

City of Austin Submittal Requirements for Technical Plan Review



City of Austin Development Services Department

Topics

- Drawing order
- Architectural drawings
- Structural drawings
- Visitability Ordinance



Part 1: Drawing Order



Drawing Order for Submittal

- Exterior Visitability
- Architectural Drawings
 - Interior visitability
 - Floor plans
 - Elevations
- Structural Drawings
 - Foundation
 - Framing
 - Bracing

All plans MUST include selected options and MUST be oriented correctly



Part 2: Architectural Drawing Requirements



Sealed vs. Unsealed

Sealed = Registered Architect or Certified Building Designer

Sealed

- Completeness check
 - Interior visitability
 - Floor plans
 - Elevations

Unsealed

- Full technical review
 - Means of egress
 - Minimum room requirements
 - Smoke and carbon monoxide alarms
 - Hazardous glazing
 - Plumbing fixture clearances
 - Handrails and guardrails
 - Stairways
 - Attics
 - Fire-resistant construction



Part 3: Structural Drawing Requirements



Sealed vs. Unsealed

Sealed = Registered Architect or Registered Engineer

Sealed

- Completeness check
- Are all the required drawings part of the set?
- Are all major items addressed?

Unsealed

- Are all the required drawings part of the set?
- Are all major items addressed?
- **Verify structural plans and details with prescriptive code requirements**



What constitutes a complete structural drawing set?

- Foundation plans
 - Foundation details
 - Framing plans
 - Conventional Framing
 - Wood Framed Floors
 - Wood Framed Roof
 - Pre-engineered systems
 - Framing details
 - Wall-to-foundation, wall-to-floor, wall-to-roof
 - Braced wall plan
 - Bracing details
 - Sheathing thickness, attachment size & pattern, portal frame details, etc.
- ***All plans MUST include selected options and MUST be oriented correctly*****



Pre-engineered systems (Trusses/I-joists)

- Structural framing plans need to include supporting structural members for pre-engineered systems. Support structure (including headers, beams, walls and columns) must be provided.

THIS IS A TRUSS PLACEMENT DIAGRAM ONLY. These trusses are designed as individual building components to be incorporated into the building design at the specification of the building designer. See individual design sheets for each truss design identified on the placement drawing. The building designer is responsible for temporary and permanent bracing of the roof and floor system and for the overall structure. The design of the truss support structure including headers, beams, walls, and columns is the responsibility of the building designer. For general guidance regarding bracing, consult "Building Component Safety Information" available from the SBC Association (www.sbcindustry.com).

- **3 options** allowed to meet the requirements for “supporting structural members”



Pre-engineered systems (Trusses/I-joists)

OPTION 1

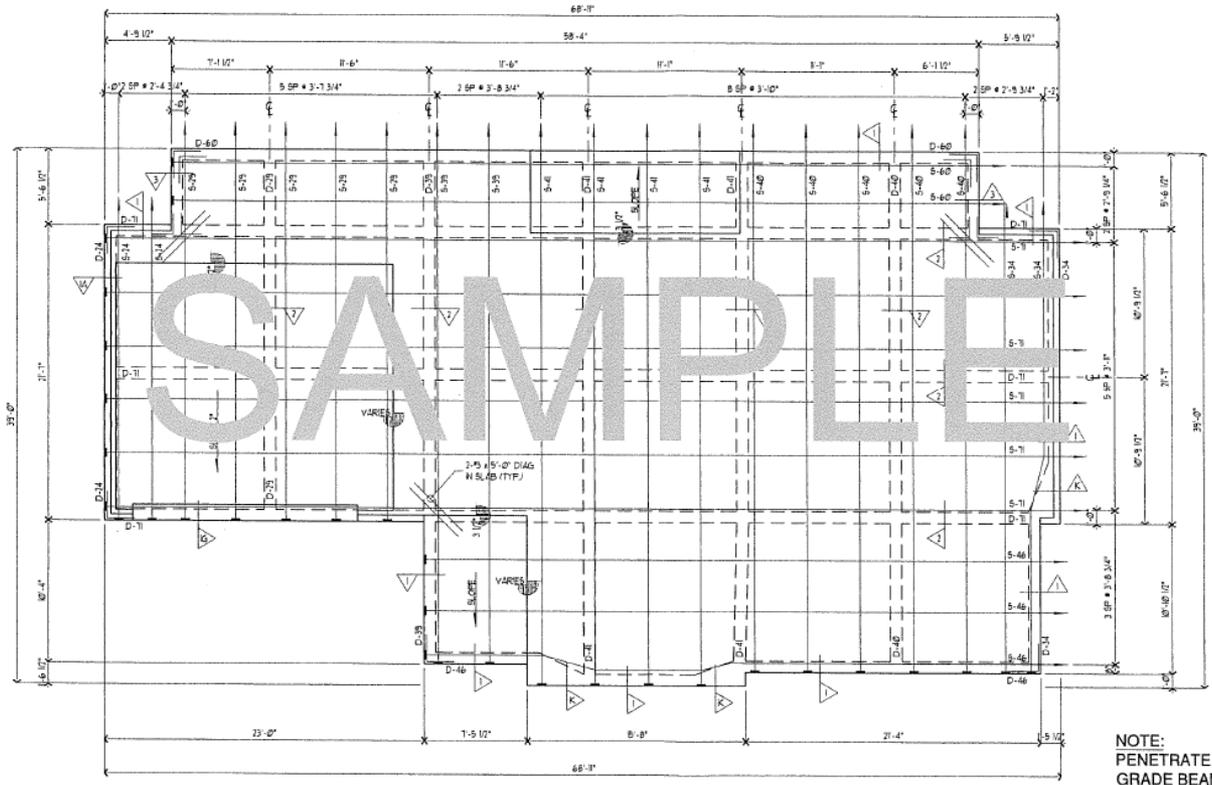
Plan Review: Provide framing plan showing truss/wooden i-joist layout (direction and spacing) sealed by the engineer of record. The framing plan shall show all supporting structural members (headers, beams, posts, columns, etc.)

Field Inspections: Provide truss layout and truss calculations from the manufacturer stamped by an engineer



Option 1: Example

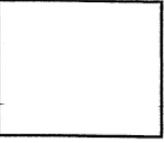




NOTE:
 PENETRATE ALL PERIMETER
 GRADE BEAMS 12" MIN.
 INTO
 APPROVED MATERIAL U.N.O.
 AND ENSURE DESIGN DEPTH
 IS ACHIEVED - REF. SHEET 2.

THIS FOUNDATION ASSUMES LEVEL SITE CONDITIONS IF
 UNDERSLAB FORMING FILL AND/OR UNAPPROVED
 FILL DEPTH EXCEEDS 40" CONTACT ENGINEER FOR
 REDSIGN (SEE HARD POINT NOTE ON SHT. 2) VERIFY
 ALL DIMENSIONS WITH ARCHITECTURALS. DO NOT USE
 THESE PLANS FOR SETTING FORMS.

NOTE:
 THIS IS A SCHEMATIC PLAN FOR THE PURPOSE OF LOCATING AND IDENTIFYING
 FOUNDATION REINFORCING ELEMENTS ONLY. VERIFY ALL DIMENSIONS, DROPS,
 OFFSETS AND FEATURES WITH THE ARCHITECTURAL PLANS BEFORE FORMING
 THE FOUNDATION. [REDACTED] CANNOT BE HELD LIABLE FOR ANY CONTRACTOR
 OVERSIGHT IN THIS REGARD. DO NOT FORM FOUNDATION USING THESE PLANS.
 DIMENSIONAL CONTROL IS THE RESPONSIBILITY OF THE ARCHITECT. USE THESE
 PLANS FOR THE PLACEMENT OF THE GRADE BEAMS AND REINFORCEMENT.



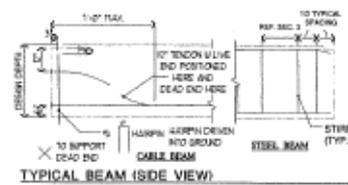
FILL UNAPPROVED ON THIS SITE

FILL APPROVED ON THIS SITE

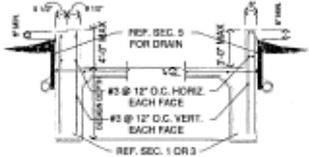
FOUNDATION PLAN
 SCALE: 1/8" = 1'-0"

S1 OF 2

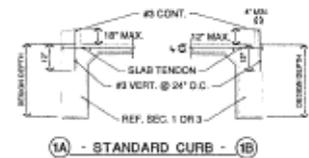




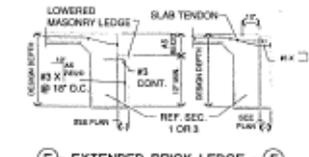
TYPICAL BEAM (SIDE VIEW)



(10) - HEIGHTENED CURB - (11) - STANDARD CURB



(12) - LOWERED MASONRY LEDGE - (13) - DEEP BEAM



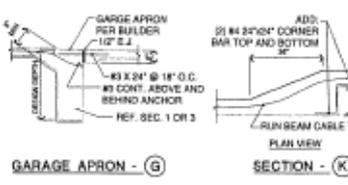
(14) - EXTENDED BRICK LEDGE - (15) - DROP IN SLAB



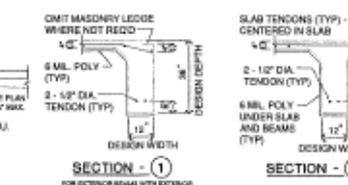
(16) - DROP IN SLAB - (17) - DEEP BEAM



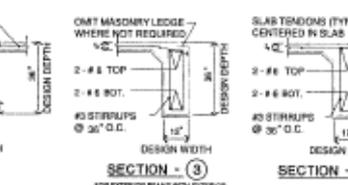
(18) - DEEP BEAM - (19) - DROP IN SLAB



(20) - GARAGE APRON - (21) - SECTION



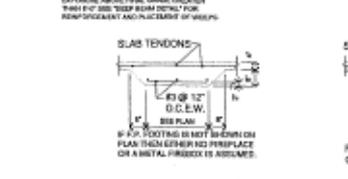
(22) - SECTION - (23) - SECTION



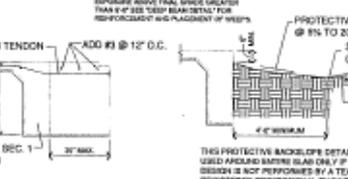
(24) - SECTION - (25) - SECTION



(26) - TYPICAL DROP IN SLAB TO 18 INCHES - (27) - SECTION



(28) - INT. F.P. FTG. - (29) - CANTILEVERED FTG.



(30) - PROTECTIVE BACK SLOPES

DESIGN WIDTH	DESIGN WIDTH	DESIGN WIDTH	DESIGN WIDTH
1'-7"	1'-7"	1'-7"	1'-7"
4'-0"	4'-0"	4'-0"	4'-0"
4'-11"	4'-11"	4'-11"	4'-11"
6'-11"	6'-11"	6'-11"	6'-11"
12'-0"	12'-0"	12'-0"	12'-0"
12'-0"	12'-0"	12'-0"	12'-0"

DESIGN WIDTH	DESIGN WIDTH	DESIGN WIDTH	DESIGN WIDTH
6'-0"	6'-0"	6'-0"	6'-0"
12'-0"	12'-0"	12'-0"	12'-0"
12'-0"	12'-0"	12'-0"	12'-0"
12'-0"	12'-0"	12'-0"	12'-0"
12'-0"	12'-0"	12'-0"	12'-0"

1.0. GENERAL
 1-1. Engineer's inspection required for:
 - concrete pre-pour setup
 - final staking of tendons
 - argon's inspection recommended (not required) for:
 - concrete placement and material testing
 1-2. Tendon lengths and count and concrete quantity on plan are for estimating purposes only. Contractor should verify all tendon lengths and concrete quantity prior to install.
 1-3. Concrete quantity must be verified for all tendons.
 1-4. All tendons shall be installed in accordance with the following:
 a. All tendons shall be installed in accordance with the following:
 b. All tendons shall be installed in accordance with the following:
 c. All tendons shall be installed in accordance with the following:
 d. All tendons shall be installed in accordance with the following:
 e. All tendons shall be installed in accordance with the following:
 f. All tendons shall be installed in accordance with the following:
 g. All tendons shall be installed in accordance with the following:
 h. All tendons shall be installed in accordance with the following:
 i. All tendons shall be installed in accordance with the following:
 j. All tendons shall be installed in accordance with the following:
 k. All tendons shall be installed in accordance with the following:
 l. All tendons shall be installed in accordance with the following:
 m. All tendons shall be installed in accordance with the following:
 n. All tendons shall be installed in accordance with the following:
 o. All tendons shall be installed in accordance with the following:
 p. All tendons shall be installed in accordance with the following:
 q. All tendons shall be installed in accordance with the following:
 r. All tendons shall be installed in accordance with the following:
 s. All tendons shall be installed in accordance with the following:
 t. All tendons shall be installed in accordance with the following:
 u. All tendons shall be installed in accordance with the following:
 v. All tendons shall be installed in accordance with the following:
 w. All tendons shall be installed in accordance with the following:
 x. All tendons shall be installed in accordance with the following:
 y. All tendons shall be installed in accordance with the following:
 z. All tendons shall be installed in accordance with the following:

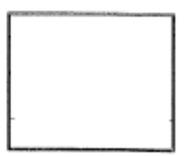
2.0. SITE PREPARATION
 2-1. All work shall be performed in accordance with FHWA Data Sheet 79-G. Refer to notes concerning "approved" and "unapproved" fill.
 2-2. All Under-Slab "Forming Fill" shall have a P.U. less than 20 and be free of organics.
3.0. CONCRETE
 3-1. Concrete shall have a minimum compressive strength of 3000 psi at 28 days. Concrete should be minimum 2000 psi at full tendon stressing. All concrete work shall meet A.C.I. 318R. Concrete shall be deposited in forms no later than two hours after water is mixed at the plant. No addition of water will be permitted at the job site to adjust the slump to a maximum of 3 inches.
 3-2. Concrete shall be well consolidated using proper mechanical vibration, especially in the vicinity of the tendon anchorage.
 3-3. If unanticipated irregularities in concrete placement occur, and concrete hardens, temporary forms must be used for setting of consolidation joints or concrete must be chipped to form vertical joints prior to setting additional slab. Use #3 x 24 dowels at 12" O.C. spalled into existing concrete to bond set to new concrete.
 3-4. PLASTERING MAY BE PLACED ONLY AFTER STRESSING.

4.0. CONCRETE COVERAGE
 4-1. SLAB TENDONS:
 1-10 inches above sub-grade in 4" thick slab and ANCHORS to have 4 inches vertical coverage from center of anchor to face of concrete.
 4-2. Slab Tendons may be moved 1/2" max. horizontally to allow for plumbing boxes-out. Beam Tendons may be moved 3" downward and/or 2" upward vertically for plumbing/finish plane in beams.
 4-3. SCAM AND WALL STEEL:
 1-10 inches slab, 2 inches formed, and 3 inches exposed to earth.
 4-4. PIPE PENETRATIONS:
 2 inches for tendon and rebar.

