RIGHT SIDE ELEVATION

SCALE : 1/4" = 1'-@"



FRONT ELEVATION SCALE : 1/4" = 1'-0"

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1168D-1M PROJECT MANAGER:SRR DRAWN 07/28/20 LAW

25# SNOW LOAD



REAR ELEVATION

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

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Result Congression No. 17 U.1 Cale

LEFT SIDE ELEVATION

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

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The part, other than the part, such as a plant, and local form, such and local form, such and local form, such and to their form that the plant is a plant, and local form the plant is a plant, and local form and to plant, and the plant is a plant, and the plant is a plant is a plant, and the plant is a plant is a plant, and the plant is a pl

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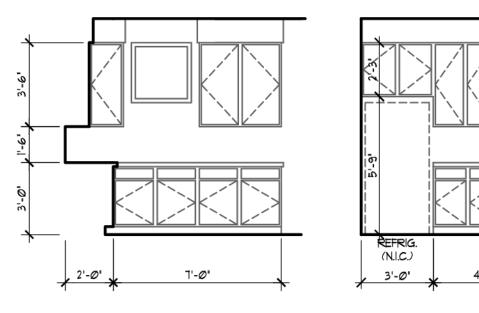
1168D-2M PROJECT MANAGER:SRR DRAWN 07/28/20 LAW

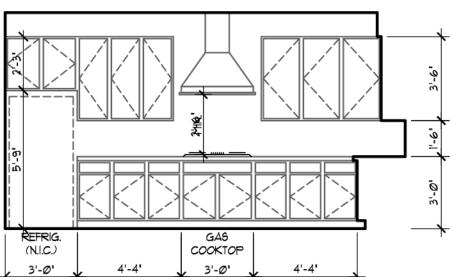
25# SNOW LOAD

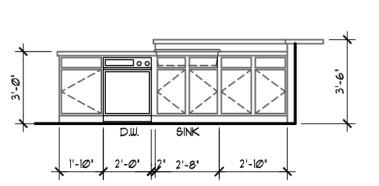
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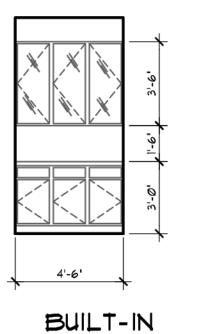
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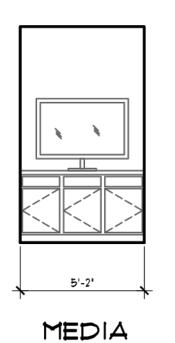


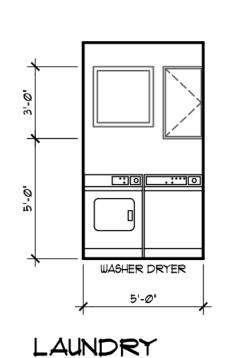


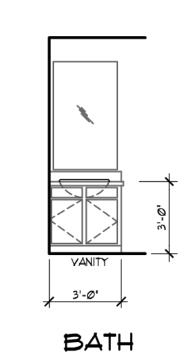


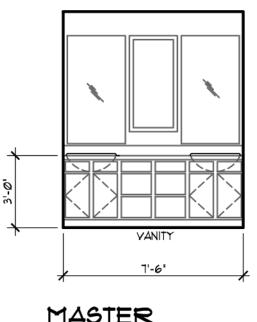
KITCHEN











MASTER BATH

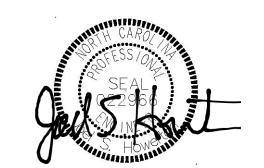
CABINET ELEVATIONS

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

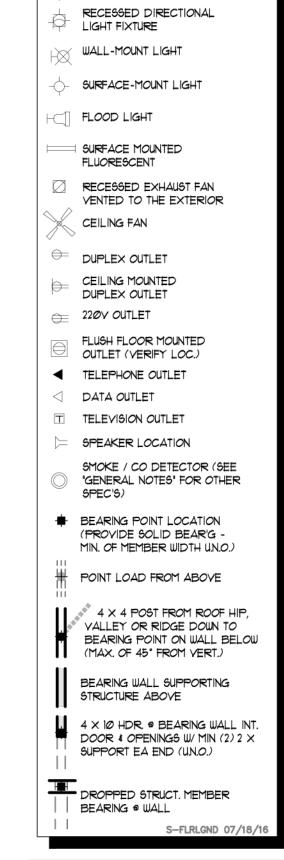
OR DESK

STRUCTURAL EVALUATION BY: HOWERTON SERVICES, PLLC 3513 CATHEDRAL BELL ROAD RALEIGH, NC 27614 LICENSE P-1716

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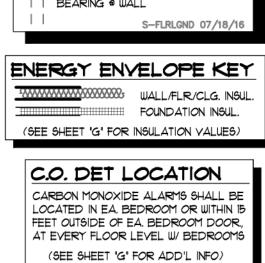


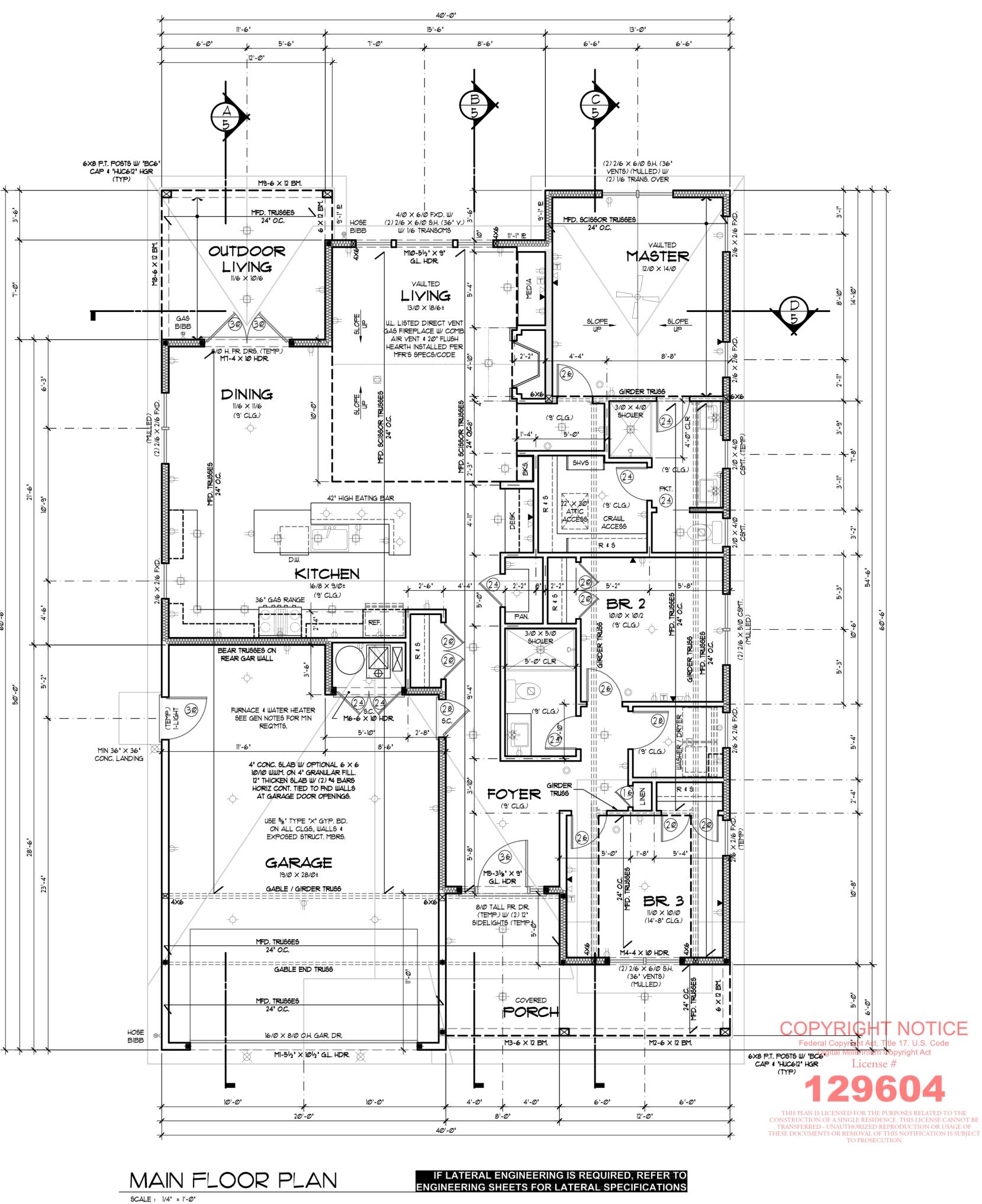
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LEGEND

RECESSED LIGHT

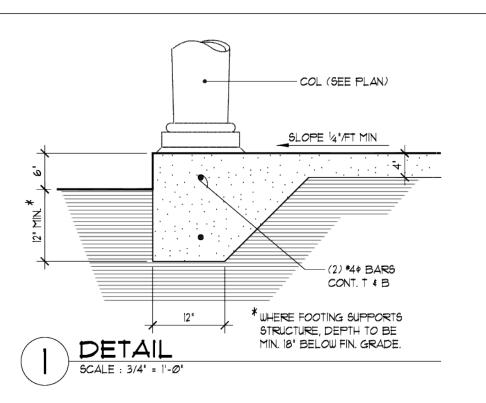


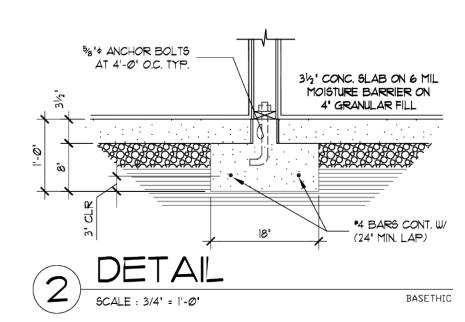


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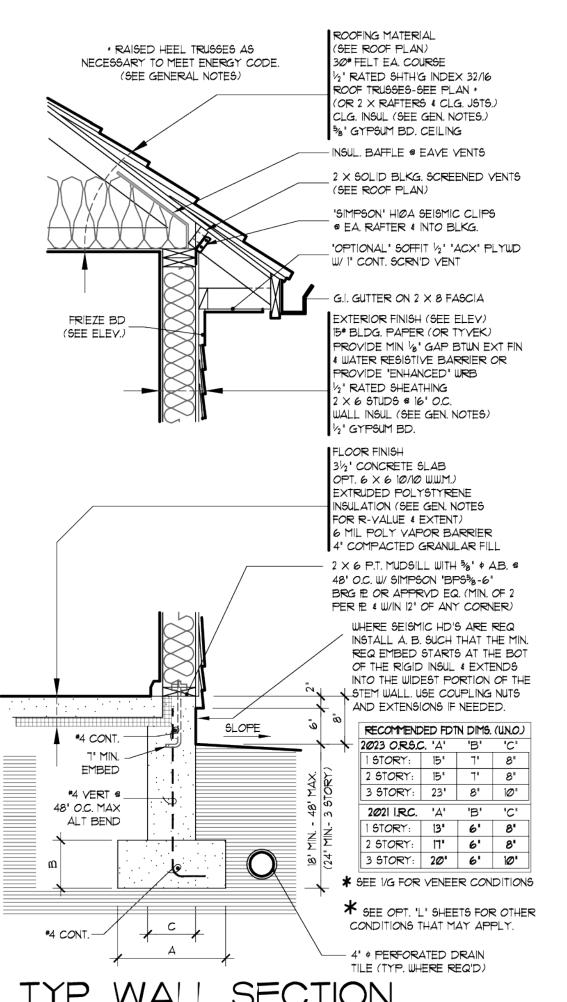
1168D-3M PROJECT MANAGER:SRE DRAWN 07/28/20 LAW

