

Foundation, anchorage, and wall framing shall comply with NCR 2018. This is a generic/non compliant plan

MODEL No. H-2020-S

General Notes

- It is imperative that the contractor observe manufacturers' instructions and procedures in installing all material and equipment. All instructions and warranties of all materials and equipment to be delivered to the owner at completion of construction.
- Layout:
It is recognized that the Contract Documents are diagrammatic in showing certain physical relationships of the various elements and systems and their interfacing with other elements and systems. Establishments and coordination of these relationships is the exclusive responsibility of the Contractor. Do not scale the drawings. Lay out and arrange all elements to carry the harmony of the design throughout the work. In case of conflict or locations not dimensioned, verify required position with Marshall Architecture.
- This project shall comply with all governing regulations, ordinances, or covenants of the project area in which it is built.
- Egress windows to have maximum sill height of 44", minimum vertical clear opening of 24", minimum horizontal opening of 20", and have a minimum of 5.7 square feet clear open area.
- Top of stair handrails to be 34" to 38" above the stair nosing and should be continuous the full length of stair run. Minimum headroom above the stair nosing to be 6'-8". Top of guardrails to be minimum 36" above finished floor. Open rail members to have less than 4" space between. Handrails to be minimum of 1-1/2", maximum of 2" in diameter, spaced a minimum of 1-1/2" from the face of wall.
- Tempered glazing required at the following locations:
 - Within 24" arc of a door.
 - Within 18" of a floor or 60" vertically of a bathtub drain.
 - Shower enclosures.
 - Within 36" horizontally of the standing surface of a bathtub or shower.
- Firestop all pocket doors, flues, and openings at the top of walls.
- Flash all exterior openings, wood trim members and roof/wall intersections with 26 gauge galvanized flashing material.
- All exterior doors and doors leading to unheated areas to be weather-stripped with threshold.
- Vent all exhaust fans to exterior. Provide rain caps with back draft dampers.
- Exhaust vent for clothes dryer to be installed per Section M1502 IRC 2012 and manufacturers' installation instructions. Exhaust ducts shall not exceed a total combined horizontal and vertical length of 15 feet including two 90-degree elbows. Five feet shall be deducted for each 90 degree elbow in excess of two.
- Center water closets in space provided (minimum 15" from vertical surfaces at sides).
- Attic ventilation shall not be less than 1/300th of the attic area as a combination of a rooftop and soffit vents.
- Garage finish- All surfaces adjacent to habitable space to be insulated and finished with 5/8" type "X" gypsum board. All structural elements supporting structure above to be wrapped with 5/8" type "X" gypsum board. R-30 insulation in floor above. Garage to house door to be 1-3/8" solid core or a door having a fire rating of 20 minutes with spring closer hinges in a weather stripped frame with threshold.
- Exterior doors should open onto landing located not more than 1 1/2" below the top of the threshold of the door. Minimum length of the landing should not be less than 36".
- Deck framing members within 18" of exposed ground should be pressure treated or naturally decay resistant wood. Wood located nearer than 6" to the earth or in contact with concrete shall be pressure treated or naturally decay resistant.
- All exterior walls are to be 2x4's at 16" on center unless otherwise noted. Double top plate single bottom plate. All interior load bearing walls @ 16" O.C. All non bearing to be 2x4" O.C. UON by engineer

WINDOW TYPES:

- SL = HORIZONTAL SLIDER
- SH = SINGLE HUNG
- FX = FIXED FRAME
- FT = FIXED TRANSOM
- PS = PATIO SLIDER
- (T) = TEMPERED GLASS
- (CSMT) = CASEMENT

NOTE:
ALL WINDOWS TO HAVE U-FACTOR OF 32 OR LESS

NOTE:
ALL EGRESS WINDOWS TO HAVE A MINIMUM 5.7 SF. CLEAR OPENING.

WINDOW NOTES:

- SEE UNIT FLOOR PLANS FOR LOCATION OF ALL WINDOWS - COORDINATE WITH ELEVATIONS.
- CONTRACTOR TO VERIFY ALL WINDOW TYPES AND SIZES PRIOR TO FABRICATION
- (T) = TEMPERED GLAZING PER CODE. - CONTRACTOR TO FIELD VERIFY ALL CONDITIONS. SEE GENERAL NOTE #6.
- U.N.O. - ALL WINDOW HEADS @ 6'-10 1/2" AFF.
- 2660 SH by a window indicates a 2'-6" wide by 6'-0" high window, that is a single hung window.

DOOR TYPES:

- SC-1 3/4" SOLID CORE ENTRY DOOR (RE: ELEVATIONS)
- INTERIOR - 1 3/8" HOLLOW CORE, RAISED 6-PANEL, PAINTED
- BF - BI-PASS - HOLLOW CORE, RAISED 6-PANEL, PAINTED
- SER DR - 1 3/4" METAL, 20 MINUTE RATED, WITH CLOSER, FLUSH FINISH, PAINTED
- OH DR - SECTIONAL STEEL OVERHEAD DOOR, PAINTED
- BF - BI-FOLD - HOLLOW CORE, RAISED 6-PANEL, PAINTED
- PS - SLIDING GLASS DOOR

NOTE:
ALL OPAQUE DOORS TO HAVE U-FACTOR OF 21 MAXIMUM

DOOR NOTES:

- AT DOOR FROM HOUSE TO GARAGE, PROVIDE SELF-CLOSER (DOOR SHALL BE SELF-CLOSING FROM THE 2/3RDS OPEN POSITION)
- PROVIDE DOOR STOPS AT ALL SWING DOORS
- PROVIDE FULL PERIMETER WEATHER STRIPPING AT ALL EXTERIOR DOORS
- CONTRACTOR TO VERIFY ALL DOOR TYPES AND SIZES & COORDINATE HARDWARE REQUIREMENT'S WITH OWNER
- OPTIONAL DOOR
- 3068 by a door indicates a 3'-0" wide by 6'-8" high door.

ENERGY CODE:

PERFORMANCED BASED INSPECTION MUST COMPLY WITH CHAPTER 4 OF THE 2018 IECC

DESIGN LOADS:

These plans were designed to meet the external load conditions noted below.

	Dead Loads	Live Loads
Roof, with Composite Shingles	10 pcf	30 pcf
Floor	10 pcf	40 pcf
Exterior Decks	12 pcf	60 pcf
Ceiling (Space above ceilings where limited storage is possible, but additional room construction is not)	10 pcf	20 pcf
Wind		90 mph/exposure B
Snow		30 pcf ground
Seismic		B

FRAMING NOTES:

- FRAMING LUMBER:
 - ALL FRAMING LUMBER TO BE HEM-FIR LARCH #2 AND BETTER. Fb=850/970 pcf, Fv=75 pcf, Fc=1250 pcf, E=1300000 pcf
 - 2x STUDS TO BE HEM-FIR LARCH "STUD" GRADE. Fb=675/750 pcf, Fv= 75 pcf, Fc=800 pcf, E=1200000 pcf
 - TJI'S AND "MICRO-LAMS" BY TRUS JOIST CORP. OR EQUIV. Fb=2600 pcf, Fv=285 pcf, Fc=750 pcf, E=1800000 pcf
- ALL HEADERS TO BE 2-2x12 UNLESS NOTED OTHERWISE ON PLAN.
- PROVIDE MIN. 2-2x POST UNDER EACH END OF ALL BEAMS AND HEADERS UNLESS NOTED OTHERWISE ON PLAN.
- PROVIDE SOLID BLOCKING UNDER ALL POSTS 2-2x AND LARGER.
- SHEATH ALL EXTERIOR WALLS WITH 1/4" EXTERIOR GRADE O.S.B. NAIL O.S.B. SHEATHING W/8d NAILS AT 4" O.C. AT EDGES AND 12" O.C. AT INTERMEDIATE MEMBERS.
- PROVIDE SOLID 2x RIM JOIST AT END OF ALL FLOOR JOISTS WITH DIMENSION LUMBER FLR JOISTS AND "TIMBERSTRAND" RIM JOIST AT ALL "TJI" FLOOR JOISTS U.N.O.
- ALL METAL CONNECTORS TO BE SIMPSON STRONG TIE OR EQUIVALENT.
- ALL EXTERIOR WALLS TO BE FRAMED WITH 2x STUDS AT 24" O.C. WITH DOUBLE TOP AND SINGLE BOTTOM PLATE U.N.O.
- ALL INTERIOR BEARING WALLS TO BE FRAMED WITH 2x STUDS AT 16" O.C. WITH DOUBLE TOP AND SINGLE BOTTOM PLATE U.N.O.
- GLUE AND NAIL ALL MULTIPLE MEMBERS 2-2x AND LARGER W/6d NAILS AT 6" O.C. FULLY BLOCK WEBS, GLUE AND NAIL ALL MULTIPLE "TJI" FLOOR JOISTS.

- ROOF SHEATHING TO BE MIN. 5/8" O.S.B. EXTERIOR GRADE SHEATHING AND FLOOR SHEATHING TO BE MIN. 3/4" TAG PLYWOOD GLUED AND NAILED.
- FRAMER RESPONSIBLE FOR MISSING HEATING AND PLUMBING RUNS.
- PROVIDE SIMPSON H25 OR EQUAL AT ALL TRUSS AND ROOF RAFTER BEARING LOCATIONS.
- ALL FRAMING TO BE IN CONFORMANCE WITH 2018 EDITION OF INTERNATIONAL RESIDENTIAL CODE.

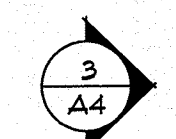
Drawing Legend

Drawing Notes: (1)
The number "1" refers to plan note 1. for further information regarding the area indicated.

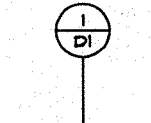
Drawing Reference:
RE: 2 - A2 indicates refer to drawing 2 on sheet A2

Room Titles:
ROOM - room name
C-CEILING - ceiling height/floor covering
CPT = carpet
LINO = sheet linoleum
F.M.C. = Floor Material Change

Section Marker:
shows location and direction of section



Detail Marker:
shows location and direction of detail

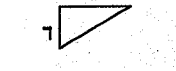


Interior Elevation Marker:
A1 - The letters around the outside indicates direction and the letter in the middle - indicates sheet

Sill Plate:
sill plate location



Slope:
indicates rise of 7" in 12" horizontal length



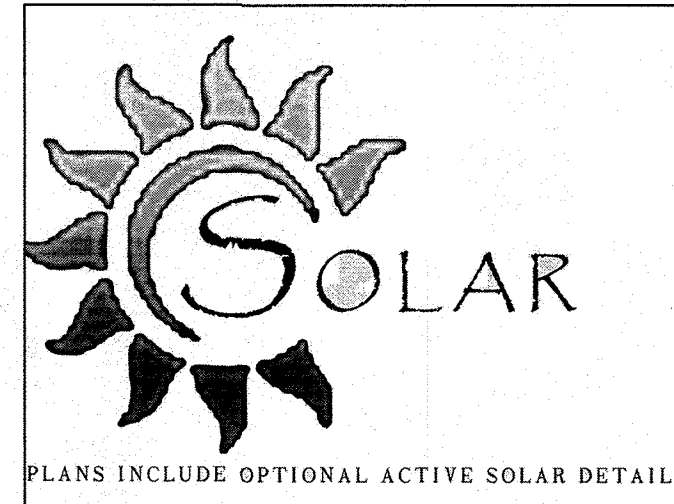
Building Codes

- 2018 IRC
- 2018 IECC
- 2017 NEC
- 2018 IMC

Sheet Index

Sheet	Description	Revision Date
A1	Cover Sheet	n/a
A2	2018 IRC Notes	n/a
A3	Main Level Floor Plan	n/a
A4	Exterior Elevations	n/a
A5	Building Sections	n/a
A6	Concrete Slab Floor Plan	n/a
A7	Details	n/a
A8	Air Barrier Details	n/a
A9	Optional Solar Details	n/a
A10	Framing Plans	n/a
A11	Electrical Floor Plans	n/a

Revision Date



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J.B.M.
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D.L.M.

date:
12-15-06

revised:

sheet index:
COVER SHEET

sheet no.

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H-2020-S

ARCHITECTURAL LEGEND

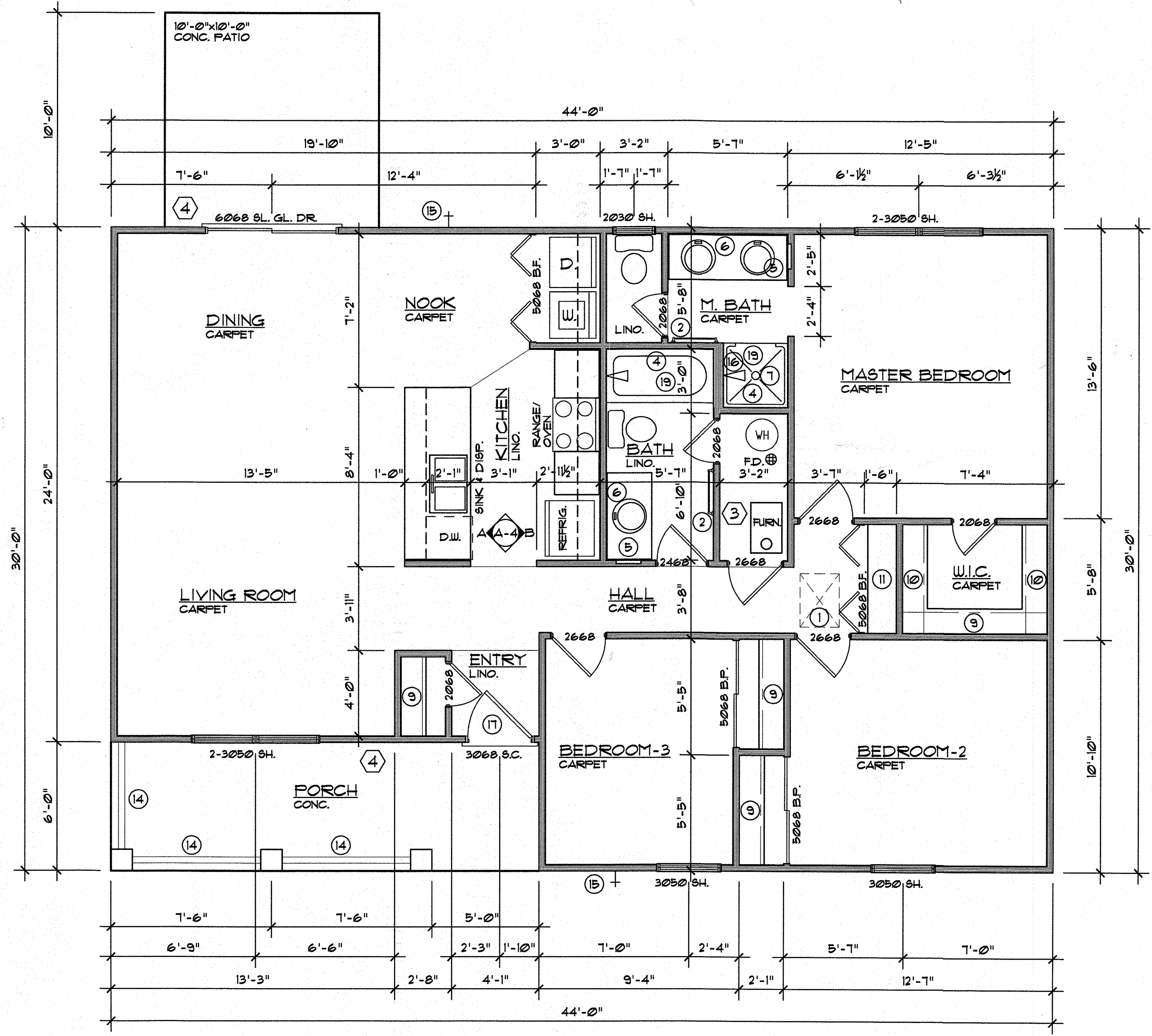
1. Provide 22"x30" attic access.
2. 24" towel bar.
3. Towel ring.
4. Soap and grab bar.
5. Recessed medicine cabinet.
6. Mirror.
7. 36"x36" shower receptor w/ tempered glass enclosure.
8. Provide 18"x24" c.s. access
9. One shelf and one rod.
10. One shelf and two rods 42" high and 40" between.
11. Linen closet - 5 shelves.
12. 34" high (min.) 38" high (max.) 1/2" # handrail.
13. 34" high (min.) 38" high (max.) 600 type grabrail w/ 2x2 balusters @ 4" o.c.
14. 36" high guardrail w/ 2x2 balusters @ 6" O.C.
15. Hose bibb.
16. 2x6 stud wall
17. Maximum vertical height measured from top of threshold of door to landing not to exceed 7 1/2". Maximum threshold height at door to interior landing not to exceed 1".
18. Door between house and garage to be 1 3/8" minimum. Changes in elevations at doors due to landings or termination of stairs, to be measured from top of door threshold.
19. Provide water-resistant type gyp. bd. @ bath walls at tub & shower locations.

