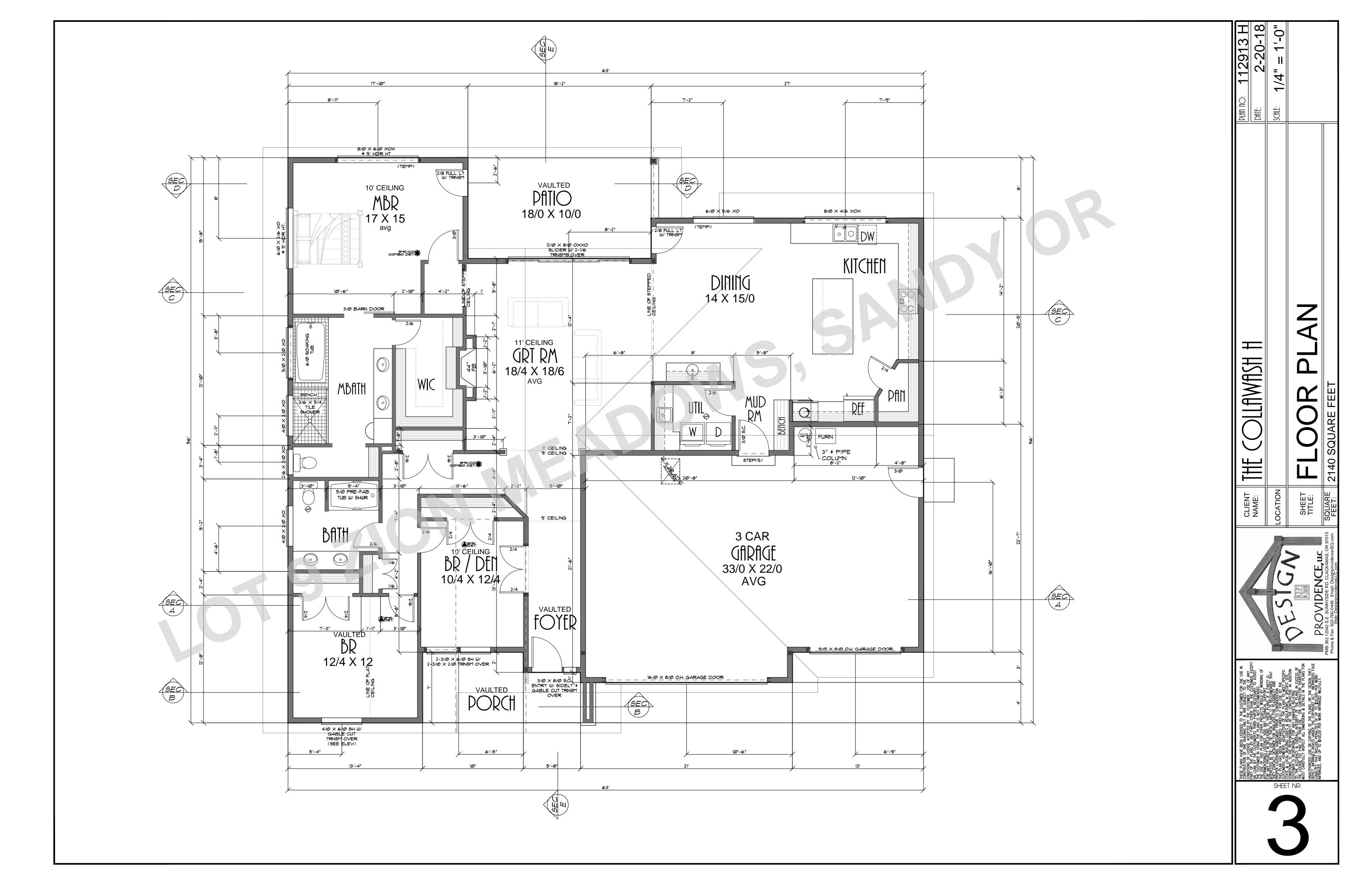
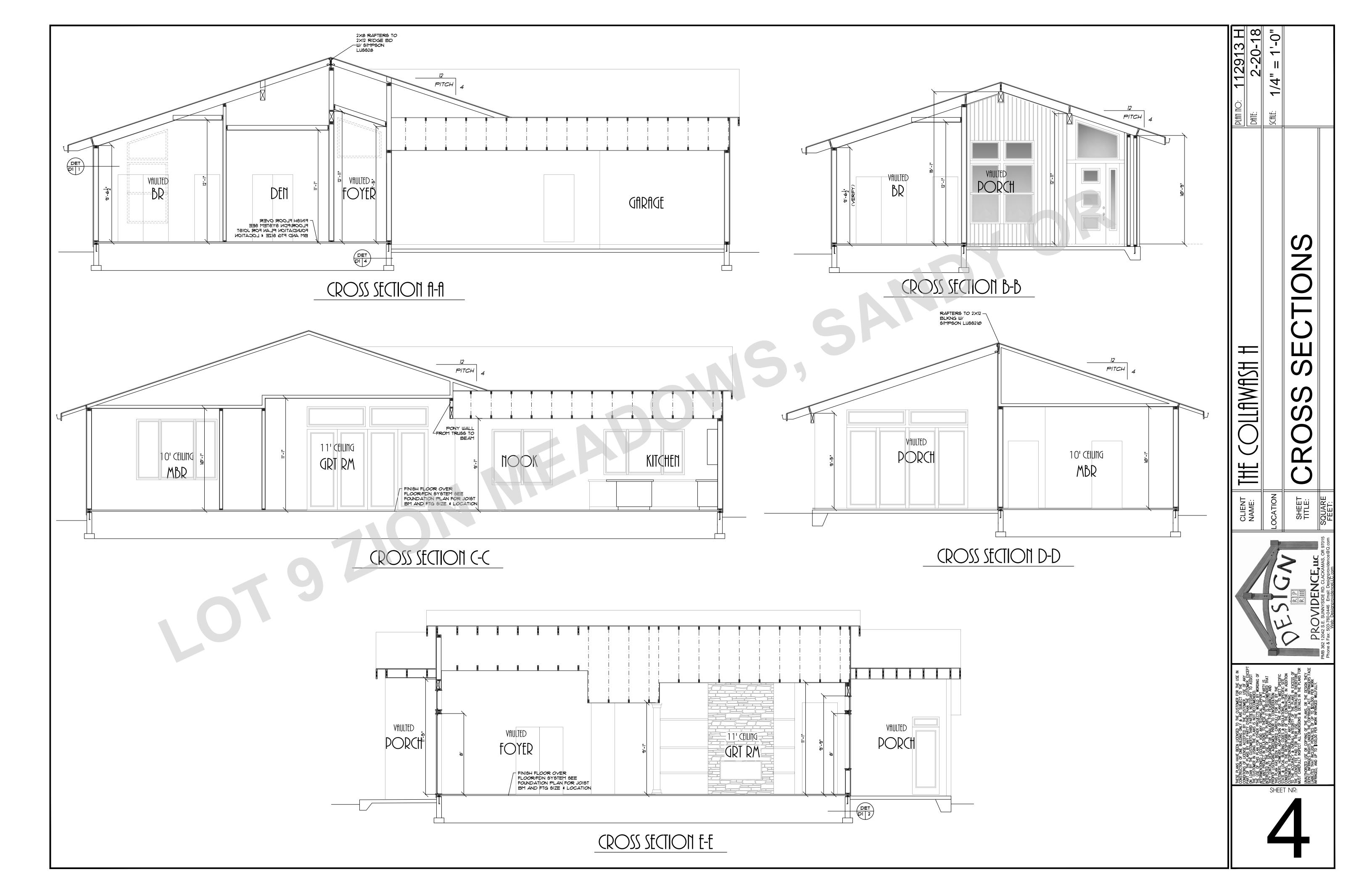