25# SNOW LOAD

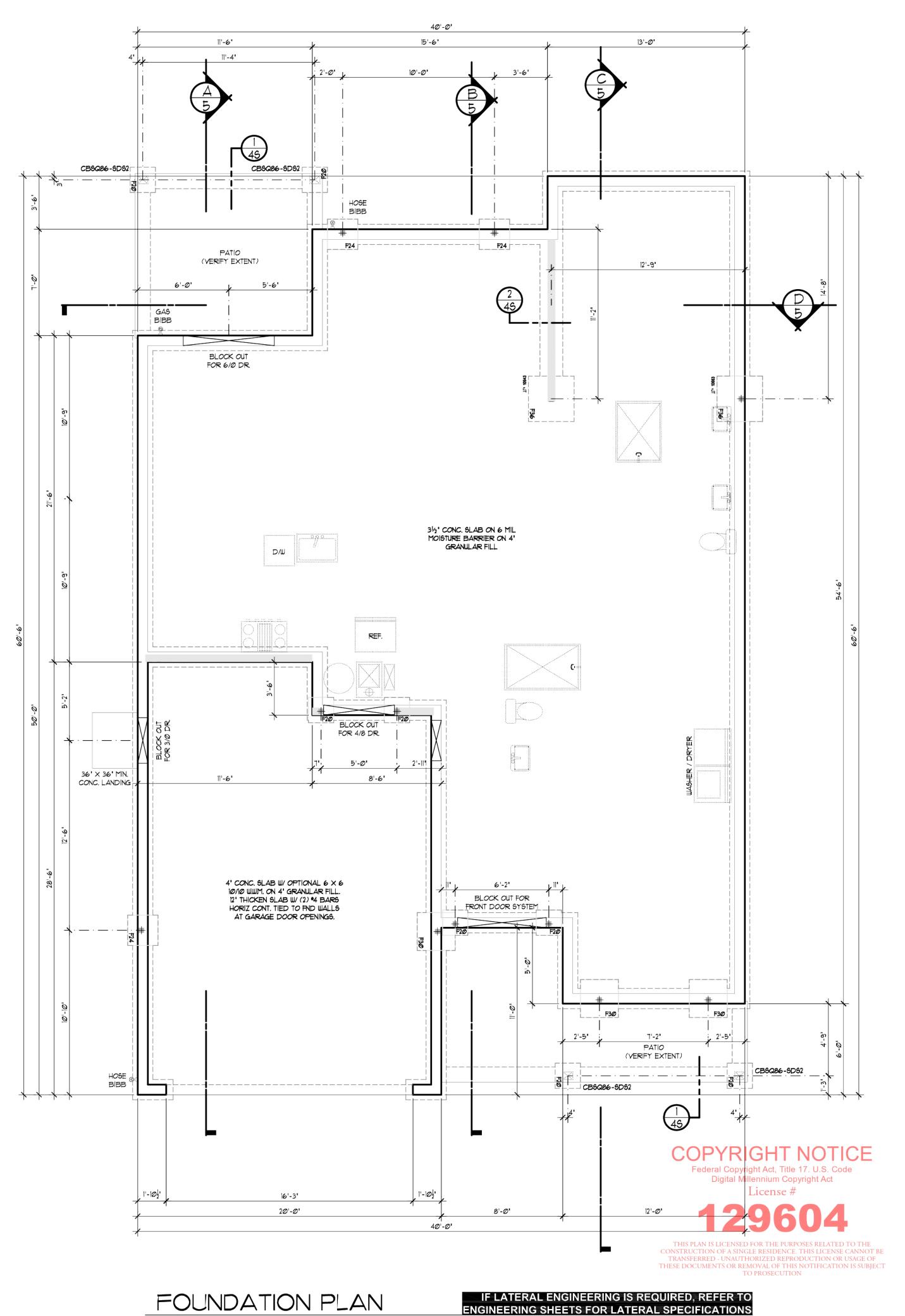




TAG	PAD SIZE	REINFORCING	MAX. BRY
-	18' DIA. x 7'	N.A.	2,474 #
F2Ø	20'x20'x10'	N.A.	3,819 #
F24	24'x24'x12'	N.A.	5,400 #
F28	28'x28'x14'	N.A.	T,211 #
F3Ø	30'x30'x15'	N.A.	8,203 #
F36	36'x36'x13'	(4) *4 BARS @ 7" O.C. E/W	12,037 #
F42	* 42'x42'xl2'	(5) *4 BARS @ 8' O.C. E/W	16,537 #
F48	** 48'x48'x12'	(6) #4 BARS @ 9" O.C. E/W	21,600 #
F54	*** 54'x54'xl2'	(6) #4 BARS @ 9" O.C. E/W	27,337 #
F60	*** 60'x60'x12'	(7) #4 BARS @ 9' O.C. E/W	33,750 #
AS: * 6xi ** 3½	SUMED MIN. 4x4 *2 [6 *2 D.F. COLUMN FO	DF, COLUMN (UN.O SEE PLA DR MAX. BR'G FOR MAX. BR'G (OR 6x6 TO	MS)



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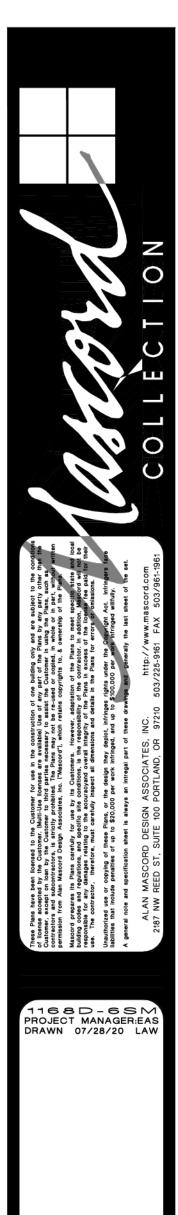


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1168D-45M PROJECT MANAGER:SRR DRAWN 07/28/20 LAW

25# SNOW LOAD



25# SNOW LOAD



LIVING

GIRDER TRUSS

---i#¬ L____

ROOF FOLD -LINE

GIRDER TRUSS

- ROOF FOLD LINE -

(2) 2/6 × 2/6 FXD.

IF LATERAL ENGINEERING IS REQUIRED, REFER TO ENGINEERING SHEETS FOR LATERAL SPECIFICATIONS

DINING

BEAR TRUSSES ON REAR GAR WALL

GARAGE

ROOF FRAMING PLAN

TYPICAL AT

RAKES U.N.O.

TYPICAL AT EAVES UN.O.

L____i___

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

2X OVERFRAMING "

GIRDER TRU66

GABLE END TRUSS

ROOF PLAN TO BE VERIFIED W/ TRUSS LAYOUT AND DESIGN BY TRUSS MFR. SEE LAYOUT, TRUSS DRAWINGS AND ENGINEERING, BY MFR, FOR ADDITIONAL SPECIFICATIONS AND INSTALLATION

COORD. W/ TRUSS

MFR. TYPICAL

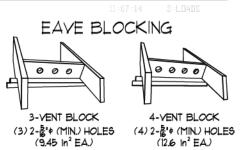
THIS ROOF HAS BEEN DESIGNED TO SUPPORT CEDAR SHAKE ROOFING MATERIALS AND COMPOSITION ROOFING OF VARIOUS TYPES. THE TABLE BELOW DESCRIBES IN DETAIL THE ASSUMPTIONS MADE IN THE DESIGN OF THE ROOF STRUCTURE OF THIS BUILDING. ROOF LIVE LOAD (SNOW) 25.0 PSF FRAMING MATERIALS: 2.0 PSF 33.25 PSF ACTUAL REQ'D SHEATHING MATERIALS: 1.5 PSF 6.15 PSF SAFETY FACTOR 1.5 PSF MISC. MATERIALS: ROOFING TYPE DRY / WET MED SHAKES 2.0 / 3.25 PSF GYPSUM MATERIALS: ADD 2.0 PSF FOR VAULTED AREAS (COVERED IN SAFETY HVY SHAKES 3.0 / 4.0 PSF SHINGLES 2.0 / 3.25 PSF COMPOSITION 2.5 / 3.0 PSF NOTE: HIPS, VALLEYS & RIDGES SHALL NOT BE LESS IN DEPTH THAN THE END CUT OF THE RAFTERS (FIELD VERIFY ALL CONDITIONS) COMP/SHAKE ROOF LEGEND MAXIMUM SPANS PER 2004 W.W.P.A. TBL. RR-28 4 × 4 ₩OOD POST FROM RIDGE *2 D.F. L/24Ø (HIP OR VALLEY) TO WALL BELOW 25* LL & 15* DL (MIN. (2) 2×4 REQ'D AT WALL BEARING POINT) NOTE: SPLICES IN SIZE SPACING SPAN HIPS & VALLEYS CAN ONLY OCCUR @ POST DOWN LOCATIONS 16" O.C. | 12'-1" 24" O.C. | 9'-10" 49 SQ. IN. ROOF VENTS (SEE VENT TABLE FOR QTY. - 50%/50% SHOWN) 17'-8" 2X4 PURLIN WALL TO BM. OR WALL 16' O.C. 15'-4" 24" O.C. 12'-6" BELOW. (FRAM'G AT 24" O.C.) 12" O.C. 21'-7" SHADED AREA DENOTES ROOF 16" O.C. 18'-9" 24" O.C. 15'-3" FRAMED OVER RAFTERS BELOW |2' O.C. | 25'-|' | |6' O.C. | 21'-8' | | 24' O.C. | |17'-9' | ■ O_Ď. DOMNSBOUTS ROOF AREA (ft²) = 2348 EAVE-BLOCK'G ROOF VENTS % EAVE AREA (in²) % ROOF AREA (in²) 3-VENT 4-VENT 49 in² 450.8 12 54 9 60 6762 40

