Serial Number: RFP-FQ16146/NAC
Date of Issue: May 14, 2018
Original Proposal Due Date: February 3, 2017
Revised Proposal Due Date: May 31, 2018

**WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY**
**600 FIFTH STREET, N.W.**
**WASHINGTON, DC 20001**

May 14, 2018
AMENDMENT NO. 15
REQUEST FOR PROPOSALS
FOR
POTOMAC YARD METRORAIL STATION
FQ16146/NAC

TO WHOM IT MAY CONCERN:

The Request For Proposals and Proposal Documents accompanying RFP FQ16146/NAC requesting Proposals for the above project are hereby changed in part as listed below.

## I. GENERAL INFORMATION

1. This amendment modifies specifications, Standard Drawings and Directive Drawings.
2. This amendment supersedes Amendment 14 (5/3/2018) in its entirety.
3. Proposers may choose (but are not required) to submit revisions to the relevant portions of their technical proposals if warranted by the revised technical requirements provided in this amendment.

## II. CHANGES TO DOCUMENTS

The Request For Proposals and Proposal Documents accompanying solicitation RFP/FQ16146/NAC are hereby changed in part as follows:

1. **VOLUME 1 – DIVISIONS 0 AND 1**
Delete the following pages and in lieu thereof add or substitute the accompanying pages:

| DELETE | SUBSTITUTE | DESCRIPTION |
|---|---|---|
| 00 10 00-1 and -4 | 00 10 00-1 and -4 | Revised |
| 00 43 40-1 through -4 | 00 43 40-1 through -4 | Revised |
| n/a | 00 45 10-12 | New Page |
| 00 70 00-69 | 00 70 00-69 through -73 | New Pages |
| 01 14 10-2 and -3 | 01 14 10-2 and -3 | Revised |

2. **VOLUME 2 – DIVISIONS 2 THROUGH 49**

Delete the following pages and where noted substitute the accompanying pages:

| DELETE | SUBSTITUTE | DESCRIPTION |
|---|---|---|
| 05 12 13 | 05 12 13 | Revised section |
| 07 72 00 | 07 72 00 | Revised section |
| 32 13 00 | n/a | Deleted section |
| 32 31 00 | n/a | Deleted section |

**3. VOLUME 3 – PROJECT DIRECTIVE DRAWINGS:**

Station Platform and Mezzanine floor finish shall be quarry tile. Tile shall be Summitville Tiles, Inc. “10 Summitville Red” 8” hex, 5/8” thickness, flashed, wire cut finish, or approved equal. Grout shall be Summitville #568 “Silhouette” or approved equal.

**4. VOLUME 3 – ST AND DD DRAWINGS:**

1. Delete the precast platform pavers shown on ST-A-STAD-001 and -002. See project directive drawings for platform finish.
2. Delete the illuminated handrails shown on DD-A-VTST-004 and -005. Provide SS handrails without integral illumination in the locations shown.

**5. ACKNOWLEDGEMENT**

Offerors are required to acknowledge receipt of this amendment on the Technical and Price Proposal Forms (Pages 00 41 20-1 and 00 41 30-1) in the space provided. Failure to acknowledge all amendments may cause the bid to be considered not responsive to the invitation, which would require rejection of the Proposal.

_____

Norie A. Calvert
Contracting Officer

Enclosures

* * * * *

# SECTION 00 10 00

# PROPOSING REQUIREMENTS – DESIGN BUILD

00 10 10 REQUEST FOR PROPOSAL:

This Section includes Project information for Proposers.

## NOTICE TO OFFERORS

**Contract No. FQ16146/NAC includes RFP Documents for:**

**Project Name:** POTOMAC YARD METRORAIL STATION

TECHNICAL PROPOSAL for the Work described herein shall be submitted to the Contract Administrator, Nichel Crooks, through WMATA's PMSS. Technical and Price Proposals shall be separate proposals and # submitted before 3:00 PM (local time) on May 31, 2018. All questions are to be directed to Contract # administrator.

DIRECTIONS TO SUBMITTING PROPOSER: Read and comply with the Solicitation Instructions. In addition to other submission requirements set forth in this Request for Proposal and all Amendments, the following must be properly executed, completed, and submitted separately as part of the offer:

A. TECHNICAL PROPOSAL:

1. Technical Proposal Form (properly executed)[1]
2. Technical Proposal

B. PRICE PROPOSAL:

1. Price Proposal Form (properly executed[1])
2. Price Schedule
3. Price Guarantee
4. Proposal Data Form with Supporting Data
5. Representations and Certifications
6. List of DBE Certified Firms[2]
7. DBE Data[3]

PROPOSAL(S) MUST SET FORTH FULL, ACCURATE, AND COMPLETE INFORMATION AS REQUIRED BY THIS REQUEST FOR PROPOSAL, INCLUDING ALL AMENDMENTS

[1] The separate sealed Technical and Price Proposal Forms must be marked with offer under Solicitation RFP No. FQ16146/NAC and with acknowledgement of all Amendments.
[[2] Proposed DBE firms must be certified WMATA DBE firms ***prior to submittal*** of Schedule of DBE Participation and Letters of Intent in order to be applied toward the DBE goal established for the Contract. Non-WMATA Certified DBE firms may be utilized by the Proposer but will not be applied toward the goal calculations.]
[3] DBE Data and List of WMATA DBE-Certified Firms must be updated and included in Best and Final Offer (BAFO) submission(s).

A. Potomac Yard Metro Station Final Environmental Impact Statement (FEIS),

B. Record of Decisions (RODs) from the Federal Transit Administration (FTA) and the National Park Service (NPS),

C. Section 106 Memorandum of Agreement (MOA),

D. Phase II Environmental Site Assessment

E. The City of Alexandria's Development Special Use Permit (DSUP2016-004, 2016-005, 2016-005) conditions

The above stated documents are provided in this Solicitation FQ16146/NAC. All cost associated with the required compliance shall be included in the Design Builders proposal. See SECTION 00 30 00 INFORMATION AVAILABLE TO PROPOSERS.

B. Basis of Design: As specified in Section 01 11 20, DESIGN AND PROGRAM REQUIREMENTS.

00 10 13 PROJECT SOLICITATION SCHEDULE:

A. The solicitation schedule for this Project is as follows:

1. Issue Revised Request for Proposal: July 11, 2017
2. One-on-One Meeting No. 1: Weeks of September 4 and September 11, 2017
3. Site Visits: by Appointment December, 2017
4. One-on-One Meeting No. 2: October 23, 2017
5. Proposer submission of ATCs: no later than December 1, 2017
6. WMATA action on ATCs: December 15, 2017
7. One-on-One Meeting No. 3: Week of January 8, 2018
# 8. Technical and Price Proposal: May 31, 2018 #
# 9. Projected Contract Award: June 19, 2018 #
# 10. Notice to Proceed: July 2, 2018 #

**END OF SECTION**

# SECTION 00 43 40

## PRICE PROPOSAL SCHEDULE

(Submit with Proposal)

A. DESCRIPTION OF WORK

1. The Design-Builder shall Design and Build the Facilities in the manner and at the locations set forth in the RFP Documents of this solicitation, and in accordance with the Technical and Price Proposals as finally accepted by the Authority. The Design-Builder shall design the Work pursuant to the Contract Documents and the Rules and Regulations of the Jurisdictional Authorities, and shall construct the facility in strict accordance with the Issued for Construction Specifications and Issued for Construction Drawings and in full compliance with the Rules and Regulations of the Jurisdictional Authorities.

B. BASIS FOR AWARD

1. The best value evaluation of the Proposal by the Authority will consider the Total Base, Owner-selected elevator type, and Owner-approved ATCs as Finally Accepted.

C. PRICE PROPOSAL

**Price Proposal Schedule**

| Item # | Description | Note # | Est. Qty. | Unit | Unit Price | Total Amount |
|---|---|---|---|---|---|---|
| **Base** | | | | | | |
| 1 | Mobilization | 1 | 1 | LS | $3,000,000 | $3,000,000 |
| 2 | General Conditions | 2 | 1 | LS | $_____ | $_____ |
| 3 | Site Work | 3 | 1 | LS | $_____ | $_____ |
| 4 | DELETED | 4 | 1 | LS | $_____ | $_____ |
| 5 | DELETED | 5 | 1 | LS | $_____ | $_____ |
| 6 | Site Restoration and Mitigation | 6 | 1 | LS | $_____ | $_____ |
| 7 | Station Structure | 7 | 1 | LS | $_____ | $_____ |
| 8 | Station Finishes | 8 | 1 | LS | $_____ | $_____ |
| 9 | AC Room Building Construction and Equipment | 9 | 1 | LS | $_____ | $_____ |
| 10 | DELETED | 10 | 1 | LS | $_____ | $_____ |
| 11 | North Pedestrian Bridge and Pavilion | 11 | 1 | LS | $_____ | $_____ |
| 12 | Design Items 3 through 11 | | 1 | LS | $_____ | $_____ |
| 13 | Traction Power | 12 | 1 | LS | $_____ | $_____ |
| 14 | Communications | 12 | 1 | LS | $_____ | $_____ |
| 15 | Automatic Train Control | 12 | 1 | LS | $_____ | $_____ |
| 16 | Hazardous Waste | 13 | 1200 | CY | $_____ | $_____ |
| 17 | PCB-Contaminated Soil | 14 | 1200 | CY | $_____ | $_____ |
| 18 | Petroleum-Contaminated Soil 1 | 15 | 1200 | CY | $_____ | $_____ |
| 19 | Petroleum Contaminated Soil 2 | 16 | 1200 | CY | $_____ | $_____ |
| 20 | NOT USED | 17 | | CY | $_____ | $_____ |

| | | | | | | |
|---|---|---|---|---|---|---|
| 21 | Permitting Allowance | 18 | 1 | Allow | $50,000 | $50,000 |
| 22 | Utility Allowance | 19 | 1 | Allow | $250,000 | $250,000 |
| 23 | Conduit, Cable Troughs & Duct Bank | 20 | 1 | Allow | $11,000,000 | $11,000,000 |
| | | | | | **Total Subbase Price** | **$_____** |

