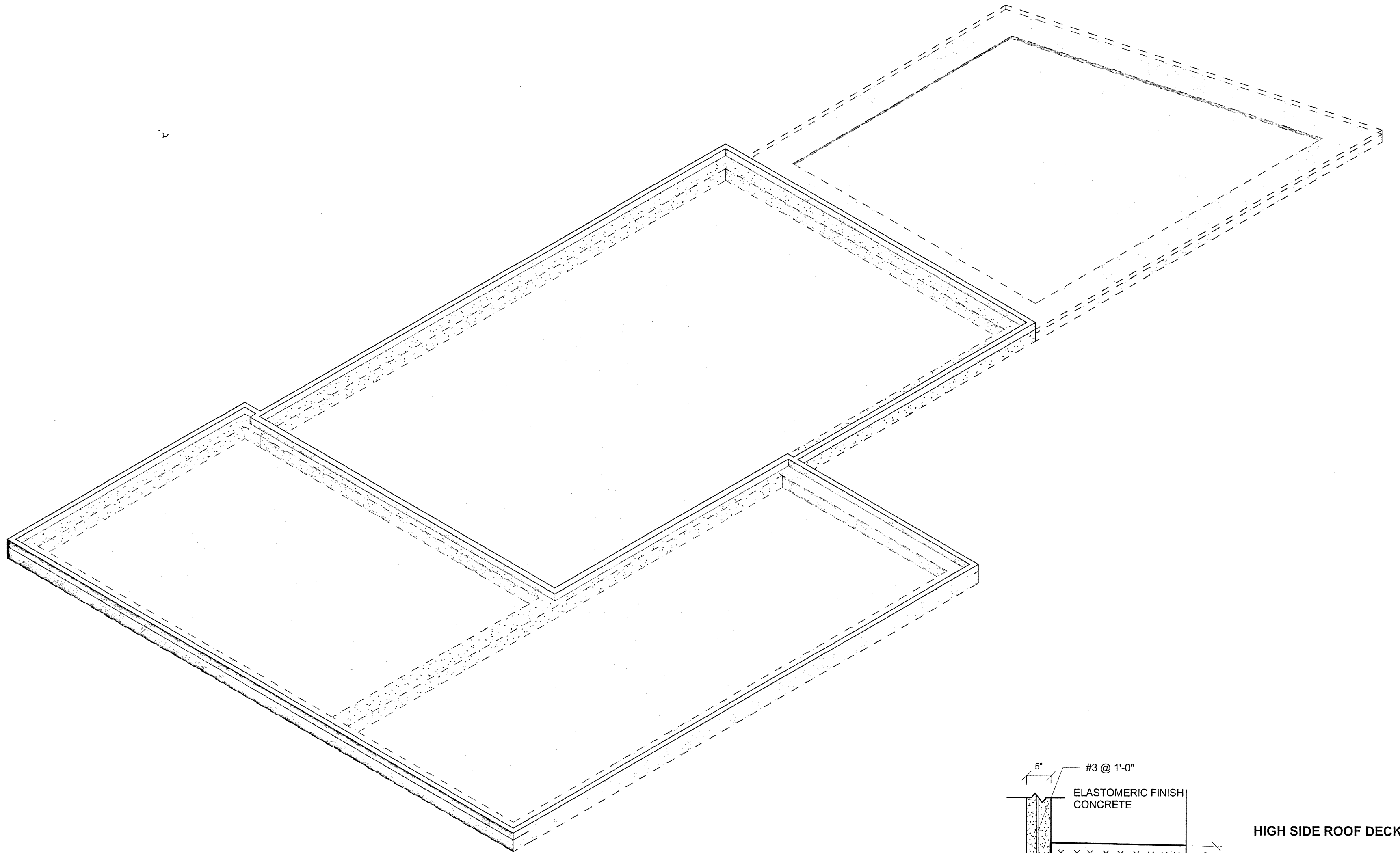
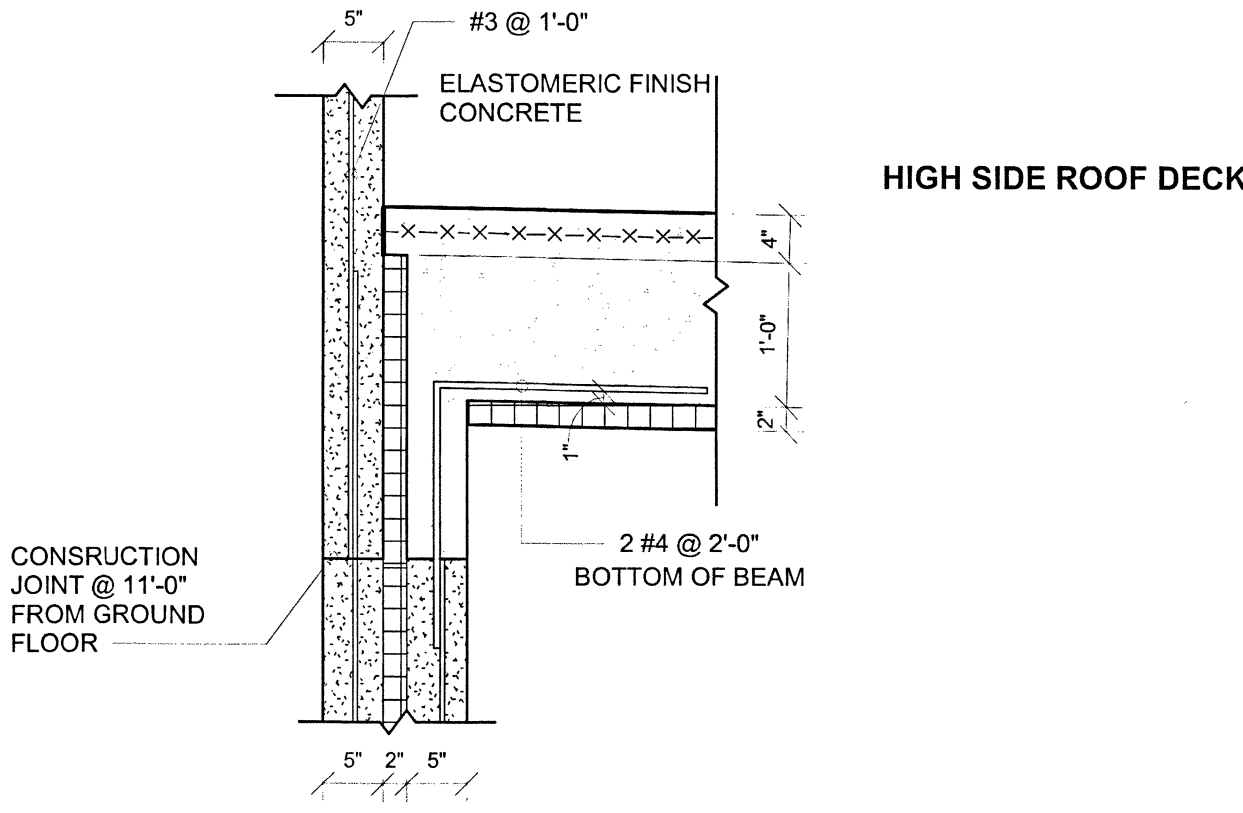


STRUCTURAL NOTES:

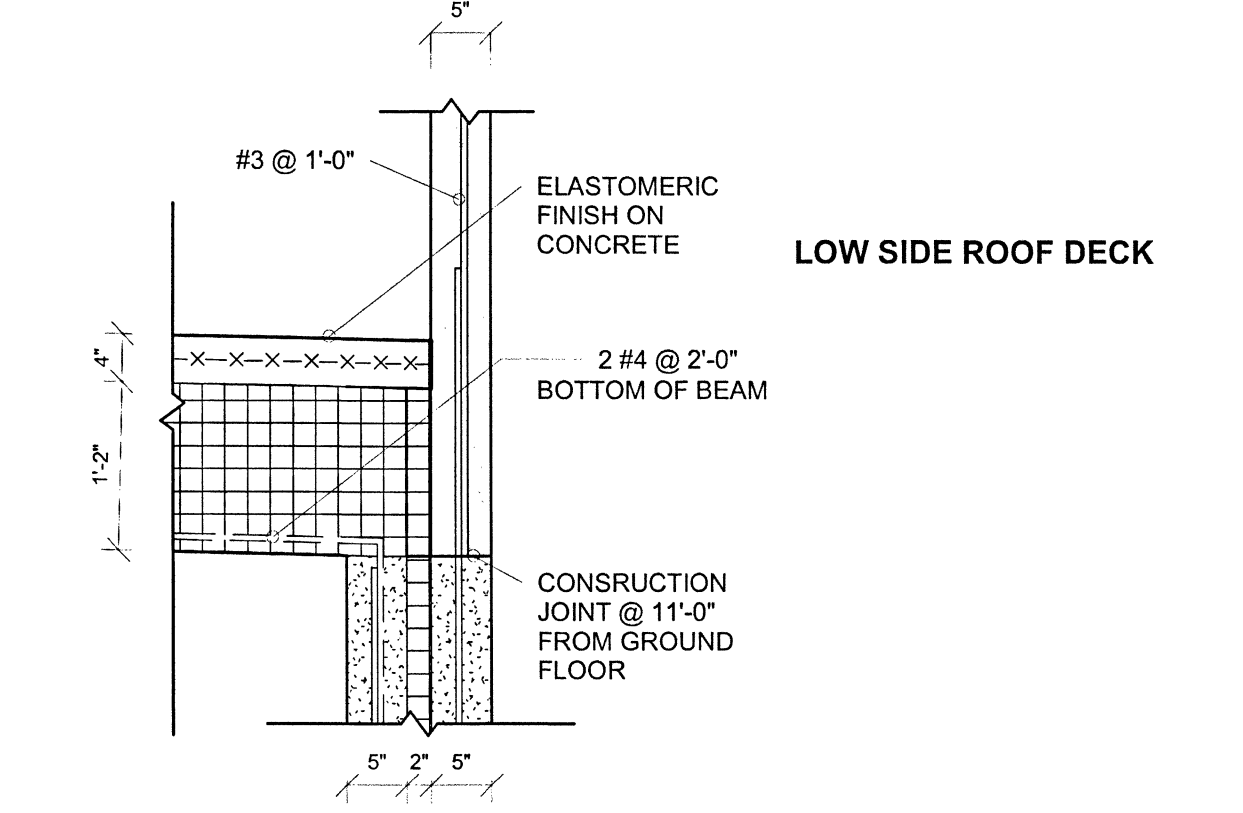
1. GENERAL
- A. Design and construction shall conform to 2018 International Residential Code (IRC), as amended by the City Lee's Summit, MO.
- B. The contractor shall verify dimensions and conditions before construction and be responsible for their correctness. Notify the architect of any discrepancies, inconsistencies, or difficulties affecting the work before proceeding.
- C. The Contractor is responsible for designing and installing all temporary shoring and bracing.
- D. Structural members shall not be cut, notched or otherwise compromised unless specifically approved in advance or as shown on these drawings.
