

**3.6 FIELD PAINTING**

A. After erection, all surfaces on which the shop coat is damaged or destroyed or on which the metal is exposed by rust spots shall be cleaned off and painted one coat of paint.

B. After erection, all bolts, heads and welds shall be painted by Erector.

C. After erection, all steel which is exposed to the weather or to the earth shall have one coat of rust inhibitive paint. Primer shall be applied to provide a minimum dryfilm of two mils.

**3.7 SURFACE PREPARATION**

A. Architecturally Exposed Structural Steel and steel exposed to the weather shall be prepared for painting to meet the requirements of SSPC - SP10, conduct blasting only when steel structures are more than 5 deg. F above the dew point.

**3.8 SHOP PAINTING**

A. All steel and iron work shall be cleaned of mill scale, dirt, rust, oils and grease.

B. Paint shall be used from original containers without dilution.

C. All drips and runs shall be removed leaving a smooth finish for the finish coat of paint.

D. Shop paint for work not exposed to pedestrian view shall meet Federal Specification TT-P-89G, Type I.

E. Architecturally Exposed Structural Steel or steel exposed to the weather shall be primed with a primer which is compatible with the finish coat specified in Division 05 of these Specifications.

F. All structural steel not encased in concrete, not encased in sprayed-on fireproofing or not encased in direct applied fireproofing shall be painted with one coat of rust inhibitive paint two mils thick.

G. All structural steel encased in concrete shall not be painted.

**END OF SECTION 05 1200**

**SECTION 05 2100**

**STEEL JOIST FRAMING  
PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary General Conditions, and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

A. This section covers steel joists and all related work.

B. Related Sections: The following sections contain requirements that relate to this Section:

- Division 05 Sections "Structural Steel" and "Steel Roof Decking".

**1.3 REFERENCE STANDARDS**

A. Except as called for otherwise herein, the fabrication and erection of steel joists shall comply with the following:

- AISC Steel Construction Manual Thirteenth Edition.
- Standard Specifications and Load Tables of the Steel Joist (SJI) Latest Edition for K, LH, DLH, Joist Girders Series and 1961 Edition for H Series.
- ASTM E329-06 Standard Practice for Use in the Evaluation of Testing and Inspection Agencies as Used in Construction.
- International Building Code, 2006 with latest amendments.

**1.4 SHOP DRAWINGS**

A. The Contractor shall submit to the Architect shop drawings which show all details and dimensions for checking, fabrication and installation of joists. Work must not proceed in the field before the Contractor has received drawings from the Architect to which no exceptions have been taken. All drawings for review must be submitted electronically to the Architect, one master submittal will be returned to the Contractor electronically with each discipline comments marked in a separate color. Submittals shall include erection drawings, sections, and fabrication drawings.

B. The name of the manufacturer of the joists shall be shown on the shop drawings.

C. All field welding and bolting for the attachment of steel joists shall be shown on shop drawings.

**1.5 INSPECTION**

A. All joists not manufactured by a member of the SJI or the AISC shall have welds inspected by an inspection laboratory conforming to requirements of ASTM E329 approved by the Architect or by Design Professional registered in the state in which the project is being built.

B. One copy of the inspection report shall be furnished to the Architect, one to the Architect's Structural Engineer and one to the Contractor.

C. Cost of inspection shall be paid for by the Owner.

D. For testing/inspection agency services, refer to Section 1, General Conditions.

**PART 2 - PRODUCT**

**2.1 MANUFACTURER**

A. All joists shall be manufactured by one of the following:

- A member company of the Steel Joist Institute. Submit affidavit certifying membership.
- A member company of the American Institute of Steel Construction. Submit affidavit certifying membership.
- A company not a member of the SJI or the AISC who shall, prior to the fabrication, submit to the Architect the following items:
  - Two copies of a laboratory report of welding inspection.
  - Two copies of a certificate signed by a Design Professional registered in the state in which the project is being built stating the joist design, materials and workmanship comply with SJI and these specifications.
- All materials shall be of domestic manufacture.

