

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

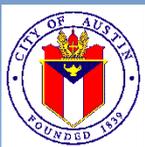
Sealed = Registered Architect or Certified Building Designer

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

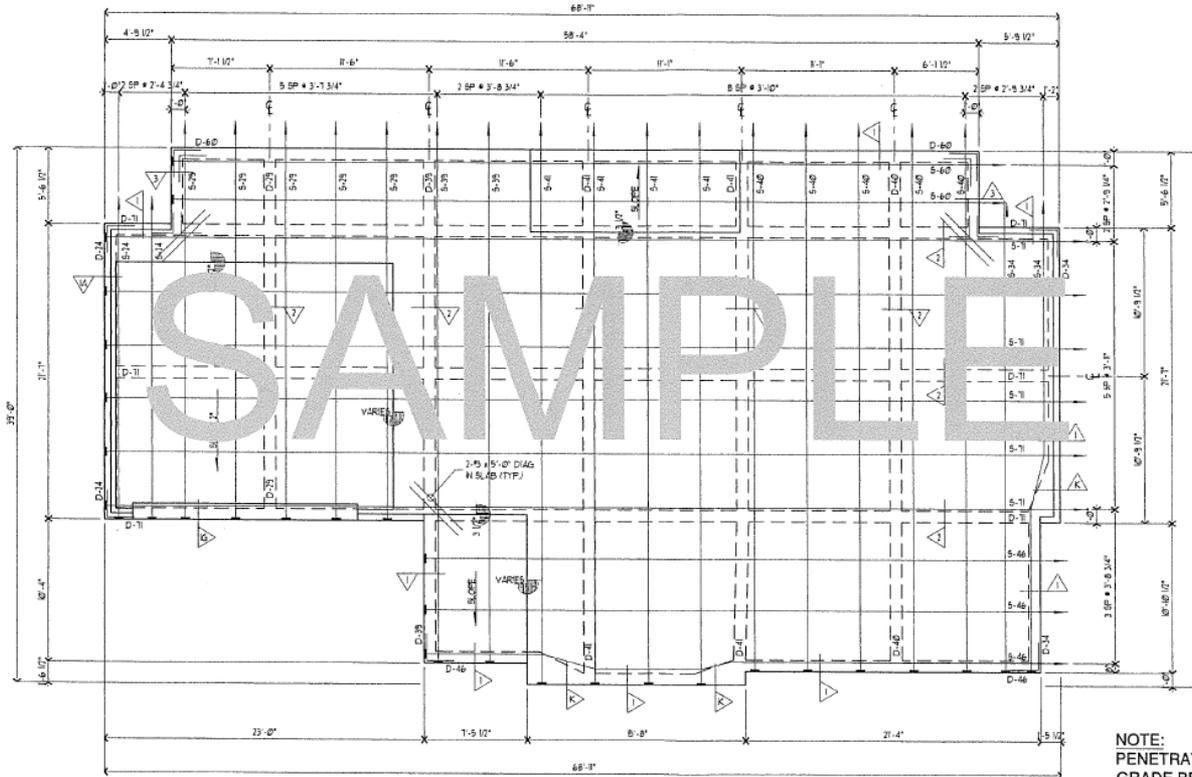
Plan Review: Provide framing plan showing truss/wooden i-joist layout (direction and spacing) sealed by the engineer of record. The framing plan shall show all supporting structural members (headers, beams, posts, columns, etc.)

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



Option 1: Example

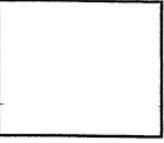




NOTE:
 PENETRATE ALL PERIMETER
 GRADE BEAMS 12" MIN.
 INTO APPROVED MATERIAL U.N.O.
 AND ENSURE DESIGN DEPTH
 IS ACHIEVED - REF. SHEET 2.

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.

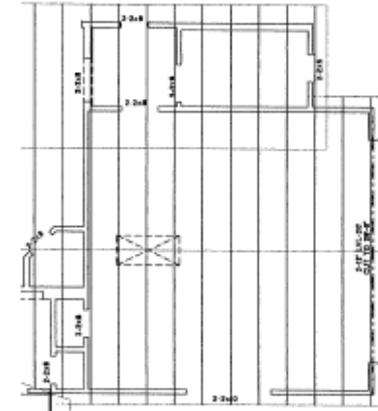
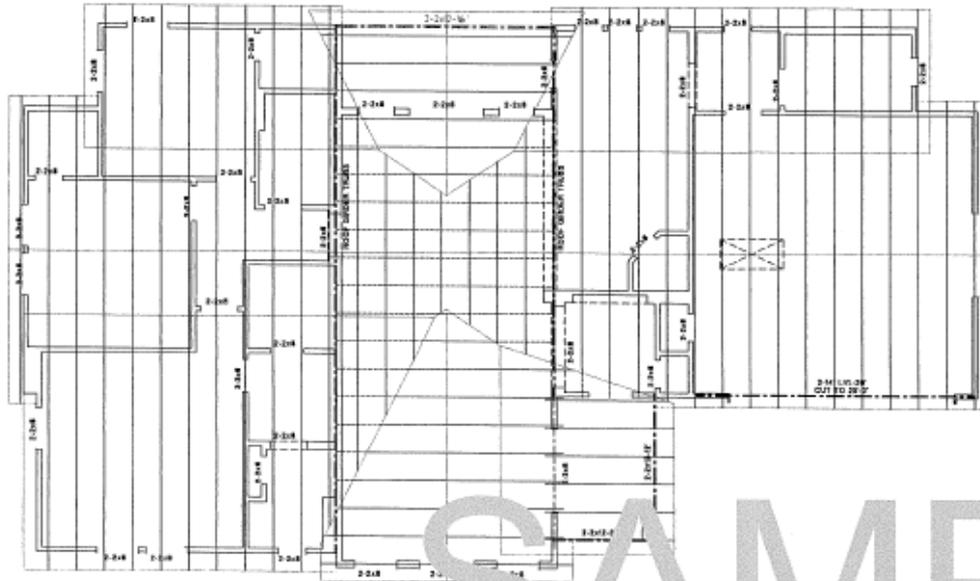


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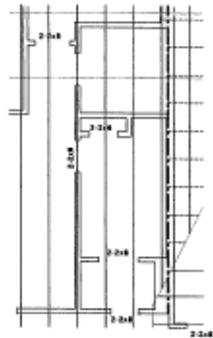
FOUNDATION PLAN
 SCALE: 1/8" = 1'-0"

S1 OF 2





CEILING & ROOF TRUSS LAYOUT



OPT MASTER BATH
CEILING & ROOF TRUSS LAYOUT

SAMPLE

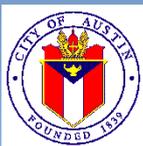
- 1) THE NUMBER OF WALL STUDS REQUIRED TO SUPPORT THE ENDS OF BEAM AND ROOF GIRDER TRUSSES SHALL BE ONE GREATER THAN THE NUMBER OF PILES MAKING UP THE BEAM OR TRUSS.
- 2) SHEET 5 10 TRUSS ROOF FRAMING NOTES SHALL BE INCORPORATED INTO THESE PLANS BY REFERENCE AS INDICATED HEREIN AT FULL LENGTH.
- 3) AN 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.

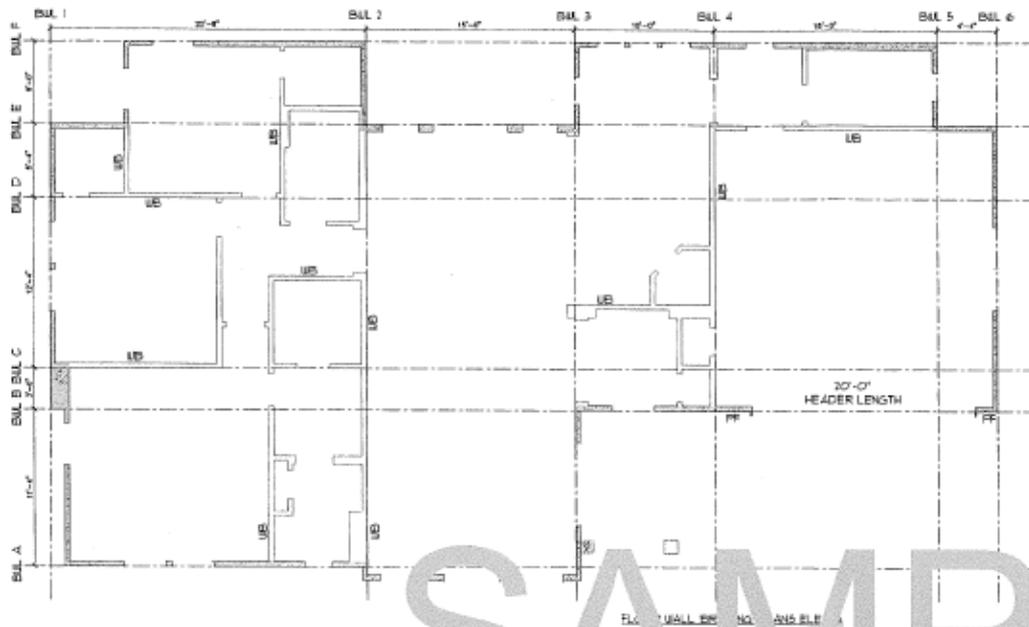
ELEV. 'A' - TRUSS FRAMING PLAN



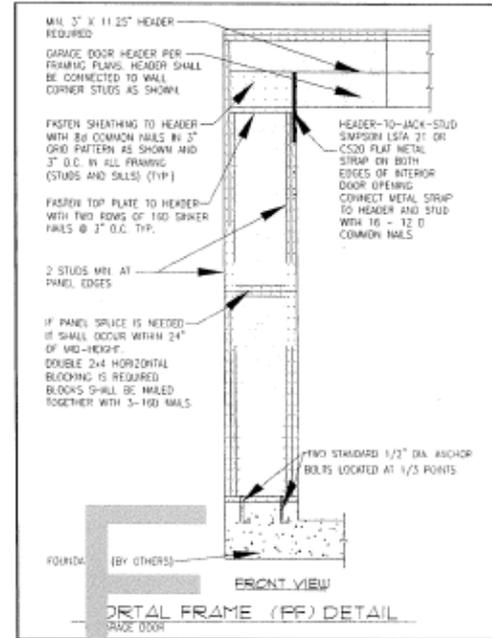
PLAN NO. _____
ADDRESS: _____

SHEET NO.
1
OF
6





SAMPLE



LEGEND

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

- WALL BRACING NOTES**
- 1) SHEATH ALL EXTERIOR WALLS WITH 7/16" OSB. FASTEN OSB FINISH WITH 86 NAILS (2 1/2 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 INTERPRETING STUDS, PLACED AT NOT MORE THAN 90 DEGREES OR LESS THAN 45 DEGREES FROM THE HORIZONTAL AND ATTACHED TO EACH STUD AND PLATE WITH A MINIMUM OF 3-86 NAILS.

ELEV. 'A' - WALL BRACING PLAN

PLAN NO. _____
ADDRESS _____

SHEET NO. **3**
OF
6



GENERAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.
2. THE SUBLEASER SHALL BE RESPONSIBLE FOR PROVIDING THESE NOTES AND DETAILS TO THE CONTRACTOR.
3. CONSTRUCTION SHALL CONFORM WITH THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE FOR ONE- AND TWO-FAMILY DWELLINGS, CURRENT EDITION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING IF ANY OTHER CODES OR ORDINANCES APPLY, AND CONFORMING TO THEM. IF A DISCREPANCY EXISTS BETWEEN THE FRAMING PLANS CHECKED (GIVEN BY THE ARCHITECT) AND THESE NOTES, THE ENGINEER SHALL BE NOTIFIED IN WRITING PRIOR TO FURTHER CONSTRUCTION OF WORK.
4. **ABBREVIATIONS DEFINED:**
 IND. - UNLESS NOTED OTHERWISE
 S.F.D. - SOUPHORN FIRE INSULATION BUREAU
 S.P. - SOUTHERN PINE
 O.C. - ON CENTER SPACING OF MEMBERS
 P.F. - PRESURE TREATED
 I.C. - INTERNATIONAL RESIDENTIAL CODE, CURRENT EDITION
5. **DESIGN FINISH (UNLESS OTHERWISE SPECIFIED):**
 INTERIOR FLOOR 40 PSF
 20 PSF
 DECK WITH STORAGE 30 PSF
 ATTIC 40 PSF
 BALCONY 80 PSF
6. **MINIMUM DESIGN WIND SPEED: 20 MPH**
7. **MATERIALS:** WOOD FRAMING MEMBERS (JOIST, RAFTERS, TRusses, BRACES, ETC.) SHALL BE NO. 2 SP GRAD. MILL PLATED AND DECK FRAMING MEMBERS SHALL BE PLY. NO. 2 SP.