**Elevator Proposal Schedule**

(Proposer shall provide pricing for both types. Owner will select one type for incorporation in the project).

| Item # | Description | Note # | Est. Qty. | Unit | Unit Price | Total Amount |
|---|---|---|---|---|---|---|
| 24 | Hydraulic Elevators | | | LS | $_____ | $_____ |
| 25 | Gearless Traction Elevators | | | LS | $_____ | $_____ |
| | | | | | **Total Base Price** | **$_____** |

(Total Base Price =Total Subbase Price plus either Item 24 or Item 25)

**Options Schedule**

| Item # | Description | Note # | Est. Qty. | Unit | Unit Price | Total Amount |
|---|---|---|---|---|---|---|
| 26 | Optional Enclosure of Pedestrian Bridge | 21 | 1 | LS | $_____ | $_____ |
| # 27 | Optional Pedestrian Ramp | 22 | 1 | LS | $_____ | $_____ # |
| | | | | | **Total Options Price** | $_____ |
| | | | | | **Total Base Price + Options Price** | **$_____** |

The Contract Price will be evaluated based on the Total Base Price plus Option Price. The Authority retains the right to award based on the Total Base Price only or Total Base plus Options.

**Notes to Proposers**

(1) The Mobilization costs shall include the premium costs for payment and performance bonds. The remaining mobilization costs shall be paid in six equal installments over the first six payment requests.

(2) Contractor shall provide a quotation for all cost elements that make up General Conditions. General Conditions costs shall not be included with any other cost elements proposed under items 1 and 3 through 24 above.

(3) Contractor shall provide a quotation for all work below station platform level, which includes, but is not limited to:

- earthwork
- retaining walls
- demolition
- grading and drainage
- stormwater management
- erosion and sediment control
- pavement, striping
- signage
- utilities
- perimeter fence
- treatment of contaminated water
- track work

All soil shall be assumed to be contaminated with arsenic above background concentrations. Quote shall include the cost of characterization, removal, transportation, and disposal.

(4) DELETED

(5) DELETED

(6) Contractor shall provide a quotation for the demolition and restoration of the Potomac Greens Drive traffic circle, the demolition and restoration of Old Town Greens tot lots and tennis courts removed for construction access and temporary relocation of tot lot. Old Town Greens tot lot shall be relocated to a site within Old Town Greens HOA.

(7) Contractor shall provide a quotation for all station structure work at and above the platform level, including platforms, mezzanines, and vertical transportation.

(8) Contractor shall provide a quotation for station finishes, which include, but are not limited to:

- paver tiles
- kiosks
- light fixtures
- platform edge
- platform lighting
- bathrooms
- benches

(9) Contractor shall provide a quotation for all costs related to the construction of off-site AC room and access road as well as all electrical equipment, ductbanks, conduit, and connections. Equipment costs include, but are not limited to design, installation, testing, and commissioning.

(10) DELETED.

(11) Contractor shall provide a quotation for the north pedestrian bridge and Entry Pavilion, connecting to the future North Potomac Yard development.

(12) Traction Power, Automatic Train Control, and Communications: Contactor shall provide a quotation for equipment costs which include, but are not limited to design, supply, installation, and testing.

(13) Hazardous Waste: The contractor shall provide a quotation for the removal and disposal of hazardous waste from the site. For inclusion in this category, soil must fail the toxicity characteristic leaching procedure. Soil in this category shall be assumed to be contaminated with other constituents, including, but not limited to, arsenic, petroleum, and benzene, toluene, ethyl benzene, and xylenes (BTEX). Quote shall include the cost of characterization, removal, transportation, and disposal.

(14) PCB-Contaminated Soil: The contractor shall provide a quotation for the removal and disposal of PCB-contaminated soil from the site. For inclusion in this category, concentration of PCBs shall exceed 1 mg/kg. Soil in this category shall be assumed to be contaminated with other constituents, including, but not limited to, arsenic, petroleum, and BTEX. Quote shall include the cost of characterization, removal, transportation, and disposal.

(15) Petroleum Contaminated Soil 1: The contractor shall provide a quotation for the removal and disposal of petroleum-contaminated soil from the site. For inclusion in this category, soils shall have a concentration of petroleum hydrocarbons (TPH) equal to or greater than 500 mg/kg, and/or of BTEX equal to or greater

than 10 mg/kg. Soils in this category shall be assumed to be contaminated with arsenic above background. Quote shall include the cost of characterization, removal, transportation, and disposal.

(16) Petroleum Contaminated Soil 2: The contractor shall provide a quotation for the removal and disposal of petroleum-contaminated soil from the site. For inclusion in this category, soils shall have a concentration of petroleum hydrocarbons (TPH) equal to or greater than 50 mg/kg, and less than 500 mg/kg, and total BTEX less than 10 mg/kg. Soils in this category shall be assumed to be contaminated with arsenic above background. Quote shall include the cost of characterization, removal, transportation, and disposal.

(17) NOT USED

(18) The City of Alexandria shall waive all fees associated with obtaining City of Alexandria Permits. Fee schedules for all other permits required for the Potomac Yard Station, including, but not limited to, National Park Service, Virginia Department of Transportation, Corps of Engineers, and any other State or Federal permit required shall be the responsibility of the Design Builder.

Contractor shall provide a quotation for an allowance to cover costs associated with permit fees for any permit fees not expressly waived by the City of Alexandria.

(19) Contractor shall provide an invoice for an allowance applicable to the cost incurred by the Design Builder which is paid directly to the utility companies for fees. Allowance will cover Design Builder costs such as tap and connection fees, applications, and inspections fees. Other utility cost including, but not limited to, design and utility installation do not apply to this allowance and shall be included in the Site Work Bid Item in the Design Builder's proposal.

(20) Allowance to cover costs to provide new conduit, cable troughs and/or duct banks for Traction Power, Automatic Train Control, and Communications along the existing alignment in cases where existing facilities do not provide adequate capacity for new cabling. Allowance is also for new cabling for Traction Power, Automatic Train Control and Communications between the Potomac Yard Station and the adjacent stations/rooms/buildings that would connect the new station to the remainder of the WMATA system. Costs covered under this allowance include, but are not limited to, design engineering, demolition, material
# procurement, installation and testing. Design and engineering costs are not covered under this allowance #
and shall be included in Items 13, 14 or 15. Costs for conduit, cable troughs, duct banks and cabling within the limits of the new alignment are not covered under this Item, and shall be included in Items 13, 14 or 15.

# (21) Contractor costs to design and construct a fully-glazed, floor-to-ceiling enclosure in lieu of woven metal #
mesh at the North Pedestrian Bridge, including modified mechanical and life safety systems as required. The Authority retains the right to exercise this option at the time of award or within 365 days after Notice to Proceed.

# (22) Contractor costs to design and construct a pedestrian ramp and stair to provide public access to the #
pedestrian bridge. The ramp shall originate on the east side of Potomac Avenue near its intersection with East Glebe Road, and connect directly into the North Pedestrian Bridge, with the stair providing additional access to the bridge from ground level. Ramp width shall be minimum 14 feet clear. Provide continuous overhead canopy for ramp and stair. Architectural and structural detailing shall complement the proposer's station, bridge and entrance pavilion design. The scope of work includes new, relocated and reconfigured walkways, planting, drainage, utilities and lighting as required to implement the ramp. The design shall adhere to ADA, WMATA, and City requirements. WMATA will exercise or decline this option at the time of award.

# **18. CRIMINAL BACKGROUND SCREENING CERTIFICATION (QUARTERLY)** #

By submission of this offer, the offeror certifies that:

**18.1** It will contract with or engage a reputable third-party vendor to conduct, criminal background screenings of all Contractor personnel who will have access to WMATA's customers, WMATA's property, or WMATA's information in connection with this Contract. This requirement also applies to Contractors who engage with the general public on WMATA's behalf.

**18.2** It will screen for criminal convictions, taking 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, all Contractor personnel who will have access to WMATA's customers, the general public, WMATA's property, or WMATA's information and who work on this Contract during each calendar year within this Contract's period of performance. The Offeror will provide certification that it conducted these screenings to the Contracting Officer's Technical Representative (COTR) on a quarterly basis, on a form provided.

**18.3** The Contractor shall submit to the COTR, a list of all employees and agents who will require Contractors' access badges not less than 7 days prior to the date on which access will be required.