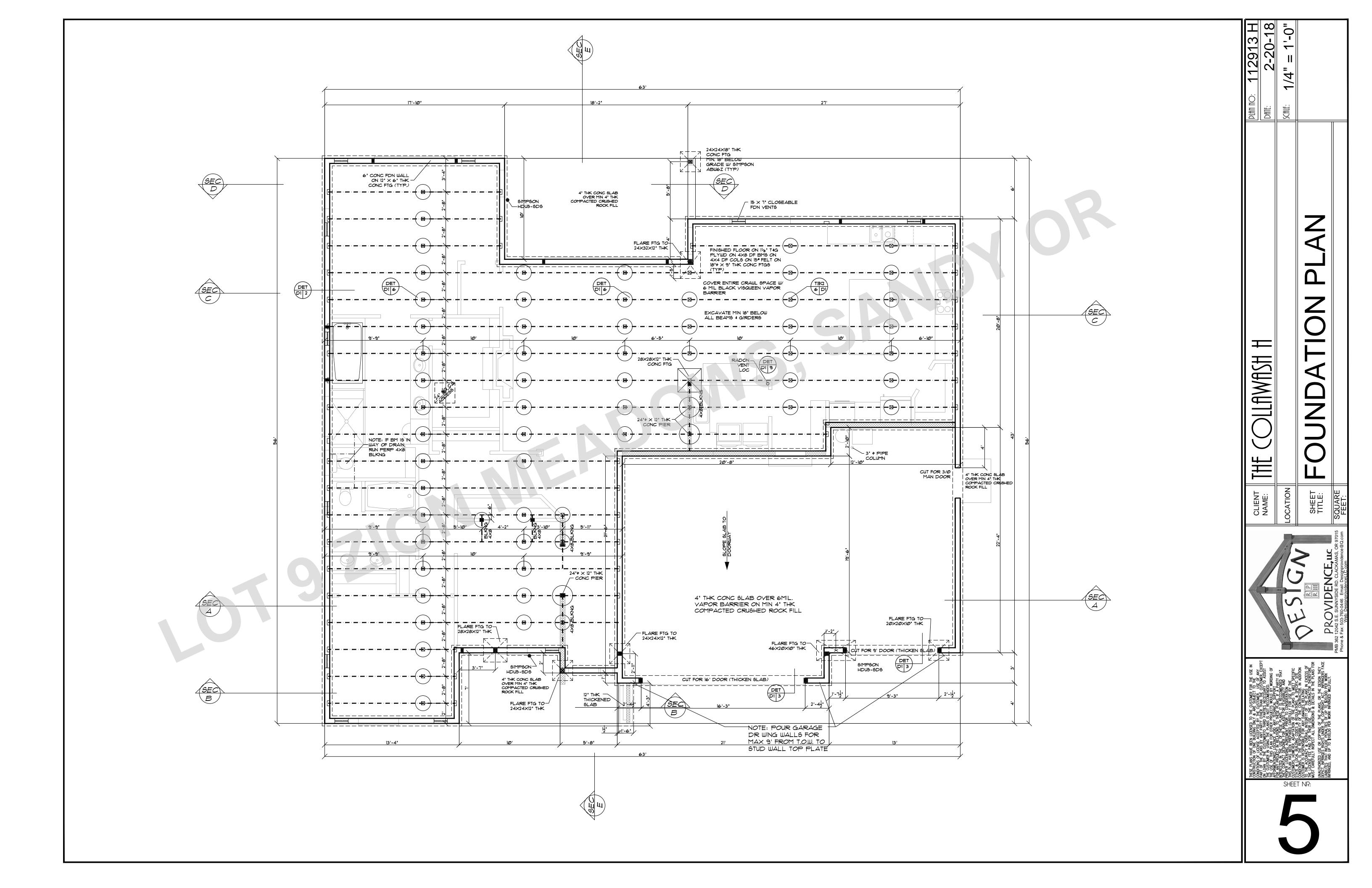
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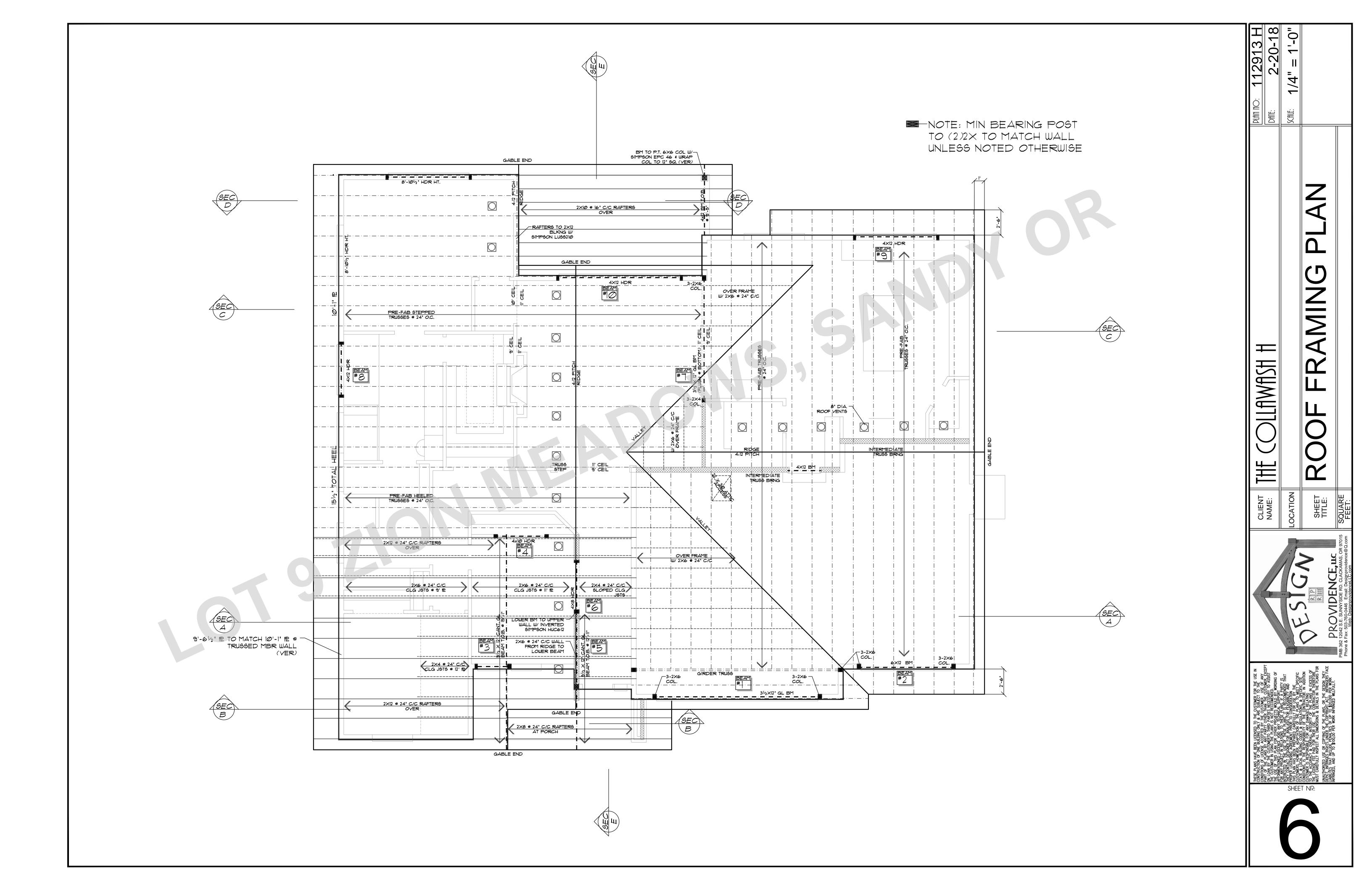


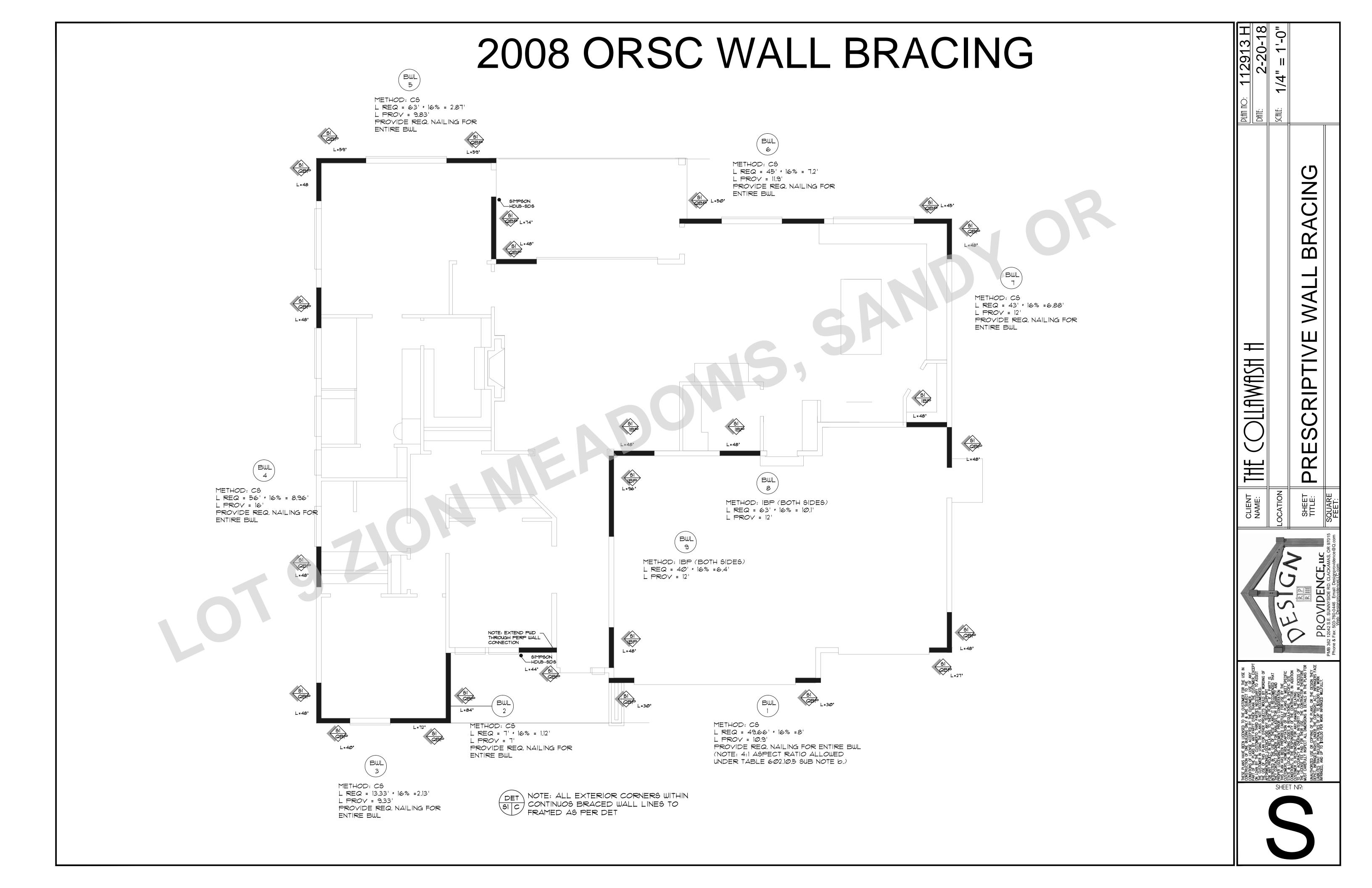












# 2008 ORSC WALL BRACING

CRIPPLE WALLS

<u>R602.9</u> CRIPPLE WALLS, FOUNDATION CRIPPLE WALLS SHALL BE FRAMED OF STUDS NOT LESS IN SIZE THAN THE STUDDING ABOVE, WHEN EXCEEDING 4' (1219MM) IN HEIGHT, SUCH WALLS SHALL BE FRAMED OF

ADDITIONAL STORY. CRIPPLE WALLS SUPPORTING 3 STORIES SHALL BE FRAMED WITH 2X6 (51MMX153MM) STUDS SPACED NOT MORE THAN 16" (406MM) OC.

CRIPPLE WALLS WITH A STUD HEIGHT LESS THAN 14" (356MM) SUPPORTING EXTERIOR WALLS OR AN INTERIOR BRACED WALL LINE WHICH IS SUPPORTED BY A CONTINUOUS FOUNDATION AS REQUIRED BY SECTION R602.10.9 SHALL BE SHEATHED ON AT LEAST ONE SIDE WITH A WOOD STRUCTURAL PANEL THAT IS FASTENED TO BOTH THE TOP AND BOTTOM PLATES IN ACCORDANCE WITH TABLE R602.3(1), OR THESE CRIPPLE WALLS SHALL BE CONSTRUCTED OF SOLID

R602.10.2 CRIPPLE WALL BRACING. CRIPPLE WALLS

SUPPORTING EXTERIOR OR INTERIOR BRACED WALL

LINES AS REQUIRED BY SECTION R602.10.9 SHALL BE

BRACED WITH AN AMOUNT AND TYPE OF BRACING AS

REQUIRED FOR THE WALL ABOVE IN ACCORDANCE

WITH TABLES R602.10.3(1) OR R602.10.3(2) WITH THE

FOLLOWING MODIFICATIONS FOR THE CRIPPLE WALL

. THE PERCENT BRACING AMOUNT AS

DETERMINED FROM TABLE R602.10.3(1) OR

R602.10.3(2) SHALL BE INCREASED BY 15

2. THE MAXIMUM WALL PANEL SPACING SHALL

BE DECREASED TO 18' (5486MM) ON CENTER

WITH A STUD HEIGHT EXCEEDING 14" (356MM)

INSTEAD OF 25' (7620MM) OC.