1. ALL WOOD FRAMING MEMBERS SHALL BE FREE OF SAPROD CHECKS, EXCESSIVE KNOTS, CRACKS, ETC. AND SHALL CONFORM TO THE REQUIREMENTS OF THE SPIR.
2. **WALL CONSTRUCTION:**
 2x4 STUDS SHALL BE USED FOR WALLS LESS THAN 10 FEET IN HEIGHT AND 2x6 STUDS SHALL BE USED FOR WALLS 10 FEET AND GREATER IN HEIGHT.
 STUDS SHALL BE SPACED AT 16" ON CENTER (O.C.). LAG BOLTS SHALL BE PLACED 16" ON CENTER ON 2x4 GRADE LUMBER. CAP WALLS WITH DOUBLE TOP PLATE, OVERLAPPED AT CORNERS AND INTERSECTIONS. END JOISTS IN TOP PLATE SHALL BE SPACED AT LEAST 24".

FOR TWO-STORY STRUCTURES, ONE OF THE FRAMING METHODS LISTED BELOW SHALL BE INSTALLED ABOVE ALL 1ST FLOOR WALLS WHICH HAVE A 2ND FLOOR WALL ABOVE. FOR 1 1/2 STORY STRUCTURES, ONE OF THE FRAMING METHODS LISTED BELOW SHALL BE INSTALLED ABOVE ALL 1ST FLOOR WALLS WHICH HAVE A 2ND FLOOR TRUSS OR TA. FOR WALLS WHICH ARE NOT ATTACHED TO OTHER JOIST OR FLOOR JOISTS, PROVIDE PLATE 2x4 BLOCKS ATTACHED TO CEILING JOISTS AND WALL TOP PLATE AT 24" O.C. TO BRACE TOP OF WALL.

WALL COLLAR BRACE UP OF 1 1/2" THICK BRACE FROM SUPPORT OF BEAMS AND OTHER POINT LOADS SHALL BE CONTINUED FROM SECOND FLOOR WALLS TO FOUNDATION BEAMS IF POSSIBLE. THE NUMBER OF WALL BRACES REQUIRED TO SUPPORT THE END OF THE BEAM SHALL BE ONE GREATER THAN THE NUMBER OF PILES MAKING UP THE BEAM. FOR EXAMPLE: A THREE PLY LVL (3-14" LVL) WILL REQUIRE 4 BRACES.

STUDS THAT BE CUT OR NOTCHED TO A DEPTH NOT EXCEEDING 20 PERCENT OF THE STUD WIDTH. KNOTS MAY BE DRILLED PROVIDED THAT THE DIAMETER OF THE RESULTING HOLE IS NO GREATER THAN 40 PERCENT OF THE STUD WIDTH. THE EDGE OF THE HOLE IS NO CLOSER THAN 2" TO THE EDGE OF THE STUD, AND THE HOLE IS NOT LOCATED IN THE SAME SECTION AS A NOTCH OR CUT.

STUDS THAT HAVE MORE THAN 10 FEET IN HEIGHT SHALL HAVE HORIZONTAL BRACING PROVIDED AT THEIR MID-HEIGHT.

THE NUMBER OF JACK BOLTS (TYPICALLY 8 BOLTS) REQUIRED TO SUPPORT WINDOW AND DOOR HEADERS SHALL BE ONE AT EACH END OF THE HEADER FOR ALL DOUBLE AND TRIPLE WINDOW AND DOOR HEADERS AND TWO AT EACH END OF THE HEADER FOR ALL DOUBLE AND TRIPLE WINDOW HEADERS.

8. SEE WALL BRACING NOTES AND DETAILS IN THESE SPECIFICATIONS.
 9. BEAMS IDENTIFIED AS LVL'S SHALL BE 1 1/2" THICK LAMINATED VENEER LUMBER (LVL) AND SHALL CONFORM TO THE FOLLOWING DESIGN PARAMETERS:
 E = 1,800,000 PSI Fv = 2,800 PSI Pv = 225 PSI

AN ENGINEERED ORDER FROM (DESIGN BY OTHERS) MAY BE SUBSTITUTED FOR ANY NON-FRAMING LVL CEILING BEAM SPECIFIED IN THE FRAMING PLANS. SEE NOTE 10 HEREIN FOR ADDITIONAL REQUIREMENTS.

MULTI-PLY LVL BEAMS SHALL BE CONNECTED TOGETHER AS DETAILED BELOW:



BEAM SHALL REQUIRE A TAPERED END (NOT BOTH) TOP OF BEAM AT BEARING POINTS ABOVE A ROOF DECKING SURFACE. THAT IS, THE TOP CORNER OF THE BEAM SHALL TAPER TO BE CUT. THE BEAM SHOULD BE FINALLY CUT 60 TO 90 DEGREES AGAINST THE BOTTOM OF THE ROOF DECKING.

11. UNLESS OTHERWISE NOTED ON THE FRAMING PLANS:
 ALL CEILING JOISTS SHALL BE SPACED AT 24" O.C. FOR SINGLE ROOF COVERING ALL RAFTERS SHALL BE 2x4'S SPACED AT 24" O.C. FOR TILE ROOF COVERING ALL RAFTERS SHALL BE 2x6'S SPACED AT 24" O.C. THE CONTRACTOR SHALL MAINTAIN THE FOLLOWING JOIST AND RAFTER SPACING TABLES TO VERIFY THAT THESE MEMBERS HAVE NOT EXCEEDED THE ALLOWABLE SPACING SPECIFIED.

CEILING JOISTS
 FINISH FLOOR FINISH FLOOR 2" DP LIMITED ATTIC STORAGE SPACE
 LL = 20 PSF, DL = 10 PSF, DETL = 1,040

JOIST SIZE	24"	30"	36"
2 x 4	9'-10"	12'-0"	13'-8"
2 x 6	12'-4"	15'-3"	17'-1"
2 x 10	14'-5"	18'-1"	20'-2"

RAFTERS (CEILING NOT ATTACHED)
 FINISH FLOOR FINISH FLOOR 2" DP LL = 20 PSF, DL = 10 PSF, DETL = 1,040

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34. UNLESS OTHERWISE NOTED ON THE FRAMING PLANS:
 ALL CEILING JOISTS SHALL BE SPACED AT 24" O.C. FOR SINGLE ROOF COVERING ALL RAFTERS SHALL BE 2x4'S SPACED AT 24" O.C. FOR TILE ROOF COVERING ALL RAFTERS SHALL BE 2x6'S SPACED AT 24" O.C. THE CONTRACTOR SHALL MAINTAIN THE FOLLOWING JOIST AND RAFTER SPACING TABLES TO VERIFY THAT THESE MEMBERS HAVE NOT EXCEEDED THE ALLOWABLE SPACING SPECIFIED.

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 ALL CEILING JOISTS SHALL BE SPACED AT 24" O.C. FOR SINGLE ROOF COVERING ALL RAFTERS SHALL BE 2x4'S SPACED AT 24" O.C. FOR TILE ROOF COVERING ALL RAFTERS SHALL BE 2x6'S SPACED AT 24" O.C. THE CONTRACTOR SHALL MAINTAIN THE FOLLOWING JOIST AND RAFTER SPACING TABLES TO VERIFY THAT THESE MEMBERS HAVE NOT EXCEEDED THE ALLOWABLE SPACING SPECIFIED.

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 ALL CEILING JOISTS SHALL BE SPACED AT 24" O.C. FOR SINGLE ROOF COVERING ALL RAFTERS SHALL BE 2x4'S SPACED AT 24" O.C. FOR TILE ROOF COVERING ALL RAFTERS SHALL BE 2x6'S SPACED AT 24" O.C. THE CONTRACTOR SHALL MAINTAIN THE FOLLOWING JOIST AND RAFTER SPACING TABLES TO VERIFY THAT THESE MEMBERS HAVE NOT EXCEEDED THE ALLOWABLE SPACING SPECIFIED.

PLAN NO. _____
 ADDRESS _____

SCALE 1/8" = 1'-0"

SHEET 1
 OF
 2



Pre-engineered systems (Trusses/I-joists)

OPTION 2

Plan Review:

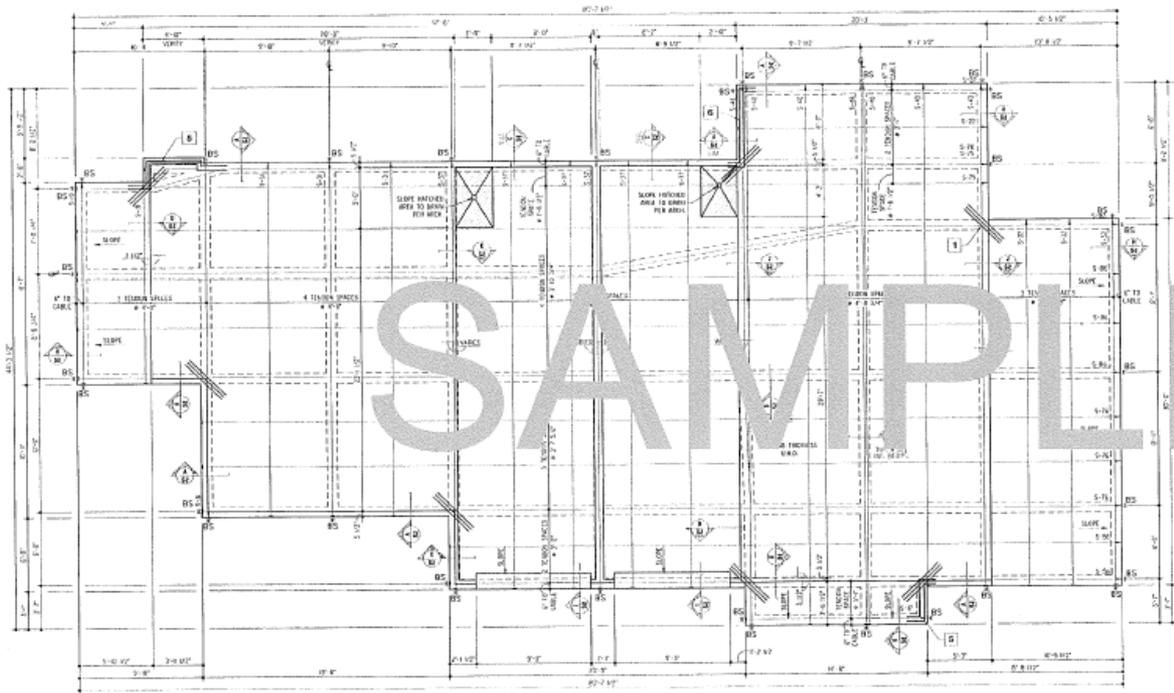
- Provide framing plan showing general area of truss/wooden i-joist system (hatched, shaded, etc.) sealed by the engineer of record. The framing plan should show all supporting structural members (headers, beams, posts, columns, etc.)
- Provide coordinating truss layout (direction and spacing) from the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

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



Option 2: Example





FOUNDATION PLAN

1/4" = 1'-0"

GENERAL PLAN NOTES

1. CHECK ALL NOTES & DIMENSIONS WITH ARCHITECTURE PRIOR TO START OF CONSTRUCTION.
2. IMMEDIATE CHANGE OF DIMENSIONS IS CONSIDERED AS STATE OF TEXAS BEING REQUIRED IN MATHEMATICAL, SURVEY AND ENGINEERING.
3. CONSULT ENGINEER FOR INTERIOR FINISH LOCATIONS WHEN NOT BY FULL SECTION 3'-0".
4. GRADE BEAMS ARE TO BE CONFORMED TO AND ARE EXISTING UNLESS OTHERWISE NOTED.
5. BEAM BEAM DEPTHS MAY BE REDUCED WITH BEARING ON LATERALS. CONTACT ENGINEER FOR APPROV. WTS.
6. MINIMUM BEAM GULLS - 10" DIA.

NOTES:
 CALCULATIONS BASED ON # 30L ANALYSIS PREPARED BY: CARLOS GUTIERREZ
 DATED: 04/08/14
 PROJECT: 14-00000
 100000000 ENGINEERING PROJECTS
 505 - 10 - TONGUE ST.
 #4 - 4" CIRCUM. 3.0' EDGE
 #6 - 1/2" CIRCUM. 1.0' EDGE
 DESIGN PA 1 - 24

CONTRACTOR/OWNER RESPONSIBILITY:

NOTE:
 FOUNDATION PLANS BASED ON ARCHITECTURE DATED ON 02/18/14. CONSULT ENGINEER FOR ANY STRUCTURAL CHANGES DUE TO ARCHITECTURAL CHANGES MADE AFTER DATE.

LEGEND

- 1 - 3 - 48 X 4'-0" (70#)
- 2 - #5 16' BOTTOM
- 3 - #3 @ 4" O.C.
- 4 - #4 TOP @ BOTTOM
- 5 - #5 TOP @ BOTTOM
- 6 - #4 #5 STRIPS @ 3/2" O.C.
- 7 - #5 16' TOP
- 8 - #4 #5 STRIPS @ 3/2" O.C.