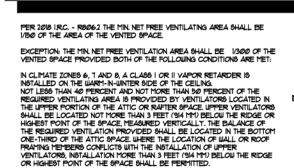
53.3 600.1 46.1 526.3 64 48 11

563.5 60 45

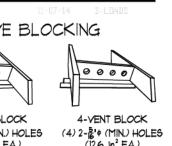
PER 2018 I.R.C R804 1/150 OF THE AREA OF		NTILATING AREA SHALL BE
		REA SHALL BE 1/300 OF TH OWING CONDITIONS ARE MET:
NSTALLED ON THE WAY NOT LESS THAN 40 PT REGUIRED VENTILLATIN THE UPPER PORTION SHALL BE LOCATED IN HIGHEST POINT OF THE ATTENDED OF THE ATTENDED OF THE ATTENDED OF THE ATTENDED ON THE ATTEND	G AREA 16 PROVIDED B OF THE ATTIC OR RAFTER IOT MORE THAN 3 FEET (E SPACE, MEASURED VER ATION PROVIDED SHALL TIC SPACE, WHERE THE I ONFLICTS WITH THE INSTAL	HE CELLING. IHAN 50 PERCENT OF THE DY VENTILATORS LOCATED IN R 94 PACE UPPER VENTILATORS 94 PAT) BELOU THE RIDGE OF RICALLY, THE BALANCE OF DE LOCATED IN THE BOTTO LOCATION OF WALL OR ROOF LLATION OF UPPER 1 (94) MT) BELOW THE RIDGE

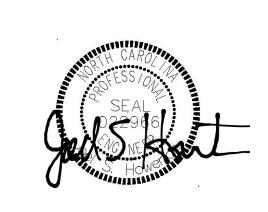
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ROOF DESIGN NOTES





08 27 2024 EDT

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GENERAL NOTES:

1. ALL WORK IS TO COMPLY WITH THE LATEST ADOPTED VERSION OF THE 2015 INTERNATIONAL RESIDENTIAL CODE (I.R.C.) AND/OR ANY APPLICABLE STATE, COUNTY OR LOCAL JURISDICTION.

2. 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. OWNER/CONTRACTOR SHALL VERIFY WITH LOCAL BLDG. DEPT. WHICH CLIMATE ZONE THE PROJECT WILL BE BUILT IN.

3. WRITTEN DIMENSIONS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS. DO NOT SCALE THE DRAWINGS.

4. DESIGN LOADS:

u5E	L.L.	DL.
UNINHAB. ATTIC W/O STORAGE	10	10
UNINHAB. ATTIC W/ LIMITED STORAGE	20	10
HABITABLE ATTICS & ATTICS SERVED BY STAIR		10
BALCONIES (EXTERIOR) 4 DECKS	40	10
GUARD RAILS & HAND RAILS	200	-
GUARD RAIL IN-FILL COMPONENTS	50	-
PASSENGER VEHICLE GARAGE (3,000* POINT)	50	VARIES
ROOMS OTHER THAN SLEEPING ROOMS	40	10
SLEEPING ROOMS	3Ø	10
STAIRS	40	10
•		TRI _1

(IF YOUR LOCAL AREA REQUIRES DIFFERENT DESIGN LOADS CONSULT WITH A LOCAL QUALIFIED PROFESSIONAL TO DETERMINE THE APPROPRIATE REVISIONS.)

5 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT

CLIMATE ZONE	1	2	3	4 Except Marine	5 And Marine 4	6	7 and 8	For SI: 1 foot = 3048 mm
FENESTRATION U-FACTOR 6	<u>R</u>	0.40	Ø.35	Ø.3 5	Ø.32	Ø.32	Ø.32	UP TO 15 ft² GLAZED
SKYLIGHT U-FACTOR b	Ø.75	0.65	0.55	0.55	0.55	0.55	0.55	FENESTRATION & (1) SIDE HINGED SOLID DR UP TO
GLAZED FENESTRATION SHGC b, e	0.25	Ø.25	Ø25	0.40	NR	×R	NR.	24 ft ² IS PERMITTED TO I EXEMPTED FROM THE U-FACTOR SHGC REQIMIT
CLG R-VALUE j	30	38	38	49	49	49	49	TABLE R402.1.1
WOOD FRAME WALL R-VALUE	13	13	20 or 13+5 h	20 or 13+5 h	20 or 13+5 h	20 or 13+5 h	20 or 13+5 h	AREA WEIGHTED AVERAGE
MASS WALL R-VALUE	3/4	4/6	8/13	8/13	13/17	15/20	19/21	OF FENESTRATION PRODUCTS SHALL BE
FLOOR R-VALUE	13	13	19	19	3Ø ^g	3Ø g	38 9	PERMITTED TO SATISFY
BASEMENT WALL R-VALUE c	0	0	5/13 ^f	10/13	15/19	15/19	15/19	THE U-FACTOR REQIMTS SUPPLY DUCTS IN ATTICS
SLAB R-VALUE AND DEPTH a	0	0	Ø	10, 2 ft	10, 2 ft	10, 4ft	10, 4ft	SHALL BE INSULATED TO MIN. OF R-8. ALL OTHER
CRAWL SPACE WALL R-VALUE ¢	0	0	5/13	10/13	15/19	15/19	15/19	DUCTS SHALL BE INSULATED TO MIN. R-6

- a. R-values are minimums. U-factors and SHGC are maximums. When insul. in installed in a cavity which is less than the label or design thickness of the insul., the installed R-value of the insul.
- shall not be less than the R-value specified in the table. b. The fenestration U-factor column excludes skylights. The SHGC column applies to all glazed fenestration. Exception: Skylights may be excluded from glazed fenestration SHGC regimts. in
- Climate Zones 1 thru 3 where the SHGC for such skylights does not exceed 0.30. "15/19" means R-15 cont. insul. on the int. or ext. of the home or R-19 cavity insul. at the int. o the bamt, wall. "15/19" shall be permitted to be met w/R-13 cavity insul, on the int, of the bamt, wall plus R-5 cont. insul. on the int. or ext. of the home. "10/13" means R-10 cont. insul. on the
- int. or ext. of the home, or R-13 cavity insul. & the int. of the bemt. wall. d. R-5 shall be added to the required slab edge R-values for heated slabs. Insulation depth shall be the depth of the ftg. or 2'-0", whichever is less in Zones I thru 3 for heated slabs.
- There are no SHGC requirements in the Marine Zone. Basement wall insul, is not req'd in warm-humid locations. (see climate map)
- Or insulation sufficient to fill the framing cavity, R-19 min. First value is cavity insul., second is cont. insul. or insulated siding, so '13+5' means R-13 cavity insul. plus R-5 cont. insul. or insulated siding. If struct, sheathing covers 40% of less of the ext., cont. insul R-value shall be permitted to be reduced by no more than R-3 in locations where struct, sheathing is used - to maintain a consistent total sheathing thickness,
- The second R-value applies when more than half the insul. is on the interior of the mass wall. Under prescriptive building thermal envelope, R-30 shall be deemed to satisfy the regimt for R-38 wherever the full height of uncompressed R-30 insul. extends over the wall top plate at the eaves. Similarly, R-38 satisfies the regimt for R-49. In limited areas (500 sq. ft. or 20% of total insul. clg area, whichever is less) roof/clg assembly thermal envelope reqimt. may be reduced to R-30.

AIR BARRIER: CONT. AIR BARRIER SHALL BE INSTALLED IN THE BDLG. ENVELOPE. BREAKS/JOINTS IN THE AIR BARRIER SHALL BE SEALED. AIR PERMEABLE INSUL. SHALL NOT BE USED AS A SEALING MATERIAL. INSUL. SHALL BE INSTALLED PER MANUE GUIDELINES.

INFILTRATION: THE SEALING METHODS BETWEEN DISSIMILAR MATERIALS SHALL ALLOW FOR DIFFERENTIAL EXPANSION AND CONTRACTION. THE FOLLOWING SHALL BE CAULKED, GASKETED, WEATHERSTRIPPED OR OTHERWISE SEALED WITH AN AIR BARRIER MATERIAL, SUITABLE FILM OR SOLID MATERIAL

Marine (C)

ZONE 1 INCLUDES HAWAII, GUAM, PUERTO RICO, AND THE VIRGIN ISLANDS

ALL OF ALASKA IN ZONE T EXCEPT FOR THE FOLLOWING

NORTHWEST ARCTIC SOUTHEAST FAIRBANKS

WADE HAMPTON YUKON-KOYUKUK

CLIMATE ZONE MAP

BOROUGHS IN ZONE 8:

FAIRBANKS N. STAR

NORTH SLOPE

TESTING: DWELLING SHALL BE TESTED TO VERIFY LEAKAGE RATE DOES NOT EXCEED 5 AIR CHANGES PER HOUR IN ZONES 1 & 2, AND 3 AIR CHANGES PER HOUR IN ZONES 3-8 BY BLOWER DR. TEST AT A PRESSURE OF Ø2 IN WG. (50 PASCALS). WHERE REQ'D BY BUILDING OFFICIAL, TESTING SHALL BE CONDUCTED BY AN APPROVED THIRD PARTY. SEE NII02.4.12 (R402.4.12), FOR TESTING PROCEDURES AND DOCUMENTATION REQIMTS.

SPACE BETWEEN WINDOWS/DOOR JAMBS & FRAMING AND SKYLIGHTS & FRAMING. DUCTS, SHAFTS, UTILITY PENETRATIONS & FLUE SHAFTS OPENING TO EXT. OR UNCONDITIONED SPACE. JUNCTIONS OF FOUNDATION & SILL PLATE & JUNCTION OF THE TOP PLATE & TOP OF EXT. WALLS. HVAC REGISTER BOOTS THAT PENETRATE BLDG. THERMAL ENVELOPE (SEAL TO SUBFLOOR/DRYWALL). RECESSED LIGHT FIXTURES INSTALLED IN THE BLDG. THERMAL ENVELOPE SHALL BE AIR TIGHT, IC-RATED (SEALED TO THE DRYWALL). BETWEEN GARAGE AND CONDITIONED SPACES.

