PRE-BID Q&A

Responses – January 13, 2021

NORTH EUGENE HIGH SCHOOL

Bid Set B – Structural Steel & Unit Masonry –

ADDENDUM #02 - BID QUESTION/ ANSWER

Overall Updates:

- 100%CD – Spec 0100 - Metal Stairs has been revised and has been posted in BuildingConnected, 95% CD Architectural sets remain for reference
- Bid Due Date remains as 1/21/21 at 2pm
- Structural Steel to include all non-design-build stairs and associated handrail/guardrail in base scope. BuildingConnected Bid Form updated.
- Structural Steel to include entire Auditorium Tech Access Level including metal stairs, structural steel, and metal decking. BuildingConnected Bid Form updated.
- Structural Steel to include as add/alt all design-build Stairs and design-build handrail/guardrail. BuildingConnected Bid Form updated.

BP# 04-01 - Structural Steel

1. Q: Does the structural steel contractor need to provide fall protection for the roof level?
    a. No, the roofing subcontractor will provide their own fall protection. Please only provide fall protection for the interior of the building. Interior fall protection is to remain in place until all permanent handrail and guardrails are installed.

2. Sheet S-401 Keyed Notes 7 and 8 call for Metal Joists @ 16” o.c., when looking at details 1/S-614 and 2/614 they are specified as light gage metal joists. Please confirm these are light gage metal joists and not structural steel members.
    a. Correct, the lower portion of the catwalk/control room contain light gage metal joists. These are by others. Structural Steel Subcontractor to F&I all Structural Steel, Stairs, Design-Build Handrail/Guardrail, HSS, Angle, Mesh, and Metal Decking for the Catwalk and Control Room level/access.

3. Is the structural Steel contractor to F&I all handrail and guardrail at the stairs including the balcony handrail and guardrail at the top of the stairs?
    a. Yes, Supply Stair and Balcony handrail/guardrail with the F&I of the stairs.

The bid form has been updated to reflect any revisions noted within

SECTION 05 5100
METAL STAIRS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal stairs with precast concrete treads. Stair S101, S103
B. Stairs with metal treads.
C. Metal stairs with concrete-filled pan treads. Stair S104, S105.
D. Design-build metal stairs with concrete-filled pan treads, with guardrails and handrails: Stair S102, S106.
E. Metal Stairs with metal treads. Stairs at Auditorium Tech Access levels.
F. Design-build metal stairs with metal treads, with guardrails and handrails: Auditorium Control Room 192L.
G. Design-build guardrails at Auditorium Tech Access levels.

1.02 RELATED REQUIREMENTS

A. Section 01 3300 - Delegated Design Requirements: Sub-Contractor stair design and engineering procedures for design-build stairs and railings.
B. Section 03 3000 - Cast-in-Place Concrete: Concrete fill in stair pans; mesh reinforcement for landings.
C. Section 03 3000 - Cast-in-Place Concrete: Placement of metal anchors in concrete.
D. Section 03 4500 - Precast Architectural Concrete: Placement of metal anchors in precast concrete.
E. Section 05 5000 - Metal Fabrications: Guardrails and handrails for custom stairs. Prefabricated ladders and ship ladders.
F. Section 09 9123 - Interior Painting: Paint finish.

1.03 REFERENCE STANDARDS

A. ASCE/SEI 7 - Minimum Design Loads for Buildings and Other Structures 2016.
B. ASTM A6/A6M - Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling 2014.
C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2014.
D. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless 2020.
E. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates 2013.
F. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes 2013.
G. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing 2014.
H. ASTM A786/A786M - Standard Specification for Hot-Rolled Carbon, Low-Alloy, High-Strength Low-Alloy, and Alloy Steel Floor Plates 2015.
I. AWS D1.1/D1.1M - Structural Welding Code - Steel 2015.
J. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel; International Accreditation Service, Inc. 2011.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories.

1. At design-build stairs, include the design engineer's seal and signature on each sheet of shop drawings.

C. Design Data: As required by authorities having jurisdiction.
   1. Delegated Design Submittal. Comply with Section 01 3300 - Delegated Design Requirements.
   2. For Design-build metal stairs, guardrails and handrails indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

D. Welders' Certificates.

E. Fabricator's Qualification Statement: Provide documentation showing steel fabricator is accredited under IAS AC172.

1.05 QUALITY ASSURANCE

A. Structural Designer Qualifications: At design-build stairs.
   1. Professional Structural Engineer experienced in design of this work and licensed in Oregon, or personnel under direct supervision of such an engineer.