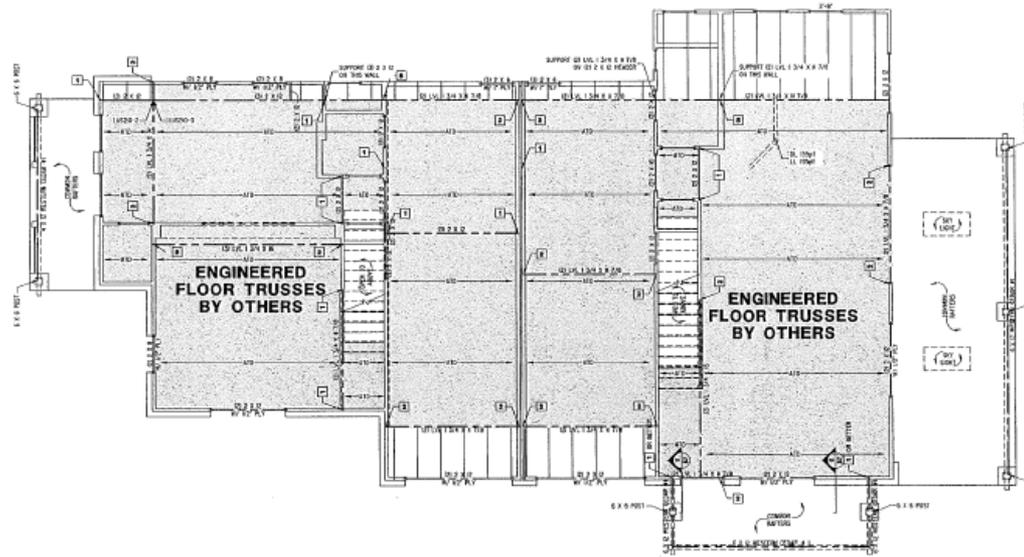
DATE ISSUED

FOUNDATION PLAN

SHEET NO.
S-1



SAMPLE



- GENERAL NOTES**
1. DESIGN IS BASED ON A MAXIMUM WIND SPEED CLASS LOW OF 50 MPH UNLESS OTHERWISE INDICATED BY OTHER MATERIALS OR CODES.
 2. ALL WOOD MEMBERS SHALL BE CONTRACTED AND TYP. #2 UNLESS NOTED OTHERWISE.
 3. ALL JOISTS TO BE SUPPORTED INDEPENDENTLY BY HEADERS OF STEEL LANGLEY CONTACT CHANGES AS REQUIRED.
 4. ALL JOISTS TO BE 2 x 4 + 2" P.C. UNLESS NOTED OTHERWISE.
 5. ALL HEADERS TO BE A MINIMUM OF 2 x 4 UNLESS NOTED OTHERWISE.
 6. ALL JOISTS TO BE SIMPLY OR BUILTUP UNLESS NOTED OTHERWISE.
 7. FINISH FLOOR FINISHES FOR ALL DECK TO BEAM CONNECTIONS UNLESS SPECIFIC FINISH IS CALLED OUT ON PLAN.
 8. WIND BRACE IS REQUIRED TO BE PROVIDED AND BUILTUP BRACE INDICATED ON PLAN. WIND BRACE SHALL BE A MINIMUM 2" X 4" UNLESS NOTED OTHERWISE. TO THE VERTICAL CENTER OF THE JOIST AT THE EXTERIOR FACE OF THE STUD WALL. I.E. THE CENTER FROM THE JOIST TO THE TOP OF THE TOP PLATE.
 9. ON LVL BRACE TO BE BRACED TO AN ANCHOR OR LVL THROUGH JOIST IN 4" O.C. BRACE SHALL BE BRACED TO FROM THE TOP AND BOTTOM OF THE BEAM.
 10. STUD JOISTS AND JOISTS TO BE IN ACCORDANCE WITH PROVISIONS OF SECTION 1605 OF THE INTERNATIONAL RESIDENTIAL CODE. JOISTS SHALL BE CHECKED FOR OVER WALL BRACING AT AN ANCHORED JOIST.
 11. ALL EXPOSED LUMBER TO BE TREATED FOR MOISTURE PROTECTION.
 12. THE PORTLAND IS INCLUDES OF FRAMED ATTIC, FLOOR, AND EXTERIOR DECK.

- FRAMING LEGEND**
- FINISH BY OTHERS
 - BEAM
 - JOIST
 - WIND BRACE DIRECTION
 - LEAD BRACING WALLS

- NOTE:**
1. NON-CODE BRACING AND CODE JOISTS SHALL BE 2" X 4" UNLESS NOTED OTHERWISE.
 2. WALLS SHALL BE BUILT UP TO FOUNDATION.
 3. BRACE OR LALLY SUPPORT.
 4. SUPPORT AND LOCATION.
 5. ROOF BRACE.
 6. BRACE INDICATED POINT AND BRACE FINISH IS TO BE IN ACCORDANCE WITH PROVISIONS OF SECTION 1605 OF THE INTERNATIONAL RESIDENTIAL CODE. JOISTS SHALL BE CHECKED FOR OVER WALL BRACING AT AN ANCHORED JOIST.
 7. BRACE SHALL BE BRACED TO FROM THE TOP AND BOTTOM OF THE BEAM.
 8. ON LVL BRACE TO BE BRACED TO AN ANCHOR OR LVL THROUGH JOIST IN 4" O.C. BRACE SHALL BE BRACED TO FROM THE TOP AND BOTTOM OF THE BEAM.
 9. STUD JOISTS AND JOISTS TO BE IN ACCORDANCE WITH PROVISIONS OF SECTION 1605 OF THE INTERNATIONAL RESIDENTIAL CODE. JOISTS SHALL BE CHECKED FOR OVER WALL BRACING AT AN ANCHORED JOIST.
 10. ALL EXPOSED LUMBER TO BE TREATED FOR MOISTURE PROTECTION.
 11. THE PORTLAND IS INCLUDES OF FRAMED ATTIC, FLOOR, AND EXTERIOR DECK.

- LEGEND:**
- 1 2 x 4 S.P. #2
 - 2 2 x 4 S.P. #2
 - 3 2 x 4 S.P. #2
 - 4 2 x 4 S.P. #2
 - 5 2 x 4 S.P. #2
 - 6 2 x 4 S.P. #2
 - 7 2 x 4 S.P. #2
 - 8 2 x 4 S.P. #2
 - 9 2 x 4 S.P. #2
 - 10 2 x 4 S.P. #2

REVISIONS BY # OF STAGE FOR LMS SUPPORT BY NUMBER

IRC 2008
IRC 2009
IRC 2012

NOTE:

FRAMING PLANS SHALL BE ARCHITECTURE DATED OR DESIGN - CONSTRUCTION NUMBER FOR ANY STRUCTURAL CHANGES DUE TO ARCHITECTURAL CHANGES MADE AFTER DATE:

NOTE:

THESE PLANS WERE DRAWN ACCORDING TO THE AMERICAN WOOD COUNCIL'S RECALL ACCEPTED MEMBER PROPERTIES FOR USUALLY GRADED LUMBER FOLLOWING THE EFFECTIVE DATE 1, 2015.

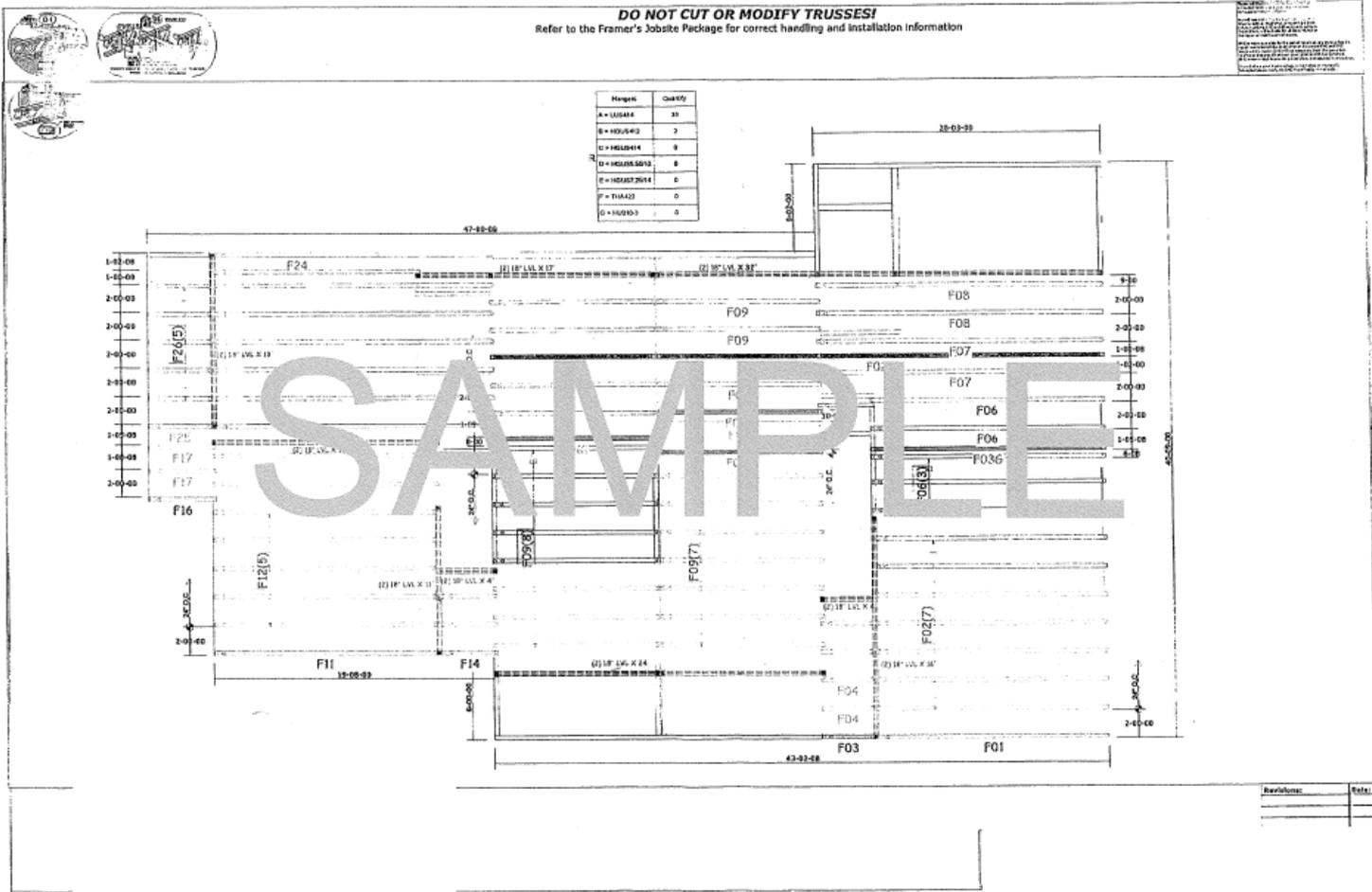
FIRST STORY CEILING FRAMING PLAN
1/4" = 1'-0" EQ. PORTLAND - 2017

CEILING FRAMING PLAN

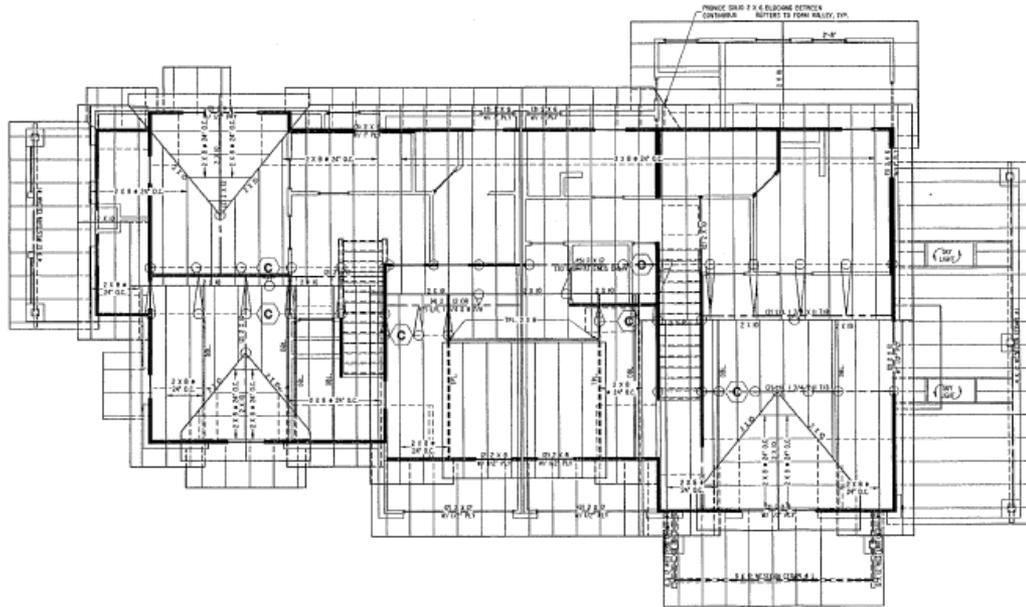
DATE ISSUED

S-4





SAMPLE



GENERAL NOTES

01. BEAMS TO BE MADE ON A MINIMUM MATERIAL THICKNESS AND OF S20 UNLESS OTHERWISE NOTED OR OTHERWISE INDICATED.
02. ALL MEMBERS SHALL BE CONTIGUOUS AND SPP, AS UNLESS NOTED OTHERWISE.
03. ALL BRACING TO BE SPECIFIED INDEPENDENTLY OF MEMBERS BY STEEL LISTS, CONSULT ENGINEER AS REQUIRED.
04. ALL NOTING TO BE 2 X 4 + 2" O.D. UNLESS NOTED OTHERWISE.
05. ALL BEAMS TO BE A MINIMUM OF 2 X 4 UNLESS NOTED OTHERWISE.
06. NO FOOTING IS NECESSARY IF PROPER SETBACK, FOUNDATION AND EXTERIOR DRAINAGE.

