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SECTION 13 44 00
MODULAR MEZZANINES

GUIDE SPECIFICATIONS FOR
BEAM & BAR JOIST MEZZANINE SYSTEM

PART 1 - GENERAL

1.01 RELATED WORK

- A. SECTION 03 30 00: Cast in Place Concrete (and Concrete Finishing)
1. The area where mezzanine is installed shall have a concrete slab, troweled smooth and level.
 2. Concrete areas where mezzanine column placement occurs shall be able to withstand loadings of _____ pounds spread over a _____" X _____" X _____" steel base plate.

1.02 SYSTEM DESCRIPTION

- A. This document specifies a pre-engineered free-standing steel mezzanine consisting, in general, of columns, framing, decking, hardware, accessories and finish. The mezzanine shall not require cross bracing in any direction.
- B. Design Criteria
1. System shall be designed for _____PSF live load or as indicated on drawing.
 2. System shall be designed for _____clear height and _____top of deck.

1.03 REFERENCES

- A. AISC - Specification for the Design, Fabrication and Erection of Structural Steel for Buildings.
- B. AISC-SJI – Standard Specifications for Open Web Steel Joists, Longspan Steel Joists, and Deep Longspan Steel Joists.
- C. ANSI MH28.3-2009 – Specification for the Design, Manufacture, and Installation of Industrial Steel Work Platforms.
- D. ASTM A36/A36M-08 – Standard Specification for Carbon Structural Steel; or A992/A992M-06A, Grade 50 – Standard Specification for Structural Steel Shapes; or A572/A572M-07, Grade 50 – Standard Specification for High Strength Low-Alloy Columbium-Vanadium Structural Steel.
- E. ASTM A307-07B – Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
- F. ASTM A325-10 – Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.

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- G. ASTM A653/A653M-09A – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot Dip Process.
- H. ASTM A500/A500M-10 – Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
- I. ASTM A1008/A1008M-10 – Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable.
- J. AWS D1.1/D1.1M – Structural Welding Code.
- K. NAAMM – Metal Bar Grating Manual.

1.04 QUALITY ASSURANCE

- A. System Manufacturer: Established firm with a minimum of 5 (five) years experience in the design and fabrication of steel mezzanine systems.
- B. System Design: Under direct supervision of a Professional Engineer experienced in the design of mezzanines and in accordance with AISC and AISC-SJI specifications.
- C. All welding performed by the mezzanine supplier shall be made by certified welders (Reference AWS D1.1/D1.1M Structural Welding Code).
- D. Installation contractor shall be a firm experienced in installing mezzanine systems of similar size and magnitude, and approved by the manufacturer.
- E. Regulatory Requirements: System (handrails, kick plate, stairways, etc.) shall conform to OSHA requirements. (If applicable code exceeds OSHA requirements, specify here: _____).

1.05 SUBMITTALS

- A. Submit three (3) brochures of manufacturers' product data.
- B. Submit approval drawings showing size and height of mezzanine; type of decking; length and number of framing members; column location; orientation of base plates; and location and type of accessories.
- C. Submit manufacturers' installation and erection manual.

1.06 WARRANTY

- A. The supplier shall warrant the mezzanine materials to be free from manufacturing defects for a period of 25 years from date of substantial completion with certified installation.
- B. Warranty does not cover damage caused by conditions beyond the control of the supplier or installer such as faulty building construction, ordinary wear and tear, fire, water or chemical action, separation of concrete slab or settling of walls.

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PART 2 - PRODUCTS

2.01 APPROVED MANUFACTURERS

- A. System Manufacturer: Wildeck, Inc., located at: 405 Commerce St., Waukesha, WI 53186; Tel: 800-325-6939; Fax: 262-549-3466; E-Mail: info@wildeck.com; Web: www.wildeck.com; or an approved equal.

2.02 MATERIALS

A. Framing

1. Bar joist framing shall be steel, chord size and depth as shown on drawings, designed and manufactured to AISC-SJI specifications.
2. Wide flange beam framing shall be structural steel; depth, width and thickness as shown on drawings, meeting the requirements of A992/A992M-06A, Grade 50.

- B. Support columns shall be minimum 5" X 5" X 3/16" (square wall) structural steel tubing meeting the requirements of ASTM A500/A500M-10, Grade B, Fy=46 ksi.

1. Column base plates shall be minimum 12" X 12" x 3/4" steel meeting the requirements of ASTM A36/A36M-08.
2. Column base floor anchors shall be high tensile and shear strength steel, SAE Grade 5 or better, zinc plated, meeting the requirements of ASTM A325-10 type 3-B bolts. Anchors shall be 1/2" x 5" or 3/4" x 5", (other sizes available based on design), as indicated on drawings.

