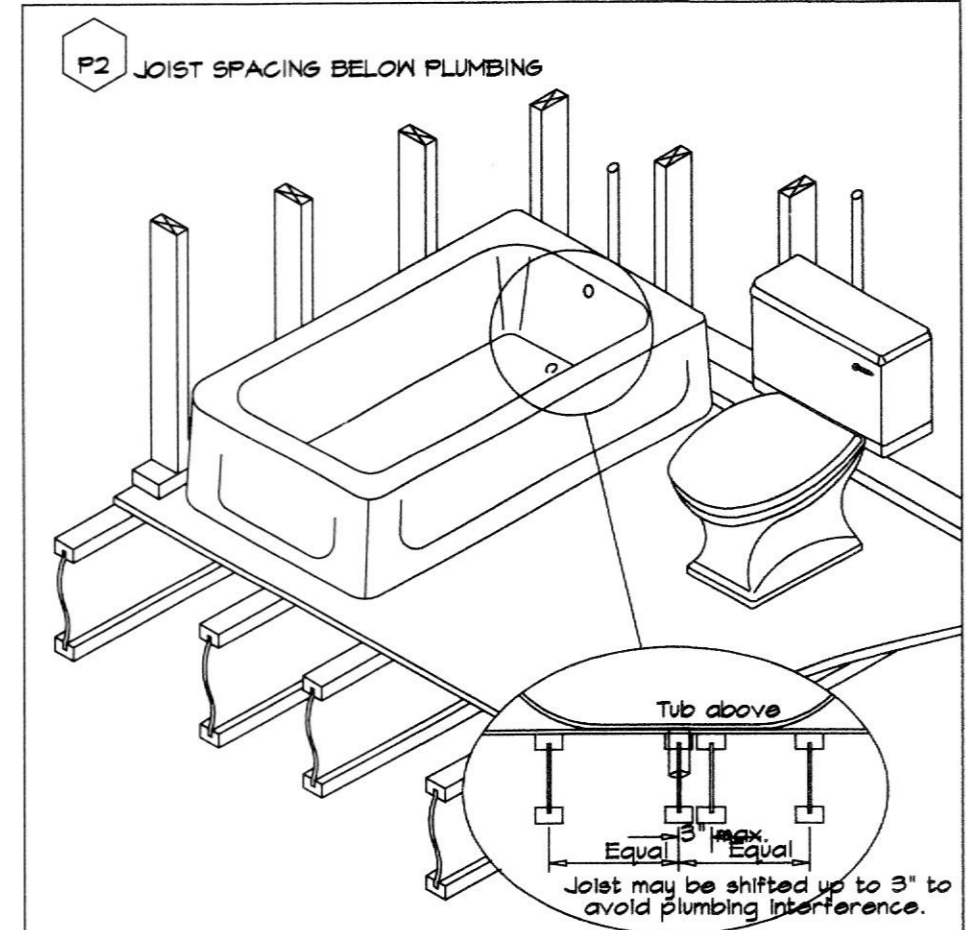


GENERAL STRUCTURAL NOTES

- I. GENERAL**
- A. ALL CONSTRUCTION SHALL CONFORM WITH THE PROVISIONS OF THE 2000 INTERNATIONAL RESIDENTIAL CODE FOR ONE AND TWO FAMILY DWELLINGS.
- B. DESIGN LIVE LOADS:
 ROOF: 30 PSF
 FLOORS: 40 PSF
 SLEEPING AREAS: 30 PSF
- 2. FOUNDATIONS**
- A. FOOTINGS ARE DESIGNED FOR AN ALLOWABLE SOIL BEARING CAPACITY OF 2000 PSF. FOOTINGS SHALL BEAR ON NATURAL UNDISTURBED SOIL 1'-0" BELOW ORIGINAL GRADE. THE BOTTOM OF EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 2'-6" BELOW FINISHED GRADE. CONTRACTOR TO VERIFY THE ALLOWABLE SOIL PRESSURE IN THE FIELD. IF FOUND TO BE LESS THAN 2000 PSF, THE FOOTINGS WILL HAVE TO BE REDESIGNED.
- B. CAST IN PLACE CONCRETE
- A. ALL CONCRETE WORK SHALL CONFORM TO THE LATEST APPROVED (BY LOCAL GOVERNMENT) EDITIONS OF THE FOLLOWING A.C.I. AND A.S.T.M. DOCUMENTS:
 ACI-301 SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS
 ACI-308 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE
- B. ALL CONCRETE, EXCEPT AS NOTED, SHALL BE (f_c=3000 PSI) STONE AGGREGATE CONCRETE AT 28 DAYS. ALL CONCRETE EXPOSED TO THE WEATHER SHALL BE AIR ENTRAINED.
- C. SLABS ON GROUND SHALL BE 4" THICK CONCRETE REINFORCED WITH 6"x6" W/4XN/4 WAF OVER 6 MIL POLYETHYLENE VAPOR BARRIER AND 4" WASHED GRAVEL UNLESS OTHERWISE NOTED.
- 4. MASONRY**
- A. ALL MASONRY CONSTRUCTION AND MATERIALS USED THEREIN (CONCRETE MASONRY, CLAY MASONRY, MORTAR, GROUT AND STEEL REINFORCEMENT) SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" (ACI 530-42/ASCE 5-42/TMS 402-42) AND "SPECIFICATIONS FOR MASONRY STRUCTURES" (ACI 530.1-42/ASCE 6-42/TMS 602-42) IN ALL RESPECTS.
- B. MASONRY BEARING WALLS SHALL CONSIST OF STANDARD HOLLOW UNITS CONFORMING TO ASTM C 90 UNLESS OTHERWISE NOTED. WHERE SOLID UNITS ARE REQUIRED, PROVIDE UNITS CONFORMING TO ASTM C 145.