SPECIAL NOTES

- (C) PARENTHESIZED WALL OR BEAM BEHIND TO SUPPORT NOTING.

FRAMING LEGEND

- TRUSS BY BEAMS
 - BEAM
 - ASSUMED TRUSS EJECTION
 - NON-LOAD BEARING WALLS
 - LOAD BEARING WALLS
- NOTE: NON-LOAD BEARING AND LOAD BEARING WALLS APPLY TO UPPER FLOOR WALLS ONLY. I.E. WALLS THAT DO NOT BE WITH THE FOUNDATION.
- BEAM OR RAILED SUPPORT
 - SUPPORT AND LOCATION
 - ROOF SPACE

LEGEND:	
1	2" X 4 @ 5' O.C.
2	2" X 4 @ 5' O.C.
3	2" X 4 @ 5' O.C.
4	2" X 4 @ 5' O.C.
5	2" X 4 @ 5' O.C.
6	2" X 4 @ 5' O.C.
7	2" X 4 @ 5' O.C.

APPROXIMATE MAX. # OF STUDS PER LINE SUPPORT BY MEMBER.

IRC 2006
IRC 2009
IRC 2012

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

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

ROOF FRAMING PLAN

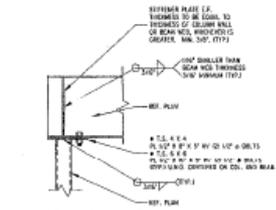
1/4" = 1'-0"

DATE ISSUED: []

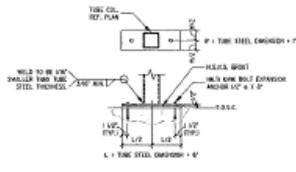
ROOF FRAMING PLAN

S-6

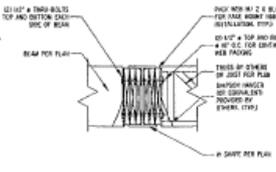




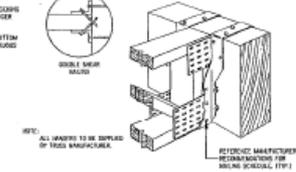
1 BEAM PROFILE W/ BOLTED CONNECTION
SCALE: 1/8"



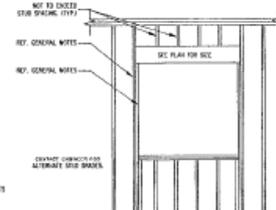
2 BASE PLATE TO FOUNDATION
SCALE: 1/8"



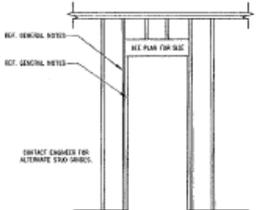
3 TYPICAL WOOD FRAMING MEMBER TO STEEL BEAM
SCALE: 1/8"



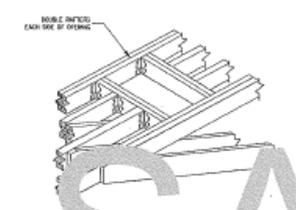
4 FLOOR TRUSS TO BEAM CONNECTION
SCALE: 1/8"



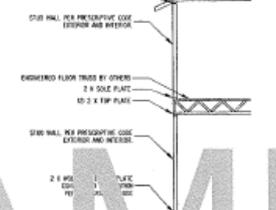
5 TYPICAL WINDOW OPENING
SCALE: 1/8"



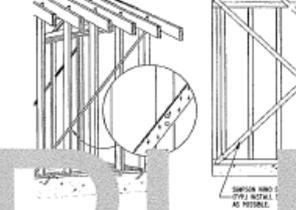
6 TYPICAL DOOR OPENING
SCALE: 1/8"



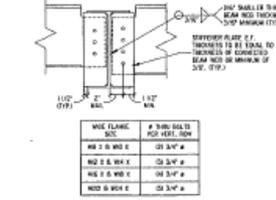
7 TYPICAL ROOF OPENING
SCALE: 1/8"



8 TYPICAL WALL SECTION
SCALE: 1/8"

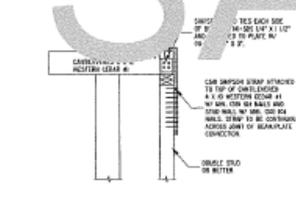


9 TYPICAL WALL BRACING
SCALE: 1/8"



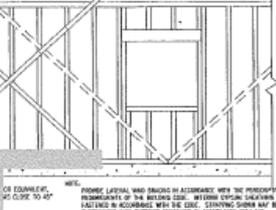
10 BEAM TO BEAM CONNECTION STEEL
SCALE: 1/8"

WELD FLANGE SIZE	# BOLT BALLS FOR VERT. DIM
1/2" x 1/2" x 1/2"	03 3/4" x 4"
1/2" x 1/2" x 1/2"	03 3/4" x 4"
1/2" x 1/2" x 1/2"	03 3/4" x 4"
1/2" x 1/2" x 1/2"	03 3/4" x 4"



11 CONNECTION CANTILEVERED BEAM
SCALE: 1/8"

SAMPLE



10 TYPICAL WALL BRACING
SCALE: 1/8"



DATE ISSUED
10/10/10

DETAILS

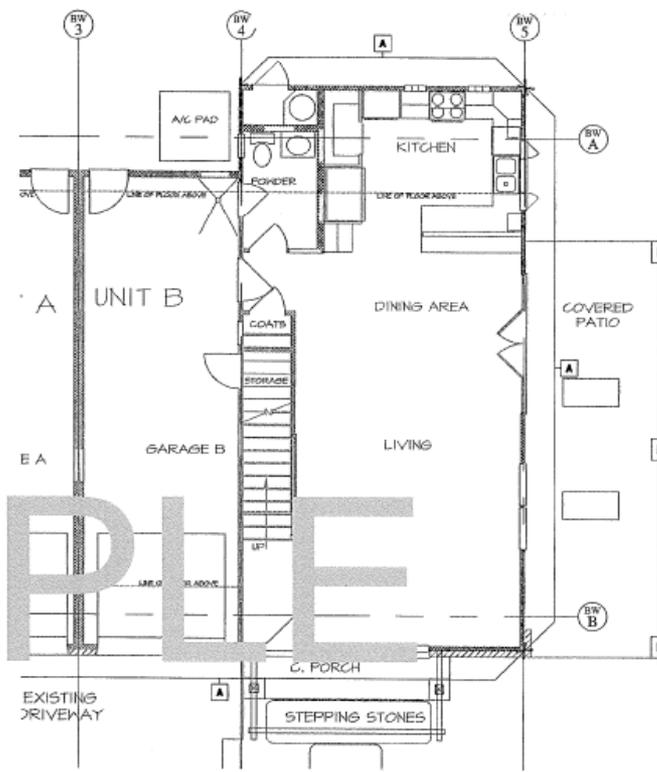
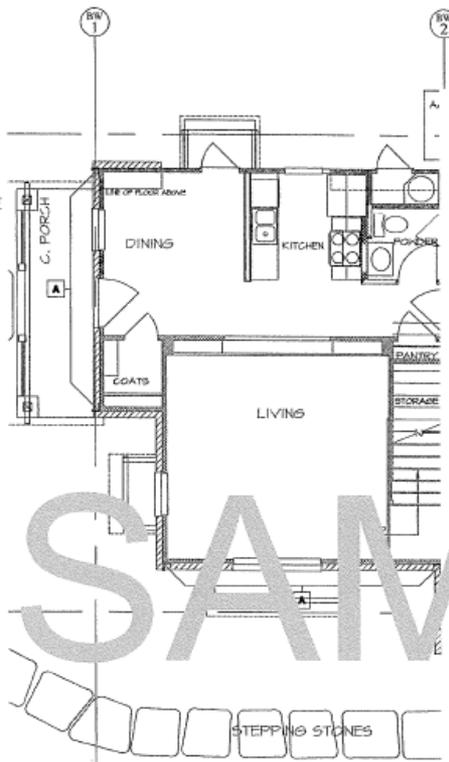
S-7



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-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. (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



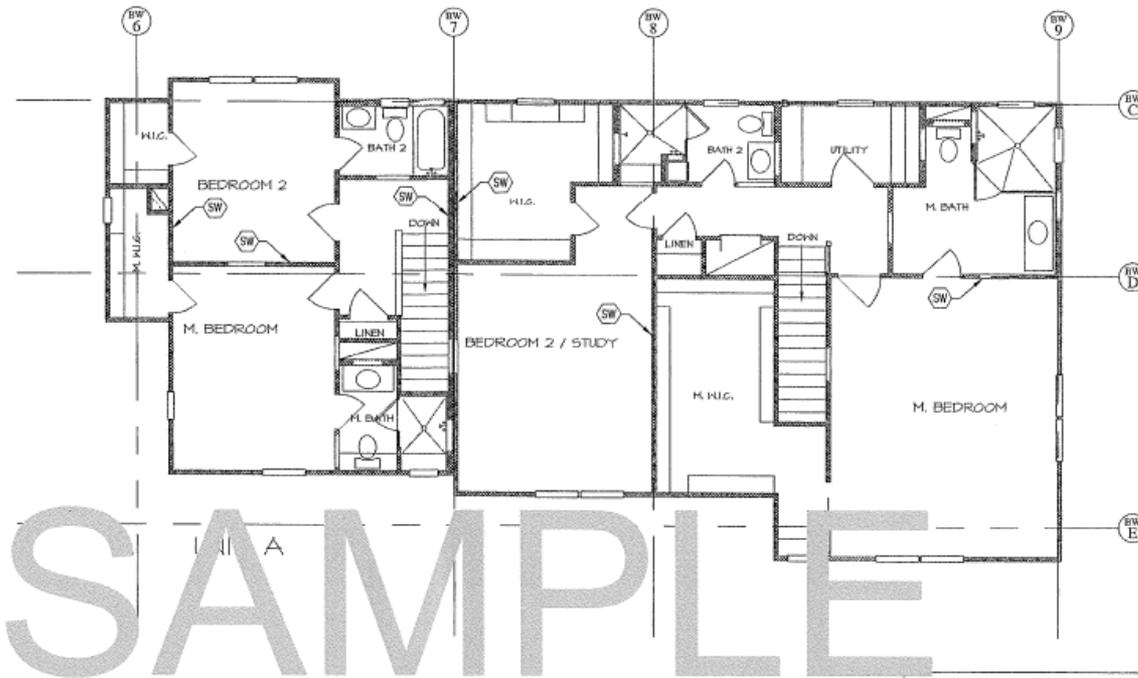
SHEARWALL & NAILING SCHEDULE

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

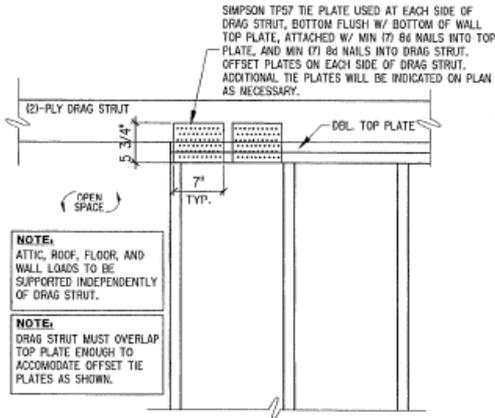
DATE ISSUED

WINDBRACING PLAN

SHEET NO.