STUDS HAVING THE SIZE REQUIRED FOR AN

### ABRIDGED TABLE 602.10.3(1) SEGMENTAL WALL BRACING

SEISMIC DESIGN OR WIND SPEED	CONDITION	AMOUNT OF BRACING J METHOD 3 abcdefh		
CATEGORY C	ONE STORY. TOP STORY OF 2 STORY.	NOT LESS THAN 16% OF B.W.L. IN FULL HEIGHT PANELS		
OR 110 MPH OR LESS	FIRST STORY OF TWO STORY. 2D STORY OF THREE STORY.	NOT LESS THAN 30% OF B.W.L. IN FULL HEIGHT PANELS		
OR LESS	FIRST STORY OF THREE STORY	NOT LESS THAN 45% OF B.W.L. IN FULL HEIGHT PANELS		
CATEGORY DI	ONE STORY. TOP STORY OF 2 OR 3 STORY.	NOT LESS THAN 20% OF B.W.L. IN FULL HEIGHT PANELS		
OR 110 MPH OR LESS	FIRST STORY OF TWO STORY. 2D STORY OF THREE STORY.	NOT LESS THAN 45% OF B.W.L. IN FULL HEIGHT PANELS		
OR LESS	FIRST STORY OF THREE STORY	NOT LESS THAN 60% OF B.W.L IN FULL HEIGHT PANELS		
CATEGORY D2	ONE STORY. TOP STORY OF TWO STORY.	NOT LESS THAN 25% OF B.W.L. IN FULL HEIGHT PANELS		
OR 110 MPH OR LESS	FIRST STORY OF TWO STORY. SECOND STORY.	NOT LESS THAN 55% OF B.W.L. IN FULL HEIGHT PANELS		
	CRIPPLE WALLS	NOT LESS THAN 15% OF B.W.L. IN FULL HEIGHT PANELS		

- FOR SI: | INCH = 25.4 MM, | FOOT = 304.8 MM, | PSF = 0.0479 kN/m2, | MPH = 1.609 KMH
- a. WALL BRACING AMOUNT ARE BASED ON A SOIL SITE CLASS "D". INTERPOLATION OF BRACING AMOUNTS BETWEEN THE SOIS VALUES ASSOCIATED WITH THE SEISMIC DESIGN CATEGORIES SHALL BE PERMITTED WHEN A SITE SPECIFIC SOIS VALUE IS DETERMINED IN ACCORDANCE WITH SECTION 1615 OF THE INTERNATIONAL BUILDING CODE.
- b. FOUNDATION CRIPPLE WALL PANELS SHALL BE BRACED IN ACCORDANCE WITH SECTION R602.10.2.
  c. METHODS OF BRACING SHALL BE DESCRIBED IN SECTION R602.10.3. THE ALTERNATE BRACED WALL PANELS DESCRIBED IN SECTION R602.10.6 SHALL ALSO BE PERMITTED, WHERE APPLICABLE.
- d. THE BRACING AMOUNTS FOR SEISMIC DESIGN CATEGORIES ARE BASED ON A 15 PSF WALL DEAD LOAD. FOR WALLS WITH A DEAD LOAD OF 8 PSF OR LESS, THE BRACING AMOUNTS SHALL BE PERMITTED TO BE MULTIPLIED BY 0.85 PROVIDED THAT THE ADJUSTED BRACING AMOUNT IS NOT LESS THAN THAT REQUIRED FOR THE SITE'S WIND SPEED. THE MINIMUM LENGTH OF BRACED PANEL SHALL NOT BE LESS THAN REQUIRED BY SECTION R602.10.3.
- e. WHEN THE DEAD LOAD OF THE ROOF/CEILING EXCEEDS 15 PSF, THE BRACING AMOUNTS SHALL BE INCREASED IN ACCORDANCE WITH SECTION R3Ø122.4. BRACING REQUIRED FOR A SITE'S WIND SPEED SHALL NOT BE ADJUSTED.
- F. AN ALTERNATE BRACED PANEL SHALL BE CONSIDERED TO HAVE AN EFFECTIVE LENGTH OF 4 FEET (1219 MM) FOR THE PURPOSE OF SATISFYING THE PERCENTAGE OF WALL LENGTH REQUIRED TO BE BRACED.
- g. (NOT USED ON THIS ABRIDGED TABLE)

  h. THE CENTER-TO-CENTER SPACING OF 25 FEET (7260 MM) IN ONE AND TWO STORY DWELLINGS MAY BE INCREASED UP TO A MAXIMUM OF 30 FEET (9144 MM) ON CENTER PROVIDED THE PERCENTAGE OF
- 1. (NOT USED ON THIS ABRIDGED TABLE)
  J. BRACED WALL PANELS SHALL NOT BE MORE THAN 12 FEET (3810 MM) IN HEIGHT AND CONSTRUCTED TO A
  MAXIMUM HEIGHT TO WIDTH RATIO OF 2½:1. THE MINIMUM WIDTH OF A BRACED PANEL SHALL BE 4 FEET
  (1219 MM) EXCEPT AS PERMITTED FOR ALTERNATE BRACED PANELS. NO INCREASE IN HEIGHT SHALL BE
  ALLOWED FOR BRACED WALL PANELS SHEATHED ON BOTH FACES OF THE WALL.

BRACING FOR THAT WALL LINE MEETS THE REQUIREMENT FOR AN ADDITIONAL STORY.

# ABRIDGED TABLE 602.10.3(2) CONTINUOUS WALL BRACING a,

SEISMIC DESIGN OR	CONDITION	AMOUNT OF BRACING A,D,C,d,e,f	
WIND SPEED		MAX OPENING HT % 67% 9.0	OF THE WALL HEIGHT 85% h,d
		NOT LESS THAN % OF E	B.W.L. IN FULL HT PANELS
CATEGORY C OR 110 MPH OR LESS	ONE STORY. TOP STORY OF 2 OR 3 STORY.	16%	16%
	FIRST STORY OF TWO STORY. 2D STORY OF THREE STORY.	24%(16%)	27%(16%)
	FIRST STORY OF THREE STORY	36%(25%)	40%(25%)
CATEGORY DI OR 110 MPH OR LESS	ONE STORY. TOP STORY OF 2 OR 3 STORY.	16%	18%(16%)
	FIRST STORY OF TWO STORY. 2D STORY OF THREE STORY.	36%(20.5%)	4Ø.5%(23%)
	FIRST STORY OF THREE STORY	48%(36%)	54%(40%)
CATEGORY D2 OR 110 MPH OR LESS	ONE STORY. TOP STORY OF TWO STORY.	20%(16%)	22.5%(16%)
	FIRST STORY OF TWO STORY. SECOND STORY.	44%(30%)	49.5%(30%)
	CRIPPLE WALLS	60%(45%)	67.5%(45%)

FOR SI: 1 INCH = 25.4 MM, 1 FOOT = 304.8 MM, 1 PSF = 0.0479 kN/m2, 1 MPH = 1.609 KMH

- a. WALL BRACING AMOUNT ARE BASED ON A SOIL SITE CLASS "D". INTERPOLATION OF BRACING AMOUNTS BETWEEN THE SAS VALUES ASSOCIATED WITH THE SEISMIC DESIGN CATEGORIES SHALL BE PERMITTED WHEN A SITE SPECIFIC SAS VALUE IS DETERMINED IN ACCORDANCE
- WITH SECTION 1615 OF THE OREGON STRUCTURAL SPECIALTY CODE.

  6. FOUNDATION CRIPPLE WALL PANELS SHALL BE BRACED IN ACCORDANCE WITH SECTION
- C. THE BRACING AMOUNTS FOR SEISMIC DESIGN CATEGORIES ARE BASED ON A 15 PSF WALL DEAD LOAD. FOR WALLS WITH A DEAD LOAD OF 8 PSF OR LESS, THE BRACING AMOUNTS SHALL BE PERMITTED TO BE MULTIPLIED BY 0.85 PROVIDED THAT THE ADJUSTED BRACING AMOUNT IS NOT LESS THAN THAT REQUIRED FOR THE SITE'S WIND SPEED. THE MINIMUM LENGTH OF BRACED PANEL SHALL NOT BE LESS THAN REQUIRED BY TABLE R602.10.5.
- d. THE BRACING AMOUNTS FOR SEISMIC DESIGN CATEGORIES ARE BASED ON A MINIMUM PANEL THICKNESS OF 3/8" ATTACHED STUDS SPACED NOT MORE THAN 24" O.C. IN ACCORDANCE WITH TABLE R602.3(1). THE BRACING AMOUNT SHALL BE PERMITTED TO BE REDUCED TO THE AMOUNT IN PARENTHESES IN THE TABLE WHEN THE PANEL THICKNESS IS INCREASED TO 1/16" NAILED WITH 8d NAILS OR EQUIVALENT WITH 4" SPACING AT ALL PANEL EDGES.
- NAILED WITH 8d NAILS OR EQUIVALENT WITH 4" SPACING AT ALL PANEL EDGES.

  e. INTERIOR BRACED WALL LINES ARE PERMITTED TO BE BRACED WITH THE AMOUNT OF BRACING DESIGNATED IN THIS TABLE USING METHOD 5 WHEN ALL EXTERIOR WALLS ARE CONTINUOUSLY SHEATHED WITH WOOD STRUCTURAL PANELS.