- C. ALL MORTAR SHALL CONFORM TO THE REQUIREMENTS FOR PROPORTIONS, MIXING, STRENGTH AND APPLICATION FOR PORTLAND CEMENT/LIME TYPE "S" MORTAR AS DESCRIBED IN ACI 530-42.
- D. ALL GROUT FILL IN MASONRY WALLS SHALL CONFORM TO ASTM C 476. SLUMP RANGE 8-11". PLACE GROUT IN 5'-0" MAXIMUM POUR HEIGHTS AND CONSOLIDATE BY MECHANICAL VIBRATION.
- E. PROVIDE 8" DEPTH OF 80% SOLID MASONRY BELOW ALL JOIST OR SLAB BEARING LINES. PROVIDE 16" HIGH X 16" LONG 100% SOLID MASONRY BELOW ALL LINTELS AND BEAMS UNLESS NOTED OTHERWISE.
- F. ALL MASONRY WALLS SHALL BE REINFORCED WITH NO. 4 GAGE TRUSS TYPE GALVANIZED DUR-O-WALL SPACED VERTICALLY AT 16" O.C. U.N.O. LAP ALL DUR-O-WALL 6" MINIMUM. PROVIDE CORNER AND TEE PIECES AT ALL INTERSECTIONS.
- G. LOOSE LINTELS FOR MASONRY WALLS SHALL BE FOR EACH 4' WIDTH OF MASONRY ONE STEEL ANGLE AS FOLLOWS:
- | | |
|----------------|---------------------------|
| 0'-0" TO 3'-0" | 3'-1/2" X 3'-1/2" X 3/16" |
| 3'-1" TO 3'-0" | 4" X 3'-1/2" X 3/16" |
| 5'-1" TO 6'-6" | 5" X 3'-1/2" X 3/8" |
| 6'-7" TO 8'-0" | 6" X 3'-1/2" X 3/8" |
- ALL ANGLES SHALL HAVE THEIR SHORT LEGS OUTSTANDING AND 6" MINIMUM BEARING.

- 5. STRUCTURAL STEEL**
- A. ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM SPECIFICATION A-36 (LATEST LOCAL APPROVED). ALL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE AISC MANUAL, AISC SPECIFICATION AND AISC CODE OF STANDARD PRACTICE.
- B. ALL WELDED CONNECTIONS SHALL BE DONE WITH ETOXX ELECTRODES. SHOP AND FIELD WELDS SHALL BE MADE BY APPROVED CERTIFIED WELDERS AND SHALL CONFORM TO THE AMERICAN WELDING SOCIETY CODE FOR BUILDINGS AND D11. WELDS SHALL DEVELOP THE FULL STRENGTH OF MATERIALS BEING WELDED UNLESS OTHERWISE NOTED.
- 6. WOOD**
- A. STRUCTURAL SOLID WOOD RAFTERS, JOISTS, BEAMS AND STUDS SHALL BE HEM FIR #2 OR SPRUCE PINE FIR #2 SURFACED DRY AT A MAXIMUM OF 14% MOISTURE CONTENT. ALL LUMBER EXPOSED TO WEATHER SHALL BE PRESSURE TREATED SOUTHERN PINE #2. ALL FABRICATION, ERECTION, OTHER PROCEDURES, AND MINIMUM UNIT STRESSES SHALL CONFORM TO THE CURRENT NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION.
- B. WOOD TRUSSES SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION (ANSI/TPI 1) AND COMMENTARY AND RECOMMENDATIONS FOR HANDLING, INSTALLING AND BRACING METAL PLATE CONNECTED WOOD TRUSSES (41) AS PUBLISHED BY THE TRUSS PLATE INSTITUTE AND IN ACCORDANCE WITH THE 1981 EDITION OF THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION.
- C. WOOD TRUSSES AND ENGINEERED FLOOR JOISTS ARE TO BE DESIGNED BY THE SUPPLIER. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER/ARCHITECT FOR REVIEW. ALL TRUSSES AND JOISTS SHALL BE DESIGNED TO LIMIT THE BEARING STRESS TO 425 psi WHEN MEMBERS BEAR ON STUD WALLS. PROVIDE MEMBERS OF ADEQUATE WIDTH OR METAL CONNECTIONS TO LIMIT STRESSES TO THE SPECIFIED VALUE.
- D. ALL LAMINATED VENEER LUMBER (LVL) OR PARALLEL STRAND LUMBER (PSL) SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: F_b=2600psi, F_v=285psi, E=1,900,000psi, F_c=250psi (PARALLEL), F_c=150psi (PERPENDICULAR).
- E. ALL DOUBLE MEMBERS SHALL BE NAILED TOGETHER WITH 2 ROWS OF 16d NAILS SPACED AT 12" O.C. ALL TRIPLE MEMBERS SHALL BE NAILED TOGETHER WITH 3 ROWS OF 16d NAILS SPACED AT 12" O.C. NAILED FROM EACH SIDE.
- F. PROVIDE DOUBLE JOISTS AT PARALLEL PARTITIONS WHERE PARTITION LENGTH EXCEEDS 1/3 JOIST SPAN.
- G. ALL NAILED ARE TO BE COMMON WIRE NAILS. NAILING OF ALL FRAMING SHALL BE AS SPECIFIED IN THE CONTRACT DOCUMENTS BUT IN NO CASE SHALL BE LESS THAN THE RECOMMENDED NAILING SCHEDULE CONTAINED IN THE 2000 INTERNATIONAL RESIDENTIAL CODE. ALL MULTIPLE STUD POSTS ARE TO BE NAILED TOGETHER WITH 12d NAILS @ 6" O.C. STAGGERED.
