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APPROVED BY: ___________________________ ORIGINATOR: ___________________________
Manager of Architectural Engineering Senior Project Architect
Bridges and Buildings Department Bridges and Buildings Department
DATE: November 2016
PROJECT: Oreland Station Pedestrian Bridge
PART 1 – GENERAL

1.01 Description of Work

A. The Work of this Contract shall include fabrication, and delivery of custom fabricated guard and hand rails.

B. This is a non-itemized blanket contract. All quantities listed are estimates. SEPTA is not bound to purchase at specific quantities. This contract will expire at the end of the contract period or exhaustion of the quantities listed, whichever occurs first. The items listed in the Schedule A are estimated quantities. The Contractor shall fill the order in quantities as needed by SEPTA for up to the Contract Total.

C. This “requirements type” material contract for lockers at various facilities shall have an 18-month duration. Items shall be released on an “as required, as released basis,” coordinated by the project manager.

D. The Contractor shall submit a price for each item on the schedule of values to be held for the duration of the contract.

E. The Contract shall include up to 12 deliveries as requested by SEPTA. This shall be included in the vendor’s bid price.

F. SEPTA guarantees to fulfil a minimum of 80% of the contract total within the contract duration.

G. The guard and hand rails are to be phased in both fabrication and delivery to accommodate SEPTA’s work schedule.
   1. Fabrication and delivery of the first batch is to be coordinated with the SEPTA construction manager, tentatively scheduled for April 2017 and the following batches shall follow every four (4) months until completed.

1.02 Related Sections

A. Section 01300: Submittals

B. Section 05090: Miscellaneous Fasteners

C. Section 05501: Custom Mild Steel Fabrications

D. Section 09960: High-Performance Coatings – Galvanizing and Powder Coating

1.03 Submittals

A. All submittals shall be provided under the provisions of Section 01300 Submittals.
PART 3 – EXECUTION

3.01 Packing and Shipping

A. The guard and hand rails shall be shipped per the construction phasing as coordinated with the SEPTA construction manager.

B. All components shall be packaged and shipped so as to protect the integrity and finish from any damage whatsoever.

C. Label and Key all components to the installation drawings.

D. The Contractor shall be responsible for any applications/fees/paperwork associated with any necessary approvals or permits required for roadway access.

3.02 Delivery

A. Delivery shall be made to SEPTA’s work site only when the site is ready with suitable space for storage and provisions to protect materials during construction.

B. SEPTA shall be given 72 hour notice prior to shipping.

3.03 Installation

A. Site installation shall be done by SEPTA work forces.

END OF SECTION
PART 1 – GENERAL

1.01 Description

A. This section covers all submittals including shop drawing submission and concurrence requirements, along with installation drawings and further complements the requirements of the Agreement. Make submittals required by the Contract Documents, (utilizing the attached transmittal form) and revise and resubmit as necessary to establish compliance with the specified requirements.

B. Submittals that are not required will not be reviewed by SEPTA.

C. The Contractor may require subcontractors to provide drawings, installation diagrams, and similar information to help coordinate the Work, but such data shall remain between the Contractor and the subcontractors and will not be reviewed by SEPTA unless it is required by other pertinent sections of the Specifications.

1.02 Related Work

A. Section 01010: Summary of Work

B. Section 05090: Miscellaneous Fasteners

C. Section 05501: Custom Mild Steel Fabrications

D. Section 09960: High-Performance Coatings – Galvanizing and Powder Coating

1.03 Quality Assurance

A. Coordination and Submittals

1. Prior to making each submittal, the Contractor shall carefully review and coordinate all aspects of each item being submitted. Shop drawings of systems containing closely related items and components must be submitted as a single submission showing the interrelationship of the components required for that system.

2. The Contractor shall verify prior to submission that each shop drawing is well-prepared and that the submittal conforms in all respects with the specified requirements. The drawings shall provide complete information regarding proper fabrication and installation.

