



Structural Plan Review Commercial Checklist

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This checklist is provided as a reference tool and is not intended to be exhaustive of all possible structural requirements. It may also include more items than a specific set of structural plans may encompass.

Referenced Codes:

- 2015 International Building Code (IBC)
- ASCE 7-10
- ACI 318-14
- ACI 530-13
- AISC 360-10

**Code section references are IBC unless noted otherwise*

	Code Requirements	Code Section
	A. Documentation	
1.	Complete City of Austin Statement of Special Inspections form.	1705
2.	Geotechnical report (Exception: presumptive load-bearing values, from IBC Table 1806.2, may be substituted for applicable projects and must be clearly identified in drawings)	1830.6
3.	Complete City of Austin Deferred Submittal form.	N/A
4.	Engineer licensed in the State of Texas shall prepare the plans when required by State law or when requested by the City Building Official.	N/A
	B. General	
5.	The design loads and other information pertinent to the structural design required by section 1603 shall be indicated on the construction documents. Please include the following items in the structural general notes: <ul style="list-style-type: none"> a. Risk category b. Dead loads with partition load assumptions c. Floor live loads, including live load reductions d. Roof live load e. Roof snow load, P_g f. Wind design data per Section 1609 <ul style="list-style-type: none"> i. Wind speed, V_{ult} ii. Exposure category iii. Internal pressure coefficient iv. Design wind pressures for exterior component and cladding materials g. Seismic design data per Section 1613 <ul style="list-style-type: none"> i. Seismic importance factor, I_e ii. Mapped spectral response acceleration parameters, S_s and S_1 iii. Site class iv. Design spectral response acceleration parameters, S_{DS} and S_{D1} 	1603

	Code Requirements	Code Section
	<ul style="list-style-type: none"> v. Seismic design category vi. Basic seismic-force resisting system(s) vii. Design base shear(s) viii. Seismic response coefficient(s), C_s ix. Response modification coefficient(s), R x. Analysis procedure used h. Geotechnical Information <ul style="list-style-type: none"> i. Design load bearing value of soils ii. Design assumptions at below grade walls i. Flood design data per Section 1612 j. Special loads per Section 1603.1.8 	
6.	Structural drawings must be sealed by a structural or civil engineer registered in the State of Texas.	
7.	Provide construction documents as required by Section 107.1.	107.1
8.	List material and design codes used in the construction documents	Chapter 35
9.	Plans and details for elements of the structure designed by others shall be reviewed and approved by the Engineer or Architect of record prior to submitting to the City for review and approval. Include list of deferred submittal items.	107.3.4.1
10.	Provide compacted fill specifications, as outlined in Section 1803.5.8.	1803.5.8
11.	The minimum uniformly distributed live loads and concentrated live loads shall be consistent with Table 1607.1.	1607.3
12.	The concentrated load given in Table 1607.1 shall be assumed to be uniformly distributed over an area 2.5 square feet on floor and other similar surfaces and shall be located to produce the maximum load effects in the structural members.	1607.4
13.	Design Dead Loads with partition load assumptions	1606
14.	Partition load not less than 15 psf (pounds per square foot) shall be included as live load in office buildings and in other buildings where partition locations are subjected to change whether or not partitions are shown on the construction documents, unless the specified live load exceeds 80 psf.	1607.5
15.	Provide roof plans with mechanical units shown and included in design.	1607.12
16.	Design and detail parapets.	
17.	Verify that ponding has been accounted for and included in design.	ASCE 7-10 Section 8.4
18.	Handrail assemblies and guards shall be designed to resist a uniform load of 50 psf applied in any direction at the top and to transfer this load through the supports to the structure. Handrail assemblies and guards shall be able to resist a single concentrated load of 200 pounds applied in any direction at any point along the top and have attachment devices and supporting structure to transfer this loading to appropriate structural elements of the building. The concentrated load need not be assumed to act concurrently with the uniform load.	1607.8
19.	Interior walls and partitions that exceed 6 feet in height, including their finish materials, shall have adequate strength to resist the loads to which they are subjected, but not less than a horizontal load of 5 psf.	1607.8
20.	The deflections of structural members shall not exceed the more restrictive of the limitations of the material chapters and Table 1604.3.	1604.3.1
21.	Indicate requirement for structural observation on the drawings.	1704.6
22.	Provide shrinkage specifications for wood framing that supports more than two floors and a roof.	2304.3.3
23.	Buildings, structures and parts thereof shall be designed to withstand the minimum wind loads. Wind loads shall be determined in accordance with chapter 26 to 30 ASCE 7 or provisions of the alternate all-heights method in Section 1609.6.	1609.1

