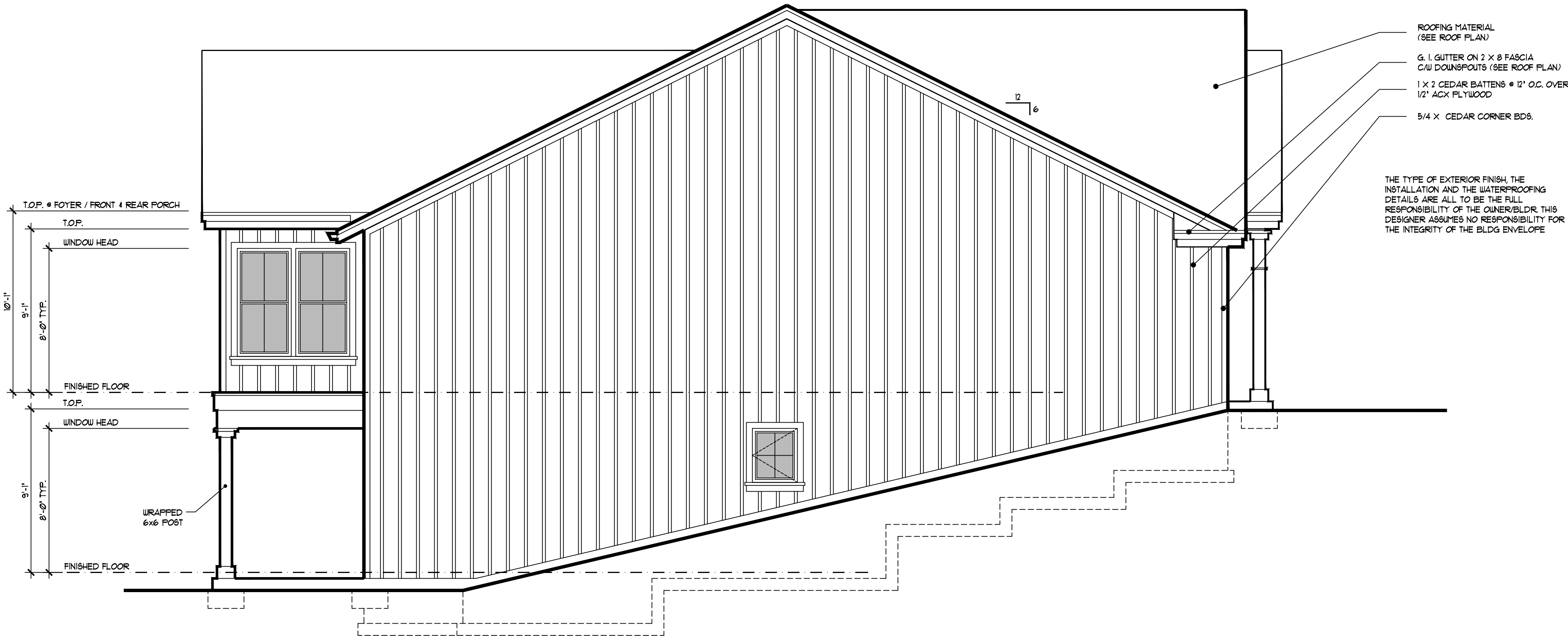
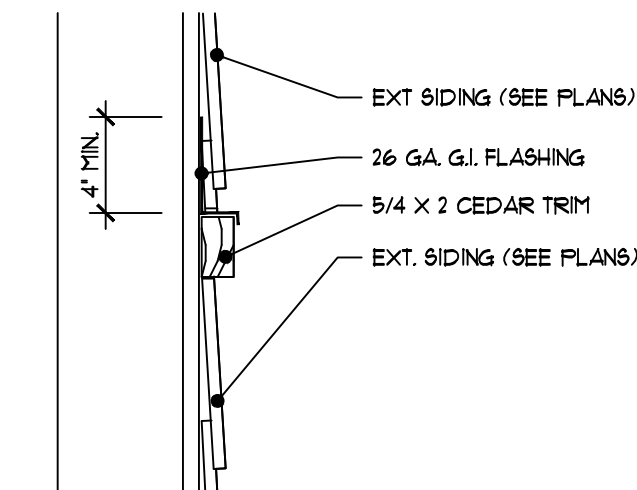




LEFT SIDE ELEVATION

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



TRIM DETAIL

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



FRONT ELEVATION

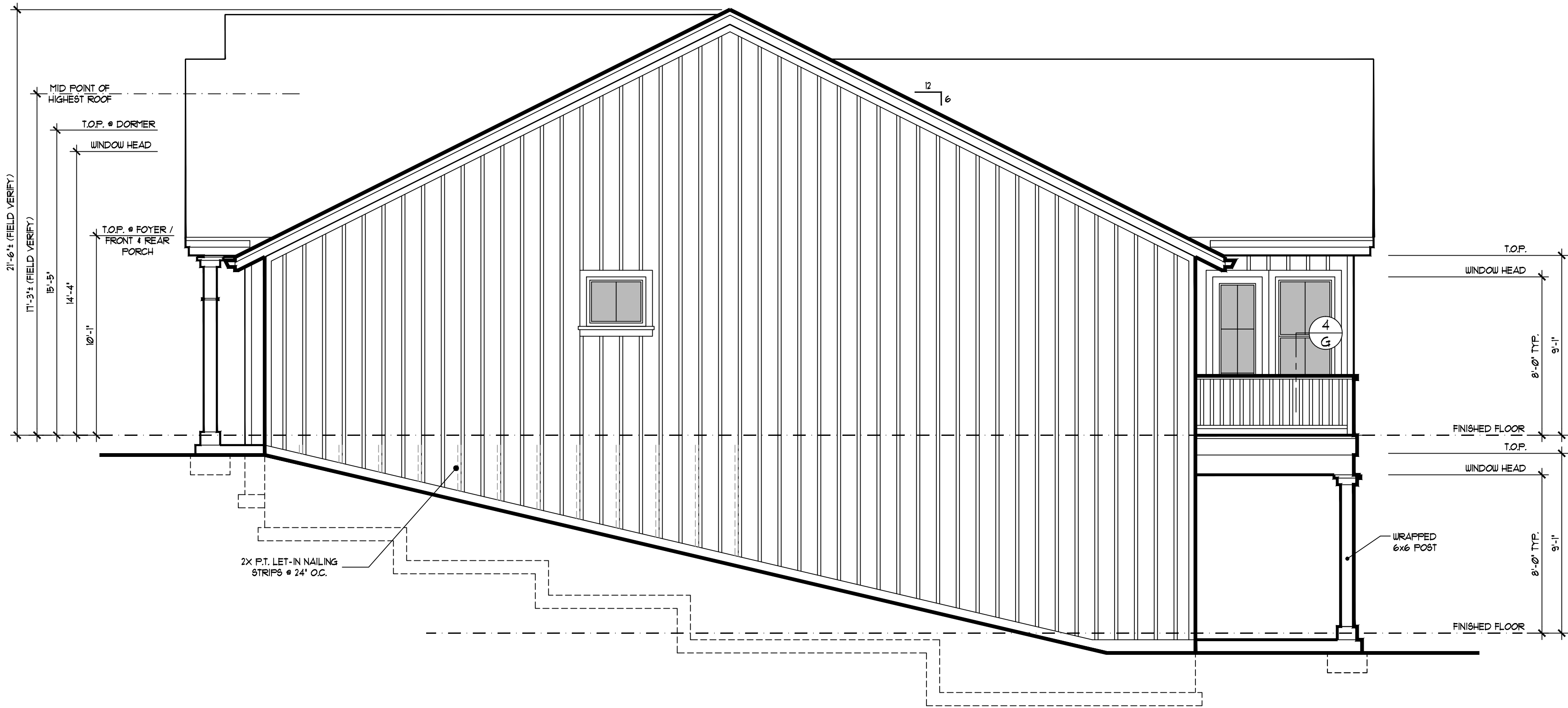
SCALE : 1/4" = 1'-0"

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	PROJECT NUMBER 2022-410

THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR THE CORRECT INSTALLATION OF ALL EXTERIOR FINISHES AND WEATHERPROOFING.



