

LIGHT GAUGE STEEL

COLD-FORMED STEEL: SHALL BE FABRICATED AND ERRECTED IN ACCORDANCE WITH MANF. RECOMMENDATIONS AND SHALL CONFORM TO THE LATEST EDITION OF THE AMERICAN IRON AND STEEL INSTITUTE (AISI) PUBLICATION "SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" AND APPLICABLE SECTIONS OF OTHER GOVERNING CODES. COLD-FORMED STEEL ON PLANS ARE PER SPECIFICATIONS BY METAL STUD MANUFACTURERS ASSOCIATION. PRODUCTS OF EQUAL OR GREATER VALUE MAY BE USED SUBJECT TO ENGINEERS APPROVAL.

FRAMING SYSTEM: STRUCTURAL DWGS. SHOW THE TYPICAL STRUCTURAL FRAMING OF THE PRIMARY ELEMENTS OF THE OVERALL SYSTEM. THE CONTRACTOR SHALL PROVIDE ALL ACCESSORIES INCLUDING TRACKS, WEB STIFFENERS, BLOCKING, LINTELS, CLIP ANGLES, REINFORCEMENTS, FASTENING DEVICES, BRACING, AND OTHER ACCESSORIES AS RECOMMENDED BY THE MANF. TO PROVIDE A COMPLETE AND STABLE FRAMING SYSTEM.

EASTERNERS: SHALL BE WITH SELF-TAPPING PAN HEAD, HEX HEAD, OR WAFER HEAD SHEET METAL SCREWS PER MANF. RECOMMENDATIONS. SCREWS WHICH ARE REMOVED SHALL BE REPLACED BY A SCREW OF A LARGER DIA. WHERE THE REPLACEMENT IS MADE INTO AN EXISTING HOLE. REPLACE ALL SCREWS WHICH STRIP OUT MATERIAL. SCREWS SHALL BE SPACED NO CLOSER THAN 5/8 INCH O/C AND WITH A MIN. FREE EDGE DISTANCE OF 1/2 INCH. CLIP ANGLES OR FLAT CLIPS USED FOR ATTACHMENTS SHALL BE 20 GAGE MIN. OF SCREW SPACING AND EDGE DISTANCES NOTED ABOVE. ALL SCREWS #8 AND LARGER SHALL HAVE A HEAD SIZE OF 5/16 INCH MINIMUM.

STUDS, JOISTS AND ACCESSORIES: SHALL BE CARBON SHEET STEEL UNLESS NOTED OTHERWISE.

ALL STUDS SHALL BE SECURELY SEATED FOR FULL END BEARING FOR BOTH THE TOP AND BOTTOM TRACKS UNLESS NOTED OTHERWISE. PROVIDE DOUBLE STUDS AT ALL JAMBS, CORNERS, INTERSECTIONS, AND BEAM BEARING LOCATIONS.

WALL STUD BRIDGING AS RECOMMENDED BY THE STUD MANF. SHALL BE INSTALLED TO PREVENT BOTH WEAK AXIS BENDING AND STUD ROTATION AT 4'-0" MAX. INTERVALS. WALLS 8'-0" AND SHORTER SHALL HAVE A SINGLE ROW OF BRIDGING AT MID-HEIGHT. IN ADDITION, BRIDGING SHALL BE PROVIDED AT ROOF LINES AND ELSEWHERE AS NOTED ON THE DRAWINGS. SOLID BLOCKING SHALL BE INSTALLED IN LIEU OF BRIDGING WHERE NOTED ON THE DRAWINGS.

MINIMUM UNCOATED STEEL THICKNESS: DELIVERED TO JOB SITE SHALL NOT BE LESS THAN THAT SHOWN IN THE FOLLOWING TABLE:

GAUGE	DESIGN THICKNESS (IN)	MINIMUM THICKNESS (IN)
25	.0188	.0179
22	.0203	.0200
20	.0246	.0229
18	.0451	.0428
16	.0566	.0538
14	.0713	.0677
12	.1017	.0986

STEEL GRADES

GAUGE	CARBON SHEET STEEL			GALVANIZED STEEL		
	ASTM GRADE	Fy KSI	Ft KSI	ASTM GRADE	Fy KSI	Ft KSI
12, 14, 16	A570 50	50	A446 D	50		
18 OR HIGHER	A570 33	33	A446 A	33		

NOTE: ALL GAUGES OF DIAGONAL TENSION STRAPS, BRACES OR BRIDGING SHALL HAVE A MINIMUM YIELD STRENGTH OF 33 KSI UNLESS NOTED OTHERWISE.

GALVANIZED COATINGS: SHALL CONFORM TO ASTM A525.

