



STRUCTURAL DRAWINGS

Sealed by either a professional structural or civil engineer registered in the State of Arizona.

1. IBC 1603 General Structural Notes

- Design Dead Loads.
- Design Live Loads.
- IBC 106.1 and 1607.7.5 Live loads posted. – Storage – light and heavy, Parking Garages 1607.7.5
- Wind Design Data-1603.1.4, ASCE 7-10, Chapter 6 (wind exposure category- type B, parapets, components and cladding).
- IBC 1604.5 – Risk Category.
- Seismic Design Data – 1603.1.5
- Special Loads (if applicable) that are specified by the code.
- IBC 107.3.4.1 Identify all Deferred Submittal Items such as joists, trusses, alternate stairs.
- IBC 1705 Identify all Special Inspection and Structural Observation requirements.
- Material Specifications (fire cover for concrete if applies, fire treated wood if applies, etc.)
- IBC 2304.3.3 Shrinkage specs for wood framing over 3 stories.
- Geotechnical Information, i.e. Soils Class, Allowable Bearing Pressure, Reference to Geotechnical.
- Investigation Report or IBC Table 1806.2, other information pertaining to the design.

2. Foundation Plan

- Indicate shear wall and hold down locations.
- Include separate sheets for “mirrored” plans.
- Footing bearing or top of footing elevations.
- Anchor size and placements.
- PT slabs stamped per IBC 1907.2. Note: This is a PHX amendment.
- Plaza decks adjacent to high-rise buildings designed per IBC 1607.6 **IF REQUIRED.**

3. Floor Framing Plan

- Indicate shear wall and hold down locations.
- Include separate sheets for “mirrored” plans.
- Framing floor layout and sizes.
- Section and detail cuts.
- Stairs and railings when required.

4. Roof Framing Plan

- Framing roof layout and sizes- include loading and reactions for deferred elements per 107.3.4.2.
- Section and detail cuts.
- Mechanical loads shown and designed for per IBC 1607.12.
- Roof slopes match architectural plans – ponding design per IBC 1611.2.
- Drag elements at re-entrant corners and flexible diaphragms designed per ASCE 7-10.
- Parapets are designed and detailed per ASCE 7-10.

5. Wall Framing Information and Details

6. Structural Details

- General structural details, connection details and all cut structural details called out from structural.
- Foundation / framing plans.

7. Calculations

- One copy of Structural calculations that includes vertical and lateral structural analysis and sealed by the professional structural engineer of record.
- Computer Calculations shall include design input load summary, output summary and explicit cross references to supplemental calculations as well as the plans.
- Sketched detailed layout of Lateral Force Resistance System members.
- Hand calculations to validate design input loads, output data, connection details, etc. (such as stair and railings).

8. Geotechnical Investigation Report

- Provide one copy of soil report sealed by the professional geotechnical engineer of record or include site soil classification & allowable bearing and cite the source.

9. Prefabricated Metal Building

- Provide separate manufacturer's construction drawings and calculations that are sealed by the professional structural engineer of record for the prefabricated metal building.

10. Post-Tension Slab-on-Ground Plans

- Slab/beam geometry: length, width, thickness, overlapping regions based on simplified analysis for complex geometries, thickened sections if used, dimensions of turndowns.
- Slab type per PTI guide- type I, II, III, or IV.
- Minimum concrete strength at 28 days and minimum concrete strength at jacking.
- E_m , Y_m , coefficient of subgrade friction, soil subgrade modulus.
- Strand specifications; strand grade and diameter, clearances, drape if used.
- Post tendons' jacking force, assumed losses, anchor set, edge distance to first strand, edge moisture variation. Plans shall graphically show all locations of strand tendons with dimensioned spacing requirements.
- Mild reinforcing associated with stress concentrations (re-entrant corners, etc.)
- Provide the following loading data in Post-Tension Slab-on-Ground calculation: concentrated loads from framing elements; posts and columns, fire places, heavy equipment, etc, and perimeter line loading.
- Plans shall reference the correct vital soil report information for design: the company and their report number, allowable soil bearing capacities and at what depth and any compacted fill requirements in addition to items noted above. All calculations shall be based and coordinated with this soil report.
- Strand elongation.
- Post tension hardware supplier assumptions; i.e., proprietary data from supplier used in analysis assumptions.

11. Remodels and Alterations

- Provide structural evaluation/calculations addressing code compliance.

12. Special Inspections

- One copy of Special Structural Inspection Certificate and Special Geotechnical Inspection Certificate if applicable.

13. Overlapping information with architectural details

- 705 – Fire walls – Structural independence.
- 707 – Shaft walls – 707.7.1 no structural penetrations.
- 704.2, 704.3 – Individual protection of structural members
- 721 – Prescriptive and calculated fire resistance