**18.4** The Offeror will determine that all Contractor personnel working on this Contract during the calendar year passed the Contractor's criminal background screening and will be in good standing and otherwise fit to work on this Contract.

**18.5** The Offeror has not obtained or otherwise been made aware of any information about any Contractor personnel working on this Contract that contradicts or otherwise impacts the Contractor's determination that such persons passed the Contractor's criminal background screening and/or are fit to work on this Contract.

**18.6** The Contractor will flow this requirement down to all of its subcontractors who will have access to WMATA's customers, the general public, WMATA's property, or WMATA's information within this Contract's period of performance.

| | |
|---|---|
| Name | Signature |
| Title | Company |
| Date | |

.

b. All other applicable Federal guidance, and

3. Flow this provision down to all applicable subcontracts.

N. Veterans Preference

1. As provided by 49 U.S.C. §5325(k), to the extent practicable, The Design-Builder will:

a. Give a hiring preference to veterans, as defined in 5 U.S.C. §2108, who have the skills and abilities required to perform construction work required under a third party contract in connection with a capital project supported with federal assistance appropriated or made available for 49 U.S.C. chapter 53, and
b. Will not require an employer to give a preference to any veteran over an equally qualified applicant who is a member of any racial or ethnic minority, female, and individual with a disability, or former employee.

O. NOTIFICATION OF FEDERAL PARTICIPATION

This Project is being funded in whole or part with Federal Funds.

# P. REQUESTS FOR RECORDS #

The Washington Metropolitan Area Transit Authority (WMATA), in the regular course of business, may receive from the public, including prospective vendors and bidders, requests for records on a variety of topics. It is WMATA's policy to make official agency records, including electronic records, available to the public, unless specifically prohibited by WMATA's policy or applicable laws.

(a) "Records" means any existing writings, drawings, maps, recordings, tapes, film, microfilm, correspondence, forms, cards, photographs, optical disks, photo copies, and records stored by computer (electronic records) that are made or received by WMATA in connection with a public contract. A record does not include uncirculated personal notes, papers, electronic records and any other records that were created and retained solely as work papers for personal use of the Contracting Officer, Contract Administrator or other WMATA employee.

(b) WMATA's contracting process allows for the release/posting of certain information concerning this Contract after its award. This includes the name of the successful bidder and the amount of the award. This information is available on WMATA's website under "Business with Metro" or directly from the Contract Administrator.

(c) Upon WMATA's request, the successful bidder shall be required to provide a redacted copy of its bid with confidential and proprietary information redacted.

(d) After the award is announced, the winning proposal may be subject to release under WMATA's Public Access to Records Policy (PARP).

(e) When WMATA determines that a bid will be of wide public interest, WMATA will post the redacted bid on its website. When WMATA receives three (3) or more requests for a successful bid, WMATA will post it on its website.

(f) Requests for Records that are not made available during the procurement process will be submitted in accordance with the PARP. Requests must be in writing and sent by mail to the Office of General Counsel, Washington Metropolitan Area Transit Authority, 600 Fifth Street, NW, Washington, D.C. 20001, or by electronic mail at parpprivreq@wmata.com or by facsimile to the attention of the PARP Administrator at (202) 962-2550. If a request for records is sent directly from the requestor to a Contract Administrator, department, or independent office, that entity shall immediately forward the request to the PARP Administrator in the Office of General Counsel. If records are subject to a PARP request, a member of the PARP team will contact the company to

begin the PARP document review process, which includes providing detailed written justifications for any information for which exemptions are claimed.

(g) Neither WMATA's bidding process nor the PARP process generally allow for the release of information that would cause competitive harm to the bidders, other organizations, WMATA's employees, or interests. Information that will be withheld includes the following:

(1) The names of unsuccessful bidders;

(2) The bids of unsuccessful bidders;

(3) Personal information (this does not include education and qualifications which are released) about the successful bidder or its employees that is not available to the public on the website of the successful bidder;

(4) Unit price details of the successful bid (this does not include the bottom line price, which is released);

(5) The names of the vendors who file a protest to the solicitation or its award;

(6) The written adjudication of any protests;

(7) Personal information concerning WMATA's employees; and

(8) Trade secrets and confidential commercial or financial information obtained from a bidder.

(h) If your company's records are subject to a PARP request (i.e., if it is the successful bidder), a broad claim of confidentiality for the entire bid is rarely acceptable, and will likely be rejected during the PARP process. Therefore, WMATA suggests that you narrowly identify your confidential/proprietary information based on the following guidance:

(i) Information that may be withheld/redacted: Detailed pricing except bottom line offer amounts;

(j) Public information subject to release:

(1) Any information on your company's website;

(2) Publicly known information (even if not on your company's website);

(3) General company background;

(4) Mere compliance with IFB requirements; and

(5) Anything standard to the industry.

## # Q. **TITLE AND RISK OF LOSS** #

(a) Unless this Contract specifically provides for earlier passage of title to deliverables (including documents, reports, and data) or other items resulting from this Contract, title shall pass to the Authority upon acceptance, regardless of when or where the Authority takes physical possession. Risk of loss, theft, destruction of, or damage to, such deliverables or other items remains with the Contractor, until the transfer of title or at the time when the Authority takes physical possession, whichever is later.

(b) In the event of loss or damage to any deliverable or other item of work, prior to the time when the Authority takes physical possession, the Contractor agrees to repair or replace it as soon as

reasonably possible to restore the item to the same condition that pre-existed the loss or damage, in accordance with all requirements of this Contract, without cost to the Authority. Nothing contained herein shall be deemed to require the Contractor's repair or replacement of any loss or damage caused solely by the Authority's acts or omissions.

# R. **RIGHTS IN DATA AND COPYRIGHTS — FTA** #

(a) The term "subject data" used in this article means recorded information, whether or not copyrighted, that is delivered or specified to be delivered under this Contract. The term includes graphic or pictorial delineation in media such as drawings or photographs; text in specifications or related performance or design-type documents; machine forms such as magnetic tape, or computer memory printouts; and information retained in computer memory. Examples include, but are not limited to: computer software, engineering drawings and associated lists; specifications, standards, process sheets, manuals, technical reports, catalog item identifications, and related information. The term "subject data" does not include financial reports, cost analyses, and similar information incidental to Contract administration.

(b) The following restrictions apply to all subject data first produced in the performance of this contract:

(1) Except for its or WMATA's own internal use, the Contractor may not publish or reproduce subject data in whole or in part, or in any manner or form, nor may the Contractor authorize others to do so, without the written consent of the U.S. Government, until such time as the Government may have either released or approved the release of such data to the public. This restriction on publication, does not apply to agreements with academic institutions;

(2) In accordance with 49 C.F.R. § 18.34 and 49 C.F.R.§ 19.36, the Federal Government reserves a royalty-free, non-exclusive and irrevocable license to reproduce, publish, or otherwise use, and to authorize others to use, the following subject data for its purposes:

(i) Any subject data developed under this contract whether or not a copyright has been obtained; and

(ii) Any rights of copyright to which the contractor purchases ownership with Federal assistance.

(c) When the Federal Transit Administration (FTA) provides financial assistance for a planning, research, development, or a demonstration project, it is FTA's general intention to increase mass transportation knowledge, rather than limit the benefits to participants in the project. Therefore, unless FTA determines otherwise, the Contractor agrees that, in addition to the rights set forth in subsection (b)(2) of this article, FTA may make available to any FTA recipient, sub-recipient, third party contractor, or third party subcontractor, either FTA's license in the copyright to the subject data derived under this Contract or a copy of the subject data first produced under this Contract. If this Contract is not completed for any reason whatsoever, all data developed under this Contract shall become subject data as defined in subsection (a) and shall be delivered as the Federal Government may direct.

(d) Unless prohibited by state law, the Contractor agrees to indemnify, save, and hold harmless WMATA and the Federal Government, their officers, agents, and employees acting within the scope of their official duties against any liability, including costs and expenses, resulting from the Contractor's willful or intentional violation of proprietary rights, copyrights, or right of privacy, arising out of the publication, translation, reproduction, delivery, use, or disposition of any data furnished under this Contract. The Contractor shall not be required to indemnify WMATA and the Federal Government for any such liability arising out of the wrongful acts of their employees or agents.

(e) Nothing contained in this article shall imply a license to WMATA or the Federal Government under any patent or be construed as affecting the scope of any license or other right otherwise granted to WMATA or the Federal Government under any patent.

(f) The requirements of paragraphs (b) and (c), do not apply to material furnished by the Authority to the Contractor and incorporated in the work carried out under the contract provided that the Contractor identifies the incorporated material at the time of delivery of the work.

(g) Any dispute arising under this article shall be subject to the "Disputes" article of this Contract.

(h) Notwithstanding any other payment provision in this Contract, the Contracting Officer may retain from payments due and owing the Contractor up to 10 percent (10 %) of the contract price until final delivery and acceptance of the subject data defined in this article and as required to be furnished by the Price Schedule or the Contract's specifications.

## # S. PAYMENT DEDUCTIONS - NONCOMPLIANCE WITH DBE REQUIREMENTS- FTA #

(a) For Federally funded contracts that exceed $150,000 and to which the Disadvantage Business Enterprise (DBE) Requirements (Appendix B) apply, the failure to perform in accordance with requirements of Appendix B may result in a partial or full suspension of payment, including progress payments, if applicable.

