METALS

General

In general, follow the guidelines below when designing and specifying structural steel, metal deck, and metal fabrications. Unless specifically indicated otherwise, these guidelines are not intended to restrict or replace professional judgment.

Design Requirements

Codes and Standards: Comply with AISC, AWS, and BOCA codes applicable to the specific project. Comply with the most stringent of applicable OSHA and BOCA standards, as well as UFAS and Michigan Department of Labor requirements for guards, handrails, and ladders. A/E's may use their own office standards for aesthetic features and details such as connections.

Drawing Requirement

Indicate live loading capacity on structural steel design drawing.

Structural Steel

Structural Steel Lintels and Shelf Angles - Lintels and shelf angles provided for support of masonry veneers exposed to weather must comply with the following requirements:

- Units must be hot-dip galvanized after fabrication.
- Units are not required to, but may be, stainless steel.
- Leg thickness must be sized for structural loads, but not less than 3/8-inch thick.

Metal Roof Deck - All metal roof deck must be hot-dip galvanized (ASTM A 525 G60 coating).

Miscellaneous Metal Fabrications

Fire Exit Stairs - Typically, fire exit stairs are considered utility spaces where safety and economy should take precedence over aesthetics. Stair designs with straight runs are preferred over curved stairs. Scissors stairs with less than 12 inches between alternate flights are preferred over those with wider gaps, in order to avoid requiring both handrails and 42-inch high guards.

The following are minimum requirements for typical fire exit stairs. Obtain approval of University Coordinator for more elaborate solutions.

Treads must be concrete filled metal pan, not metal grating or embossed metal plate.

Standard economy railing infill may be flattened expanded metal mesh with steel channel frames. When approved by University Project Coordinator, baluster-type infill may be vertical bars complying with BOCA requirements. Rail-type horizontal bars are not permitted under any circumstances.

Show anchorage at unusual conditions, such as removable railings.

Ornamental Stairs - Designers can expect more flexibility concerning stairs with major aesthetic impact, and the design of such stairs should be coordinated with the University Project Coordinator.

Guardrails and Handrails - Specify hot-dipped galvanized steel for all exterior locations exposed to weather. Alternatively, stainless steel, bronze, anodized aluminum and other materials may be used with the approval of the University Coordinator.

Provide expansion provisions at suitable intervals, but not less than 30 feet o.c.

Handrails in concrete paving and walks may be set in sleeves or core drilled holes. Depth of core must be not less than 4-inches deep and of a diameter not less than 1-inch wider than outside pipe diameter. Set rails in non-shrink, erosion resistant grout.

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