GENERAL NOTES

1. Provide 5/8" Type "X" 1-hour fire rated drywall @ garage walls, ceilings and structural members adjacent to living areas as per section 3032 of the IRC. (drywall to extend to the underside of the highest roof sheathing or be installed to entire ceiling.)
 2. Start top of 4" concrete garage slab, 2" below top of garage foundation wall @ rear and slope 4" down to front foundation wall over blockout (2" min. req. by code).
 3. Provide 1" minimum clearance around furnace flue.
 4. Install an impervious membrane between all concrete patios/porches and wood frames as per code.
- Do not scale drawings, use dimensions as specified on drawings.

NOTE: FOR BEAM SIZES AND FRAMING NOTES, REFER TO STRUCTURAL SHEETS.

25 pos
Base
15
Casing

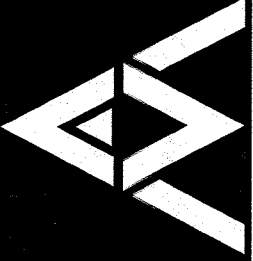


1 MAIN LEVEL FLOOR PLAN
1/4" = 1'-0" 1200 Sq. Ft.

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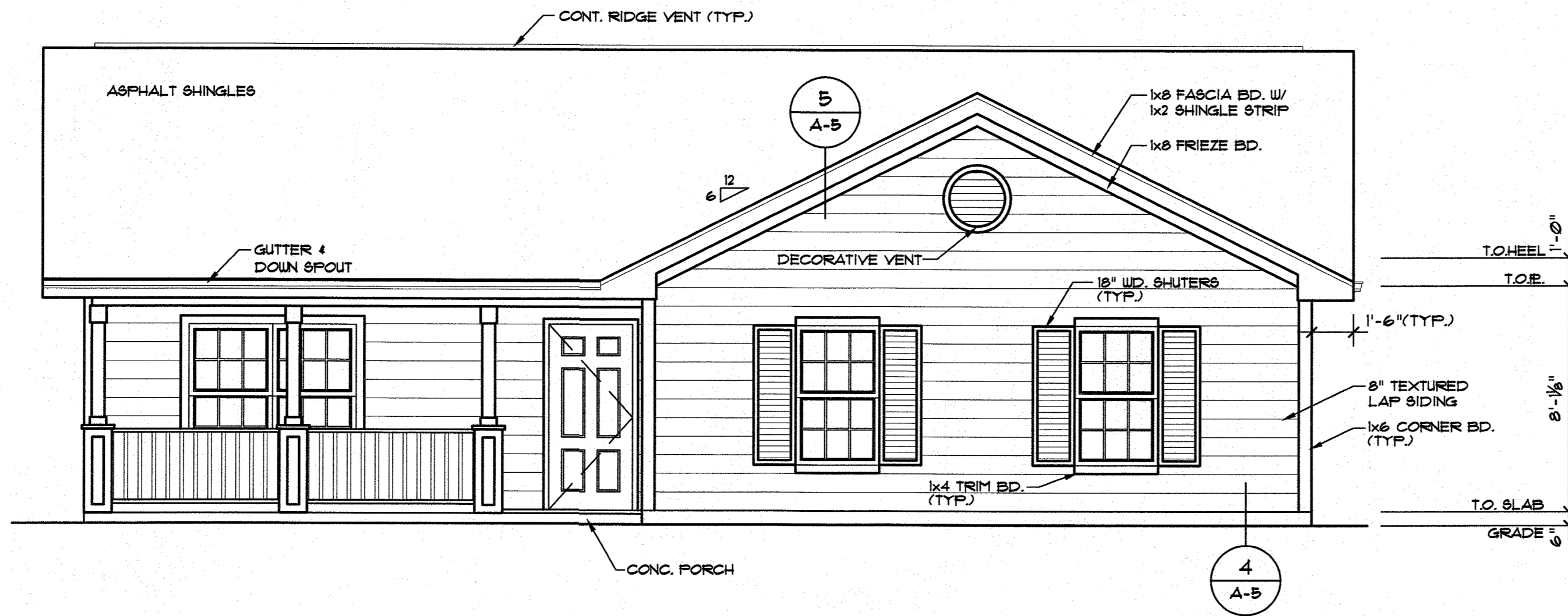
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checked by: **D.L.M.**

date: **12-15-06**

revised:

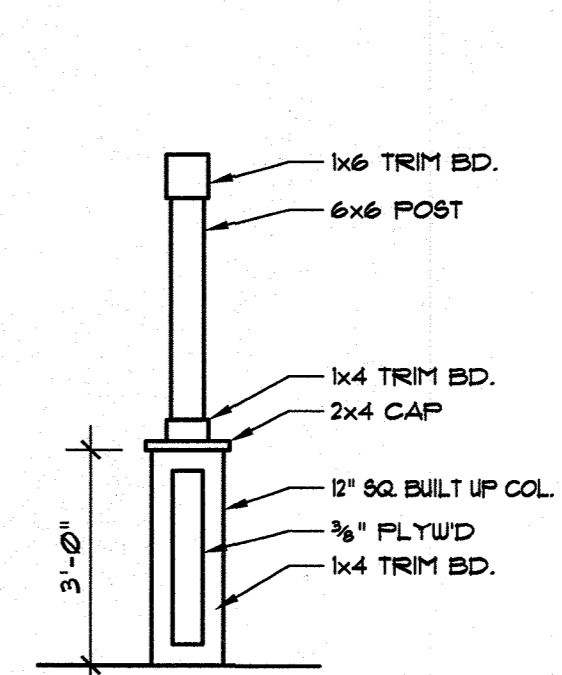
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sheet no. **A3 of 11**

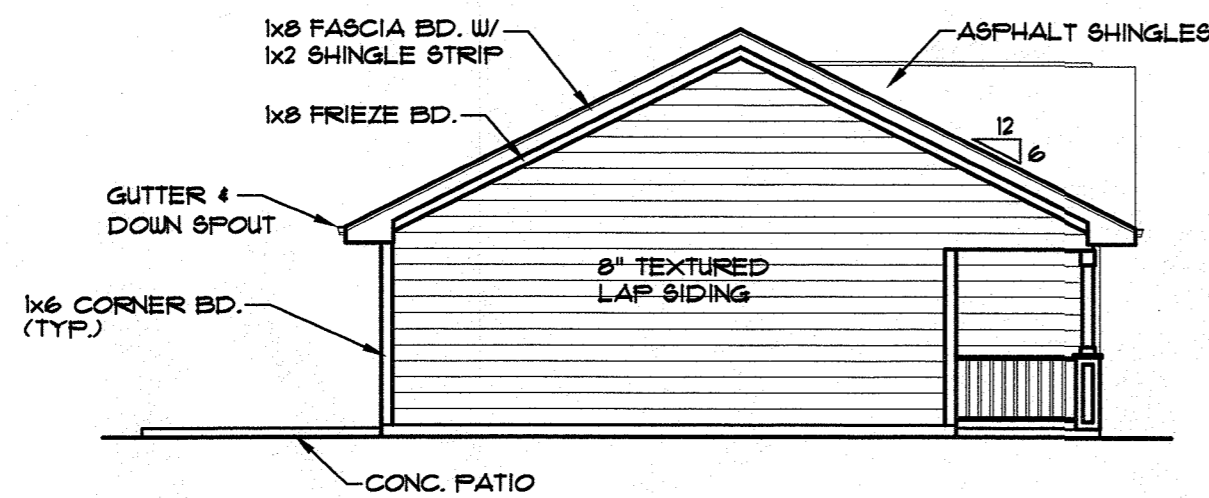


1 FRONT ELEVATION
1/4" = 1'-0"

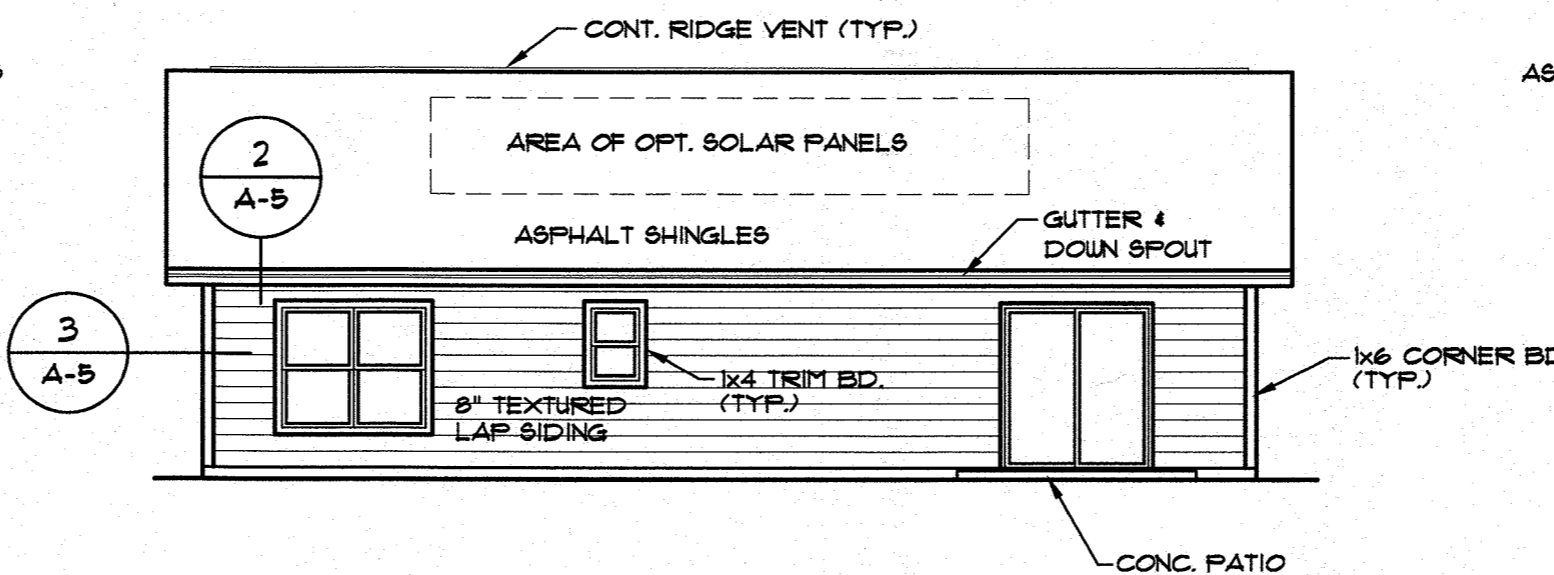
TILT AND ORIENTATION OF SOLAR PANELS
Solar panels should be placed as close as possible on a south facing roof in the Northern Hemisphere. The angle of degree varies as per location.



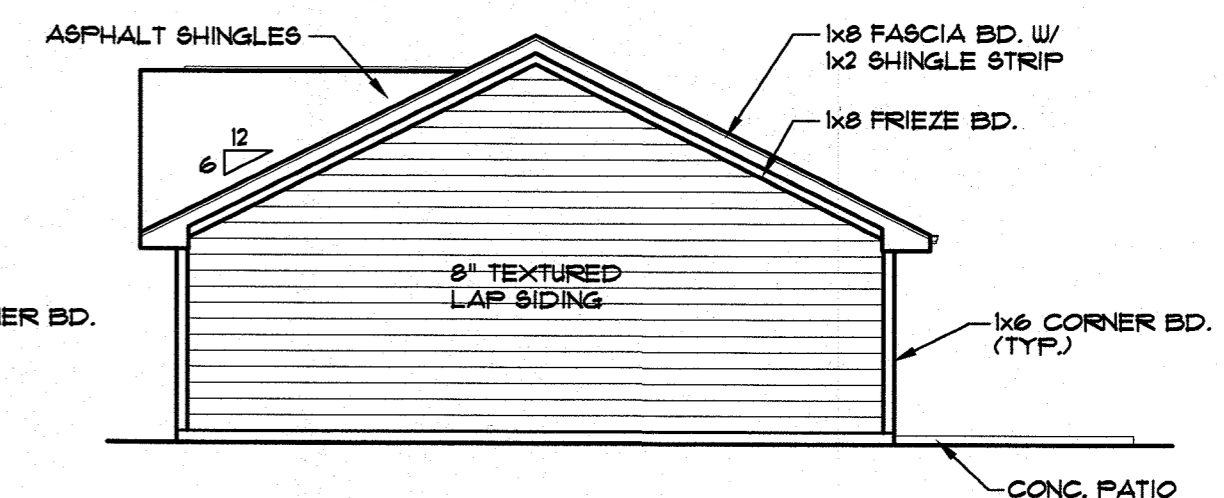
2 COLUMN DETAIL
3/8" = 1'-0"



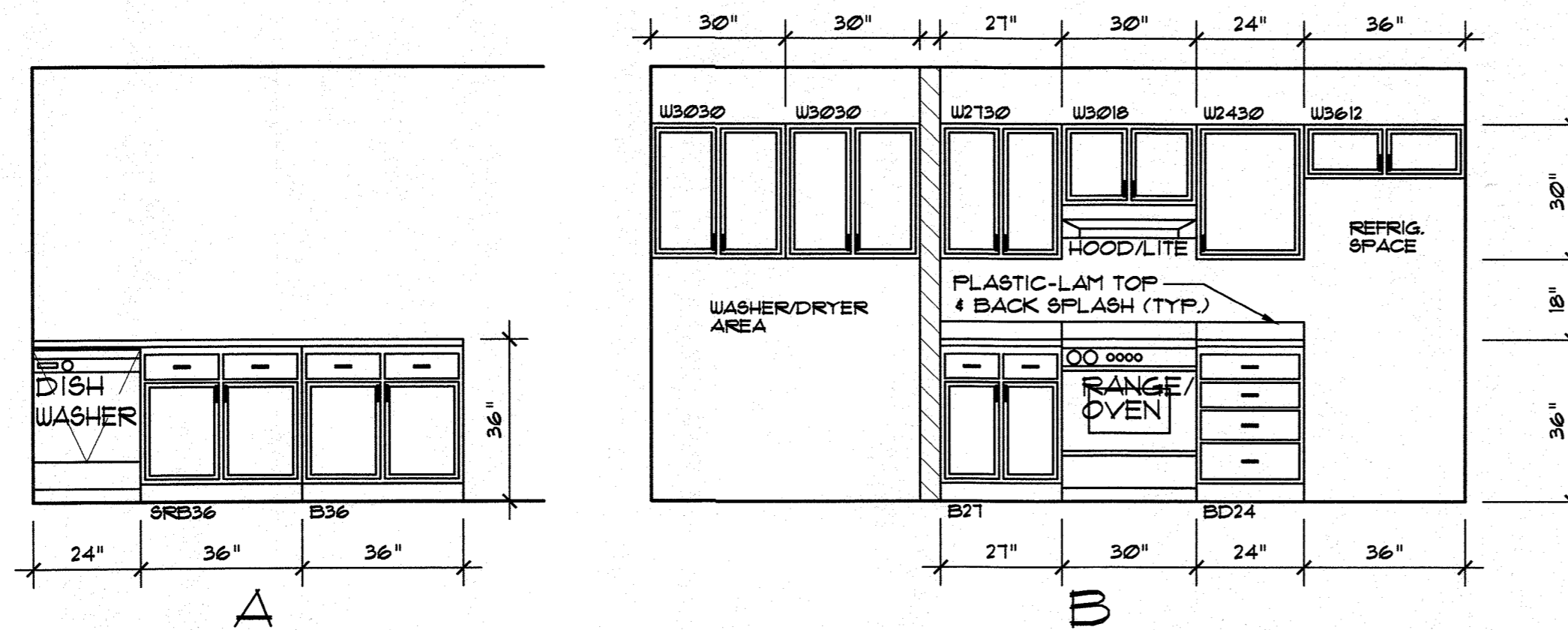
3 LEFT SIDE ELEVATION
1/8" = 1'-0"