RIGHT SIDE ELEVATION

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



REAR ELEVATION

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

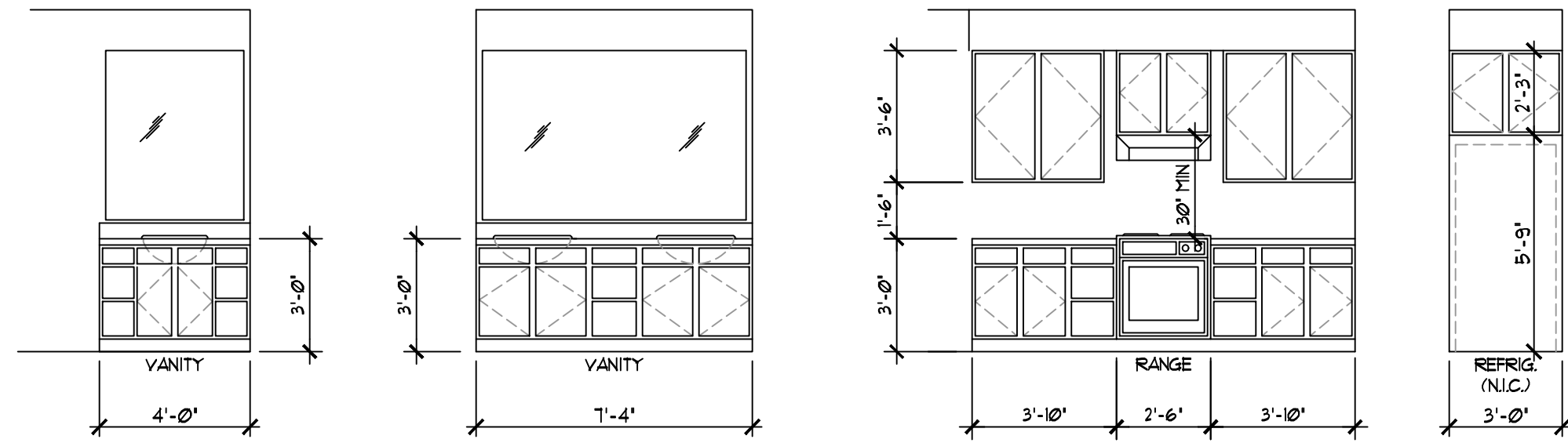
MAIN FLOOR	1519 SQ. FT.
LOWER FLOOR	1035 SQ. FT.
TOTAL AREA	2554 SQ. FT.
GARAGE AREA	+ 444 SQ. FT.

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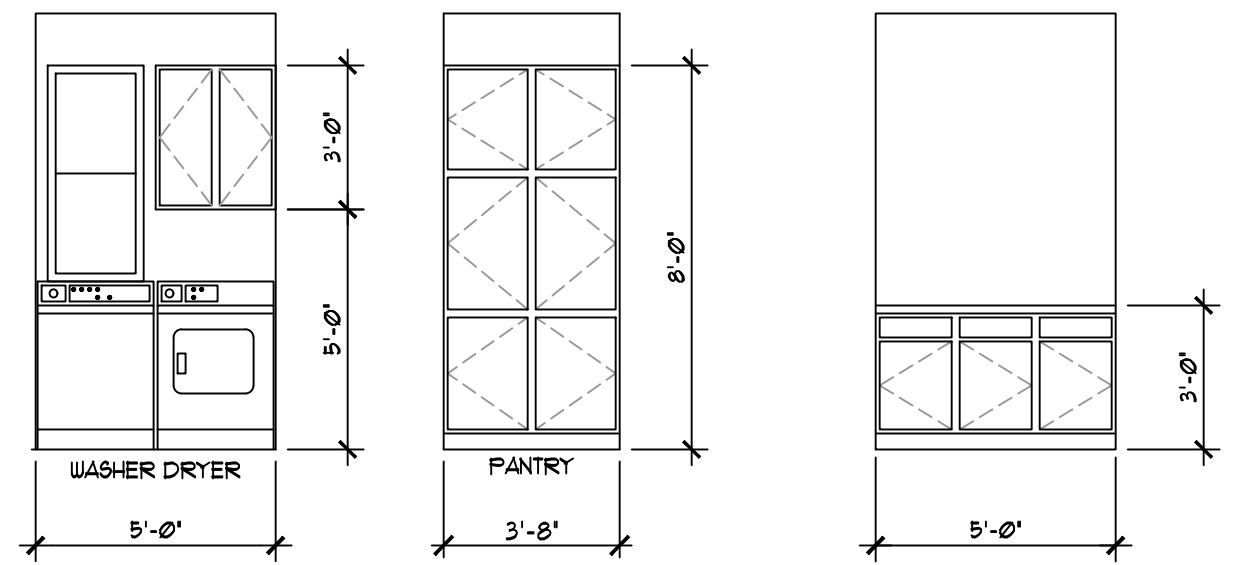
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HALL BATH MBR. BATH KITCHEN