NOTES

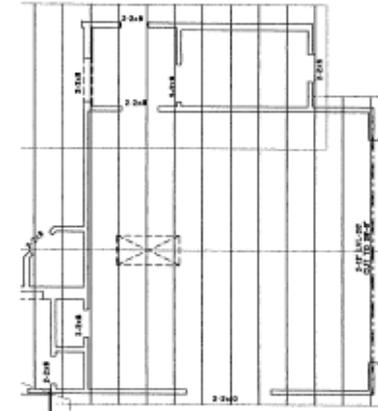
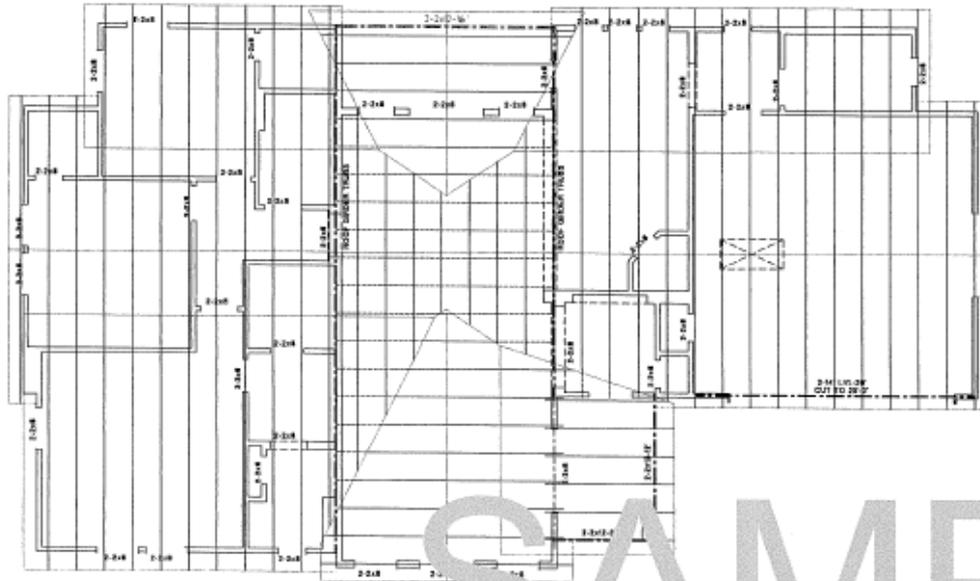
- 3.5. REINFORCING**
 3-1. All reinforcing bars shall be ASTM A-615 Grade 60, except Grade 40 may be used for staples, corner bars and helicals.
 3-2. All tendons shall be 20# grade, 7 wire strand, 1/2 inch diameter, U.N.C., prestressed and sheathed with a continuous, extruded plastic sheathing.
 3-3. Anchorage system shall be a mechanical/unbonded tendon anchorage utilizing a cast wedge plate and a plate wedge (as manufactured by a P.T.I. approved manufacturer).
 3-4. All post-tensioned tendons and anchors shall conform to the requirements of the latest "P.T.I. Guide Specifications For Post-Tensioning Materials." Post-tensioned tendon splices to be P.T.I. approved.
 3-5. All tendons shall be installed in accordance with the following:
 a. All tendons shall be installed in accordance with the following:
 b. All tendons shall be installed in accordance with the following:
 c. All tendons shall be installed in accordance with the following:
 d. All tendons shall be installed in accordance with the following:
 e. All tendons shall be installed in accordance with the following:
 f. All tendons shall be installed in accordance with the following:
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 y. All tendons shall be installed in accordance with the following:
 z. All tendons shall be installed in accordance with the following:

OPTIONAL PROVISIONS TO BE ENFORCED, IF CHECKED:
 FILL (UNAPPROVED). The fill material on this site is unsuitable to support a slab-on-ground foundation. The fill must be penetrated by all grade beams and extend a minimum of 6 inches into virgin soil. As an alternative, see HARD POINTS note. Based on the scope investigation, unapproved fill appears to be approximately deep.
 FILL (APPROVED). The fill material is acceptable to support a slab-on-ground foundation. Contract exterior grade be a minimum of 6 inches into virgin soil. "Approved" fill is fill that has been approved by M.A.W. based on proper exploration, testing or inspection by an agency acceptable to M.A.W.



FOUNDATION DETAILS
S2 OF 2

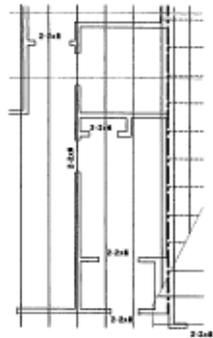




CEILING & ROOF TRUSS LAYOUT

OPT SIDE ENTRY
CEILING & ROOF TRUSS LAYOUT

SAMPLE



OPT MASTER BATH
CEILING & ROOF TRUSS LAYOUT

- 1) THE NUMBER OF WALL STUDS REQUIRED TO SUPPORT THE ENDS OF BEAM AND ROOF GIRDER TRUSSES SHALL BE ONE GREATER THAN THE NUMBER OF PILES MAKING UP THE BEAM OR TRUSS.
- 2) SHEET 5 10 TRUSS ROOF FRAMING NOTES SHALL BE INCORPORATED INTO THESE PLANS BY REFERENCE AS INDICATED HEREIN AT FULL LENGTH.
- 3) AN ENGINEERED GIRDOR TRUSS (DESIGNED BY OTHERS) MAY BE SUBSTITUTED FOR ANY BEAM OR GIRDER SPECIFIED IN THESE FRAMING PLANS.
- 4) ALLOW JOISTS TO ALLOW FOR PLUMBING AND MECHANICAL INSTALLATION.
- 5) ALL MEASUREMENTS SHALL BE VERIFIED IN THE FIELD BY THE FRAMING CONTRACTOR.
- 6) SEE FLOOR JOIST AND ROOF TRUSS INSTALLATION SPECIFICATIONS SUPPLIED BY SUPPLIER FOR ADDITIONAL REQUIREMENTS.

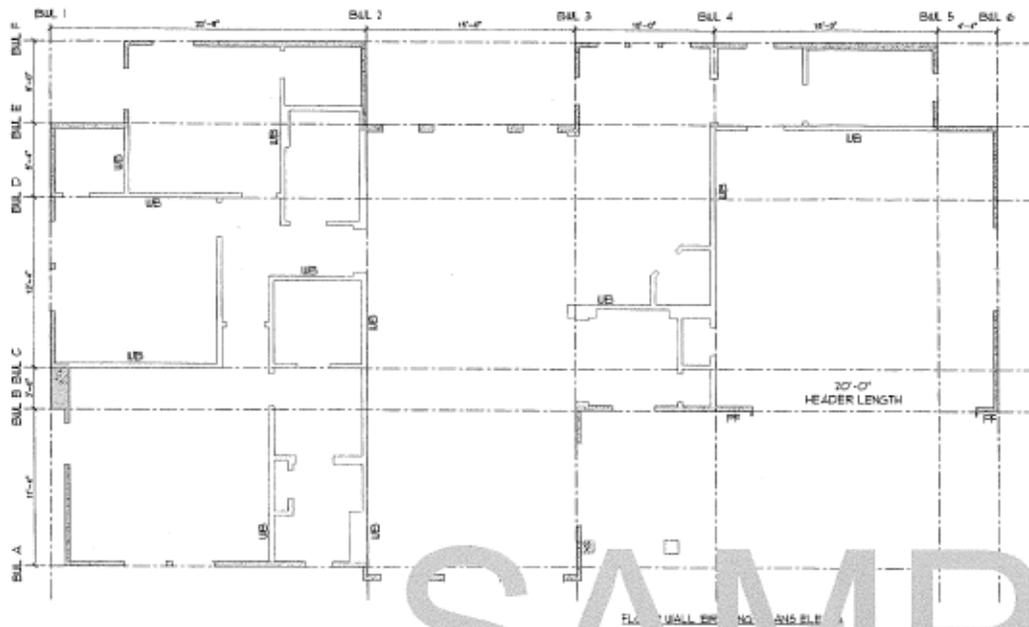
ELEV. 'A' - TRUSS FRAMING PLAN



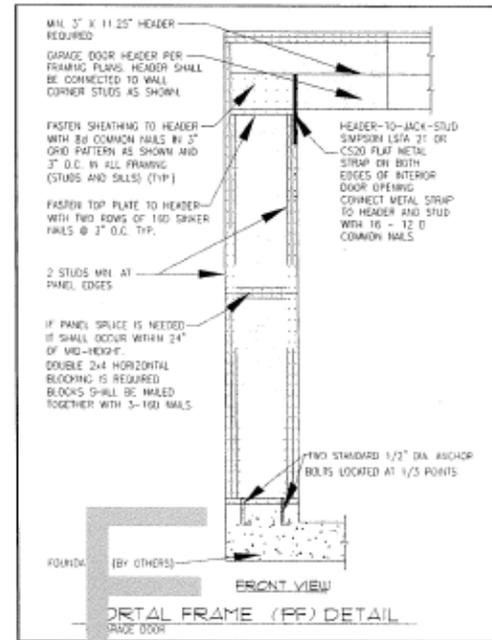
PLAN NO. _____
ADDRESS: _____

SHEET NO.
1
OF
6





SAMPLE



LEGEND

WB	1x4 LET-IN OR SIMPSON CWB
PF	OR TWO SIMPSON NB FLAT STRAPS
TWB	PORTAL FRAME DETAIL, TIMBER WALL BRACE

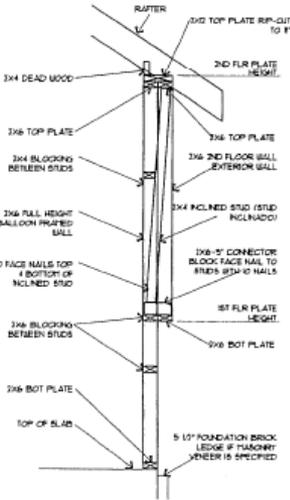
- WALL BRACING NOTES**
- 1) SHEATH ALL EXTERIOR WALLS WITH 7/16" OSB. FASTEN OSB FRAMING WITH 86 NAILS (25 x 0.131") SPACED 6" O.C. ON ALL PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS.
 - 2) ALL VERTICAL JOINTS OF PANEL SHEATHING SHALL OCCUR OVER STUDS. BLOCK ALL HORIZONTAL JOINTS.
 - 3) OSB WALL SHEATHING SHALL BE COVERED BY AN APPROVED WATER-REPELLENT SHEATHING.
 - 4) WHERE 1x4 LET-IN BRACE IS USED FOR WALL BRACING, IT SHALL BE SET INTO THE TOP AND BOTTOM PLATES AND THE INTERMEDIATE STUDS, PLACED AT NOT MORE THAN 60 DEGREES OR LESS THAN 45 DEGREES FROM THE HORIZONTAL AND ATTACHED TO EACH STUD AND PLATE WITH A MINIMUM OF 3-8D NAILS.

ELEV. 'A' - WALL BRACING PLAN

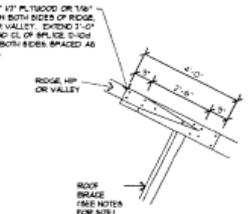
PLAN NO. _____
ADDRESS _____

SHEET NO. **3** OF **6**

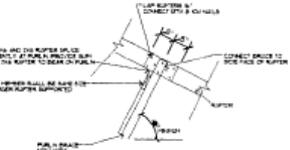




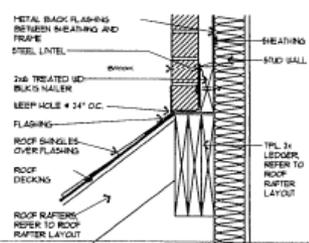
5 1/2" OFFSET WALL DETAIL



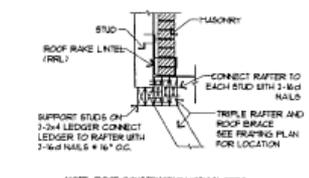
RIDGE, HIP & VALLEY BRACE
BRACES FOR RIDGES, HIPs AND VALLEYS SHALL BE CONSTRUCTED WITH TWO MEMBERS IN A "T" SHAPE AND SHALL BE BUILT WITH A 2x4 AND 2x6 FOR BRACES LESS THAN 10 FEET IN LENGTH OR TWO 2x6s FOR BRACES GREATER THAN 10 FEET IN LENGTH.



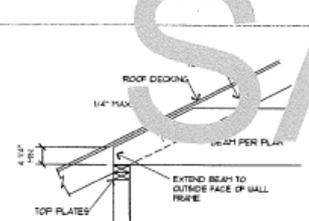
PURLIN BRACE
BRACES FOR PURLINS SHALL BE CONSTRUCTED WITH TWO MEMBERS IN A "T" SHAPE AND SHALL BE BUILT WITH TWO 2x4s FOR BRACES LESS THAN 10 FEET IN LENGTH OR A 2x4 AND 2x6 FOR BRACES GREATER THAN 10 FEET IN LENGTH.



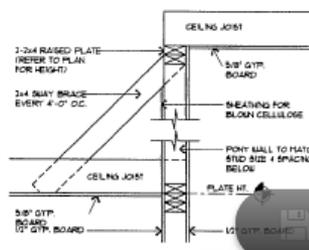
BRICK ABOVE RAFTERS IN SECTION



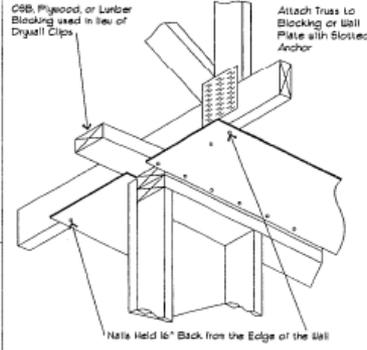
ROOF RAKE INTEL



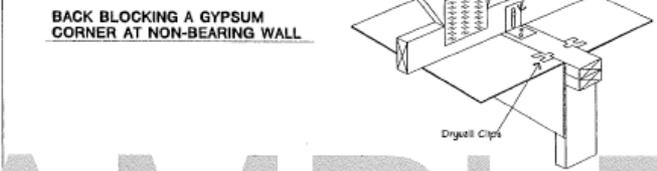
BEAM TAPERED END CUT



INTERIOR PONY WALL SECTION



BACK BLOCKING A GYPSUM CORNER AT NON-BEARING WALL

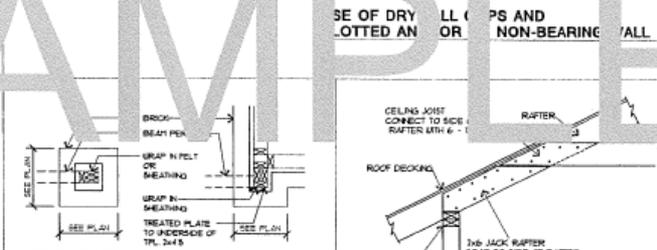


FLOATING GYPSUM CORNER 2

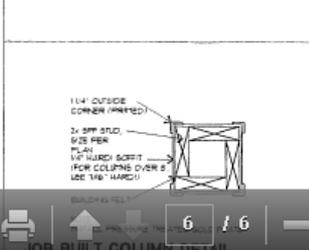
(True Parallel to Wall)

FLOATING GYPSUM CORNER 1

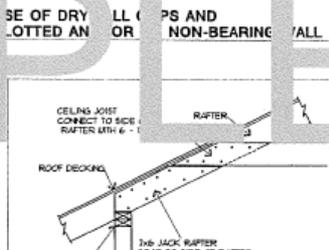
(True Perpendicular to Wall)



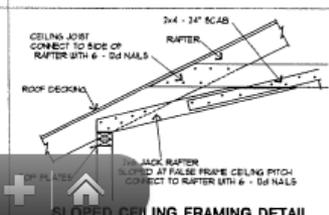
BRICK PORCH COLUMN DETAIL



JOB BUILT COLUMN DETAIL



SLOPED CEILING FRAMING DETAIL



SLOPED CEILING FRAMING DETAIL AT FALSE FRAMED CEILING AREA



PLAN NO. _____
ADDRESS _____

SHEET NO.
2
OF
2

17.00 x 11.00 in



Pre-engineered systems (Trusses/I-joists)

OPTION 2

Plan Review:

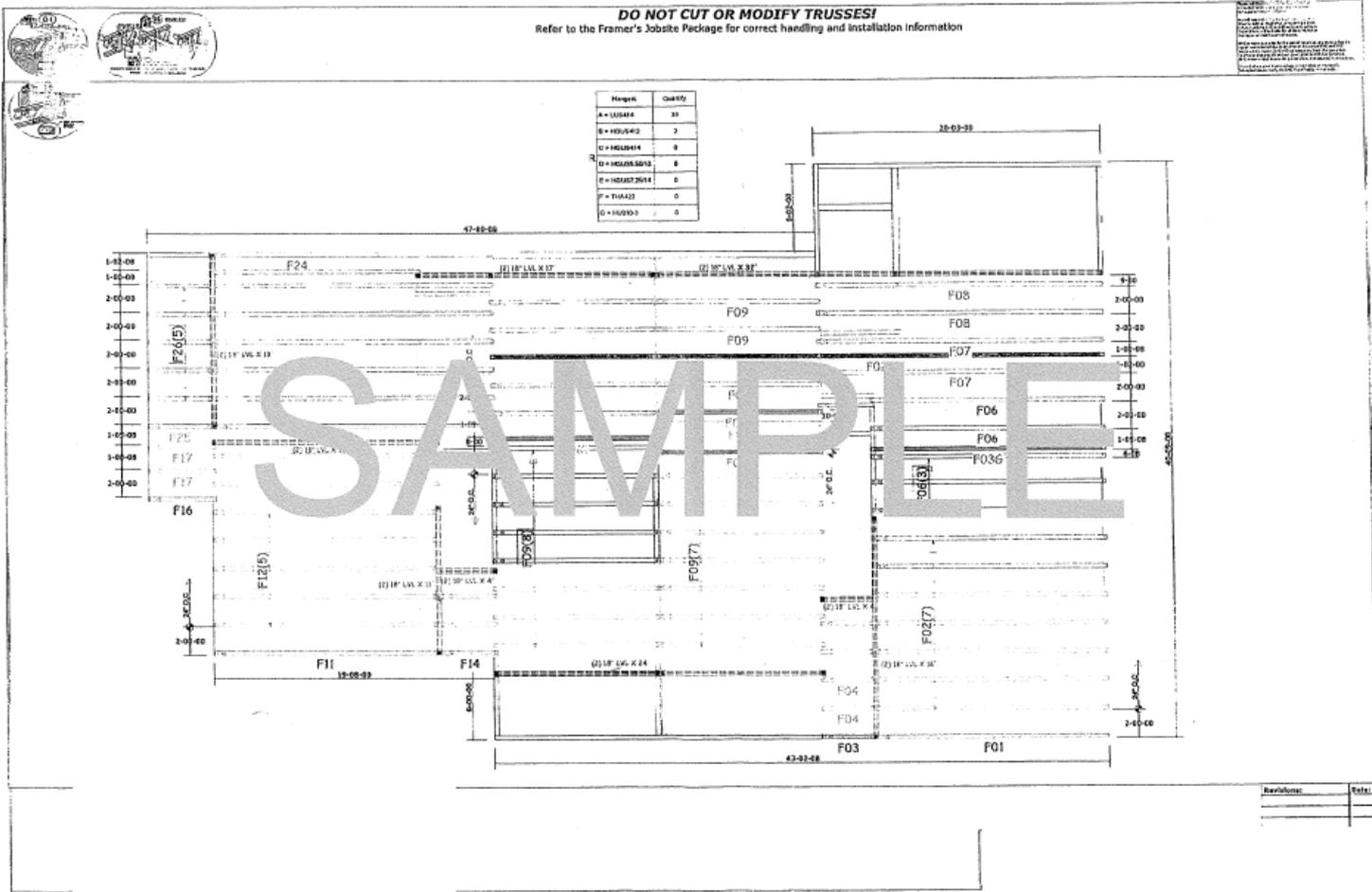
- Provide framing plan showing general area of truss/wooden i-joist system (hatched, shaded, etc.) sealed by the engineer of record. The framing plan should show all supporting structural members (headers, beams, posts, columns, etc.)
- Provide coordinating truss layout (direction and spacing) from the manufacturer