- E. These drawings are for use on this project only.
- F. Structural Design Criteria:
- Occupancy (Risk) Category II
- A. Floor Live = 40 psf
- B. Roof Live = 20 psf
- C. Snow = Pg = 20 psf
- D. Lateral Loads: Wind V =115 mph, Exposure B
2. FOUNDATIONS
- A. Slab grade beams are designed to bear on engineered fill or undisturbed soil capable of safely sustaining 2500 psf.
- B. All excavation shall be approved by a qualified soil engineer, approved by the architect and/or engineer, prior to placement of reinforcing or concrete.
- C. The Contractor shall be entirely responsible for safely excavating the site
- D. Moisture content in soils beneath building locations should not be allowed to change after footing excavations and after grading for slabs on grade are completed. Do not place concrete on frozen ground.
- E. Finish grading the site so that drainage flows positively away from the building perimeter.
- F. All concrete slabs-on-grade shall be poured upon 4" gravel on stabilized compacted fill. The gravel shall be compacted prior to concrete placement.
- G. Place a continuous impenetrable 15 mil polyethylene brand vapor barrier on the gravel directly under the concrete slab. All joints and penetrations shall be properly sealed as per manufacturer's recommendations.
3. CONCRETE
- A. All concrete shall be designed and constructed according to ACI 318-11, "Building Code Requirements for Reinforced Concrete."