WELDS: SHALL BE MADE IN ACCORDANCE AISI CODE USING E60XX ELECTRODES. SPECIAL INSPECTION PER U.B.C. SECTION 306 IS NOT REQUIRED UNLESS NOTED OTHERWISE. WELD SIZE SHALL NOT BE LESS THAN THAT SHOWN IN THE FOLLOWING TABLE.

WELDING: ALL WELDING SHALL BE PERFORMED BY WELDERS EXPERIENCED IN LIGHT GAUGE STRUCTURAL STEEL FRAMING WORK.

SECTION GAUGE	WELD SIZE (IN)	APPROX. EQUIVALENT SIZE	FY (KSI)	FU (KSI)
18	0.0451	3/64	33	45
16	0.0566	1/4	50	65
14	0.0713	5/64	50	65
12	0.1017	1/8	50	65

WELDS TO GALVANIZED STEEL: SHALL BE TOUCHED UP WITH ZINC-RICH PAINT OR OTHER RUST RETARDANT COATING.

LATERAL BRACING: MUST BE PROVIDED BY WALL SHEATHING, HORIZONTAL STRAPS, OR COLD-ROLLED CHANNELS. BRACING SHALL CONFORM TO SECTION D3 OF THE AISI SPECIFICATIONS.

SPICES: IN AXIALLY LOADED STUDS SHALL NOT BE PERMITTED.

JOISTS: SHALL BE LOCATED DIRECTLY OVER BEARING STUDS OR A LOAD DISTRIBUTION MEMBER SHALL BE PROVIDED TO SUPPORT EACH JOIST.

DIAGONAL STRAP BRACING: SHALL BE PRETENSIONED IN ACCORDANCE WITH CHAPTER 20 OF 1997 U.B.C.

STEEL NOTES

VERIFY: ALL MEASUREMENTS AT JOB.

COORDINATE: ALL METAL WORK WITH ADJOINING WORK FOR DETAILS OF ATTACHMENT, FITTINGS, ETC.

MISCELLANEOUS FASTENINGS: PROVIDE ALL LUGS, CLIPS, ANCHORS AND MISCELLANEOUS FASTENINGS NECESSARY FOR THE COMPLETE ASSEMBLY AND INSTALLATION.

GROUTING: DO ALL GROUTING OF FRAMES, PLATES, SILLS, BOLTS, AND SIMILAR ITEMS WITH NON-SHRINK GROUT.

PROTECTION: PROTECT ALL DISSIMILAR METALS FROM GALVANIC CORROSION.

WELDING: PERFORM ALL WELDING IN ACCORDANCE WITH AWS CODE D 1.1. WELDS SHALL BE MADE ONLY BY OPERATORS EXPERIENCED IN PERFORMING THE TYPE OF WORK INDICATED. WELDS NORMALLY EXPOSED TO VIEW IN THE FINISHED WORK SHALL BE UNIFORMLY MADE AND GROUND SMOOTH. WHERE WELDING IS DONE IN PROXIMITY TO GLASS OR FINISHED SURFACES, SUCH SURFACES SHALL BE PROTECTED FROM DAMAGE DUE TO WELD SPARKS, SPATTER, OR TRAMP METAL.

BOLTED, SCREWED, AND RIVETED CONNECTIONS: PROVIDE WASHERS UNDER ALL HEADS AND NUTS BEARING ON WOOD. DRAW ALL NUTS TIGHT AND UPSET TREADS OF PERMANENT CONNECTIONS TO PREVENT LOOSENING. USE BEVELED WASHERS WHERE BEARING IS ON SLOPED SURFACES.

CLEANING: THOROUGHLY CLEAN ALL MILL SCALE, RUST, DIRT, GREASE AND OTHER FOREIGN MATTER FROM FERROUS METAL PRIOR TO ANY GALVANIZING, HOT PHOSPHATE TREATMENT OR PAINTING.

PAINTING: AFTER MATERIAL HAS BEEN PROPERLY CLEANED AND TREATED, APPLY SHOP PRIME COAT OF PAINT TO ALL SURFACES EXCEPT THOSE ENCASED IN CONCRETE OR MASONRY. APPLY ALL PAINT AS PER MANUFACTURER'S DIRECTIONS. SPOT PAINT ALL ABRASIONS AND FIELD CONNECTIONS AFTER ASSEMBLY. SHOP COAT SHALL BE DRY PRIOR TO SHIPMENT TO JOB SITE. UNLESS OTHERWISE SPECIFIED OR DIRECTED, DO NOT APPLY SHOP PRIME COATS OR ANY STENCILED OR PAINTED IDENTIFICATION MARKINGS TO ANY GALVANIZED SURFACES.