- C. Bar joist-to-beam fasteners shall be 1/2" X 1-1/2" zinc plated steel bolts meeting the requirements for ASTM A325-10. Beam-to-column fasteners shall be 3/4" x 2" zinc plated bolts meeting the requirements of ASTM A325-10.

- D. Bridging shall be 2" x 2" x 1/8" angle, meeting the requirements of ASTM A36/A36M-08.

E-1. Decking (Roof Deck & Moisture Resistant Resin Board)

1. Roof decking shall be 1-1/2" deep, 20 gauge steel, wide rib, meeting the requirements of ASTM A1008/A1008M-10, Grade C, Fy=33 ksi and painted manufacturer's standard gray on top side with one (1) mil white paint on bottom side.

- a. Option (delete or specify above): Roof decking shall be 1-1/2" deep, 20 gauge galvanized steel, wide rib, meeting the requirements of ASTM A653/A653M-09A, Grade A, Fy=33 ksi.

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2. Roof deck fasteners shall be steel screws, 12-24 x 1-1/4", HWH T/5, plated.
3. Moisture Resistant Resin Board shall be 3/4" thick, tongue and groove on two long sides.
 - a. Option (delete or modify above): Light, Medium, or High Density Moisture Resistant Resin Board.
4. Wood decking fasteners shall be steel screws 10-16 x 1-13/16", PFH T/3, plated.
5. Kick plates shall be 2-1/2" X 6-1/2" or 6-1/2" x 6-1/2", 14 gauge formed steel angle.

E-2. Decking (Roof Deck & Floor Plate)

1. Roof decking shall be 1-1/2" deep, 20 gauge steel, wide rib, meeting the requirements of ASTM A1008/A1008M-10, Grade C, Fy= 33 ksi and painted manufacturer's standard gray on top side with one (1) mil white paint on bottom side.
 - a. Option (delete or specify above): Roof decking shall be 1-1/2" deep, 20 gauge galvanized steel, wide rib, meeting the requirements of ASTM A653/A653M-09A, Grade A, Fy=33 ksi.
2. Roof deck fasteners shall be steel screws, 12-24 x 1-1/4", HWH T/5, plated.
3. Floor plate shall be 12 gauge unpainted (option for galvanized) steel with four-way diamond pattern.
4. Floor plate fasteners shall be 3/16" diameter dome head steel rivets, zinc plated, 0.126"- 0.250" grip range.
5. Kick plates shall be 2-1/2" x 6-1/2" or 6-1/2" x 6-1/2", 14 gauge formed steel angle.

E-3. Decking (Bar Grating)

1. Bar grating shall be welded steel, 19W4, 1" x 1/8", designed in accordance with NAAMM.
2. Bar grating fasteners
 - a. Steel saddle clips, zinc plated.
 - b. Steel screws, 12-24 x 2", HWH T/5, plated.
3. Kick plates shall be 2" x 5" or 5" x 5", 14 gauge formed steel angle.

- F. Guard railing shall be steel (HSLA) tube, 1-1/2" O.D., ADA compliant horizontal rails with 2-1/2" x 2-1/2" x 1/8" HSS (Hollow Structural Section) uprights. Guard railing shall be attached directly to framing using 1/2" ASTM A325-10 bolts and externally attached so no usable square footage on mezzanine is lost.

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- G. There shall be ____ gate(s) as shown on drawing. Safety Gates (Reference: ANSI MH28.3-2009, paragraph 6.4.3) shall be either Overhead Safety Gate, Pivot Safety Gate, or Double-Drop Safety Gate.

Alternate choices, where other perimeter guarding is in place, are: Swing, Slide, Lift-Out or Tilt-Out Gates.

H. Stairs

1. There shall be ____ stair system(s) as shown on drawings. The complete assembly shall include stairs, ____" wide; structural steel stringers meeting the requirements of ASTM A1011/A1011M-10; (HSLA) 1-1/2" O.D. railing and all associated hardware.
 2. Closed/Open stair systems shall have 12 gauge diamond plate steel treads and open risers.
 - a. Option (delete or specify above): Closed stair system shall have 12 gauge diamond plate steel treads and risers.
 3. Stair Platform(s) (when required) shall be ____" X ____" and have 12 gauge diamond plate steel over 1-1/2" deep, 20 gauge, wide rib roof deck.
 4. Stair and stair platform floor anchors shall be 3/8" x 3" high tensile and shear strength steel, SAE Grade 5 or better, zinc plated, meeting the requirements of ASTM A325-10 Type 3-B bolts.
- I. Painting: Mezzanine components, painted by the mezzanine manufacturer, shall be cleaned with a biodegradable phosphate-free alkaline solution, rinsed, dried and painted with a 2-part (electrostatically applied) polyurethane paint.

