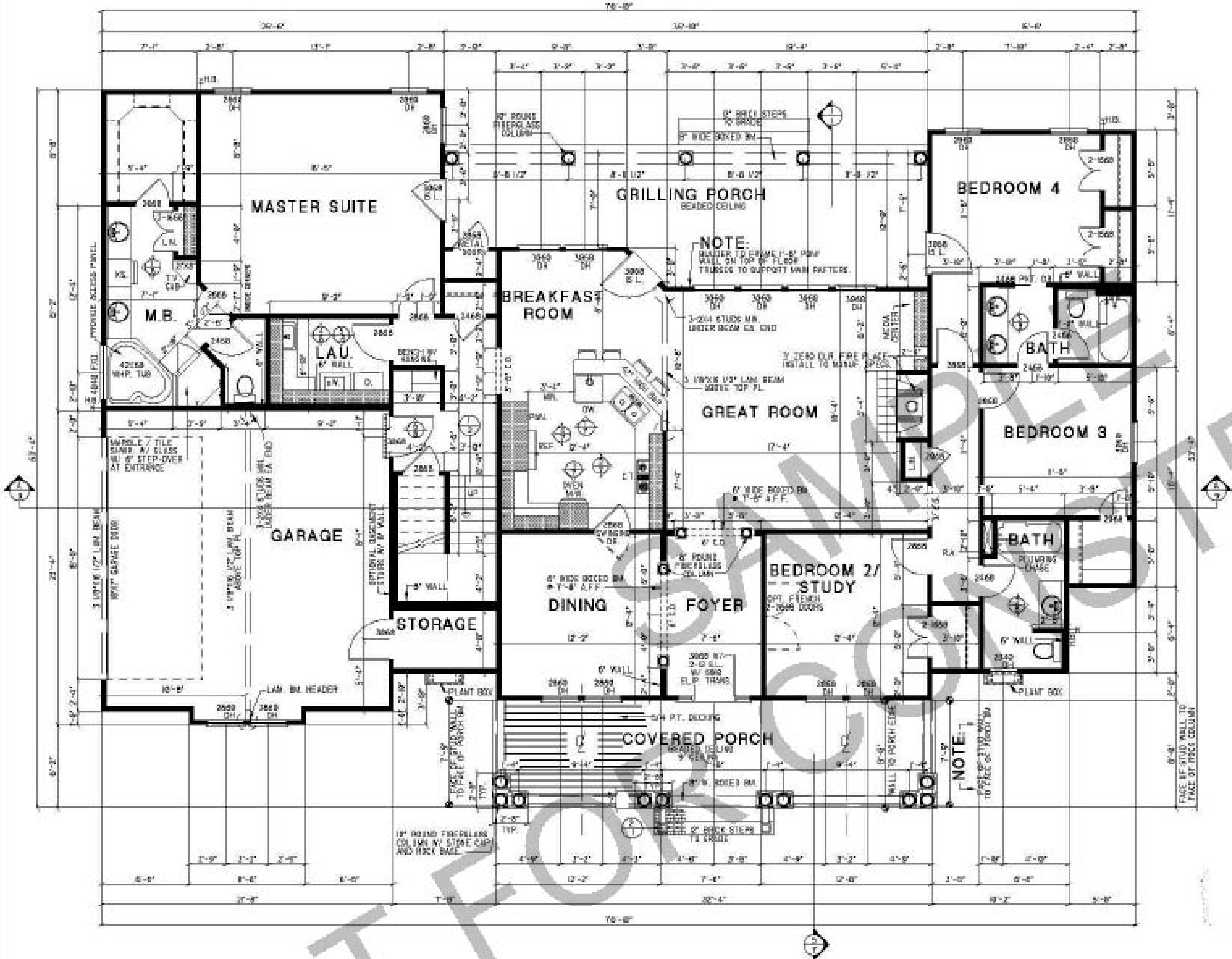


FLOOR PLAN NOTES:

1. ALL STRUCTURAL INFORMATION SHOWN FOR REFERENCE PURPOSES ONLY. CONTRACTOR SHALL HAVE LICENSED STRUCTURAL ENGINEER REVIEW AND DESIGN ALL STRUCTURAL ELEMENTS SUCH AS ALL FRAMING WALLS, BEAMS, CONNECTIONS, HEADERS, JOISTS AND RAFTERS.

2. ALL DIMENSIONS ARE FROM FACE OF STUD TO FACE OF STUD UNLESS NOTED OTHERWISE.

3. WINDOW SIZES INDICATED ON PLANS ARE NOTED BY APPROXIMATE ROUGH OPENING SIZE. REFER TO PLANS AND EXTERIOR ELEVATIONS FOR WINDOW TYPES.

4. COORDINATE LOCATION OF UTILITY METERS WITH SITE PLAN AND LOCATE AWAY FROM PUBLIC VIEW. VISUAL IMPACT SHALL BE MINIMIZED, I.E. MOUNT AS LOW AS POSSIBLE.

5. PREFABRICATED FIREPLACE CONSTRUCTION SHALL MEET OR EXCEED ALL APPLICABLE CODES REGARDING USE OF FIRE SEPARATIONS, CLEARANCES, ETC. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL ITEMS AND CONSTRUCTION MEET OR EXCEED CODE. OVERALL FLUE HEIGHT SHALL BE COORDINATED TO MATCH HEIGHT SHOWN ON PLANS AND SHALL NOT EXCEED THE TOP OF CHIMNEY CHASE AS CONSTRUCTED.

6. CONTRACTOR SHALL COORDINATE ALL CLOSET SHELVING REQUIREMENTS.

7. DO NOT SCALE DRAWINGS. FOLLOW DIMENSIONS ONLY.

8. CONTRACTOR SHALL FIELD VERIFY ALL CABINET DIMENSIONS BEFORE FABRICATION.

9. BEDROOM WINDOWS SHALL HAVE A MINIMUM NET CLEAR OPENING OF 5.7 SQ FT., A MINIMUM NET CLEAR OPENABLE WIDTH OF 20", A MINIMUM NET CLEAR OPENABLE HEIGHT OF 24" AND HAVE A MAXIMUM FINISH SILL HEIGHT OF 43" FROM FINISH FLOOR.

10. ALL GLASS LOCATED WITHIN 18" OF FLOOR, 12" OF A DOOR OR LOCATED WITHIN 60" OF FLOOR AT BATHTUBS, WHIRLPOOLS, SHOWERS, SAUNAS, STEAM ROOMS OR HOT TUBS SHALL BE TEMPERED.

11. ALL EXPOSED INSULATION SHALL HAVE A FLAME SPREAD RATING OF LESS THAN 25 AND A SMOKE DENSITY RATING OF LESS THAN 450.

12. PROVIDE COMBUSTION AIR VENTS, WITH SCREEN AND BACK DAMPER, FOR FIREPLACES, WOOD STOVES AND ANY APPLIANCE WITH AN OPEN FLAME.

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

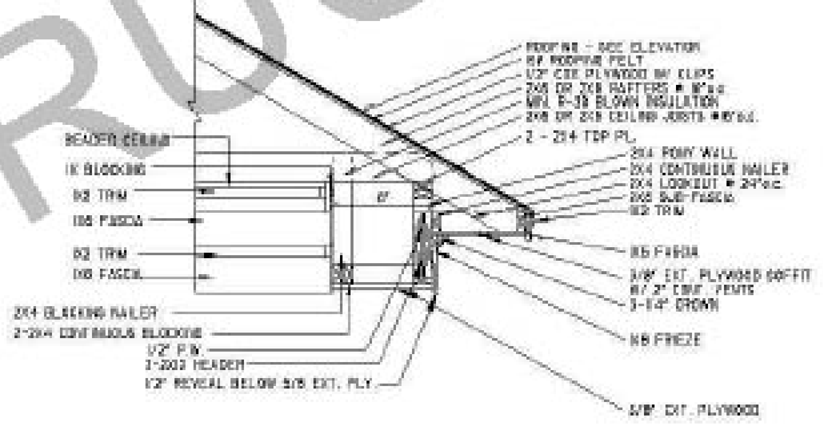
14. ATTIC HVAC UNITS SHALL BE LOCATED WITHIN 20' OF ITS SERVICE OPENING. RETURN AIR GRILLES SHALL NOT BE LOCATED WITHIN 10 FEET OF A GAS FIRED APPLIANCE.

15. ALL WALLS AND CEILINGS IN GARAGE AND GARAGE STORAGE AREAS TO HAVE 5/8" TYPE-X GYP. BOARD W/ 1-HOUR FIRE RATING. ALL EXT. DOORS IN GARAGE TO BE METAL OR SOLID CORE DOORS INCLUDING DOORS ENTERING HEAT/COOLED PORTION OF RESIDENCE.

16. ALL FIREPLACE CHASE WALLS SHALL BE INSULATED INSIDE AND OUTSIDE. PROVIDE HORIZONTAL "DRAFT STOPS" AT EACH FLOOR LEVEL BY PACKING 2" SEMI INSULATION BETWEEN 2X4 JOISTS.

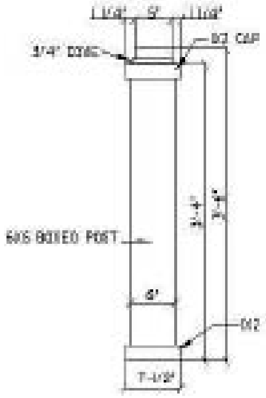
17. ALL INTERIOR WALLS SHALL BE COVERED WITH 1/2" GYPSUM BOARD, WITH METAL CORNER REINFORCING, TAPE FLOAT AND SAND (3 COATS). USE 5/8" GYPSUM BOARD ON CEILINGS WHICH SUPPORTING MEMBERS ARE 24" O.C. OR GREATER. USE 1/2" GYPSUM BOARD ON CEILING MEMBERS LESS THAN 24" O.C.

18. ALL BATH AND TOILET AREA WALLS AND CEILINGS SHALL HAVE WATER RESISTANT GYPSUM BOARD.



① BOX BEAM SECTIONAL DETAIL

3/4" = 1'-0"



② PORCH NEWEL DETAIL

1" = 1'-0"

[redacted]

FLOOR PLAN SPECIFICATIONS

HEAT/COOLED TOTAL:	2373 SQ. FT.
GARAGE, STORAGE:	620 SQ. FT.
PORCHES:	566 SQ. FT.
BONUS ROOM 1:	687 SQ. FT.
BONUS ROOM 2:	596 SQ. FT.
UPPER STORAGE:	83 SQ. FT.
TOTAL:	5142 SQ. FT.

NOTE:

1.- MAIN FLOOR CEILINGS TO BE 9' UNLESS NOTED.
2.- UPPER FLOOR CEILINGS TO BE 8' UNLESS NOTED.
3.- BUILDER TO APPROVE & VERIFY ALL PLANS BEFORE CONSTRUCTION.
4.- VERIFY ALL PLANS W/ LOCAL BUILDING CODES.
5.- HVAC & W.H. TO BE IN ATTIC UNLESS OTHERWISE NOTED.
6.- PROVIDE SHUT-OFF VALVE FOR ALL GAS APPLIANCES. REFERENCE IRC SECTION G2420
7.- ALL GLASS LOCATED WITHIN 18" OF FLOOR, 12" OF A DOOR OR LOCATED WITHIN 60" OF FLOOR AT BATHTUBS, WHIRLPOOLS, SHOWERS, SAUNAS, STEAM ROOMS OR HOT TUBS SHALL BE TEMPERED TO COMPLY WITH IRC SECTION R308.4.5

REVISIONS	BY
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
	24x36

[redacted]

[redacted]

NOTICE DUTY OF COOPERATION

[redacted] assumes no liability for any HOME constructed from this plan. Release of these plans contemplates further cooperation among the owner, his contractor and the designer. Design and construction are complex. Although the designer and his consultants performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the designer. Failure to notify the designer compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the designer shall relieve the designer from responsibility for all consequences. Changes made from the plans without the consent of the designer are unauthorized and shall relieve the designer of responsibility for all consequences arising out of such changes. Only qualified Designer, Architect, Draftsman, or Structural Engineer should attempt to modify any portion of this design. Written dimensions on these drawings shall have precedence over scaled dimensions; contractors shall verify and be responsible for all dimensions and conditions on the job. This office must be notified of any variations from the dimensions and conditions shown by these drawings. Shop details must be submitted to this office for approval before proceeding with fabrication.

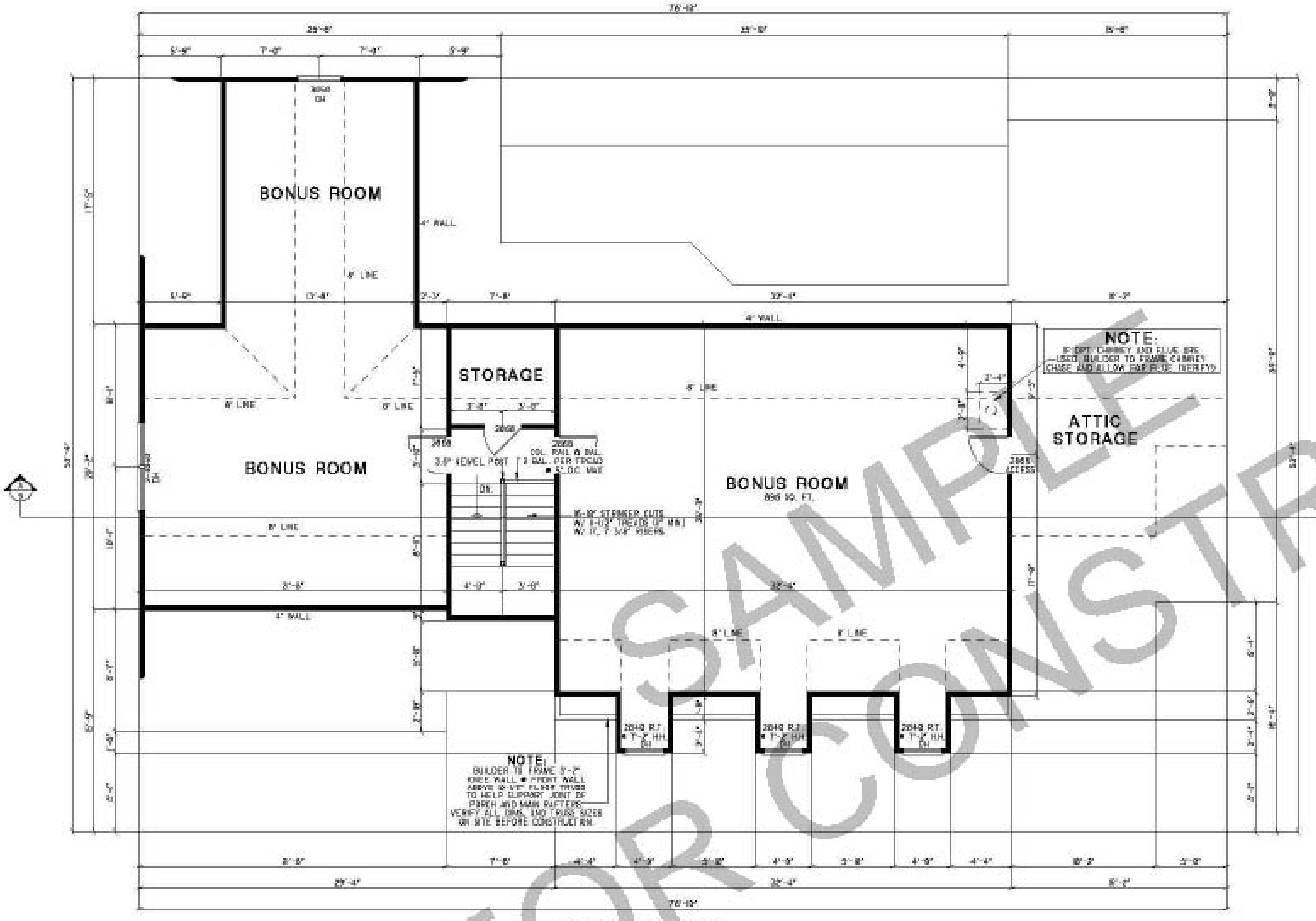
MAIN FLOOR PLAN / NOTES

[redacted]

CAD DESIGNED

DATE [redacted]
SCALE 1/4" = 1'-0"
BUILDER
JOB [redacted]
DRAWN BY

1 OF 9



NOTE:
IF OPT. CHIMNEY AND FLUE ARE USED, BUILDER TO FRAME CHIMNEY CHASE AND ALLOW FOR FLUE. (VERIFY)

NOTE:
BUILDER TO FRAME 3'-2" KNEE WALL @ FRONT WALL ABOVE 18-1/2" FLOOR TRUSS TO HELP SUPPORT JOINT OF PORCH AND MAIN RAFTERS. VERIFY ALL DIMS. AND TRUSS SIZES ON SITE BEFORE CONSTRUCTION.

CONSTRUCTION AND FRAMING NOTES:

1. DESIGN LOADS ARE AS FOLLOWS PER SQ FT:

LOCATION	LIVE	DEAD	DEFLECT LIMIT
1ST FLOOR	40 LB	10 LB	L/360
2ND FLOOR SLEEPING AREAS	30 LB	10 LB	L/360
ATTIC (NON STORAGE)	10 LB	5 LB	L/240
ATTIC (STORAGE)	20 LB	10 LB	L/360
ROOF WITH FINISHED CEILING	30 LB SNOW	10 LB	L/240
ROOF W/O FINISHED CEILING	30 LB	7 LB	L/180
DECKS	60 LB	10 LB	L/360

SNOW LOADS HAVE BEEN ADJUSTED TO REFLECT THE SLOPED ROOF FACTOR AS A FUNCTION OF ROOF PITCH. RAFTER SIZES MAY HAVE TO BE INCREASED TO ACCOMMODATE HIGHER SNOW LOADS. VERIFY WITH LOCAL CODES.

2. LUMBER SHALL BE DOUGLAS-FIR-LARCH, HEM-FIR OR SOUTHERN-YELLOW-PINE WITH FB=1450 AND E=1.6 MINIMUM.

3. ALL HEADERS SHALL BE FREE FROM ALL SPLITS, CHECKS OR SHAKES.

4. UNLESS NOTED OTHERWISE, PROVIDE DOUBLE HEADER JOISTS AND TRIMMERS AT ALL FLOOR OPENINGS. DOUBLE JOISTS UNDER ALL PARALLEL PARTITIONS. DOUBLE 2X12 HEADERS WITH 1/2" PLYWOOD GLUED BETWEEN AND NAILED FOR ALL OPENINGS IN 2X6 WALLS. DOUBLE 2X12 HEADERS NAILED TOGETHER FOR ALL OPENINGS IN 2X4 WALLS.

5. FLOOR CONSTRUCTION: 3/4" TONGUE AND GROOVE SUBFLOOR WITH FINISH MATERIAL OVER.

6. STAIR CONSTRUCTION SHALL CONSIST OF GRADE STRINGERS, 1" OR 2" THICK TREADS AND 3/4" THICK RISERS OR MATERIALS FABRICATED BY A COMPONENT MANUFACTURER.

7. ALL WOOD PLATES IN CONTACT WITH CONCRETE SHALL BE "PRESSURE TREATED" & SILICONE SEALED.

8. "MICRO-LAM" BEAMS SHALL HAVE BENDING STRESS (FB=2,800 PSI). VERIFY WITH LOCAL CODES.

9. SPECIAL UPLIFT CONNECTIONS AS INDICATED AT CANTILEVERED JOISTS SHALL BE "SIMPSON STRONG TIE" ANCHORS OR EQUAL.

10. MINIMUM HEADER SIZE SHALL BE (2)2X10 UNLESS NOTED OTHERWISE. EXTERIOR WALLS SHALL BE OF 2X4 WITH 1/2" PLYWOOD.

11. ALL STRUCTURAL STEEL SHALL CONFORM WITH ASTM SPECIFICATION A-36.

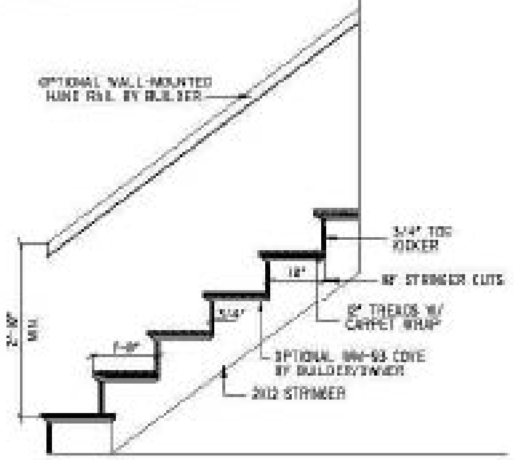
12. UNLESS OTHERWISE NOTED, PROVIDE A 2X PLATE BOLTED TO THE TOP FLANGE OF ALL STEEL BEAMS WITH 3/8" DIAMETER BOLTS STAGGERED AT 24" ON CENTER. NAIL/TOENAIL ALL JOISTS AND RAFTERS AND JOISTS AS APPROVED BY GOVERNING CODES, UNLESS OTHERWISE NOTED.

13. FLOOR FRAMING LAYOUT SHALL BE COORDINATED WITH THE GENERAL AND HVAC CONTRACTORS TO PROVIDE ACCESS SPACES AND UNOBSTRUCTED RUNS FOR HVAC DUCT WORK. FLOOR TRUSS LAYOUT TO BE ENGINEERED BY TRUSS MANUFACTURE.

14. PROVIDE BRIDGING OR BLOCKING AT MIDSPAN OF JOISTS/RAFTERS/TRUSSES, MAXIMUM SPACING BETWEEN BEARING WALL AND BRIDGING IS 8'-0".

15. THESE FRAMING PLANS WERE DESIGNED USING STANDARD CONSTRUCTION PRACTICES. THEY CONFORM TO STANDARD BUILDING CODES. DUE TO VARIATIONS IN LOCAL CODES AND GEOLOGICAL CONDITIONS REVISIONS MAY BE REQUIRED TO THESE PLANS.

16. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LOCAL CODES, REGULATIONS AND ERRATA ARE THE BUILDER SHALL VERIFY ALL CONDITIONS BEFORE BEGINNING CONSTRUCTION. CONSULT WITH LOCAL ARCHITECTURAL ENGINEERS AND CODE OFFICIALS PRIOR TO USING THE FRAMING MATERIALS PROVIDED TO INSURE COMPLIANCE WITH CODES AND STRUCTURAL INTEGRITY.



① STAIR DETAIL
SCALE 3/4" = 1'-0"

NOTE:
STAIR RISE HEIGHT AND RUN DISTANCE ARE NOT SPECIFIED ON THIS DETAIL AND SECTION. FOR RISE AND RUN SPECS. REFER TO FLOOR PLAN.

