

SS-8 FIELD MODIFICATION OF STRUCTURAL STEEL IS PROHIBITED WITHOUT PRIOR APPROVAL OF THE ARCHITECT AND STRUCTURAL ENGINEER.

SC STRUCTURAL STEEL CONNECTIONS

- SC-1 ALL STEEL DETAILS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", AISC-LOAD AND RESISTANCE FACTOR DESIGN.
- SC-2 ALL CONNECTIONS, UNLESS INDICATED AS BEING FULLY DESIGNED ON THE STRUCTURAL DRAWINGS, SHALL BE DESIGNED AND DETAILED BY A LICENSED STRUCTURAL ENGINEER IN THE STATE WHERE THE PROJECT IS LOCATED. THE DESIGN AND DETAILING SHALL COMPLY WITH ALL APPLICABLE CODES AND SPECIFICATION SECTIONS.
- SC-3 UNLESS OTHERWISE NOTED, DETAILS INDICATED ON DRAWINGS INDICATE GENERAL CRITERIA FOR DESIGN AND DETAILING OF CONNECTIONS. DETAILS INDICATED ON DRAWINGS ARE NOT INTENDED TO CONVEY COMPLETE CONNECTOR SIZES, PLATE SIZES, WELD SIZES, NUMBER OF BOLTS, OR ANY OTHER SPECIFIC INFORMATION THAT IS OBTAINED THROUGH DESIGNING OF AN INDIVIDUAL CONNECTION FOR A GIVEN SET OF LOADS. THESE DETAILS DO NOT SHOW ERECTION AIDS. PROVIDE ERECTION AIDS AS REQUIRED AND REMOVE THEM AFTER WORK IS COMPLETE.
- SC-4 SUBMIT CONNECTIONS NOT SPECIFICALLY DETAILED ON THE DRAWINGS TO THE SER FOR REVIEW PRIOR TO REVIEW OF SHOP DRAWINGS. FOR BIDDING PURPOSES, WHERE NO MOMENTS ARE INDICATED ON DRAWINGS PROVIDE FULL MOMENT CAPACITY OF MEMBER (9 Fy Z) AND WHERE NO VERTICAL SHEAR IS INDICATED ON DRAWINGS PROVIDE FULL SHEAR CAPACITY (.54 Fy d w).
- SC-5 ALTERNATE CONNECTIONS TO THOSE SHOWN ON DRAWINGS WILL ONLY BE CONSIDERED ACCEPTABLE IF CONTRACTOR FORMALLY SUBMITS ALTERNATES AND THE SER APPROVES THE SUBMITTAL.
- SC-6 FOR CONNECTION DESIGN AND DETAILING, SET CONNECTION WORK POINT AT INTERSECTION OF MEMBER CENTERLINES, UON.
- SC-7 DESIGN ALL CONNECTIONS FOR FORCES INDICATED ON THE DRAWINGS. CONNECTION DESIGN FORCES INDICATED ON THE DRAWINGS ARE FACTORED UON.
- SC-8 DESIGN OF MEMBERS IS BASED ON ASSUMPTION OF 3/4 INCH DIAMETER AND 1-INCH DIAMETER A325 OR A490 BOLTS. USE NO MORE THAN TWO BOLT DIAMETERS, ONE GRADE PER DIAMETER, SKIP ONE SIZE BETWEEN DIAMETERS.
- SC-9 BEAM CONNECTION DESIGN NOTES
SEE PLANS FOR BEAM REACTIONS AND MOMENTS THAT ARE LARGER THAN THE VALUE SHOWN IN SCHEDULES.
DEVELOP THE LARGER OF THE BEAM SHEAR REACTION SCHEDULED, SHOWN ON PLANS OR SHOWN ON ELEVATIONS.