(b) If the Contractor is found to be in noncompliance with the DBE requirements of Appendix B, the progress of the work shall also be deemed to be unsatisfactory, and an amount equal to the DBE participation in the Contract shall be retained from payment (or progress payments, if any) made to the Contractor.

(c) If the contract value is over $150,000, the prime contractor will be responsible for submitting a monthly report of the status of its DBE subcontractors as outlined in Appendix B to the Contracting Officer.

(d) If the Contractor fails to submit the required monthly DBE reports, the Contracting Officer may suspend payment (or progress payments) until such time as the monthly reports are submitted and accepted by the Authority.

## # T. SENSITIVE SECURITY INFORMATION #

The Contractor must protect, and take measures to assure that its subcontractors at each tier protect, "sensitive information" made available during the course of administering an Authority contract or subcontract in accordance with 49 U.S.C. Section 40119(b) and implementing DOT regulations, "Protection of Sensitive Security Information," 49 CFR Part 15, and with 49 U.S.C. Section 114(s) and implementing Department of Homeland Security regulations, "Protection of Sensitive Security Information," 49 CFR Part 1520.

## # U. LAWS AND REGULATIONS #

The Contractor shall be responsible to comply with any applicable State of Maryland, Commonwealth of Virginia, District of Columbia, Federal and local laws and regulations governing the services and/or supplies to be provided under this Contract. Further, the Contractor shall be responsible to obtain, at its own cost and expense, any and all licenses/permits required to transact business in any political jurisdictions where work will be performed.

# V. **METRIC SYSTEM** #

To the extent the Federal Government directs, the Contractor agrees to use the metric system of measurement in its Contract activities, in accordance with the Metric Conversion Act, as amended by the Omnibus Trade and Competitiveness Act, 15 U.S.C. § 205 (a) *et. seq*.; Executive Order No. 12770, "Metric Usage in Federal Government Programs," 15 U.S.C. § 205(a) note; and applicable U.S. DOT or FTA regulations in accordance with applicable Federal directives. As practicable and feasible, the Contractor agrees to supply products and services with dimensions expressed in the metric system of measurement. Metric usage shall not be required to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms.

# W. **CONTRACTOR PERSONNEL** #

(a) The Authority may direct the replacement of the Contractor's employees reasonably deemed to be unsuitable by the Contracting Officer, or whose continued participation in the work is deemed contrary to the best interests of the Authority. Except in circumstances deemed exigent by the Contracting Officer, the reason for replacement will be discussed between the Contractor and the Authority before a replacement directive is issued. Upon receipt of a written replacement directive from the Authority specifying the date by which the replacement must occur, the Contractor shall proceed with the replacement and shall do so in a manner that minimizes, to the greatest extent practicable, any impact upon the Contract.

(b) Contractor personnel required to work on WMATA's property must obtain a WMATA vendors' badge and successfully complete the mandatory safety training that must be renewed yearly. The Contractor must advise its affected personnel that, to obtain a vendor's badge, Contractor will perform a background check.

# X. **PUBLIC COMMUNICATION** #

The Contractor shall not issue communications to the media, place advertisements, nor publicize through any means the services, goods or construction that it is providing to WMATA under this Contract, without prior written consent of the Contracting Officer. The Contractor shall not publish, in print or online, any communications products such as newsletters, press releases, blogs or other communications without the Contracting Officer's prior, written consent. Approval of any such requests shall be at the Contracting Officer's sole discretion.

# Y. **ALL NECESSARY FEDERAL PROVISIONS DEEMED INCLUDED- FTA** #

It is the intent of the parties that each and every provision of law required to be inserted in this Contract should be and is hereby inserted herein.

**END OF SECTION**

listed below, single track RSAs will be permitted between 2200 Friday and 0400 Tuesday and complete shutdown RSAs will 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

G. The Hours of Work associated with non-revenue and RSAs and the frequency that these Hours of Work will be available to the Design-Builder are noted below.

1. Non-revenue (0100 to 0400) – 2 of 5 weeknights
2. Weekend RSAs as indicated below. Weekend RSAs will not be permitted on back-to-back weekends. 3-day weekend RSAs will be limited to federal holiday weekends indicated in Article 1.04F herein:
   a. 2-day weekend single tracking (2200 Friday to 0400 Monday)
   b. 3-day weekend single tracking (2200 Friday to 0400 Tuesday)
   c. 2-day weekend shutdown (0300 Saturday to 0400 Monday)
   d. 3-day weekend shutdown (0300 Saturday to 0400 Tuesday)
3. A double track outage will be granted for up to two consecutive weeks between National Airport and Braddock Road stations, commencing no sooner than 6:00 AM Saturday July 10, 2021 and ending no later than 12:01 AM on September 7, 2021. Examples of a two week outage are as follows:
   a. Start 6:00 AM 07/10/21 end 12:01 AM 07/26/21
   b. Start 6:00 AM 08/21/21 and 12:01 AM 09/07/21
4. # A double track outage will be granted south of the Four Mile Run Bridge, commencing no sooner than 6:00 AM Tuesday May 28, 2019, and ending no later than 12:01 AM on Saturday August 31, 2019. During this outage the Design-Builder will have access to the Roadway without escort. Alexandria Yard will not be available for access by track-based equipment during this outage. #

# H. RSAs will not be permitted during the following periods in any calendar year except for the 2019 and 2021 outages described under 1.04 G (3) and (4) above: #

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 4th Sunday of October (Marine Corps Marathon)
5. Thanksgiving eve through the following Monday
6. The 3rd Saturday of December

7. Christmas eve and Christmas day

8. New Year's eve and New Year's day

I. 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. Plan 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 RSAs will need to be advanced or delayed 1 week unless there is conflict with the black-out periods listed above.

J. There shall be no early endings of the working days on nights of regularly scheduled sporting events such as baseball, basketball, hockey, or soccer.

K. 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 RSAs will need to be delayed 1 week unless it conflicts with the black-out periods listed above.

L. Construction of the Potomac Yard Metrorail Station and its facilities will require the operation of heavy equipment adjacent to the active WMATA railroad. Equipment operations that pose a threat to the railroad right-of-way cannot occur during revenue rush hour operations but can occur, on a limited basis, during non-rush hour operations with the presence of a WMATA flagperson. A flagperson will only be supplied with a 1-week notice from the Design-Builder. An example of restricted equipment operations would be a crane positioned such that its load or the crane itself would breach the railroad right-of-way in the event of a failure or accident. Positioning or operating equipment that eliminates this risk would permit operation to proceed without restrictions.

M. Construction of the Potomac Yard Metrorail Station and its facilities will require the operation of heavy equipment adjacent to the active CSX railroad. The Design Builder shall coordinate all activities with CSX and any operations that pose a threat to the CSX railroad right-of-way cannot occur without the expressed written permission of CSX and the presence of a CSX flagperson.

PART 2 – PRODUCTS (not used)

PART 3 – EXECUTION (not used)

**END OF SECTION**

# SECTION 05 12 13

# ARCHITECTURALLY EXPOSED STRUCTURAL STEEL FRAMING (AESS)

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. Section Includes:

# B. Structural steel framing and assemblies in the following locations and exposed to public view are designated as “Architecturally Exposed Structural Steel” or “AESS”: #

a. Entrance pavilions.
b. Platform canopies.
c. Platform shelters.
d. Windscreens.
e. Curtain walls.
f. Mezzanine vaults.
g. Pedestrian bridges.
h. Unitized louver framing. and
i. Elevator support/bracing.

C. Related Requirements:

1. Section 05 12 00 "Structural Steel Framing" for additional requirements applicable to AESS.
2. Section 05 50 00 "Metal Fabrications" for steel lintels and shelf angles not attached to structural-steel frame, miscellaneous steel fabrications, and other metal items not defined as structural steel.
3. Section 09 96 00 “High-Performance Coatings” for primers and coatings used at AESS.

### 1.3 DEFINITIONS

A. AESS: Structural steel designated as "architecturally exposed structural steel" or "AESS" in the Contract Documents as defined in AISC 303, Section 10.

B. Category 4 AESS: AESS that is within 96 inches vertically and 36 inches horizontally of a walking surface and that is visible to a person standing on that walking surface.

# C. Category 3 AESS: AESS that is greater than 96 inches vertically, greater than 36 inches horizontally, and less than 20 feet vertically and horizontally of a walking surface and that is visible to a person standing on that walking surface. #

# D. Category 2 AESS: AESS that is further than 20 feet and less than 40 feet vertically and horizontally of a walking surface and that is visible to a person standing on that walking surface. #

# E. Category 1 AESS: AESS that is further than 40 feet vertically and horizontally from a walking surface and that is visible to a person standing on that walking surface. #

## 1.4 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.

## 1.5 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

## 1.6 ACTION SUBMITTALS

A. Shop Drawings: Show fabrication of AESS components. Shop Drawings for structural steel may be used for AESS provided items of AESS are specifically identified and requirements below are met for AESS.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
2. Include embedment Drawings.
3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain. Indicate grinding, finish, and profile of welds.
4. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical, high-strength bolted connections. Indicate orientation of bolt heads.
5. Indicate exposed surfaces and edges and surface preparation being used.
6. Indicate special tolerances and erection requirements.