Field Inspections: Provide truss layout and truss calculations from the manufacturer stamped by an engineer

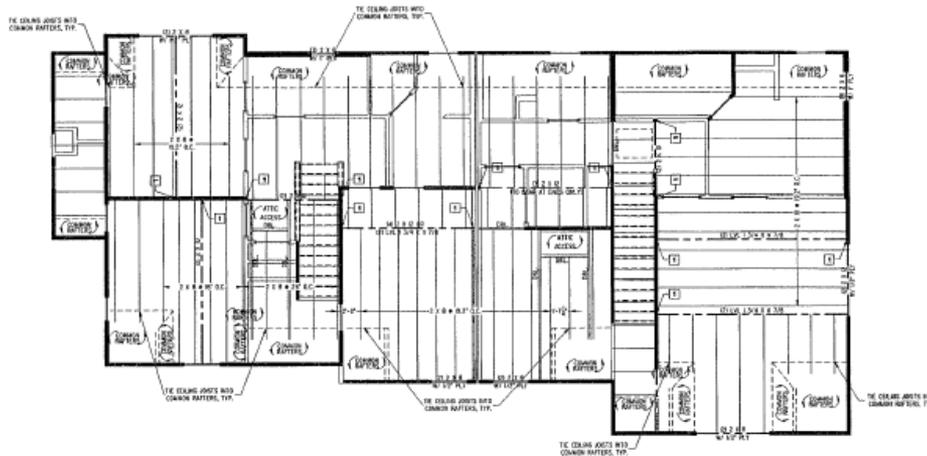


Option 2: Example





SAMPLE



SECOND STORY CEILING FRAMING PLAN

1/4" = 1'-0" SO. FOOTAGE = 043

GENERAL NOTES

01. DESIGN IS BASED ON A UNIFORM NEAR, PROOF LOAD OF 500 LBS/SQ. YD. CONSULT ENGINEER IF OTHER MATERIALS ARE USED.
02. ALL MEMBERS SHALL BE EMFASIS 400 STD. #2 UNLESS NOTED OTHERWISE.
03. ALL MEMBERS TO BE SUPPORTED INDEPENDENTLY OF HEADERS BY STEEL LATH. CONCRETE FLOORING AS REQUIRED.
04. ALL JOISTS TO BE 2 x 4 x 14 FT. L.S. UNLESS NOTED OTHERWISE.
05. ALL HEADERS TO BE A MINIMUM OF (2) 2 x 4 UNLESS NOTED OTHERWISE.
06. ALL MEMBERS TO BE SHOWN ON EITHER UNLESS NOTED OTHERWISE.
07. PROVIDE MEMBER NUMBER FOR ALL BEAM TO BEAM CONNECTIONS UNLESS SPECIFIC MEMBER NO. IS CALLED OUT ON PLAN.
08. BEAM JOIST & GUYOT BEAMS AND OTHER BEAMS INSTALLED OR PLACED SHALL SUPPORT ONLY THE DESIGNATED BEAMS BY A MINIMUM WEIGHTS/SP. EQUAL TO THE VERTICAL CENTER OF THE BEAMS AS THE BEAM FACE OF THE BEAM WALL, IN A. THE BEAM FROM THE BEAM FACE TO THE TOP OF THE TOP PLATE.
09. ALL L.A. BEAMS TO BE BOLTED IN 42 INCHES OF JOIST THROUGH JOIST x 12" O.C. JOIST SHOULD BE LOCATED 7" FROM THE TOP AND BOTTOM OF THE BEAM.
10. BEAM JOIST AND BRIDGES TO BE IN ACCORDANCE WITH PROVISIONS OF SECTION 804.0 OF THE URBAN DESIGNATED INTERNATIONAL RESIDENTIAL CODE. ENGINEER MAY BE CONTACTED FOR JOIST WALL DESIGN AT AN ADDITIONAL FEE.
11. ALL EXPOSED LUMBER TO BE TREATED FOR MOISTURE PROTECTION.
12. SO. FOOTAGE IS INCLUSIVE OF FINISHED ATTIC FLOOR AND DECKING DECK.

FRAMING LEGEND

- FINISH BY OTHER
- BEAM
- JOIST
- UNFINISHED TRUSS BRACKET
- NON-LOAD BEARING WALLS
- LEAD BEARING WALLS

NOTE: HIGH LOAD BEARING AND LONG BEARING WALLS APPLY TO SUPPORTED WALLS ONLY. I.E. WALLS THAT DO NOT BE WITH THE FOUNDATION.

- FLOOR OR WALL SUPPORT
- FORWARD AND LOCATED
- ROOF BRACE

LEGEND:

- 1 2x4x14 FT. #2
- 2 2x4x14 FT. #2
- 3 2x4x14 FT. #2
- 4 2x4x14 FT. #2
- 5 2x4x14 FT. #2
- 6 2x4x14 FT. #2
- 7 2x4x14 FT. #2

MEMBERS ARE # 2 UNLESS NOTED OTHERWISE.

IRC 2008
IRC 2009
IRC 2012

NOTE:

FRAMING PLANS BASED ON ARCHITECTURE DRAWING OR CONSULT ENGINEER FOR ANY STRUCTURAL CHANGES DUE TO ARCHITECTURAL CHANGES MADE AFTER DATE.

NOTE:

THESE PLANS WERE DESIGNED ACCORDING TO THE AMERICAN WOOD COUNCIL'S REPLY ACCEPTED REVISIONS PERMITTED FOR USUALLY HEAVY SOUTHERN YELLOW PINE EFFECTIVE JAN. 1, 2012.

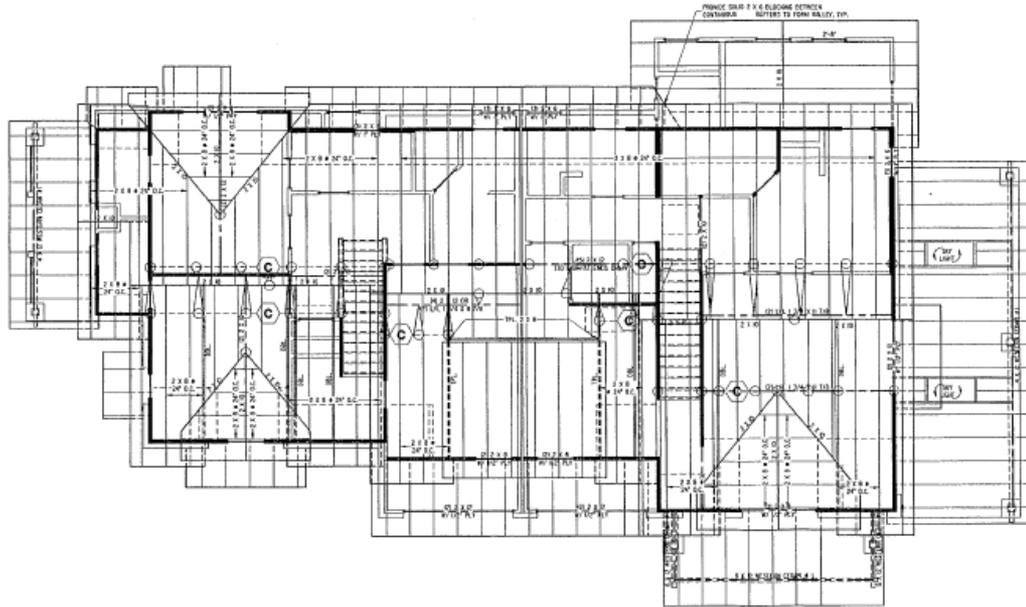
DATE ISSUED

CEILING FRAMING PLAN

S-5



SAMPLE



GENERAL NOTES

01. MEMBERS TO BE MADE OF A MINIMUM MATERIAL THICKNESS AND SIZE UNLESS OTHERWISE NOTED.
02. ALL MEMBERS SHALL BE CONTINUOUS UNLESS NOTED OTHERWISE.
03. ALL JOISTS TO BE SUPPORTED INDEPENDENTLY BY BEAMERS BY STEEL LATHES, UNLESS OTHERWISE NOTED.
04. ALL JOISTS TO BE 2 X 4 @ 24" O.C. UNLESS NOTED OTHERWISE.
05. ALL BEAMERS TO BE A MINIMUM OF 2 X 4 UNLESS NOTED OTHERWISE.
06. NO FOOTING IS BELIEVED BY PROBABLY EXISTING, FOUNDATION, AND EXISTING DECK.

SPECIAL NOTES

- (C) PAPER-FRAME WALL OR BEAM BEHIND TO SUPPORT RAFTERS.

FRAMING LEGEND

- TRUSS BY OTHERS
 - JOIST
 - ASSUMED THREE ECTIONS
 - NON-CLOSE BEARING WALLS
 - LOAD BEARING WALLS
- NOTE: NON-CLOSE BEARING AND LOAD BEARING WALLS APPLY TO UPPER FLOOR WALLS ONLY. I.E. WALLS THAT DO NOT RECEIVE VERTICAL LOADS.
- ROOF OR BEAM SUPPORT
 - SUPPORT AND LOCATION
 - /// ROOF SPACE

LEGEND

- 1 2 X 4 @ 24" O.C.
- 2 2 X 4 @ 24" O.C.
- 3 2 X 4 @ 24" O.C.
- 4 2 X 4 @ 24" O.C.
- 5 2 X 4 @ 24" O.C.
- 6 2 X 4 @ 24" O.C.
- 7 2 X 4 @ 24" O.C.

APPROXIMATE MIN. # OF STUDS PER LINE SUPPORT OF JOISTS

IRC 2006
IRC 2009
IRC 2012

NOTE: FRAMING PLANS BASED ON ARCHITECTURE DATED ON 01/16/14 - CORRECTLY POINTED FOR ANY STRUCTURAL CHANGES DUE TO ARCHITECTURAL CHANGES MADE AFTER DATE.

NOTE: THESE PLANS WERE DESIGNED ACCORDING TO THE AMERICAN WOOD COUNCIL'S NEWLY ADOPTED PERIODIC SCHEDULES FOR VISUALLY GRADED EASTERN YELLOW PINE EFFECTIVE JUNE 1, 2012.

ROOF FRAMING PLAN

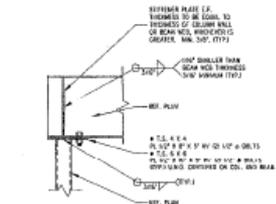
1/4" = 1'-0"

ROOF FRAMING PLAN

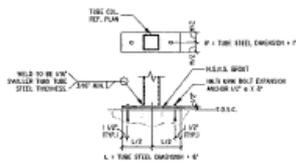
DATE ISSUED
REVISED

S-6

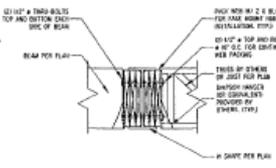




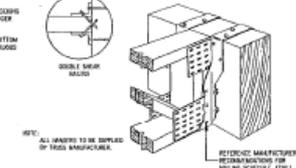
1 BEAM PROFILE W/ BOLTED CONNECTION
SCALE: 1/8"



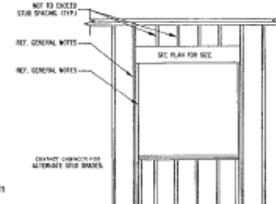
2 BASE PLATE TO FOUNDATION
SCALE: 1/8"



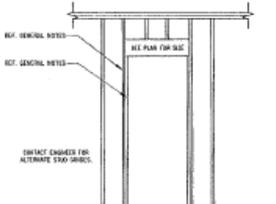
3 TYPICAL WOOD FRAMING MEMBER TO STEEL BEAM
SCALE: 1/8"



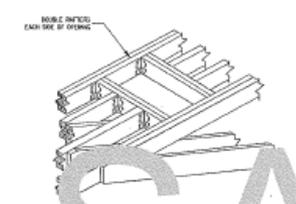
4 FLOOR TRUSS TO BEAM CONNECTION
SCALE: 1/8"



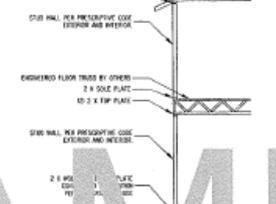
5 TYPICAL WINDOW OPENING
SCALE: 1/8"



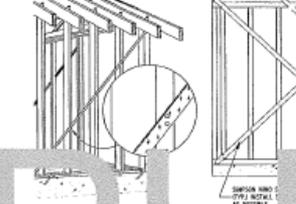
6 TYPICAL DOOR OPENING
SCALE: 1/8"



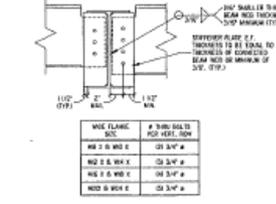
7 TYPICAL ROOF OPENING
SCALE: 1/8"



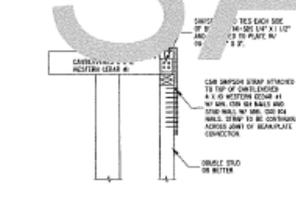
8 TYPICAL WALL SECTION
SCALE: 1/8"



9 TYPICAL WALL BRACING
SCALE: 1/8"

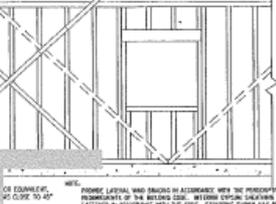


10 BEAM TO BEAM CONNECTION STEEL
SCALE: 1/8"



11 CONNECTION CANTILEVERED BEAM
SCALE: 1/8"

SAMPLE



10 BEAM TO BEAM CONNECTION STEEL
SCALE: 1/8"

DATE ISSUED

DETAILS

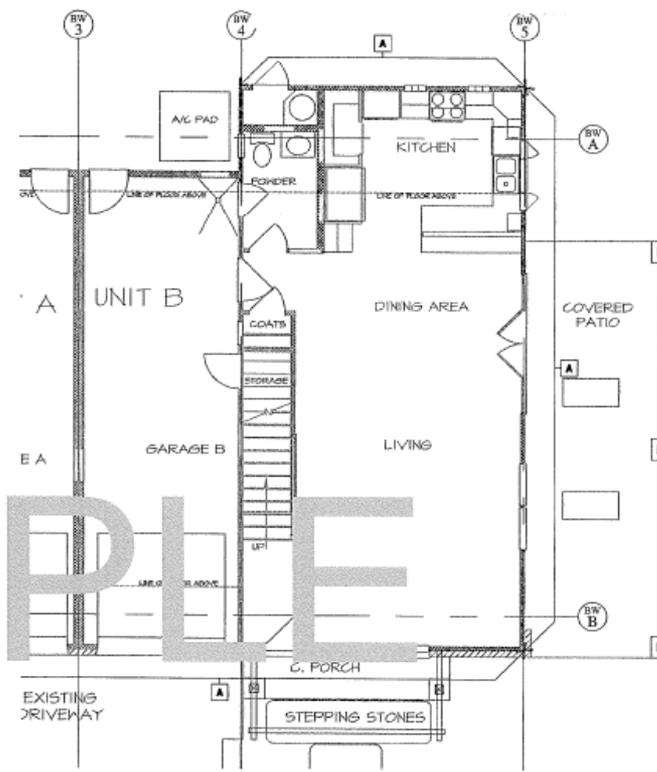
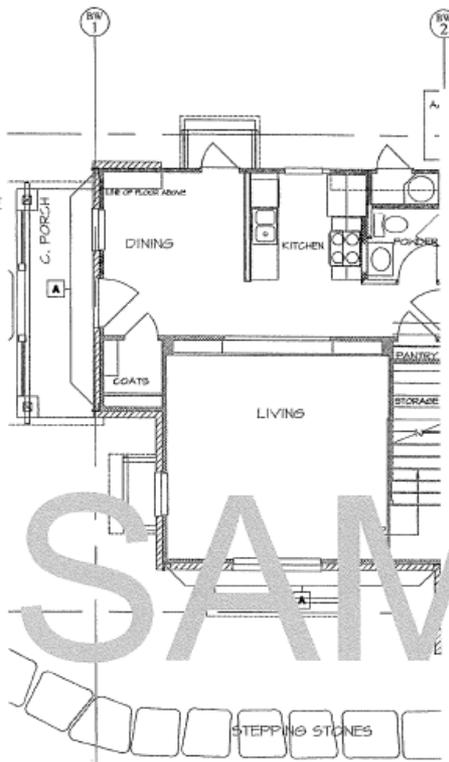
S-7



SHEARWALL & NAILING SCHEDULE

SHEAR WALL DESIGN BASED UPON FOLLOWING ASSUMPTIONS U.N.O.