NOTE:
1.- HVAC TO BE IN ATTIC. VERIFY W/ BUILDER.
2.- UPPER FLOOR CEILING HEIGHTS TO BE 8'-0" UNLESS NOTED.
3.- UPPER FLOOR JOIST TO BE 18-1/2" OPEN WEB FLOOR TRUSSES @ 19" O.C. W/ 3/4" T&G ADVANTECH FLOOR GLUED & SCREWED.
SEE TRUSS MANUF. FOR FLOOR TRUSS LAYOUTS.
ALL OPEN WEB FLOOR TRUSSES TO BE DESIGNED & ENGINEERED BY TRUSS MANUF. TRUSS MANUF. WILL PROVIDE TRUSS LAYOUT BASED ON ENGINEERING. TRUSS MANUF. TO SUPPLY TRUSSES W/ CHAMFERED END ON SELECTED UNITS TO ALLOW FOR EXT. WALL SUPPORT & RAFTER CLEARANCE.
4.- HVAC & W.H. TO BE IN ATTIC UNLESS OTHERWISE NOTED.

INSULATION NOTES:

1. PROVIDE R-19 BATT INSULATION IN 2X6 WALLS, R-13 IN 2X4 WALLS, MINIMUM R-30 INSULATION IN FLAT CEILINGS AND R-30 BLANKET INSULATION IN VAULTED CEILINGS. ALLOW 1/2" MINIMUM AIRSPACE BETWEEN SHEATHING AND INSULATION. FACE FOIL DOWN TO WARM SIDE.

2. INSTALL SIDE WALL AND CEILING INSULATION IN CONTINUOUS BLANKETS, WITHOUT HOLES FOR ELECTRICAL BOXES, LIGHT FIXTURES OR HEATING DUCTWORK. CAULK ALL OPENINGS IN EXTERIOR WALL CONSTRUCTION.

3. INSTALL 6 MIL POLYETHYLENE VAPOR BARRIER AGAINST INSIDE OF ALL INSULATION. LAP JOINTS 12" MINIMUM.

4. FLOORS OVER UNHEATED SPACE SHALL HAVE R-25 FOIL BACK INSULATION BETWEEN JOISTS.

5. SLAB EDGE INSULATION R-5.

6. HVAC DUCTS LOCATED IN UNHEATED SPACES SHALL BE INSULATED WITH R-6.

NOTICE DUTY OF COOPERATION

[redacted] assumes no liability for any HOME constructed from this plan. Release of these plans contemplates further cooperation among the owner, his contractor and the designer. Design and construction are complex. Although the designer and his consultants performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the designer. Failure to notify the designer compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the designer shall relieve the designer from responsibility for all consequences. Changes made from the plans without the consent of the designer are unauthorized and shall relieve the designer of responsibility for all consequences arising out of such changes. Only qualified Designer, Architect, Contractor, or Structural Engineer should attempt to modify any portion of this design.
Written dimensions on these drawings shall have precedence over scaled dimensions; contractors shall verify and be responsible for all dimensions and conditions on the job. This office must be notified of any variations from the dimensions and conditions shown by these drawings. Shop details must be submitted to this office for approval before proceeding with fabrication.

REVISIONS	BY
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

24x36

[redacted]

[redacted]

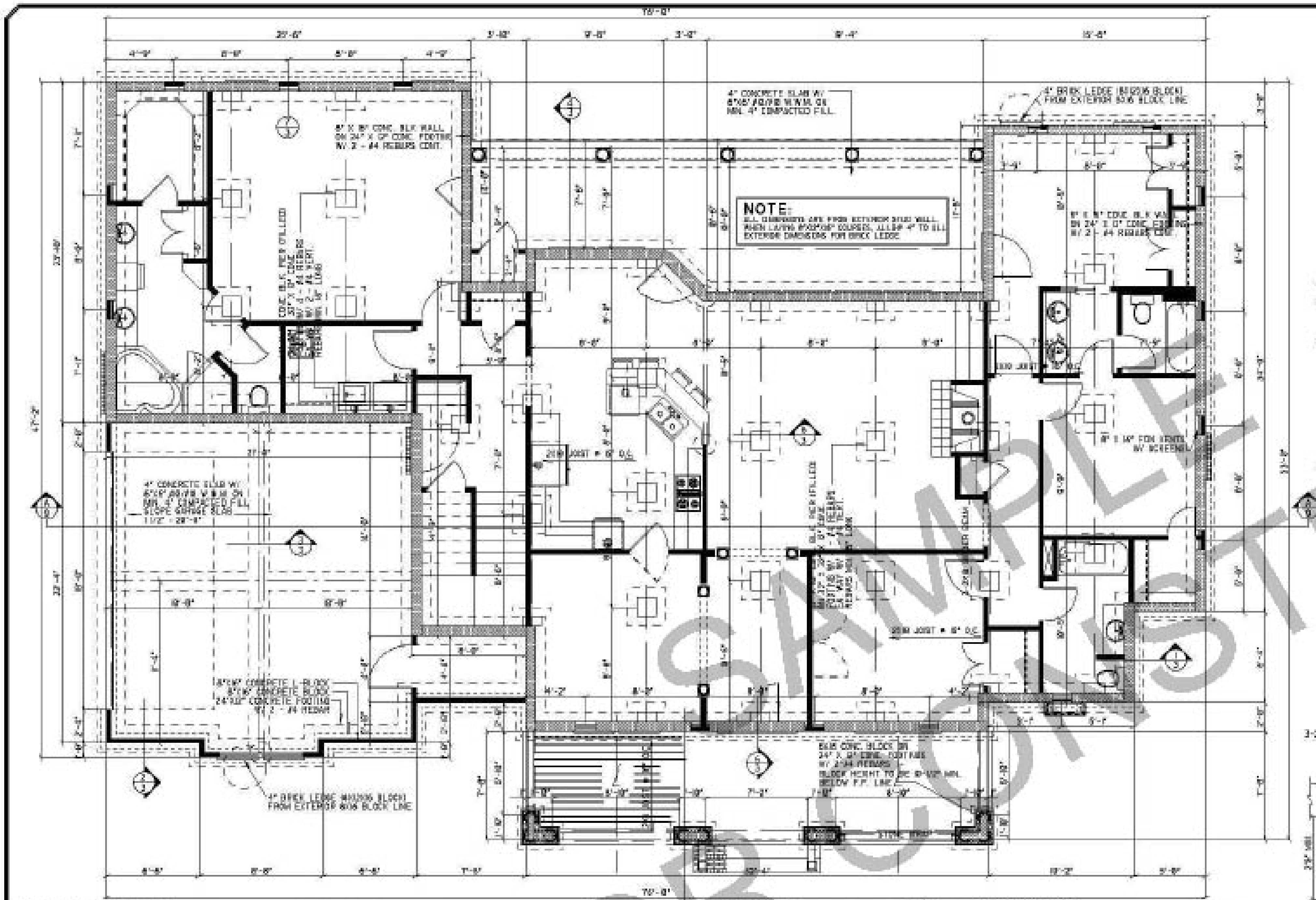
[redacted]

UPPER FLOOR PLAN / NOTES
[redacted]
[redacted]

CAD DESIGNED

DATE [redacted]
SCALE 1/4" = 1'-0"
BUILDER
JOB [redacted]
DRAWN BY

2 OF 9



FOUNDATION NOTES:

1. ALL FOOTINGS SHALL REST ON FIRM, UNDISTURBED SOIL.

2. ASSUMED SOIL SHALL BE SAND OR GRAVEL, WITH MINIMUM TRACES OF DRY CLAY WITH A MINIMUM BEARING CAPACITY OF 2000 LBS/SQ FT.

3. UNLESS OTHERWISE NOTED, ALL SLABS ON GRADE SHALL BE 3000 P.S.I. 28 DAY COMPRESSIVE STRENGTH CONCRETE ON 4" [illegible] GRAVEL FILL MINIMUM WITH 6X6 - W1.4XW1.4 WWM REINFORCING. INTERIOR SLABS SHALL BE PLACED ON 6 MIL [illegible] POLYETHYLENE VAPOR BARRIER.

4. PROVIDE 1/2" EXPANSION JOINT MATERIAL BETWEEN ALL CONCRETE SLABS OR ABUTTING CONCRETE OF MASONRY WALLS OCCURRING IN EXTERIOR OR UNHEATED INTERIOR AREAS.

5. PLACE 1/2" DIAMETER X 10" [illegible] SILL PLATE ANCHOR BOLTS AT EACH VERTICAL REBAR (WHERE OCCURRING) OR AT 4'-0" O.C. AND AT EACH CORNER AND BOTH SIDES OF OPENINGS.

6. FOOTING SIZES SHOWN ARE ONLY TYPICAL FOR STATED SOIL PRESSURES AND CONTINENT COMPACTION, WHICHEVER IS MORE RESTRICTIVE.

7. CONTRACTOR TO VERIFY FOOTING DEPTHS WITH LOCAL FROST REQUIREMENTS OR EXISTING SOIL CONDITIONS, WHICHEVER IS MORE RESTRICTIVE.

8. PROVIDE TERMITE PROTECTION AS REQUIRED BY LOCAL CODES.

9. PROVIDE DEEP SCORE CONTROL JOINTS AT MID POINTS OF ALL GARAGES, BOTH DIRECTIONS.

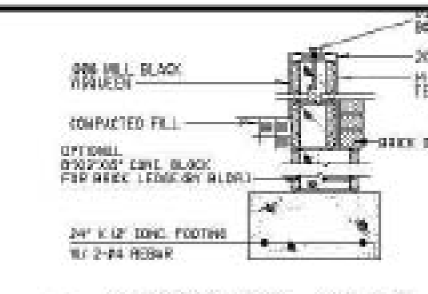
10. MASONRY VENEER MUST BE ANCHORED TO BUILT-UP CONSTRUCTION WITH GALVANIZED CORRUGATED METAL TIES SPACED 16" O.C. HORIZONTALLY AND 24" O.C. VERTICALLY.

11. INSTALL CONTINUOUS APPROVED FLASHING AND CUT WEEP HOLES AT 48" O.C. WITHIN FIRST EXPOSED COURSE ABOVE GRADE.

12. CRAWL SPACE FOUNDATIONS PROVIDE CRAWL SPACE VENTILATION PER LOCAL CODE REQUIREMENTS.

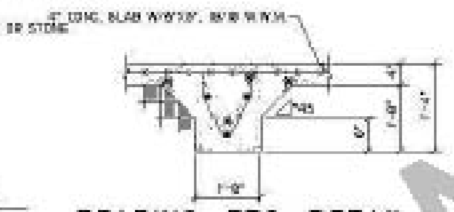
NOTE:

1 - BUILDER TO VERIFY ALL SOIL CONDITIONS BEFORE CONSTRUCTING FOUNDATION. IF POOR CONDITIONS EXIST CONSULT A STRUCTURAL ENGINEER.
2 - BUILDER TO VERIFY FOUNDATIONS DETAILS W/ LOCAL BUILDING CODES.
3 - VERIFY ALL FLOOR OUTLETS, RANGE & DRYER VENTS IN SLAB.
4 - BUILDER TO LOCATE FOUNDATION ACCESS LOCATION. VERIFY W/ SITE ELEVATIONS.
5 - VERIFY SUMP PUMP, AND FRENCH DRAIN LOCATIONS IF NEED. VERIFY W/ SITE.
6 - CRAWL SPACE DESIGN & PIER LOCATIONS ARE BASED ON A STRUCTURAL CONFIGURATION WHICH ALLOWS A MAXIMUM POINT LOAD (DEAD OR LIVE) AT ANY GIVEN POINT ON THE FINISHED FLOOR. THIS REQUIRES MAXIMUM SUPPORT AND STABILITY.
7 - USE DOUBLE & IF ALLOWED, TRIPLE FLOOR JOIST UNDER ALL PARALLEL BEARING WALLS.
8 - BUILDER TO PROVIDE CROSS MEMBER BRIDGING BETWEEN JOISTS BY USING EITHER METAL BRIDGES OR 1X3 CROSS BRACING MEMBERS @ 8' SPACING MAX. VERIFY ALL APPLICATIONS WITH LOCAL CODE.
9 - BUILDER TO VERIFY USE OF POWER VENTS IN CRAWL SPACE AREAS WHERE EXTRA VENTILATION MAY BE NEEDED. (VERIFY W/ LOCAL CODE)



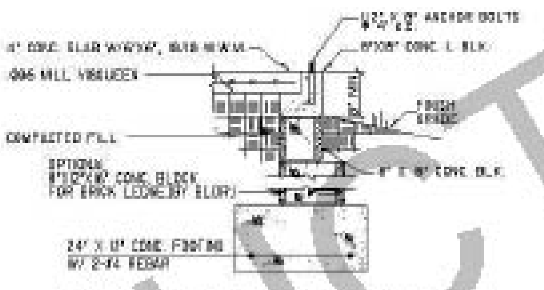
① FOUNDATION DETAIL

3/4" = 1'-0"



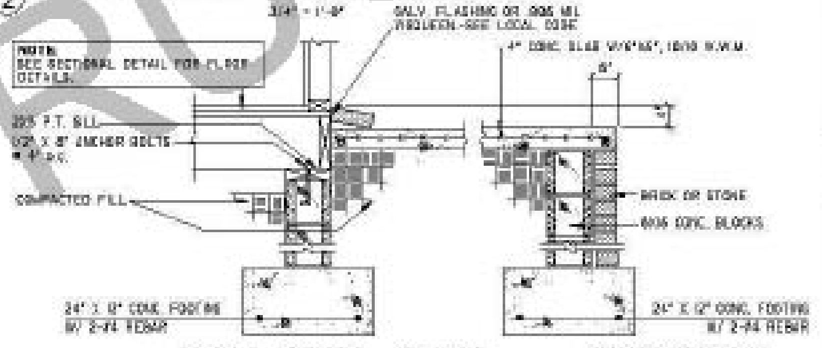
③ BEARING FTG DETAIL

3/4" = 1'-0"



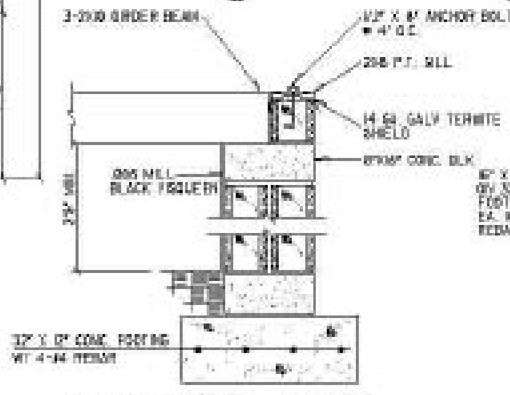
② GARAGE FOUNDATION DETAIL

3/4" = 1'-0"



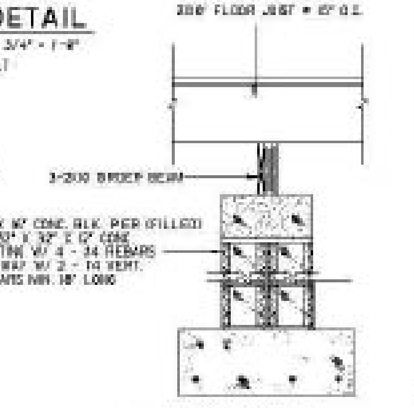
④ STEP DOWN DETAIL

3/4" = 1'-0"



⑤ PILASTER DETAIL

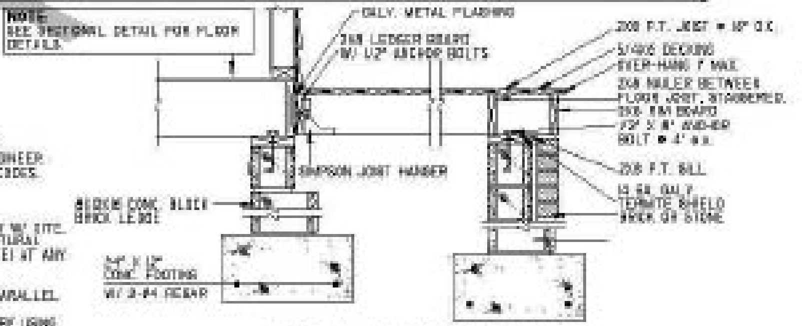
3/4" = 1'-0"



⑥ PIER DETAIL

3/4" = 1'-0"

⑦ BRICK VENT DETAIL



⑧ STEP DOWN DETAIL

3/4" = 1'-0"

FOUNDATION (CRAWL SPACE) PLAN / NOTES

[redacted]

[redacted]

CAD DESIGNED

REVISIONS	BY
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
	24x36

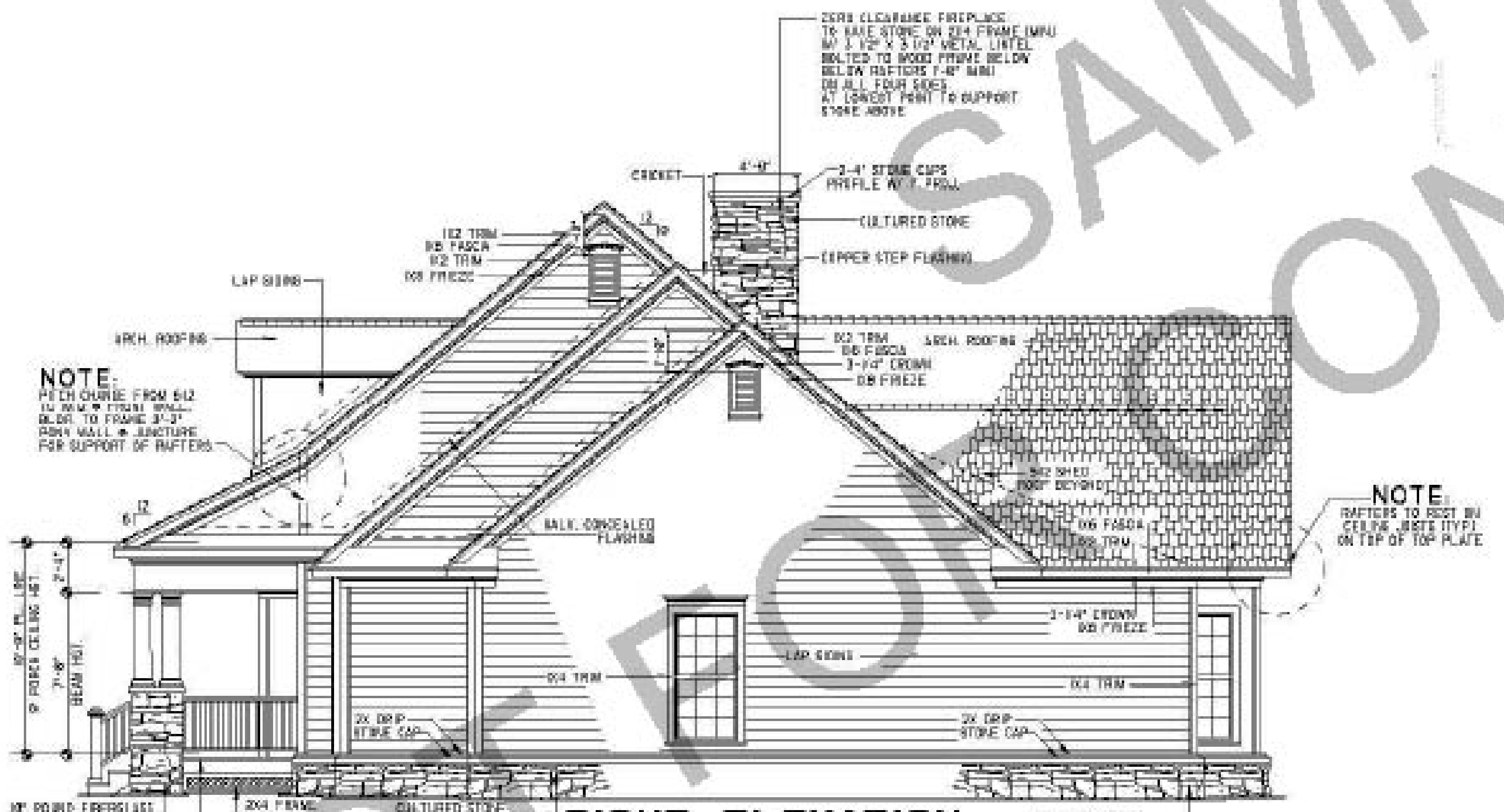
[redacted]

[redacted]

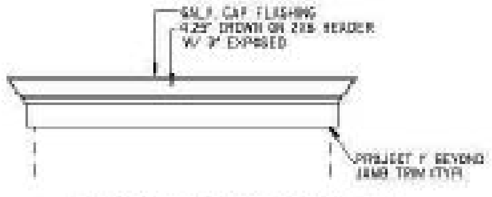
DATE [redacted]
SCALE 1/4" = 1'-0"
BUILDER
JOB [redacted]
DRAWN BY

3 of 9

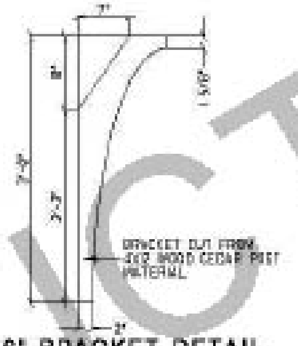
FRONT ELEVATION



RIGHT ELEVATION



① CROWN HEADER DETAIL
1" = 1'-0"



② 36" BRACKET DETAIL
1" = 1'-0"

ELEVATION NOTES:

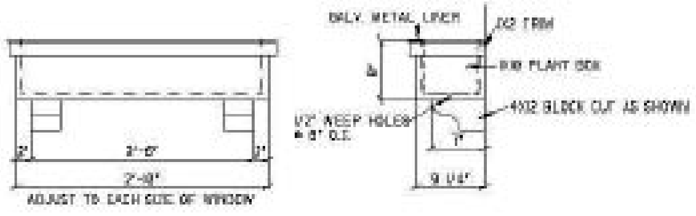
1. GUTTERS AND DOWNSPOUTS ARE NOT SHOWN FOR CLARITY. DOWNSPOUTS SHALL BE LOCATED TOWARDS THE FRONT AND REAR OF THE HOUSE. LOCATE DOWNSPOUTS IN NON-VISUALLY OFFENSIVE LOCATIONS, FOR EXAMPLE, FRONT WALL OF HOUSE, BEHIND PORCH COLUMNS, ETC. GENERAL CONTRACTOR SHALL VERIFY EXISTING GRADES AND COORDINATE ANY NECESSARY ADJUSTMENTS TO HOUSE WITH OWNER.

2. PLUMBING AND HVAC VENTS SHALL BE GROUPED IN ATTIC TO LIMIT ROOF PENETRATIONS AND TO BE LOCATED AWAY FROM PUBLIC VIEW, I.E. AT THE REAR OF THE HOUSE AND SHALL BE PRIMED AND PAINTED TO MATCH ROOF COLOR.

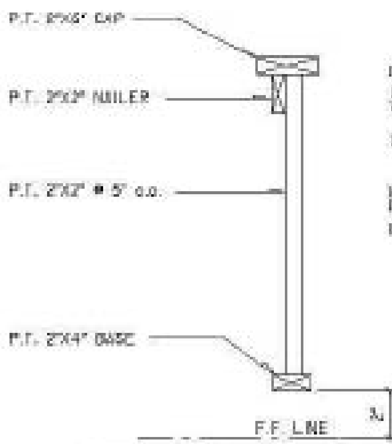
3. PROVIDE ATTIC VENTILATION PER LOCAL CODE REQUIREMENTS.