**2.2 SPECIAL ENDS**

A. All joists designated on plans as strut joists shall be equipped with 1/4" bearing stiffeners with 9/16" x 1" slots/nuts at each end for bolting as erection progresses.

**2.3 BRIDGING**

A. Bridging shall be spaced as prescribed in the SJI Specifications unless otherwise noted. Requirements shall be the minimum.

B. Bridging for joists shall be of the diagonal type welded to joists and at crossover. Minimum sizes shall be 3/4" x 3/4" angle or 3/4" channel.

C. The size and type of bridging joists shall be as prescribed in the SJI Specifications, except that where horizontal bridging is used a vertical bracing shall be provided in the first panel and in every sixth panel.

D. For all roof joists provide a single diagonal brace in the first bottom chord panel joint.

**2.4 SLOPED END BEARINGS**

A. Where steel joists are placed on sloped shoes must be provided where the slope exceeds 1/4" in 12 inches.

**2.5 PROVISION FOR OPENING**

A. Roof openings between joists over 12" square shall be framed with 4"x3"x1/4" otherwise on plans.

B. Vertical legs of angles shall be coped for field welding to steel joists or to other angles.

**PART 3 - EXECUTION**

**3.1 ERECTION**

A. As structural steel is erected strut joists shall be bolted in place with two 1/2" bolts each end. (OSHA)

B. As joists are erected they shall be secured to their supports by temporary or permanent connections.

C. Floor joists shall be welded to steel supports with 1/8" x 1" fillet welds each side.

D. Roof joists shall be welded to steel supports with 1/8" x 2" fillet welds each side.

E. All roof joists and connections shall be designed for a minimum of 15 p.s.f. net uplift loading unless noted otherwise on plans due to wind uplift based on tributary load area.

F. Bridging shall be installed as erection of joists progresses. Bridging shall be attached at each connection and at crossover by welding. Long span joist bridging may be bolted at each connection and at crossover.

G. Opening framing shall be attached by welding.

H. Joists shall not be subjected to construction loads until top chords are stayed by attachment of roof deck or floor forms.

I. Where called for on plans, bottom chord or rod type extensions shall be provided.

J. Floor joists shall not be subjected to construction loads in excess of 50 p.s.f.

K. Roof joists shall not be subjected to construction loads in excess of 20 p.s.f.

L. Ends of joists shall be extended where indicated on plans. Extension shall be in accordance with the SJI Standards, Type R7, unless otherwise indicated on plans.

M. Where indicated on plans, 2 1/2" deep structural tube section shall be provided.

N. The suspension of plumbing, electrical conduits or mechanical ducts from bridging is not permitted.

O. Unless noted otherwise, "AX" indicates additional "X" bridging using 2" x 2"x1/4" angles.

P. Remove loose scale, rust and other foreign materials from fabricated joists and accessories before application of shop paint. Apply one coat of steel joist primer paint to steel joists and accessories, by spray or dipping to provide a continuous dry paint film thickness of not less than 0.50 mil. Clean and touch up paint field welds, abraded areas and rust spots of prime coat using the same paint as for shop painting; except, steel shall not be primed or painted if steel is to receive spray-on painting.

Q. Coordinate joist lengths and minimum bearing lengths with supporting beam widths. Offset joists where necessary or provide wider steel bearing plates.

R. Material shall be stored above ground on platforms, skids on supports to keep joists free of dirt, grease and foreign matter. Protect from corrosion.

**END OF SECTION 05 2100**

**SECTION 05 3123**

**STEEL ROOF DECKING  
PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary General Conditions, and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

A. This section covers steel roof deck and all related work.

B. Related Sections: The following sections contain requirements that relate to this Section:

- Division 05 Sections "Structural Steel" and "Steel Joist Framing".