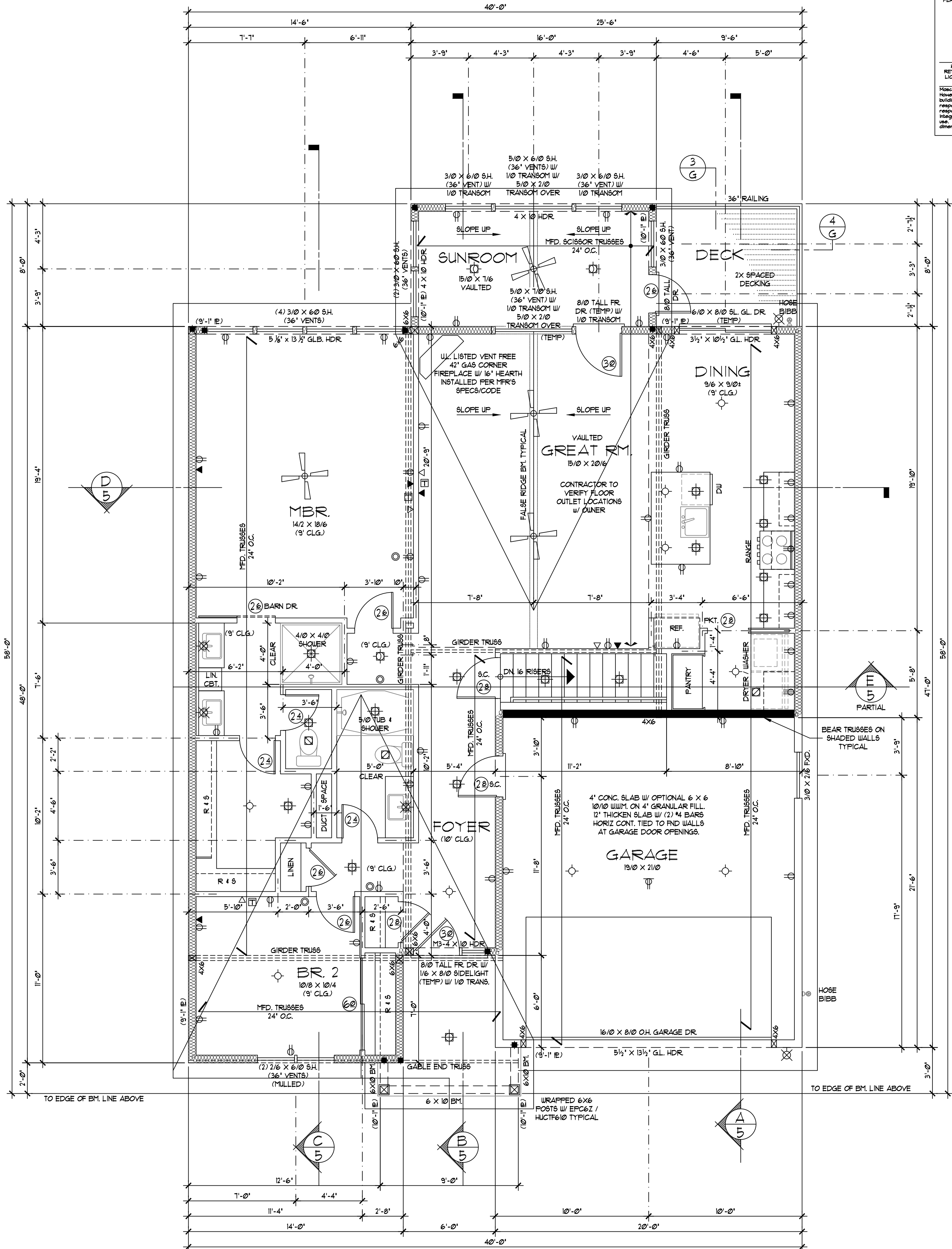


LAUNDRY GREAT RM.

- LEGEND**
- RECESSED LIGHT
 - RECESSED DIRECTIONAL LIGHT FIXTURE
 - WALL-MOUNT LIGHT
 - SURFACE-MOUNT LIGHT
 - FLOOD LIGHT
 - SURFACE MOUNTED FLUORESCENT
 - RECESSED EXHAUST FAN VENTED TO THE EXTERIOR
 - CEILING FAN
 - DUPLEX OUTLET
 - CEILING MOUNTED DUPLEX OUTLET
 - 220V OUTLET
 - FLUSH FLOOR MOUNTED OUTLET (VERIFY LOC.)
 - TELEPHONE OUTLET
 - DATA OUTLET
 - TELEVISION OUTLET
 - SPEAKER LOCATION
 - SMOKE / CO DETECTOR (SEE 'GENERAL NOTES' FOR OTHER SPECS)
 - BEARING POINT LOCATION (PROVIDE SOLID BEARING - MIN. OF MEMBER WIDTH UNO.)
 - POINT LOAD FROM ABOVE
 - 4 X 4 POST FROM ROOF HIP, VALLEY OR RIDGE DOWN TO BEARING POINT ON WALL BELOW (MAX. OF 48" FROM VERT.)
 - BEARING WALL SUPPORTING STRUCTURE ABOVE
 - 4 X 10 HDR. • BEARING WALL, INT. DOOR 4 OPENINGS W/ MIN (2) 2 X SUPPORT EA END (UNO.)
 - DROPPED STRUCT. MEMBER BEARING • WALL

- ENERGY ENVELOPE KEY**
- WALL, FLR./CLG. INSUL.
 - FOUNDATION INSUL.
 - (SEE SHEET 'G' FOR INSULATION VALUES)

- C.O. DET LOCATION**
- CARBON MONOXIDE ALARMS SHALL BE LOCATED IN EA. BEDROOM OR WITHIN 15 FEET OUTSIDE OF EA. BEDROOM DOOR AT EVERY FLOOR LEVEL W/ BEDROOMS (SEE SHEET 'G' FOR ADD'L INFO)



MAIN FLOOR PLAN

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

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

THE Masco COLLECTION

LICENSE NUMBER: 125766

THESE PLANS ARE BASED UPON THE ORIGINAL DESIGN. IF ANY CHANGES ARE MADE, THE LICENSEE SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMISSION TO MAKE REVISIONS TO THE ORIGINAL DESIGN. THESE PLANS ARE NOT TO BE USED FOR ANY OTHER PROJECTS WITHOUT THE WRITTEN PERMISSION OF THE DESIGNER.

AND THEIR DESIGN PROFESSIONAL (AGENT):
LIFESTYLE HOME DESIGN
2528 LAFAYETTE RD
WAYZATA, MN 55391
P&P-266-3439

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Masco Design Associates, Inc. is not responsible for any damages resulting from the use of these plans. The user assumes all responsibility for the design and construction of the project. The user shall indemnify and hold Masco Design Associates, Inc. harmless from all claims, damages, and expenses, including reasonable attorneys' fees, arising from the use of these plans.

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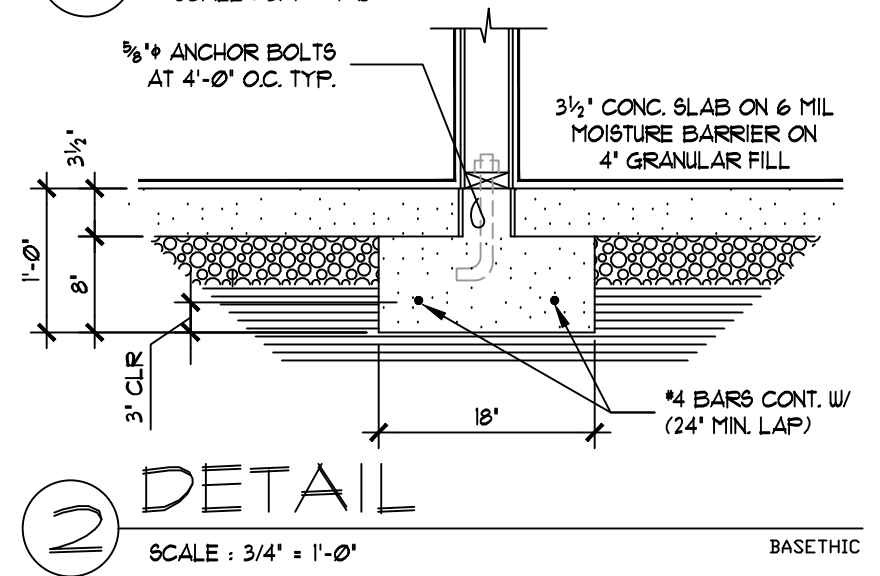
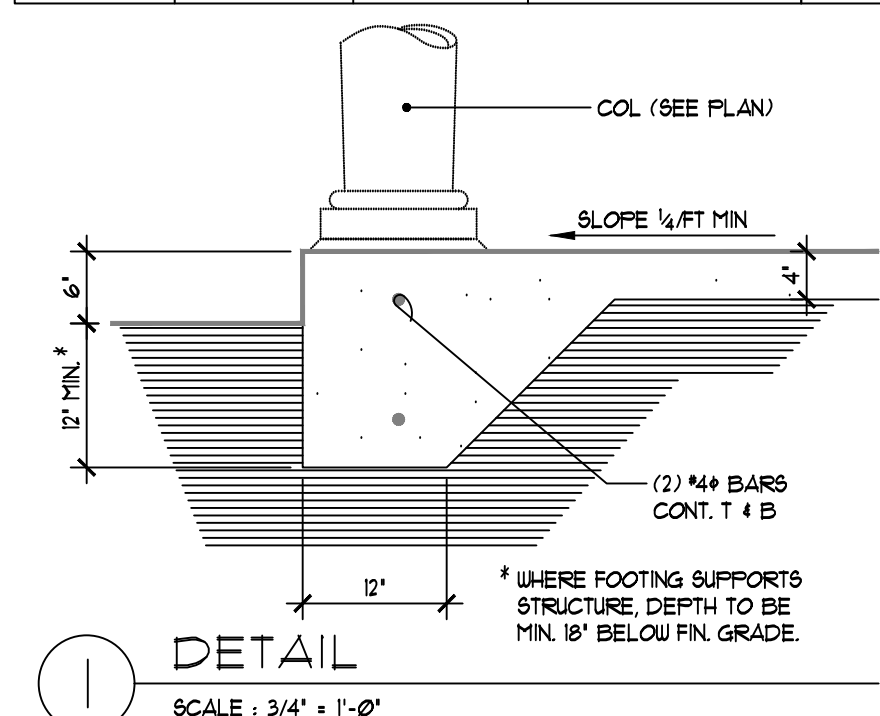
NAME
YARBOROUGH