	Code Requirements	Code Section
24.	Every structure and portion thereof, including nonstructural components that are permanently attached to structures and their supports and attachments, shall be designed and constructed to resist the effects of earthquake motion in accordance with ASCE 7.	1613.1
25.	For each structure with a combination of different basic-seismic-force-resisting systems located along the same orthogonal axis, the response modification coefficient(R) used for design shall not be greater than the least value of R for any system utilized in that same direction, except for the vertical combination allowance per ASCE/SEI 7-10 section 12.2.3.1.	1603.1.5 ASCE 7-10 Sections 12.1.1 and 12.2.3
26.	The effective seismic weight of a structure shall include the total dead load, 25% of the floor live load in storage areas, the actual partition weight or a minimum of 10 psf of floor area, whichever is greater when provision for partitions is required by ASCE 7 sec. 4.3.2 and total operating weight of permanent equipment per ASCE 7 sec. 12.7.2.	ASCE 7-10 12.7.2
27.	The basic lateral and vertical seismic force-resisting system shall conform to one of the types as indicated in ASCE 7 Table 12.2-1. The structural system used shall be in accordance with the seismic design category and height limitations indicated in ASCE 7 Table 12.2-1. The appropriate response modification coefficient, R, system over-strength factor, ω , and deflection amplification factor, Cd, indicated in ASCE 7 Table 12.2-1 shall be used in determining the base shear, element design forces and design story drift.	ASCE 7 Section 12.2
28.	All structures shall be separated from adjoining structures. Separation shall allow for the maximum inelastic response displacement. Adjacent buildings on the same property shall be separated by at least a distance specified in 12.12.3 of ASCE 7	ASCE 7-10 Section 12.12.3
29.	The design story drift shall be determined per ASCE 7 sections 12.12 and shall not exceed the allowable story drift as obtained from Table 12.12-1 of ASCE 7.	ASCE 7 Section 12.12
30.	Indicate type of shear walls and their minimum length on plans.	
31.	Indicate the type/size and locations of hold-down on plans.	
32.	When using alternative basic load combinations in allowable stress design that includes wind or seismic loads, allowable stresses are permitted to be increased or load combinations reduced where permitted by the material chapter of this code or the referenced standards.	1605.3.2
33.	R, Cd, and Ω values for vertical combinations: The value of the response modification coefficient (R) used for design at any story shall not exceed the lowest value of R that is used in the same direction at any story above that story. The deflection amplification factor (Cd) and the system-over-strength factor (Ω) used for the design at any story shall not be less than the largest value of this factor that is used in the same direction at any story above that story, except for rooftop structures not exceeding two stories in height and 10% of the total structure weight, other supported structural systems with a weight equal to or less 10% of the weight of the structure, and detached one- and two-family dwellings of light-frame construction.	ASCE 7-10 Section 712.2.3.1
34.	In cases where allowable stress design is used for load combinations with over-strength factor, allowable stresses may be determined using allowable stress increase of 1.2. This increase shall not be combined with increases in allowable stresses or load combination reductions otherwise permitted by this standard or the material reference.	ASCE 7-10 Section 12.4.3.3
35.	Structural walls and their anchorage shall be designed for a force normal to the surface equal to 0.4 S_{ds} times the weight of the structural wall, with a minimum force of 10% of the weight of the structural wall.	ASCE 7-10 Section 12.11.1
36.	The anchorage of concrete or masonry structural walls to supporting construction shall provide a direct connection capable of resisting the force.	ASCE 7-10 Section 12.11.2