- H. PROVIDE BRIDGING SPACED AT 48" O.C. IN FIRST TWO JOIST, RAFTER OR TRUSS SPACES WHEN FRAMING IS PARALLEL TO EXTERIOR WALL. NAIL SHEATHING (FLOOR, CEILING OR ROOF) TO BRIDGING AND NAIL BRIDGING TO EXTERIOR WALL PLATE. PROVIDE ONE ROW OF BRIDGING BETWEEN ALL FLOOR AND ROOF JOISTS FOR EACH 8'-0" OF SPAN. PROVIDE SOLID BLOCKING OR A CONTINUOUS RIM JOIST AT THE BEARING OF JOISTS, RAFTERS OR TRUSSES ON WOOD PLATES.
- I. PROVIDE THE FOLLOWING JAMB STUDS AT ALL BEARING WALL OPENINGS UNLESS NOTED OTHERWISE:
 0'-3" OPENING: 1 JACK STUD, 1 KING STUD
 3'-1" TO 6'-0" OPENING: 2 JACK STUDS, 1 KING STUD
 6'-1" TO 9'-0" OPENING: 2 JACK STUDS, 2 KING STUDS
- PROVIDE DOUBLE STUDS AT ALL CORNERS AND BENEATH ALL GIRDER TRUSSES AND WOOD BEAMS UNLESS NOTED OTHERWISE ON PLANS. WOOD BEAMS, GIRDER TRUSSES AND HEADERS SHALL BEAR THE FULL DEPTH OF POSTS AND JACK STUDS.
- J. ALL POSTS (MULTIPLE STUDS OR SOLID POST) SUPPORTING BEAMS, WALL HEADERS OR GIRDER TRUSSES, SHALL BE BLOCKED SOLID FOR THE FULL LENGTH AND WIDTH OF POSTS AT ALL INTERSECTIONS WITH FLOORS AS REQUIRED TO PROVIDE CONTINUOUS SUPPORT TO TOP OF FOUNDATION WALLS OR BEAMS. POSTS SHOWN ON UPPER LEVELS FLOORS SHALL ALSO BE INSTALLED ON THE LOWER LEVELS IN LINE WITH THE POST ABOVE DOWN TO FOUNDATION WALLS OR BEAMS.
