

STRUCTURAL NOTES

1 GENERAL

- A. THE BUILDING RENOVATION IS DESIGNED UNDER THE PROVISIONS OF THE 2012 INTERNATIONAL RESIDENTIAL CODE
- B. THE FOLLOWING LIVE LOADS WERE UTILIZED IN THE DESIGN:
- | | |
|----------------|--------|
| ROOF | 30 PSF |
| LIVING AREAS | 40 PSF |
| SLEEPING ROOMS | 30 PSF |
| EXTERIOR DECK | 40 PSF |
- ROOF SNOW LOAD
- GROUND SNOW LOAD (Ps)
- 25 PSF
- WIND LOAD
- BASIC WIND SPEED (V30)
- 90 MPH
- IMPORTANCE FACTOR (iw)
- 1.0
- WIND EXPOSURE
- B

- C. THE BASIC STABILITY OF THE STRUCTURE IS DEPENDENT UPON THE DIAPHRAGM ACTION OF FLOORS, WALLS & ROOF ACTING TOGETHER. CONTRACTOR TO PROVIDE ALL GUYS, BRACES, STRUTS, ETC. AS REQUIRED TO ACCOMMODATE ALL LIVE, DEAD AND WIND LOADS UNTIL ALL FINAL CONNECTIONS BETWEEN THESE ELEMENTS ARE MADE.

2 EARTHWORK

- A. THE FOLLOWING PARAMETERS CONTAINED IN THE GEOTECHNICAL REPORT PREPARED BY DMV CAPITOL, LLC, MAY 14, 2015, WERE USED IN NEW FOUNDATION DESIGN AND EXISTING FOUNDATION EVALUATION: SOIL BEARING CAPACITY (PSF) 3000
- B. BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 2'-6" BELOW FINISH EXTERIOR GRADE. WHERE REQUIRED, STEP FOOTINGS IN RATIO OF 2 HORIZONTAL TO 1 VERTICAL.
- C. COMPACTED BACKFILL BELOW BUILDING SLABS - ALL SOIL FILL MATERIAL MUST BE APPROVED BY SOILS ENGINEER PRIOR TO PLACEMENT. MATERIALS TO BE FREE FROM ORGANIC MATERIAL, TRASH, MUCK, CONCRETE, ASPHALT OR OTHER DELETERIOUS SUBSTANCES. PRIOR TO PLACING FILL, THE EXISTING SURFACE SHALL BE CLEARED OF ALL REFUSE OR ORGANIC MATERIALS. FILL MATERIAL SHALL BE PLACED IN LAYERS NOT TO EXCEED 8" AND COMPACTED TO MIN. 95% OF THE DRY MAX. DENSITY AS DETERMINED BY ASTM D698.
- D. FOUNDATION WALLS ARE DESIGNED FOR A LATERAL EARTH PRESSURE OF 60 PCF ASSUMING A FREE DRAINING MATERIAL OR DRAINING BOARD BEHIND WALL WITH A PERIMETER DRAIN TILE SYSTEM. NOTIFY ENGINEER IF SOIL CONDITIONS DIFFER.

3 CONCRETE

- A. ALL CONCRETE TO HAVE MINIMUM COMPRESSIVE STRENGTH (F'c) = 3000 PSI IN 28 DAYS. EXTERIOR SLABS SHALL HAVE A MINIMUM STRENGTH OF 3500 PSI. ALL CONCRETE TO BE POURED IN ACCORDANCE WITH 403 SPECIFICATIONS. CONCRETE EXPOSED TO WEATHER TO BE AIR ENTRAINED.
- B. ALL REINFORCING STEEL TO MEET ASTM-A-615 GRADE 60. PLACING "THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES". FURNISH SUPPORT BARS AND ALL REQUIRED ACCESSORIES IN ACCORDANCE WITH C.R.S.I. STANDARDS. ALL REINFORCING TO BE SPLICED A MINIMUM OF 30 BAR DIAMETERS.
- C. PROVIDE CLEAR DISTANCE TO OUTERMOST REINFORCING AS FOLLOWS: PLANS AND SHOP FABRICATION DETAILS SHALL BE IN ACCORDANCE WITH
- | | |
|-------------------|--------|
| FOOTINGS (BOTTOM) | 3" |
| WALLS | 1-1/2" |
- D. PROVIDE CORNER BARS TO MATCH HORIZONTAL REINFORCING IN WALLS AND FOOTINGS.

