

GOVERNING BUILDING CODE: 2020 FLORIDA BUILDING CODE (FBC)

1. ROOF DEAD LOADS, D
- MEMBRANE (UNBALLASTED) = 1.0 PSF
- INSULATION = 3.0 PSF
- METAL DECK = 2.0 PSF
- JOISTS = 3.0 PSF
- GIRDERS = 2.0 PSF
- CEILING, MECHANICAL, ELECTRICAL, & FIRE PROTECTION = 5.0 PSF
- TOTAL DEAD LOAD = 16.0 PSF
2. MINIMUM ROOF LIVE LOADS, Lr
- A. METAL DECK = 20 PSF
- B. JOISTS, JOIST GIRDERS, BEAMS, COLUMNS, & FOOTINGS
1. TRIBUTARY LOADED AREA (A1): 0 TO 200 SF = 14.5
2. TRIBUTARY LOADED AREA (A1): 201 TO 599 SF = 20*(1-2.0/001*A1) PSF
3. TRIBUTARY LOADED AREA (A1): 600 SF. AND GREATER = 12 PSF
3. ROOF SNOW LOADS, S
- A. GROUND SNOW LOAD, Pg = 0 PSF
- B. SNOW EXPOSURE FACTOR, Ce = 1.0
- C. SNOW LOAD IMPORTANCE FACTOR, Is = 1.0
- D. THERMAL FACTOR, Ct = 1.0
- E. FLAT-ROOF SNOW LOAD, Pfl = 0 PSF
- F. INCLUDES 5.0 PSF RAIN-ON-SNOW SURCHARGE WHERE APPLICABLE
- G. ALL APPLICABLE EFFECTS DUE TO UNBALANCED SNOW LOADING AND SNOW DRIFTING
4. WIND LOADS, W
- A. ULTIMATE DESIGN WIND SPEED (3 SECOND GUST), Vu = 130 MPH
- B. NOMINAL (ASD) DESIGN WIND SPEED, Vn = 101 MPH
- C. RISK CATEGORY = II
- D. BUILDING CATEGORY: ENCLOSED, SIMPLY DIAPHRAGM
- E. OVERALL EXPOSURE CATEGORY = C
- F. HEIGHT AND EXPOSURE ADJUSTMENT COEFFICIENT = 1.36 (Kzt = 1.0)
- G. MAIN WIND-FORCE-RESISTING SYSTEM WIND DESIGN PRESSURES, W

MWFRS NOMINAL (ASD) WIND DESIGN PRESSURES		
LOCATION		DESIGN PRESSURE (PSF)
HORIZONTAL	INTERIOR ZONE	-14.5
	END ZONE **	-21.8
* THE TOTAL HORIZONTAL LOAD EFFECT ON THE BUILDING SHALL NOT BE LESS THAN THAT BY ASSUMING THAT THE WIND PRESSURES IN ALL ZONES IS EQUAL TO 10.0 PSF		
VERTICAL	** END ZONE PRESSURES SHALL APPLY WITHIN 20 FEET OF EACH BUILDING CORNER	
	MAXIMUM WINDWARD ROOF PRESSURE	
	INTERIOR ZONE	-18.2
	END ZONE **	-26.2
VERTICAL	MAXIMUM LEeward ROOF PRESSURE	
	INTERIOR ZONE	-11.6
	END ZONE **	-14.9

H. COMPONENTS AND CLADDING WIND DESIGN PRESSURES: PER TABLE BELOW.

COMPONENTS AND CLADDING NOMINAL (ASD) WIND DESIGN PRESSURES (PSF)				
ZONE*	EFFECTIVE WIND AREA (SF)	WINDWARD PRESSURE	LEeward PRESSURE	
1	10	10.1	-39.4	
	20	10.0	-36.8	
	50	10.0	-33.4	
	100	10.0	-30.8	
	10	10.1	-52.0	
2	10	10.0	-46.7	
	50	10.0	-44.3	
	100	10.0	-40.9	
	10	10.1	-70.9	
	20	10.0	-64.2	
3	10	10.0	-55.4	
	100	10.0	-48.7	
	10	24.7	-26.9	
	20	23.6	-25.7	
	100	21.1	-23.1	
4	10	24.7	-33.1	
	20	22.1	-24.4	
	100	21.1	-23.1	
	10	23.6	-30.9	
	100	22.1	-27.9	
5	10	23.6	-30.9	
	100	21.1	-25.7	

- * ZONE 1 INCLUDES THOSE ROOF ELEMENTS LOCATED OUTSIDE OF 10 FEET OF A ROOF EDGE.
- ZONE 2 INCLUDES THOSE ROOF ELEMENTS LOCATED WITHIN 10 FEET A ROOF EDGE.
- ZONE 3 INCLUDES THOSE ROOF ELEMENTS LOCATED WITHIN 10 FEET OF A ROOF EDGE AND WITHIN 10 FEET OF A BUILDING CORNER.
- ZONE 4 INCLUDES THOSE WALL ELEMENTS LOCATED OUTSIDE OF 10 FEET OF A BUILDING CORNER.
- ZONE 5 INCLUDES THOSE WALL ELEMENTS LOCATED WITHIN 10 FEET OF A BUILDING CORNER.