1. ALL WALLS SHEATHED W/ 1/2" THICK GYPSUM WALL BOARD, INCLUDING GARAGE. BLOCKING IS NOT REQUIRED BETWEEN STUDS. ATTACH W/5d NAILS (OR EQUAL) AT 7" O.C. AT TOP & BOTTOM PLATES AND STUDS.
2. ATTACH UPPER FLOOR BOTTOM PLATES ACCORDING TO PRESCRIPTIVE CODE METHODS.
3. THIS DESIGN DOES NOT RELY ON ANY CONTRIBUTION FROM THE CEILING DIAPHRAGM.
4. FOUNDATION SILL PLATES AT BRACED WALL LINES AND ALL EXTERIOR WALLS ANCHORED TO FOUNDATION W/ 1/2" @ X 10" ANCHOR BOLTS @ 72" O.C. AND 12" FROM DOORS. FOUNDATION SILL PLATES AT INTERIOR WALLS ANCHORED TO FOUNDATION W/ HILTI X-DRI POWDER ACTUATED FASTENERS (OR EQUAL) @ 16" O.C. AND WITHIN 12" OF EACH END.
5. ONE ANCHOR BOLT SHALL BE PROVIDED AT EACH END OF THE NARROW GARAGE WALLS, NEXT TO GARAGE DOOR OPENING.
6. BLOCK AND NAIL ALL COFFERED CEILING LINES.
7. THE MOST RESTRICTIVE PRESCRIPTIVE FASTENING REQUIREMENTS OF IRC TABLE 602.3 OR IBC 2304.9.1 SHALL APPLY.
8. THIS WINDBRACING PLAN IS VALID ONLY FOR LISTED ELEVATIONS AND OPTIONS.
9. ALL WALLS DESIGNATED (SW) ARE CONSIDERED BRACED WALLS AND SHALL BE DIRECTLY SUPPORTED BY FLOOR FRAMING MEMBERS OR 2x BLOCKING (FLAT) BETWEEN FLOOR TRUSSES, USING TOENAILING OR A PRODUCT SIMILAR TO THE SIMPSON TP57 TIE PLATE. FASTEN ALL SW SOLE PLATES W/ 3-16d NAILS 16" O.C.
10. INTERIOR WALLS INTERSECTING EXTERIOR WALLS SHALL BE DIRECTLY CONNECTED BY OVERLAPPING TOP PLATES PER CODE AND SHALL BE ADDITIONALLY FASTENED TO EXTERIOR WALL STUDS WITH MINIMUM (1) 16d NAIL @ 16" ON CENTER OR EQUIVALENT NAILING.



SHEATHING SCHEDULE LEGEND

- A** 15/32" CDX PLYWOOD OR 7/16" OSB RATED SHEATHING (ONE SIDE), BLOCKED, NAILED W/ 8d COMMON NAILS @ 4" O.C. ON EDGE AND 12" O.C. IN FIELD.
- B** 15/32" CDX PLYWOOD OR 7/16" OSB RATED SHEATHING (ONE SIDE), BLOCKED, NAILED W/ 8d COMMON NAILS @ 6" O.C. ON EDGE AND 12" O.C. IN FIELD.
- C** 1/4" HARDI PANEL (ONE SIDE), BLOCKED, NAILED W/ 6d COMMON NAILS, 2" LONG, @ 6" O.C. ON EDGE AND 6" O.C. IN FIELD.
- D** SIMPSON STRAP BRACING SPANNING DIAGONALLY ACROSS THE GARAGE CEILING. STRAP TO BE NAILED TO UNDERSIDE OF EACH CEILING JOIST AND EXTEND OVER THE WALL PLATES AND DOWN AND AROUND CORNER STUDS TO ENSURE MIN. (1) 16d NAILS SECURE EACH END.



IRC 2012

1ST FLOOR WINDBRACING PLAN

SCALE: 1/8" = 1'-0"

ALL DIMENSIONS ARE THE SOLE RESPONSIBILITY OF THE ARCHITECT. HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE DIMENSIONS PRIOR TO THE START OF CONSTRUCTION, AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.

LEGENDS:

- 2-PLY DRAG STRUT
- REF. DETAIL SHEET
- (SW) - SHEAR WALL LINE
- (BW A) - BRACED WALL LINE

NOTES:

1. ADDITIONAL WINDBRACING ADDED BY CONTRACTOR IS ACCEPTABLE TO THE ENGINEER.
2. ENGINEER HAS DESIGNED WINDBRACING ONLY.
3. CONTINUOUS TOP PLATE OR DETAIL 1,2/WB3.
4. OSB NOTED ON PLAN TO BE CONTINUOUS FROM BOTTOM PLATE TO TOP PLATE OF THE FLOOR ON WHICH IT IS INDICATED.

WINDBRACING PLAN

DATE ISSUED

SHEET NO.

WB-1



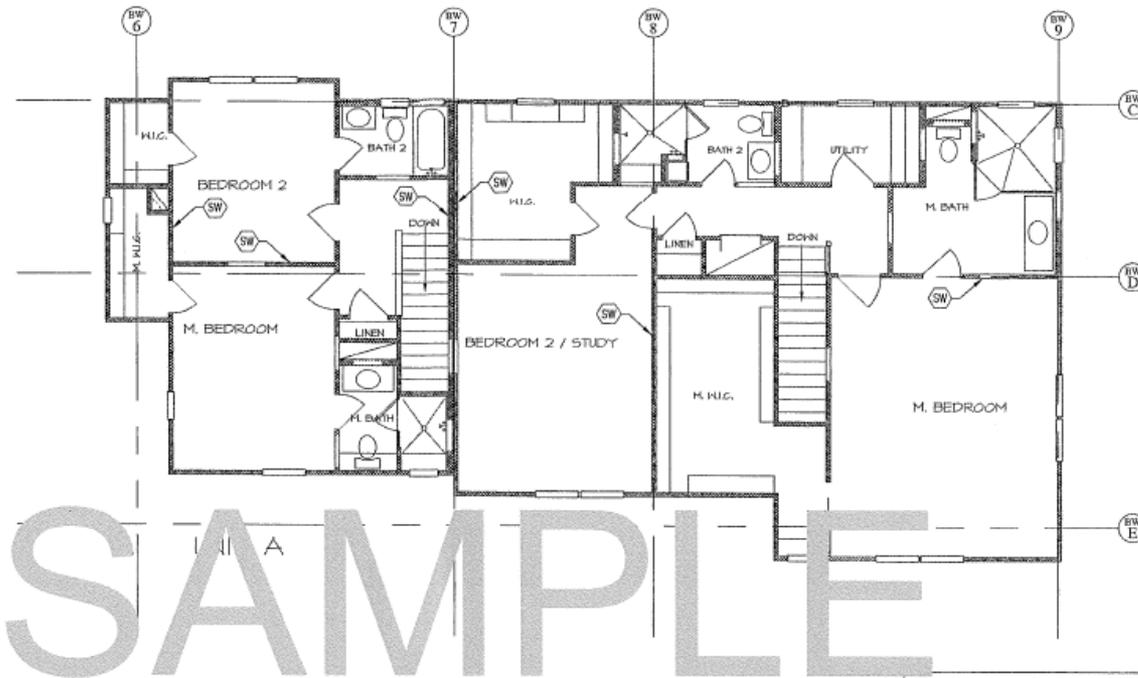
SHEARWALL & NAILING SCHEDULE

SHEAR WALL DESIGN BASED UPON FOLLOWING ASSUMPTIONS U.M.O.

1. ALL WALLS SHEATHED W/ 1/2" THICK GYPSUM WALL BOARD, INCLUDING GARAGE. BLOCKING IS NOT REQUIRED BETWEEN STUDS. ATTACH W/5d NAILS (OR EQUAL) AT 7" O.C. AT TOP & BOTTOM PLATES AND STUDS.
2. ATTACH UPPER FLOOR BOTTOM PLATES ACCORDING TO PRESCRIPTIVE CODE METHODS.
3. THIS DESIGN DOES NOT RELY ON ANY CONTRIBUTION FROM THE CEILING DIAPHRAGM.
4. FOUNDATION SILL PLATES AT BRACED WALL LINES AND ALL EXTERIOR WALLS ANCHORED TO FOUNDATION W/ 1/2" @ X 10" ANCHOR BOLTS @ 72" O.C. AND 12" FROM DOORS. FOUNDATION SILL PLATES AT INTERIOR WALLS ANCHORED TO FOUNDATION W/ HILTI X-DNI POWDER ACTUATED FASTENERS (OR EQUAL) @ 16" O.C. AND WITHIN 12" OF EACH END.
5. ONE ANCHOR BOLT SHALL BE PROVIDED AT EACH END OF THE NARROW GARAGE WALLS, NEXT TO GARAGE DOOR OPENING.
6. BLOCK AND NAIL ALL COFFERED CEILING LINES.
7. THE MOST RESTRICTIVE PRESCRIPTIVE FASTENING REQUIREMENTS OF IRC TABLE 602.3 OR IBC 2304.9.1 SHALL APPLY.
8. THIS WINDBRACING PLAN IS VALID ONLY FOR LISTED ELEVATIONS AND OPTIONS.
9. ALL WALLS DESIGNATED (SW) ARE CONSIDERED BRACED WALLS AND SHALL BE DIRECTLY SUPPORTED BY FLOOR FRAMING MEMBERS OR 2x BLOCKING (FLAT) BETWEEN FLOOR TRUSSES, USING TOENAILING OR A PRODUCT SIMILAR TO THE SIMPSON TP57 TIE PLATE. FASTEN ALL SW SOLE PLATES W/ 3-16d NAILS 16" O.C.
10. INTERIOR WALLS INTERSECTING EXTERIOR WALLS SHALL BE DIRECTLY CONNECTED BY OVERLAPPING TOP PLATES PER CODE AND SHALL BE ADDITIONALLY FASTENED TO EXTERIOR WALL STUDS WITH MINIMUM (1) 16d NAIL @ 16" ON CENTER OR EQUIVALENT NAILING.

SHEATHING SCHEDULE LEGEND

- [A] 15/32" CDX PLYWOOD OR 7/16" OSB RATED SHEATHING (ONE SIDE), BLOCKED, NAILED W/ 8d COMMON NAILS @ 4" O.C. ON EDGE AND 12" O.C. IN FIELD.
- [B] 15/32" CDX PLYWOOD OR 7/16" OSB RATED SHEATHING (ONE SIDE), BLOCKED, NAILED W/ 8d COMMON NAILS @ 6" O.C. ON EDGE AND 12" O.C. IN FIELD.
- [C] 1/4" HARDI PANEL (ONE SIDE), BLOCKED, NAILED W/ 6d COMMON NAILS, 2" LONG, @ 6" O.C. ON EDGE AND 6" O.C. IN FIELD.
- [D] SIMPSON STRAP BRACING SPANNING DIAGONALLY ACROSS THE GARAGE CEILING. STRAP TO BE NAILED TO UNDERSIDE OF EACH CEILING JOIST AND EXTEND OVER THE WALL PLATES AND DOWN AND AROUND CORNER STUDS TO ENSURE MIN. (10) 16d NAILS SECURE EACH END.



IRC 2012

2ND FLOOR WINDBRACING PLAN

SCALE: 1/8" = 1'-0"

ALL DIMENSIONS ARE THE SOLE RESPONSIBILITY OF THE ARCHITECT. HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE DIMENSIONS PRIOR TO THE START OF CONSTRUCTION, AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.

SECOND FLOOR PLAN

- NOTES:**
1. ADDITIONAL WINDBRACING ADDED BY CONTRACTOR IS ACCEPTABLE TO THE ENGINEER.
 2. ENGINEER HAS DESIGNED WINDBRACING ONLY.
 3. CONTINUOUS TOP PLATE OR DETAIL 1,2/WB3.
 4. OSB NOTED ON PLAN TO BE CONTINUOUS FROM BOTTOM PLATE TO TOP PLATE OF THE FLOOR ON WHICH IT IS INDICATED.

- LEGENDS:**
- 2-PLY DRAG STRUT
 - REF. DETAIL SHEET
 - (SW) - SHEAR WALL LINE
 - (BW A) - BRACED WALL LINE

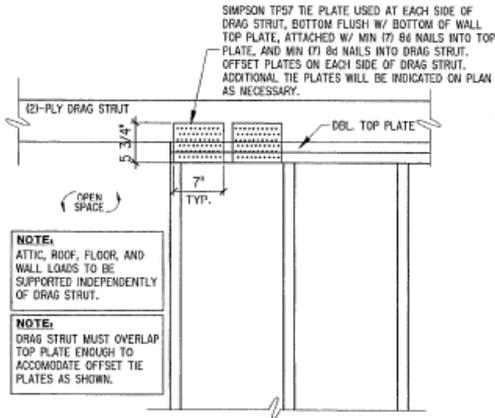
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WINDBRACING PLAN

SHEET NO.

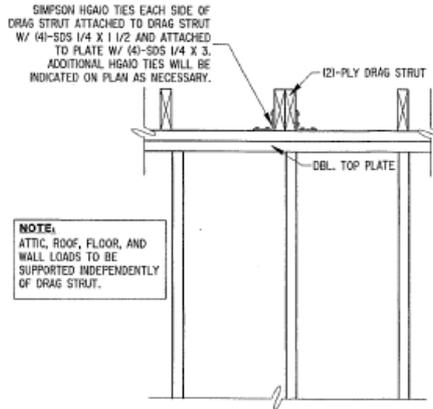
WB-2





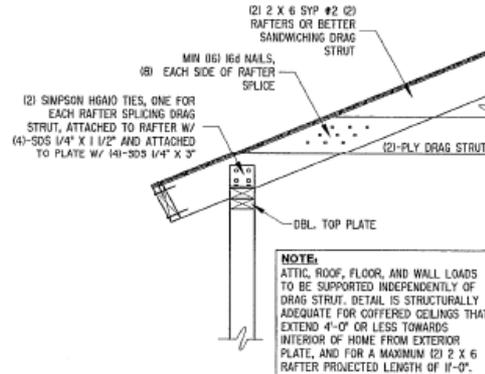
**1 PARALLEL CONNECTION
DRAG STRUT TO WALL**

SCALE: 3/4" = 1'-0"



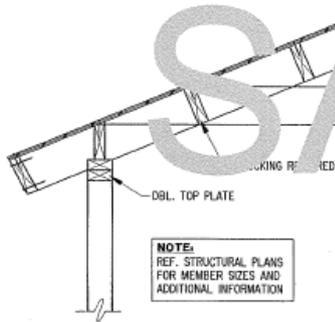
**2 PERPENDICULAR CONNECTION
DRAG STRUT TO WALL**

SCALE: 3/4" = 1'-0"



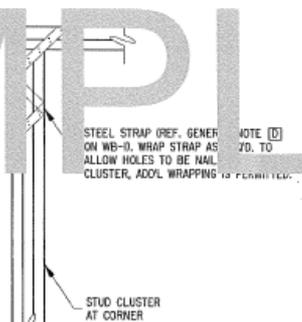
3 DRAG STRUT TO RAFTERS

SCALE: 3/4" = 1'-0"



**4 COFFERED CEILING
BLOCKING**

SCALE: 3/4" = 1'-0"



**5 STRAP AT
NARROW GARAGE WALL**

SCALE: 3/4" = 1'-0"

THE DETAILS SHOWN ON THIS SHEET ARE GENERIC IN NATURE. ALL DETAILS MUST APPLY. SEE WB-1 FOR SPECIFIC REFERENCES TO DETAILS.



IRC 2012

WINDBRACING DETAILS

SCALE: 3/4" = 1'-0"

ALL DIMENSIONS ARE THE SOLE RESPONSIBILITY OF THE ARCHITECT. HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE DIMENSIONS PRIOR TO THE START OF CONSTRUCTION, AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.

WINDBRACING DETAILS

DATE ISSUED

SHEET NO.