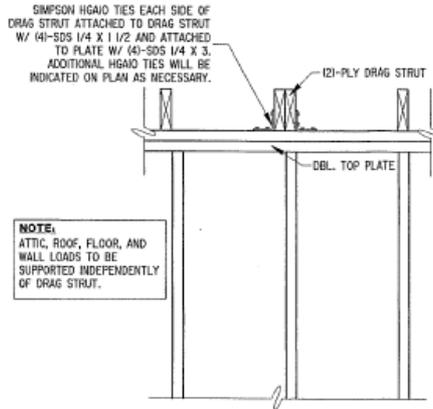
WB-2





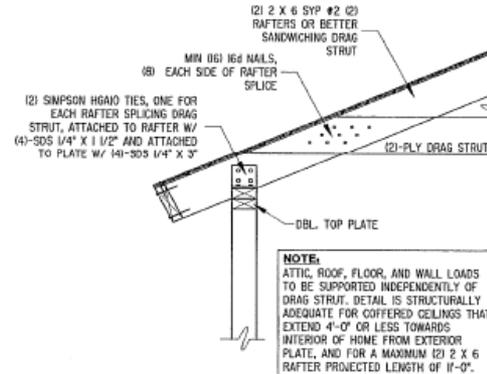
1 PARALLEL CONNECTION DRAG STRUT TO WALL

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



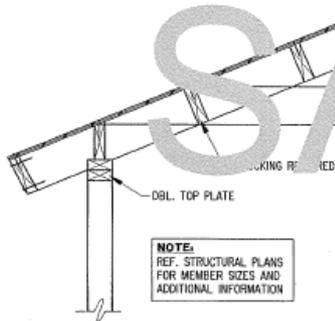
2 PERPENDICULAR CONNECTION DRAG STRUT TO WALL

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



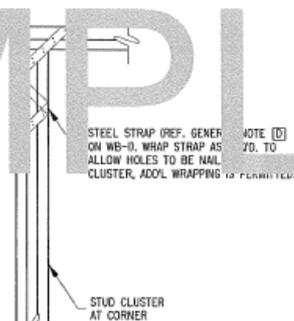
3 DRAG STRUT TO RAFTERS

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)

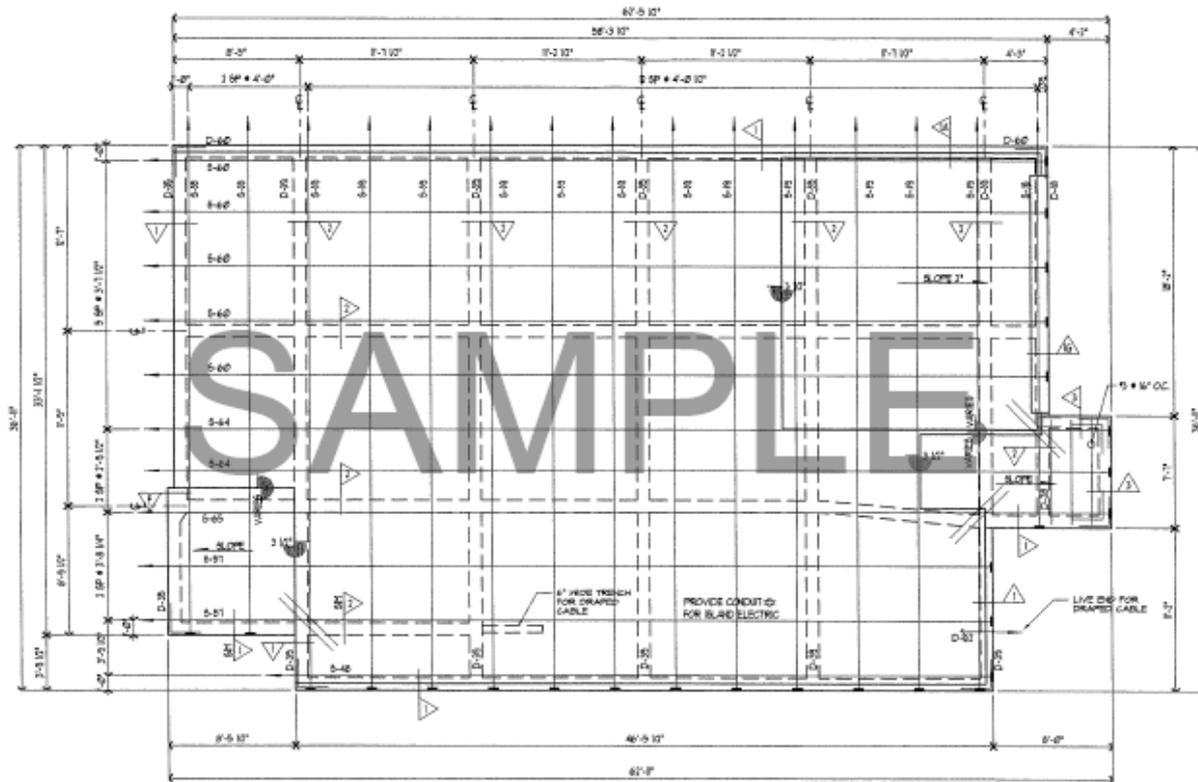
OPTION 3 – unsealed plans

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



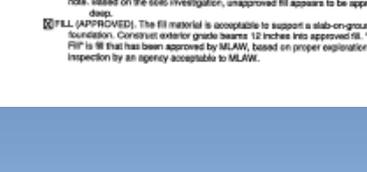
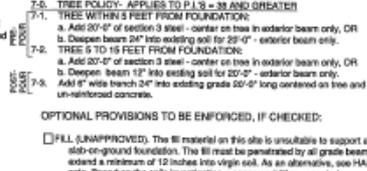
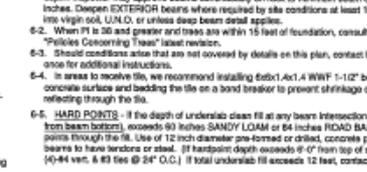
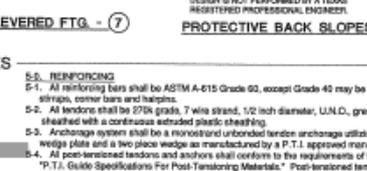
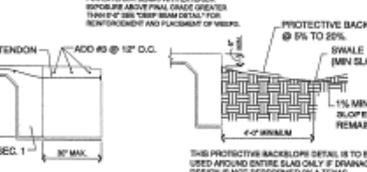
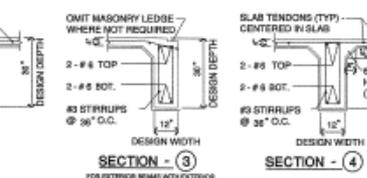
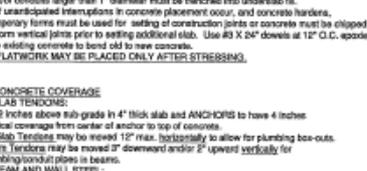
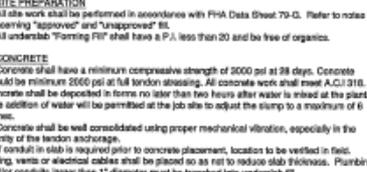
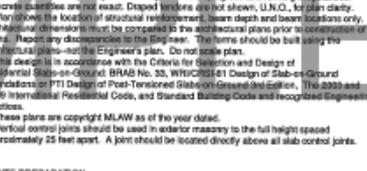
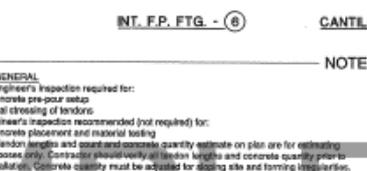
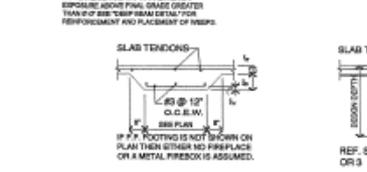
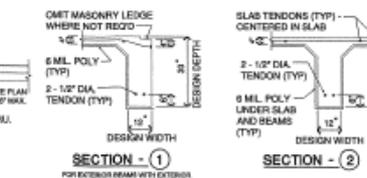
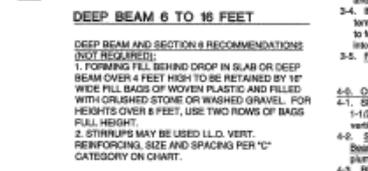
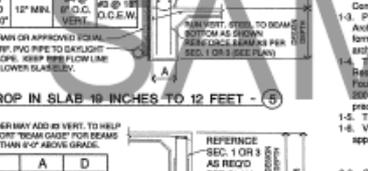
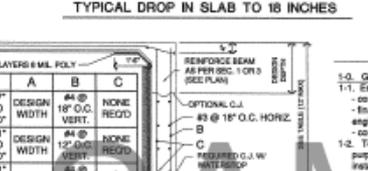
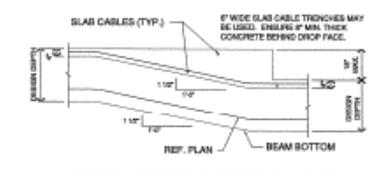
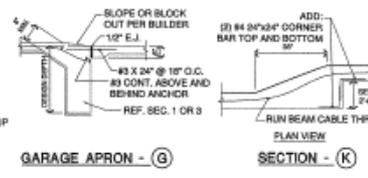
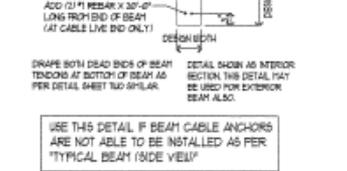
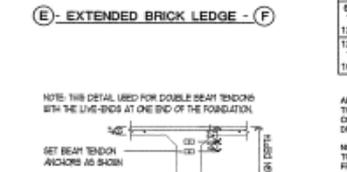
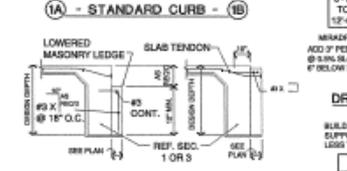
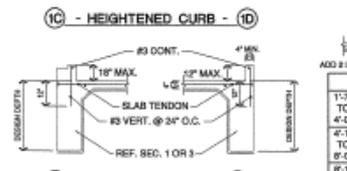
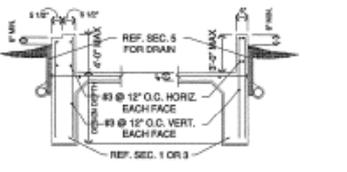
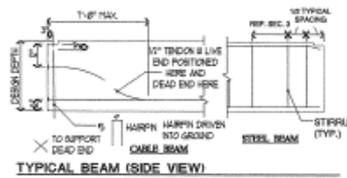


THE FOUNDATION ASSUMES LEVEL SITE CONDITIONS. IF UNDESIRABLE FORMING FULL AND/OR UNAPPROVED FULL DEPTH EXCEEDS 48" CONTACT ENGINEER FOR REDESIGN (SEE HARD POINT NOTE ON S41.2). VERIFY ALL DIMENSIONS WITH ARCHITECTURALS. DO NOT USE THESE PLANS FOR SETTING FORMS.

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

NOTE:
 THIS IS A SCHEMATIC PLAN FOR THE PURPOSE OF LOCATING AND IDENTIFYING FOUNDATION REINFORCED ELEMENTS ONLY. VERIFY ALL DIMENSIONS, DROPS, OFFSETS AND FEATURES WITH THE ARCHITECTURAL PLANS BEFORE FORMING THE FOUNDATION. MLAW 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.





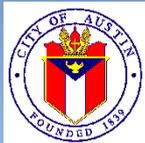
INT. F.P. FTG. - (6)

CANTILEVERED FTG. - (7)

NOTES

- 1-0. GENERAL
- 1-1. Engineer's inspection required for:
- final closing of tendons
 - concrete pour order
- 1-2. Engineer's inspection recommended (not required) for:
- concrete placement and material testing
 - concrete quantities and cast
 - concrete quantity estimate on plan are for estimating purposes only. Contractor shall verify all tendon lengths and concrete quantity prior to installation. Concrete quantity must be adjusted for sloping site and forming irregularities. Concrete quantities are not shown. U.N.C. for plan clarity.
 - Tendon lengths and quantity estimate on plan are for estimating purposes only. Contractor shall verify all tendon lengths and concrete quantity prior to installation. Concrete quantities are not shown. U.N.C. for plan clarity.
 - Plan shows the location of structural reinforcement, beam depth and beam locations only. Any other dimension in plan to be compared to the architectural plans prior to construction or formwork. Reconciling discrepancies to the Engineer. The forms should be built using the architectural plans and the Engineer's plan. Do not scale plan.
 - This design is in accordance with the Criteria for Selection and Design of Residential Slab-on-Grade (BRAD) No. 33, with the ACI 308.1 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.
- 1-3. These plans are copyright MLAW as of the year dated.
- 1-4. 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 FHSA Data Sheet 70-D. Refer to notes concerning "approved" and "unapproved" fill.
- 2-2. All under slab "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 conduit 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 under slab 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 anchor to top of concrete.
 - Slab Tendons may be reeved 12" max. horizontally to allow for plumbing box-outs.
 - Slab Tendons may be reeved 2" downward and/or 2" upward vertically for plumbing boxes in slabs.
- 4-2. BEAM AND WALL STEEL:
- 1/2 inches slab, 2 inches formed, 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 haunches.
- 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 x size of opening plus 16 inches to be placed in concrete 2 inches beyond perimeter of opening (not req. if cables are partial stressed - see note 5-5).
- 6-0. PLAN VARIATIONS
- 6-1. 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.
- 6-2. When P.I. is 30 and greater and traps are within 15 feet of foundation, consult MLAW for "Peticles Concerning Trap" latest revision.
- 6-3. Should conditions arise that are not covered by details on this plan, contact Engineer at once for additional instructions.
- 6-4. In areas to receive tile, we recommend installing fabric-A.C.I. WWF 1-10" below concrete surface and bedding for tile on a bond breaker to prevent shrinkage cracks from reflecting through the tile.
- 6-5. HARD POINTS - If the depth of under slab 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' 0" from top of slab reweave w/ 10-#4 vert. A #3 ties @ 24" O.C.) If total under slab fill exceeds 12 feet, contact Engineer.
- 7-0. TREE POLICY - APPLIES TO P.I. 30 AND GREATER:
- 7-1. TREES 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.
- 7-2. TREES 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.
- 7-3. Add 6" wide haunch 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-ground 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 site investigation, unapproved fill appears to be approximately deep.
- FILL (APPROVED). The fill material is acceptable to support a slab-on-ground foundation. Concrete exterior grade beams 12 inches into approved fill. Approved FIF 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

