund travel, Section 5 of the International Air Transportation Fair Competitive Practices Act of 1974 (49 U.S.C. 40118) (Fly America Act) requires contractors, recipients, and other use U.S.-flag air carriers for U.S. Government-financed international air transportation of personnel (and their personal effects) or property, to the extent that service by those carriers is available. It requires the Comptroller General of the United States, in the absence of satisfactory proof of the necessity for foreign-flag transportation, to disallow expenditures from funds, appropriated or otherwise established for the account of the United States, for international air transportation secured aboard a foreign-flag air carrier if a U.S.-flag air carrier is available to provide such services.
- c) If available, the Contractor, in performing work under this contract, shall use U.S.-flag carriers for international air transportation of personnel (and their personal effects) or property.
- d) In the event that the Contractor selects a carrier other than U.S.-flag air carrier for international air transportation, the Contractor shall include a statement on vouches involving such transportation essentially as follows:
  - Statement of Unavailability of U.S.-Flag Air Carriers
  - International air transportation of persons (and their personal effects) or property by U.S.-flag air carrier was not available or it was necessary to use foreign-flag air carrier services for the following reasons. See FAR §47.403. (State reasons):



- e) The Contractor shall include the substance of this clause, including this paragraph (e), in each subcontract or purchase under this contract that may involve international air transportation.

**2. BUY AMERICA REQUIREMENTS**  
**49 U.S.C. 5323(j)**  
**49 CFR Part 661**

**Applicability to Contracts**

Applicable to all projects that involve the purchase of more than \$150,000 of iron, steel, manufactured goods, or rolling stock to be delivered to the recipient to be used in an FTA assisted project.

**Flow Down**

The Buy America requirements flow down from FTA recipients and subrecipients to first tier contractors, who are responsible for ensuring that lower tier contractors and subcontractors are in compliance. The \$150,000 threshold applies only to the grantee contract; subcontracts under that amount are subject to Buy America.

**Buy America** - The contractor agrees to comply with 49 U.S.C. 5323(j) and 49 C.F.R. Part 661, which provide that Federal funds may not be obligated unless steel, iron, and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 C.F.R. 661.7. Separate requirements for rolling stock are set out at 49 U.S.C. 5323(j) (2) (C) and 49 C.F.R. 661.11.

**The certificate entitled *Buy America Requirements- Certificate of Compliance* must be completed and submitted with the Bid/Proposal.**

**4. CARGO PREFERENCE REQUIREMENTS**  
**46 U.S.C. 55305**  
**46 CFR Part 381**

**Applicability to Contracts**

Applicable to all contracts involving equipment, materials, or commodities which may be transported by ocean vessels.

**Flow Down**

The Cargo Preference requirements apply to all subcontracts when the subcontract may be involved with the transport of equipment, material, or commodities by ocean vessel.

**Cargo Preference - Use of United States-Flag Vessels** - The contractor agrees:  
a. to use privately owned United States-Flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to the underlying contract to the extent such vessels are available at fair and reasonable rates for United States-Flag commercial vessels;

b. to furnish within 20 working days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, "on-board" commercial ocean bill-of-lading in English for each shipment of cargo described in the preceding paragraph to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590 and to the FTA recipient (through the contractor in the case of a subcontractor's bill-of-lading.); and

c. to include these requirements in all subcontracts issued pursuant to this contract when the subcontract may involve the transport of equipment, material, or commodities by ocean vessel.

**5. SEISMIC SAFETY REQUIREMENTS**  
**42 U.S.C. 7701 et seq. 49**  
**CFR Part 41**

**Applicability to Contracts**

Applicable to all contracts for the construction of new buildings or additions to existing buildings.

**Flow Down**

The Seismic Safety requirements flow down from FTA recipients and subrecipients to first tier contractors to assure compliance, with the applicable building standards for Seismic Safety, including the work performed by all subcontractors.

**Seismic Safety** - The contractor agrees that any new building or addition to an existing building will be designed and constructed in accordance with the standards for Seismic Safety required in Department of Transportation Seismic Safety Regulations 49 CFR Part 41 and will certify to compliance to the extent required by the regulation. The contractor also agrees to ensure that all work performed under this contract including work performed by a subcontractor is in compliance with the standards required by the Seismic Safety Regulations and the certification of compliance issued on the project.

**The certificate entitled Seismic Safety- *Certificate of Compliance* (Attachment A) must be completed and submitted with your bid/proposal.**

**6. ENERGY CONSERVATION REQUIREMENTS**  
**42 U.S.C. 6321 et seq.**  
**49 CFR Part 18**

**Applicability to Contracts**

Applicable to all contracts.

**Flow Down**

The Energy Conservation requirements extend to all third party contractors and their contracts at every tier and subrecipients and their subagreements at every tier.

**Energy Conservation** - The contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in

the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

**7. CLEAN WATER REQUIREMENTS**  
**33 U.S.C. 1251**

**Applicability to Contracts**

Applicable to all contracts and subcontracts exceeding \$150,000.

**Flow Down**

The Clean Water requirements flow down to FTA recipients and subrecipients at every tier.

**Clean Water** - (1) The Contractor agrees to comply with the inspection and all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. §1251-1387. The Contractor agrees that it will not use any violating facilities, and it understands and agrees that the County will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.

(2) The Contractor also agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FTA.

**10. LOBBYING**  
**31 U.S.C. 1352**  
**49 CFR Part 19**  
**49 CFR Part 20**

**Applicability to Contracts**

Applicable to all contracts and subcontracts exceeding \$100,000.

**Flow Down**

The Lobbying requirements mandate the maximum flow down, pursuant to Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352(b) (5) and 49 C.F.R. Part 19, Appendix A, Section 7.

**Mandatory Clause/Language**

49 CFR Part 20, Appendices A and B provide specific language for inclusion in FTA funded third party contracts as follows:

- Lobbying Certification and Disclosure of Lobbying Activities for third party contractors are mandated by 31 U.S.C. 1352(b) (5), as amended by Section 10 of the Lobbying Disclosure Act of 1995, and DOT implementing regulation, "New Restrictions on Lobbying," at 49 CFR § 20.110(d)
- Language in Lobbying Certification is mandated by 49 CFR Part 19, Appendix A, Section 7, which provides that contractors file the certification required by 49 CFR Part 20, Appendix A.
- Use of "Disclosure of Lobbying Activities," Standard Form-LLL set forth in Appendix B of 49 CFR Part 20, as amended by "Government wide Guidance For New

Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/19/96) is mandated by 49 CFR Part 20, Appendix A.

**Byrd Anti-Lobbying Amendment, 31 U.S.C. 1352, as amended by the Lobbying Disclosure Act of 1995, P.L. 104-65 [to be codified at 2 U.S.C. § 1601, et seq.]** - Contractors who apply or bid for an award of \$100,000 or more shall file the certification required by 49 CFR part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the recipient.

**The certificate entitled *Certification Regarding Lobbying (Attachment A)* must be completed and returned with your bid/proposal.**

**11. ACCESS TO RECORDS AND REPORTS**

49 U.S.C. 5325

18 CFR 18.36 (i)

49 CFR 633.17

**Applicability to Contracts**

Applicable to all contracts and subcontracts as listed below.

**Flow Down**

The requirements flow down to FTA recipients and subrecipients at every tier.

**Access to Records** - The following access to records requirements apply to this Contract:

1. Where the County is not a State but a local government and is the FTA Recipient or a subgrantee of the FTA Recipient in accordance with 49 C.F.R. 18.36(i), the Contractor agrees to provide the County, the FTA Administrator, the Comptroller General of the United States or any of their authorized representatives access to any books, documents, papers and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts and transcriptions. Contractor also agrees, pursuant to 49 C.F.R. 633.17 and 2 C.F.R. §200.337 to provide the FTA Administrator or his authorized representatives including any PMO Contractor access to Contractor's records and access to construction sites pertaining to a major capital project, defined at 49 U.S.C. 5302(a)1, which is receiving federal financial assistance through the programs described at 49 U.S.C. 5307, 5309 or 5311.

2. Where the County which is the FTA Recipient or a subgrantee of the FTA Recipient in accordance with 49 U.S.C. 5325(a) enters into a contract for a capital project or improvement (defined at 49 U.S.C. 5302(a)1) through other than competitive bidding, the Contractor shall make available records related

to the contract to the County, the Secretary of the US Department of Transportation and the US Comptroller General or any authorized officer or employee of any of them for the purposes of conducting an audit and inspection.

3. The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

4. The Contractor agrees to maintain all books, records, accounts and reports required under this contract for a period of not less than three (3) years after the date of termination or expiration of this contract, except in the event of litigation or settlement of claims arising from the performance of this contract, in which case Contractor agrees to maintain same until the County, the FTA Administrator, the US Comptroller General, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related thereto. Reference 49 CFR 18.39(i) (11) and 2 CFR §200.334.

**12. FEDERAL CHANGES**  
**49 CFR Part 18**

**Applicability to Contracts**

Applicable to all contracts.

**Flow Down**

The Federal Changes requirement flows down appropriately to each applicable changed requirement.

**Federal Changes** - Contractor shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the Master Agreement between The County and FTA, as they may be amended or promulgated from time to time during the term of this contract. Contractor's failure to so comply shall constitute a material breach of this contract.

**13. BONDING REQUIREMENTS**  
**2 CFR Part 200.325**  
**31 CFR Part 223**

**Applicability to Contracts**

Applicable to all construction or facility improvement contracts or subcontracts exceeding the simplified threshold.

**Flow Down**

Bonding requirements flow down to subcontractors exceeding the simplified threshold.

**14. CLEAN AIR**  
**42 U.S.C. 7401 et seq**  
**40 CFR 15.61**  
**49 CFR Part 18**

**Applicability to Contracts**

Applicable to all contracts and subcontracts exceeding \$150,000.

**Flow Down**

The Clean Air requirements flow down to all subcontracts which exceed \$150,000.

**Clean Air** - (1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 - 7671q. The Contractor agrees to not use any violating facilities and to report each violation to the County and understands and agrees that the County will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.

(2) The Contractor also agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FTA.

**15. RECYCLED PRODUCTS**

**42 U.S.C. 6962**

**40 CFR Part 247**

**Executive Order 12873**

**2 CFR Part 200.322**

**Applicability to Contracts**

Recipients are required to procure only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 C.F.R. part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition.

These regulations apply to all procurement actions involving items designated by the EPA, where the Contractor purchases \$10,000 or more of one of these items in a fiscal year, or when the cost of such items purchased during the previous fiscal year exceeds \$10,000.

**Flow Down**

These requirements flow down to all contractors and their subcontracts at every tier where the value of an EPA designated item exceeds \$10,000.

**Recovered Materials** - The Contractor agrees to provide a preference for those products and services that conserve natural resources, protect the environment, and are energy efficient by complying with and facilitating compliance with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6962), including but not limited to the regulatory provisions of U.S. Environmental Protection Agency (U.S. EPA), "Comprehensive Procurement Guideline for Products Containing Recovered Materials," 40 CFR Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in Subpart B of 40 CFR Part 247.

**16. DAVIS-BACON AND COPELAND ANTI-KICKBACK ACTS**

**18 U.S.C. 874**

40 U.S.C. 3145  
40 U.S.C. 3141-3148  
49 U.S.C. 5333(a)  
29 CFR Part 3  
29 CFR Part 5

**Applicability to Contracts**

Applicable to all prime construction, alteration or repair contracts in excess of \$2,000. The requirements extend to all Contractors and their sub-contractors at every tier.

**Clause Language**

***Davis-Bacon and Copeland Anti-Kickback Acts***

(1) **Minimum wages** - (i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) Except with respect to helpers as defined as 29 CFR 5.2(n)(4), the work

to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) With respect to helpers as defined in 29 CFR 5.2(n)(4), such a classification prevails in the area in which the work is performed.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii) (B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account, assets for the meeting of obligations under the plan or program.

(2) **Withholding** - Arlington County shall upon its own action or upon written



request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, Arlington County may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) **Payrolls and basic records** - (i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to Arlington County for transmission to the Federal Transit Administration. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under section 5.5(a)(3)(i) of Regulations, 29 CFR part 5. except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, DC 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to Arlington County, for transmission to the Federal Transit Administration, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to Arlington County.

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be maintained under section 5.5(a) (3) (i) of Regulations, 29 CFR part 5 and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a) (3) (ii) (B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a) (3) (i) of this section available for inspection, copying, or transcription by authorized representatives of the Federal Transit Administration or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) **Apprentices and trainees** - (i) Apprentices - Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a

bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator of the Wage and Hour Division of the U.S. Department of Labor determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees - Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a

training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity - The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) **Compliance with Copeland Act requirements** - The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) **Subcontracts** - The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the Federal Transit Administration may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) **Contract termination: debarment** - A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) **Compliance with Davis-Bacon and Related Act requirements** - All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) **Disputes concerning labor standards** - Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(10) **Certification of eligibility** - (i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

**17. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**  
**40 U.S.C. 3701-3708**  
**29 CFR Part 5**

**Applicability to Contracts**

Applicable to all contracts exceeding \$100,000. The contractor shall require the inclusion of the language of this clause within subcontracts of all tiers.

**Compliance with the Contract Work Hours and Safety Standards Act**

(1) **Overtime requirements** - No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

The requirements of 40 U.S.C. § 3704 are applicable to construction work and provide that no laborer or mechanic be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchase of supplies or materials or articles ordinarily available on the open market, or to contracts for transportation or transmission of intelligence.

(2) **Violation; liability for unpaid wages; liquidated damages** - In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

(3) **Withholding for unpaid wages and liquidated damages** - Arlington County shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

(4) **Subcontracts** - The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (1) through (4) of this section and also a clause requiring the subcontractors to include these

clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

(5) The Contractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three (3) years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Such records maintained under this paragraph shall be made available by the Contractor for inspection, copying, or transcription by authorized representatives of the FTA and the Department of Labor, and the Contractor will permit such representatives to interview employees during working hours on the job.

**19. NO GOVERNMENT OBLIGATION TO THIRD PARTIES**

**Applicability to Contracts**

Applicable to all contracts and subcontracts.

**Flow Down**

These requirements flow down to contractors and subcontractors at every tier.

(1) The County and Contractor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this contract and shall not be subject to any obligations or liabilities to the County, Contractor, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying contract.

(2) The Contractor agrees to include the above clause in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

**20. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS AND RELATED ACTS**

31 U.S.C. 3801 et seq.  
49 CFR Part 31 18 U.S.C. 1001  
49 U.S.C. 5307

**Applicability to Contracts**

Applicable to all contracts.

**Flow Down**

These requirements flow down to contractors and subcontractors who make, present, or submit covered claims and statements.

**Program Fraud and False or Fraudulent Statements or Related Acts.**

(1) The Contractor acknowledges that the provisions of the Program Fraud

Civil Remedies Act of 1986, as amended, 31 U.S.C. § 3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. Part 31, apply to its actions pertaining to this Project. Upon execution of the underlying contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying contract or the FTA assisted project for which this contract work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.

(2) The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S.C. § 5307, the Government reserves the right to impose the penalties of 18 U.S.C. § 1001 and 49 U.S.C. § 5307(n)(1) on the Contractor, to the extent the Federal Government deems appropriate.

(3) The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

**21. TERMINATION**  
**49 U.S.C. Part 18**  
**FTA Circular 4220.1F**

**Applicability to Contracts**

Applicable to all contracts exceeding \$10,000.

**Flow Down**

These requirements flow down to contractors and subcontractors at every tier.

**Termination for Cause, Including Breach and Default; Cure**

The Contract shall remain in force for the Contract Term or Subsequent Contract Term(s) and until the County determines that all requirements and conditions have been satisfactorily met: the County has accepted the Work, and thereafter until the Contractor has met all requirements and conditions relating to the Work under the Contract Documents, including warranty and guarantee periods. However, the County shall have the right to terminate this Contract sooner if the Contractor is in breach or default or has failed to perform satisfactorily the Work required, as determined by the County in its discretion.

If the County determines that the Contractor has failed to perform satisfactorily, then the County will give the Contractor written Notice of such failure/s and the opportunity to cure such failure/s at least fifteen (15) days before termination of the Contract takes effect ("Cure Period"). If the Contractor fails to cure within the Cure Period or as otherwise specified in the Notice, the Contract is terminated for the Contractor's failure to provide satisfactory Contract performance. Upon such

termination, the Contractor may apply for compensation for Contract services satisfactorily performed by the Contractor and allocable to the Contract and accepted by the County prior to such termination unless otherwise barred by the Contract ("Termination Costs"). Such request for Termination Costs, with all supporting documentation, must be submitted to the County Project Officer within fifteen (15) days after the expiration of the Cure Period. The County may accept or reject, in whole or in part, the application for Termination Costs and notify the Contractor of same within a reasonable time thereafter.

If the County terminates the Contract for default or breach of any Contract provision or condition, then the termination shall be immediate after Notice from the County to the Contractor (unless the County in its discretion provides for an opportunity to cure) and the Contractor shall not be permitted to seek Termination Costs.

Upon any termination pursuant to this section, the Contractor shall be liable to the County for all costs incurred by the County after the effective date of termination including costs required to be expended by the County to complete the Work covered by the Contract, including costs of delay in completing the Project or the cost of repairing or correcting any unsatisfactory or non-compliant work. Such costs shall be either subtracted from any amount due the Contractor or shall be promptly paid by the Contractor to the County upon demand by the County. Additionally, and notwithstanding any provision in this Contract to the contrary, the Contractor is liable to the County (and the County shall be entitled to recover) all damages to which the County is entitled by this Contract or by law, including and without limitation, direct damages, indirect damages, consequential damages, delay damages, replacement costs, refund of all sums paid by the County to the Contractor under the Contract and all attorney fees and costs incurred by the County to enforce any provision of this Contract.

Except as otherwise directed by the County, the Contractor shall stop Work on the date of receipt of Notice of the termination or other date specified in the Notice, place no further orders or subcontracts for materials, services, or facilities except as are necessary for the completion of such portion of the Work not terminated, and terminate all vendors and subcontracts and settle all outstanding liabilities and claims.

In the event any termination for cause, default, or breach shall be found to be improper or invalid by any court of competent jurisdiction then such termination shall be deemed to have been a termination for convenience.

**Termination for the Convenience of the County**

The performance of work under this Contract may be terminated by the Purchasing Agent in whole or in part whenever the Purchasing Agent shall determine that such termination is in the County's best interest. Any such termination shall be effected by the delivery to the Contractor of a written notice of termination at least fifteen (15) days before the date of termination, specifying the extent to which performance of the work under this Contract is terminated and the date upon which such termination becomes effective. The Contractor will be entitled to receive compensation for all Contract services satisfactorily performed by the Contractor and allocable to the Contract and accepted by the County prior to such termination and any other termination costs as negotiated by the parties, but no amount shall be allowed for anticipatory profits.



After receipt of a notice of termination and except as otherwise directed, the Contractor shall stop all work on the date of receipt of the notice of termination or other date specified in the notice; place no further orders or subcontracts for materials, services or facilities except as are necessary for the completion of such portion of the work not terminated; immediately transfer all documentation and paperwork for terminated work to the County; and terminate all vendors and subcontracts and settle all outstanding liabilities and claims.

**22. GOVERNMENT-WIDE DEBARMENT AND SUSPENSION (NONPROCUREMENT)**

**Applicability to Contracts**

The provisions of Part 29 apply to all contracts and subcontracts at any level expected to equal or exceed \$25,000 as well as any contract or subcontract (at any level) for Federally required auditing services. 49 CFR 29.220(b).

The certificate entitled *Certification Regarding Debarment, Suspension and Other Responsibility Matters (Attachment A)* must be completed and returned with your bid/proposal.

**24. CIVIL RIGHTS REQUIREMENTS**

29 U.S.C. § 623, 42 U.S.C. § 2000  
42 U.S.C. § 6102, 42 U.S.C. § 12112  
42 U.S.C. § 12132, 49 U.S.C. § 5332  
29 CFR Part 1630, 41 CFR Parts 60 et seq.

**Applicability to Contracts**

Applicable to all contracts.

**Flow Down**

The Civil Rights requirements flow down to all third party contractors and their contracts at every tier.

**Civil Rights** - The following Federal Civil Rights laws and regulations apply to the underlying contract:

- (1) Federal Equal Employment Opportunity (EEO) Requirements - These include, but are not limited to:
  - a. Nondiscrimination in Federal Public Transportation Programs. 49 U.S.C. §5332, covering projects, programs, and activities financed under 49 U.S.C. Chapter 53, prohibits discrimination on the basis of race, color, religion, national origin, sex (including sexual orientation and gender identity), disability, or age, and prohibits discrimination in employment or business opportunity.
  - b. Prohibition against Employment Discrimination. Title VII of the Civil Rights Act of 1964, as amended, 42 U.S.C. §2000e, and Executive Order No. 11246, "Equal Employment Opportunity," September 24, 1965, as amended, prohibit discrimination in employment on the basis of race, color, religion, sex, or national origin.
- (2) Nondiscrimination on the Basis of Sex. Title IX of the Education Amendments of 1972, as amended, 20 U.S.C. § 1681 et seq. and

implementing Federal regulations, "Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance," 49 C.F.R. part 25 prohibit discrimination on the basis of sex.

- (3) Nondiscrimination on the Basis of Age. The "Age Discrimination Act of 1975," as amended, 42 U.S.C. §6101 et seq., and Department of Health and Human Services implementing regulations, "Nondiscrimination on the Basis of Age in Programs or Activities Receiving Federal Financial Assistance," 45 C.F.R. Part 90, prohibit discrimination by participants in federally assisted programs against individuals on the basis of age. The Age Discrimination in Employment Act (ADEA), 29 U.S.C. §621 et seq., and Equal Employment Opportunity Commission (EEOC) implementing regulations, "Age Discrimination in Employment Act," 29 C.F.R. part 1625, also prohibit employment discrimination against individuals age 40 and over on the basis of age.
- (4) Federal Protections for Individuals with Disabilities. The Americans with Disabilities Act of 1990, as amended (ADA), 42 U.S.C. §12101 et seq., prohibits discrimination against qualified individuals with disabilities in programs, activities, and services, and imposes specific requirements on public and private entities. Third party contractors must comply with their responsibilities under Titles I, II, III, IV, and V of the ADA in employment, public services, public accommodations, telecommunications, and other provisions, many of which are subject to regulations issued by other Federal agencies.

**Civil Rights and Equal Opportunity** - The following requirements apply to the underlying contract:

(1) Nondiscrimination - In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12132, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.

(2) Equal Employment Opportunity - The following equal employment opportunity requirements apply to the underlying contract:

(a) Race, Color, Creed, National Origin, Sex - In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, and Federal transit laws at 49 U.S.C. § 5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 C.F.R. Parts 60 et seq., (which implement Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. § 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, sex, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment

advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

(b) Age - In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. § § 623 and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

(c) Disabilities - In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

(3) The Contractor also agrees to include these requirements in each subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary to identify the affected parties.

## **25. BREACHES AND DISPUTE RESOLUTION**

**49 CFR Part 18**

**FTA Circular 4220.1F**

### **Applicability to Contracts**

Applicable to all contracts exceeding \$150,000.

### **Flow Down**

The Breaches and Dispute Resolutions requirements flow down to all tiers.

### **Dispute Resolution**

The Contract is governed in part by the applicable provisions of the Arlington County Purchasing Resolution. The time limit for final written decision by the County Manager in the event of a contractual dispute, as that term is defined in the Purchasing Resolution, is thirty (30) days. Procedures for considering contractual claims, disputes, administrative appeals, and protests are contained in the Purchasing Resolution, incorporated herein by reference, and available upon request from the Office of the Purchasing Agent. Pending final determination of any dispute or claim hereunder, the Contractor shall proceed diligently with the performance of the Work under the Contract.

### **Arbitration**

It is expressly agreed that nothing under the Contract shall be subject to arbitration, and any references to arbitration are expressly deleted from the Contract.

## **28. DISADVANTAGED BUSINESS ENTERPRISE (DBE)**

**49 CFR Part 26**

### **Applicability to Contracts**

Applicable to all DOT-assisted contracting activities.

**Disadvantaged Business Enterprises**

a. This contract is subject to the requirements of Title 49, Code of Federal Regulations, Part 26, *Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs*. The County's overall goal for DBE participation is 23.3 %. A separate contract goal has not been established for this procurement.

b. The contractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of this DOT-assisted contract. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as The County deems appropriate. Each subcontract the contractor signs with a subcontractor must include the assurance in this paragraph (see 49 CFR 26.13(b)).

c. The contractor will be required to report its DBE participation obtained through race-neutral means throughout the period of performance.

d. The contractor is required to pay its subcontractors performing work related to this contract for satisfactory performance of that work no later than seven (7) days after the contractor's receipt of payment for that work from the County. In addition, the Contractor is required to return any retainage payments to those subcontractors within 30 days after the subcontractor's work related to this contract is satisfactorily completed.

e. The contractor must promptly notify the County, whenever a DBE subcontractor performing work related to this contract is terminated or fails to complete its work, and must make good faith efforts to engage another DBE subcontractor to perform at least the same amount of work. The contractor may not terminate any DBE subcontractor and perform that work through its own forces or those of an affiliate without prior written consent of the County.

**30. INCORPORATION OF FEDERAL TRANSIT ADMINISTRATION (FTA) TERMS**  
**FTA Circular 4220.1F**

**Applicability to Contracts**

Applicable to all contracts.

**Flow Down**

The incorporation of FTA terms has unlimited flow down.

**Incorporation of Federal Transit Administration (FTA) Terms** - The preceding provisions include, in part, certain Standard Terms and Conditions required by the USDOT, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by USDOT, detailed in 2 CFR §200 or as amended by 2 CFR §1201, or the most recent version of FTA Circular 4220.1F, are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. The Contractor shall not perform any act, fail to perform any act, or refuse

to comply with any County requests which would cause the County to be in violation of the FTA terms and conditions.

### **33. ACCESS FOR INDIVIDUALS WITH DISABILITIES**

#### **Applicability to Contracts**

Applicable to all contracts.

The Contractor agrees to comply with 49 U.S.C. § 5301(d), which states the Federal policy that elderly individuals and individuals with disabilities have the same right as other individuals to use public transportation services and facilities, and that special efforts shall be made in planning and designing those services and facilities to implement transportation accessibility rights for elderly individuals and individuals with disabilities.

The Contractor also agrees to comply with all applicable provisions of section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794, which prohibits discrimination on the basis of disability in the administration of programs or activities receiving Federal financial assistance; with the Americans with Disabilities Act of 1990 (ADA), as amended, 42 U.S.C. §§ 12101 *et seq.*, which requires that accessible facilities and services be made available to individuals with disabilities; with the Architectural Barriers Act of 1968, as amended, 42 U.S.C. §§ 4151 *et seq.*, which requires that buildings and public accommodations be accessible to individuals with disabilities; and with other laws and amendments thereto pertaining to access for individuals with disabilities that may be applicable. In addition, the Contractor agrees to comply with applicable implementing Federal regulations and any later amendments thereto, and agrees to follow applicable Federal implementing directives, except to the extent FTA approves otherwise in writing.

### **34. SPECIAL DOL EEO CLAUSE**

#### **Applicability to Contracts**

Applicable to all contracts.

During the performance of this contract, the Contractor agrees as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor will take affirmative action to ensure that applications are employed, and that employees are treated during employment without regard to their face, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:  
Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including

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

2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applications will receive consideration for employment without regard to race, color religion, sex, sexual orientation, gender identity, or national origin.
3. The Contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
4. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contractor or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
5. The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
6. The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
7. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
8. The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through

(8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

### **35. VETERANS HIRING PREFERENCE**

#### **Applicability to Contracts**

Applicable to all contracts.

The Contractor shall give a hiring preference, to the extent practicable, to veterans (as defined in Section 2108 of Title V) who have the requisite skills and abilities to perform the construction work required under the Contract. This subsection shall not be understood, construed or enforced in any manner that would require an employer to give preference to any veteran over any equally qualified applicant who is a member of any racial or ethnic minority, female, an individual with a disability, or former employee.

**ATTACHMENT "A"**

**REQUIRED CERTIFICATIONS**

**BUY AMERICA REQUIREMENTS-CERTIFICATE OF COMPLIANCE**

(To be submitted with a bid/proposal exceeding the purchase threshold for Federal assistance programs, currently set at \$100,000.)

**Certification requirement for procurement of steel, iron, or manufactured products.**

***Certificate of Compliance with 49 U.S.C. 5323(j) (1)***

The bidder or offeror hereby certifies that it will meet the requirements of 49 U.S.C. 5323(j) (1) and the applicable regulations in 49 C.F.R. Part 661.5.

Date \_\_\_\_\_

Signature \_\_\_\_\_

Company Name \_\_\_\_\_

Title \_\_\_\_\_

***Certificate of Non-Compliance with 49 U.S.C. 5323(j) (1)***

The bidder or offeror hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j) (1) and 49 C.F.R. 661.5, but it may qualify for an exception pursuant to 49 U.S.C. 5323(j) (2) (A), 5323(j) (2) (B), or 5323(j) (2) (D), and 49 C.F.R. 661.7.

Date \_\_\_\_\_

Signature \_\_\_\_\_

Company Name \_\_\_\_\_

Title \_\_\_\_\_



**SEISMIC SAFETY-CERTIFICATE OF COMPLIANCE**

(To be submitted with a bid/proposal for the construction of new buildings or additions to existing buildings.)

The contractor agrees that any new building or addition to an existing building will be designed and constructed in accordance with the standards for Seismic Safety required in Department of Transportation Seismic Safety Regulations 49 CFR Part 41 and will certify to compliance to the extent required by the regulation. The contractor also agrees to ensure that all work performed under this contract including work performed by a subcontractor is in compliance with the standards required by the Seismic Safety Regulations and the certification of compliance issued on the project.

Date \_\_\_\_\_

Signature \_\_\_\_\_

Company Name \_\_\_\_\_

Title \_\_\_\_\_

**CERTIFICATION REGARDING LOBBYING PURSUANT TO 49 CFR PART 20**

APPENDIX A, 49 CFR PART 20--CERTIFICATION REGARDING LOBBYING  
(To be submitted with each bid or offer exceeding \$100,000)

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned [Contractor] certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for making lobbying contacts to an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form--LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions [as amended by "Government wide Guidance for New Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/19/96). Note: Language in paragraph (2) herein has been modified in accordance with Section 10 of the Lobbying Disclosure Act of 1995 (P.L. 104-65, to be codified at 2 U.S.C. 1601, *et seq.*)]

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.]

The Contractor, \_\_\_\_\_, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. A 3801, *et seq.*, apply to this certification and disclosure, if any.

\_\_\_\_\_ Signature of Contractor's Authorized Official

\_\_\_\_\_ Name of Contractor's Authorized Official

\_\_\_\_\_ Title of Contractor's Authorized Official

\_\_\_\_\_ Date

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY  
MATTERS**

(To be submitted with each bid or offer exceeding \$25,000)

This contract is a covered transaction for purposes of 49 CFR Part 29. As such, the contractor is required to verify that none of the contractor, its principals, as defined at 49 CFR 29.995, or affiliates, as defined at 49 CFR 29.905, are excluded or disqualified as defined at 49 CFR 29.940 and 29.945.

The contractor is required to comply with 49 CFR 29, Subpart C and must include the requirement to comply with 49 CFR 29, Subpart C in any lower tier covered transaction it enters into.

By signing and submitting its bid or proposal, the bidder or proposer certifies as follows:

The certification in this clause is a material representation of fact relied upon by Arlington County. If it is later determined that the bidder or proposer knowingly rendered an erroneous certification, in addition to remedies available to Arlington County, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. The bidder or proposer agrees to comply with the requirements of 49 CFR 29, Subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

The prospective participant certifies to the best of its knowledge and belief that it and the principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, voluntarily excluded, or disqualified from participation in any federally assisted Award;
- (b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them or commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction: violation of Federal or State antitrust statute or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

---

Typed Name & Title of Authorized Representative

---

Signature of Authorized Representative

---

Date

I am unable to certify to the above statements. My explanation is attached.

**EXHIBIT J – WMATA SPECIFICATIONS MANUAL DIVISION 1 (CRYSTAL CITY EAST  
METRO ENTRANCE, DESIGN-BUILD SERVICES)**

**WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY**



**SPECIFICATIONS MANUAL**

**Division 1**

**Crystal City East Metro Entrance  
Design-Build Services**

Washington Metropolitan Area Transit Authority  
RFP PROJECT NUMBER/CA

Contract No. PROJECT NUMBER  
Date: Issue Date



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## SECTION 01 11 00 - SUMMARY OF WORK

### GENERAL

#### 1.01 SUMMARY

##### C. Spare Parts Allowance

PART 1 – 1. Unless otherwise noted, contractor shall provide manufacturer's recommended spare parts for all components and systems required for this project.

D. Scaffolding used must be designed for egress and approved and stamped by a Professional Engineer licensed in the jurisdiction where the scaffolding will be constructed/installed.

E. OEM must provide consent prior to closing any shaft serving as an Emergency Exit.

F. All dry standpipes must remain in service and accessible during the project duration.

G. The Design-Builder shall submit a salvage plan as follows:

1. The Design-Builder shall coordinate with WMATA and submit a list of all potential items for salvage to include, at a minimum:

- a. all electrical equipment,
- b. mechanical equipment,
- c. fiber and electrical cables, and
- d. architectural elements including, but not limited to, metal stairs, swing doors, locksets and handrails.

2. The submittal list shall be reviewed by WMATA department managers and finalized with delivery locations identified on WMATA property and WMATA shall designate temporary storage locations at the construction site to coordinate removal.

3. The Design-Builder shall maintain property control records for materials or equipment identified for salvage and shall be responsible for the storage and protection of materials and equipment and shall replace materials and equipment, which are broken or damaged during construction operations as the result of negligence or while in the Design-Builder's care.

4. Salvaged materials shall be packaged and protected for transport, bag and tag all nuts, bolts, connectors, etc. The Design-Builder shall provide all rigging, transport and handling. WMATA shall inspect delivery and provide a delivery receipt for all salvageable material returned to WMATA.

5. Salvaged material not identified for reuse shall become the property of the Design-Builder and shall be removed from WMATA property. WMATA shall inspect all non-returned salvageable material prior to removal from site.

6. The Design-Builder shall provide record photos of and inventory list for the delivery of all materials salvaged.

I. The Project shall function as an integral part of and be fully compatible with the existing WMATA system.

## 1.02 DAYS/HOURS OF WORK

- A. The standard work week for the project will be 5 consecutive 8-hour days Monday-Friday, with the work scheduled between 7 AM to 4 PM or as defined in Section 01 14 10, ACCESS TO SITE.
- B. Provide WMATA 7 Days advance notice prior to changing shift hours and 48 hours advance notice for planned work shifts outside the established work week and work day.