4 STEEL

- A. ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A572 GRADE 50 PIPE TO BE A53, TUBE TO BE A500 OR A501. DETAILING TO BE IN ACCORDANCE WITH AISC STRUCTURAL STEEL DETAILING MANUAL. BOLTED FIELD CONNECTION SHALL BE 3/4" DIAMETER HIGH STRENGTH BOLTS MEETING ASTM SPEC. A-325.
- B. ALL WELDERS SHALL BE CERTIFIED IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY. ALL WELDING ELECTRODES, MACHINES, ETC. SHALL BE COMPATIBLE WITH STEEL BEING WELDED.
- C. FLITCH BEAMS SHALL BE BOLTED WITH 1/2 INCH DIAMETER THROUGH BOLTS AT 16 INCHES ON CENTER TOP AND BOTTOM WITH THE FIRST SET OF BOLTS 6 INCHES FROM THE END.

5 WOOD

- A. ALL FRAMING LUMBER SHALL BE HEM-FIR, GRADE #2, OR SPRUCE-PINE-FIR GRADE #2, OR BETTER, HAVING THE FOLLOWING MINIMUM BASE DESIGN VALUES:
- BENDING STRESS "Fb" = 850 PSI FOR SINGLE MEMBER USE
- HORIZONTAL SHEAR "Fv" = 70 PSI
- COMPRESSION PERPENDICULAR TO GRAIN "Fc" = 405 PSI
- COMPRESSION PARALLEL TO GRAIN "Fc11" = 1,150 PSI
- MODULUS OF ELASTICITY "E" = 1,300,000 PSI
- NOTE: SPRUCE-PINE-FIR (SOUTH) IS NOT ACCEPTABLE. SPRUCE-PINE-FIR MUST BE GRADED BY NUGA.
- B. ALL EXTERIOR FRAMING SHALL BE PRESSURE-TREATED. FRAMING SHALL BE PRESSURE-TREATED WITH ALKALINE COPPER QUAT (ACO) OR COPPER AZOLE (CBA-A AND CA-B), NOT SODIUM BORATE (SBX). LUMBER OR STRUCTURAL POSTS SHALL BE SOUTHERN YELLOW PINE, GRADE 2 OR BETTER, HAVING THE FOLLOWING MINIMUM PROPERTIES (BASED ON 2X12 LUMBER):
- BENDING STRESS "Fb" = 750 PSI FOR SINGLE MEMBER USE
- HORIZONTAL SHEAR "Fv" = 90 PSI
- COMPRESSION PERPENDICULAR TO GRAIN "Fc" = 565 PSI
- COMPRESSION PARALLEL TO GRAIN "Fc11" = 1,250 PSI
- MODULUS OF ELASTICITY "E" = 1,400,000 PSI

- C. PLYWOOD LAMINATED (MICROLAM OR LVL) BEAMS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:
- BENDING STRESS "Fb" = 2600 PSI
- HORIZONTAL SHEAR "Fv" = 250 PSI
- MODULUS OF ELASTICITY "E" = 1,900,000 PSI
- D. ALL WALL STUDS SHALL BE SPF STUD GRADE OR BETTER, HAVING THE FOLLOWING MINIMUM BASE DESIGN VALUES:
- COMPRESSION PARALLEL TO GRAIN "Fc11" = 625 PSI
- BENDING STRESS "Fb" = 725 PSI FOR SINGLE USE MEMBERS
- MODULUS OF ELASTICITY "E" = 1,200,000 PSI

- E. UNLESS NOTED OTHERWISE, FASTENING FOR STRUCTURAL MEMBERS SHALL FOLLOW INTERNATIONAL RESIDENTIAL CODE TABLE R602.3(1).
- F. CUTTING AND NOTCHING OF CONVENTIONAL 2X FLOOR JOISTS SHALL CONFORM TO THE FOLLOWING:
- NOTCH DEPTH IN THE TOP OR BOTTOM OF THE JOISTS AND BEAMS SHALL NOT EXCEED ONE-SIXTH THE DEPTH OF THE MEMBERS AND SHALL NOT BE LOCATED IN THE MIDDLE ONE THIRD OF THE SPAN (INCLUDING BIRDS MOUTH CUTS).
- NOTCH DEPTH AT THE ENDS OF THE MEMBER SHALL NOT EXCEED ONE-FOURTH THE DEPTH OF THE MEMBER.
- THE TENSION SIDE OF BEAMS, JOISTS AND RAFTERS SHALL NOT BE NOTCHED, EXCEPT AT ENDS OF MEMBERS.
- HOLES BORED OR CUT INTO JOISTS SHALL NOT BE CLOSER THAN TWO INCHES TO THE TOP OR BOTTOM OF THE JOISTS. THE DIAMETER OF THE HOLE SHALL NOT EXCEED ONE-THIRD THE DEPTH OF THE JOISTS.