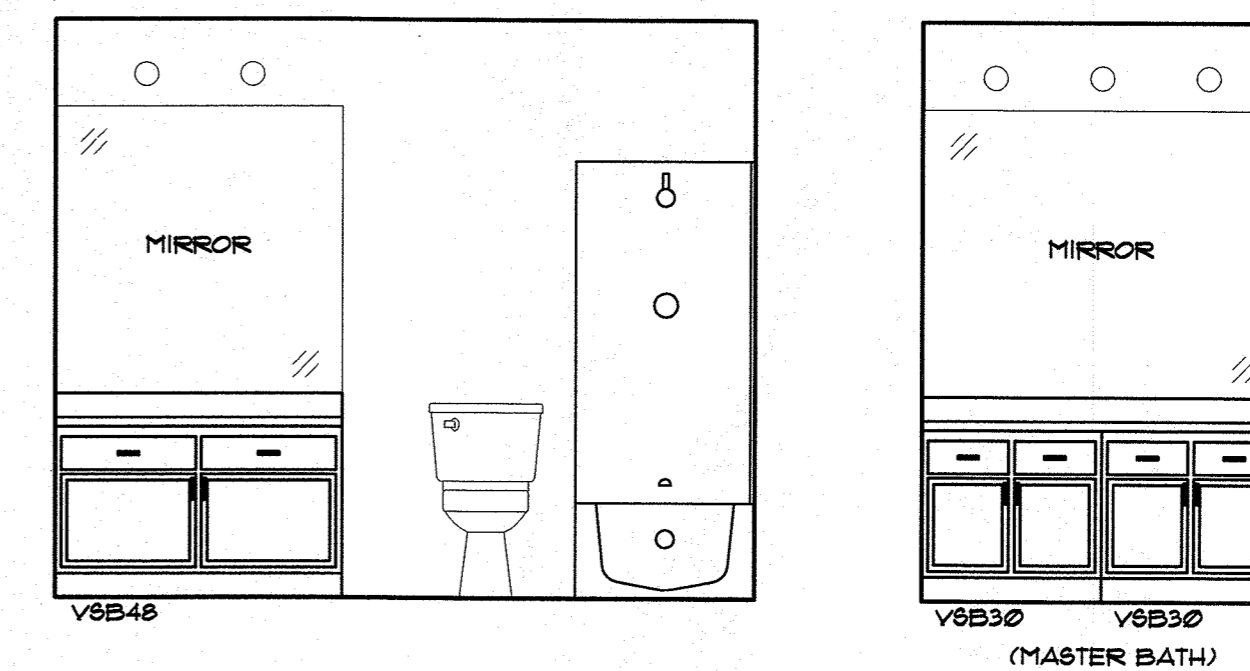
4 REAR ELEVATION
1/8" = 1'-0"



5 RIGHT SIDE ELEVATION
1/8" = 1'-0"



6 KITCHEN/ LAUNDRY CABINET ELEVATIONS
3/8" = 1'-0"

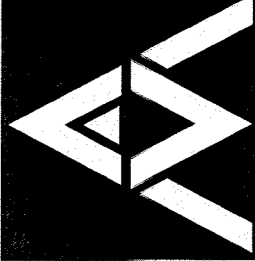


7 BATH ELEVATIONS
3/8" = 1'-0"

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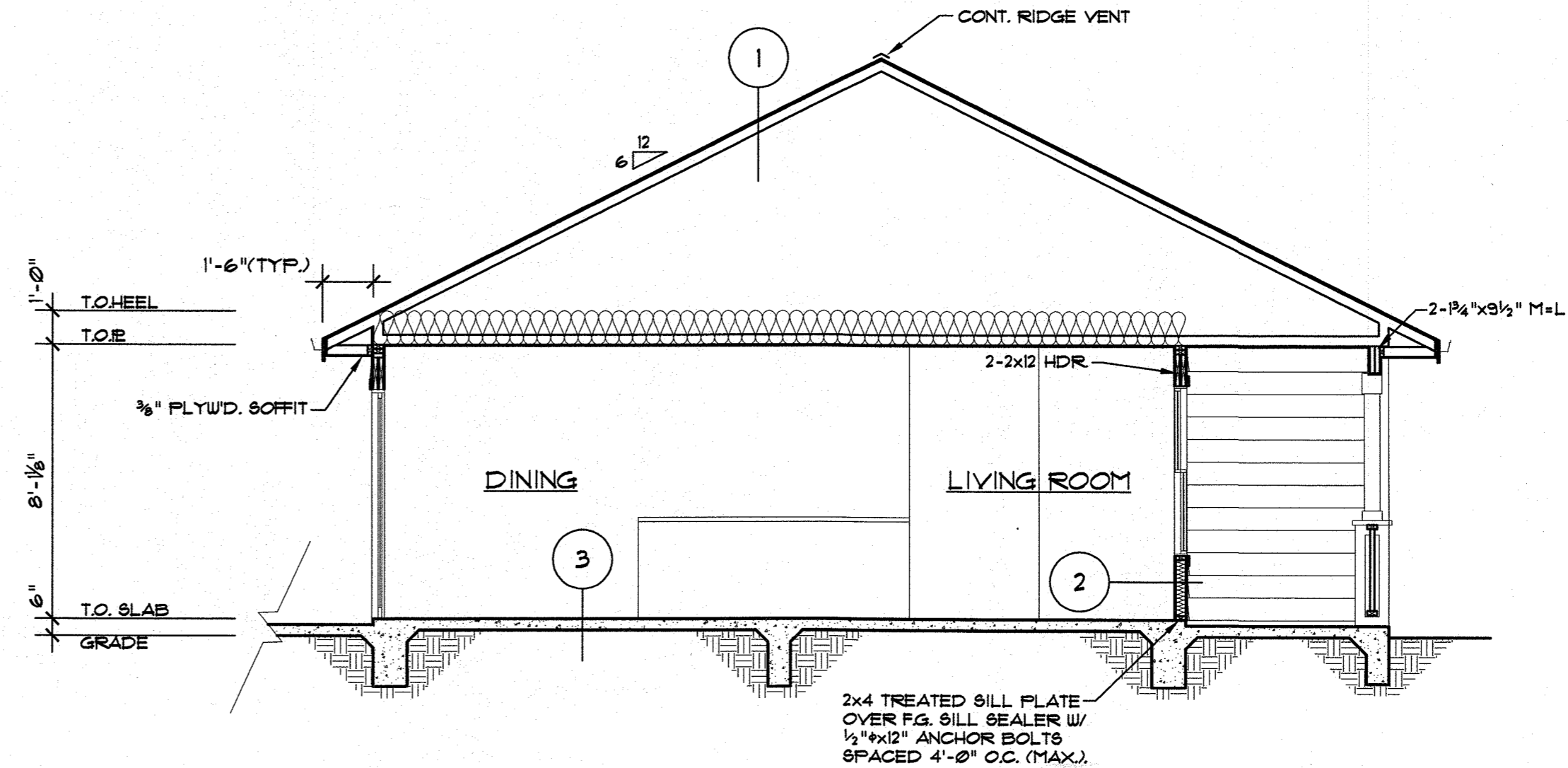
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ELEVATIONS

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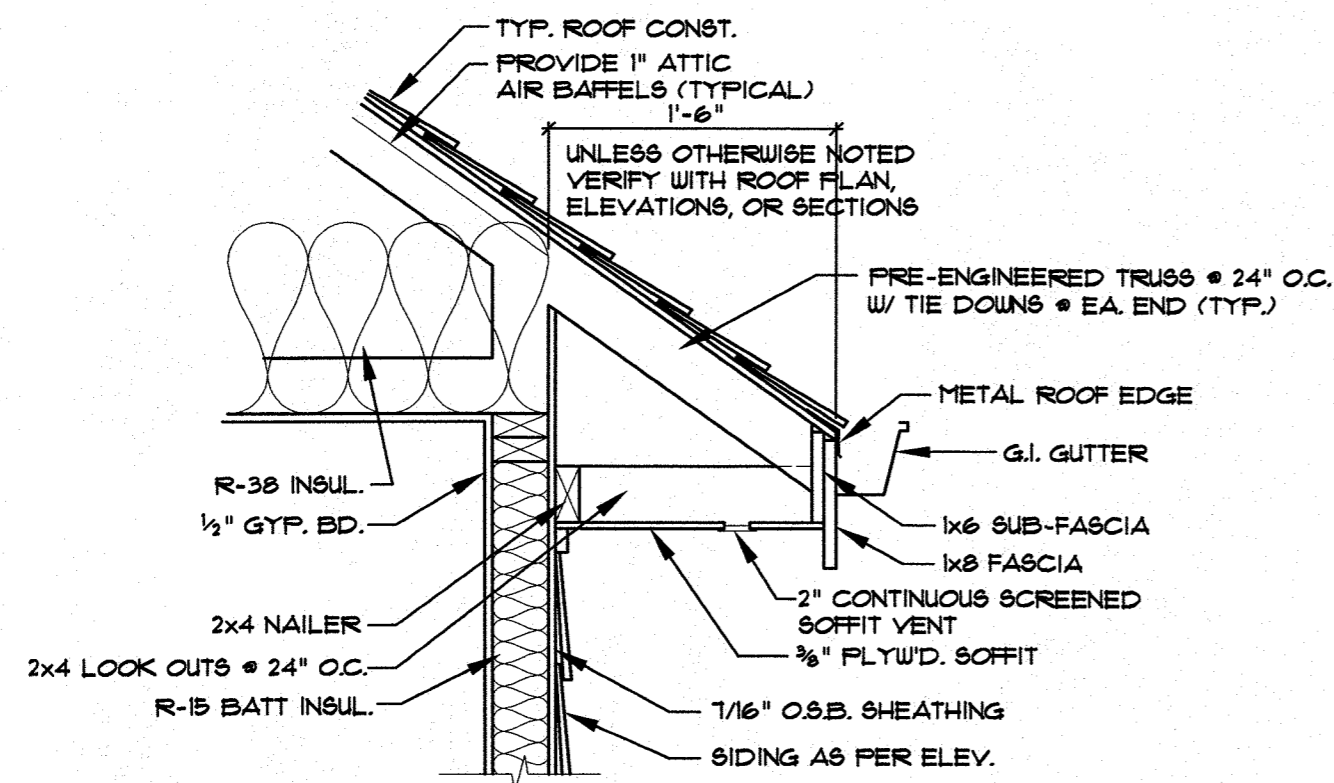
- 1 **ROOF SYSTEM:**
240# ASPHALT SHINGLES ON 15# FELT UNDERLAYMENT ON 5/8" EXTERIOR GRADE O.S.B. SHEATHING NAILED OVER PRE-MANUFACTURED ROOF TRUSSES @ 24" O.C. OR 2x RAFTERS (SEE ROOF FRAMING) W/R-38 FIBER-GLASS INSULATION AND 1/2" GYP. BD. TO INTERIOR.
- 2 **EXTERIOR WALL SYSTEM:**
8" TEXTURED LAP SIDING OVER WEATHER-RESISTANT SHEATHING PAPER (PER SECT. R1032 2018 IRC) APPLIED OVER 1/16" EXT. GRADE O.S.B. SHEATHING ON 2x4 STUDS @ 16" O.C. W/DBL. TOP & SINGLE BOT. PLATE W/R-15 BATT INSULATION & 1/2" GYP. BD. TO INTERIOR.
- 3 **FLOOR SYSTEM:**
4" CONC. SLAB W/6x6-10/10 WWM. OVER 10 MIL. POLY. VAPOR BARRIER AND 4" GRAVEL.

NOTE:
CONC. TO ACHIEVE 3000 PSI COMP. STRENGTH MINIMUM IN 28 DAYS.

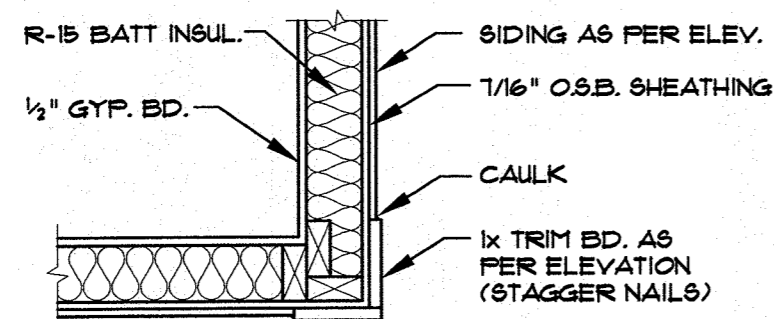
NOTE: INSTALL RIDGED INSUL. TO CONC. SLAB AS REQUIRED BY IECC 2018 CLIMATE ZONE.



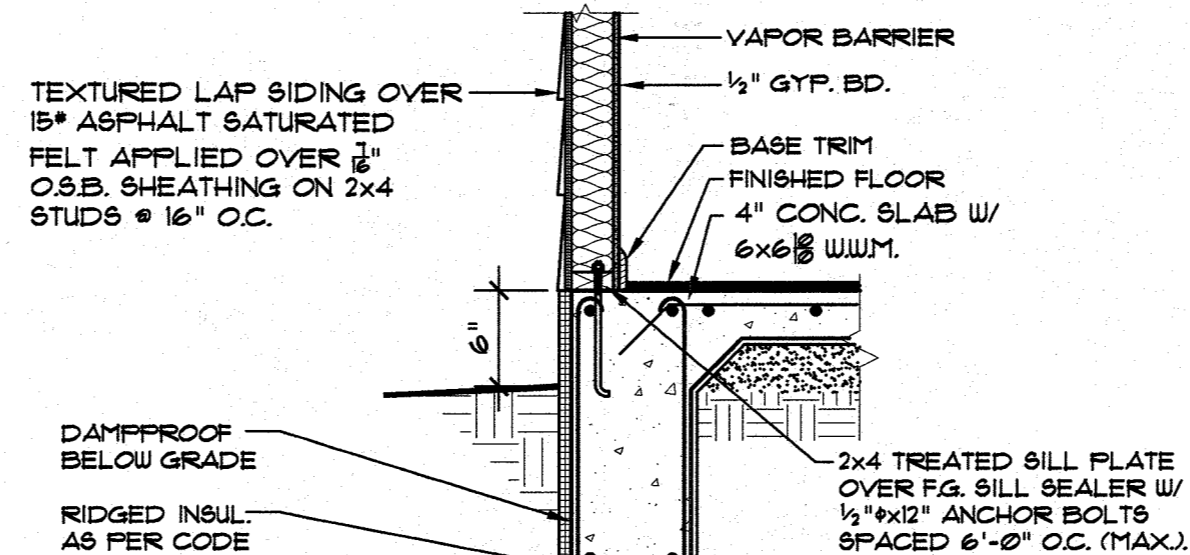
1 CROSS SECTION
1/4" = 1'-0"