## 1.03 SITE LOGISTICS

- A. Access to and egress from the construction site and any other construction areas within WMATA property shall be through designated entrances only. The station may be utilized for access and egress by properly badged personnel during off-peak hours and non-revenue time. Personnel entering via the stations shall not enter the roadway, unless pre-approved and shall be RWP trained personnel.
- B. Contractor shall submit a work plan that addresses track isolation, tunnel ventilation, WMATA SAFE and Arlington Fire Department requirements. Design-Builder's plan shall isolate the track from the work area to prevent fouling the track. Once isolated, the Design-Builder may request additional work hours from WMATA.
- C. Contractor shall comply with WMATA SAFE's requirements for ventilation and the control of existing tunnel ventilation systems.
- D. Design-Builder may request use a prime mover supplied by the Design-Builder or Authority, but may not be available at any time.
- E. Construction equipment and materials shall be staged at one or more of the following locations:
  - 1. Within public right-of-way at street level at locations determined by the Design-Builder, and as approved by the Authority and Arlington County.
    - a. The Design-Builder shall apply and pay all fees associated with obtaining all temporary easements, approvals, and Maintenance of Traffic (MOT) permits as required and in accordance with Section 01 55 00, MAINTENANCE OF TRAFFIC ACCESS AND PARKING.
  - 2. The Design-Builder is responsible for the filing of all applicable permit applications in its entirety, including drawings, maps, calculations, or other items required to fulfil the requirements of each permit, including the cost associated with each permit required for the implementation of the project.
- I. Parking
  - 1. WMATA will not provide parking.
  - 2. Design-Builder shall park at locations determined by the Design-Builder acquired through the appropriate permitting procedures.
- K. Permits: Obtain permits from Utilities and Jurisdictional Authorities as needed.
- L. Systems Integration: Develop a Systems Integration Plan as part of design development and perform and manage Systems Integration for the project in accordance with Section 01 11 30, SYSTEMS INTEGRATION

- M. Safety: Establish and manage Project safety in accordance with Section 01 11 40, SAFETY/ ENVIRONMENTAL REQUIREMENTS and Section 01 11 50, SAFETY AND SECURITY CERTIFICATION.
- N. Quality: Establish and manage a Quality System in accordance with Section 01 47 00, QUALITY MANAGEMENT SYSTEM.
- O. Inspection and Testing
1. Inspect the Work to ensure that construction is being performed in accordance with Issued for Construction Drawings, Issued for Construction Specifications, and applicable submittals. Maintain Inspectors Daily Reports and submit to the Arlington County Project Officer and WMATA Representative weekly.
  2. Establish and perform component testing and system integration testing as specified in various specification sections and the Technical Requirements and in accordance with Section 01 47 00, QUALITY MANAGEMENT SYSTEM.
  3. Provide and manage the services of an independent testing agency that shall conduct material testing.
  4. Provide and manage the services of independent inspectors for those disciplines required by jurisdictional authorities. Independent inspectors shall perform third party inspections necessary to certify that construction has been performed in accordance with Issued for Construction Drawings and Issued for Construction Specifications. Independent inspectors shall have the qualifications required by jurisdiction authorities.
  5. The independent testing agency and independent inspectors may be provided through a single entity.
  6. All inspection and testing reports shall be submitted through the Arlington County QAM for record and to WMATA representative.
- P. As-Built Documents: Maintain a hard copy drawing and specification record of as-built conditions during construction phase and provide updated REVIT models of As-Built conditions and As-Built Specifications at the completion of the Project in accordance with Section 01 77 50, CLOSEOUT.
- Q. Training and Commissioning: Provide support for commissioning in accordance with Section 1 of the Technical Requirements, and the Functional Requirements, and provide training to WMATA staff as indicated in Section 01 82 00, DEMONSTRATION AND TRAINING for requirements.
- PART 2 – There should be no impacts to communications provided through train antenna system. If there is any impact to existing train antenna a temporary, fully functional antenna must be installed
- PART 3 – prior to the removal of an existing one.

**PRODUCTS (NOT USED)**

**EXECUTION (NOT USED)**

**END OF SECTION**

## SECTION 01 11 10 - DESIGN-BUILDER KEY STAFF

### GENERAL

#### 1.01 SUMMARY

- PART 1 – A. This Section specifies key staff that form the Design-Builder's team and identifies their basic functions.

#### 1.02 REFERENCES

- A. Registrar Accreditation Board of the American Society for Quality (RABASQ)
- B. Occupational Safety and Health Association (OSHA)
1. Construction Safety Training
  2. First Aid/CPR/Blood Borne Pathogens Training

#### 1.03 SUBMITTALS

- A. Submit the following within 10 days of Award in accordance with Section 01 33 00, SUBMITTAL PROCEDURES:

#### 1.04 DESIGNER

- A. The Design-Builder shall be responsible for performing or furnishing design professional services and related services in all phases of the Project and require its Designer to perform the services in accordance with the specifications and requirements of the Contract and in accordance with professional standards of skill, care, and diligence adhered to by firms recognized for their expertise, experience, and knowledge in performing these services. The Design-Builder shall be responsible for the professional quality, technical accuracy, completeness, and coordination of the services and shall serve as the Architect of Record and the Engineers of Record for the Project.
- B. All architecture, engineering, and other design services rendered by or through the Design-Builder shall be accomplished, reviewed, and approved by the Designer's team of architects and engineers licensed to practice in their respective disciplines in the jurisdiction where the Project will be constructed. The Design-Builder shall comply with local laws regarding the licensing of design firms and personnel providing services for the Project.
- C. All positions shall be filled by competent personnel satisfactory to the Arlington County Project Officer. Each position shall be held by a separate full-time employee unless otherwise specifically approved by the Arlington County Project Officer.
- D. Key Designer Staff
1. Design Manager
    - a. Design manager shall have previous experience managing design on Design-Build projects of a similar type and financial magnitude in the transportation industry.
    - b. The Design Manager shall:

- 1) Be responsible for managing design and design services during construction for all disciplines involved in the Project.
- 2) Assign Engineer(s) of Record for Project and shall establish and implement design milestone submittal schedules.
- 3) Ensure that the design of all project elements is done in accordance with Industry Standards, and jurisdictional codes and regulations.
- 4) Manage design sub-consultants that support the Designer, developing and implementing a Design Control Plan (DCP), and a Design Quality Plan (DQP) in carrying out design of Project elements and ensuring that sub-consultants do the same, coordinating with Jurisdictional Authorities and utility companies and ensuring that all design complies with applicable jurisdictional codes and standards, preparation and submittal of design milestone and Issued for Construction Drawings and Issued for Construction Specifications, preparation of Working Drawings, responding to and managing review comments from the Authority and other reviewers, and assisting the Construction Manager in obtaining permits, all in a timely manner without affecting Project schedule.
- 5) Be responsible for managing the preparation of As-Built Drawings and As-Built Specifications.

## 2. Engineers of Record

- a. Registered Professional Engineers licensed to practice in their respective disciplines in the jurisdiction where the Project will be constructed, with sufficient experience in design of similar projects.
- b. Responsible for signing and sealing Issued for Construction Drawings and Specifications.
- c. Responsible for ensuring that design within their disciplines is done in accordance with Contract Documents, Industry Standards, and jurisdictional codes and regulations. Responsibilities also include but are not limited to, implementing the Design Control Plan (DCP) and a Design Quality Plan (DQP), supporting the Design Manager in coordinating with Jurisdictional Authorities and Utility companies and ensuring that all design complies with applicable jurisdictional codes and standards, preparation and submittal of design milestone and Issued for Construction Drawings and Issued for Construction Specifications, and/or preparation of Shop Drawings and Working Drawings, and responding to and addressing review comments from WMATA and other reviewers.
- d. Engineers of Record shall be active participants in all phases of the Project, including the construction phase, for review of submittals, approval of samples and mock-ups, coordination of the Work of their respective disciplines with other disciplines, and regular Site visits to verify conformance with the approved design.

## 3. Systems Integration Manager

- a. The Systems Integration Manager shall be a Professional Engineer or Architect with experience in the integration of systems similar to those required in this project and experience in the design and/or integration of project systems of similar size and complexity.

- b. The Systems Integration Manager shall be responsible for the final integration and coordination of Design-Builder's drawings, plans and specifications, required to fully implement the systems integration of all work required in this contract in accordance with WMATA Standards/Specifications and Manual of Design Criteria.
- c. The Systems Integration Manager shall:
  - 1) establish, implement, and maintain all Systems Integration documentation, drawings, specifications, and integration planning,
  - 2) serve as a liaison officer with the Authority on matters relating to the Design-Builder's System Integration Plan,
  - 3) be responsible for ensuring that the Systems Integration is effective in ensuring that the Contract requirements are satisfied, and
  - 4) be responsible for the oversight of onsite and offsite Systems Integration design, testing, and final acceptance by the Authority.

## 1.05 DESIGN-BUILDER

- A. The Design-Builder shall be responsible for management of the Project and for performing as the builder, including furnishing the services of Subcontractors and vendors, to perform/contract/approve, as relevant, to all manufacture, fabrication, installation, and construction to complete the Project in accordance with the approved Issued for Construction Drawings and Issued for Construction Specifications, all applicable jurisdictional codes and regulations, the approved Quality Management System; the approved Safety Plan; the approved Systems Integration Plan, and environmental and other applicable requirements to achieve Acceptance in accordance with the approved Project Schedule. The Design-Builder shall obtain jurisdictional approvals and permits, and Utility approvals.
- B. All personnel involved in the performance of construction work shall be experienced and qualified to perform their trade, and all construction work shall be performed in a skilled and workmanlike manner.
- C. Individuals holding these key staff positions shall not be changed without written approval from the Arlington County Project Officer for any substitutions of key staff.
- D. Key Design-Builder Staff
  1. Design-Build Project Manager
    - a. Project Manager shall have experience managing design and construction of complex multi-discipline projects. Project manager shall have previous experience managing design and construction on Design-Build projects of a similar type and financial magnitude in the transportation industry.
    - b. Project Manager shall be in charge of construction of the Project as a whole with overall responsibility for the successful and timely completion of the Project.
    - c. The Project Manager shall:
      - 1) supervise the other Key Personnel (except the Quality Manager),
      - 2) be the primary point of contact with the WMATA Representative,
      - 3) be responsible for coordinating with outside agencies as required,

- 4) be responsible for managing cost and maintaining schedule of the Project,
  - 5) be responsible for ensuring that QA/QC and safety guidelines are followed, and
  - 6) be responsible for satisfactory completion of all testing, commissioning, and close-out of the Project.
2. Construction Manager
- a. The Construction Manager shall have previous experience in managing complex multi-discipline heavy construction projects and the construction of projects of a similar type and financial magnitude in the transportation industry.
  - b. Be responsible for managing construction of all facets of the Project.
  - c. Retain overall responsibility the day-to-day construction activity of the Project. Responsibilities include but are not limited to:
    - 1) Acquiring construction permits,
    - 2) Managing Subcontractors, independent testing companies, fabricators and Suppliers,
    - 3) Coordinating with Quality Manager and Safety Manager in the implementation of project Quality and Safety plans,
    - 4) Development, management, and implementation of Project Schedule construction activities,
    - 5) Preparation, submittal, and management of construction submittals,
    - 6) Ensure that construction is based on Issued for Construction Drawings and Issued for Construction Specifications and that all applicable codes and standards are complied with.
    - 7) Maintaining as-built documentation,
    - 8) Coordinating with outside agencies and utility companies on construction related matters, and
3. Construction General Superintendent
- a. Shall have experience in complex multi-discipline heavy construction, experience in the rapid transit industry, and experience in a supervisory capacity supervising projects of a similar type and financial magnitude.
  - b. Responsible for oversight of day-to-day construction at the Site.
  - c. Responsibilities include but are not limited to supervising construction activity, overseeing coordination between Subcontractors, and ensuring that construction is based on current Shop Drawings and Working Drawings. The Construction General Superintendent is also responsible for maintaining as-built documentation.
4. Quality Manager
- a. The Quality Manager shall be trained as a Lead Auditor in a Registrar Accreditation Board of the American Society for Quality (RABASQ) approved course on the requirements of ISO 9001 and shall have related experience in a design and

- construction environment, transportation projects, and management positions performing QA/QC auditing.
- b. The Quality Manager shall be responsible for the quality assurance and quality control for the Project and shall be fully familiar with FTA quality requirements.
  - c. The Quality Manager shall:
    - 1) be a full-time staff member of the Design-Builder's team,
    - 2) Reports to one or more levels of management above the Design-Builder's Project Manager,
    - 3) establish, implement, and maintain the Quality Management System,
    - 4) serve as a liaison officer with the Authority and the Jurisdictional Authorities on matters relating to the Design-Builder's quality system,
    - 5) be responsible for ensuring that the Quality Management System is effective in ensuring that the Contract requirements are satisfied, and
    - 6) be responsible for the oversight of onsite and offsite testing by the Design-Builder.
  - d. The Quality Manager may, if suitably qualified, be approved as the Safety and Security Certification Manager as defined in SECTION 01 11 50 SAFETY AND SECURITY CERTIFICATION.
5. Project Scheduler:
- a. The Project Scheduler shall have experience managing the construction schedules, design, and construction of complex multi-discipline projects of a similar type and financial magnitude in the transportation industry.
  - b. The Project Scheduler shall support the Design-Builder with scheduling and coordination of the Pre-construction, Procurement, and Construction activities.
  - c. The Project Scheduler shall:
    - 1) Provide, maintain, and continuously update CPM and summary level schedules, including, but not limited to, the review of project baseline schedules, monthly progress schedules, weekly look-ahead schedules, time impact analysis, risk analysis, and tracking schedule conformance,
    - 2) Describe the tools and methodology of the development of the baseline schedule, including durations, sequencing, logic and skilled labor availability for determination of labor projections,
    - 3) Assist in the monitoring of project activities and progress reporting,
    - 4) Participate in Over the Shoulder (OTS) and constructability reviews as necessary,
    - 5) Support assessment of work-around/contingency planning for major work events,
    - 6) Develop, from a construction perspective, of each trade contract, which shall include, but is not limited to, elements such as schedule, site phasing, construction methods, and special or difficult circumstance, and
    - 7) Develop measurable goals for each trade contract.



## 6. Safety Superintendent

- a. The Safety Superintendent shall have experience in heavy industry construction safety practices and in transportation construction operating conditions and shall have completed OSHA Construction Safety Training and First Aid/CPR/Blood-borne Pathogens Training. Certified Safety Professional (CSP) is preferred.
- b. Be responsible for development of a construction safety plan.
- c. Be a full-time member of the Design-Builder and devote full-time to worksite safety in implementing, enforcing, and maintaining the safety program for the Contractor and Subcontractor forces.
- d. Have no duty other than safety supervision of persons, equipment, and property affected by Contract work.
- e. Reports to one or more levels of management above the Design-Builder's Project Manager.
- f. Have specialized training and experience in construction safety supervision and have a thorough knowledge of all OSHA regulations. The Safety Superintendent shall have the ability to develop and conduct safety-training courses. The Safety Superintendent shall be familiar with industrial hygiene equipment and testing as required for the protection of all personnel and the public.
- g. Able to develop and conduct safety-training courses.
- h. Be familiar with industrial hygiene equipment and testing as required for the protection of all personnel and the public,
- i. Have OSHA-30 hour, in-class, training for construction.
- j. The superintendent will be required to visit the site on a regular basis to determine that the assigned foreman of the work crew is properly performing all work per approved submittal requirements and the work is being performed safely. The superintendent shall visit the site, at a minimum once a day and check in with the WMATA inspector on site in the performance of their duties as the Superintendent. If required site visits are not performed, a work stoppage at the Design-Builder's cost may occur.

## 7. Welders

- a. Shall be qualified in accordance with the requirements of American Welding Society (AWS) D1.1 Structural Welding Code, Steel.

## 8. Personnel performing non-destructive testing (NDT)

- PART 2 – a. Shall be certified by the American Society for Non-Destructive Testing (ASNT).
- PART 3 – b. Only personnel certified for NDT Level I and working under a NDT Level II person or persons certified for NDT Level II may perform non-destructive testing.

**PRODUCTS (NOT USED)**

**EXECUTION (NOT USED)**

**END OF SECTION**

## SECTION 01 11 20 - DESIGN AND PROGRAM REQUIREMENTS

### GENERAL

#### 1.01 SUMMARY

- PART 1 – A. This Section specifies requirements for carrying out detailed design and design support during construction, as indicated, and provides requirements for design management to be followed by the Design-Builder. The Section also establishes Program Requirements for the Project.

#### 1.02 REFERENCES

- A. WMATA Manual of Design Criteria and Contract Drawings, Specifications, and any Technical Requirements
- B. WMATA Adjacent Construction Project Manual
- C. American Railway Engineering and Maintenance-of Way Association (AREMA)

#### 1.03 SUBMITTALS

- A. Make the submittals of this Section for Approval by the Authority in accordance with Section 01 33 00, SUBMITTAL PROCEDURES, unless noted otherwise.
  - 1. Milestone documents as specified within this Section.
  - 2. Check sets of Design Drawings and Design Specifications at each design milestone.
  - 3. Test, acceptance, and verification criteria and procedures for the product being specified as described in Section 01 47 00, QUALITY MANAGEMENT SYSTEM.
  - 4. Meeting minutes of all design coordination meetings attended by third-party entities as described in Section 01 31 20, Project Meetings
  - 5. At the end of the Contract, submit in accordance with Section 01 77 50, CLOSEOUT, a complete configuration management database.

#### 1.04 GENERAL DESIGN REQUIREMENTS

- A. Review Project requirements and discuss any issues needing clarification with WMATA Representative along with WMATA design review team, end users and other stake holders at the Pre-Design-Build Meeting prior to beginning any design work. The meeting shall be attended by the Design-Builder's Project Manager, Design Engineering Manager, Architect and Engineers of Record involved in designing the Project elements.
- B. All design and field engineering Work required to be performed by the Design-Builder shall be performed under the direct supervision of the Design Engineering Manager by a licensed professional and shall satisfy the laws of the jurisdiction in which the Project is located.
- D. Perform a code review for the Project and identify any potential conflicts amongst the design requirements, assumptions, field conditions, WMATA Manual of Design Criteria and jurisdictional codes that may affect scope, cost schedule, or quality of work. Notify the Arlington County Project Officer and WMATA Representative of potential conflicts as soon as practicable but no later than within thirty (30) Days of discovery. The notification shall include a clear

statement of the conflict, the source of the requirement and criteria, and a recommended solution to the potential conflict.

- E. Perform additional detailed surveys and investigations to verify the Site conditions as needed for development of the final design.
- F. Perform additional detailed environmental investigations and coordinate with the Jurisdictional Authorities as needed for development of the final design and for obtaining all necessary permits.
- G. ADAAG Design and Construction Compliance
  - 1. Design and construct the Work in accordance with ADAAG regulations and Federal Transit Administration Accessibility Handbook for Transit Facilities. In projects that address only a portion of an existing facility, ADAAG requirements state that the connection to public use space shall be accessible to the public at finish of construction. Alterations cannot decrease public accessibility. Accessible paths must be provided both within scope of the facility being constructed or renovated and to adjacent properties. ADAAG requirements apply to facilities open to the public as well as facilities for Authority employees in accordance with ADAAG reference 4.1.1.5.
  - 2. Should ADAAG regulations and Federal Transit Administration Accessibility Handbook for Transit Facilities requirements conflict, the most stringent shall apply.
  - 3. Ensure that facility designs, except as noted, comply with ADAAG and FTA requirements by providing a duly certified ADAAG Design Compliance Certification Form using the form provided by the Authority.
- H. Develop and provide Design Drawings and Design Specifications. WMATA Standard Drawings and WMATA Standard Specifications shall be incorporated into the Design Drawings and Design Specifications, without edits, where referenced in the Technical Requirements. Develop Project-specific specifications for work not addressed in the WMATA Standard Specifications. Submittals specified in the Project-specific specifications developed by the Design-Builder shall be submitted to WMATA for information only.
- I. Design work pertaining to rehabilitation of existing facilities shall be based on the assumption that the facility will remain operational during on-Site inspections, design development, and construction. Coordinate facility access through the WMATA Representative.
- J. Design Reviews: Arlington County and WMATA will review and Approve milestone design submittals based on the requirements of the Contract Drawings, Technical Requirements, WMATA Manual of Design Criteria, WMATA Standard Specifications as referenced in the Technical Requirements, and program requirements established in this Section. Set up meetings with Authority including outside agencies, if needed, to present the design packages for all milestone submittals. The Design Engineering Manager is responsible for obtaining comments from Jurisdictional Authorities and Utilities. Proceeding with furthering design prior to the resolution of all review comments from all entities to the Authorities satisfaction is at the Design-Builder's own risk.
- K. Permits: Prepare designs necessary to submit plans and obtain all permits needed to implement the Project. Do not modify Contract Document requirements based on comments from Jurisdictional Authorities or Utilities without approval from the Arlington County Project Officer and concurrence of WMATA.
- L. Provide Engineering and Architectural services during construction, such as performing Request for Information and submittal reviews prior to their submittal to the Arlington County Project Officer and WMATA Representative as further described in Section 01 33 00,

SUBMITTAL PROCEDURES, and prepare As-Built Drawings and As-Built Specifications as further described in Section 01 77 50, CLOSEOUT.

### 1.05 DESIGN CONTROL PLAN

- A. Develop and maintain a Design Control Plan (DCP) that establishes basic guidelines for the preparation and development of design documents culminating in Issued for Construction Drawings and Issued for Construction Specifications. The DCP shall address the following requirements as a minimum:
  1. Control of design inputs and changes shall be managed by the Design-Builder in a manner that assures Contract and Design-Builder requirements are correctly translated into the drawings and specifications used for procurement, manufacturing, construction, and testing.
  2. Establish processes and procedures for preparing and checking of design calculations, drawings, and specifications for each milestone design submittal.
  3. Detailed checking of documents shall be carried out by an individual who has qualifications and experience equal to or greater than the preparer. Maintain record of check sets through the life of the Project and submit these with each milestone design submittal. Authority will audit these check sets periodically. Identify superseded documents with a stamp to avoid wrongful use of documents.
  4. Configuration management.
- A. Prepare plans for each design activity and define responsibility for its implementation.
- B. Provide verification and validation of software products designed for the Project.
- C. Design verification shall include checking and back-checking calculations, drawings, specifications, and other design elements without reliance on review and comments from the Authority and shall be conducted before providing each milestone design submittal to the Authority and before the start of construction or fabrication.
- D. Provide certification with each milestone design submittal stating that the documents being submitted are reviewed, checked and backchecked.
- E. Design or provide documentation for submission/approval for all required test, acceptance, and verification criteria and procedures for the product being specified. Test and acceptance criteria and procedures may be used by the Authority and its on-call architectural and engineering consultants to verify designs and products. The design verification process shall test the design to assure that it meets Contract Document requirements.
- F. Implement configuration management and document change control for the duration of this Project for calculations, drawings, specifications, documents, systems, operating and maintenance documentation, and the physical materials. Maintain document change control and update all documents as the design and installation progresses. Configuration management system shall provide an accurate historical record that can trace decisions made through the life of the Contract. At the end of the Contract, submit to Arlington County and WMATA in accordance with Section 01 77 50, CLOSEOUT, a complete configuration management database.
- G. Arlington County and/or WMATA have the right to accept or deny a requested design change and no design change shall be implemented without Authority Approval. The Authority will only consider requested design changes, which are submitted to the WMATA Representative with the following supporting documentation:

1. A valid reason for the change.
  2. Evidence that the change is feasible
  3. An explanation of why the change is desirable
  4. Estimates of effects on performance, costs and schedule
- H. Include a means for contemporaneously relating the modification status of equipment and construction to the corresponding drawing or specification.
- I. Maintain process control, including:
1. Completion of quality procedures, work instructions, and initial coordination meetings prior to the start of a design activity.
  2. Documented procedures for checking of calculations and survey computations.
  3. A formal system of continuous feedback of problems and their resolution shall be developed between the Designer and construction staff.

#### 1.06 MILESTONE DESIGN SUBMITTALS

- A. Intermediate Design (60% Design)– required for all electrical, mechanical and shaft work - Design Drawings, Design Specifications, calculations, and all associated design documents shall be completed to include the minimum requirements listed below:
1. Drawings:
    - a. Plan and profile location of all potentially affected utilities and structures – Complete
    - b. Plan confirming adjacent property lines – Complete
    - c. Plan showing temporary and permanent Right-of-Way requirements – Complete
    - d. Plan of existing conditions – Complete
    - e. Civil sections – In Progress
    - f. Sizing of primary structural members – Complete
    - g. Retaining wall elevations and sections – In Progress
    - h. Architectural plans and elevations – In Progress
    - i. Architectural wall sections – In Progress
    - j. Architectural floor plans – In Progress
    - k. Structural plans – In Progress
    - l. Mechanical plans – In Progress
    - m. Electrical plans – In Progress
    - n. ICA plans – In Progress
    - o. Architectural plans – In Progress

- p. Mechanical equipment list – In Progress
  - q. Electrical single line diagram – In Progress
  - r. Applicable codes and standards – Complete
  - s. CADD files for verification of file structure
2. Specifications: Index of all specification Sections - Complete
  3. Intermediate design calculations for each discipline commensurate with design development.
  4. Design Report including documentation of:
    - a. Constructability and Construction Staging Plan - Draft
    - b. Utility and Structures Relocation/Protection/Support - Draft
    - c. Traffic Impact Assessment including constraints, maintenance plans, parking inventories, truck haul routes, and new/modified road systems - Draft
    - d. Handling and Disposal of Excavated Material - Draft
    - e. Hydrology/Stormwater Management and Drainage -Draft.
    - f. Supplemental Geotechnical Investigation – Complete
    - g. Supplemental Environmental Documentation – Draft
    - h. Systems Interface Management Plan - Complete
    - i. Identification of required permits and jurisdictional authority approvals - Complete
  5. Public meeting presentation materials
  6. Quality Assurance Documentation
  7. Risk Assessment Documentation
  8. Design Schedule - Complete.
  9. Response to Authority and Jurisdictional Authority Review Comments
- B. Pre-Final Design (90% Design)– required for all portions (electrical, mechanical and shaft work as well as structural platforms design) of the project - Design Drawings, Design Specifications, calculations, and all associated design documents shall be completed to include the minimum requirements listed below:
1. Drawings:
    - a. Plan and profile location of all potentially affected utilities and structures
    - b. Plan confirming adjacent property lines
    - c. Plan showing temporary and permanent Right-of-Way requirements
    - d. Plan of existing conditions

- e. Sizing of all structural members
  - f. Structural plans
  - g. Mechanical plans
  - h. Electrical plans
  - i. ICA plans
  - j. Architectural plans
  - k. Mechanical equipment list
  - l. Electrical single line diagram
  - m. Applicable codes and standards
  - n. CADD files for verification of file structure
2. Design Specifications
  3. Pre-Final design calculations for each discipline commensurate with design development.
  4. Design Report including documentation of:
    - a. Constructability and Construction Staging Plan
    - b. Utility and Structures Relocation/Protection/Support
    - c. Traffic Impact Assessment including constraints, maintenance plans, parking inventories, truck haul routes, and new/modified road systems.
    - d. Systems Interface Management Plan
    - e. Identification of required permits and jurisdictional authority approvals.
  5. Public meeting presentation materials
  6. Quality Assurance Documentation
  7. Risk Assessment Documentation
  8. Design Schedule
  9. Response to Authority and Jurisdictional Authority Review Comments
- C. Final Design (100% Design)– required for all portions (electrical, mechanical and shaft work as well as structural platforms design) of the project – Design Drawings, Design Specifications, calculations, and all associated design documents shall be complete, checked, and ready for signing and sealing after Approval by the Authority.
- D. Issued For Construction – Design Drawings, Design Specifications, and calculations signed and sealed by Architect and Engineer of Record.

#### 1.07 ADDITIONAL PROGRAM REQUIREMENTS

- A. Project-specific Program Requirements that supplement or replace requirements imposed by WMATA Manual of Design Criteria are as stated in the Technical Requirements, Contract Drawings, and Contract Specifications.

## PRODUCTS (NOT USED)

## EXECUTION

### PART 2 – 3.01 DESIGN MANAGEMENT

- PART 3 – A. Appoint a Design Engineering Manager to lead and coordinate the Design-Builder's design effort.

### 3.02 IMPLEMENTATION

- A. Prepare the design by developing detailed Issued for Construction Drawings, Issued for Construction Specifications, design calculations, analyses and reports, with all engineering required in accordance with accepted industry practices and submit milestone design submittals to Arlington County and the WMATA Representative for Approval.
- B. Provide the engineering design as specified for facilities owned by states, cities, agencies, districts, and utilities including service connections, and facility modifications and relocations as applicable.
- C. Coordinate and resolve conflicts for locations and sizes of openings, conduits, equipment placement, power and HVAC requirements, and clearances and weights of all elements among all the disciplines as applicable.
- D. Immediately notify the Arlington County Project Officer and WMATA Representative in writing upon identification of design issues or problems, which may affect cost, schedule, the work of Utilities, or other contracts.
- E. Issued for Construction Drawings and Issued for Construction Specifications, design calculations, analyses, and reports and certifications shall be signed and sealed by registered Professionals licensed to practice engineering in all jurisdictions where the Project will be constructed, as applicable.
- F. Coordinate design with governmental, public and private agencies and others. Such coordination shall include attending meetings as may be necessary. Notify WMATA Representative of coordination meetings a minimum of 2 Days prior to meetings. Prepare and submit to the Arlington County Project Officer and the WMATA Project Representative through e-Builder meeting minutes of all such meetings attended. Promptly notify Arlington County and the WMATA Representative in writing through e-builder of any betterments or other work beyond the scope of the Contract Documents that are requested by jurisdictional authorities, Utilities, and property owners.

### 3.03 INTERFACE REQUIREMENTS

- A. Investigate existing systems. Design, furnish, and install systems and materials, which interface with and are fully compatible with existing systems and that function in a fully compatible regard to safety, reliability, and maintainability as specified in Section 01 11 30, SYSTEMS INTEGRATION.



- E. Systems, which require functional and physical interface coordination, may include, but are not limited to:
1. Drainage Systems
  2. Existing Underground Utilities
  3. Traffic Maintenance during Construction and Traffic Signalization
  4. Power and Energy Management System
  5. Mechanical Systems
  6. Plumbing Systems
  7. Electrical Systems
  8. Communications Systems including Voice and Data
- F. Interface and compatibility requirements within various other interfaces for the Communications Systems include:
1. Ancillary and Remote Facilities: Coordinate provisions for Fire and Intrusion Alarm System and wayside telephones.
  2. Local Fire Jurisdictional Authorities: Coordinate provisions for fire detection, alarm, and suppression to ensure compliance.
- G. Interface and compatibility requirements for the Utility systems:
1. Coordinate equipment location and drain inlets and pipes. Coordinate new drain inlets and pipes with existing manholes, drain inlets, and pipes. Coordinate new sanitary sewer pipes with existing manholes and pipes.
  2. Coordinate electrical power requirements and location of equipment, feeders, and ductbanks.
- H. Interface and compatibility requirements for the Public Telephone system:
1. Right-of-Way: Coordinate required changes to telephone company facilities affected by construction.
- I. Develop a Systems Interface Points matrix, which shall identify all system interfaces and describe in detail the functional and physical interfaces between new and existing systems. The descriptions shall include interface locations, operating parameters, and applicable test points. The Systems Interface Points matrix shall:
1. Assign primary and secondary responsibilities to the providers of the interfaced systems and provide assurances that the systems provided under this Contract are fully compatible and that interface connections will not degrade, be compromised, or otherwise interfere with the normal operations of either of the interfaced systems.
  2. Provide assurances that the systems provided under this Contract are interfaced in a manner similar to existing WMATA systems performing the same functions. Differences in the manner in which the systems are interfaced shall be clearly described and subject to the Approval of the WMATA Representative.

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3. Provide a direct reference to one or more test procedures contained in the Design-Builder's approved Systems Integration Plan, which will verify that each system interface fully satisfies the requirements described therein.
  4. Be developed before or concurrent with the systems designs and shall be submitted for review along with each milestone design submittal.
- J. Control systems installation, its current configuration, and provide appropriate documents to support system configuration. Issue engineering recalls, update installed material, and update support material such as test equipment and documentation.

**END OF SECTION**

## SECTION 01 11 30 - SYSTEMS INTEGRATION

### GENERAL

#### 1.01 SUMMARY

- A. This Section specifies systems integration requirements for the Project.
- PART 1  
B. The purpose of this Contract is for Arlington County to deliver to the Authority a complete system that functions efficiently as a part of the overall WMATA System and within the local community. The Contract Documents set out the requirements that define the Arlington County and WMATA's intent. The designs of Communications, Mechanical, and Electrical systems as applicable are conceptual. It is the Design-Builder's responsibility to complete these designs and integrate these systems into the WMATA System. The Design-Builder is expected to advance the designs into a single unified whole.
- C. Systems Integration shall ensure that individual elements fit into components; components fit into subsystems; subsystems fit into systems; and systems fit into the existing WMATA System as applicable. The WMATA System includes train, bus, paratransit, and support facilities as necessary for operations.
- D. As part of the Systems Integration process, the Design-Builder shall implement a systems engineering program designed to assure attainment of the reliability, availability, and safety goals of WMATA.

#### 1.02 SUBMITTALS

- A. Submit in accordance with Section 01 33 00, SUBMITTAL PROCEDURES, and as noted below for WMATA Representative's Approval:
1. Systems Integration Database software licenses, if other than Microsoft Access, and database structure within 60 Days of NTP.
  2. Integrated System Test Plan: Within 180 Days of NTP and updated monthly thereafter.
  3. Systems integration design at each milestone design submittal, as applicable.
  4. Integrated system test procedures: 60 Days before use.
  5. Authority notification of testing within 15 Days of testing.
  6. Test results - within 10 Days of completion of test.
  7. Operations procedures: 60 Days prior to operations training.
  8. Documentation including drawings, manuals, and flow charts as system integration is completed for each interface.
  9. Certificates of compliance - before Acceptance

#### 1.03 QUALITY ASSURANCE

- A. Systems Integration Manager shall be qualified per Section 01 11 10, DESIGN-BUILDER KEY STAFF.

## 1.04 PROCESS REQUIREMENTS

- A. Establish and maintain a systematic, documented, comprehensive, verifiable, and continuous systems integration process applied throughout the duration of the Contract to implement the intent of the Contract Documents and the Issued for Construction Drawings and Issued for Construction Specifications. At a minimum, the systems integration effort shall:
1. In addition to the Initial Systems Integration Plan, provide a Systems Integration Plan that defines the process for accomplishing these goals.
  2. Utilize the System Interface Points matrix specified in Section 01 11 20, DESIGN AND PROGRAM REQUIREMENTS, to develop the Systems Integration Plan that systematically identifies a process for integrating each interface identified therein.
  3. Provide a mechanism and assign project responsibility for interface management and control, such that every interface has a single entity within the Design-Builder's organization accountable for engineering and verifying the interface.
  4. Define methods to confirm interface compatibility and demonstrate said compatibility through tests or other approved verification methods.
  5. Assure that reliability, availability, maintainability, and safety requirements are propagated through all systems and system components so as to meet the overall availability, dependability, and safety criteria set out in this Contract.
  6. Develop special drawings for the sole purpose of demonstrating coordination among crafts, disciplines and systems, and work by others.
  7. Coordinate all disciplines, civil/structural/architectural, utilities, landscaping, track-work, mechanical, electrical, train control, communications, and traction power, as applicable, to ensure that all systems are integrated and there are no integration issues.
  8. Allow WMATA to independently assess the effectiveness of, and audit, the Design-Builder's systems integration process.
- B. Provide systems integration procedures that:
1. Define a method for tracking system integration of physical, mechanical electrical, electronic, software, and operational interfaces of all systems components and between new and existing WMATA System components.
  2. Define a method for tracking contacts needed for systems integration coordination.
  3. List all Suppliers, Subcontractors, and their interfaces.
  4. Identify major coordination milestones.
  5. Identify major system integration demonstrations.
  6. Identify conflict resolution procedures.
- C. Provide system operations descriptions in text, flow charts, and simple graphics. Describe the system's function and how the function will be achieved. The purpose of these descriptions is to ensure that the Design-Builder and WMATA have a common understanding of the system's use and operation so that WMATA receives a truly turnkey product that will function as desired. These descriptions shall be in sufficient detail to assure a complete understanding of WMATA's intent and the Design-Builder's approach to meeting that intent.

- D. The systems integration design shall be provided in stages in accordance with milestone design submittals specified in Section 01 11 20, DESIGN AND PROGRAM REQUIREMENTS:
1. The intermediate systems integration design shall be delivered with the intermediate milestone design submittal and shall:
    - a. Provide draft description of TVS as applicable.
    - b. Provide draft systems integration procedures.
    - c. Provide a working model of the Systems Integration Database.
    - d. Identify the Design-Builder's Systems Integration Manager.
    - e. Identify all major systems.
    - f. Identify all major coordination efforts.
    - g. Identify interfaces that are on the critical path.
    - h. Identify WMATA reliability, availability, and safety goals.
    - i. Provide written disposition of the intermediate design review comments 10 Days after receiving comments from the Authority.
  2. The pre-final systems integration design shall be delivered with the pre-final milestone design submittal, shall build on the intermediate systems integration design, shall incorporate the comments on the intermediate systems integration design, and shall:
    - a. Provide a final draft description of TVS as applicable.
    - b. Provide final draft systems integration procedures.
    - c. Deliver a populated Systems Integration Database.
    - d. Identify all systems, their interfaces and schedule impact.
    - e. Identify all coordination efforts.
    - f. Identify interfaces that are on the critical path.
    - g. Identify compliance with WMATA reliability, availability, and safety goals.
    - h. Provide written disposition of the pre-final design review comments 10 Days after receiving comments from the Authority.
  3. The final systems integration design shall be delivered with the final milestone design submittal, shall build on the pre-final systems integration design, shall incorporate the comments on the pre-final systems integration design, and shall:
    - a. Provide a complete set of drawings, cut sheets, and specifications, progressed to the final level.
    - b. Provide TVS as applicable.
    - c. Provide final systems integration procedures.
    - d. Deliver a fully populated Systems Integration Database.