B. Samples: Submit Samples of AESS to set quality standards for exposed welds.

1. Two steel plates, 3/8 by 8 by 4 inches, with long edges joined by a groove weld and with weld ground smooth.
2. Steel plate, 3/8 by 8 by 8 inches, with one end of a short length of rectangular steel tube, 4 by 6 by 3/8 inches , welded to plate with a continuous fillet weld and with weld ground smooth and blended.
3. Round steel tube or pipe, minimum 8 inches in diameter, with end of another round steel tube or pipe, approximately 4 inches in diameter, welded to its side at a 45-degree angle with a continuous fillet weld and with weld ground smooth and blended.

## 1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and fabricator.

B. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.

## 1.8 QUALITY ASSURANCE

A. Regulatory Requirements:

1. Comply with codes, laws and regulations of the authorities having jurisdiction (AHJ). Refer to Section 01 41 00 "Regulatory Requirements" for additional information.

B. Reference Standards and Specifications:

# 1. Architecturally Exposed Structural Steel provisions of Section 10, Code of Standard Practice, AISC 303 #

C. Fabricator Qualifications: A qualified fabricator that participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category STD, or is accredited by the IAS Fabricator Inspection Program for Structural Steel (AC172).

# D. Installer Qualifications: A qualified installer who participates in the AISC Quality Certification Program and is designated an AISC-Certified Erector, Category ACSE or Category CSE. #

# E. Shop-Painting Applicators: Qualified according to AISC's Sophisticated Paint Endorsement P1 for Enclosed Conditions, Endorsement P2 for Covered Conditions, and Endorsement P3 for Exposed Exterior Conditions or SSPC-QP 3, "Standard Procedure for Evaluating Qualifications of Shop Painting Applicators." #

# F. Mockups: Build mockups of AESS to set quality standards for fabrication and installation. #

1. Build mockup of typical portion of AESS as shown on Drawings.
2. DELETED
3. Coordinate high-performance coatings requirements with Section 09 96 00 "High-Performance Coatings."
4. DELETED
5. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

## 1.9 DELIVERY, STORAGE, AND HANDLING

A. Use special care in handling to prevent twisting, warping, nicking, and other damage. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.

1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

B. General:

1. Load, transport, unload, and store structural materials so as to keep them clean and free from damage.
2. Store material on platforms, skids or other supports above the ground and ensure proper drainage and protection from corrosion.
3. Deliver structural steel to the site in such quantities and at such times to ensure continuity of installation.

C. Steelwork:

1. When handling and shipping steelwork, prevent bending, scraping or overstressing members. Keep steel members off ground by using pallets, blocking, or other supports. Do not store materials on structure in a manner that might cause distortion or damage to members or supporting structures. Repair or replace damaged materials or structures.
2. Block projecting parts likely to be bent or damaged during handling with wood or other approved material.
3. Replace pieces bent or damaged unless the repair is approved by the Owner.

D. Bolts and Nuts:

1. Ship small parts such as bolts, nuts, washers, pins, fillers and small connecting plates or angles in boxes, crates or barrels, properly identified for correct use on project.
2. Pack separately bolts of each length and diameter and loose nuts or washers of each size.
3. Store fasteners in a protected place.

E. Welding Rods and Electrode Wire: Deliver SMAW welding rods to fabrication shop and jobsite in hermetically sealed metal containers. Store rods in sealed container or in a rod oven maintained at 250 degrees F. Comply with AWS D1.1 Section 5 for handling of rods and electrode wire.

F. Paint: Have paint materials delivered in manufacturer's original sealed containers, bearing manufacturer's label and name, specification identification number where applicable as well as month and year of manufacture.

G. Promptly remove materials or fabricated components that do not comply with contract requirements. Replace with new materials.

## 1.10 FIELD CONDITIONS

A. Field Measurements: Where AESS is indicated to fit against other construction, verify actual dimensions by field measurements before fabrication.

B. Environmental Requirements:

1. Shop Welding:
   a. When welding during cold weather, avoid chilling weld metal within zone of welding influence
   b. When temperature where steel is stored is more than 20°F below that of welding shop, move steel to be welded into shop sufficiently in advance of welding to allow it to attain shop temperature prior to welding.
   c. Steel shall be free of moisture.
   d. Comply with preheat requirements of AWS D1.1.
2. Field Welding:
   a. Steel surfaces to be welded shall be dry, and free from mill scale, dirt, oil, paint, and other contaminants.
   b. Gas-shielded welding processes shall not be used when the weld is subject to wind speed above 3 MPH. Field welding to be completed in accordance exclusively with AWS D1.1.
3. Painting:
   a. Apply paint when temperature of steel and paint is above minimum recommended temperature of paint manufacturer and temperature is forecasted to remain above the minimum recommended temperature until paint has dried.
   b. Painting steel at a temperature, which can cause blistering, porosity or conditions otherwise detrimental to life of paint, is prohibited. When paint is applied in hot weather or thinned in cold weather, ensure that specified thickness of paint coating is obtained.
   c. Priming and painting of the structural steel shall be in accordance with the product manufacturer's specifications.
   d. Steel pieces shall not be marked with any substance (e.g., wax crayon) which will telegraph through the specified paint or coating system. Comply with paint manufacturer's requirements.

e. Assembly marks will be located out of sight. Bleed through markers/paint stickers shall be utilized in nonvisible areas. Scanning tags will be placed in nonvisible locations. The locations of all tags will be noted on the approval drawings for comment by the design team.

## PART 2 - PRODUCTS

### 2.1 STEEL

A. Structural Steel: As specified in Section 05 12 00, "Structural Steel Framing."

### 2.2 BOLTS, CONNECTORS, AND ANCHORS

A. Tension-Control, High-Strength Bolt-Nut-Washer Assemblies: ASTM F1852, Type 1, round-head assemblies, consisting of steel structural bolts with splined ends, heavy-hex carbon-steel nuts, and hardened carbon-steel washers.

1. Finish: Mechanically deposited zinc coating.
2. DELETED

### 2.3 FILLER

A. Filler: Polyester filler intended for use in repairing dents in automobile bodies.

### 2.4 PRIMER

A. DELETED

B. Primer: SSPC-Paint 25, zinc oxide, alkyd, linseed oil primer.

C. DELETED

D. DELETED

E. DELETED

F. Etching Cleaner for Galvanized Metal: MPI#25.

G. Galvanizing Repair Paint: ASTM A780.

H. Shop Primer for Galvanized Steel: In accordance with Section 09 96 00 “High-Performance Coatings.”

## # 2.5 FABRICATION #

A. Shop fabricate and assemble AESS to the maximum extent possible. Locate field joints at concealed locations if possible. Detail assemblies to minimize handling and to expedite erection.

1. Use special care handling and fabricating AESS before and after shop painting to minimize damage to shop finish.

B. Category AESS 1:

1. Comply with overall profile dimensions of AWS D1.1/D1.1M for welded built-up members. Keep appearance and quality of welds consistent. Maintain true alignment of members without warp exceeding specified tolerances.
2. Prepare surfaces according to Part 2 "Shop Priming" Article and SSPC-SP 6 (WAB)/NACE WAB-3.
3. Grind sheared, punched, and flame-cut edges to remove burrs and provide smooth surfaces and eased edges.
4. Make intermittent welds appear continuous, using filler or additional welding.
5. Seal weld open ends of hollow structural sections with 3/8-inch (9.5-mm) closure plates.
6. Limit butt and plug weld projections to 1/16 inch (1.6 mm).
7. Install bolt heads on the same side of each connection and maintain orientation consistently from one connection to another.
8. Remove weld spatter, slivers, and similar surface discontinuities.
9. Remove blemishes and surface irregularities resulting from temporary braces or fixtures by filling or grinding, before cleaning, treating, and shop priming.
10. Grind tack welds smooth unless incorporated into final welds.
11. Remove backing and runoff tabs, and grind welds smooth.

B. Category AESS 2:

1. Comply with overall profile dimensions of AWS D1.1/D1.1M for welded built-up members. Keep appearance and quality of welds consistent. Maintain true alignment of members without warp exceeding specified tolerances.
2. Prepare surfaces according to Part 2 "Shop Priming" Article and SSPC-SP 6 (WAB)/NACE WAB-3.
3. Grind sheared, punched, and flame-cut edges to remove burrs and provide smooth surfaces and eased edges.
4. Make intermittent welds appear continuous, using filler or additional welding.
5. Seal weld open ends of hollow structural sections with 3/8-inch (9.5-mm) closure plates.
6. Limit butt and plug weld projections to 1/16 inch (1.6 mm).
7. Install bolt heads on the same side of each connection and maintain orientation consistently from one connection to another.
8. Remove weld spatter, slivers, and similar surface discontinuities.
9. Remove blemishes and surface irregularities resulting from temporary braces or fixtures by filling or grinding, before cleaning, treating, and shop priming.
10. Grind tack welds smooth unless incorporated into final welds.
11. Remove backing and runoff tabs, and grind welds smooth.
12. Limit as-fabricated straightness tolerance to one-half that permitted for structural-steel materials in ANSI/AISC 303.
13. Limit as-fabricated curved structural steel tolerance to that permitted for structural-steel materials in ANSI/AISC 303.
14. Limit as-fabricated straightness tolerance of welded built-up members to one-half that permitted by AWS D1.1/D1.1M.
15. Conceal fabrication and erection markings from view in the completed structure.
16. Make welds uniform and smooth.