PROJECT NUMBER
2022-410

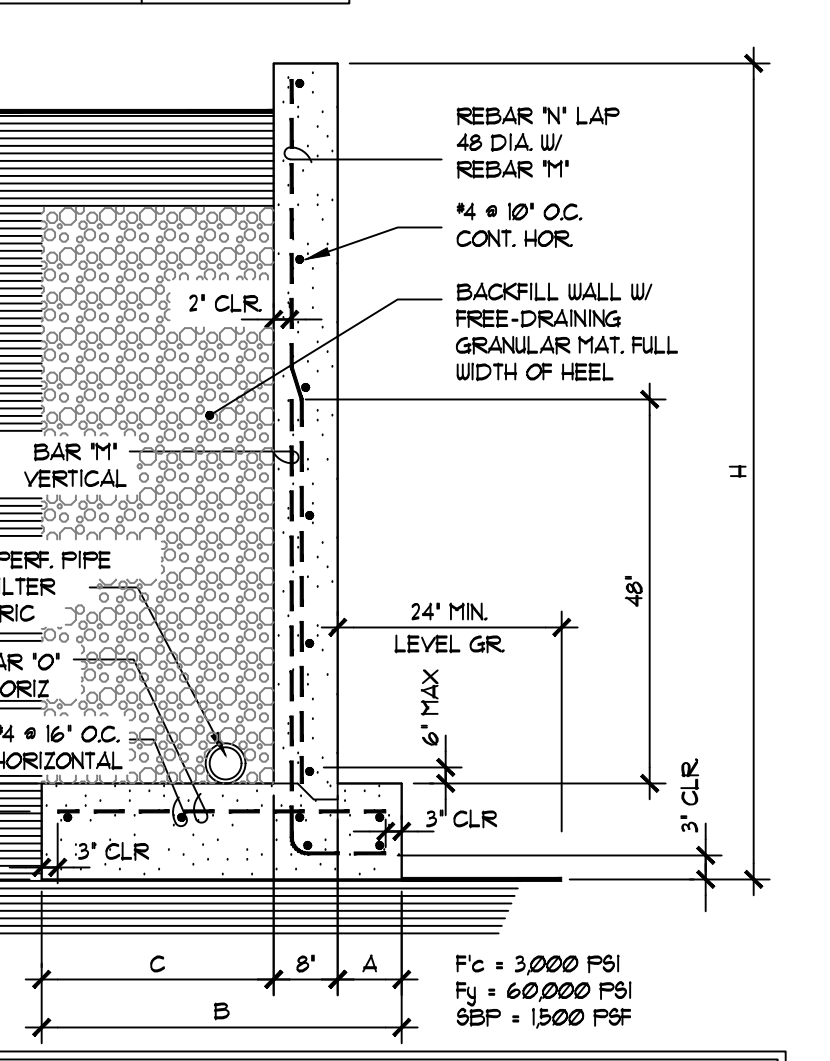
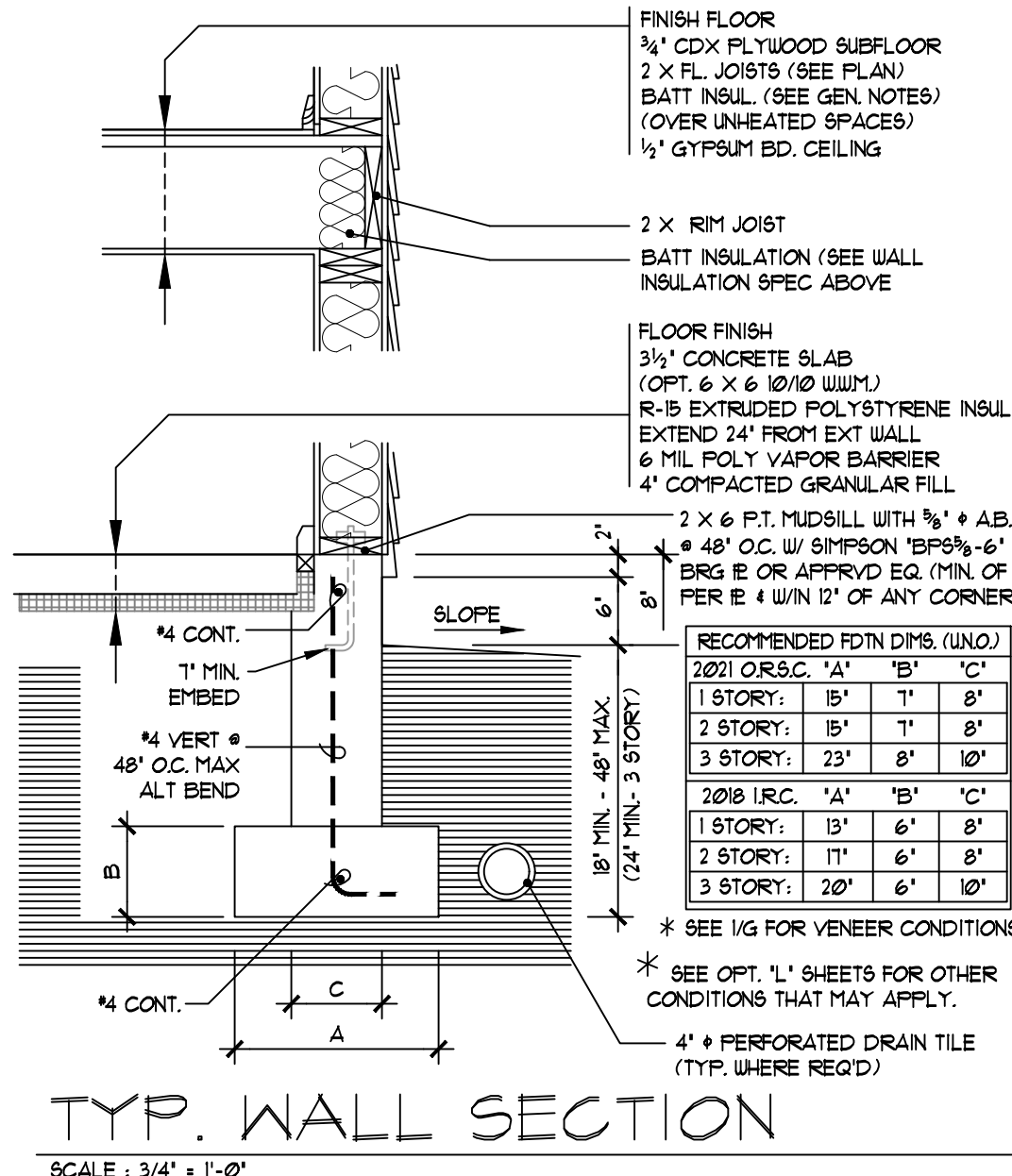
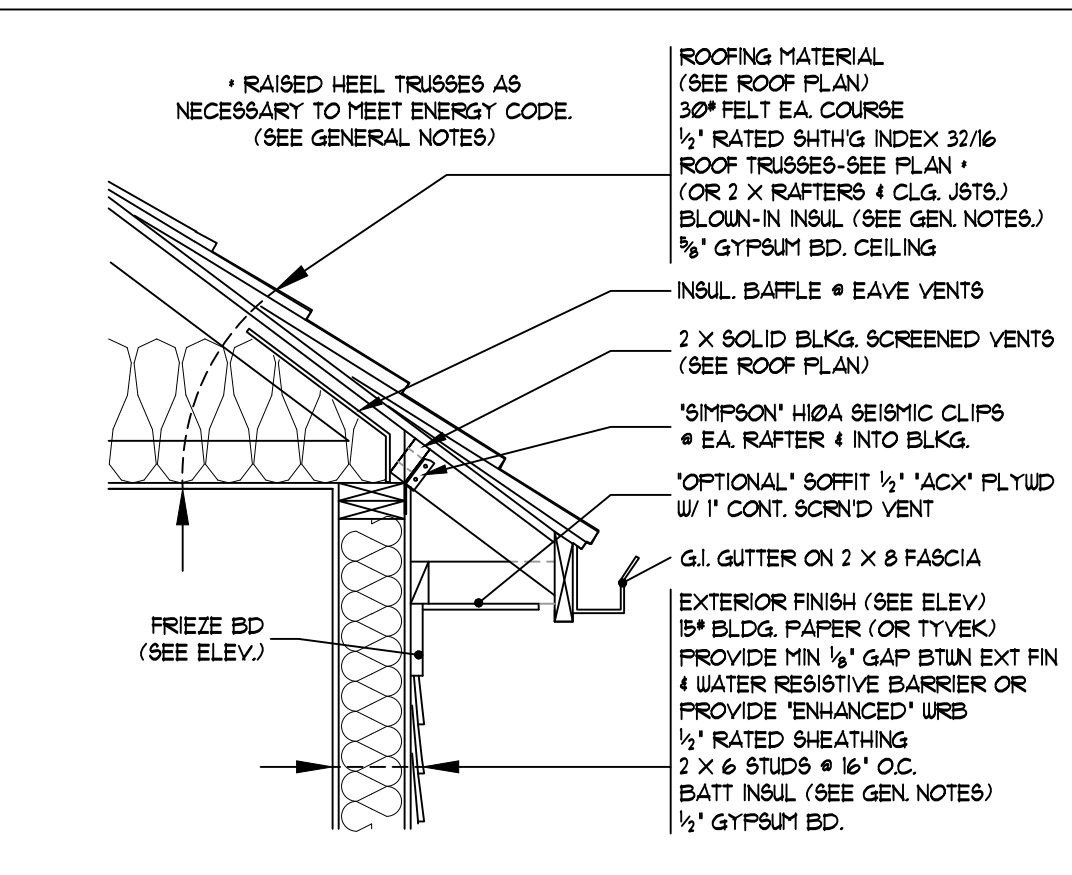
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FOUNDATION VENTILATION CALCULATIONS (SEE GENERAL NOTES FOR ADDITIONAL INFORMATION)						
DESCRIPTION	UNDER-FLOOR AREA (FT ²)	NET AREA (IN ² PER VENT)	QTY. OF VENTS REQ'D (WITHOUT CLASS-I VAPOR BARRIER)	QTY. OF VENTS REQ'D (WITH CLASS-I VAPOR BARRIER)	MECHANICAL VENTILATION RATE (CFM)	DEHUMIDIFICATION RATE (PINTS PER DAY)
AMOUNT/QTY	351	45	8	1	1.0	24.6
CODE REF.			R408.1 R408.2	R408.1 R408.2	R408.3.1 N102.1	R408.3.2.4
NOTES	1/50 OF UNDER-FLOOR AREA (NO VAPOR BARRIER REQUIRED)					
	1/100 OF UNDER-FLOOR AREA (VAPOR BARRIER REQUIRED)					
	MECHANICAL VENT CAPABLE OF 1.0 CFM PER 50 FT ² OF UNDER-FLOOR AREA					