- G. PROVIDE BLOCKING BETWEEN ALL JOISTS 2X12 OR GREATER IN DEPTH AT INTERVALS NOT TO EXCEED 8 FEET. TRUSS JOIST AND "I" JOIST SHALL HAVE BRIDGING BETWEEN JOISTS DESIGNED BY THE MANUFACTURER TO CONFORM BUILDING CODE REQUIREMENTS.
- H. PROVIDE SOLID BLOCKING AT 4 FEET ON CENTER BETWEEN BAND JOIST AND FIRST INTERIOR PARALLEL JOIST, UNO.

- I. PREFABRICATED JOIST HANGERS, BEAM HANGERS, POST CAPS AND POST BASES SHALL BE SIZED AND ATTACHED PER MANUFACTURERS RECOMMENDATION. FASTENERS AND CONNECTORS UTILIZED WITH PRESSURE-TREATED MEMBERS SHALL MEET G185 GALVANIZING.

- J. ANCHOR BOLTS CONNECTING PRESSURE TREATED WOOD PLATES TO FOUNDATIONS, MASONRY WALLS, OR CONCRETE SLABS SHALL BE HOT-DIPPED GALVANIZED.

- K. MULTIPLE STUDS SHALL BE NAILED WITH 10d NAILS AT 24" O.C. PROVIDE SOLID BLOCKING OR CRIPPLE STUDS IN FLOOR SYSTEM AT ALL POINT LOADS ABOVE.

- L. ALL FREESTANDING POSTS SHALL HAVE PREFAB POSTCAP AND BASE. POSTS WITHIN WALL SHALL HAVE PREFAB CAP ATTACHED TO BEAM. POSTS BEARING ON MASONRY OR CONCRETE SHALL HAVE PREFAB BASE.
- M. HOLES BORED IN BEARING WALL STUDS SHALL NOT EXCEED 1/3 OF STUD WIDTH.

- N. ALL STUD BEARING WALLS TO BE PROVIDED WITH 2 CONTINUOUS TOP PLATES AND 1 CONTINUOUS BOTTOM PLATE. SPLICES OF TOP PLATE SHALL OCCUR OVER STUD. SPLICES SHALL BE STAGGERED A MINIMUM OF TWO FEET.
- O. ALL ROOF RAFTERS AND TRUSSES SHALL BE CONNECTED AT EACH BEARING POINT WITH ONE PREFABRICATED GALVANIZED METAL CONNECTOR. EACH ANCHOR SHALL BE 18 GAGE MINIMUM THICK AND SHALL BE ATTACHED TO HAVE A CAPACITY TO RESIST A 450# UPLIFT LOADING UNLESS SHOWN OTHERWISE ON DRAWINGS.