- K. ALL FLUSH JOIST TO BEAM OR BEAM TO BEAM CONNECTIONS SHALL BE MADE WITH JOIST OR BEAM HANGERS TO SUPPORT THE LOAD CAPACITY INDICATED ON THE PLANS OR THE FULL CAPACITY OF THE JOIST OR BEAM. HANGERS SHALL BE PROVIDED BY SIMPSON STRONG-TIE OR USP LUMBER CONNECTORS. THE SUPPLIER SHALL DESIGN ALL HANGERS FOR THE CAPACITY STATED. INSTALL ALL HANGERS IN STRICT CONFORMANCE TO THE MANUFACTURER'S INSTRUCTIONS. FILL ALL NAIL OR BOLT HOLES USING THE

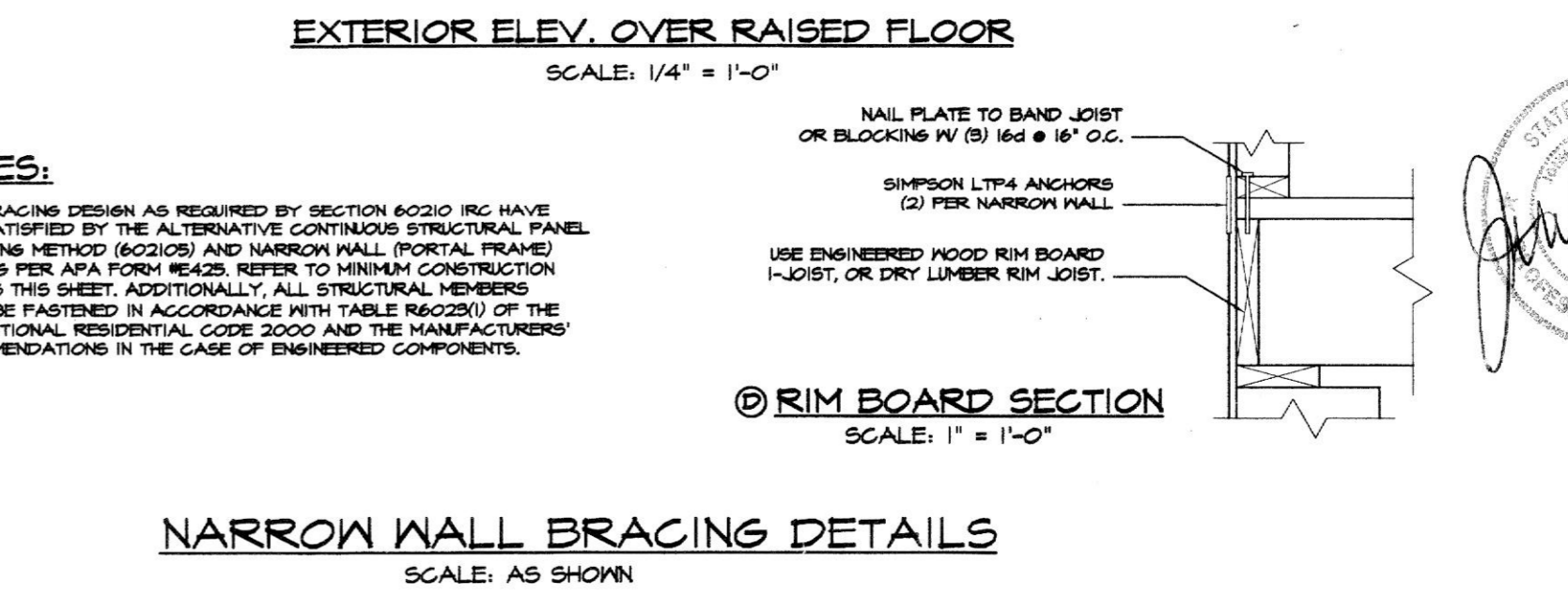
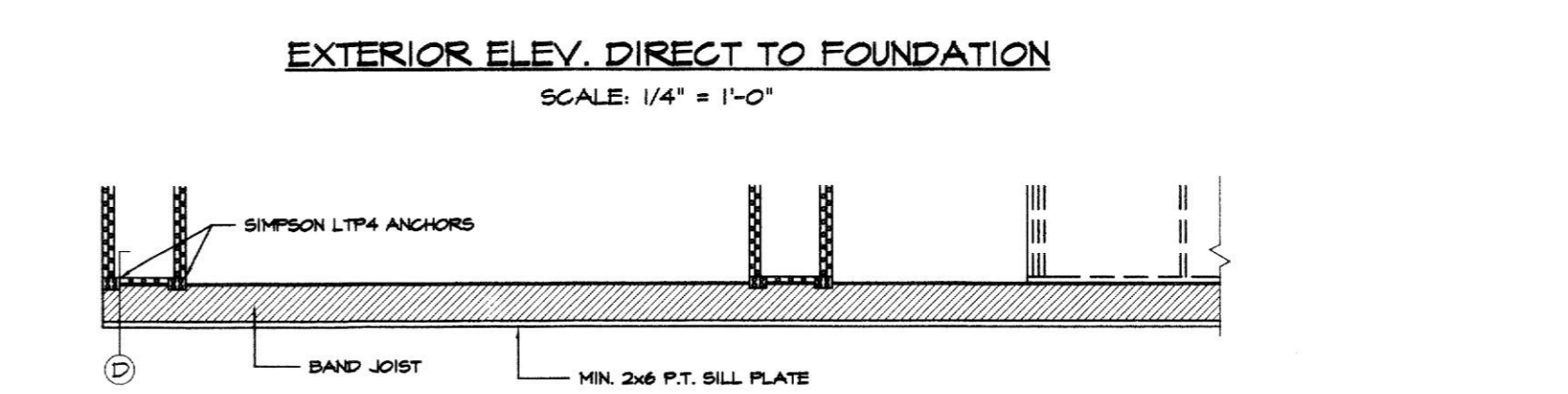
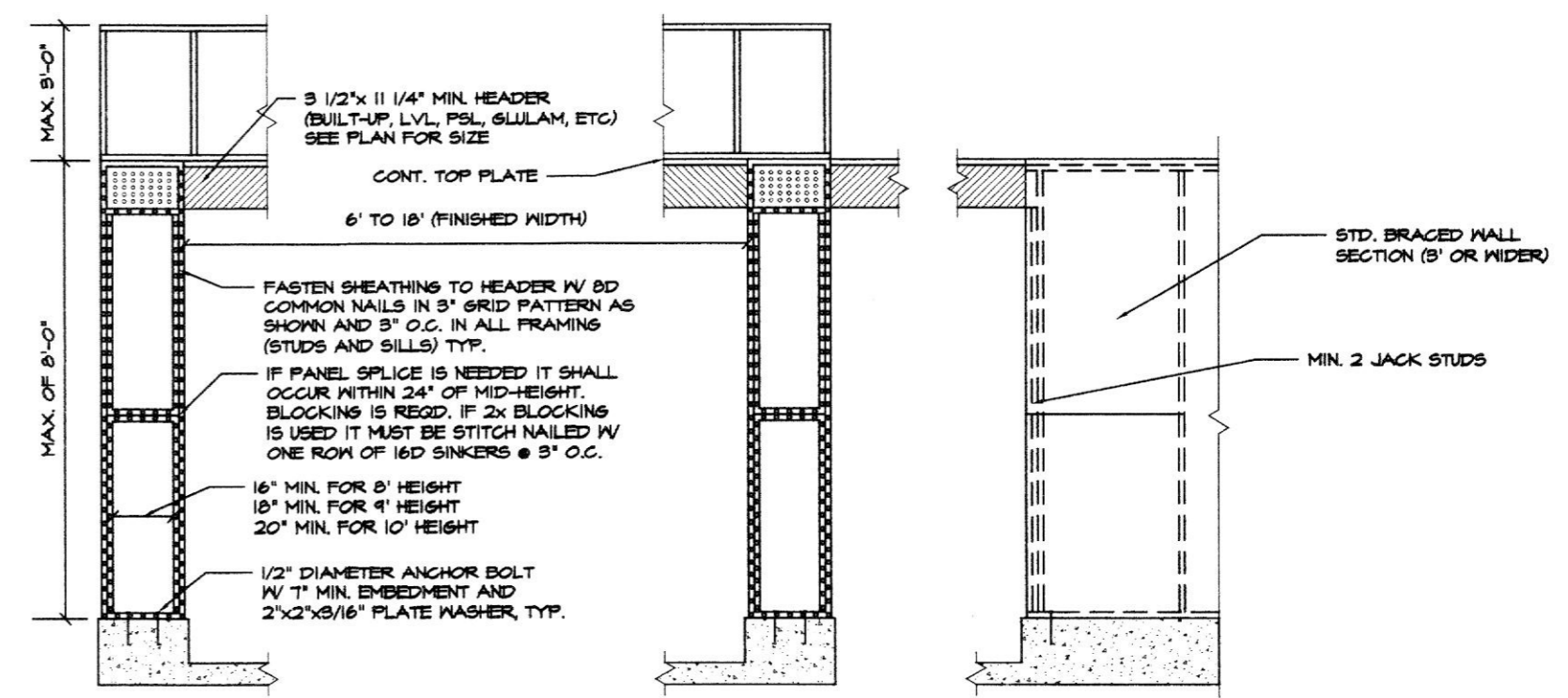