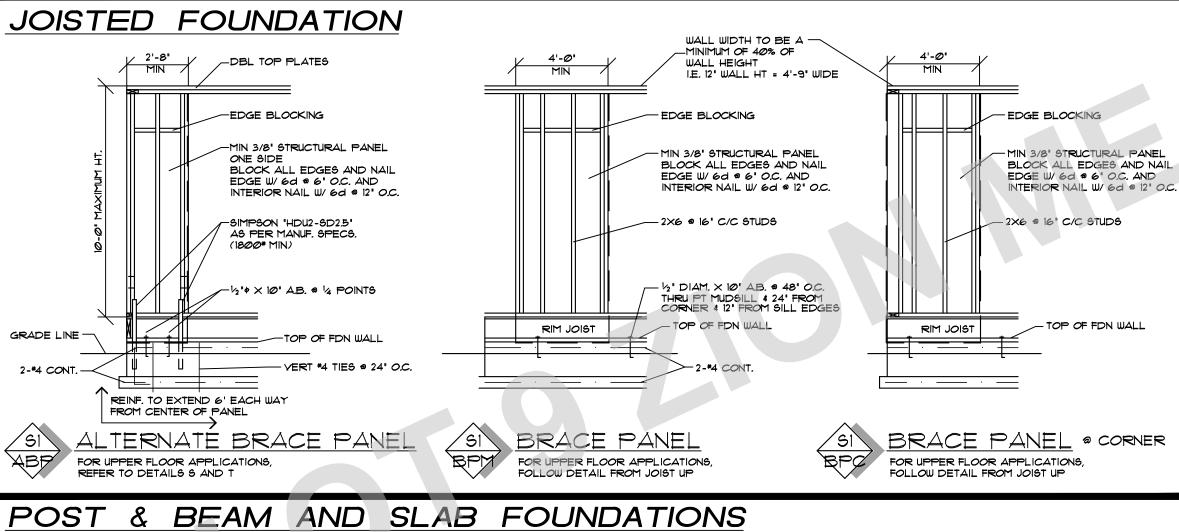
  f. REQUIREMENTS IN THIS TABLE ARE BASED ON THE REQUIREMENTS OF SECTION R602.10.5. AND
- TABLE R602.10.5
  g. BRACING AMOUNTS OF TABLE R602.3(1) METHOD 3 MULTIPLIED BY A FACTOR OF 0.80.
  n. BRACING AMOUNTS OF TABLE R602.3(1) METHOD 3 MULTIPLIED BY A FACTOR OF 0.90.
  l. BRACED WALL PANELS SHALL NOT BE MORE THAN 12 FEET IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH TABLE R602.10.5. NO INCREASE IN HEIGHT SHALL BE ALLOWED FOR

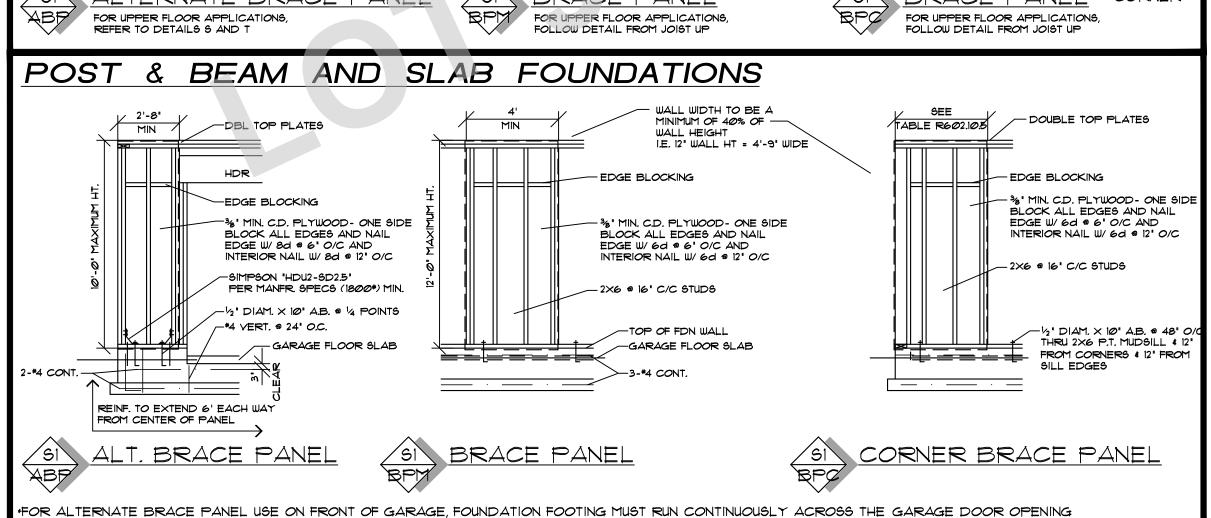
BRACED WALL PANELS SHEATHED ON BOTH FACES OF THE WALL.

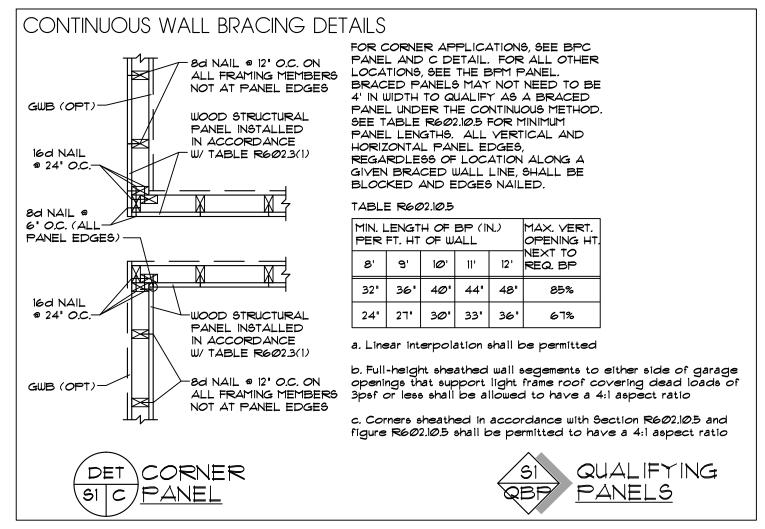
# EXTENT OF HEADER DOUBLE PORTAL FRAME(TWO WALL PANELS) EXTENT OF HEADER DOUBLE PORTAL FRAME(TWO WALL PANELS) MIN. 3" imes 11.25" NET HDR -6' to 18'-FASTEN TOP PLATE TO HEADER WITH TWO ROWS OF 16D SINKER NAILS AT 3' O.C. TYP. SIMPSON ST22 OPPOSITE SHEATHING (IF NEEDED)/JANEL EDGES SHALL BE LOCKED, AND OCCUR WITHIN 24' OF MIDHEIGHT. ONE ROW OF TYP. SHEATHING-TOFRAMING NAILING IS REQUISED FASTEN SHEATHING TO HEADER WITH 8D COMMON OR GALVANIZED BOX NAILS IN 3' GRID PATTERN AS SHOWN AND 3' O.C. IN ALL FRAMING (STUDS, BLOCKING, AND SILLS) TYP. MIN WIDTH = 16" FOR ONE STORY STRUCTURES MIN. WIDTH = 24" FOR USE IN THE FIRST OF TWO STORY STRUCTURES REQUIRED. IF 2X4 BLOCKING 19 USED, THE 2X4'S MUST BE NAILED TOGETHER WITH 3 16D SINKERS MIN TIE DOWN DEVICE SEE SECTION R602.10.6.2 FIGURE R602.10.62 (MODIFIED) ALERNATE BRACED WALL PANEL TO A DOOR OR WINDOW OPENING

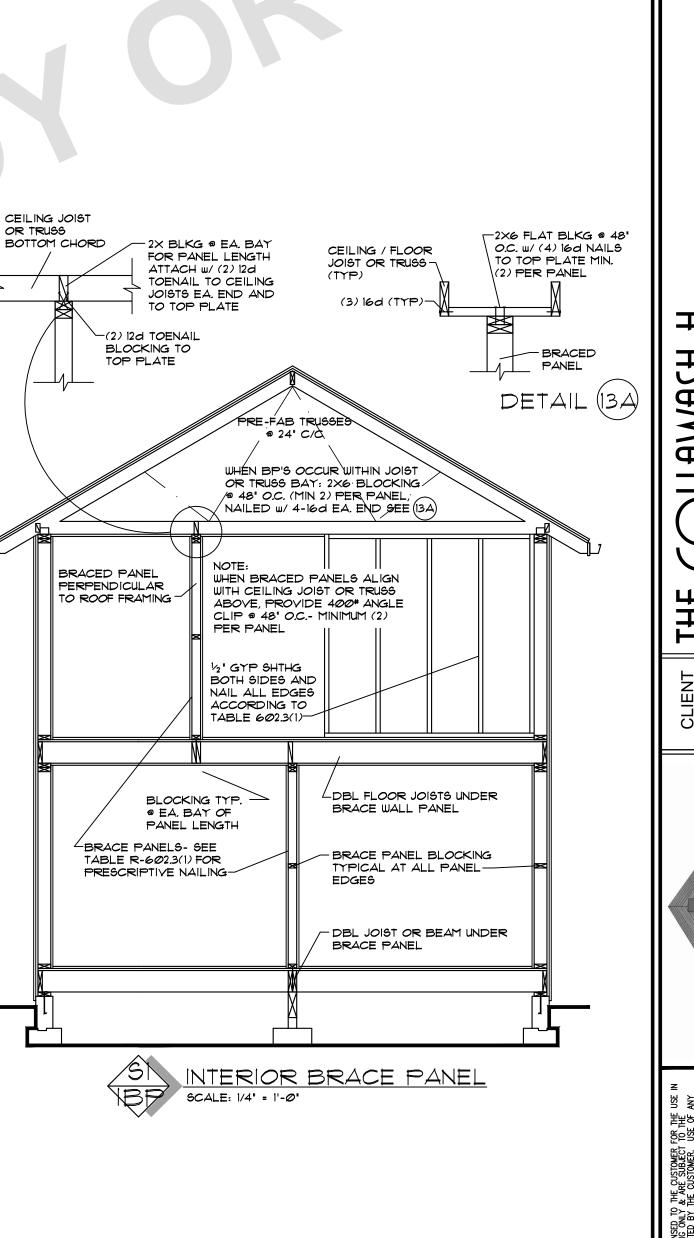
<u>WP TO A DOOR OR WINDOW OPENING</u>

BRACING:

