

## STRUCTURAL NOTES

THE STRUCTURAL NOTES DEFINE GENERAL DESIGN AND MATERIAL REQUIREMENTS AND ARE INTENDED TO SUPPLEMENT, BUT NOT REPLACE, THE PROJECT SPECIFICATIONS

### CAST-IN-PLACE CONCRETE, CONTINUED

4. **Special Finishes:** Refer to Architectural Drawings for molds, grooves, ornaments, clips or grounds required to be encased in concrete and for location of floor finishes and slab depressions.
5. **Defect Repair:** Honey-combing, spalls, cracks, etc. shall be repaired. Extent of defective area to be determined by the Structural Engineer.
6. **Curing**
  - 6.1 **Begin** curing procedures immediately following commencement of the finishing operation.
  - 6.2 Concrete shall be moist cured in accordance with ACI 308. See Specification for additional information.

### NON-SHRINK GROUTING

1. Non-shrink grout under steel base plates shall be a packaged hydraulic cement grout and conform to ASTM C1107.
2. Mixing of grout, surface preparation of concrete substrate, placement, thermal control, and curing of grout shall conform to the manufacturer's instructions.
3. Work related to the grout under steel base plates shall conform to all requirements of ACI 351.4-14, "Specification for Installation of Cementitious Grouting between Foundations and Equipment Bases".
4. The required minimum compressive strength at 28 days is 6,000 psi.
5. Mix grout to its fluid, self-leveling consistency, and place under base plate in a flowable state.
6. Use forms to contain grout. Forms shall be set at a distance from the edge of the baseplate on all sides equal to at least the thickness of the grout bed, and no less 1.5-in.
7. Non-shrink grout used for patching, repair, and other specific applications shall be submitted for review and approval by engineer.

## CONCRETE MASONRY

1. Specified Compressive Strength,  $f'_m = 2,000$  psi  
Minimum Net Area Compressive Strength of Masonry Unit: 2,000 psi  
(ASTM C90 w/ Type M or S Mortar)
2. Mortar: walls below grade Type M  
Bearing walls Type M or S
3. Coarse Grout: 2,500 psi min. compressive strength conforming to ASTM C476.
  - 3.1 Grout solid bond beams, reinforced CMU cores, and CMU cores and wall cavities below grade.
  - 3.2 Masonry webs on each side of grouted cells shall be fully mortared.  
Exterior single wythe CMU walls shall have head joints fully mortared.
4. Horizontal Joint Reinforcement, UNO: Two (2) No. 9 gage longitudinal wires at 16" vertically. Lap wire 6 inches minimum. Provide accessories for corners, intersections, etc. Use ladder type for walls with vertical reinforcing.
5. Provide open bottom beam block units with 3" deep minimum web openings at horizontal reinforcement locations not located over an opening. A minimum clear space of one bar diameter shall be provided between the reinforcing bars and the face of masonry units.
6. CMU has been designed assuming "running bond" placement. Do not use "stack bond" unless approved by Structural Engineer.
7. Contraction Joints: Unless noted otherwise on the Plans, maximum spacing of 1 1/2 times of wall height or 24 feet (whichever is less) in all concrete
8. Submit written construction procedures prior to the start of masonry construction.
9. Contractor shall submit drawings coordinated with masonry and MPE contractors indicating the MPE penetrations through load bearing and non-load bearing walls. These drawings shall indicate the size and location of all penetrations and shall be submitted to the Architect/Structural engineer prior to installation.

## STRUCTURAL STEEL

1. Steel Shapes
  - 1.1 Pipe Structural Sections: ASTM A53, Grade B
2. Anchor Rods and Studs
  - 2.1 Anchor Rods: ASTM F1554, Grade 36. Headed Rods or threaded rods with plate washer and heavy hex nut.
  - 2.2 Headed Studs: AWS D1.1. See Details for Diameter, Length and Spacing. Length given is in-place length after burn-off.
3. Structural steel shall be fabricated and erected according to the "Specification for Structural Steel Buildings" referenced in the referenced Building Code.
4. welders shall be qualified for the work performed in accordance with AWS D1.1. welder qualifications shall be certified by the local building authority and verified by the Contractor and the Special Inspector.
5. Architecturally Exposed Structural Steel (AESS): Conform to AISC Code of Standard Practice, Section 10. AESS shall be sandblasted (SSPC-SP6) prior to primer coat application. Primer shall be compatible with final paint coat and shall be approved by finish paint contractor. Steel deck shall be painted after installation. See Architectural Documents for paint specifications. AESS includes the following:
  - Structural steel members exposed to view

## POST-INSTALLED ANCHORS

1. Post-installed anchors shall only be installed where indicated on the structural drawings, unless approved by engineer of record.
2. The below products are the design basis for this project. Product diameter and embedment shall be as shown in the details. Install products IN ACCORDANCE

### POST-INSTALLED ANCHORS, CONTINUED

WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII). Refer to the project building code and/or evaluation report for special inspections and proof load requirements. Substitution requests for products other than those listed below may be submitted by the contractor to the Engineer-of-Record (EOR) for review. Substitutions will only be considered for products having a recognized performance rating for the appropriate application under the project building code. Substitution requests shall include calculations that demonstrate the substituted product is capable of achieving the equivalent performance values of the design basis product.