**1.3 REFERENCE STANDARDS**

A. American Iron and Steel Institute (AISI):  
SG03, Cold-Formed Steel Design Manual Set, 2002 Edition

B. American Welding Society (AWS):  
1. D1.308, Structural Welding Code - Sheet Steel

C. Steel Deck Institute (SDI):  
SDI 31 (2007), Design Manual for Composite Decks, Form Decks and Deckings

D. American Society for Testing and Materials (ASTM):  
ASTM A653/A653M-08, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvalume) by the Hot-Dip Process  
ASTM A1008/A1008M-08a, Standard Specification for Steel Sheet, Cold-Rolled, Commercial Quality, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable  
ASTM E329-08, Standard Specification for Agencies Engaged in Construction Inspection and Testing

**1.4 SHOP DRAWINGS**

A. All drawings for review must be submitted electronically to the Architect, one master submittal will be returned to the Contractor electronically with each discipline comments marked in a separate color. Submittals shall include erection drawings, sections, and fabrication drawings. Erection shall not begin until the Contractor has been furnished a copy of the drawings to which no exception has been taken.

B. The welding washers and welding systems for attachment of deck to support shall be covered on shop drawings.

C. Submit detailed drawings showing placement of deck panels and storage details and every condition requiring closure panels, supplementary framing, special jointing or other accessories.

**1.5 INSPECTION AND TESTING**

A. Inspections and tests shall be performed by an independent laboratory complying with ASTM E329 selected and approved by the Owner's Project Manager, Architect, and paid by the Contractor. All material to be furnished shall be subject to inspections and tests in the shop and field.

B. Inspections and testing shall include deck placement, deck condition and welding.

C. Reports of inspections and testing shall be made by the laboratory on a weekly basis.

D. For testing/inspection agency services, refer to Section 1, Part 3, Article 1.3.4 of the General Conditions.

**PART 2 - PRODUCT**

**2.1 STEEL DECK**

A. Deck shall be manufactured from 20-gauge steel conforming to ASTM A1008/A1008M Grade C or A653/A653M Grade A and having a minimum yield strength of 33,000 psi.

B. The deck shall have integral ribs, all continuous and complete in cross section, spaced not more than 6-1/2" o.c. Ribs shall be formed to a depth of not less than 1-1/2". Ribs shall be not less than 1-3/4" wide at point of bearing.

C. Sheets shall be so fabricated as to permit telescoping end laps not less than 2-1/2" long, made on structural supports. Side laps shall be of the interlocking type or have other provisions for fastening.

D. All sheets of deck furnished shall be furnished in lengths to match spacing of supports and be free of imperfections, and rust spots. Defective sheets shall be replaced.

E. Deck sheets shall be either hot dipped galvanized with 1-1/4 oz. Zinc coating, or they shall be scoured and phosphate coated and then painted with a spray-on, ovenbaked primer. Galvanizing shall meet ASTM A653/A653M, G90.

F. Compute the properties of metal roof deck section on the basis of the effective design width as limited by the provisions of the AISI Specifications. Provide not less than the metal roof deck section properties shown on the drawings, including section modulus and moment of inertia per foot of width, but not less than requirements of FM125.

**2.2 WELDING WASHERS**

A. Welding washers shall be standard cut washers not less than 1" in diameter and 1/16" thick.

B. Welding washers may be omitted for the 22 gauge deck provided the contractor submits a letter from the testing company certifying all of the puddle welds.

**PART 3 - EXECUTION**

**2.3 PROVISION FOR OPENING**

A. Roof opening over 12" square shall be framed with 4" x 3" x 1/4" angles with vertical long leg down, except where called for otherwise on plans.

B. Vertical legs of angles shall be coped for field welding to steel joists or to other angles.

C. Provide roof framing as in "A" for all roof drains.

**3.1 ERECTION**

A. Bundles of decking shall not be placed on steel joist prior to placement as the joist must be laterally stayed by the deck before they can develop their design loads. Bundles one stack high may be placed along beam lines after joists are welded in place and bridged.