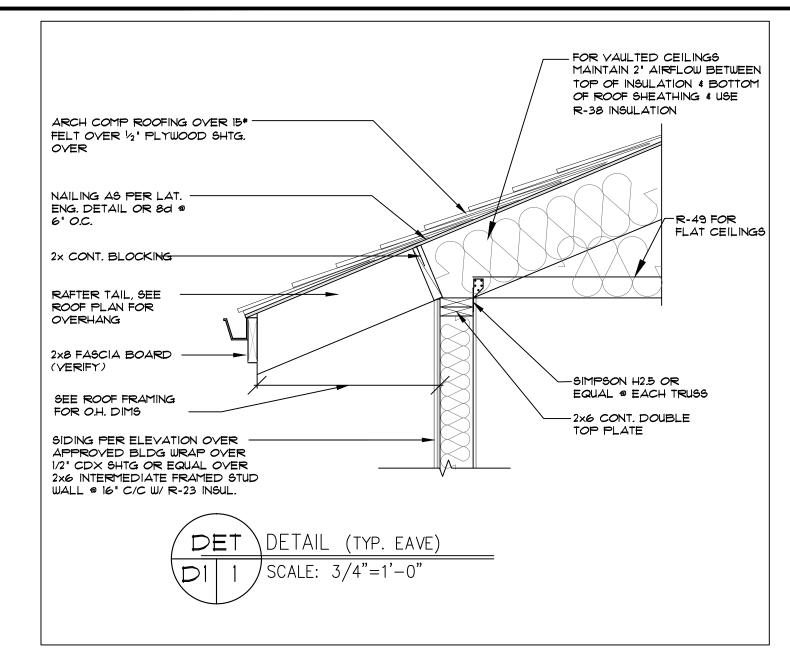


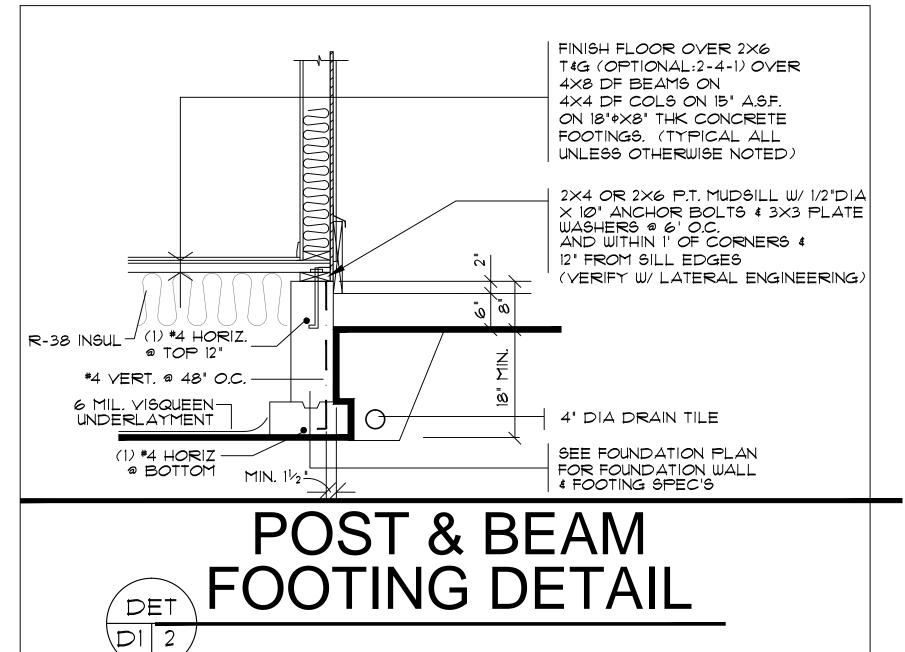


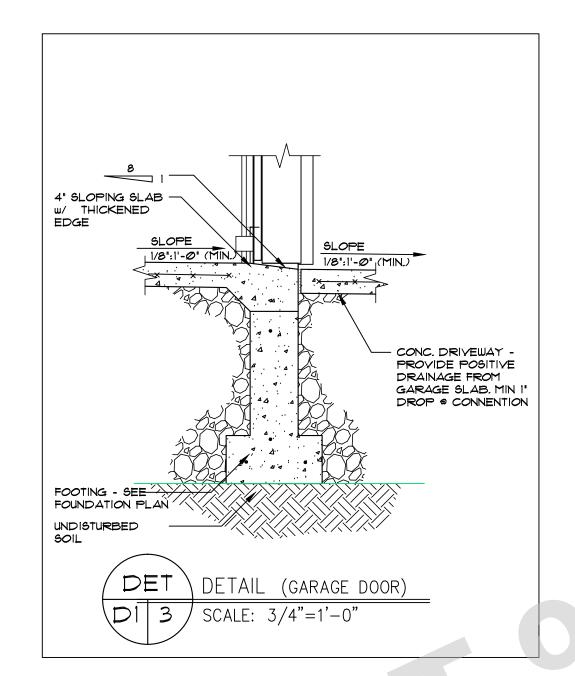


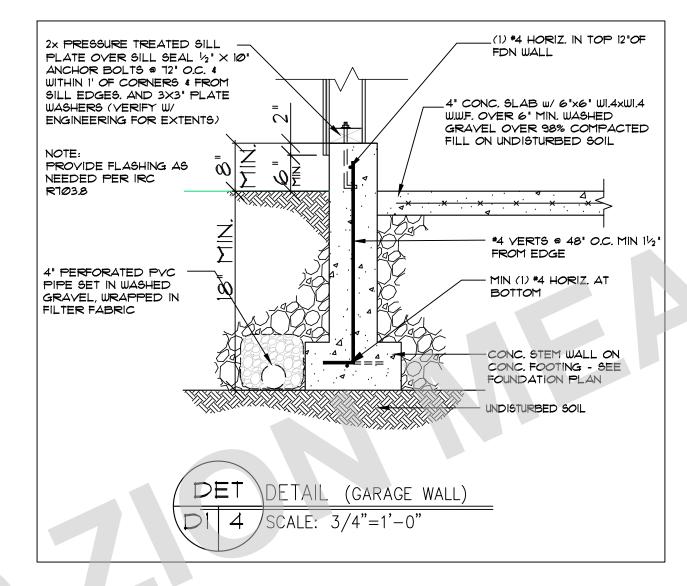


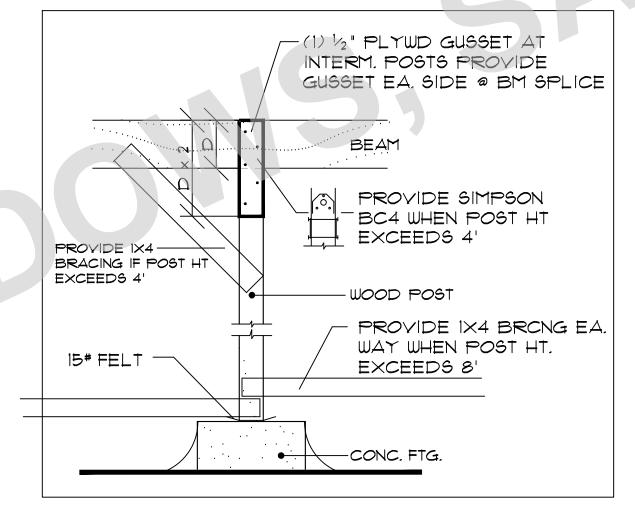
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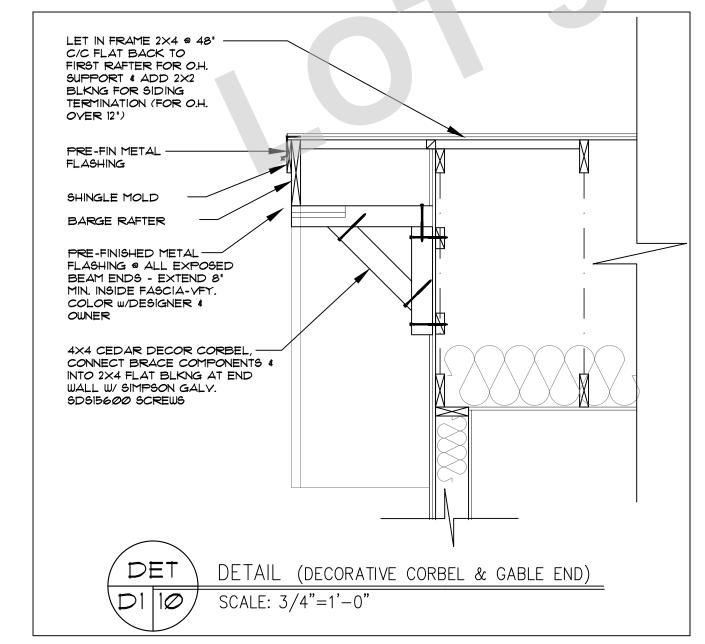