DEVELOP THE LARGER OF THE MOMENT SCHEDULED, SHOWN ON PLANS OR SHOWN ON ELEVATIONS.
DEVELOP THE LARGER OF THE AXIAL FORCE DENOTED AS P OR TF SHOWN ON PLANS OR SHOWN ON ELEVATIONS. SEE STEEL BEAM LEGEND.
WHERE NO AXIAL FORCE IS SHOWN ALL BEAM CONNECTIONS SHALL BE DESIGNED FOR A MINIMUM AXIAL FORCE EQUAL TO 5% OF THE VERTICAL SHEAR REACTION ACTING CONCURRENTLY WITH THE VERTICAL BEAM SHEAR.
ALL BEAM REACTIONS, AXIAL FORCES AND MOMENTS ACT CONCURRENTLY. UON, BEAM REACTIONS ACT IN GRAVITY DIRECTION WHILE AXIAL FORCES AND MOMENTS ARE TO BE CONSIDERED REVERSIBLE.
EXCEPT WHERE "SNUG TIGHT" INSTALLATION IS SPECIFICALLY PERMITTED ON DRAWINGS OR "SLIP CRITICAL" DETAILING IS REQUIRED, ALL HIGH STRENGTH BOLTS SHALL BE INSTALLED AS FULL PRETENSIONED BOLTS.
AT A MINIMUM ALL BOLTED MOMENT AND AXIAL CONNECTION SHALL HAVE PRETENSIONED BOLTS IN STANDARD HOLES.
BOLTED MOMENT CONNECTIONS AT CANTILEVERS AND BACKSPANS SHALL USE SLIP CRITICAL BOLTS.
DO NOT USE OVERSIZED OR SLOTTED HOLES FOR ANY CONNECTIONS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR APPROVED IN WRITING BY THE SER.
- SC-10 ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE STRUCTURAL WELDING CODE, ANSIIAWS D1.1, LATEST EDITION. ALL WELD SIZES SHALL BE THE LARGER OF THE SIZE REQUIRED BY CONNECTION FORCES, THE MINIMUM SIZE PER ANSIIAWS D1.1, OR 3/16 INCH MINIMUM FILLET WELD UON. ANY WELD SIZES SHOWN ON THE DESIGN DRAWINGS ARE CONSIDERED EFFECTIVE WELD SIZES AND SHALL BE INCREASED IN ACCORDANCE WITH AWS AS REQUIRED BY GAPS OR SKEWS BETWEEN COMPONENTS.
- SC-11 USE RUNOFF TABS AT ALL BEVEL AND FULL PENETRATION WELDS. REMOVE RUNOFF TABS BY NEAT CUTS AFTER WELD IS COMPLETED. GRIND SMOOTH WHERE REQUIRED BY DETAIL.
- SC-12 WHERE REQUIRED BY DETAIL REMOVE WELD BACK UP BARS AND GRIND SMOOTH AFTER WELD IS COMPLETED.
- SC-13 FOR TRUSS DETAILING USE A MINIMUM BOLT SPACING OF 3 TIMES THE BOLT DIAMETER AND A MINIMUM EDGE DISTANCE OF 2 INCHES. ALSO REFER TO TYPICAL DETAILS.
- SC-14 DESIGN, DETAIL, FURNISH AND INSTALL STIFFENERS, CONTINUITY PLATES, DOUBLER PLATES, OR OTHER NECESSARY ADDITIONAL LOCAL STRENGTHENING MEASURES AS REQUIRED. MEMBER SIZES INDICATED ON THE DRAWINGS ARE BASED ON MEMBER BEHAVIOR AWAY FROM CONNECTIONS.