4. EXTERIOR FLASHING SHALL BE CORRECTLY INSTALLED AT ALL CONNECTIONS BETWEEN ROOFS, WALLS, CHIMNEYS, PROJECTIONS AND PENETRATIONS AS REQUIRED BY APPROVED CONSTRUCTION PRACTICES.

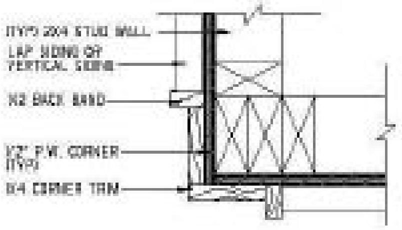
5. CONTRACTOR SHALL PROVIDE ADEQUATE ATTIC VENTILATIONS / ROOF VENTS PER LOCAL GOVERNING CODE. INSTALL CONTINUOUS RIDGE VENTILATION AND PAINT TO MATCH ROOF. PROVIDE APPROPRIATE SOFFIT VENTILATION AT OVERHANGS.



③ PLANT BOX DETAIL
1" = 1'-0"



⑤ PORCH RAIL DETAIL
1 1/2" = 1'-0"



④ CORNER 1X4 TRIM DETAIL
3" = 1'-0"

REVISIONS	BY
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
	24x36

[redacted]

[redacted]

[redacted]

NOTICE DUTY OF COOPERATION

[redacted] assumes no liability for any HOME constructed from this plan. Release of these plans contemplates further cooperation among the owner, his contractor and the designer. Design and construction are complex. Although the designer and his consultants performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the designer. Failure to notify the designer compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the designer shall relieve the designer from responsibility for all consequences. Changes made from the plans without the consent of the designer are unauthorized and shall relieve the designer of responsibility for all consequences arising out of such changes. Only qualified Designer, Architect, Contractor, or Structural Engineer should attempt to modify any portion of this design. Written dimensions on these drawings shall have precedence over scaled dimensions; contractors shall verify and be responsible for all dimensions and conditions on the job. This office must be notified of any variations from the dimensions and conditions shown by these drawings. Shop details must be submitted to this office for approval before proceeding with fabrication.

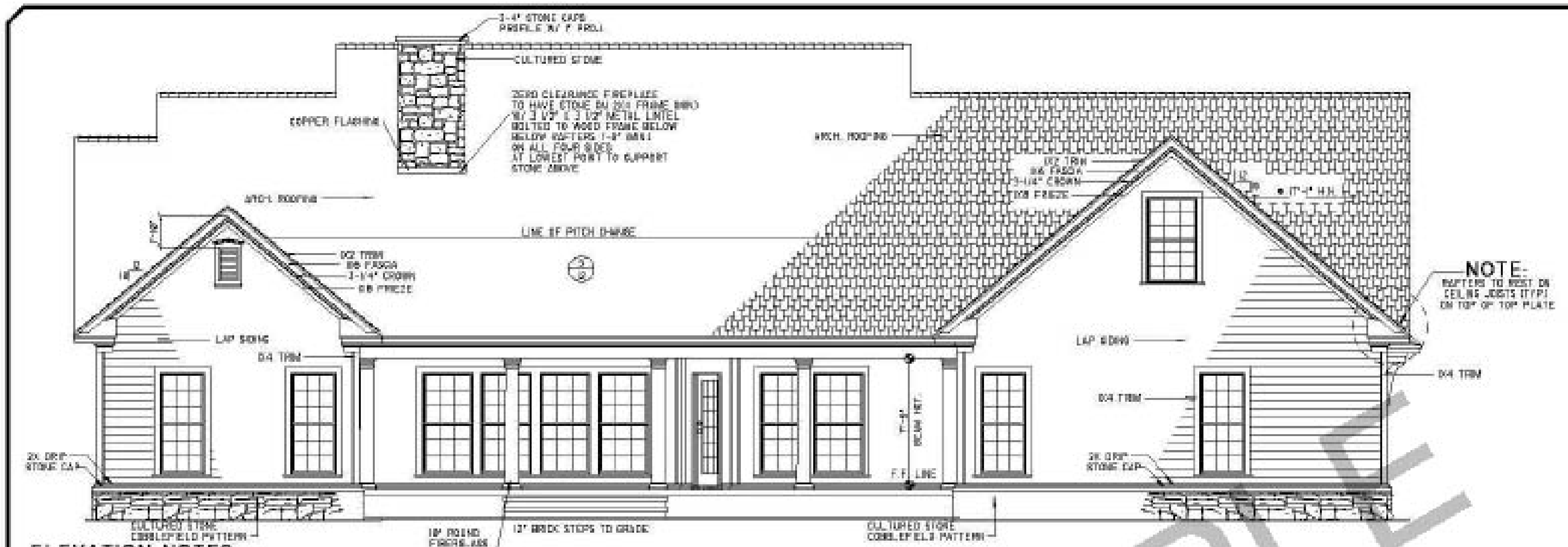
ELEVATIONS / NOTES

[redacted]

CAD DESIGNED

DATE [redacted]
SCALE
1/4" = 1'-0"
BUILDER
JOB [redacted]
DRAWN BY

4 OF 9



REAR ELEVATION

ELEVATION NOTES:

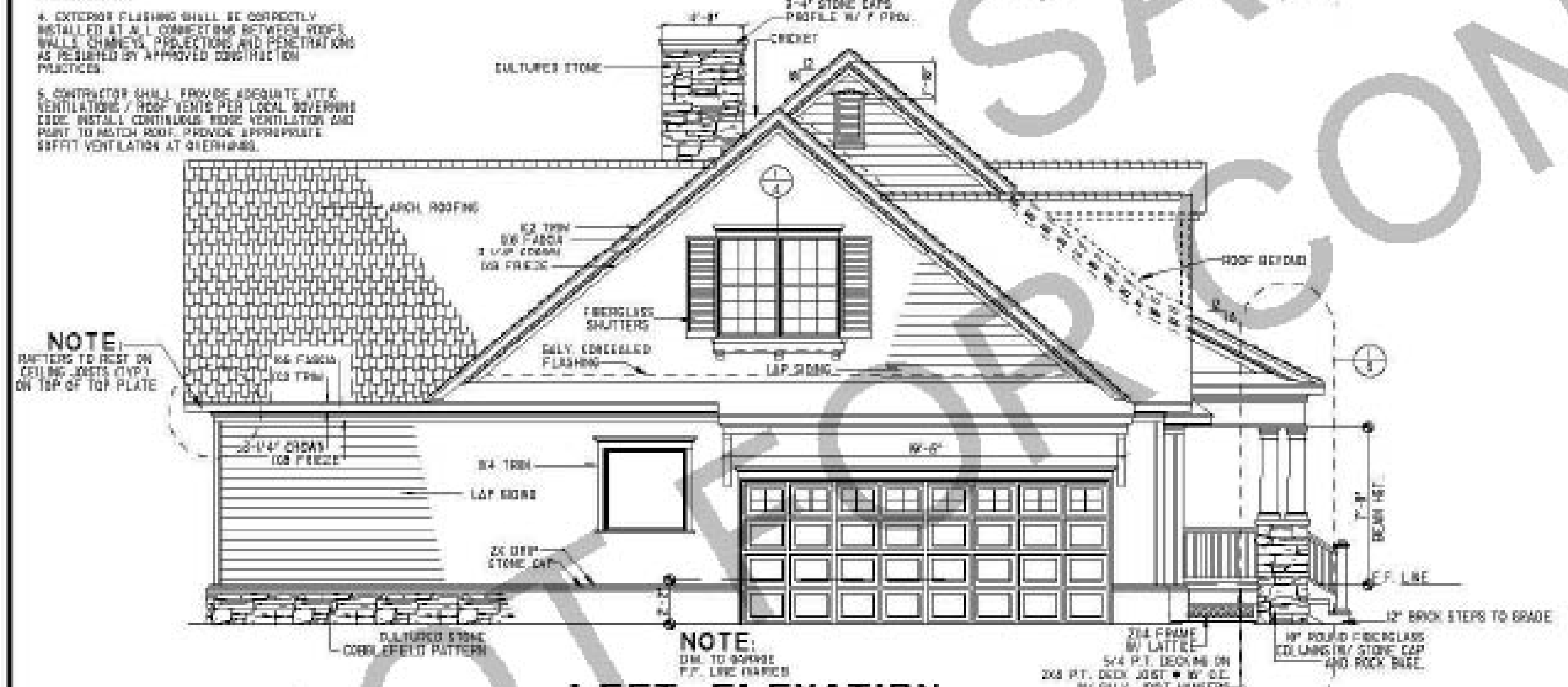
1. GUTTERS AND DOWNSPOUTS ARE NOT SHOWN FOR CLARITY. DOWNSPOUTS SHALL BE LOCATED TOWARDS THE FRONT AND REAR OF THE HOUSE. LOCATE DOWNSPOUTS IN NON-VISUALLY OFFENSIVE LOCATIONS, FOR EXAMPLE, FRONT WALL OF HOUSE, BESIDE PORCH COLUMNS, ETC. GENERAL CONTRACTOR SHALL VERIFY EXISTING GRADES AND COORDINATE ANY NECESSARY ADJUSTMENTS TO HOUSE WITH OWNER.

2. PLUMBING AND HVAC VENTS SHALL BE GROUPED IN ATTIC TO LIMIT ROOF PENETRATIONS AND TO BE LOCATED AWAY FROM PUBLIC VIEW, I.E. AT THE REAR OF THE HOUSE AND SHALL BE PRIMED AND PAINTED TO MATCH ROOF COLOR.

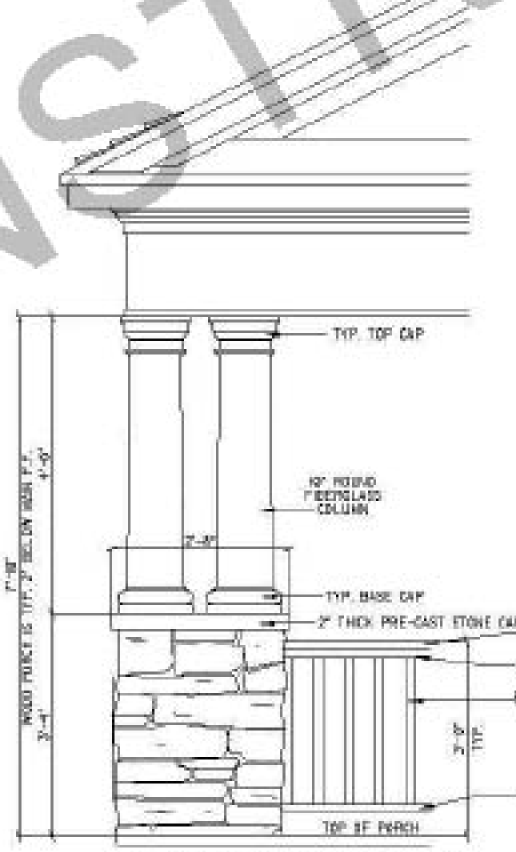
3. PROVIDE ATTIC VENTILATION PER LOCAL CODE REQUIREMENTS.

4. EXTERIOR FLASHING SHALL BE CORRECTLY INSTALLED AT ALL CONNECTIONS BETWEEN ROOFS, WALLS, CHIMNEYS, PROJECTIONS AND PENETRATIONS AS REQUIRED BY APPROVED CONSTRUCTION PRACTICES.

5. CONTRACTOR SHALL PROVIDE ADEQUATE ATTIC VENTILATIONS / ROOF VENTS PER LOCAL GOVERNING CODE. INSTALL CONTINUOUS RIDGE VENTILATION AND PAINT TO MATCH ROOF. PROVIDE APPROPRIATE SOFFIT VENTILATION AT OVERHANGS.

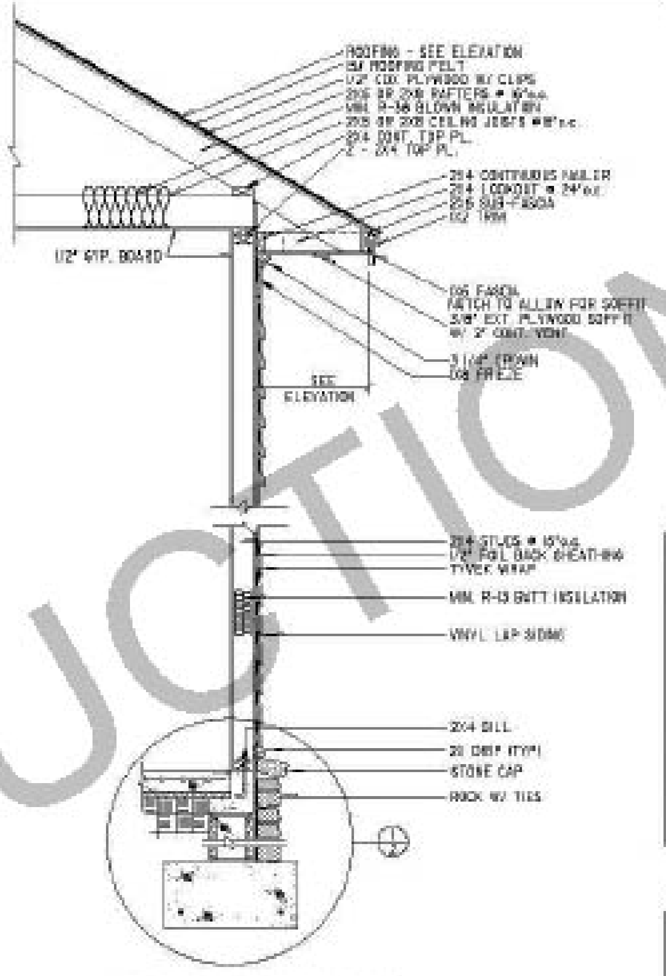


LEFT ELEVATION



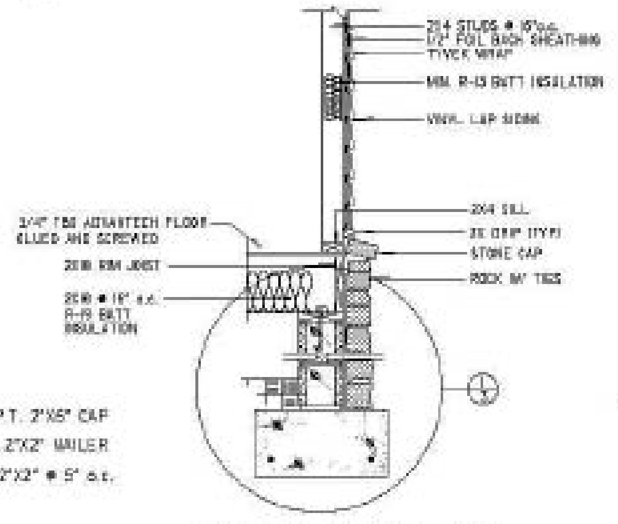
1 COLUMN BASE DETAIL

3/4" = 1'-0"



SLAB FOUNDATION SECTIONAL DETAIL

3/4" = 1'-0"



CRAWL FOUNDATION SECTIONAL DETAIL

3/4" = 1'-0"

REVISIONS	BY
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

24x36

[redacted]

[redacted]

[redacted]

NOTICE DUTY OF COOPERATION

[redacted] assumes no liability for any HOME constructed from this plan. Release of these plans contemplates further cooperation among the owner, his contractor and the designer. Design and construction are complex. Although the designer and his consultants performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the designer. Failure to notify the designer compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the designer shall relieve the designer from responsibility for all consequences. Changes made from the plans without the consent of the designer are unauthorized and shall relieve the designer of responsibility for all consequences arising out of such changes. Only qualified Designer, Architect, Engineer, or Structural Engineer should attempt to modify any portion of this design.
Written dimensions on these drawings shall have precedence over scaled dimensions; contractors shall verify and be responsible for all dimensions and conditions on the job. This office must be notified of any variations from the dimensions and conditions shown by these drawings. Shop details must be submitted to this office for approval before proceeding with fabrication.

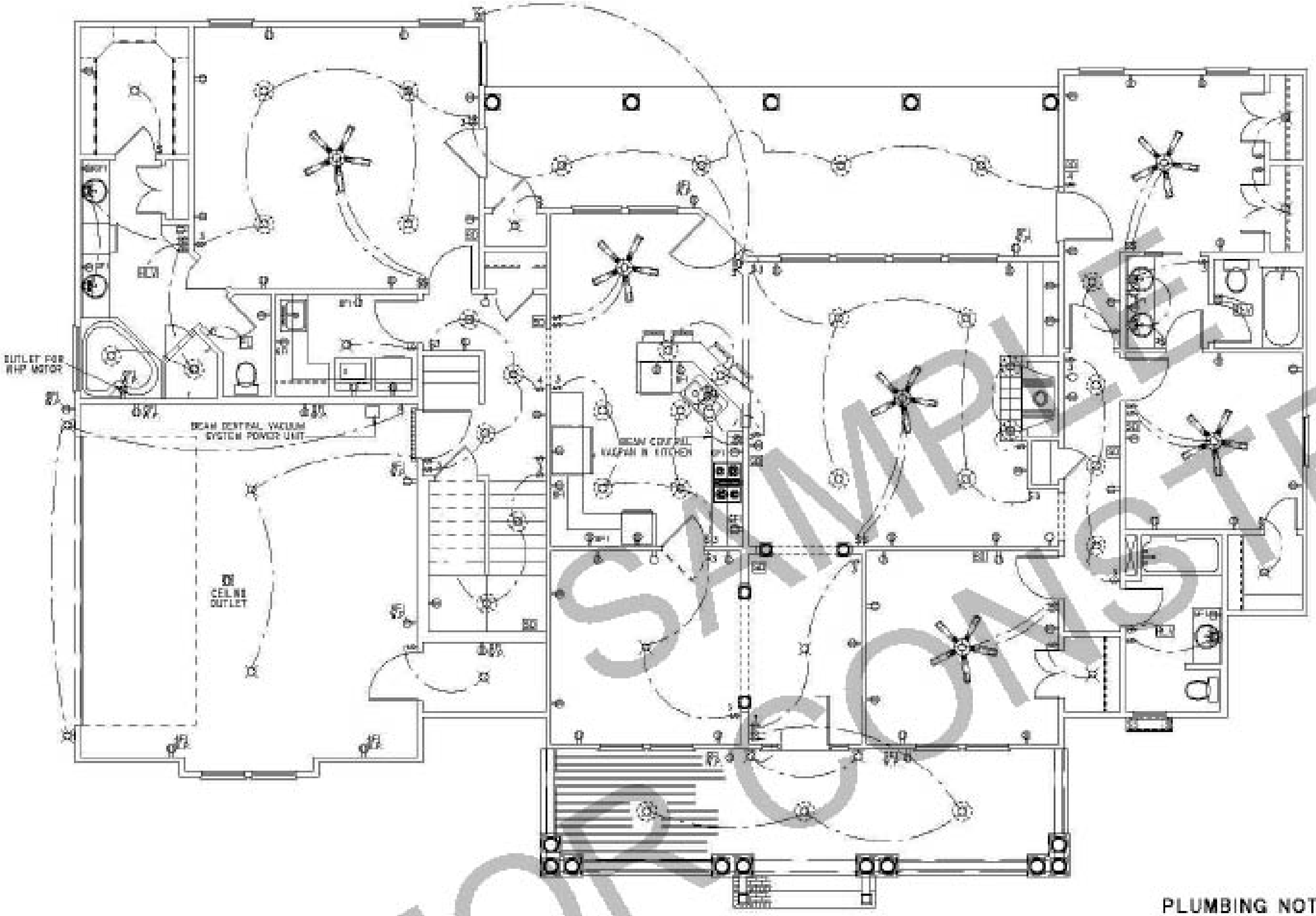
ELEVATIONS / NOTES

[redacted]

[redacted]

CAD
DESIGNED

DATE	[redacted]
SCALE 1/4" = 1'-0"	
BUILDER	
JOB	[redacted]
DRAWN BY	



ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	EXHAUST FAN
	CEILING FAN
	CEILING FAN W/ LIGHT
	EXHAUST FAN W/ LIGHT
HLV	HEAT, LIGHT AND VENT
	LIGHT
	4' FLORESCENT LIGHT
	2' X 4' FLORESCENT LIGHT
	6" RECESSED CAN LIGHT
	3" RECESSED CAN LIGHT
	FLOOD LIGHT
	WALL MOUNTED LIGHT
	ELECTRICAL OUTLET
	220V ELECTRICAL OUTLET
	CEILING MOUNTED OUTLET
	FLOOR MOUNTED OUTLET
	HIDDEN OUTLET
	SWITCHED OUTLET
	BREAKER BOX
	PHONE
SD	SMOKE DETECTOR
$	SWITCH
	STACKED SWITCHES
3	THREE WAY
4	FOUR WAY
GFI	GROUND FAULT INTERRUPTER
W.P.	WATERPROOF
	ELECTRICAL WIRE
	CABLE TV
	TRACK LIGHTING

BEAM VACUUM LEGEND

SYMBOL	DESCRIPTION
☐	BEAM CENTRAL VACUUM SYSTEM POWER UNIT
	BEAM CENTRAL VACPAN IN KITCHEN
	BEAM CENTRAL VACUUM INLET VALVE

NOTE:

1.- OWNER TO VERIFY & APPROVE ALL ELECTRICAL & POSSIBLE FLOOR OUTLET LOCATIONS NOT NOTED.

2.- PROVIDE ARC-FAULT INTERRUPTER PROTECTION FOR ALL BEDROOMS. REFERENCE IRC SECTION E3802

PLUMBING NOTES:

1. PLUMBING SHALL MEET ALL LOCAL CODES.

2. IF WATER HEATER IS LOCATED ANYWHERE, EXCEPT GARAGE OR BASEMENT, PROVIDE METAL DRAIN PAN WITH AUXILLARY DRAIN TO EXTERIOR.

3. ALL GAS WATER HEATERS SHALL BE VENTED AT TOPOUT.

4. PROVIDE INSIDE MAIN WATER CUT-OFF.

5. PROVIDE BLOCKING IF WALL PLATES OR JOISTS ARE CUT INTO.

REVISIONS	BY
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
	24x36

[redacted]

[redacted]

[redacted]

NOTICE DUTY OF COOPERATION

[redacted] assumes no liability for any HOME constructed from this plan. Release of these plans contemplates further cooperation among the owner, his contractor and the designer. Design and construction are complex. Although the designer and his consultants performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the designer. Failure to notify the designer compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the designer shall relieve the designer from responsibility for all consequences. Changes made from the plans without the consent of the designer are unauthorized and shall relieve the designer of responsibility for all consequences arising out of such changes. Only qualified Designer, Architect, Contractor, or Structural Engineer should attempt to modify any portion of this design.

Written dimensions on these drawings shall have precedence over scaled dimensions; contractors shall verify and be responsible for all dimensions and conditions on the job. This office must be notified of any variations from the dimensions and conditions shown by these drawings. Shop details must be submitted to this office for approval before proceeding with fabrication.