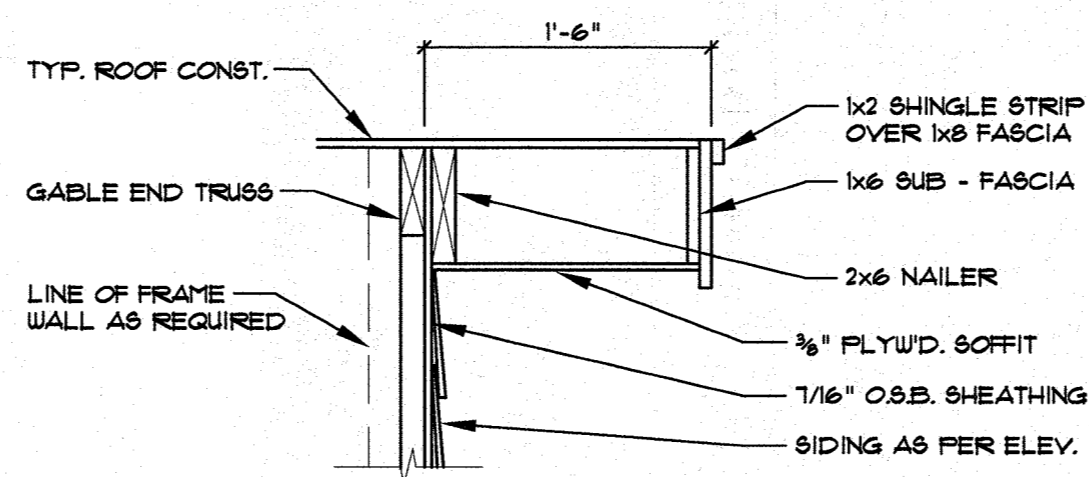
2 CORNICE DETAIL
1" = 1'-0"



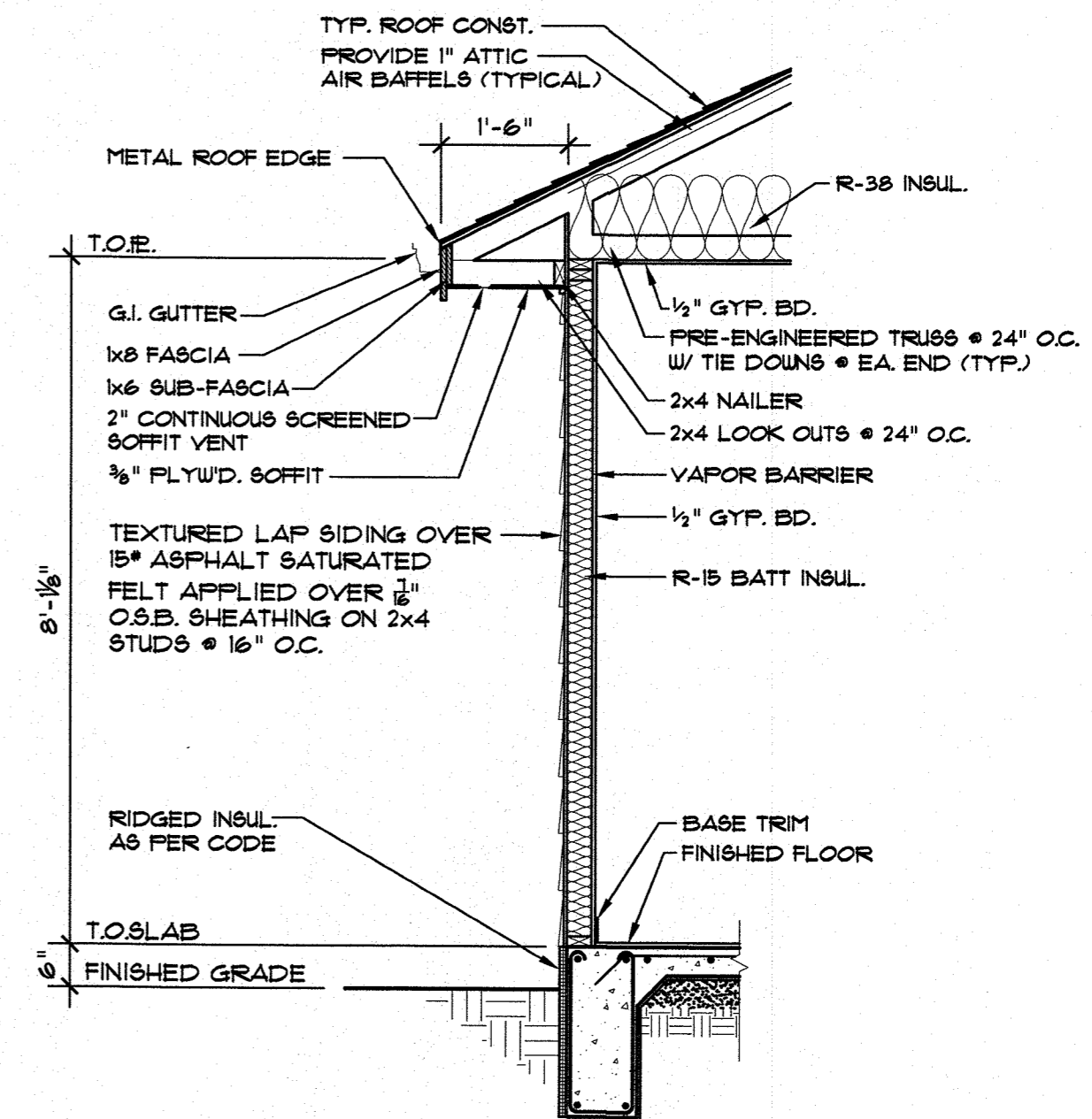
3 CORNER DETAIL
1" = 1'-0"



4 EXTERIOR WALL DETAIL
3/4" = 1'-0"



5 GABLE DETAIL
1" = 1'-0"



6 TYPICAL WALL SECTION
1/2" = 1'-0"

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SECTIONS

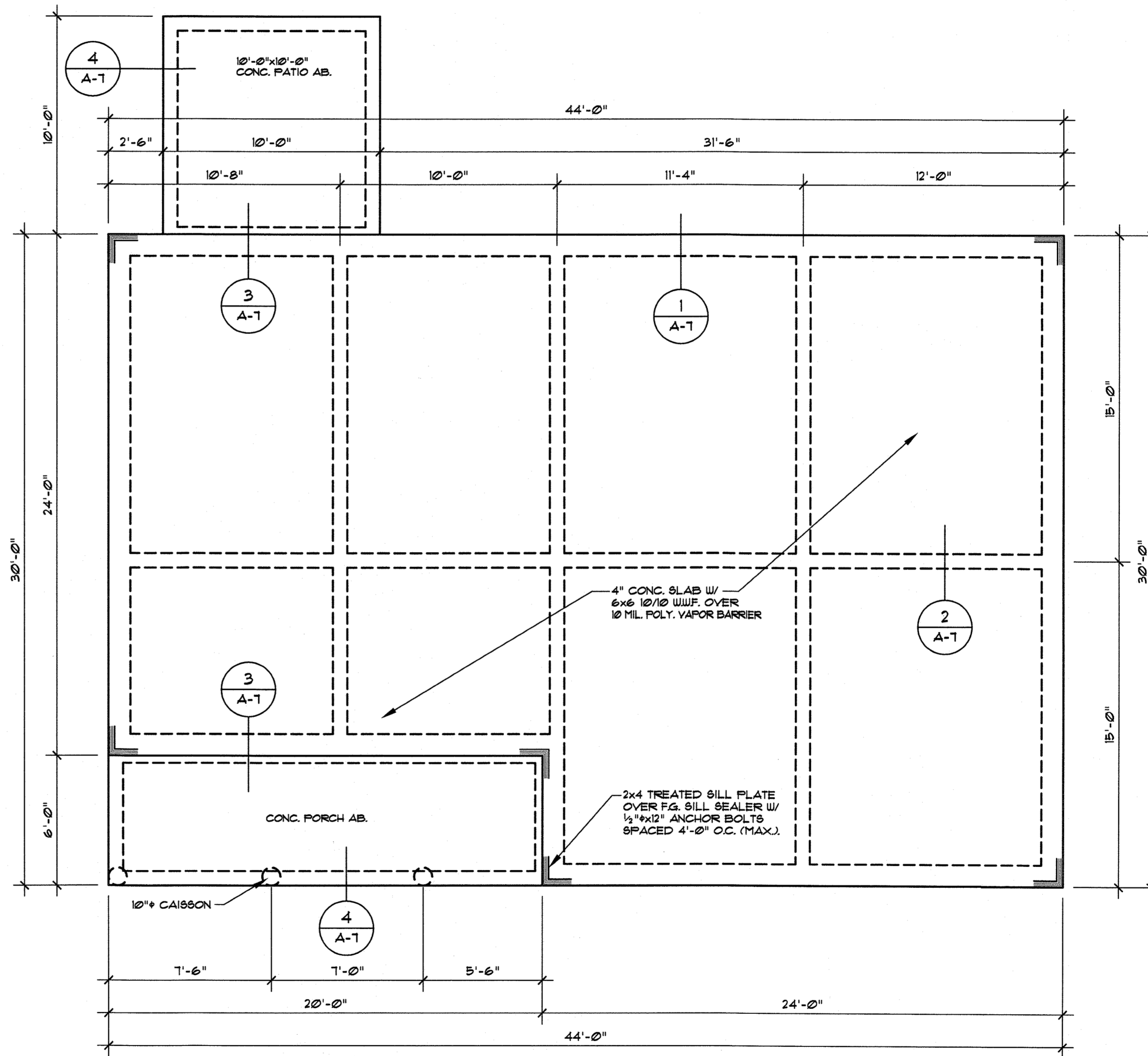
sheet no.

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NOTE: Foundation design shown on these drawings are conceptual only. Actual foundation design by others. Foundation design to be based upon site soil conditions and building code requirements.

NOTE: CONC. TO ACHIEVE 3000 PSI COMP. STRENGTH MINIMUM IN 28 DAYS.

NOTE: INSTALL RIDGED INSUL. TO CONC. SLAB AS REQUIRED BY IECC 2018 CLIMATE ZONE.



1 CONC. SLAB FLOOR PLAN
1/4" = 1'-0"

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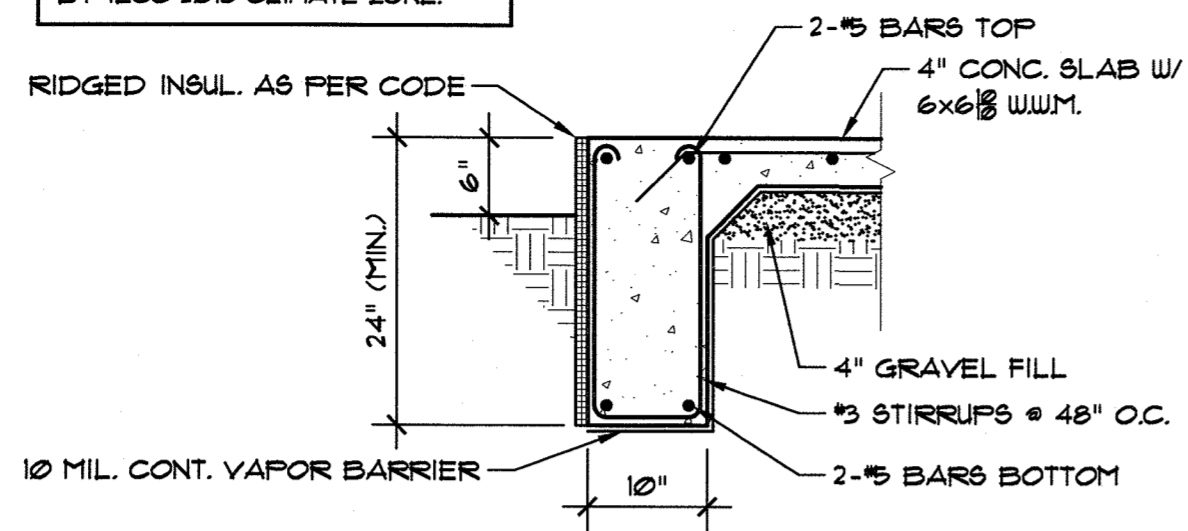
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CONC. SLAB
FLOOR PLAN

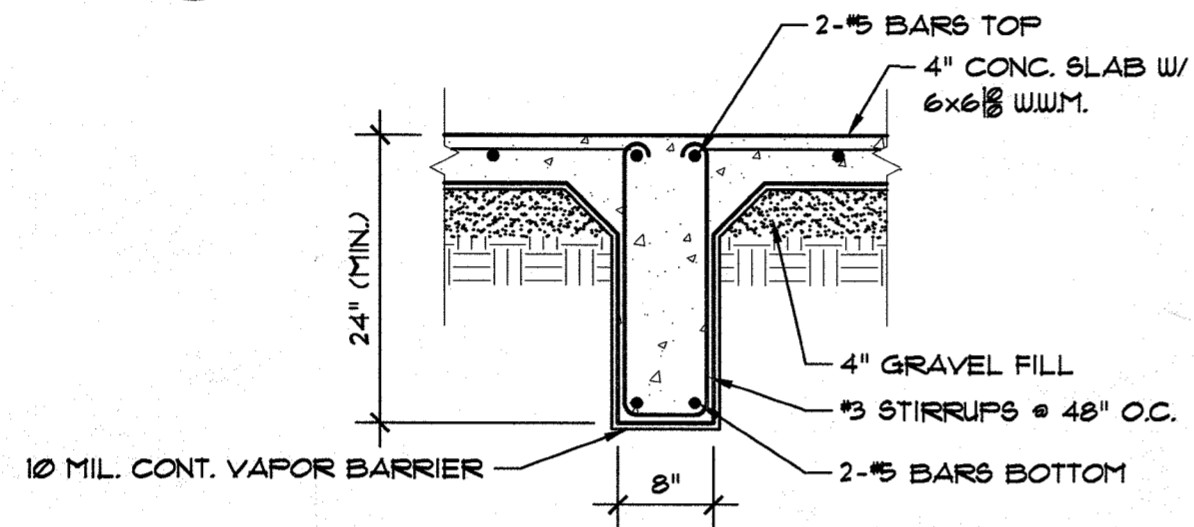
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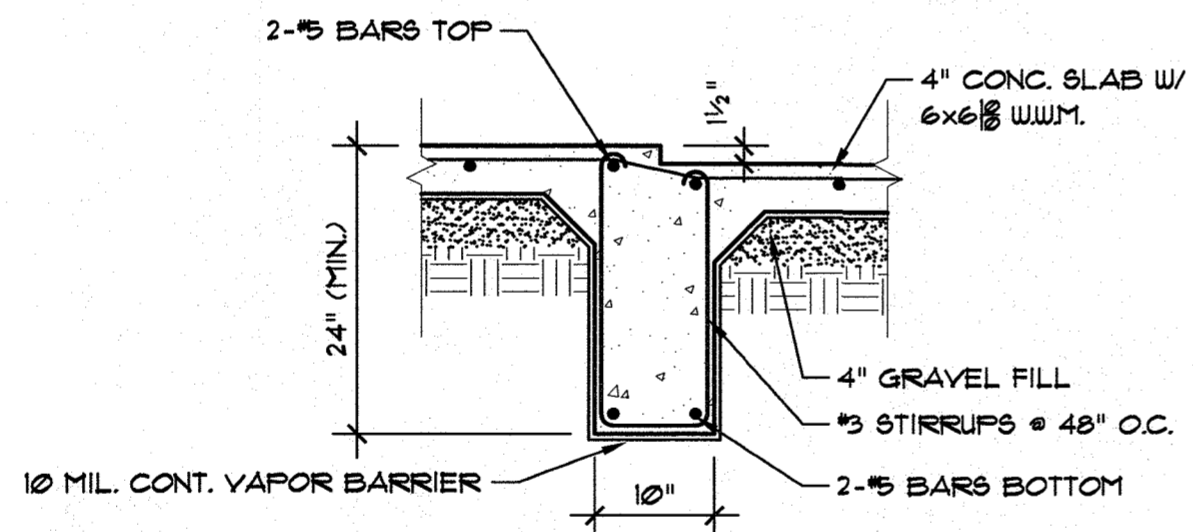
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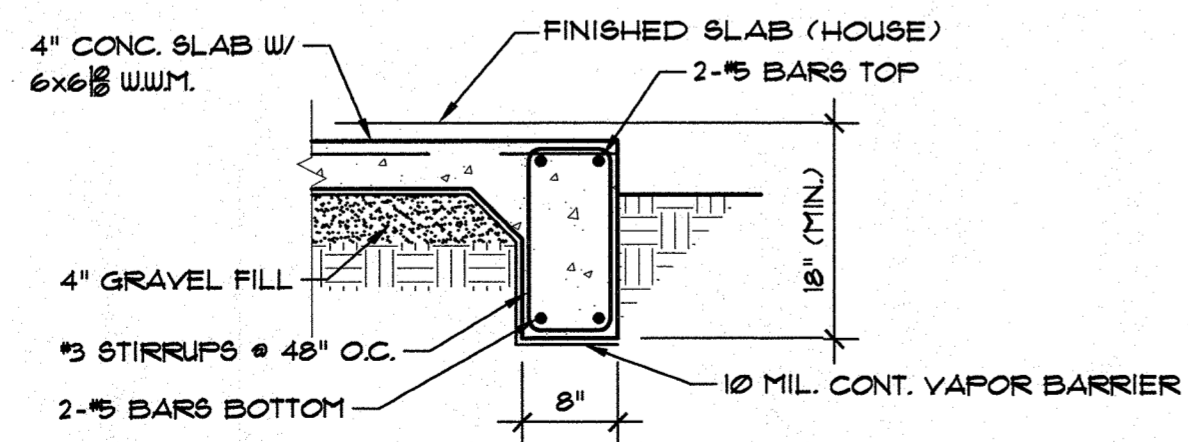
1 PERIMETER BEAM DETAIL
3/4" = 1'-0"