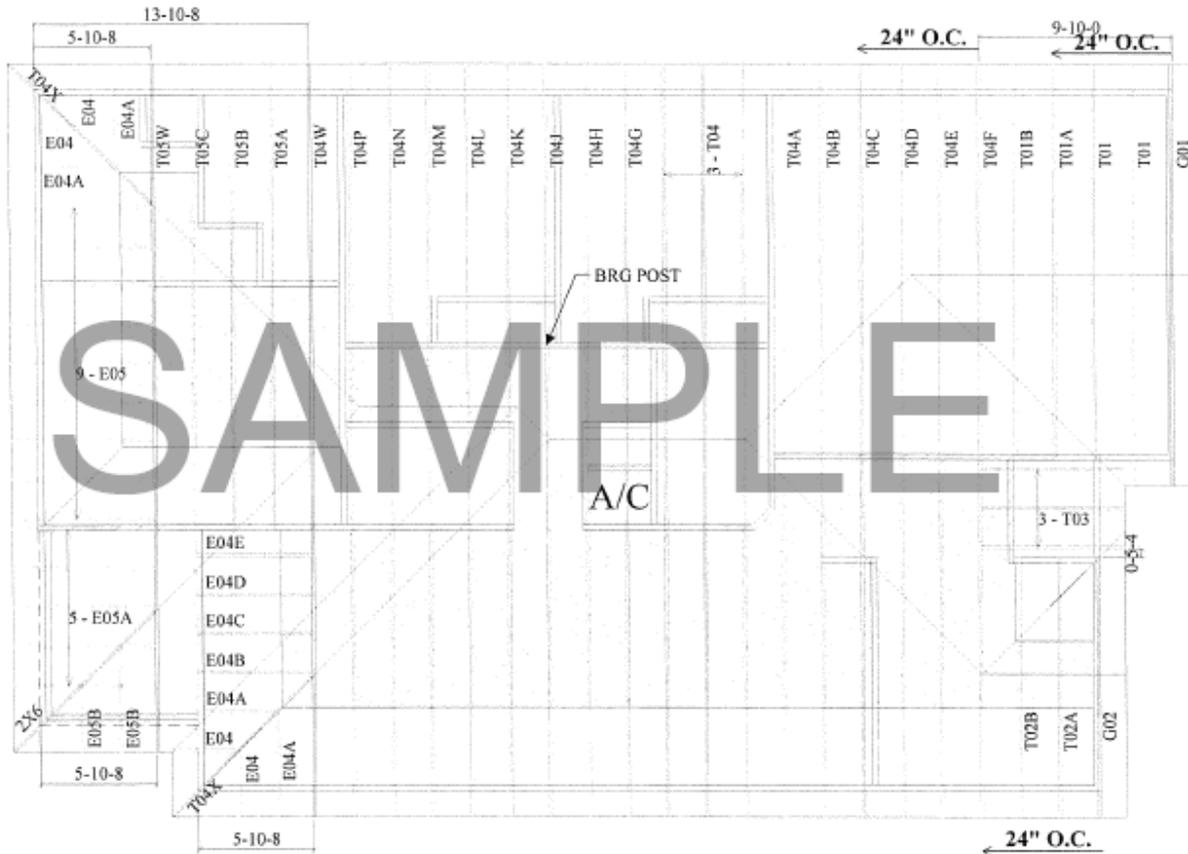
35 - STC CLIPS

7 - 2X4X14' BRACING

16 - 2X4X14" HIP FILLER

1 - 2X6X12' RAFTER

1 - 3.5 X 11.25 X 17' GDH



ROOF TRUSS FRAMING NOTES:

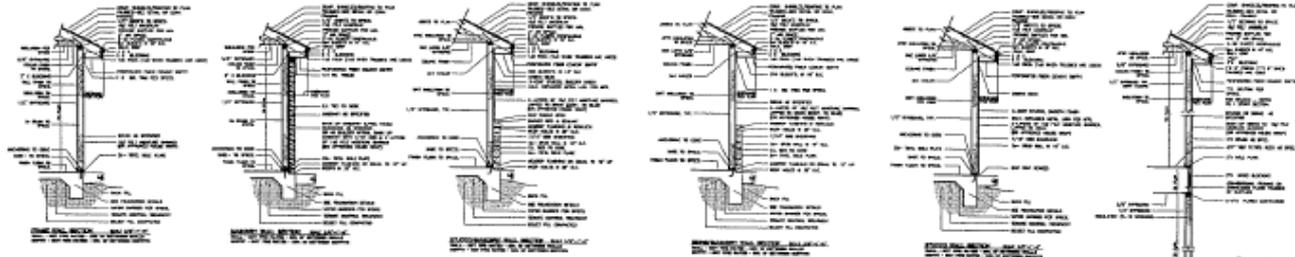
1. VERIFY ALL MECHANICAL CLEARANCES FOR CHASES, FLUES, SKYLIGHTS, RECESSED LIGHTS, ETC. PRIOR TO SETTING TRUSSES. DO NOT CUT, NOTCH OR DRILL TRUSSES. ENGR. REPAIR COSTS DUE TO UNAUTHORIZED FIELD ALTERATIONS WILL BE BACKCHARGED TO RESPONSIBLE PARTY.
2. DO NOT INSTALL ROOF TRUSSES BACKWARDS. SEE INDIVIDUAL TRUSS DRAWINGS FOR VERIFICATION OF BRACING LOCATIONS.
3. SEE INDIVIDUAL DRAWINGS FOR REQUIRED LOCATIONS OF BRACING ON MEMBERS. ALL TOP CHORD MEMBERS WITHOUT BRACING MUST BE BRACED WITH PLYING SPACES 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 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 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 building code "Building component safety information" available from the IBC Association (www.international.org).

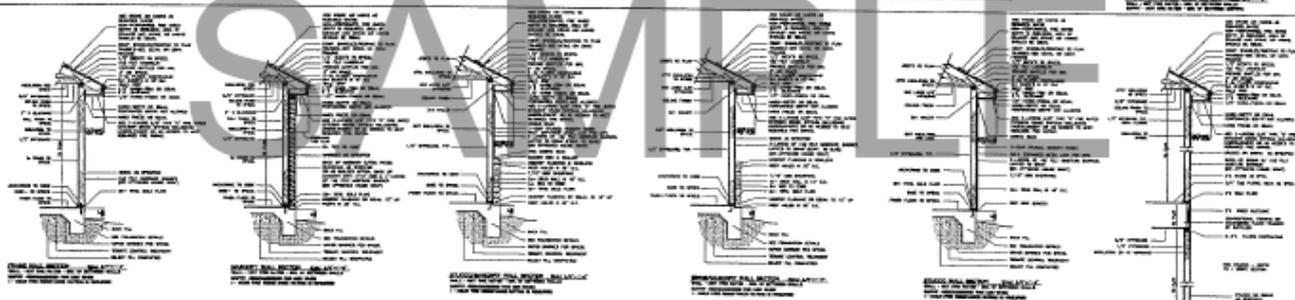
TRUSS PLACEMENT PLAN

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**STANDARD WALL SECTIONS
FOR NON-SPRINKLERED BUILDINGS**
FOR EXTERIOR WALLS REQUIRING 1 HOUR
FIRE RATINGS REFER TO SEPARATE ASTM
E 19 OR UL 263 RATED ASSEMBLIES



STANDARD WALL SECTION

WALL TYPE	MINIMUM THICKNESS	MINIMUM RIGIDITY	MINIMUM WEIGHT
1. Exterior Wall - 1 Hour	4 in.	1.0	15 lb/ft ²
2. Exterior Wall - 2 Hour	6 in.	1.5	22 lb/ft ²
3. Exterior Wall - 3 Hour	8 in.	2.0	30 lb/ft ²
4. Exterior Wall - 4 Hour	10 in.	2.5	37 lb/ft ²
5. Exterior Wall - 5 Hour	12 in.	3.0	45 lb/ft ²
6. Exterior Wall - 6 Hour	14 in.	3.5	52 lb/ft ²
7. Exterior Wall - 7 Hour	16 in.	4.0	60 lb/ft ²
8. Exterior Wall - 8 Hour	18 in.	4.5	68 lb/ft ²
9. Exterior Wall - 9 Hour	20 in.	5.0	75 lb/ft ²
10. Exterior Wall - 10 Hour	22 in.	5.5	83 lb/ft ²

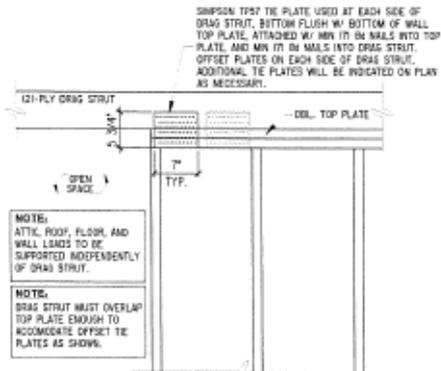
EXTERIOR WALL SECTION

WALL TYPE	MINIMUM THICKNESS	MINIMUM RIGIDITY	MINIMUM WEIGHT
1. Exterior Wall - 1 Hour	4 in.	1.0	15 lb/ft ²
2. Exterior Wall - 2 Hour	6 in.	1.5	22 lb/ft ²
3. Exterior Wall - 3 Hour	8 in.	2.0	30 lb/ft ²
4. Exterior Wall - 4 Hour	10 in.	2.5	37 lb/ft ²
5. Exterior Wall - 5 Hour	12 in.	3.0	45 lb/ft ²
6. Exterior Wall - 6 Hour	14 in.	3.5	52 lb/ft ²
7. Exterior Wall - 7 Hour	16 in.	4.0	60 lb/ft ²
8. Exterior Wall - 8 Hour	18 in.	4.5	68 lb/ft ²
9. Exterior Wall - 9 Hour	20 in.	5.0	75 lb/ft ²
10. Exterior Wall - 10 Hour	22 in.	5.5	83 lb/ft ²

**WALL SECTIONS FOR NON-SPRINKLERED
BUILDINGS w/COPIED PROJECTIONS
AS APPROVED BY THE CITY OF AUSTIN**
FOR EXTERIOR WALLS REQUIRING 1 HOUR
FIRE RATINGS REFER TO SEPARATE ASTM
E 19 OR UL 263 RATED ASSEMBLIES

DETAILS
Scale: AS NOTED

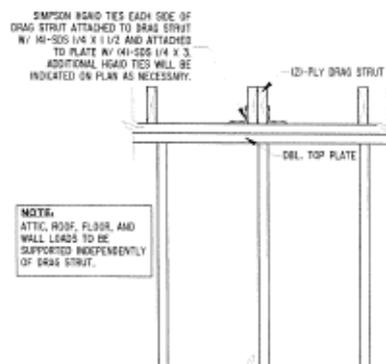




NOTE:
ATTIC, ROOF, FLOOR, AND WALL LOADS TO BE SUPPORTED INDEPENDENTLY OF DRAG STRUT.

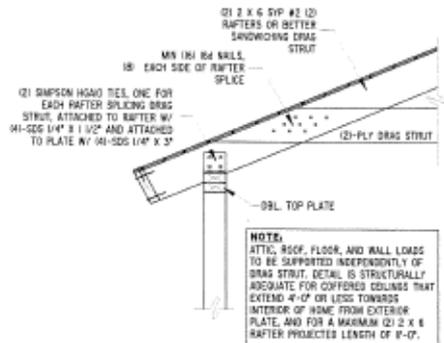
NOTE:
DRAG STRUT MUST OVERLAP TOP PLATE ENOUGH TO ACCOMMODATE OFFSET PLATES AS SHOWN.

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



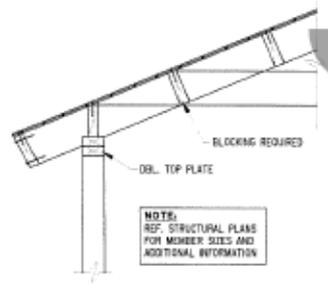
NOTE:
ATTIC, ROOF, FLOOR, AND WALL LOADS TO BE SUPPORTED INDEPENDENTLY OF DRAG STRUT.