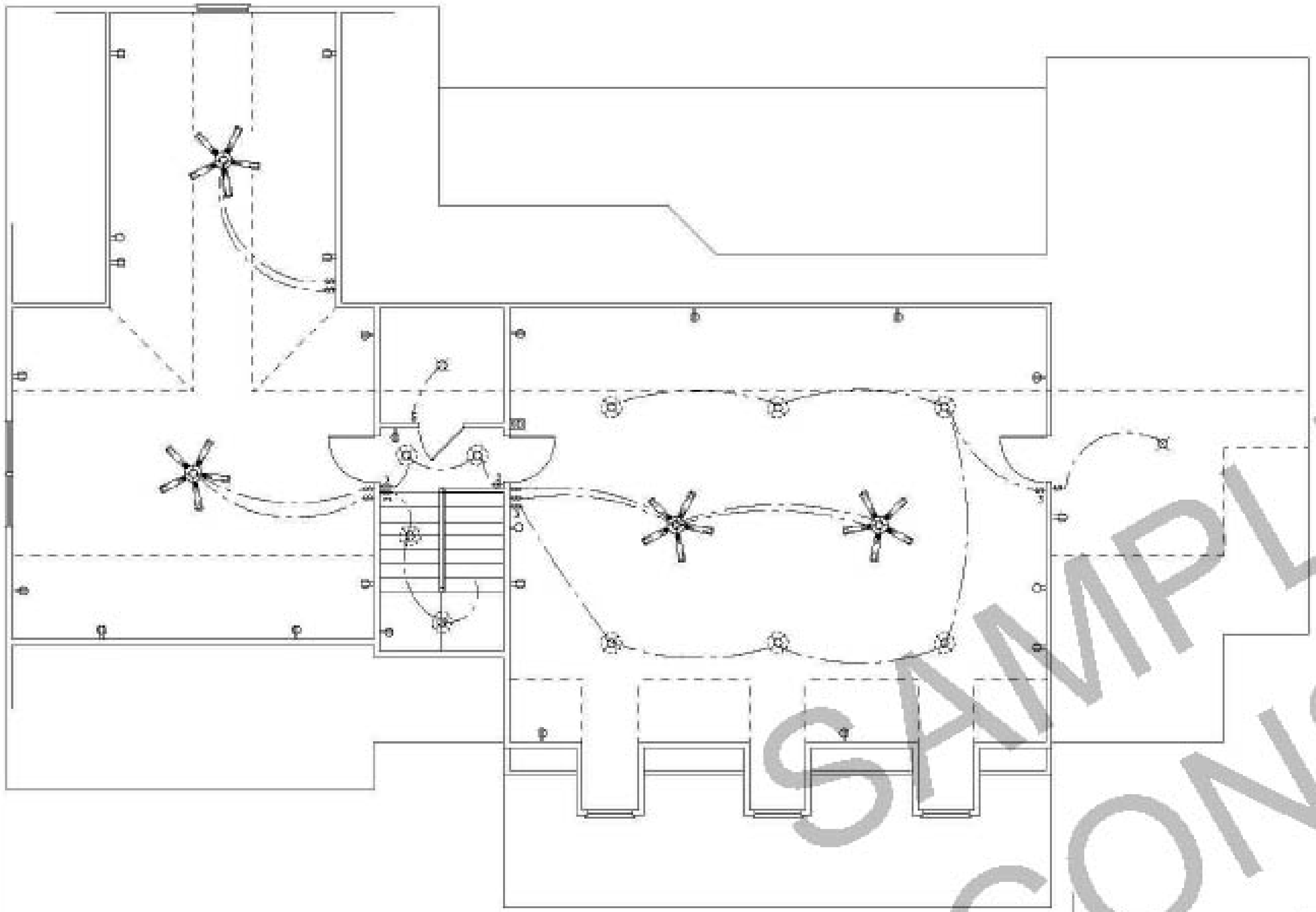
MAIN FLOOR ELECTRICAL PLAN / NOTES

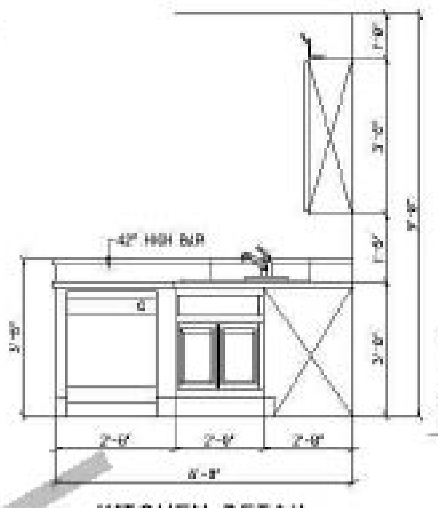
[redacted]

[redacted]

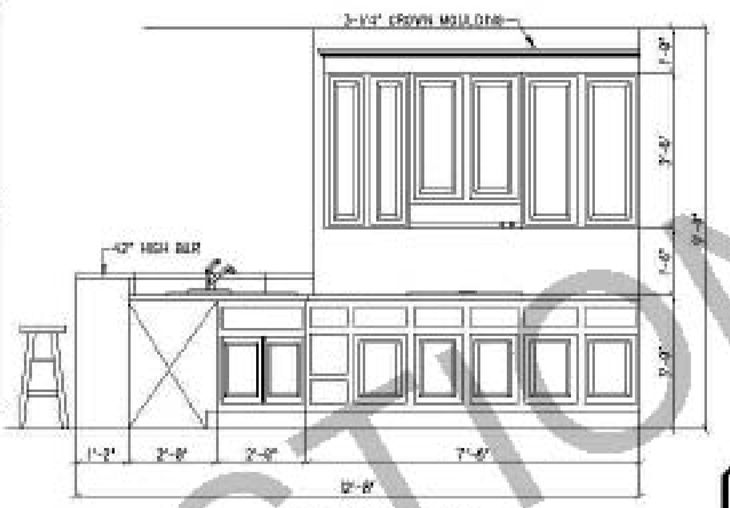
CAD DESIGNED

DATE [redacted]
SCALE 1/4" = 1'-0"
BUILDER
JOB [redacted]
DRAWN BY

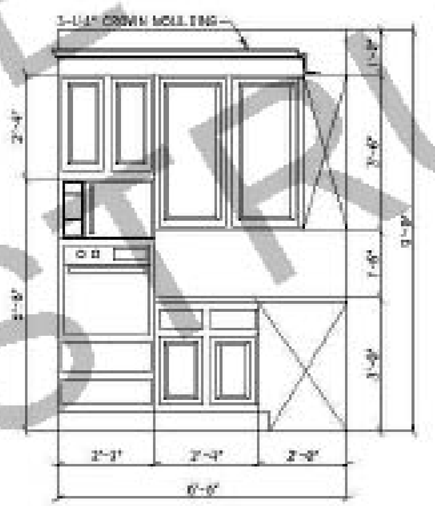




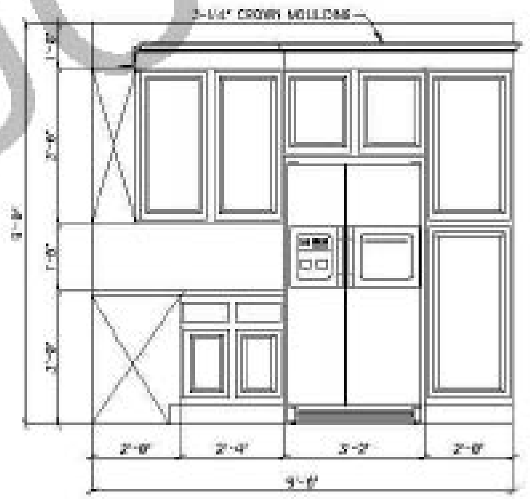
① KITCHEN DETAIL
1/2" = 1'-0"



② KITCHEN DETAIL
1/2" = 1'-0"

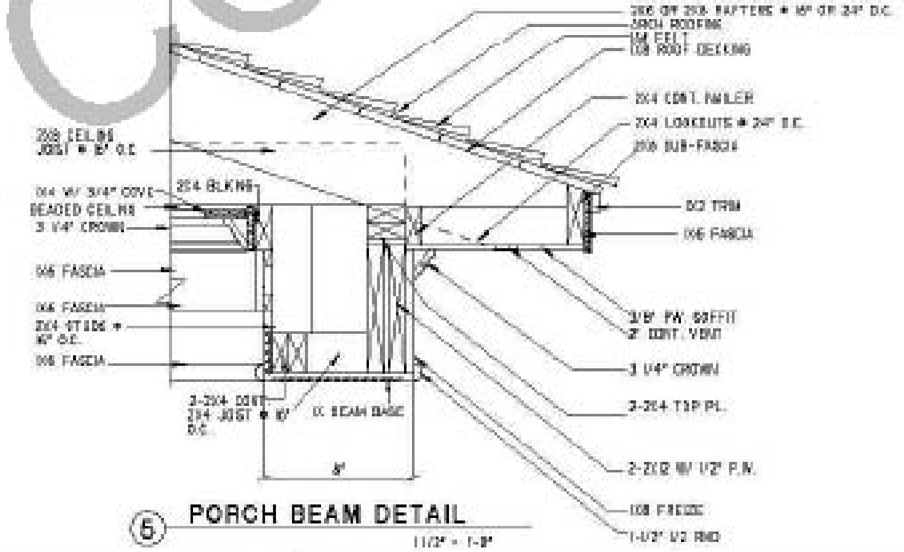


③ KITCHEN DETAIL
1/2" = 1'-0"



④ KITCHEN DETAIL
1/2" = 1'-0"

NOTE:
1.- OWNER TO VERIFY & APPROVE ALL ELECTRICAL & POSSIBLE FLOOR OUTLET LOCATIONS NOT NOTED.
2.- PROVIDE ARC-FAULT INTERRUPTER PROTECTION FOR ALL BEDROOMS REFERENCE IRC SECTION E3802



⑤ PORCH BEAM DETAIL
1 1/2" = 1'-0"

SECTION NOTES:

1. PROVIDE INSULATION BAFFLES AT EAVE VENTS BETWEEN RAFTERS / TRUSSES
2. RIDGES, VALLEY AND HIP MEMBERS SHALL BE FULL VERTICAL DEPTH OF FRAMING MEMBERS
3. PROVIDE 2X6 COLLAR TIES AT 48" O.C.
4. PROVIDE CONTINUOUS 2X6 PURLINS AT MID-SPAN OF RAFTERS, SPACE AT 6'-6" MAX.
5. PROVIDE 2X4 STRUTS AT 48" O.C. FROM PURLINS TO BEARING WALLS AT 45 MINIMUM ANGLE.
6. HANDRAILS SHALL BE MOUNTED 30"-34" ABOVE NOSING OF STAIRS GUARDRAILS SHALL BE MOUNTED AT 36".

NOTICE DUTY OF COOPERATION

[redacted] assumes no liability for any HOMES constructed from this plan. Release of these plans contemplates further cooperation among the owner, his contractor and the designer. Design and construction are complex. Although the designer and his consultants performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the designer. Failure to notify the designer compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the designer shall relieve the designer from responsibility for all consequences. Changes made from the plans without the consent of the designer are unauthorized and shall relieve the designer of responsibility for all consequences arising out of such changes. Only qualified Designer, Architect, Contractor, or Structural Engineer should attempt to modify any portion of this design.
Written dimensions on these drawings shall have precedence over scaled dimensions; contractors shall verify and be responsible for all dimensions and conditions on the job. This office must be notified of any variations from the dimensions and conditions shown by these drawings. Shop details must be submitted to this office for approval before proceeding with fabrication.

UPPER ELECTRICAL PLAN / CABINET ELEVATIONS / NOTES

[redacted]

[redacted]

CAD DESIGNED

REVISIONS	BY
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
	24x36

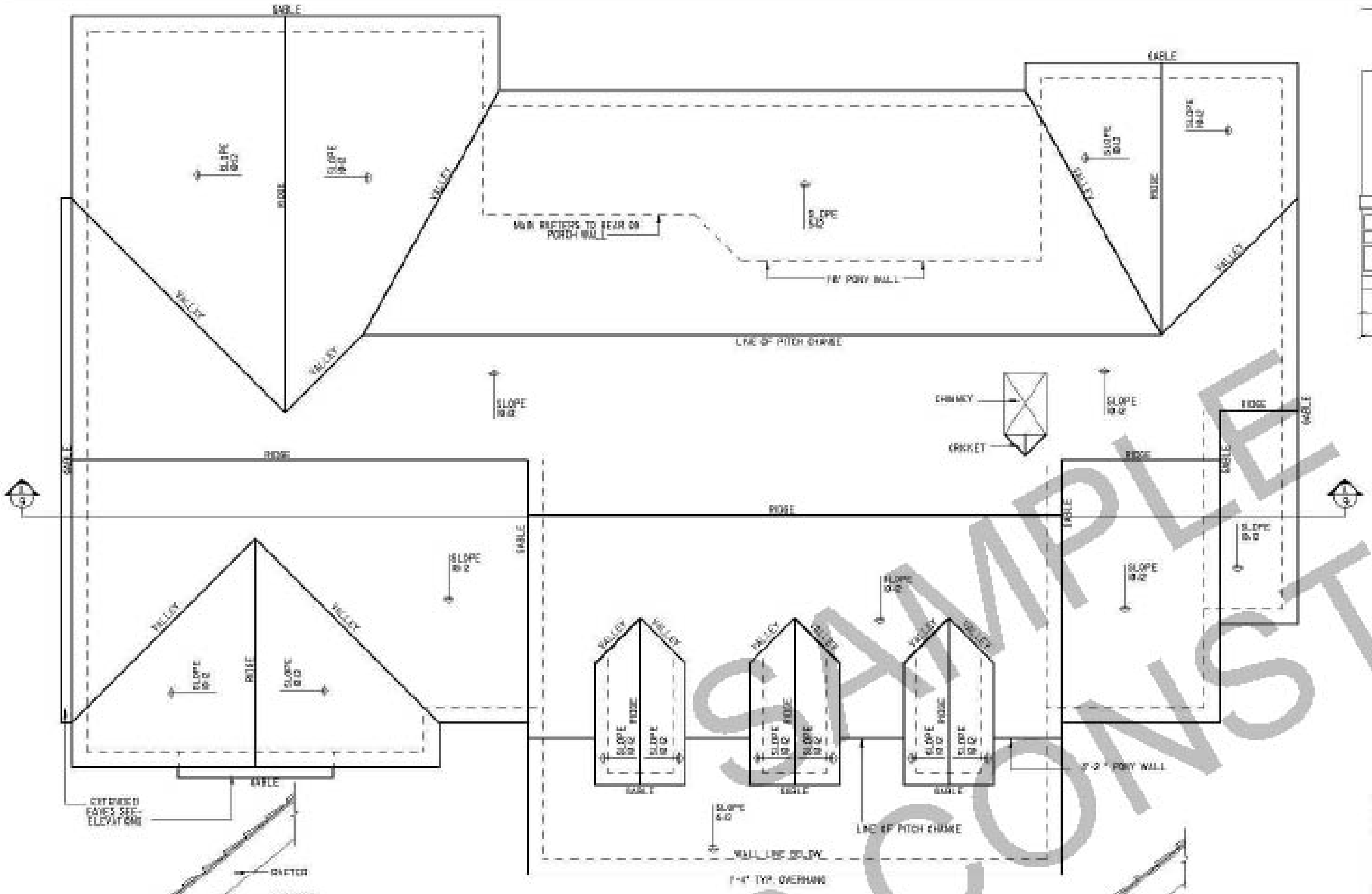
[redacted]

[redacted]

[redacted]

DATE [redacted]
SCALE 1/4" = 1'-0"
BUILDER
JOB [redacted]
DRAWN BY

7 OF 9



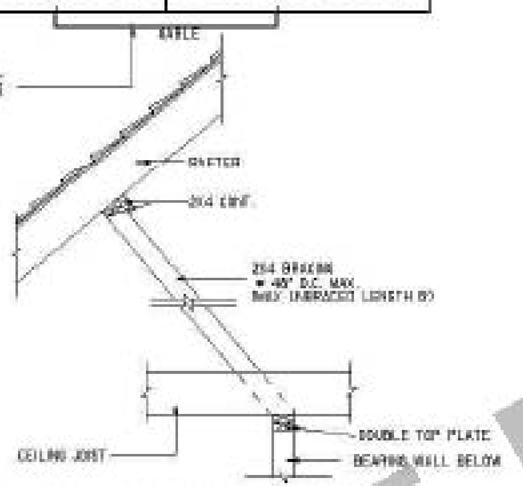
ROOF PLAN

NOTE:

1.- MAIN ROOF PITCH TO BE 10/12 UNLESS NOTED.
2.- MAIN PLATE LINE TO BE 9'-0" UNLESS NOTES.

FRAMING NOTES:

1.- RAFTERS TO BE SUPPORTED BY CONT. BRACING FOR HORIZONTAL SPANS OF 16'-0" OR GREATER
2.- SUPPORT ALL HIP, VALLEY, AND RIDGES @ 6'-0" O.C. MAX
3.- ALL RAFTERS TO BEAR ON SECOND FLOOR WALLS WHERE APPLICABLE.
4.- RAFTERS MAY BE SPLICED ONLY @ CONT. BRACING OF SECOND FLOOR WALLS.
5.- RAFTERS TO BE PLACED IN COMPLIANCE WITH ALL LOCAL CODES
EXAMPLES:
A.- 2X6 RAFTERS @ 16" O.C. MAX. WITH 1/2" P.W. DECKING
B.- 2X6 RAFTERS @ 24" O.C. MAX. WITH 5/8" P.W. DECKING
C.- 2X8 RAFTERS @ 24" O.C. MAX. WITH 5/8" P.W. DECKING
D.- 2X8 RAFTERS @ 16" O.C. MAX. WITH 1/2" P.W. DECKING
6.- FASCIA OVERHANG TO BE 12" (TYP.) UNLESS NOTED ON ELEVATIONS.
7.- ALL HIP / VALLEY RAFTERS TO BE 2X8 UNLESS NOTES.

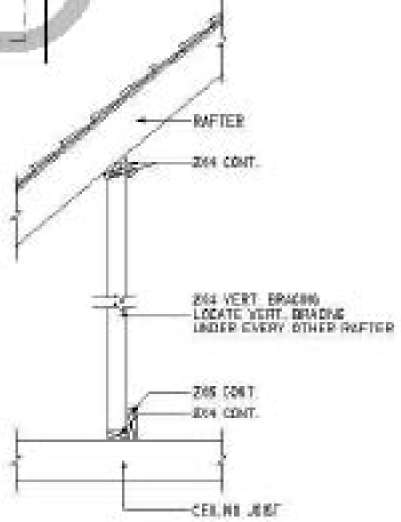


OPT. RAFTER BRACING DETAIL (PURLIN)

3/4" = 1'-0"

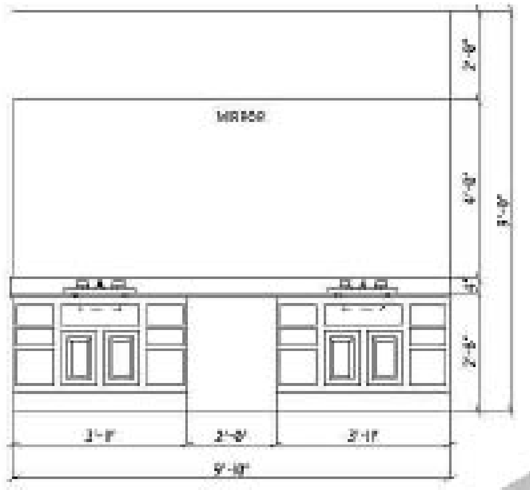
NOTE:

PURLINS ARE PERMITTED TO BE INSTALLED TO REDUCE THE SPAN OF RAFTERS. PURLINS SHALL BE SUPPORTED BY 2-INCH BY 4-INCH BRACES INSTALLED TO BEARING WALLS AT A SLOPE OF NOT LESS THAN 45 DEGREES. THE BRACES SHALL NOT BE SPACED MORE THAN 48" APART ON CENTER AND THE UNBRACED LENGTH OF BRACES SHALL NOT EXCEED 8 FT. PURLINS SHALL BE CONTINUOUS. (REFER IRC R802.5)



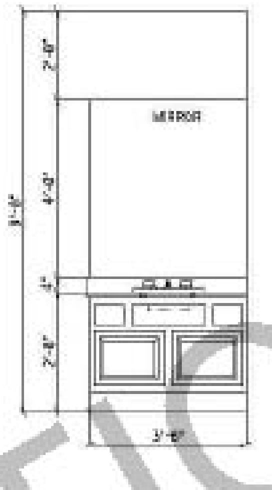
RAFTER BRACING DETAIL

3/4" = 1'-0"



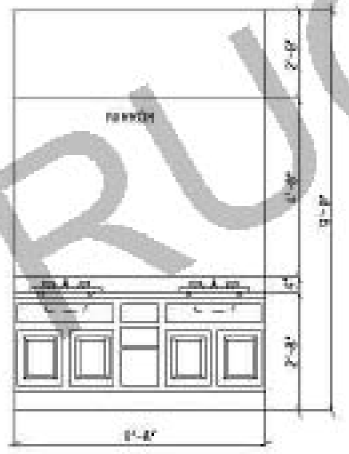
① MASTER BATH DETAIL

1/2" = 1'-0"



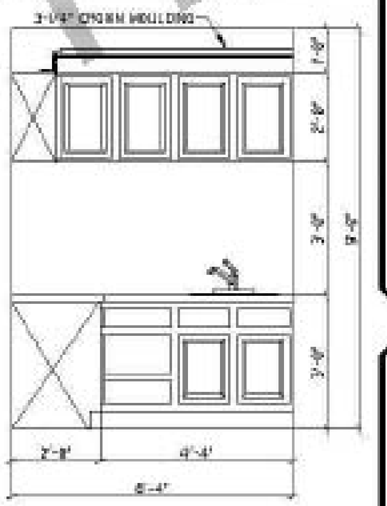
② BATHROOM DETAIL

1/2" = 1'-0"



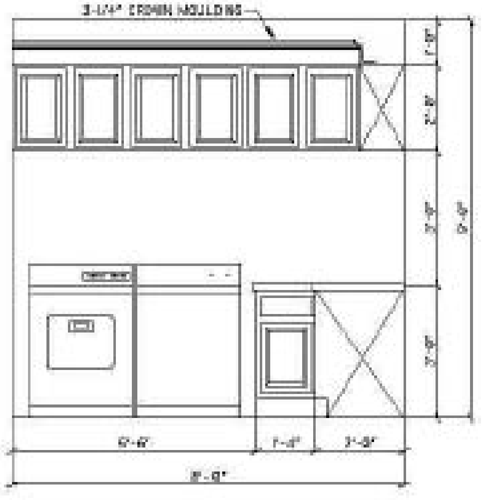
③ BATHROOM DETAIL

1/2" = 1'-0"



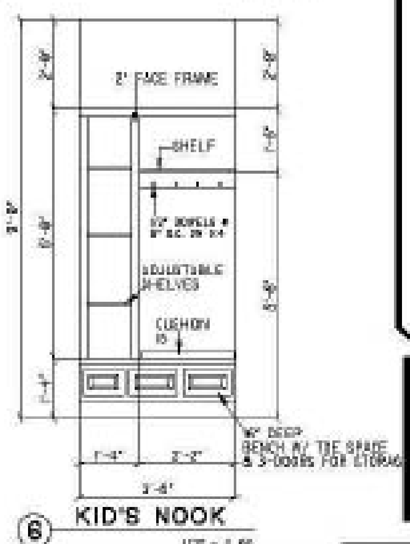
④ LAUNDRY ROOM DETAIL

1/2" = 1'-0"



⑤ LAUNDRY ROOM DETAIL

1/2" = 1'-0"



⑥ KID'S NOOK

REVISIONS	BY
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

24x36

[redacted]

[redacted]

[redacted]

NOTICE DUTY OF COOPERATION

[redacted] assumes no liability for any HOME constructed from this plan. Release of these plans contemplates further cooperation among the owner, his contractor and the designer. Design and construction are complex. Although the designer and his consultants performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the designer. Failure to notify the designer compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the designer shall relieve the designer from responsibility for all consequences. Changes made from the plans without the consent of the designer are unauthorized and shall relieve the designer of responsibility for all consequences arising out of such changes. Only qualified Designer, Architect, Contractor, or Structural Engineer should attempt to modify any portion of this design.
Written dimensions on these drawings shall have precedence over scaled dimensions; contractors shall verify and be responsible for all dimensions and conditions on the job. This office must be notified of any variations from the dimensions and conditions shown by these drawings. Shop details must be submitted to this office for approval before proceeding with fabrication.

