

GENERAL NOTES

SECTION 5 - STRUCTURAL STEEL

SECTION 5.1 - STRUCTURAL FRAME

5.1.1 Structural Steel Properties:

High Strength Steel	ASTM A992 Grade 50
Use High Strength Steel for W Shapes and WT's, u.n.o.	
Structural Steel (Normal Strength)	ASTM A36
Use for Angles, Channels, and Plates, u.n.o.	
Steel Pipes	ASTM A53, Grade B
Hollow Structural Sections (HSS)	ASTM A500, Grade B
Erection Bolts	ASTM A307
High Strength Bolts	ASTM A325N
Anchor Bolts	ASTM F1554 Grade 55

5.1.2 Continuity Plates (Full Depth column stiffeners aligned with beam flanges, or Full Depth beam stiffeners aligned with column flanges) shall match the steel grade of the base member.

WELDING

5.1.3 Unless otherwise noted, angles, plates, rods, and miscellaneous framing shall be welded at contact joints and supports. Weld sizes shall conform to AWS D1.1 minimums, except where noted otherwise.

5.1.4 Where fillet weld sizes are not indicated on weld symbols, fillet size shall be 1/16th inch smaller than thickness of thinner of materials being joined.

5.1.5 Complete penetrations are indicated by notation "CP" on weld symbols, partial penetration by "PP".

STRUCTURAL BOLTS

5.1.6 Bolts indicated on details shall be 3/4 inch diameter, unless noted otherwise.

5.1.7 Bolts shall be tightened by the AISC "Snug Tight" method unless noted otherwise.

MISCELLANEOUS

5.1.8 Edge angles supporting floor or roof deck shall be spliced only over supports.

DBAs AND HSAs

5.1.9 Weld deformed bar anchors and headed stud anchors by full-fusion process. Weld in accordance with manufacturer's recommendations regarding equipment, conditions of material, and temperature. Weld in accordance with AISC Specifications and with AWS D1.1 and D1.4. Permit only AWS certified welders to perform welds.

SECTION 5.4 - METAL ROOF DECK

5.4.1 Metal Deck Schedule:

SDI	Deck	Sheet	Min.	Min.	Min.		
Deck	Deck	Depth	Width	Ix	Sx(top)	Sx(bot)	
Gauge	Type	(In.)	(In.)	(In.4)	(In.3)	(In.3)	Finish
20	WR	1.5	36	0.210	0.232	0.245	Galv.

5.4.2 Metal Deck Connection Schedule:

Inst. Mark	Supports (W/N)	Conn. @ Edges (In.)	Conn. @ Parallel Edges (In.)	Sidelap No./Span	Req'd Capacity (PLF)	Shear
I	36/7	6	4	4	545	

Notes:

1. Listed shear capacity is "Service Level" and based on a maximum support spacing of 5.5 feet on center.

5.4.3 Support and parallel edge connections shall be 5/8-inch diameter puddle welds. Sidelap connections shall be no. 10 hex head screws or 1/8" x 1.5" fillet welds.

5.4.4 W/N = sheet width/no. connections each sheet.

5.4.5 Deck connections shall be Mark I throughout.

SECTION 5.5 - ARCHITECTURALLY EXPOSED STEEL

5.5.1 Architecturally Exposed Steel is required where noted on drawings.

5.5.2 Welds ground smooth: Fabricator shall grind welds of AESS smooth. For groove welds, the weld shall be made flush to the surfaces each side and be within +1/16", -0" of plate thickness.

5.5.3 Contouring and blending of welds: Where fillet welds are indicated to be ground contoured, or blended, oversize welds as required and grind to provide a smooth transition.

5.5.4 Continuous Welds: Where welding is noted on the drawings, provide continuous welds of a uniform size and profile.

5.5.5 Minimize Weld Show Through: At locations where welding on the far side of an exposed connection occurs, grind distortion and marking of the steel to a smooth profile with adjacent material.

5.5.6 Coping and Blocking Tolerance: Maintain a uniform gap of 1/8" ± 1/32".

5.5.7 Joint Gap Tolerance: Maintain a uniform gap of 1/8" ± 1/32" at all copes and blocks.

5.5.8 Piece Marks Hidden: Fabricate such that piece marks are fully hidden in the final structure or made with such media to permit full removal after erection.

5.5.9 Surface Defects Minimized: Remove deformities and scars in edges that occur in the process of handling materials.

5.5.10 Mill Marks: Fabricator shall endeavor to deliver steel with no mill marks (stenciled, stamped, raised etc) in exposed locations. Mill marks shall be omitted by cutting of mill material to appropriate lengths where possible or orienting material where mill mark is not exposed to view.