	Code Requirements	Code Section
37.	Any smaller portion of the structure shall be tied to the remainder of the structure with elements having a design strength capable of transmitting a seismic force of 0.133 times S_{ds} times the weight of the smaller portion or 5 percent of the portion's weight, whichever is greater.	ASCE 7-10 Section 12.1.3
38.	Provide material specifications, such as fire cover, FRTW, etc.	
39.	Specify on the plans the special inspections required for this project.	1704.2 1704.3.1 1705.1
C. Foundation		
40.	The design and construction of structural concrete elements shall meet the minimum requirements of ACI 318-14 for Structural Concrete as per the IBC.	
41.	Specify on the drawings the required sizes for all concrete structural elements, including, but not limited to, spread footings, continuous strip footings, thickened slab footings, walls, grade beams, pilasters, pedestals, deep foundations (caissons, piles and pile caps), elevated slabs, beams and columns.	1603.1 1807 1808 1809 1810 1901.2 1901.3 1905 1906 ACI 318-14
42.	Indicate the required type, size, spacing and location of all reinforcement in concrete structural elements.	1807.1.5 1808.8 1810.3.8 1810.3.9 1901.2 1901.5 1905 1908.4
43.	Specify on the structural drawings the 28-day design compressive strength (f_c) of concrete for all structural elements.	1808.8.1 1901.5 1904
44.	Indicate on the structural drawings the required material specifications for all steel reinforcement to be placed in concrete construction, including ASTM designation, and material grade or yield strength (KSI) for compliance.	1901.5 ACI 318-14 sections 20.2, 20.3, 20.4, 20.5, 20.6, 25.4, 25.5, 26.4, 26.5, 26.6
45.	Specify that the bottom of all foundations shall extend a minimum of twelve (12) inches below the top of finished grade.	1809.4 1809.5
46.	Specify on the drawings the minimum width of twelve (12) inches for all footings that resist loads. Alternatively, submit a subsurface investigation report sealed and signed by a professional geotechnical engineer licensed in the state of Texas, which documents the structural adequacy of footings less than twelve (12) inches in width.	1809.4
47.	Specify placement of a 6 mil (minimum) polyethylene moisture barrier (with joints lapped not less than 6 inches) directly beneath all interior concrete slabs on grade. Alternatively, the designer of record shall state on drawings that omission of the moisture barrier beneath the concrete slab on grade will not be detrimental to the intended use of the building.	1907

	Code Requirements	Code Section
48.	Specify on the drawings the minimum required concrete cover for reinforcement for all concrete structural elements, including, but not limited to, foundations, slabs, walls, beams and columns.	1901.5
49.	Specify on the drawings the minimum required lap splice length for each type and size of steel reinforcement in compression and tension for all concrete structural elements, including, but not limited to, foundations, slabs, walls, beams and columns.	1901.5
50.	Specify on the drawings the minimum required lap splice length for each type and size of steel reinforcement in compression and tension for all concrete structural elements. Indicate on structural drawings that the design of concrete structural elements -- including walls, formed slabs, beams, and columns -- is in accordance with ACI 318-14. Elements include, but are not limited to, foundations, slabs, walls, beams and columns.	1901.2
51.	Specified thickness of structural concrete element (including, but not limited to, footing, slab, wall and beam) does not provide the minimum required embedment depth for the proposed reinforcement beyond either construction joint or free edge of element to ensure full tensile development, in accordance with ACI 318-14 Sections 25.4 and 25.6 for adequate transfer of design forces.	1901.2
52.	For post-tensioned slabs on grade, please provide the following information for the post-tensioned slabs: <ul style="list-style-type: none"> a. Slab/beam geometry: length, width, thickness, thickened sections, dimensions of turndowns. b. Slab type per PTI c. Minimum concrete strength at 28 days and minimum concrete strength at jacking d. E_m, Y_m e. Strand specifications; strand grade and diameter, clearances, drape f. Post tensioning tendons jacking force, assumed losses, anchor set, edge distance to first strand, strand locations and dimensioned spacing requirements. g. Mild reinforcing associated with stress concentrations h. Plans shall reference the correct vital soil report information for design, including the company and its report number, allowable soil bearing capacities, depth, and any compacted fill requirements i. Strand elongation 	
D. Concrete		
53.	The design and construction of structural concrete elements shall meet the minimum requirements of ACI 318-14 for Structural Concrete as per the IBC.	
54.	Specify on the drawings the required sizes for all concrete structural elements, including, but not limited to, spread footings, continuous strip footings, thickened slab footings, walls, grade beams, pilasters, pedestals, deep foundations (caissons, piles and pile caps), elevated slabs, beams and columns.	1603.1 1901.2 1901.3 1905 1906 ACI 318-14
55.	Indicate the required type, size, spacing and location of all reinforcements in concrete structural elements.	1901.2 1901.5 1905 1908.4
56.	Specify on the structural drawings the 28-day design compressive strength (f_c) of concrete for all structural elements.	1901.5 1904
57.	Indicate on the structural drawings the required material specifications for all steel reinforcement to be placed in concrete construction including ASTM designation, and material grade or yield strength (KSI) for compliance with.	1901.5 ACI 318-14 sections 20.2,