B. The sheets shall be erected true to alignment, placed evenly, and matched at joists.

C. The deck shall be fastened to structural members by means of electric arc welding through steel washers. Minimum diameter puddle weld of 5/8" diameter. Weld shall be spaced not more than 6" o.c. at all bearing points, unless otherwise shown.

D. When completed the deck shall form a flat and continuous surface for the complete support of all insulating and roofing materials.

E. During erection coordination with other trades shall prevail, and openings and special conditions shall be provided as called for by plans and specifications.

F. If side laps are of the interlocking type, they shall be button punched. If side laps are not of the interlocking type, they shall be fastened with self tapping screws, minimum size #10. Maximum spacing shall be 6" o.c. unless otherwise shown.

G. Deck shall bear a minimum of 2" on supports.

H. Insulation supports shall be provided where rib openings in the top surface of roof decking occur adjacent to edges and openings. Weld closure strips into position.

**3.2 PRECAUTION**

A. After decking is welded to supporting members, construction loads not exceeding 20 lbs per square foot may be placed on deck.

**3.3 FIELD PAINTING**

A. After erection, all welds shall be touched up with rust inhibitive paint.

**3.4 INSPECTION**

A. After notice, the Architect's representative shall have the opportunity to inspect and pass upon the placement of the decking before insulation is placed thereon. Inspection of the roof deck shall also include inspecting and passing upon the placement of the decking before insulation is placed thereon.

**END OF SECTION 05 3123**

**SECTION 05250  
PERMANENT STEEL FORMS  
PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary General Conditions, and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

A. This section covers steel forms for floors.

B. Related Sections: The following sections contain requirements that relate to this Section:

- Division 05 Sections "Structural Steel" and "Steel Joist Framing".

**1.3 REFERENCE STANDARDS**

A. Except as called for otherwise herein, the fabrication and erection of corrugated steel forms on steel joists shall comply with the AISI Specifications for Light Gauge Cold Form Steel.

**1.02 SHOP DRAWINGS**

A. The Contractor shall submit to the Architect shop drawings which shall show all details and dimensions for checking fabrication and installation of corrugated forms. Work must not proceed in the field before the Contractor has received drawings marked "No Exceptions Taken".

**PART 2 - PRODUCT**

**2.01 STEEL FORMS FOR FLOORS**

A. Minimum permanent steel forms shall be 28 gauge, 1/2" deep, 1 1/2" pitch, corrugated, galvanized or painted steel.

B. The following products are approved:  
Permaform S - Roll Form Products  
Tensiform 50 - Wheeling  
Formdeck - MacFab  
Fab Form - Pittsburgh Steel Company  
Slab Form - Bethlehem Steel Company  
Corrugated Form - U. S. Steel Company

C. Welding washers shall be 16 gauge standard welding washer.

**PART 3 - EXECUTION**

**3.01 INSTALLATION OF PERMANENT FORMS FOR FLOORS**

A. Forms shall be lapped a minimum of 2" at supports and one corrugation at sides.

B. Welds through welding washers shall be placed at each support in the bottom of each side corrugation and at the bottom of the middle corrugation.

**3.02 SLABS OVER PERMANENT FORMS**

A. Slab shall be 3 inches in depth measured from the bottom of the corrugation.

B. Slab shall be reinforced with WWF 6x6 W2.9 x W2.9 welded wire fabric.

C. Concrete for slab shall be in accordance with Section 3A of these specifications.

**END OF SECTION**

REVISIONS	NO.	DATE	COMMENTS
	01-15-19		Permit Set

RETAIL DEVELOPMENT  
**POP'S WINE & SPIRITS**  
 2-1764 TR A-B MCFARLAND 400 IND PARK  
 MCFARLAND PKWY ALPHARETTA GA 30004

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**S7.3**