AIR BARRIER TO BE INSTALLED ON FIREPLACE WALLS - FIREPLACE TO HAVE GASKETED DOORS. OPENINGS AT PENETRATIONS OF UTILITY SERVICES THROUGH THE ROOF, WALLS, AND FLOORS BUILDING ASSEMBLIES USED AS DUCTS OR PLENUMS JOINTS, SEAMS, AND PENETRATIONS OF VAPOR RETARDERS

ALL OTHER OPENINGS IN THE BUILDING ENVELOPE

CAVITIES IN WALL CORNERS 4 HDRS. TO BE FULLY INSULATED TO R3/in 4 SHALL BE SEALED. FLOORS, INCLUDING ABOYE GARAGE AND CANTILEVERED FLOORS - INSUL. SHALL BE INSTALLED TO MAINTAIN PERMANENT CONTACT W/ UNDERSIDE OF SUBFLOOR DECKING. (EXCEPTIONS PER NII022.8) THE AIR BARRIER SHALL BE INSTALLED AT ANY EXPOSED EDGE OF INSUL. RIM JOIST SHALL BE INSULATED 4 INCLUDE AIR BARRIER. KNEE WALLS SHALL

CEILING/ATTIC - AIR BARRIER ® DROPPED CEILING/SOFFIT SHALL BE ALIGNED W/ THE INSUL. AND ANY GAPS IN AIR BARRIER SEALED. ACCESS OPENINGS, DROP-DOWN STAIR, ETC. INTO UNCONDITIONED ATTIC SPACE SHALL

ALLOW FOR REQ'D ATTIC VENTILATION. WHERE PROVIDED @ CRAWLSPACE, IN LIEU OF FLOOR INSUL., INSUL. SHALL BE PERMANENTLY ATTACHED TO THE CRAWLSPACE WALLS. EXPOSED EARTH IN UNVENTED EARTH SHALL BE COVERED WITH A CLASS-I VAPOR

BE SEALED, BATT INSUL. INSTALLED IN ATTIC ROOF ASSEMBLIES MAY BE COMPRESSED . EXT. WALL LINES TO

RETARDER W/ OVERLAPPING JOINTS TAPED. BATT INSUL. SHALL BE OUT NEATLY TO FIT AROUND WIRING & PLUMBING IN EXT. WALLS WITHOUT VOIDS/GAPS, AIR BARRIER SHALL EXTEND BEHIND ELECTRICAL/COMMUNICATION BOXES OR INSTALL AIR SEALED BOXES.

WALL FROM THE SHOWER/TUB. AT LEAST ONE THERMOSTAT SHALL BE PROVIDED FOR EA. SEPARATE HEATING AND COOLING SYSTEM. WITH FORCED AIR HEATING, AT LEAST ONE THERMOSTAT SHALL BE DAILY PROGRAMMABLE

EXT. WALLS ADJACENT TO TUBS/SHOWERS TO BE INSULATED AND AIR BARRIER SHALL SEPARATE THE INSULATED

DUCTS, AIR HANDLERS & FILTER BOXES SHALL BE SEALED (NII03.3.2.) JOINTS & SEAMS SHALL COMPLY W/ IMC OR MIGØI.Á.I EXCEPTIONS ALLOWED FOR AIR- IMPERMEABLE SPRAY FOAM PRODUCTS (EXCEPTION 1) OR DUCTS MEETING SPECIFIC PRESSURE & JOINT REQIMTS (EXCEPTION 2), DUCTS SHALL BE PRESSURE TESTED PER NII03.3.3 (MANDATORY) BY EITHER ROUGH-IN TEST OR POST CONSTRUCTION TEST AS DESCRIBED IN CODE, UNLESS DUCTS 4 AIR HANDLERS ARE LOCATED ENTIRELY WITHIN THERMAL BLDG. ENVELOPE. A WRITTEN TEST REPORT, SIGNED BY THE TESTER, SHALL BE PROVIDED TO THE BUILDING OFFICIAL. TOTAL DUCT LEAKAGE SHALL MEET

6. ALL EXPOSED INSUL, TO HAVE A FLAME SPREAD RATING NOT TO EXCEED 25. SMOKE-DEVELOPED INDEX NOT TO EXCEED 450, WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 123, AND WHERE INSTALLED ON ATTIC FLOOR6, ALL HAVE A CRITICAL RADIANT FLUX NOT LEGG THAN Ø.12 WATTG PER cm² PER AGTM E 79Ø.

(PRESCRIPTIVE) REQIMTS OF NII03.3.4.1 ROUGH-IN TEST, OR NII03.3.4.2 POST CONSTRUCTION TEST.

INSULATE ALL ACCESS DOOR/HATCHES TO CRAWLSPACES AND ATTICS TO THE EQUIY, RATING OF THE WALL. FLOOR, OR CEILING THROUGH WHICH THEY PENETRATE, EXCEPTION: VERTICAL ACCESS DOORS TO UNCONDITIONED SPACE SHALL BE PERMITTED TO MEET THE WALL R-VALUE A MIN. OF 15% OF THE LAMPS IN PERMANENTLY INSTALLED LIGHTING FIXTURES SHALL BE HIGH EFFICACY LAMPS.

8. ALL WINDOWS WITHIN 24' OF ANY DOOR (REGARDLESS OF WALL PLANE), AND WHOSE BOTTOM EDGE IS LESS THAN 60' ABOVE FLOOR OR WALKING SURFACE SHALL HAVE TEMPERED GLAZING.

9. SKYLIGHTS ARE ASSUMED TO BE PRE-MFR UNIT SKYLIGHTS. UNIT SKYLIGHTS SHALL COMPLY WITH THE REQUIREMENTS OF AAMA/WDMA/CSA 101/1.52/A440.

10. A PERMANENT CERTIFICATE SHALL BE COMPLETED AND POSTED ON OR IN THE ELEC. DIST. PANEL LISTING THE PREDOMINANT R-VALUES OF INSUL. INSTALLED IN OR ON CLG/ROOF, WALLS, FDTN. (SLAB, BSMT WALL, CRAWLSPACE WALL AND / OR FLOOR) AND DUCTS OUTSIDE COND. SPACES. - FENESTRATION U-FACTORS/SHGC AND RESULTS FROM ANY REQ'D. ENVELOPE AIR LEAKAGE TESTING, ALONG WITH TYPES AND EFFICIENCIES OF HEATING, COOLING AND SERVICE WATER HEATING EQUIP. PER NII01.16 (R4013)

II. ALL EXTERIOR WINDOWS ARE TO BE DOUBLE GLAZED AND ALL EXTERIOR DOORS ARE TO BE SOLID CORE WITH WEATHERSTRIPPING. PROVIDE 1/2" IN. DEAD BOLT LOCKS ON ALL EXTERIOR DOORS, AND LOCKING DEVICES ON ALL DOORS AND WINDOWS WITHIN 10 FT. (VERTICAL) OF GRADE. PROVIDE PEEPHOLE 54' - 66' ABOVE FIN. FLOOR ON EXTERIOR ENTRY DOORS. OPERABLE WINDOWS LOCATED MORE THAN 12' ABOVE FINISHED GRADE OR SURFACE SHALL HAVE LOWEST PART OF CLEAR OPENING A MIN OF 24' ABOVE FIN FIRE GLAZING BETWEEN FIN FLR AND 24' SHALL BE FIXED OR HAVE OPENINGS THROUGH WHICH A 4' DIA, SPHERE CANNOT PASS OR CODE APPROVED WINDOW GUARD. (COMPLIANT W/ ASTM F2090).

12. GLAZING IN DOORS AND ENCLOSURES FOR HOT TUBS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHTUBS & CHOWERS, AND IN ANY PART OF A BUILDING WALL ENCLOSING THESE COMPARTMENTS, WHERE BOTTOM EDGE OF GLAZING 18 LESS THAN 60" MEASURED VERTICALLY ABOVE ANY STANDING OR WALKING SURFACE, TO BE

13. BASEMENTS, EVERY SLEEPING ROOM AND HABITABLE ATTICS TO HAVE MIN. WINDOW OPENING OF 5.7 SQ. FT. WITH A MIN. WIDTH OF 20' AND A SILL HGT. NOT MORE THAN 44' ABOVE FIN. FLOOR.

14. SMOKE DETECTORS SHALL BE INSTALLED IN EA. SLEEPING ROOM, OUTSIDE THE IMMEDIATE VICINITY OF EA. SLEEPING AREA AND ON EA. STORY OF THE DIJELLING. CARBON MONOXIDE ALARMS SHALL BE LOCATED IN EA. BEDROOM OR W/IN 15 FEET OUTSIDE OF EA. BEDROOM DR. BEDROOMS ON SEPARATE FLR LEVELS IN A STRUCTURE OF TWO OR MORE STORIES SHALL HAVE SEPARATE CARBON MONOXIDE ALARMS SERVING EA. STORY. ALL SMOKE DETECTORS AND/OR COMBINATION SMOKE/CARBON MONOXIDE ALARMS SHALL BE INTERCONNECTED SUCH THAT THE ACTUATION OF ONE ALARM WILL ACTUATE ALL THE ALARMS AND WILL BE AUDIBLE IN ALL SLEEPING AREAS OVER BACKGROUND NOISE LEVELS WITH ALL INTERVENING DOORS CLOSED. SINGLE STATION CARBON MONOXIDE ALARMS THAT ARE HARD WIRED SHALL BE EQUIPPED W/ BATTERY

15. ELECTRICAL RECEPTACLES IN BATHROOMS, KITCHENS, EXTERIOR LOCATIONS AND GARAGES SHALL BE G.F.I. OR G.F.I.C. PER NATIONAL ELECTRICAL CODE (N.E.C.) REQUIREMENTS.

16. INTERIOR & EXTERIOR STAIRS SHALL HAVE A MEANS TO ILLUMINATE THE STAIRS, INCLUDING LANDINGS & TREADS. INTERIOR STAIRS OF 6 STEPS OR MORE SHALL HAVE THE REQUIRED LIGHTING IN THE IMMEDIATE VICINITY OF THE TOP 4 BOTTOM OF THE STAIRS, EXTERIOR STAIRWAYS SHALL BE PROVIDED WITH AN ARTIFICIAL LIGHT SOURCE LOCATED IN THE IMMEDIATE VICINITY OF THE TOP LANDING OF STAIR EXTERIOR STAIRS LEADING FROM GRADE TO BASEMENT SHALL HAVE AN ARTIFICIAL LIGHT SOURCE IN THE IMMEDIATE

IT. PROVIDE COMBUSTION AIR VENTS (W/ SCREEN AND BACK DAMPER) FOR FIREPLACES, WOOD STOVES, AND ANY APPLIANCES WITH AN OPEN FLAME. FIREPLACE FLUE DAMPERS SHALL BE TIGHTLY FITTING AND OPERATED BY A READILY ACCESSIBLE MANUAL OR APPROVED AUTOMATIC CONTROL.

18. LOCAL EXHAUST: BATHROOMS-TOILET ROOMS, UTILITY ROOMS & INDOOR SWIMMING POOLS & SPAS ARE TO BE VENTED WITH A FAN CAPABLE OF PRODUCING A MIN. 50 CFM INTERMITTENT OR 20 CFM CONT. AND KITCHENS CAPABLE OF 100 CFM INTERMITTENT OR 25 CFM CONT., DUCT LENGTH, DIA, 4 TYPE TO BE DETERMINED PER TABLE MI5062 ALL EXHAUST VENTS TO BE VENTED TO EXTERIOR. WHERE IT EXCEEDS 35, THE EQUIVALENT LENGTH OF THE DRYER EXHAUST DUCT SHALL BE IDENTIFIED ON A PERMANENT LABEL OR TAG LOCATED WITHIN 6 FEET OF THE EXHAUST DUCT CONNECTION.