5. SEISMIC DESIGN DATA
- A. RISK CATEGORY = II
- B. MAPPED SPECTRAL RESPONSE COEFFICIENTS
- 1- Ss = 0.068
- 2- Si = 0.037
- C. SITE CLASS = D (ASSUMED)
- D. SPECTRAL RESPONSE COEFFICIENTS
- 1- Sss = 0.073
- 2- Ssi = 0.059
- E. SEISMIC DESIGN CATEGORY = A
- F. BASIC SEISMIC-FORCE-RESISTING SYSTEM: COMBINATION OF ORDINARY REINFORCED MASONRY SHEAR WALLS AND STEEL SYSTEMS NOT SPECIFICALLY DESIGN FOR SEISMIC RESISTANCE
- G. RESPONSE MODIFICATION COEFFICIENT, R = 2.0
- H. SYSTEM OVERSTRENGTH FACTOR, Co = 3.0
- I. DEFLECTION AMPLIFICATION FACTOR, Cd = 3.0
- J. ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE
- K. BASE SHEAR, V = 17.8 Kips

FOUNDATIONS

1. THE FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS MADE IN THE "REPORT OF GEOTECHNICAL ENGINEERING SERVICES" DATED MARCH 10, 2021, PREPARED BY PROFESSIONAL SERVICE INDUSTRIES, INC. (PROJECT NO. 1757266).
2. SPREAD FOOTINGS SHALL BEAR ON SOIL CAPABLE OF SUSTAINING A NET ALLOWABLE BEARING PRESSURE OF 3.0 KSF FOR INDIVIDUAL COLUMN FOOTINGS AND CONTINUOUS WALL FOOTINGS UNDER FULL SERVICE DEAD AND LIVE LOADS.
3. THE EXISTING SITE SUBGRADE SHALL BE PREPARED IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS IN THE PROJECT GEOTECHNICAL ENGINEERING REPORT.
4. ALL BEARING MATERIAL SHALL BE INSPECTED BY THE INDEPENDENT TESTING AGENCY PRIOR TO CONCRETE PLACEMENT. THE INDEPENDENT TESTING AGENCY SHALL BE THE SOLE JUDGE AS TO THE SUITABILITY OF THE BEARING MATERIAL. FOOTING ELEVATIONS SHALL BE ADJUSTED AS REQUIRED.
5. FOOTINGS MAY BE POURED INTO AN EARTH-FORMED TRENCH IF SOIL CONDITIONS PERMIT.
6. THE TOP OF EXTERIOR FOOTING ELEVATION SHALL BE SET A MINIMUM OF 8" BELOW LOWEST FINAL ADJACENT EXTERIOR GRADE AND A MINIMUM 16" BELOW FINISHED FLOOR. THE BOTTOM OF EXTERIOR FOOTINGS SHALL BEAR A MINIMUM OF 16" BELOW LOWEST FINAL ADJACENT EXTERIOR GRADE.
7. FOUNDATION WALLS THAT RETAIN EARTH SHALL BE BRACED AGAINST BACKFILLING PRESSURES UNTIL FLOOR SLABS AT TOP AND BOTTOM ARE IN PLACE, OR UNTIL THE CONCRETE OR MASONRY HAS ATTAINED ITS FULL COMPRESSIVE STRENGTH FOR CANTILEVER WALLS.
8. WHERE FOUNDATION WALLS ARE TO HAVE EARTH PLACED ON EACH SIDE, PLACE FILL SIMULTANEOUSLY SO AS TO MAINTAIN A COMMON ELEVATION ON EACH SIDE OF THE WALL.
9. VERIFY THE USE AND EXTENT OF PERIMETER INSULATION WITH THE ARCHITECTURAL DRAWINGS PRIOR TO THE INSTALLATION OF FOUNDATIONS. INSTALL PERIMETER INSULATION AS REQUIRED.

CONCRETE

(REFER TO SPECIFICATION SECTION 03301 IN THE PROJECT MANUAL)

1. ALL CONCRETE SHALL BE NORMAL-WEIGHT (DENSITY=145 PCF) AND SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH IN ACCORDANCE WITH THE FOLLOWING:
- ALL FOUNDATIONS, INTERIOR SLAB,..... 3000psi
- EXTERIOR SLABS, CURBS, SIDEWALKS..... 4000psi
- ALL OTHER CONCRETE (U.N.O.)..... 3000psi
2. THE SLUMP OF ALL CONCRETE SHALL NOT EXCEED 4" UNLESS A HIGH RANGE WATER-REDUCING ADMIXTURE IS USED. THE SLUMP OF CONCRETE PRIOR TO ADDITION OF A HIGH-RANGE WATER-REDUCING ADMIXTURE SHALL NOT EXCEED 4". THE SLUMP OF CONCRETE CONTAINING A HIGH RANGE WATER-REDUCING ADMIXTURE SHALL NOT EXCEED 10".
3. THE COARSE AGGREGATE SIZE SHALL BE #57 OR LARGER.
4. THE MINIMUM PORTLAND CEMENT CONTENT (ASTM C150) OF ALL CONCRETE SHALL CONFORM TO THE FOLLOWING TABLE (FLY ASH NOT PERMITTED):

SPECIFIED COMPRESSIVE STRENGTH (PSI)	CONCRETE (LBS.)
3000	470
4000	564

5. THE CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS FOR REVIEW A MINIMUM OF ONE WEEK PRIOR TO THE PLACEMENT OF ANY CONCRETE. THE CONCRETE MIX DESIGNS SHALL INCLUDE ALL STRENGTH DATA NECESSARY TO SHOW COMPLIANCE WITH THE PROJECT SPECIFICATIONS FOR EITHER THE TRIAL BATCH OR FIELD EXPERIENCE METHOD.
6. CONCRETE REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.
7. CONCRETE REINFORCING STEEL TO BE WELDED SHALL CONFORM TO ASTM A706.
8. ALL REINFORCING SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE DETAILING MANUAL.
9. ALL REINFORCING SHALL BE SUPPORTED IN FORMS, SPACED WITH NECESSARY ACCESSORIES AND SHALL BE SECURELY WIRED TOGETHER, IN ACCORDANCE WITH THE LATEST EDITION OF THE CRSI "MANUAL OF STANDARD PRACTICE".
10. THE MINIMUM CONCRETE CLEAR COVER OVER REINFORCING STEEL, UNLESS NOTED OTHERWISE, SHALL BE:
- UNFORMED SURFACE IN CONTACT WITH THE GROUND..... 3 IN.
- FORMED SURFACES EXPOSED TO EARTH OR WEATHER:
- #6 BARS AND LARGER..... 2 IN.
- #5 BARS AND SMALLER..... 1 1/2 IN.
- FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER:
- BEAMS, GIRDERS, AND COLUMNS..... 1 1/2 IN.
- SLABS, WALLS AND JOISTS:
- #14 BARS AND SMALLER..... 3/4 IN.
- #14 AND #18 BARS..... 1 1/2 IN.
11. ALL BASE PLATES, ANCHOR BOLTS, SUPPORT ANGLES, ETC., WHICH ARE BELOW GRADE SHALL BE COVERED WITH A MINIMUM OF 3" OF CONCRETE.
12. ALL LAP SPLICES SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE, UNLESS NOTED OTHERWISE. WHERE CLASSES ARE NOT CALLED OUT ON DRAWINGS, USE CLASS "B" SPLICES.