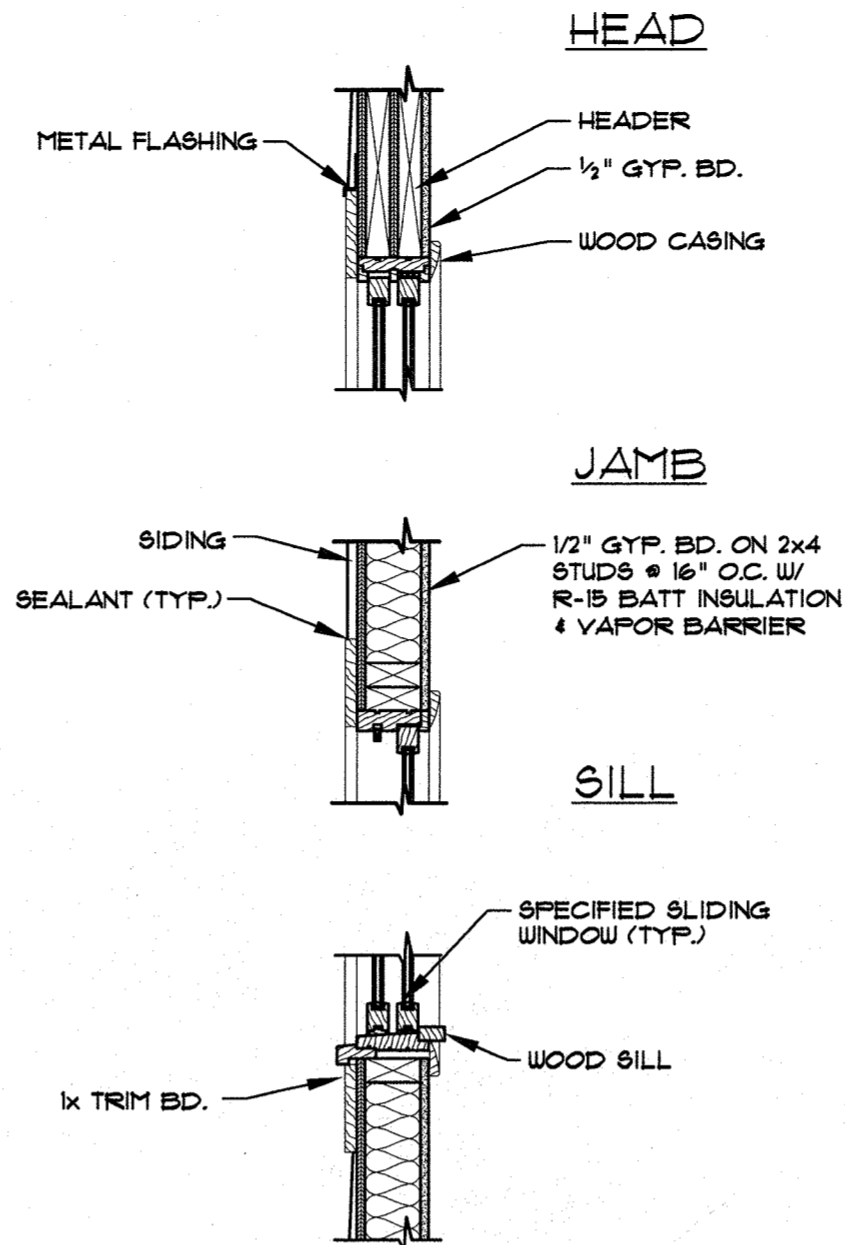
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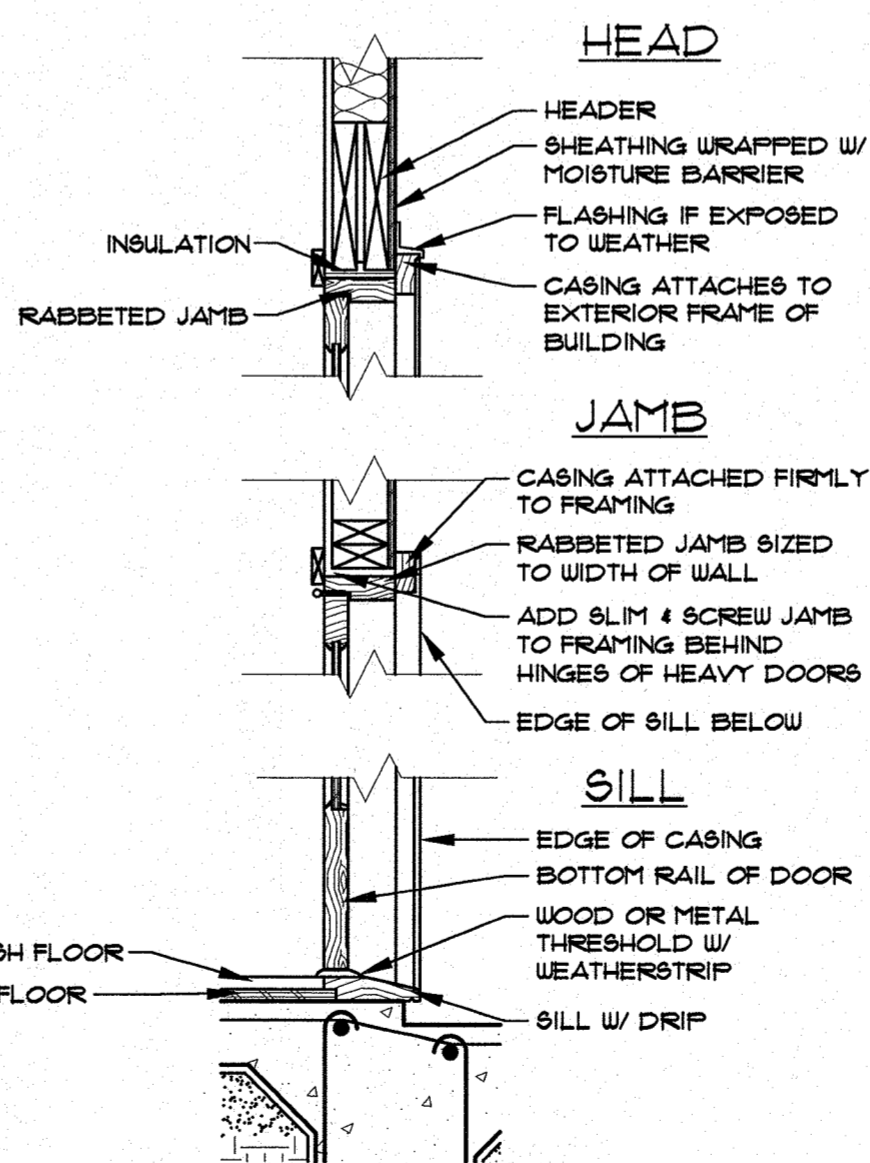
3 HOUSE/PATIO BEAM DETAIL
3/4" = 1'-0"



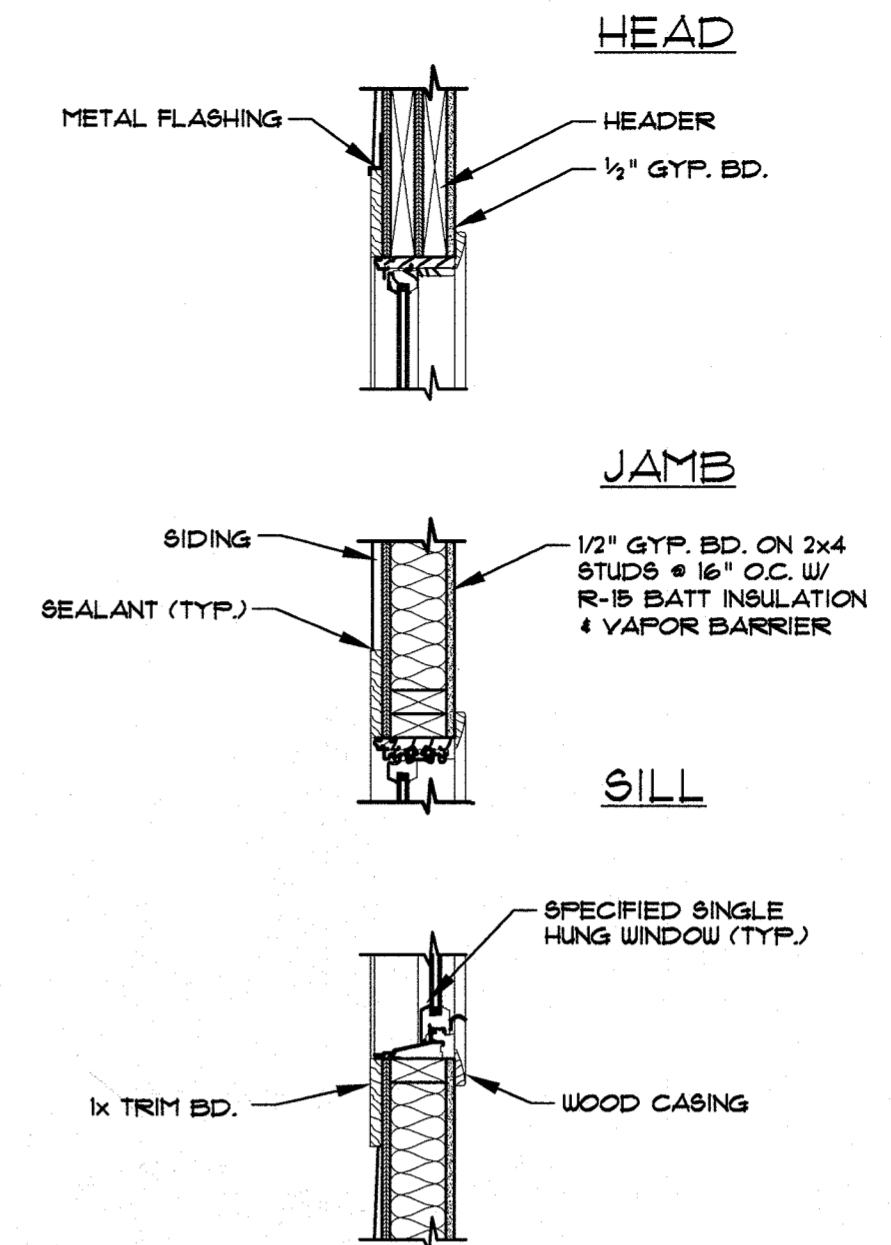
4 PATIO BEAM DETAIL
3/4" = 1'-0"



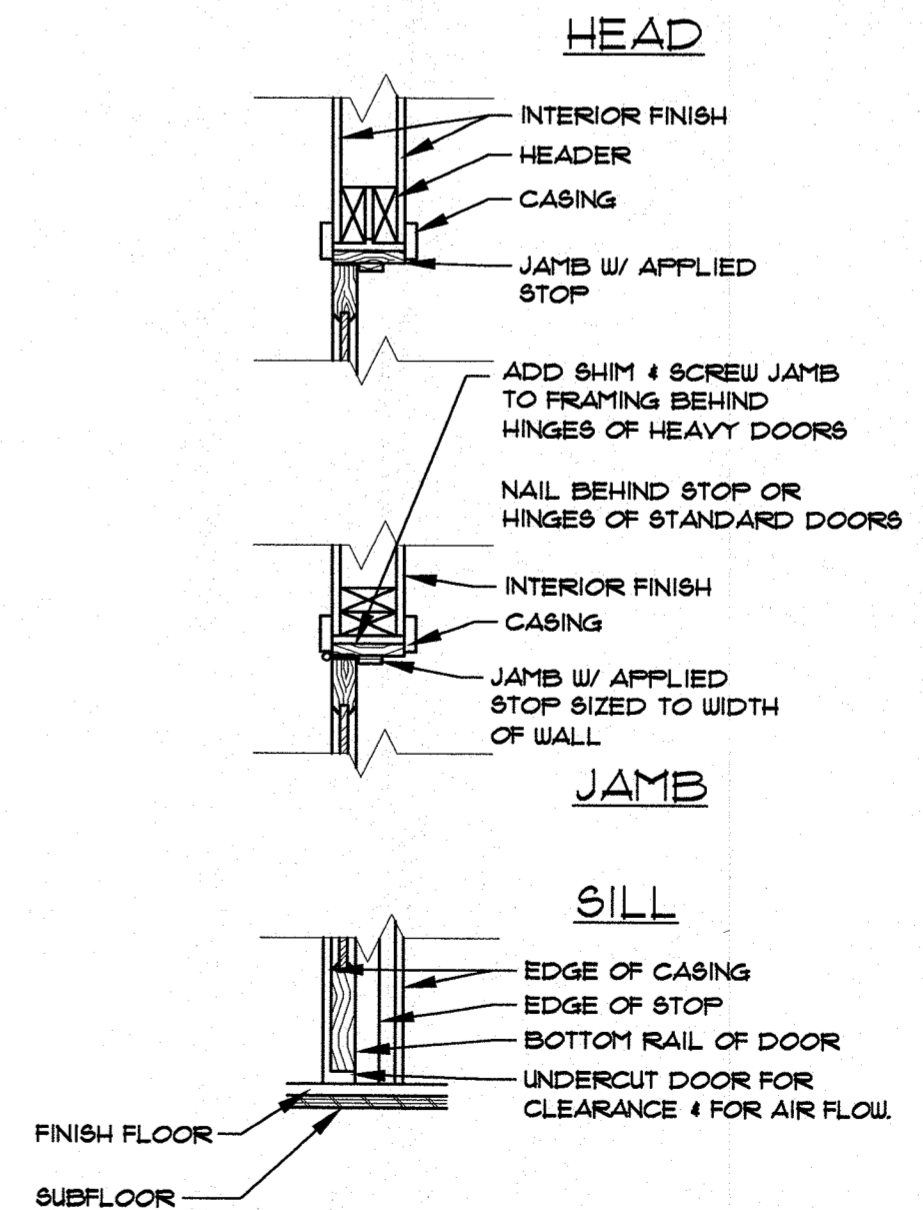
5 SL. WINDOW DETAIL
1" = 1'-0"