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



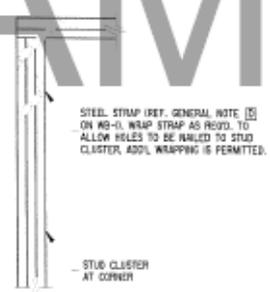
NOTE:
ATTIC, ROOF, FLOOR, AND WALL LOADS TO BE SUPPORTED INDEPENDENTLY OF DRAG STRUT. DETAIL IS STRUCTURALLY ADEQUATE FOR COFFERED CEILINGS THAT EXTEND 4'-0\"/>

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 [5] ON WB-1). WRAP STRAP AS SHOWN. TO ALLOW HOLES TO BE DRILLED 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

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

DRAWN BY: CAD BY: MT MM

SD FOOTAGE: 0

FILE NAME: _____

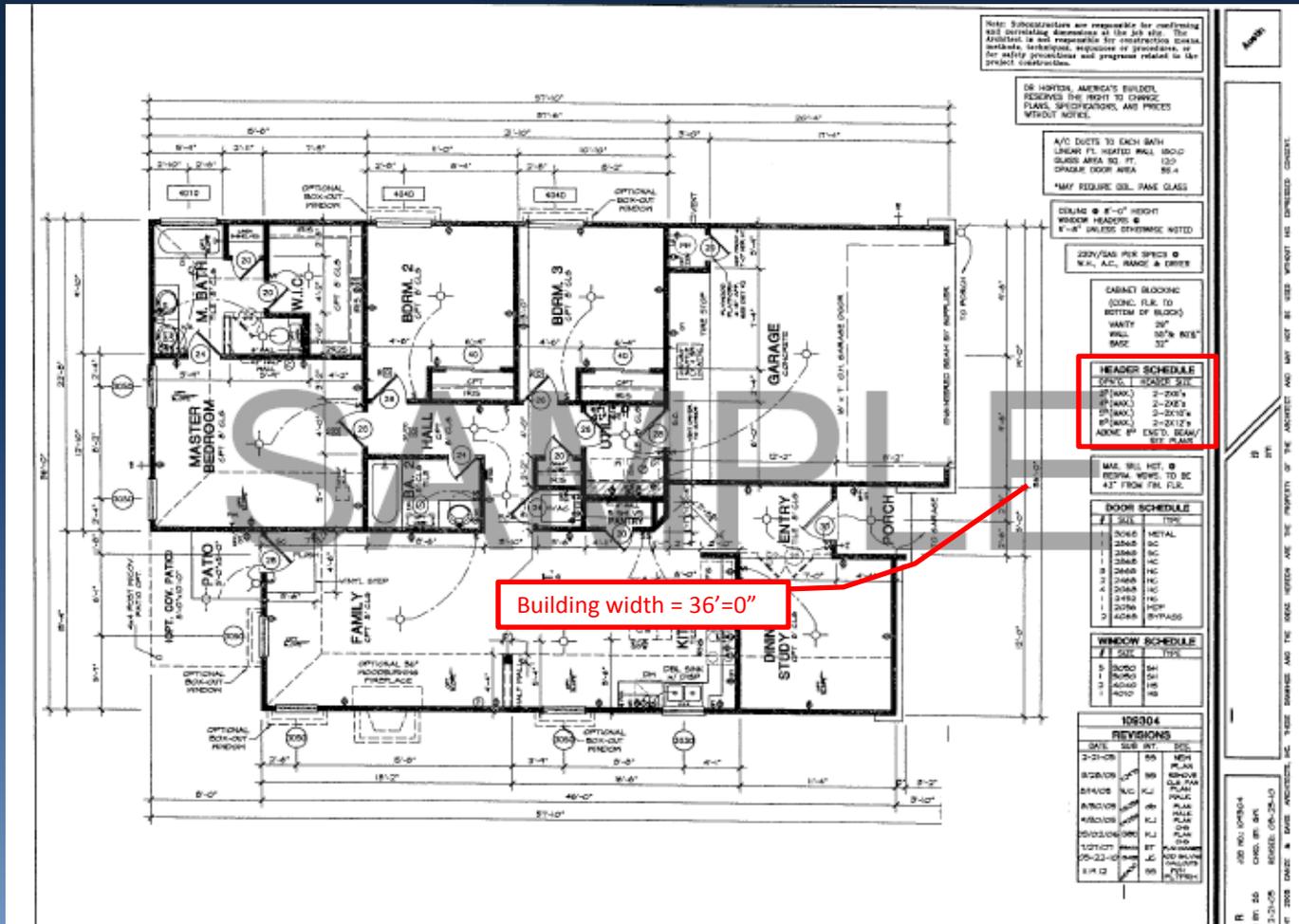
SHEET NO. _____

WB-2

USE OF THESE DRAWINGS INDICATES AGREEMENT TO CONFORM WITH GENERAL NOTES AND CONDITIONS AND CONSENT 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

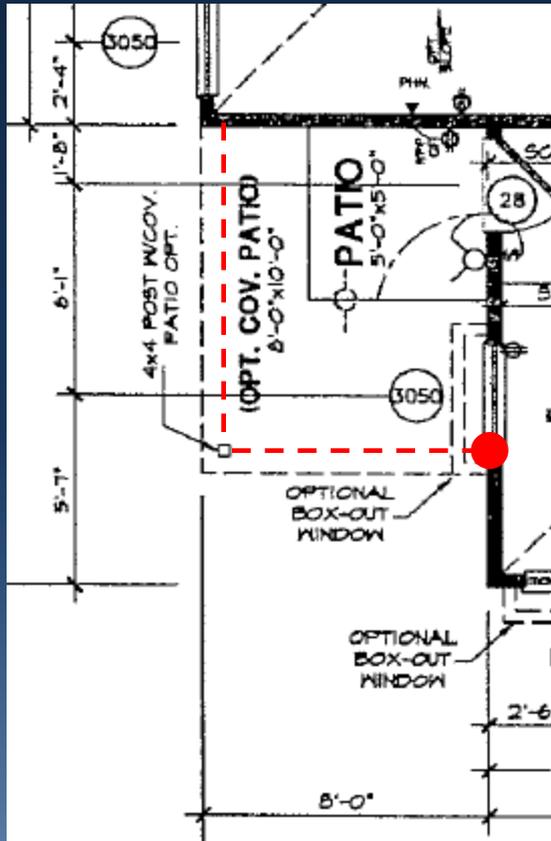
TABLE R502.5(1) GIRDER SPANS^a AND HEADER SPANS^a FOR EXTERIOR BEARING WALLS (Maximum spans for Douglas fir-larch, hem-fir, southern pine and spruce-pine-fir and required number of jack studs)

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

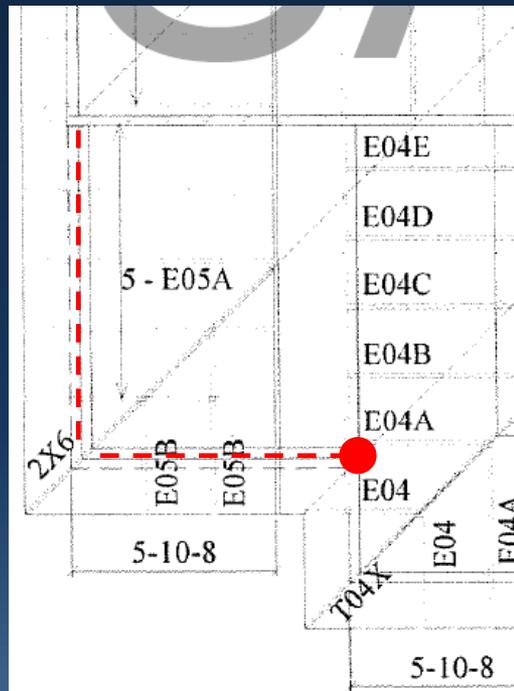
For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.
 a. Spans are given in feet and inches.
 b. Tabulated values assume #2 grade lumber.
 c. Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
 d. NJ - Number of jack 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.



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 1/2"
- 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

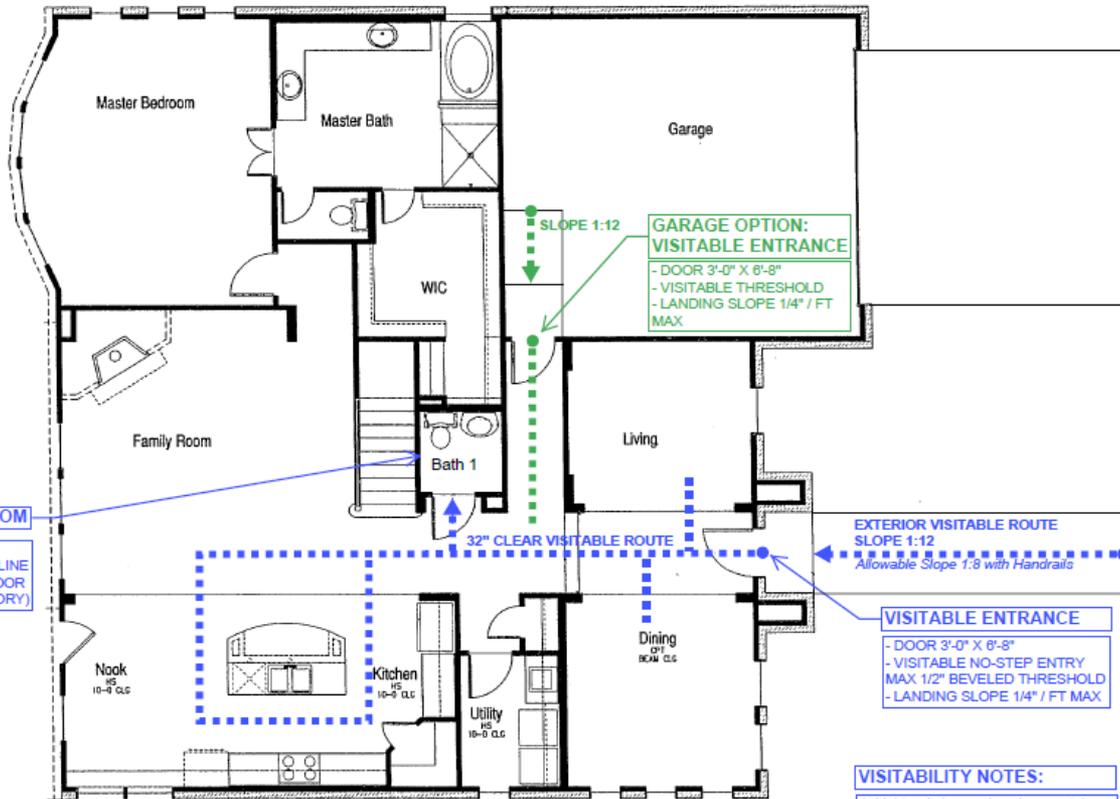
- Bathroom Route:** Front Entry Door, Bath 1, Kitchen, Dining, Living and connecting hallways.
1. Minimum clear width of 32"
 2. Thresholds and transitions shall be ramped or beveled

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

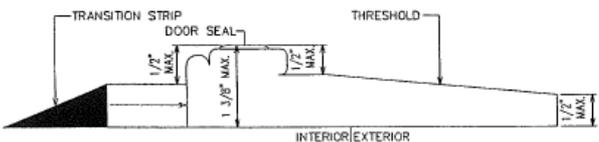
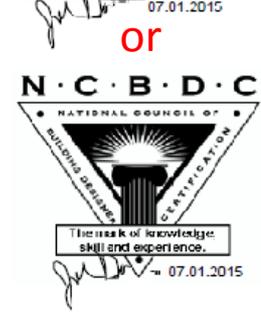
1. Light switches and environmental controls no higher than 48" above the interior floor level
2. Outlets and receptacles minimum 15" above interior floor level except for floor outlets.



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

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

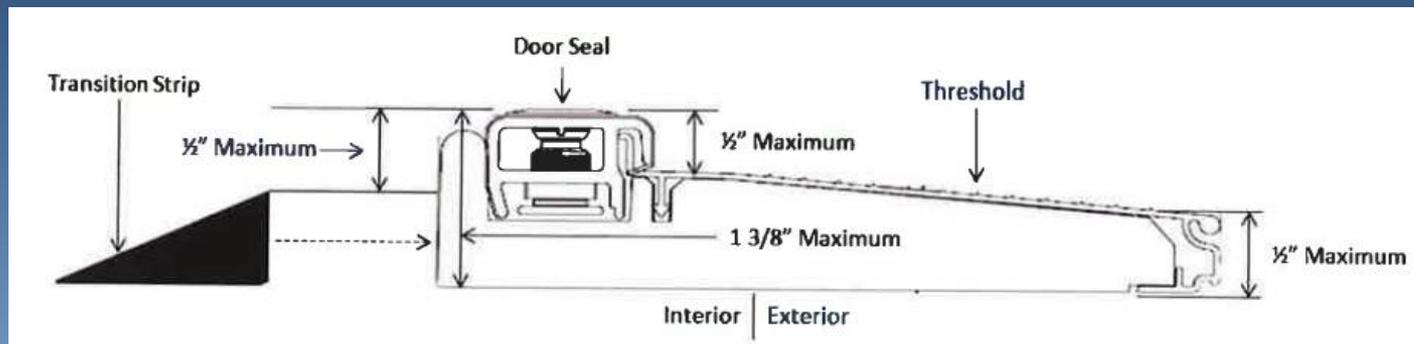


Approved Threshold Detail

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.