	Code Requirements	Code Section
		20.3, 20.4, 20.5, 20.6, 25.4, 25.5, 26.4, 26.5, 26.6
58.	Specify on the drawings the minimum required concrete cover for reinforcement for all concrete structural elements, including, but not limited to, foundations, slabs, walls, beams and columns.	1901.5
59.	Specify on the drawings the minimum required lap splice length for each type and size of steel reinforcement in compression and tension for all concrete structural elements including, but not limited to, foundations, slabs, walls, beams and columns.	1901.5
60.	Specify on the drawings the minimum required lap splice length for each type and size of steel reinforcement in compression and tension for all concrete structural elements. Indicate on structural drawings that the design of concrete structural elements including walls, formed slabs, beams, and columns is in accordance with ACI 318-14. Elements include, but are not limited to, foundations, slabs, walls, beams and columns.	1901.2
61.	Walls more than 10 inches thick, except basement walls, shall have reinforcement in each direction placed in 2 layers parallel with faces of wall.	ACI 318-14 Section 11.7.2.3
62.	Indicate on structural drawings that the design of concrete structural elements -- including walls, formed slabs, beams and columns -- is in accordance with ACI 318-14 (Building Code Requirements for Structural Concrete).	1901.2
63.	Detail continuous beam tension reinforcement required for positive moment at mid-span and for negative moment at supports, including stirrups for compliance with the structural integrity requirements.	1901.2 ACI 318-14 Section 4.10.2
64.	Specified thickness of structural concrete element -- including but not limited to footing, slab, wall and beam -- does not provide the minimum required embedment depth for the proposed reinforcement, beyond either construction joint or free edge of element, to ensure full tensile development in accordance with ACI 318-14, Sections 25.4 and 25.6, for adequate transfer of design forces.	1901.2
65.	Specify on the structural drawings the type, size and spacing of anchors required for connection of steel framing components to concrete structural elements, including, but not limited to, headed bolts, headed studs, hooked (J- and L-) bolts, and expansion-type bolts.	1901.3 1901.5
66.	Specify on structural drawings the minimum required embedment depth into concrete for all anchors required for connection of steel framing components to concrete structural elements.	1901.3 1901.5
67.	For each anchor (connecting steel framing components to concrete structural elements) that is installed at a distance less than the specified anchor embedment depth from the edge, specify on structural drawings the minimum required clear distance from the edge of the concrete structural element.	1901.3 1901.5 ACI 318-14 Sections 17.7, 26.7
68.	Indicate on the structural foundation drawings the relative elevations at the top of footings and at top of slab on grade.	1901.5
69.	For pre-engineered structural building systems, indicate on the foundation plan the design reactions (gravity, uplift, lateral thrust, etc.) that have been determined by the pre-engineered building structural engineer and utilized in the design of footings/column anchorage.	1604.9