WB-3



Pre-engineered systems (Trusses/I-joists)

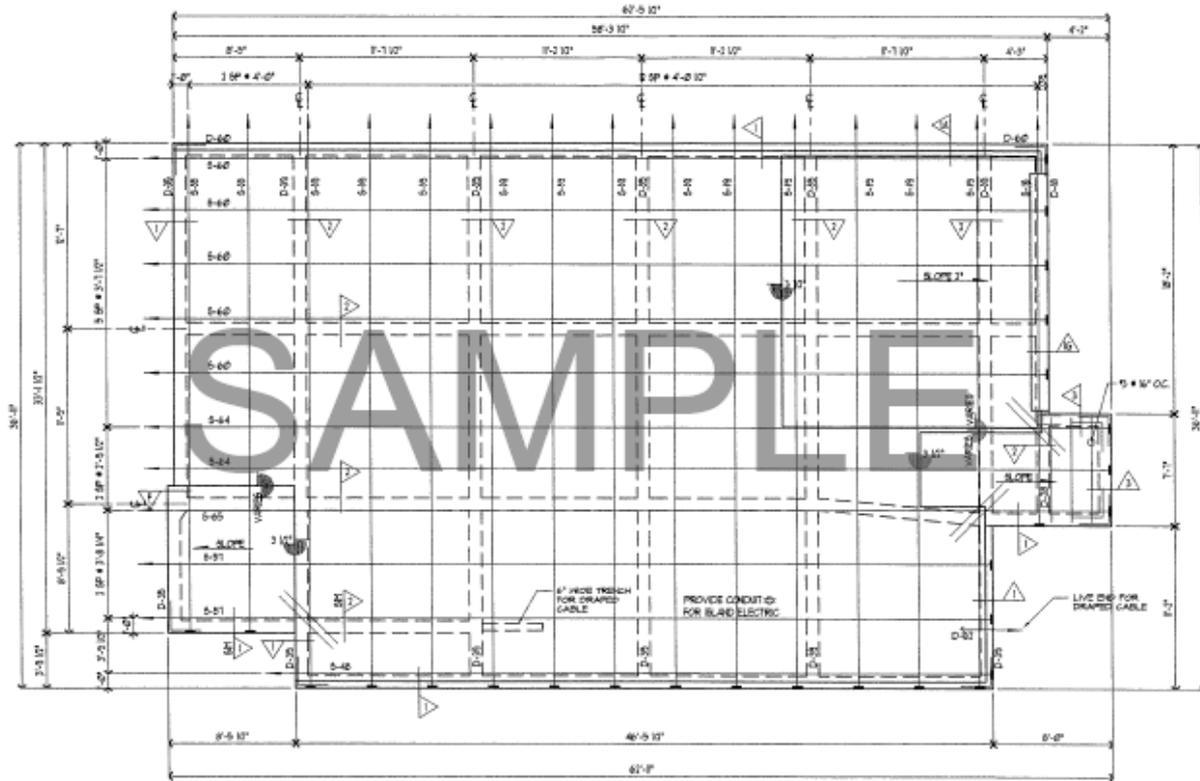
OPTION 3 – unsealed plans

Plan Review:

- Provide framing plan showing truss/wooden i-joist layout (direction and spacing) from manufacturer.
- Provide header schedule per prescriptive code requirements
- Provide manufacturer span tables for engineered lumber products (LVL's, glulams, etc.)
- Provide post/column sizes

Field Inspections: Provide truss calculations from the manufacturer stamped by an engineer



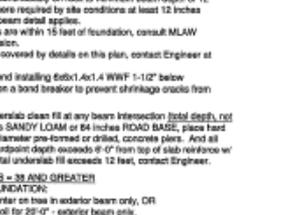
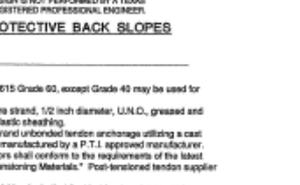
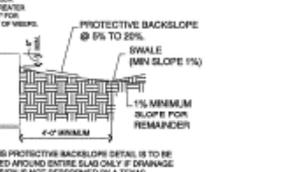
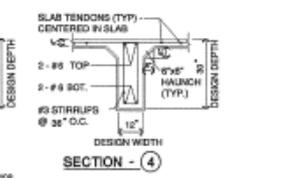
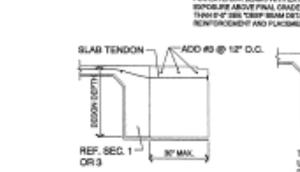
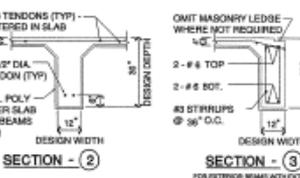
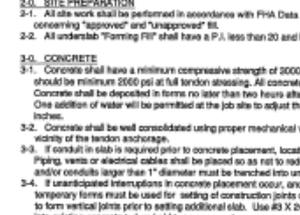
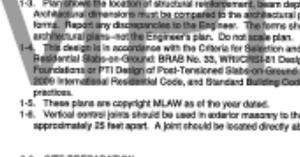
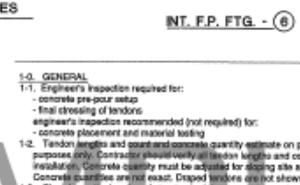
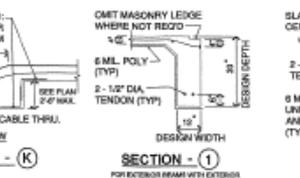
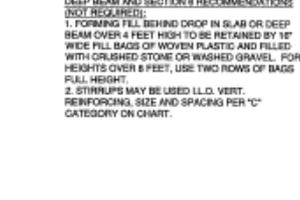
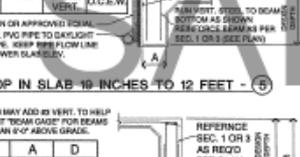
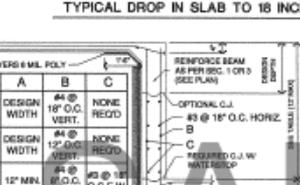
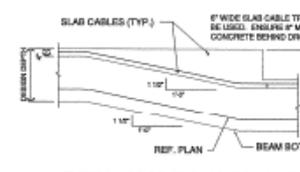
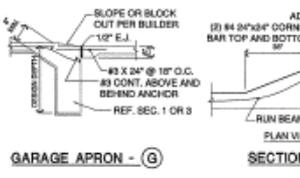
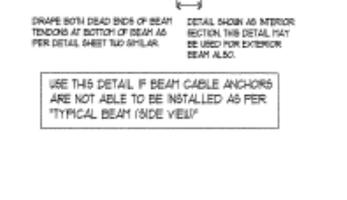
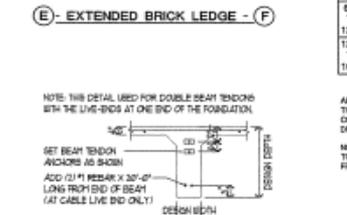
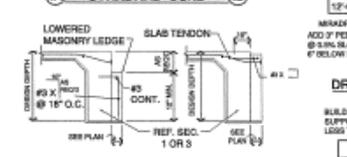
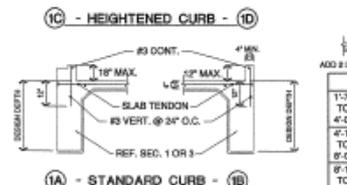
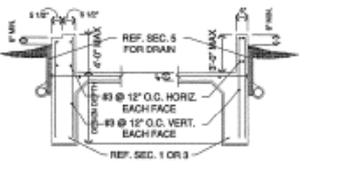
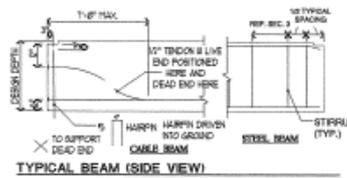


THIS FOUNDATION ASSUMES LEVEL SITE CONDITIONS. IF INCERLAS FORMING FULL ANCHOR UNAPPROVED FULL DEPTH EXCEEDS 48\"/>

NOTE:
 PENETRATE ALL PERIMETER GRADE BEAMS 12\"/>

NOTE:
 THIS IS A SCHEMATIC PLAN FOR THE PURPOSE OF LOCATING AND IDENTIFYING FOUNDATION REINFORCING ELEMENTS ONLY. VERIFY ALL DIMENSIONS, DROPS, OFFSETS AND FEATURES WITH THE ARCHITECTURAL PLANS BEFORE FORMING THE FOUNDATION. M/LAW CANNOT BE HELD LIABLE FOR ANY CONTRACTOR OVERSIGHT IN THIS REGARD. DO NOT FORM FOUNDATION USING THESE PLANS. DIMENSIONAL CONTROL IS THE RESPONSIBILITY OF THE ARCHITECT. USE THESE PLANS FOR THE PLACEMENT OF THE GRADE BEAMS AND REINFORCEMENT





TYPICAL BEAM (SIDE VIEW)

TYPICAL DROP IN SLAB TO 18 INCHES

(1A) - STANDARD CURB - (1B)

(E) - EXTENDED BRICK LEDGE - (F)

GARAGE APRON - (G)

SECTION - (K)

SECTION - (1)

SECTION - (2)

SECTION - (3)

SECTION - (4)

SECTION - (5)

SECTION - (6)

SECTION - (7)

FOR EXTENSION BEAMS WITH EXTERIOR FINISH ABOVE FINAL GRADE, PROVIDE REINFORCING AND PLACEMENT OF WEIERS.

FOR EXTENSION BEAMS WITH EXTERIOR FINISH ABOVE FINAL GRADE, PROVIDE REINFORCING AND PLACEMENT OF WEIERS.

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1.0. GENERAL

- 1.1. Engineer's inspection required for:
 - final closing of tendons
 - concrete placement and curing
- 1.2. Tendon wedges and cement and concrete quantity estimate on plan are for estimating purposes only. Contractor shall verify tendon lengths and concrete quantity prior to installation. Concrete quantity must be adjusted for slumping and forming irregularities. Concrete quantities are not shown. U.N.C. for plan clarity.
- 1.3. Plan shows the location of structural reinforcement, beam depth and beam locations only. Any additional dimensions must be compared to the architectural plans prior to construction or formwork. Rebar spacing discrepancies to be approved by the Engineer. The forms should be built using the architectural plans - not the Engineer's plan. Do not scale plan.
- 1.4. This design is in accordance with the Criteria for Selection and Design of Residential Slab-on-Grade (BRAD) No. 33, with the ACI Design of Slab-on-Grade Foundations or PTI Design of Post-Tensioned Slab-on-Grade Foundations, The 2003 and 2009 International Residential Code, and Standard Building Code and recognized Engineering practices.
- 1.5. These plans are copyright MLAW as of the year dated.
- 1.6. Vertical control joints should be used in exterior masonry to the full height spaced approximately 25 feet apart. A joint should be located directly above all slab control joints.

2.0. SITE PREPARATION

- 2.1. All site work shall be performed in accordance with FHWA Data Sheet 70-2. Refer to notes concerning "approved" and "unapproved" fill.
- 2.2. All underlaid "forming fill" shall have a P.I. less than 20 and be free of organics.

3.0. CONCRETE

- 3.1. Concrete shall have a minimum compressive strength of 2000 psi at 28 days. Concrete should be minimum 2000 psi at full tendon stressing. All concrete work shall meet A.C.I. 311B. Concrete shall be deposited in forms no later than two hours after water is mixed at the plant. One addition of water will be permitted at the job site to adjust the slump to a maximum of 6 inches.
- 3.2. Concrete shall be well consolidated using proper mechanical vibration, especially in the vicinity of the tendon anchorage.
- 3.3. If formwork in slab is required prior to concrete placement, location to be verified in field. Piping, vents or electrical cables shall be placed so as not to reduce slab thickness. Plumbing and/or conduits larger than 1" diameter must be trashed into underlaid fill.
- 3.4. If unanticipated interruptions in concrete placement occur, and concrete hardens, temporary forms must be used for setting of construction joints or concrete must be allowed to form vertical joints prior to setting additional slab. Use #3 X 24" dowels at 12" O.C. spaced into existing concrete to bond old to new concrete.
- 3.5. **FLATWORK MAY BE PLACED ONLY AFTER STIRRUPS.**

4.0. CONCRETE COVERAGE

- 4.1. SLAB TENDONS:
 - 1/2 inches above slab grade in 4" thick slab and ANCHORS to have 4 inches vertical coverage from center of tendon to top of concrete.
 - Slab Tendons may be moved 12" max. horizontally to allow for plumbing base-out.
 - Slab Tendons may be moved 2" downward and/or 2" upward vertically for plumbing conditions in beams.
- 4.2. BEAM AND WALL STEEL:
 - 1/2 inches above slab grade, and 3 inches exposed to earth.
- 4.3. PIPE PENETRATIONS:
 - 2 inches for tendon and spar.

5.0. REINFORCING

- 5.1. All reinforcing bars shall be ASTM A-615 Grade 60, except Grade 40 may be used for stirrups, corner bars and hairpins.
- 5.2. All tendons shall be 27K grade, 7 wire strand, 1/2 inch diameter, U.N.C., greased and sheathed with a continuous extruded plastic sheathing.
- 5.3. Anchorage system shall be a monolithic unbonded tendon anchorage utilizing a cast wedge plate and a two piece wedge as manufactured by a P.T.I. approved manufacturer.
- 5.4. All post-tensioned tendons and anchors shall conform to the requirements of the latest "P.T.I. Guide Specifications For Post-Tensioning Materials." Post-tensioned tendon supplier to be P.T.I. factory certified.
- 5.5. **PARTIAL STRESS** all tendons to 13.3 kips (or half of full jacking force) 24 to 48 hours after concrete placement.
- 5.6. **FULL STRESSING** of all tendons to 20 kips 7 to 10 days after concrete placement.
- 5.7. The first tendon in the slab shall be a maximum of 12 inches and a minimum of 6 inches from the outside form. Tendons not dimensioned on plan to be equally spaced.
- 5.8. (1) #3 or 24 inches or 24 inches corner bar required at all exterior corners top for beams reinforced with cables OR 24"X24" corner bars equal to steel beam size and spacing if beam is steel reinforced. Deepened beams to have corner bars with diameter equal to horizontal steel at each horizontal bar.
- 5.9. At plumbing stacks, add #3 bars (size of opening plus 16 inches) to be placed in concrete 2 inches beyond perimeter of opening (not req'd. if cables are partial stressed - see note 5-5).
- 5.10. **PLAN VARIATIONS**
- 5.11. All depth dimensions of beams are minimum unless intact rock is encountered at less depth. Inspector may approve beams continuously on rock to minimum beam depth of 12 inches. Deepen EXTERIOR beams where required by site conditions at least 12 inches into virgin soil U.N.C. or unless deep beam detail applies.
- 5.12. When P.I. is 30 and greater and traps are within 15 feet of foundation, consult MLAW "Peticles Concerning Traps" latest revision.
- 5.13. Should conditions arise that are not covered by details on this plan, contact Engineer at once for additional instructions.
- 5.14. In areas to receive fill, we recommend installing detritus A.I.WWF 1-1/2" below concrete surface and bedding for fill on a bond breaker to prevent shrinkage cracks from reflecting through the fill.
- 5.15. **HARD POINTS** - If the depth of underlaid clean fill at any beam intersection (total depth, not from beam bottom), exceeds 60 inches SANDY LOAM or 64 inches ROAD BASE, place hard points through the fill. Use of 12 inch diameter gas formed or drilled, concrete piers. And all beams to have anchors or steel. (If hardpoint detail exceeds 6' from top of slab reinforce w/ #4-#4 vert. A #3 ties @ 24" O.C.) If total underlaid fill exceeds 12 feet, contact Engineer.

6.0. TREE POLICY - APPLIES TO P.I. 30 AND GREATER

- 6.1. **TREE WITH 8 FEET FROM FOUNDATION:**
 - a. Add 20'-0" of section 3 steel - center on base in exterior beam only, OR
 - b. Deepen beam 24" into existing soil for 28'-0" - exterior beam only.
- 6.2. **TREE 5 TO 16 FEET FROM FOUNDATION:**
 - a. Add 20'-0" of section 3 steel - center on base in exterior beam only, OR
 - b. Deepen beam 12" into existing soil for 20'-0" - exterior beam only.
- 6.3. Add 6" wide hunch 24" into existing grade 20'-0" long centered on tree and filled with un-reinforced concrete.

OPTIONAL PROVISIONS TO BE ENFORCED, IF CHECKED:

- FILL (UNAPPROVED).** The fill material on this site is unacceptable to support a slab-on-grade foundation. The fill must be penetrated by all grade beams and extend a minimum of 12 inches into virgin soil. As an alternative, use HARD POINTS note. Based on the soils investigation, unapproved fill appears to be approximately deep.
- FILL (APPROVED).** The fill material is acceptable to support a slab-on-grade foundation. Consult exterior grade beams 12 inches into approved fill. Approved fill is fill that has been approved by MLAW, based on proper exploration, testing, or inspection by an agency acceptable to MLAW.





See sealed truss drawings for multiple ply nailing patterns.