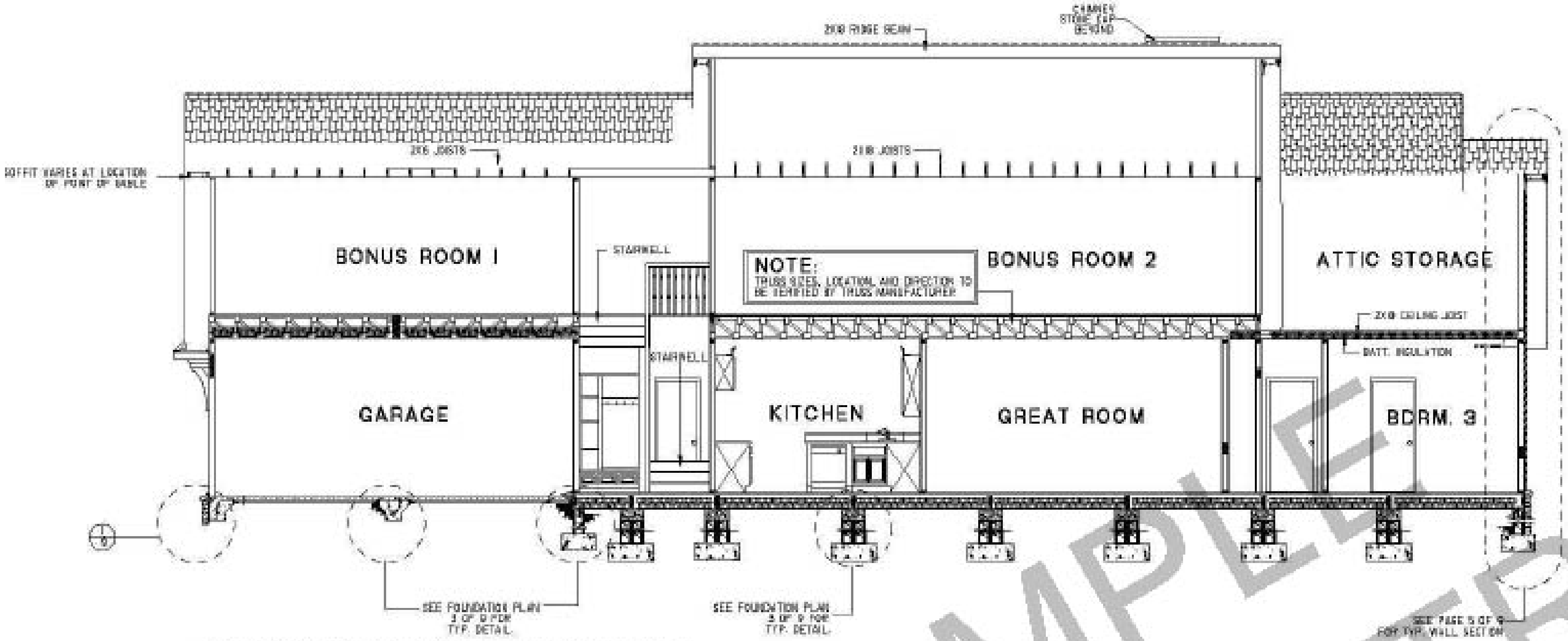
ROOF PLAN / CABINET ELEVATIONS / NOTES

[redacted]

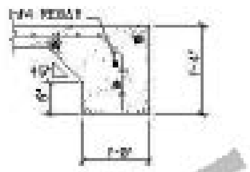
[redacted]

CAD DESIGNED

DATE [redacted]
SCALE 1/4" = 1'-0"
BUILDER
JOB [redacted]
DRAWN BY

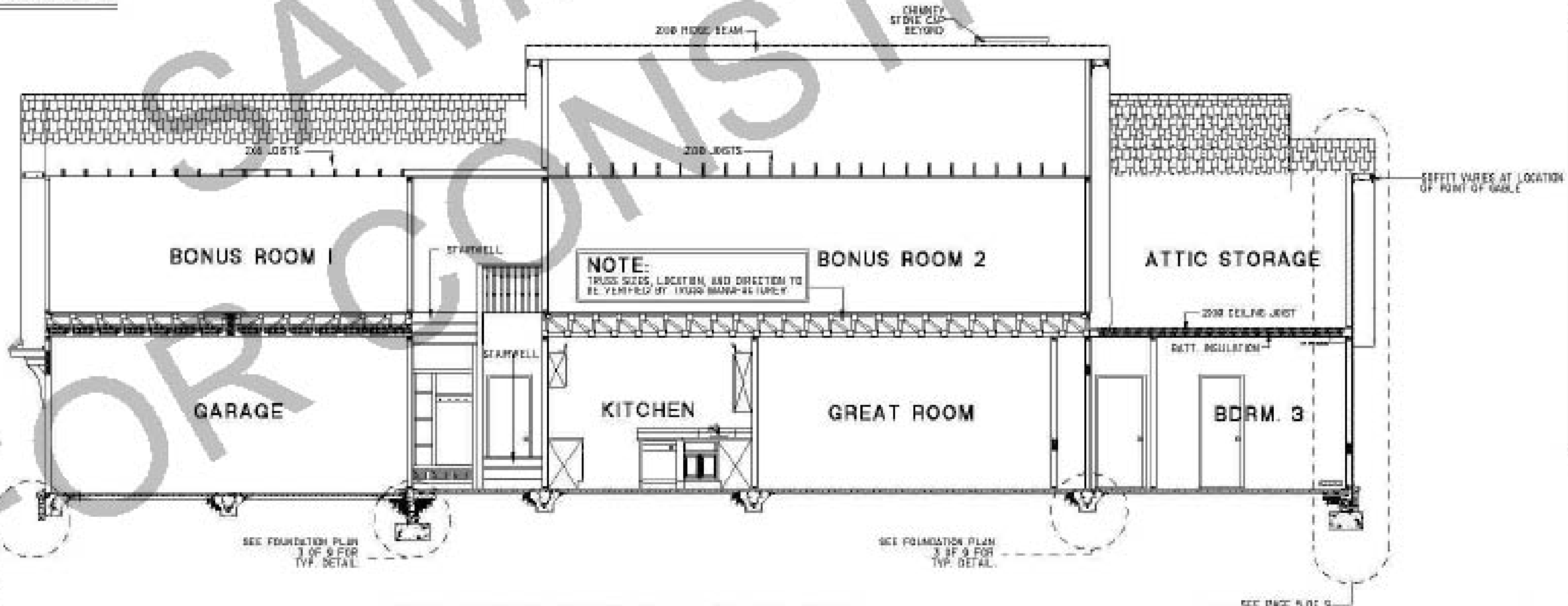


CROSS SECTION A A [CRAWL]



① TURN DOWN DETAIL

3/4" = 1'-0"



[redacted]

CROSS SECTION A A [SLAB]

REVISIONS	BY
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

24x36

[redacted]

[redacted]

NOTICE DUTY OF COOPERATION

[redacted] assumes no liability for any HOME constructed from this plan. Release of these plans contemplates further cooperation among the owner, his contractor and the designer. Design and construction are complex. Although the designer and his consultants performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the designer. Failure to notify the designer compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the designer shall relieve the designer from responsibility for all consequences. Changes made from the plans without the consent of the designer are unauthorized and shall relieve the designer of responsibility for all consequences arising out of such changes. Only qualified Designer, Architect, Contractor, or Structural Engineer should attempt to modify any portion of this design.
Written dimensions on these drawings shall have precedence over scaled dimensions; contractors shall verify and be responsible for all dimensions and conditions on the job. This office must be notified of any variations from the dimensions and conditions shown by these drawings. Shop details must be submitted to this office for approval before proceeding with fabrication.

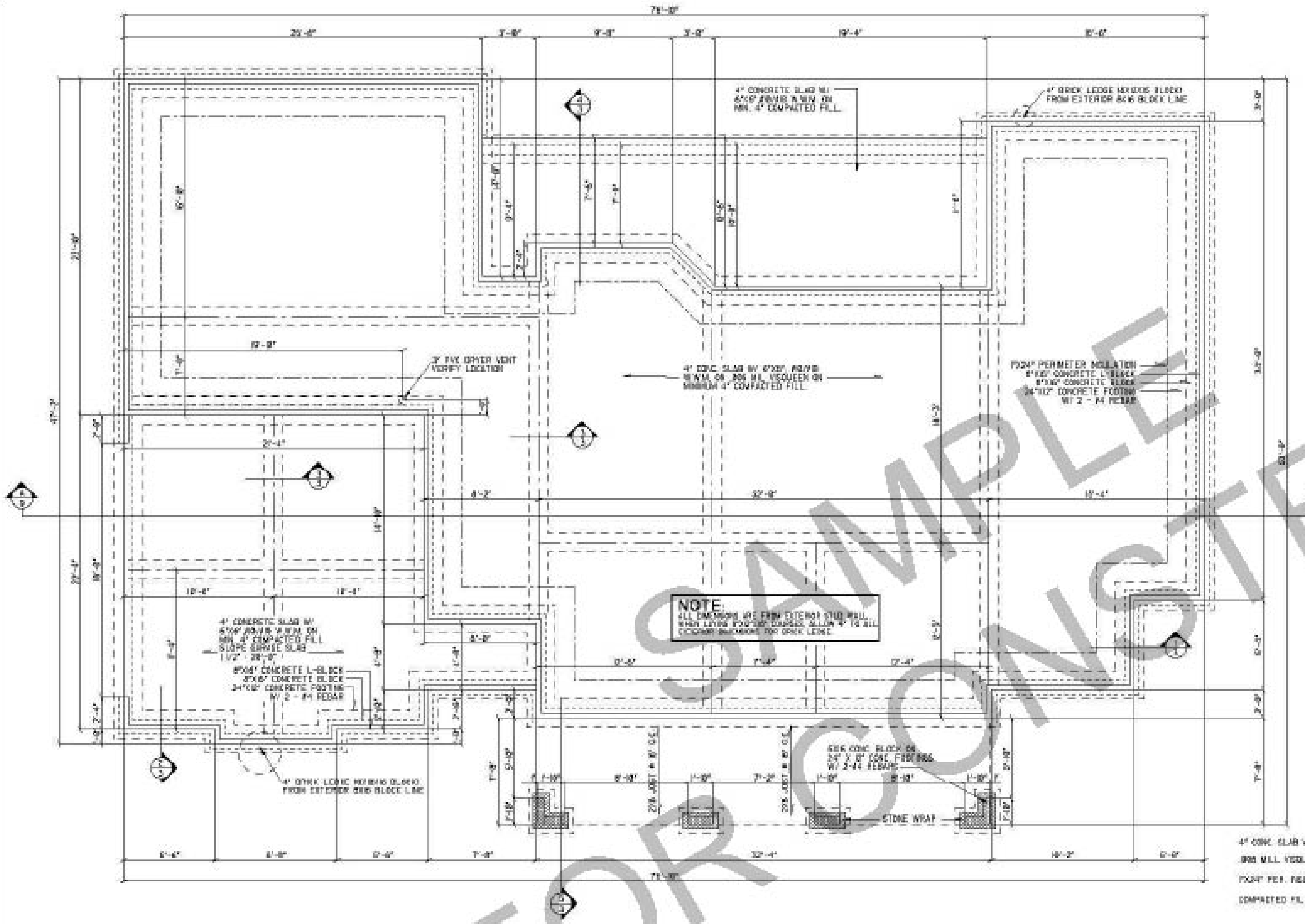
CROSS SECTION / NOTES

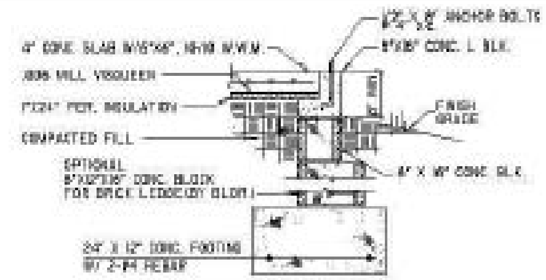
[redacted]

CAD DESIGNED

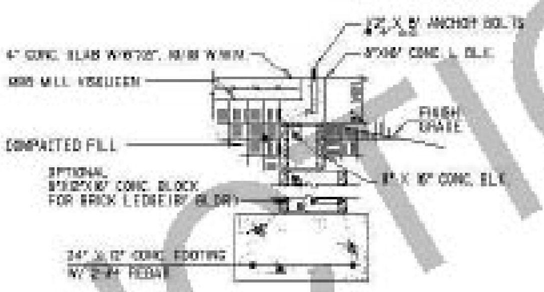
DATE [redacted] 4
SCALE
1/4" = 1'-0"
BUILDER
JOB [redacted]
DRAWN BY
GHT

9 OF 9

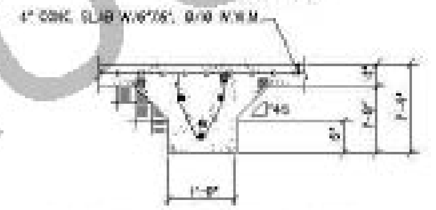




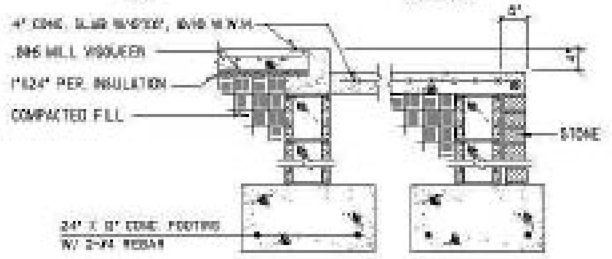
① FOUNDATION DETAIL
3/4" = 1'-0"



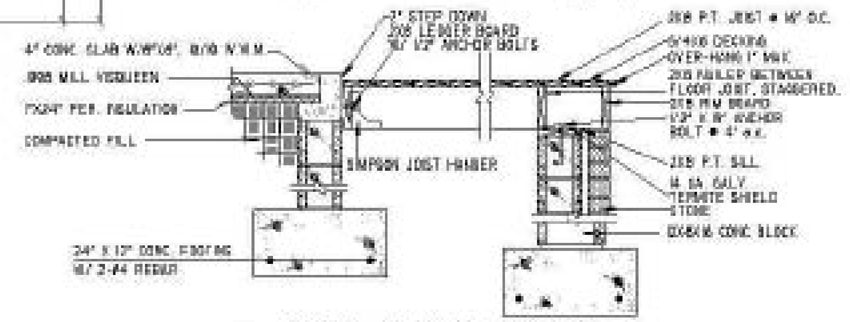
② GARAGE FOUNDATION DETAIL
3/4" = 1'-0"



③ BEARING FTG DETAIL
3/4" = 1'-0"



④ STEP DOWN DETAIL
3/4" = 1'-0"



⑤ STEP DOWN DETAIL
3/4" = 1'-0"

FOUNDATION NOTES:

1. ALL FOOTINGS SHALL REST ON FIRM, UNDISTURBED SOIL.

2. ASSUMED SOIL SHALL BE SAND OR GRAVEL, WITH MINIMUM TRACES OF ORG CLAY WITH A MINIMUM BEARING CAPACITY OF 2000 LBS/SQ FT.

3. UNLESS OTHERWISE NOTED, ALL SLABS ON GRADE SHALL BE 3000 PSI (28 DAY COMPRESSIVE STRENGTH) CONCRETE ON 4" BASE OF GRAVEL FILL REINFORCED WITH 6X6 - W1.4XW1.4 W.W.M. REINFORCING. INTERIOR SLABS SHALL BE PLACED ON 6 MIL STABILIZED POLYETHYLENE VAPOR BARRIER.

4. PROVIDE 1/2" EXPANSION JOINT MATERIAL BETWEEN ALL CONCRETE SLABS ON ABUTTING CONCRETE OF MASONRY WALLS OCCURRING IN EXTERIOR OR UNHEATED INTERIOR AREAS.

5. PLACE 1/2" DIAMETER X 10" (2) SILL PLATE ANCHOR BOLTS AT EACH VERTICAL REBAR WHERE OCCURRING OR AT 6'-0" O.C. AND AT EACH CORNER AND BOTH SIDES OF OPENINGS.

6. FOOTING SIZES SHOWN ARE ONLY TYPICAL FOR STATED SOIL PRESSURES AND CONTINENT COMPACTION, WHICHEVER IS MORE RESTRICTIVE.

7. CONTRACTOR TO VERIFY FOOTING DEPTHS WITH LOCAL FROST REQUIREMENTS OR EXISTING SOIL CONDITIONS, WHICHEVER IS MORE RESTRICTIVE.

8. PROVIDE TERMITE PROTECTION AS REQUIRED BY LOCAL CODES.

9. PROVIDE DEEP SCORE CONTROL JOINTS AT MID POINTS OF ALL GARAGES, BOTH DIRECTIONS.

10. MASONRY VENEER MUST BE ANCHORED TO BACK-UP CONSTRUCTION WITH GALVANIZED CORRUGATED METAL TIES SPACED 16" O.C. HORIZONTALLY AND 24" O.C. VERTICALLY.

11. INSTALL CONTINUOUS APPROVED FLASHINGS AND COTTON CORD WEEPS AT 48" O.C. WITHIN FIRST EXPOSED COURSE ABOVE GRADE.

12. CRAWL SPACE FOUNDATIONS: PROVIDE CRAWL SPACE VENTILATION PER LOCAL CODE REQUIREMENTS.

NOTICE DUTY OF COOPERATION

[redacted] assumes no liability for any HOME constructed from this plan. Release of these plans contemplates further cooperation among the owner, his contractor and the designer. Design and construction are complex. Although the designer and his consultants performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the designer. Failure to notify the designer compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the designer shall relieve the designer from responsibility for all consequences. Changes made from the plans without the consent of the designer are unauthorized and shall relieve the designer of responsibility for all consequences arising out of such changes. Only qualified Designer, Architect, Engineer, or Structural Engineer should attempt to modify any portion of this design.
Written dimensions on these drawings shall have precedence over scaled dimensions; contractors shall verify and be responsible for all dimensions and conditions on the job. This office must be notified of any variations from the dimensions and conditions shown by these drawings. Shop details must be submitted to this office for approval before proceeding with fabrication.