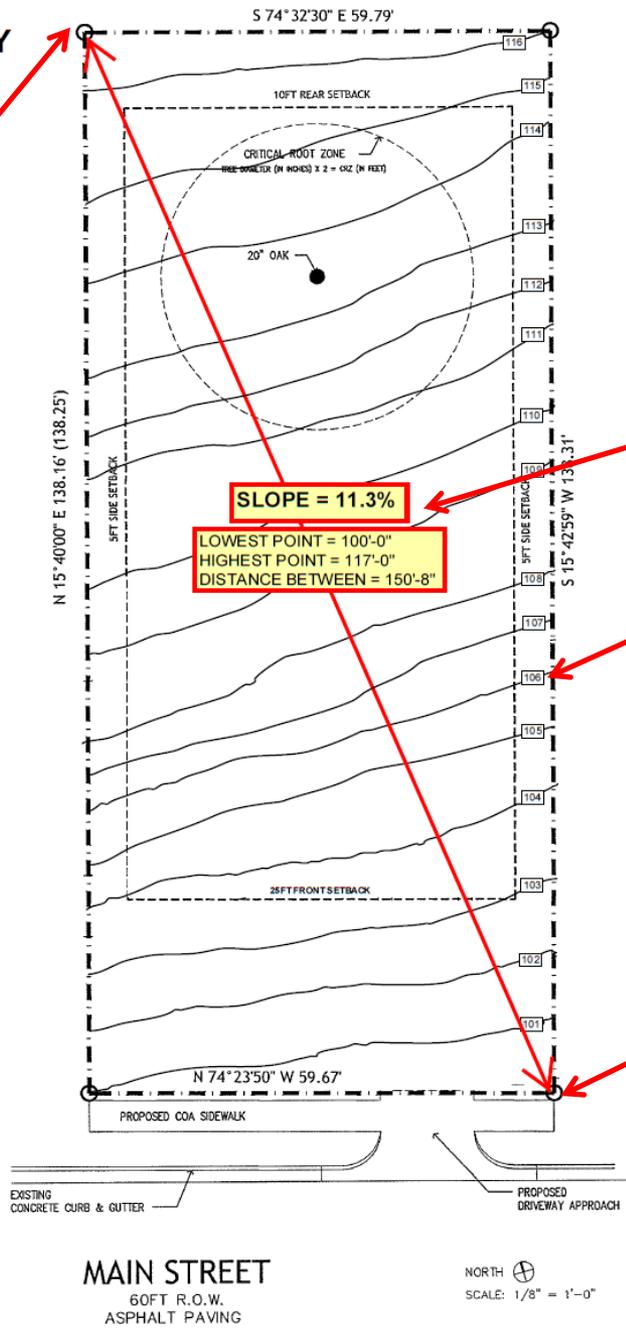
**SAMPLE VISITABILITY
WAIVER REQUEST -
SLOPE > 10%
R320.7.1.2**

**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

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.



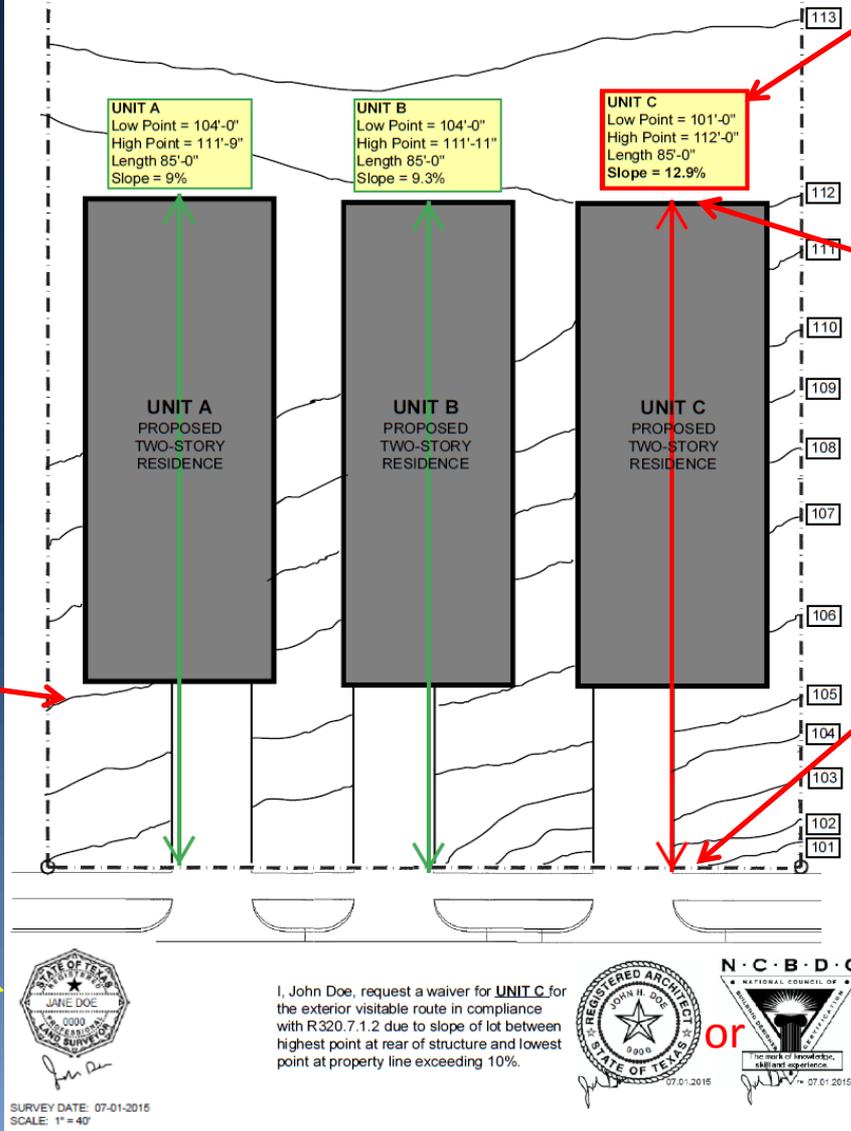
Slope Waiver Request 2+ Dwellings

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

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



Slope Calculations Unit C:
11' rise / 85' 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



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%

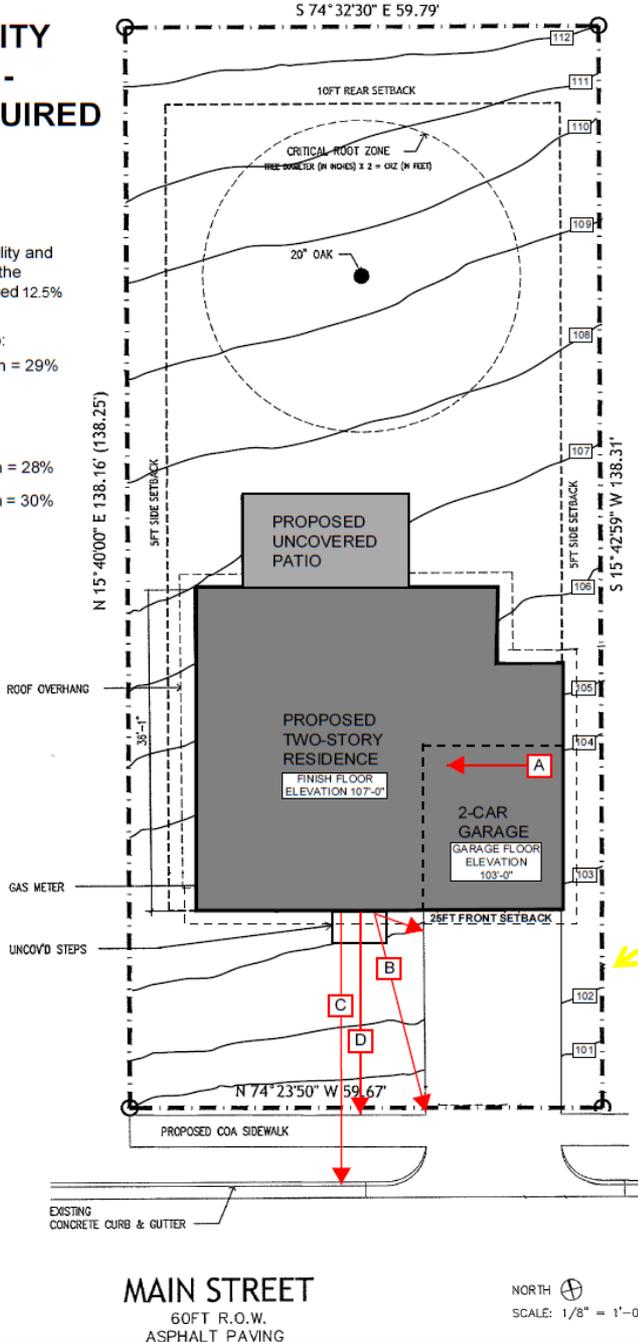
B. DRIVEWAY: Varies:
4'-6" Rise / 8'-0" Run = 56%
7'-0" Rise / 19'-0" Run = 37%

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:

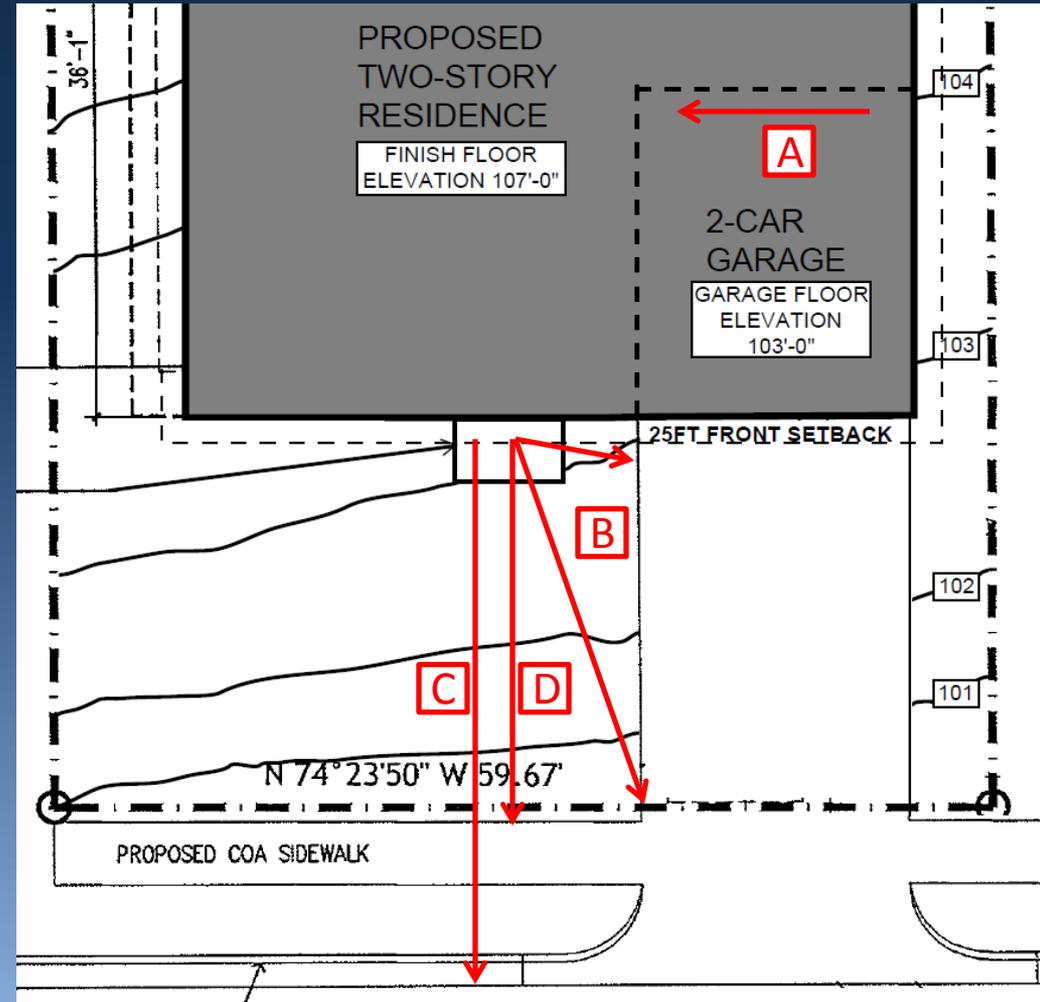
$$8'-0'' \text{ Rise} / 29'-0'' \text{ Run} = 28\%$$

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

City of Austin Residential Technical Review Team:

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Beth Culver, AIA, PMP, Plans Examiner
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