7 EXTERIOR DOOR DETAIL
1" = 1'-0"



6 SH. WINDOW DETAIL
1" = 1'-0"



8 INTERIOR DOOR DETAIL
1" = 1'-0"

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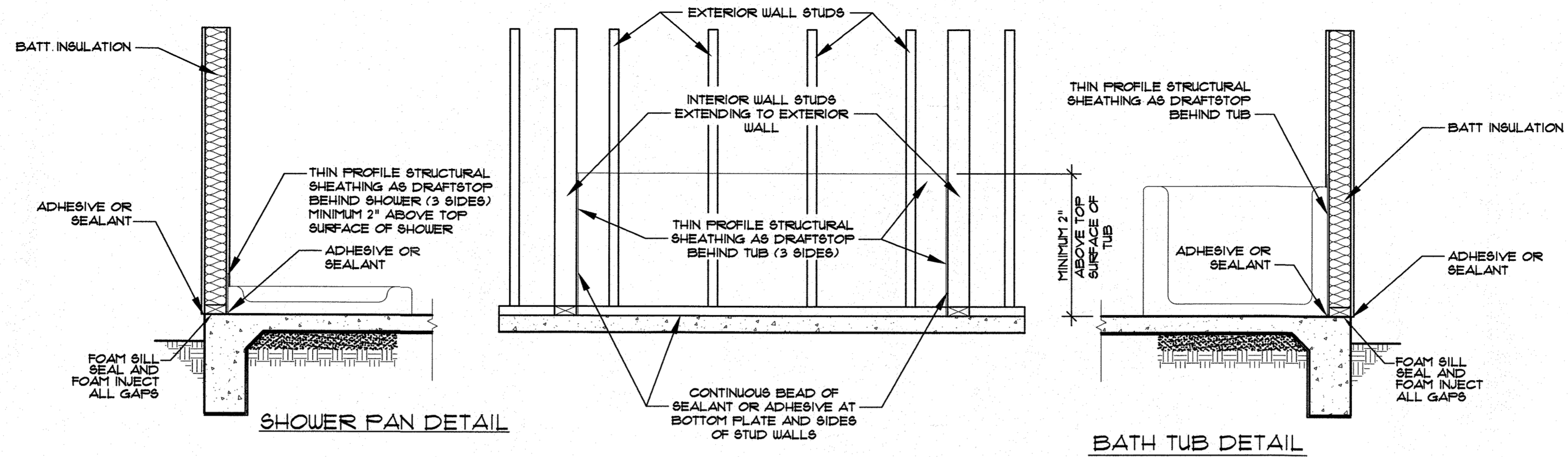
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DETAILS

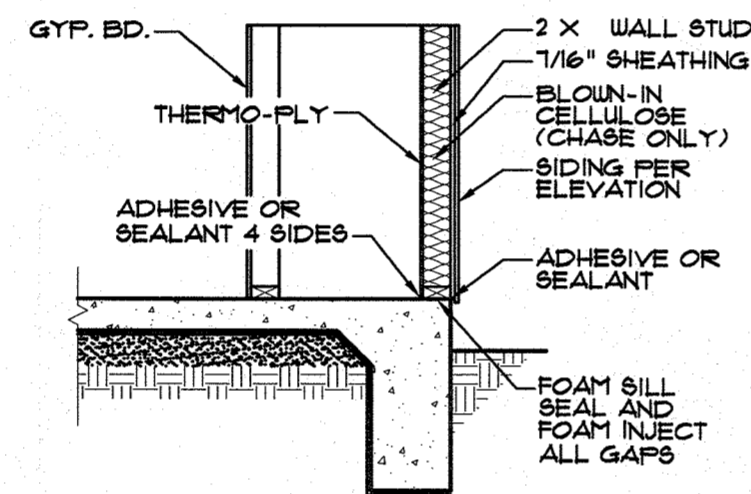
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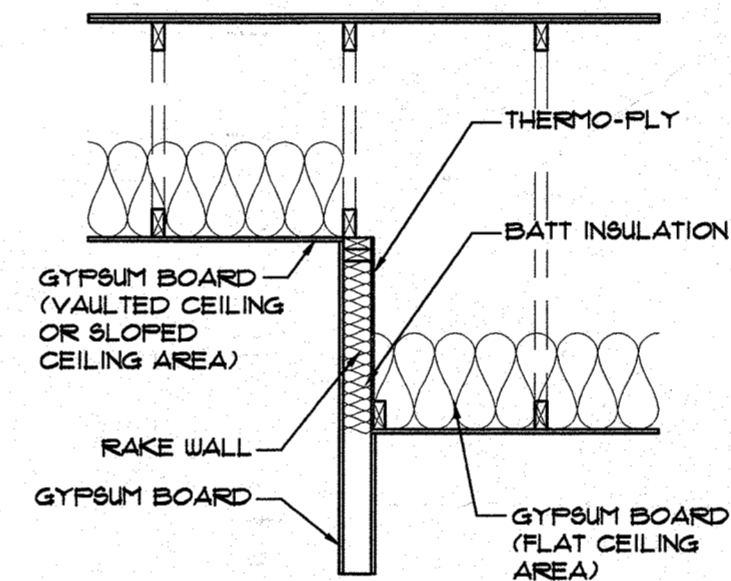
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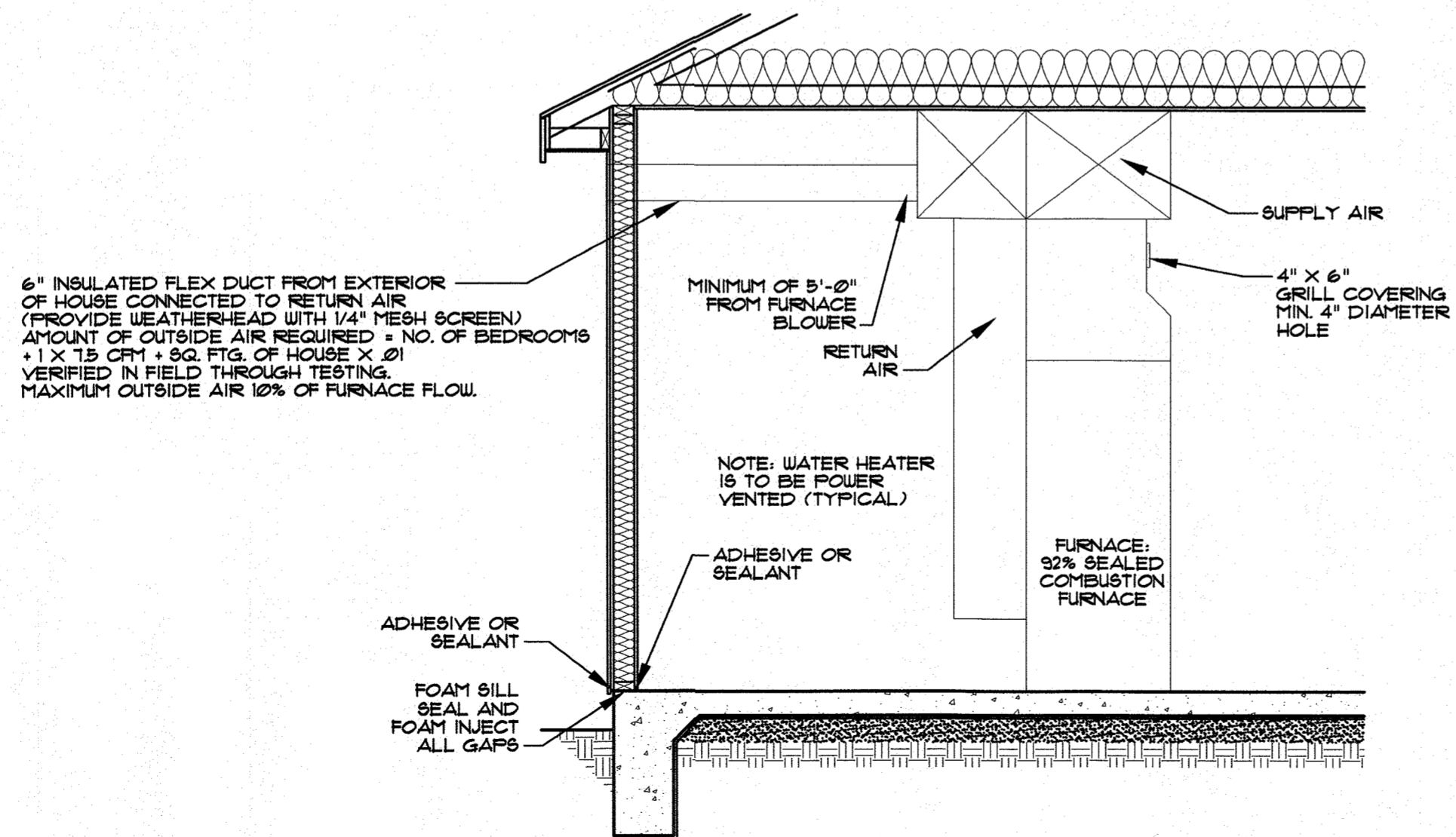
1 PANELIZED WALL DETAIL
 $\frac{3}{4}'' = 1'-0''$



2 FIRST FLOOR DETAIL
 $\frac{1}{2}'' = 1'-0''$



3 RAKE WALL DETAIL
 $\frac{1}{2}'' = 1'-0''$



4 FURNACE DETAIL
 $\frac{1}{2}'' = 1'-0''$

6" INSULATED FLEX DUCT FROM EXTERIOR OF HOUSE CONNECTED TO RETURN AIR (PROVIDE WEATHERHEAD WITH 1/4" MESH SCREEN)
 AMOUNT OF OUTSIDE AIR REQUIRED = NO. OF BEDROOMS + 1 X 15 CFM + 90. FTG. OF HOUSE X .01
 VERIFIED IN FIELD THROUGH TESTING.
 MAXIMUM OUTSIDE AIR 10% OF FURNACE FLOW.

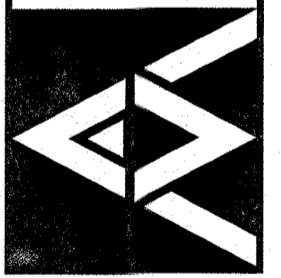
NOTE: WATER HEATER IS TO BE POWER VENTED (TYPICAL)

model no.

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date:
 12-15-06

revised:

sheet index:
 AIR BARRIER
 DETAILS

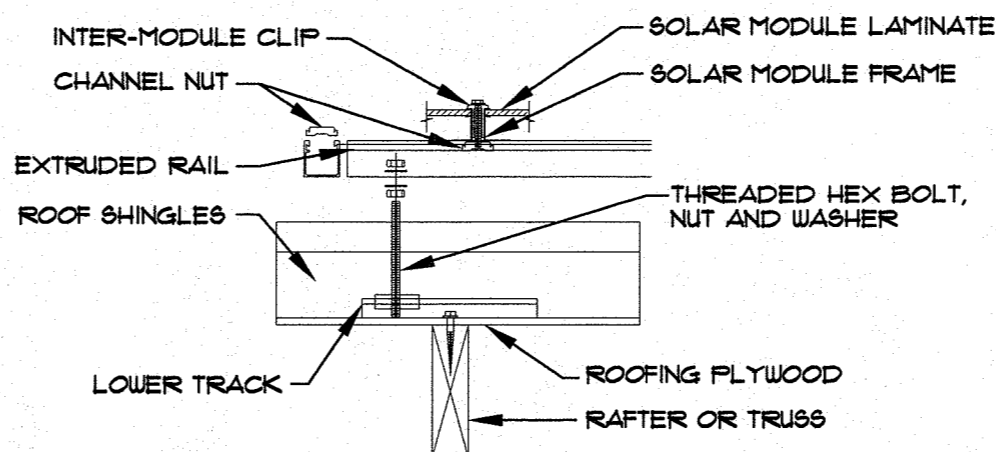
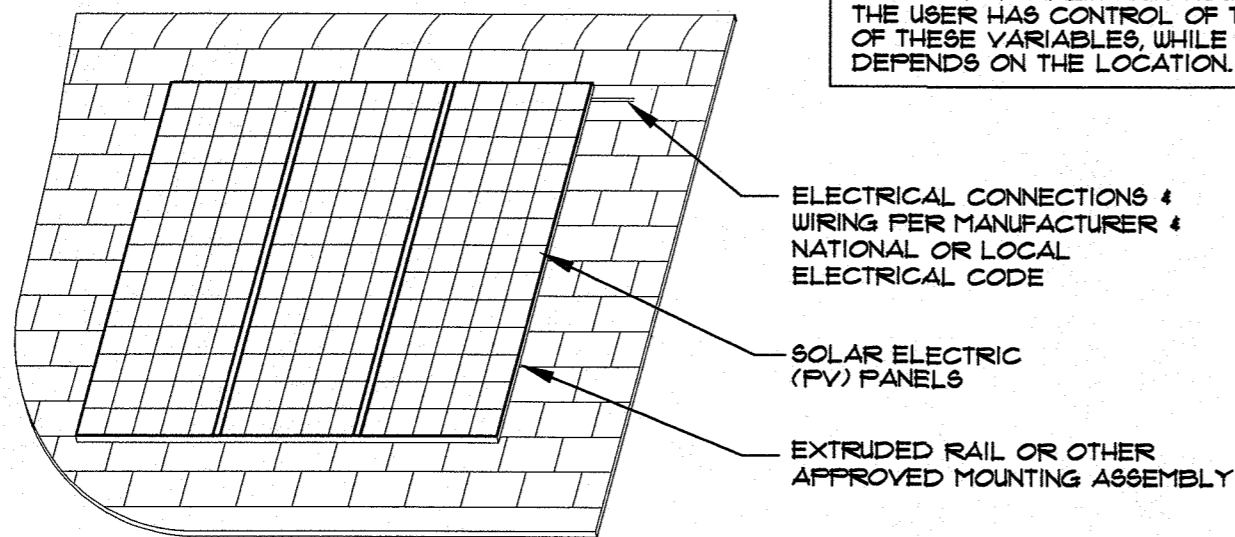
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NOTE: SOLAR ELECTRIC (PV) ROOFING PANELS SHALL BE UL LISTED AND INSTALLED PER MANUFACTURER INSTALLATION INSTRUCTIONS AND COMPLY WITH THE NATIONAL ELECTRIC CODE AND LOCAL UTILITY REQUIREMENTS.

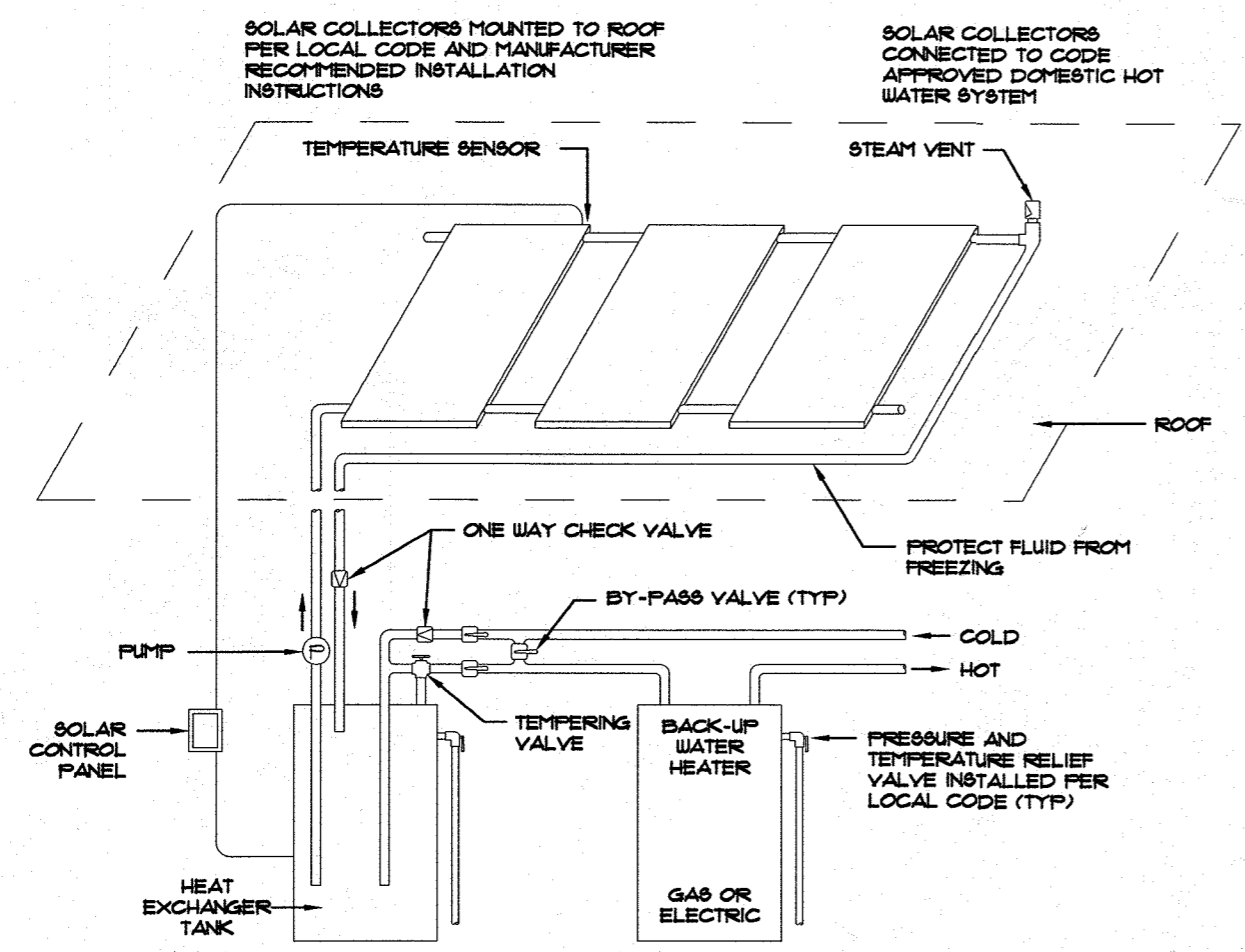
SYSTEM SIZING INFORMATION

THE SIZE OF A SOLAR ELECTRIC SYSTEM DEPENDS ON THE AMOUNT OF POWER THAT IS REQUIRED (WATTS), THE AMOUNT OF TIME IT IS USED (HOURS) AND THE AMOUNT OF ENERGY AVAILABLE FROM THE SUN IN A PARTICULAR AREA (SUN-HOURS PER DAY). THE USER HAS CONTROL OF THE FIRST TWO OF THESE VARIABLES, WHILE THE THIRD DEPENDS ON THE LOCATION.

