

**LIGHT GAUGE METAL STUD FRAMING:**

- STANDARD CONNECTORS ARE AS FOLLOWS (U.N.O.):  
METAL STUD TO METAL STUD: #8-18 SELF-TAPPING METAL SCREW  
METAL STUD TO CONCRETE: 0.177" DIA. PAF W/ 3/4" EMBED.  
METAL STUD TO STRUCTURAL STEEL: 0.177" DIA. PAF W/ 3/16" EMBED.
- TYPICAL CONNECTIONS ARE AS FOLLOWS (UNLESS NOTED OTHERWISE):  
METAL STUD TRACKS: FASTENERS AT THE METAL STUD SPACING  
METAL STUD TO METAL STUD (FACE TO FACE): FOUR FASTENERS MIN.  
METAL STUD TO METAL STUD (FACE TO SIDE): TWO FASTENERS MINIMUM  
METAL STUD TO CONCRETE: TWO FASTENERS MINIMUM @ 6" O.C.  
METAL STUD TO STRUCTURAL STEEL: TWO FASTENERS MINIMUM
- THE CONTRACTOR SHALL TAKE CARE NOT TO OVER-TIGHTEN THE SCREWS. IF SCREWS ARE STRIPPED OUT DURING INSTALLATION, NEW SCREWS SHOULD BE INSTALLED WITH THE ADEQUATE EDGE DISTANCES ALLOWED BY THE STEEL STUD MANUFACTURERS ASSOCIATION, THE METAL STUD MANUFACTURER, AND FASTENER MANUFACTURER. IF ADDITIONAL CONNECTION IS NOT POSSIBLE, CONTACT THE ENGINEER.
- LIGHT GAUGE STEEL TRACKS SHOULD MATCH THE GAUGE OF THE CONNECTING METAL STUD OR BE 43 MIL. MINIMUM. METAL STUDS SHOULD BE CONNECTED TO THE TRACK AT EACH SIDE EXCEPT WHERE A SLIP CONNECTION IS USED. SEE REFERENCING DETAIL FOR SLIP CONNECTION CONDITIONS.
- FABRICATION AND ERECTION SHALL CONFORM TO "SPECIFICATIONS FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS" BY AISI, LATEST EDITION.
- ALL METAL STUDS SHALL HAVE A MINIMUM YIELD STRENGTH OF 33,000 PSI.
- ALL MATERIAL AND ACCESSORIES SHALL BE GALVANIZED MEETING THE G-60 CRITERIA IN ASTM A 653, LATEST EDITION.
- ALL SCREWS AND PINS SHOULD BE NON-CORROSIVE. NO FASTENERS SHOULD BE STAINLESS STEEL OR COPPER-COATED.
- STRUCTURE IS ONLY STABLE IN ITS COMPLETED FORM. CONTRACTOR SHALL EMPLOY ADEQUATE TEMPORARY BRACING AND SHORING UNTIL THE FRAMING IS COMPLETE.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS AND FIELD CONDITIONS. IF THERE ARE ANY DISCREPANCIES, CONTACT THE ENGINEER.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES TO COMPLY WITH THE DRAWINGS AND NOTES.
- NO PROVISIONS HAVE BEEN MADE TO SUSPEND OR SUPPORT ANY PIPING, DUCTWORK, OR OTHER SYSTEMS NOT SHOWN IN THE DETAILS.
- BOX BEAMS SHALL BE SCREWED TOGETHER WITH A #8-18 SELF TAPPING SCREW CONNECTING EACH SIDE OF THE TRACKS TO THE CONTINUOUS METAL STUDS. THIS WILL PROVIDE FOR A MINIMUM OF FOUR FASTENERS EVERY FOOT OF BOX BEAM.
- WHERE MORE STRINGENT REQUIREMENTS ARE MADE BY A MANUFACTURER, THE STEEL STUD MANUFACTURERS ASSOCIATION, AISI, AISC, OR ACI 318, THE MORE CONSERVATIVE REQUIREMENTS WILL GOVERN.
- METAL STUD HEADERS AND SILLS SHALL BE A CONTINUOUS 54 MIL TRACK W/ L3x3x68 MIL CLIP W/ (3) -TEK SCREWS @ EACH END. A JACK STUD SHALL BE INSTALLED AT THE ENDS OF HEADERS/SILLS NEXT TO A FULL-HEIGHT STUD.
- ADDITIONAL FULL-HEIGHT STUDS SHALL BE INSTALLED NEXT TO EACH OPENING AS FOLLOWS:  
- HALF OF THE STUDS INTERRUPTED BY THE OPENING  
- TWO STUDS MINIMUM (TWO DOUBLE STUDS WHERE STUDS ARE DOUBLED)
- 1/2" GYPSUM SHEATHING AT DESIGNATED SHEAR WALLS SHALL BE ATTACHED TO THE FRAMING WITH #10 TEK SCREWS AS FOLLOWS:  
- EDGES & OPENINGS: 4" O.C.  
- INTERIOR SHEATHING EDGES: 6" O.C.  
- SHEATHING INTERIOR TO STUDS: 12" O.C.