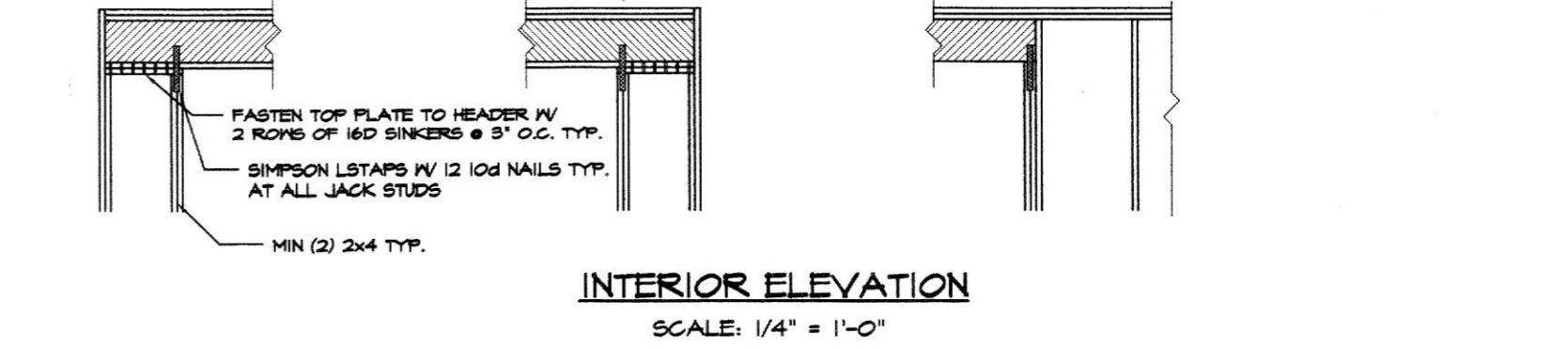
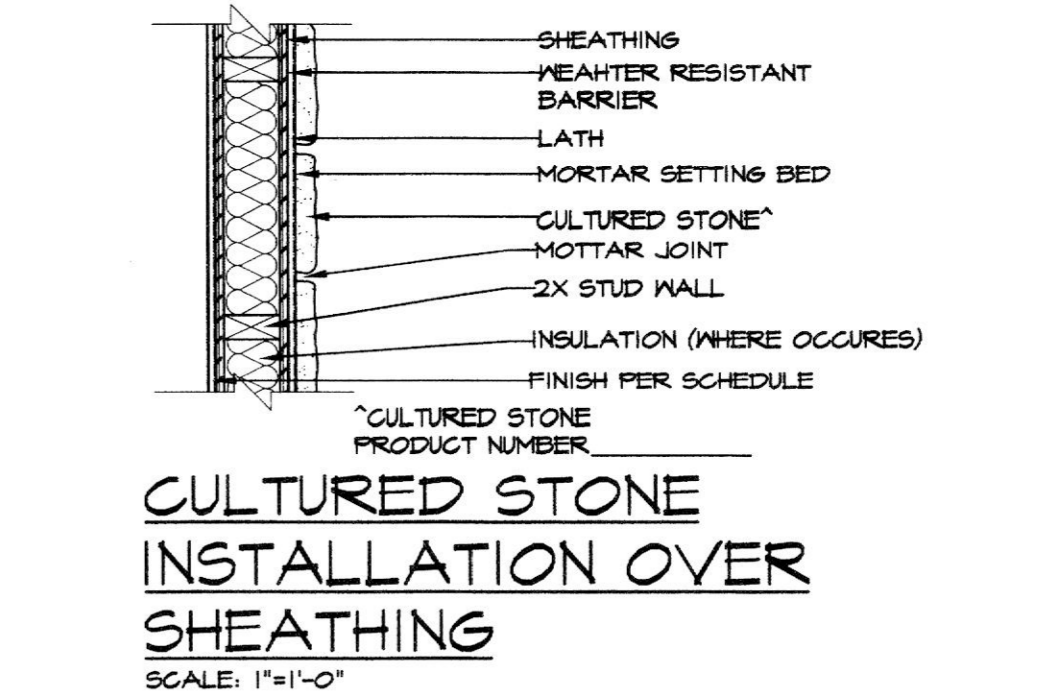
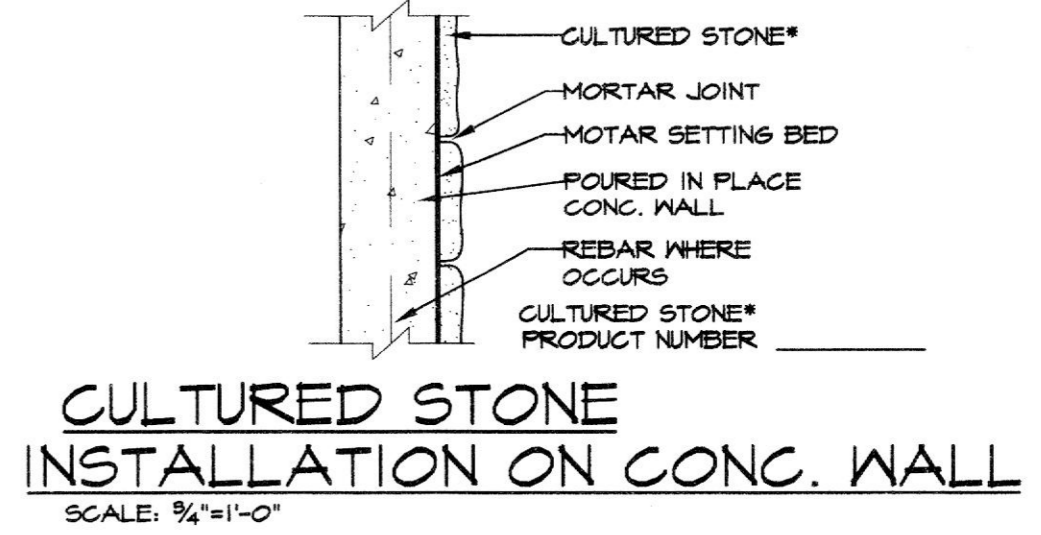
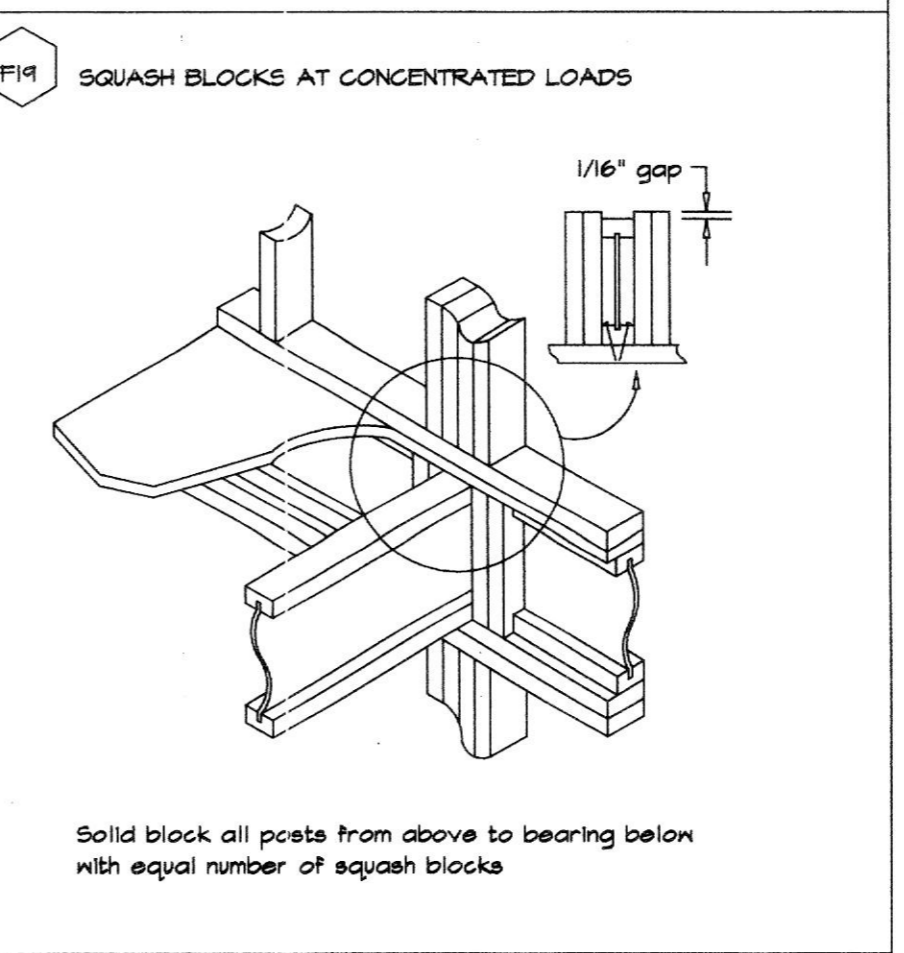
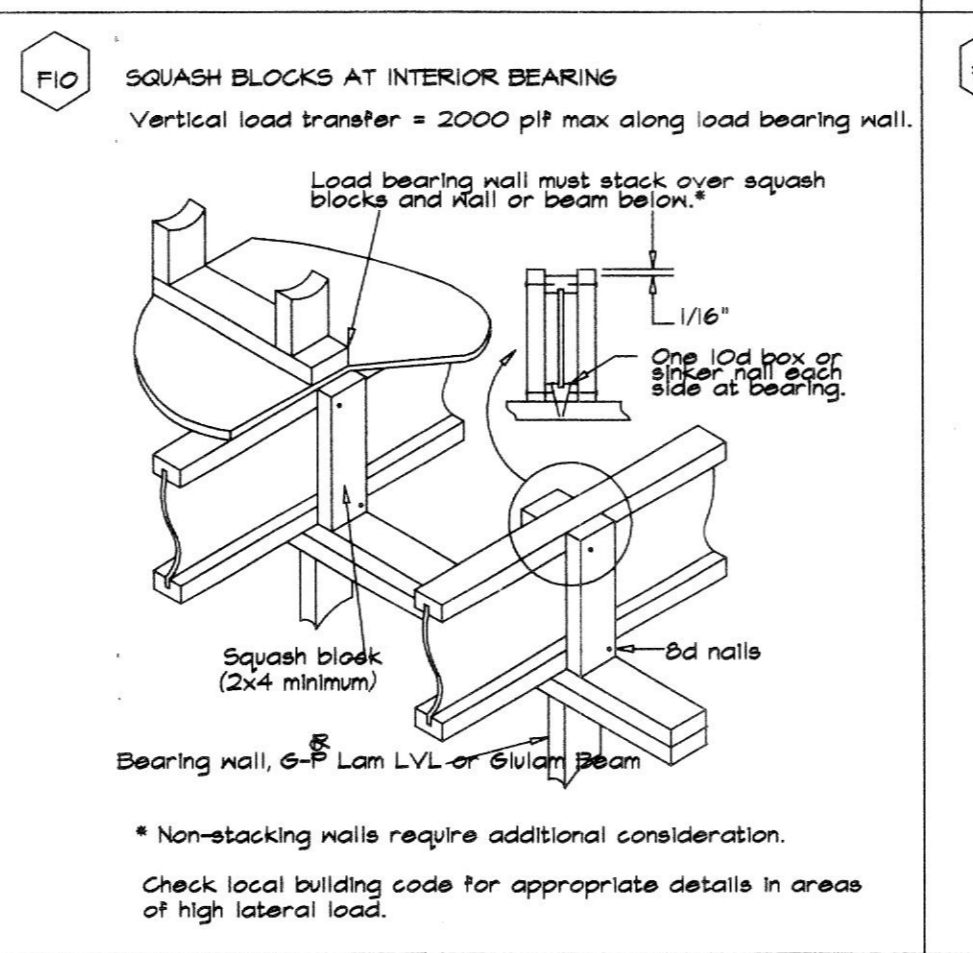
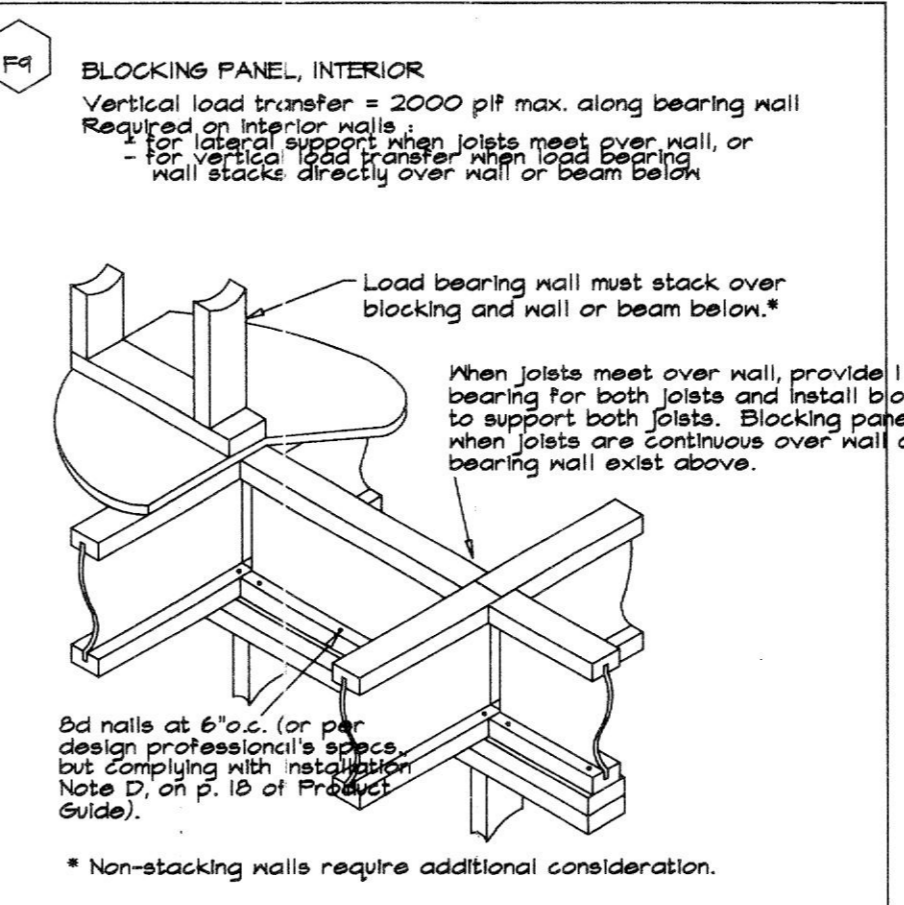
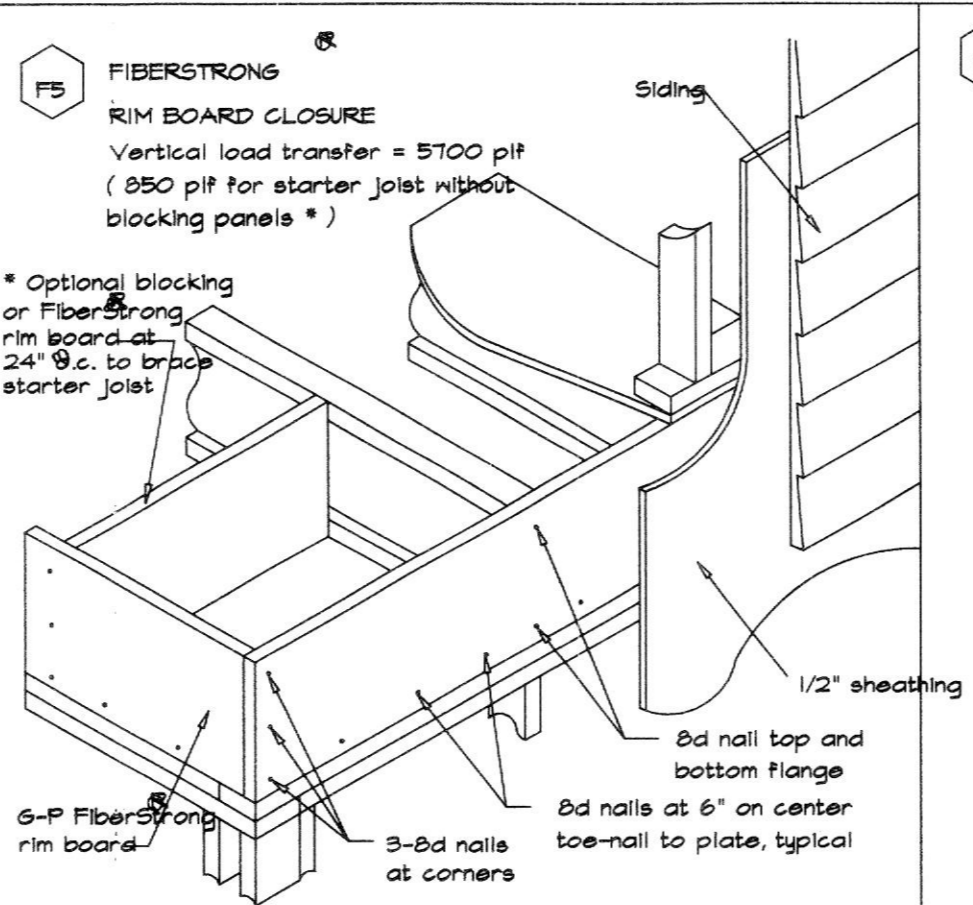
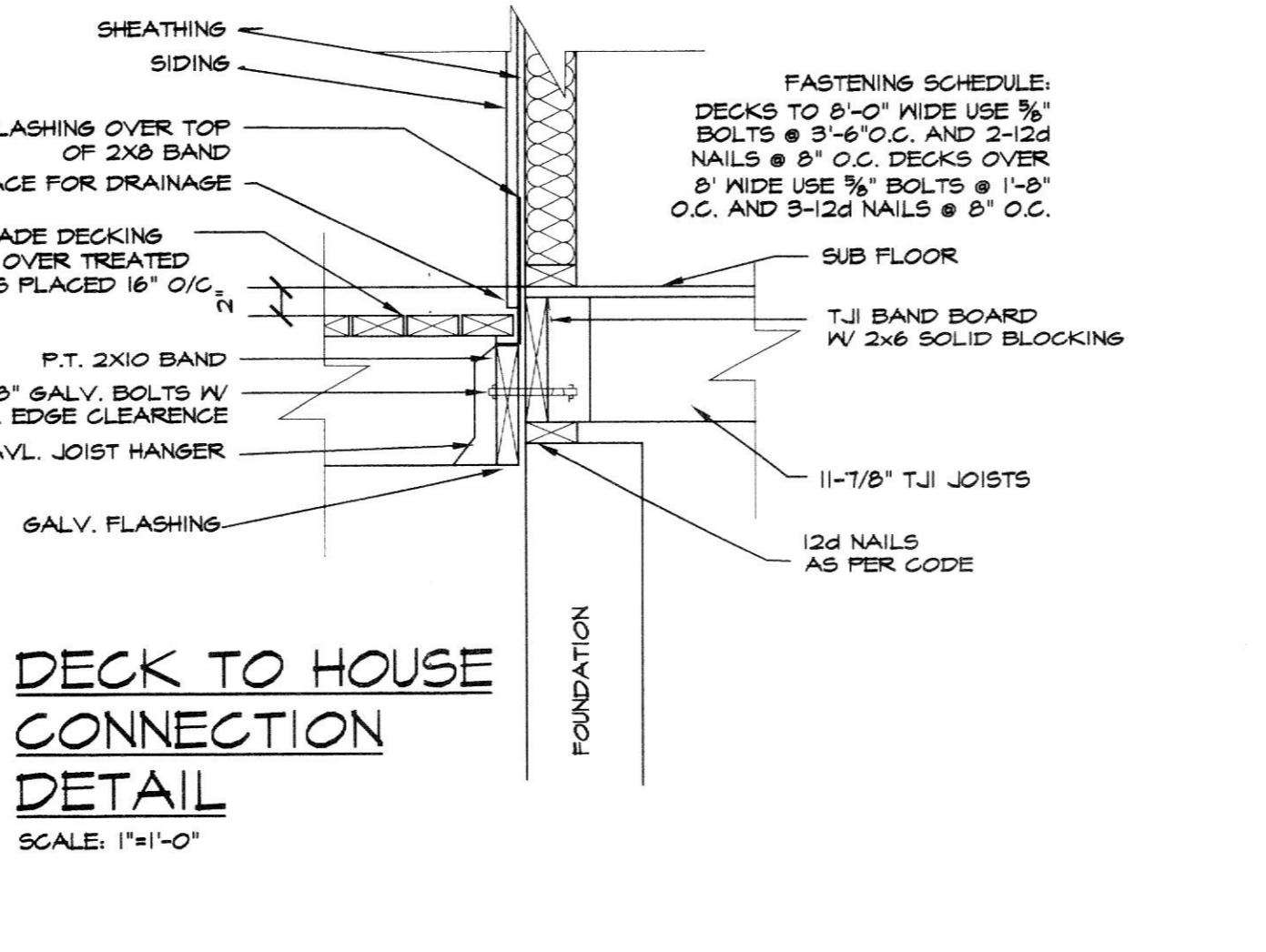


LVL FASTENING SCHEDULE

Maximum Uniform Load Applied to Either or Both Outside Pieces (Pounds per linear foot)

Pieces	16d NAILS	1/2" BOLTS	SCREWS (Note 4)
Member	2 ROWS 12" o.c. 3 ROWS 12" o.c. 24" o.c. stag 4 ROWS 12" o.c. stag	2 ROWS 12" o.c. 2 ROWS 12" o.c. stag 2 ROWS 12" o.c.	2 ROWS 12" o.c. 2 ROWS 12" o.c. 2 ROWS 12" o.c.
2	505	760	505
3	580	870	580
4	Not Permitted	940	675

NOTES:
 1. Confirm adequacy of the beam (depth and number of pieces) for carrying the designated load.
 2. Stress level for nail and bolt values is 100%. Increases of 15% for snow loaded or 25% for non-snow loaded roof conditions are permitted.
 3. Top and bottom row of connectors should be 2" from edge.
 4. Bolt holes are to be the same diameter as the bolt. Every bolt must extend through the full thickness of the member. Use washers under head and nut.
 5. For three-piece member, specified nailing is from the each side.
 6. To minimize rotation, four-piece members should only be used when loads are applied to both sides, or completely across the top of the member.
 7. Four-piece members must be bolted or attached with 6" screws from both sides.
 8. Floor joists must be attached with approved metal hangers.
 9. Screws are USP 16S series or Simpson Strong-Tie SDS installed per manufacturer instructions.
 10. Screws for 3-ply and 4-ply members must be from both sides of beam.



THE WORKMAN RESIDENCE

REVISED 10/27/2004
 REVISED 10/16/2004

SCALE: 1/4" = 1'-0"
 DATE: 9/2004
 SHEET NO.: 8 OF 8

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