Recommended truss hold downs are for vertical uplift load only. (exposure B)

Hanger nails to be minimum 10d common (0.148" x 3") unless noted otherwise

LOOSE MATERIAL:

100 - H2.5A

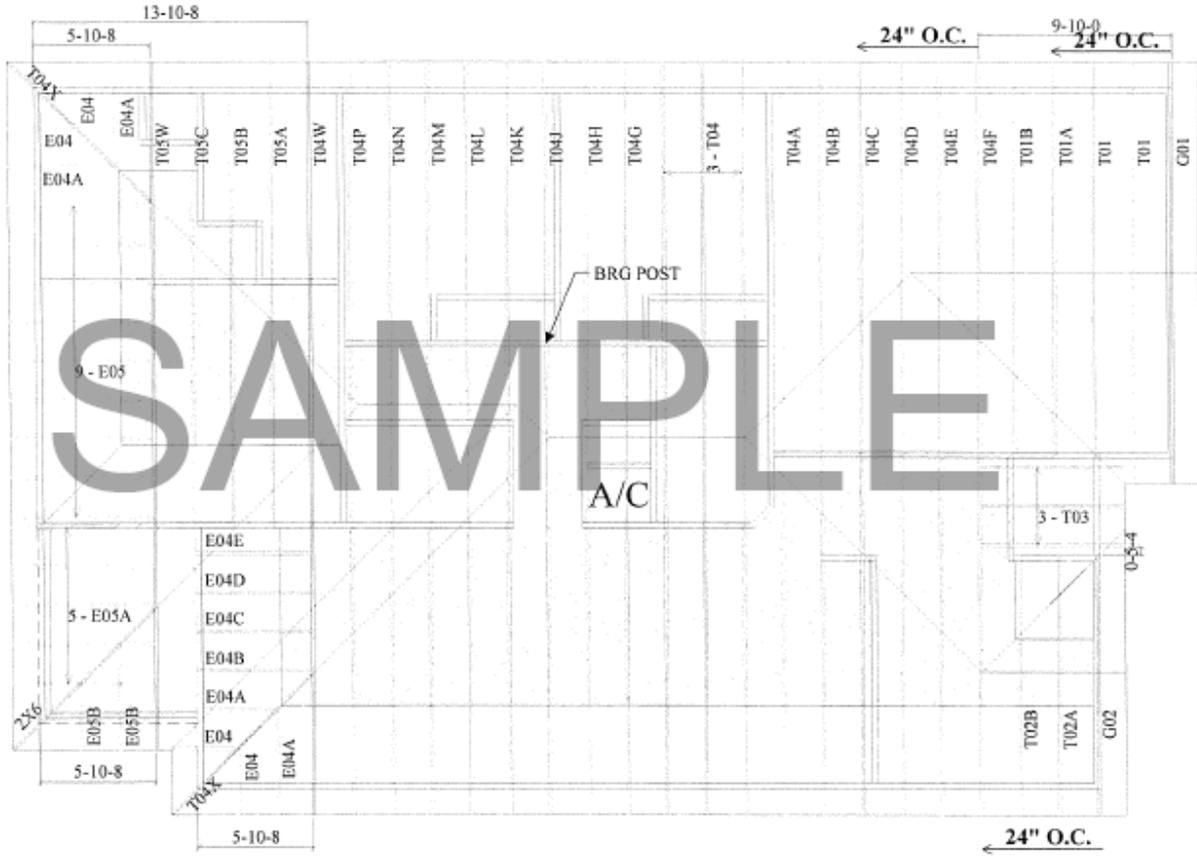
35 - STC CLIPS

7 - 2X4X14' BRACING

16 - 2X4X14" HIP FILLER

1 - 2X6X12' RAFTER

1 - 3.5 X 11.25 X 17' GDH



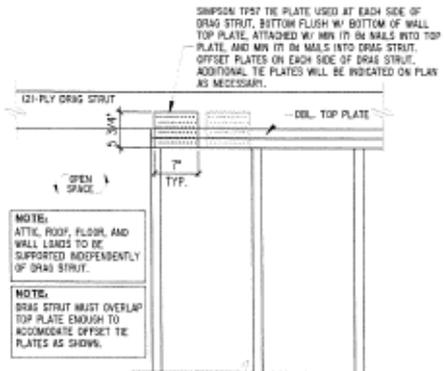
- ROOF TRUSS FRAMING NOTES:**
1. VERIFY ALL MECHANICAL CLEARANCES FOR CHASES, FLUES, SKYLIGHTS, RECESSED LIGHTS, ETC. PRIOR TO SETTING TRUSSES. DO NOT CUT, NOTCH OR DRILL TRUSSES. ENGR. REPAIR COSTS DUE TO UNAUTHORIZED FIELD ALTERATIONS WILL BE BACKCHARGED TO RESPONSIBLE PARTY.
 2. DO NOT INSTALL ROOF TRUSSES BACKWARD. SEE INDIVIDUAL TRUSS DRAWINGS FOR VERIFICATION OF BEARING LOCATIONS.
 3. SEE INDIVIDUAL DRAWINGS FOR REQUIRED LOCATIONS OF BRACING ON MEMBERS. ALL TOP CHORD MEMBERS WITHOUT BRACING MUST BE BRACED WITH PLYING SPACERS NO GREATER THAN SPACING INDICATED ON INDIVIDUAL TRUSS DRAWINGS. ALL OTHER BRACING IS THE RESPONSIBILITY OF OTHERS.
 4. SEE INDIVIDUAL DRAWINGS FOR NAILING OR BOLTING REQUIREMENTS TO ATTACH MULTIPLE TRUSS MEMBERS TOGETHER.

THIS IS A TRUSS PLACEMENT DIAGRAM ONLY. These trusses are designed as individual building components to be incorporated into the building design as the specification of the building designer. See individual design sheets for each truss design identified on the placement drawing. The building designer is responsible for temporary and permanent bracing of the roof and floor system and for the overall structure. The design of the base support structure including columns, beams, walls, and slabs is the responsibility of the building designer. For general guidance regarding loading, consult "Building Component Safety Information" available from the SBC Association (www.sbcindustry.com).

TRUSS PLACEMENT PLAN

This drawing is property of UFP. Any use of this information for estimating or construction without written permission is prohibited.

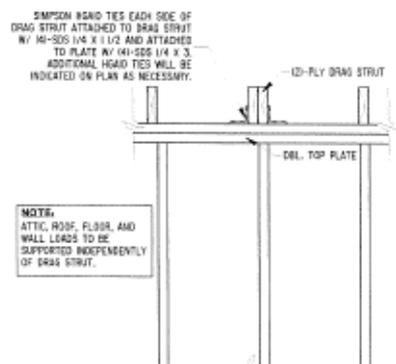




NOTE:
ATTIC, ROOF, FLOOR, AND WALL LOADS TO BE SUPPORTED INDEPENDENTLY OF DRAG STRUT.

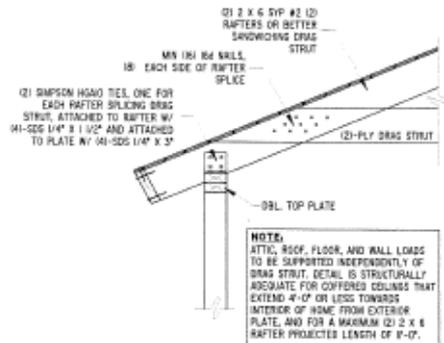
NOTE:
DRAG STRUT MUST OVERLAP TOP PLATE ENOUGH TO ACCOMMODATE OFFSET TIE PLATES AS SHOWN.

1 PARALLEL CONNECTION DRAG STRUT TO WALL
SCALE: 3/4" = 1'-0"



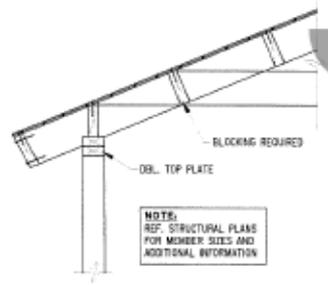
NOTE:
ATTIC, ROOF, FLOOR, AND WALL LOADS TO BE SUPPORTED INDEPENDENTLY OF DRAG STRUT.

2 PERPENDICULAR CONNECTION DRAG STRUT TO WALL
SCALE: 3/4" = 1'-0"



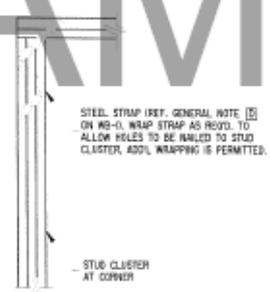
NOTE:
ATTIC, ROOF, FLOOR, AND WALL LOADS TO BE SUPPORTED INDEPENDENTLY OF DRAG STRUT. DETAIL IS STRUCTURALLY ADEQUATE FOR COFFERED CEILING THAT EXTEND 4'-0\"/>

3 DRAG STRUT TO RAFTERS
SCALE: 3/4" = 1'-0"



NOTE:
REF. STRUCTURAL PLANS FOR MEMBER SIZES AND ADDITIONAL INFORMATION

4 COFFERED CEILING BLOCKING
SCALE: 3/4" = 1'-0"



STEEL STRAP (REF. GENERAL NOTE 15 ON WB-1) WRAP STRAP AS REQD. TO ALLOW REELS TO BE RAILED TO STUD CLUSTER. ADD'L WRAPPING IS PERMITTED.

5 STRAP AT NARROW GARAGE WALL
SCALE: 3/4" = 1'-0"

NOTE:
THE DETAILS SHOWN ON THIS SHEET ARE GENERIC IN NATURE. ALL DETAILS MAY NOT APPLY. SEE WB-1 FOR SPECIFIC REFERENCES TO DETAILS.



1/6/2015 3:49 PM

IRC 2012

WINDBRACING DETAILS

SCALE: 3/4" = 1'-0"

ALL DIMENSIONS ARE THE SOLE RESPONSIBILITY OF THE ARCHITECT. HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE DIMENSIONS PRIOR TO THE START OF CONSTRUCTION AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.

WINDBRACING DETAILS

DATE ISSUED: 04/30/08

NO.	DATE	BY
1	05/20/08	MF
2	01/26/15	GA

DRWN BY: MT CKD BY: MM

SD FOOTAGE: 0

FILE NAME: _____

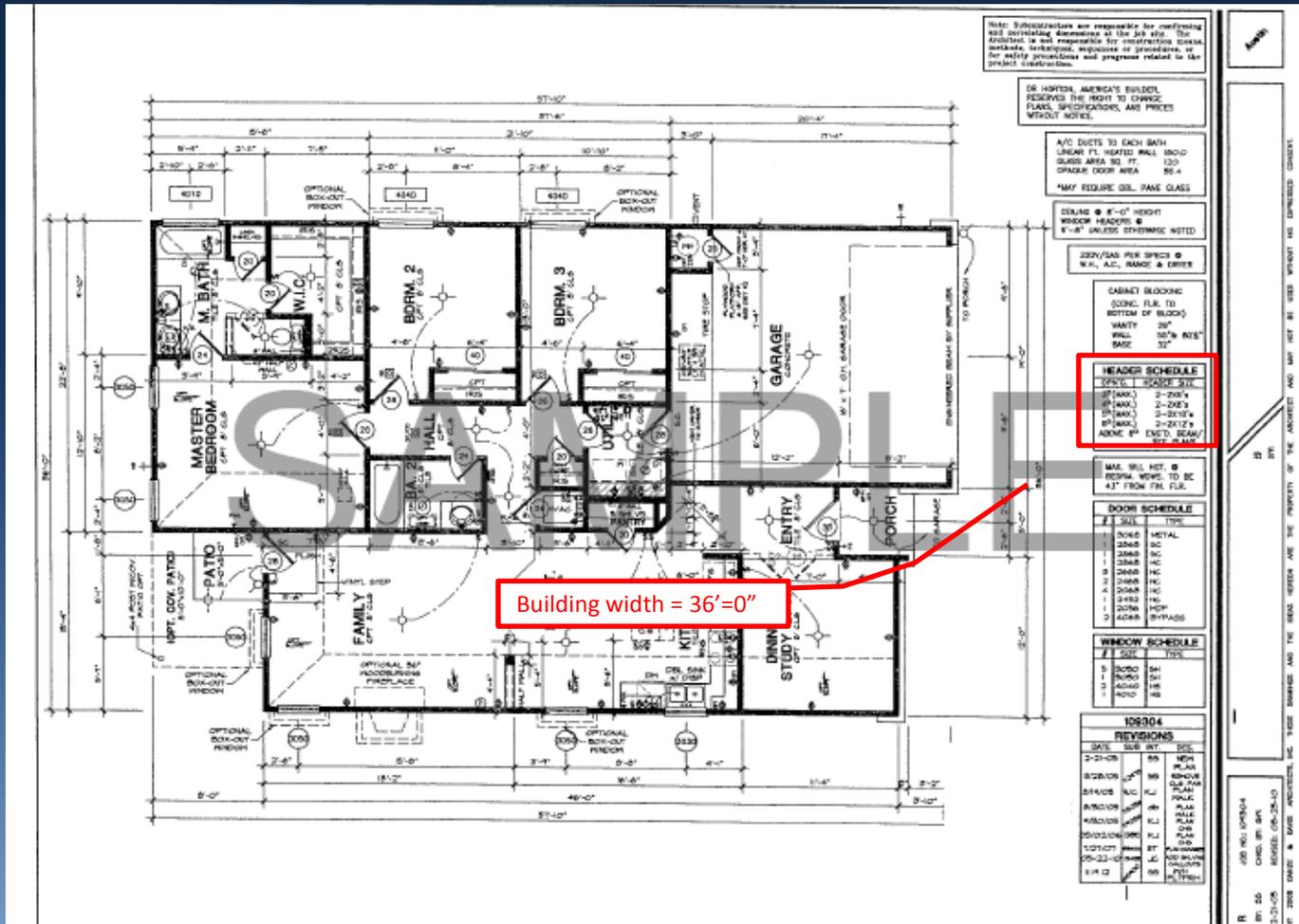
SHEET NO. _____

WB-2

USE OF THESE DRAWINGS INDICATES AGREEMENT WITH GENERAL NOTES AND CONDITIONS AND COPIES ARE THE PROPERTY OF THE ARCHITECT. SEE WB-1 FOR REGISTRATION NO. 12345



A closer look at the header schedule option...



Header schedule per plans

HEADER SCHEDULE	
OPN'G.	HEADER SIZE
3° (MAX.)	2-2X6's
4° (MAX.)	2-2X8's
5° (MAX.)	2-2X10's
8° (MAX.)	2-2X12's
ABOVE 8°	ENG'D. BEAM/ SEE PLANS

Header schedule per 2012 IRC

TABLE R502.5(1) GIRDER SPANS^a AND HEADER SPANS^a FOR EXTERIOR BEARING WALLS (Maximum spans for Douglas fir-larch, hem-fir, southern pine and spruce-pine-fir and required number of jack studs)

GIRDERS AND HEADERS SUPPORTING	SIZE	GROUND SNOW LOAD (psf) ^e																	
		30				50				70									
		Building width ^c (feet)																	
		20		28		36		20		28		36							
Span	NJ ^d	Span	NJ ^d	Span	NJ ^d	Span	NJ ^d	Span	NJ ^d	Span	NJ ^d	Span	NJ ^d						
Roof and ceiling	2-2 x 4	3-6	1	3-2	1	2-10	1	3-2	1	2-9	1	2-6	1	2-10	1	2-6	1	2-3	1
	2-2 x 6	5-5	1	4-8	1	4-2	1	4-8	1	4-1	1	3-8	2	4-2	1	3-8	2	3-3	2
	2-2 x 8	6-10	1	5-11	2	5-4	2	5-11	2	5-2	2	4-7	2	5-4	2	4-7	2	4-1	2
	2-2 x 10	8-5	2	7-3	2	6-6	2	7-3	2	6-3	2	5-7	2	6-6	2	5-7	2	5-0	2
	2-2 x 12	9-9	2	8-5	2	7-6	2	8-5	2	7-3	2	6-6	2	7-6	2	6-6	2	5-10	3
	3-2 x 8	8-4	1	7-5	1	6-8	1	7-5	1	6-5	2	5-9	2	6-8	1	5-9	2	5-2	2
	3-2 x 10	10-6	1	9-1	2	8-2	2	9-1	2	7-10	2	7-0	2	8-2	2	7-0	2	6-4	2
	3-2 x 12	12-2	2	10-7	2	9-5	2	10-7	2	9-2	2	8-2	2	9-5	2	8-2	2	7-4	2
	4-2 x 8	9-2	1	8-4	1	7-8	1	8-4	1	7-5	1	6-8	1	7-8	1	6-8	1	5-11	2
	4-2 x 10	11-8	1	10-6	1	9-5	2	10-6	1	9-1	2	8-2	2	9-5	2	8-2	2	7-3	2
	4-2 x 12	14-1	1	12-2	2	10-11	2	12-2	2	10-7	2	9-5	2	10-11	2	9-5	2	8-5	2
	2-2 x 4	3-1	1	2-0	1	2-5	1	2-0	1	2-5	1	2-2	1	2-7	1	2-3	1	2-0	1

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.
 a. Spans are given in feet and inches.
 b. Tabulated values assume #2 grade lumber.
 c. Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
 d. NJ - Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
 e. Use 30 psf ground snow load for cases in which ground snow load is less than 30 psf and the roof live load is equal to or less than 20 psf.



Areas that are outside of prescriptive limits...