**CONCRETE MASONRY**

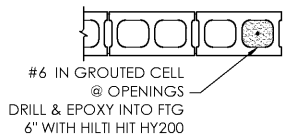
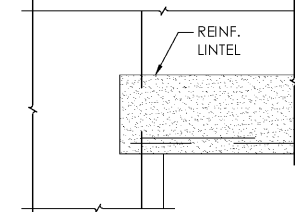
- MASONRY WALLS HAVE BEEN DESIGNED TO SPAN VERTICALLY AS SIMPLE SPANS FROM FLOOR TO FLOOR. BOTH LEVELS SUPPORTING THE WALLS SHOULD BE COMPLETE PRIOR TO THE REMOVAL OF BRACES, FORMS, ETC. BY THE CONTRACTOR. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING ALL NECESSARY BRACING, FORMS, ETC. (SEE ACI 530) AS REQUIRED FOR CONSTRUCTION LOADS, STABILITY, AND RESISTANCE TO SEISMIC, WIND, AND LATERAL EARTH PRESSURES UNTIL THE ENTIRE STRUCTURE IS COMPLETE. THESE TEMPORARY ELEMENTS SHALL NOT BE DESIGNED ASSUMING ANY MOMENT RESISTANCE FROM THE FOOTINGS.
- CONCRETE MASONRY SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF  $f_m = 1900$  PSI. CONCRETE MASONRY UNITS SHALL BE NORMAL WEIGHT BLOCK CONFORMING TO ASTM C90, GRADE N, AND SHALL HAVE A MINIMUM NET COMPRESSIVE STRENGTH OF 1900 PSI. MORTAR SHALL CONFORM TO ASTM C270, TYPE S. GROUT SHALL CONFORM TO ASTM C476 AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. THE GROUT SLUMP SHALL BE BETWEEN 8"-10".
- REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 60, UNLESS NOTED OTHERWISE.
- CONTINUOUS WIRE REINFORCING (JOINT REINFORCING) SHALL BE A GALVANIZED, TRUSS-TYPE FABRICATED UNIT WITH A SINGLE PAIR OF 9 GAUGE SIDE RODS AND CONTINUOUS 9 GAUGE DIAGONAL CROSS RODS FABRICATED FROM COLD-DRAWN STEEL WIRE COMPLYING WITH ASTM A82. JOINT REINFORCING SHALL BE PLACED AT 16" O.C. VERTICALLY IN ALL MASONRY WALLS, UNLESS NOTED OTHERWISE.
- SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF VERTICAL CONTROL JOINTS. HORIZONTAL BOND BEAM AND LINTEL REINFORCING SHALL BE CONTINUOUS ACROSS VERTICAL CONTROL JOINTS. JOINT REINFORCING SHALL BE STOPPED ON EITHER SIDE OF VERTICAL CONTROL JOINTS.
- ALL REINFORCED CELLS, ALL CELLS BELOW GRADE, AND ALL CELLS BELOW FINISHED FLOOR SHALL BE GROUTED SOLID.
- REINFORCING STEEL SHALL BE SECURED IN A CELL PRIOR TO THE PLACEMENT OF GROUT.
- SPliced REINFORCEMENT MAY BE LAPPED AT 65 BAR DIAMETERS OR 24" (WHICHEVER VALUE IS GREATER) AND BE WIRE-TIED TOGETHER PRIOR TO INSTALLATION OF GROUT.
- REINFORCING BARS SHALL HAVE A MINIMUM CLEARANCE OF 3/4" AND NOT LESS THAN ONE BAR DIAMETER MINIMUM BETWEEN BARS.
- REINFORCED MASONRY HAS BEEN DESIGNED IN ACCORDANCE WITH ACI 530/ ASCE 5/TMS 602.