C. Category AESS 3:

1. Comply with overall profile dimensions of AWS D1.1/D1.1M for welded built-up members. Keep appearance and quality of welds consistent. Maintain true alignment of members without warp exceeding specified tolerances.
2. Prepare surfaces according to Part 2 "Shop Priming" Article and SSPC-SP 6 (WAB)/NACE WAB-3.
3. Grind sheared, punched, and flame-cut edges to remove burrs and provide smooth surfaces and eased edges.
4. Make intermittent welds appear continuous, using filler or additional welding.
5. Seal weld open ends of hollow structural sections with 3/8-inch (9.5-mm) closure plates.
6. Limit butt and plug weld projections to 1/16 inch (1.6 mm).
7. Install bolt heads on the same side of each connection and maintain orientation consistently from one connection to another.
8. Remove weld spatter, slivers, and similar surface discontinuities.
9. Remove blemishes and surface irregularities resulting from temporary braces or fixtures by filling or grinding, before cleaning, treating, and shop priming.
10. Grind tack welds smooth unless incorporated into final welds.
11. Remove backing and runoff tabs, and grind welds smooth.
12. Limit as-fabricated straightness tolerance to one-half that permitted for structural-steel materials in ANSI/AISC 303.
13. Limit as-fabricated curved structural steel tolerance to that permitted for structural-steel materials in ANSI/AISC 303.
14. Limit as-fabricated straightness tolerance of welded built-up members to one-half that permitted by AWS D1.1/D1.1M.
15. Conceal fabrication and erection markings from view in the completed structure.
16. Make welds uniform and smooth.
17. Cut out mill marks from mill material or hide these markings from view in the completed structure. Where neither method is possible, remove mill marks by grinding and filling surfaces as approved by Architect.
18. Grind butt and plug welds smooth or fill, removing weld splatter exposed to view.
19. Orient HSS seams as indicated or away from view.
20. Align and match abutting member cross sections.
21. At visible open joints of copes, miters, and cuts, maintain uniform clear gaps of 1/8 inch (3.2 mm). At closed joints, maintain uniform contact within 1/16 inch (1.6 mm).
22. Fabricate with exposed surfaces smooth, square, and of surface quality approved by Architect.

D. Category AESS 4:

1. Comply with overall profile dimensions of AWS D1.1/D1.1M for welded built-up members. Keep appearance and quality of welds consistent. Maintain true alignment of members without warp exceeding specified tolerances.
2. Prepare surfaces according to Part 2 "Shop Priming" Article and SSPC-SP 6 (WAB)/NACE WAB-3.
3. Grind sheared, punched, and flame-cut edges to remove burrs and provide smooth surfaces and eased edges.
4. Make intermittent welds appear continuous, using filler or additional welding.
5. Seal weld open ends of hollow structural sections with 3/8-inch (9.5-mm) closure plates.
6. Limit butt and plug weld projections to 1/16 inch (1.6 mm).
7. Install bolt heads on the same side of each connection and maintain orientation consistently from one connection to another.
8. Remove weld spatter, slivers, and similar surface discontinuities.
9. Remove blemishes and surface irregularities resulting from temporary braces or fixtures by filling or grinding, before cleaning, treating, and shop priming.
10. Grind tack welds smooth unless incorporated into final welds.
11. Remove backing and runoff tabs, and grind welds smooth.

12. Limit as-fabricated straightness tolerance to one-half that permitted for structural-steel materials in ANSI/AISC 303.
13. Limit as-fabricated curved structural steel tolerance to that permitted for structural-steel materials in ANSI/AISC 303.
14. Limit as-fabricated straightness tolerance of welded built-up members to one-half that permitted by AWS D1.1/D1.1M.
15. Conceal fabrication and erection markings from view in the completed structure.
16. Make welds uniform and smooth.
17. Cut out mill marks from mill material or hide these markings from view in the completed structure. Where neither method is possible, remove mill marks by grinding and filling surfaces as approved by Architect.
18. Grind butt and plug welds smooth or fill, removing weld splatter exposed to view.
19. Orient HSS seams as indicated or away from view.
20. Align and match abutting member cross sections.
21. At visible open joints of copes, miters, and cuts, maintain uniform clear gaps of 1/8 inch (3.2 mm). At closed joints, maintain uniform contact within 1/16 inch (1.6 mm).
22. Fabricate with exposed surfaces smooth, square, and of surface quality approved by Architect.
23. Treat HSS seams to appear seamless.
24. Contour and blend welds and weld transitions between members, removing splatter exposed to view.
25. Fill surface imperfections with filler and sand smooth to achieve surface quality approved by Architect.
26. Minimize weld show-through and distortion on the opposite side of exposed connections by grinding to a smooth profile aligned with adjacent material.

F. Curved Members: Fabricate indicated members to curved shape by rolling to final shape in fabrication shop.

1. Distortion of webs, stems, outstanding flanges, and legs of angles shall not be visible from a distance of 20 feet under any lighting conditions.
2. Tolerances for walls of hollow steel sections after rolling shall be approximately 1/2 inch.

G. Bolt Holes: Cut, drill, mechanically thermal cut, or punch standard bolt holes perpendicular to metal surfaces.

H. Cleaning Corrosion-Resisting Structural Steel: Clean and prepare steel surfaces that are to remain unpainted according to SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."

I. Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel members.

1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.
2. Baseplate Holes: Cut, drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.
3. Weld threaded nuts to framing and other specialty items indicated to receive other work.

## # 2.6 SHOP CONNECTIONS #

A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A325 or A490 Bolts" for type of bolt and type of joint specified.

1. Joint Type: Snug tightened, Pretensioned, or Slip critical in accordance with engineered shop drawings and with Section 05 12 00 “Structural Steel Framing.”

B. Weld Connections: Comply with AWS D1.1 and AWS D1.8 for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work., and comply with the following:

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. DELETED.
7. DELETED.
8. DELETED.
9. DELETED.
10. DELETED.

## 2.7 GALVANIZING

A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A123.

1. Do not quench or apply post-galvanizing treatments that might interfere with paint adhesion.
2. Fill vent and drain holes that are exposed in the finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.
3. Galvanize lintels, shelf angles, plates, and related items attached to structural-steel frame and located in exterior walls.

## 2.8 SHOP PRIMING

A. Shop prime steel ferrous and galvanized surfaces except the following:

1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches .
2. Surfaces to be field welded.
3. Surfaces to be high-strength bolted with slip-critical connections.
4. Surfaces to receive sprayed fire-resistive materials.
5. DELETED

B. Surface Preparation: Comply with Section 09 96 00 “High-Performance Coatings.”

1. DELETED
2. DELETED
3. DELETED
4. DELETED
5. DELETED
6. DELETED
7. DELETED
8. DELETED
9. DELETED

C. DELETED

D. Priming: Immediately after surface preparation, apply primer according to Section 09 96 00 r surface preparation, apply manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

1. Stripe paint corners, crevices, bolts, welds, and sharp edges.
2. Apply two coats of shop paint to surfaces that are inaccessible after assembly or erection. Change color of second coat to distinguish it from first.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

A. Verify, with steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.

1. Prepare a certified survey of bearing surfaces, anchor rods, bearing plates, and other embedments showing dimensions, locations, angles, and elevations.

B. Examine AESS for twists, kinks, warping, gouges, and other imperfections before erecting.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

A. Provide temporary shores, guys, braces, and other supports during erection to keep AESS secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated.

1. If possible, locate welded tabs for attaching temporary bracing and safety cabling where they will be concealed from view in the completed Work.
2. Do not remove temporary shoring supporting composite deck construction until cast-in-place concrete has attained its design compressive strength.

### # 3.3 ERECTION #

A. Take special care during erection to avoid marking or distorting the AESS and to minimize damage to shop painting. Set AESS accurately in locations and to elevations indicated and according to ANSI/AISC 303 and ANSI/AISC 360.

1. Remove welded tabs that were used for attaching temporary bracing and safety cabling and that are exposed to view in the completed Work. Take care to avoid any blemishes, holes, or unsightly surfaces resulting from the use or removal of temporary elements.
2. Grind tack welds smooth.
3. Remove backing and runoff tabs, and grind welds smooth.
4. Orient bolt heads on the same side of each connection and maintain orientation consistently from one connection to another.
5. Remove erection bolts in AESS, fill holes with weld metal or filler, and grind or sand smooth to achieve surface quality approved by The Authority and Architect.
6. Fill weld access holes in AESS with weld metal or filler and grind, or sand smooth to achieve surface quality as approved by The Authority and Architect.
7. Conceal fabrication and erection markings from view in the completed structure.

B. In addition to ANSI/AISC 303, Section 10 requirements, comply with the following.

1. Erection of Category AESS 1 and Category AESS 2:

    a. Erect AESS to the standard frame tolerances specified in ANSI/AISC 303 for non-AESS.
    b. Comply with AWS D1.1/D1.1M. Keep appearance and quality of welds consistent. Maintain true alignment of members without warp exceeding specified tolerances.
    c. Remove weld spatter, slivers, and similar surface discontinuities.
    d. Grind off butt and plug weld projections larger than 1/16 inch (1.6 mm).
    e. Continuous welds shall be of uniform size and profile.
    f. Ream holes that must be enlarged. Use of drift pins or burning is not permitted. Replace misaligned connection plates where holes cannot be aligned with acceptable appearance.
    g. Splice members only where indicated on Drawings.
    h. No torch cutting or field fabrication is permitted.