- B. All concrete for footings shall develop minimum ultimate compressive design strength of 3500 psi in 28 days. Slump shall not exceed 4-1/2".
- C. All concrete for interior flat and walls work shall develop minimum ultimate compressive design strength of 4000 psi in 28 days.
- D. All concrete other than flatwork may have Portland cement replaced with an equivalent weight of fly ash: 1) only with approval; 2) not more than 15% by weight; and 3) provided the total minimum cementitious content is not reduced.
- E. Mix design for large and small aggregate shall be submitted for approval. Ideally it will be comprised KDOT's "Concrete Paving Aggregate 3" (CPA-3); limestone shall not be used. The maximum size of large aggregate shall not exceed 3/4" diameter. Contractor is responsible to submit for review all admixtures used in the concrete prior to placement.
- F. Micro-fibers used in concrete shall be Helix brand, mixed at the batch plant according to manufacturer's written instructions.
- G. Water shall be potable. Adding water to concrete on site shall not be permitted.
- H. Do not remove forms until concrete has achieved its specified 3-day strength.
- I. Do not embed aluminum parts in concrete.
4. REINFORCING STEEL
- A. All concrete is reinforced unless specifically called out as unreinforced. Any sections not shown shall be detailed per ACI 315, "Details and Detailing of Concrete Reinforcement", current edition.
- B. All concrete accessories shall comply with current editions of both ACI, "Detailing Handbook" and CRSI, "Placing Reinforcing Bars". All accessories in concrete shall have plastic-coated feet.
- C. Clear cover of concrete over reinforcing steel:
- Concrete placed against trenched earth 3"
- Formed Concrete placed against earth 2"
- Walls and elevated slabs not in earth 1"
- Slabs 3/4"
- All coverage shall be nominal bar diameter minimum.
5. CAST-IN-PLACE CONCRETE FLOOR SYSTEM
- A. Footing shall be a Frost Protected Shallow Foundation, designed for an air freezing index of 1500 and in compliance with ASCE 32-01, as adopted by IRC R403.3. Materials used below grade for the purpose of insulating footings against frost shall comply with ASTM C 578.
- B. Comply with construction recommendations for elevated concrete slab and slab-on-grade provided in ACI 302.1 R-04, "Guide for Concrete Floor & Slab Construction".
- C. Roof, elevated slab shall be an ICF decking system either QuadDeck or LiteDeck at the contractor's option. Follow manufacturer's written instructions for the placement of leave in place forms and concrete.
- D. All reinforcing placed in elevated slab structures shall be:
- E. No hole larger than 8" diameter may be set thru the slab unless shown on the drawings.
- F. Openings and embedded items in slab shall not interrupt or interfere with reinforcing placement.
- G. Do not place conduit inside concrete walls or slabs except as shown.
- H. Cut saw joints where indicated.
6. EXTERIOR CAST-IN-PLACE CONCRETE INSULATED [Thermomass]
- A. The cast-in-place insulated building wall system shall be designed to conform with all manufacturer's instructions and as shown on project drawings, including architectural, mechanical, and structural drawings
- B. Cast-in-place composite sandwich wall; 5" concrete (outer wythe), 2" insulation, 5" concrete (inner wythe). See Separate submittal for Thermomass specifications EXHIBIT A.
7. REINFORCING STEEL
- A. Fabrication, erection and placement of reinforcing steel shall conform to Concrete Reinforcing Steel Institute (CRSI), "Manual of Standard Practice".
- B. All reinforcing shall conform to ASTM A615 or A706 grade Gr 60 reinforcing steel.
- C. Welded plain wire fabric ["WWF"] shall conform to ASTM A1064.
- D. All bar bends shall be made cold.
- E. At corners of all walls, supply corner bars, lapped 48 bar diameters (2'-6" minimum) matching the size and spacing of horizontal bars.
- F. All vertical steel shall be lapped 48 bar diameters (2'-6" minimum) at splices and embedments, unless shown otherwise.
- G. Secure reinforcing from displacement prior to pouring concrete.
8. CONSTRUCTION ADMINISTRATION
- A. The Owner may engage a Special Inspector to regularly inspect ongoing construction in accordance with section 1704 of the 2012 International Building Code.