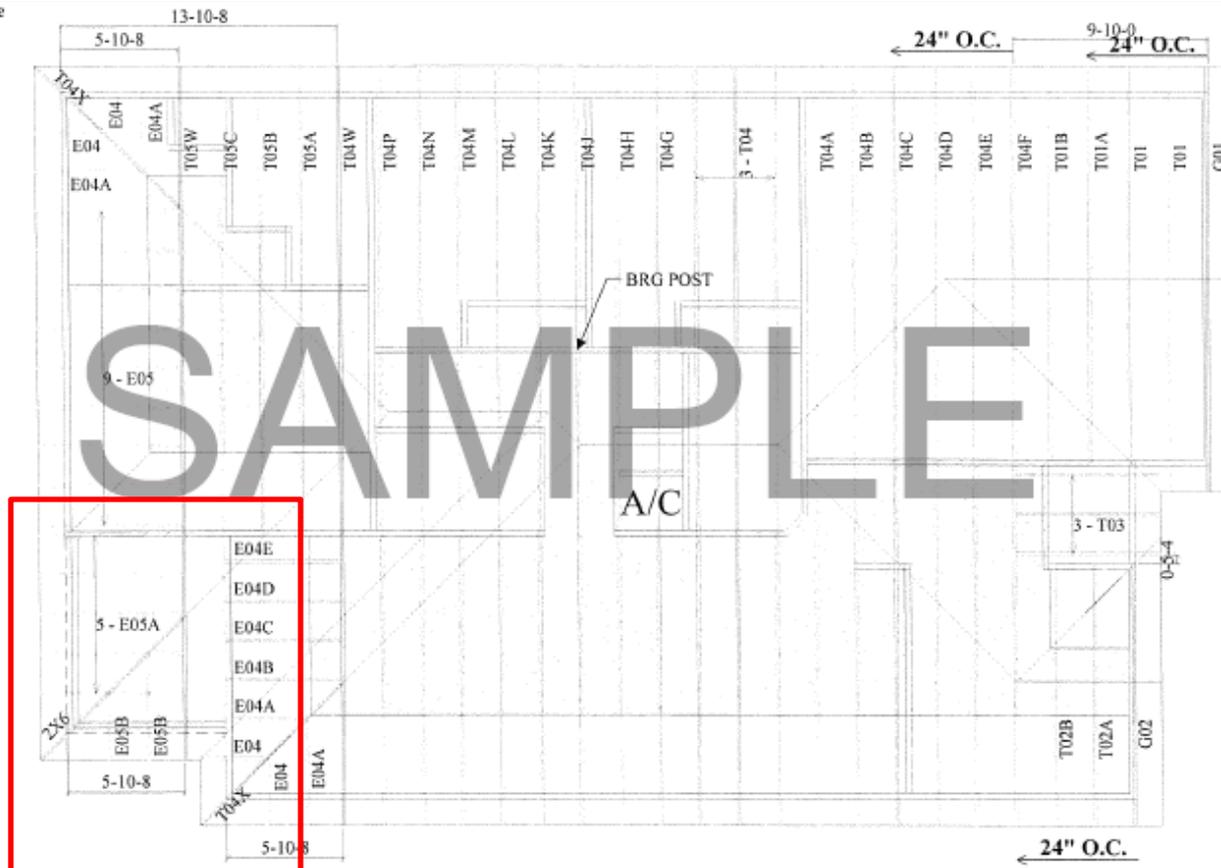
(0.148" x 3") unless noted otherwise

LOOSE MATERIAL:

100 - H2.5A
35 - STC CLIPS

7 - 2X4X14' BRACING
16 - 2X4X14" HIP FILLER
1 - 2X6X12' RAFTER

1 - 3.5 X 11.25 X 17' GDH



ROOF TRUSS FRAMING NOTES:

1. VERIFY ALL MECHANICAL CLEARANCES FOR CHASES, FLUES, SKYLIGHTS, RECESSED LIGHTS, ETC. PRIOR TO SETTING TRUSSES. DO NOT CUT, NOTCH OR DRILL TRUSSES. EXCESS REPAIR COSTS DUE TO UNAUTHORIZED FIELD ALTERATIONS WILL BE BACKCHARGED TO RESPONSIBLE PARTY.
2. DO NOT INSTALL ROOF TRUSSES BACKWARDS. SEE INDIVIDUAL TRUSS DRAWINGS FOR VERIFICATION OF BRACING LOCATIONS.
3. SEE INDIVIDUAL DRAWINGS FOR REQUIRED LOCATIONS OF BRACING ON WED MEMBERS. ALL TOP CHORD MEMBERS WITHOUT SHEATHING MUST BE BRACED WITH PURLINS SPACED NO GREATER THAN SPACING INDICATED ON INDIVIDUAL TRUSS DRAWING. ALL OTHER BRACING IS THE RESPONSIBILITY OF OTHERS.
4. SEE INDIVIDUAL DRAWINGS FOR NAILING OR BOLTING REQUIREMENTS TO ATTACH MULTI PLY TRUSS MEMBERS TOGETHER.

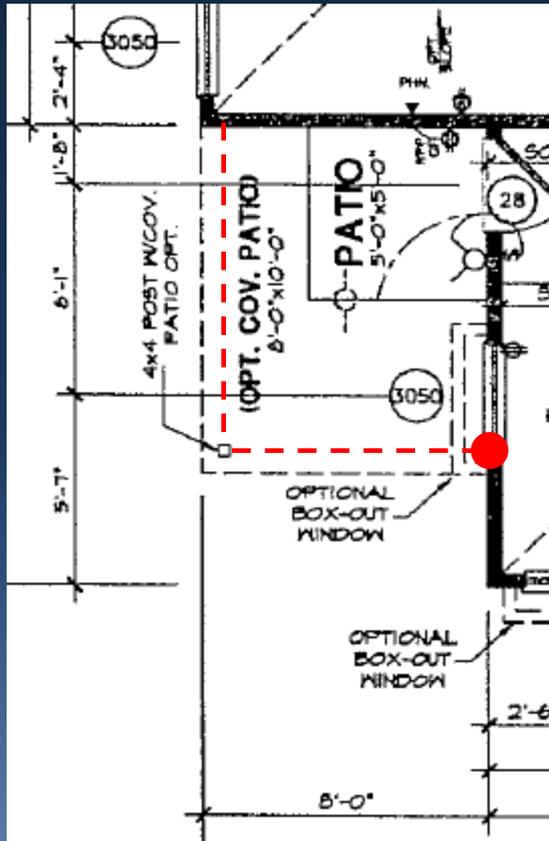
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TRUSS PLACEMENT PLAN

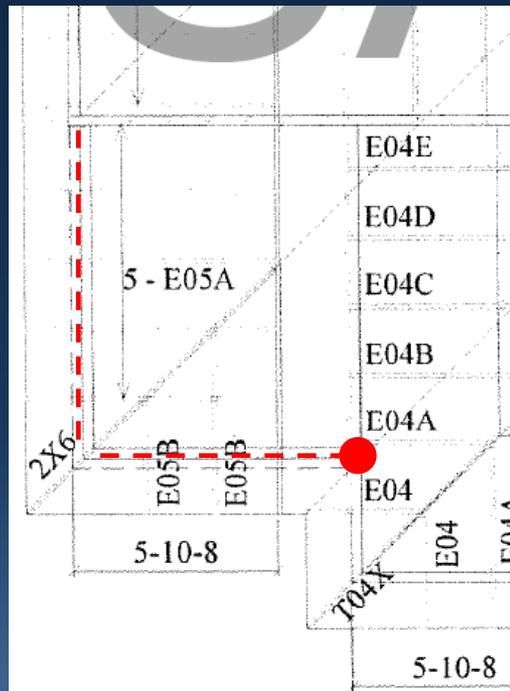
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Arch floor plan



Truss layout



ISSUES

- Patio beams not provided on truss layout – treat as “headers”
- N-S porch “header” exceeds max span of header schedule
- E-W porch “header” applies a point load to the family room window header
- Family room window header can no longer be selected from prescriptive tables

2012 IRC Commentary

R301.5 Live load. The minimum uniformly distributed live load shall be as provided in Table R301.5.

❖ Table R301.5 lists the minimum **uniformly distributed** live loads (see the definition in Chapter 2) required for design of various portions of a residence. These loads are the **basis for the prescriptive tables** for floor systems in Chapter 5.



Part 4: Visitability Ordinance



Submittal Requirements

- Interior visitability
 - Plan with **graphic** notations
 - **OR** Plan with **descriptive** notes
- Exterior Visitability – **July 1, 2015**
 - Plan showing Exterior Route and components
 - **Waivers:** Survey with contours and Registered Design Professional substantiation letter or notes.
- Plan sheets and/or submittal exhibits that are necessary to demonstrate Visitability compliance must be sealed by a Texas-registered Architect or NCBDC Certified Building Designer.



Visitability Plan

VISITABILITY NOTES:
(Optional in lieu of graphic representation)

EXTERIOR ROUTE

- Point of origin: Front sidewalk
Elevation 97'-10 1/2"
- Visible entrance: Front Entry Door
Landing el. 99'-11 1/4"
- Visible Route: Walk from front sidewalk
to Entry Door
25'-0" length
Slope 1:12 / 8.3%

VISITABLE ENTRANCE: Front Entry Door

1. Minimum clear width of 32"
2. Beveled threshold 1/2" max

INTERIOR COMPLIANCE

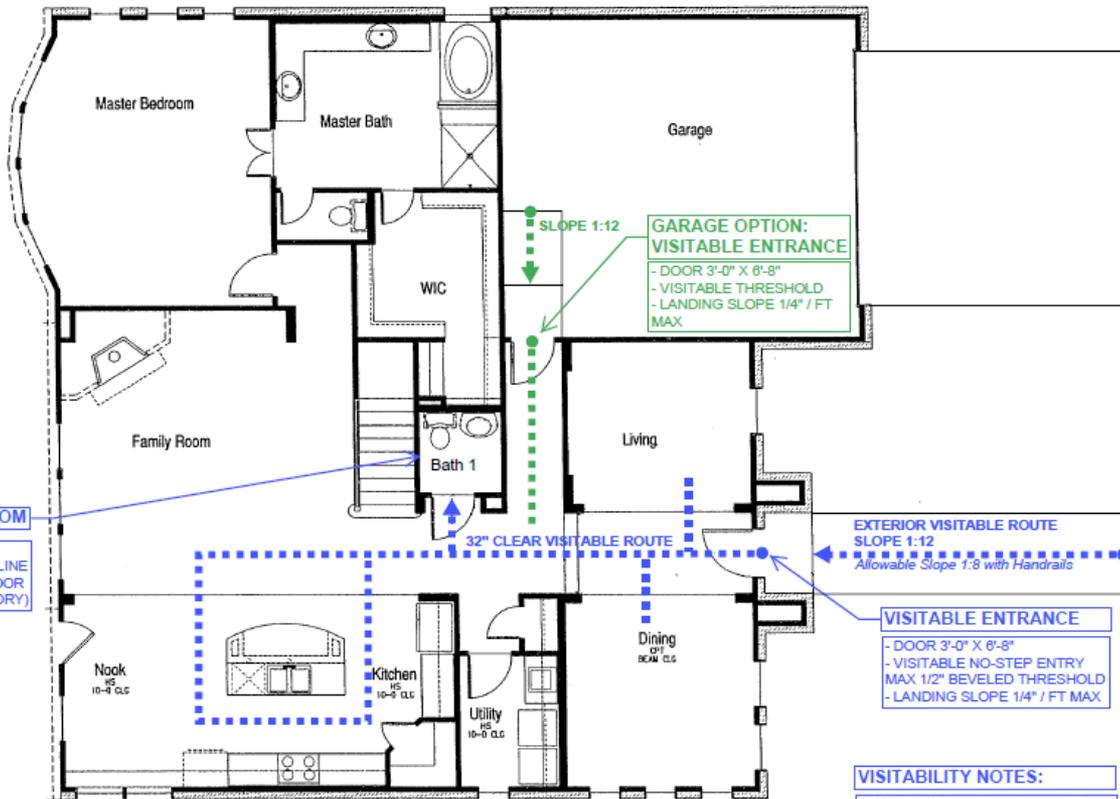
- Bathroom Route:** Front Entry Door, Bath 1, Kitchen, Dining, Living and connecting hallways.
1. Minimum clear width of 32"
 2. Thresholds and transitions shall be ramped or beveled

VISITABLE BATHROOM: Bath 1

1. Minimum clear opening of 30 inches at door
2. Lateral 2 x 6 wood blocking shall be installed flush with stud edges of bathroom walls. Centerline of block at 34" a.f.f. except for portion of the wall located directly behind the lavatory.

ELECTRICAL

1. Light switches and environmental controls no higher than 48" above the interior floor level
2. Outlets and receptacles minimum 15" above interior floor level except for floor outlets.

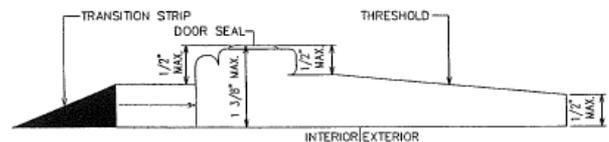
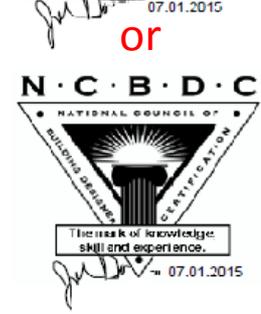


VISITABLE BATHROOM
- DOOR 2'-8" X 6'-8"
- 2x6 BLOCKING CENTERLINE AT 34" ABOVE FINISH FLOOR (EXCEPT BEHIND LAVATORY)

GARAGE OPTION: VISITABLE ENTRANCE
- DOOR 3'-0" X 6'-8"
- VISITABLE THRESHOLD
- LANDING SLOPE 1/4" / FT MAX

VISITABLE ENTRANCE
- DOOR 3'-0" X 6'-8"
- VISITABLE NO-STEP ENTRY
MAX 1/2" BEVELED THRESHOLD
- LANDING SLOPE 1/4" / FT MAX

VISITABILITY NOTES:
1. Light switches and environmental controls no higher than 48" above the interior floor level
2. outlets and receptacles minimum 15" above interior floor level except for floor outlets



THRESHOLD SECTION
N.T.S.

VISITABLE ROUTE DIAGRAM
SCALE: 1/8"=1'-0"



VISITABILITY NOTES:

(Optional in lieu of graphic representation)

EXTERIOR ROUTE

Point of origin: Front sidewalk
Elevation 97'-10 ½"

Visitable entrance: Front Entry Door
Landing el. 99'-11 ½"

Visitable Route: Walk from front sidewalk
to Entry Door
25'-0" length
Slope 1:12 / 8.3%

VISITABLE ENTRANCE: Front Entry Door

1. Minimum clear width of 32"
2. Beveled threshold 1/2" max

INTERIOR COMPLIANCE

Bathroom Route: Front Entry Door, Bath 1,
Kitchen, Dining, Living
and connecting hallways.

1. Minimum clear width of 32"
2. Thresholds and transitions shall be ramped or beveled

VISITABLE BATHROOM: Bath 1

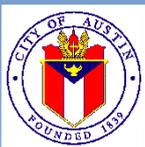
1. Minimum clear opening of 30 inches at door
2. Lateral 2 x 6 wood blocking shall be installed flush with stud edges of bathroom walls. Centerline of block at 34" a.f.f. except for portion of the wall located directly behind the lavatory.

ELECTRICAL

1. Light switches and environmental controls no higher than 48" above the interior floor level
2. Outlets and receptacles minimum 15" above interior floor level except for floor outlets.

Visitability Notes

Notes must be
descriptive about
each component

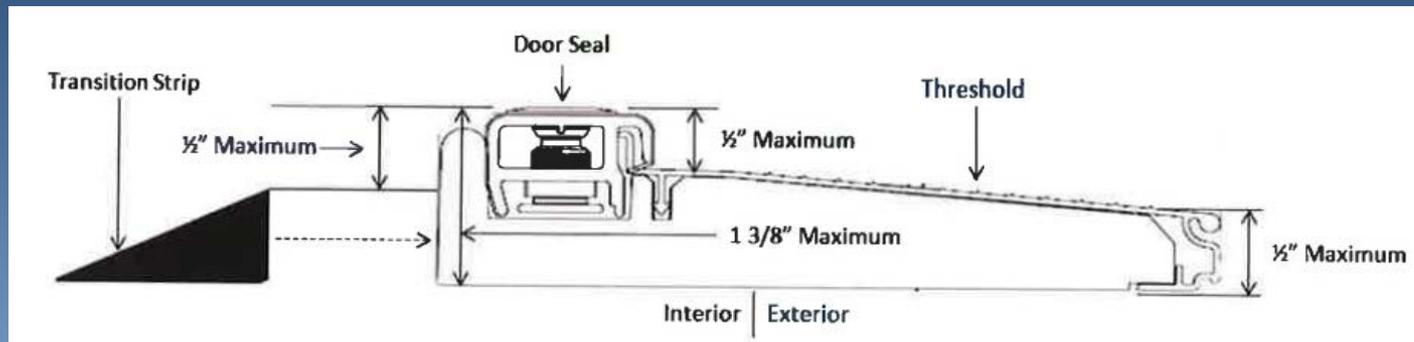


Approved Threshold Detail

Code interpretation CI2013-0002 is an approved method of compliance pertaining to the threshold.