CONCRETE REINFORCING LAP SPlice SCHEDULE					
BAR SIZE	TENSION SPLICES (IN.)				COMPRESSION SPLICES (IN.)
	A	B	A	B	
#3	22	28	17	22	12
#4	28	37	22	28	15
#5	36	47	28	36	19
#6	43	56	33	43	23
#7	63	81	48	63	27
#8	72	93	55	72	30

- COMPRESSION DOWEL EMBEDMENT: 22 BAR DIAMETERS LAP
- WELDED WIRE FABRIC: ONE SPACING OF CROSS WIRES PLUS 2" LAP

REINFORCED MASONRY

(REFER TO SPECIFICATION SECTION 04201 IN THE PROJECT MANUAL)

1. MASONRY WALLS HAVE BEEN DESIGNED TO SPAN VERTICALLY, AS SIMPLE SPANS, FROM FLOOR TO ROOF, AND ARE DEPENDENT UPON THE COMPLETED ROOF STRUCTURE, METAL ROOF DECK, AND COMPLETION OF ALL MASONRY WALLS FOR STABILITY AND FOR RESISTANCE TO WIND AND SEISMIC FORCES. THE GENERAL CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING ALL NECESSARY BRACING AS REQUIRED FOR STABILITY, RESISTANCE OF CONSTRUCTION LOADS, AND FOR RESISTANCE TO WIND AND SEISMIC FORCES UNTIL THE ENTIRE STRUCTURE IS COMPLETE. THE SHORING SHALL NOT RELY ON ANY MOMENT RESISTANCE CAPACITY OF THE FOOTINGS.
2. REINFORCED MASONRY SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH, fm = 1500 PSI. MASONRY UNITS SHALL BE NORMAL WEIGHT BLOCK CONFORMING TO ASTM C90. MORTAR SHALL CONFORM TO ASTM C270, TYPE "S". GROUT SHALL CONFORM TO ASTM C476. SEE SPECIFICATIONS FOR MINIMUM COMPRESSIVE STRENGTHS OF MASONRY UNITS, MORTAR, AND GROUT.
3. PROVIDE VERTICAL CONTROL JOINTS IN MASONRY WALLS AT A MAXIMUM SPACING OF 25 FEET, AND IN ONE WALL AT INTERSECTING WALLS AT A MAXIMUM OF 4 FEET FROM THE WALL CORNER. REFERENCE THE ARCHITECTURAL DRAWINGS FOR GENERAL LOCATIONS OF CONTROL JOINTS IN MASONRY WALLS. HORIZONTAL BOND BEAM AND LINTEL REINFORCING SHALL BE CONTINUOUS ACROSS VERTICAL CONTROL JOINTS. JOINT REINFORCING SHALL BE STOPPED EITHER SIDE OF VERTICAL CONTROL JOINTS.
4. MASONRY REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.
5. CONTINUOUS WIRE REINFORCING (JOINT REINFORCING) SHALL BE GALVANIZED TRUSS TYPE FORMED FROM 9 GAUGE COLD-DRAWN STEEL WIRE COMPLYING WITH ASTM A62. JOINT REINFORCING SHALL BE SPACED AT 16" O.C. VERTICALLY IN ALL MASONRY WALLS.
6. ALL REINFORCED CELLS AND ALL CELLS BELOW THE FINISHED FLOOR ELEVATION SHALL BE GROUTED SOLID.
7. WHEN A FOUNDATION DOWEL DOES NOT LINE UP WITH A VERTICAL BLOCK CORE, IT SHALL NOT BE SLOPED MORE THAN ONE HORIZONTAL IN SIX VERTICAL. DOWELS MAY BE GROUTED INTO A CELL IN VERTICAL ALIGNMENT, EVEN THOUGH IT IS IN AN ADJACENT CELL TO THE VERTICAL WALL REINFORCING. GROUT THE CELL FOR THE FULL HEIGHT OF THE DOWEL.
8. ALL REINFORCING STEEL SHALL BE CENTERED IN THE MASONRY UNIT CELL, UNLESS NOTED OTHERWISE.
9. ALL REINFORCING STEEL SHALL BE SECURED IN PLACE BEFORE GROUTING STARTS.
10. ALL REINFORCING BARS SHALL HAVE A MINIMUM GROUT COVER OF 1/2" TO THE INSIDE FACE OF THE MASONRY UNIT. A MINIMUM OF TOTAL MASONRY COVER OF 2".
11. ALL REINFORCING BARS IN WALLS SHALL HAVE NOT LESS THAN ONE BAR DIAMETER NOR 1" CLEAR BETWEEN BARS.
12. ALL REINFORCING BARS IN COLUMNS AND PILASTERS SHALL HAVE NOT LESS THAN ONE AND ONE-HALF BAR DIAMETERS NOR 1 1/2" CLEAR BETWEEN BARS.
13. VERTICAL CELLS THAT WILL BE GROUTED SHALL HAVE A VERTICAL ALIGNMENT TO MAINTAIN A CONTINUOUS UNINTERRUPTED CELL AREA.
14. GROUTING SHALL BE STOPPED 1 1/2" BELOW THE TOP OF A COURSE SO AS TO FORM A KEY AT THE POUR JOINT.
15. GROUTING OF MASONRY BEAMS AND LINTELS OVER OPENINGS SHALL BE DONE IN ONE CONTINUOUS OPERATION.
16. ALL BOLTS, ANCHORS, ETC., INSERTED IN THE WALLS, SHALL BE GROUTED SOLID INTO POSITION.
17. ALL REINFORCING LAP SPLICES SHALL BE A MINIMUM OF 72 BAR DIAMETERS BASED ON THE MAXIMUM ALLOWABLE STRESS, UNLESS NOTED OTHERWISE. SPLICED BARS SHALL BE WIRED TOGETHER. LAP SPLICES BETWEEN ADJACENT BARS SHALL BE STAGGERED A MINIMUM OF 24 BAR DIAMETERS.