**CMU LINTEL & SILL SCHEDULE**

SPAN	DEPTH	12" CMU
0'-0" TO 4'-0"	8"	(1) - #5
4'-0" TO 6'-0"	8"	(1) - #5
6'-0" TO 8'-0"	8"	(2) - #4
8'-0" TO 10'-0"	16"	(2) - #4

**NOTES:**

- PROVIDE A MINIMUM OF ONE BEARING ON EACH SIDE.
- REINFORCEMENT BEARING WITH (1) - #5 MINIMUM, OR 1/2" OF THE VERTICAL REINFORCEMENT INTERRUPTED BY THE OPENING (ROUNDED UP TO THE NEXT NUMBER OF BARS.)
- DEEP LINTELS MAY BE CONSTRUCTED OF A "U" BLOCK LOWER COURSE AND COMPRESSED WEB BLOCK IN THE UPPER COURSE.
- MINIMUM REBAR COVER SHALL BE 2.5"



**LAP SPLICE SCHEDULE CLASS SPLICE**

REBAR	3000 PSI CONCRETE	4000 PSI CONCRETE
#3	1'-10"	1'-7"
#4	2'-5"	2'-1"
#5	3'-0"	2'-7"
#6	3'-7"	3'-1"
#7	5'-3"	4'-6"
#8	6'-0"	5'-2"

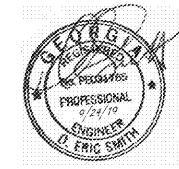
**CONCRETE MIX DESIGN SCHEDULE**

MIX LOCATION	CLASS	WEIGHT (PCF)	MIN. 28 DAY				FLY ASH PERMITTED	SLAG PERMITTED
			COMPRESSIVE STRENGTH (PSI)	SLUMP (INCHES)	PERCENT AIR	PERCENT		
SHALLOW FTGS	A	145	3000	3-5	0-3	YES	YES	
INTERIOR SOG	B	145	4000	3-5	0-3	YES	YES	

