PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Composite steel floor deck with accessories.
2. Steel roof deck with accessories.
3. Bent plate and sheet metal closures at decking edges and openings.
4. Holes through decking, with reinforcing.

B. Related Requirements:
1. Section 018113 “Sustainable Design Requirements.”

C. Related Work Specified Elsewhere:
1. Hoisting of decking.
2. Structural steel framing and supports for steel decking.
3. Structural concrete fill on steel floor deck.
4. Concrete fill on steel roof deck.

1.2 REFERENCES

A. ASTM A36 – Structural Steel.

B. ASTM A108 – Steel Bars, Carbon, Cold-Finished, Standard Quality.

C. ASTM A653 – Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip process, Structural (Physical) Quality.

D. ASTM A924 – Steel Sheet, Zinc-Coated, Galvanized by the Hot-Dip Process.

E. AWS D1.1 – Structural Welding Code – Steel

F. AWS D1.3 – Structural Welding Code – Sheet Steel.

G. ASTM A780 - Repair of Damaged and Uncoated Area of Hot-Dip Galvanized Coating.

H. SDI (Steel Deck Institute) – Design Manual for Composite Decks, Form Decks, Roof Decks, Cellular Metal Floor Deck with Electrical Distribution.

1.3 SUBMITTALS:

A. Comply with all pertinent provisions of Division 01.

B. LEED Submittals: Credits MRc4 & MRc5. Refer to Section 018113 “Sustainable Design Requirements” for additional submittal requirements.

C. Shop Drawings: Submit shop drawings fully detailing and dimensioning all steel decking including accessories, fastenings, welding, holes with reinforcing, flashings, and closures. Indicate welding according to AWS Standard Welding Symbols and provide welding operator's certificate. Show deck plan, support locations, projections, dimensioned layouts for openings and reinforcing details.

D. Product Data: Provide deck profile characteristics and dimensions, structural properties and finishes.

E. Welders Certificates: Certify welders employed on the work, verifying AWS qualification within the previous 12 months.

F. Calculations: If steel decking of type differing from that indicated or specified is proposed, submit the manufacturer's calculations and supporting data showing that proposed decking conforms to requirements indicated and specified. Include the decking manufacturer's technical product data and copies of code approvals for proposed decking. Submit with shop drawings and obtain approval prior to fabrication and delivery of decking.

1.4 QUALITY ASSURANCE:

A. Comply with all pertinent provisions of Division 01.

B. Qualifications of Welders: Employ welding operators currently tested and qualified in accordance with AWS D1.3.

C. When the materials of this Section are used as part of an assembly indicated on the Contract Drawings in which fire-resistive construction ratings are required, demonstrate approval by Underwriters' Laboratories, Inc. and the governmental agencies having jurisdiction. Provide steel floor and roof deck system that, with concrete fill, meets UL and code requirements for 2 fire-rated deck system.

D. Source Quality Control: Conform to Title 24 CCR, 2203; unidentified decking is not acceptable. Furnish deck manufacturer's certified mill analyses and test reports for each heat covering decking having Fy of 38 Ksi or less. In addition, for decking having Fy greater than 33 Ksi, Testing Laboratory shall perform one tension and elongation test and one bend or flattening test for each gage.

1.5 DELIVERY, HANDLING AND STORAGE:

A. Comply with all pertinent provisions of Division 01.

B. Store deck on dry wood sleepers, slope for positive drainage.

PART 2 - PRODUCTS

2.1 DECKING MATERIALS:

A. Furnish metal decking having galvanized coating conforming to ASTM A525, Class G60. Decking shall be fabricated of steel conforming to ASTM A653 SQ, Grade 33, minimum yield 38,000 psi., unless otherwise noted. For conditions where metal decking is exposed, furnish metal decking prime painted.

B. Roof Decking: Type and manufacture noted on the drawings, lengths to span over at least three supports unless otherwise shown, each panel factory slotted or having rolled-in moisture venting provisions. For conditions where metal decking is exposed, furnish smooth metal decking without any grooves.

C. Floor Deck: Type and manufacture noted on drawings, lengths to span over at least three supports unless otherwise indicated, each panel factory slotted or having rolled-in

moisture venting provisions , and manufactured from ASTM A653 SQ, Grade 33 steel.

D. Decking Accessories: Provide indicated and required decking accessories including, without limitation, welding washers and welding anchors, closures, transitions, and filler strips, as required for complete installations. Provide bent plate closures, angles, channels, and attachments as required for openings through decking for ducts, shafts, piping, and other penetrations; where decking changes direction; and at decking perimeter; fabricated of 16 gage galvanized steel unless otherwise shown on the Structural Drawings. Provide roof drain and overflow sumps of minimum 14 gage galvanized steel.

E. Galvanizing Repair Paint: Zinc rich paint conforming to Mil Spec MIL-P-21035 (SHIPS).

F. Metal Deck Screws: For conditions where metal decking is exposed and deck attachments are required to be self drilling, self tapping screws, provide TEKS or I.C.H. TRAXX screws (ER-3056) or equal with an approved I.C.B.O. Report. Provide neoprene washers at all screw attachments.

PART 3 - EXECUTION

3.1 INSTALLATION OF DECKING: Verify dimensions and actual site conditions to ensure proper fit and installation.

A. Placing: Place steel decking on supports with full bearings, end joints centered over supports, and adjust to correct final position before completing permanent attachments. Place units in straight alignment for the entire length of run of flutes with close registration of flutes and with maximum 1/8" gap between ends of units, minimum 2" bearing on the supports. Do not splice units except at supports. Conform to code approvals and approved submittals.

B. Cutting and Fitting: Perform cutting and fitting at columns, perimeters, shafts, stairs, and other openings. Provide tight fitting closures at the open uncovered ends and edges of decking, and all miscellaneous supports required to carry the metal decking. Secure hole reinforcement to decking with fillet welds placed on both sides of reinforcing members. Place reinforcement channels and angles across flutes and to project a distance beyond sides of openings equal to the maximum size of the opening unless otherwise shown. Perform field cutting and trimming square and neat, equal to factory cutting.

C. Welding: Use materials and methods in accordance with recommendations of steel decking manufacturer and approved submittals. Hold decking tight to the supporting elements with screws or other means as directed for proper welding or crimping of the decking edges. Conform to AWS D1.3 and to the patterns and weld types indicated, with all finished welds free of sharp points or edges. Field coat welds and abraded surfaces at completion with an approved anodic type galvanizing repair paint. Omit the field paint coating where welds or abrasions are covered by concrete fill or sprayed fireproofing.

D. Screwed Deck: Use materials and methods in accordance with recommendations of steel decking manufacturer and approved submittals. Hold decking tight to the supporting elements and provide screw pattern and spacing as indicated on structural drawings. Provide nested side laps stitched together with screws as indicated on the

structural drawings.

E. Damaged Decking: Remove and replace all metal decking showing denting or other damage that adversely affects decking strength or subsequent materials, as directed.

3.2 CLEANING AND TOUCH-UP:

A. Remove surplus materials. Clean and touch-up raw edges of decking cut for openings with anodic galvanizing repair paint. Leave decks ready to receive subsequent materials.

3.3 FIELD QUALITY CONTROL:

A. Inspection: Install steel decking under continuous inspection according to Title 24, 1704A.3, welding approved and recorded by welding inspector before being covered.

B. Inspection and Testing of Welded Shear Studs: In accordance with Section 05-050650, “Welded Stud Connectors” including pre-production testing and production inspection and testing.

END OF SECTION