5.5.11 Grinding of sheared edges: Fabricator shall grind all edges of sheared, punched or flame-cut steel.

5.5.12 Seal weld open ends of round and rectangular hollow structural section with 3/8" closure plates. Provide continuous, sealed welds at angle to gusset-plate connections and similar locations where AESS is exposed to weather.

5.5.13 Removal of field connection aids: Run-out tabs, erection bolts and other steel members added to connections to allow for alignment, fit-up, and welding in the field shall be removed from the structure. Field groove welds shall be selected to eliminate the need for backing bars or to permit their removal after welding. Welds at run-out tabs shall be removed to match adjacent surfaces and ground smooth. Holes for erection bolts shall be plug welded and ground smooth.

5.5.14 Obtain permission for any torch cutting or field fabrication from the Architect.

5.5.15 Do not enlarge unfair holes in members by burning or by using drift pins. Ream holes that must be enlarged to admit bolts. Replace connection plates that are misaligned where holes cannot be aligned with acceptable final appearance.

SECTION 6 - DEFERRED APPROVALS

6.1 The following items require deferred approval from the enforcement agency. Use specifications for additional design services to be provided by Contractor.

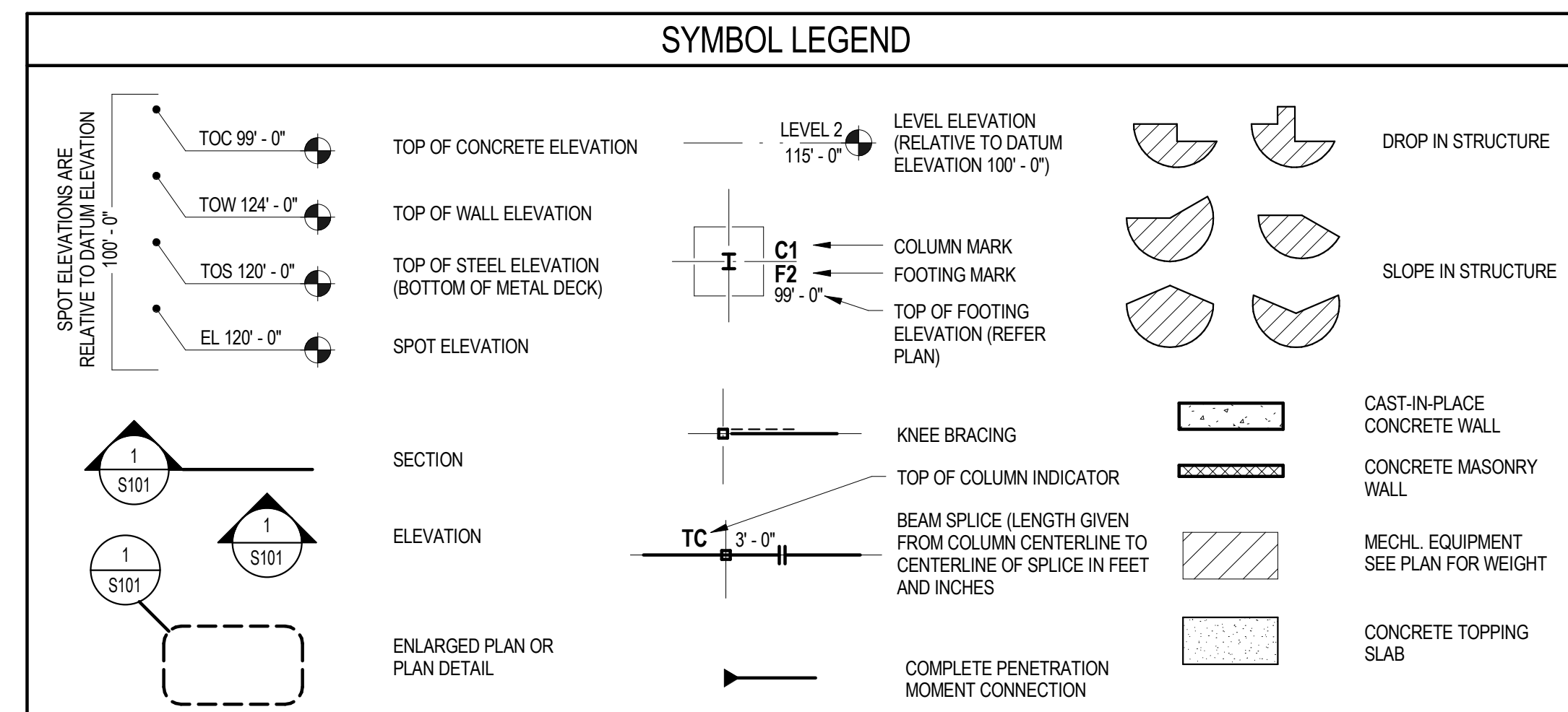
- Cold formed metal framing, exterior and interior.
- Anchorage details for roof mounted equipments
- All elements required by construction activities including shoring
- New parapet framing

6.2 The design of the above items is by the Contractor/Manufacturer. Contractor/Manufacturer must prepare all necessary calculations and drawings per the applicable Building Code under the supervision of a Structural Engineer, registered in the state in which the project is located, and obtain all necessary plan check approvals from the enforcement agency.