19. WHOLE HOUSE MECHANICAL VENTILATION: SYSTEM SHALL CONSIST OF ONE OR MORE SUPPLY OR EXHAUST FANS, OR A COMBINATION OF SUCH, AND ASSOCIATED DUCTS AND CONTROLS. LOCAL EXHAUST OR SUPPLY FANS ARE PERMITTED TO SERVE AS SUCH A SYSTEM. OUTDOOR AIR DUCTS CONNECTED TO THE RETURN SIDE OF A AIR HANDLER SHALL BE CONSIDERED TO PROVIDE SUPPLY VENTILATION. SYSTEM SHALL BE PROVIDED WITH MANUAL OVERRIDE CONTROLS. (MECH.-HYAC CONTRACTOR TO SIZE VENTILATION SYSTEM IN ACCORDANCE WITH

SECTION MISOTS, REGARDING AREA SERVED AND SYSTEM TYPE.

20. SPECIFIC MANUFACTURES AND MATERIALS DEPICTED ON THESE PLANS ARE AN INDICATION OF QUALITY AND STRENGTH. YERIFY ALL CONSTRUCTION MATERIAL SUBSTITUTIONS WITH CURRENT APPLICABLE BUILDING CODES AND LOCAL BUILDING OFFICIALS PRIOR TO INSTALLATION / SUBSTITUTION.

21. THIS DESIGN, UNLESS PURCHASED WITH ITS SPECIFIC ENGINEERED ANALYSIS, HAS NOT BEEN REVIEWED FOR

FOUNDATION NOTES:

I. 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. 2. CONTINUOUS FOOTINGS ARE DESIGNED PER 2015 IRC TABLE R403.(1) - SOIL BEARING VALUE OF 1500 PSF, 30° SNOW LOAD, LIGHT FRAME CONSTRUCTION BASED ON 32' WIDE HOUSE WITH CENTER BEARING WALL. 3. MAX. SLOPE OF CUTS AND FILLS TO BE TWO (2) HORIZ. TO ONE (1) VERT. FOR BLDG, STRUCTURES, AND FDTNS. 4. ANY FILL UNDER GRADE SUPPORTED SLABS TO BE A MIN. OF 4" IN. GRANULAR MAT. COMPACTED TO 95%. 5. CONCRETE: - MIX AND 28 DAY STRENGTH OF CONCRETE.

- BASEMENT WALLS & FOUNDATIONS EXPOSED TO WEATHER:	NOT 2,500 PSI	MORTAR & GROUT TO BE MIXED PER
- BASEMENT & INTERIOR SLABS ON GRADE:		MFR REQIMTS
- BASEMENT WALLS & FOUNDATIONS EXPOSED TO THE WEATHER:, AND GARAGE SLABS	3,000 PSI	
- PORCHES, STEPS, & CARPORT SLABS EXPOSED TO WEATHER:	3,5 <i>00</i> PSI	

. GARAGE FLOORS TO SLOPE 1/8"/FT MIN. TOWARDS OPENING AS REQUIRED FOR DRAINAGE. CONCRETE BLABS TO HAVE CONTROL JOINTS AT 25' FT. (MAX.) INTERVALS EA. WAY. SLABS ARE TO BE 5-7% AIR

1. CONCRETE SIDEWALKS TO HAVE 3/4" IN. TOOLED JOINTS AT 5" FT. (MIN.) O.C.

9. EXCAYATE SITE TO PROVIDE A MIN. OF 18' CLEARANCE UNDER ALL GIRDERS.

- 8. REINFORCING STEEL TO BE A-615 GRADE 60. WELDED OPTIONAL WIRE MESH TO BE A-185.
- 10. COVER ENTIRE CRAWL SPACE WITH CLASS I VAPOR RETARDER (e.g. 6 MIL POLYETHYLENE FILM). \$ INSTALL A RADON VENT BETWEEN GROUND COVER AND SOIL (PER IRC APPENDIX F,- SEE SHEET R), AS REQ'D WHERE VENT AREA 16 LEGG THAN 1/150 OF CRAWLGPACE AREA OR OPERABLE LOUVERS ARE

PROVIDE A MIN. OF I SQ. FT. OF VENTILATION AREA FOR EACH 1500 SQ. FT. OF CRAWL SPACE AREA. LOCATE VENTS TO PROVIDE CROSS VENTILATION OF THE SPACE. IF CLASS I VAPOR RETARDER <u>NOT</u> USED, PROVIDE I SQ. FT. OF VENTILATION AREA FOR EA. 150 SQ. FT. OF CRAIJL SPACE AREA, AND VENTS TO BE EVENLY SPACED TO PROVIDE CROSS VENTILATION, EXCEPT ONE SIDE OF BUILDING MAY HAVE NO VENT OPENING. VENTS ARE TO BE COVERED WITH 1/8" IN MESH CORROSION RESISTANT SCREEN, OR APPROVED ALTERNATE PER R4082

12. ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED OR PROTECTED WITH 55° ROLL

3. BEAM POCKETS IN CONCRETE TO HAVE 1/2" IN. AIRSPACE AT SIDES AND ENDS WITH A MIN. BEARING OF

14. WATERPROOF BASEMENT WALLS BEFORE BACKFILLING. PROVIDING A 4" IN. DIA. PERFORATED DRAIN TILE BELOW THE TOP OF THE FOOTING (SEE BUILDING SECTIONS).

15. PROVIDE MIN. 18" X 24" CRAWLSPACE ACCESS THROUGH FLOOR OR MIN. 16" X 24" CRAWLSPACE

FRAMING NOTES:

INSTALLED AT CRAWLSPACE VENTS.

. ALL EXTERIOR WALL OPENINGS & BEARING WALL OPENINGS TO HAVE 4 imes 10 HEADERS UNLESS OTHERWISE INDICATED. IF BUILDING BUILT WITH 88% IN. STUDS USE 4 imes 8 HEADERS UNLESS OTHERWISE NOTED ON THE PLAN.

2. ALL EXTERIOR WALLS TO BE BUILT OF 2 X 6 STUDS # 16' O.C. TYPICALLY UNLESS NOTED OTHERWISE. ALL INTERIOR WALLS ARE TO BE BUILT OF 2 × 4 STUDS # 16" O.C. TYPICALLY INLESS NOTED OTHERWISE. ALL INTERIOR WALLS SUPPORTING TWO OR MORE FLOORS AND I OR MORE ROOF/CEILING ASSEMBLIES SHALL BE 2 imes 6 STUDS @ 16 $^{\circ}$ O.C. FOUNDATION CRIPPLE WALLS SHALL BE FRAMED OF STUDS NOT LESS IN SIZE THAN THE STUDDING ABOVE. WHEN EXCEEDING 4'-0" IN HEIGHT, SUCH WALLS SHALL BE FRAMED OF STUDS HAVING THE SIZE REQUIRED FOR AN ADDITIONAL STORY UNLESS SPECIFIED OTHERWISE

3. ALL METAL CONNECTORS TO BE "SIMPSON" OR EQUIVALENT. UN.O. JOISTS HUNG ON FLUSH BEAMS TO BE ATTACHED WITH U210 OR EQUIVALENT. MULTIPLE JOISTS USE U210-2/U210-3 AS REQUIRED. USE OF 10d X 1-1/2" NAILS ARE ALLOWED WITH THESE TYPE OF HANGERS UNLESS NOTED ON THE PLANS. SEE NAIL CONVERSION CHART FROM CONNECTOR MANUFACTURES. CATALOG FOR OTHER NOTES AND RESTRICTIONS THAT MAY APPLY. "USP" CONNECTORS CONSIDERED APPROVED EQUAL

4. PROVIDE DOUBLE JOISTS UNDER ALL WALLS ABOVE, RUNNING PARALLEL TO JOISTS AND SOLID BLOCKING BELOW ALL BEARING WALLS RUNNING PERPENDICULAR TO FLOOR JOISTS. . PROVIDE POSITIVE VENTILATION AT EACH END OF EACH RAFTER SPACE AT VAULTED CLG

AREAS, AND INSULATION BAFFLES AT EAVE VENTS BETWEEN RAFTERS. RAFTER VENTILATION IS ALSO REQUIRED AT BLOCKING LOCATIONS ABOVE THE PLATE. 6. PROVIDE FIRE BLOCKING PER 2015 I.R.C. R302.11 & DRAFT STOPS PER 2015 I.R.C. R302.12

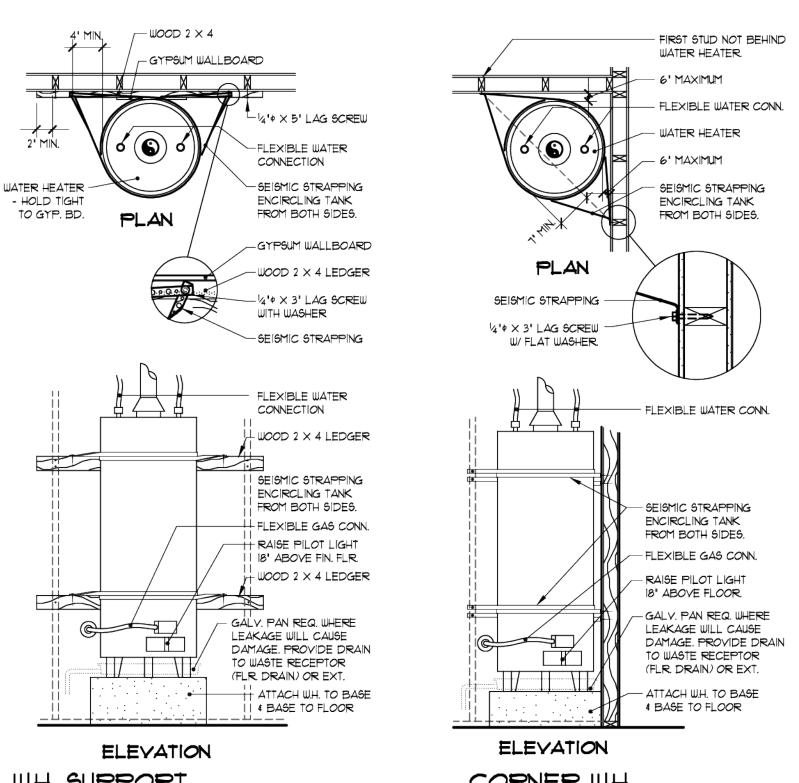
1. HIPS, VALLEY'S AND RIDGES SHALL NOT BE LESS IN DEPTH THAN THE END CUT OF THE

8 UNLESS NOTED OTHERWISE CONNECT POST TO BEAM WITH "SIMPSON" BC SERIES CAP/BASE (OR APPROVED EQUAL) CONNECTORS, AT EXTERIOR APPLICATIONS USE "SIMPSON" EPB SERIES BASES UNO. AND AT INTERIOR GARAGE POSTS AT FINISH FLOOR, (POST NOT EMBEDDED) USE 'SIMPSON' CB SERIES BASES. 'USP' CONNECTORS CONSIDERED APPROVED EQUAL