2. Erection of Category AESS 3:

    a. Erect AESS to the standard frame tolerances specified in ANSI/AISC 303 for non-AESS.
    b. Comply with AWS D1.1/D1.1M. Keep appearance and quality of welds consistent. Maintain true alignment of members without warp exceeding specified tolerances.
    c. Remove weld spatter, slivers, and similar surface discontinuities.
    d. Grind off butt and plug weld projections larger than 1/16 inch (1.6 mm).
    e. Continuous welds shall be of uniform size and profile.
    f. Ream holes that must be enlarged. Use of drift pins or burning is not permitted. Replace misaligned connection plates where holes cannot be aligned with acceptable appearance.
    g. Splice members only where indicated on Drawings.
    h. No torch cutting or field fabrication is permitted.
    i. Weld profiles, quality, and finish shall be as approved by The Authority and Architect.
    j. Make joint welds, including tack welds, appear continuous by filling intermittent welds.

3. Erection of Category AESS 4:

    a. Erect AESS to the standard frame tolerances specified in ANSI/AISC 303 for non-AESS.
    b. Comply with AWS D1.1/D1.1M. Keep appearance and quality of welds consistent. Maintain true alignment of members without warp exceeding specified tolerances.
    c. Remove weld spatter, slivers, and similar surface discontinuities.
    d. Grind off butt and plug weld projections larger than 1/16 inch (1.6 mm).
    e. Continuous welds shall be of uniform size and profile.
    f. Ream holes that must be enlarged. Use of drift pins or burning is not permitted. Replace misaligned connection plates where holes cannot be aligned with acceptable appearance.
    g. Splice members only where indicated on Drawings.
    h. No torch cutting or field fabrication is permitted.
    i. Weld profiles, quality, and finish shall be as approved by The Authority and Architect.
    j. Make joint welds, including tack welds, appear continuous by filling intermittent welds.
    k. Grind welds smooth.
    l. Minimize weld show-through and distortion on the opposite side of exposed connections by grinding to a smooth profile aligned with adjacent material.
    m. Oversize welds where ground, contoured, or blended, and grind to provide a smooth transition, matching profile approved by The Authority and Architect.

C. Do not use thermal cutting during erection unless approved by the Owner and Architect. Finish thermally cut sections within smoothness limits in AWS D1.1. Demonstrate thermal cutting and finishing on mockups and obtain Owner’on mockups and obtain Ownerally cut sections with

## 3.4 FIELD CONNECTIONS

A. High-Strength Bolts: Install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A325 or A490 Bolts" for type of bolt and type of joint specified.

1. Joint Type: Snug tightened, Pretensioned, or Slip critical in accordance with Section 05 12 00 and approved shop drawings.
2. Orient bolt heads in same direction for each connection and to maximum extent possible in same direction for similar connections as approved on shop drawings.

B. Weld Connections: Comply with requirements in "Weld Connections" Paragraph in "Shop Connections" Article.

1. DELETED.
2. DELETED.
3. DELETED.

## 3.5 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to inspect AESS as specified in Section 05 12 00 "Structural Steel Framing." The testing agency is not responsible for enforcing requirements relating to aesthetic effect.

B. The Authority and Architect will observe AESS in place to determine acceptability relating to aesthetic effect.

## 3.6 REPAIRS AND PROTECTION

A. Remove welded tabs that were used for attaching temporary bracing and safety cabling and that are exposed to view in the completed Work. Grind steel smooth.

B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A780.

C. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

1. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.

D. DELETED

E. Touchup Priming: Cleaning and touchup priming are specified in Section 09 96 00 "High-Performance Coatings."

**END OF SECTION**

# SECTION 07 72 00
# ROOF ACCESSORIES

## PART1 - GENERAL

### 1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

### 1.02 SUMMARY

A. Section Includes: This section specifies requirements for providing the following:

1. Roof Hatches.
2. Smoke Vents.
3. Roof Vents.
4. Deleted #
5. Roof Curbs and Equipment Supports.
6. Miscellaneous Roof Accessories.

B. Related Requirements:

1. Section 05 50 00, "Metal Fabrications" for metal vertical ladders, ships' ladders, and stairs for access to roof hatches.
2. Section 07 92 00, "Joint Sealants."
3. Section 07 61 00, “Sheet Metal Roofing” for Snow Guards #

### 1.03 SUBMITTALS

A. Submit in accordance with Section 01 33 00 "Submittal Procedures."

B. Product Data: For each type of product indicated. Include construction details, materials, dimensions of individual components and profiles, and finishes.

C. Shop Drawings: Show fabrication and installation details. Indicate dimensions, weights, loadings, required clearances, method of field assembly, and components. Include plans, elevations, sections, details, and attachments to other Work.

D. Coordination Drawings: Roof plans drawn to scale and coordinating penetrations and roof-mounted items. Show the following:

1. Size and location of roof accessories specified in this Section.
2. Method of attaching roof accessories to roof or building structure.
3. Other roof-mounted items including mechanical and electrical equipment, ductwork, piping, and conduit.

E. Samples for Verification: For each type of exposed finish required, prepared on Samples in manufacturer's standard sizes, and of same thickness and material indicated for the Work. If finishes involve normal color or shade variations, include sample sets showing the full range of variations expected. Provide a mock-up of custom-fabricated items

F. Certificates.

### 1.04 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For roof accessories to include in operation and maintenance manuals.

## 1.03 QUALITY ASSURANCE

A. Regulatory Requirements:

1. Comply with codes, laws and regulations of the authorities having jurisdiction (AHJ). Refer to Section 01 41 00 "Regulatory Requirements" for additional information.

B. Reference Standards and Specifications: Provide roof accessories in compliance with the following industry standards and as specified.

1. ASTM International (ASTM):
   a. ASTM A653, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
   b. ASTM A729, Standard Specification for Carbon and Alloy Steel Axles, Heat-Treated, for Mass Transit and Electric Railway Service.
   c. ASTM A780, Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.
   d. ASTM B209, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
   e. ASTM B221, Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
   f. ASTM C920, Standard Specification for Elastomeric Joint Sealants.
   g. ASTM C1036, Standard Specification for Flat Glass.
   h. ASTM D256, Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
   i. ASTM D4586, Standard Specification for Asphalt Roof Cement, Asbestos-Free.
   j. ASTM E527, Standard Practice for Numbering Metals and Alloys in the Unified Numbering System (UNS).
2. National Fire Protection association (NFPA):
   a. NFPA: 204M. Guide For Smoke and Heat Venting
3. National Roofing Contractors Association (NRCA):
   a. NRCA Roofing and Waterproofing Manual.
4. Sheet Metal and Air Conditioning Contractors' National Association (SMACNA):
   a. SMACNA: Architectural Sheet Metal Manual.
5. Underwriters Laboratories (UL):
   a. UL 793, Standard for Automatically Operated Roof Vents for Smoke and Heat.
   b. UL 972, Standard for Burglary Resisting Glazing Material.
6. Society for Protective Coatings (SSPC)
   a. SSPC - Paint 12.
7. National Association of Architectural Metal Manufacturers (NAAMM):
   a. NAAMM "Metal Finishes Manual for Architectural and Metal Products".

## 1.04 DELIVERY, STORAGE AND HANDLING

A. Deliver products to jobsite in original unopened containers clearly labeled with manufacturer's name and brand designation, type, class and rating as applicable.

B. Store products in approved dry area and protect from contact with soil and from exposure to the elements.

C. Handle products to prevent breakage of containers and damage to products.

## 1.05 WARRANTY

A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finishes or replace roof accessories that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
   a. Color fading more than 5 Hunter units when tested according to ASTM D2244.
   b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
   c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
2. Finish Warranty Period: 10 years from date of Substantial Completion.

# PART 2 - PRODUCTS

## 2.01 MATERIALS, GENERAL

A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653, G90(Z275) coating designation

B. Aluminum Sheet: ASTM B209 for alclad alloy 3005H25 or alloy and temper required to suit forming operations, with mill finish, unless otherwise indicated

C. Extruded Aluminum: ASTM B221 alloy 6063-T52 or alloy and temper required to suit structural and finish requirements, with mill finish, unless otherwise indicated

D. Galvanized Steel Sheet: ASTM A653 with G90 coating designation; commercial quality, unless otherwise indicated.

1. Structural Quality: Grade 40, where indicated or as required for strength.

E. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A792 with Class AZ-50 coating, structural quality, Grade 40, or as required for strength.

F. Plastic Sheet:

1. Unless additional thickness is required for light transmittances, provide glazing plastic sheet thickness required for 40-lbf/sq. ft. external and 20-lbf/sq. ft. internal loading pressures as recommended by the manufacturer for the size and shape indicated.
2. Polycarbonate: Thermoformable, monolithic polycarbonate sheets manufactured by the extrusion process, burglar-resistance rated per UL 972 with average impact strength of 16 ft-lbf/in. of width when tested according to ASTM D256, Method A (Izod).