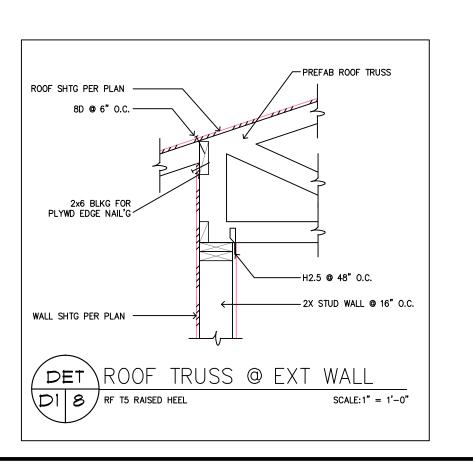


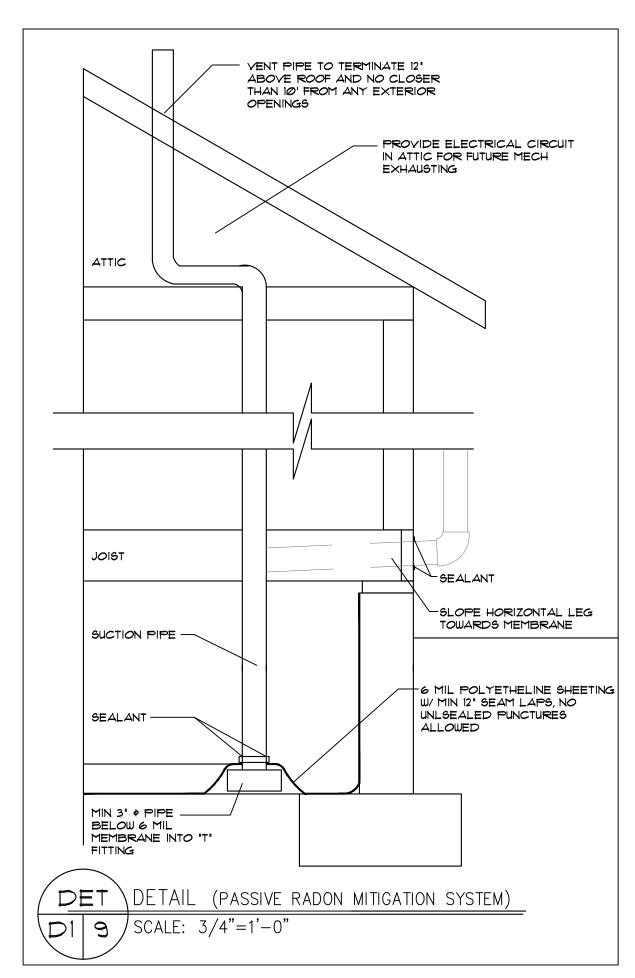


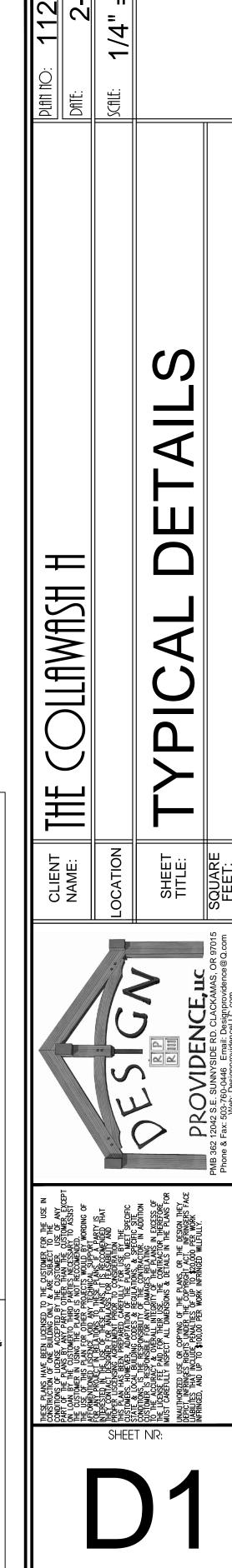


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### GENERAL NOTES

ALL WORK IS TO COMPLY WITH THE 2017 ORSC CODE AND ANY APPLICABLE

- STATE, COUNTY OR LOCAL REGULATIONS THE CONTRACTOR IS RESPONSIBLE TO CHECK THE PLANS AND IS TO NOTIFY THE DESIGNER OF ANY ERRORS OR OMISSIONS PRIOR TO THE START OF CONSTRUCTION. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED
- DIMENSIONS. 4. DESIGN LOADS: ROOF 25 PSF (LIVE LOAD)

40 PSF (LIVE LOAD) FLOOR 100 PSF STAIRS GARAGE FLOOR 125 PSF (2000\* PT) 75 PSF

DECKS (IF YOUR LOCAL AREA REQUIRES DIFFERENT DESIGN LOADS, CONSULT WITH A LOCAL STRUCTURAL ENGINEER TO DETERMINE THE APPROPRIATE REVISIONS.)

PROVIDE INSULATION BAFFLES AT EAVE VENTS BETWEEN RAFTERS

ALL SMOKE DETECTORS SHALL BE POWERED BY 110V CURRENT, CONNECTED TO HOUSE ELECTRICAL SYSTEM. INTERCONNECT WITH EACH ONE SO THAT IF ANY ONE TRIPS THEY WILL ALL SOUND. THEY SHALL ALSO HAVE A BATTERY BACKUP AND BE LOCATED IN EACH BEDROOM AND ON EACH FLOOR LEVEL. GUARDRAILS SHALL HAVE INTERMEDIATE RAILS SPACED

SUCH THAT A SPHERE 4" IN DIA. CANNOT PASS THROUGH PROVIDE GROUNDING ELECTRODE AT ELECTRICAL SERVICE CONSISTING OF A MINIMUM 20' LENGTH OF 1/2" + STEEL REINFORCEMENT OF FOOTINGS. ELECTRODE SHALL

EXTEND 12" MIN ABOVE THE PLATE LINE THE MAXIMUM AMOUNT OF WATER USED BY NEW PLUMBING FIXTURES: 1.6 GALLONS/FLUSH

SHOWER HEADS

2.5 GALLONS/MINUTE INTERIOR FAUCETS . IN THE EVENT OF CONFLICT BETWEEN PERTINENT CODES AND REGULATIONS AND REFERENCED STANDARDS OF THESE SPECIFICATIONS, THE MORE STRINGENT PROVISIONS SHALL GOVERN

2.5 GALLONS/MINUTE

STRUCTURAL SPECIFICATIONS AND DRAWINGS FOR THIS WORK HAVE BEEN PREPARED IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICE TO MEET MINIMUM REQUIREMENTS OF THE LATEST EDITION OF THE

SPECIFICATIONS AND DRAWINGS INDICATE FINISHED STRUCTURE. BUILDER SHALL BE RESPONSIBLE FOR CONSTRUCTION METHODS, PROCEDURES, AND CONDITIONS (INCLUDING SAFETY), EXCEPT AS SPECIFICALLY

INDICATED OTHERWISE IN THE CONTRACT DOCUMENTS . CONSTRUCTION LOADS SHALL NOT OVERLOAD STRUCTURE NOR SHALL THEY BE IN EXCESS OF DESIGN LOADINGS INDICATED ON DRAWINGS.

BUILDER SHALL VERIFY ALL MATERIALS, DIMENSIONS, AND CONDITIONS SHOWN ON STRUCTURAL DRAWINGS OR NOTED IN STRUCTURAL SPECIFICATIONS. ANY VARIANCES WITHIN STRUCTURAL DRAWINGS AND SPECIFICATIONS, OR WITHIN CONDITIONS ENCOUNTERED AT JOB SITE. SHALL BE REPORTED TO OWNER IN WRITING BEFORE COMMENCEMENT OF ANY WORK EFFECTED BY SUCH VARIANCE.

BUILDER SHALL RIGIDLY ADHERE TO ALL LAWS, CODES, AND ORDINANCES WHICH APPLY TO THIS WORK, HE SHALL NOTIFY AND RECEIVE CLARIFICATION FROM OWNER IN WRITING OF ANY VARIATIONS BETWEEN CONTRACT

DOCUMENTS AND GOVERNING REGULATIONS. ALL MANUFACTURED MATERIALS, COMPONENTS, FASTENERS, ASSEMBLIES, ETC., SHALL BE HANDLED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND PROVISIONS OF APPLICABLE ICBO RESEARCH RECOMMENDATIONS. WHERE SPECIFIC MANUFACTURED PRODUCTS ARE CALLED FOR GENERIC EQUALS WHICH MEET APPLICABLE STANDARDS AND SPECIFICATIONS MAY BE USED.

NO VARIANCE BY A BUILDING OFFICIAL SHALL BE BINDING ON DESIGNERS.

BUILDER SHALL INVESTIGATE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILLED EXCAVATIONS OR BURIED STRUCTURES SUCH AS CESS POOLS, CISTERNS. FOUNDATIONS. ETC. IF ANY SUCH ITEMS ARE FOUND, OWNER SHALL BE NOTIFIED IMMEDIATELY.

EACH BEDROOM TO HAVE A MINIMUM WINDOW OPENING OF 5.7 SQ FT WITH A MIN. WIDTH OF 20" AND A MIN. HEIGHT OF 22" AND A SILL LESS THAN 44" OFF THE FLOOR. ALL WINDOWS WITHIN 18' OF THE FLOOR AND WITHIN

24" OF ANY DOOR ARE TO HAVE TEMPERED GLAZING. SEE SECTION R308.4 IN ORSC FOR ADDITIONAL INFO. SKYLITES ARE TO BE GLAZED WITH TEMPERED GLASS ON OUTSIDE AND LAMINATED GLASS ON INSIDE (UNLESS PLEXIGLAS). GLASS TO HAVE MAXIMUM CLEAR SPAN OF 25". SKYLITE FRAME IS TO BE ATTACHED TO A

2 X CURB WITH MINIMUM OF 4" ABOVE ROOF PLANE. ALL TUB OR SHOWER ENCLOSURES ARE TO BE GLAZED

WITH SAFETY GLAZING. ALL EXTERIOR WINDOWS ARE TO BE DOUBLE GLAZED AND ALL EXTERIOR DOORS ARE TO BE SOLID CORE WITH WEATHERSTRIPPING. PROVIDE 1/2" DEADBOLT LOCKS ON ALL EXTERIOR DOORS AND LOCKING DEVICES ON ALL DOORS OR WINDOWS WITHIN 10' (VERTICAL) OF GRADE. PROVIDE PEEP-HOLE @ 54" - 66" ABOVE FLOOR ON

EXTERIOR DOORS PROVIDE COMBUSTION AIR VENTS (W/ SCREEN AND BACK DAMPER) FOR FIREPLACES, WOOD STOVES AND ANY APPLIANCES WITH AN OPEN FLAME.

BATHROOMS AND UTILITY ROOMS ARE TO BE VENTED TO THE OUTSIDE WITH A MINIMUM OF A 90 CFM FAN. RANGE HOODS ARE ALSO TO BE VENTED TO OUTSIDE.

ALL EXPOSED INSULATION IS TO HAVE A FLAME SPREAD RATING OF LESS THAN 25 & A SMOKE DENSITY RATING OF LESS THAN 450.

PERIMETER CONC. WALLS TO BE PROTECTED W/ RIGID FIBERBOARD INSULATION FROM TOP OF CONC WALL TO NOT LESS THAN 24" BELOW GRADE.

SLAB EDGE INSULATION IS TO BE R-15. HEATING DUCTS TO BE INSULATED W/ R-8

WINDOWS SHALL MEET REQUIRED U FACTORS FOR THE CONTRACTORS CHOSEN PATH OF COMPLIANCE SEE TABLE NIIØ4.I(1)

ONE EXTERIOR DOOR MAY BE INSULATED TO A U-FACTOR OF 0.20. ALL OTHER EXTERIOR DOORS MAY NOT EXCEED 0.54.

### Framing notes

NOTE: SEE TABLE 602.3(1) IN ORSC FOR FASTENER SCHEDULE

https://codes.iccsafe.org/public/public/chapter/content/10136/ ALL EXTERIOR WALL AND BEARING WALL OPENINGS TO HAVE 4X12 DF HEADERS UNLESS OTHERWISE INDICATED

JOISTS THAT ARE ATTACHED TO FLUSH BEAMS ARE TO BE HUNG WITH "SIMPSON" LU TYPE OR EQUIV. DOUBLE JOISTS THAT ARE ATTACHED TO FLUSH BMS ARE TO BE HUNG WITH 'SIMPSON' LUS TYPE OR EQUIV. PROVIDE DOUBLE JOISTS UNDER ALL PARALLEL

PARTITIONS OVER PROVIDE FIREBLOCKING, DRAFTSTOPS & FIRESTOPS AS PER THE ORSC SEC R602.8

6. LUMBER SPECIES: A. POSTS, BEAMS, HEADERS NO.2 DOUG FIR JOISTS AND RAFTERS NO.3 DOUG FIR B. SILLS, PLATES, BLOCKING BRIDGING, ETC.