A. POSTS, BEAMS, HEADERS JO	DISTS AND RAFTERS	NO. 2 DOUGLAS FIR
B. SILLS, PLATES, BLOCKING B	RIDGING ETC.	NO. 3 DOUGLAS FIR
C. STUDS		STUD GRADE DF.
D. STUDS OVER 10' HIGH		NO. 2 OR BETTER D/F
. POST & BEAM DECKING		UTILITY GRADE DF.
PLYWOOD SHEATHING		1/2" CDX PLY, 32/16
3. GLU-LAM BEAMS (EXT. ADH	€ EXT. CONDITIONS)	Fb-2400, DRY ADH.
H. PSL MATERIALS ** LVL. MATERIALS **	Fb = 2900 E = 20 Fb = 2900 E= 20 Fb = 2600 E= 1.9	Fv = 285 Fv = 285
LSL MATERIALS ***	Fb = 2335 E= 1.55	Fv = 525

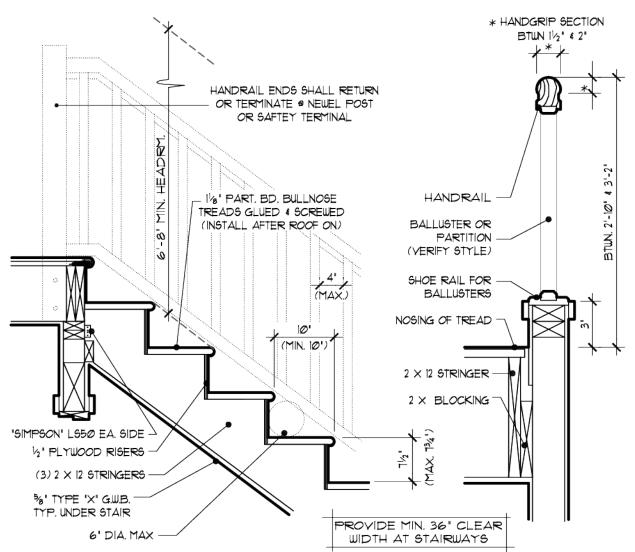
	BLK'G BETWEEN CEIL JSTS OR RETRS TO TOP 12	4-8d BOX (21/2 'x@.113")	TCE NAIL
	CLG JST TO TOP PE	4-8d BOX (21/2 'x@.113')	FACE NAIL
PO 07	CLG JST LAPPED AT PARTITION	4-10d BOX (3'x0.128')	TOE NAIL
ďΖ	CEIL JSTS TO RAFTER	PER TABLE 802.5.1.(9)	FACE NAIL EA. RETR
	COLLAR TIE TO RAFTER	4-10d BOX (3'x0.128')	TOE NAIL
	RAFTER/TRUSS TO #2	3-16d BOX (3½'xØ.135')	END NAIL
	RAFTER TO RIDGE/HIP/VALLEY (MIN. 2")	3-16d BOX (31/2 'x0.135')	12" O.C. FACE
	STUD TO STUD & INTSECTING WALL CORNERS	16d BOX (31/2 'x0.135')	16" O.C. EA. EDGE
	BUILT-UP HDR 2X MEMBERS	16d COM (3½'xØ.162')	TOE NAIL
	CONT. HDR TO STUD	5-8d BOX (2½'xØ. 3')	12" O.C. FACE
	TOP PE TO TOP PE	2-16d COM (31/2 'xØ.162')	FACE EA. SIDE
	DBL. TOP E SPLICE	12-16d COM (3½ 'x@.162')	16" O.C. FACE
T MM	SOLE IE TO JST, RIM OR BLK'G	16d COM (3½'x0.162')	END NAIL
∄	TOP OR BOTTOM #2 TO STUD	3-16d BOX(3½'x0.135')	FACE NAIL
	TOP 12 LAPS & CORNER/INTERSECTION	2-16d COM (31/2 'xØ.162')	
			TOE NAIL
	JOIST TO SILL, TOP IE OR GIRDER	4-8d BOX (21/2 'x@.113 ')	4' O.C. TOE NAIL
	RIM JST OR BLKG TO SILL OR TOP E	8d BOX (2½ 'xØ.113')	€ EA BEAR'G
咒	2' SUBFLR TO JST/GIRDER	3-16d BOX (21/2 'xØ.135')	# EA BEAR'G
OTER	2' PLANKS (P & B FLR AND ROOF)	3-16d BOX (2½ 'xØ.135')	END NAIL
0	RIM J5T, TO J5T,	3-16d COM (3½'xØ.162')	24" O.C. FACE TOP 4
8	BUILT-UP GIRDERS/BEAMS (2' LAYERS)	10d BOX (3"x0.128")	BTM & STAGGERED
	Built-up GIRDERS/BEALIS (2 LATERS/	IDG BOX (5 AD.IEG)	6" EDGE/I2" FIELD
卍	%'-½' WOOD STRUCTURAL PANELS	8d COM (2½ 'xØ.131')	6" EDGE/12" FIELD
	뭣"-1" WOOD STRUCTURAL PANELS	8d COM (2½ 'xØ.131')	6" EDGE/12" FIELD
	11/21-11/41 WOOD STRUCTURAL PANELS	10d COM (3'x0.148')	7' EDGE/7' FIELD
	½' GYP9UM WALL/CLG. BD. (UN.O.)	14' TYPE '6'/'W' SCREW	7' EDGE/1' FIELD
	%'GYPSUM WALL/CLG. BD. (UN.O.)	15g' TYPE 'S'/'W' SCREW	TBL-5

	SPAN TABLES BASED ON 2015 I.R.C. TABLE R502.3.(1), R502.3.(2), R802.4(1), AND R802.4(2)									
JOISTS		FLOOR (40° LL/10° DL) (L/360)	FLOOR (30* LL/10* DL) (L/360)		ISTS	CEILING (20* LL/10* DL) (L/240)	CEILING (10° LL/5° DL) (L/240)			
DF. #2	SPAC'G O.C.	MAX. SPAN	MAX. SPAN	D.F. #2	SPAC'G O.C.	MAX. SPAN	MAX. SPAN			
2 × 6	12' 16' 24'	10'-9 ' 9'-9 ' 8'-3 '	'- 0' 0'-9 ' 9'-3 '	2 × 4	12' 16' 24'	9'-10' 8'-11' 7'-3'	12'-5" 11'-3" 9'-10"			
2 × 8	12' 16' 24'	14'-2' 2'-9' Ø'-5'	5'-7" 4'-2" 1'-8"	2 × 6	12' 16' 24'	15'-0' 13'-0'' 10'-8'	19'-6' 17'-8' 15'-0'			
2 × 10	12' 16' 24'	8'- 0' 5'-7' 2'-9'	19'-10 ' 17'-5' 14'-3'	2 × 8	12' 16' 24'	19-1" 16'-6" 13'-6"	25-8' 23'-4' 9'-1'			
2 × 12	12' 16' 24'	20'- ' 8'- ' 4'-9 '	23'-4 ' 20'-3 ' 16'-6 '	2 × 1Ø	12' 16' 24'	23'-3 20'-2 ' 16'-5 '	26'-0' 26'-0' 23'-3'			



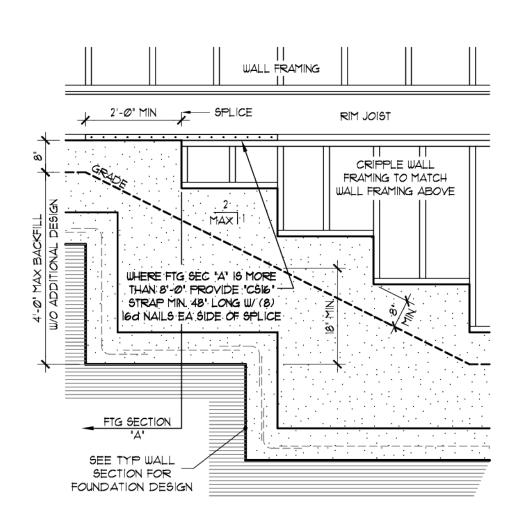
W.H. SUPPORT SCALE: 1/2' = 1'-0'

CORNER W.H. WHWALL SCALE: 1/2' = 1'-0'

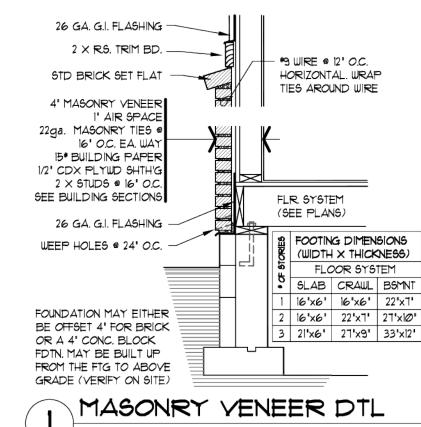


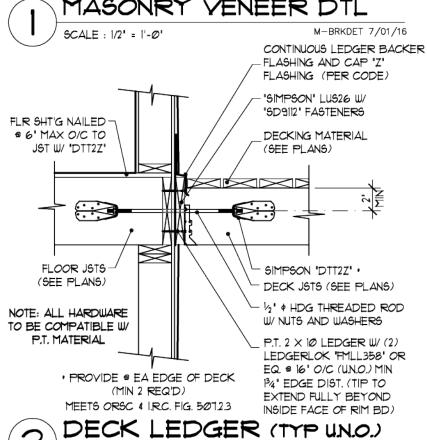
STAIR DETAIL

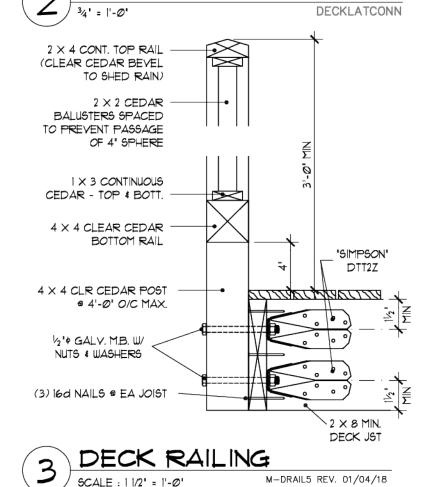
M-STAIR1 07/15/08 SCALE : 3/4" = 1'-0"



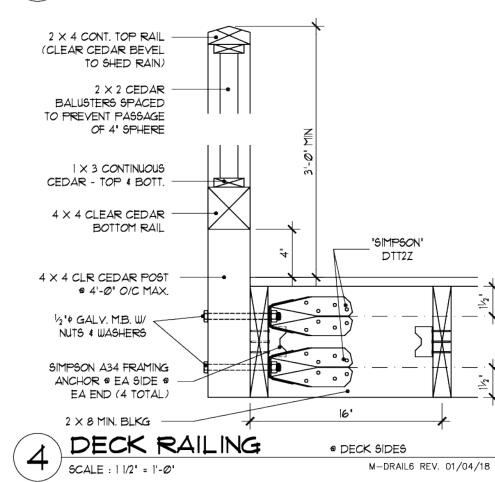
STEP FOOTING DETAIL 1/2" = 1'-0"