SD STEEL DECK GENERAL REQUIREMENTS

- SD-1 THE DESIGN, MANUFACTURE AND ERECTION OF STEEL DECK AND ITS ANCHORAGE SHALL, AT A MINIMUM, BE IN ACCORDANCE WITH "DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS AND ROOF DECKS" OF THE STEEL DECK INSTITUTE (SDI), CURRENT EDITION AND "SPECIFICATIONS FOR DESIGN OF LIGHT GAGE COLD FORMED STEEL STRUCTURAL MEMBERS" AS PUBLISHED BY THE AMERICAN IRON AND STEEL INSTITUTE (AISI), CURRENT EDITION.
- SD-2 FABRICATE STEEL DECK UNITS AND ACCESSORIES FROM STEEL SHEET CONFORMING TO ASTM A653 SQ GRADE 33, WITH A MINIMUM YIELD STRENGTH OF 33 KSI.
- SD-3 CONFIGURE ALL STEEL DECK USING THREE SPAN CONTINUOUS LAYOUTS WHEREVER POSSIBLE.
- SD-3 CONFIGURE ALL STEEL DECK AS SHOWN ON THE DRAWINGS.
- SD-4 DESIGN STEEL DECK FOR UNSHORED CONDITIONS.

DK STEEL COMPOSITE DECK AND FORM DECK

- DK-1 COMPOSITE DECK AND FORM DECK SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES:
ASTM A653-HOT-DIPPED GALVANIZED CONFORMING TO ASTM A924 G60,
OR
ASTM A1008, GRADE C WITH PHOSPHATE TREATED AND BAKED ON RUST-INHIBITIVE PAINT
- DK-2 DESIGN AND DETAIL COMPOSITE DECK TO SUPPORT SCHEDULED DESIGN LOADS, WORKING AS A PART OF COMPOSITE SLAB.
- DK-3 FASTEN COMPOSITE FLOOR DECK UNITS AS FOLLOWS:
A. TO THE STEEL FRAMEWORK AT ENDS OF UNITS AND AT ALL INTERMEDIATE SUPPORTS; BY PUDDLE WELDS NOT LESS THAN 3/4 INCH DIAMETER SPACED AT 12 INCHES ON CENTER MAXIMUM, UON. WHERE PRESENT, A HEADED STUD CAN REPLACE A PUDDLE WELD.
B. AT SIDE LAPS OF ADJACENT UNITS BETWEEN SUPPORTS; BY SIDE SEAM WELDING (MINIMUM OF 1-1/2 INCH BY 1/2 INCH) AT INTERVALS NOT EXCEEDING 24 INCHES ON CENTER UON.
- DK-4 COMPOSITE FLOOR DECK HANGER TABS LOADS SHALL NOT EXCEED 60 LBS PER HANGER TAB. IN ADDITION LOADS ON HANGERS SHALL BE DISTRIBUTED IN SUCH A MANNER THAT THE TRIBUTARY LOADS FOR EACH HANGER SHALL NOT EXCEED 5 POUNDS PER SQUARE FOOT. DO NOT HANG MEP EQUIPMENT AND PIPING DIRECTLY FROM STEEL DECK.
- DK-5 DISTRIBUTE STEEL STUDS UNIFORMLY OVER BEAM SPAN UNLESS OTHERWISE NOTED ON DRAWINGS. MAXIMUM SPACING OF 3/4 INCH HEADED STUDS SHALL NOT EXCEED 12" ON CENTER (ONE STUD PER FOOT) UNLESS OTHERWISE NOTED ON PLAN.
- DK-6 HEADED SHEAR STUDS SHALL EXTEND A MINIMUM OF 1 1/2 INCHES ABOVE THE TOP OF STEEL DECK WITH A MINIMUM CLEAR COVER OF 1/2 INCH FROM THE TOP OF SLAB.
- DK-7 STEEL COMPOSITE DECKS ARE TO BE POURED LEVEL AND CONCRETE CONTRACTOR SHALL INCLUDE ADDITIONAL QUANTITY OF CONCRETE DUE TO BEAM AND DECK DEFLECTION OR AS INDICATED ON THE DRAWINGS.
- DK-8 DESIGN AND DETAIL STEEL COMPOSITE DECK, FORM DECK, DECK ENCLOSURES, AND DECK ACCESSORIES FOR CONSTRUCTION LOADS. IN DETERMINING CONSTRUCTION LOADING OF FRESH CONCRETE, ACCOUNT FOR RELEVANT FACTORS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
A. THE PLANNED CONCRETE PLACEMENT METHODS
B. ADDITIONAL CONCRETE WEIGHT DUE TO DECK DEFLECTION
C. ADDITIONAL CONCRETE WEIGHT DUE TO CUMULATIVE DEFLECTION OF INDIVIDUAL BEAMS AND GIRDERS EQUAL TO DIAGONAL BAY DIMENSION BETWEEN COLUMNS DIVIDED BY 360 LESS ANY INDICATED CAMBER.