3. The Contractor shall sign each submittal and affix a stamp with specific written indication that the Contractor has satisfied all responsibilities under the Contract Documents with respect to review of the submission.

4. Shop drawings shall be tailored to the specific project need including coordination of various trades and should include material descriptions, quantities, dimensions, design criteria and similar data to enable SEPTA to review information as required. The shop drawings must show clear and complete information for the fabrication and installation of materials.
5. Orient the plan(s) on the shop drawing(s) in the same manner as the plans on the Contract Drawings.

6. Shop drawings with reproduction(s) of the Contract Drawings will not be accepted.

B. Responsibility: The Contractor is solely responsible and accountable for:

1. Means, methods, techniques, sequences and procedures, construction including fabrication, assembly, installation/erection, safety precautions and programs incidental to any submittal reviewed and approved by SEPTA.

2. Accuracy of all submittals and shop drawings and final installation.

3. Arranging submittals and shop drawing standards meetings with SEPTA and/or the Project Manager.

4. Numbering all submittals. Architectural product numbers shall be preceded with an “A”, likewise Structural products with an “S”. All re-submittals shall have an “R” and the number of the resubmission at the end. Example: A001, A-001-R01.

1.04 Substitutions

A. “Or Equal” Substitutions

1. Restricted Items: Where items of equipment and/or materials are specifically identified in the Specifications or on the Drawings by a manufacturer's name, model or catalogue number, only such specific items may be used. When several materials are specified by name for one use, the Contractor may select any of those specified. Materials specified by manufacturer's trade name shall comply with the manufacturer's printed Specifications and data.

2. Equals Considered: Whenever a material or article required is specified or shown on the plans by using the name of the proprietary product or of a particular manufacturer or vendor, any material or article which will, in the opinion of SEPTA's Project Manager, perform adequately the duties imposed by general design will be considered equal and satisfactory provided material or article so proposed is of equal substance and function in SEPTA's Project Manager's opinion. It shall not be purchased or installed without SEPTA's Project Manager's written approval. "Or Equal" requests will be considered only when substantiated by the Contractor's submittal of data documenting the "or equal" nature of material or article within ten (10) calendar days after the date of receipt of Notice to Proceed.

B. Substitutions for Unavailability

1. Substitutions (may) be considered when a Product becomes unavailable through no fault of the Contractor. The Contractor shall document each request with complete data substantiating compliance of proposed Substitution with Contract Documents, or there is a clear benefit to SEPTA including cost. A request constitutes a representation that the Contractor:

   a. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.

   b. Shall provide the same warranty for the substitution as for the specified product.

   c. Shall coordinate installation and make changes to other work which may be required for the Work to be complete with no additional cost to SEPTA.
d. Shall waive claims for additional costs or time extension which may subsequently become apparent.
e. Shall reimburse SEPTA for review or redesign services associated with re-approval by SEPTA.

1.05 Submittals

A. SEPTA’s action for submittals will be indicated as follows:
   NO EXCEPTIONS TAKEN
   PROCEED AS NOTED: REVISE AND RESUBMIT FOR RECORD
   DO NOT PROCEED: REVISE AND RESUBMIT
   REJECTED
   NOT APPLICABLE

B. Contractor shall submit shop drawings, installation drawings, catalog cuts, samples and substitution(s) for SEPTA review and approval. The Contractor shall coordinate between the contractor/Fabricator/Detailer and SEPTA and the Project Manager for each complex submittal requiring detailed coordination.

C. Submittals will be reviewed by SEPTA.

D. Submittals not in compliance with the Contract will be returned to the Contractor for revision. Any loss of time and additional costs associated with re-submittal(s) will the Contractor's responsibility.

E. Each submission and re-submission shall give specific written notice on the transmittal of each variation that the shop drawings or samples may have from the requirements of the Contract Documents and, in addition, shall cause a specific notation to be made on each shop drawing submitted for review and approval of each such variation.