ISOLATED FOOTING SCHEDULE				
TAG	FOOTING SIZE	REINFORCING	MAX. BRG.	
F20	18" DIA. x 1'	N.A.	2,414	
F21	20"x20"x10"	N.A.	3,818	
F24	24"x24"x12"	N.A.	5,400	
F28	28"x28"x14"	N.A.	7,211	
F30	30"x30"x15"	N.A.	8,203	
F36	36"x36"x18"	(4) #4 BARS + 1" O.C. E.W.	12,031	
F42	42"x42"x21"	(5) #4 BARS + 1" O.C. E.W.	16,531	
F48	48"x48"x24"	(6) #4 BARS + 1" O.C. E.W.	21,600	
F54	54"x54"x27"	(7) #4 BARS + 1" O.C. E.W.	27,331	
F60	60"x60"x30"	(8) #4 BARS + 1" O.C. E.W.	33,750	
ASSUMED MIN. 4x4 D.F. COLUMN (UNO. - SEE PLANS)				
6x6 D.F. COLUMN FOR MAX. BRG.				
11 3/4" x 11 3/4" FSL. COLUMN FOR MAX. BRG. (OR 6x6 TO 18,521)				
11 3/4" x 11 3/4" FSL. COLUMN FOR MAX. BRG. (OR 6x6 TO 18,521)				
SOIL B.P. 1500 PSF				



35 PCF EQUIVALENT FLUID PRESSURE RETAINING WALL DESIGN							
C	B	BAR 'M'	BAR 'N'	BAR 'O'	H _L		
1'-4"	7'-8"	4 # 8' O.C.	4 # 8' O.C.	4 # 8' O.C.	12'		
2'-0"	4'-2"	4 # 8' O.C.	4 # 8' O.C.	4 # 8' O.C.	12'		
4'-2"	5'-6"	4 # 8' O.C.	4 # 8' O.C.	4 # 8' O.C.	12'		
5'-6"	5'-6"	4 # 8' O.C.	4 # 8' O.C.	4 # 8' O.C.	12'		
40 PCF EQUIVALENT FLUID PRESSURE RETAINING WALL DESIGN							
C	B	BAR 'M'	BAR 'N'	BAR 'O'	H _L		
1'-6"	2'-10"	4 # 8' O.C.	4 # 8' O.C.	4 # 8' O.C.	5'		
3'-2"	4'-2"	4 # 8' O.C.	4 # 8' O.C.	4 # 8' O.C.	5'		
4'-10"	6'-2"	4 # 8' O.C.	4 # 8' O.C.	4 # 8' O.C.	5'		
6'-4"	8'-2"	4 # 8' O.C.	4 # 8' O.C.	4 # 8' O.C.	5'		

DO NOT OVERRELIED UPON WITHOUT CONFIRMATION THAT THE SITE SPECIFIC CONDITIONS



ENERGY ENVELOPE KEY

	WALL/F.L.R./CLG. INSUL.
	FOUNDATION INSUL.

(SEE SHEET 'G' FOR INSULATION VALUES)



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MAIN FLOOR	1519 SQ. FT.
LOWER FLOOR	1035 SQ. FT.
TOTAL AREA	2554 SQ. FT.
GARAGE AREA	+ 444 SQ. FT.

ROOF DESIGN NOTES

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	3.25 PSF	AVE./UET
FRAMING MATERIALS:	2.0 PSF	33.25 PSF	ACTUAL REQ'D
SHEATHING MATERIALS:	15 PSF	6.75 PSF	SAFETY FACTOR
MISC. MATERIALS:	15 PSF		
ROOFING TYPE	DRY / UET	40.0 PSF	TL
MED SHAKES	2.0 / 3.25 PSF		
HVT SHAKES	3.0 / 4.0 PSF		
SHINGLES	2.0 / 3.25 PSF		
COMPOSITION	2.5 / 3.0 PSF		

GYPSUM MATERIALS: ADD 2.0 PSF FOR VAULTED AREAS (COVERED IN SAFETY FACTOR)

NOTE: HIP, VALLEYS & RIDGES SHALL NOT BE LESS IN DEPTH THAN THE END CUT OF THE RAFTERS (FIELD VERIFY ALL CONDITIONS)

LEGEND

- 4 X 4 WOOD POST FROM RIDGE (HIP OR VALLEY) TO WALL BELOW (MIN. (2) 2 X 4 REQ'D AT WALL BEARING POINT) NOTE: SPLICES IN HIP & VALLEYS CAN ONLY OCCUR @ POST DOWN LOCATIONS
- 49 SQ. IN. ROOF VENTS (SEE VENT TABLE FOR QTY. - 50%/50% SHOWN)
- 2X4 FURLIN WALL TO BM, OR WALL BELOW (FRAMG AT 24" O.C.)
- SHADED AREA DENOTES ROOF FRAMED OVER RAFTERS BELOW
- DOWNSPOUTS