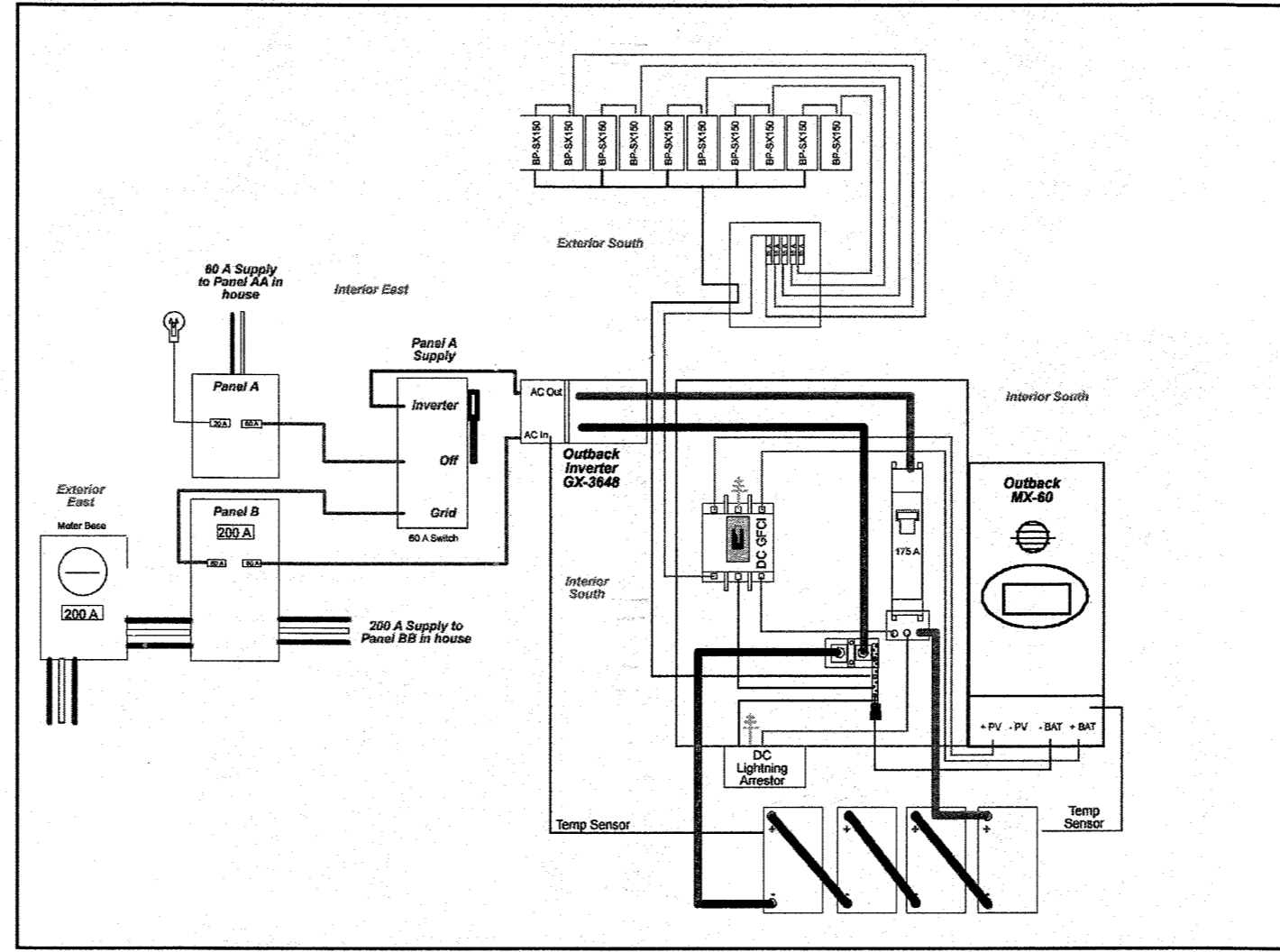


2 PHOTOVOLTAIC PANEL CONNECTION
1/2" = 1'-0"

1 PHOTOVOLTAIC PANEL ISOMETRIC
N.T.S.



3 SOLAR DOMESTIC WATER HEATER
N.T.S.



4 SOLAR ELECTRIC SCHEMATIC DIAGRAM
N.T.S.

STATE	CITY	SUN HRS. PER DAY		
		HIGH	LOW	AVG.
AK	FAIRBANKS	5.87	2.12	3.99
AL	MONTGOMERY	4.69	3.37	4.23
AR	LITTLE ROCK	5.29	3.88	4.69
AZ	PHOENIX	7.13	5.78	6.58
CA	LOS ANGELES	6.14	5.03	5.62
CA	SODA SPRINGS	6.47	4.40	5.60
CO	DENVER	5.72	4.44	4.87
CO	GRAND JUNCTION	6.34	5.23	5.85
DC	WASHINGTON	4.69	3.37	4.23
FL	TAMPA	6.16	5.26	5.67
GA	ATLANTA	5.16	4.09	4.74
HI	HONOLULU	6.71	5.59	6.02
IA	AMES	4.80	3.73	4.40
ID	BOISE	5.83	3.33	4.92
IL	CHICAGO	4.08	1.47	3.14
IN	INDIANAPOLIS	5.02	2.55	4.21
KS	DODGE CITY	6.50	4.20	5.60
KY	LEXINGTON	5.97	3.60	4.94
LA	NEW ORLEANS	5.71	3.63	4.92
MA	BOSTON	4.27	2.99	3.84
MD	SILVER HILL	4.71	3.84	4.47
ME	PORTLAND	5.23	3.56	4.51
MI	EAST LANSING	4.71	2.70	4.00
MN	ST. CLOUD	5.43	3.53	4.53
MO	ST. LOUIS	4.87	3.24	4.38
MS	MERIDIAN	4.86	3.64	4.43
MT	GREAT FALLS	5.70	3.66	4.93
NM	ALBUQUERQUE	7.16	6.21	6.77
NE	LINCOLN	5.40	4.38	4.79
NC	GREENSBORO	5.05	4.00	4.71
ND	BISMARCK	5.48	3.97	5.01
NJ	SEA BROOK	4.76	3.20	4.21
NV	LAS VEGAS	7.13	5.84	6.41
NY	NEW YORK CITY	4.97	3.03	4.08
OH	CLEVELAND	4.79	2.69	3.94
OK	OKLAHOMA CITY	6.26	4.98	5.59
OR	CORVALLIS	5.71	1.90	4.03
PA	PITTSBURGH	4.19	1.45	3.28
RI	NEWPORT	4.69	3.58	4.23
SC	CHARLESTON	5.72	4.23	5.06
SD	RAPID CITY	5.91	4.56	5.23
TN	NASHVILLE	5.20	3.14	4.45
TX	DALLAS	6.00	4.80	5.43
TX	EL PASO	7.42	5.87	6.72
UT	SALT LAKE CITY	6.09	3.78	5.26
VA	RICHMOND	4.50	3.37	4.13
WA	SEATTLE	4.83	1.60	3.57
WA	PROSSER	6.21	3.06	5.03
WI	MADISON	4.85	3.28	4.29
WV	CHARLESTON	4.12	2.74	3.65
WY	LANDER	6.81	5.50	6.06

SYSTEM LOADS WORK SHEET

1. LIST ALL AC LOADS, WATTAGE & HRS OF USE PER WEEK IN THE SPACE PROVIDED. MULTIPLY WATTS BY HRS/WEEK TO GET WATT-HRS PER WEEK (WH/WK). ADD UP ALL THE WATT HRS PER WEEK TO DETERMINE AC WATT HRS PER WEEK.

DESCRIPTION OF AC LOADS RUN BY INVERTER	WATTS	X	HOURS/WEEK	=	WATT HOURS/WEEK
TOTAL WATT/HOURS/WEEK					

2. CONVERT TO DC WATT-HRS PER WEEK: MULTIPLY LINE 1 BY 1.15 TO CORRECT FOR INVERTER LOSS.
 3. INVERTER DC INPUT VOLTAGE: USUALLY 12, 24 OR 48 VOLTS. THIS IS DC SYSTEM VOLTAGE.
 4. DIVIDE LINE 2 BY LINE 3. THIS IS TOTAL DC AMP-HRS PER WEEK USED BY AC LOADS.
 5. LIST ALL DC LOADS IN THE SPACE PROVIDED BELOW. IF YOU HAVE NO DC LOADS, ENTER "0" IN LINE 7 AND PROCEED TO LINE 8.

DESCRIPTION OF DC LOADS	WATTS	X	HOURS/WEEK	=	WATT HOURS/WEEK
TOTAL WATT/HOURS/WEEK					

6. DC SYSTEM VOLTAGE. USUALLY 12, 24, OR 48 VOLTS.
 7. FIND TOTAL AMP-HRS PER WEEK USED BY DC LOADS. DIVIDE LINE 5 BY LINE 6.
 8. TOTAL AMP-HRS PER WEEK USED BY AC LOADS FROM LINE 4.
 9. ADD LINES 7 AND 8. THIS IS TOTAL AMP-HRS PER WEEK USED BY ALL LOADS.
 10. DIVIDE LINE 9 BY 7 DAYS. THIS IS TOTAL AVG AMP-HRS PER DAY THAT NEEDS TO BE SUPPLIED BY THE BATTERY. ENTER THIS NUMBER ON LINE 1 ON THE PHOTOVOLTAIC ARRAY DESIGN WORKSHEET.

PHOTOVOLTAIC ARRAY DESIGN WORKSHEET

STEP 1 TOTAL AVERAGE AMP-HOURS PER DAY NEEDED FROM THE SYSTEM LOADS WORKSHEET, LINE 10 _____

STEP 2 MULTIPLY LINE 1 BY 12 TO COMPENSATE FOR LOSS FROM BATTERY CHARGE/DISCHARGE _____

STEP 3 AVERAGE SUN-HOURS PER DAY IN YOUR AREA (SEE SOLAR ISOLATION CHART) _____

STEP 4 DIVIDE LINE 2 BY 3. THIS IS THE TOTAL SOLAR ARRAY AMPS REQUIRED. _____

STEP 5 OPTIMUM OR PEAK AMPS OF SOLAR MODULE USED. _____

STEP 6 TOTAL NUMBER OF SOLAR MODULES IN PARALLEL REQUIRED. DIVIDE LINE 4 BY 5 _____

STEP 7 ROUND OFF TO THE NEXT HIGHEST WHOLE NUMBER. _____

STEP 8 NUMBER OF MODULES IN EACH SERIES STRING TO PROVIDE DC BATTERY VOLTAGE (SEE CHART BELOW) _____

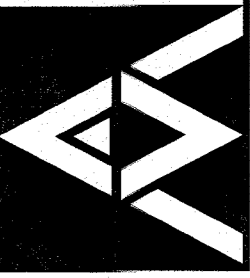
STEP 9 MULTIPLY LINE 1 BY 8 TO GET THE TOTAL NUMBER OF SOLAR MODULES REQUIRED. _____

NOMINAL SYSTEM VOLTAGE	NUMBER OF SERIES CONNECTED MODULES PER STRING	
	12V MODULE	24V MODULE
12	1	N/A
24	2	1
48	4	2

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revised:

sheet index: OPTIONAL SOLAR DETAILS

sheet no.



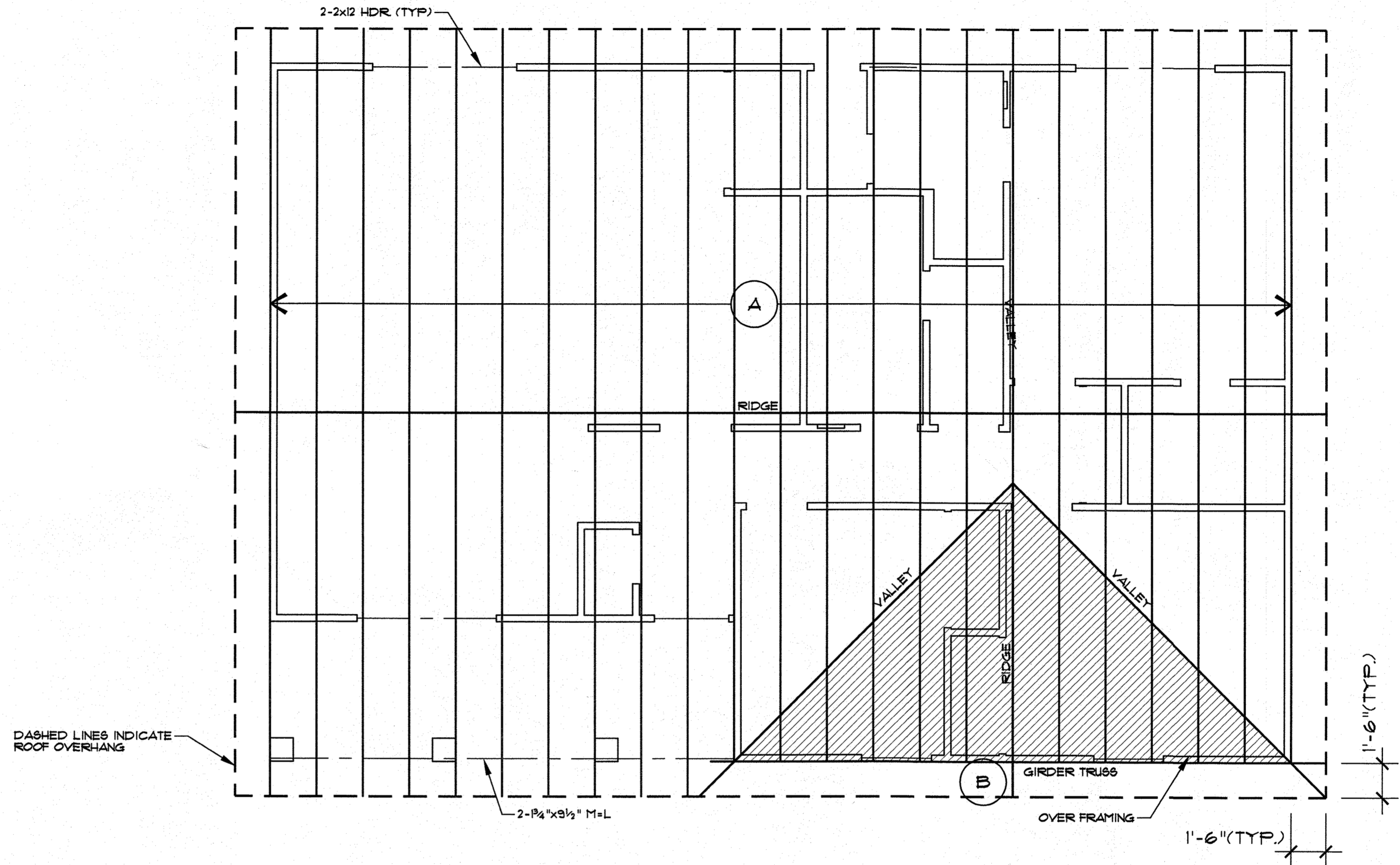
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sheet index:
 ROOF FRAMING
 PLAN

sheet no.