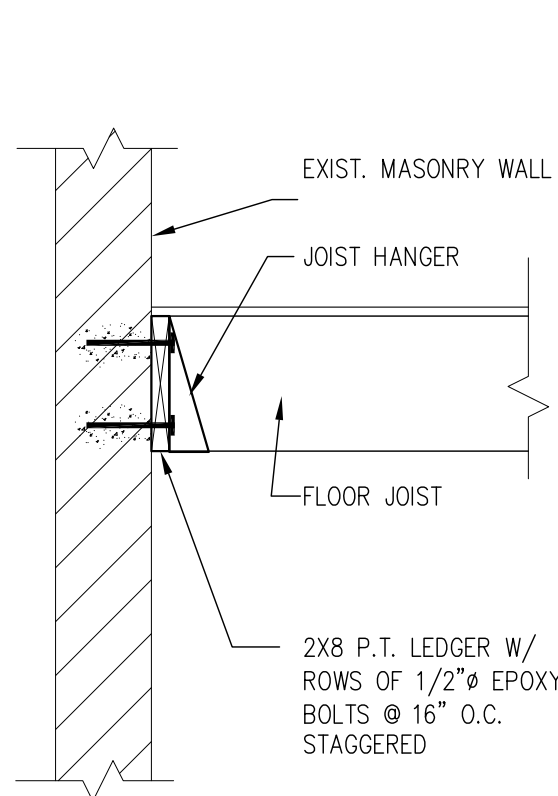
6 SHEATHING

- A. FLOOR SHEATHING SHALL BE 23/32 (3/4) INCH APA RATED STURD-I-FLOOR, TONGUE AND GROOVE, PLYWOOD, OR EQUAL. PANELS SHALL HAVE LONG DIMENSION ORIENTED ACROSS THREE OR MORE JOISTS AND SHALL BE FASTENED WITH CONSTRUCTION ADHESIVE AND 8d NAILS AT 6 INCHES ON CENTER AT PANEL EDGES AND AT 12 INCHES ON CENTER AT INTERMEDIATE SUPPORTS. UNLESS NOTED OTHERWISE, PANEL EDGES NEED NOT BE BLOCKED.
- B. EXTERIOR WALL SHEATHING SHALL BE BRACED WITH CONTINUOUS SHEATHING (CS) IN ACCORDANCE R602.10.3 IRC 2006, AND SHALL BE 7/16 (1/2) INCH THICK APA RATED WOOD STRUCTURAL PANELS. FASTEN PANELS TO STUDS WITH 8d NAILS AT 6 INCHES ON CENTER AT PANEL EDGES AND AT 12 INCHES ON CENTER AT INTERMEDIATE SUPPORTS. UNLESS NOTED OTHERWISE, PANEL EDGES NEED NOT BE BLOCKED. THE MINIMUM BRACED WALL LENGTH SHALL COMPLY WITH TABLE R602.10.4.2.

- C. ROOF SHEATHING SHALL BE 15/32 (1/2) INCH APA RATED WOOD PANELS WITH THE SPAN RATING OF 24/0 OR BETTER. FASTEN PANELS TO FRAMING WITH 8d NAILS AT 6 INCHES ON CENTER AT PANEL EDGES AND 12 INCHES ON CENTER AT INTERMEDIATE SUPPORTS. ORIENT LONG DIMENSION OF PANELS ACROSS THREE OR MORE SUPPORTS. EDGES NEED NOT BE BLOCKED, UNLESS OTHERWISE NOTED.

7 MISCELLANEOUS

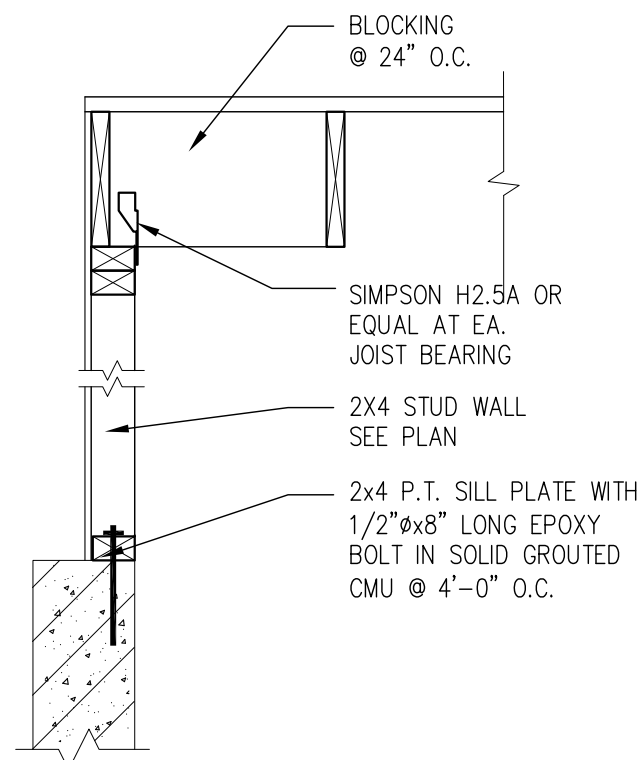
- A. ALL WOOD BLOCKING, NAILERS, ETC. SHALL BE ATTACHED TO STEEL OR CONCRETE FRAMING WITH POWER ACTUATED FASTENERS OR 1/2" DIAMETER BOLTS UNLESS NOTED OTHERWISE. FASTENERS SHALL BE SPACED AT 24" MAXIMUM O.C. FASTENERS SHALL HAVE A MINIMUM CAPACITY OF 100 POUNDS IN SHEAR AND PULLOUT UNLESS NOTED OTHERWISE.