COMP/SHAKE ROOF

MAXIMUM SPANS PER 2004 WUPA TBL. RR-28 9" D.F. L/240 25# LL & 15# DL		
SIZE	SPACING	SPAN
2X6	12" O.C.	14'-0"
	16" O.C.	12'-1"
	24" O.C.	9'-10"
2X8	12" O.C.	17'-8"
	16" O.C.	15'-4"
	24" O.C.	12'-6"
2X10	12" O.C.	21'-1"
	16" O.C.	18'-9"
	24" O.C.	15'-3"
2X12	12" O.C.	25'-1"
	16" O.C.	21'-8"
	24" O.C.	17'-9"

% EAVE	AREA (in ²)	% ROOF	AREA (in ²)	3-VENT	4-VENT	49 in ²
60	589.8	40	3932	63	41	8
56.1	551.4	43.3	425.1	59	44	9
53.3	524.0	46.7	459.1	56	42	9
50	491.5	50	491.5	52	39	10

PER 2004 IBC, MINIMUM 1% NET FREE VENTILATING AREA SHALL BE 1/60 OF THE AREA OF THE VENTED SPACE.

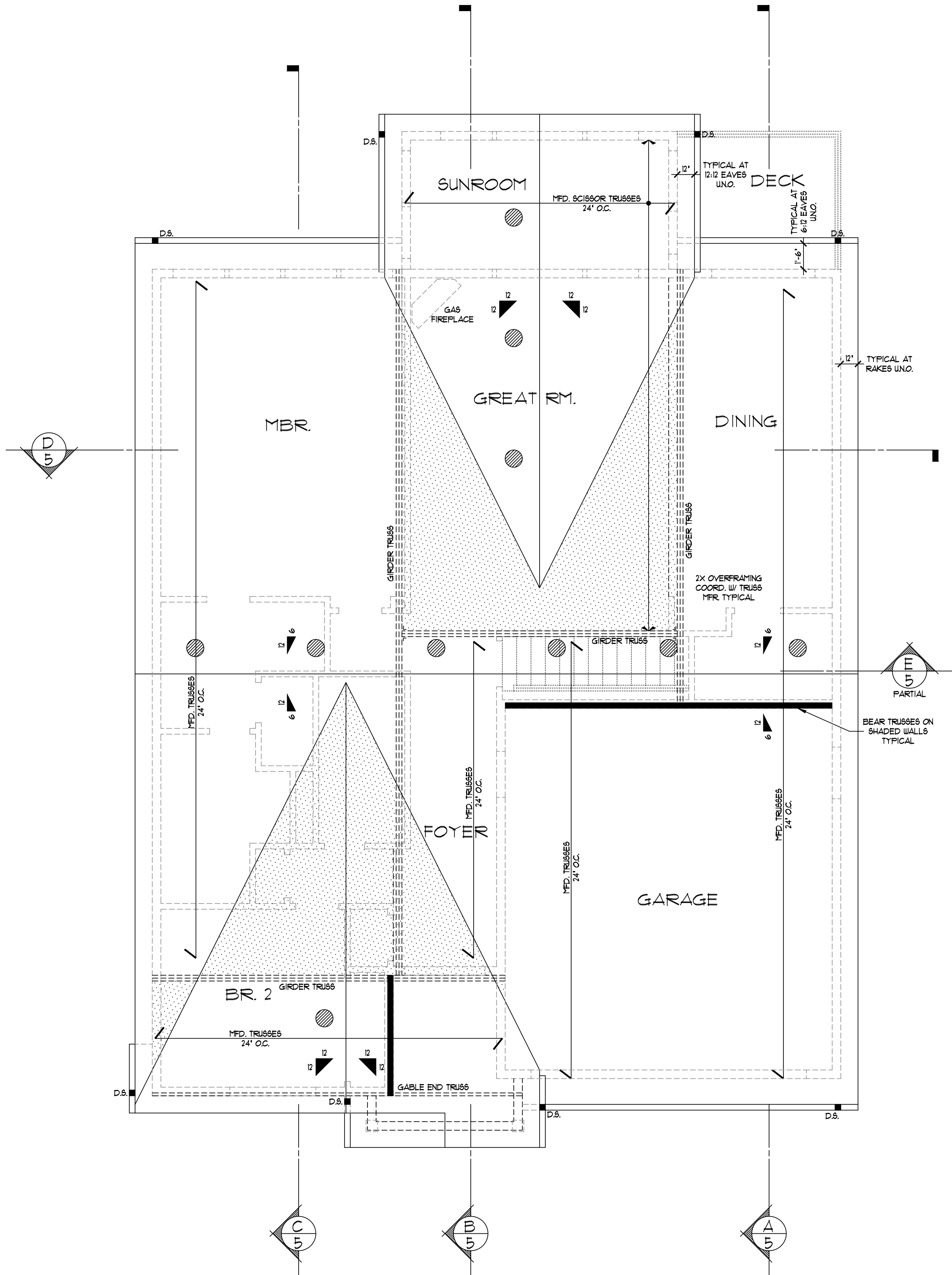
EXCEPTION: THE MIN. NET FREE VENTILATING AREA SHALL BE 1/60 OF THE AREA OF THE VENTED SPACE PROVIDED BOTH OF THE FOLLOWING CONDITIONS ARE MET:

IN CLIMATE ZONES 6, 7 AND 8 A CLASS 1 OR 2 VAPOR RETARDER IS INSTALLED ON THE WARM-INSIDE SIDE OF THE CEILING.

NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATION LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE (UPPER VENTILATION SHALL BE LOCATED NO MORE THAN 18" FROM THE RIDGE OR HIGHEST POINT OF THE SPACE MEASURED VERTICALLY. THE BALANCE OF THE REQUIRED VENTILATION PROVIDED SHALL BE LOCATED IN THE BOTTOM ONE-THIRD OF THE ATTIC SPACE WHERE THE LOCATION OF WALL OR ROOF FINISHING PROVIDES CORRELATION WITH THE INSTALLATION OF UPPER VENTILATIONS. INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

EAVE BLOCKING

- 3-VENT BLOCK (3) 2- $\frac{3}{4}$ " (MIN) HOLES (3.45 in² EA)
- 4-VENT BLOCK (4) 2- $\frac{3}{4}$ " (MIN) HOLES (2.6 in² EA)



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 REQUIREMENTS.

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

ROOF FRAMING PLAN

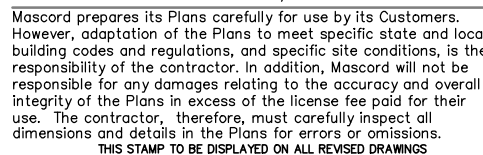
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MAIN FLOOR	1519 SQ. FT.
LOWER FLOOR	1035 SQ. FT.
TOTAL AREA	2554 SQ. FT.
GARAGE AREA	+ 444 SQ. FT.



IN ADDITION TO THE CRAWL SPACE SEALING REQUIREMENTS, ONE OF THREE RADON MITIGATION METHODS SHALL BE IMPLEMENTED.

- PROVIDE AN APPROVED MECHANICAL CRAWL SPACE VENTILATION SYSTEM OR OTHER EQUIVALENT SYSTEM.