STRUCTURAL STEEL

(REFER TO SPECIFICATION SECTION 05120 IN THE PROJECT MANUAL)

1. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING GRADES:
- ALL CHANNELS, ANGLES, PLATES, ETC. (U.N.O.)..... A36 (Fy=36 KSI)
- ALL WIDE FLANGES (U.N.O.)..... A572 (Fy=50 KSI)
- HOLLOW STRUCTURAL SECTIONS (SHAPED)..... A500 GRADE B (Fy=46 KSI)
- HOLLOW STRUCTURAL SECTIONS (ROUND)..... A500 GRADE B (Fy=42 KSI)
- STEEL PIPE..... A53 GRADE B (Fy=35 KSI)
- BOLTS..... A325 (U.N.O.)
- ANCHOR RODS..... F1554 (GRADE 36)
- WELDING ELECTRODES..... E70XX
2. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE (1989), EXCEPT AS MODIFIED IN THESE NOTES AND THE PROJECT SPECIFICATIONS.
3. SEE PROJECT SPECIFICATIONS FOR SHOP COT FINISH REQUIREMENTS ON EXPOSED EXTERIOR CANOPY FRAMING.
4. THE STEEL STRUCTURE IS A NON-SELF-SUPPORTING STEEL FRAME AND IS DEPENDENT UPON DIAPHRAGM ACTION OF THE ROOF DECK AND ATTACHMENT TO THE WALL SYSTEM FOR STABILITY AND FOR RESISTANCE TO WIND AND SEISMIC FORCES. PROVIDE ALL TEMPORARY SUPPORTS REQUIRED FOR STABILITY AND FOR RESISTANCE TO WIND AND SEISMIC FORCES UNTIL THESE ELEMENTS ARE COMPLETE AND ARE CAPABLE OF PROVIDING THIS SUPPORT.
5. THE FABRICATOR IS RESPONSIBLE FOR THE DESIGN OF ALL CONNECTIONS, UNLESS NOTED OTHERWISE. WHERE CONNECTION COMPONENTS ARE NOT EXPLICITLY IDENTIFIED, THE STRUCTURAL DRAWINGS ARE SCHEMATIC AND ARE ONLY INTENDED TO SHOW THE RELATIONSHIP OF MEMBERS CONNECTED. CONNECTION COMPONENTS IDENTIFIED ON THE STRUCTURAL DRAWINGS SHALL BE INCORPORATED INTO THE FABRICATOR'S SHOP DRAWINGS. SEE THE SPECIFICATIONS. ALL SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY THE FABRICATOR'S ENGINEER FOR THE DESIGN OF THE CONNECTIONS, WITH THE ENGINEER'S SEAL FOR THE STATE WHERE THE STRUCTURE IS LOCATED. THE ENGINEER'S SEAL MAY BE QUALIFIED FOR DESIGN OF CONNECTIONS ONLY.
6. SPLICING OF STEEL MEMBERS, UNLESS SHOWN ON THE DRAWINGS, IS PROHIBITED WITHOUT WRITTEN APPROVAL OF THE PROFESSIONAL-OF-RECORD.
7. STRUCTURAL STEEL SHALL BEAR A MINIMUM OF 8" WHEN SUPPORTED BY CONCRETE OR MASONRY, UNLESS NOTED OTHERWISE. ANCHOR STEEL MEMBERS TO MASONRY WITH TWO (2)-5/8" DIAMETER ANCHOR BOLTS WITH 4" HOOK AND 1'-4" EMBEDMENT, UNLESS NOTED OTHERWISE.
8. FOR ALL STRUCTURAL STEEL, SUPPORTING JOISTS FORTY FEET (40') AND LONGER, ALLOW FOR BOLTED CONNECTIONS TO THE SUPPORTING STEEL (COORDINATE WITH THE JOIST SUPPLIER).
9. ALL COLUMNS SHALL BE PROVIDED WITH A 6"x6"x3/8" KNIFE PLATE FOR STEEL JOISTS, AND A 6"x6"x3/4" KNIFE PLATE FOR STEEL JOIST GIRDERS, AT THE COLUMN CENTERLINE AT THE BOTTOM CHORD ELEVATION, WELDED TO THE COLUMN (LONG DIMENSION VERTICAL). COLUMNS SHALL ALSO BE FABRICATED TO ALLOW FOR BOLTED CONNECTIONS OF STEEL JOISTS AND JOIST GIRDERS AT COLUMNS CENTERLINES. WHERE STEEL JOIST OR JOIST GIRDERS DO NOT SPACE TO COLUMN CENTER LINES, PROVIDE FOR BOLTED CONNECTIONS FOR THE STEEL JOIST OR GIRDER CLOSEST TO THE CENTER LINE.