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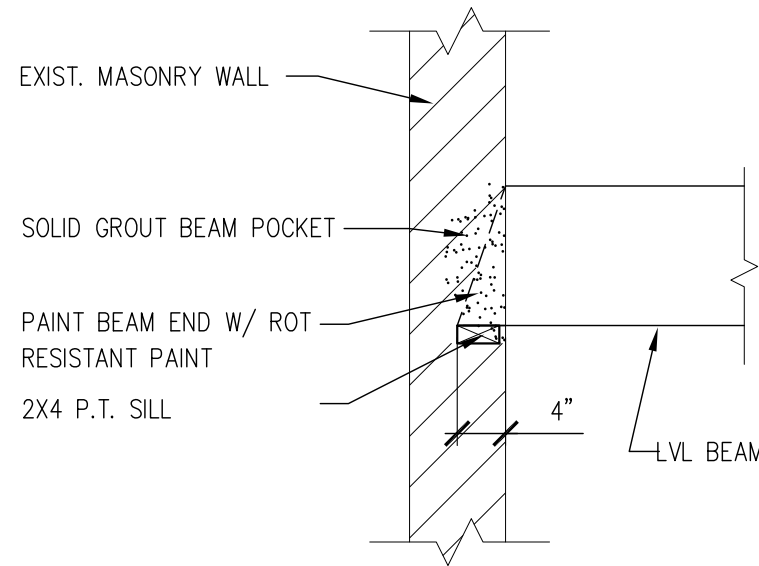
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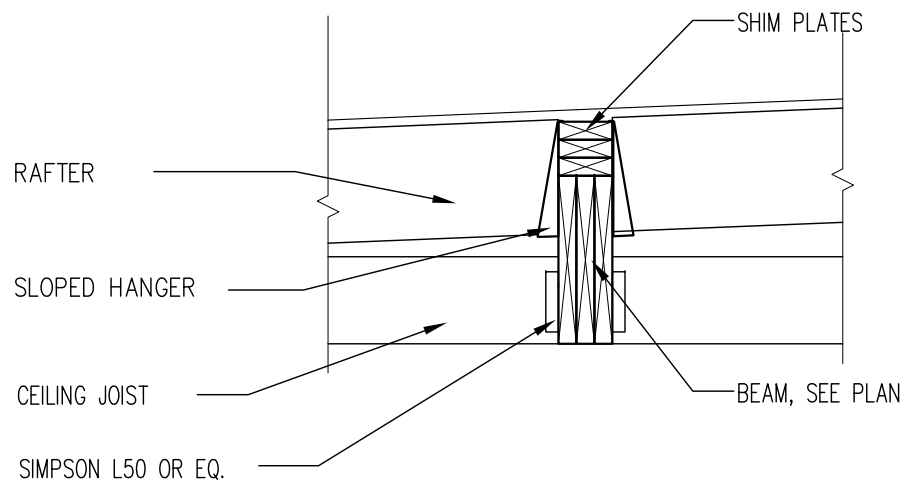
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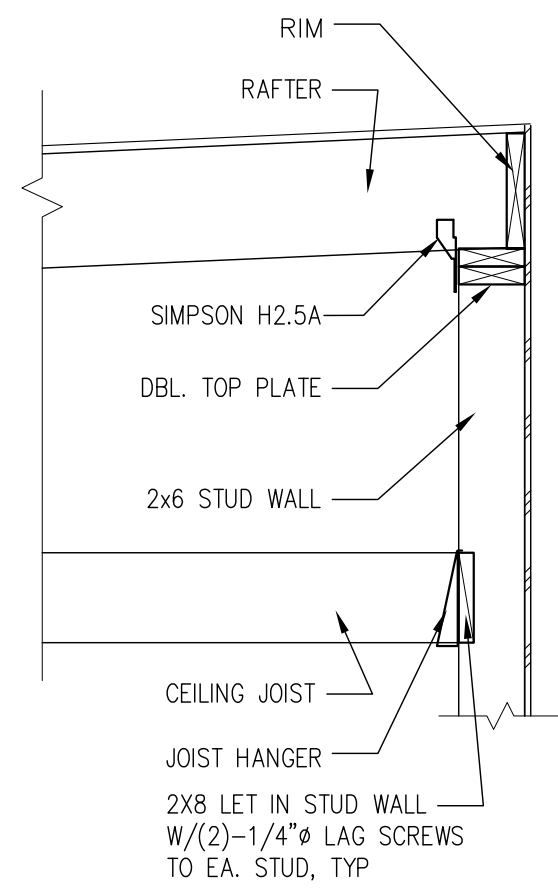
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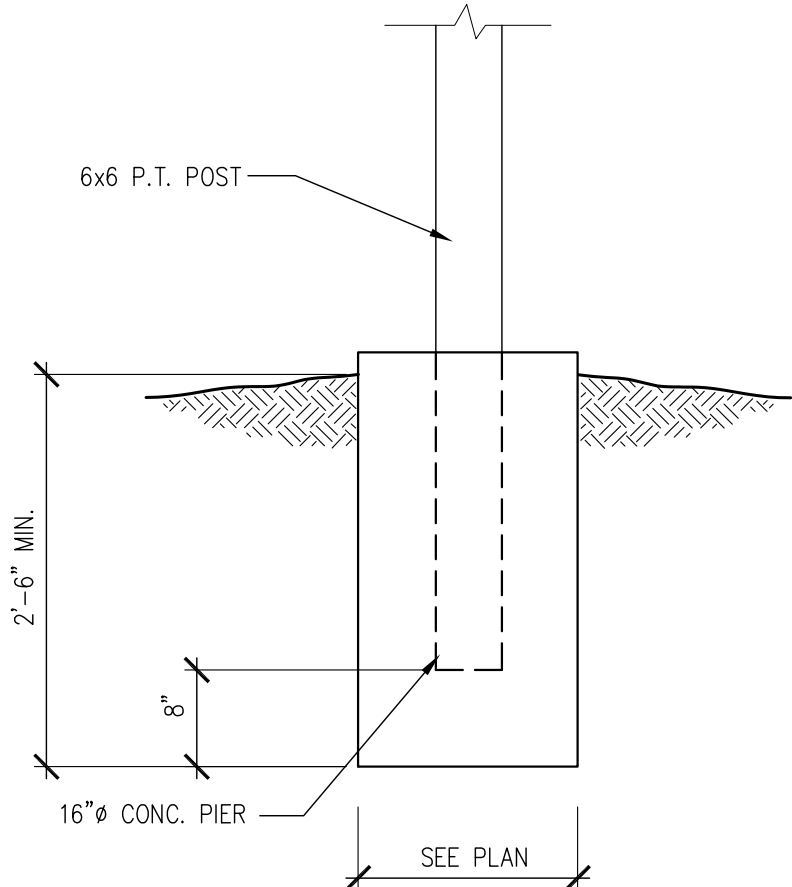