FOUNDATION (SLAB) PLAN / NOTES

[redacted]

[redacted]

CAD DESIGNED

REVISIONS	BY
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

24x36

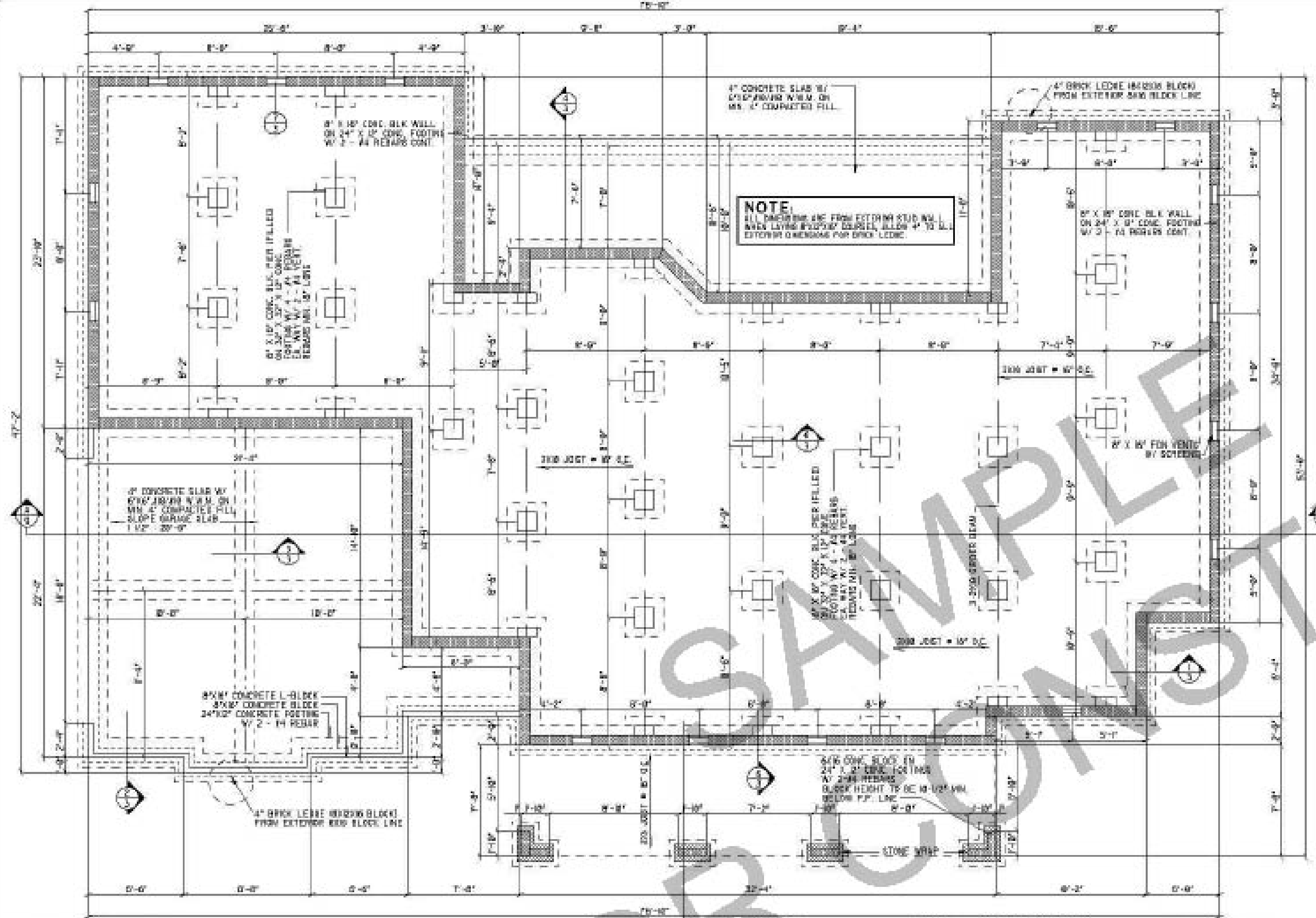
[redacted]

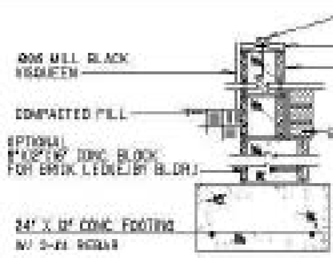
[redacted]

[redacted]

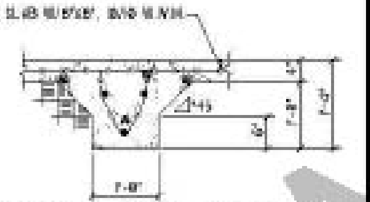
DATE [redacted]
SCALE 1/4" = 1'-0"
BUILDER
JOB [redacted]
DRAWN BY

3 OF 9

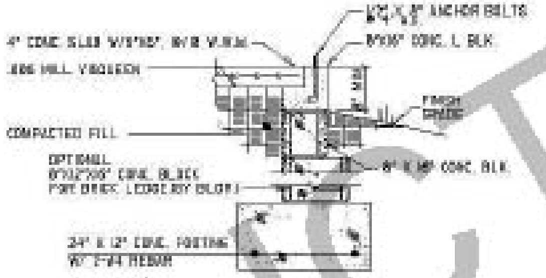




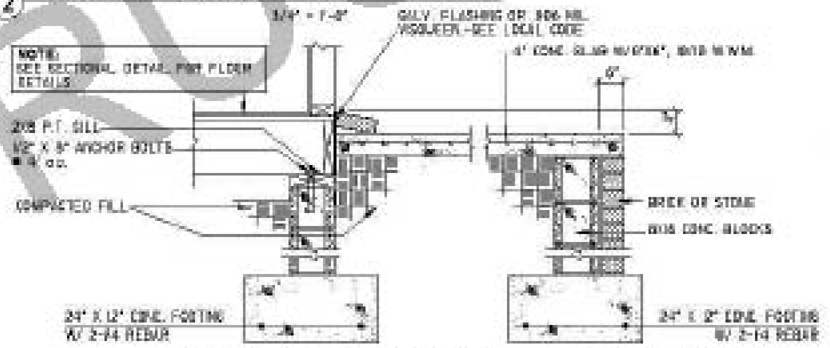
① FOUNDATION DETAIL
3/4" = 1'-0"



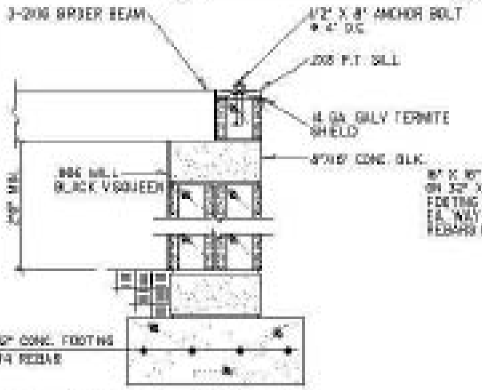
③ BEARING FTG DETAIL
3/4" = 1'-0"



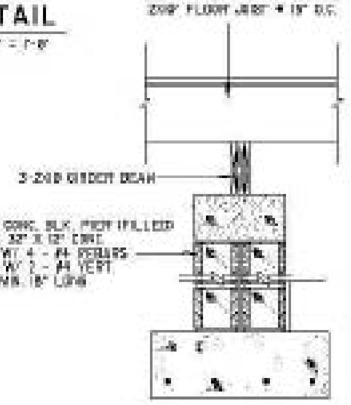
② GARAGE FOUNDATION DETAIL
3/4" = 1'-0"



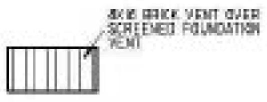
④ STEP DOWN DETAIL
3/4" = 1'-0"



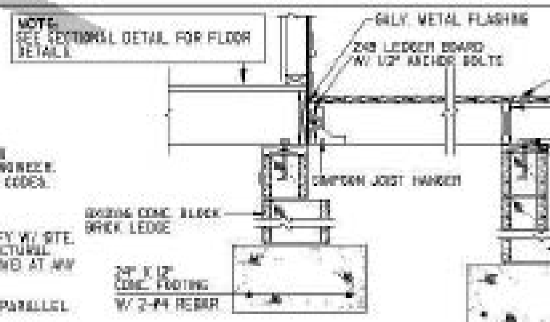
⑤ PILASTER DETAIL
3/4" = 1'-0"



⑥ PIER DETAIL
3/4" = 1'-0"



⑦ BRICK VENT DETAIL



⑧ STEP DOWN DETAIL
3/4" = 1'-0"

FOUNDATION NOTES:

1. ALL FOOTINGS SHALL REST ON FIRM, UNDISTURBED SOIL.

2. ASSUMED SOIL SHALL BE SAND OR GRAVEL, WITH MINIMUM TRACES OF DRY CLAY WITH A MINIMUM BEARING CAPACITY OF 2000 LBS/SQ FT.

3. UNLESS OTHERWISE NOTED, ALL SLABS ON GRADE SHALL BE 3000 PSI (28 DAY COMPRESSIVE STRENGTH) CONCRETE ON 4" SAND OR GRAVEL FILL, MINIMUM WITH 6X6 - W1.4XW1.4 WWM REINFORCING. INTERIOR SLABS SHALL BE PLACED ON 6 MIL STABILIZED POLYETHYLENE VAPOR BARRIER.

4. PROVIDE 1/2" EXPANSION JOINT MATERIAL BETWEEN ALL CONCRETE SLABS ON ABUTTING CONCRETE OR MASONRY WALLS OCCURRING IN EXTERIOR OR UNHEATED INTERIOR SPACE.

5. PLACE 1/2" DIAMETER X 10" (2) SILL PLATE ANCHOR BOLTS AT EACH VERTICAL REBAR WHILE OCCURRING OF AT 6'-0" O.C. AND AT EACH CORNER AND BOTH SIDES OF OPENINGS.

6. FOOTING SIZES SHOWN ARE ONLY TYPICAL FOR STATED SOIL PRESSURES AND CONTINUOUS COMPACTION, WHICHEVER IS MORE RESTRICTIVE.

7. CONTRACTOR TO VERIFY FOOTING DEPTHS WITH LOCAL FROST REQUIREMENTS OR EXISTING SOIL CONDITIONS, WHICHEVER IS MORE RESTRICTIVE.

8. PROVIDE TERMITE PROTECTION AS REQUIRED BY LOCAL CODES.

9. PROVIDE DEEP SCORE CONTROL JOINTS AT MID POINTS OF ALL SLABS, BOTH DIRECTIONS.

10. MASONRY VENEER MUST BE ANCHORED TO BACK-UP CONSTRUCTION WITH GALVANIZED CORRUGATED METAL TIES SPACED 16" O.C. HORIZONTALLY AND 24" O.C. VERTICALLY.

11. INSTALL CONTINUOUS APPROVED FLASHINGS AND COTTON CORD WEEPS AT 48" O.C. WITHIN FIRST EXPOSED COURSE ABOVE GRADE.

12. CRAWL SPACE FOUNDATIONS: PROVIDE CRAWL SPACE VENTILATION PER LOCAL CODE REQUIREMENTS.

NOTE:

1.- BUILDER TO VERIFY ALL SOIL CONDITIONS BEFORE CONSTRUCTING FOUNDATION. IF POOR CONDITIONS EXIST CONSULT A STRUCTURAL ENGINEER.
2.- BUILDER TO VERIFY FOUNDATIONS DETAILS W/ LOCAL BUILDING CODES.
3. VERIFY ALL FLOOR OUTLETS, RANGE & DRYER VENTS IN SLAB.
4.- BUILDER TO LOCATE FOUNDATION ACCESS LOCATION. VERIFY W/ SITE ELEVATIONS.
5.- VERIFY 2" PERF. MIN. FRENCH DRAIN LOCATIONS IF NEED. VERIFY W/ SITE.
6.- CRAWL SPACE DESIGN & PIER LOCATIONS ARE BASED ON A STRUCTURAL CONFIGURATION WHICH ALLOWS A MAXIMUM POINT LOAD (DEAD OR LIVE) AT ANY GIVEN POINT ON THE FINISHED FLOOR.
THIS INSURES MAXIMUM SUPPORT AND STABILITY.
7.- USE DOUBLE & IF ALLOWED, TRIPLE FLOOR JOIST UNDER ALL PARALLEL BEARING WALLS.
8.- BUILDER TO PROVIDE CROSS MEMBER BRIDGING BETWEEN JOISTS BY USING EITHER METAL BRIDGES OR 1X4 CROSS BRACING MEMBERS @ 8' SPACING MAX. VERIFY ALL APPLICATIONS WITH LOCAL CODE.
9.- BUILDER TO VERIFY USE OF POWER VENTS IN CRAWL SPACE AREAS WHERE EXTRA VENTILATION MAY BE NEEDED. VERIFY W/ LOCAL CODE)

NOTICE DUTY OF COOPERATION

[redacted] assumes no liability for any HOME constructed from this plan. Release of these plans contemplates further cooperation among the owner, his contractor and the designer. Design and construction are complex. Although the designer and his consultants performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the designer. Failure to notify the designer compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the designer shall relieve the designer from responsibility for all consequences. Changes made from the plans without the consent of the designer are unauthorized and shall relieve the designer of responsibility for all consequences arising out of such changes. Only qualified Designer, Architect, Draftsman, or Structural Engineer should attempt to modify any portion of this design.
Written dimensions on these drawings shall have precedence over scaled dimensions; contractors shall verify and be responsible for all dimensions and conditions on the job. This office must be notified of any variations from the dimensions and conditions shown by these drawings. Shop details must be submitted to this office for approval before proceeding with fabrication.

FOUNDATION (CRAWL SPACE) PLAN / NOTES
[redacted]
[redacted]

CAD DESIGNED

REVISIONS	BY
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

24x36

[redacted]

[redacted]

[redacted]

DATE [redacted]
SCALE 1/4" = 1'-0"
BUILDER
JOB [redacted]
DRAWN BY

NOTE:

THESE PLANS HAVE BEEN DESIGNED BY PROFESSIONAL DESIGNERS TO MEET THE 2003 IRC AS WELL AS ANY SUBSEQUENT VERSIONS UP TO AND INCLUDING THE 2006 IRC. IN ADDITION TO THIS, IF PLAN IS TO BE BUILT IN HURRICANE OR EARTHQUAKE PRONE ZONES PLAN MUST BE REVIEWED BY LOCAL STRUCTURAL ENGINEER TO IMPLEMENT ANY ADDITIONAL CHANGES THAT MIGHT BE NECESSARY TO MEET IRC CODES IN THOSE AREAS. TO COMPLETELY SATISFY ALL CODE UPDATES AND REQUIREMENTS, PLEASE CONTACT YOUR LOCAL CODE INSPECTOR OR YOUR GENERAL CONTRACTOR FOR ANY MODIFIED NOTES THAT WOULD APPLY TO THE DESIGN. AT THE BOTTOM OF THIS GENERAL NOTE, IS A LIST OF EXAMPLES TO BE PORTRAYED FROM THE STRICT IRC DURING THE BUILDING PROCESS. AS WITH ALL CODES, VERIFY ALL PLANS LOCALLY TO INSURE THE MOST RECENT CODES ARE BEING ENFORCED ON YOUR JOB.

EXAMPLES OF [redacted] CODE REQUIREMENTS:

1- PROVIDE ACCESS PANEL AND W.P.G.F.I. OUTLET FOR ALL WHIRL. TUBS.
2- BUILDER TO APPROVE & VERIFY ALL PLANS BEFORE CONSTRUCTION.
3- PROVIDE SHUT-OFF VALVE FOR ALL GAS APPLIANCES. REFERENCE IRC SECTION G2419
4- ALL GLASS LOCATED WITHIN 18" OF FLOOR, 12" OF A DOOR OR LOCATED WITHIN 60" OF FLOOR AT BATHTUBS, WHIRLPOOLS, SHOWERS, SAUNAS, STEAM ROOMS OR HOT TUBS SHALL BE TEMPERED TO COMPLY WITH IRC SECTION R308.4
5- BUILDER TO VERIFY W/ OWNER THE TYPE OF WINDOWS TO BE USED. EXAMPLE: CASEMENTS, DOUBLE-HUNG, SINGLE-HUNG, ETC.
6- PROVIDE ARC-FAULT PROTECTION INTERRUPTER FOR ALL BED ROOMS. REFERENCE IRC SECTION E3802. ALL KITCHENS, BATHS, LAUNDRY, GARAGES & OUTSIDE OUTLETS TO BE W.P. G.F.I.
7- UNLESS OTHERWISE NOTED, ALL GARAGE SLABS TO BE A MINIMUM OF 4" BELOW MAIN FINISH FLOOR (TYP.)

GENERAL

[illegible]

FOUNDATIONS

[illegible]

CONCRETE

[illegible]

MILD STEEL REINFORCEMENTS FOR CONCRETE AND MASONRY

[illegible]

WOOD

[illegible]

THERMAL AND MOISTURE PROTECTION

[illegible]

INSULATION

[illegible]

GYPSUM DRYWALL

[illegible]

NOTICE: DUTY OF COOPERATION

[redacted] [illegible]

REVISIONS	BY
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
	2006

[redacted]

[redacted]

GENERAL SPECIFICATIONS

STANDARD BUILDING CODE
International Residential Code (ICC)

CAD
DESIGNED

DATE [redacted]

[redacted]

OF

CEILING JOIST SPAN DATA

* THE REQUIRED EXTREME FIBER STRESS IN BENDING "Fb", IN POUNDS PER SQUARE INCH, AND THE MODULUS OF ELASTICITY "E" IN 1,000,000 psi ARE SHOWN

LIMITED ATTIC STORAGE WHERE DEVELOPMENT OF FUTURE ROOMS IS NOT POSSIBLE
Douglas Fir - Larch - 20lbs./Ft² - Live Load

	"Fb"	"E"	2x4 12"	2x4 16"	2x4 24"	2x6 12"	2x6 16"	2x6 24"	2x8 12"	2x8 16"	2x8 24"	2x10 12"	2x10 16"	2x10 24"
SELECT STRUCTURAL DENSE #1 DENSE #2 #2 #3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

LIMITED ATTIC STORAGE WHERE DEVELOPMENT OF FUTURE ROOMS IS NOT POSSIBLE
Southern Yellow pine - 20lbs./Ft² - Live Load

	"Fb"	"E"	2x4 12"	2x4 16"	2x4 24"	2x6 12"	2x6 16"	2x6 24"	2x8 12"	2x8 16"	2x8 24"	2x10 12"	2x10 16"	2x10 24"
SELECT STRUCTURAL #1 DENSE #1 DENSE #2 #3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

MAXIMUM DEFLECTION IS 1/240 OF SPAN

ALLOWABLE RAFTER SPANS

FLAT OR SLOPED RAFTERS (FLAT ROOF OR CATHEDRAL CEILING WITH NO ATTIC SPACE) SUPPORTING DRYWALL CEILING
Douglas Fir - Larch - 20lbs./Ft²

	"Fb"	"E"	2x6 12"	2x6 16"	2x6 24"	2x8 12"	2x8 16"	2x8 24"	2x10 12"	2x10 16"	2x10 24"	2x12 12"	2x12 16"	2x12 24"
SELECT STRUCTURAL DENSE #1 DENSE #2 #2 #3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

FLAT OR SLOPED RAFTERS (FLAT ROOF OR CATHEDRAL CEILING WITH NO ATTIC SPACE) SUPPORTING DRYWALL CEILING
Southern Yellow pine - 20lbs./Ft²

	"Fb"	"E"	2x6 12"	2x6 16"	2x6 24"	2x8 12"	2x8 16"	2x8 24"	2x10 12"	2x10 16"	2x10 24"	2x12 12"	2x12 16"	2x12 24"
SELECT STRUCTURAL #1 DENSE #1 DENSE #2 #3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

FLAT OR LOW SLOPED RAFTERS (NO ATTIC SPACE) SLOPE 3 IN 12 OR LESS
Douglas Fir - Larch - 20lbs./Ft²

	"Fb"	"E"	2x6 12"	2x6 16"	2x6 24"	2x8 12"	2x8 16"	2x8 24"	2x10 12"	2x10 16"	2x10 24"	2x12 12"	2x12 16"	2x12 24"
SELECT STRUCTURAL DENSE #1 DENSE #2 #2 #3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

FLAT OR LOW SLOPED RAFTERS (NO ATTIC SPACE) SLOPE 3 IN 12 OR LESS
Southern Yellow pine - 20lbs./Ft²

	"Fb"	"E"	2x6 12"	2x6 16"	2x6 24"	2x8 12"	2x8 16"	2x8 24"	2x10 12"	2x10 16"	2x10 24"	2x12 12"	2x12 16"	2x12 24"
SELECT STRUCTURAL #1 DENSE #1 DENSE #2 #3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

MEDIUM OR HIGH SLOPED RAFTERS (NO ATTIC SPACE) SLOPE 3 IN 12 OR LESS
Douglas Fir - Larch - 20lbs./Ft²

	"Fb"	"E"	2x4 12"	2x4 16"	2x4 24"	2x6 12"	2x6 16"	2x6 24"	2x8 12"	2x8 16"	2x8 24"	2x10 12"	2x10 16"	2x10 24"
SELECT STRUCTURAL DENSE #1 DENSE #2 #2 #3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

MEDIUM OR HIGH SLOPED RAFTERS (NO ATTIC SPACE) SLOPE 3 IN 12 OR LESS
Southern Yellow pine - 20lbs./Ft²

	"Fb"	"E"	2x4 12"	2x4 16"	2x4 24"	2x6 12"	2x6 16"	2x6 24"	2x8 12"	2x8 16"	2x8 24"	2x10 12"	2x10 16"	2x10 24"
SELECT STRUCTURAL #1 DENSE #1 DENSE #2 #3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TABLE R703.7.3
ALLOWABLE SPANS FOR LINTELS SUPPORTING MASONRY VENEER[a,b]

SIZE OF STEEL ANGLE[a,b] (inches)	NO STORY ABOVE	ONE STORY ABOVE	TWO STORY ABOVE	NO. OF 1/2" OR EQUIVALENT REINFORCING BARS[c]
3 X 3 X 1/4	6'-0"	3'-6"	3'-0"	1
4 X 3 X 1/4	8'-0"	5'-0"	3'-0"	1
6 X 3-1/2 X 1/4	14'-0"	8'-0"	3'-6"	2
2-6 X 3-1/2 X 1/4	20'-0"	11'-0"	5'-0"	4

For SI: 1 inch=25.4 mm, 1 foot=304.8 mm.
a. Long leg of the angle shall be placed in a vertical position.
b. Depth of reinforced lintels shall not be less than 8 inches and all cells of hollow masonry lintels shall be grouted solid. Reinforcing bars shall extend not less than 8 inches into the support.
c. Steel members indicated are adequate typical examples; other steel members meeting structural design requirements may be used.

[illegible]

FLOOR JOIST SPAN DATA

* MODULUS OF ELASTICITY "E" IN 1,000,000 psi AS LISTED IN 1,000,000 psi

Douglas Fir - Larch - 30lbs./Ft² - Live Load

	"Fb"	"E"	2x6 12"	2x6 16"	2x6 24"	2x8 12"	2x8 16"	2x8 24"	2x10 12"	2x10 16"	2x10 24"	2x12 12"	2x12 16"	2x12 24"
SELECT STRUCTURAL DENSE #1 DENSE #2 #2 #3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Douglas Fir - Larch - 40lbs./Ft² - Live Load

	"Fb"	"E"	2x6 12"	2x6 16"	2x6 24"	2x8 12"	2x8 16"	2x8 24"	2x10 12"	2x10 16"	2x10 24"	2x12 12"	2x12 16"	2x12 24"
SELECT STRUCTURAL DENSE #1 DENSE #2 #2 #3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Southern Yellow Pine - 30lbs./Ft² - Live Load

	"Fb"	"E"	2x6 12"	2x6 16"	2x6 24"	2x8 12"	2x8 16"	2x8 24"	2x10 12"	2x10 16"	2x10 24"	2x12 12"	2x12 16"	2x12 24"
SELECT STRUCTURAL #1 DENSE #2 DENSE #2 #3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Southern Yellow Pine - 40lbs./Ft² - Live Load

	"Fb"	"E"	2x6 12"	2x6 16"	2x6 24"	2x8 12"	2x8 16"	2x8 24"	2x10 12"	2x10 16"	2x10 24"	2x12 12"	2x12 16"	2x12 24"
SELECT STRUCTURAL #1 DENSE #2 DENSE #2 #3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

California Redwood - 30lbs./Ft² - Live Load

	"Fb"	"E"	2x6 12"	2x6 16"	2x6 24"	2x8 12"	2x8 16"	2x8 24"	2x10 12"	2x10 16"	2x10 24"	2x12 12"	2x12 16"	2x12 24"
CLEARHEART STRUCT. SELECT STRUCTURAL #1 #2 #3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

California Redwood - 40lbs./Ft² - Live Load

	"Fb"	"E"	2x6 12"	2x6 16"	2x6 24"	2x8 12"	2x8 16"	2x8 24"	2x10 12"	2x10 16"	2x10 24"	2x12 12"	2x12 16"	2x12 24"
CLEARHEART STRUCT. SELECT STRUCTURAL #1 #2 #3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

GLUED LAMINATED FLOOR AND ROOF BEAMS - SPAN DATA

SPAN DATA FOR GLUED LAMINATED ROOF BEAMS *
MAXIMUM DEFLECTION 1/240TH OF THE SPAN

BEAM SIZE (ACTUAL)	WGT. OF BEAM PER LIN. FT. IN POUNDS	10	12	14	16	18	20	22	24	26	28	30	32
		POUNDS PER LIN. FT. LOAD BEARING CAPACITY											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

EXAMPLE: CLEAR SPAN = 20'-0"
BEAM SPACING = 8'-0"
DEAD LOAD 8 LBS./SQ.FT. (ROOFING AND DECKING)
LIVE LOAD 20 LBS./SQ.FT. (SNOW)
TOTAL LOAD LIVE LOAD + DEAD LOAD X BEAM SPACING
= (20 + 8) X 8 = 280 LBS./LIN.FT.
THE BEAM SIZE REQUIRED IS 3-1/4 X 13 1/2 WHICH SUPPORT 347 LBS./LIN. FT. OVER A SPAN OF 20'-0".

* BEAMS MAY BE DOUGLAS FIR, LARCH OR SOUTHERN YELLOW PINE.