	Code Requirements	Code Section
70.	Specified footing size(s) shall provide for sufficient weight to adequately resist the applicable design uplift and overturning forces indicated on the foundation plan for each pre-engineered building structure.	1604.8.1
71.	Specify on the drawings that control joints in the floor slab on grade shall be offset from the centerline of columns, which are supported by monolithic cast slab footings.	1901.3 1901.5
72.	State on the drawings that results for all concrete compressive strength tests shall be available on the job site for review by the inspector.	ACI 318-11 Section 26.13
73.	Prior to final authorization of the building permit, submit complete fabrication drawings that address the structural requirements for construction of all types of concrete wall panels, including precast and tilt-up. Drawings shall be sealed and signed by a professional engineer registered in the State of Texas. Drawings shall indicate required steel reinforcement for the panels, steel embeds required for connections between wall panels and for anchorages between the roof/floor structure and wall panels, the minimum required 28-day concrete compressive strength, and all design loads (including gravity, wind and seismic).	1603.1 1901.5
74.	For post-tensioned elevated slab, please provide the following information for the post-tensioned slabs: <ul style="list-style-type: none"> a. Structural framing plans clearly showing the load-carrying cables b. Each post tensioned tendons capacity c. Numbers of tendons per beams and girders d. Jacking and stressing sequence of the tendons e. Tendons ending condition details of the post tensioned beams and girders typical and or each specific if it differs f. Percentage of the elongation tolerance and the allowable elongation percentages 	
75.	Provide sufficient concrete cover in floor and roof slabs to achieve necessary fire resistance.	722.2.2
76.	Provide sufficient concrete cover in columns to achieve necessary fire resistance.	722.2.4
E. Masonry		
77.	Specify on the structural drawings the required type(s) of mortars per ASTM C 270.	2103.2
78.	Specify on structural drawings conformance of masonry grout with ASTM C 476. Alternatively, specify minimum required grout compressive strength equal to f'_m (compressive strength of masonry) but not less than 2,000 psi as determined in accordance with ASTM C 1019.	2103.03 ACI 530-13 Section 1.2.1 ACI 530.1-13 Section 2.2
79.	Specify on the structural drawings the required net area compressive strength (f'_m) of masonry.	2103.1 2107.1 2108.1 ACI 530-13 Section 1.2.1 ACI 530.1-13 Section 1.4
80.	Masonry net area compressive strength (f'_m) greater than 1,500 psi (for concrete masonry) and 2,500 psi (for clay masonry) shall be verified either by prism tests conducted per ASTM C 1314 or by unit compressive strength tests performed per ASTM C 140 (for concrete masonry) and ASTM C 67 (for clay masonry). State on structural drawings that test reports that document either a minimum unit compressive strength of ___(psi) or a prism minimum compressive strength (f'_m) of ___(psi) shall be submitted to the building inspector.	1704.6 ACI 530-13 Section 1.2.1 ACI 530.1-13 Section 1.4