- B. Special inspections may be required for 1) concrete placement; 2) reinforcing placement; 3) soil bearing integrity 4) slump and air temperature of concrete. Inspection reports shall be furnished to the owner, architect, engineer and any other designated person. A final signed report shall also be submitted.
- C. The Contractor shall submit the following shop drawings: 1) Concrete mix design(s) and 2) complete reinforcing placement drawings
- D. All reinforcing placement shall be inspected and approved by the Special Inspector before placing concrete.



1 3D FOUNDATION

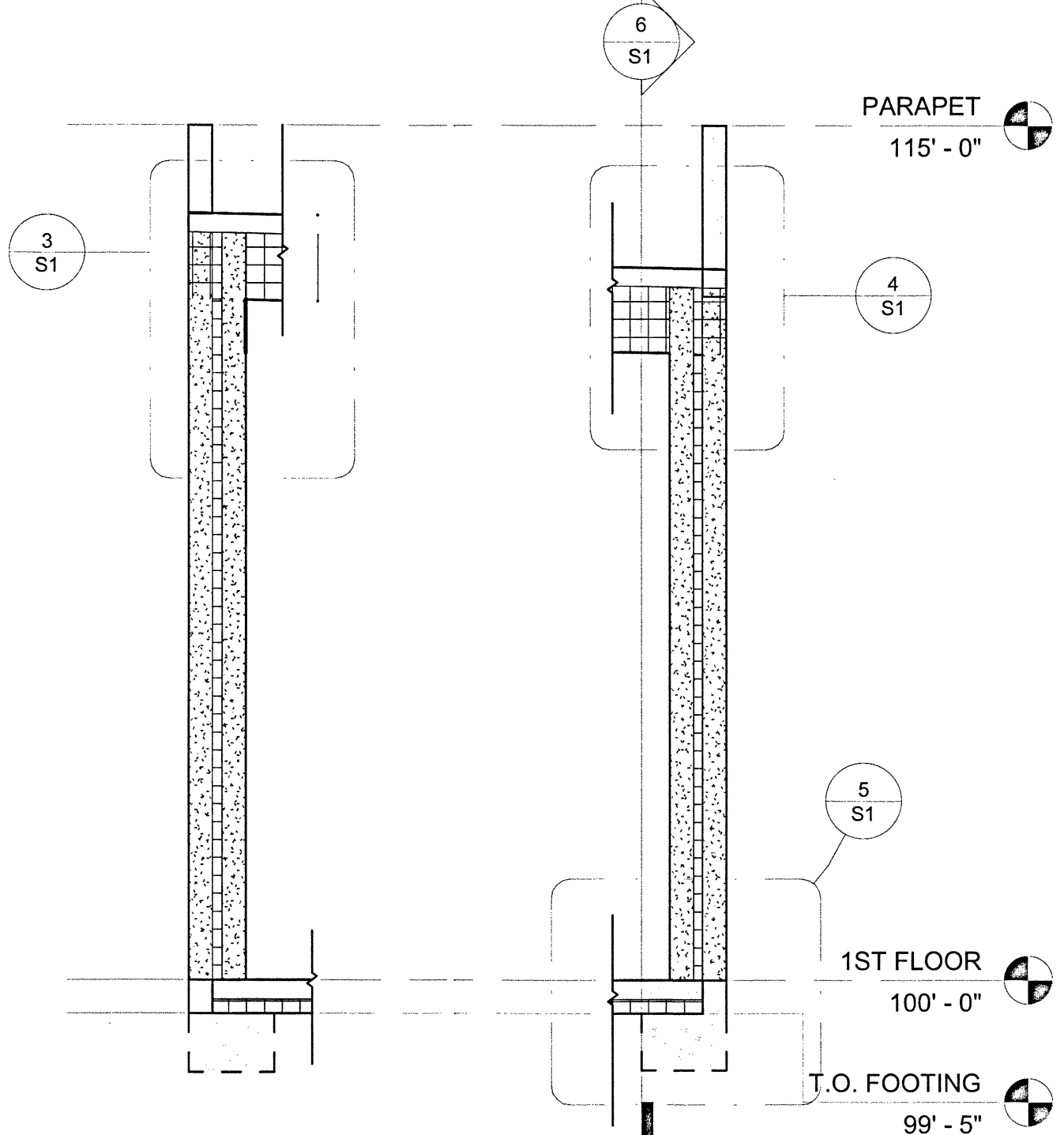


3 SECTION @ ICF DECK BEAM
3/4" = 1'-0"

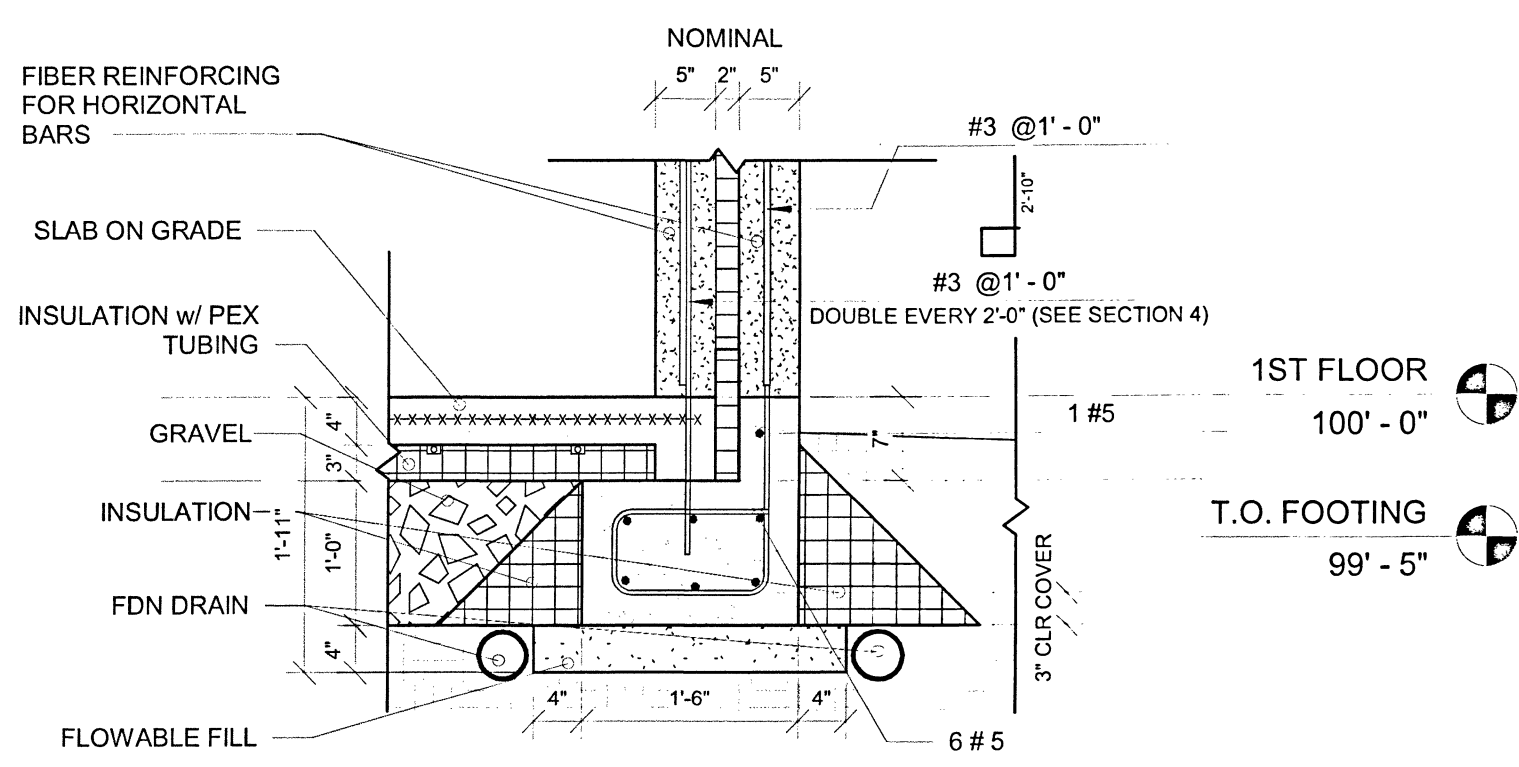