- e. Update all impacts.
  - f. Identify all coordination efforts.
  - g. Identify interfaces that are on the critical path.
  - h. Identify compliance with WMATA reliability, availability, and safety goals.
  - i. Provide written disposition of the final design review comments 10 Days after receiving comments from the Authority.
4. The final systems integration design shall be delivered with the final milestone design submittal, shall build on the pre-final systems integration design, shall incorporate the comments on the pre-final systems integration design, and shall as applicable:
- a. Provide a complete set of Final Design Specifications and Final Design Drawings, including cut sheets, progressed to the final level.
  - b. Provide TVS as applicable.
  - c. Deliver a fully populated Systems Integration Database.
  - d. Update all impacts.
  - e. Identify all coordination efforts.
  - f. Identify interfaces that are on the critical path.
  - g. Identify compliance with Authority reliability, availability, and safety goals.
- E. Integration Design and Documentation:
- 1. Provide full technical documentation of the integration of each interface, and when required, provide detailed descriptive and operations procedures for operation of any particular interface. Systems Integration services shall address interfaces such as interactions with Authority operations and maintenance, local fire fighters, and others as applicable. When required, provide operations and procedures manuals to define exactly how each interface is designed and operated.
  - 2. When the systems integration process results in a complete integrated product with no special parts or features, the Issued for Construction Drawings and Issued for Construction Specifications and approved Shop Drawings shall suffice as complete documentation. When the systems integration process requires a separate element, physical or otherwise, to assure proper operation, separate and full documentation will be required. Required documentation may take the form of additional drawings, procedures, manuals, flow charts, or other material. The WMATA Representative shall be the sole arbiter of what documentation is required.
  - 3. Documentation includes test and other records that relate to the performance of any particular interface.

### 1.05 INTERFACE STANDARDS

- A. The use of English (US customary units) standard measures shall be consistent with the current use of those standards at the Authority.
- B. A standard shall be deemed to exist when a previously existing interface, similar to that required by this Contract, is already in use on Authority property. Standard, in this context, means that

this is the standard way to make this interface at this location. Provide a system that is consistent with current practices so as to minimize effects on the balance of the system. Adhere to standards unless an explicit written waiver is granted. Notify the Arlington County Project Officer and WMATA Representative in writing of deviations.

- C. When no existing standard for an interface exists, propose an interface standard to the WMATA Representative. Minimize the number of interface types.

## 1.06 SYSTEMS INTEGRATION DATABASE

- A. Develop and maintain a Systems Integration Database that lists all physical, mechanical, electrical, electronic, software, operational, and other interfaces. The database shall be developed in the software of the Design-Builder's choice provided the software is ODBC (Open Data Base Connectivity) compliant and the data tables can be imported directly into Microsoft Access. Provide the WMATA Representative with two licensed copies of the database software used and upgrades, if any are required, so that the Authority may also run the database for the Period of Performance of the Contract. Submit the database structure to the WMATA Representative for Approval. Further enhancements can be added to the database provided the initial Approved data fields are maintained unchanged upon Approval of the WMATA Representative. Submit updated copies of the interface database at each progress meeting and when requested by the WMATA Representative.
- B. Systems Integration Database shall include a full set of reporting tools. Retain the services of a database developer who is familiar with these reporting tools and who can create custom reports. Demonstrate the developer's adequacy by providing a sample database with sample reports showing how this tool can be used to manage the system interfaces. The WMATA Representative shall be the sole judge of the adequacy of the database, its structure, and the developer.
- C. Maintain, in the Systems Integration Database, a complete listing of all interfaces and their relevant characteristics. Also maintain a library of standards and specifications relevant to the system interfaces. Provide the WMATA Representative with copies of such standards and specifications. Provide samples of interface materials (e.g., connectors, protocol conversion software, and black boxes as specified in the Issued for Construction Specifications.
- D. Data fields/tables to be included in the database shall include such items as:
  - 1. Interface ID number.
  - 2. Type of interface (e. g. physical, mechanical, electrical, electronic, software, operational)
  - 3. Interface Level as applicable (e. g. between subsystems, between subsystems and major systems, between major systems)
  - 4. Purpose of interface.
  - 5. Side-one identification including side-one standard and side-one contact person.
  - 6. Side-two identification including side-two standard and side-two contact person.
  - 7. Safety standard.
  - 8. Status.
  - 9. Open Issues/Conflicts.
  - 10. Person taking action.

11. Projected resolution date.
12. Scheduled test date and test results (pass/fail).
13. Scheduled demonstration date and demonstration results (pass/fail).
14. Schedule conflict (yes/no).
15. Results/Impacts.
16. List of all interfaces, their characteristics, and specification references.
17. Training requirements.
18. Contacts including name, organization, address, telephone, fax, and e-mail.

### 1.07 INTEGRATED SYSTEM TEST PLAN

- A. An Integrated System Test Plan shall be submitted that delineates the specific integrated system tests required. These tests will directly involve Authority personnel. Revise, update, and submit this plan for Approval monthly.
- B. The Integrated System Test Plan shall include the following:
  1. A matrix of all systems testing required by the Contract Documents and the Issued for Construction Drawings and Issued for Construction Specifications to be performed by Design-Builder, Suppliers, or Subcontractors.
  2. Samples of test reports that shall meet the minimum requirements called for in the applicable test standards or specifications.
  3. Coordinate on-Site and off-Site testing.
  4. Comply with Authority notification requirements for planned tests and inspections.
  5. Prepare integrated system test procedures in compliance with the Integrated Systems Test Plan and include the following information:
    - a. System to be tested
    - b. Specification Section, Article, and Paragraph relative to test
    - c. Applicable standard
    - d. Type of test (e.g. total system, sub-system, factory)
    - e. Test equipment required
    - f. Qualifications required to perform test
    - g. Step-by-step procedures for the test and parameters to be tested
    - h. Test frequency
    - i. Test data sheets or test report forms
    - j. Responsibility for test performance
    - k. Completion status



- I. Means of tracking and recording corrective actions being taken to assure compliance with the Contract Documents.

## PART 2 – PRODUCTS (not used)

## PART 3 – EXECUTION

### 3.01 SYSTEMS INTEGRATION MANAGER

- A. Appoint a Systems Integration Manager to lead and coordinate the integration efforts. Do not change the designated person without the prior written approval of the Arlington County Project Officer and acceptance by WMATA.

### 3.02 INTEGRATED SYSTEMS TESTING PREREQUISITES

- A. A prerequisite to integrated system testing shall be that all component testing has been satisfactorily completed and that system installation is complete and ready for system integration testing.

### 3.03 IMPLEMENTATION

- A. Implement system integration. System integration shall have been achieved once the Design-Builder demonstrates that all systems and subsystems operate as a unit with each other and within the overall WMATA System as applicable. All systems, including but not limited to Communications, Electrical, and Mechanical Systems shall be integrated to perform as specified in the Contract Documents and the Issued for Construction Specifications.
- B. Provide composite clearance verification drawings that demonstrate the spatial location of all utilities and their relation to other utilities, facilities, and items such as foundations. The composite clearance verification drawings shall also demonstrate clearances for train movement.

### 3.04 INTEGRATED SYSTEM TESTING

- A. Provide integrated system testing to assure that system components interface properly. Appropriately test all interfaces and certify that the interfaces work properly and meet all Contract requirements. Create test procedures and test data sheets that fully exercise the interface and prove that the interface performs its intended function.
- B. The WMATA Representative has the right to reject any integrated system test procedure or require additional integrated system tests if, in the WMATA Representative's sole opinion, the proposed test does not adequately exercise or demonstrate the performance of the interface.
- C. Notify the WMATA Representative in advance of each test. All test results shall be submitted to the WMATA Representative.

### 3.05 PERFORMANCE DEMONSTRATION

- A. Integrated system testing shall culminate in system Performance Demonstration that shall simulate all operations and shall exercise all systems and system elements as specified in Section 01 82 00, DEMONSTRATION AND TESTING.

### 3.06 MONITORING AND AUDIT

- A. The Authority shall have the right to monitor and audit the systems integration process. Facilitate these audits by providing information and arranging for the Authority's auditors to have access to all relevant records. Provide timely information to the WMATA Representative about interface problems that are identified, and the steps being taken to resolve them. Also invite Authority to attend meetings held within the organization or with Subcontractors to resolve interface definitions or systems integration issues. Furnish Authority with minutes of such meetings within 10 Days after such meeting, regardless of whether Authority attends.
- B. In addition, Authority reserves the right to witness all interface and systems integration tests. Notify the WMATA Representative of each upcoming test. The Authority reserves the right to direct supplemental testing of a component, element, subsystem, or system in the interest of verifying achievement of specified performance levels, at no cost to the Authority.

**END OF SECTION**

## SECTION 01 11 40 - SAFETY/ENVIRONMENTAL REQUIREMENTS

### GENERAL

#### 1.01 SUMMARY

- PART 1 - A. This Section includes construction safety and security and environmental safety requirements for the Project including WMATA's Safety Awareness Program.

#### 1.02 REFERENCES

- A. WMATA Construction Safety and Environmental Manual (CSEM)
- B. ANSI/ISEA 107 - American National Standard for High-Visibility Safety Apparel
- C. Occupational Safety and Health Association (OSHA)
  - 1. 29 CFR §1910
  - 2. 29 CFR §1926
  - 3. 49 CFR §172
  - 4. 49 CFR §390-397
- D. U.S. Army Corps of Engineers - Safety Manual EM-385-1-1
- E. National Commission for the Certification of Crane Operators
- F. Resource Conservation and Recovery Act (RCRA) of 1976 and amendments
- G. Metrorail Safety Rules and Procedures Handbook (MSRPH) - SOP No. 19
- H. WMATA, Office of Rail Transportation Maintenance Operations Control, Administrative Procedure OAP 200-33, Site Specific Work Plan (SSWP)

#### 1.03 QUALITY ASSURANCE

- A. Safety Superintendent: As specified in Section 01 11 10, DESIGN-BUILDERS KEY STAFF
- B. First Aid Attendant
  - 1. SHALL HAVE CURRENT FIRST AID AND CPR CERTIFICATION. A RESUME, CERTIFICATIONS, AND EVIDENCE OF TRAINING SHALL BE SUBMITTED DOCUMENTING EDUCATION AND EXPERIENCE.
  - 2. Shall be trained in Blood-borne Pathogens in accordance with CFR §1910.1030.

#### 1.04 SUBMITTALS

- A. Submit to the Arlington County Project Officer for approval in accordance with Section 01 33 00, SUBMITTAL PROCEDURES, 60 Days prior to commencing construction, unless noted otherwise:
  - 1. Documentation and Certifications of Safety Superintendent's and First Aid Attendant's, as applicable, experience in construction safety.

2. Design-Builder's Organizational Health and Safety Program Plan that includes OSHA required plans listed below that are applicable to the Work.
    - a. Site-specific Emergency Response Plan.
    - b. Site-specific Temporary Fire Protection System Plan.
    - c. Site-specific Waste Water Discharge Plan if wastewater is generated.
    - d. Site-specific Pollution Control Program.
    - e. Site-specific Dust and Debris Control Plan.
    - f. Site-Specific Work Plans for all work that will be performed in the right-of-way and operational ancillary rooms within the station.
    - g. Site-specific Fall Protection Plan.
    - h. Bloodborne Pathogens Exposure Control Plan.
    - i. Hearing Conservation Program if employees are exposed to continuous noise in excess of the OSHA Action Level.
    - j. Respiratory Protection Program if employees are exposed to dust (including crystalline silica) or other toxic atmospheres in excess of the OSHA permissible exposure limits. If a respiratory program is required, provide documentation of training, medical clearance for respirator use, and respirator fit testing.
    - k. Hot Work Program.
    - l. Lockout Tagout Program.
    - m. Confined Space Program.
  3. Job Hazard Analysis submitted prior to each element of construction.
  4. Documentation to show that all Confined Space entrants and attendants are trained in Confined Space Entry, including hands-on-training or Confined Space Awareness, as applicable, and possess applicable licenses and certifications.
  5. Site-specific Confined Space Permits at least seven (7) business days before entry is required.
  6. Identity of all materials or chemicals to be used on Authority property (including welding rods), GHS-compliant Safety Data Sheet (SDS) for these products, and a brief explanation of how they will be used and if wastes will be generated. Submit SDS Review Request Forms to the Arlington County Project Officer and WMATA Representative prior to the use these materials or chemicals.
  7. Certification of Crane Operators (CCO) Certificate(s) for each crane and each crane operator prior to any crane operator working on the Site.
- B. Submit to the Arlington County Project Officer and WMATA Representative for information in accordance with Section 01 33 00, SUBMITTAL PROCEDURES, 60 Days prior to commencing construction, unless noted otherwise:
1. Certificates of Insurance for pollution liability coverage, if applicable, in accordance with Section 00 87 70, INDEMNIFICATION AND INSURANCE REQUIREMENTS, for Design-

- Builder or Subcontractors performing work involving hazardous materials, hazardous substances, hazardous wastes, or contaminated soil or water.
2. Results of noise monitoring, air monitoring, and soil, water or waste sampling submitted weekly during work activities.
  3. Documentation of medical surveillance submitted monthly.
  4. Identity of equipment that may generate toxic atmospheres such as gasoline or diesel-powered generators, welding, and cutting equipment.
  5. Documentation of licenses and certificates required for lead or asbestos abatement, UST removal, or installation, OSHA's Hazardous Waste Operations and Emergency Response Standard (HAZWOPER), or other work requiring licensing or certification such as welding.
  6. Documentation of licenses, certificates, and U.S. EPA identification numbers required for transportation of hazardous materials, hazardous substances, or hazardous wastes.
  7. Documentation of licenses, permits, and certificates required for disposal of hazardous wastes including the name and address of the waste disposal facility where hazardous waste materials are to be disposed.
  8. Identification of air monitoring devices that will be used to monitor air quality at the Work Site. Provide copies of most recent manufacturer calibration and all Design-Builder field calibration checks.

#### 1.05 SAFETY REQUIREMENTS

- A. The Design-Builder shall be responsible for all Subcontractors, Suppliers, and other persons working under its direction to comply with all requirements as noted herein and shall disseminate these requirements to those personnel.
- B. Cooperate with representatives of the Authority and federal, state, and local regulatory agencies during Site inspections or investigations. Inspection and investigation activities do not involve directing of Design-Builder's work but may involve interviews with Design-Builder personnel. WMATA shall immediately notify the Design-Builder of those items that threaten property and/or a person's life and limb and that may require the Design-Builder to stop work on a specific task or operation. All other WMATA observations shall be directed to the Arlington County Project Officer.
- C. Immediately report all accidents and incidents (including near misses) that occur during the performance of the Work to the Arlington County Project Officer or WMATA Representative.
- D. The storage of hazardous and flammable materials (including such items as rags, mops, paper towels, or other combustible materials contaminated with hazardous or flammable products) on Authority property, is restricted. Design-Builders seeking to store hazardous or flammable materials on Authority property must obtain approval from the Authority by submitting safety data sheet (SDS) for each specific chemical and the quantity of each chemical to be stored on the Site. It may not always be possible to grant permission to store hazardous or flammable materials on Authority property. If permission is granted, store the materials in compliance with the jurisdictional codes and regulations. Acquire permits for use of hazardous materials as required by the jurisdictional Fire Marshal.
- E. The use of explosives for the performance of Contract work will not be permitted without written Approval from the WMATA Representative. Obtain all permits and approvals from the Jurisdictional Agencies.

- F. Prior to performing any work on or above or under the right-of-way, arrangements shall be made through the WMATA Representative for access rights and power outage in accordance with SOP No. 19 contained in the Metrorail Safety Rules and Procedures Handbook and OAP 200-33 (SSWP). All special requests for access, single tracking, power outages, escorts, and other Authority support shall be submitted in writing. Site Specific Work Plans shall be submitted for all Work conducted in Authority Right-of Way and any operational facility. Ensure that all personnel complete minimum required WMATA safety training on the rules and procedures for working on the Right-of-Way before starting such work.
- G. Employ and assign to the construction work a Safety Superintendent as specified in Section 01 11 10, DESIGN-BUILDER KEY STAFF. A first aid station shall be established and fully equipped to meet the needs of the anticipated work force. In no event shall work at the Site be performed until the approved Safety Superintendent is available to the Project.
- H. If, at any time, the Work Site is without the services of an approved Safety Superintendent for a period of 15 Days or more, the Work may be closed down at the discretion of the Arlington County Project Officer. If WMATA observes a lack of a Safety Superintendent Arlington County will be informed. The Safety Superintendent shall be acceptable to the Arlington County Project Officer and WMATA Representative, and his/her performance will be reviewed and documented by the WMATA Representative on a continuing basis. If the Safety Superintendent's effectiveness is below standard, the Design-Builder shall provide immediate replacement at the request of the Arlington County Project Officer after consultation with the WMATA Representative. Once employed, the Safety Superintendent shall not be changed without permission of the Arlington County Project Officer and concurrence of the WMATA Representative.
- I. For all work within Confined Spaces, comply with all OSHA, state, and local Jurisdictional Authority rules and regulations for confined spaces defined by 29 CFR §1910.146. Confined spaces shall be classified as either non-permit confined space or permit-required confined space in accordance with OSHA regulations.
- J. Prior to the initial entry into a confined space, coordinate entry with the Arlington County Project Officer and WMATA Representative and take air quality readings to establish base readings and conditions. At a minimum, oxygen, lower explosive limit, carbon monoxide, and hydrogen sulfide, shall be measured. Measurement of additional parameters may be required depending on the location of the space and potential for atmospheric hazards related to contamination or work activities.
- K. Air quality and any additional parameter reading results shall be provided to the Arlington County Project Officer and the WMATA Representative for recording purposes and shall determine if atmospheric hazards exist, which would classify the space as a permit-required confined space. Continuous and follow-up monitoring of air quality shall meet OSHA requirements, and all subsequent results shall be provided to the Arlington County Project Officer and WMATA Representative.
- L. Prior to the start of any work involving non-permit confined spaces, submit the following:
1. Written Job Hazard Analysis for all work to be performed in the confined space, including SDSs for chemicals to be used in the space. Submit SDSs for all chemicals to be used on Authority property along with a brief description of how and where they will be used and if wastes will be generated. The SDSs will be reviewed by Authority and if approved, the materials can be used in the system. If they are rejected, submit a substitute for Authority approval. The SDSs must be recent (less than 3 years old) and comply with the OSHA Hazard Communication Standard 29 CFR §1910.1200. The Design-Builder is responsible for complying with the requirements of the SDSs.

2. Written Emergency Response Plan, which identifies emergency responders for rescue operations.
  3. Written plan for a temporary Fire Protection System as specified in Section 00 74 00, PROTECTION OF PERSONS AND PROPERTY, for use during the term of the Contract, for Arlington County and WMATA approval. Ensure that work activities do not adversely impact existing fire protection system(s) i.e., sprinklers, stand pipes, and portable extinguisher.
  4. Identification of air monitoring devices that will be used to monitor air quality at the work Site. Provide copies of most recent manufacturer calibration and all Design-Builder field calibration checks. As a minimum, Authority requires field calibration checks on air monitoring instruments, each day (or shift) before use. The field calibration check information shall include the date, time, calibration check data, and the printed name and signature of the person performing the calibration check. Such documentation shall be available during the day and submitted to the Arlington County Project Officer and WMATA Representative for the record.
  5. Documentation to show that all personnel working in or near non-permit confined spaces are trained in Confined Space Awareness.
- M. Prior to the start of any work involving permit-required confined spaces, submit the following in addition to those items required for non-permit confined spaces:
1. Written Site-specific Confined Space Program.
  2. Confined space permit for applicable space. Each permit is valid for a maximum of 24 hours.
  3. Written Respiratory Protection Program.
  4. Documentation to show that all personnel required to wear respiratory protection have received respiratory protection training, have been fit tested for the respirators they are required to wear (applies to tight fitting respirators) and have been medically evaluated to verify that they have no health problem that would interfere with their safe use of a respirator.
  5. A warning sign to identify the work Site as a permit-required confined space requiring authorization to enter.
  6. The Design-Builder is required to notify the State or Arlington County Project Officer as applicable at least 24 hours prior to entering permit-required confined spaces or to employ State certified Safety personnel who will manage permit-required confined space access and who will perform the required record keeping.
- N. Provide a Job Hazard Analysis prior to the start of each phase of work.
- O. Work clothing consists of long pants, shirts with long or short sleeves, sturdy work boots, and appropriate personal protective equipment. Jewelry that hangs, loose clothing, or clothing with non-detachable hoods, drawstrings, or anything that can become entangled in machinery, shall not be worn on the work Site if machinery is in use on the work Site. Personal protective equipment such as hard hats and footwear shall meet the requirements of 29 CFR §1910.135 and §1910.136. Athletic-type footwear shall not be worn on the Site.
- P. Smoking is prohibited in the Metrorail system, Metrobus system, other Authority facilities, and in Authority vehicles. The Arlington County Project Officer, with consultation from the WMATA Representative, will select a designated smoking area outside the system or facilities and Design-Builder will be informed of its location. Design-Builder personnel found smoking in un-

designated areas will be subject to removal from Authority property. The Design-Builder's Safety Superintendent shall be responsible for ensuring compliance.

- Q. The OSHA Standard for Sanitation, 29 CFR §1910.141, shall be followed. Prior to starting work, furnish for the Design-Builder's staff, necessary toilet convenience secluded from public view. They should be kept in a clean and sanitary condition and shall comply with the requirements and regulations of the area in which the work is being performed. Potable drinking water shall be provided with individual cups and sanitary conditions for the water dispenser shall be maintained. A common drinking cup and other common utensils are prohibited.
- R. For all work at heights above 6 feet, submit a detailed, site-specific Fall Protection Plan. Comply with the most stringent OSHA requirements for Walking-Working Surfaces (29 CFR Part 1910 Subpart D), Scaffolds (29 CFR Part 1926, Subpart L), and Fall Protection 29 CFR Part 1926, Subpart M.
- S. Comply with 29 CFR §1910.95, Occupational Noise Exposure for all work on Authority property, including construction. This standard requires that employees exposed to continuous noise in excess of the OSHA Action Level, participate in a Hearing Conservation Program. Instruments used for noise measurements must be appropriate for the type of noise being measured (impact/impulse or continuous).
- T. If the Work involves removal of paints or coatings, test the paint or coatings to determine if they contain heavy metals such as lead that require special handling and disposal considerations. As a minimum, testing shall be conducted for the eight metals (arsenic, barium, cadmium, chromium, lead, mercury, silver, and selenium) required by the Resource Conservation and Recovery Act (RCRA) of 1976 and amendments. If any of these are present, the components will require special handling and disposal to prevent exposure to workers, patrons, the community, and the environment. The Design-Builder's personnel performing lead-based paint abatement, removal, or control, shall have all licenses and accreditation required by the jurisdiction in which the work is performed. Jurisdictions that do not have their own state lead plans fall under the auspices of the Environmental Protection Agency (EPA). The Design-Builder shall provide medical monitoring to meet the requirements of 29 CFR §1910.1025 and §1926.62. As a minimum, medical monitoring shall consist of biological monitoring for lead and zinc protoporphyrin and shall include a physician's medical determination. As a minimum, biological monitoring shall be conducted immediately prior to working on Authority property where the employee may be exposed to lead, and immediately upon completion of this work. The Design-Builder shall provide training for lead workers and supervisors as required by the jurisdictional regulations. Documentation shall be submitted to the Arlington County Project Officer and WMATA Representative prior to commencement of work. All documentation shall be authentic and verifiable. All materials shall be handled and disposed of in compliance with the jurisdictional regulations. SDSs for replacement paints/coatings must be approved by Authority prior to use on Authority property.
- U. If the Work involves removal of insulation, flooring, cove base, mastic, ceiling tile, roofing materials, or any other material that is suspected of containing asbestos, the Design-Builder must have the materials sampled and analyzed to determine if they contain asbestos. If the Design-Builder will be handling or removing asbestos-containing materials, the Design-Builder shall have all licenses and accreditations required by the jurisdiction in which the work is performed. The Design-Builder is required to provide medical monitoring to meet the requirements of 29 CFR §1910.1001 and §1926.1101. The Design-Builder shall provide training for asbestos workers and supervisors as required by the jurisdictional regulations. Documentation shall be provided to the WMATA Representative prior to commencement of work. All documentation shall be authentic and verifiable. All materials shall be handled and disposed of in compliance with the jurisdictional regulations. All replacement materials shall be free of asbestos.



- V. Design-Builder's personnel shall not be exposed to asphalt fumes in excess of the National Institute for Occupational Safety and Health (NIOSH) recommended ceiling limit of 5 milligrams of asphalt fumes per cubic meter of air (5 mg/m<sup>3</sup>), in any 15-minute period. NIOSH provides recommendations for control of asphalt fumes.
- W. Work that generates visible dust requires submission of a Dust and Debris Control Plan to prevent exposure of employees, patrons, and the community to dust including crystalline silica dust. Be prepared to submit air-monitoring data to demonstrate effectiveness of dust control measures. If dust cannot be controlled, submit Respiratory Protection Program in compliance with 29 CFR §1926.103 or 29 CFR §1910.134, and submit evidence of air monitoring, training documentation, medical clearance for respirator use, and respirator fit tests for tight-fitting respirators.
- X. Ensure that the level of exhaust emissions from equipment such as air compressors and generators, are within acceptable limits to comply with clean air regulations and that workers are not exposed to exhaust fumes or gases (carbon monoxide, sulfur dioxide, nitrogen oxides, hydrogen sulfide, aldehydes) in excess of the most stringent of occupational exposure limits.
- Y. For all work generating waste water, submit a Waste Water Discharge Plan that describes how the Design-Builder will treat and release wastewater generated by activities at the work Site, for all work that generates wastewater. Apply for Temporary Discharge Permit from local sewer authority, as required by specific site activities. Comply with Consolidated Plan prepared by Authority for Bus Divisions and Rail Yards.
- Z. For Abrasive Blasting activities, all SDSs for abrasives shall be submitted for Approval prior to abrasive blasting activities. Only abrasives containing less than 1 percent crystalline silica shall be used for abrasive blasting.
- AA. For Hot Work activities, provide documentation on certification for personnel who perform welding on Authority property. Ventilation in accordance with OSHA regulations shall be provided for hot work such as welding, cutting, or brazing.
- BB. At the Site of the work, a First Aid Kit shall be provided and fully equipped to meet the needs of the anticipated work force. Employees expected to render First Aid or CPR shall have the proper current certifications and be trained in Bloodborne Pathogens in accordance with 29 CFR §1910.1030.
- CC. Work shall not be performed in any area in use by the public, unless specifically required by the Contract or directed in writing by the Arlington County Project Officer and approved by the WMATA Representative. Give at least 48 hours' notice to the WMATA Representative before beginning such work.
- DD. In cases where the movement of Design-Builder's motorized equipment is necessary, flag persons shall be provided to warn and direct personnel and patrons away from the area of travel. Flag persons shall be certified as trained in proper flagging techniques and Design-Builder employees involved in traffic control and devices shall be certified as trained in traffic management as required by the State or local jurisdiction. Certification shall be documented.
- EE. When it is necessary to maintain use of work areas involving stations, sidewalks, elevators, platforms, bus shelters, vehicular roadways, building entrances, and corridors, protect the area with guardrails, substantial barricades, temporary fences, overhead protection, and temporary partitions as deemed necessary by the Arlington County Project Officer and/or the WMATA Representative. Under no circumstances will yellow or orange tape strung between barricades, or the like, be acceptable as a substantial barricade. Open manholes, access openings, or other breaks in the normal walking surface shall be isolated from personnel and the public using barricades.

FF. Sidewalks, entrances, platforms, mezzanines, or any other location where personnel or the public traverses, shall always be kept clear of obstruction, tools, ladders, and work debris, and excavation materials. When necessary, temporary sidewalks or pathways shall be provided for pedestrian traffic. Temporary sidewalks or pathways shall be free of tripping hazards and protected by proper guardrails and barricades. Temporary means of egress and access shall be marked for easy recognition. If work is required above sidewalks, overhead protection shall be provided. Protected walkways shall be Approved by the Authority.

GG. Appropriate warning signs and instructional safety signs shall be conspicuously posted in all areas involving construction activities. Work involving electrical systems or equipment in or near the area to which personnel or the public have access shall be isolated using barricades and partitions. Exposed, live circuits shall not be left accessible to personnel or the public or left dangling overhead. Before completion of the Work:

1. Ensure that all wiring is insulated and properly positioned.
2. Verify grounding, bonding, or both, of all metallic conduit, wiring or electrical equipment that is in the areas of contractual effort, and to which the public can make contact.
3. Notify the Arlington County Project Officer and WMATA Representative immediately in those instances where verification cannot be made.
4. Design-Builder's personnel working near the platform edge or in the right-of-way shall wear reflective safety vests with the tear-away feature, to identify them to passing trains, as directed by the Authority at the right-of-way safety training required in this Section. The safety vests shall comply with the ANSI/ISEA 107 guideline entitled American National Standard for High-Visibility Safety Apparel. All of the Design-Builder's personnel are required to attend safety training provided by the Authority before starting work near the platform edge or in the right-of-way.

HH. Use of Cranes and Derricks:

1. General Safety Requirements. Comply with the following:
  - a. 29 CFR §1910.180 through §1910.189.
  - b. 29 CFR §1926.550 through §1926.556
  - c. U.S. Army Corps of Engineers, Safety Manual EM-385-1-1.
2. No part of any crane or derrick boom shall swing over Authority patrons, tracks, or stations without an Authority Approved shield or procedure.
3. Placement of crane or derrick shall be coordinated with the WMATA Representative.
4. A supervisory or a red tag power outage is required. Exceptions may be granted on an individual basis after a review and approval by the Authority.
5. Hardhat requirements are enforced.
6. "Swing Stop" requirements may be instituted based on the hazards involved.
7. Use of cranes and derricks over common corridor railroads and highways is under the rules of the affected common corridor railroad or highway owner.
8. ALL CRANES USED FOR ERECTING COMPONENTS OF PRECAST CONCRETE ON THE PROJECT SHALL BE EQUIPPED WITH LOAD MOMENT INDICATING (LMI) DEVICES OR RATED CAPACITY INDICATORS (RCI), AN ANTI-TWO-BLOCK DEVICE.

ALL CRANE OPERATORS SHALL BE CERTIFIED TO OPERATE THE TYPE OF CRANE USED BY THE NATIONAL COMMISSION FOR THE CERTIFICATION OF CRANE OPERATORS (CCO) AND THEIR CCO CERTIFICATES SHALL BE SUBMITTED TO THE WMATA REPRESENTATIVE. TO INCREASE THE FACTOR OF SAFETY WHEN PICKING STRUCTURAL ELEMENTS OF THE BUILDING, ALL CRANES SHALL HAVE LOAD CAPACITY CHARTS REDUCED (DE-RATED) BY A FACTOR OF 30 PERCENT. SUBMIT A LIFT PLAN SHOWING ALL PERTINENT INFORMATION DEMONSTRATING THAT THE TOTAL LOAD DOES NOT EXCEED 70 PERCENT OF THE MAXIMUM BEFORE CRANE DELIVERY TO THE PROJECT SITE.

- II. All jobsite visits for visitors and tours shall be coordinated through the Arlington County Project Officer and WMATA Representative in accordance with the WMATA Construction Safety and Environmental Manual, and Design-Builder insurance requirements.

### 1.06 ENVIRONMENTAL SAFETY REQUIREMENTS

- A. Comply with the most stringent of federal, state, or local environmental regulations for air, water, land, and waste in order to maintain the safety and health of employees, Authority patrons, and the community.
  - 1. Any jurisdictional permits for the discharge/treatment of wastewater/runoff as a result of dry ice blasting or any other method of cleaning will be required. Permits to be obtained and paid for by Design-Builder.
- B. If task requires specialized licenses or certifications, for example "lead or asbestos abatement Design-Builder's license or certified tank installer/remover", show evidence of such registration prior to commencement of work. If the Work requires specialized training, for example lead or asbestos training, show evidence that employees have received such training prior to commencement of work.
- C. If the Work requires transportation of hazardous materials or hazardous substances, provide evidence of Department of Transportation General Awareness Driver's Training in compliance with 49 CFR §172 and Commercial Driver's License in compliance with 49 CFR §390-397, prior to commencement of work.
- D. All hazardous materials and hazardous substances shall be stored in "Performance Oriented Packaging" in compliance with 49 CFR §178, Subpart L.
- E. If the Work requires disposal of hazardous wastes, disposal shall be to a Treatment/Storage/Disposal facility with a Part B Permit and the waste hauler shall have a state or local license and U.S. EPA identification number. Apply and pay for temporary EPA Generator ID number required to dispose of hazardous waste. Submit evidence of all applicable licenses and permits along with the name and address of the waste disposal facility where hazardous waste materials are to be disposed, prior to commencement of work.
- F. If the Work involves response to spills of hazardous materials, hazardous substances or hazardous wastes, all personnel shall have appropriate training that complies with 29 CFR §1910.120.
- G. Environmental surveys shall be conducted to identify locations and quantities of hazardous materials present in all areas to be disturbed during the project. The environmental surveys shall be conducted by personnel and firms certified and/or licensed by each jurisdiction, as required, to conduct the surveys and sampling, with laboratory analyses performed by laboratories certified and/or licensed to perform the analyses. The Design-Builder must identify suspect environmental materials, collect samples and perform analyses required to identify them. Where present, the extent of these materials must be identified and documented and materials must be properly abated in accordance with all regulations. Submit detailed

documentation of environmental surveys and sampling results to SAFE/EMAC, including quantities and locations of all hazardous materials identified, and qualifications/certifications/licenses for survey personnel and laboratories. Properly remove and dispose of all hazardous materials and wastes in accordance with all applicable regulations, with documentation submitted to SAFE/EMAC.

- H. Contractors seeking to use or store hazardous or flammable materials on WMATA property must request permission from the WMATA Project Manager, who will submit copies of the Safety Data Sheets (SDS) and a request through WMATA's SDS system for review by SAFE/EMAC prior to use.

**PRODUCTS (NOT USED)**

**EXECUTION (NOT USED)**

PART 2 –

**END OF SECTION**

PART 3 –

## SECTION 01 11 50 - SAFETY AND SECURITY CERTIFICATION

### GENERAL

#### 1.01 SUMMARY

- PART 1 –
- A. This Section specifies WMATA Project Safety and Security Certification (SCC) program requirements for contractors during a typical project life cycle's design, construction/installation, testing, and pre-revenue/start-up phases.
  - B. B. Per Federal Transit Administration (FTA) and Washington Metropolitan Safety Commission (WMSC) guidance, these activities are required before allowing the agency to commence revenue service or occupancy of stations, facilities, parking lots, rail platforms, rolling stock, and operating new and upgraded systems.
  - C. C. As part of this project's SSC process, all WMATA and contractor Project Managers (PMs) shall comply and implement this certification process to assure adherence to WMATA's safety goals.

#### 1.02 REFERENCES

- A. FTA Handbook for Transit Safety & Security Certification (2002).
- B. FTA Guideline 5800.1 - Safety and Security Management Guide for Major Capital Projects - Safety and Security Management Plan (SSMP).
- C. 49 CFR Part 633 – Project Management Oversight (PMO).
- D. WMATA Public Transportation Agency Safety Plan (PTASP) (latest version).
- E. WMATA Security Emergency Preparedness Plan (SEPP) (latest version), Security Sensitive Information (SSI) document with limited access.
- F. WMATA Safety and Security Certification Program Plan (SSCPP) and associated Standard Operating Procedures (SOPs) (latest versions) are as follows;
  1. SAFE OSCE-001-01, Development of Safety & Security Management Plan (SSMP) and Safety & Security Certification Plan (SSCP).
  2. SAFE OSCE-002-01, Developing a Preliminary Hazard Analysis (PHAs) and Operational Hazard Analysis (OHAs).
  3. SAFE OSCE-003-01, Development of Design Criteria
  4. SAFE OSCE-004-01, Development of Certifiable Elements and Items List (CEL and CILs).
  5. SAFE OSCE-005-01, Verification of Operational Readiness.
  6. SAFE OSCE-006-00, Developing Temporary Use Notice (TUN) Development
  7. SAFE OSCE-007-00, Safety, and Security Certification Review Committee Voting Process
- G. WMATA SAFE SSC Training Program for all WMATA and contractor PMs and selected supporting staff.
- H. WMATA Manual of Design Criteria (latest version).