GLUED LAMINATED FLOOR AND ROOF BEAMS - SPAN DATA

SPAN DATA FOR GLUED LAMINATED FLOOR BEAMS *
MAXIMUM DEFLECTION 1/360TH OF THE SPAN

BEAM SIZE (ACTUAL)	WGT. OF BEAM PER LIN. FT. IN POUNDS	10	12	14	16	18	20	22	24	26	28	30	32
		POUNDS PER LIN. FT. LOAD BEARING CAPACITY											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

EXAMPLE: CLEAR SPAN = 20'-0"
BEAM SPACING = 8'-0"
DEAD LOAD 7 LBS./SQ.FT. (DECKING AND CARPET)
LIVE LOAD 40 LBS./SQ.FT. (FURNITURE AND OCCUPANTS)
TOTAL LOAD LIVE LOAD + DEAD LOAD X BEAM SPACING
= (40 + 7) X 10 = 470 LBS./LIN.FT.
THE BEAM SIZE REQUIRED IS 5 1/4 X 15 WHICH SUPPORT 508 LBS./LIN. FT. OVER A SPAN OF 24'-0".

* BEAMS MAY BE DOUGLAS FIR, LARCH OR SOUTHERN YELLOW PINE.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	EXHAUST FAN
	CEILING FAN
	CEILING FAN W/ LIGHT
	EXHAUST FAN W/ LIGHT
H.L.V.	HEAT, LIGHT AND VENT
	LIGHT
	4' FLORESCENT LIGHT
	2' X 4' FLORESCENT LIGHT
	RECESSED CAN LIGHT
	FLOOD LIGHT
	WALL MOUNTED LIGHT
	ELECTRICAL OUTLET
	220V-ELECTRICAL OUTLET
	CEILING MOUNTED OUTLET
	FLOOR MOUNTED OUTLET
	WEATHER OUTLET
	SWITCHED OUTLET
	BREAKER BOX
	PHONE
	SMOKE DETECTOR
$	SWITCH
	STACKED SWITCHES
3	THREE WAY
4	FOUR WAY
GFI	GROUND FAULT INTERRUPTER
W.P.	WATERPROOF
	ELECTRICAL WIRE
	CABLE TV
	TRACK LIGHTING

GENERAL NOTES:

In case of conflict between the General Notes below and the specifications the more rigid requirement shall govern unless amended in writing by the Engineer.

DESIGN DATA

1. Design Codes - (All latest editions unless noted)
   - American Concrete Institute (ACI)
   - American Institute of Steel Construction (AISC)
   - American Welding Society (AWS)
   - Southern Standard Building Code (SSBC)
   - American National Standards Institute, Inc. (ANSI A58.1-1982) Minimum Design Loads for Buildings and Other Structures
2. Material Specifications and Design Stresses
   - Anchor Bolts and Embedded Steel .... Fy = 36,000 psi (ASTM A36)
   - Structural Steel Unit .... Fy = 36,000 psi (ASTM A36)
   - Cast-in-place Concrete
   - Footings .... F'c = 3,000 psi at 28-days.
   - Interior slabs-on-grade .... F'c = 3,000 psi at 28-days.
   - Ext. exposed concrete not enclosed .... F'c = 4,000 psi at 28-days.
   - Reinforcing Steel
   - #3 and #4 bars only .... Fy = 40,000 psi (ASTM A615, Grade 40)
   - #4 and larger bars .... Fy = 60,000 psi (ASTM A615, Grade 60)
3. Design Soil Bearing Pressures
   - Reference Soil and Foundation Investigation by Grubbs, Garner, & Hoskyn, Inc. Consulting Engineers, Little Rock, AR.
   - Footings on natural soils are designed for a maximum soil bearing pressure of 2,000 psf.
   - Footings on compacted engineered fill are designed for maximum soil bearing pressure of 2,000 psf.
   - If the soil at the footing bearing elevations shown is of questionable bearing value the Engineer or Architect shall be notified immediately.
   - After footing excavations are completed and before placing concrete, the excavated sites shall be inspected and approved by the Owner selected independent testing laboratory as specified.

GENERAL INFORMATION

1. All columns shall be centered on grid lines unless noted otherwise.
2. All column footings shall be centered on columns unless noted otherwise.
3. All wall footings shall be centered on walls unless noted otherwise.
4. For concrete reinforcing at corners, see typical corner bar detail.
5. For slab-on-grade construction joint detail, see typical slab-on-grade detail.
6. All fill material under structure shall be sandy clay or clayey sand exhibiting a liquid limit less than 35. Fill material shall be placed in loose lifts not to exceed 8" and compacted to a density of not less than 95% of Modified Proctor Maximum Dry Density (ASTM D-1557) at or slightly wet of optimum moisture content. In place moisture and density of each lift shall be determined by in-situ field tests prior to placing additional fill.
7. Where noted E.J. on plan, provide Keyed Joint in floor slab.
8. A 6-mil polyethylene film vapor barrier shall be placed below all interior slabs-on-grade.
9. Provide a 4-inch clean medium to coarse sand or gravel compacted drainage fill below all interior slabs-on-grade.

CAST-IN-PLACE CONCRETE

1. Arrangement and bending of reinforcing steel shall be in accordance with ACI detailing manual, latest edition.
2. Reinforcing steel shall be new and all bars over #2 shall be deformed.
3. Where reinforcing bars are shown continuous, lap bars 30-bar diameters or 24-bar diameters at tension or compression splices respectively (12" minimum).
4. Provide suitable wire spacers, chairs, ties, etc., for supporting reinforcing steel in the proper position while placing concrete.
5. Concrete protective covering for reinforcement at surfaces not exposed directly to the ground shall be 3/4" for slabs, joists, and walls and 1-1/2" for beam stirrups and column ties or spirals.
6. Concrete protective covering for reinforcement at surfaces which will be exposed to the weather or be in contact with the ground shall be 2" for bars larger than #5 and 1-1/2" for #5 bars or smaller. Provide 3" cover below and at ends of footing bars.
7. Location and sizes of openings, sleeves, etc., required for other trades must be verified by these trades before placing concrete.

CONCRETE MASONRY UNITS

1. Place vertical reinforcing bars at corners, jambs of openings, below beam bearing, and in walls as indicated on the drawings.
2. Dowell vertical reinforcing bars out of the structure below with bars of the same size and spacing above.
3. Lap splice bars in masonry 48 bar diameters.
4. Place horizontal bars in 8" deep bond beam units at top of wall.
5. Continue bond beam units and reinforcing uninterrupted around corners and across wall intersections.
6. Metal masonry-mason reinforcing shall be truss type conforming to ASTM A82, not less than 9 gauge, galvanized at exterior walls. Furnish material with prefabricated corners and tees. Reinforcing shall be used in all partitions, spaced 16" o.c. vertically. Joints lapped 6". Place reinforcing in first bed joint above and below all concrete slabs and wall openings.
7. Load bearing concrete masonry units shall conform to ASTM C90, Grade N, Type I, with minimum average compressive strength on net area of 1,900 psi and minimum net area compressive strength of individual units shall be 1,500 psi.
8. Non-load bearing concrete masonry units shall conform to ASTM C129, Type I.
9. Mortar shall be Type-N conforming to property or proportion requirements of ASTM C270.
10. All masonry fill concrete shall have a minimum strength of 28-days f'c = 3,000 psi. Maximum aggregate shall be 3/8" and shall be placed in maximum lifts of 4'-0".
11. All grout shall conform to ASTM C476, Fine Grout.

ARCHITECTURAL ABBREVIATIONS LEGEND

ABBREV.	DESCRIPTION	ABBREV.	DESCRIPTION
ARCH.	architectural	PNTR.	pantry
B.F.	bi-fold doors	P.D.	pocket door
BRD.	board	PR.	pair
C.D.X.	C & D grade exterior plywood	P.T.	pressure treated
CLO.	closet	PW.	plywood
CLO. or CLOS.	closet	RG.	range
CLNG.	ceiling	RD.	rod or round
C.O.	cased opening	REF.	refrigerator
C.M.U.	concrete masonry unit (concrete block)	RFG.	roofing
COMP.	composition	RND.	round
C.T.	ceramic tile	SH.	shelf
D.	dryer	SHWR.	shower
DIA.	diameter	SHT.	sheet
DWG.	drawing	SQ.	square
DW.	dishwasher	S4S	surfaced four sides (rectangular wood trim)
DN.	down	S.F. or SQ.FT.	square foot
EXT.	exterior	SPC. or SPEC.	spacing
FTG.	footing	SHWR.	shower
FL.	floor	SKL.	skylight
FZR.	freezer	SI.	siding
GALV.	galvanized	T.C.	trash compactor
GYP. BD.	gypsum wallboard	THK.	thick
HVAC	heating, ventilation and air conditioning	TRTD	treated
H.B.	hose bibb	TYP.	typical
H.D.	heavy duty	T&G	tongue and groove
H.W.	hot water	W.	washer
I.B.	ironing board	W.H.	water heater
I.M.	ice maker	WSP.	whirlpool
INSUL.	insulation	WP.	waterproof
M.C.	medicine cabinet	W/	with
M.U.	mock-up		
MW.	microwave		
N.I.C.	not in contract		
N.T.S.	not to scale		
O.C.	on center		

NOTICE DUTY OF COOPERATION

[redacted] assumes no liability for any HOMES constructed from this plan. Release of these plans contemplates further cooperation among the owner, his contractor and the designer. Design and construction are complex. Although the designer and his consultants performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the designer. Failure to notify the designer compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the designer shall relieve the designer from responsibility for all consequences. Changes made from the plans without the consent of the designer are unauthorized and shall relieve the designer of responsibility for all consequences arising out of such changes. Only qualified Designer, Architect, Contractor, or Structural Engineer should attempt to modify any portion of this design.
Written dimensions on these drawings shall have precedence over scaled dimensions; contractors shall verify and be responsible for all dimensions and conditions on the job. This office must be notified of any variations from the dimensions and conditions shown by these drawings. Shop details must be submitted to this office for approval before proceeding with fabrication.

LEGENDS / GENERAL NOTES

CAD DESIGNED

REVISIONS	BY
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

24x36

[redacted]

[redacted]

DATE: [redacted]

LEGENDS

[redacted]

OF

[redacted] ® Construction Specifications and Methodologies

IMPORTANT NOTE: THESE NOTES AND SPECIFICATIONS ARE PROVIDED BY NDG/MEN AS A SERVICE TO THEIR CUSTOMERS TO PROVIDE THE MOST POPULAR CODE TOPICS. THE INFORMATION AND METHODOLOGIES PREPARED HEREIN ARE IN ACCORDANCE TO AND REFERENCED TO THE [redacted] INTERNATIONAL RESIDENTIAL CODES. THE INFORMATION IS ALSO A GENERAL SUMMARIZATION OF THE CODE AND IT IS RECOMMENDED THAT YOU BECOME FAMILIAR WITH THE FULL EXTENT OF THE ACTUAL CODE. THE NOTES AND SPECIFICATIONS MAY HAVE TO BE AMENDED DUE TO VARIATIONS IN LOCAL CODES AND GEOLOGICAL CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND/OR HOMEOWNER TO MAKE THE NECESSARY MODIFICATIONS TO ENSURE CODE COMPLIANCE AND STRUCTURAL INTEGRITY. IT IS RECOMMENDED THAT YOU CONSULT A LOCAL ARCHITECT OR ENGINEER OF YOUR CHOICE AND CHECK WITH LOCAL BUILDING OFFICIALS PRIOR TO THE START OF ACTUAL CONSTRUCTION. SPECIAL ENGINEERING MAY REQUIRE THAT THESE SPECIFICATIONS BE CHANGED OR AMENDED TO COMPLY WITH SEISMIC, WIND, OR OTHER SPECIAL CONDITIONS AS REQUIRED BY LOCAL CONSTRUCTION METHODOLOGIES AND LOCAL CODES.

[redacted]

IMPORTANT DISCLAIMER

THE ENCLOSED INFORMATION IS INTENDED TO ASSIST AND INFORM YOU THROUGH THE CONSTRUCTION OF YOUR HOME. YOUR CONSTRUCTION PLANS HAVE BEEN DRAWN TO PRESCRIBE TO INDUSTRY STANDARDS. THESE PROFESSIONAL STANDARDS DETERMINE HOW CONSTRUCTION PLANS ARE DRAWN AND WHAT INFORMATION THEY INCLUDE. CONSTRUCTION PLANS ARE INTENDED AS A TECHNICAL GUIDE TO PROFESSIONAL CONTRACTORS AND ARE NOT INTENDED TO BE A SET OF STEP-BY-STEP INSTRUCTIONS. THEREFORE, IF YOU ARE PLANNING TO BUILD YOUR HOME WITHOUT THE SERVICES OF A PROFESSIONAL BUILDER, WE SUGGEST THAT YOU BECOME THOROUGHLY FAMILIAR WITH READING CONSTRUCTION PLANS OR CONSIDER CONSULTING A CONSTRUCTION SPECIALIST. IF YOU SHOULD HAVE ANY QUESTIONS REGARDING THE CONSTRUCTION PLANS AND/OR THE SUPPORTIVE DOCUMENTATION, PLEASE FEEL FREE TO CONTACT US AT 1-[illegible]

GREAT CARE AND EFFORT GOES INTO THE CREATION OF THE DESIGN AND ENGINEERING OF YOUR CONSTRUCTION PLANS. HOWEVER, BECAUSE OF THE IMPOSSIBILITY OF PROVIDING ANY PERSONAL AND/OR ON-SITE CONSULTATION, SUPERVISION AND CONTROL OVER THE ACTUAL CONSTRUCTION, AND BECAUSE OF THE GREAT VARIANCES IN LOCAL BUILDING CODE REQUIREMENTS AND OTHER LOCATION BUILDING AND WEATHER CONDITIONS, NDG/MEN NOR THE AGENTS OR EMPLOYEES ASSUMES RESPONSIBILITY FOR ANY DAMAGES INCLUDING BUT LIMITED TO, ANY DEFICIENCIES, OMISSIONS, OR ERRORS IN THE DESIGN. IN ANY CASE, ANY DISCREPANCIES, ERRORS, AND/OR OMISSIONS IN THE DIMENSIONS, AND/OR DRAWINGS CONTAINED IN THE CONSTRUCTION PLANS SHALL BE BROUGHT TO THE ATTENTION OF NDG/MEN PRIOR TO COMMENCEMENT OF CONSTRUCTION. PROCEEDING WITH CONSTRUCTION CONSTITUTES THE ACCEPTANCE OF THE CONSTRUCTION DOCUMENTS "AS IS" AND ANY DISCREPANCIES, ERRORS, AND/OR OMISSIONS BECOME THE SOLE RESPONSIBILITY OF THE PURCHASER. IF ANY ERRORS ARE DISCOVERED PRIOR TO CONSTRUCTION NDG/MEN WILL BE GIVEN FULL OPPORTUNITY TO CORRECT ANY ERRORS AND/OR OMISSIONS TO THE CONSTRUCTION PLANS. IN ANY OR ALL CIRCUMSTANCES, THE MAXIMUM FINANCIAL LIABILITY TO NDG/MEN CAN NOT EXCEED THE TOTAL PLAN PURCHASE.

PROFESSIONAL SEAL

THOUGH EVERY EFFORT WAS MADE TO MAKE THE CONSTRUCTION DOCUMENTS FOLLOW THE I.R.C. NATIONAL CODE METHODOLOGIES, A FEW STATES AND CITIES HAVE PASSED BI-LAWS REGARDING CONSTRUCTION PLANS THAT WOULD BE SUBMITTED TO YOU LOCAL MUNICIPALITY AND USED FOR THE CONSTRUCTION OF YOUR HOME. THESE BI-LAWS REQUIRE THE CONSTRUCTION PLANS TO BE REVIEWED AND/OR PREPARED, INSPECTED, AND SEALED (OR STAMPED) BY A LICENSED ARCHITECT IN YOUR STATE. IT IS ADVISED THAT YOU CONTACT YOUR MUNICIPALITY'S BUILDING DEPARTMENT FOR INSTRUCTIONS TO COMPLY WITH THEIR CONSTRUCTION PLANS REVIEW PROCESS.

COPYRIGHTS

REPRODUCTION OF THESE CONSTRUCTION PLANS, EITHER IN WHOLE OR IN PART, INCLUDING ANY FORM COPYING AND/OR PREPARATION OF A DERIVATIVE WORKS THEREOF, FOR ANY REASON IS STRICTLY PROHIBITED. THE PURCHASE OF A SET OF CONSTRUCTION PLANS IN NO WAY TRANSFERS ANY COPYRIGHT OR OTHER OWNERSHIP INTEREST IN IT TO THE PURCHASER EXCEPT FOR A LIMITED LICENSING RELEASE TO USE THE SAID PLAN SET FOR CONSTRUCTING ONE AND ONLY ONE DWELLING UNIT. THE PURCHASE OF ADDITIONAL SETS OF THE SAID PLANS AT A REDUCED PRICE FROM THE ORIGINAL SET OR AS PART OF A MULTIPLE SET PACKAGE DOES NOT CONVEY TO THE PURCHASER A LICENSE TO CONSTRUCT MORE THAN ONE DWELLING. SIMILARLY, THE PURCHASE OF REPRODUCIBLE CONSTRUCTION PLANS (A.K.A. SEPIAS, MYLARS, OR VELLUMS) CARRIES THE SAME COPYRIGHT PROTECTION AS MENTIONED ABOVE. IT IS GENERALLY ALLOW TO MAKE A MAXIMUM OF 10 COPIES FOR THE CONSTRUCTION OF A SINGLE DWELLING ONLY. TO USE ANY PLAN MORE THAN ONCE, AND TO AVOID ANY COPYRIGHT LICENSE INFRINGEMENT, IT IS NECESSARY TO CONTACT THE ORIGINAL DESIGNER FOR RELEASE AND LICENSE FOR ANY EXTENDED USAGE. WHEREAS A PURCHASER OF REPRODUCIBLES IS GRANTED A LICENSE TO MAKE COPIES, IT SHOULD BE NOTED THAT AS COPYRIGHTED MATERIALS, MAKING PHOTOCOPIES FROM CONSTRUCTION PLANS IS ILLEGAL. COPYRIGHT AND LICENSE OF CONSTRUCTION PLANS EXISTS TO PROTECT ALL PARTIES. IT RESPECTS AND SUPPORTS THE INTELLECTUAL PROPERTY OF THE ORIGINAL ARCHITECT AND/OR DESIGNER, THEREBY KEEPING IT POSSIBLE TO OFFER PRE-DRAWN PLANS AT AFFORDABLE PRICES. COPYRIGHT LAW FOR PRE-DRAWN CONSTRUCTION PLANS IS NOW BEING VIGOROUSLY ENFORCED. COPYRIGHT INFRINGEMENT COULD LEAD TO FINES OF UP TO $100,000 PER VIOLATION.

GENERAL SITE NOTES

1. CONTRACTOR TO VERIFY LOCATIONS OF SITE UTILITIES, REQUIREMENTS, AND CONNECTIONS. FEES: OWNER, CONTRACTOR AND SUBCONTRACTORS TO PAY ALL OF THEIR RELATED CONSTRUCTION PERMIT FEES AS AGREED UPON BETWEEN THE OWNER AND CONTRACTOR.
2. BEFORE EXCAVATION, THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS, MAPS, AND BUILDING SITE OF EXISTING FACILITY TO DETERMINE THE ROUTES OF ALL UNDERGROUND UTILITIES. BEFORE DIGGING COMMENCES IT IS ADVISED THAT THE OWNER AND OR CONTRACTOR CALL THEIR STATES UTILITY LOCATOR FACILITATOR.
3. IT IS RECOMMENDED THAT THE SITES SOIL BE TESTED FOR COMPRESSION RATING TO DETERMINE FOUNDATION AND FOOTING DESIGN. CONCRETE FOUNDATIONS AND FOOTING DESIGN SHALL BE IN ACCORDANCE TO CHAPTER 4 OF THE I.R.C. CODE. SEE FOUNDATION SECTION ON THIS PAGE FOR MORE DETAIL.
4. CONSULT A LOCAL CIVIL ENGINEER FOR SITE PLANS AND SURVEYS OF EXISTING PROPERTY. A LANDSCAPE ARCHITECT SHOULD BE CONSULTED FOR MORE EXTENSIVE LANDSCAPE DESIGNS.

CHAPTER 3 :: BUILDING PLANNING

SECTION R304 MINIMUM ROOM AREAS

R304.1 MINIMUM AREA.
HABITABLE ROOMS SHALL HAVE A FLOOR AREA OF NOT LESS THAN 70 SQUARE FEET (6.5 M2).
EXCEPTION: KITCHENS.

R304.2 MINIMUM DIMENSIONS.
HABITABLE ROOMS SHALL BE NOT LESS THAN 7 FEET (2134 MM) IN ANY HORIZONTAL DIMENSION.

EXCEPTION: KITCHENS.

R304.3 HEIGHT EFFECT ON ROOM AREA.
PORTIONS OF A ROOM WITH A SLOPING CEILING MEASURING LESS THAN 5 FEET (1524 MM) OR A FURRED CEILING MEASURING LESS THAN 7 FEET (2134 MM) FROM THE FINISHED FLOOR TO THE FINISHED CEILING SHALL NOT BE CONSIDERED AS CONTRIBUTING TO THE MINIMUM REQUIRED HABITABLE AREA FOR THAT ROOM.

SECTION R305 CEILING HEIGHT

R305.1 MINIMUM HEIGHT.
HABITABLE SPACE, HALLWAYS AND PORTIONS OF BASEMENTS CONTAINING THESE SPACES SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 7 FEET (2134 MM). BATHROOMS, TOILET ROOMS AND LAUNDRY ROOMS SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 6 FEET 8 INCHES (2032 MM).

NOTE: SEE SECTION R305.1 FOR EXCEPTIONS.

R305.1.1 BASEMENTS.
PORTIONS OF BASEMENTS THAT DO NOT CONTAIN HABITABLE SPACE OR HALLWAYS SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 6 FEET 8 INCHES (2032 MM).

EXCEPTION: AT BEAMS, GIRDERS, DUCTS OR OTHER OBSTRUCTIONS, THE CEILING HEIGHT SHALL BE NOT LESS THAN 6 FEET 4 INCHES (1931 MM) FROM THE FINISHED FLOOR.

SECTION R306 SANITATION

R306.1 TOILET FACILITIES.
EVERY DWELLING UNIT SHALL BE PROVIDED WITH A WATER CLOSET, LAVATORY, AND A BATHTUB OR SHOWER.

R306.2 KITCHEN.
EACH DWELLING UNIT SHALL BE PROVIDED WITH A KITCHEN AREA AND EVERY KITCHEN AREA SHALL BE PROVIDED WITH A SINK.

R306.3 SEWAGE DISPOSAL.
PLUMBING FIXTURES SHALL BE CONNECTED TO A SANITARY SEWER OR TO AN APPROVED PRIVATE SEWAGE DISPOSAL SYSTEM.

R306.4 WATER SUPPLY TO FIXTURES.
PLUMBING FIXTURES SHALL BE CONNECTED TO AN APPROVED WATER SUPPLY. KITCHEN SINKS, LAVATORIES, BATHTUBS, SHOWERS, BIDETS, LAUNDRY TUBS AND WASHING MACHINE OUTLETS SHALL BE PROVIDED WITH HOT AND COLD WATER.