B. Welder Qualifications: Show certification of welders employed on the Work, verifying AWS qualification within the previous 12 months.

C. Fabricator Qualifications: A qualified steel fabricator that is accredited by the International Accreditation Service (IAS) Fabricator Inspection Program for Structural Steel in accordance with IAS AC172.

1.06 COORDINATION

A. Coordinate installation of anchorages for metal stairs. 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 in time for installation.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Delegated Design: At design-build stairs, engage a qualified professional engineer to design stairs, railings and guards, and treads, including attachment to building construction.
   1. Structural Performance of Stairs: Metal staris shall with stand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
      a. Uniform Load: 100 lbf/sq. ft. (4.79 kN/sq. m).
      b. Concentrated Load: 300 lbf (1.33 kN) applied on an area of 4 sq. in. (2580 sq. mm.)
      c. Uniform and concentrated loads need not be assumed to act concurrently.
      d. Stair Framing: Capable of withstanding stresses resulting from railing and guard loads in addition toloads specified above.
      e. Limit deflection of treads, platforms, and framing members to L/360 or 1/4 inch (6.4 mm), whichever is less.
   2. Structural Performance of Railings and Guards: Railings and guards, including attachment to building construction, shall withstand the effets of gravity loads and the following loads and stresses within limits and under conditions indicated:
      a. Handrails and Top Rails of Guards:
         1) Uniform Load: 50 lbf/sq. ft. (0.73 kN/sq. m) applied in any direction.
         2) Concentrated Load: 200 lbf (0.89 kN) applied in any direction.
         3) Uniform and concentrated loads need not be assumed to act concurrently.
      b. Infill of Guards:
         1) Concentrated Load of 50 lbf (0.22 kN) applied horizontally on an area of 1 sq.. ft. (0.093 sq. m.)

2) Infill load and other loads need not be assumed to act concurrently.

c. Seismic Performance of Stairs: Metal stairs shall withstand the effects of earthquake motions determined according to ASCE/SEI 7 and as indicated on the Structural Drawings.

1) Component Importance Factor: 1.5.

2.02 METAL STAIRS - GENERAL

A. Metal Stairs: Provide stairs of the design specified, complete with landing platforms, vertical and horizontal supports, railings, and guards, fabricated accurately for anchorage to each other and to building structure.

1. Handrails: Comply with applicable accessibility requirements of ADA Standards.
2. Dimensions: As indicated on drawings.
3. Shop assemble components; disassemble into largest practical sections suitable for transport and access to site.
4. No sharp or rough areas on exposed travel surfaces and surfaces accessible to touch.
5. Separate dissimilar metals using paint or permanent tape.

B. Metal Jointing and Finish Quality Levels:

1. Architectural: All joints as inconspicuous as possible, whether welded or mechanical.
   a. Welded Joints: Continuously welded and ground smooth and flush.
   b. Mechanical Joints: Butted tight, flush, and hairline; concealed fastenings only.
   c. Exposed Edges and Corners: Eased to small uniform radius.
   d. Metal Surfaces to be Painted: Sanded or ground smooth, suitable for highest quality gloss finish.
   e. Shop prime and field paint per Section 09 9123 - Interior Painting.
2. Commercial: Exposed joints as inconspicuous as possible, whether welded or mechanical; underside of stair not covered by soffit IS considered exposed to view.
   a. Welded Joints: Intermittently welded on back side, filled with body putty, and sanded smooth and flush.
   b. Welds Exposed to View: Ground smooth and flush.
   c. Mechanical Joints: Butted tight, flush, and hairline.
   d. Bolts Exposed to View: Countersunk flat or oval head bolts; no exposed nuts.
   e. Exposed Edges and Corners: Eased to small uniform radius.
   f. Metal Surfaces to be Painted: Sanded or ground smooth, suitable for satin or matte finish.
   g. Shop prime and field paint per Section 09 9123 - Interior Painting.
3. Service: Exposed joints tight with face surfaces aligned; underside of stair not covered by soffit is not considered exposed to view.
   a. Welded Joints: Welded on back side wherever possible.
   b. Welds Exposed to View: Ground smooth; not required to be flush.
   c. Bolts Exposed to View: Countersunk flat or oval head bolts; no exposed nuts or screw threads.
   d. Metal Surfaces to be Painted: Sanded smooth, suitable for satin or matte finish.

C. Fasteners: Same material or compatible with materials being fastened; type consistent with design and specified quality level.

D. Anchors and Related Components: Same material and finish as item to be anchored, except where specifically indicated otherwise; provide all anchors and fasteners required.

2.03 METAL STAIRS WITH PRECAST CONCRETE TREADS

A. Applications: S101, S103.

B. Jointing and Finish Quality Level: Architectural, as defined above.

C. Risers: Closed.

D. Treads: precast concrete tread designed to attached to stair support.
   1. Precast Concrete Treads: Design-build, as specified in Section 03 4500 Precast Architectural Concrete.
   2. Tread attachment: Design/build connections; Welded or bolted to stair support plates.
E. Risers: Steel Plate as indicated in drawings.
   1. Nosing Depth: Not more than 1-1/2 inch (38 mm) overhang.
F. Stringers: As indicated on drawings.
G. Guardrails and handrails: See Section 05 5000 Metal Fabrications.
H. Finish: Shop-prime, field painted.
   1. Painting: Outer coats, See Section 09 9123 - Interior Painting.

2.04 METAL STAIRS WITH CONCRETE FILLED PAN TREADS

A. Applications: S104, S105.
B. Jointing and Finish Quality Level: Architectural at S104 and S105, as defined above.
C. Risers: Closed.
D. Treads: Metal supports with field-installed concrete fill.
   1. Concrete Depth: 1-1/2 inches (38 mm), minimum, or as otherwise indicated on the Drawings.
   2. Tread Pan Material: Steel sheet.
   3. Tread Pan Thickness: As required by design; 14 gage, 0.075 inch (1.9 mm) minimum, or as otherwise indicated on the Drawings.
   4. Tread support to Stringers: Welded to carrier angles welded to stringers, or as otherwise indicated in the Drawings.
   5. Pan Anchorage to Stringers: Continuously welded, from top or bottom, or as otherwise indicated on the Drawings.
   6. Concrete Reinforcement: As required by design and as may be warranted to mitigate visible shrinkage and/or flexural cracking, or as otherwise indicated on the Drawings.
   7. Concrete Finish: Steel troweled with non-slip finish.
E. Risers: Steel Plate as indicated in drawings.
   1. Riser/Nosing Profile: Sloped riser with rounded nosing of minimum radius.
   2. Riser/Nosing Profile: Vertical riser with underside of nosing sloped up from bottom of tread pan at not less than 60 degrees from horizontal, with rounded top of nosing of minimum radius.
   3. Nosing Depth: Not more than 1-1/2 inch (38 mm) overhang.
   4. Nosing Return: Flush with top of concrete fill, not more than 1/2 inch (12 mm) wide.
F. Stringers: Rolled steel channels.
   1. Stringer Depth: 12 inches (305 mm), or as otherwise indicated on the Drawings.
   2. End Closure: Sheet steel of same thickness as risers welded across ends.
G. Landings: Same construction as treads, or using corrugated steel decking,unless otherwise indicated on the Drawings; supported and reinforced as required to achieve design load capacity.
H. Guardrails and handrails: Fabricate as indicated on drawings and as specified.
   1. Guardrails: Shop-prime painted steel bar frame with bar picket infill as indicate on the Drawings. See Section 09 9123 - Interior Painting.
   2. Handrails: Stainless steel pipe, brushed finish.

2.05 DESIGN BUILD METAL STAIRS WITH CONCRETE FILLED PAN TREADS

A. Applications: S102, S106. See architectural drawings for design requirements.
B. Jointing and Finish Quality Level: Commercial.
C. Risers: Closed.
D. Treads: Metal supports with field-installed concrete fill.

1. Concrete Depth: 1-1/2 inches (38 mm), minimum, or as otherwise indicated on the Drawings.
2. Tread Pan Material: Steel sheet.
3. Tread Pan Thickness: As required by design; 14 gage, 0.075 inch (1.9 mm) minimum, or as otherwise indicated on the Drawings.
4. Factory Fabricated Tread and Nosing: Manufacturer's standard, field applied aluminum walking surface with integral nosing, abrasive filler and factory applied finishes.
5. Tread support to Stringers: Welded to carrier angles welded to stringers, or as otherwise indicated in the Drawings.
6. Pan Anchorage to Stringers: Continuously welded, from top or bottom, or as otherwise indicated on the Drawings.
7. Concrete Reinforcement: As required by design and as may be warranted to mitigate visible shrinkage and/or flexural cracking, or as otherwise indicated on the Drawings.
8. Concrete Finish: Steel troweled with non-slip finish.

E. Risers: Steel Plate as indicated in drawings.
1. Riser/Nosing Profile: Sloped riser with rounded nosing of minimum radius.
2. Riser/Nosing Profile: Vertical riser with underside of nosing sloped up from bottom of tread pan at not less than 60 degrees from horizontal, with rounded top of nosing of minimum radius.
3. Nosing Depth: Not more than 1-1/2 inch (38 mm) overhang.
4. Nosing Return: Flush with top of concrete fill, not more than 1/2 inch (12 mm) wide.

F. Stringers: Rolled steel channels.
1. Stringer Depth: As required by design.
2. End Closure: Sheet steel of same thickness as risers welded across ends.

G. Landings: Same construction as treads, or using corrugated steel decking,unless otherwise indicated on the Drawings; supported and reinforced as required to achieve design load capacity.

H. Landings: Similar construction, using corrugated steel decking, supported and reinforced as required to achieve design load capacity.

I. Guardrails and handrails: Fabricate as indicated on drawings and as specified.
1. Guardrails: Shop-prime, field painted steel bar frame with bar picket infill as indicate on the Drawings.
2. Handrails: Shop-prime, field painted steel pipe.

J. Finish: Shop-prime, painted.
1. Painting: Outer coats, See Section 09 9123 - Interior Painting.

K. Under Side of Stair: Exposed to view, to be finished same as specified for other exposed to view surfaces.

2.06 METAL STAIRS WITH METAL TREADS

A. Applications: Auditorium Tech Access level Stairs. shown on 3/S401, 1/S402 , A-447, A-448

B. Jointing and Finish Quality Level: Service, as defined above.

C. Risers: Closed.

D. Treads: Checkered steel plate.
1. Tread Thickness: 1/4 inch (6 mm), minimum.
2. Anchorage to Stringers: Welded or bolted to carrier angles welded or bolted to stringers.

E. Risers: Steel sheet.
1. Riser Thickness: As required by design; 14 gage, 0.075 inch (1.9 mm) minimum.
2. Riser/Nosing Profile: Sloped riser with rounded nosing of minimum radius.

F. Stringers: Rolled steel channels.
1. Stringer Depth: 10 inches (250 mm).

2. End Closure: Sheet steel of same thickness as risers welded across ends.

G. Stair Dampening: Install under all treads.
   1. Products:
      a. Soundcoat: GPDS/Foam Damping Sheet.
      b. Pacific Stair Corporation: Quiet Tread.
      c. Substitutions: See Section 01 6000 - Product Requirements.

H. Railings and Guards: Delegated design as noted in this Section.

I. Finish: Shop- or factory-prime painted. Paint per Section 09 9123 - Interior Painting.

2.07 DESIGN BUILD METAL STAIRS WITH METAL TREADS

A. Applications: Stair at Auditorium Control Room 192L. See architectural drawings for design requirements.

B. Jointing and Finish Quality Level: Service, as defined above.

C. Risers: Closed.

D. Treads: Checkered steel plate.
   1. Tread Thickness: 1/4 inch (6 mm), minimum.
   2. Nosing: Plate bent to minimum radius with down return of 1 inch (25 mm).
   3. Photoluminescent Nosing: Factory fabricated aluminum nosing with embedded photoluminescent strip; field applied to front edge of tread.
   4. Factory Fabricated Tread and Nosing: Manufacturer's standard, with integral tread, nosing, abrasive filler and factory applied finishes.
   5. Anchorage to Stringers: Welded or bolted to carrier angles welded or bolted to stringers.

E. Risers: Steel sheet.
   1. Riser Thickness: As required by design; 14 gage, 0.075 inch (1.9 mm) minimum.
   2. Riser/Nosing Profile: Sloped riser with rounded nosing of minimum radius.

F. Stringers: Rolled steel channels.
   1. Stringer Depth: As required by design.
   2. End Closure: Sheet steel of same thickness as risers welded across ends.

G. Landings: Same construction as treads, supported and reinforced as required to achieve design load capacity.

H. Stair Dampening: Install under all treads.
   1. Products:
      a. Soundcoat: GPDS/Foam Damping Sheet.
      b. Pacific Stair Corporation: Quiet Tread.
      c. Substitutions: See Section 01 6000 - Product Requirements.

I. Railings and Guards: Delegated design as noted in this Section.

J. Photoluminescent Handrail Strips: Factory fabricated, field applied strips.

K. Finish: Shop- or factory-prime painted. Paint per Section 09 9123 - Interior Painting.

L. Finish: Galvanized after fabrication, except sheet components are to be galvanized before fabrication.

2.08 HANDRAILS AND GUARDS FOR DESIGN-BUILD STAIRS

A. Handrails: Stainless steel round pipe or tube rails unless otherwise indicated.
   1. Outside Diameter: 1-1/4 inch (32 mm), minimum, to 1-1/2 inches (38 mm), maximum.

B. Guards: Steel bar frame with bar picket infill as shown on Drawings. Shop prime, paint per Section 09 9123 - Interior Painting

2.09 DESIGN-BUILD HANDRAIL AND GUARDS FOR AUDITORIUM TECH ACCESS WALKWAYS AND STAIRS

A. Provide fabricated steel components as detailed in Architectural and Structural Drawings.

B. Fabricate in sections that can be powdercoated and bolted to walkways and stairs.

C. Finish: Powdercoat flat black.

2.10 MATERIALS

A. Steel Sections: ASTM A 36/A 36M, unless otherwise indicated on the Structural Drawings..
B. Steel Tubing: ASTM A500/A500M or ASTM A501/A501M structural tubing, round and shapes as indicated.
C. Steel Plates: ASTM A6/A6M or ASTM A283/A283M, unless otherwise indicated on the Structural Drawings.
D. Stainless Steel Pipe: ASTM A276/276M.
E. Pipe: ASTM A 53/A 53M Grade B Schedule 40, finish as indicated.
F. Checkered Plate: ASTM A786/A786M, rolled steel floor plate; manufacturer's standard pattern.
G. Concrete Fill: Portland cement Type I, 3000 psi (20 MPa) 28 day strength, 2 to 3 inch (50 to 75 mm) slump.
H. Concrete Reinforcement: Mesh type as detailed, galvanized.

2.11 SHOP FINISHING

A. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
B. Do not prime surfaces in direct contact with concrete or where field welding is required.
C. Prime Painting: Use specified shop- and touch-up primer.
    1. Preparation of Steel: In accordance with SSPC-SP 6 Commercial Blast Cleaning..
    2. Preparation of Galvanized Steel: In accordance with SSPC-SP2 Hand Tool Cleaning.
    3. Number of Coats: One.
    4. Verify compatibility with top coat as specified in Section 09 9123 - Interior Painting.
D. Powdercoat: See section 09 9123 - Interior Painting.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

A. When field welding is required, clean and strip primed steel items to bare metal.
B. Supply items required to be cast into concrete and embedded in masonry with setting templates.

3.03 INSTALLATION

A. Install components plumb and level, accurately fitted, free from distortion or defects.
B. Provide anchors, plates, angles, hangers, and struts required for connecting stairs to structure.
C. Allow for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
D. Provide welded field joints where specifically indicated on drawings. Perform field welding in accordance with AWS D1.1/D1.1M.
E. Other field joints may be either welded or bolted provided the result complies with the limitations specified for jointing quality levels.
F. Obtain approval prior to site cutting or creating adjustments not scheduled.
G. After erection, prime welds, abrasions, and surfaces not shop primed or galvanized, except surfaces to be in contact with concrete.
H. File and ease all edges exposed to the reach of occupants and maintenance staff. Sharp edges and corners will be inspected during construction, and will need to be repaired to Owner's approval.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch (6 mm) per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch (6 mm).

END OF SECTION