	Code Requirements	Code Section
	Note: For testing of prisms, at least one test shall be performed prior to construction and for each 5,000 square feet of wall surface area, but not less than one set of three test prisms for each project.	
81.	Specify on the structural drawings the required material specifications for all steel reinforcement to be placed in masonry construction, including ASTM designation, and material grade or yield strength (KSI).	2103.4 ACI 530-13 Section 1.2.1
82.	Structural backing for masonry veneer shall comply with the Span/240 deflection limit of IBC Table 1604.3. Submit engineering documentation, which substantiates compliance for all structural components to which veneer anchor ties are attached including, but not limited to, wall studs greater than 10 feet in height, structural siding, and girths subject to the applicable wind and seismic design loads.	1604.3
83.	Indicate on the structural drawings the structural construction requirements for lintels that support masonry above openings and supplement with details that indicate the applicable reinforcement and end bearing conditions.	2104.1
84.	Provide details that indicate the required anchorage of masonry walls to roof and floor structure to transfer the applicable horizontal design forces acting perpendicular and parallel to the wall.	1604.8.2 2106.1 ACI 530-13 Sections 1.2.1, 4.1.4
85.	Specify on the structural drawings the type, size and spacing of anchors required for connection of steel framing components to masonry structural elements, including, but not limited to, headed bolts, headed studs, hooked (J- and L-) bolts, and expansion-type bolts.	ACI 530-13 Section 1.2.1
86.	Specify on the structural drawings the minimum required embedment depth of all anchors into grouted masonry.	ACI 530-13 Section 1.2.1
87.	Specify on the structural drawings the required type, size, and spacing of all horizontal and vertical reinforcement in masonry walls to adequately resist the applicable gravity, wind and seismic design forces.	1603.1 ACI 530-13 Section 1.2.1
88.	Specify the minimum required lap splice length for reinforcement in masonry as determined by either Equation 21-1 of IBC Section 2107.2.1 or Section 8.1.6.7.1.1 of ACI 530-13. Note: If Equation 21-1 of IBC is used, in regions of flexure for reinforced masonry where the design tensile stress in the reinforcement exceed 80% of the allowable tensile stress, increase the required length of lap determined by Equation 21-1 by 50%.	2107.2.1 ACI 530-13 Section 8.1.6.7.1.1
89.	Specify on the structural drawings the type(s) of masonry shear walls proposed for the basic seismic-force-resisting system: ordinary reinforced, intermediate reinforced, or special reinforced.	2106.1 ACI 530-13 Section 7.3.2
90.	Ordinary reinforced masonry shear walls shall be reinforced both vertically and horizontally in accordance with the minimum requirements of ACI 530-13 section 7.3.2.3.1 For vertical wall reinforcement, specify at least one no. 4 full-height vertical rebar at all corners, within 16 inches of each side of openings, within 8 inches of each side of control and expansion joints, within 8 inches of the ends of walls, and at a maximum spacing of 10 feet. For horizontal wall reinforcement, specify either two (2) W1.7 wires at a maximum spacing of 16 inches or a continuous bond beam reinforced with at least one no. 4 rebar at a maximum spacing of 10 feet. Specify additional horizontal reinforcement at the top and bottom of wall openings, which shall extend at least 24 inches and not less than 40 bar diameters beyond the opening; continuously along connections between wall and roof/floor structure; and within 16 inches of the top of walls.	1603.1 ACI 530-13 Sections 7.3.2.3.1, 8.3, or 9.3

	Code Requirements	Code Section
91.	Provide details for the construction of each firewall, ensuring that the wall is structurally independent of all other construction so that new and/or existing construction on either side of the firewall can collapse under fire conditions without affecting the structural integrity of the wall. Each firewall shall be nonloadbearing and shall be designed to adequately resist the applicable lateral design forces, including 5 psf for interior walls, seismic for all walls, and wind for exterior walls. Specify sufficient clearance between face of firewall and adjacent steel framing on each side to accommodate thermal expansion of the steel structure without causing damage to the wall.	706 1607.14 Table 721.1(2) ASCE 7-10 Section 13.5 and Chapter 26
	F. Steel	
92.	Specify and detail on the structural drawings the required types, sizes and locations for structural framing components, including, but not limited to, beams, columns, joists, joist girders, purlins, girths and braces.	1603.1 2205.1 2207.2
93.	Specify on the drawings the required material specifications for all steel framing components and connectors, including ASTM designation, yield strength (KSI), and material grade (as applicable).	2203.1 2205.1 2210.1 2211.1
94.	Specify on the structural drawings that bolted connections shall be assembled and inspected in accordance with RCSC-2009 (Specification for Structural Joints using High-Strength Bolts).	1705.2.1 2204.2 AISC 360-10 Sections N5.4 and N5.5
95.	Specify on the structural drawings that the design of special connections between steel framing components by other than the project structural engineer of record shall be performed by a professional engineer registered in the state of Texas, including, but not limited to, brace-end connections, moment-resisting connections, modified beam seat connections, and member splice connections. Design forces and reactions for each applicable connection shall be indicated on the structural drawings.	1603.1 1604.2 1604.4 1604.10 2204 2205
96.	Specify on the drawings the required type, size and gauge of metal deck applicable to floor, roof and wall construction.	1603.1 2210
97.	Specify on the drawings the required type, size and spacing of fasteners for attachment of metal floor and roof deck to supports (including side laps). Note: Attachments shall provide adequate shear capacity and stiffness to resist the applicable lateral wind and seismic design forces.	1603.1 1604.4 2210 ASCE 7-10 Sections 12.1.1, 12.10.1, 12.14.7.4, 26.1.1
98.	Specify on the drawings the required type, size and spacing of fasteners for attachment of metal wall panels to supports (including side laps) to adequately resist the applicable design wind pressures, acting normally, to the face of wall.	1603.1 1609.1 2210 ASCE 7-10 Section 26.1.1 and Chapter 30
99.	Provide details that indicate that the bottom surfaces of bearing plates and column base plates shall be grouted to ensure full bearing contact on supports, except for plates two (2) inches or less in thickness, which bear on surfaces (such as concrete floors) constructed to specific levelness tolerances.	1603.1 2205.1