GALVANIZING: CONFORM TO ASTM A123 FOR ROLLED, PRESSED AND FORGED SHAPES, PLATES, BAR AND STRIP; A153 FOR HARDWARE ITEMS AND A386 FOR ASSEMBLED STEEL PRODUCTS. CONFORM TO ASTM A384 AND A385 (RECOMMENDED PRACTICES) PERTAINING TO GALVANIZING ASSEMBLED STEEL PRODUCTS. UNLESS OTHERWISE PERMITTED, DO ALL GALVANIZING AFTER FABRICATION, IN LARGEST SECTIONS PRACTICABLE. WHERE GALVANIZING IS REMOVED BY WELDING OR OTHER ASSEMBLY PROCEDURE, TOUCH UP ABRASED AREAS WITH MOLDED ZINC OR ZINC-RICH PAINT.

MATERIALS: STANDARD STRUCTURAL STEEL SHAPES, BARS AND PLATES SHALL BE ASTM A36. STEEL TUBING SHALL BE ASTM A500 (COLD ROLLED) GRADE A OR B, OR ASTM A501 (HOT ROLLED) WELDED OR SEAMLESS.

BOLTS: SHALL CONFORM TO ASTM 307, GRADE A, UNLESS NOTED OTHERWISE.

WELDING PROCEDURES: WELDERS AND TACKERS FOR STRUCTURAL METAL WORK SHALL BE QUALIFIED IN ACCORDANCE WITH SECTION 2205 OF 1997 UBC.

WELDING ELECTRODES: TO BE E70XX.

PAINTED STUDS AND JOISTS: ASTM A570 FOR 12, 14, AND 16 GAGE WITH A MINIMUM YIELD STRENGTH OF 50 KSI, ASTM A611 GRADE C FOR 18 AND 20 GAGE STUDS, JOISTS, BRIDGING, TRACK, END CLOSURES AND ACCESSORIES WITH A MINIMUM YIELD STRENGTH OF 33 KSI.

GALVANIZED STUDS AND JOISTS: ASTM A446 GRADE D FOR 12, 14, AND 16 GAGE WITH A MINIMUM YIELD STRENGTH OF 50 KSI, ASTM A446 GRADE A FOR 18 AND 20 GAGE STUDS, JOISTS, BRIDGING, TRACK, END CLOSURES AND ACCESSORIES WITH A MINIMUM YIELD STRENGTH OF 33 KSI.

GALVANIZED DECKING: ASTM A446.

SHOP DRAWINGS: SHOP DRAWINGS SHALL SHOW DIMENSIONS, SIZES, THICKNESSES, GAGES, FINISHES, JOINING, ATTACHMENTS, AND RELATIONSHIP OF WORK TO ADJOINING CONSTRUCTION. WHERE WELDED CONNECTORS AND INSERTS ARE REQUIRED TO RECEIVE WORK, SHOP DRAWINGS SHALL SHOW EXACT LOCATIONS REQUIRED, AND ALL SUCH DRAWINGS SHALL BE FURNISHED TO THE TRADES RESPONSIBLE FOR INSTALLING THE CONNECTORS OR INSERTS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.

STEEL FABRICATION: ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL BE FABRICATED AND ERRECTED IN ACCORDANCE WITH THE A.I.S.C. SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, LATEST EDITION.

PIPE COLUMNS: SHALL CONFORM TO ASTM A53, GRADE B, UNLESS OTHERWISE NOTED ON PLANS.

STRUCTURAL TUBING: SHALL CONFORM TO ASTM A500, GRADE B, UNLESS OTHERWISE NOTED.

FIELD FOREMAN: THE FIELD FOREMAN RESPONSIBLE FOR THE FABRICATION AND ERECTION OF ALL STRUCTURAL STEEL SHALL HAVE A MINIMUM OF (3) YEARS EXPERIENCE IN THIS CAPACITY FOR THIS TYPE OF CONSTRUCTION.

OPEN WEB STEEL JOIST NOTES

1. PREFABRICATED ROOF AND FLOOR TRUSSES SHALL BE MANUFACTURED BY: VULCRAFT OR EQUAL.
2. DESIGN AND FABRICATION OF TRUSSES SHALL CONFORM TO UBC STANDARDS 27-4. JOIST MANUFACTURER SHALL BE STEEL JOIST INSTITUTE (SJI) APPROVED.
3. MAXIMUM DEFLECTIONS SHALL BE LESS THAN:
 - ROOF TRUSSES
 - a) L/240 FOR DEAD PLUS LIVE LOADS WHERE 'L' = LENGTH OF SPAN
 - b) L/360 FOR LIVE LOAD ONLY
4. COORDINATE ACTUAL JOIST MEMBER LENGTHS WITH THE STRUCTURAL PLANS AND DETAILS.
5. SUBMIT COMPLETE SHOP DRAWINGS AND DESIGN CALCULATIONS TO THE ARCHITECT AND STRUCTURAL ENGINEER AND OBTAIN THEIR REVIEW PRIOR TO COMMENCEMENT OF FABRICATION DESIGN CALCULATIONS ARE TO BE SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEVADA.
6. MANUFACTURER SHALL PROVIDE BRIDGING PER STD. 27-4.
7. IN ADDITION TO THE TRUSS DESIGN LOADS SPECIFIED ON PLANS, JOIST AND GIRDERS SHALL BE DESIGNED FOR A CONCENTRATED LOAD OF 400# TO HANG FROM ANY LOCATIONS ALONG THE BOTTOM.
8. ROOF TRUSSES SHALL BE DESIGNED FOR (NET) WIND UPLIFT (8 PSF).