STUD GRADE D.F. C STUDS D. POST AND BEAM DECKING UTILITY GRADE D.F. E. PLYWOOD SHEATHING 1/2" CDX PLY, 32/16 F. GLU-LAM BEAMS fb-2400, DRY ADH. NAILING SCHEDULE

THE ENDS OF THE MEMBER SHALL NOT EXCEED

SEE TABLE 602.3(1) NOTCHES IN SOLID LUMBER JOISTS, RAFTERS, AND BEAMS SHALL NOT EXCEED ONE-SIXTH OF THE DEPTH OF THE MEMBER, SHALL NOT BE LONGER THAN ONE-THIRD OF THE DEPTH OF THE MEMBER AND SHALL NOT BE LOCATED IN THE MIDDLE ONE-THIRD OF THE SPAN. NOTCHES AT

ONE-FOURTH THE DEPTH OF THE MEMBER. THE TENSION SIDE OF MEMBERS 4" (102mm) OR GREATER IN NOMINAL THICKNESS SHALL NOT BE NOTCHED EXCEPT AT ENDS OF THE MEMBERS. THE DIAMETER OF HOLES BORED OR CUT INTO MEMBERS SHALL NOT EXCEED ONE-THIRD THE DEPTH OF THE MEMBER. HOLES SHALL NOT BE CLOSER THAN 2" TO THE TOP OR BOTTOM OF THE MEMBER, OR TO ANY OTHER HOLE LOCATED IN THE MEMBER. WHERE THE MEMBER IS ALSO NOTCHED, THE HOLE SHALL NOT BE CLOSER THAN 2" (51mm) TO THE NOTCH.

STUDS IN AN EXTERIOR WALL OR LOAD-BEARING PAR-TITIONS SHALL BE PERMITTED TO BE CUT OR NOTCHED TO A DEPTH NOT EXCEEDING 25% OF ITS WIDTH. STUDS IN NON-LOAD-BEARING PARTITIONS SHALL BE PERMITTED TO BE NOTCHED TO A DEPTH NOT TO EXCEED 40% OF A SINGLE STUD WIDTH. STUDS SHALL BE PERMITTED TO BE BORED OR DRILLED, PROVIDED THAT THE DIAMETER OF THE RESULTING HOLE IS NO GREATER THAN 40% OF THE STUD WIDTH, THE EDGE OF THE HOLE IS NO CLOSER THAN 5/8" (15.9mm) TO THE EDGE OF THE STUD, AND THE HOLE IS NOT LOCATED IN THE SAME

SECTION AS A CUT OR NOTCH. INSTALL ALL HORIZONTAL MEMBERS WITH CROWN UP. ALL MEMBERS IN BEARING SHALL BE ACCURATELY CUT AND ALIGNED SO THAT FULL BEARING IS PROVIDED WITHOUT USE OF SHIMS. BEARING POSTS SHALL HAVE FULL BLOCKING OR SUPPORT UNDER

ALL JOISTS SHALL HAVE A MINIMUM OF 2" BEARING AT SUPPORTS. LAPPING JOISTS SHALL HAVE 6" LAPS CENTERED OVER INTERIOR SUPPORTS. LEDGERS AND STUD WALL FOUNDATION SILL PLATES SHALL BE BOLTED TO CONCRETE W/ ANCHOR BOLTS OF SIZE AND MINIMUM SPACING AS SHOWN ON DRAWINGS.

AT LEAST TWO BOLTS SHALL BE PROVIDED FOR EACH PIECE W/ ONE BOLT WITHIN 12" OF EACH END. ALL PLYWOOD WALL SHEATHING SHALL BE APPLIED AS FOLLOWS: CENTER VERTICAL JOINTS OVER STUDS AND CENTER HORIZONTAL JOINT OVER 2' BLOCKING OR PLATE, NAIL TOP OF PANELS TO DOUBLE TOP PLATE. AND NAIL BOTTOM OF PANELS TO ANCHORED SILL PLATE APPLY GYPSUM BOARD SO THAT END JOINTS OF ADJACENT COURSE DO NOT OCCUR AT THE SAME STUD.

# FOUNDATION NOTES

FOOTINGS ARE TO BEAR ON UNDISTURBED LEVEL SOIL DEVOID OF ANY ORGANIC MATERIAL AND STEPPED AS REQUIRED TO MAINTAIN THE REQUIRED DEPTH BELOW THE FINAL GRADE.

SOIL BEARING PRESSURE ASSUMED TO BE 1500 PSF. ANY FILL UNDER GRADE SUPPORTED SLABS TO BE A MINIMUM OF 4" GRANULAR MATERIAL COMPACTED TO 95%. CONCRETE TO DEVELOP A MIN. OF 3000 PSI AT 28 DAYS WITH A MIN. OF 6 SACKS OF CEMENT PER YARD AND

A MAXIMUM SLUMP OF 4". CONCRETE SLABS TO HAVE CONTROL JOINTS AT 25' (MAXIMUM) INTERVALS EA, WAY CONCRETE SIDEWALKS TO HAVE 3/4" TOOLED JOINTS AT 5' O.C. (MINIMUM)

REINFORCING STEEL TO BE A-615 GRADE 40. WELDED WIRE MESH TO BE A-185. EXCAVATE THE SITE TO PROVIDE A MINIMUM OF 18" CLEARANCE UNDER ALL GIRDERS

COVER ENTIRE CRAWLSPACE WITH 6 MIL BLACK "VISQUEEN" AND EXTEND UP FDTN. WALLS TO P.T. MUDSILL. 0. PROVIDE A MINIMUM OF I SQ FT OF VENTILATION AREA FOR EACH 150 SQ FT OF CRAWLSPACE AREA. VENTS ARE TO BE CLOSABLE WITH 1/4" OPENINGS IN CORROSIVE

RESISTANT SCREEN. ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED OR PROTECTED WITH 30\* ROLL ROOFING. 2. BEAM POCKETS IN CONCRETE TO HAVE 1/2" AIRSPACE

AT SIDES AND ENDS WITH A MINIMUM BEARING OF 3". PROVIDE CRAWLSPACE DRAIN AS PER SEC. R405.1 OF THE GRADE AWAY FROM FND WALLS SHALL FALL 6" MIN.

WITHIN FIRST 10'. SLOPE FOR PERMANENT FILLS AND CUT SLOPES SHALL NOT EXCEED 2 UNITS HORIZ, TO 1 UNIT VERT. BACKFILL SHALL NOT BE PLACED UNTIL WALL HAS

SUFFICIENT STRENGTH AND HAS BEEN ANCHORED TO FLOOR ABOVE ON WALLS W/ MORE THAN 4' UNBALANCED BUILDER SHALL BE RESPONSIBLE FOR SUPPORT OF ALL

TEMPORARY EMBANKMENTS AND EXCAVATIONS. FOOTINGS SHALL BE FOUNDED ON FIRM, UNDISTURBED. NATIVE, FREE DRAINING SOILS. CONDITIONS FOUND TO BE OTHERWISE SHALL BE REPORTED TO OWNER.

ALL GROUND OVER WHICH FOOTINGS AND SLABS-ON-GRADE ARE TO BE PLACED SHALL BE FREE OF EXPANSIVE OR COMPRESSIBLE DEBRIS AND ORGANIC D. FOOTINGS AND SLABS-ON-GRADE CONCRETE SHALL

OF CONCRETE PLACEMENT

NOT BE PLACED ON MUDDY OR FROZEN GROUND. SUB-GRADE FOR SLABS-ON-GRADE WHERE VAPOR BARRIER IS NOT REQUIRED SHALL BE DAMP AT TIME

LIGHTING REQUIREMENTS:

AT LEAST ONE WALL SWITCH-CONTROLLED LIGHTING OUTLET SHALL BE INSTALLED IN EVERY HABITABLE ROOM AND IN BATHROOMS, HALLWAYS, STAIRWAYS, ATTACHED GARAGES, DETACHED GARAGES PROVIDED WITH ELECTRICAL POWER AND AT THE EXTERIOR SIDE OF EGRESS DOORS. STAIRWAY LIGHTING CONTROL:

ALL INTERIOR AND EXTERIOR STAIRWAYS SHALL BE PROVIDED WITH A MEANS OF ILLUMINATION TO THE STAIR, INCLUDING THE LANDINGS AND TREADS, TO BE CONTROLLED BY A WALL SWITCH AT EACH FLOOR LEVEL. INTERIOR STAIRS SHALL BE PROVIDED WITH AN ARTIFICIAL LIGHT SOURCE LOCATED IN THE IMMEDIATE VICINITY OF EACH LANDING AT THE TOP AND BOTTOM OF THE STAIR. EXTERIOR STAIRS SHALL BE PROVIDED WITH AN ARTIFICIAL LIGHT SOURCE LOCATED IN THE IMMEDIATE VICINITY OF THE TOP LANDING OF THE STAIR. EXCEPTION: WHERE THE DIFFERENCE BETWEEN FLOOR LEVELS REQUIRES LESS THAN 6 STAIR RISERS.

FIXTURES IN CLOTHES CLOSETS: SURFACE MOUNTED FLUORESCENT FIXTURES SHALL BE INSTALLED ON THE WALL ABOVE THE DOOR OR ON THE CEILING, PROVIDED THERE IS A MINIMUM CLEARANCE OF 6' BETWEEN THE FIXTURE AND THE NEAREST POINT OF A STORAGE SPACE.

WET OR DAMP LOCATIONS: FIXTURES INSTALLED IN WET OR DAMP LOCATIONS SHALL BE INSTALLED SO THAT WATER CANNOT ENTER OR ACCUMULATE IN WIRING COMPARTMENTS, LAMPHOLDERS OR OTHER ELECTRICAL PARTS. ALL FIXTURES INSTALLED IN WET LOCATIONS SHALL BE MARKED "SUITABLE FOR WET LOCATIONS". ALL FIXTURES INSTALLED IN DAMP LOCATIONS SHALL BE MARKED "SUITABLE FOR WET LOCATIONS" OR "SUITABLE FOR DAMP LOCATIONS"

LIGHT SWITCH ACCESS: ALL SWITCHES SHALL BE LOCATED TO ALLOW OPERATION FROM A READILY ACCESSIBLE LOCATION.