6.3 Fabrication and installation of the above items shall not be started until detailed plans, specifications and engineering calculations have been accepted and signed by the Architect or Structural Engineer of Record and the signature of the Architect or Professional Engineer who has been delegated responsibility covering the work shown on a particular plan or specification, and approved by the enforcement agency.

AB	Anchor Bolt	K-FT	Kip-Feet (Moment)
ADDL	Additional	LBFL	Long Leg Back-to-Back
ADJ	Adjacent	LLBB	Long Leg Horizontal
AESS	Architectural Exposed Structural Steel	LLV	Long Leg Vertical
AFF	Above Finished Floor	LSH	Long Side Horizontal
AGGR	Aggregate	LSV	Long Side Vertical
ALT	Alternate	LT	Left
ARCH	Architectural	M	Moment
BL	Building Line	MATL	Material
BL	Brick Ledge	MAX	Maximum
BLDG	Building	MECH	Mechanical
BLK	Block	MEP	Mech/Elec/Plumbing
BM	Beam	MFR	Manufacturer
BOT, B	Bottom	MIN	Minimum
BRG	Bearing	MK	Mark
BTWN	Between	MTL	Metal
C	Channel	NIC	Not in Contract
CFMF	Cold-Formed Metal Framing	NO	Number
CGS	Center of Gravity of Steel	NS	Near Side
CIP	Cast-in-Place	NSG	Non-Shrink Grout
CJ	Construction Joint	NTS	Not to Scale
CL	Center Line	OC	On Center
CMU	Concrete Masonry	OF	Outside Face
COL	Column	OP HD	Opposite Hand
COMP	Compression	OPNG	Opening
CONC	Concrete	P	Pan (form)
CONN	Connect(on)	P-T	Post-Tensioning
CONSTR	Construction	PCC	Precast Concrete
CONT	Continuous	PEN	Penetration
COORD	Coordinate	PI	Plasticity Index
CTR	Center	PIL	Pilaster
CW	Curtain Wall	PL	Plate
db	Bar Diameter(s)	PNL	Panel
DBA	Deformed Bar Anchor	PSF	Pounds Per Square Foot
DEG	Degree(s)	PSI	Pounds Per Square Inch
DET	Detail	PT	Point
DIA or Ø	Diameter	R	Radius
DIM	Dimension	RECT	Rectangle(ular)
DIST	Distance	REF	Refer (to)
DWG	Drawing	REINF	Reinforcing
DWL	Dowel	REQD	Required
EA	Each	RT	Right
EF	Each Face	SC	Schedule
EJ	Expansion Joint	SECT	Section
EL	Elevation	SHT	Sheet
ELEV	Elevator	SIM	Similar
ENGR	Engineer	SOG	Slab-on-Grade
EQ	Equal	SPA	Space(ing)
EW	Each Way	SPEC	Specifications
EXP BT	Expansion Bolt	SQ	Square
EXST	Existing	ST	Stimul(s)
EXT	Exterior	STD	Standard
F	Force (Axial)	STIF	Stiffener
FABR	Fabricator	STL	Steel
FDTN	Foundation	STRUCT	Structure(al)
FIN	Finish	SUPPT	Support
FIN FLR, FF	Finish Floor	SYMM	Symmetrical
FLR	Floor	T	Tension
FS	Far Side	T&B	Top and Bottom
FV	Field Verify	TEMP	Temperature
GC	General Contractor	TOC	Top of Concrete
GN	General Notes	TOF	Top of Footing
GR	Grade	TOJ	Top of Joist
GR BM	Grade Beam	TOP	Top of Pier
HCRIZ, H	Horizontal	TOS	Top of Steel
HSA	Headed Stud Anchor	TOW	Top of Wall
HSS	Hollow Structural Section	TR-AA	Treaded Rod - Adhesive Anchor
HST	Height	TYP	Typical
IF	Inside Face	ULT	Ultimate (force)
INFO	Information	UNO	Unless Noted Otherwise
INT	Interior	V	Shear
INTERM	Intermediate	VERT, V	Vertical
JST	Joist	WD	Wood
JT	Joint	WP	Working or Work Point
K	Kip (1,000 pounds)		

STANDARD ABBREVIATIONS



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REVISIONS

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GENERAL NOTES

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