3. For Anchoring into Concrete
  - 3.1 Expansion Anchors: Hilti Kwik Bolt TZ (ICC-ES ESR-1917), Simpson Strong-Bolt 2 (ICC-ES ESR-3037), Dewart/Powers Power-Stud+ SD1 (ICC-ES ESR-2818) or Dewart/Powers Power-Stud+ SD2 (ICC-ES ESR-2502).  
Minimum Embedment = 6 times anchor diameter, UNO.
  - 3.2 Screw Anchors: Simpson Titen-HD (ICC-ES ESR-2713), Dewart Screw Bolt+ (ICC-ES ESR-3889) or Hilti Kwik HUS-EZ (ICC-ES ESR-3027).  
Minimum Embedment = 6 times anchor diameter, UNO.
4. For Anchorage into Solid Grouted Concrete Masonry
  - 4.1 Expansion Anchors: Hilti Kwik Bolt 3 (ICC-ES ESR-1385), Simpson Strong-Bolt 2 (IAPMO-UES ER-240), Simpson wedge-All (ICC-ES ESR-1396) or Dewart/Powers Power-Stud+ SD1 (ICC-ES ESR-2966).  
Minimum Embedment = 6 times anchor diameter, UNO.
  - 4.2 Screw Anchors: Simpson Titen-HD (ICC-ES ESR-1056) or Dewart Screw-Bolt+ (ICC-ES ESR-4042), Hilti Kwik HUS-EZ (ICC-ES ESR-3056).  
Minimum Embedment = 6 times anchor diameter, UNO.
5. Contractor shall arrange for an anchor manufacturer's representative to provide on-site installation training for all of their anchoring products specified. The Structural Engineer of record must receive documented confirmation that all of the contractor's personnel who install anchors are trained prior to the commencement of anchor installation.

**WOOD**

1. Structural framing plans depict the primary structural framing system. Contractor shall provide secondary and miscellaneous framing as required to complete the project (see architectural drawings).
2. Dressed Seasoned Lumber: S4S, 19% maximum moisture content at time of dressing.
  - 2.1 Lintels, Roof Joists and Beams:  
Southern Pine, No. 2 grade
  - 2.2 Wood in Contact with Concrete or Masonry or Exposed to Weather:  
Foundation grade pressure-treated.  
Use galvanized nails in pressure-treated wood.
3. Structural Panels
  - 3.1 Roof panels: APA rated sheathing (plywood or OSB).
    - 3.1.1 Panels shall have a Span Rating of 40/20 and Exposure 1.
    - 3.1.2 Panels shall be placed with the long direction perpendicular to the supports and shall be a minimum of 24-inches wide and continuous over at least 2 supports.
    - 3.1.3 Roof panels shall be both glued (exterior glue) and nailed.
    - 3.1.4 Long panel edges shall be supported with Edge Clips; one located midway between each support. There shall be a 1/8-inch gap at panel edges and ends.
    - 3.1.5 OSB panels shall be installed with the textured side up.
4. Connections for Structural Timber: Galvanized strong-tie connectors by the Simpson Company or approved equal.

## SHOP-FABRICATED WOOD TRUSSES

1. Design of wood trusses and their connections shall be the sole responsibility of the Contractor. Design and shop drawing submittals shall comply with the specifications. Shop drawings shall be sealed by an Engineer licensed in the project state.
2. wood trusses shall be designed for the superimposed loads given in the Structural Drawings plus any additional superimposed dead loads due to overbuilt wood framing constructed above trusses.

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12/12/2023	

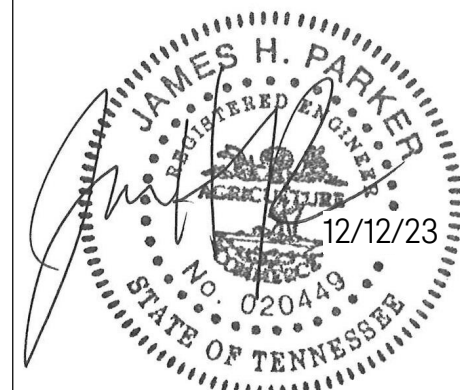
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**STRUCTURAL NOTES**  
(cont.)

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