F. Each re-submission(s) shall clearly identify and make specific notation(s) on each shop drawing concerning the:
   1. Changes that are made as a result of SEPTA's Project Manager comments on the previous submittal(s).
   2. Changes that are not made, but commented on by SEPTA's Project Manager on the previous submittal(s). The Contractor shall provide detailed explanation and justification as to why SEPTA's Project Manager's comments are not addressed.
   3. Changes that are solely made by the Contractor, but not commented on by SEPTA's Project Manager on the previous submittal(s). The Contractor shall provide a detailed explanation and justification for such changes.
   4. Each item being resubmitted shall have an “R” placed at the end of the submission number and shall also include what resubmission this is, such as 01, 02, etc.

G. Submittals that are "Proceed as Noted" by SEPTA's Project Manager are for the purpose of expediting the fabrication of the intended work. The Contractor shall incorporate all corrections and resubmit to SEPTA the required copies of drawings within 10 days of the "Proceed as Noted" action.
1.06 Delivery, Storage and Handling

A. Delivery and Handling: Transport and handle units and their associated components, and other products specified herein, in a manner recommended by their respective manufacturers to prevent damage and defects of whatever nature.

B. Storage: Store units and components in accordance with their manufacturer's recommendations to prevent joint damage and joint contamination. Exercise such care in storage of other specified products as recommended by their respective manufacturers.

PART 2 – PRODUCTS

2.01 Shop Drawings

A. Scale and measurements: Shop drawings shall be made accurately to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the Work.

B. Types of prints required:
   1. Shop drawings shall be submitted in the form of (4) black line prints of each sheet.
   2. Blueprints will not be acceptable
   3. Xerox copies or PDF files will not be accepted.

C. Review comments will be shown on one set of the drawings and will be returned to the Contractor. The Contractor may make and distribute such copies as are required for its purposes.

2.02 Installation Drawings

A. Installation Drawings shall depict the various shelter components and how they are to be erected / installed.
   1. The drawings shall be keyed to the component packaging.
   2. The drawings shall call out type, quantity and spacing of all fasteners to be used and where.
   3. The drawings shall call out the type of backer rod, caulk, sealant, etc. to be used and where.
   4. Drawings notes shall be clear, descriptive and reference the components and packaging keying.
   5. Provide a phone number and contact on the drawings for SEPTA installers to call for support if needed.
   6. Reproductions of the shop drawings will not be accepted.

2.03 Manufacturer's Literature (Including Catalog Cuts)

A. The Contractor shall submit only the original printed literature and product data sheets available from the manufacturer(s).
B. Where contents of submitted literature from manufacturers includes data not pertinent to the submittal, the Contractor shall clearly show which portions of the contents are being submitted for review, if not clearly shown, the submittal shall be returned.

C. The Contractor shall submit the number of copies, which are required to be returned, plus 3 copies for SEPTA's use and distribution.

2.04 Samples

A. The Contractor shall provide sample(s) identical to the precise article proposed to be provided. Identify as described under "Identification of submittals" below.

B. Number of samples required:
   1. Unless otherwise specified, the Contractor shall submit samples in the quantity which is required to be returned, plus one which will be retained by SEPTA.
   2. By pre-arrangement in specific cases a single sample may be submitted for review and, when approved, be installed in the Work at a location agreed upon by SEPTA.

PART 3 – EXECUTION

3.01 Identification of Submittals

A. The Contractor shall consecutively number all submittals under "Transmittal”. *The Contractor shall use attached submission transmittal for all submissions.*
   1. When re-submittal(s) is made for any reason, the Contractor shall transmit under a new letter of transmittal with a new transmittal number.
   2. On re-submittals, the Contractor shall cite the prior transmittal number(s) under "submission number”.

B. The Contractor shall maintain an accurate submittal log for the duration of the Work, showing current status of all submittals at all times. The Contractor shall make the submittal log available to SEPTA for review upon request.

3.02 Grouping of Submittals

A. Unless otherwise specified, partial submittals shall not be permitted. The entire package shall be numbered, grouped and submitted under one transmittal.