I. Key Acronyms:

1. CEL Certifiable Elements List
2. CIL Certifiable Items List
3. CSCC Construction Specification Conformance Checklists
4. DCCC Design Criteria Conformance Checklists
5. FTA Federal Transit Administration
6. MOV Means of Verification
7. OSCE Office of Safety Certification and Engineering
8. PHA Preliminary Hazard Analyses
9. PM Project Manager
10. PMO Project Management Oversight
11. PTASP Public Transportation Agency Safety Plan
12. SAFE Department of Safety
13. SSC Safety and Security Certification
14. SCRC WMATA's Safety Certification Review Committee
15. SCWG Safety Certification Working Group
16. SEPP Security Emergency Preparedness Plan
17. SOP Standard Operating Procedures
18. SSCP Safety and Security Certification Plan
19. SSCPP WMATA Safety and Security Certification Program Plan
20. SSI Security Sensitive Information
21. SSMP Safety and Security Management Plan
22. TSI Transportation Safety Institute
23. TSSP Transit Safety and Security Program
24. TUN Temporary Use Notices
25. TVA Threat and Vulnerability Assessment
26. TVCC Testing Validation Conformance Checklists
27. WMSC Washington Metropolitan Safety Commission

### 1.03 GENERAL

- A. The WMATA and contractor PMs are responsible for supporting WMATA's SSC Program as outlined in the SAFE's SSCPP and supporting SOPs. The SSC program's purpose is to ensure that:
1. The design, construction/installation, testing, and commissioning of all critical safety and security elements (civil, facilities, structural, equipment procurements, and systems) have been verified for conformance with set safety and security requirements to demonstrate their readiness for operational use.
  2. WMATA rail, bus, facilities, structures, and systems are operationally safe and secure for customers, employees, contractors, and the general public.
  3. WMATA and contractor PMs establish and utilize a management system to execute the Safety and Security Certification Program.
  4. A common ground of understanding is established among key project team members regarding specific responsibilities and the execution of the SSC program.
- B. The overall SSC objectives are to achieve acceptable risk levels through systematic hazard analysis and management approach, criteria adherence, design, construction/installation and testing certification and review, and formal contract acceptance. These objectives are to conform to all Federal and Commonwealth requirements through documentation and verification that:
1. System safety hazards are identified, assessed, and mitigated to acceptable and manageable risk levels.
  2. Security vulnerabilities are identified, assessed, and documented action is taken to resolve identified unwarranted security risks.
  3. Appropriate codes, guidelines, and standards have been reviewed to provide a basis for safety and security considerations in the final design documents.
  4. Facilities, systems, and equipment have been designed, constructed, inspected, and tested per applicable codes and standards.

### 1.04 SUBMITTALS

- A. Submit the following documents for approval per Section 01330, SUBMITTAL PROCEDURES, as well as following the WMATA SSCPP (latest version) and associated SOPs as identified in the reference documents above:
1. Project-specific **Safety and Security Certification Plan (SSCP)** within 90 days of NTP.
    - a. Projects valued at greater than \$100 million.
    - b. The SSCP content requirements are outlined in **SOP SAFE OSCE-001-01, Development of SSMP and SSCP**.
  2. **Certifiable Element List (CEL)** with Sub-elements identified within 30 days of NTP.
    - a. Instructions are in **SOP SAFE OSCE-004-01, Development of Certifiable Elements and Items List (CEL and CILs)**.
  3. **Preliminary Hazard Analysis (PHAs)** within 60 days of NTP.

- a. Format and instructions are outlined in **SOP SAFE OSCE-002-01, Developing a PHA and OHA.**
4. **Threat and Vulnerability Assessment (TVA).**
- a. Metro Transit Police Department (MTPD) will validate the requirement.
  - b. If required, perform and deliver the TVA within 60 days of NTP per WMATA's Security Sensitive Information (SSI) Program.
5. **Certifiable Items Lists (CILs)**
- CIL format and instructions are outlined in **SOP SAFE OSCE-004-01, Development of Certifiable Elements and Items List (CEL and CILs).**
- a. **CIL component Design Criteria Conformance Checklist (DCCC)** within 90 days of NTP.
  - b. **CIL component Construction Specification Conformance Checklist (CSCC)** within 60 days of final design approval and published 100% specifications for construction/installation and testing.
  - c. **CIL component Testing Validation Conformance Checklist (TVCC)** within 30 days of system testing plans and procedures approval dates.
  - d. During the CIL verification process by the contractor and SAFE SSC Team, the contractor will provide updated CILs every 30 days to account for new means of verification (MOV) annotated on the CILs by the contractor. The SCWG meetings provide details on these requirements.
6. **Adjusted Submittal Delivery Dates.** For those projects/contracts having short durations, the submittal delivery time frames are adjusted to fit the SSC process needs and project schedule with SCWG approval.
7. **Design, Construction/installation, and Testing Change Orders Approvals.** The affected CILs, PHAs, and TVA will be reviewed, updated as needed, and submitted to the SCWG for approval to reflect any change that affects safety and security.

## 1.05 QUALITY

- A. The Contractor's SSC representative shall have SSC knowledge by completing a recognized SSC training course provided by the Federal Transportation Administration (FTA), Transportation Safety Institute (TSI), or past WMATA SAFE SSC training. Quality control experience or having SSC exposure on past projects can also apply. To validate this requirement, the contractor shall provide one or more of the following:
  - 1. FTA/TSI Transit Safety and Security Program (TSSP) Certificate.
  - 2. A training certificate from one of the FTA/TSI SSC courses is listed below in paragraph C.
  - 3. A listing of past SSC project experience.
  - 4. Quality Assurance/Quality Control (QA/QC) experience.
  - 5. Past WMATA SSC training within the last five (5) years.
- B. Preferred qualification – a transit safety professional with the FTA/TSI TSSP certificate or who has attended an FTA/TSI SSC-related training course from one of the following courses:



1. TSI, FT00551-V, Safety, Security, and Emergency Management Considerations for Capital Improvements Projects (FTACP)
2. TSI, FT00538, Transit System Safety and Security Design Review (TSSS-DR)
3. TSI, FT00543-V, Rail System Safety (RSS)
4. TSI, FT00433-V, Transit Bus System Safety (BSS)
5. TSI, FT00432, Transit System Security Course (TSS)

## 1.06 SECURITY AND SAFETY CERTIFICATION PROCESS

- A. The WMATA and contractor PMs and designated SSC representatives will participate in the WMATA SSC Program per the SSCPP (paragraph 3.0 Safety and Security Certification Process) and associated SOPs at Attachment E for the contract duration. They will manage and implement the following SSC 10-steps:
  1. Identify Certifiable Elements
  2. Develop Safety and Security Design Criteria
  3. Develop and Complete Design Criteria Conformance Checklist
  4. Perform Construction Specification Conformance
  5. Identify Additional Safety and Security Test Requirements
  6. Perform Testing and Validation in Support of the SSC Program
  7. Manage Integrated Tests for the SSC Program
  8. Manage "Open Items" in the SSC Program
  9. Verify Operational Readiness
  10. Conduct Final Determination of Project Readiness and Issue Safety and Security Certification
- B. WMATA SAFE SSC Team will provide oversight implementation guidance and verify compliance with all SSC requirements outlined in the SSCPP paragraph 2.0 Program Management, Organization, and Responsibilities.
- C. WMATA PMs shall manage and oversee compliance with the project SSC program and follow the responsibilities outlined in the SSCPP paragraph 2.0 Program Management, Organization, and Responsibilities. and associated SOPs requirements.
- D. Contractor PMs and their SSC representatives shall follow the following general responsibilities and the more comprehensive duties outlined in the SSCPP Section 2.0 Program Management, Organization, and Responsibilities.
  1. Actively supports and participates in the Project SSC Program process outlined in SSCPP and attends the SCWG meetings.
  2. Attends the WMATA SAFE SSC training session at the earliest possible opportunity.
  3. Ensures all SSC-related submittals noted in paragraph 1.04 above are submitted, reviewed, and validated by the SCWG before final submittal approval.
  4. Provides the SAFE SSC Team access to all design, construction/installation, and testing submittals via the project document management software system for the SSC CIL verification process.

5. Annotates the Means of Verification (MOV) on the CILs where the safety/security and emergency management design criteria and construction/installation and testing reports submittals are located for verification purposes.

## PRODUCTS (NOT USED)

## EXECUTION

### PART 2 – 3.01 CONTRACTOR SSC PROGRAM REPRESENTATIVE

- PART 3 – A. The contractor's PMs shall appoint an SSC Program Representative with the qualifications noted in this specification to lead and coordinate the SSC process and activities.

### 3.02 SSC TRAINING PROGRAM

- A. WMATA and contractor project PMs and support staff must attend the WMATA SAFE SSC training program within 60 days after NTP is given to reinforce SSCPP requirements and solidify SSC responsibilities.

### 3.03 SAFETY AND SECURITY CERTIFICATION WORKING GROUP (SCWG)

- A. SCWG meetings are established by the WMATA SAFE SSC Team and held monthly or as needed once the project NTP is issued. Once the project kick-off meeting occurs, the first SCWG meeting is scheduled within two (2) weeks.
- B. General guidance, attendees, and SCWG responsibilities and activities are found in the SSCPP paragraph 2.0, "*Program Management, Organization, and Responsibilities.*"

### 3.04 SSC DOCUMENT CONFIGURATION MANAGEMENT

- A. Prepare update, and complete all submittal document requirements as listed in paragraph 1.04 throughout the performance of the contract.
- C. Establish an SSC documentation configuration management folder in the project document management system. The SSC documents shall be consolidated and become a project closeout requirement provided by the noted responsible party. See Section 7.1, SSCPP, for a listing of required documentation and responsible party.

END OF SECTION

## SECTION 01 11 60 - IDENTIFICATION AND SECURITY

### GENERAL

#### 1.01 SUMMARY

- A. This Section includes identification and security requirements for work on Authority Property.

#### PART 1 - 1.02 DEFINITIONS

- A. Authority Property: Includes the Authority's Rail and Bus Operating System and Authority administrative facilities, whether under construction or being rehabilitated.

#### 1.03 SUBMITTALS

- A. Forms necessary to initiate background check process, including color copy of the front and back of Design-Builder personnel's Driver License or other accepted form of identification.

#### 1.04 PRE-EMPLOYMENT CRIMINAL BACKGROUND CHECK

- A. As a prerequisite to eligibility for a WMATA-issued identification and access badge ("One Badge"), access to WMATA's customers, property, or confidential information, and in consideration for this Contract, the Design Builder shall have the sole responsibility for, and shall assure, adequate criminal background screenings on a routine basis of all of its personnel who are or will be working on WMATA's premises (whether they receive a One Badge or not) or otherwise have access to WMATA's customers, property, or confidential information.
- B. Design Builder shall implement, not later than notice to proceed, a criminal background check screening of the Design-Builder's personnel that shall take into consideration (1) the nature of the services or work being performed under the contract with particular regard for the individual's access to, and interaction with, WMATA's customers, property, and confidential information; (2) the nature or gravity of the offense or conduct resulting in a criminal conviction; and (3) the time that has lapsed since the conviction and/or completion of the sentence.
- C. The Design Builder shall contract with, or otherwise engage, a reputable third-party vendor to conduct the required criminal background screenings, and shall provide the vendor with a copy of its criminal background check screening policies and procedures.
- D. The Design Builder shall not place any person on or engage any person under this Contract, unless that person passes the Design-Builder's criminal background screening. At the end of each calendar quarter, the Design Builder shall certify to the Arlington County Project Officer and WMATA Representative on a form provided, its compliance with this criminal background screening requirement and confirm that all persons required to be screened passed the Design-Builder's criminal background screening before working on this Contract. For the sole purpose of monitoring the Design Builder's compliance, WMATA reserves the right to request additional documents or perform its own criminal background screening of Design-Builder's personnel. The WMATA will inform the Design-Builder, in writing, of any proposed action within a reasonable time before such action is taken.
- E. The Design Builder shall indemnify and hold Arlington County and WMATA harmless from any and all claims, demands, damages, costs and expenses, including attorneys' fees and other costs and expenses associated with any claims, demands, requests for relief, and/or other liabilities arising out of or resulting from the Design-Builder's criminal background screening obligations and processes.

- F. The Design Builder will include this requirement in all subcontracts under this Contract, and receive certifications from their subcontractors to ensure that its subcontractors' personnel who are or will be working on WMATA's premises (whether they receive a One Badge or not) or otherwise have access to WMATA's customers, property, or confidential information undergo the required criminal background checks.

#### 1.05 IDENTIFICATION AND SECURITY CHECKS

- A. All employees of the Design Builder and its Subcontractors working on WMATA projects shall prominently display an identification badge issued by the Authority.
1. Maintain an up-to-date list of all workers badging status, to include badge number, worker for name, badge expiration and company.
- B. Design Builder Photo ID Badges: Individuals requiring the Design Builder photo ID badges are subject to the following identification and security checks
1. Provide valid and current photo identification, such as a State-issued Driver's License, State-issued Identification Card, U.S. Passport, or identification from the Immigration and Naturalization Service, such as a Permit to Work or a Permanent Residence Card (Green Card).
  2. The individual's identification may be matched against the FBI Watch List and security clearance.
  3. The photo identification will be matched against the Design Builder's list of employees authorized to work on a particular job.

#### 1.06 NON-CONFORMANCE

- A. In the event any employee of the Design-Builder or its Subcontractors fails to adhere to the requirements of this Section, the employee or Subcontractor will be removed from the job until non-conformance is corrected. Such removal will not be grounds for any time extension or additional compensation.

#### 1.07 ADMINISTRATION

- A. Design Builder Photo ID Badge:
1. A Design Builder Photo ID badge will be required if the individual will be present on Authority Property. Design-Builder shall consult with the Authority to determine specific procedure for obtaining a badge.
  2. Design Builder Photo ID badge takes approximately 14 Days to obtain unless personnel have lived outside of the United States within the last year, in which case the background checking process will require additional time to complete.
  3. It will be the Design Builder's responsibility to immediately notify the WMATA Representative if a worker loses his or her Design Builder Photo ID badge. A fee will be charged for each lost badge.
  4. All Design Builder Photo ID badges shall be returned to the WMATA Representative when they are no longer needed.
  5. Design Builder Photo ID badges shall be renewed on an annual basis.

Washington Metropolitan Area Transit Authority  
RFP PROJECT NUMBER/CA

Contract No. PROJECT NUMBER  
Date: Issue Date

**PRODUCTS (NOT USED)**

**EXECUTION (NOT USED)**

**END OF SECTION**

PART 2 –

PART 3 –

## SECTION 01 14 10 - ACCESS TO SITE

### GENERAL

#### SUMMARY

- PART 1 –
- A. This Section specifies requirements for gaining access to Site and describes work hours the Design-Builder will be allowed in WMATA Trackway and Operating Facilities.

#### DEFINITIONS

- A. Non-Revenue Hours of Work – When the Authority is not operating revenue service trains the track may be available to the Design Builder, upon request and approval.
- B. Revenue Service Adjustment (RSA) Hours of Work – There are two service conditions:
1. Single tracking when a single track is made available to the Design-Builder to work while the Authority operates trains in both directions on the opposite track.
  2. Shutdowns when both tracks of a section of line are made available to the Design-Builder to work.

#### IDENTIFICATION CARDS

- A. The Contractor and its Subcontractors working within the Crystal City Metrorail Station facility per Section B below shall provide their personnel with WMATA Contractor Identification Badges showing the employer's name and the employee's name, number, and photo I.D. These badges shall be displayed in a prominent manner on each person while engaged on the Work. Access to the Site shall be granted only to properly accredited representatives of the Contractor and its Subcontractors.
- B. The Contractor and Subcontractor requiring entry into the rail revenue operating system, including rail maintenance yards, for performance of the Work shall provide such employees requiring entry with photo identification cards issued by the Authority with a Roadway Worker Protection (RWP) training endorsement. RWP training, as administered by the Authority, will be required for the Contractor and Subcontractor employees prior to working in the rail revenue operating system and rail maintenance yards. Contractor's Safety Superintendent shall schedule the RWP training through the WMATA Representative.

Workers will be required to take WMATA training and pass the course for Roadway Worker Protection under the following conditions:

1. The employee is working on the WMATA trackbed outside of an Authorized Construction Site or;
2. The employee's work location is approximate to the WMATA trackbed such that the work has the potential to encroach upon the dynamic envelop of a train and/or track borne equipment.

Workers will not be required to take WMATA training and pass the course for Roadway Worker Protection under the following conditions:

1. The employee is working within an Authorized Construction Site; or
2. A barrier is installed between the employee's work location, that is proximate to the WMATA trackbed, such that the barrier would prevent the work from encroaching upon the dynamic envelop of a train and/or track borne equipment.

3. The employee is working on the platform, not beyond the edge of the tactile strip (“bumpy tiles”) in the direction of the roadway and platform end gates, not using ladders, scaffold or equipment that has the potential to foul the roadway, and must be visibly differentiated from other personnel that are RWP trained (e.g. different color vest)
- C. The Contractor shall obtain and be responsible for administering the use of WMATA contractor identification badges. The WMATA contractor identification badges are not valid for transportation on Metrobus or Metrorail and identification badges will be valid up to a maximum of one year. Should the Contractor’s and Subcontractor’s employees not have valid WMATA contractor identification badges, they will be dismissed from the Site.

## HOURS OF WORK

- A. Work within WMATA trackway, on station platforms and within WMATA operating facilities affecting revenue service shall be carried out during non-revenue hours and/or Revenue Service Adjustment (RSA) hours and under the oversight of WMATA escorts, unless otherwise requested and pre-approved.
- B. Coordinate, schedule and receive approval for all work with the WMATA Representative to ensure that the Design-Builder’s activities do not interfere with the operation of or access to the Authority’s facilities.
- C. Typical working hours not requiring access to track or other Authority facilities that require escorts for access are 8AM to 2PM.

Table 01 14 10 - 01

Track Rights <b>NOT</b> Required for Non-Roadway Work						
Work Hour Category	Night of:	Hours Available <sup>1</sup>	Expected Access to Site	Off Site Time	Expected Work Window	Description
Non-Revenue Weekday	Sunday	Access for Non-Roadway Work to be allowed 24/7				Work NOT in the Roadway but within the WMATA facility. Work must be conducted following all WMATA safety standards and SOP's.
	Monday - Thursday					
Non-Revenue Weekends	Friday					
	Saturday					

<sup>1</sup> Hours subject to change at the Authority's discretion.

Table 01 14 10 - 02

Track Rights Required for Non-Revenue Hours of Work						
Work Hour Category	Night of:	Hours Available Non-Revenue <sup>1</sup>	Expected Access to Site	Off Site Time	Expected Work Window <sup>2</sup>	Description
Non-Revenue Weekday	Sunday	01:30 (Mon) to 03:30 (Mon) (2 hrs)	Monday 01:30	Monday 03:30	2 hours	Work in the Roadway requiring track rights and/or lock-out/tag-out procedures as required by WMATA safety standards and SOP's.
	Monday - Thursday	01:30 to 03:30 hrs) (2	Tuesday-Thursday 01:30	Tuesday-Friday 03:30	2 hours	
Non-Revenue Weekends	Friday	01:00 (Sat) to 05:00 (Sat) (4 hrs)	Saturday 01:00	Saturday 05:00	4 hours	
	Saturday	01:00 (Sun) to 05:00 (Sun) (4 hrs)	Sunday 01:00	Sunday 05:00	4 hours	

<sup>1</sup> Hours subject to change at the Authority's discretion.

<sup>2</sup> With "Supervisory" outage per Design-Builders Safety Plan. Red Tag outage reduces time by 50%.

Table 01 14 10 - 03

Scheduled RSA Events for Non-Revenue Hours of Work
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Work Hour Category	Night of:	Hours Available Non-Revenue <sup>1</sup>	Expected Access to Site	Off Site Time	Expected Work Window <sup>2</sup>	Description
Weekend Shutdowns	Friday-Monday	23:00 (Fri) to 04:00 (Mon) (53 hrs)	Friday 23:00	Monday 04:00	53 hours	Station Investigations and Construction of Project

<sup>1</sup> Hours subject to change at the Authority's discretion.

<sup>2</sup> With "Supervisory" outage per Design-Builders Safety Plan. Red Tag outage reduces time by 5 hours.

Table 01 14 10 - 04

RSA Events to be considered by WMATA upon Request for Non-Revenue Hours of Work						
Work Hour Category	Night of:	Hours Available Non-Revenue <sup>1</sup>	Expected Access to Site	Off Site Time	Expected Work Window <sup>2</sup>	Description
2-day Weekend Single Tracking Event	Friday-Monday	23:00 (Fri) to 04:00 (Mon) (53 hrs)	Friday 23:00	Monday 04:00	53 hours	Work in the Roadway requiring track rights and/or lock-out/tag-out procedures as required by WMATA safety standards and SOP's.
3-day Weekend Single Tracking Event	Friday-Tuesday	23:00 (Fri) to 04:00 (Tues) (77 hrs)	Friday 23:00	Monday 04:00	77 hours	
2-day Weekend Shutdown	Friday-Monday	03:00 (Sat) to 04:00 (Mon) (49 hrs)	Saturday 03:00	Monday 04:00	49 hours	
3-day Weekend Shutdown	Friday-Tuesday	03:00 (Sat) to 04:00 (Tues) (73 hrs)	Saturday 03:00	Tuesday 04:00	73 hours	

<sup>1</sup> Hours subject to change at the Authority's discretion.

<sup>2</sup> With "Supervisory" outage per Design-Builders Safety Plan. Red Tag outage reduces time by 5 hours.

D. There are Federal Holidays that occur on Mondays throughout the year creating a 3-day weekend. In addition to the Work Hours indicated in Article 1.04G herein, on holiday weekends listed below, single track RSAs may be permitted between 2200 Friday and 0400 Tuesday and complete shutdown RSAs may be permitted between 0300 Saturday and 0400 Tuesday.

1. Martin Luther King Day
2. President's Day
3. Memorial Day
4. Columbus Day
5. Labor Day

E. RSA's will not be permitted during the following periods in any calendar year:

1. March 12 through April 21
  2. The first Saturday of June (Race for the Cure)
  3. The week containing July 4 including the preceding and succeeding weekends.
  4. The 4<sup>th</sup> Sunday of October (Marine Corps Marathon)
  5. Thanksgiving eve through the following Monday
  6. Christmas eve and Christmas day
  7. New Year's Eve and New Year's day
- F. Many times, during a calendar year there are large events scheduled in the Washington DC area that require special attention by WMATA. These events are typically scheduled no sooner than 90 Days in advance of their occurrence. The Design-Builder should plan for no more than three such events in any calendar year. WMATA will notify the Design-Builder of the scheduling of these events as soon as they become known. If the event conflicts with a scheduled RSA, then the Design-Builder RSA's will need to be advanced or delayed 1 week unless there is conflict with the black-out periods listed above.
- G. There shall be no requests for early endings of the working days on nights of regularly scheduled sporting events such as baseball, basketball, hockey, or soccer.
- H. Emergencies, excluding Acts of God, arise during the course of Metrorail operations that could cause the cancellation of a scheduled RSA. Anticipate no more than four cancellations within a calendar year. If an emergency occurs, then the Design-Builder RSA's will need to be delayed 1 week unless that conflicts with the black-out periods listed above.

### TRACKWAY AND SAFETY ACCESS

A. Material and Equipment Access:

Material and equipment access are via the roadway. If the Contractor needs roadway access for equipment and material the Contractor shall coordinate with WMATA.

B. WMATA's "Dynamic Envelope:"

All materials and equipment provided under this contract to be transported to the project site (shaft and/or station) must fit within the WMATA dynamic envelope per the WMATA Design Criteria. This includes equipment manufactured to be placed on its side, manufactured in smaller components to be reassembled on site, etc. Equipment shall not be transported or handled in any way that violates the manufacturer's warranty. These Dynamic Height and Width restrictions include the dimensions of a standard flat car being used for transport of the materials/equipment.

- C. The Design-Builder shall engineer, install, maintain, and finally remove temporary barriers separating WMATA roadway and platform areas from work areas requiring revenue and dayshift work activities. Barriers are to protect and demarcate personnel and material from affecting the roadway. These barriers must be "extraordinary" engineered physical barriers between tracks and "buffer" zones between tracks. These barriers must be designed and stamped by a Professional Engineer licensed in the jurisdiction where the barrier will be constructed/installed. Due to the risk of making third rail contact by workers or materials in shafts, Red Tag outages are required. In lieu of Red-Tags, a supervisory outage may be used if SAFE issued rubber-mats are used over the 3<sup>rd</sup> rail for impact. These shields must be designed and stamped by a Professional Engineer licensed in the jurisdiction where the barrier/shielding will be constructed/installed.

- D. The Design-Builder shall plan for all tools, materials, and equipment needed to complete the work to be delivered directly to the worksite(s) prior to the commencement of the work.

#### WORK TRAINS

- A. All Design-Builder-provided rail mounted vehicles/cars must be inspected by WMATA Track and Structures prior to being permitted to operate on the system. The Design-Builder shall ensure the flatcar is fully loaded, secured, and ready to travel to the jobsite a minimum of 2 hours before the Hours of work.

#### PART 2 - PRODUCTS (NOT USED)

#### PART 3 - EXECUTION (NOT USED)

**END OF SECTION**

## SECTION 01 18 00 - PROJECT UTILITY INTERFACE

### GENERAL

#### 1.01 SUMMARY

- A. This Section specifies the Design-Builder's responsibilities regarding interface with Utility companies and agencies.

PART 1 -

#### 1.02 SUBMITTALS

- A. Submit sets of drawings and specifications to those Utilities and agencies affected by the design as required. All transmittals and requests to agencies and Utilities for approvals, reimbursable estimates, and other data shall indicate the submittal stage. Provide the Arlington County Project Officer and WMATA Representative with an electronic copy of all transmittal letters and other communications and replies thereto as each is sent to or received from a Utility or agency (submitted through e-Builder and PROCORE) The Utilities and agencies noted below shall be provided with the following review submittals. Comply with the requirements of each Utility and agency:
1. Copies of each of the composite utility plans,
  2. Copies of all pertinent Sections of the specifications, and
  3. Copies of index sheets, key plans, and general information drawings as appropriate. Prepare key (location) plans as necessary to cover all the disciplines required to do the Work. Do not prepare individual key plans for each discipline.
- B. Complete list of affected Utilities and agencies to the Arlington County Project Officer and WMATA Representative:
1. Confirmation of approval by the affected Utility or agency of the treatment, design, and standards must accompany the submittal to the WMATA Representative of the Design Drawings and Design.
- C. Shop Drawings for utility connections and special facilities during construction.

#### 1.03 UTILITIES AND AGENCIES

- A. The Design-Builder is responsible for coordination, treatment, and design of all utilities or properties owned or controlled by Utilities or agencies. An active effort shall be made by the Design-Builder as early in the design as possible to coordinate with all affected Utilities and agencies to determine their current standards. Prepare a new drawing(s) reflecting the latest standards, codes and utility requirements.
- B. Utility fees shall be paid for by the Design-Builder.
- C. The Utilities and agencies listed hereinafter may not be all inclusive. Although not a comprehensive list, the design-builder is required to coordinate with all Utilities, Agencies, and any other entity with underground or overhead facilities in or near the project site as required to complete the contract.
- D. Recommend additional agencies/utility companies as appropriate. Determine all affected Utilities including but not limited to the following agencies or their successor agencies and submit complete list to the WMATA Representative:

VIRGINIA

1. Arlington County, VA
  - a) Washington Gas (gas)
  - b) Dominion Virginia Power (electric)
  - c) Verizon & Verizon FIOS (telephone/cable)
  - d) Comcast/Xfinity (telephone/cable)
  - e) Cox Cable (telephone/cable)
  - f) RCN (telephone/cable)
  - g) Arlington Water (water and sewer)
  - h) Virginia Department of Transportation (VDOT)
  - i) Plantation Pipeline & Colonial Pipeline (gas)

- D. Other identified utility owner (cable, fuel lines, etc.) whose facility will be affected by the construction.

PART 2 – **PRODUCTS**

**2.01 APPROVED PRODUCTS**

- A. All products to be utilized on any utility shall be as approved by that Utility.

PART 3 – **EXECUTION**

**3.01 DESIGN, CONSTRUCTION, AND MAINTENANCE OF UTILITY FACILITIES**

- A. All work performed by the Design-Builder on any utility, if any, shall be performed in accordance with the requirements of that Utility and the full knowledge of the WMATA Representative.
- B. Indicate in the Design Drawings where Utilities will perform design, construction, and maintenance of their facilities in relation to this Contract. Provide the engineering design as specified for facilities owned by Utilities including service connections, facility modifications, and relocations as applicable.
- C. Provide the Utilities with detailed Shop Drawings for utility connections and special facilities during construction.

**END OF SECTION**

## SECTION 01 31 20 - PROJECT MEETINGS

### GENERAL

#### 1.01 SUMMARY

A. This Section specifies administrative and procedural requirements for Project involving or PART 1 – concerning WMATA meetings.

#### 1.02 SYSTEMS INTEGRATION PROGRESS MEETINGS

- A. Progress Meetings shall be held by the Design-Builder monthly in the Washington Metropolitan Area starting 10 Days after receipt of the Design-Builder written responses to Arlington County and WMATA's design review comments on the intermediate Systems Integration Design. The purpose of these meetings will be to clarify the comments, update Authority personnel on the systems integration issues, resolve interface definitions or systems integration issues, and exchange ideas and information. Meeting intervals can be revised by the WMATA Representative, if deemed appropriate.
- B. These meetings shall be attended by the Design-Builder's Key Staff, those Subcontractors, Suppliers, or other entities critical to the resolution of any open issues, the Arlington County Contracting Officer Representative, and other representatives of the Authority.
- C. The agenda for the progress meetings shall be similar to the progress review meeting agenda and shall include all unresolved issues raised in previous systems integration progress meetings.
- D. All interface problems shall be identified at the earliest possible opportunity. Provide a list of problem interfaces along with an assessment of the project impact and potential resolutions at each progress meeting.
- E. Record meeting minutes and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 – Provide two (2) business days for comment on minutes before closing meeting minute report.

PART 3 –

**PRODUCTS (NOT USED)**

**EXECUTION (NOT USED)**

**END OF SECTION**

## SECTION 01 33 00 - SUBMITTAL PROCEDURES

### GENERAL

#### 1.01 SUMMARY

- PART 1 - A. This Section specifies the general requirements and procedures for preparing and submitting design and construction documents to the Authority and Jurisdictional Authorities for approval or for information. The submittals shall consist of, but not be limited to design drawings, computations, and specifications; Shop Drawings; Working Drawings; product data; documents, letters, certifications and reports; permit applications and Jurisdictional Authority approval documents; and other submittals.

#### 1.02 DEFINITIONS

- A. Schedule of Required Submittals: A compendium of all required design and construction related submittals identified throughout the Contract Documents.
- B. Contract Document Submittal Log: A document indicating the status of all Required Submittals listed in the Schedule of Required Submittals.
- C. For Information: Submittals indicated within the Technical Requirements as "For Information" are prepared and submitted by the Design-Builder to the Authority for information only. The Authority may provide comments on Submittals for Information, but Authority's Approval is not required.

#### 1.03 SUBMITTAL SCHEDULE

- A. Coordinate the schedule for design submittals with the Project Schedule. The schedule for design submittals shall reflect the time required for designing, reviewing, ordering, manufacturing, fabricating, and delivery, including additional time required for re-submittals.
- B. Provide a preliminary Schedule of Required Submittals, as described in Section 00 72 00, SUBMITTALS, within 14 Days after the effective date of Notice to Proceed (NTP) for the Authority's review. The preliminary Schedule of Required Submittals shall be updated through discussions with the Authority during weekly progress meetings or through special meetings subsequent to initial Authority approval.
- C. Submit a final Schedule of Required Submittals within 180 Days after the effective date of NTP.
- D. Submit a Contract Document Submittal Log, as described in Section 00 72 00, SUBMITTALS, within 30 Days after the effective date of NTP. The Contract Document Submittal Log, created in MS Excel or MS Access, shall consist of all submittals required by the Contract Documents and Issued for Construction Specifications. Populate the Contract Document Submittal Log with submittal data as the design and construction progress. The Contract Document Submittal Log shall list all versions of a submittal, however only one version of a submittal may be in effect at any one time.
- E. Submittals made shall be arranged and maintained in a tabular format by specification Section as well as in chronological order by the dates required for construction. The log shall include:
1. Scheduled date for initial Submittal, review, and "need" date for acceptance in order to fabricate and install, corresponding to the Project Schedule activity.
  2. Contract number, specification Section number and title

3. Name of Subcontractor
  4. Type of Submittal (Shop Drawings, product data, samples, or other), description of the item, name of manufacturer, trade name, and model number
  5. Highlight submittals that are on the critical path and require expedited review to meet the schedule. Indicate lead time to the date of fabrication and installation.
  6. State if submitted for approval or information.
  7. If a Submittal is a safety critical item based on the approved Certifiable Items List (CIL), include the "Item" number and "Section" (paragraph) number, as shown on the Certifiable Items List.
  8. Re-submittals: Reason for change
  9. Tested/Inspected By: Identify the entity performing the test
- F. The Contract Document Submittal Log shall be updated and submitted on a monthly basis.

#### 1.04 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Submit one electronic copy in the format specified, unless noted otherwise, through the Authority's Project Management Software System (PMSS). The WMATA Representative will return one electronic copy through the PMSS.
- B. The WMATA Representative will discard submittals received from sources other than the Design-Builder.
- C. Prepare separate submittals for each item in a specification Section. Group them in the order listed, paragraph by paragraph, and package them together.
- D. Transmit submittals of related parts of the Work concurrently such that processing will not be delayed for coordination. Incomplete submittals will be returned to the Design-Builder with no action taken by the Authority.
- E. For Design Drawings submittals, include title block in accordance with the WMATA CAD Manual. For Design Specification submittals:
  1. Indicate Project name and Contract number and the date of submission.
  2. Indicate name of firm or entity that prepared each submittal.
- F. For all other submittals, place a permanent label or title block on each submittal item for identification.
  1. Indicate Project name and Contract number, the date of submission, reference to the specification Section article, and drawing number and detail to which the submittal applies.
  2. Indicate name of firm or entity that prepared each submittal.
  3. Provide a blank space approximately 5 by 5 inches, in the lower right corner of each drawing just above the title block, to record the Design-Builder's review and approval markings and action taken by the WMATA Representative.
- G. All submittals shall be accompanied with a transmittal form containing the following minimum information.



1. Project name and Contract number, the date of submission, Subcontractor, Supplier, manufacturer name, and submittal number
2. Submittal purpose and description
3. Reference to the specification Section, drawing number, and title
4. Reference applicable standards, such as ASTM or Federal Specification numbers
5. Location(s) where product is to be installed, as appropriate
6. Identification of deviations from the Issued for Construction Drawings and Specifications
7. Notation that Submittal is a safety critical item, if identified on the "Certifiable Items List"

#### 1.05 DESIGN DOCUMENTS

- A. All Design Documents shall be submitted for the Authority's review at the progressive completion levels designated by the Authority. This includes design drawings, supporting calculations, design reports based on geotechnical data and field surveys, Jurisdictional Authority correspondence, private and public utility company correspondence, and any other pertinent design basis information.
- B. Submit Design Drawings in AutoCAD and bookmarked-by-discipline Adobe (.PDF) formats that can be edited (without seals) and plotted either as full-size or half-size drawings that are scalable. Submit Adobe (.PDF) of Issued for Construction Drawings sealed and signed by a professional engineer or architect, as applicable, registered in the jurisdiction where the work will be performed for official record.
- C. Submit Design Calculations and Reports in MS Word and bookmarked-by-discipline Adobe (.PDF) formats.
- D. Submit Design Specifications in MS Word and bookmarked-by-Section Adobe (.PDF) formats. Submit Adobe (.PDF) of Issued for Construction Specifications sealed and signed by a professional engineer or architect, as applicable, registered in the jurisdiction where the work will be performed for official record.

#### 1.06 MEETING MINUTES

- A. Prepare meeting minutes that are the responsibility of the Design-Builder immediately after each meeting. Submit draft copy to WMATA Representative for review within 5 Days in MS Word format.
- B. Submit final meeting minutes in Adobe (.PDF) format 3 Days after receipt of Authority review.

#### 1.07 SHOP DRAWINGS

- A. General:
  1. Submit Shop Drawings in AutoCAD and Adobe (.PDF) formats.
  2. Shop Drawings shall indicate all pertinent features of the products and the method of fabrication, connection, erection, or assembly with respect to the Work.
  3. The first drawings submitted by Design-Builder, Subcontractor, or vendor will be reviewed for conformance with this Section. Once accepted, use the drawing format as a standard for subsequent drawings.