**STRUCTURAL TESTS & INSPECTIONS
REQUIRED FOR THIS PROJECT:**

1. REFER TO CHAPTER 17 OF THE 1997 UNIFORM BUILDING CODE & 1998 CALIFORNIA BUILDING CODE FOR AMPLIFICATION OF THE FOLLOWING REQUIREMENTS. ALL SPECIAL INSPECTORS MUST SUBMIT FINAL REPORTS.

	YES	NO
	<input checked="" type="checkbox"/>	<input type="checkbox"/>
 2. **FOUNDATIONS:**
 - A. COMPACTED FILL INCLUDING UTILITY TRENCHES OF CONCRETE OVER 2,500 PSI.
 - B. VISUAL EXAMINATION & APPROVAL OF ALL FOUNDATION EXCAVATIONS BY SOILS ENGINEER.
 - C. EXPANSION INDEX EVALUATION OF PAD.
 - D. DRILLING OF CAISSONS.
 3. **CONCRETE:**
 - A. CONTINUOUS INSPECTION X TEST CYLINDERS FOR CONCRETE PLACEMENT
 - B. PNEUMATICALLY PLACED CONCRETE-GUNITE & SHOTCRETE. (TEST SPECIMENS, PLACING OF CONCRETE)
 - C. BOLTS & EMBEDDED PLATES INSTALLED IN CONCRETE. (CURING INSTALLATION & PLACING OF CONCRETE)
 4. **REINFORCING STEEL:**
 - A. PLACEMENT REINFORCING.
 - B. PLACING OF STRESSING TENDONS.
 - C. SAMPLING & TESTING OF STEEL. (MILL REPORTS & IDENTIFICATION OF STEEL)
 5. **WELDING:**
 - A. ALL STRUCTURAL FIELD WELDING. (INCLUDES DECKING & WELDED STUDS)
 - B. NON-DESTRUCTIVE TESTING OF MOMENT-RESISTING SPACE FRAMES.
 - C. STRUCTURAL LIGHT GAGE METAL FRAMING.
 6. **BOLTING:**
 - A. HIGH STRENGTH BOLTING.
 - B. EXPANSION BOLTS IN CONCRETE OR MASONRY.
 - C. INSTALLATION OF EPDXY ANCHORED BOLTS, RODS, OR REBAR.
 7. **MASONRY:**
 - A. SAMPLING & TESTING OF MASONRY.
 - B. TESTING OF GROUT & MORTAR PRISMS.
 - C. CONTINUOUS INSPECTION.
 - D. COMPRESSION PRISMS.
 8. **STRUCTURAL STEEL:**
 - A. MILL REPORTS & IDENTIFICATION OF STEEL. (AFFIDAVIT OF COMPLIANCE)
 - B. SAMPLING & TESTING.
 9. **APPROVED FABRICATORS:** MUST SUBMIT CERTIFICATION OF COMPLIANCE
 - A. FOR ALL OFFSITE FABRICATION SUCH AS STRUCTURAL STEEL, GLU-LAMS, PRECAST CONCRETE, ETC.
 10. **ALL TESTS & INSPECTIONS:**
 - A. SHALL BE PERFORMED BY AN INDEPENDENT INSPECTION AGENCY. (APPROVED BY BUILDING DEPARTMENT)
 - B. JOB SITE VISITS BY THE STRUCTURAL ENGINEER DO NOT CONSTITUTE AN OFFICIAL INSPECTION.
 - C. COPIES OF TEST RESULTS SHALL BE FURNISHED TO THE STRUCTURAL ENGINEER IN ADDITION TO OTHER NORMAL DISTRIBUTIONS.
- NOTE:** IT IS THE CONTRACTORS SOLE RESPONSIBILITY TO SEE THAT THESE TEST AND INSPECTIONS ARE PERFORMED.



REVISIONS
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FILE:
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SCALE: N/A
PROJECT: 63037

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