B. Partial and poorly prepared submittals will be rejected by SEPTA’s Project Manager as not complying with the requirements of the Contract. The Contractor will be liable for delays so occasioned.

3.03 Timing of Submittals

A. The Contractor shall package and send submittals within 30 days of the “Notice to Proceed”.
B. In scheduling, the Contractor shall allow 10 calendar days for review and processing by SEPTA's Project Manager following its receipt of the submittal.

This review time will be increased for the submittal(s) that are so extensive 10 calendar days of turn around period is unreasonable as determined by SEPTA and the Project Manager. This determination shall be binding on the Contractor.

C. Continued submission of material and repetitious submittals which clearly fail to meet the requirements of the Contract Documents which may cause delays in the completion of the Contract and any such delays be the sole responsibility of the Contractor.

3.04 SEPTA's Review

A. Review and Processing by SEPTA shall not relieve the Contractor from responsibility for errors, which may exist in the submitted data.

B. Revisions:

1. The Contractor shall make required revisions as noted on initial submittal.

2. If the Contractor considers any required revision to be a change, it shall so notify SEPTA as provided for in the "Agreement". Such notification shall be made no later than 10 calendar days from the date of return of such submittals by SEPTA or its Project Manager to the Contractor.

3. The review of the shop drawings waives the original contract requirements of the Contract Documents only if the Contractor clearly states and highlights the proposed deviation in a prominent fashion on the shop drawing itself, and only as specially stated in writing by SEPTA, that the Contract Document requirements are waived.

END OF SECTION
SUBMISSION TRANSMITTAL

Transmittal #:____________________   Submission #:____________________

Project Name: _________________________  SEPTA Project #: ___________

Contract #: _________________________

Contractor Name: _________________________

Contractor's Authorized Signature __________________ Date: _______

Submission Description:

Shop Dwg. #: _________________________

Ref. Dwg. #: _________________________  Ref. Spec. Sec.: ___________

Names of Subcontractor/Supplier/Installer:______________

Indicate if this is a substitution:

Indicate if this is Engineering or Installation Submission:

☐ NO EXCEPTIONS TAKEN

☐ PROCEED AS NOTED; REVISE AND RESUBMIT FOR RECORD

☐ DO NOT PROCEED; REVISE AND RESUBMIT

☐ REJECTED

☐ NOT APPLICABLE

Date ___________    Action ______________  Reviewer _____________  Date _____________

Final Action:____________________   Date:____________________

Name of Authority:____________________  Name of Individual:____________________

Copy to:____________________   Signature:____________________

Comments: (If additional space is needed, use reverse side of this form)
SECTION 055213

PIPE AND TUBE RAILINGS

PART 1 - GENERAL

1.1 DESCRIPTION

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

1.2 SUMMARY

A. Section Includes:

1. Steel pipe and tube railings.

1.3 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.

B. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

C. Schedule installation so wall attachments are made only to completed walls. Do not support railings temporarily by any means that do not satisfy structural performance requirements.

1.4 ACTION SUBMITTALS

A. Product Data: For the following:

1. Manufacturer's product lines of mechanically connected railings.
2. Railing brackets.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

C. Samples: For each type of exposed finish required.

1. Sections of each distinctly different linear railing member, including handrails, top rails, posts, and balusters, including finish.
2. Fittings and brackets.
3. Assembled Sample of railing system, made from full-size components, including top rail, post, handrail, and infill. Sample need not be full height.
   
   a. Show method of connecting and finishing members at intersections.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For testing agency.
B. Welding certificates.
C. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers certifying that shop primers are compatible with topcoats.

1.6 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel according to the following:
   
   1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."

1.7 DELIVERY, STORAGE, AND HANDLING

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

1.8 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of stairs and other construction contiguous with metal fabrications by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Railings, including attachment to building construction, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
   
   1. Handrails and Top Rails of Guards:
      
      a. Uniform load of 50 lbf/ ft. (0.73 kN/m) applied in any direction.
      b. Concentrated load of 200 lbf (0.89 kN) applied in any direction.
      c. Uniform and concentrated loads need not be assumed to act concurrently.