Read the entire interpretation here:

<http://www.austintexas.gov/departments/building-technical-codes>



Waiver Requirements

R320.7.1 Waiver of exterior visitable route provision for certain properties. The requirements of Section R320.7 do not apply to:

1. lots with 10% or greater slope prior to development; or
2. properties for which compliance cannot be achieved without the use of switchbacks.

Topographic information shall be performed by a Texas Registered Professional Land Surveyor. This survey shall be provided at the time of application submittal. The registered or certified design professional shall substantiate request for waiver.



Slope Waiver Requirements

The slope waiver shall be determined by the slope between the highest point to the lowest point prior to development. Slope greater than 10% are exempt from R320.7 exterior visitable route.



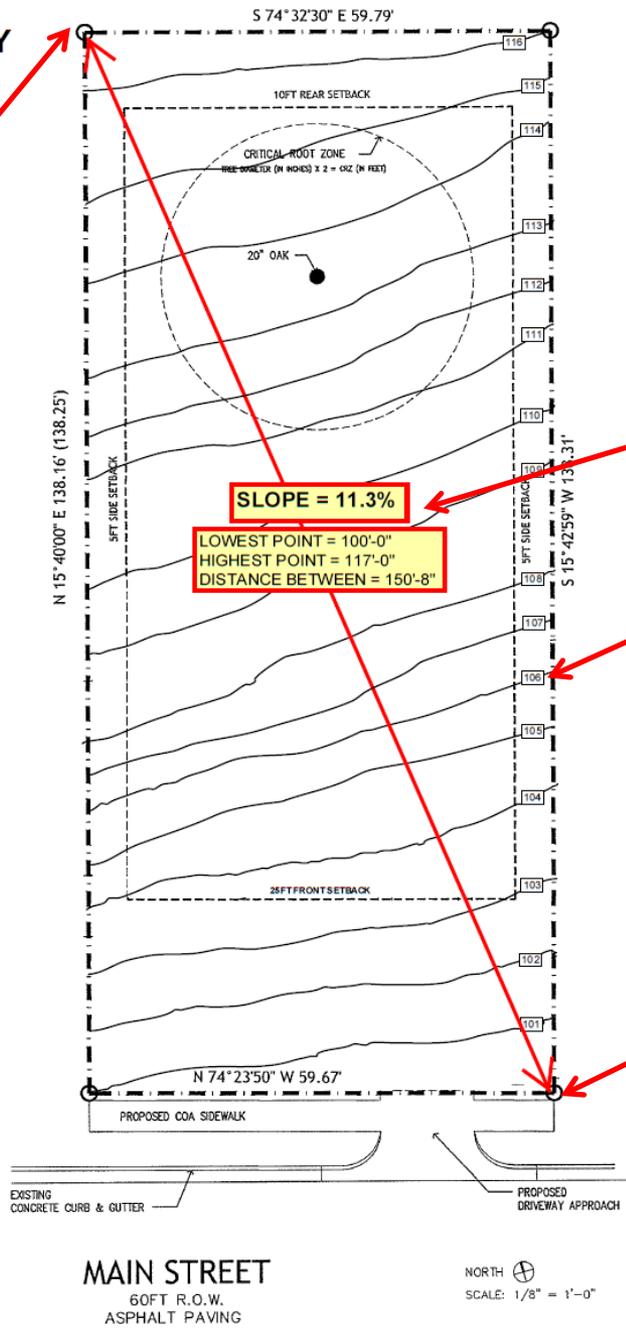
**SAMPLE VISITABILITY
WAIVER REQUEST -
SLOPE > 10%
R320.7.1.2**

**High Point
117'-0"**

I, John Doe, request a waiver for the exterior visitable route in compliance with R320.7.1.2 due to slope of lot between highest and lowest point prior to development exceeding 10%.



SURVEY DATE: 07-01-2015
SCALE: 1" = 40'



Slope Waiver Request

Slope Calculation
17' rise / 150'-8" run =
11.3%

Contours
(1'-0" or 2'-0"
intervals preferred)

**Low Point
100'-0"**

Substantiation
from Design
Professional

Design
Professional Seal,
Signature, & Date

Survey from
Professional
Land Surveyor



Slope Waiver Requirements

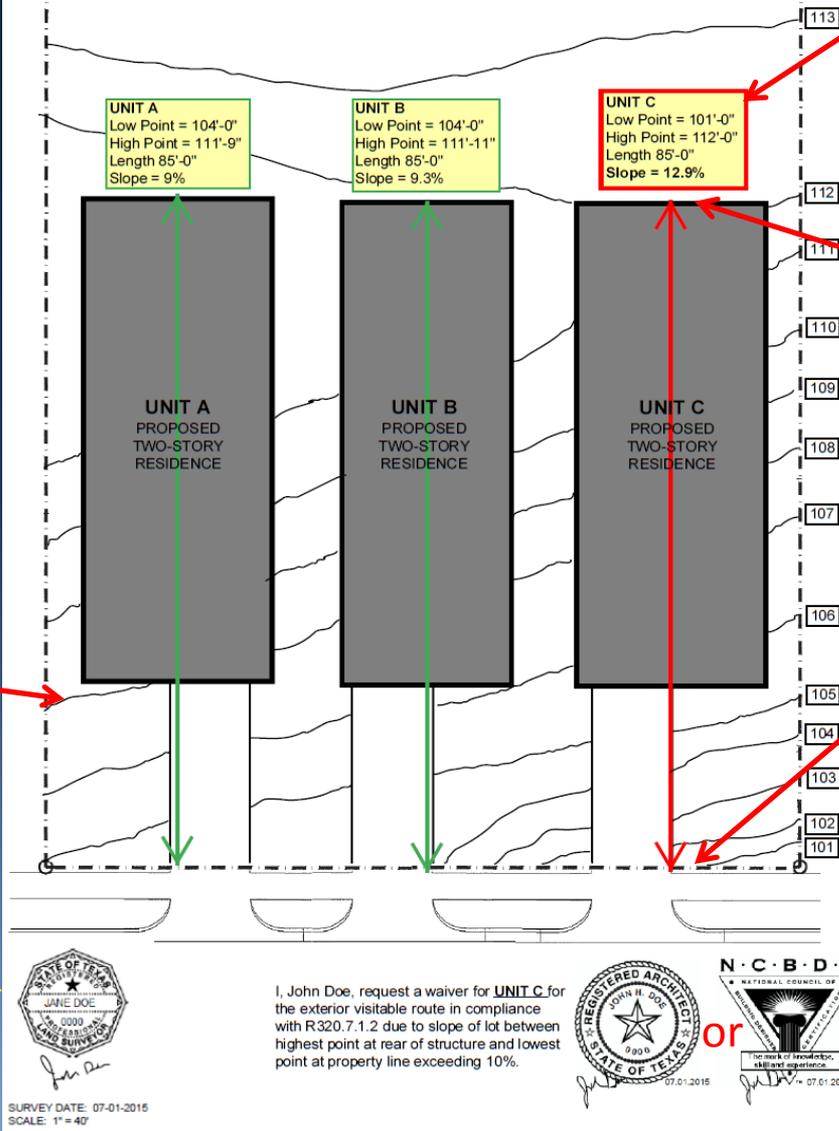
2+ Dwellings

On a lot or legal tract with more than two dwelling units, the slope will be measured from the rear of each structure perpendicular to the midpoint of the front property line or the public or private street. Slope greater than 10% are exempt from R320.7 exterior visitable route.



Slope Waiver Request 2+ Dwellings

SAMPLE VISIBILITY WAIVER REQUEST - R320.7.1.2 SLOPE > 10% (MORE THAN 2 DWELLING UNITS)



Slope Calculations
Unit C:
 $11' \text{ rise} / 85' \text{ run} = 12.9\%$

High Point
112'-0" @ Unit C

Low Point
101'-0" @ Unit C
Property Line or Street

Substantiation from
Design Professional
including Seals

Unit C Waiver granted

Unit A & Unit B must
comply w/ visitability

Contours
(1'-0" or 2'-0"
intervals preferred)

Survey from
Professional
Land Surveyor



Switchback Waiver Requirements

Switchback waiver shall be determined by the slope between the elevation of the finished floor at the visitable dwelling entrance and all potential origin points as defined in section R320.7. The horizontal distance shall be reduced by 6ft to account for landings. Ramp slopes to meet the intent of the code.

Potential Origin Points: Garage, Driveway, Public Street, Public Sidewalk.

R311.8.1 Maximum slope.

Ramps shall have a maximum slope of 1 unit vertical in 12 units horizontal (8.3-percent slope).

Exception: Where it is technically infeasible to comply because of site constraints, ramps may have a maximum slope of one unit vertical in eight horizontal (12.5-percent slope).



SAMPLE VISITABILITY WAIVER REQUEST - SWITCHBACK REQUIRED R320.7.1.2

I John Doe, AIA confirm that each origination point was reviewed for compliance with IRC R320 Visitability and all slopes from origination point to the Visible Entrance finish floor exceed 12.5%

SLOPE CALCULATIONS

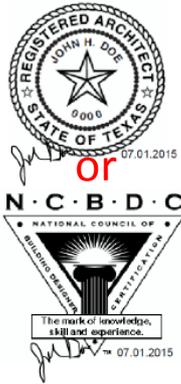
Finish floor at Visible Entrance to:

A. GARAGE: 4'-0" Rise / 14'-0" Run = 29%

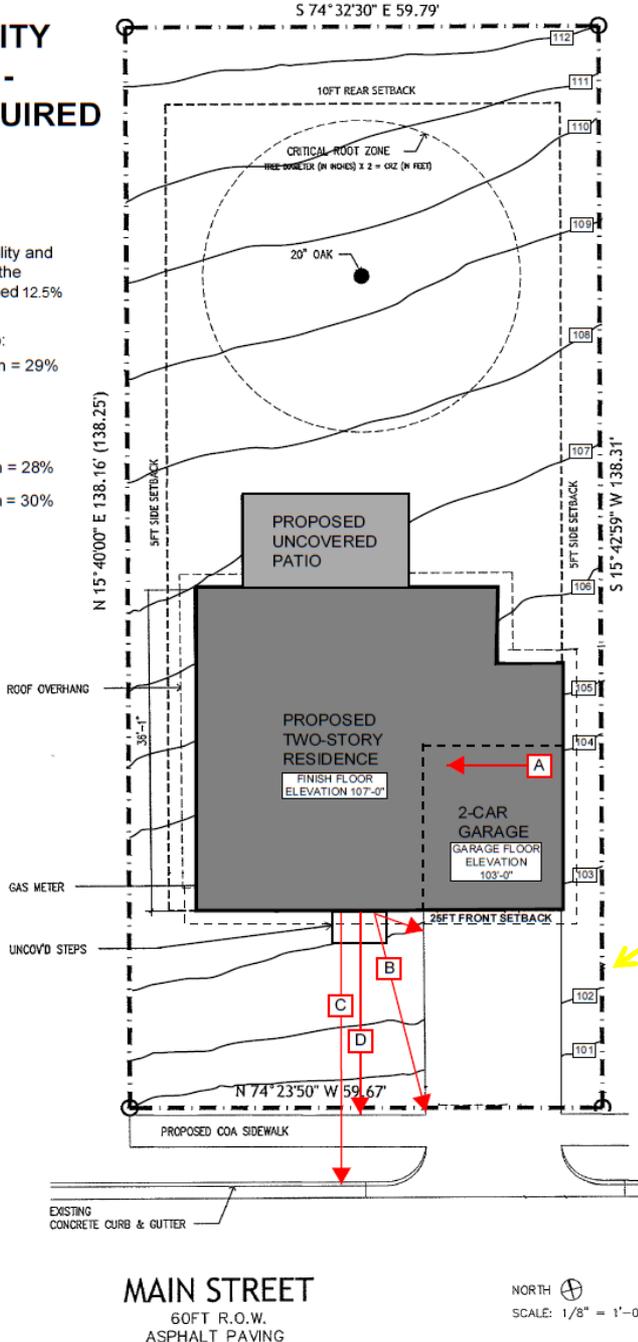
B. DRIVEWAY: Varies:
4'-6" Rise / 8'-0" Run = 56%
7'-0" Rise / 19'-0" Run = 37%

C. STREET: 8'-0" Rise / 29'-0" Run = 28%

D. SIDEWALK: 7'-6" Rise / 19' Run = 30%



SURVEY DATE: 07-01-2015
SCALE: 1" = 40'



Switchback Waiver Request

Overall Site Slope is
< 10%

Contours and investigated routes shown (in red)

Substantiation
from Design
Professional

Slope
Calculations

Design
Professional
Seal,
Signature, &
Date

Survey from
Professional
Land Surveyor



SLOPE CALCULATIONS

Finish floor at Visitable Entrance to:

A. GARAGE:

$$4'-0'' \text{ Rise} / 14'-0'' \text{ Run} = 29\%$$

B. DRIVEWAY: Varies:

$$4'-6'' \text{ Rise} / 8'-0'' \text{ Run} = 56\%$$

$$7'-0'' \text{ Rise} / 19'-0'' \text{ Run} = 37\%$$

C. STREET:

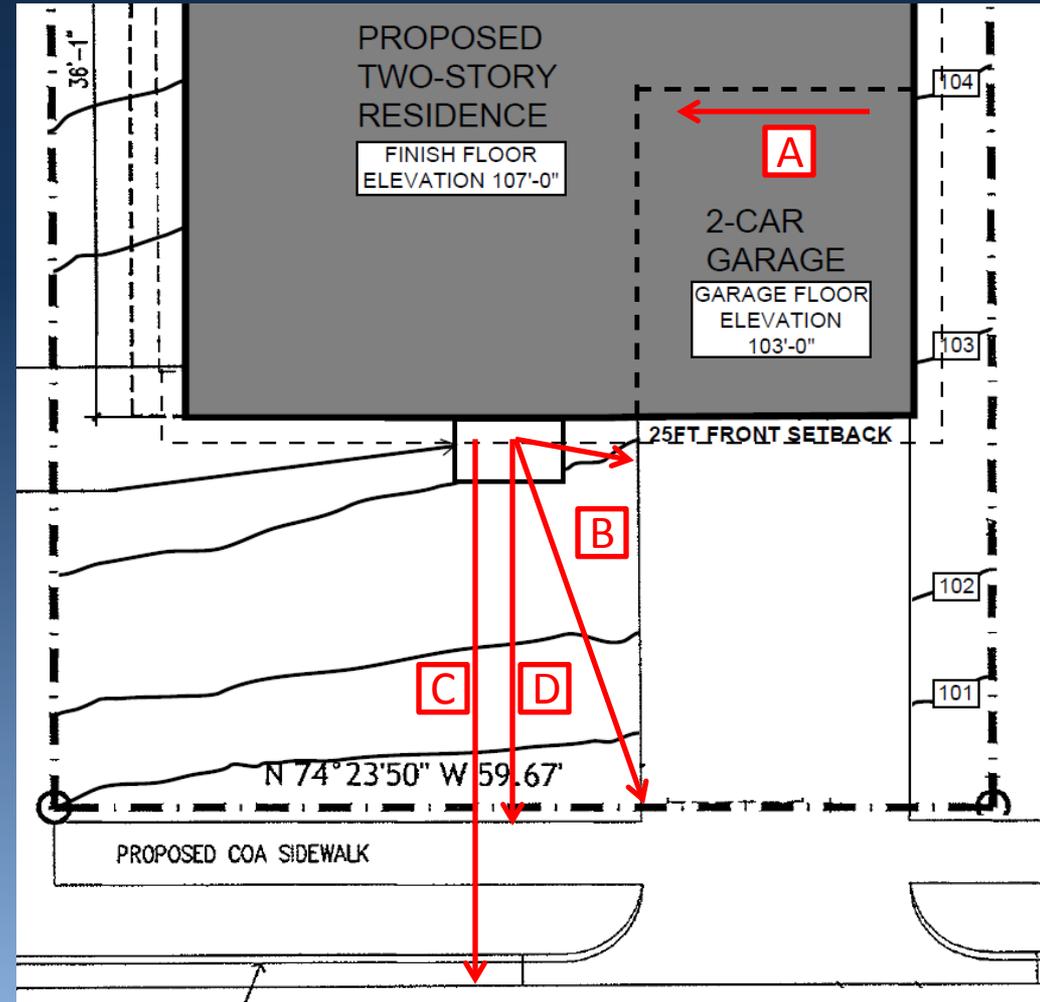
$$8'-0'' \text{ Rise} / 29'-0'' \text{ Run} = 28\%$$

D. SIDEWALK:

$$7'-6'' \text{ Rise} / 19' \text{ Run} = 30\%$$

**6'-0" has been subtracted from all Runs to account for landings.*

Switchback Waiver Request Calculations



Visitability Exterior Route
July 1, 2015

Starting **July 1, 2015** all
visitability requirements will be
enforced



THANK YOU

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