PROJECT	SCHEDULE OF SPECIAL INSPECTION SERVICES				
	MATERIAL / ACTIVITY	SERVICE	Y/N	APPLICABLE TO THIS PROJECT	
			EXTENT	AGENT	DATE COMPLETED
<b>1704.2 Inspection of Fabricators</b>	Verify fabrication/quality control procedures	In-plant review	(3)	Periodic (or AISC Cert.)	
<b>1704.3 Steel Construction</b>	Material verification of high-strength bolts, nuts, and washers	Review material markings and certificates of compliance		Periodic	
	Inspection of high-strength bolting	Field inspection		Periodic	
	a. Snug-tight joints			Periodic	
	b. Pre-tensioned and slip-critical joints			Periodic	
	1) Turn-of-nut with matching markings			Periodic	
	2) Direct tension indicator			Periodic	
	3) Twist-off nut			Periodic	
	4) Turn-of-nut without matching markings			Continuous	
	5) Calibrated wrench			Continuous	
	Material verification of structural steel:				
	a. Identification markings	Field inspection		Periodic	
	b. Certified mill tests	Review submittals		Each submittal	
	Weld filler materials	Review certificate of compliance and field verification		Periodic	
	Structural steel welding:	Shop and field inspection			
	a. Complete and partial penetration groove welds			Continuous	
	b. Multi-pass fillet welds			Continuous	
	c. Single-pass fillet welds > 5/16"			Periodic	
	d. Single-pass fillet welds ≤ 5/16"			Periodic	
	e. Flare and deck welds			Periodic	
	Reinforcing steel welding:	Shop and field inspection			
	a. Verification of weldability of steel other than ASTM A 706			Periodic	
	b. Reinforcing steel-recessing thermal and axial forces in intermediate and special moment frames, and braced frame walls, and shear reinforcement			Continuous	
	c. Shear reinforcement			Continuous	
	d. Other reinforcing steel			Periodic	
	Inspection of steel reinforcement details for compliance with approved construction documents	Field inspection		Periodic	
	e. Details such as bars, lap splicing, member locations			Periodic	
	f. Application of post-tensioning			Periodic	
<b>1704.4 Reinforced Construction</b>	Inspection of reinforcing steel	Field inspection		Periodic	
	Inspection of anchor bolts to be installed in concrete prior to and during placement of concrete where allowable loads have been increased per IBC section 1911.5 or where strength design is used	Field inspection		Continuous	
	Inspection of anchors and reinforcing steel installed in hardened concrete: verify anchor type, anchor dimensions, hole dimensions, hole cleaning procedure, anchor spacing, edge distances, concrete minimum thickness, anchor embedment and lightning torque	Field inspection		Periodic	
	Verify use of approved design mix	Field review		Periodic	
	Field concrete testing	Field testing		Continuous	
	Inspection of concrete and masonry placement for proper application techniques	Field inspection		Continuous	
	Concrete strength testing and verification of compliance with construction documents	Field testing and review of laboratory reports		Periodic	
	Inspection of formwork for shape, line, location and dimensions	Field inspection		Periodic	
<b>1704.5 Masonry Construction</b>	Verify proportions of site prepared mortar: grout and prestressing grout for bonded tendons	Field and submittal review		Periodic	
	Verify construction of mortar joints	Field inspection		Periodic	
	Verify location of reinforcement and connectors, and placement of prestressing tendons and anchorages	Field inspection		Periodic	
	Verify size and location of structural masonry elements	Field and submittal review		Periodic	
	Verify type, size, and location of anchors, including details of anchorage of masonry to structural members, frames, or other construction	Field inspection		Level 1 - Periodic	
	Verify size, grade, and type of reinforcement	Field inspection		Periodic	
	Verify welding of reinforcing bars	Field inspection		Not Allowed	
	Verify protection of masonry during hot-dry weather	Field inspection		Periodic	
	Verify grout space is clean prior to grouting	Field inspection		Level 1 - Periodic	
	Verify grout placement complies with code and construction document annotations	Field inspection		Continuous	
	Testing of grout specimens, mortar specimens, and/or prisms required by construction documents	Field testing		Periodic	
	Observe preparation of prisms required by construction documents	Field inspection		Continuous	
	Verify compliance with required testing and inspection provisions of construction documents and the approved submittals	Field testing and inspection		Periodic	
<b>1704.7 Soils</b>	Verify materials below shallow foundations are adequate to achieve the design bearing capacity	Field inspection		Periodic	
	Verify excavations are extended to proper depth and have reached proper material	Field inspection		Periodic	
	Perform classification and testing of controlled fill materials	Field inspection		Periodic	
	Verify use of proper materials, densities, and fill thicknesses during placement and compaction of controlled fill	Field inspection		Continuous	
	Prior to placement of controlled fill, observe subgrade and verify that site has been prepared properly	Field inspection		Periodic	
<b>METAL STUD INSPECTION</b>					
1. SIZE AND MATERIAL STRENGTH	Field inspection	Y			
2. FASTENER AND SHEATHING CONNECTIONS	Field inspection	Y			

**CROSSFIELDS**  
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**REVISIONS:**

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CHECKED BY: DES  
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SHEET NO: S-0.2

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