STEEL JOISTS AND JOIST GIRDERS

(REFER TO SPECIFICATION SECTIONS 05210 AND 05211 IN THE PROJECT MANUAL)

1. ALL STEEL JOISTS SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR OPEN WEB STEEL JOISTS, 'K-SERIES' (2002)", AND JOIST GIRDERS WITH THE "STANDARD SPECIFICATION FOR JOIST GIRDERS (2002)", OF THE STEEL JOIST INSTITUTE (SJI).
2. ALL STEEL JOISTS AND JOIST GIRDERS SHALL BE DESIGNED BY THE JOIST MANUFACTURER. THE MANUFACTURER'S ENGINEER SHALL BE RESPONSIBLE FOR THE DESIGN, ADEQUACY, AND SAFETY OF ALL STEEL JOISTS AND JOIST GIRDERS. ALL SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY THE MANUFACTURER'S ENGINEER FOR THE DESIGN OF THE STEEL JOISTS AND JOIST GIRDERS, WITH THE ENGINEER'S SEAL FOR THE STATE WHERE THE STRUCTURE IS LOCATED. THE ENGINEER'S SEAL MAY BE QUALIFIED FOR DESIGN OF STEEL JOISTS AND JOIST GIRDERS ONLY.
3. EXCEPT WHERE ADDITIONAL AND/OR SPECIFIC DESIGN LOADS ARE SPECIFIED ON THE STRUCTURAL DRAWINGS, STEEL JOISTS SHALL BE DESIGNED AS SIMPLY SUPPORTED, UNIFORMLY LOADED TRUSSES WITH THE TOP CHORD BRACED AGAINST LATERAL BUCKLING. THE UNIFORM DESIGN LOAD SHALL BE THE TOTAL SAFE UNIFORMLY DISTRIBUTED LOAD AS SHOWN IN THE SJI STANDARD LOAD TABLE. WHEN NON-UNIFORM OR CONCENTRATED LOADS ARE SPECIFIED ON THE DRAWINGS, THE MANUFACTURER SHALL DESIGN THE STEEL JOISTS IN ACCORDANCE WITH PARAGRAPH 5.5 OF THE "STANDARD SPECIFICATIONS FOR JOIST GIRDERS (2002)".
4. EXCEPT WHERE ADDITIONAL DESIGN LOADS ARE SPECIFIED ON THE STRUCTURAL DRAWINGS, STEEL JOIST GIRDERS SHALL BE DESIGNED AS SIMPLY SUPPORTED TRUSS MEMBERS, WITH ALL LOADS SHOWN IN MAGNITUDE AND SPACED ALONG JOIST GIRDER TOP CHORD AS SPECIFIED ON THE DRAWINGS.
5. ALL ROOF JOISTS AND JOIST GIRDERS, UNLESS NOTED OTHERWISE, SHALL BE DESIGNED TO SUPPORT THE LIVE (OR SNOW) DESIGN LOAD WITHOUT EXCEEDING A DEFLECTION OF L/240, AND THE TOTAL DESIGN LOAD WITHOUT EXCEEDING A DEFLECTION OF L/80.
6. STEEL JOIST BRIDGING AND JOIST GIRDER BRACING SHOWN ON THE DRAWINGS IS FOR ILLUSTRATIVE PURPOSES ONLY. ALL STEEL JOIST BRIDGING AND JOIST GIRDER BRACING SHALL BE DESIGNED AND SPECIFIED BY THE JOIST MANUFACTURER TO BE PROVIDED IN ACCORDANCE WITH THE SJI SPECIFICATION AND TO RESIST SPECIFIED NET UPLIFT FORCES INDUCED BY WIND LOADING, ALL BRIDGING AND BRIDGING ANCHORS SHALL BE INSTALLED, AND STEEL JOIST ENDS FINISH, PRIOR TO THE APPLICATION OF ANY LOADS. BRIDGING THAT TERMINATES AT, OR IS INTERRUPTED BY, STRUCTURAL STEEL BEAMS, OR MASONRY WALLS SHALL BE ATTACHED THERETO. THE JOIST MANUFACTURER AND GENERAL CONTRACTOR MUST COORDINATE BRIDGING AND BRACING LOCATIONS TO AVOID INTERFERENCE WITH ALL MECHANICAL, ELECTRICAL AND FIRE PROTECTION EQUIPMENT.
7. THE JOIST MANUFACTURER SHALL DESIGN ALL ROOF JOISTS AND JOIST GIRDERS TO RESIST SPECIFIED NET UPLIFT FORCES INDUCED BY WIND LOADS, IN ACCORDANCE WITH THE STANDARD SJI SPECIFICATIONS AND THE GOVERNING BUILDING CODE. A SINGLE LINE OF BOTTOM CHORD BRIDGING MUST BE PROVIDED FOR JOISTS NEAR THE FIRST BOTTOM CHORD PANEL POINTS FROM EACH END, WHENEVER UPLIFT DUE TO WIND FORCES IS SPECIFIED ON THE DESIGN DRAWINGS.
8. JOIST GIRDERS SHALL BE PROPORTIONED SUCH THAT THEY CAN BE ERECTED WITHOUT BRIDGING THE MINIMUM BEARING LENGTH REQUIREMENTS FOR K-SERIES JOISTS, UNLESS NOTED OTHERWISE, SHALL BE:
- 2'-0" ON STRUCTURAL STEEL
- 4" ON STEEL BEARING PLATES OVER MASONRY
10. THE MINIMUM BEARING LENGTH REQUIREMENTS FOR JOIST GIRDERS, UNLESS NOTED OTHERWISE, SHALL BE:
- 4" ON STRUCTURAL STEEL
- 6" ON STEEL BEARING PLATES OVER MASONRY
11. UNLESS NOTED OTHERWISE, K-SERIES JOISTS SHALL BE ATTACHED TO SUPPORTING STEEL MEMBERS, OR STEEL BEARING PLATES, WITH (2)-1/2" LONG 1/4" FILLET WELDS (ONE EACH SIDE), OR WITH (2)-1/2" DIA. BOLTS, OR WITH A COMBINATION OF (1)-1/8" x 1/2" FILLET WELD AND (1)-1/2" DIA. BOLT. WHERE THE DRAWINGS INDICATE THAT THE JOIST SEAT IS TO BE WELDED TO THE SUPPORTING STEEL, THE BOLT IS PROVIDED ARE FOR ERECTION ONLY AND MAY BE REMOVED AFTER THE WELDS ARE COMPLETED.