	Code Requirements	Code Section
100.	Structural details shall locate the edge of each joist and joist girder-bearing plate at a distance of ½ inch or less from the inside face of masonry or concrete support, except for the condition in which the top of plate is level with the support-bearing surface.	1603.1 2207.1 2207.2
101.	Provide a design load diagram for each open web steel joist, which supports concentrated load (in addition to the applicable uniform gravity design loads) for design input by the joist manufacturer. Diagrams shall clearly specify the magnitude and location of all design loads, including, but not limited to, uniform and concentrated loads. Alternatively, specify joists (such as KCS series), which have been designed by the manufacturer for constant moment and shear capacity along the entire span.	1603.1 1604.2 1606.2 1607.4 2207.1 2207.2
102.	Provide details for stiffening the top and/or bottom chord of the open web steel joists at all locations where the concentrated loads from the proposed mechanical equipment do not align with joist panel points.	1603.1 1604.2 1606.2 1607.4 2207.2
103.	Specify on the drawings the required size, gauge, spacing and height of light gauge steel studs for construction of exterior walls to ensure compliance with the applicable lateral deflection limits of IBC table 1604.3 under design wind conditions.	1603.1 1604.3 2211
104.	Specify on the drawings the required type, size, quantity and spacing of fasteners for connections between all light gauge steel framing components (studs, joists, rafters, runner track, framing clips, strap bracing, joist web stiffeners and horizontal bracing for loadbearing studs), including attachment to primary support structure and foundation.	1603.1 1604.3 2211
105.	Provide detail(s) to indicate the required connection of full-height light-gauge steel wall framing to floor structure to accommodate the vertical deflection due to the applicable gravity design loads. Alternatively, submit engineering calculations that document the structural adequacy of the light-gauge steel wall framing to support the applicable floor gravity design loads.	1604.4 2211
106.	Provide detail(s) to indicate the required connection at top of full-height light-gauge steel wall framing to roof structure (excluding direct interface with roof deck only) to adequately accommodate the vertical deflection due to the applicable gravity design loads. Alternatively, submit engineering calculations that document the structural adequacy of the light-gauge steel wall framing to support the applicable roof gravity design loads.	1604.4 2210
107.	Specify on the drawings that the structural backing to which masonry veneer anchor ties are attached shall resist corrosion and have a base metal thickness of at least 0.043 inch (18 gauge minimum).	1405.6
108.	Identify on the structural plans all light-gauge cold-formed steel frame shear walls that have been designed to resist the applicable lateral wind and seismic forces as specified by IBC sections 1609 thru 1613. Specify on the plans the shear wall construction requirements, including the size, gauge and spacing of wall studs, the proposed wall sheathing material (wood structural panel, gypsum board panel, sheet steel), and the required attachment pattern for compliance with the requirements of AISI S213-07/S1-09 for the appropriate shear wall type.	1603.1 1604.4 1604.9 1604.10 2211.1 2211.5 2505.2
109.	Specify on the drawings that the steel material for studs and track for shear wall construction (in which steel or wood sheathing provides lateral resistance) shall comply with the requirements of ASTM A1003 and shall have a thickness of either 18 or 20 gauge for Grade 33 Type H steel and a thickness of at least 16 gauge for Grade 50 Type H steel.	1603.1 2211.1 2211.5 2505.2, AISI S213-07/S1-09, Table C2.1-3