- PROVIDE FOUNDATION VENTILATION SYSTEM (SEE FOUNDATION NOTES FOR CRAWLSPACE VENTING)
- PROVIDE A SOIL-GAS RETARDER, SUCH AS 6 MIL POLYETHYLENE OR EQUIVALENT (SEE GAS-RETARDER NOTES)
- PROVIDE A VENT STACK (SEE VENT STACK NOTES)

- PROVIDE NO LESS THAN ONE NET SQ. FT. OF GRAILSPACE FOUNDATION VENT AREA PER EACH 50 SQ. FT. OF UNDER-FLOOR AREA (SEE FOUNDATION NOTES FOR GRAILSPACE 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.
- DUELLINGS SHALL BE TESTED WITH A BLOWER DOOR DEPRESSURIZING TO 0.05 INCHES WATER GAGE. DUELLINGS FROM UNDER FLOOR SHALL BE FOUND TO EXHIBIT NO MORE THAN 5.0 AIR CHANGES PER HOUR.
- INSTALL A MECHANICAL EXHAUST SUPPLY, OR COMBINATION VENTILATION SYSTEM PROVIDING WHOLE-BUILDING VENTILATION RATES AS PER TABLE N100(3).

FLOOR AREA (FT. ²)	NUMBER OF BEDROOMS				
	0-1	2-3	4-5	6-7	>7
<500	30	45	60	75	90
500-3,000	45	60	75	90	105
3,000-4,500	60	75	90	105	120
4,500-6,000	75	90	105	120	135
6,000-7,500	90	105	120	135	150
>7,500	105	120	135	150	165

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.

- ## 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:
 1. 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 1/4" SIEVE.
 2. A UNIFORM LAYER OF SAND 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.

- THE SOIL IN CRAWL SPACES 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.

- A FLUMPING TEE OR OTHER APPROVED CONNECTION SHALL BE INSTALLED HORIZONTALLY BENEATH THE SOIL-GAS-RETARDER AND SHALL BE IDENTIFIED BY A CORRELATION TAG OR LABEL IDENTIFYING THE VERTICAL VENT PIPE INSTALLED THROUGH THE SHEETING.
- THE VENT PIPE SHALL BE EXTENDED UP THROUGH THE BUILDING FLOOR AND SHEETING TO THE EXTERIOR SURFACE OF THE BUILDING SURFACE IN A LOCATION AT LEAST 10 FEET AWAY FROM ANY WINDOW OR OTHER OPENING INTO THE CONDITIONED SPACES OF THE BUILDING THAT IS NOT DIRECTLY ADJACENT TO THE VENT PIPE. THE VENT PIPE SHALL BE IDENTIFIED WHERE OTHER OPENING IN ADJOINING OR ADJACENT BUILDINGS. IN BUILDINGS WHERE INTERIOR FOOTINGS OR OTHER BARRIERS PREVENT THE SUBMITTAL OF THE VENT PIPE TO THE EXTERIOR, A LABELABLE MATERIAL, EACH AREA SHALL BE FITTED WITH AN INDIVIDUAL VENT PIPE.
- EACH INDIVIDUAL VENT PIPE 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 THROUGHOUT THE ENTIRE BUILDING, FROM THE ROOF TO THE GROUND BENEATH THE SLAB OR SOIL-GAS-RETARDER.
- RADON VENT PIPES SHALL BE ACCESSIBLE FOR FUTURE FAN OR POWERED RADON REDUCTION SYSTEMS. ACCESS SHALL BE PROVIDED OUTSIDE THE HABITABLE SPACE, OR AN APPROVED ROOF TOP ELECTRICAL SUPPLY MAY BE PROVIDED FOR FUTURE USE FOR A POWERED RADON VENT FAN.
- ALL EXPOSED AND VISIBLE INTERIOR RADON VENT PIPES SHALL BE IDENTIFIED WITH AT LEAST ONE LABEL ON EACH FLOOR AND IN ACCESSIBLE ATTICS. THE LABEL SHALL READ: "RADON REDUCTION SYSTEM".

- 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 IN ANTICIPATED LOCATION OF SYSTEM FAILURE ALARMS.

- 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 CONTINUE TO TERMINATE ABOVE THE ROOF (SEE VENT PIPE NOTES).

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LOWER FLOOR	1035 SQ. FT.
TOTAL AREA	2554 SQ. FT.
GARAGE AREA	+ 444 SQ. FT.

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 2011 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, KAMIAHA, SPOKANE AND STEVENS, IN THE STATE OF WASHINGTON, PER 2015 I.R.C./UAC 51-51-0601(A) & 51-053.

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:

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:

- CRACKS IN CONCRETE SLABS
- COLD JOINT BETWEEN TWO CONCRETE POURS
- POSES 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

- CRACKS IN SUBFLOORING AND FLOORING
- SPACES BEHIND STUD WALLS AND BRICK VENEER WALLS THAT REST ON UNCAFFED 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 DRAINING, 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 M16014.1). 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 1/4", 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.

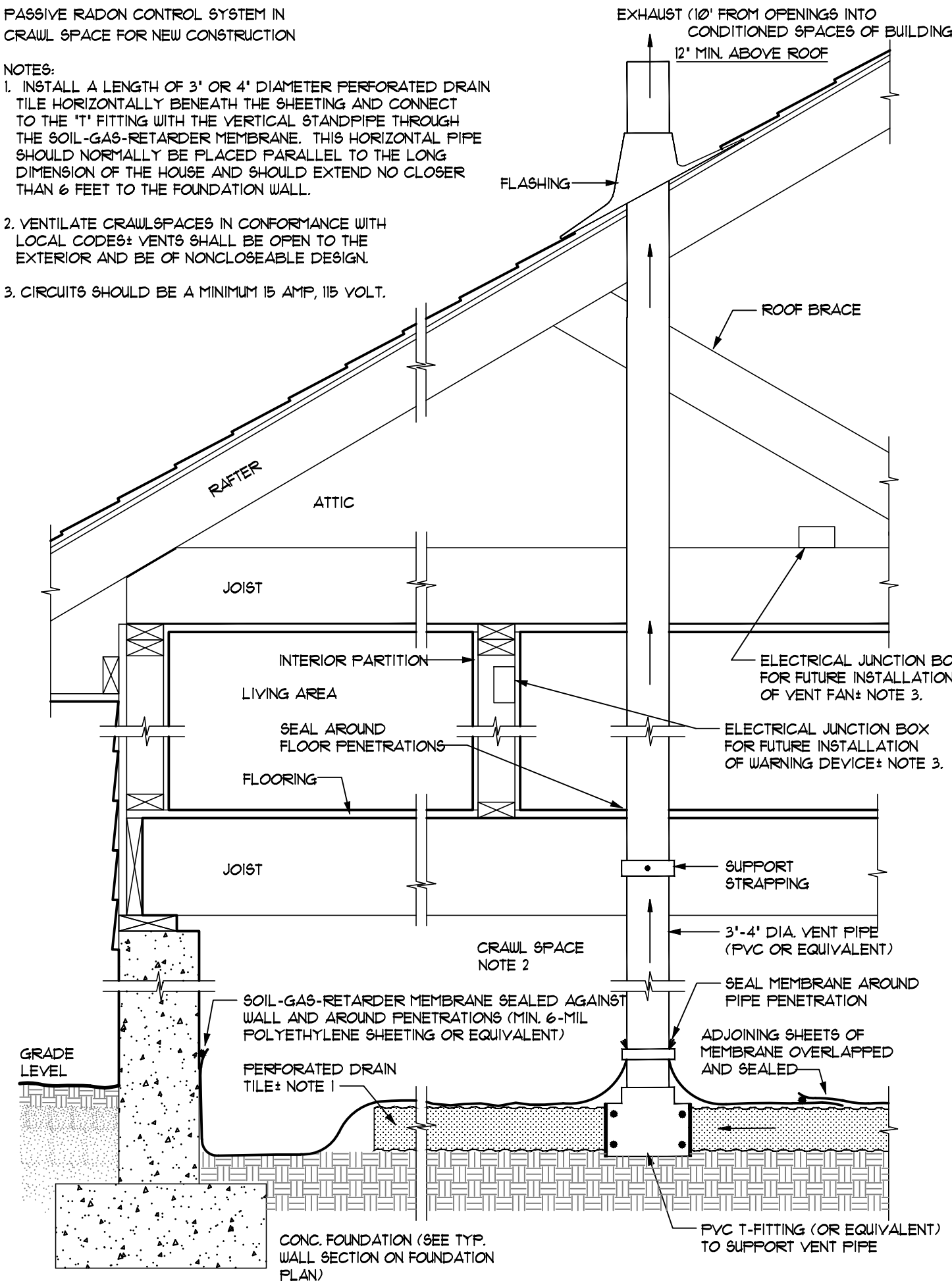
AIR HANDLING UNITS IN CRAWL SPACES SHALL BE SEALED TO PREVENT AIR FROM BEING DRAWN INTO THE UNIT.