- B. Dimensioning: Follow applicable dimensioning and tolerance practices as specified in ANSI/ASME Y14.5.
1. Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
  2. Provide sufficient dimensions on drawings so that size, shape, and location may be determined without calculation.
  3. Show each dimension clearly so that only one interpretation is possible. Show each dimension for a feature once.
  4. Text must be legible on 11 by 17-inch prints.
  5. Include on the Shop Drawings details necessary for the installation, maintenance, and repair of all equipment provided.

### 1.08 WORKING DRAWINGS

- A. Submit Working Drawings in AutoCAD and Adobe (.PDF) formats.
- B. Working Drawings indicate the Design-Builder's plan for temporary structures that will not become part of the completed Project.
- C. Working Drawings and calculations shall be signed and sealed by a professional engineer registered in the jurisdiction where the work will be performed and shall convey, or be accompanied by information sufficient to completely explain the structure, machine, or system described and its intended manner of use.

### 1.09 PRODUCT DATA

- A. Submit product data in Adobe (.PDF) format.
- B. If information must be specially prepared for a submittal because standard published data is not suitable for use, submit as Shop Drawings, not as product data.
- C. Modify manufacturers' standard drawings, catalog cuts, brochures, diagrams, schedules, performance charts, illustrations, calculations, printed installation, erection, application, and placing instructions, and other descriptive data to delete information that is not applicable to the Contract. Indicate dimensions, clearances, performance characteristics, capacities, wiring and piping diagrams, and controls. Supplement standard information with additional information applicable to this Contract.
- D. Submit product data concurrent with samples.

### 1.10 SAMPLES

- A. Submit samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittals and actual components as delivered and installed.

- B. Maintain sets of accepted samples at the Site, available for quality control comparisons throughout the course of construction activity. Sample sets may be used to determine conformance of construction associated with each set.
  - 1. Samples that may be incorporated into the Work are indicated in individual specification Sections. Samples not incorporated into the Work, or otherwise designated as the Owner's property, are the property of Design-Builder.
- C. Samples for Verification: Submit full-size units or samples of a size indicated, physically identical with material or the product proposed for use and that shows a full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
- D. Number of Samples: Submit five (5) sets of Samples to the County QAM, who will review for completeness and provide to WMATA representative. The WMATA Representative will retain three Sample sets; the remainder will be returned. Mark up and retain one returned Sample set as a project record sample.
  - 1. Submit a single sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
- E. If variations in color, pattern, texture, or other characteristics are inherent in the material or product represented by a sample, submit at least three (3) sets of paired units that show approximate limits of variations.

#### 1.11 CERTIFICATES AND CERTIFICATIONS

- A. Submit original certificates and certifications in MS Word and Adobe (.PDF) formats.
- B. Provide certificates and certifications that demonstrate proof of compliance with Contract specification requirements for products, materials, equipment, and systems.
- C. Authority Approval of a certification shall not be construed as relieving the Design-Builder from furnishing products that meet the specified design intent.

#### 1.12 REPORTS

- A. Submit original reports, signed and sealed by a professional engineer in the jurisdiction that the Work is to be constructed, and any related drawings in MS Word, AutoCAD and Adobe (.PDF) formats.
- B. The Design-Builder shall provide reports that demonstrate proof of compliance with Contract specification requirements. The reports include manufactured products, materials, research, equipment, systems, and test reporting in the field or laboratory.
- C. Authority Approval of submitted reports shall not be construed as relieving the Design-Builder from furnishing products that meet the specified design intent.

#### 1.13 DATA

- A. Submit data and any related drawings in MS Word, AutoCAD and PDF formats.
- B. The Design-Builder shall provide written and graphic information including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations that

demonstrate proof of compliance with Contract specification requirements. Provide the name and version of software used for calculations.

- C. Authority Approval of submitted data shall not be construed as relieving the Design-Builder from furnishing products that meet the specified design intent.

#### 1.14 AS-BUILT DOCUMENTS

- A. The Design-Builder shall maintain a record set of As-Built Drawings and Specifications annotated to show all changes incorporated as Work progresses.
- B. Submit As-Built Drawings in AutoCAD and bookmarked-by-discipline Adobe (.PDF) formats that can be plotted either as full-size or half-size drawings that are scalable.
- C. Before the scheduled date of Substantial Completion, the Design-Builder shall submit approved as-built documents for the completed Work as specified in Section 01 77 50, CLOSEOUT.

#### 1.15 DESIGN-BUILDER'S REVIEW

- A. Prepare written responses to Arlington County and WMATA's comments on the Design-Builder's Design Drawings and Design Specifications using the Design Review Form provided by the Authority and submit to Arlington County and WMATA within 5 Days of receiving the comments. Responses to Authority comments that are not agreed to by the Design-Builder shall be resolved in a Design Review Meeting. Resolution between the Design-Builder and the Authority of responses to comments in writing on the Design Review Form is required prior to incorporating comments in the subsequent design submittal.
- B. Review each submittal, including all those provided by Subcontractors and Suppliers of any tier, check for coordination with other Work and for compliance with the Issued for Construction Drawings and Issued for Construction Specifications. Note inconsistencies with Contract Documents and Issued for Construction Drawings and Issued for Construction Specifications. Submittals shall bear the Design-Builder's approval stamp and initials of the reviewer before submitting to the Authority.
- C. Each submittal transmittal form shall be signed by the Authorized representative of the Design-Builder with a statement, "Having checked this submission, we certify that it conforms to the requirements of the Contract in all respects, except as otherwise indicated".
- D. Do not start work where submittals are required until submittal review is completed by the Authority and Approval, if required, has been received.
- E. Identify approval methods of the various jurisdictional authorities and obtain their approvals as required.

#### 1.16 AUTHORITY'S REVIEW

- A. Design Review
  - 1. The WMATA Representative is responsible for receiving all Project design submittals from the Design-Builder and distributing to the appropriate Authority reviewers.
  - 2. For each design submittal, the Authority will provide written review comments on Design Review Forms or marked up drawings to the Design-Builder for incorporation into the design documents. Submittals will be reviewed in accordance with the specified design submittal review schedule.

3. The Authority will review the Design-Builder's responses to comments within 5 Days after receiving the responses. If, in the opinion of the Authority, comments are not resolved, the Authority will arrange a Design Review Meeting with the Design-Builder to discuss and resolve all unresolved comment responses within 21 Days of receiving the responses.
- B. The WMATA Representative shall receive construction submittals from the Design-Builder and will distribute them within the Authority for review.
1. Shop Drawings, samples, and other submission reviews by the Authority will not include checking of dimensions for potential conflicts.
  2. Approval by the Authority of a specific item will not indicate Approval of an assembly of which the item is a component.
  3. Incomplete submittals will be returned for resubmission without review.
- C. Submittals that are reviewed by the Authority will be returned to the Design-Builder with one of the following approval codes:
1. Approved Without Condition or Comment.
  2. Approved as Noted, Resubmittal Not Required. The Design-Builder shall comply with changes, conditions, or comments on the submittal.
  3. Disapproved. The entire submittal is disapproved and shall be resubmitted.
  4. Rejected not in accordance with requirements.

#### 1.17 RESUBMISSIONS, DISTRIBUTION, AND USE

- A. Make resubmissions in the same form and number of copies as initial submittal. Note the date and content of previous submittal. Clearly indicate the extent of revision.
- B. Furnish copies of final submittals to manufacturers, Subcontractors, Suppliers, fabricators, installers, Jurisdictional Authorities, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- C. Retain complete copies of submittals on Site.

#### 1.18 RFI ADMINISTRATIVE REQUIREMENTS

- A. Submit one electronic copy on the RFI form provided by the Authority, through the Authority's Project Management Software System (PMSS). The WMATA Representative will return one electronic copy through the PMSS.
- B. Allow seven (7) Days for the review of each RFI.
- C. The WMATA Representative will discard RFIs received from sources other than the Design-Builder.
- D. All submittals shall be accompanied with a transmittal form containing the following minimum information.
  1. Project name and Contract number, the date of submission, and RFI number
  2. Clear statement of the question to be addressed by the Authority

Washington Metropolitan Area Transit Authority  
RFP PROJECT NUMBER/CA

Contract No. PROJECT NUMBER  
Date: Issue Date

3. Reference to the specification Section, drawing number, and title that is the subject of the RFI

**PRODUCTS (NOT USED)**

**EXECUTION (NOT USED)**

**END OF SECTION**

PART 2 –

PART 3 –

## SECTION 01 41 00 - REGULATORY REQUIREMENTS

### GENERAL

#### 1.01 SUMMARY

- PART 1 – A. This Section includes information required for conformance to regulatory requirements, such as building codes, mechanical codes, electrical codes, ADAAG regulations, or other regulations applicable to the Project.

#### 1.02 GENERAL

- A. Meet or exceed the WMATA Manual of Design Criteria, WMATA Standard Specifications, and the Technical Requirements relevant for each element of the Work as these represent the standards to be used for design and construction. Comply with all Federal, state, and local laws and regulations that control the design and construction of the Project, and meet or exceed the laws and standards relevant for each element of the Work to be installed if they are more stringent than the WMATA Manual of Design Criteria and WMATA Standard Specifications and the Technical Requirements.

#### 1.03 THE JURISDICTIONAL AUTHORITIES, RAILROADS, UTILITIES, AND MISCELLANEOUS AGENCIES

- A. Coordinate with the following entities as appropriate and relevant to the Project. The departments and agencies listed hereinafter may not be all inclusive. Although not a comprehensive list, the design-builder is required to coordinate with all Utilities, Agencies, and any other entity with jurisdiction in or near the project site as required to complete the contract.
- B. Recommend additional agencies and departments as appropriate.
- C. Coordinate with the following entities as appropriate and relevant to the Project.
- D. The Design-Builder is alerted to the need for coordination with projects located on or near the sites and/or agencies having jurisdiction on or near the project sites as follows, which include but are not limited to:
- E. Federal agencies
1. Environmental Protection Agency (EPA)
  2. Federal Aviation Administration (FAA)
  3. Federal Highway Administration (FHWA)
  4. Federal Transit Administration (FTA)
  5. General Services Administration (GSA)
  6. Department of the Interior:
    - a. National Park Service (NPS), National Capital Region
  7. Occupational Safety and Health Administration (OSHA)
  8. U.S. Army, Corps of Engineers (COE):
    - a. Washington Aqueduct Division
    - b. Baltimore District
    - c. Norfolk

9. U.S. Coast Guard (USCG)
10. U.S. Navy, Naval Facilities Engineering Command (NAVFAC)
11. Architectural and Transportation Barriers Compliance Board (ATBCB):
  - a. American with Disabilities Act Accessibility Guidelines (ADAAG)
12. Federal Emergency Management Agency (FEMA)
13. U.S. Army Engineer District
14. Department of Defense (DOD)
15. USDA Natural Resources Conservation Service
16. US Fish and Wildlife Service

G. Virginia

1. Virginia (Northern) Planning District Commission
2. Virginia (Northern) Park Authority
3. Virginia (Northern) Transportation Commission
4. Virginia State Highway Commissioner
5. Virginia Department of Transportation (VDOT)
6. Virginia Department of Motor Vehicles
7. Virginia Department of Environmental Quality (DEQ)
8. Virginia Department of General Services
9. Virginia Department of Health
10. Virginia Department of Conservation and Recreation (DCR)
11. Metropolitan Washington Airports Authority (MWAA)

H. Arlington County

1. Department of Public Works:
  - a. Utilities Department
2. Arlington County Department of Environmental Services
3. Arlington County Fire Department
4. Arlington County Sheriff and Police Department
5. Arlington County Zoning Department
6. Highway Facilities
7. Fire Prevention Code
8. Arlington County Permit Office
9. Arlington County Fire Prevention Office
10. US National Park Service (NPS)

N. Utilities: See Section 01 18 00, PROJECT UTILITY SOURCES.

O. Miscellaneous agencies:

1. Metropolitan Washington Council of Governments
2. Washington Metrorail Safety Commission



Washington Metropolitan Area Transit Authority  
RFP PROJECT NUMBER/CA

Contract No. PROJECT NUMBER  
Date: Issue Date

**PRODUCTS (NOT USED)**

**EXECUTION (NOT USED)**

**END OF SECTION**

PART 2 –

PART 3 –

## SECTION 01 42 00 - REFERENCES

### GENERAL

#### 1.01 SUMMARY

- PART 1 –
- A. This Section lists the reference standards cited in the Contract Documents, the organizations or Jurisdictional Authorities whose standards are cited, and common acronyms used in the Contract Documents.
- B. When reference is made to codes, regulations, reference standards, and specifications, the Work shall conform to the current edition as of the date of Award, unless it is superseded by Jurisdictional Authorities.

#### 1.02 ABBREVIATIONS AND ACRONYMS

AA	<b>Aluminum Association</b>
AAR	<b>Association of American Railroads</b>
AASHTO	<b>American Association of State Highway and Transportation Officials</b>
ABMA	<b>American Bearing Manufactures Association</b>
ABS	<b>Acrylonitrile-Butadiene-Styrene</b>
ac	<b>Alternating Current</b>
ACGIH	<b>American Conference of Governmental Industrial Hygienists</b>
ACI	<b>American Concrete Institute</b>
A/D	<b>Analog to Digital</b>
ADA	<b>Americans with Disabilities Act</b>
ADAAG	<b>Americans with Disabilities Act Accessibility Guidelines</b>
AHA	<b>American Hardboard Association</b>
AHDGA	<b>American Hot Dip Galvanized Association, Inc</b>
AHJ	<b>Authority Having Jurisdiction</b>
AEIC	<b>Association of Edison Illuminating Companies</b>
AISC	<b>American Institute of Steel Construction</b>
ANSI	<b>American National Standards Institute (synonymous with USASI-ASA)</b>
API	<b>American Petroleum Institute</b>
AREMA	<b>American Railway Engineering and Maintenance of Way Association</b>
ARI	<b>Air Conditioning and Refrigeration Institute</b>
ASCE	<b>American Society of Civil Engineers</b>
ASHRAE	<b>American Society of Heating, Refrigerating and Air-Conditioning Engineers</b>
ASME	<b>American Society of Mechanical Engineers</b>
ASNT	<b>American Society of Nondestructive Testing</b>
ASTM	<b>ASTM International</b>
ATBCB	<b>Architectural and Transportation Barriers Compliance Board</b>
AT&T	<b>American Telephone and Telegraph Company</b>
ATS	<b>Automatic Transfer Switch</b>
AWG	<b>American Wire Gauge (synonymous with Brown and Sharpe)</b>
AWI	<b>Architectural Woodwork Institute</b>
AWWA	<b>American Water Works Association</b>
AWS	<b>American Welding Society</b>
AWPA	<b>American Wood Preservers' Association</b>
BHMA	<b>Building Hardware Manufactures Association</b>
BIA	<b>Brick Institute of America</b>
BLS	<b>Bureau of Labor Statistics</b>
BOCA	<b>Building Officials and Code Administrators International</b>

BTU	<b>British Thermal Unit</b>
BTUH	<b>British Thermal Units Per Hour</b>
C	<b>Celsius (Centigrade)</b>
CAGI	<b>Compressed Air and Gas Institute</b>
CE	<b>US Army, Corps of Engineers</b>
cfm	<b>Cubic Feet Per Minute</b>
CISPI	<b>Cast Iron Soil Pipe Institute</b>
CMU	<b>Concrete Masonry Unit</b>
CO	<b>Contracting Officer</b>
COR	<b>Contracting Officer Representative</b>
CQCS	<b>Contractor's Quality Control System</b>
CRSI	<b>Concrete Reinforcing Steel Institute</b>
CSP	<b>Concrete Surface Profile</b>
CTI	<b>Cooling Tower Institute</b>
dBA	<b>A weighted Decibel(s)</b>
dc	<b>Direct Current</b>
DFT	<b>Dry Film Thickness</b>
DHI	<b>Door and Hardware Institute</b>
DILM	<b>Ductile Iron Pipe, Cement-Lined and Coated, Mechanical Joint</b>
DILP	<b>Ductile Iron Pipe, Cement-Lined and Coated, Push-On-Joint</b>
DPDT	<b>Double Pole, Double Throw</b>
DPST	<b>Double Pole, Single Throw</b>
DTS	<b>Data Transmission System</b>
DWG	<b>Drawing</b>
EIA	<b>Electronic Industries Association</b>
EPA	<b>Environmental Protection Agency</b>
EPDM	<b>Ethylene Propylene Diene Monomer</b>
EPR	<b>Ethylene-Propylene-Rubber</b>
F	<b>Fahrenheit</b>
FAA	<b>Federal Aviation Administration</b>
FAT	<b>Factory Acceptance Test</b>
FCCCR	<b>Foundation for Cross-Connection Control Research of the University of Southern California Engineering Center</b>
FHWA	<b>Federal Highway Administration</b>
FIT	<b>Field Installation Test</b>
FM	<b>Factory Mutual Insurance – FM Global</b>
FS	<b>Federal Specifications</b>
FED STD	<b>Federal Standard</b>
FO	<b>Fiber-Optic</b>
ft	<b>Feet</b>
FTA	<b>Federal Transit Administration (formerly UMTA)</b>
FWD	<b>Forward</b>
GPH	<b>Gallons Per Hour</b>
HOA	<b>HAND/OFF/AUTOMATIC</b>
HP	<b>Horsepower</b>
HRWR	<b>High-Range Water Reducer</b>
HR	<b>Hour</b>
HSB	<b>Hot Stand-By (redundant PLC)</b>
HVAC	<b>Heating, Ventilating and Air Conditioning</b>
IACS	<b>Industrial Automation and Control System</b>
IBC	<b>International Building Code</b>
ICA	<b>Instrumentation, Controls, and Automation</b>
ICC	<b>International Code Council</b>

ICEA	<b>Insulated Cable Engineers Association</b>
ICI	<b>Industrial Coatings International</b>
ICS	<b>Industrial Control System</b>
ID	<b>Inside Diameter</b>
IDIQ	<b>Indefinite Delivery/Indefinite Quantity</b>
IEC	<b>International Electrotechnical Commission</b>
IED	<b>Intelligent Electronic Device</b>
IEEE	<b>Institute of Electrical and Electronic Engineers</b>
IESNA	<b>Illuminating Engineering Society of North America</b>
IFB	<b>Invitation for Bids</b>
IFC	<b>Issued for Construction</b>
IO, I/O	<b>Input / Output module(s)</b>
IPC	<b>Illustrated Parts Catalog</b>
IPS	<b>Iron Pipe Size</b>
ISA	<b>International Society of Automation</b>
ISO	<b>International Organization for Standardization</b>
kHz	<b>Kilo Hertz</b>
kV	<b>Kilovolts</b>
kVA	<b>Kilovolts-amperes</b>
kW	<b>Kilowatts</b>
LED	<b>Light Emitting Diode</b>
LV	<b>Low Voltage (below 1000V)</b>
mV	<b>1,000 volts</b>
mVA	<b>1,000 volts-amperes</b>
MAT	<b>Material</b>
MATOC	<b>Multiple Award Task Order Contract</b>
MCC	<b>Motor Control Center</b>
MCM	<b>1,000 Circular Mils</b>
MCP	<b>Motor Circuit Protector</b>
METRO	<b>Logo for the Washington Metropolitan Area Transit Authority</b>
MS	<b>Military Specification</b>
MSG	<b>Manufacturers' Standard Gauge</b>
MIL STD	<b>Military Standard</b>
MODC	<b>Manual of Design Criteria</b>
MSHA	<b>Mine Safety and Health Administration</b>
MSS	<b>Manufacturer's Standardization Society of the Valve and Fitting Industry</b>
MTPD	<b>Metro Transit Police Department</b>
NAAMM	<b>National Association of Architectural Metal Manufacturers</b>
NACE	<b>National Association of Corrosion Engineers</b>
NAVFAC	<b>USN, Naval Facilities Engineering Command</b>
NBGQA	<b>National Building Granite Quarries Association</b>
NBS	<b>National Bureau of Standards</b>
NC	<b>Normally Closed</b>
NCMA	<b>National Concrete Masonry Association</b>
NDT	<b>Non-Destructive Testing</b>
NEBB	<b>National Environmental Balancing Bureau</b>
NEC	<b>National Electrical Code</b>
NEMA	<b>National Electrical Manufacturers Association</b>
NETA	<b>International Electrical Testing Association</b>
NFPA	<b>National Fire Protection Association</b>
NIOSH	<b>National Institute for Occupational Safety and Health</b>
NIST	<b>National Institute of Standards and Technology</b>

NO	<b>Normally Open</b>
NPS	<b>National Park Service</b>
NTP	<b>Notice to Proceed or Network Time Protocol, depending on the context in which it occurs</b>
NTIS	<b>National Technical Information Service</b>
O&M	<b>Operation and Maintenance</b>
O.C.	<b>On Center</b>
OCCB	<b>Operations Control Center Building</b>
OD	<b>Outside Diameter</b>
OEM	<b>Original Equipment Manufacturer</b>
OIT	<b>Operator Interface Terminal</b>
ORD	<b>Operations Readiness Date</b>
OS	<b>Operating System (for computing device)</b>
OS&Y	<b>Outside Stem and Yoke</b>
OSHA	<b>US Department of Labor, Occupational Safety and Health Administration</b>
P&ID	<b>Piping and Instrumentation Diagram</b>
PAC	<b>Programmable Automation Controller</b>
PCI	<b>Pre-Stressed Concrete Institute</b>
PDI	<b>Plumbing and Drainage Institute</b>
PE	<b>Polyethylene</b>
PEI	<b>Porcelain Enamel Institute</b>
PEI	<b>Petroleum Equipment Institute</b>
PPHM	<b>Parts Per Hundred Million</b>
PPM	<b>Parts Per Million</b>
pcf	<b>Pounds Per Cubic Foot</b>
psf	<b>Pounds Per Square Foot</b>
psi	<b>Pounds Per Square Inch</b>
Psig	<b>Pounds Per Square Inch Gauge</b>
Pv	<b>Velocity Pressure</b>
PVC	<b>Polyvinyl Chloride</b>
QA	<b>Quality Assurance</b>
QC	<b>Quality Control</b>
RCRA	<b>Resource Conservation and Recovery Act</b>
REV	<b>Reverse</b>
RFP	<b>Request for Proposal</b>
RIO	<b>Remote I/O (Inputs/Outputs)</b>
Rms	<b>Root Mean Square</b>
ROCC	<b>Rail Operations Control Center</b>
ROD	<b>Revenue Operation Date</b>
rpm	<b>Revolutions Per Minute</b>
RQD	<b>Rock Quality Designation</b>
RTRC	<b>Reinforced Thermosetting Resin Conduit</b>
RTU	<b>Remote Terminal Unit</b>
RVSS	<b>Reduced Voltage Soft Starter</b>
SDI	<b>Steel Deck Institute or Steel Door Institute, depending upon context in which it occurs</b>
SMACNA	<b>Sheet Metal and Air-Conditioning Contractors National Association</b>
S1S	<b>Smooth One Side</b>
S2S	<b>Smooth Both Sides</b>
SAT	<b>Site Acceptance Test</b>
SCADA	<b>Supervisory Control and Data Acquisition</b>
Sf	<b>Square Feet</b>
SIT	<b>System Integration Test</b>
SJI	<b>Steel Joist Institute</b>

SMACNA	<b>Sheet Metal and Air-Conditioning National Association</b>
SPDT	<b>Single Pole, Double Throw</b>
SPST	<b>Single Pole, Single Throw</b>
SS	<b>Stainless Steel or Soft (el. Motor) Starter, depending upon the context in which it occurs</b>
SSPC	<b>Steel Structures Painting Council</b>
TCA	<b>Tile Council of America</b>
TCP/IP	<b>Transmission Control Protocol/Internet Protocol</b>
TGA	<b>Thermogravimetric Analysis</b>
TIA	<b>Telecommunication Industry Association</b>
TVF	<b>Tunnel ventilation Fan</b>
TVS	<b>Tunnel Ventilation System</b>
UFAS	<b>Uniform Federal Accessibility Standards (superseded by ADAAG)</b>
UL	<b>Underwriters Laboratories, Incorporated</b>
UMTA	<b>Urban Mass Transit Administration (currently FTA)</b>
UPS	<b>Unit Price Schedule or Uninterruptible Power System, depending upon context in which it occurs</b>
USBR	<b>US Bureau of Reclamation</b>
USCS	<b>US Commercial Standard</b>
USDOT	<b>US Department of Transportation</b>
USPS	<b>US Product Standard</b>
USSG	<b>United States Standard Gauge</b>
VOC	<b>Volatile Organic Compound</b>
VUSBC	<b>Virginia Uniform Statewide Building Code</b>
WMATA	<b>Washington Metropolitan Area Transit Authority</b>
WMSC	<b>Washington Metrorail Safety Commission</b>
XLPE	<b>Cross-Linked Polyethylene</b>

PART 2 –

PART 3 –

**PRODUCTS (NOT USED)**

**EXECUTION (NOT USED)**

**END OF SECTION**

## SECTION 01 47 00 - QUALITY MANAGEMENT SYSTEM

### GENERAL

#### 1.01 SUMMARY

- PART 1 –
- A. This Section specifies the Design-Builder's requirements to formalize a system that documents the structure, responsibilities, and procedures required to achieve effective quality management of the Work throughout the duration of the Contract.
  - B. The Quality Management System shall be consistent with ISO 9001 standard. The Design-Builder is not required to be ISO certified, however, certain Suppliers and manufacturers shall be certified as required in these specifications.
  - C. The Quality Management System shall include a Quality Plan, Design Control Plan, Construction Quality Plan, Inspection and Test Plans and corresponding procedures and forms necessary to establish, document, maintain, and execute work that conforms to the Contract Documents.
  - D. Inspection and Testing shall be performed by qualified staff and laboratories as specified herein.
  - E. Arlington County will hire an independent Quality Assurance Manager (County QAM) which will serve as primary quality oversight for the project in coordination with the Authority. This shall include special inspections.

#### 1.02 REFERENCES

- A. Federal Transit Administration (FTA)
  - 1. FTA-PA-27-5194-12.1, Quality Management System Guidelines
- B. International Organization for Standardization (ISO)
  - 1. ISO 9001 – Quality Management Systems
  - 2. ISO 10013 – Guidelines for Quality Management System Documentation
- C. U.S. national standards maintained by the U.S. National Institute of Standards and Technology (NIST) and the U.S. Naval Observatory.

#### 1.03 SUBMITTALS

- A. Make submittals in accordance with Section 01 33 00, SUBMITTAL PROCEDURES, and as noted below. Submit plans, procedures, audit schedules and certifications for Approval. Remaining submittals are for information.
- B. Design Control Plan: As specified in Section 01 11 20, DESIGN AND PROGRAM REQUIREMENTS.
- C. Quality Plan: Contract-specific Quality Plan modeled after ISO 9001 within 30 Days of NTP and with each revision. As a minimum, the following quality elements shall be included in the Quality Plan.
  - 1. Management Responsibility

2. Document Control
  3. Subcontracting and Purchasing
  4. Product Identification and Traceability
  5. Inspection and Testing
  6. Test Program Plan of Technical Requirements Section 1.
  7. Inspection Measuring and Test Equipment
  8. Inspection and Test Status
  9. Nonconformance
  10. Corrective Action
  11. Quality Records
  12. Quality Audits
  13. Training
- D. Quality Procedures: Procedures for each of the quality elements in the Quality Plan within 120 Days of NTP.
- E. Inspection and Test Plans/Specific: Submit Work task or component specific Inspection and Test Plans a minimum 60 Days in advance of when the covered work is scheduled to begin.
- F. Quality Reports: Submit the following reports in accordance with the approved Quality Plan and Quality Procedures.
1. Design Status Reports: Monthly.
  2. Daily Quality Reports: Daily.
  3. Test Status Report: Monthly.
  4. Review and Disposition of Nonconforming Product: With each occurrence.
  5. Summary of Management Reviews: Monthly during the first 6 months after NTP and not less than quarterly thereafter.
  6. Proposed audit schedule to be determined by design-builder and County QAM.
  7. Report of audit results and completion of corrective actions within 30 Days of the completion of an Audit.
  8. Quality Compliance Certification with each Monthly Progress Report

#### 1.04 QUALITY MANAGEMENT SYSTEM REQUIREMENTS

- A. Quality Management System
1. The Quality Management System shall be updated to improve the system as necessary throughout the Period of Performance of the Contract to reflect changes determined to be necessary by Design-Builder management review, Design-Builder internal audit, and



Authority audit. Each update of the Quality Management System requires QAM and Authority Approval.

2. During the Period of Performance, exercise positive control over all of the Work, including that of subconsultants, Subcontractors, fabricators, manufacturers, installers, and Suppliers in accordance with the Quality Plan and Quality Procedures described within the approved Design-Builder Quality Management System.
3. The execution of the Quality Management System shall be subject to Authority audit throughout the Period of Performance of the Contract, in coordination with the Arlington County QAM.

B. Quality Plan

1. The Quality Plan shall include the signatures of the Officer(s) responsible for the Design-Build entity indicating their approval of the Quality Management System.
2. Quality Manager
  - a. Shall have the qualifications specified in Section 01 11 10, DESIGN-BUILDER KEY STAFF.
  - b. Shall perform as the Design-Builder's Management Representative.
  - c. Is responsible for implementing the Quality Management System and shall have the authority to stop the Work.
3. Document Control: Current version of all documents shall be managed in the Authority's Project Management Software System (PMSS). The database shall be kept current throughout the Period of Performance of the Contract.
4. Subcontracting and Purchasing
  - a. Purchased material, equipment, and services shall be controlled to ensure that they are properly integrated into the Work.
  - b. Assure that Design-Builder's subconsultants, Suppliers, and Subcontractors satisfactorily demonstrate and document an adequate system for managing quality to the Design-Builder.
  - c. Provide adequate surveillance of subconsultants, Subcontractors, and Suppliers to assure conformance with the Quality Management System and specification requirements. This surveillance shall include inspection and audit of off-Site activities of Design-Builder's subconsultants, Subcontractors, and Suppliers.
5. Product Identification and Traceability: The Design-Builder's Quality Management System shall include provisions to identify and provide traceability of products and materials where appropriate and as required in the Issued for Construction Specifications.
6. Inspection and Testing/General
  - a. Establish an Inspection and Test Plan that conforms to the Quality Management System and the Issued for Construction Specifications and that allows for tracking of actual performance of inspections and tests.
  - b. The Inspection and Test Plan shall incorporate elements of the Authority furnished Inspection Guidelines, Part 2, as needed to meet the requirements of the Quality Plan.

- c. Testing laboratories shall be certified as required by the Issued for Construction Specifications.
  - d. The Inspection and Test Plan shall be designed to ensure that testing is performed to demonstrate that components and systems perform satisfactorily in service. Testing shall be performed by qualified and experienced personnel and using certified in accordance with approved test procedures. Tests shall incorporate acceptance limits defined by industry codes and standards or by the Issued for Construction Specifications; the more restrictive standard shall take precedence. All test results shall be documented and submitted to the County QAM.
  - e. Provide the County QAM 48-hours' notice of tests except when greater notice is required in these specifications.
  - f. Include instructions necessary to implement source inspections; receiving inspections; inspection of work in progress; hold point inspections, and completion inspections.
  - g. Forms for recording test results and authorized approval signatures shall be used for all tests. Each test form shall identify the applicable specification Section, Article, and Paragraph.
  - h. Subcontractors testing their own work shall be supervised and managed by the Design-Builder. The responsibility for testing and Subcontractor performance remains with the Design-Builder.
  - i. If tests or certifications conducted by the County QAM disclose that work is not in conformance with the Issued for Construction Specifications, then the County QAM will advise the Design-Builder as to the particular defects to be remedied. Upon correction of the defects, provide written notification to the County QAM, and additional testing or certification shall be conducted as necessary to result in a proven and certified system(s). Further, in the case of such non-conformance with the Issued for Construction Drawings and Issued for Construction Specifications, provide details on the preventive action taken to avoid such non-conformance for remaining installations.
7. Inspection, Measuring, and Test Equipment: Ensure that test equipment used meets the specified requirements, and that the equipment and instruments are controlled, maintained, and calibrated by a nationally recognized certification entity/agency. Devices used to calibrate measuring and test equipment or other measurement standards shall be traceable to one or more of the following:
- a. U.S. national standards maintained by the U.S. National Institute of Standards and Technology (NIST) and the U.S. Naval Observatory.
  - b. Fundamental or natural physical constants with values assigned or accepted by the U.S. NIST.
  - c. National standards of other countries, which are correlated, with U.S. national standards.
  - d. Comparison to consensus standards.
8. Inspection and Test Status: Require inspection and test schedules for the County QAM's use in scheduling test witnessing and other quality assurance functions.
9. Review and Disposition of Nonconforming Product: The authority within the Design-Builder organization to review and provide disposition of nonconforming products shall be identified. The disposition of product that does not conform to Issued for Construction

Drawings and Issued for Construction Specifications shall be subject to approval by the County QAM.

10. Corrective Action: Corrective action shall be established, documented, and maintained. These include the investigation of the root cause of nonconforming work and the corrective action needed to prevent recurrence, and analysis to detect and eliminate potential causes of nonconforming work.

11. Control of Quality Records

- a. Quality records document results achieved (e.g. test data sheets, test reports, electronic test data, mill certifications, measurement verification sheets, batch tickets) or provide evidence of activities performed (e.g. inspection reports, photos or videos, checklists with sign-offs).
- b. Establish and implement measures to identify, collect, index, file, and store. These procedures shall include a database to track and maintain control over all Quality Records generated by the Contract Work.
- c. Quality records shall be legible, reproducible, identifiable with the item involved, and contain the date of origination and identity of the originator, verifier, and responsible supervisor.
- d. Quality records generated by Subcontractors, Suppliers, fabricators, and test laboratories shall be traceable to the product being supplied or fabricated and shall be provided in advance of shipment or shall be shipped with the product.
- e. Retain quality records for the duration required to meet statutory requirements.

12. Quality Audits

- a. Management reviews conducted by Design-Builder:
  - 1) Management reviews shall occur monthly during the first 6 months of the Contract and not less than quarterly thereafter.
  - 2) Written summaries of findings and major corrective actions shall be provided to the County QAM within 5 Days of completion of each review.
- b. Internal quality audits conducted by Design-Builder:
  - 1) Internal audits shall be performed at least quarterly.
  - 2) Deficiencies in the Quality Management System, the causes of deficiencies in the Quality Management System, and the status of corrective action and preventive action, when appropriate shall be recorded in the audit results.
  - 3) Audit results shall be provided to the County QAM and the WMATA Representative within 14 Days of the audit with a plan for corrective and preventative action.
  - 4) Provide notification of completed corrective and preventative action.

13. Training: Establish, maintain and provide the training needs for all personnel performing activities affecting quality.

C. Design Control Plan

1. The Design-Builder's design process shall translate the Authority's needs and requirements into an acceptable design.
2. Design control shall be defined by the Design Control Plan as described in Section 01 11 20, DESIGN AND PROGRAM REQUIREMENTS.
3. Configuration management shall be defined by a Configuration Management Plan developed as a part of the Design Control Plan.

D. Inspection and Test Plans/Specific

1. As a minimum, Inspection Plans shall include the following information:
  - a. A matrix of all inspections required by the Issued for Construction Specifications to be performed by Design-Builder, Suppliers, or Subcontractors and their frequency.
  - b. Established hold points that require work stoppage until Authority action relative to that work activity is complete.
  - c. Established witness points that identify when Authority and/or County QAM notification is required for a Design-Builder work activity.
  - d. Checklists to be utilized.
2. As a minimum, the Test Plans shall include the following information:
  - a. A matrix of all tests required by the Issued for Construction Specifications to be performed by Design-Builder, Suppliers, or Subcontractors.
  - b. Samples of test reports: the test reports shall meet the minimum requirements called for in the applicable test standards specified in the Issued for Construction Specifications.
  - c. Provisions for coordinating onsite and offsite testing.
  - d. Provisions for meeting the County QAM notification criteria for planned tests and inspections specified to be witnessed by the County QAM. Provide the County QAM a minimum of 48 hours advance notice.
  - e. Description of test
  - f. Specification Section, Article, and Paragraph related to each test
  - g. Type of test
  - h. Applicable standard
  - i. Test frequency
  - j. Responsibility for test performance
  - k. Completion status
  - l. Means of tracking and recording corrective actions being taken to assure compliance with the Issued for Construction Specifications.
  - m. Means for recording test results.