RD STEEL ROOF DECK

- RD-1 STEEL ROOF DECK SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES:
STEEL FOR DECK ASTM A653, MINIMUM YIELD STRENGTH OF 33 KSI
HOT-DIP GALVANIZING ASTM A653 G60
ROOF DECK SHALL BE HOT-DIP GALVANIZED, UON
- RD-2 STEEL ROOF DECK UNITS SHALL BE FASTENED TO THE STEEL FRAMEWORK TO SUPPORT THE FOLLOWING LOADS AND MEET THE MINIMUM REQUIREMENTS:
A. GRAVITY LOAD SEE LOADING DIAGRAMS
B. DIAPHRAGM SHEAR DESIGN FORCE 500 PLF
C. UPLIFT FORCE 12 PSF GENERAL
ASSUME ROOF DIAPHRAGM LOADS AND ROOF UPLIFT LOADS TO BE APPLIED SIMULTANEOUSLY.
- RD-4 ROOF DECK AND ITS ANCHORAGE TO SUPPORTING MEMBERS SHALL MEET THE FOLLOWING MINIMUM FASTENING REQUIREMENTS:
A. AT ENDS OF UNITS AND AT ALL INTERMEDIATE SUPPORTS; BY PUDDLE WELDS NOT LESS THAN 3/4 INCH DIAMETER SPACED NOT MORE THAN 12 INCHES ON CENTER MAX.
B. SIDE LAPS OF ADJACENT UNITS; SHALL BE FASTENED BY SIDE SEAM WELDING OR SIDELAP SCREWS SPACED PER MANUFACTURERS ENGINEERED CALCULATIONS WITH A MAXIMUM SPACING OF 24 INCHES ON CENTER. ARC SEAM WELDS SHALL BE A MINIMUM OF 1-1/2 INCH BY 1/2 INCH.
- RD-5 HANG NO LOAD DIRECTLY FROM STEEL ROOF DECK WITHOUT THE PRIOR APPROVAL OF THE DECK SUPPLIER AND REVIEW BY THE SER.
- RD-6 DECKING CONTRACTOR SHALL COORDINATE DECK OPENING SIZES AND LOCATIONS FROM ARCHITECTURAL AND MEP CONTRACT DOCUMENTS, PROVIDE HEADER MEMBERS OR REINFORCEMENT AS REQUIRED BY TYPICAL DETAILS EVEN IF NOT SHOWN ON THE PLANS, AND SUBMIT PROPOSED OPENINGS THROUGH SLAB/DECK FOR REVIEW BY THE DESIGN PROFESSIONALS.