12. UNLESS NOTED OTHERWISE, JOIST GIRDERS SHALL BE ATTACHED TO SUPPORTING STEEL MEMBERS, OR STEEL BEARING PLATES, WITH TWO (2)-1/4" LONG 1/4" FILLET WELDS (ONE EACH SIDE), OR TWO (2)-3/4" DIA. BOLTS, OR WITH A COMBINATION OF (1)-1/4" x 1/2" FILLET WELD AND (1)-3/4" DIA. BOLT. JOIST GIRDERS AT COLUMN CENTERLINES SHALL BE BOLTED TO STRUCTURAL STEEL WITH TWO (2)-3/4" DIA. BOLTS. WHERE THE DRAWINGS INDICATE THAT THE JOIST GIRDER SEAT IS TO BE WELDED TO THE SUPPORTING STEEL, THE BOLT IS PROVIDED ARE FOR ERECTION ONLY AND MAY BE REMOVED AFTER THE WELDS ARE COMPLETED.
13. STEEL JOISTS AND JOIST GIRDERS AT COLUMN CENTER LINES SHALL BE BOLTED TO THE SUPPORTING STEEL MEMBER WITH TWO BOLTS, OF SIZE SPECIFIED ABOVE. WHERE STEEL JOISTS OR GIRDERS DO NOT SPACE TO COLUMN CENTER LINES, USE BOLTED CONNECTIONS FOR THE STEEL JOIST OR GIRDER CLOSEST TO THE CENTER LINE. WHERE THE DRAWINGS INDICATE THAT THE JOIST OR GIRDER SEAT IS TO BE WELDED TO THE SUPPORTING STEEL, THE BOLT IS PROVIDED ARE FOR ERECTION ONLY AND MAY BE REMOVED AFTER THE WELDS ARE COMPLETED.
14. STEEL JOISTS AND JOIST GIRDERS AT COLUMN CENTER LINES SHALL BE PROVIDED WITH BOTTOM CHORD EXTENSIONS, TO ALIGN WITH THE KNIFE PLATE AT THE COLUMN, FOR STABILIZATION. DO NOT WELD THE STEEL JOIST OR GIRDER CHORD TO THE PLATE.
15. HOLES IN STEEL JOIST OR JOIST GIRDER CHORDS WILL NOT BE PERMITTED, EXCEPT FOR BOLTED CONNECTIONS AT THE BEARING END OF STEEL JOISTS, OR WHERE SPECIFIED ON THE DRAWINGS AND SPECIFICALLY DESIGNED FOR BY THE JOIST MANUFACTURER.
16. ALL ITEMS SUCH AS MECHANICAL EQUIPMENT, DUCT WORK, PIPES, CEILING SUPPORTS, FIXTURES, DISPLAYS, ETC., WHICH ARE TO BE SUPPORTED BY, OR HUNG FROM, STEEL JOISTS AND JOIST GIRDERS SHALL BE BRACED WITH AUXILIARY FRAMING TO THE PANEL POINTS OF THE STEEL JOIST OR GIRDER WHEN THE CONCENTRATED LOAD EXCEEDS 50 LBS. METHODS OF FRAMING THAT INDUCE BENDING IN THE STEEL JOIST OR JOIST GIRDER CHORDS OR WEB MEMBERS WILL NOT BE PERMITTED.
17. ADDITIONAL DESIGN LOADS FROM ARCHITECTURAL FEATURES, ROOF TOP EQUIPMENT, OR ANY OTHER CONCENTRATED LOADS SHOWN ON THE DRAWINGS, SHALL BE CONSIDERED AS COLLATERAL LOADS. THESE LOADS SHALL BE CONSIDERED IN THE DESIGN OF THE STEEL JOISTS AND JOIST GIRDERS, IN ADDITION TO THE SPECIFIED UNIFORM LOADS. COORDINATE WITH THE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATIONS AND WEIGHTS OF ALL EQUIPMENT. WHERE SUCH LOADS DO NOT OCCUR AT THE PANEL POINTS OF THE JOISTS OR GIRDERS, AUXILIARY FRAMING SHALL BE ADDED, OR THE CHORDS SHALL BE DESIGNED FOR THE EFFECTS OF THE LOAD.
18. NO LOADS SHALL BE PLACED ON ANY JOIST GIRDER UNTIL THE STEEL JOISTS BEARING ON THE GIRDER ARE IN PLACE, AND FASTENED TO THE GIRDER AS SPECIFIED.
19. ALL STEEL JOISTS AND JOIST GIRDERS SHALL BE CAMBERED IN CONFORMANCE WITH SECTION 4.7 OF THE "STANDARD SPECIFICATIONS FOR OPEN WEB STEEL JOISTS, 'K-SERIES' (2002)", AND WITH SECTION 1003.6 OF THE "STANDARD SPECIFICATION FOR JOIST GIRDERS (2002)", OF THE STEEL JOIST INSTITUTE (SJI).
20. ALL JOISTS FORTY FEET (40') AND LONGER MUST BE FABRICATED TO ALLOW FOR BOLTING TO STEEL STRUCTURAL SUPPORTS.
21. ALL JOIST GIRDERS SUPPORTING JOISTS FORTY FEET (40') AND LONGER MUST BE FABRICATED TO ALLOW FOR BOLTED CONNECTIONS OF THE JOIST TO THE JOIST GIRDER.
22. ALL DAMAGED STEEL JOISTS AND JOIST GIRDERS SHALL BE REPAIRED OR REPLACED. THE PROFESSIONAL-OF-RECORD SHALL BE THE SOLE JUDGE AS TO WHETHER A JOIST, OR JOIST GIRDER, CAN BE REPAIRED OR MUST BE REPLACED. ALL REPAIRS TO STEEL JOISTS AND JOIST GIRDERS SHALL BE DESIGNED AND SPECIFIED BY THE JOIST SUPPLIER'S ENGINEER.