The automated application system shall utilize a heat-assisted, air dry, cure process. Mezzanine color shall be Wildeck gray.

2.03 FABRICATION

- A. Fabrication of materials will comply with dimensions, profiles, and gauges (thicknesses) shown on the approval drawings and, if not shown, will consist of the mezzanine manufacturer's standard products.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Inspect working areas to be sure concrete slab is cleaned of all debris so installers shall have adequate access to work surface.
- B. General Contractor/Owner shall advise the installation company of any embedded floor obstacles that may interfere with the installation of floor anchors.

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3.02 PREPARATION

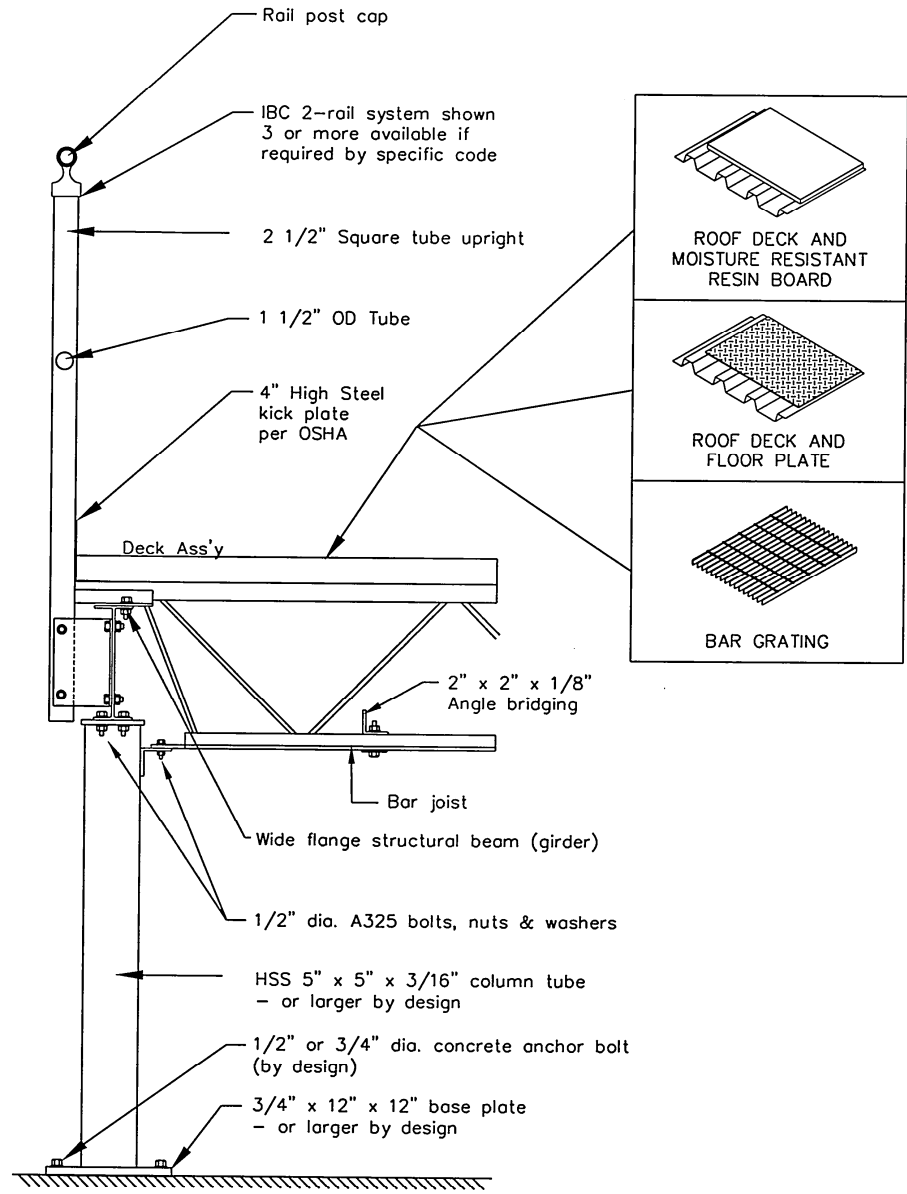
A. Field Inspection

1. The mezzanine contractor or a manufacturer's technician shall make an inspection of the job site prior to preparation of approval drawings.
2. Field measurements shall be made at this time. Any obstructions not indicated on the construction drawings that may affect the design of the mezzanine shall be reported to the General Contractor/Owner.

3.03 INSTALLATION

- A. Erection of the mezzanine and accessories shall be in accordance with the specifications and instructions contained in the erection manual and approved drawings provided by the manufacturer.
- B. Erector shall clean up all unused materials and debris and remove same from the premises.

END OF SECTION



BEAM AND BAR JOIST MEZZANINE SYSTEM