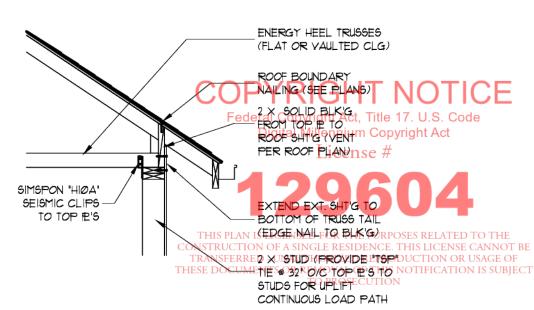






WHCORN





TRUSS CONNECTION

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25# SNOW LOAI

ROJECT MANAGER:SI

DRAWN 07/28/20 LA

RADON MITIGATION

THE FOLLOWING CONSTRUCTION TECHNIQUES AND MEASURES ARE INTENDED TO MITIGATE RADON ENTRY IN NEW CONSTRUCTION. THESE TECHNIQUES MAY BE REQUIRED ON A JURISDICTION BY JURISDICTION BASIS. FOR EXAMPLE, IN THE STATE OF OREGON, PER 2014 O.R.S.C., THE COUNTIES OF MULTNOMAH, WASHINGTON, CLACKAMAS, POLK, YAMHILL, HOOD RIVER AND BAKER REQUIRE RADON MITIGATION, AS DO THE COUNTIES OF CLARK, FERRY, OKANOGAN, PEND OREILLE, SKAMANIA, SPOKANE AND STEVENS, IN THE STATE OF WASHINGTON, PER 2015 I.R.C./WAC 51-51-60101 (AFI01 & AFI03).

FOLLOWING: THE U.S. E.P.A. "MODEL STANDARDS AND TECHNIQUES FOR CONTROL OF RADON IN NEW RESIDENTIAL BUILDINGS", THESE SPECIFICATIONS MEET MOST NATIONAL CODES. THE BUILDER AND HOME OWNER SHOULD CHECK FOR ANY LOCAL VARIANTS TO THESE GUIDELINES.

BUILDING TIGHTNESS MEASURES THE FOLLOWING ARE POINTS OF ENTRY TO PROTECT FROM PASSAGE OF

RADON GAS INTO LIVING SPACE - PROVIDE POLYURETHANE CAULK OR EQUIVALENT SEALANT AT THE FOLLOWING CRITICAL POINTS:

SLAB ON-GRADE AND BASEMENT WALLS

- CRACKS IN CONCRETE SLABS
- COLD JOINT BETWEEN TWO CONCRETE POURS PORES AND JOINTS IN CONCRETE BLOCKS
- FLOOR-TO-WALL CRACK OR FRENCH DRAIN EXPOSED SOIL, AS IN A SUMP
- WEEPING (DRAIN) TILE, IF DRAINED TO OPEN SUMP MORTAR JOINTS
- LOOSE FITTING PIPE PENETRATIONS OPEN TOPS OF BLOCK WALLS
- WATER (FROM SOME WELLS) UNTRAPPED FLOOR DRAIN TO A DRY WELL OR SEPTIC SYSTEM.

CRAWL SPACE

- CRACKS IN SUBFLOORING AND FLOORING SPACES BEHIND STUD WALLS AND BRICK VENEER WALLS THAT REST
- ON UNCAPPED HOLLOW-BLOCK FOUNDATION ELECTRICAL PENETRATIONS
- LOOSE-FITTING PIPE PENETRATIONS
- OPEN TOPS OF BLOCK WALLS WATER FROM SOME WELLS
- HEATING DUCT REGISTER PENETRATIONS
- COLD-AIR RETURN DUCTS IN CRAWL SPACE

CONDENSATE DRAINS SHALL BE RUN TO THE EXTERIOR USING NON PERFORATED PIPE OR SHALL BE PROVIDED WITH AN APPROVED TRAP.

SUMP PITS THAT SERVE AS END POINT FOR A SUB-SLAB OR EXTERIOR DRAIN TILE LOOP SYSTEM, AND SUMP PITS WHICH ARE NOT SEALED FROM THE SOIL, SHALL BE FITTED WITH A GASKETED OR SEALED LID. WHERE THE SUMP IS USED AS THE SUCTION POINT IN A SUB-SLAB DECOMPRESSION SYSTEM, THE LID MUST BE DESIGNED TO ACCOMMODATE THE VENT PIPE. WHERE USED AS A FLOOR DRAWING, THE SUMP PIT LID SHALL HAVE A TRAPPED INLET.

DUCTWORK WHICH PASSES THROUGH OR BENEATH A CONCRETE FLOOR SLAB SHALL BE FREE OF SEAMS AND MUST BE PERFORMANCE TESTED.

DUCTWORK PASSING THROUGH A CRAWLSPACE MUST HAVE ALL SEAMS AND JOINTS SEALED (PER MIGØ13.1). ALL JOINTS OF DUCT SYSTEMS USED IN THE HEATING OR COOLING OF A CONDITIONED SPACE SHALL BE SEALED BY MEANS OF TAPES, MASTIC, AEROSOL SEALANT, GASKETING OR OTHER APPROVED CLOSURE SYSTEMS. WHERE MASTIC IS USED TO SEAL OPENINGS GREATER THAN 14", A COMBINATION OF MASTIC AND MESH SHALL BE USED.

CRAWLSPACE ACCESS OR UNDER-FLOOR MECHANICAL EQUIPMENT ACCESS, OR ANY OTHER ACCESS POINT FROM THE HABITABLE SPACE INTO THE CRAWL SPACE, SUCH AS DOORS OR PANELS, MUST BE CLOSED AND GASKETED TO CREATE AN AIRTIGHT SEPARATION.

AIR HANDLING UNITS IN CRAWL SPACES SHALL BE SEALED TO PREVENT AIR FROM BEING DRAWN INTO THE UNIT.

> - ELECTRICAL JUNCTION BOX FOR FUTURE INSTALLATION

OF VENT FAN± NOTE 3.

- ELECTRICAL JUNCTION BOX

FOR FUTURE INSTALLATION

- SUPPORT

STRAPPING

3'-4' DIA. VENT PIPE

(PVC OR EQUIVALENT)

PIPE PENETRATION

MEMBRANE OVERLAPPED

ADJOINING SHEETS OF

AND SEALED

SEAL MEMBRANE AROUND

PVC T-FITTING (OR EQUIVALENT)

TO SUPPORT VENT PIPE

OF WARNING DEVICE'S NOTE 3.

PASSIVE RADON CONTROL SYSTEM IN EXHAUST (10' FROM OPENINGS INTO CRAWL SPACE FOR NEW CONSTRUCTION CONDITIONED SPACES OF BUILDING 12" MIN. ABOVE ROOF 1. INSTALL A LENGTH OF 3" OR 4" DIAMETER PERFORATED DRAIN TILE HORIZONTALLY BENEATH THE SHEETING AND CONNECT TO THE 'T' FITTING WITH THE VERTICAL STANDPIPE THROUGH THE SOIL-GAS-RETARDER MEMBRANE. THIS HORIZONTAL PIPE SHOULD NORMALLY BE PLACED PARALLEL TO THE LONG DIMENSION OF THE HOUSE AND SHOULD EXTEND NO CLOSER FLASHING----THAN 6 FEET TO THE FOUNDATION WALL. 2. VENTILATE CRAWLSPACES IN CONFORMANCE WITH LOCAL CODES! VENTS SHALL BE OPEN TO THE EXTERIOR AND BE OF NONCLOSEABLE DESIGN. 3. CIRCUITS SHOULD BE A MINIMUM IS AMP, 115 VOLT. - ROOF BRACE

CRAWL SPACE

NOTE 2

SOIL-GAS-RETARDER MEMBRANE SEALED AGAINST

WALL AND AROUND PENETRATIONS (MIN. 6-MIL

POLYETHYLENE SHEETING OR EQUIVALENT)

CONC. FOUNDATION (SEE TYP.

WALL SECTION ON FOUNDATION

LEVEL

JOIST

JOIST

INTERIOR PARTITION

FLOOR PENETRATIONS

SEAL AROUND

LIVING AREA

FLOORING-

CRAWLSPACE SUB-MEMBRANE DEPRESSURIZATION SYSTEM

METHOD *2 - PASSIVE SUB-MEMBRANE DEPRESSURIZATION SYSTEM

METHOD # - MECHANICAL VENTILATION (AFIØ3.5, EXCEPTION)

CRAWL SPACE RADON MITIGATION

RADON MITIGATION METHODS SHALL BE IMPLEMENTED.

IN ADDITION TO THE CRAWL SPACE SEALING REQUIREMENTS, ONE OF THREE

 PROVIDE FOUNDATION VENTILATION SYSTEM (SEE FOUNDATION NOTES FOR CRAWLSPACE VENTING)

PROVIDE AN APPROVED MECHANICAL CRAWL SPACE VENTILATION

 PROVIDE A SOIL-GAS RETARDER, SUCH AS 6 MIL POLYETHYLENE OR EQUIVALENT (SEE GAS-RETARDER NOTES) PROVIDE A VENT STACK (SEE VENT STACK NOTES)

SYSTEM OR OTHER EQIVALENT SYSTEM.

METHOD #3 - CRAWLSPACE VENTILATION, AND BUILDING TIGHTNESS.

- PROVIDE NO LESS THAN ONE NET SQ. FT. OF CRAWLSPACE FOUNDATION VENT AREA PER EACH 150 SQ. FT. OF UNDER-FLOOR AREA (SEE FOUNDATION NOTES FOR CRAWLSPACE VENTING LOCATION
- REQUIREMENTS). OPERABLE LOUVERS, DAMPERS, OR OTHER MEANS TO TEMPORARILY CLOSE OFF VENT OPENINGS ARE NOT ALLOWED TO MEET THE
- REQUIREMENTS OF THIS RADON MITIGATION METHOD. DWELLINGS SHALL BE TESTED WITH A BLOWER DOOR, DEPRESSURIZING THE DWELLING TO 50 PASCAL'S FROM AMBIENT CONDITIONS AND

FOUND TO EXHIBIT NO MORE THAN 5.0 AIR CHANGES PER HOUR.

 INSTALL A MECHANICAL EXHAUST, SUPPLY, OR COMBINATION VENTILATION SYSTEM PROVIDING WHOE-BUILDING VENTILATION RATES AS PER TABLE NIIOI.I(3).