   2. Infill of Guards:
      
      a. Concentrated load of 50 lbf (0.22 kN) applied horizontally on an area of 1 sq. ft. (0.093 sq. m).
b. Infill load and other loads need not be assumed to act concurrently.

B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.
   1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.2 METALS, GENERAL

A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.

B. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails unless otherwise indicated.
   1. Provide type of bracket with predrilled hole for exposed bolt anchorage and that provides 1-1/2-inch (38-mm) clearance from inside face of handrail to guardrail surface.

2.3 STEEL AND IRON

A. Tubing: ASTM A 500, Grade B (cold formed).

B. Pipe: ASTM A 53/A 53M, Type F or Type S, Grade A, Standard Weight (Schedule 40), unless another grade and weight are required by structural loads.
   1. Provide galvanized finish for exterior installations and where indicated.

C. Plates, Shapes, and Bars: ASTM A 36.

2.4 FASTENERS

A. General: Provide the following:
   1. Hot-Dip Galvanized Railings: Type 316 stainless-steel.
   2. Provide exposed fasteners with finish matching appearance, including color and texture, of railings.

B. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated and capable of withstanding design loads.
   1. Anchoring handrails to guardrail – Hollobolt, to meet criteria
   2. Anchoring guardrails to stair stringer – Bolt size per drawings

2.5 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

B. Etching Cleaner for Galvanized Metal: Complying with MPI#25.
C. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.


2.6 FABRICATION

A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage.

B. Shop assemble railings to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.

C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm) unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

D. Form work true to line and level with accurate angles and surfaces.

E. Fabricate connections that are exposed to weather in a manner that excludes water. Provide weep holes where water may accumulate.

F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.

G. Connections: Fabricate railings with welded connections unless otherwise indicated.

H. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove flux immediately.
4. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.

I. Nonwelded Connections: Connect members with concealed mechanical fasteners and fittings. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.

1. Fabricate splice joints for field connection using an epoxy structural adhesive if this is manufacturer's standard splicing method.

J. Form Changes in Direction as Follows:

1. [By bending or by inserting prefabricated elbow fittings.]
K. For changes in direction made by bending, use jigs to produce uniform curvature for each repetitive configuration required. Maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.

L. Close exposed ends of railing members with prefabricated end fittings.

M. Provide wall returns at ends of handrails unless otherwise indicated, and close ends of returns.

N. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work unless otherwise indicated.

2.7 STEEL AND IRON FINISHES

A. Galvanized Railings:
   1. Hot-dip galvanize exterior steel railings, including hardware, after fabrication.
   2. Comply with ASTM A 123 for hot-dip galvanized railings.
   4. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.
   5. 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.

B. For galvanized railings, provide hot-dip galvanized fittings, brackets, fasteners, sleeves, and other ferrous components.

C. Preparing Galvanized Railings for Shop Priming: After galvanizing, thoroughly clean railings of grease, dirt, oil, flux, and other foreign matter, and treat with etching cleaner.

D. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with requirements indicated below:

E. Primer Application: Apply shop primer to prepared surfaces of railings unless otherwise indicated. Comply with requirements in SSPC-PA 1, "Shop, Field, and Maintenance Painting of Steel," for shop painting. Primer need not be applied to surfaces to be embedded in concrete or masonry.
   1. Shop prime uncoated railings with zinc-rich primer indicated.

F. High-Performance Coating: Apply polyester urethane powder coat intermediate and topcoats to prime-coated surfaces. Comply with coating manufacturer's written instructions and with requirements in SSPC-PA 1, "Shop, Field, and Maintenance Painting of Steel," for shop painting. Apply at spreading rates recommended by coating manufacturer.
PART 3 - EXECUTION

3.1 INSTALLATION

A. Installation shall be by SEPTA.

END OF SECTION 055213