AC ARCHITECTURAL CLADDING/EXTERIOR CLADDING SYSTEMS

- AC-1 REFER TO LOADS IMPOSE D DIAGRAMS ON S0.0.4 FOR ASSUMED DESIGN LOADS AND CONNECTIONS OF ARCHITECTURAL CLADDING TO BASE BUILDING STRUCTURE. PROVIDE DESIGNS THAT MEET INDICATED CRITERIA AND CONFORM TO LISTED CODES AND STANDARDS. REFER TO SUBMITTALS SECTION IN THESE GENERAL NOTES AND PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

PA POST-INSTALLED ANCHORS

- PA-1 EPOXY-ANCHORED REINFORCING BAR SYSTEMS:
HIT RE 500 EPOXY ADHESIVE ANCHOR HILTI, TULSA, OK
HIT RE 500-SD EPOXY ADHESIVE ANCHOR HILTI, TULSA, OK (FOR CRACKED CONCRETE)
OVERHEAD AND/OR CONSTANT TENSION EPOXY ANCHOR INSTALLATIONS NOT SHOWN ON THE DRAWINGS SHALL NOT BE PERMITTED UNLESS EACH CONDITION IS REVIEWED AND APPROVED IN WRITING BY THE SER.
- PA-2 ALTERNATIVE SYSTEM EQUIVALENT TO OR EXCEEDING THE PROPERTIES OF THE SYSTEM ABOVE WILL BE CONSIDERED.
- PA-3 FIELD DRILLED EXPANSION ANCHOR SYSTEMS:
KWIK BOLT 3 HILTI, TULSA, OK
KWIK TZ FOR CRACKED CONCRETE HILTI, TULSA, OK (FOR CRACKED CONCRETE)
- PA-4 ALTERNATIVE SYSTEM EQUIVALENT TO OR EXCEEDING THE PROPERTIES OF THE SYSTEM ABOVE WILL BE CONSIDERED.
- PA-5 ANCHORS ARE TO BE MINIMUM 3/4" DIAMETER WITH A MINIMUM EMBEDMENT OF 4.5". UON.
- PA-6 INSTALL ANCHORS TO MEET THE REQUIREMENTS INDICATED IN THE CONTRACT DOCUMENTS AND THE MANUFACTURER'S RECOMMENDATIONS.
- PA-7 LOCATE, BY NON-DESTRUCTIVE MEANS, AND AVOID ALL EXISTING REINFORCEMENT PRIOR TO INSTALLATION OF ANCHORS. IF EXISTING REINFORCING LAYOUT PROHIBITS THE INSTALLATION OF ANCHORS AS INDICATED IN THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONALS IMMEDIATELY.
- PA-8 INSTALL MASONRY ANCHORS IN SOLID MASONRY OR IN HOLLOW MASONRY THAT HAS BEEN GROUTED SOLID AT LEAST ONE COURSE ABOVE AND ONE COURSE BELOW THE ANCHOR, UON.