METAL ROOF DECK

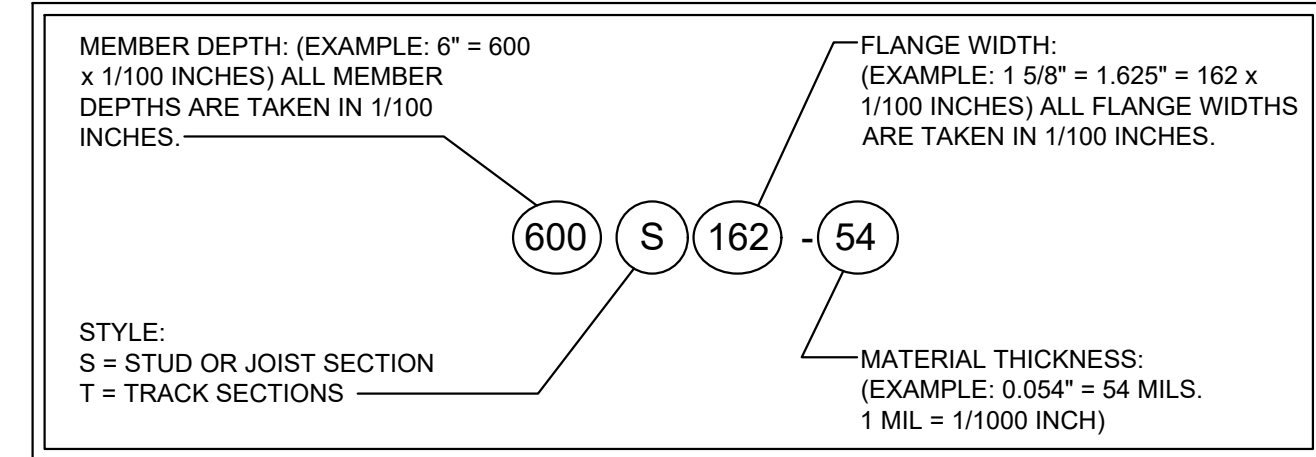
(REFER TO SPECIFICATION SECTION 05311 IN THE PROJECT MANUAL)

1. METAL ROOF DECK SHALL COMPLY WITH THE REQUIREMENTS OF THE STEEL DECK INSTITUTE "SPECIFICATIONS AND COMMENTARY FOR STEEL ROOF DECK" (1995).
2. ALL METAL ROOF DECK SHALL BE OF CONFIGURATION, DEPTH, AND MINIMUM GAUGE AS SPECIFIED ON THE DRAWINGS. ATTACHMENT OF METAL DECK TO THE SUPPORTING STRUCTURAL MEMBERS SHALL BE, AT A MINIMUM, AS SPECIFIED ON THE DRAWINGS. SEE THE ROOF PLAN NOTES.
3. SEE SPECIFICATION FOR FINISH.
4. DO NOT HANG OR SUPPORT ANY LOADS FROM METAL ROOF DECK.
5. ALL METAL ROOF DECK SHEETS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE SPANS.
6. METAL DECK SHEET ENDS SHALL BE LAPPED A MINIMUM OF 2". BUTTED ENDS ARE NOT PERMITTED.
7. END LAPS SHALL BE STAGGERED WHEN THE THICKNESS OF THE DECK EXCEEDS 20 GA.
8. E60XX WELDING ELECTRODES SHALL BE USED WHEN WELDING METAL ROOF DECK.
9. PROVIDE SUMP PANS AS SHOWN. SUMP PANS SHALL BE THE MANUFACTURER'S STANDARD.

COLD-FORMED STEEL

(REFER TO SPECIFICATION SECTION 05400 IN THE PROJECT MANUAL)