4 SECTION @ ICF DECK INSULATION
3/4" = 1'-0"

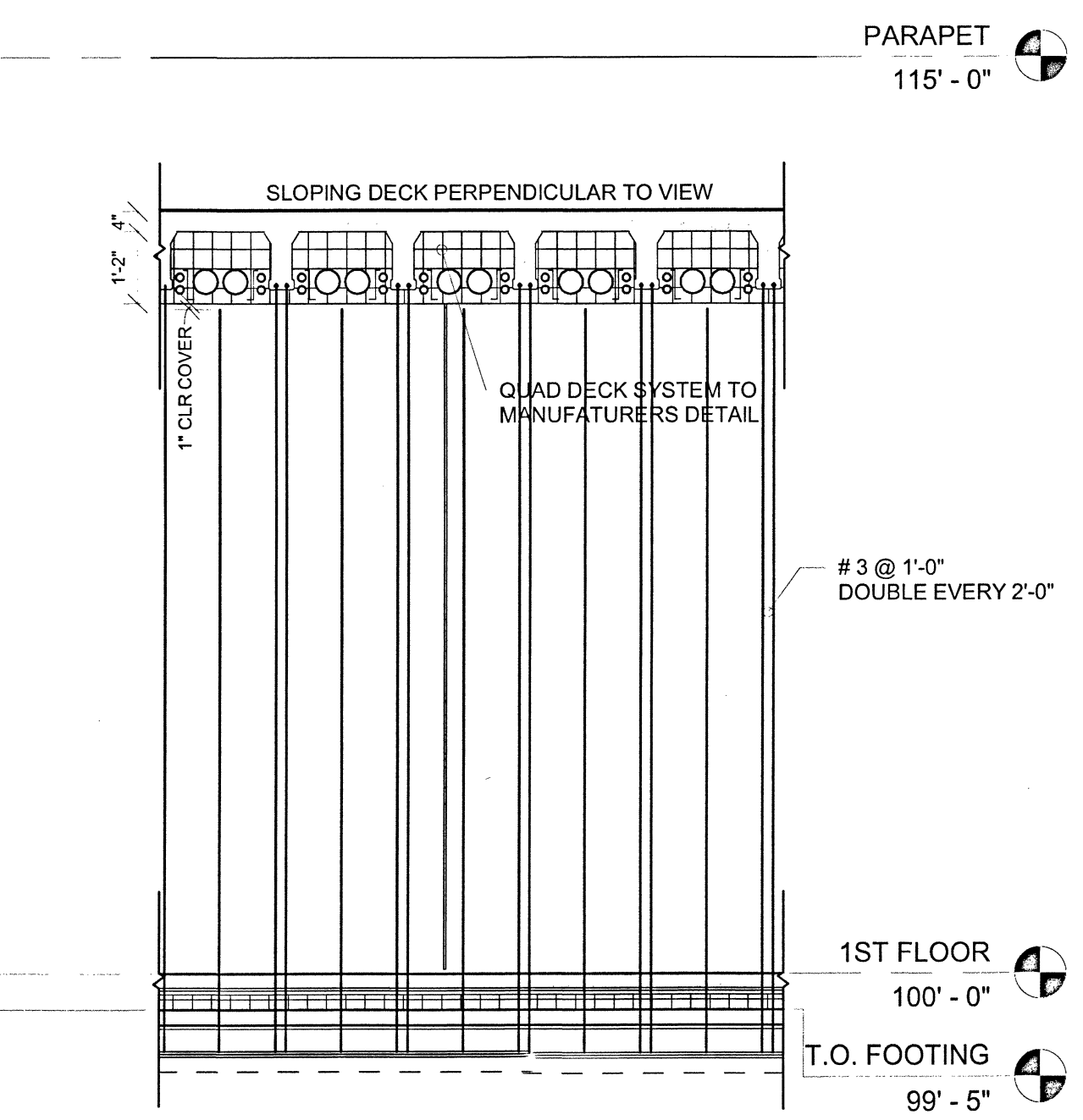
RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
CODES ADMINISTRATION
LEE'S SUMMIT, MISSOURI
BY _____
DATE _____



2 WALL SECTIONS THERMOMASS
3/8" = 1'-0"



5 SHALLOW FROST PROTECTED FOOTING
3/4" = 1'-0"



6 Section 4
3/8" = 1'-0"