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
ADDL	ADDITIONAL	OH	OPPOSITE HAND
ADJ	ADJACENT	OPNG(S)	OPENING(S)
ALT	ALTERNATE	OPP	OPPOSITE
APPRX	APPROXIMATE	OSL	OUTSTANDING LEG
ARCH	ARCHITECT OR ARCHITECTURAL	P/T	POST-TENSIONED
B/	BOTTOM OF	PC	PIECE
B/B	BACK TO BACK	PCY	POUNDS PER CUBIC YARD
BLDG	BUILDING	PERP	PERPENDICULAR
BLK	BLOCK	PG	PLATE GIRDER
BLKG	BLOCKING	PL	PLATE
BM	BEAM	PRC	PRECAST
BOT	BOTTOM	PRLL	PARALLEL
BRDG	BRIDGING	PSF	POUNDS PER SQUARE FOOT
BRG	BEARING	PSI	POUNDS PER SQUARE INCH
BTWN	BETWEEN	PT	POINT
C	COMPRESSION	RAD	RADIUS
C/C	CENTER TO CENTER	REF	REFERENCE
CIP	CAST-IN PLACE	REINF	REINFORCED(D) (ING) OR (MENT)
CL	CENTER LINE	REQD	REQUIRED
CLR	CLEAR OR CLEARANCE	SCHED	SCHEDULE(D)
CMU	CONCRETE MASONRY UNIT	SDL	SUPERIMPOSED DEAD LOAD
COL	COLUMN	SECT	SECTION
COMP	COMPRESSION	SER	STRUCTURAL ENGINEER OF RECORD
CONC	CONCRETE	SF	SQUARE FOOT (FEET)
CONN	CONNECTION(S)	SHT	SHEET
CONST	CONSTRUCTION	SIM	SIMILAR
CONT	CONTINUOUS	SOG	SLAB ON GRADE
db	REINFORCING BAR DIAMETER	SP	SPACE
DBL	DOUBLE	SPEC(S)	SPECIFICATION(S)
DEG	DEGREE(S)	STD	STANDARD
DET	DETAIL	STL	STEEL
DIA	DIAMETER	STR	STRUCTURE
DIAG	DIAGONAL	STRCTL	STRUCTURAL
DIM(S)	DIMENSION(S)	SYM	SYMMETRICAL
DL	DEAD LOAD	T	TENSION
DWG(S)	DRAWING(S)	T&B	TOP AND BOTTOM
DWL	DOWEL(S)	T/	TOP OF
(E)	EXISTING	TEMP	TEMPERATURE OR TEMPORARY
EA	EACH	TEN	TENSION
ECC	ECCENTRICITY	THK	THICK OR THICKNESS
EF	EACH FACE	TYP	TYPICAL
EL	ELEVATION	UON	UNLESS OTHERWISE NOTED
ELEC	ELECTRICAL	V	SHEAR
ENGR	ENGINEER	VERT	VERTICAL
EOD	EDGE OF ROOF DECK	VIF	VERIFY IN FIELD
EOS	EDGE OF SLAB	W/	WITH
EQ	EQUAL	WO	WITHOUT
EQUIP	EQUIPMENT	WD	WOOD
EQW	EACH WAY	WP	WORK POINT
EXP	EXPANSION	WPFG	WATERPROOFING
EXT	EXTERIOR	WS	WATERSTOP
FF	FACE TO FACE	WWR	WELDED WIRE REINFORCEMENT
FIN	FINISH(ED)		
FLR	FLOOR		
FND	FOUNDATION		
FP	FIREPROOF(ING)		
FS	FAR SIDE		
FTG	FOOTING		
GA	GAGE, GAUGE		
GALV	GALVANIZED		
GB	GRADE BEAM		
GEN	GENERAL		
GR	GRADE		
HK	HOOK		
HORIZ	HORIZONTAL		
HP	HIGH POINT		
HT	HEIGHT		
ID	INSIDE DIAMETER		
IF	INSIDE FACE		
INFO	INFORMATION		
INT	INTERIOR		
INTRM	INTERMEDIATE		
JST(S)	JOIST(S)		
JT	JOINT		
K	KIPS (1,000 POUNDS)		
KLF	KIP PER LINEAR FOOT		
KSF	KIP PER SQUARE FOOT		
LL	LIVE LOAD		
LLH	LONG LEG HORIZONTAL		
LLV	LONG LEG VERTICAL		
LONG	LONGITUDINAL		
LP	LOW POINT		
LW	LIGHTWEIGHT		
LWC	LIGHTWEIGHT CONCRETE		
M	MOMENT		
MATL	MATERIAL		
MAX	MAXIMUM		
MC	MOMENT CONNECTION(S)		
MECH	MECHANICAL		
MEP	MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION		
MEZZ	MEZZANINE		
MFR	MANUFACTURER		
MID	MIDDLE		
MIN	MINIMUM		
MISC	MISCELLANEOUS		
NIC	NOT IN CONTRACT		
NO	NUMBER		
NOM	NOMINAL		
NS	NEAR SIDE		
NTS	NOT TO SCALE		
NW	NORMAL WEIGHT		
NWC	NORMAL WEIGHT CONCRETE		
OC	ON CENTER		
OD	OUTSIDE DIAMETER		
OF	OUTSIDE FACE		

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SEALS AND SIGNATURES



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