RECEPTACLE OUTLET REQUIREMENTS: IN EVERY KITCHEN, FAMILY ROOM, DINING ROOM, LIVING ROOM, DEN, BEDROOM, OR

SIMILAR ROOM OR AREA OF DWELLING UNITS, RECEPTACLE OUTLETS SHALL BE INSTALLED SO THAT NO POINT ALONG THE FLOOR LINE IN ANY WALL SPACE IS MORE THAN 6 FEET, MEASURED HORIZONTALLY FROM AN OUTLET IN THAT SPACE, INCLUDING ANY WALL SPACE THAT IS 2 FEET OR MORE IN WIDTH.

RECEPTACLE OUTLETS, WITH GFI PROTECTION, SHALL BE INSTALLED EVERY 24" ON ALL COUNTER SPACES THAT MEASURE 12" OR WIDER

AT LEAST ONE WALL RECEPTACLE OUTLET, WITH GFI PROTECTION, SHALL BE INSTALLED IN BATHROOMS ADJACENT TO EACH BASIN LOCATION.

AT LEAST ONE RECEPTACLE OUTLET, WITH GFI PROTECTION, SHALL BE INSTALLED OUTDOORS AT THE FRONT AND BACK OF EACH DWELLING UNIT HAVING DIRECT ACCESS TO GRADE.

HALLWAYS OF 10 FEET OR MORE IN LENGTH SHALL HAVE AT LEAST ONE RECEPTACLE OUTLET. HYAC OUTLET:

A CONVENIENCE RECEPTACLE OUTLET SHALL BE INSTALLED FOR THE SERVICING OF HEATING, AIR-CONDITIONING AND REFRIGERATION EQUIPMENT LOCATED IN ATTICS AND CRAWL SPACES.

A RECEPTACLE INSTALLED IN A WET LOCATION SHALL BE IN A WEATHER PROOF ENCLOSURE, THE INTEGRITY OF WHICH IS NOT AFFECTED WHEN THE ATTACHMENT PLUG CAP IS INSERTED.

\*ADDITIONAL INFORMATION CAN BE FOUND IN THE OREGON RESIDENTIAL SPECIALTY CODE BOOK IN SECTIONS:

E37-404 SWITCHES E37-406 RECEPTACLE OUTLETS E37-410 LIGHTING OUTLETS

BUILDING COMPONENTS	REQUIRED VALUE
WALL INSULATION ABOVE GRADE	R = 21 intermediate °
WALL INSULATION BELOW GRADE"	R = 15/R - 21
FLAT CEILINGS	R = 49
VAULTED CEILINGS <sup>9</sup>	R = 30 rafter or R-304° scissor truss
UNDERFLOOR INSULATION	R = 30
SLAB FLOOR EDGE INSULATION	R = 15
HEATED SLAB FLOOR INTERIORS'	R = 10
WINDOW CLASS	U = 0.30
SKYLIGHT CLASSI	U = 0.50
EXT. DOORST	U = 0.20
EXT. DOORS W/<2.5 SQ. FT. GLAZING	U = 0.40
FORCED AIR DUCT INSULATION	R = 8

ADDITIONAL NOTES

a. As allowed in Section Nil@1.4. termal performance of a component may be adjusted provided that overall heat loss does not exceed the total resulting from conformance to the required U-value standards. Calculations to document equivalent heat loss shall be performed using the procedure and approved U-values contained in Table NII04.1(1).

b. R-values used in this table are nominal, for the insulation only in standard wood frameed construction and not for the entire assembly.

c. Wall insulation requirements apply to all exterior wood framed, concrete or masonry walls that are above grade. This includes cripple walls and rim joist areas. Nominal compliance with R-21 insulation and intermediate framing (NIIØ4.5.2) with insulated headers.

e. Below-grade wood, concrete or masonry walls include all walls that are below grade and do not include those portions of such walls that extend more than 24 inches above grade. R-21 for insulation in framed cavity.

f. Insulation levels for ceilings that have limited attic/rafter depth such as dormers, bay windows or similar featrues totaling not more than 150 squaur feet in area may be reduced to not less than R-21. when reduced, the cavity shall be filled (except for required vent spaces)

g. The maximum vaulted ceiling surface area shall not be greater than 50% of the total heated space floor area unless area has a U-factor no greater than U-0.031. The factor of 0.042 is representative of a vaulted scissor truss. A 10 inch deep rafter vaulted ceiling with R-30 insultation is U-0.0033 and complies with this requirement, not to exceed 50% of the total heated space floor area.

j. Sliding glass doors shall comply with window performance requirements. k Reduced area may not be used as a trade off criterion for thermal performance

m. A maximum of 28 square feet of exterior door area per dwelling unit can have a U-factor of 54 or less.

n. Glazing that is either double pane with low-e coating on one surface, or triple pane shall be deemed to comply with this u-.30 requirement.

### TABLE N1101.1(2) ADDITIONAL MEASURES

		ADDITIONAL MEASURES				
	9	High efficiency walls				
Select One)	1.7	Exterior walls—U-0.045/R-21 cavity insulation + R-5 continuous				
		Upgraded features				
	2	Exterior walls—U-0.057/R-23 intermediate or R-21 advanced, Framed floors—U-0.026/R-38, and Windows—U-0.28 (average UA)				
		Upgraded features				
	3	Exterior walls—U-0.055/R-23 intermediate or R-21 advanced, Flat ceiling <sup>c</sup> —U-0.017/R-60, and Framed floors—U-0.026/R-38				
		Super Insulated Windows and Attic OR Framed Floors				
	4	Windows—U-0.22 (Triple Pane Low-e), and Flat ceiling <sup>e</sup> —U-0.017/R-60 or Framed floors—U-0.026/R-38				
Envelope		Air sealing home and ducts				
En	5	Mandatory air sealing of all wall coverings at top plate and air sealing checklist <sup>1</sup> , and Mechanical whole-building ventilation system with rates meeting M1503 or ASHRAE 62.2, and All ducts and air handlers contained within building envelope <sup>d</sup> or All ducts sealed with mastic <sup>b</sup>				
	6	High efficiency thermal envelope UA <sup>g</sup>				
		Proposed UA is 8% lower than the code UA				
	A	High efficiency HVAC system <sup>8</sup>				
Conservation Measure (Select One)		Gas-fired furnace or boiler AFUE 94%, or Air source heat pump HSPF 9.5/15.0 SEER cooling, or Ground source heat pump COP 3.5 or Energy Star rated				
	В	Ducted HVAC systems within conditioned space				
		All ducts and air handlers contained within building envelope <sup>d</sup> Cannot be combined with Measure 5				
Sel	i i	Ductless heat pump				
8 0	C	Ductless heat pump HSPF 10.0 in primary zone of dwelling				
0	D	High efficiency water heater <sup>c</sup>				
		Natural gas/propane water heater with UEF 0.85 OR Electric heat pump water heater Tier 1 Northern Climate Specification Product				

LIGHTING

ALL PERMANENTLY INSTALLED INTERIOR AND EXTERIOR LIGHTING IXTURES SHALL CONTAIN HIGH-EFFICACY LAMPS. SCREW-IN COMPACT FLUORESCENT AND LED LAMPS COMPLY WITH THIS REQUIREMENT. EXCEPT 2 INTERIOR AND 2 EXTERIOR PERMANENT FIXTURES ARE NOT REQUIRED TO HAVE HIGH EFFICIENCY LAMPS.

THE BUILDING OFFICIAL SHALL BE NOTIFIED IN WRITING AT THE FINAL INSPECTION THAT THE PERMANENTLY INSTALLED FIXTURES HAVE MET THIS REQUIREMENT.

# **APPENDIX**

RADON CONTROL METHODS (ABRIDGED - SEE CODE SECTION FOR FULL DETAILS)

AFIØ3.2 Subfloor preparation. A layer of gas-permeable material shall be placed under all concrete slabs and other floor systems that directly contact the ground and are within the walls of the living spaces of the building.

1. A uniform layer of clean aggregate, a min. of 4 inches thick (see code section for additional info)

AFIØ3.3 Soil-gas-retarder. A minimum 6-mil 34or 3-mil cross-laminated polyethylene or equivalent flexible sheeting material shall be placed on top of the gas-permeable layer see code for additional info) AFIØ3.4 Entry routes. Potential radon entry routes shall be closed

n accordance with Sections AFI03.4.1 through AFI03.4.10. (See code section for further details) AFIØ3.5 Crawl space mitigation system. In buildings with crawl space foundations, a system complying with AFIØ3.5.1 or AFIØ3.5.2

shall be installed during construction Exception: Buildings in which an approved mechanical crawl space ventilation system or other equivalent system is installed. AFIØ3.5.I.I (PASSIVE METHOD) Ventilation. Crawl spaces shall be provided with vents to the exterior of the building The minimum net area of ventilation openings shall comply with Section R408.

AFIØ3.5.1.2 Soil-gas-retarder. The soil in crawl spaces sha be covered with a continuous layer of minimum 6-mil (0.15 mm) polyethylene soil-gas-retarder as per code section

AFIØ3.5.1.3 Vent pipe. A plumbing tee or other approved connection shall be inserted horizontally beneath the sheeting and connected to a 3- or 4-inch-diameter (76 mm or 102 mm) fitting with a vertical vent pipe installed through the sheeting as per code section to min 12"

AFIØ3.5.2 (ACTIVE METHOD) Crawl space ventilation and building tightness. As an alternate method to Passive method. Requires non closable fdn vents, and whole house centilation system (air exchanger) (see code section AFIØ3.5.2 for specifications)

AFIØ3.6 Passive subslab depressurization system. AFIØ3.6.1 Vent pipe. A minimum 3-inch-diameter (76 mm) ABS, PVC or equivalent gas-tight pipe shall be embedded vertically into the sub-slab aggregate (see code section for suther details)

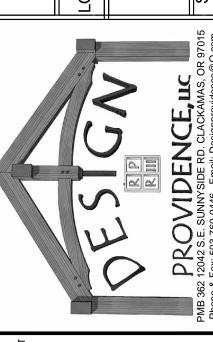
AF103.6.2 - AF103.10 see code section for these requirements

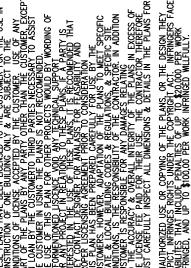
AFIØ3.11 Building depressurization. Joints in air ducts and plenums in unconditioned spaces shall meet the requirements of Section MIGOI. Thermal envelope air infiltration requirements shall comply with the energy conservation provisions in Chapter II. Firestopping shall meet the requirements contained in Section R602.8.

AFIØ3.12 Power source. To provide for future installation of an active sub-membrane or sub-slab depressurization system, an electrical circuit terminated in an approved box shall be installed during construction in the attic or other anticipated location of vent pipe fans. An electrical supply shall also be accessible in anticipated located of system failure

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