E. QUALITY REPORTS

1. Design Status Report
  - a. Design status report shall track and report the status of design products for County QAM review. The report shall be revised, updated, and submitted for approval at least monthly.
  - b. The design status report shall be consistent with and follow from the Design Control Plan and shall specifically track all design and design verification activities included in the approved Design Control Plan.
  - c. The design status report shall be in a format that allows the Design-Builder and the County QAM to reasonably understand the means by which the design of the Project is being completed. It shall provide planned versus actual schedule performance and shall be accurate and useful as a means for project personnel to understand how the Design is proceeding throughout the term.
  - d. The Design Status Report shall include subcontracted design work, if appropriate.
2. Daily Quality Reports: Daily quality reports shall summarize the construction activities to the Authority, record the inspections and tests completed and the results, and record deficiencies identified, during the previous 24 hours of work. These reports shall be provided to the County QAM daily, uploaded into Procure.
3. Test Status Report: Track and report the status of testing. Revisions, updates, and additions the test status report shall be submitted to County QAM at least monthly.

#### 1.05 QAM QUALITY OVERSIGHT

- A. The principal role of the County QAM in the implementation of the Design-Build Quality Program will be oversight of the effectiveness of the Design-Builder's Quality Management System including quality control and quality assurance activities. WMATA Quality Personnel will coordinate activities with the QAM. WMATA will inform the County QAM of any additional quality inspections deemed required and as such reserves the right to conduct inspection of all phases of design and construction by Authority field staff. Deficiencies discovered will be brought to the immediate attention to the Arlington County QAM including written follow-up notification.
- B. When the County determines that the approved Quality Management System or plans, or any portion or feature thereof, are not controlling work sufficiently for the Work to conform to Contract Documents, Issued for Construction Drawings and Issued for Construction Specifications, the Authority will inform the County QAM, in writing. The County QAM will direct the Design-Builder to take appropriate action to correct such deficiencies. The WMATA Representative may stop the Work activities if the Quality Management System is not functioning properly due to lack of Design-Builder's staff or for any other Contract non-compliance.
- C. Notwithstanding the above, County QAM inspection, testing, or other actions shall not constitute Acceptance of work, nor shall it relieve the Design-Builder of its contractual responsibilities.

#### 1.06 AUTHORITY AUDITS OF THE DESIGN-BUILDER'S QUALITY MANAGEMENT SYSTEM

- A. At its sole discretion, the Authority may conduct audits, tests, and inspections in addition to those performed by the Design-Builder or the County QAM.

- B. There will be an ongoing review and evaluation of implementation of the Design-Builder's Quality Management System by the County QAM and reports submitted to WMATA to verify that the Design-Builder is effectively controlling the quality of design and construction.
- C. Audits include audits of fabricators, Subcontractors, subconsultants, Suppliers, and third-party audits (i.e., ISO audits, trade organization certification audits, and audits required to maintain laboratory or testing accreditation).
- D. If the implementation of the Design-Builder's Quality Management System is determined to be ineffective by the Authority, the Authority, at its sole discretion, may request/require appropriate action from the County QAM. for any and all work it deems to be deficient or non-conforming to the Contract Documents, Issued for Construction Drawings and Issued for Construction Specifications. The Design-Builder will be expected to make whatever changes are necessary in the organization or in the Quality Management System to provide effective control of the quality of the Work.
- E. The County QAM will perform audits to verify that the Design-Builder is effectively controlling the quality of the Work. The basis for the audits will be the Quality Management System and the Issued for Construction Drawings and Issued for Construction Specifications, these reports will be submitted to WMATA for review and acceptance.

**PRODUCTS (NOT USED)**

PART 2 –

**EXECUTION (NOT USED)**

PART 3 –

**END OF SECTION**

## SECTION 01 51 00 - TEMPORARY UTILITIES

### GENERAL

#### 1.01 SUMMARY

A. This Section specifies requirements for temporary utilities for use during construction.

PART 1  
B. Temporary utilities required include but are not limited to:

1. Water service and distribution.
2. Temporary electric power and light.
3. Telephone service.
4. Storm and sanitary sewer.

#### 1.02 REFERENCES

- A. American National Standards Institute (ANSI)
1. ANSI-A10 Series standards for Safety Requirements for Construction and Demolition
- B. National Electrical Contractors Association (NECA)
1. NECA Electrical Design Library, Temporary Electrical Facilities
- C. National Electrical Manufacturers Association (NEMA)
- D. National Fire Protection Association (NFPA)
1. NFPA 70, National Electrical Code
  2. NFPA 241, Standard for Safeguarding Construction, Alteration, and Demolition Operations
- E. Occupational Safety and Health Administration (OSHA)
- F. Underwriters Laboratories (UL)

#### 1.03 SUBMITTALS

- A. Submit the following in accordance with Section 01 33 00, SUBMITTAL PROCEDURES, and with additional requirements as specified for each.
1. Reports for tests, inspections, meter readings, and similar procedures performed for temporary utilities.
  2. Indicate the schedule for implementation and termination of each temporary utility as appropriate to the Authority as described in Section 01 32 20, CONTRACT PROGRESS REPORTING.

#### 1.04 QUALITY ASSURANCE

- A. Comply with industry standards and applicable laws and regulations of Jurisdictional Authorities including but not limited to:
1. Building Code requirements.
  2. Health and safety regulations.

3. Utility company regulations.
  4. Police, Fire Department, and Rescue Squad rules.
  5. Environmental protection regulations.
- B. Comply with NFPA Code 241, ANSI-A10, and NECA Electrical Design Library, Temporary Electrical Facilities. For electrical service, comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70.
- C. Arrange for the inspection and testing of each temporary utility before use, and coordinate all requirements for certifications and permits. The WMATA Representative shall be notified sufficiently in advance, but with no less than 24 hours' notice, so as to be present at all planned inspections and onsite activities.

#### 1.05 PROJECT CONDITIONS

- A. Incorporate into the Project Schedule dates for implementation and termination of each temporary utility. At the earliest practicable time and when acceptable to the Authority, change over from use of temporary service to use of the permanent service.
- B. Keep temporary services and facilities clean and neat in appearance. Temporary utilities shall operate in a safe and efficient manner. Take all necessary fire prevention measures and shall ensure that utilities are not overloaded or permitted to interfere with progress of the Work. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on the Site.
- C. Determine temporary utility services requirements and shall make arrangements with utility companies and governmental agencies to obtain such services.
- D. Provide temporary electrical service of sufficient capacity to serve the temporary requirements during the life of the Contract. The source of temporary power for testing may be the temporary service, portable generator, or other approved system, which will deliver power at the voltage and other characteristics required to accomplish testing as specified. Circuits and construction for temporary systems shall suit the needs of the Work and comply with NEC and the codes and regulations of the Jurisdictional Authorities.
- E. Temporary services shall be furnished, installed, connected, and maintained by the Design-Builder as approved by the WMATA Representative. Prior to completion of the Work, the Design-Builder shall remove all temporary services and restore affected areas as approved.
- F. Shop drawings for all temporary utility and electrical services shall be submitted for approval. Power supply shall be of such quantity and type required to perform the Work. Maximum primary voltage shall be 600 volts, unless otherwise approved. Lighting equipment shall be of the type and quantity needed to provide illumination of all project areas. Materials for and installation of temporary services shall comply with OSHA requirements.

#### 1.06 ACCESS TO FIRE HYDRANTS AND FIRE ALARM BOXES

- A. Whenever the Work is being carried out, free access must be given to each fire hydrant, fire alarm box and standpipe; when required, hydrants shall be extended by suitable tubes or piping to an accessible point as approved and to the satisfaction of the jurisdictional fire department. Obstructions shall not be piled at any time or placed within 10 feet of any fire hydrant or fire alarm box and, where materials are placed in the vicinity of a fire hydrant or fire alarm box and to such height as to prevent the same from being readily seen, the position of such hydrants or fire alarm boxes shall be indicated by suitable signs and lights, both day and night.



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- B. Safeguard, maintain, and protect the wires, cables, ducts, manholes, posts, and poles, signals, and alarm boxes of fire departments. Do not cause interruption to the fire department fire alarm telegraph service, and in case of accident, shall promptly notify the fire department. No fire department wire, cable, duct, manhole, post or pole, signal, or fire alarm box shall be disturbed, except in the presence of a representative of the Arlington County Fire Marshall. In case such wire, cable, duct, manhole, post or pole, signal, or fire alarm box is disturbed, the Design-Builder shall immediately notify the WMATA Representative, and it shall be restored immediately to its original condition.

**PRODUCTS (NOT USED)**

**EXECUTION (NOT USED)**

PART 2 –

**END OF SECTION**

PART 3 –

## SECTION 01 55 00 - MAINTENANCE OF TRAFFIC, ACCESS, AND PARKING

### GENERAL

#### 1.01 SUMMARY

- A. This Section includes requirements for maintenance of existing pedestrian and vehicular traffic  
PART 1 – onsite and offsite; construction sequence, and staging; maintaining access to and from the Site including construction areas, haul routes, and temporary roads with traffic control; and for Design-Builder parking.

#### 1.02 REFERENCES

- A. Manual of Uniform Traffic Control Devices (MUTCD)

#### 1.03 SUBMITTALS

#### 1.04 MAINTENANCE OF TRAFFIC

- A. Except as otherwise approved by Arlington County and WMATA, design-builder shall maintain access to all emergency egress facilities.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

**END OF SECTION**

## SECTION 01 56 00 - TEMPORARY BARRIERS AND ENCLOSURES

### GENERAL

#### 1.01 SUMMARY

- PART 1 – A. This Section includes requirements for temporary barriers and enclosures. This Section also includes facilities for the protection of occupants entering or exiting spaces during construction.

#### 1.02 GENERAL

- A. Wherever necessary, shown or specified, erect and maintain signs, fences, barricades, and pedestrian bridges for the protection of public travel, the work site, adjoining property and adjoining public places.
- B. Take positive measures to prevent entry into the Site of the Work and storage areas by children, animals, and unauthorized adults and vehicles.
- C. Appropriate warning signs and instructional safety signs as specified in Section 01 58 00, PROJECT SIGNS, shall be conspicuously posted in all areas involving construction activities. Furnish signs and attach to, as applicable, the protective devices enclosing the Design-Builder's work, access, operating, and platform storage and site storage/laydown areas as applicable; pedestrian sidewalks, streets, and parking lots adjacent to the work area; and openings. The storage/laydown areas as designated by the Authority, if any, and as specified in Section 01 52 00, TEMPORARY CONSTRUCTION FACILITIES, shall be fenced and signage shall be provided to prevent unauthorized entry. Stored materials shall be bundled or tied down by the Design-Builder.
- D. Protective devices shall be in accordance with codes and regulations of Jurisdictional Authorities.
- E. All work pertaining to this Section shall meet ADAAG requirements.

#### 1.03 SUBMITTALS

- A. Submit the following Shop Drawings in accordance with Section 01 33 00, SUBMITTAL PROCEDURES.
1. Location and fence material of fencing for pedestrian access areas.

#### 1.04 TEMPORARY FENCES

- A. Provide temporary fencing within the construction area to fence off pedestrian sidewalks, streets and parking areas from operating, access and work areas and Site storage/laydown areas.
- B. Temporary fences shall be substantially constructed in a neat appearance.
- C. Working Area Wooden Fencing
1. Provide 6-foot high temporary working area wooden fencing as shown or as directed and as specified. Working area wooden fencing shall serve two purposes: to protect pedestrian access areas from hazardous construction activities, and to enclose the Design-Builder's work, access, storage, and operating areas.

2. The location of fence for pedestrian access areas adjacent to the Work area and for enclosing Design-Builder's work areas shall be as specified and consistent with the Design-Builder's approved Working Drawings for maintenance of traffic plans.

D. Working Area Chain-link Fencing

1. Provide 6-foot high temporary working area chain-link fencing as specified to fence off storage area from operating areas, and if necessary, to fence off pedestrian access areas.
2. The location of fence for pedestrian access areas adjacent to the Work area and to the storage areas shall be as specified and consistent with the Design-Builder's approved Working Drawings for maintenance of traffic plans.

### 1.05 TREE AND PLANT PROTECTION

- A. Protect trees and plants not slated to be removed or replaced from construction activities.

### 1.06 PROTECTION OF UTILITIES

- A. Protect existing utilities.

### 1.07 PROTECTION OF EXISTING STRUCTURES AND IMPROVEMENTS

- A. Protect Existing Structures and Improvements.

## PART 2 – PRODUCTS

### 2.01 MATERIALS

- A. Barricades shall be substantial in character, neat in appearance, and of approved size and arrangement.
- B. Barricade materials shall be as approved. Lumber for barriers as applicable and working area wooden fencing shall be exterior grade, treated to be fire-retardant, pressure impregnated with resin salt as approved. Exterior latex paint for barriers and working area wooden fencing shall be as specified in WMATA Standard Specification Section 09 91 99, FIELD PAINTING. Color shall be as approved by the WMATA Representative. Provide necessary fencing hardware, locks, gates and all other incidentals as approved.
- C. All chain-link fencing shall be anti-climbing type, with plastic inserts, barbed wire (where indicated), and as specified in WMATA Standard Specification Section 32 31 00, FENCING.
- D. WARNING SIGNAGE SHALL BE AS SPECIFIED IN SECTION 01 58 00, PROJECT SIGNS.
- E. Structural lumber for decking shall be as specified in Section 01 53 00, TEMPORARY DECKING.

## PART 3 –

- F. At the Authority's or Arlington County's request the Design builder shall post signage on temporary fences and barricade structures, provided the Authority or Arlington County provides Design-Builder with image files needed to create the signs.

## EXECUTION

### 3.01 INSTALLATION

- A. As removal of pavement and sidewalk progresses as applicable and furnish and install barricades in accordance with requirements of the Jurisdictional Authorities. During the prosecution of the Work, barricade or close openings in floors, walls, and other parts of the structures while such openings are not in regular use as applicable. Barricade or close such openings before Acceptance of the Work. Barricades shall be anchored to the ground on all sides of openings. Work involving electrical systems or equipment in or near the area to which personnel or the public have access shall be isolated using barricades.
- B. Flashing yellow lights shall be mounted and maintained on barricades at maximum intervals of 25 feet.
- C. Fabricate and erect in accordance with local requirements pedestrian barriers as applicable and working area wooden fencing with a stud framework and a covering of tightly fitted plywood sheets. Paint with two coats of exterior latex paint. Install hardware, locks, gates, and all other incidentals. Furnish and install wooden fence along sides of decked areas for pedestrian walkways as applicable where such walkways are adjacent to open areas, staging/storage areas, and other areas used by the Design-Builder.
- D. Erect chain-link fencing consisting of a post-and-rail framework with chain-link fabric; install hardware, locks, gates, and all other incidentals; and insert plastic inserts into the chain link fence.
- E. Along sides of areas for pedestrian walkways as applicable, where such walkways are adjacent to vehicular traffic, install concrete barriers as shown on approved maintenance of traffic plan.
- F. Erect, fabricate, attach, and maintain safety warning and other signs.
- G. Protect existing vegetation, structures, utilities, and improvements.
- H. Provide maintenance for all barricades, barriers, temporary fences, pedestrian bridges, signage, and existing vegetation, structures, utilities, and improvements protection as applicable for the duration of the Contract. Immediately prior to completion of the Contract, completely remove the items and restore the area.

**END OF SECTION**

## SECTION 01 57 00 - TEMPORARY CONTROLS

### GENERAL

#### 1.01 SITE SECURITY

- A. Design-Builder shall ensure the site is secured to Arlington County and WMATA's satisfaction.

PART 1 –

**END OF SECTION**

## SECTION 01 58 00 - PROJECT SIGNS

### GENERAL

#### 1.01 SUMMARY

- A. This Section includes the requirements for Project signs that will be required at the Site during the construction of the Project.
- PART 1 –

#### 1.02 PROJECT IDENTIFICATION SIGNS

- A. Furnish Project identification signs in the locations at the Sites selected by Arlington County.
- B. Sign size, content, lettering, and format for the large permanent-mount sign shall be as directed by Arlington County and shall be shown on the Design-Builder's Working Drawings.
- C. Signs shall be installed 20 Days after Notice to Proceed is given, shall be maintained during the Work, and shall be removed upon the completion of the Project.

#### 1.03 WARNING SIGNS AND INSTRUCTIONAL SAFETY SIGNS

- A. Provide "No Trespassing" signs, load limit on decking, and other warning and instructional safety aluminum signs with minimum 2-inch high Helvetica Medium style lettering and mount at locations on fencing/barriers/barricades/pedestrian bridges and on other areas as directed. Sign panel size and thickness shall be as directed. Mount the signs with stainless-steel cap screws with hex nuts and lock washers. This Section includes the requirements for Project signs that will be required at the Site during the construction of the Project.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

**END OF SECTION**

## SECTION 01 61 00 - BASIC PRODUCT REQUIREMENTS

### GENERAL

#### 1.01 SUMMARY

- PART 1 –
- A. This Section includes administrative and procedural requirements governing the Design-Builder's selection of products for use in construction of the Project.
  - B. Administrative procedures for handling requests for substitutions made after award of the Contract are included under Section 01 63 00, PRODUCT SUBSTITUTION PROCEDURES.

#### 1.02 DEFINITIONS

- A. As used herein, the term brand name includes identification of products by make and model. If items called for in the Contract Documents have been identified by a brand name or equal description, such identification is intended to be descriptive, but not restrictive, and is to indicate the quality and characteristics of products that will be satisfactory. Design Specifications identifying equal products including products of the brand name manufacturer other than the one described by brand name as specified in Section 01 63 00, PRODUCT SUBSTITUTION PROCEDURES, will be considered if such products are clearly identified and are determined by the Designer and the Authority to meet fully the salient characteristics of the products specified in the Contract Documents.

#### 1.03 SUBMITTALS

- A. Submit for review an initial product list with the Intermediate Design in accordance with Section 01 33 00, SUBMITTAL PROCEDURES. A written explanation for omissions of data and for known variations from Contract requirements shall be included.
- B. Submit for review and Approval a completed product list including a written explanation for omissions of data and for variations from Contract requirements to the Arlington County Project Officer within 30 Days after date of commencement of the construction work. Arlington County Project Officer will coordinate with WMATA representative. WMATA will notify the Arlington County Project Officer and Design-Builder of acceptance or rejection of the documentation within 21 Days of receipt of the submittal.
- C. Authority Acceptance of the product list does not constitute a waiver of the requirement that products comply with the Contract Documents and the Design Drawings and Design Specifications.

#### 1.04 QUALITY ASSURANCE

- A. Provide products of the same kind from a single source.
- B. Except for required labels and operating data, the manufacturer's or producer's nameplates or trademarks shall not be attached or imprinted on exposed surfaces.
  - 1. Labels: Locate required product labels and stamps on a concealed surface or, where required for observation after installation, on an accessible surface that is not conspicuous.
  - 2. Equipment Nameplates: Provide a permanent nameplate on each item of service connected or power-operated equipment. The nameplate shall contain the following information and other essential operating data:



- a. Name of product and manufacturer
- b. Model and serial number
- c. Capacity
- d. Speed
- e. Ratings

## 1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. All products shall be delivered, stored, and handled in accordance with the manufacturer's recommendations to prevent damage, deterioration, loss, or invalidation of the manufacturer's warranty.
  - B. Schedule delivery to minimize long-term storage at the Site and to prevent overcrowding of construction storage and staging areas.
  - C. Coordinate the time of delivery with the installation schedule to ensure that hazardous, easily damaged, or those items sensitive to deterioration, theft, and other losses are stored for a minimum holding period.
  - D. Products shall be delivered to the Site in the manufacturer's original sealed container or other appropriate packaging, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
  - E. Products shall be inspected upon delivery by the Design-Builder to ensure compliance with the Design Drawings and Design Specifications, and to ensure that products are undamaged and properly protected. Documentation noting the time, date, and manner of delivery shall be maintained by the Design-Builder. A statement attesting to the inspection of the products at time of delivery shall be included in the documentation signed by the Design-Builder's authorized representative.
  - F. Products shall be stored at the Site in a manner that will facilitate inspection and measurement of quantity or counting of units. Heavy materials shall be stored in a manner that will not damage supporting construction. Products subject to damage by the elements shall be stored under cover in weather-tight enclosures with ventilation adequate to prevent condensation.
- PART 2 – Temperature and humidity shall be maintained within range required by manufacturer's instructions.

## PRODUCTS

### 2.01 PRODUCT SELECTION

- A. Provide products that comply with the Issued for Construction Drawings and Issued for Construction Specifications. All products to be installed in the Work shall be undamaged and, unless otherwise permitted, unused at the time of installation. Products shall include all accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and suitable for the intended use.
- B. Unless otherwise specified, provide standard products of the type that have been produced and used successfully in similar situations on other Authority projects of a similar nature.
- C. Procedures governing product selection include:

1. Where only a single product or manufacturer is named and the notation “no substitution is permitted” is included in the specification, provide the product indicated. No substitutions will be permitted.
2. Where two or more products or manufacturers are named followed by the notation “no substitutions are permitted” is included in the specification, provide one of the products indicated. No substitutions will be permitted.
3. Where the Issued for Construction Drawings and Issued for Construction Specifications list products or manufacturers that are available and acceptable for incorporation into the Work, accompanied by the term ...or equal or ...or approved equal, the Design-Builder may propose any available product that complies with Contract requirements. Comply with the requirement of Section 01 63 00, PRODUCT SUBSTITUTION PROCEDURES, to obtain approval for use of an unnamed product.
4. Where the Issued for Construction Drawings and Issued for Construction Specifications list the salient features that explicitly describe a product or assembly and a brand name is not included, provide a product or assembly that provides the listed features and otherwise complies with the Contract requirements.
5. Where the Issued for Construction Drawings and Issued for Construction Specifications explicitly require compliance with performance requirements, and the product complies with those requirements based on the manufacturer’s recommended use of the product for the application indicated in the Design Drawings and Design Specifications (as evidenced in published product literature, or by the manufacturer’s certification of performance), the Design-Builder may submit the product for incorporation into the Work.
6. Where the Issued for Construction Drawings and Issued for Construction Specifications require only compliance with an imposed code, standard, or regulation, the Design-Builder may select a product that complies with the standards, codes, or regulations specified.
7. Visual Matching: Where specifications require matching an established item, the Authority’s decision will be final on whether a proposed product matches satisfactorily. Where no product is available that adequately matches adjacent products or complies with the other specified requirements, comply with provisions of Section 01 63 00, PRODUCT SUBSTITUTION PROCEDURES, for selection of an alternate product.
8. Where specified product requirements include the phrase ...as selected from manufacturer’s standard colors, patterns, textures..., select a manufacturer that provides a range of colors in a product that meets all other Design Drawings and Design Specifications requirements. In this situation, standard shall imply regularly or routinely produced.

PART 3 –

## EXECUTION

### 3.01 PRODUCT LIST

- A. Prepare a product list in tabular form acceptable to the Arlington County Project Officer and WMATA showing products specified in the Design Drawings and Design Specifications. Coordinate the timing of delivery of products on the product list with the Design-Builder’s Project Schedule as specified in Section 01 32 20, CONTRACT PROGRESS REPORTING, and Contract Document Submittal Log as specified in Section 01 33 00, SUBMITTAL PROCEDURES. At a minimum, provide the following information for each product:
  1. Related specification Section number.
  2. Generic name used in the Design Drawings and Design Specifications.

3. Proprietary name, model number, and similar designation.
  4. Manufacturer's name and address.
  5. Supplier's name and address.
  6. Installer's name and address.
  7. Projected delivery date and length of delivery period.
- B. Within 21 Days of receipt of product list submittals, WMATA Representative will notify the Arlington County Project Officer and Design-Builder of Authority acceptance or rejection of the product list. If rejected, product list shall be corrected by the Design-Builder and resubmitted for review.

### 3.02 INSTALLATION OF PRODUCTS

- A. Comply with the manufacturer's instructions and recommendations for installation of all products installed under this Contract unless otherwise specified. Products shall be accurately located, aligned with other elements of the Work, and securely installed in place. All exposed surfaces shall be clean as specified in Section 01 74 00, CLEANING, and protected as necessary to prevent damage and deterioration as specified in Section 01 72 30, PROTECTION OF ADJACENT CONSTRUCTION.

**END OF SECTION**

## SECTION 01 63 00 - PRODUCT SUBSTITUTION PROCEDURES

### GENERAL

#### 1.01 SUMMARY

- PART 1 –
- A. This Section includes administrative and procedural requirements for handling requests for substitutions made after award of the Contract.
  - B. Other requirements governing the Design-Builder's selection of products and product options are included under Section 01 61 00, BASIC PRODUCT REQUIREMENTS.

#### 1.02 DEFINITIONS

- A. Definitions used in the Section are not intended to change the meaning of other terms used in the approved Issued for Construction Drawings and Issued for Construction Specifications.
- B. Design-Builder requests for changes in products, materials, equipment, and methods of construction as required or specified by Contract Documents or in approved Issued for Construction Drawings and Issued for Construction Specifications are considered requests for substitutions. The following are not considered substitutions:
  - 1. Revisions to Contract Documents or approved Issued for Construction Drawings and Issued for Construction Specifications requested by the Authority.
  - 2. Specified options of products and construction methods included in Contract Documents or in approved Issued for Construction Drawings and Issued for Construction Specifications. Note that products submitted under an or equal or not limited to provision are considered to be substitutions as specified in Section 00 21 00, SUPPLEMENTARY INSTRUCTIONS TO PROPOSERS.
  - 3. The Design-Builder's determination of and compliance with governing regulations and orders issued by governing authorities.

#### 1.03 SUBMITTALS

- A. Requests for substitution from the Design-Builder during design work will be considered by the Authority. Requests for substitution from the Design-Builder during construction will be considered by the Authority if received with adequate time to allow for Authority review and Approval without delaying the Project Schedule. Requests received that may delay the Project Schedule will be considered or rejected at the sole discretion of the Authority.
  - 1. Submit one electronic copy in Adobe (.PDF) file format of the Brand Name or Equal Form, Section 00 43 30, BRAND NAME OR EQUAL FORM, for each request for substitution to Arlington County Project Officer and the WMATA Representative for consideration of the form and in accordance with procedures required for Change Order proposals as specified by the Arlington County Project Officer. Submission of a change order shall be made only when such changes are deemed appropriate by the Arlington County Project Officer and WMATA Representative.
  - 2. In each substitution request, identify the product and fabrication or installation method to be replaced. The related Technical Requirement, WMATA Standard Specification Section, Standard or RFP Drawing numbers, or approved Issued for Construction Drawing numbers shall be referenced in the submittal. Complete documentation showing compliance with the

requirements for substitutions shall also be submitted including the following information as appropriate:

- a. Product Data, including drawings, fabrication, and installation procedures.
  - b. Samples, where samples of the specified product are requested.
  - c. A detailed comparison of significant qualities/salient features of the proposed substitution with those of the material or work specified. Significant qualities shall include elements such as size, weight, durability, performance, visual effect, code compliance, maintenance requirements, energy usage, and environmental considerations.
  - d. Coordination information, including a list of changes or modifications made necessary to other parts of the Work and to construction performed by the Authority or separate contractors.
  - e. A statement indicating the substitution's effect on the Design-Builder's Construction Schedule. Indicate the effect of the proposed substitution on overall Period of Performance.
  - f. Cost comparison between the product specified and the requested substitution, including a proposal of the net change, if any in the Contract Price.
  - g. Certification by the Design-Builder that the substitution proposed is equal to or better in every respect to that required under the Contract, and that the product will perform as intended. Include a waiver of rights to additional payment or time that may subsequently become necessary should the product fail to perform adequately, or because of changes to other work were required as a consequence of the substitution.
  - h. Failure by the Design-Builder to include the above requirements in the submittal may be cause for rejection of the submittal in its entirety.
- B. If deemed necessary and within 14 Days of receipt of the submittal, the WMATA Representative may request additional information or documentation that, in its sole judgment is required for the evaluation of the substitution request. Within 21 Days of receipt of the original substitution request or of requested additional information or documentation, the Design-Builder will be notified of acceptance or rejection of the proposed substitution. If a decision on the use of a proposed substitute cannot be made or obtained within the time allocated, the product specified by name in the Contract Documents or approved Issued for Construction Drawings and Issued for Construction Specifications shall be used.

#### 1.04 SUBSTITUTION PROCEDURE

- A. The Design-Builder's request for substitution may be rejected by the WMATA Representative if the substitution would involve:
1. Extensive revisions to Contract Documents.
  2. A proposed change not in keeping with the general intent of Contract Documents.
  3. An untimely request, not fully documented when submitted.
  4. A request that is directly related to an or equal clause or similar language in the Contract Documents.

5. A product or method of construction that could not be provided within the Period of Performance.
  6. A product or method of construction that could not be approved by a governing authority.
  7. Additional responsibilities or expense to the Authority (including additional expenses for redesign and evaluation services, increased cost of related construction, and other similar considerations) that outweighs any advantage that is being offered to the Authority as a result of the substitution.
  8. A method of construction that cannot be provided in a manner that is compatible with other materials, the product cannot be coordinated with other materials, and a warranty cannot be provided for the product in accordance with the requirements of the Contract even though the Design-Builder expresses a willingness to certify that the apparent deficiencies can be corrected.
- B. Neither the Design-Builder's submittal nor the Authority's review or Approval of Shop Drawings, product data, or samples that relate to a substitution constitutes an Approval of the requested substitution. Submission of Shop Drawing, product data, or sample submittals does not relieve the Design-Builder from fulfilling Contract requirements for substitutions.

**PRODUCTS (NOT USED)**

PART 2 –

**EXECUTION (NOT USED)**

PART 3 –

**END OF SECTION**

## SECTION 01 71 10 - ACCEPTANCE OF CONDITIONS

### GENERAL

#### 1.01 SUMMARY

- A. This Section specifies basic requirements for determining acceptable conditions for installation.

PART 1

#### 1.02 SUBMITTALS

- A. One electronic copy of the preconstruction inspection records.

#### 1.03 PRECONSTRUCTION INSPECTION REQUIREMENTS

- A. Prior to beginning construction work, the Design-Builder shall inform the Authority of buildings or structures on which it intends to perform work or which performance of the Project Work will affect.
- B. Conditional inspection of buildings or structures in the immediate vicinity of the Project, which may reasonably be expected to be affected by the Work, will be performed jointly by the Authority and the Design-Builder. This inspection will be conducted prior to the commencement of construction work to determine pre-existing conditions. After this inspection, the Authority will not assume any responsibility for damages arising from the Work performed and it shall be the responsibility of the Design-Builder to correct all damages caused by performance of the Contract Work.
- C. Examine substrates, areas, and conditions, with Authority personnel present, for compliance with requirements for installed tolerance and other conditions affecting performance. Record observations from the required preconstruction inspection.
- D. Where a written inspection report requires listing conditions detrimental to performance of the Work, include the following:
1. Description of the Work.
  2. List of detrimental conditions, including substrates.
  3. List of unacceptable installation tolerances.
  4. Recommended corrections.

#### 1.04 EXAMINATION

- A. General: Verify dimensions shown on existing work and dimensions required for work that is to connect with work not in place in accordance with Section 01 72 10, LAYOUT OF WORK AND FIELD ENGINEERING.
- B. Existing Conditions
1. The existence and location of Site improvements, above and below-ground utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of above and below-ground utilities, mechanical and electrical systems, and other construction affecting the Work. Verify the location and point of connection of utility services.

2. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, water service pipes, and electrical services.
  3. Furnish location data for work related to the Project that must be performed by public utilities serving the Project Site.
- C. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- D. Examine rough-in for mechanical and electrical systems to verify actual location of connections before equipment and fixture installation.
- E. Examine new and existing facilities for suitable conditions where products and systems are to be installed.

### 1.05 ACCEPTANCE OF CONDITIONS

- A. Examine substrates, areas, and conditions, with contract personnel present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
    - a. Description of the Work.
    - b. List of detrimental conditions, including substrates.
    - c. List of unacceptable installation tolerances.
    - d. Recommended corrections.
  2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
  3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
  4. Examine new and existing facilities for suitable conditions where products and systems are to be installed.

PART ~~B~~ - Proceed with installation only after unsatisfactory conditions have been corrected.

PART ~~C~~ - Proceeding with work indicates acceptance of surfaces and conditions.

**PRODUCTS (NOT USED)**

**EXECUTION (NOT USED)**

**END OF SECTION**



## SECTION 01 72 10 - LAYOUT OF WORK AND FIELD ENGINEERING

### GENERAL

#### 1.01 SUMMARY

- PART 1 – A. This Section includes general procedural requirements for layout of work and field engineering including, examination, preparation, construction layout, installation, survey personnel, equipment and calibration requirements, survey standards, surveys procedures, and formats for figures and reports.

#### 1.02 RELATED SECTIONS

- A. Section 01 71 10 – ACCEPTANCE OF CONDITIONS

#### 1.03 REFERENCES

- A. DIN (Deutsches Institut für Normung) 18723 – Specification for Theodolite Accuracy
- B. Federal Geodetic Control Committee (FGCC):
- Standards and Specifications for Geodetic Control Networks
- C. National Oceanic and Atmospheric Administration (NOAA):
- Manual National Ocean Survey (NOS), National Geodetic Survey (NGS) 3 Geodetic Leveling
- D. National Society of Professional Surveyors (NSPS)
- American Congress on Surveying and Mapping (ACSM).

#### 1.04 SUBMITTALS

- A. Survey personnel qualification data: Resumé and proof of certification or registration for all project surveyors. Resumés shall include information to demonstrate their capabilities and experience. Include lists of three completed projects with owner, project names, project duration, project description, project addresses, and phone numbers for the Survey Manager and survey crew chiefs.
- B. Survey equipment: List of equipment and instruments to be used on the Project and include manufacturer specifications, date of purchase and last date of service for all instruments. Notify the WMATA Representative when changes to equipment are made and submit an updated list of equipment and instruments.
- C. Electronic distance measuring instruments: All measurements, computations, and results from the required calibration exercise.
- D. Procedures for Control Surveys, Structural As-built Surveys, Movement Detection Surveys, Early Alignment As-built Surveys, and Hi-Lo Surveys, Post Construction Alignment As-built Surveys and Final Trackway Monumentation Surveys.
- E. Horizontal and vertical trackway alignment revisions with supporting calculations and data.
- F. Supporting documents, calculations, and data for required remedial actions.

- G. Numbering sequence for trackway vertical control monumentation.
- H. Log of layout control work. Record deviations from required lines and levels.
- I. Survey data reduction and calculations for Price Schedule items of work.
- J. Post construction Monument Record Sheets.

### 1.05 QUALITY ASSURANCE

- A. Verify and maintain records to document personnel certification; equipment maintenance, calibration, and adjustment; and use of required procedures for field work and office computations. These records shall be maintained by the surveyor in responsible charge of the Work. Verification of compliance shall be included in the Design-Builder's overall Quality Assurance program and provided to the WMATA Representative quarterly or upon request.
- B. Survey Personnel
  - 1. Ensure that all personnel are qualified to perform the Work.
  - 2. Provide a Survey Manager to plan, execute, and verify all survey work (or survey work as established by the WMATA Representative).
  - 3. All personnel performing or assisting in survey activities, including construction layout, shall be Certified Survey Technicians (CST) by and through the National Society of Professional Surveyors (NSPS) - American Congress on Surveying and Mapping (ACSM).
    - a. Each member of the Design-Builder's survey staff shall be certified in one or more of the Certified Survey Technician levels when assigned to a WMATA project. There are four levels of certification in the CST program. Certification is by experience and examination. Refer to NSPS Figure 1.05-1 for the levels of the CST Program.
    - b. The Authority will accept registration as a Land Surveyor or Property Line Surveyor, in Virginia, Maryland, or the District of Columbia in lieu of CST certification.
    - c. Survey consultants hired by the Design-Builder to provide survey services are bound by the same CST requirements contained in the D1 Specs.
    - d. Surveyors working under the direction of a Licensed Surveyor or Property Line Surveyor are not exempt from the CST requirement.
    - e. Use of craft personnel as substitute for temporary survey staff is not acceptable unless they are a Certified Survey Technician.
    - f. With concurrence by the WMATA Representative and WMATA Quality Assurance Manager, a Design-Builder's surveyor without CST certification may temporarily work on a WMATA contract prior to taking the CST exam, if the surveyor:
      - 1) Fulfills the minimum education and or experience requirements for the position held as described in the CST Program Book.
      - 2) Submits a copy of the CST application to the WMATA Representative along with other documentation of education and or work experience.
      - 3) Is scheduled to take the next available CST exam.
      - 4) Requests in writing, a temporary waiver of the CST requirement pending the outcome of the results of the CST exam with the understanding that failure to pass the CST exam will result in said surveyor's removal from the WMATA Contract.