G. Insulation: Manufacturer's standard rigid or semi rigid glass-fiber board of thickness indicated.

H. Wood Nailers: Not less than 1-1/2 inches thick complying with Section 06 10 53.

I. Fasteners: Same metal as metals being fastened, or nonmagnetic stainless steel or other noncorrosive metal as recommended by manufacturer. Match finish of exposed fasteners with finish of material being fastened.

1. Where removing exterior exposed fasteners affords access to building, provide non-removable fastener heads.

J. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, or PVC; or flat design of foam rubber, sponge neoprene, or cork.

K. Bituminous Coating: SSPC-Paint 12, solvent-type bituminous mastic, nominally free of sulfur and containing no asbestos fibers, compounded for 15-mil dry film thickness per coating.

L. Mastic Sealant: Polyisobutylene; nonhardening, non-skinning, nondrying, non-migrating sealant.

M. Elastomeric Sealant: Generic type recommended by unit manufacturer that is compatible with joint surfaces; ASTM C920, Type S, Grade NS, Class 25, and Uses NT, G, A, and, as applicable to joint substrates indicated, O and in accordance with Section 07 92 00.

N. Roofing Cement: ASTM D4586, no asbestos, fibrated asphalt cement designed for trowel application or other adhesive compatible with roofing system.

## 2.02 ROOF HATCHES

A. General: Fabricate units to withstand 40-lbf/sq. ft. external and 20-lbf/sq. ft. Internal loading pressure.

1. Frame with minimum 9-inch- high, integral-curb, double-wall construction with 1-1/2-inch insulation, formed cants and cap flashing (roofing counter flashing), with welded or sealed mechanical corner joints.
2. Provide double-wall cover (lid) construction with 1- inch- thick insulation core.
3. Provide gasketing and equip with corrosion-resistant or hot-dip galvanized hardware including pintle hinges, hold-open devices, interior padlock hasps, and both interior and exterior latch handles.

B. Type: Single-leaf personnel access.

1. For Ladder Access: 30 by 36 inches.
2. For Ship's Ladder Access: 30 by 54 inches.
3. For Stair Access: 30 by 102 inches.

C. Type: Double leaf for equipment access.

1. Size: 72 by 96 inches.

D. Material and Finish: Galvanized steel, baked enamel.

E. Sloping Roofs: Where slope or roof deck exceeds 1/4 inch per foot (1:48), fabricate hatch curbs with height tapered to match slope to level tops of units.

## 2.03 SMOKE VENTS

A. General: Automatically operated roof vents for heat and smoke constructed to operate (open) without power source that could be interrupted during a fire. Custom fabricate units only to extent necessary to comply with indicated dimensions and other special requirements.

B. Live Load and Uplift: Unless otherwise indicated, fabricate to withstand a minimum 10-lbf/sq. ft. external live load and 30-lbf/sq. ft. uplift.

C. Regulatory Requirements: Comply with provisions of the following:

1. UL 793, for construction and performance of automatically operated roof vents for heat and smoke

2. NFPA 204M, for heat-and-smoke vent design constraints, operation, size, and location.

D. Framing: Fabricate from the following materials, with manufacturer's standard welded or sealed mechanical corner joints, including cap flashing (roofing counter flashing):

1. Material: Formed sheet or extruded aluminum or galvanized steel, at Contractor's option
   a. Finish: Baked enamel.
   b. Finish: High-performance organic coating.
2. Unit Support: Double-wall curb construction with 1-inch insulation, of height indicated or, if not indicated, for mounting with height minimum 9 inches above roof membrane.
   a. Provide formed cants and base profile coordinated with roof type and insulation thickness.
3. Sloping Roofs: Where slope of roof deck exceeds 1/4 inch per foot (1:48), fabricate curbs with height tapered to match slope to level tops of units.

E. Dome-Type Units: Manufacturer's standard gravity-opened, shrink-back and drop-out, acrylic or PVC sheet, dome unit for 165 deg F activation. Provide glazing system for easy replacement of activated domes and for drainage of condensation to exterior.

1. Inner Double-Dome Color: Bronze.

## # 2.04 DELETED #

## 2.05 ROOF CURBS AND EQUIPMENT SUPPORTS

A. General: Provide roof curbs capable of supporting superimposed live and dead loads, including equipment loads and other construction to be supported on roof curbs. Coordinate dimensions with rough-in information or Shop Drawings of equipment to be supported.

B. Roof Curbs: Internally reinforced roof-curb units[ with integral spring-type vibration isolators and] capable of supporting superimposed live and dead loads, including equipment loads and other construction indicated on Drawings; with welded or mechanically fastened and sealed corner joints,[ integral metal cant,] [ stepped integral metal cant raised the thickness of roof insulation,] and integrally formed deck-mounting flange at perimeter bottom.

C. Fabrication: Unless otherwise indicated or required for strength, fabricate units from minimum 0.0747-inch thick, structural-quality, hot-dip galvanized or aluminum-zinc alloy-coated steel sheet; factory primed and prepared for painting with welded or sealed mechanical corner joints.

D. Size: Coordinate dimensions with roughing-in information or Shop Drawings of equipment to be supported.

## 2.06 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work:

1. Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## 2.07 ALUMINUM FINISHES

A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

B. Conversion-Coated and Factory-Primed Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating).

1. Organic Coating: Air-dried primer of not less than 2.0-mil dry film thickness.

C. Baked-Enamel Finish: AA-C12C42R1x (Chemical Finish, cleaned with inhibited chemicals.

1. Chemical Finish: acid-chromate-fluoride-phosphate conversion coating.
2. Apply baked enamel complying with paint manufacturer's specifications for cleaning, conversion coating, and painting. Below references AAMA standard for pigmented organic coating on extrusions.
3. Color: as selected by the Authority’s representative.

D. High-Performance Organic Finish:

1. AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating.
2. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
3. Fluoropolymer Two-Coat System: Manufacturer's standard two-coat, thermo cured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight.
4. Color: As selected by the Authority’s representative.

## 2.08 GALVANIZED STEEL SHEET FINISHES

A. Surface Preparation:

1. Clean surfaces with nonpetroleum solvent so surfaces are free of oil and other contaminants.
2. After cleaning, apply a conversion coating suited to the organic coating to be applied over it.
3. Clean welds, mechanical connections, and abraded areas, and apply galvanizing repair paint specified below to comply with ASTM A780.
4. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.

A. Baked-Enamel Finish:

1. Immediately after cleaning and pretreating, apply manufacturer's standard two-coat, baked-enamel finish consisting of prime coat and thermosetting topcoat, with a minimum dry film thickness of 1 mil for topcoat.
2. Comply with paint manufacturer's written instructions for applying and baking to achieve a minimum dry film thickness of 2 mils.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.

B. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.

C. Verify dimensions of roof openings for roof accessories.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.02 INSTALLATION

A. General: Install roof accessories according to manufacturer's written instructions.

1. Install roof accessories level, plumb, true to line and elevation, and without warping, jogs in alignment, excessive oil canning, buckling, or tool marks.
2. Anchor roof accessories securely in place so they are capable of resisting indicated loads.
3. Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.
4. Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.

B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

1. Coat concealed side of [uncoated aluminum] [stainless-steel] roof accessories with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
2. Underlayment: Where installing roof accessories directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet, or install a course of polyethylene sheet.
3. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof accessories for waterproof performance.

C. General:

1. Comply with manufacturer's written instructions.
2. Coordinate installation of roof accessories with installation of roof deck, roof insulation, flashing, roofing membranes, penetrations, equipment, and other construction involving roof accessories to ensure that each element of the Work performs properly and that combined elements are waterproof and weather tight.
3. Anchor roof accessories securely to supporting structural substrates so they are capable of withstanding lateral and thermal stresses, and inward and outward loading pressures

D. Install roof accessory items according to construction details of NRCA's "Roofing and Waterproofing Manual," unless otherwise indicated.

E. Separation: Separate metal from incompatible metal or corrosive substrates, including wood, by coating concealed surfaces, at locations of contact, with bituminous coating or providing other permanent separation.

F. Flange Seals: Unless otherwise indicated, set flanges of accessory units in a thick bed of roofing cement to form a seal.

G. Cap Flashing: Where required as component of accessory, install cap flashing to provide waterproof overlap with roofing or roof flashing (as counter flashing). Seal overlap with thick bead of mastic sealant.

H. Operational Units: Test-operate units with operable components. Clean and lubricate joints and hardware. Adjust for proper operation.

I. Heat-and-Smoke Vents: Locate, install, and test according to NFPA 204M.

J. Install wood nailers in accordance with Section 06 10 53.

K. Install sealants in accordance with Section 07 92 00.

# L. Deleted #

**3.02 CLEANING AND PROTECTION**

A. Clean exposed surfaces according to manufacturer's written instructions. Touch up damaged metal coatings.

**3.03 REPAIR AND CLEANING**

A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing according to ASTM A780.

B. Touch up factory-primed surfaces with compatible primer ready for field painting according to Section 09 91 13 "Exterior Painting" and Section 09 91 23 "Interior Painting."

C. Clean exposed surfaces according to manufacturer's written instructions.

D. Clean off excess sealants.

E. Replace roof accessories that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

**END OF SECTION**