SECTION 10 53 00 – PRE-ENGINEERED WALKWAY CANOPIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes furnishing and installation of extruded aluminum walkway canopies and aluminum wall-mounted entry covers. Canopy shall be entirely of anodized aluminum extrusions. Understructure shall consist of heli-arcwelded one-piece rigid bents and the deck of interlocking anodized aluminum extrusions. The structure shall be capable of sustaining severe icing, hail, hurricane winds and being walked upon.

B. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, shall apply to work specified in this section.

C. RELATED ITEMS FOR COORDINATION

1. Aluminum columns or column block-outs and block-outs for connections to below-grade storm drainage system are to be in place when concrete paving is cast.

2. Wall flashing where walkway cover meets adjoining masonry buildings, both new construction and retrofit into existing masonry, shall be provided by this contractor.

1.2 SUBMITTALS

A. Product Data: For walkway cover system

B. Shop Drawings: Confirm field dimensions prior to production of shop drawings where possible. Show structural components and locations, material dimensions, and details of construction and assembly. Include flashing details at adjoining buildings.

C. Provide stamped engineered calculations for structural loading requirements. See structural plans for design loads.

1.3 QUALITY ASSURANCE

A. Codes and standards: Comply with provisions of the following except as otherwise indicated: Standard building code, latest addition with amendments, if any. AWS (American Welding Society) standards for structural aluminum welding.

B. Manufacturer: Obtain aluminum covered walkway system from only one (1) manufacturer, although several may be indicated as offering products complying with requirements.

C. Installer Qualifications: Firm with not less than three (3) years experience in installation of aluminum walkway covers of type, quantity and installation methods similar to work of this section.

D. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication where possible, to insure proper fitting of work.

E. Coordination: Coordinate work of this section with work of other sections which interface with covered walkway system (sidewalk, curbs, building fascias, etc.).

1.4 PERFORMANCE REQUIREMENTS

A. Canopy system design shall conform to IBC 2012, ASCE 7-10, and the latest edition of the Aluminum Design Manual. See also structural design criteria on structural plans.

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's product information, specifications and installation instructions for components and accessories.

B. Shop Drawings: Submit complete erection drawings showing attachment system, column and gutter beam framing, transverse cross sections, covering and trim details, and option installation details to clearly indicate proper assembly of components. Detailed shop drawings shall be submitted, sealed by a State Registered Structural Engineer.

C. Certification: Submit written certification prepared and signed by a South Carolina registered structural engineer verifying that framing design will safely resist wind uplift as computed by ANSI A58.1, II=150, Exposure C, as well as meet indicated loading requirements of the International Building Code's latest edition, and live and dead wind loading requirements of ASCE 7-10 and all other load requirements.

D. Calculations: Submit complete structural design calculations sealed by Structural Engineer Registered in the state of South Carolina. Design and engineering of footers and attachment surfaces are not covered in this specification and scope of work.

1.6 WARRANTY

A. Provide manufactures standard one-year warranty that shall include, but not limited to, coverage for structural, water tightness and finish beginning the day of Substantial Completion of Installation.

1.7 DELIVERY, STORAGE AND HANDLING

A. Deliver and store all canopy components in protected areas.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design: Tennessee Valley Metals, Inc.

2.2 MATERIALS

A. Aluminum Extrusions: All sections shall be extruded aluminum 6063 alloy, heat treated to T-6 temper.
B. Finishes: factory fluropolymer (Kynar) finish, AAMA 605.2, three coats. Color to be selected by Architect from manufacturer's full range of standard colors.

2.3 COMPONENTS

A. Columns: Columns shall be radius-cornered tubular extrusion of size shown on drawings with cutout and internal diverter for drainage where indicated. Circular downspout opening in column is not acceptable. (Sizes: 6" X 6" X .150 thickness)
B. Beams: Beams shall be open-top tubular extrusion of size and shape shown on drawings, top edges thickened for strength and designed to receive deck members in self-flashing manner. Structural ties shall be installed in tops of all beams. (Sizes: 6" X 12" X .180 thickness)
C. Deck: Deck shall be extruded self-flashing flush-style sections interlocking into a composite unit. (.080 thickness)
D. Fascia: Fascia shall be manufacturer's standard shape. Size as indicated on drawings.
E. Flashing: Flashing shall be .032 aluminum (min.). All thru-wall flashing is completed by others.
F. Arches: Arches for barrel vault protective covers shall be sharp-cornered tubular extrusions of size shown in drawings.

2.4 FABRICATION

A. Drainage: Water shall drain internally from deck to beams to columns, for discharge out to rain diverters below ground level as indicated on architectural drawings.
B. Deck Construction: Deck shall be manufactured of extruded modules that interlock in a self-flashing manner, with a flush underside appearance. Interlocking joints shall be positively fastened at 18" O.C. creating a monolithic structural unit capable of developing the full strength of the sections. The fastenings must have minimum shear strength of 350 pounds each. Deck shall be assembled with sufficient camber to offset dead load deflection.

PART 3 - EXECUTION

3.1 PREPARATION

A. Erection shall be performed after all concrete, masonry, and roofing work in the vicinity is complete and cleaned.

3.2 INSTALLATION

A. Column Sleeves: Column sleeves (styrofoam block-outs) or anchor bolts (if required) shall be furnished by Tennessee Valley Metals, Inc. and installed by the General Contractor.
B. Erection: Protective cover shall be erected true to line, level and plumb.

3.03 CLEANING

A. All protective cover components shall be cleaned promptly after installation.

3.04 PROTECTION

A. Extreme care shall be taken to protect materials during and after installation.

END OF SECTION 10 53 00