## PRODUCTS (NOT USED)

### EXECUTION

#### 3.01 GENERAL REQUIREMENTS

- PART 2 -  
PART 3 -
- A. The Authority has established, or will establish, such general reference points including horizontal control points and vertical benchmarks as will enable the Design-Builder to proceed with the Work. If the Design-Builder finds that previously established reference points have been destroyed or displaced, or that none have been established, it shall promptly notify the WMATA Representative.
- B. The Design-Builder shall lay out its work from reference points established by previous construction or from established reference points shown in the approved design documents, if applicable, and shall be responsible for all measurements in connection therewith. The Design-Builder shall furnish stakes, templates, platforms, equipment, tools, materials, and labor as may be required in laying out any part of the Work from the reference points established by previous construction or by the Authority. The Design-Builder will be held responsible for the execution of the Work to such lines and grades as directed.
- C. Protect and preserve the established reference points and shall make no changes in locations without approval by the Authority. Reference points lost, disturbed by construction, destroyed, or which require shifting because of necessary changes in grades or locations shall, subject to prior approval, be replaced and accurately located at the Design-Builder's expense by a registered surveyor in the area where the Work is to be performed or a qualified certified survey technician (CST Level IV). Reference points replaced by the Design-Builder's surveyor shall be done in accordance with the FGCC Standards and Specifications for Geodetic Control Networks using First Order, Class 1 specifications for horizontal control work and Second Order, Class 1 specifications for vertical control work.
- D. For the purpose of this Section, the Design-Builder shall provide competent engineering services as necessary to execute the Work. It shall verify the dimensions shown before undertaking construction work and shall be responsible for the accuracy of the finished Work.

#### 3.02 EXAMINATION

- A. General: Dimensions shown on existing work and dimensions required for work that is to connect with work not in place shall be verified by the Design-Builder by actual measurement of the existing work. Discrepancies between the approved design documents and the existing conditions shall be referred to the WMATA Representative before work affected thereby has been performed.
1. The Design-Builder shall compare drawings and verify the dimensions before laying out the Work and shall be responsible for errors which might have been avoided thereby.
  2. Dimensions and descriptions given on the approved design documents for adjacent work shall be verified by the Design-Builder. It is the responsibility of the Design-Builder to verify all as-built conditions and interface information by actual field measurement.
- B. Existing Conditions: The existence and location of site improvements, utilities, both underground and above ground, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work. Call Miss Utility at 1-(800) 257-7777 before beginning any excavation or demolition project.

1. Before construction, verify the location and points of connection of utility services and the locations and invert elevations at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
  2. Furnish location data for work related to Project that must be performed by public utilities serving Project Site.
- C. Acceptance of Conditions: In accordance with Section 01 77 50, CLOSEOUT.

### 3.03 PREPARATION

- A. Existing Utility Information: Furnish information to local Utility and the Arlington County Project Officer that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate and obtain approval from authorities having jurisdiction.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Authority or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
1. Notify the WMATA Representative and Utility representative not less than five working days in advance of proposed utility interruptions.
  2. Do not proceed with utility interruptions without written permission from the Utility and the Authority.
- C. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- D. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Design Drawings.
- E. Review of Contract Documents and Field Conditions: Immediately upon discovery of the need for clarification of the approved design documents, submit a Request for Information to the WMATA Representative. Include a detailed description of the problem encountered, together with recommendations for changing the approved design documents.

### 3.04 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on the Issue for Construction Drawings. If discrepancies are discovered, notify WMATA Representative promptly.
- B. General: Engage qualified Certified Survey Technician(s) to lay out the Work using accepted surveying practices.
1. Establish benchmarks and control points to set lines and levels at each stage of construction and elsewhere as needed to locate each element of the Project.
  2. Establish dimensions within tolerances indicated. Do not scale Issue for Construction Drawings to obtain required dimensions.
  3. Inform installers of lines and levels to which they must comply.
  4. Check the location, level, and plumb, of every major element as the Work progresses.

5. Notify the Arlington County Contracting Officer Representative and WMATA representative when deviations from required lines and levels exceed allowable tolerances.
  6. Close Site surveys with an error of closure equal to or less than the standard established or referenced herein.
- C. The tolerances generally applicable in setting survey stakes or marks shall be as set forth below. These tolerances shall not supersede stricter tolerances required by the Issue for Construction Drawings or Specifications and shall not otherwise relieve the Design-Builder of responsibility for measurements in compliance therewith. The tolerances listed below are not to be used for setting or re-establishing primary and secondary control markers or final alignment monumentation.
1. Tolerances: Tolerances in setting survey stakes or markers shall not exceed the following: those items below that apply to this project

Horizontal Survey Stakes or Markers	Distance	Tangent
Horizontal marks on hubs on centerline and offset centerlines.	1:35,000	0.02 ft.
Intermediate stakes or hubs on centerlines and offset centerlines.	1:35,000	0.02 ft.
Rough excavation and embankment for roads and other work not otherwise provided.	1:10,000	0.50 ft.
Trimming of excavation and embankment unless otherwise provided.	1:10,000	0.50 ft.
Structures-Building construction.	1:35,000	0.02 ft.
Trimming or preparation of earth subgrade for trackbeds, roadways, and concrete pipes.	1:20,000	0.04 ft.
Trackbed and roadway sub-base and base, steel pipe and other work not otherwise provided for.	1:20,000	0.04 ft.
Track invert and roadway surfacing, steel reinforcement, concrete pipe and other formed concrete.	1:35,000	0.02 ft.

Vertical Grade Stakes or Markers	Elevation (Plus/Minus)
Rough excavation and embankment for roads and other work not otherwise provided.	0.20 ft.
Trimming of excavation and embankment unless otherwise provided.	0.20 ft.
Structures-Building construction.	0.01 ft.
Trimming or preparation of earth sub-grade for trackbeds, roadways, concrete pipe and other concrete structures.	0.05 ft.
Trackbed and roadway sub-base and base, steel pipe and other work not otherwise provided for.	0.05 ft.
Track invert and roadway surfacing, steel reinforcement, concrete pipe and other formed concrete.	0.02 ft. (Track invert only minus 0.00 ft. high, plus 0.04 ft. low)
Equipment Installation.	As required by manufacturer.

- D. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- E. Building Lines and Levels: Locate and lay out control lines and grades for structures, building foundations, column grids, and floor grades, including those required for mechanical and electrical work. Transfer survey reference line markings and elevations for use with control lines and grades. Level foundations and piers from two or more locations.

- F. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available to the WMATA Representative upon request.

### 3.05 FIELD ENGINEERING

- G. Identification: Authority will provide and identify existing benchmarks and control points to be used for the duration of the Contract.
- H. Reference Points: Locate existing and verify by field traverse permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent primary benchmarks, deep benchmarks, and control points during construction operations.
1. Do not change or relocate existing benchmarks or control points without prior written approval by the WMATA Representative. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to the WMATA Representative before proceeding.
  2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- I. Benchmarks: Establish and maintain permanent secondary control points on Project Site, referenced to data established by survey control points. Comply with WMATA Standard Drawing for Survey Monuments.
1. Record benchmark locations, with horizontal and vertical data, on record copy of Issued for Construction Drawings.
  2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
  3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

### 3.06 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level unless otherwise specified.
- B. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for uniform spacing.
- C. The Design-Builder's surveys are a part of the Work and may be checked by the Authority at any time. The Design-Builder shall be responsible for lines, grades, or measurements which do not comply with specified or proper tolerances, or which are otherwise defective, and for any resultant defects in the Work. The Design-Builder will be required to conduct re-surveys or check surveys to correct errors indicated by review of the Work.

### 3.07 SURVEY EQUIPMENT AND CALIBRATION REQUIREMENTS

- A. Survey Equipment: All electronic distance measuring instruments (or total station theodolites) shall be checked by the Design-Builder against a National Geodetic Survey (NGS) range of known distances at least once every 6 months.

1. All distance measurements shall be computed using the procedures in NOS NGS-10, Use of Calibration Base Lines. The actual measurements shall be recorded, atmospheric corrections applied, and then adjusted by least squares to compute a constant, as well as, a relative correction factor (scale correction).
2. National Geodetic Survey has established specific calibration baselines for the purpose of comparing survey equipment to known monumentation to verify the instruments vertical angles, horizontal angles, and difference in elevation for compliance with the manufacturer's specifications. Verification of angle measurement and difference in elevation shall only be done by the Design-Builder if all other methods of verification acceptable to the Authority have been exhausted.
3. Bring each electronic distance meter (EDM) or total station theodolite to the Corbin, VA Geo-magnetic observatory (phone 703-373-7605) or similar NGS facility and compare their instrument(s) to known NGS values whenever there is any question as to the correct operation, accuracy and functionality of the Design-Builder's survey equipment. Minimally, this will be done every 6 months or after a damaged instrument has been repaired and before it is put back in service. The Design-Builder shall supply the WMATA Representative with all appropriate documentation from this exercise.
4. All total station distance measuring devices and prisms shall be serviced every 6 months and checked frequently over lines of known distances. Generally, this exercise shall be conducted in the spring and fall.
5. Results of this calibration exercise shall be forwarded to the Authority. Correction factors shall be posted in the Design-Builder's office computing area and applied as required to maintain the desired accuracy.
6. Adjustment and certification documents from a supplier or manufacturer are not allowed as a substitution for the distance calibration exercise at a NGS or similar facility.
7. Records of instrument calibration and adjustment shall be maintained as a part of the Design-Builder's quality control program.
8. Use of the NGS baseline for checking distances is not intended to take the place of normal maintenance, cleaning, and adjustment of the Design-Builder's instruments.
9. Every 6 months, or whenever the difference between direct and reverse readings of the theodolite depart from 180 degrees by more than 30 seconds, the instrument shall be adjusted for collimation error. Readjustment of the crosshairs and level bubble shall be done whenever their mis-adjustments affect the instrument reading by the amount of the least count.
10. Instruments found to be in disrepair or out of adjustment shall be removed and repaired or replaced.
11. All steel tapes shall be compared with the Design-Builder's EDM at least every 6 months. The Design-Builder shall number all tapes and measuring chains, record comparisons, compute correction factors, and forward to the Authority upon request or whenever equipment is changed. In addition, tape correction information shall be posted in the Design-Builder's office computing area and applied as required to maintain the desired accuracy.
12. Provide and maintain the ability in-house to check and adjust all tribrachs for eccentricity. Adjustment checks shall be made weekly or as necessary. A record of adjustments to all tribrachs shall be kept current and made available to the Authority monthly or upon request. Each tribrach shall be numbered and tagged with the date of the last adjustment.

### 3.08 SURVEY STANDARDS

- A. Maintain accuracy standards for all control surveys performed under the terms of this Contract in accordance with the following table:

Primary horizontal control surveys	First order
Primary vertical control surveys	Second order, Class I
Secondary horizontal control surveys	Second order, Class I
Secondary vertical control surveys	Second order, Class II

1. Primary control is defined as the original control provided to the Design-Builder at the start of the Contract. Secondary control is defined as the control established and used by the Design-Builder during construction. All secondary control traverse stations shall be set with permanent markers.
2. Control surveys and computations including surveys of main control lines to determine alignment of major structure components shall be performed in accordance with Second Order Class I requirements.
3. Unless specified, the Design-Builder will not be required to perform First-Order survey work unless Design-Builder destroys primary control points included in the Contract Documents or set by WMATA after Contract NTP. GPS shall not be used by the Design-Builder to re-establish destroyed primary control unless approved by the WMATA Representative.
4. The Design-Builder should expect all primary or secondary horizontal control traverses they perform to meet a 1:50,000 distance accuracy closure. All vertical control traverses shall have a closure accuracy that does not fall below that specified for Second Order, Class II surveys.
5. Survey procedures and accuracy are a function of the types of survey that is being performed. The Design-Builder is responsible for ensuring the use of proper procedures to maintain accuracy requirements contained in the Contract.
6. Use the closed traverse method in setting controls by starting at and ending at known or previously established traverse stations and benchmarks.
7. All distances over 100 feet shall be measured by the use of electronic distance measuring instrument (EDMI). Critical distances under 100 feet shall be checked with a distance meter.

B. Horizontal Traverse

1. Conventional traverse work shall be performed in accordance with the requirements defined in the FGCC Standards and Specifications for Geodetic Control Networks, Federal Geodetic Control Committee.
2. All survey field data shall be provided to the Authority upon request in a Star\*Net digital input file format.
  - a. All reduced horizontal traverse measurements shall be provided in a set reduction report in an ASCII text file format which clearly lists the following data:
    - 1) Individual observations in an orderly format along with the mean angle from each direct and reverse observation.
    - 2) Horizontal angle mean, vertical angle mean and slope distance mean for each set of observations.
    - 3) Standard deviation of the observations, and maximum, minimum, range and collimation error for each set of observations. Refer to Figure 3.08-1 for a sample set reduction report.



## 3. Accuracy requirements:

## a. First Order control surveys:

- 1) Horizontal and vertical angle circle reading observation accuracy (standard deviation) of 0.5 seconds (DIN 18723) and read to 0.1 of a second.
- 2) Occupied station centering (eccentricity) accuracy of 1 mm.
- 3) Electronic distances measuring accuracy (standard deviation) of 1 mm plus or minus 1 ppm and read to 0.001 feet.

## b. Second Order control surveys:

- 1) Horizontal and vertical angle circle reading observation accuracy (standard deviation) of 1.0 second (DIN 18723) and read to 1.0 second or less if possible.
- 2) Occupied station centering (eccentricity) accuracy of 1 mm.
- 3) Electronic distances measuring accuracy (standard deviation) of 2 mm plus or minus 2 ppm and read to 0.001 feet.
- 4) All horizontal traverse adjustments shall be performed using a minimally constrained Least Squares adjustment method which will produce the following output:
  - a. Summary of unadjusted input observations
  - b. Statistical summary
  - c. Chi Square test
  - d. Adjusted observations and residuals
  - e. Residual summary
  - f. Adjusted bearings and horizontal distances (grid and ground)
  - g. Horizontal unadjusted traverse closures
  - h. Adjusted coordinates
  - i. Convergence angles and grid factors at stations
  - j. Standard deviations, error propagation and error ellipses
- 5) All horizontal traverse adjustment results shall be provided to the Authority upon request.

## C. Vertical Traverse

3. Differential leveling shall be performed in accordance with the requirements for Second-Order, Class I geodetic leveling surveys as defined in the Standards and Specifications for Geodetic Control Networks, Federal Geodetic Control Committee (FGCC), and NOAA Manual NOS NGS 3 Geodetic Leveling, National Geodetic Survey (NGS).
  - a. The survey Subcontractor shall provide documentation of staff calibration, which includes certificates for expansion coefficient and length calibration.
4. All reduced vertical traverse data shall be provided to the Authority upon request in a Star\*Net-Lev digital input file format.
  - a. All vertical traverse data shall be provided as a data reduction report in an ASCII text file format, which clearly lists the following data:
    - 1) Individual observations with the point identifier,
    - 2) Distance from instrument to staff (rod) for each observation,

- 3) Backsight staff (rod) reading and foresight staff (rod) reading,
  - 4) Number of measurements taken and standard deviation per staff (rod) reading.
  - 5) Cumulative station differences.
5. Accuracy Requirements:
- a. Differential leveling observation accuracy (standard deviation) of 0.4 mm and read to 0.0001 feet.
6. The Design-Builder may use electronic digital levels and bar coded leveling staffs. The use of leveling staffs with ground plate (turning turtle) is required.
7. Use calibrated invar staffs (level rods) for all control work including final vertical monumentation installation.
8. Use semi-precise level rods or equal equipment for level work.
9. All vertical traverse adjustments shall be performed using a minimally constrained Least Squares adjustment method after a vertical traverse meets the minimum closure requirements referenced herein.
10. All vertical traverse adjustment results shall be provided to the Authority upon request.

### 3.09 SURVEYS AND PROCEDURES

#### A. Control Surveys

1. Verify Project primary control monumentation and provide adjustment computations to the Arlington County Project Officer.
2. Replace primary control monuments that have been destroyed or damaged and provide adjustment computations to the WMATA Representative.
  - a. Provide Monument Record Sheets to the WMATA Representative.
3. Establish secondary control monumentation along the Authority's construction project and provide adjustment computations to the WMATA Representative.
  - a. Horizontal and vertical control discs shall be installed in accordance with WMATA Standards.
  - b. Horizontal and vertical control discs set on direct fixation trackways shall be recessed to protect them from disturbance.
  - c. Provide Monument Record Sheets to the WMATA Representative.

#### B. Structural As-Builts

1. General Requirements: Structural as-builts are required to check for out-of-tolerance construction, which may impact other structures or compromise train clearances along the trackway.
  - a. All methods, equipment and procedures used by the Design-Builder to perform structural checks shall be approved by the Arlington County Project Officer and WMATA representative prior to commencement of the Work.
  - b. This survey data must be analyzed by the Design-Builder and the Authority for compliance with construction and rail tolerances.
  - c. This survey data must be analyzed by the Design-Builder and the Authority to determine what remedial action, if any, may be required to address out-of-tolerance construction and the impact of structural misalignment on the final placement of other structures and rail.

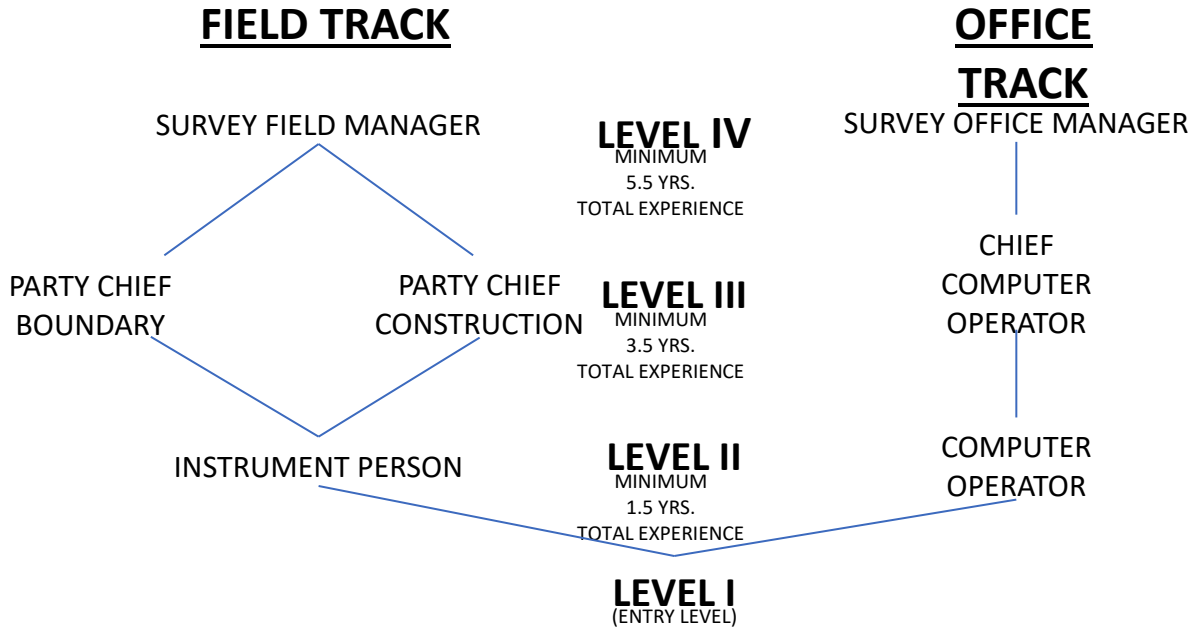
- 1) If the survey data reveals out-of-tolerance construction, which will impact the placement of other structures along the trackway, the Design-Builder shall take appropriate remedial action to comply with the Issued for Construction Drawings and Specifications.
    - a. If minimally out-of-tolerance, perform horizontal and vertical alignment revisions to minimize the impact of the misalignment on the future placement of adjoining structures and rail along the trackway.
    - b. If significantly out-of-tolerance and an acceptable alignment revision cannot be used to compensate for out-of-tolerance construction, then demolish and remove the structure and re-install.
  - 2) All alignment revisions and remedial actions shall be approved by the WMATA Representative prior to commencement of the Work.
  2. Verify existing primary horizontal and vertical controls and re-establish, if destroyed or disturbed, and provide adjustment computations to the WMATA Representative.
  3. Provide Monument Record Sheets to the Arlington County Project Officer for submission to WMATA.
  4. Establish a secondary horizontal and vertical control system on the Authority's structures and reference to the approved project primary horizontal and vertical control system. The secondary control system established on or within trackway structures shall be used for detailed cross sections, Hi-Lo surveys and placement of final trackway monumentation. The secondary control system shall be adequately referenced so it can be readily recovered. Horizontal and vertical control discs shall be installed in accordance with WMATA standard.
    - a. Horizontal and vertical control discs set on direct fixation trackways shall be recessed to protect them from disturbance.
    - b. Provide Monument Record Sheets to the WMATA Representative.
  5. Verify structural concrete placement for compliance with Issued for Construction Drawings and Specifications and provide the final results to the WMATA Representative when requested.
- C. Post Construction Alignment As-built Surveys
1. General Requirements: Post construction alignment as-built surveys are required to check trackway structures for compliance with Issue for Construction Drawings and Specifications and to check for out-of-tolerance construction, which may impact train clearance tolerances.
  2. All methods, equipment, and procedures used by the Design-Builder to perform post construction alignment as-built surveys shall be approved by the WMATA Representative prior to commencement of the Work.
    - a. This survey data must be analyzed by the Design-Builder and the Authority for compliance with construction and rail tolerances.
    - b. This survey data must be analyzed by the Design-Builder and the Authority to determine what remedial action, if any, may be required to address out-of-tolerance construction and the impact of structural misalignment on the final placement of the rail.
      - 1) If the survey data reveals out-of-tolerance construction, which will impact the placement of other structures along the trackway, the Design-Builder shall take appropriate remedial action to comply with the plans and specifications.

- a. If minimally out-of-tolerance, perform horizontal and vertical alignment revisions to minimize the impact of the misalignment on the future placement of adjoining structures and rail along the trackway.
  - b. If significantly out-of-tolerance and an acceptable alignment revision cannot be used to compensate for out-of-tolerance construction, then demolish and remove the structure and re-install.
- 2) All alignment revisions and remedial actions shall be approved by the Arlington WMATA Representative prior to commencement of the Work.
3. Verify existing primary horizontal and vertical controls and re-establish, if destroyed or disturbed, and provide adjustment computations to the WMATA Representative for approval. Provide Monument Record Sheets to the WMATA Representative.
4. Establish a secondary horizontal and vertical control system on the Authority's structures and reference to the approved project primary horizontal and vertical control system. The secondary control system established on or within trackway structures shall be used for detailed as-built cross sections, hi-lo surveys, and placement of final trackway monumentation. The secondary control system shall be adequately referenced so it can be readily recovered.
  - a. Horizontal and vertical control discs shall be installed in accordance with WMATA Standards.
  - b. Horizontal and vertical control discs set on direct fixation trackways shall be recessed to protect them from disturbance.
  - c. Provide Monument Record Sheets to the Arlington County Project Officer for record to WMATA.
5. Provide a report to the Arlington County Project Officer comparing the as-built location of the structure to the plan location as well as the theoretical dynamic outline of the train along the tunnels, retained areas, and aerial structures.
  - a. These cross sections must show computed clearances between the as-built location of the structure as well as the theoretical dynamic outline of the train.
  - b. This data must be analyzed by the Design-Builder and the Authority for compliance with construction and train clearance tolerances.
  - c. This data must be analyzed by the Design-Builder and the Authority to determine what remedial action, if any, may be required to address out-of-tolerance construction and the impact of structural misalignment on the final placement of the tracks.
6. Install and reference all permanent, secondary, and final monumentation required for construction, trackwork, and other systemwide facilities.
  - a. Provide Monument Record Sheets to the WMATA Representative.
7. Coordinate the post construction alignment as-built survey work with the WMATA Representative.

### 3.10 FIGURES AND REPORT FORMATS

#### Figure 1.05-1

#### Levels of the Certified Survey Technician Program



**Figure 3.08-1**

**TRAVERSE SET REDUCTION**

PR: METRO2.PRJ    DT: 05/01/01    ID: METRO CENTER    NM: TRAVERSE

Occupied Station:    Pt. No. 101, A-101 METRO B/D  
Backsight:    Pt. No. 100, A-100 METRO B/D  
Foresight:    Pt. No. 102, A-102 METRO B/D

Washington Metropolitan Area Transit Authority  
RFP PROJECT NUMBER/CA

Contract No. PROJECT NUMBER  
Date: Issue Date

### HORIZONTAL ANGLE REDUCTION

Set Rejection Criterion: Deviation from Mean greater than 3 inches

Set No.	Face	Backsight	Foresight	Horiz. Angle	Mean Dev.
1	1	0-00-00.0	191-05-13.0		
	2	180-00-01.0	11-05-12.4		
	Mean	0-00-00.50	191-05-12.70	191-05-12.20	0-00-01.03
2	1	359-59-59.6	191-05-14.0		
	2	180-00-01.0	11-05-12.1		
	Mean	0-00-00.30	191-05-13.05	191-05-12.75	0-00-00.48
3	1	359-59-59.5	191-05-13.0		
	2	179-59-59.8	11-05-12.2		
	Mean	359-59-59.65	191-05-12.60	191-05-12.95	0-00-00.27
4	1	359-59-57.2	191-05-13.1		
	2	179-59-59.7	11-05-13.8		
	Mean	359-59-58.45	191-05-13.45	191-05-15.00	- 0-00-01.78

Mean Horiz. Angle: 191-05-13.23

Std. Deviation (obs): 0-00-01.23

Std. Deviation (mean): 0-00-00.61

Maximum: 191-05-15.00

Minimum: 191-05-12.20

Range: 0-00-02.80

Collimation Error: 0-00-02.5

### BACKSIGHT ZENITH/SLOPE DISTANCE REDUCTION

Zenith Rejection Criterion: Deviation from Mean greater than 5 inches

Slope Distance Rejection Criterion: Deviation from Mean greater than 0.01 feet

Set No.	Face	Zenith	Mean Dev.	Slope Distance	Mean Dev.
5	1	90-27-40.6		215.316	
	2	269-32-20.3		215.316	
	Mean	90-27-40.15	0-00-00.08	215.316	0.00
6	1	90-27-41.7		215.316	
	2	269-32-20.5		215.316	
	Mean	90-27-40.60	0-00-00.53	215.316	0.00
7	1	90-27-40.4		215.316	
	2	269-32-21.5		215.316	
	Mean	90-27-39.45	0-00-00.61	215.316	0.00

Mean Zenith Angle: 90-27-40.07

Std. Deviation (obs): 0-00-00.57

Std. Deviation (mean): 0-00-00.33

Maximum: 90-27-40.60

Minimum: 90-27-39.45

Mean Slope Distance : 215.316

Std. Deviation (obs): 0.000

Std. Deviation (mean): 0.000

Washington Metropolitan Area Transit Authority  
RFP PROJECT NUMBER/CA

Contract No. PROJECT NUMBER  
Date: Issue Date

Range: 0-00-01.15

Collimation Error: 0-00-02.2

### FORESIGHT ZENITH/SLOPE DISTANCE REDUCTION

Zenith Rejection Criterion: Deviation from Mean greater than 5 inches

Slope Distance Rejection Criterion: Deviation from Mean greater than 0.01 feet

Set No.	Face	Zenith	Mean Dev.	Slope Distance	Mean Dev.
5	1	89-29-50.9		275.692	
	2	270-30-10.5		275.691	
	Mean	89-29-50.20	0-00-01.01	275.692	0.00
6	1	89-29-52.1		275.692	
	2	270-30-09.3		275.691	
	Mean	89-29-51.40	0-00-00.18	275.692	0.00
7	1	89-29-52.6		275.692	
	2	270-30-08.5		275.691	
	Mean	89-29-52.05	0-00-00.83	275.692	0.00

**END OF SECTION**

## SECTION 01 72 30 - PROTECTION OF ADJACENT CONSTRUCTION

### GENERAL

#### 1.01 SUMMARY

A. This Section specifies the appropriate methods for protection of adjacent construction when  
PART 1 – performing installations and improvements in and around existing facilities.

#### 1.02 PROTECTION OF EXISTING SURFACES

- A. Existing surfaces shall be carefully protected during construction operations under this Contract to avoid damaging existing surfaces.
1. Existing surfaces shall be protected by the Design-Builder from all possible damages including chipping, staining, and corroding during performance of the Work.
  2. If damage occurs, the Design-Builder shall repair or replace to match original undisturbed conditions.

#### PRODUCTS (NOT USED)

PART 2 –

#### EXECUTION (NOT USED)

PART 3 –

**END OF SECTION**



## SECTION 01 73 10 - CUTTING AND PATCHING

### GENERAL

#### 1.01 SUMMARY

- PART 1 – A. This Section specifies the appropriate methods for performing cutting and patching when installations occur in existing facilities or for improvements including selective demolition, salvaging of materials and equipment, and restoring of pavement and other surfaces and improved areas from damage caused by the Design-Builder's operations.

#### 1.02 SUBMITTALS

- A. Written Request: Submit a written request for approval by the Arlington County Project Officer and WMATA where impacted prior to cutting and patching. A written request is required for any cutting or alteration, which affects:
1. The work of the Authority or any separate contractor,
  2. The structural value or integrity of any element of the Project,
  3. The integrity or effectiveness of weather exposed or moisture-resistant elements or systems,
  4. Building aesthetic qualities for exterior areas or in occupied spaces, or
  5. The efficiency, operation life, maintenance, or safety of operational systems.
- B. Cutting and Patching Proposal: Include in written request the following:
1. Describe the extent of cutting and patching required. Show how it will be performed and indicate why it cannot be avoided.
  2. Describe anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
  3. List utilities that will be disturbed or affected, including those that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
- C. Structural Elements: Where cutting and patching involves addition of reinforcement to structural elements, submit details and engineering calculations to show how reinforcement is integrated with the original structure to satisfy requirements.
- D. Should conditions of work or schedule indicate change of materials or methods, submit written recommendations to the WMATA Representative, including:
1. Conditions indicating change,
  2. Recommendations for alternative materials or methods, and
  3. Resubmittal as required for substitution.
- E. Approval by the WMATA Representative to proceed with cutting and patching work does not waive the Authority's right to later require complete removal and replacement of any part of the Work found to be unsatisfactory.

#### 1.03 QUALITY ASSURANCE

- A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would change their load carrying capacity or load deflection ratio. Obtain prior approval from the WMATA Representative of the cutting and patching procedures proposed.
- B. Operational Limitations: Do not cut and patch operating elements or related components in a manner that would result in reducing their capacity to perform as intended. Do not cut and patch operating elements or related components in a manner that would result in increased maintenance or decreased operational life or safety. Obtain prior approval from the WMATA Representative of the cutting and patching procedures proposed.
- C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in the WMATA Representative's opinion, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching.
  - 1. If possible, retain the original installer or fabricator to cut and patch exposed Work. If it is impossible to engage the original installer or fabricator, engage another recognized experienced and specialized firm.
  - 2. Remove and replace construction cut and patched in a visually unsatisfactory manner.

#### 1.04 EMBEDDED ITEMS

- A. When reinforcing steel, conduit or other items embedded in the concrete are encountered in a drilling or coring operation, the operation shall be stopped and the WMATA Representative immediately notified. Determine whether the embedded item may be cut through and if determined to be permissible, obtain WMATA Representative's concurrence before doing so. If it is not permissible to cut through the embedded item, holes shall be drilled in another location and the original holes patched as directed by WMATA Representative.

#### 1.05 PAVEMENT AND IMPROVED AREAS RESTORATION

- A. As applicable, secure permits from the Jurisdictional Authority for all pavement restoration within the limits of said Jurisdictional Authority. Submit Working Drawings of such pavement restoration prepared in accordance with the requirements of the Issued for Construction Drawings, Issued for Construction Specifications, and the Jurisdictional Authority to the Jurisdictional Authority for approval.
  - B. During construction operations on this Contract, certain areas currently grassed, landscaped, or otherwise improved may be disturbed or damaged. Restore such areas as specified in Section 00 73 60, Protection of Existing Vegetation, Structures, Utilities and Improvements.
- PART Q.— Existing surfaces marred or damaged by operations under this Contract shall be repaired or replaced by the Design-Builder to the condition prior to being marred or damaged as approved by the WMATA Representative.

## PRODUCTS

#### 2.01 MATERIALS

- A. General: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible if identical materials are unavailable or cannot be used, use materials whose installed performance will equal or surpass that of existing materials.

## EXECUTION

### 3.01 INSPECTION

- PART 3 – corrective action before proceeding.
- A. Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed before cutting. If unsafe or unsatisfactory conditions are encountered, take
  - B. After uncovering work, inspect conditions affecting installation of new products. Report unsatisfactory or questionable conditions to the WMATA Representative in writing, and do not proceed with the Work until the WMATA Representative has provided further instruction.

### 3.02 PREPARATION PRIOR TO CUTTING AND PATCHING

- A. Temporary Support: Provide shoring, bracing, and support as required to maintain structural integrity of the affected portion of the Work.
- B. Protection: Protect existing equipment during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.
- C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

### 3.03 PERFORMANCE

- A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent patching required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction using methods least likely to damage elements to be retained or elements adjoining construction. Where possible review proposed procedures with the original installer; comply with the original installer's recommendations.
  - 1. In general, where cutting is required, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  - 2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
  - 3. Cut through concrete and masonry using a cutting machine such as a carborundum saw or diamond core drill.
  - 4. By-pass utility services such as pipe or conduit, before cutting, where services are shown or required to be removed, relocated, or abandoned. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after bypassing and cutting.
- C. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
- D. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
  - 1. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

2. Where removal of walls or partitions extends from one finished area into another, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary to achieve uniform color and appearance.
3. Where patching occurs within a smooth painted surface, apply a primer and second coat over the patched area and extend the final coat over the entire unbroken area containing the patch.
4. Patch, repair, or rehang existing ceilings as necessary to provide an even plane surface of uniform appearance.

### 3.04 CLEANING

- A. General: Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Completely remove paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

**END OF SECTION**

## SECTION 01 74 00 - CLEANING

### GENERAL

#### 1.01 SUMMARY

- PART 1 – A. This Section includes specifications for furnishing all labor, materials, equipment, and services, and performing all operations necessary for, and properly incidental to, cleanup during construction and final cleaning of the facilities and site prior to Acceptance by the Authority.

#### 1.02 RELATED SECTIONS

- A. Division 16, Electrical, for conduit cleaning.

### PRODUCTS (NOT USED)

#### PART 2 – EXECUTION

#### PART 3 3.01 CLEANUP DURING CONSTRUCTION

- A. Keep the entire Site in a neat and orderly condition at all times during construction. Conduct a general cleanup of the Site daily as a part of the Work. Provide daily cleanup and disposal service for removal of waste and rubbish from the jobsite. Clean material as necessary prior to incorporating into the Work.
- B. Dispose and recycle waste, trash, and debris in a safe, acceptable manner, in accordance with applicable laws and ordinances and as prescribed by Jurisdictional Authorities. Bury no waste material and debris on the Site. Burning of trash and debris on the Site is prohibited.
- C. Provide daily litter pickup within Project limits. Provide adequate number of trash receptacles for worker's lunches, cigarette butts, and other miscellaneous garbage.

#### 3.02 FINAL CLEANING OF FACILITIES

- A. Prior to final inspection by the Arlington County Project Officer, and after all construction work is essentially complete, thoroughly clean facilities utilizing professional facility cleaners. WMATA shall be included in any all acceptance of WMATA permanent facilities.
- B. Items to be cleaned include, but are not limited to, all glass, doors, opening frames, grilles, trim, exposed non-ferrous metal surfaces, floor coverings, light fixtures and plates, plumbing fixtures and trim, and all finish surfaces throughout the construction.
- C. Vacuum-clean where appropriate and remove all spots, smears, dust, debris, hand prints, and defacements of every sort, including those of vandals. Use commercial cleaning compounds where necessary.
- D. Follow the recommendations of the manufacturers of the materials and items to be cleaned for all cleaning, polishing, and treatment such as waxing or sealing.

#### 3.03 FINAL SITE CLEANUP

- A. Prior to final inspection, thoroughly clean the entire Site so it is in a neat, acceptable condition. Remove from the entire Site all construction equipment and facilities, construction waste and

unused materials, dunnage, loose rock and stones, excess earth, and debris of any description resulting from the Work.

- B. Hose down and scrub clean where necessary all pavement and paved walks.
- C. Thoroughly remove mortar droppings from concrete slabs and pavement. Hose down and scrub clean all concrete flatwork and exposed vertical surfaces of concrete and masonry. Clean all rail surfaces, special trackwork, track drains, handholes, and manholes.
- D. All drainage systems shall be free and clear. All drainage systems and sewers shall be pressure cleaned and inspected, and all catch basins and sumps shall be cleaned.
- E. All conduits shall be cleaned and openings protected as specified in Division 16, Electrical.
- F. All spare material shall be delivered to the Authority.