	Code Requirements	Code Section
110.	Specify required type, size, and spacing of screws for attachment of shear wall sheathing (wood structural panel, gypsum board panel, sheet steel) to light-gauge steel wall framing. Attachment shall be in accordance with AISI S213-07/S1-09.	1603.1 2211.1 2211.5 2505.2 AISI S213-07/S1-09
111.	Specify on the drawings the required blocking, along all unsupported edges of shear wall sheathing panels (wood structural panel, gypsum board panel, sheet steel) attached to light gauge steel studs.	1603.1 2211.1 2211.5 2505.2 AISI S213-07/S1-09
112.	Specify on the drawings the hold-down anchorage hardware at the ends of each shear wall for conditions in which the overturning moment, due to either design wind pressures or seismic design forces, exceeds the dead load stabilizing moment.	1604.4, 1604.9 2211.1 2211.5 ASCE 7-10 Sections 12.8.5, 12.14.8.4, AISI S213-07/S1-09
113.	Provide details that indicate the required connection of each exterior awning or canopy to the supporting structure to adequately resist the applicable design live and wind loads.	1603.1 1604.2 1607.12.2.1 1607.12.4 3105.3
G. Wood		
114.	The design of structural elements or systems, constructed partially or wholly of wood-based products, shall be in accordance with one of the methods detailed in Section 2301.2.	N/A
115.	Specify on the drawings that wood which is either embedded in earth or concrete, placed on concrete in direct contact with earth, or directly exposed to the weather shall be preservative-treated. This includes, but is not limited to, posts, beams, columns, joists, sleepers, sills and sole plates.	2304.12.1.4 2304.12.2.2 2304.12.2.3 2304.12.3
116.	Specify on the structural drawings that pre-engineered trusses shall be designed by a professional engineer registered in the State of Texas.	2301.2 2303.4.1
117.	Specify on the structural drawings the applicable design load criteria for both top and bottom chords of pre-engineered floor and roof trusses, including, but not limited to, dead, live and wind loads.	1603.1.1 1603.1.2 1603.1.8 1604.2 1606, 1607 1609, 2303.4.1
118.	State on the structural drawings that "all pre-engineered truss shop drawings shall be available on the job site during the times of inspection and shall bear clear indication that they have been reviewed and approved by the project structural engineer-of-record."	1603.1
119.	Provide wall framing information and details.	N/A
120.	Provide floor framing layout and sizes.	N/A
121.	Provide wall sheathing schedules.	N/A
122.	Provide roof framing layout and sizes.	N/A

	Code Requirements	Code Section
123.	Provide and detail drag elements at re-entrant corners and flexible diaphragms designed.	N/A
124.	Provide shear load transfer details (truss blocking, drag trusses, etc.).	N/A
125.	Indicate on structural drawings for wood buildings the required material specifications for all framing components, including, but not limited to, design stress values for glued laminated timber in accordance with AITC 117-10 (Standard Specifications for Structural Glued Laminated Timber of Softwood Species).	2301.2 2303.1 2306.1 2307.1
126.	Provide details demonstrating how the floor assembly meets the fire-resistance rating requirements of Section 711.2.4.3.	711.2.4.3
127.	Provide wood shrinkage specifications for wood framing that supports more than two floors and a roof in accordance with 2015 IBC Section 2304.3.3.	2304.3.3
128.	Type III construction: Provide details showing how the continuity of 2-hour wall rating for exterior load bearing walls is maintained.	602.3 Table 601