1. ALL SIZING BASED ON STEEL STUD MANUFACTURERS ASSOCIATION (CBO ER-4943P) PRODUCT TECHNICAL INFORMATION.
2. ALL GALVANIZED STUDS AND JOISTS 12, 14 AND 16 GAUGE SHALL BE FORMED FROM STEEL THAT CORRESPONDS TO THE MINIMUM REQUIREMENTS OF ASTM A563 SS, GRADE 50, CLASS 1 OR 3 WITH A MINIMUM YIELD OF 50,000 PSI.
3. ALL GALVANIZED 18 AND 20 GAUGE STUDS AND JOISTS; ALL GALVANIZED TRACK, BRIDGING, END CLOSURES AND ACCESSORIES SHALL BE FORMED FROM STEEL THAT CORRESPONDS TO THE REQUIREMENTS OF ASTM A563 SS, GRADE 50 WITH A MINIMUM YIELD OF 33,000 PSI.
4. ALL GALVANIZED STEEL STUDS, JOISTS, TRACK, BRIDGING AND ACCESSORIES SHALL BE FORMED FROM STEEL HAVING A GALVANIZED COATING MEETING THE REQUIREMENTS OF ASTM A525.
5. THE PHYSICAL AND STRUCTURAL PROPERTIES LISTED BY THE STEEL STUD MANUFACTURER ASSOCIATION AND AISI DESIGN MANUAL SHALL BE CONSIDERED THE MINIMUM PERMITTED FOR ALL FRAMING MEMBERS. SPECIFICALLY, THE FOLLOWING MINIMUM PROPERTIES, CALCULATED IN ACCORDANCE WITH THE LATEST AISI SPECIFICATION SHALL BE PROVIDED: IX (IN 4), SX (IN 3), AREA (IN 2), RX (IN), FY (KSI), RESISTING MOMENT (IN-LB).
6. ANY SUBSTITUTIONS MUST BE APPROVED IN WRITING PRIOR TO DELIVERY, BY THE ARCHITECT AND/OR ENGINEER OF RECORD.
7. INSTALLATION OF STUDS SHALL BE AS PER ASTM C1007-00 "INSTALLATION OF LOAD BEARING (TRANSVERSE AND AXIAL) STEEL STUDS AND ACCESSORIES". ASTM C585-00a "SPECIFICATION FOR LOAD BEARING (TRANSVERSE AND AXIAL) STEEL STUDS, RUNNERS (TRACK), AND BRACING OR BRIDGING FOR SCREW APPLICATION OF GYPSUM BOARD AND METAL PLASTER BASES", AND ASTM C754-00 "SPECIFICATION FOR INSTALLATION OF STEEL FRAMING MEMBERS TO RECEIVE SCREW ATTACHED GYPSUM BOARD".
8. ALL FRAMING COMPONENTS SHALL BE CUT SQUARELY FOR ATTACHMENT TO PERPENDICULAR MEMBERS, OR AS REQUIRED FOR AN ANGULAR FIT AGAINST ABUTTING MEMBERS. MEMBERS SHALL BE HELD POSITIVELY IN PLACE UNTIL PROPERLY FASTENED.
9. ALL TRACK BUTT JOINTS ABUTTING PIECES OF TRACK SHALL BE SECURELY ANCHORED TO A COMMON STRUCTURAL ELEMENT, OR THEY SHALL BE BUTT-WELDED OR SPICED TOGETHER.
10. ALL STUD BRIDGING SHALL BE ATTACHED IN A MANNER TO PREVENT STUD ROTATION. BRIDGING ROWS SHALL BE SPACED ACCORDING TO SUPPLIERS RECOMMENDATIONS.
11. TEMPORARY BRACING SHALL BE PROVIDED UNTIL ERECTION IS COMPLETED.
12. STUDS MUST BE LOCATED DIRECTLY OVER BEARING STUDS OR A LOAD DISTRIBUTION MEMBER SHALL BE PROVIDED AT THE TOP TRACK.
13. PROVIDE WEB STIFFENERS AT REACTION POINT WHERE INDICATED BY PLANS.
14. STUD ENDS MUST BE SQUARELY SEATED AGAINST THE TRACK WEB. BOTH STUD FLANGES MUST BE ATTACHED TO TRACK MEMBERS AT TOP AND BOTTOM.
15. STUD BRIDGING SHALL BE PROVIDED BY 1-1/2" COLD ROLLED U-CHANNEL. THE U-CHANNEL MUST BE ATTACHED TO TRACK STUD BY WELDING OR ATTACHING WITH CLIP ANGLES AND SCREWS.
16. HORIZONTAL STRAPPING AND SOLID BRIDGING WITH TRACK MEMBERS CAN ALSO BE USED FOR BRIDGING. BRIDGING SHALL BE SPACED AT 4'-0" O.C. MAXIMUM.
20. THE FOLLOWING MINIMUM COLD FORMED STEEL ATTACHMENTS SHALL BE PROVIDED U.N.O.:
- TRACK TO STRUCTURAL STEEL..... (1) 145/90 POWDER DRIVEN FASTENER AT 16" O.C.
- TRACK TO METAL DECK..... (1) #10 TEK SCREW AT 16" O.C.
- TRACK TO CONCRETE..... (1) 145/90 POWDER DRIVEN FASTENER AT 16" O.C.
- STUD TO STRUCTURAL STEEL..... (1) L2x2x14 GAUGE CLIP ANGLE CONNECTION WITH (2) #10 TEK SCREWS INTO METAL STUD AND (2) 145/90 POWDER DRIVEN FASTENERS
- TRACK TO STUD..... (2) #10 TEK SCREWS
- STUD TO STUD..... (2) #10 TEK SCREWS
21. BRICK TIES SHALL CONSIST OF "DURLO-WALL" DIA 210 AND DIA 807 SCREWS WITH DIA 700 SERIES TRIANGLE TIES AT 16" O.C. HORIZONTALLY AND VERTICALLY.
22. COLD-FORMED STEEL IDENTIFY LEGEND:



MISCELLANEOUS

1. THESE GENERAL NOTES SUPPLEMENT THE PROJECT SPECIFICATIONS. REFER TO THE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. THE STRUCTURAL DRAWINGS ARE INTENDED TO BE USED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING REQUIREMENTS FROM SUCH DRAWINGS INTO THEIR SHOP DRAWINGS AND WORK.
3. ANY DETAIL TITLED AS A TYPICAL DETAIL IS APPLICABLE THROUGHOUT THE DESIGN DRAWINGS. THESE DETAILS ARE DEFINED AS GENERAL STANDARDS THAT ARE USUALLY NOT IDENTIFIED BY SPECIFIC REFERENCE WITHIN THE DRAWINGS. THESE DETAILS MAY BE MODIFIED OR SUPERSEDED BY SPECIFIC DETAILS THAT ARE REFERENCED WITHIN THE DRAWINGS.
4. NO OPENINGS SHALL BE MADE IN ANY STRUCTURAL MEMBER WITHOUT THE WRITTEN APPROVAL OF THE PROFESSIONAL-OF-RECORD.
5. NO CHANGE IN SIZE OR DIMENSION OF STRUCTURAL MEMBERS SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE PROFESSIONAL-OF-RECORD.
6. OPENINGS IN WALLS AND DECK, WHICH ARE 1'-4" AND LESS ON A SIDE, ARE GENERALLY NOT SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO THE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SUCH OPENINGS.
7. THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED UPON THE STRUCTURAL FRAMING. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN CAPACITY OF THE FRAMING AT THE TIME THE LOADS ARE IMPOSED.
8. THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT