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Edit the entire section to suit the specific project requirements. Modify or add items as necessary. Delete items that are not applicable. Words and sentences within brackets [] reflect a choice to be made regarding inclusion or exclusion of a particular item or statement. This section may include performance, proprietary, and descriptive type specifications. Edit to avoid conflicting requirements. After editing, editor notes, such as this, should all be deleted from the section.

SECTION 05724

PRECAST STAIR TREADS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Precast concrete step treads for use with pre-assembled, or site assembled steel stairs.
- B. Related Sections include the following:

Division 3 Section "Cast-in-Place Concrete" for concrete fill for stair treads and platforms.

- 2. Division 5 Section "Miscellaneous Metal Fabrications" for stair nosings required for precast stair treads.

1.3 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide precast stair treads capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

- 1. Uniform Load: 100 lbs. per square foot.
- 2. Concentrated Load: [] applied on an area of 4 sq. in.
- 3. Limit deflection of treads, platforms, and framing members to [L/240] [L/360] or 1/4 inch, whichever is less.

4. Seismic Performance: Provide metal stairs capable of withstanding the effects of earthquake motions determined according to [ASCE 7, "Minimum Design Loads for Buildings and Other Structures": Section 9, "Earthquake Loads."]

1.4 SUBMITTALS

- A. Product Data: For precast concrete treads and the following:
 1. Manufacturers written instructions for storage, handling and installation.
- B. Shop Drawings: Include plans, details and attachments to other work.
 1. Provide templates for anchors and bolts specified for installation under other Sections.

For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for precast stair treads.

- D. Material Test Reports: For each component of precast concrete stair treads.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Transport, store and handle precast concrete stair treads in accordance with manufacturers written instructions.
- B. Store precast concrete stair treads on pallets clear of mud and water. Stack precast concrete stair treads to allow air to circulate freely and keep treads dry.
- C. Do not allow cast in anchor bolts to be damaged during handling or to rust during storage.
- D. [Transport and store stair treads so that edges and corners of treads are not damaged.](#)

1.6 PROJECT CONDITIONS

- A. Field Measurements: Indicate measurements on Shop Drawings.

1.7 COORDINATION

- A. Coordinate installation of anchorage plates or angles precast concrete stair treads. Furnish templates, and directions for installing anchor plates or angles to receive precast stair tread bolts embedded in stair treads. Deliver such items to stair fabricator in time for installation.
- B. [Coordinate delivery and installation of stair treads with stair frame fabricator and contractor.](#)

1.8 WARRANTY

- A. Warranty Period: One year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Precast concrete stair treads shall manufactured by Camp Logan Cement Works, Inc. 1212 Asbury Street, Houston, Texas 77007-3094 (800-445-9062). www.camplogancement.com
- B. Products: Subject to compliance with requirements, provide precast concrete stair treads in standard sizes and shapes, non-standard sizes or custom as indicated.

2.2 MATERIALS

- A. Concrete Materials and Properties: Comply with requirements in Division 3 Section "Cast-in-Place Concrete" for normal-weight, ready-mixed concrete with a minimum 28-day compressive strength of 5000 psi and a total air content of not less than 4 percent or more than 6 percent.
 1. [Flexural Strength: 2500-3000 psi in accordance with ASTM C293.](#)
 2. [3 percent to 4 percent absorption in accordance with ASTM C67.](#)
- B. [Aggregate: Report sieve analysis in accordance with ASTM C136.](#)

- C. Reinforcing Bars: ASTM A 615, Grade 40, deformed.
- D. Embedded Stair Tread Anchor Bolts: ASTM F 1554, Grade 36.
 - 1. Provide hot-dip or mechanically deposited, zinc-coated anchor bolts with nuts for attaching and securing stair treads to stair framing.
 - 2. Stair tread manufacturer's standard "shoulder nut" anchor bolt design to resist damage due to excessive torque stress on anchor bolt nut, or normal stair movement.
- E. Water: Potable.

Review standard and non-standard tread dimensions below and edit to suit project requirements. Custom tread shapes are available if standard and non-standard dimensions do not suit the requirements of the design.

- F. Standard Dimensions:
 - 1. Tread Length: [36], [39 ½],[41], [42], [44], [47] and [48] inches.
 - 2. Tread Width: [11] or [12] inches.
- G. Non-Standard Dimensions:
 - 1. Tread Length: [27], [30], [32], [33], [34], [45 ½], [49], [53 ½], [55], and [60] inches.
- H. Tread Thickness: [2 ¼], [3 inches].

2.3 FINISHES, GENERAL.

- A. Protect finishes on exposed surfaces from damage during manufacture and installation.
- B. Appearance of Finished Work: 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.

2.4 GALVANIZED STEEL FINISHES

- A. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
- B. Factory Priming for Field-Painted Finish: Where field painting after installation is indicated, apply the air-dried primer specified below immediately after cleaning and pretreating.

Shop Primer: Zinc-dust, zinc-oxide primer complying with performance requirements in FS TT-P-641, Type II.

2.5 PRECAST CONCRETE TREAD FINISHES

- A. Factory Finish: Manufacturer's standard light broom finish.
- B. Tool stair tread exposed edges to form a 3/8 inch radius.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions for compliance with requirements for, installation tolerances and other conditions affecting performance of work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. Cutting, Fitting, and Installation: Perform cutting, drilling, and fitting required for installing precast concrete stair treads. Set units accurately in location, alignment, and elevation, measured from established lines and levels.

Review following two paragraphs and select one method of attachment for precast stair treads to metal stair framing.

- B. Fastening to Metal Stairs: Provide anchorage devices and embedded threaded fasteners as indicated on approved submittals for securing precast concrete treads to metal stairs.

- C. Fastening to Metal Stairs: Install precast stair treads to metal stairs by welding to stair framing anchorage devices as indicated on approved submittals.

Retain the paragraph below if welded installation of precast concrete stair treads is selected in paragraph above. Delete if bolted installation is selected.

- D. Field Welding: Comply with the following requirements:
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 welding flux immediately.
 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

3.3 ADJUSTING AND CLEANING

- A. 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. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.

Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Division 9 painting Sections.

END OF SECTION 05724