VENTILATION AIR REQUIREMENTS (cfm)

FLOOR AREA		NUMBER OF BEDROOMS					
(FT.²)	Ø-1	2-3	4-5	6-7	>7		
⊲,500	3Ø	45	60	75	90		
1,501-3,000	45	60	75	90	105		
3,001-4,500	60	75	9Ø	1Ø5	120		
4,501-6,000	75	90	1Ø5	120	135		
6,000-7,500	90	105	120	135	150		
7,5 <i>0</i> 0	105	120	135	150	165		
TABLE M1507.3.3(1)							

SLAB-ON-GRADE/BASEMENT RADON MITIGATION

A PASSIVE SUB-SLAB DEPRESSURIZATION SYSTEM SHALL BE INSTALLED DURING CONSTRUCTION IN BASEMENT OR SLAB-ON-GRADE BUILDINGS. FOLLOW THE NOTES HERE REGARDING BUILDING TIGHTNESS MEASURES AND ASSEMBLE THE FOLLOWING ELEMENTS OF THIS MITIGATION SYSTEM...

- PROVIDE A RADON VENT PIPE EXTENDING FROM A GAS PERMEABLE LAYER BENEATH THE SLAB FLOOR SYSTEM, THROUGH THE FLOORS OF THE DWELLING AND TERMINATING AT THE ROOF.
- SEE NOTES REGARDING VENT PIPE, SOIL-GAS-RETARDER AND SLAB SUBFLOOR PREPARATION.

SLAB SUB-FLOOR 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. THE GAS-PERMEABLE LAYER SHALL CONSIST OF ONE OF THE FOLLOWING:
- A UNIFORM LAYER OF CLEAN AGGREGATE, A MINIMUM OF 4 INCHES THICK THE AGGREGATE SHALL CONSIST OF MATERIAL SMALL ENOUGH TO PASS THROUGH A 2" SIEVE AND BE RETAINED BY A 14" SIEVE. A UNIFORM LAYER OF SAND (NATIVE OR FILL), A MINIMUM OF 4 INCHES THICK, OVERLAIN BY A LAYER OR STRIPS OF GEO-TEXTILE DRAINAGE MATTING DESIGNED TO ALLOW THE LATERAL FLOW OF SOIL GASES.

SOIL-GAS-RETARDER

- THE SOIL INCRAWLSPACES SHALL BE COVERED WITH A CONTINUOUS LAYER OF MINIMUM 6-MIL POLYETHYLENE SOIL-GAS-RETARDER. THE GROUND COVER SHALL BE LAPPED A MINIMUM OF 12 INCHES AT JOINTS AND SHALL EXTEND TO ALL FOUNDATION WALLS ENCLOSING THE CRAWL SPACE AREA.
- THE SHEETING SHALL FIT CLOSELY AROUND ANY PIPE, WIRE OR OTHER PENETRATIONS OF THE MATERIAL.
- ALL PUNCTURES OR TEARS IN THE MATERIAL SHALL BE SEALED OR COVERED WITH ADDITIONAL SHEETING.

YENT PIPE (RADON)

- A PLUMBING TEE OR OTHER APPROVED CONNECTION SHALL BE INSTERED HORIZONTALLY BENEATH THE SOIL-GAS-RETARDER SHEETING AND CONNECTED TO A 3' OR 4' DIAMETER FITTING WITH A VERTICAL VENT PIPE INSTALLED THROUGH THE SHEETING.
- THE VENT PIPE SHALL BE EXTENDED UP THROUGH THE BUILDING. FLOORS TO TERMINATE AT LEAST 12 INCHES ABOVE THE ROOF SURFACE IN A LOCATION AT LEAST 10 FEET AWAY FROM ANY WINDOW OR OTHER OPENING INTO THE CONDITIONED SPACES OF THE BUILDING THAT IS LESS THAN 2 FEET BELOW THE EXHAUST POINT, AND 10 FEET FROM ANY
- WINDOW OR OTHER OPENING IN ADJOINING OR ADJACENT BUILDINGS. IN BUILDINGS WHERE INTERIOR FOOTINGS OR OTHER BARRIERS SEPARATE THE SUB-SLAB AGGREGATE OR OTHER GAS-PERMEABLE MATERIAL, EACH AREA SHALL BE FITTED WITH AN INDIVIDUAL VENT
- MULTIPLE VENT PIPES SHALL CONNECT TO A SINGLE VENT THAT TERMINATES ABOVE THE ROOF OR EACH INDIVIDUAL VENT PIPE SHALL TERMINATE ABOVE THE ROOF.
- ALL COMPONENTS OF THE RADON VENT PIPE SYSTEM SHALL BE INSTALLED TO PROVIDE POSITIVE DRAINAGE TO THE GROUND BENEATH THE SLAB OR SOIL-GAS-RETARDER.
- RADON VENT PIPES SHALL BE ACCESSIBLE FOR FUTURE FAN INSTALLATION THROUGH AN ATTIC OR OTHER AREA OUTSIDE THE HABITABLE SPACE, OR AN APPROVED ROOF TOP ELECTRICAL SUPPLY MAY BE PROVIDED FOR FUTURE USE FOR A POWERED RADON VENT
- ALL EXPOSED AND VISIBLE INTERIOR RADON VENT PIPES SHALL BE IDENTIFIED WITH AT LEAST ONE LABLE ON EACH FLOOR AND IN ACCESSIBLE ATTICS. THE LABEL SHALL READ: 'RADON REDUCTION

POWER SOURCE REQUIREMENT

 TO ACCOMMODATE 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 INCANTICIPATED LIQUATION DE SYSTEMS. Code FAILURE ALARMS. Digital Millennium Copyright Act

COMBINATION FOUNDATIONS

 COMBINATION: BASEMENT/CRAWL SPACE OR SLAB-ON-GRADE/CRAWL SPACE FOUNDATIONS SHALL HAVE SEPARATE RADON MITIGATION SYSTEMS IN EACH TYPE OF FOUNDATION AREA. PASSIVE SUB-SLAB AND PASSIVE SUB-MEMBRANE RADON VENT PIPES MAY BE CONNECTED TO A SINGLE VENT TERMINATING ABOVE THE ROOF, OR EACH VENT MAY INDIVIDUALLY CONNUE TO TERMINATER ABOVE THE ON OR USAGE OF ROOF (SEE VENT PIPE NOTES): UMENTS OR REMOVAL OF THIS NOTIFICATION IS SUBJECT

ZONE 2 ZONE 3

EPA RADON ZONES

DISCLAIMER: THE PURPOSE OF THIS MAP IS TO ASSIST NATIONAL, STATE AND LOCAL ORGANIZATIONS TO TARGET THEIR RESOURCES AND TO IMPLEMENT RADON-RESISTANT BUILDING CODES. ALL HOMES SHOULD BE TESTED REGARDLESS OF GEOGRAPHIC LOCATION. EPA RECOMMENDS THAT THIS MAP BE SUPPLEMENTED WITH ANY AVAILABLE LOCAL DATA IN ORDER TO FURTHER UNDERSTAND AND PREDICT THE RADON POTENTIAL FOR A SPECIFIC AREA.

-PVC T-FITTING (OR EQUIVALENT) (SEE TYP. WALL SECTION ON TO SUPPORT VENT PIPE SLAB ON-GRADE/BELOW-GRADE (BASEMENTS) SUB-MEMBRANE DEPRESSURIZATION SYSTEM

EXHAUST (10' FROM OPENINGS INTO

— FLASHING

12" MIN. ABOVE ROOF

CONDITIONED SPACES OF BUILDING)

- ROOF BRACE

ATTIC

- ELECTRICAL JUNCTION BOX

FOR FUTURE INSTALLATION

OF VENT FAN± NOTE 5.

-ELECTRICAL JUNCTION BOX

OF WARNING DEVICE'S NOTE 5.

FOR FUTURE INSTALLATION

- SUPPORT

STRAPPING

(PVC OR EQUIVALENT)

-MIN. 4' THICK LAYER

OF GAS PERMEABLE

MATERIAL± NOTE 1

PASSIVE SUB-SLAB DEPRESSURIZATION RADON

1. ALL CONCRETE SLABS THAT COME IN CONTACT WITH THE GROUND SHALL

MATTING DESIGNED TO ALLOW THE LATERAL FLOW OF SOIL GASES.

2. ALL CONCRETE FLOOR SLABS SHALL BE DESIGNED AND CONSTRUCTED

IN ACCORDANCE WITH LOCAL BUILDING CODES. ADDITIONAL REFS:

3. ALL OPENINGS, GAPS AND JOINTS IN FLOOR AND WALL ASSEMBLIES IN CONTACT SOIL OR GAPS AROUND PIPES, TOILETS, BATHTUBS OR

FOAM MATERIALS AND SMALLER GAPS WITH AN ELASTOMERIC JOINT

CONDENSATION DRAINS DOWNWARD INTO THE GROUND BENEATH THE

JOIST

JOIST

LIVING AREA

FLOORING-

INTERIOR PARTITION

-CAP BLOCK OR OTHER SEAL

- WATERPROOF SEALANT APPLIED

- SEAL OPENINGS IN SLAB AND AROUND PENETRATIONS + NOTE 3

SOIL-GAS-RETARDER MEMBRANE (MIN.

EQUIVALENT) + OVERLAP SEAMS 12' MIN.

6-MIL POLYETHYLENE SHEETING OR

ON HOLLOW BLOCK WALLS

TO EXTERIOR WALLS

4. VENT PIPES SHALL BE INSTALLED SO THAT ANY RAINWATER OR

DRAINS PENETRATING THESE ASSEMBLIES SHALL BE FILLED OR CLOSED

WITH MATERIALS THAT PROVIDE A PERMANENT AIR-TIGHT SEAL. SEAL LARGE OPENINGS WITH NON-SHRINK MORTAR, GROUTS OR EXPANDING

AMERICAN CONCRETE INSTITUTE PUBLICATIONS, 'ACI302.IR' \$

AND CONSTRUCTION OF POST-TENSIONED SLABS ON GROUND!

"AC1332R", OR THE POST TENSIONING INSTITUTE MANUAL, "DESIGN

BE LAID OVER A GAS PERMEABLE MATERIAL MADE UP OF EITHER A MINIMUM

UNIFORM LAYER OF SAND, OVERLAIN BY A LAYER OR STRIPS OF MANUFACTURED

4' THICK UNIFORM LAYER OF CLEAN AGGREGATE, OR A MINIMUM 4' THICK

CONTROL SYSTEM FOR NEW CONSTRUCTION

SEALANT, AS DEFINED IN ASTM C920-87.

SLAB OR SOIL-GAS-RETARDER MEMBRANE.

5. CIRCUITS SHOULD BE A MINIMUM 15 AMP, 115 YOLT.

PERFORATED DRAIN

TILE± NOTE I

25# SNOW LOAI

ROJECT MANAGER:SF

DRAWN 07/28/20 LA