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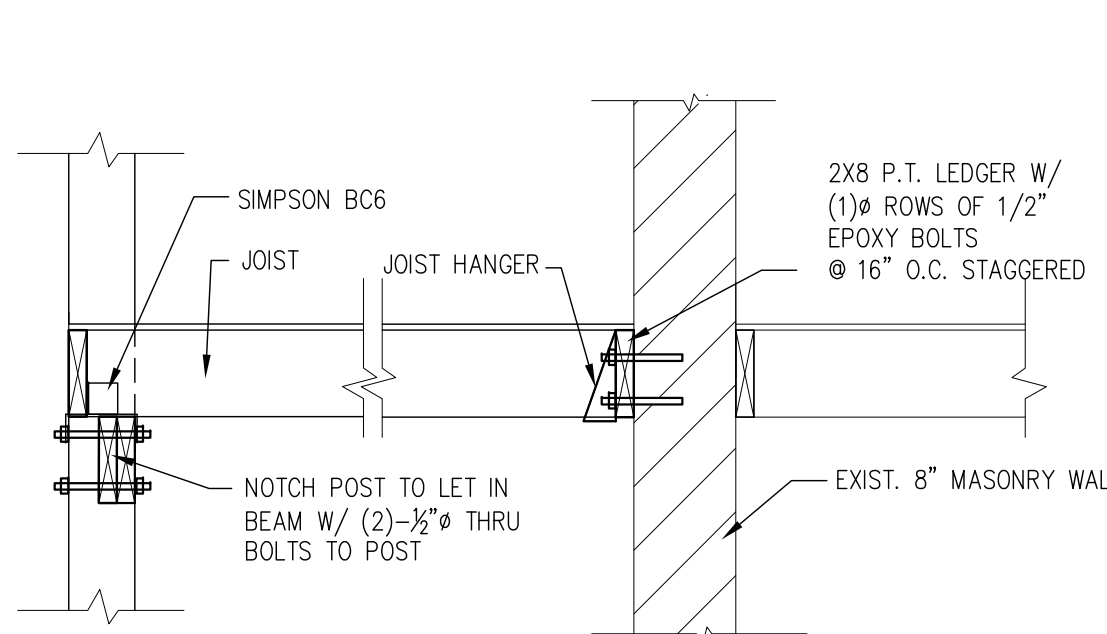
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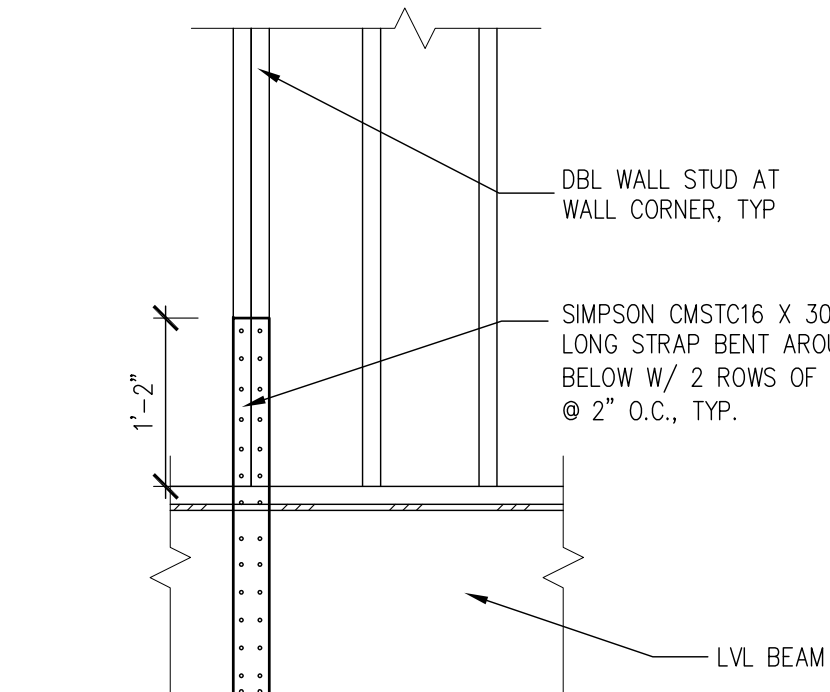
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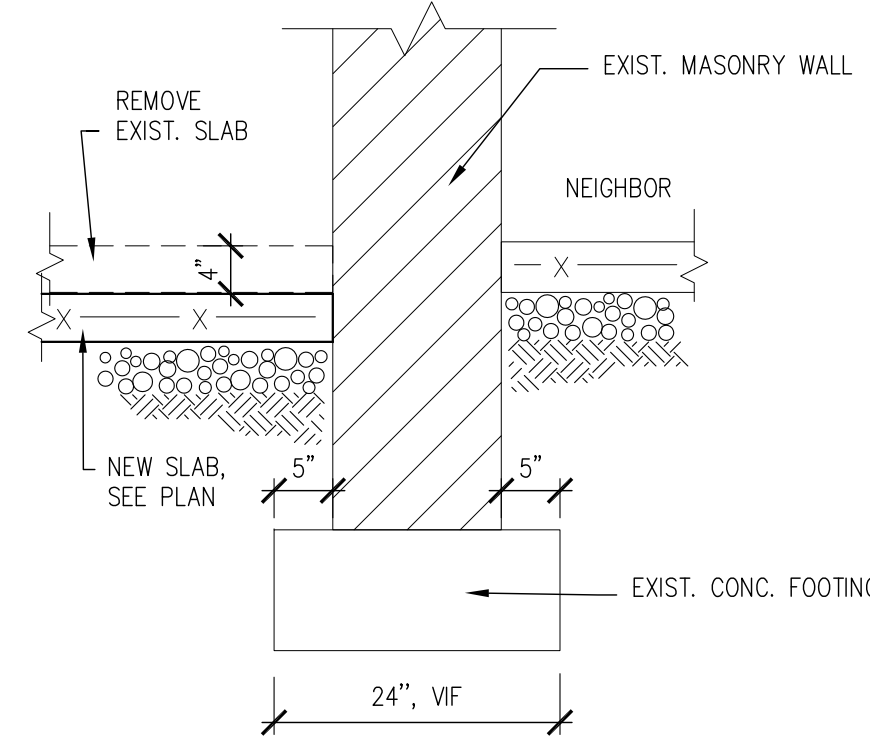
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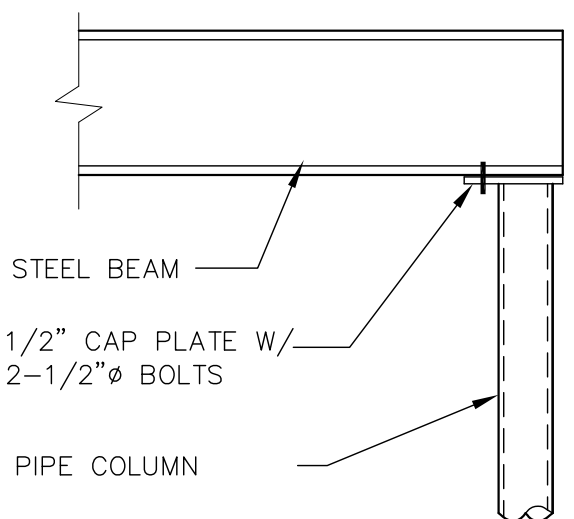
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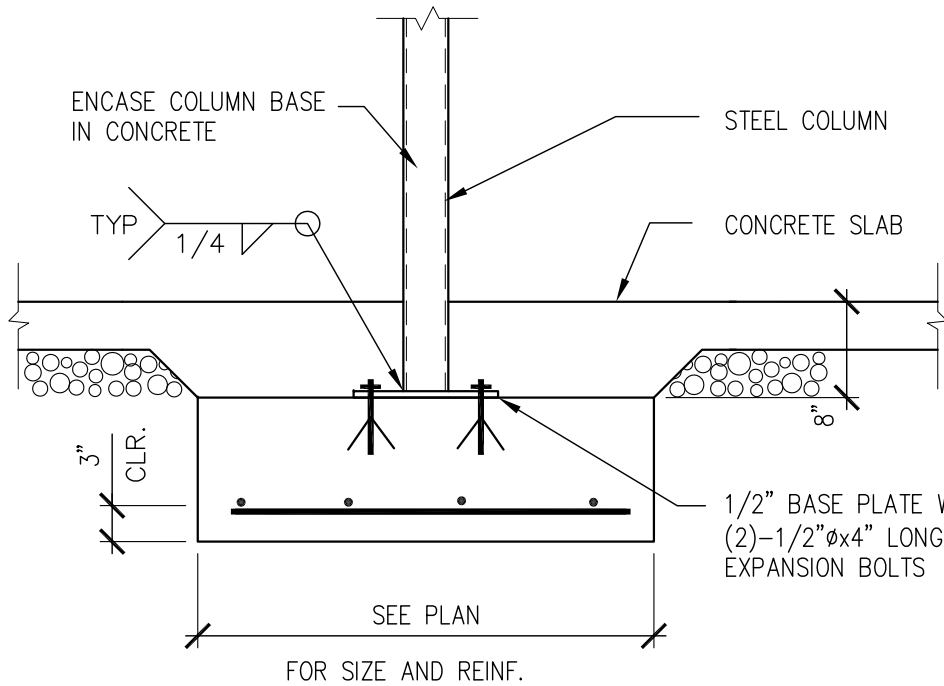