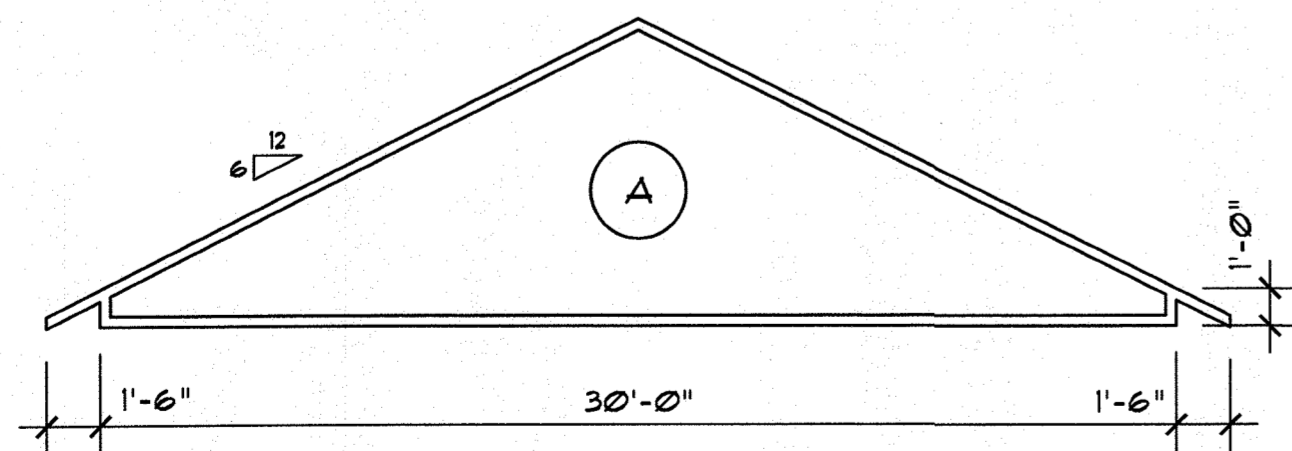
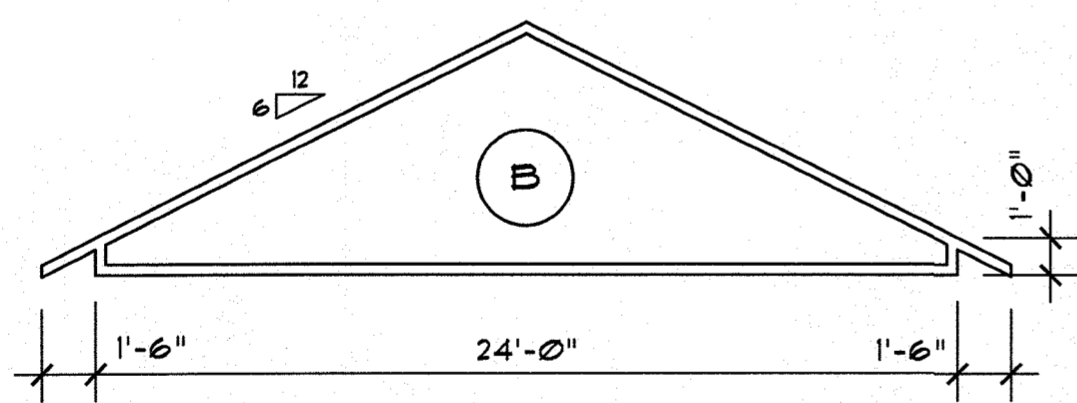


DASHED LINES INDICATE
 ROOF OVERHANG

1 ROOF FRAMING FLOOR PLAN
 1/4" = 1'-0"

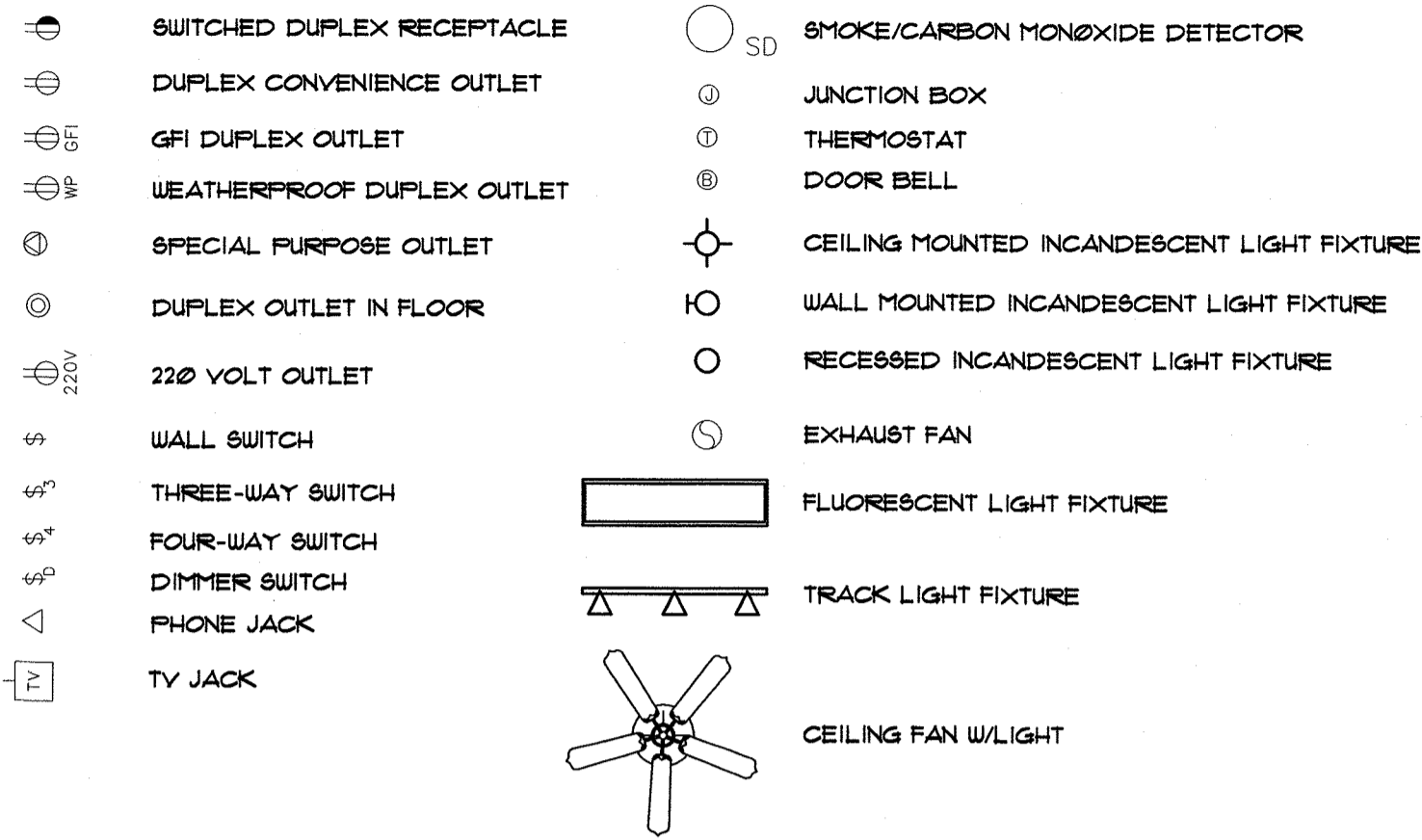
NOTE: ALL OVER FRAMING TO BE
 2x6 @ 24" O.C. W/ 2x4 VERTICAL
 SUPPORTS DOWN TO ROOF TRUSSES
 @ 24" O.C. (TYP.)

NOTE: ALL TRUSSES TO BE
 SPACED @ 24" O.C. UNLESS
 OTHERWISE NOTED.



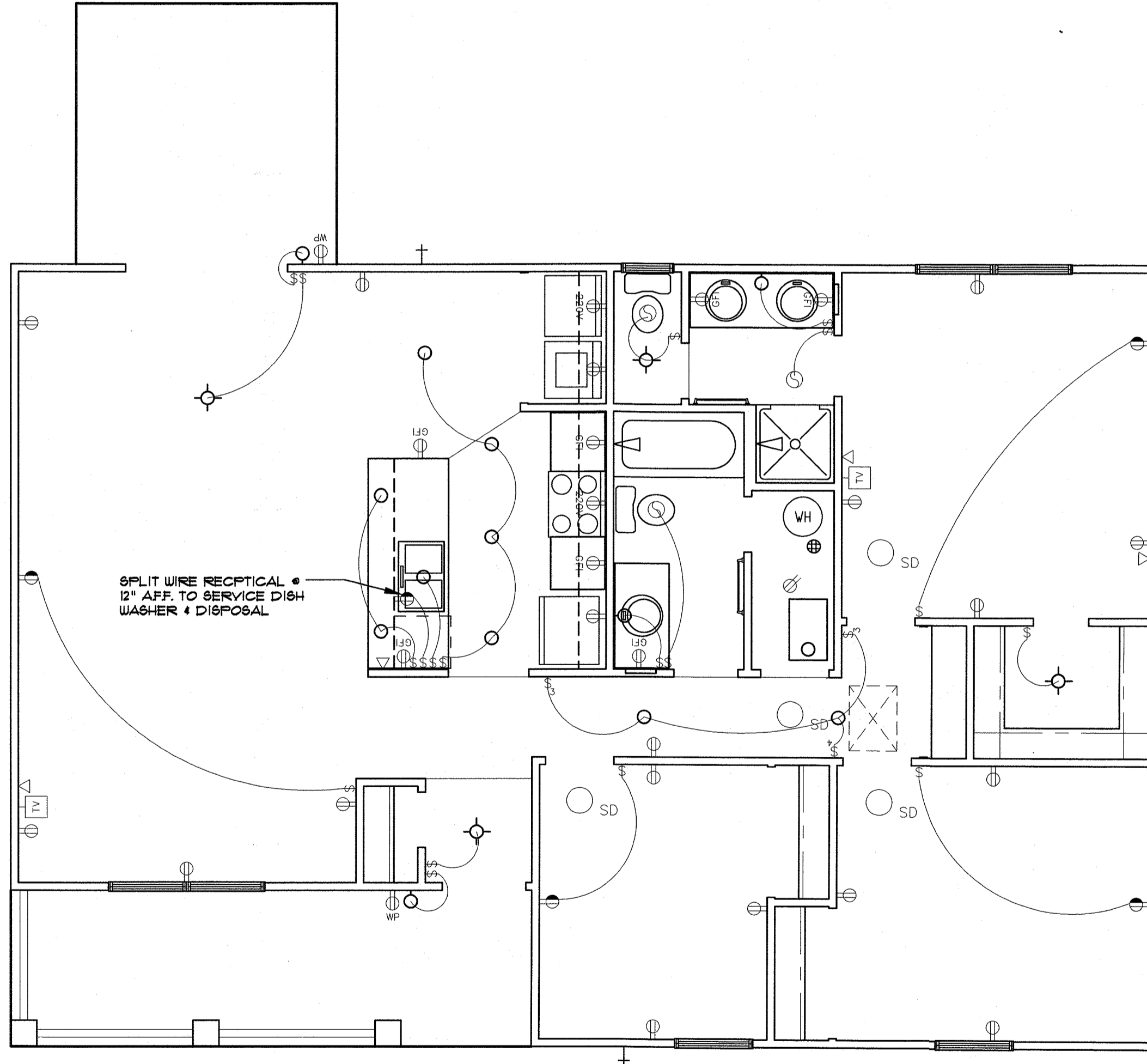
2 PRE-ENGINEERED TRUSSES
 3/16" = 1'-0"

ELECTRICAL KEY



NOTES :

- PROVIDE AND INSTALL INTO AN UNSWITCHED BRANCH CIRCUIT, SMOKE DETECTORS AS LISTED IN ACCORDANCE WITH UL 217 AND INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF THE INTERNATIONAL RESIDENTIAL CODE (I.R.C.) SECTION R314 AND THE HOUSEHOLD FIRE WARNING EQUIPMENT PROVISIONS OF NFPA 72. ALL SMOKE DETECTORS SHALL BE INTERCONNECTED SUCH THAT THE ACTUATION OF ONE ALARM WILL ACTUATE ALL THE ALARMS IN THE INDIVIDUAL UNIT.
- PROVIDE AND INSTALL GROUND FAULT CIRCUIT INTERRUPTERS (G. F. I.'S) PER NATIONAL ELECTRIC CODE OR AS REQUIRED BY GOVERNING LOCAL CODES.
- ALL BRANCH CIRCUITS TO BE COPPER ONLY
- PROVIDE AND INSTALL ARC FAULT CIRCUIT INTERRUPTERS (A.F.I.) IN ALL BRANCH CIRCUITS THAT SUPPLY 125 VOLT, SINGLE PHASE, 15 AND 20 AMPERE OUTLETS INSTALLED IN THE DWELLING UNIT PER NATIONAL ELECTRIC CODE OR AS REQUIRED BY GOVERNING LOCAL CODES.
- PROVIDE AND INSTALL IN ACCORDANCE WITH THE PROVISIONS OF THE INTERNATIONAL RESIDENTIAL CODE (I.R.C.) SECTION R315 CARBON MONOXIDE ALARMS OUTSIDE OF EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOM(S). THE ALARM SHALL BE CLEARLY AUDIBLE IN ALL BEDROOMS OVER BACKGROUND NOISE LEVELS WITH ALL INTERVENING DOORS CLOSED. CARBON MONOXIDE ALARMS SHALL BE LISTED AS COMPLYING WITH THE UL 2034 AND SHALL BE INSTALLED IN ACCORDANCE WITH THE CODE AND MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- RECESSED LIGHTING FIXTURES, WHEN INSTALLED IN THE BUILDING ENVELOPE, RECESSED LIGHTING FIXTURES SHALL MEET ONE OF THE FOLLOWING REQUIREMENTS:
 - TYPE IC RATED, MANUFACTURED WITH NO PENETRATIONS BETWEEN THE INSIDE OF THE RECESSED FIXTURE AND CEILING CAVITY AND SEALED OR GASKETED TO PREVENT AIR LEAKAGE INTO THE UNCONDITIONED SPACE.
 - TYPE IC OR NON-IC RATED, INSTALLED INSIDE A SEALED BOX CONSTRUCTED FROM A MINIMUM 0.5-INCH-THICK GYPSUM WALLBOARD OR CONSTRUCTED FROM PREFORMED POLYMERIC VAPOR BARRIER, OR OTHER AIR-TIGHT ASSEMBLY MANUFACTURED FOR THIS PURPOSE, WHILE MAINTAINING REQUIRED CLEARANCES OF NOT LESS THAN 0.5 INCH FROM COMBUSTIBLE MATERIAL AND NOT LESS THAN 3 INCHES FROM INSULATION MATERIAL.
 - TYPE IC RATED, IN ACCORDANCE WITH ASTM E 283 ADMITTING NO MORE THAN 2.0 CUBIC FEET PER MINUTE OF AIR MOVEMENT FROM THE CONDITIONED SPACE TO THE CEILING CAVITY. THE LIGHTING FIXTURE SHALL BE TESTED AT 1.57 POUNDS PER SQUARE INCH (PSI) PRESSURE DIFFERENCE AND SHALL BE LABELED.



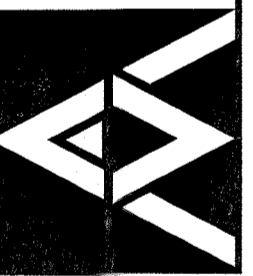
1 MAIN LEVEL ELECTRICAL PLAN
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FLOOR PLAN

sheet no.
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