PASSIVE RADON CONTROL SYSTEM IN CRAWL SPACE FOR NEW CONSTRUCTION

NOTES:
1. INSTALL A LENGTH OF 3' OR 4' DIAMETER PERFORATED DRAIN TIE HORIZONTALLY BENEATH THE SHEETING AND CONNECT TO THE '1' 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 THAN 6 FEET TO THE FOUNDATION WALL.

2. VENTILATE CRAWLSPACES IN CONFORMANCE WITH

3. CIRCUITS SHOULD BE A MINIMUM 15 AMP, 115 VOLT.

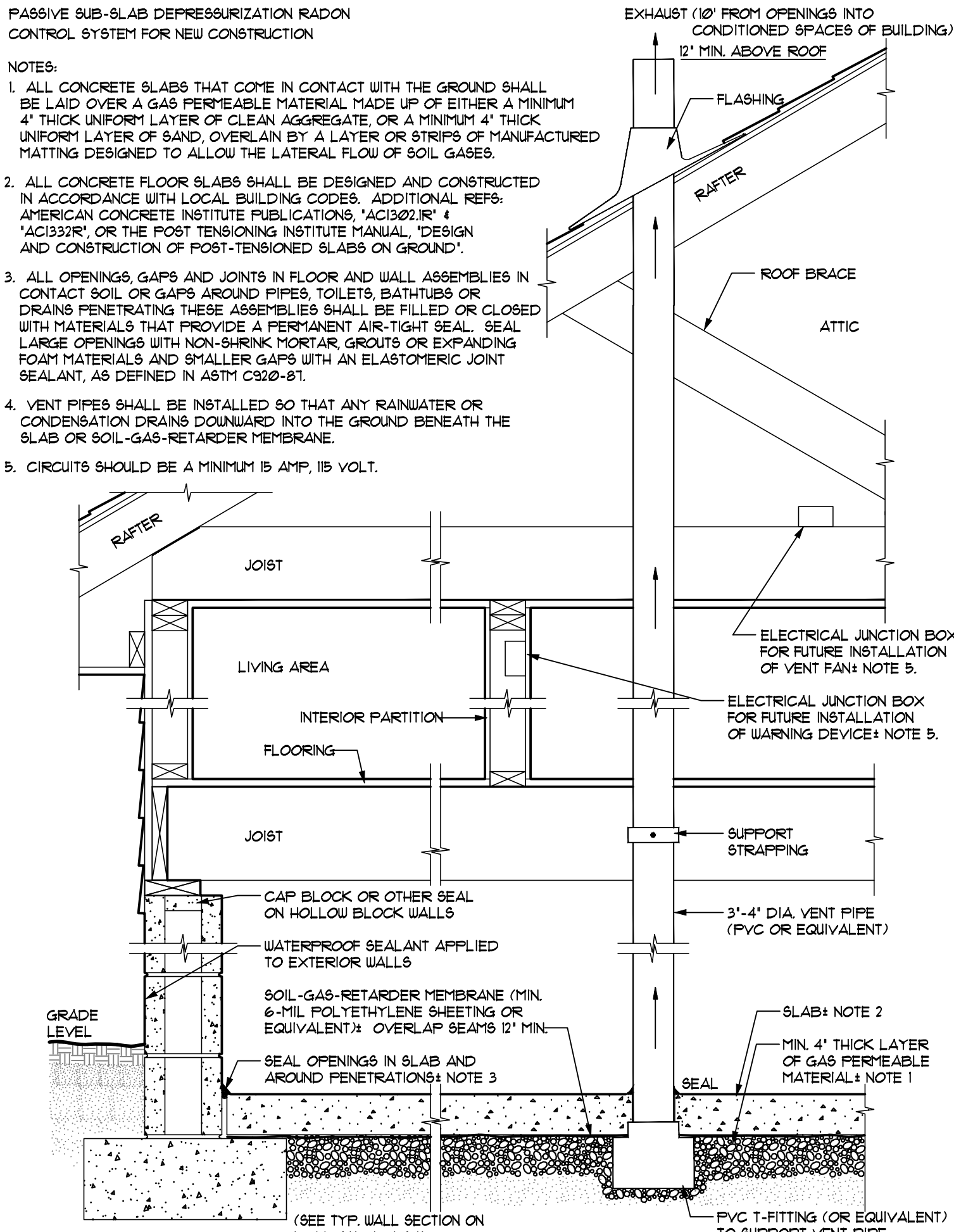


CRAWLSPACE SUB-MEMBRANE DEPRESSURIZATION SYSTEM

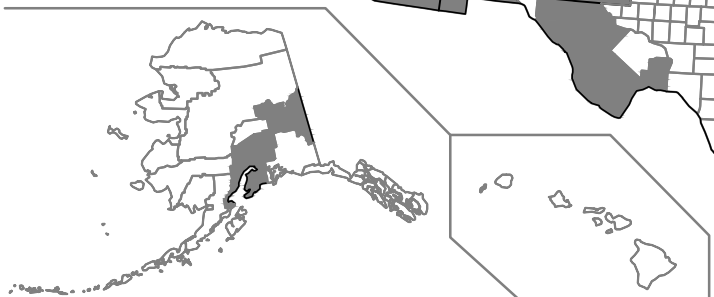
PASSIVE SUB-SLAB DEPRESSURIZATION RADON CONTROL SYSTEM FOR NEW CONSTRUCTION

NOTES:

1. ALL CONCRETE SLABS THAT COME IN CONTACT WITH THE GROUND SHALL BE LAID OVER A 4 GALS PERFEABLE MATERIAL MADE UP OF EITHER A MINIMUM 4 THICK INFORMAL LAYER OF CLEAN AGGREGATE, OR A MINIMUM 4 THICK POLYETHYLENE LAYER, SLAB JOINTS AND STRIPS OF MANUFACTURED MATINGS 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: AMERICAN CONCRETE INSTITUTE PUBLICATIONS, "AC308.2R" & "AC308.3R", OR THE POST TENSIONING INSTITUTE MANUAL, "DESIGN AND CONSTRUCTION FOR POST TENSIONED SLABS".
3. ALL OPENINGS, GAPS AND JOINTS IN FLOOR AND WALL ASSEMBLIES IN CONTACT SOIL, GAS AND RADIATION PIPES, DRAIN, BATHROOM OR DRAINS PENETRATING THESE ASSEMBLIES SHALL BE FILLED OR COVERED WITH MATERIALS THAT PROVIDE A PERMANENT AIR-TIGHT SEAL. SEAL LARGE OPENINGS WITH NON-SOLUBLE MORTAR, GROUTS OR EXPANDING CONCRETE MATERIALS AND SMALL GAPS WITH AN ELASTOMERIC JOINT SEALANT, AS DEFINED IN ASTM C926-81.
4. VENT PIPES SHALL BE INSTALLED SO THAT ANY RAINWATER OR CONDENSATION DRAINS DOWNWARD INTO THE GROUND BENEATH THE SLAB OR SOIL-GAS-RETARDER MEMBRANE.
5. CIRCUITS SHOULD BE A MINIMUM 15 AMP, 15 VOLT.



SLAB ON-GRADE/BELOW-GRADE (BASEMENTS) SUB-MEMBRANE DEPRESSURIZATION SYSTEM



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.

EPA RADON ZONES