**END OF SECTION**

## SECTION 01 77 50 - CLOSEOUT

### GENERAL

#### 1.01 SUMMARY

- PART 1 –
- A. This Section includes specifications for performing all operations necessary for and incidental to closing out the Contract and assisting in the Authority's final inspection.
- B. This Section includes procedures for closeout submittals including the following:
1. Operation and maintenance manuals;
  2. As-Built Drawings and Specifications;
  3. Spare parts list, delivery information, and distribution of spare parts;
  4. Configuration management system;
  5. Training manual, lesson plans, and student's training manual and electronic media of such, as applicable;
  6. Survey record log;
  7. Correspondence file;
  8. Releases;
  9. Vouchers;
  10. Records for design, inspection, testing or other quality elements;
  11. Request for final payment;
  12. Certifications, affidavits, and warranties and guarantees; and
  13. Correction of deficiencies submittals as applicable.
- C. This Section establishes required actions by the Design-Builder for facility systems and subsystems commissioning that include the preparation of an asset database, the preparation of preventive maintenance instructions, and labeling and packaging of spare parts.

#### 1.02 NOT USED

#### 1.03 CLOSEOUT SCHEDULE AND PROCEDURE

- A. Changes from Original Conditions:
1. Upon completion of the Work and prior to Substantial Completion, the Design-Builder shall examine each property to determine changes from the original conditions established by the preconstruction inspection, and Section 01 71 10, ACCEPTANCE OF CONDITIONS, and shall furnish a written description to the WMATA Representative of measures taken to correct damage that may have resulted from performance of this Contract, and shall obtain a written release from each owner accepting condition of the building or structure, corrections, or both, thereby relinquishing any claim against the Design-Builder. In the event any owner refuses to furnish a release of claims, the Design-Builder shall notify the WMATA Representative in writing.
  2. The Authority will not assume responsibility for alleged damages arising from the Work performed under this Contract.

**B. Requirements Preparatory to Final Inspection by the Authority:**

1. Notify the Arlington County Project Officer to perform a preliminary final inspection for the purpose of determining the state of completion of the Work. Notify the WMATA Representative at least 14 Days in advance of requested inspection. The Arlington County QAM will perform the inspection within 3 working days of the requested date. From the information gathered from this inspection, the Arlington County Project Officer, in coordination with WMATA, will prepare a Punch List of work to be performed, corrected, or completed before the Work will be accepted. All work on the Punch List shall be completed by the Design-Builder prior to final inspection.
2. Temporary facilities, except as may be required during Punch List work, shall be removed from the Site.
3. Clean the Site and all applicable appurtenances and improvements as specified in Section 01 74 00, CLEANING.
4. Properly mount operating instructions for equipment and post as specified or required.

**C. Final Inspection by the Authority:**

1. After all requirements preparatory to the final inspection have been completed as hereinbefore specified, notify the Arlington County Project Officer to perform the final inspection. Arlington County Project Officer will in turn inform WMATA. Notice shall be given at least 14 Days in advance of the time the Work will be available for final inspection. The Arlington County Project Officer, with supporting WMATA staff will perform the inspection within 3 working days of the requested date.
2. Design-Builder or its principal superintendent, authorized to act on behalf of the Design-Builder, shall accompany the Arlington County Project Officer and WMATA on the final inspection, as well as any principal Subcontractors that the Arlington County Project Officer may request to be present.
3. If the Work has been completed in accordance with the Contract and Issued for Construction Documents, and no further corrective measures are required, the Arlington County Project Officer, with WMATA concurrence, will accept the Work and will issue a Certificate of Completion as evidence of acceptance.
4. If the Work has been substantially completed in accordance with the Contract and "Issued for Construction" Documents, and the Work can be used for its intended purpose with only minor corrective measures required, the Arlington County Project Officer and WMATA Project Representative will conditionally accept the Work and will issue a Certificate of Substantial Completion based upon the Design-Builder's assurance that corrective measures will be completed within the shortest practicable time. A fixed schedule for such corrective measures shall be submitted to the Arlington County Project Officer and reviewed by WMATA for approval.
5. If the Work has not been substantially completed in accordance with the Contract and Issued for Construction Documents, and several or many corrective measures are still required, the Arlington County Project Officer will not issue a Certificate of Substantial Completion. Instead, a new Punch List will be prepared based on the information gathered from the final inspection, and the Design-Builder will be required to complete this work and then call for another final inspection, following the procedure outlined above.

**D. Asset and Parts Database:**

1. Prepare a database listing each system and subsystem asset with attribute data as identified on the Asset Data Induction Spreadsheet to include, but not limited to, the asset name, asset location, manufacturer name and contact information, model number, serial number, expected useful life, warranty period with start and end date, digital link to warranty



documentation and Operation and Maintenance Manual in the project's Procore site, spare parts provided for the asset, and special tools required to perform asset maintenance.

2. The asset data induction template is included and located in Asset Item Induction Spreadsheet (to be provided by WMATA) for the Design-Builder's guidance in preparing the asset database.

E. Preventive Maintenance Instructions:

1. Prepare preventive maintenance instructions for each asset, including asset name, asset location, manufacturer name, model number, serial number, maintenance instructions for each asset and each scheduled maintenance based on requirements of the associated Operations and Maintenance Manual, and identification of special test equipment required to test the asset subsequent to performing maintenance.
2. Sample preventive maintenance instructions (to be provided by WMATA) for the Design-Builder's guidance in preparing the preventive maintenance instructions.

#### 1.04 SUBMITTALS

- A. Make all submittals in accordance with Section 01 33 00, SUBMITTAL PROCEDURES and as specified below.

B. Operation and Maintenance:

1. Furnish manuals for individual equipment as well as systems as required by the Contract Documents. Systems consist of a set of equipment (multiple equipment) working together to perform a function. Data copy included from standard catalogs shall be edited to reflect only conditions pertinent to this Contract.
2. Data copy shall be suitable for dry-copy reproduction on standard office copy machines.
3. Hard copy manuals shall be prepared using the following materials:
  - a. Binder:
    - 1) One of the following:
      - a. Loose-leaf; three-ring with elliptical rings; stiff cover with covering resistant to oil, water, and wear; reinforced hinges; label holder on spine; mechanical device to open, close and lock rings; and sheet lifters. Size for 8-1/2-inch by 11-inch paper, 3-inch maximum capacity.
      - b. Loose-leaf three-post binder conforming to FS UU-B-320, Type II, Class 2, with covering resistant to oil, water, and wear; label holder on spine; size for 8-1/2-inch by 11-inch paper; capacity as required, 4-inch maximum thickness.
    - 2) When the assembled data exceeds the capacity of one binder, provide additional binders as necessary.
  - b. Pages:
    - 1) Originals: White, 60-pound bond with plastic-reinforced binding edge.
    - 2) Catalog data: Offset-printed copy on white paper, with plastic-reinforced edge.
    - 3) Standard: 8-1/2 inches by 11 inches.
    - 4) Fold-out: 11 inches by 8-1/2 inches for binding portion of page plus 7-1/2 inches for each additional portion of folded page; title and page number visible without unfolding. Provide a filler at the binding edge of fold-out pages, equal in thickness to the folded portion.

- 5) Holes punched for standard three-ring binder.
  - 6) Consecutively numbered.
4. Electronic Copies shall accompany the paper copies of all submittals of all manuals. These electronic copies shall be submitted in an editable, non-copyrighted Microsoft Office format. There shall be two electronic copies per submitted manual delivered one each to the programs office and to the applicable training department.
  5. Manuals shall include the following data:
    - a. Table of contents.
    - b. Design-Builder's name, address and telephone number, with similar data for its 24-hour service organization.
    - c. Manufacturer's name, address and telephone number, with similar data for its local representative, distributor, and service agency.
    - d. Catalog, model, and serial number of equipment installed. Include WMATA unit numbers where applicable.
    - e. Description of equipment.
    - f. Detailed Theory of Operation of each system and subsystem to LRU. Theory of operation to include Sequence of Operation.
    - g. Troubleshooting and Diagnostic Procedures for each piece of equipment delivered to LRU
    - h. Block Diagrams and Schematics of equipment as installed. For Mechanical systems provide a Piping and Instrumentation Diagram (P&ID) which shows the piping/ducting and related components of a physical process flow.
    - i. Software administrative procedures for data input, failure diagnosis and system restoration
    - j. Statement of warranty as specified.
    - k. Description of modification, servicing and repairs performed prior to start of warranty.
    - l. Dates warranty begins and expires.
    - m. Standard starting, stopping and operating procedures.
    - n. Emergency and special operating procedures.
    - o. Routine maintenance procedures.
    - p. Preventative Maintenance (PM) schedule (monthly and annually) which includes Servicing and lubrication schedule. Standard format for PM procedure/schedule to be provided by WMATA.
    - q. Manufacturer's printed operating and maintenance instructions, manufacturer's parts list, illustrations, and diagrams.
    - r. O&M data.
    - s. One copy of each wiring diagram to identify all wire IDs/labels including field connections.
    - t. List of spare parts, prices and recommended stock quantities for routine maintenance of the equipment for 1 year and list of spare parts that are considered critical and for which extended time frames for acquisition would create undesirable down-time for equipment.

- u. List of special tools required to perform inspection, adjustment, maintenance, and repair. Special tools are those developed to perform a unique function related to the particular equipment and not available from commercial sources.
  - v. Copy of each approved Shop Drawing of equipment and system. Include drawings which show outline dimensions, weights, and assembly data. Do not include drawings which show manufacturing details.
6. Manuals submittal schedule:
- a. Four copies of sample formats and outlines of contents in draft form 120 Days prior to the time scheduled for operation inspection, testing, or acceptance of the equipment.
  - b. Four copies of complete manual in final form 45 Days prior to the time scheduled for operation inspection, testing, or acceptance of the equipment.
  - c. Four bound sets and electronic media of approved manual before the time scheduled for operation inspection, testing, or acceptance of the equipment.
    - 1) Electronic copy files shall be in latest version of Adobe (.PDF) file format. Files shall be submitted in accordance with Section 01 33 00, SUBMITTAL PROCEDURES.
    - 2) Shop Drawings submitted with manuals shall be in AutoCAD (.DWG) file format. Line work shall be shown on designated layers in accordance with standard CAD layering guidelines as specified in the WMATA CAD Manual. Images shall be clear, sharp, and readily legible.
    - 3) The Authority reserves the right to have any images, illustrations, diagrams, and drawings resubmitted until the WMATA Representative approves their legibility.
  - d. In addition to the other requirements of this Section, if manufacturer's hardcopy illustrations, diagrams, and drawings are also used in the preparation of Operation and Maintenance manual illustrations, diagrams, and drawings, they shall also be furnished in Adobe (.PDF) file formats.
7. If operation and maintenance training is included in the Contract, provide to each trainee, hard and electronic copies of approved operation and maintenance manuals for this purpose as specified in Section 01 82 00, DEMONSTRATION AND TRAINING.
- C. As-Built Drawings and Specifications:
- 1. General:
    - a. As-Built drawings shall include Shop Drawings, Working Drawings, and field prepared drawings.
    - b. Maintain a hard copy drawing and specification record of as-built conditions on a set of Issued for Construction Drawings and Specifications as the Work progresses. The Issued for Construction Drawings and Specifications shall be kept current with all Modifications issued by the Authority. The hard copy drawing and specification record shall be maintained at the Design-Builder's field office. Periodic review of the completeness of the hard copy record will be conducted by the Authority as deemed necessary to ensure the record is kept up to date.
  - 2. As-Built Drawings:
    - a. Draft Deliverable: Submit to the Authority, for review and comment, separate sets of draft As-Built Drawings in both an AutoCAD (.DWG) file format and an Adobe (.PDF) file format (.PDF files shall be capable of printing full-size drawings.), in print quality black and white, with all fonts embedded. The latest versions of both file formats shall be used. All line work shall be shown in accordance with the WMATA CAD Manual. Images shall be clear, sharp, and readily legible. The Authority reserves the right to

have drawing(s) resubmitted until the WMATA Representative accepts the legibility of the drawing contained in the file. Submit one set of full-size and two sets of half-size black ink on white paper copies of draft As-Built Drawings for review and comment by the Authority in accordance with Section 01 33 00, SUBMITTAL PROCEDURES.

- b. Upon return of one set of full-size black ink on white paper copy of the draft As-Built Drawings with Authority comments, incorporate additions and corrections resulting from Authority review comments. Design-Builder shall direct specific attention, by annotation on resubmitted As-Built Drawings, to revisions other than the corrections requested by the WMATA Representative on previous submittals.
- c. Final Deliverable: By the date scheduled for receipt of final approved As-Built Drawing deliverables in the Contract Schedule, separate sets of As-Built Drawings in both an AutoCAD (.DWG) file format and an Adobe (.PDF) file format, in print quality black and white, with all fonts embedded. Submit one set of full-size and two sets of half-size black ink on white paper copies, produced from the Adobe file, to the WMATA Representative for review and Approval. If this submittal is found to be incomplete it will be returned to the Design-Builder with comments for re-submittal.
- d. The completed As-Built Drawings do not require the signature of the Engineer or Architect of Record. Each completed As-Built Drawing produced in Adobe (.PDF) electronic format shall have the signature of an officer of the Design-Builder's organization, certifying compliance with as-built conditions, using a stamp as follows:

AS-BUILT  
I CERTIFY THAT THIS DRAWING  
ACCURATELY DEPICTS THE WORK  
CONSTRUCTED AS OF

\_\_\_\_\_

(date)

\_\_\_\_\_

(an officer of the Design-Builder)

\_\_\_\_\_

Design-Builder's Name

3. As-Built Specifications:

- a. By the date scheduled for receipt of final approved As-Built Specification deliverables in the Contract Schedule, submit As-Built Specifications in both latest version of Word (.DOCX) file format and an Adobe (.PDF) file format, in print quality black and white. Submit two bound sets of black ink on white paper copies produced from the Adobe (.PDF) format to the WMATA Representative for review and acceptance in accordance with Section 01 33 00, SUBMITTAL PROCEDURES. The Word file format (.DOCX) does not require the professional seal or signature of the Engineer or Architect of Record. The Adobe (.PDF) file format will require the professional seal and signature of the Engineer or Architect of Record for all disciplines on the cover page. If this submittal is found to be incomplete it will be returned to the Design-Builder with comments for re-submittal.

D. As-Built Project Schedule:

- 1. Submit one electronic copy of the approved As-Built Project Schedule as required.

E. Spare Parts:

- 1. This Contract includes the requirement for spare parts, either specifically identified in the price schedule or to be identified later during the term of the Contract. Ensure that all spare parts required by this Contract are provided and delivered in accordance with the following paragraphs.

2. Submit to the Authority the one electronic copy of the list of required spare parts either specifically identified in the unit price schedule or later identified by the Authority in accordance with the Issued for Construction Specifications. The list provided by the Design-Builder shall include part name, model number, part number, serial number, stock number, component name, location for use, manufacturer's name and contact information, unit cost, quantity, available packaging, special storage and handling instructions, replacement schedule, and anticipated annual usage. In addition, the spare parts listing shall include the following additional information as appropriate:
  - a. Group the list by system and subsystem for inventory system identification. Include order and procurement information for subassemblies and components.
  - b. Correlate the required quantities with the reliability requirements and lead time considering the following classifications:
    - 1) Wear: Components which may be expected to require regular replacement under normal maintenance schedule and operations, such as mechanical parts subject to continuous operation within projected mean time between failure levels.
    - 2) Consumables or expendables: Components which are consumed, used up, destroyed, or upon failure, are otherwise made unusable for their intended purpose and are economically unrecoverable except for inherent scrap value.
    - 3) Recoverable or repairable: Components, which upon failure are capable of being repaired or remanufactured to a serviceable, operational condition and maintained available for use within their initial intended purpose. Such items shall be accounted for via appropriate asset records.
    - 4) Long lead: Components, which are not available on short notice from commercial distributors or within 48 hours from the manufacturer, such as specially made or selected components.
    - 5) Cross referencing: Where replacement components are common to more than one system or subsystem, include a cross reference and indexing system in the replacement components list.
    - 6) Non-unique parts: In all components lists, items which are not unique to the system and have been manufactured by others shall be identified by the manufacturer's name and part number, as well as by the Design-Builder's component number, if any.
3. Within 30 Days after the Design-Builder submits the required spare parts listing, the Authority will provide the Design-Builder with shipping instructions and with WMATA stock numbers for each item the Design-Builder is required to furnish. Spare parts shall be packaged such that parts for a particular asset or a particular facility are grouped together. The Design-Builder shall ship, within a 25-mile radius of the Project, the required parts to the designated points specified by the Authority and shall include the Contract number, manufacturer part number, quantity, unit price, and WMATA part number on the shipping document.
4. The identification of the individual manufacturer's part numbers shall be cross referenced to the assigned WMATA stock numbers by including a column with appropriate heading adjacent to the manufacturer's part numbers in any parts manual or listing provided in accordance with Article A.E.2 above.
5. Parts furnished in accordance with this provision shall not be used to satisfy replacement needs under any warranty provision of this Contract.
6. Spare parts shall be the same in all respects as their counterparts furnished as part of the assembled equipment to be delivered under the terms of this Contract.

7. Unless otherwise specified in this Contract, the spare parts shall be delivered at the same time as the counterpart equipment delivery. The spare parts shall be properly packaged or crated so as to prevent damage during shipment and long-term storage. The spare parts shall be labeled in accordance with the instructions contained in Article A.E.3 above.
- F. Asset Database:
1. Contractor shall provide asset and item information (to be finalized post contract award) in accordance with WMATA specifications.
  2. Asset data submitted by Design-Builder to be reviewed by WMATA and returned to Design-Builder for correction/clarification if applicable.
  3. Supplied templates are dynamic and may be subject to change dependent on project needs.
  4. Contractor shall submit all item data for the entire program in the format supplied (See Asset Item Induction Spreadsheet, to be provided by WMATA) for the items as provided by the COTR.
- G. Preventive Maintenance Instructions (PMI)
1. Submit equipment PMI (summarized O&M) in a format to be provided by the Contracting Officer.
- H. Releases and Vouchers:
1. As applicable, submit one original hard copy and electronic media, in Adobe (.PDF) file format, of releases and vouchers.
- I. Records for Design, Inspection, Testing and Other Quality Elements:
1. Submit one original hard copy and electronic media, in Adobe (.PDF) file format, of records for design, inspection, testing or other quality elements as more fully specified in Section 01 47 00, QUALITY MANAGEMENT SYSTEM.
- J. Correction of Deficiencies Submittals:
1. As applicable, submit original hard copy and electronic media, in Adobe (.PDF) file format, of Schedule of Deficiency Corrections, Recommendation for Corrective Actions, together with supporting information, Data and Reports applicable to any correction, and a Technical and Cost Proposal to amend the Contract to permit acceptance of the affected materials, equipment, systems, or subsystems as specified in Section 00 75 80, CORRECTION OF DEFICIENCIES.
- K. Certifications, Affidavits, and Warranties and Guarantees:
1. Required Affidavits, Certificates, Written Descriptions and Releases and Warranties and Guarantees provided by the Design-Builder; i.e., Certificates of Acceptance and Compliance, of System Safety and Security, of Substantial Completion, and of Final Payment; Written Description of measures taken to correct damage that may have resulted from performance of this Contract; Written Releases; Design-Builder's executed Affidavit of Payment of All Applicable Taxes and License Fees in connection with the Contract and Affidavit of Payment of Debts and Claims; Consent of Surety Company to Final Payment; Warranties and Guarantees as specified in Section 00 75 70, WARRANTY/GUARANTEE OF CONSTRUCTION, and Section 00 75 80, CORRECTION OF DEFICIENCIES, and various Sections of the specifications as applicable: Submit the original hard copy and one electronic copy in Adobe (.PDF) file format.

Washington Metropolitan Area Transit Authority  
RFP PROJECT NUMBER/CA

Contract No. PROJECT NUMBER  
Date: Issue Date

**PRODUCTS (NOT USED)**

**EXECUTION (NOT USED)**

**END OF SECTION**

PART 2 –

PART 3 –

## SECTION 01 82 00 - DEMONSTRATION AND TRAINING

### GENERAL

#### 1.01 SUMMARY

- PART 1 – A. This Section includes the general requirements for operation and maintenance training for equipment and systems provided by the Design-Builder and the general requirements for a Project performance demonstration.

#### 1.02 SUBMITTALS

- A. Submit in accordance with Section 01 33 00, SUBMITTAL PROCEDURES, the following at the times stated:
1. Training plan preliminary submittal: One electronic copy and one printed paper copy not later than 60 Days after commencement of construction work. Submittal shall include at a minimum:
    - a. Instructional outline: A complete, accurate, and detailed listing of topics to be addressed in the instructional program using the specified content list.
    - b. Specimens of instructional material to be used.
    - c. Descriptions of audio-visual material and equipment to be used.
  2. Training plan intermediate submittal: One electronic copy and one printed paper copy not later than 60 Days after approval of preliminary submittal.
    - a. All material submitted for preliminary submittal incorporating or resolving comments.
    - b. Complete instructional plans including audio-visual aids and descriptions of instructional techniques and procedures.
  3. Training plan final submittal: One electronic copy and one printed paper copy not later than 30 Days prior to scheduled date for operation inspection, testing, or acceptance of the equipment.
    - a. All material submitted for intermediate submittal incorporating or resolving comments.
  4. Training contract closeout submittal: As specified in Section 01 77 50, CLOSEOUT.
  5. Training instructor's qualifications.
  6. A complete set of all training manuals, handouts, aides and presentations, for instructor and student, shall be provided at the end of the vendor's first training class to each of the audience's training groups (two sets when there are two supporting training groups, etc.) in an approved, editable electronic format, and free from copyright restrictions.
  7. Printed copies of each student guide and student-learning materials (schematics, books of plans, etc., as determined useful) shall be prepared and bound by equipment's training provider. Provide one printed copy for each student to use during training and to keep after class completion
  8. Printed copies of the instructor's guide, student guide, presentation, and all supplemental training materials for each of the audience group's training instructors (not to exceed five copies), free from copyright restrictions, shall be provided at the end of the first vendor training session.
  9. Performance demonstration plan and procedures: submit for Approval as part of the final design review package but no later than 90 Days prior to first performance demonstration.
  10. Provide video documentation of demonstration and training classes.



### 1.03 OPERATION AND MAINTENANCE TRAINING

#### A. General:

1. Where specified, develop and conduct a program to train selected Authority personnel in the operation and maintenance of equipment and systems furnished.
2. Furnish instructors, instructional materials, and audio-visual aids and equipment.
3. The Authority will furnish physical facilities.

#### B. Operations training:

1. Operations training shall be tailored specifically to the WMATA equipment being purchased and training shall be designed to teach all trainees the functional use of all of the major modes of equipment operation.
2. The training shall be sufficient in quality and scope to bring personnel to a level of operating proficiency such that vendor support is not needed during routine equipment operation in any mode or capacity.

#### C. Maintenance training:

1. Maintenance training shall be tailored specifically to the WMATA equipment being purchased and shall be designed to develop the knowledge and skills required to maintain and repair all item(s) delivered under the Contract. Maintenance training shall address the detailed theory of operation, maintenance, testing, repair, overhaul, replacement, alignment, and troubleshooting of the delivered equipment (hardware and software).

#### D. Other Training:

1. Preventive Maintenance Instructions (PMI):
  - a. The Operations and Maintenance (O&M) Manual provided for contractually furnished or installed equipment shall include a "Preventive Maintenance Instruction" (PMI) section, to ensure the continued safe and reliable operation of the specific system or equipment. Training on these procedures shall be included in the Design-Builder-provided maintainer training curriculum. If a section contains more than one PMI procedure then the section shall begin with a Table of Contents.
  - b. PMI procedures shall be written in language easily understood by every maintainer skill level of the responsible WMATA maintenance discipline. Prior to acceptance, clarity and effectiveness of each PMI procedure shall be demonstrated in coordination with the maintenance discipline using the recommended minimum number of the lowest skill level maintainers. The maintenance team or individual must be able to understand and successfully perform the draft PMI without coaching from Design-Builders or engineers. Each procedure shall be formatted similar to standard PMI formatting as currently approved by the WMATA maintenance discipline responsible for future maintenance of the equipment, including a standard approval signature cover sheet. Sample PMI's, as formatting examples, may be obtained from the appropriate maintenance discipline after contract award. Each procedure shall contain:
    - 1) A recommended performance frequency (interval) that is adjusted to the installed environment and expected level of use.
    - 2) The maintenance crew size and average time for performance of the PMI
    - 3) The system-specific and/or equipment-specific objectives of the PMI
    - 4) Lists of:
      - a) Prerequisites
      - b) Required reference documents
      - c) Industry standards or regulations governing the performance of the maintenance action
      - d) Necessary tools and test equipment

- 5) Definitions and graphics, as much as practical to clarify the instructions
- 6) Warnings, Cautions, and Safety Notices, plentifully and prominently interspersed to prevent injury, damage, or unsafe operating conditions before any procedure step to which they apply
- 7) Data sheets and checklists, for data collection regarding conditions that are measured and to ensure that important steps are not skipped
- 8) Step-by-step instructions:
  - a) to verify and document that the tested mechanism or circuit or subsystem functions within design parameters;
  - b) for types of solvents, cleansers, and lubricants with intervals for lubrication and cleaning of mechanisms to prevent or minimize grime, corrosion, and wear;
  - c) to verify the adjustment of the system, equipment, or circuit which will allow it to operate properly (safely, reliably, and without causing excessive wear) until the next scheduled PMI;
  - d) to verify the integrity of all fasteners, couplings, electrical connections, etc. which may fail or loosen between scheduled maintenance intervals;
  - e) to document the measured condition of the equipment or circuit, to be used for abatement of deterioration, future failure analysis, and in case of catastrophe.
- 9) Step-by-step detailed adjustment instructions for any mechanism or circuit found to be out-of-adjustment

#### E. Training Plan:

1. Training plan shall contain an organized summary of the events, and associated times, necessary for the completion of all materials necessary to successfully perform the required training. The plan shall be submitted to the applicable end user's training group(s) (TTDC, TSMT, or ROQT currently) within a Contract specified period after NTP has been issued. The training plan must address all deliverables using a timeline that includes periods for review, feedback, resubmission, approval, and delivery accomplishing all by a Contract-determined date related to the equipment being placed into service. The training plan shall include the following:
  - a. Course list including course title, duration, audience, audience size, and purpose
  - b. Instructor qualifications: A description of the instructor's qualifications for each class must be submitted to the end user's training group(s) (TTDC, TSMT, or ROQT currently) for approval as part of the training plan. The description (resume, curriculum vitae, or other description of instructional qualifications) shall document a thorough knowledge of the subject equipment, an understanding of the adult learning process, and demonstrated experience in vocational instruction.
  - c. Audience qualifications and prerequisites: For the purpose of course development and presentation, vendors shall assume all WMATA students are high school graduates (or equivalent)
  - d. Instruction and testing methods to be utilized
  - e. Summary of the strategies to be employed in the accomplishment of the training
  - f. Proposed schedule of delivery of materials and training

#### F. Instructor's Guide:

1. The instructor's guide for each course shall contain all the information and direction necessary for the instructor to make an effective presentation. The instructor's guides shall include adequate guidelines to conduct a comprehensive training program. Individual lessons within the course shall be organized as separate blocks (or modules), which may be taught as a unit. In some instances, the same standard operating procedures could be used for train operators, transportation supervisors, and central control supervisors. The instructor's guide shall contain, at a minimum:
  - a. Program overview stating the overall program goals
  - b. Training syllabus
  - c. Lesson plans arranged as a session by session outline containing the following:

- 1) Overview of each lesson
  - 2) Outline of major topics to be covered including timelines for each course, lesson, and topic
  - 3) Outline of learning objectives for each major topic
  - 4) Information regarding important subjects and terms to be emphasized during each section of the training
  - 5) References to the associated Student Guide pages and presentation slides
  - d. Suggested instructional methods/learning activities
  - e. Required equipment or resources needed for effective instruction
  - f. Test question pool(s) with each question referenced to the respective learning objective(s) and student guide or other instructional materials
2. A guide (FAQ) providing questions/problems and answers as related to course content
- G. Student's Guides:
1. Student guides for each course that shall contain all the information and direction necessary the student to interact effectively in the learning environment. The student guides shall be written in a fully developed prose format, developed in the same modular format as the instructor's guides. The student's guides should contain, at a minimum:
    - a. Program overview/introduction
    - b. Statement of overall program goals
    - c. All major topics to be covered
    - d. Student learning objectives associated with each of the major topics stated in quantifiable terms
    - e. All illustrations, block diagrams, charts, schematics, wiring diagrams, logic flow diagrams, troubleshooting guides, graphics, and visual aids that may be used during course presentation to enhance presentation content and provide a seamless facilitation of instruction
    - f. Supplemental materials that may be necessary to facilitate theoretical discussions
- H. Training Presentations:
1. Training Presentations shall be matched to the instructor guides and student guides and shall facilitate seamless, effective communication of the course information to the target audience.
  2. Training Presentation format(s) shall be agreed upon by the target audience's training group(s) (TTDC, TSMT, ROQT, currently).
- I. Training Aides:
1. Dependent upon the equipment and/or system(s), a functional mockup or a functional representation may be required. These may be in the form of animated illustrations, animated schematics, model(s) of the equipment, actual device(s), interactive video training, or any accepted media format as determined by the audience's training group.
  2. All mockups become the property of audience's training group after completion of the final scheduled training class. Supplemental materials shall be demonstrated as fully operable during the first training class. All necessary repairs to the supplemental materials are the responsibility of the vendor for the duration of vendor training sessions.
- J. OEM Operator's Manual(s) describing the equipment's or system's operation in each mode and capacity of use.
1. OEM Technical Manuals describing the detailed theory of operation, maintenance, testing, repair, overhaul, replacement, alignment, and troubleshooting shall be delivered to the appropriate training groups.

#### 1.04 MATERIALS AND INSTRUCTION

- A. Training materials shall be provided and approved by audience's training groups (TTDC, TSMT or ROQT) prior to the final acceptance of training schedule or training date(s).
- B. Training materials updates are required when, in the scope of the Contract, changes or Modifications are made that affect the operation or maintenance of the contracted item(s).
- C. Instruction shall include material covered in the operation and maintenance manuals as well as the following:
  - 1. Detailed theory of operation to one level below LRU
  - 2. Practical aspects of operation
  - 3. Description of system, equipment, and components
  - 4. Functional characteristics of system, equipment, and components
  - 5. Emergency operating procedures
  - 6. Location, removal, and reinstallation of components
  - 7. Maintenance procedures
  - 8. Servicing intervals and schedules
  - 9. Block diagrams of equipment hardware and software functionality as installed
  - 10. Schematics of equipment hardware as installed
  - 11. Diagnosis and problem solving (troubleshooting)
  - 12. Repair
  - 13. Overhaul
- D. Daily class duration shall be a nominal 7-1/2-hour shift, with advantageous combinations of theoretical/classroom instruction and hands-on practice, utilizing operational equipment, presentations, mockups, and test equipment as applicable. For on-the-job training (OJT) at work locations as applicable, training shall include participation in installation activities, fault diagnosis, and equipment alignment / adjustment exercises.
- E. Operating and maintenance training shall be completed prior to the time scheduled for operation inspection, testing, or acceptance of the equipment. In addition to the retainage specified in Section 00 74 40, METHOD OF PAYMENT, payment will be withheld until training is complete and accepted.
- F. Furnish to applicable training group, a minimum of four O&M Manuals as described in Section 01 77 50, CLOSEOUT, for each piece of equipment and system, unless otherwise specified, and a minimum of one editable, non-copyrighted electronic copy in a Microsoft Office format, as specified.

#### 1.05 PROJECT PERFORMANCE DEMONSTRATION

- A. Integrated system testing shall culminate in a project performance demonstration that shall simulate all operations and shall exercise all systems and system elements. Prepare performance demonstration plan and procedures. Include testing of anticipated normal and abnormal operations, in addition to simulations of emergency operations. Performance demonstration plan shall delineate the following:
  - 1. Tests to be performed

2. Date and time when each test is to be performed
  3. An outline of the test parameters
  4. Pass/fail criteria, which must be quantified and measurable
- B. The project performance demonstration shall include those static and dynamic tests used to demonstrate that the Design-Builder designed the systems and subsystems according to the specification and the performance specified, and shall include:
1. All necessary functional and performance testing conducted during construction and manufacture of the system elements; and
  2. Operational tests, which include integrated testing of system interfaces to assure that the Project as a whole is capable of operating as specified.

**PRODUCTS (NOT USED)**

**EXECUTION (NOT USED)**

PART 2 –

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**END OF SECTION**

## EXHIBIT K – PERFORMANCE BOND FORM



# AIA Document A312™ – 2010

## Performance Bond

**CONTRACTOR:**  
*(Name, legal status and address)*

**SURETY:**  
*(Name, legal status and principal place of business)*

**OWNER:**  
*(Name, legal status and address)*

**CONSTRUCTION CONTRACT**  
Date:

Amount:

Description:  
*(Name and location)*

**BOND**  
Date:  
*(Not earlier than Construction Contract Date)*

Amount:

Modifications to this Bond:  None  See Section 16

**CONTRACTOR AS PRINCIPAL**                      **SURETY**  
Company: *(Corporate Seal)*                      Company: *(Corporate Seal)*

Signature: \_\_\_\_\_ Signature: \_\_\_\_\_  
Name                      Nam                      e  
and Title:                      and Title:  
*(Any additional signatures appear on the last page of this Performance Bond.)*

*(FOR INFORMATION ONLY — Name, address and telephone)*  
**AGENT or BROKER:**                      **OWNER'S REPRESENTATIVE:**  
*(Architect, Engineer or other party:)*

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

AIA Document A312–2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
- .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.



§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
- .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

#### § 14 Definitions

§ 14.1 **Balance of the Contract Price.** The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 **Construction Contract.** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 **Contractor Default.** Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:



*(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)*

**CONTRACTOR AS PRINCIPAL**

**SURETY**

Company:

*(Corporate Seal)*

Company:

*(Corporate Seal)*

Signature: \_\_\_\_\_

Name and Title:

Address

Signature: \_\_\_\_\_

Name and Title:

Address

**CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.**

## EXHIBIT L – PAYMENT BOND FORM

# AIA<sup>®</sup> Document A312<sup>™</sup> – 2010

## Payment Bond

**CONTRACTOR:**  
*(Name, legal status and address)*

**SURETY:**  
*(Name, legal status and principal place of business)*

**OWNER:**  
*(Name, legal status and address)*

**CONSTRUCTION CONTRACT**

Date:  
Amount: \$  
Description:  
*(Name and location)*

**BOND**  
Date:  
*(Not earlier than Construction Contract Date)*

Amount: \$  
Modifications to this Bond:  None  See Section 18

**CONTRACTOR AS PRINCIPAL**  
Company: *(Corporate Seal)*

**SURETY**  
Company: *(Corporate Seal)*

Signature: \_\_\_\_\_  
Name and Title:  
*(Any additional signatures appear on the last page of this Payment Bond.)*

*(FOR INFORMATION ONLY — Name, address and telephone)*

**AGENT or BROKER:**

**OWNER'S REPRESENTATIVE:**  
*(Architect, Engineer or other party:)*

**ADDITIONS AND DELETIONS:**  
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

Init.

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

Init.

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

## § 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

*(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)*

**CONTRACTOR AS PRINCIPAL**

**SURETY**

Company: \_\_\_\_\_ *(Corporate Seal)*

Company: \_\_\_\_\_ *(Corporate Seal)*

Signature: \_\_\_\_\_  
Name and Title: \_\_\_\_\_  
Address: \_\_\_\_\_

Signature: \_\_\_\_\_  
Name and Title: \_\_\_\_\_  
Address: \_\_\_\_\_

Init.

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## **Additions and Deletions Report for** **AIA<sup>®</sup> Document A312<sup>™</sup> – 2010**

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 11:43:03 on 10/09/2012.

*There are no differences.*



## **Certification of Document's Authenticity**

**AIA® Document D401™ – 2003**

I, \_\_\_\_\_, hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 11:43:03 on 10/09/2012 under Order No. 5820952305\_1 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A312™ – 2010, Payment Bond, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.

\_\_\_\_\_  
*(Signed)*

\_\_\_\_\_  
*(Title)*

\_\_\_\_\_  
*(Dated)*