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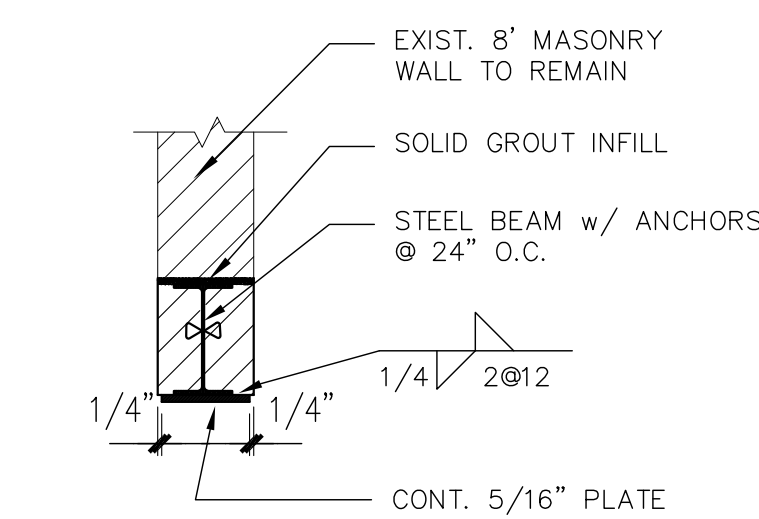
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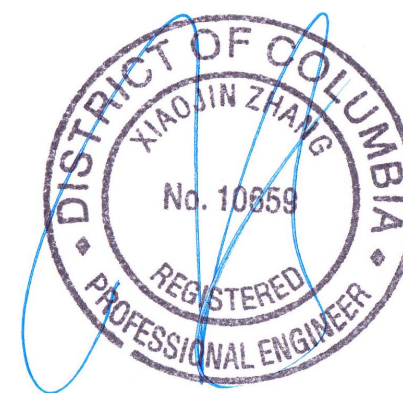
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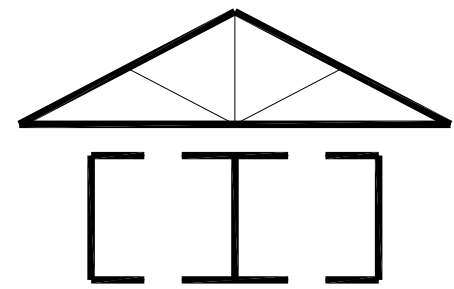
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STRUCTURAL PLANS CERTIFIED AS PROVIDED IN SECTION 106.1.4.1 OF THE D.C. CONSTRUCTION CODES.

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STRUCTURAL FRAMING

Job #

Date: Issue:
05/15/2015

REVISION

05/26/2015

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Scale AS NOTED
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STRUCTURAL NOTES
& SECTIONS

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