SECTION R307 TOILET, BATH, AND SHOWER SPACES

R307.1 SPACE REQUIRED. FIXTURES SHALL BE SPACED IN ACCORDANCE WITH FIGURE R307.1, AND IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION P2705.1.

R307.2 BATHTUB AND SHOWER SPACES. BATHTUB AND SHOWER FLOORS AND WALLS ABOVE BATHTUBS WITH INSTALLED SHOWER HEADS AND IN SHOWER COMPARTMENTS SHALL BE FINISHED WITH A NONABSORBENT SURFACE. SUCH WALL SURFACES SHALL EXTEND TO A HEIGHT OF NOT LESS THAN 6 FEET (1829 MM) ABOVE THE FLOOR.

SECTION R308 GLAZING

R308.4 HAZARDOUS LOCATIONS.
THE LOCATIONS SPECIFIED IN SECTIONS R308.4.1 THROUGH R308.4.7 SHALL BE CONSIDERED TO BE SPECIFIC HAZARDOUS LOCATIONS FOR THE PURPOSES OF GLAZING.

R308.4.1 GLAZING IN DOORS.
GLAZING IN FIXED AND OPERABLE PANELS OF SWINGING, SLIDING AND BIFOLD DOORS SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION.

NOTE: SEE SECTION 308.4.1 FOR EXCEPTIONS.

R308.4.2 GLAZING ADJACENT TO DOORS.
GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL ADJACENT TO A DOOR SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES (1524 MM) ABOVE THE FLOOR OR WALKING SURFACE AND IT MEETS EITHER OF THE FOLLOWING CONDITIONS:
1. WHERE THE GLAZING IS WITHIN 24 INCHES (610 MM) OF EITHER SIDE OF THE DOOR IN THE PLANE OF THE DOOR IN A CLOSED POSITION.
2. WHERE THE GLAZING IS ON A WALL LESS THAN 180 DEGREES (3.14 RAD) FROM THE PLANE OF THE DOOR IN A CLOSED POSITION AND WITHIN 24 INCHES (610 MM) OF THE HINGE SIDE OF AN IN-SWINGING DOOR.
EXCEPTIONS:
1. DECORATIVE GLAZING.
2. WHERE THERE IS AN INTERVENING WALL OR OTHER PERMANENT BARRIER BETWEEN THE DOOR AND THE GLAZING.
3. WHERE ACCESS THROUGH THE DOOR IS TO A CLOSET OR STORAGE AREA 3 FEET (914 MM) OR LESS IN DEPTH. GLAZING IN THIS APPLICATION SHALL COMPLY WITH SECTION R308.4.3.
4. GLAZING THAT IS ADJACENT TO THE FIXED PANEL OF PATIO DOORS.

R308.4.3 GLAZING IN WINDOWS.
GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL THAT MEETS ALL OF THE FOLLOWING CONDITIONS SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION:
1. THE EXPOSED AREA OF AN INDIVIDUAL PANE IS LARGER THAN 9 SQUARE FEET (0.836 M2).
2. THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 18 INCHES (457 MM) ABOVE THE FLOOR.
3. THE TOP EDGE OF THE GLAZING IS MORE THAN 36 INCHES
4. (914 MM) ABOVE THE FLOOR.
5. ONE OR MORE WALKING SURFACES ARE WITHIN 36 INCHES (914 MM), MEASURED HORIZONTALLY AND IN A STRAIGHT LINE, OF THE GLAZING.

NOTE: SEE SECTION R308.4.3 FOR EXCEPTIONS.

R308.4.4 GLAZING IN GUARDS AND RAILINGS.
GLAZING IN GUARDS AND RAILINGS, INCLUDING STRUCTURAL BALUSTER PANELS AND NONSTRUCTURAL INFILL PANELS, REGARDLESS OF AREA OR HEIGHT ABOVE A WALKING SURFACE SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION.

R308.4.4.1 STRUCTURAL GLASS BALUSTER PANELS.
GUARDS WITH STRUCTURAL GLASS BALUSTER PANELS SHALL BE INSTALLED WITH AN ATTACHED TOP RAIL OR HANDRAIL. THE TOP RAIL OR HANDRAIL SHALL BE SUPPORTED BY NOT LESS THAN THREE GLASS BALUSTER PANELS, OR SHALL BE OTHERWISE SUPPORTED TO REMAIN IN PLACE SHOULD ONE GLASS BALUSTER PANEL FAIL.

NOTE: SEE SECTION 308.4.4.1 FOR EXCEPTIONS.

R308.4.5 GLAZING AND WET SURFACES.
GLAZING IN WALLS, ENCLOSURES OR FENCES CONTAINING OR ADJACENT TO HOT TUBS, SPAS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHTUBS, SHOWERS AND INDOOR OR OUTDOOR SWIMMING POOLS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES (1524 MM) MEASURED VERTICALLY ABOVE ANY STANDING OR WALKING SURFACE SHALL BE CONSIDERED A HAZARDOUS LOCATION. THIS SHALL APPLY TO SINGLE GLAZING AND ALL PANES IN MULTIPLE GLAZING.

NOTE: SEE SECTION 308.4.5 FOR EXCEPTIONS.

R308.4.6 GLAZING ADJACENT TO STAIRS AND RAMPS.
GLAZING WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 36 INCHES (914 MM) ABOVE THE PLANE OF THE ADJACENT WALKING SURFACE OF STAIRWAYS, LANDINGS BETWEEN FLIGHTS OF STAIRS AND RAMPS SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION.

NOTE: SEE SECTION 308.4.6 FOR EXCEPTIONS.

R308.4.7 GLAZING ADJACENT TO THE BOTTOM STAIR LANDING.
GLAZING ADJACENT TO THE LANDING AT THE BOTTOM OF A STAIRWAY WHERE THE GLAZING IS LESS THAN 36 INCHES (914 MM) ABOVE THE LANDING AND WITHIN A 60-INCH (1524 MM) HORIZONTAL ARC LESS THAN 180 DEGREES FROM THE BOTTOM TREAD NOSING SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION.

SEE SECTION 308.4.7 FOR EXCEPTION

R308.5 SITE BUILT WINDOWS.
SITE BUILT WINDOWS SHALL COMPLY WITH SECTION 2404 OF THE INTERNATIONAL BUILDING CODE.

R308.6 SKYLIGHTS AND SLOPED GLAZING.
SKYLIGHTS AND SLOPED GLAZING SHALL COMPLY WITH THE FOLLOWING SECTIONS.

R308.6.1 DEFINITIONS. THE FOLLOWING TERMS ARE DEFINED IN CHAPTER 2:
-SKYLIGHT, UNIT.
-SKYLIGHTS AND SLOPED GLAZING.
-TUBULAR DAYLIGHTING DEVICE (TDD).

SECTION R309 GARAGES AND CARPORTS

R309.1 FLOOR SURFACE.
GARAGE FLOOR SURFACES SHALL BE OF APPROVED NONCOMBUSTIBLE MATERIAL. THE AREA OF FLOOR USED FOR PARKING OF AUTOMOBILES OR OTHER VEHICLES SHALL BE SLOPED TO FACILITATE THE MOVEMENT OF LIQUIDS TO A DRAIN OR TOWARD THE MAIN VEHICLE ENTRY DOORWAY.

R309.2 CARPORTS.
CARPORTS SHALL BE OPEN ON NOT LESS THAN TWO SIDES. CARPORT FLOOR SURFACES SHALL BE OF APPROVED NONCOMBUSTIBLE MATERIAL. CARPORTS NOT OPEN ON TWO OR MORE SIDES SHALL BE CONSIDERED TO BE A GARAGE AND SHALL COMPLY WITH THE PROVISIONS OF THIS SECTION FOR GARAGES. THE AREA OF FLOOR USED FOR PARKING OF AUTOMOBILES OR OTHER VEHICLES SHALL BE SLOPED TO FACILITATE THE MOVEMENT OF LIQUIDS TO A DRAIN OR TOWARD THE MAIN VEHICLE ENTRY DOORWAY.

EXCEPTION: ASPHALT SURFACES SHALL BE PERMITTED AT GROUND LEVEL IN CARPORTS.

R309.4 AUTOMATIC GARAGE DOOR OPENERS.
AUTOMATIC GARAGE DOOR OPENERS, IF PROVIDED, SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 325.

R309.5 FIRE SPRINKLERS.
PRIVATE GARAGES SHALL BE PROTECTED BY FIRE SPRINKLERS WHERE THE GARAGE WALL HAS BEEN DESIGNED BASED ON TABLE R302.1(2), NOTE A. SPRINKLERS IN GARAGES SHALL BE CONNECTED TO AN AUTOMATIC SPRINKLER SYSTEM THAT COMPLIES WITH SECTION P2904. GARAGE SPRINKLERS SHALL BE RESIDENTIAL SPRINKLERS OR QUICK-RESPONSE SPRINKLERS, DESIGNED TO PROVIDE A DENSITY OF 0.05 GPM/FT2. GARAGE DOORS SHALL NOT BE CONSIDERED OBSTRUCTIONS WITH RESPECT TO SPRINKLER PLACEMENT.

SECTION R310 EMERGENCY ESCAPE AND RESCUE OPENINGS

R310.1 EMERGENCY ESCAPE AND RESCUE OPENING REQUIRED.
BASEMENTS, HABITABLE ATTICS AND EVERY SLEEPING ROOM SHALL HAVE NOT LESS THAN ONE OPERABLE EMERGENCY ESCAPE AND RESCUE OPENING. WHERE BASEMENTS CONTAIN ONE OR MORE SLEEPING ROOMS, AN EMERGENCY ESCAPE AND RESCUE OPENING SHALL BE REQUIRED IN EACH SLEEPING ROOM. EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL OPEN DIRECTLY INTO A PUBLIC WAY, OR TO A YARD OR COURT HAVING A MINIMUM WIDTH OF 36 INCHES (914 MM) THAT OPENS TO A PUBLIC WAY.

NOTE: SEE SECTION R310.1 FOR EXCEPTION

R310.1.1 OPERATIONAL CONSTRAINTS AND OPENING CONTROL DEVICES.
EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL BE OPERATIONAL FROM THE INSIDE OF THE ROOM WITHOUT THE USE OF KEYS, TOOLS OR SPECIAL KNOWLEDGE. WINDOW OPENING CONTROL DEVICES AND FALL PREVENTION DEVICES COMPLYING WITH ASTM F2090 SHALL BE PERMITTED FOR USE ON WINDOWS SERVING AS A REQUIRED EMERGENCY ESCAPE AND RESCUE OPENING AND SHALL BE NOT MORE THAN 70 INCHES (178 CM) ABOVE THE FINISHED FLOOR.

R310.2 EMERGENCY ESCAPE AND RESCUE OPENINGS.
EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE MINIMUM DIMENSIONS IN ACCORDANCE WITH SECTIONS R310.2.1 THROUGH R310.2.4.

R310.2.1 MINIMUM SIZE.
EMERGENCY AND ESCAPE RESCUE OPENINGS SHALL HAVE A NET CLEAR OPENING OF NOT LESS THAN 5.7 SQUARE FEET (0.530 M2).

EXCEPTION: THE MINIMUM NET CLEAR OPENING FOR GRADE FLOOR EMERGENCY ESCAPE AND RESCUE OPENING SHALL BE 5 SQUARE FEET (0.465 M2).
HAVE A NET CLEAR OPENING AREA OF NOT LESS THAN 5 SQUARE FEET (0.465 M2).

R310.2.2 MINIMUM DIMENSIONS.
THE MINIMUM NET CLEAR OPENING HEIGHT DIMENSION SHALL BE 24 INCHES (610 MM). THE MINIMUM NET CLEAR OPENING WIDTH DIMENSION SHALL BE 20 INCHES (508 MM). THE NET CLEAR OPENING DIMENSIONS SHALL BE THE RESULT OF NORMAL OPERATION OF THE MOMENT.

R310.2.3 MAXIMUM HEIGHT FROM FLOOR.
EMERGENCY ESCAPE AND RESCUE OPENING, IT SHALL HAVE THE BOTTOM OF THE CLEAR OPENING NOT GREATER THAN 44 INCHES (1118 MM) ABOVE THE FLOOR.

R310.2.4 EMERGENCY ESCAPE AND RESCUE OPENINGS UNDER DECKS AND CANTILEVERS.
EMERGENCY ESCAPE AND RESCUE OPENINGS INSTALLED UNDER DECKS, PORCHES AND CANTILEVERS SHALL BE FULLY OPERABLE AND PROVIDE A PATH NOT LESS THAN 36 INCHES (914 MM) IN HEIGHT AND 36 INCHES (914 MM) IN WIDTH TO A YARD OR COURT.

NOTE: SEE SECTION 310.2.4 FOR EXCEPTION

R310.2.4 EMERGENCY ESCAPE AND RESCUE OPENINGS UNDER DECKS AND PORCHES.
EMERGENCY ESCAPE AND RESCUE OPENINGS INSTALLED UNDER DECKS AND PORCHES SHALL BE FULLY OPERABLE AND PROVIDE A PATH NOT LESS THAN 36 INCHES (914 MM) IN HEIGHT TO A YARD OR COURT.

R310.3 EMERGENCY ESCAPE AND RESCUE DOORS.
WHERE A DOOR IS PROVIDED AS THE REQUIRED EMERGENCY ESCAPE AND RESCUE OPENING, IT SHALL BE A SIDE-HINGED DOOR OR A SLIDING DOOR.

R310.4 AREA WELLS.
AN EMERGENCY ESCAPE AND RESCUE OPENING WHERE THE BOTTOM OF THE CLEAR OPENING IS BELOW THE ADJACENT GRADE SHALL BE PROVIDED WITH AN AREA WELL IN ACCORDANCE WITH SECTIONS R310.4.1 THROUGH R310.4.4.

R310.4.1 MINIMUM SIZE.
THE HORIZONTAL AREA OF THE AREA WELL SHALL BE NOT LESS THAN 9 SQUARE FEET (0.9 M2), WITH A HORIZONTAL PROJECTION AND WIDTH OF NOT LESS THAN 36 INCHES (914 MM). THE SIZE OF THE AREA WELL SHALL ALLOW THE EMERGENCY ESCAPE AND RESCUE OPENING TO BE FULLY OPENED.

NOTE: SEE SECTION 310.4.1 FOR EXCEPTION

R310.4.2 LADDER AND STEPS.
AREA WELLS WITH A VERTICAL DEPTH GREATER THAN 44 INCHES (1118 MM) SHALL BE EQUIPPED WITH AN APPROVED, PERMANENTLY AFFIXED LADDER OR STEPS. THE LADDER OR STEPS SHALL NOT BE OBSTRUCTED BY THE EMERGENCY ESCAPE AND RESCUE OPENING WHERE THE WINDOW OR DOOR IS IN THE OPEN POSITION. LADDERS OR STEPS REQUIRED BY THIS SECTION SHALL NOT BE REQUIRED TO COMPLY WITH SECTION R311.7.

R310.4.2.1 LADDERS.
LADDERS AND RUNGS SHALL HAVE AN INSIDE WIDTH OF NOT LESS THAN 12 INCHES (305 MM), SHALL PROJECT NOT LESS THAN 3 INCHES (76 MM) FROM THE WALL AND SHALL BE SPACED NOT MORE THAN 18 INCHES (457 MM) ON CENTER VERTICALLY FOR THE FULL HEIGHT OF THE AREA WELL.

R310.4.2.2 STEPS.
STEPS SHALL HAVE AN INSIDE WIDTH OF NOT LESS THAN 12 INCHES (305 MM), A MINIMUM TREAD DEPTH OF 5 INCHES (127 MM) AND A MAXIMUM RISER HEIGHT OF 18 INCHES (457 MM) FOR THE FULL HEIGHT OF THE AREA WELL.

R310.4.3 DRAINAGE.
AREA WELLS SHALL BE DESIGNED FOR PROPER DRAINAGE BY CONNECTING TO THE BUILDING'S FOUNDATION DRAINAGE SYSTEM REQUIRED BY SECTION R405.1.

NOTE: SEE SECTION 310.4.3 FOR EXCEPTION

R310.4.4 BARS, GRILLES, COVERS AND SCREENS.
WHERE BARS, GRILLES, COVERS, SCREENS OR SIMILAR DEVICES ARE PLACED OVER EMERGENCY ESCAPE AND RESCUE OPENINGS, AREA WELLS, BULKHEAD ENCLOSURES OR AREA WELLS THAT SERVE SUCH OPENINGS, THE MINIMUM NET CLEAR OPENING SIZE SHALL COMPLY WITH SECTIONS R310.2.1 THROUGH R310.2.3 AND R310.4.1. SUCH DEVICES SHALL BE RELEASABLE OR REMOVABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, OR TOOL, OR FORCE GREATER THAN THAT REQUIRED FOR THE NORMAL OPERATION OF THE ESCAPE AND RESCUE OPENING.

R310.5 REPLACEMENT WINDOWS FOR EMERGENCY ESCAPE AND RESCUE OPENINGS.
REPLACEMENT WINDOWS INSTALLED IN BUILDINGS MEETING THE SCOPE OF THE CODE SHALL BE EXEMPT FROM SECTIONS R310.2 AND R310.4.4, PROVIDED THAT THE REPLACEMENT WINDOW MEETS THE FOLLOWING CONDITIONS:

1. THE REPLACEMENT WINDOW IS THE MANUFACTURER'S LARGEST STANDARD SIZE WINDOW THAT WILL FIT WITHIN THE EXISTING FRAME OR EXISTING ROUGH OPENING. THE REPLACEMENT WINDOW IS OF THE SAME OPERATING STYLE AS THE EXISTING WINDOW OR A STYLE THAT PROVIDES FOR AN EQUAL OR GREATER WINDOW OPENING AREA THAN THE EXISTING WINDOW.
2. THE REPLACEMENT WINDOW IS NOT PART OF A CHANGE OF OCCUPANCY.

R310.6 DWELLING ADDITIONS.
WHERE DWELLING ADDITIONS CONTAIN SLEEPING ROOMS, AN EMERGENCY ESCAPE AND RESCUE OPENING SHALL BE PROVIDED IN EACH NEW SLEEPING ROOM. WHERE DWELLING ADDITIONS HAVE BASEMENTS, AN EMERGENCY ESCAPE AND RESCUE OPENING SHALL BE PROVIDED IN THE NEW BASEMENT.

NOTE: SEE SECTION 310.6 FOR EXCEPTIONS

R310.7 ALTERATIONS OR REPAIRS OF EXISTING BASEMENTS.
NEW SLEEPING ROOMS CREATED IN AN EXISTING BASEMENT SHALL BE PROVIDED WITH EMERGENCY ESCAPE AND RESCUE OPENINGS IN ACCORDANCE WITH SECTION R310.1. OTHER THAN NEW SLEEPING ROOMS, WHERE EXISTING BASEMENTS UNDERGO ALTERATIONS OR REPAIRS, AN EMERGENCY ESCAPE AND RESCUE OPENING IS NOT REQUIRED.

NOTE: SEE SECTION 310.7 FOR EXCEPTION

SECTION R311 MEANS OF EGRESS

R311.1 MEANS OF EGRESS.
DWELLINGS SHALL BE PROVIDED WITH A MEANS OF EGRESS IN ACCORDANCE WITH THIS SECTION. THE MEANS OF EGRESS SHALL PROVIDE A CONTINUOUS AND UNOBSTRUCTED PATH OF VERTICAL AND HORIZONTAL EGRESS TRAVEL FROM ALL PORTIONS OF THE DWELLING TO THE REQUIRED EGRESS DOOR WITHOUT REQUIRING TRAVEL THROUGH A GARAGE. THE REQUIRED EGRESS DOOR SHALL OPEN DIRECTLY INTO A PUBLIC WAY OR TO A YARD OR COURT THAT OPENS TO A PUBLIC WAY.

R311.2 EGRESS DOOR.
NOT LESS THAN ONE EGRESS DOOR SHALL BE PROVIDED FOR EACH DWELLING UNIT. THE EGRESS DOOR SHALL BE SIDE-HINGED, AND SHALL PROVIDE A CLEAR WIDTH OF NOT LESS THAN 32 INCHES (813 MM) WHERE MEASURED BETWEEN THE FACE OF THE DOOR AND THE STOP, WITH THE DOOR OPEN 90 DEGREES (1.57 RAD). THE CLEAR HEIGHT OF THE DOOR OPENING SHALL BE NOT LESS THAN 78 INCHES (1981 MM) IN HEIGHT MEASURED FROM THE TOP OF THE THRESHOLD TO THE BOTTOM OF THE STOP. OTHER DOORS SHALL NOT BE REQUIRED TO COMPLY WITH THESE MINIMUM DIMENSIONS. EGRESS DOORS SHALL BE READILY OPENABLE FROM INSIDE THE DWELLING WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT.

R311.3 FLOORS AND LANDINGS AT EXTERIOR DOORS.
THERE SHALL BE A LANDING OR FLOOR ON EACH SIDE OF EACH EXTERIOR DOOR. THE WIDTH OF EACH LANDING SHALL BE NOT LESS THAN THE DOOR SERVED.
LANDINGS SHALL HAVE A DIMENSION OF NOT LESS THAN 36 INCHES (914 MM) MEASURED IN THE DIRECTION OF TRAVEL. THE SLOPE AT EXTERIOR LANDINGS SHALL NOT EXCEED 1/4 UNIT VERTICAL IN 12 UNITS HORIZONTAL (2-PERCENT).

NOTE: SEE SECTION 311.3 FOR EXCEPTION

R311.3.1 FLOOR ELEVATIONS AT THE REQUIRED EGRESS DOORS.
LANDINGS OR FINISHED FLOORS AT THE REQUIRED EGRESS DOOR SHALL BE NOT MORE THAN 1 1/2 INCHES (38 MM) LOWER THAN THE TOP OF THE THRESHOLD.

NOTE: SEE SECTION 311.3.1 FOR EXCEPTION

R311.3.2 FLOOR ELEVATIONS AT OTHER EXTERIOR DOORS.
DOORS OTHER THAN THE REQUIRED EGRESS DOOR SHALL BE PROVIDED WITH LANDINGS OR FLOORS NOT MORE THAN 7 3/4 INCHES (196 MM) BELOW THE TOP OF THE THRESHOLD.

NOTE: SEE SECTION 311.3.2 FOR EXCEPTION

R311.3.3 STORM AND SCREEN DOORS.
STORM AND SCREEN DOORS SHALL BE PERMITTED TO SWING OVER EXTERIOR STAIRS AND LANDINGS.

R311.4 VERTICAL EGRESS.
EGRESS FROM HABITABLE LEVELS INCLUDING HABITABLE ATTICS AND BASEMENTS THAT ARE NOT PROVIDED WITH AN EGRESS DOOR IN ACCORDANCE WITH SECTION R311.2 SHALL BE BY A RAMP IN ACCORDANCE WITH SECTION R311.8 OR A STAIRWAY IN ACCORDANCE WITH SECTION R311.7.

R311.5 LANDING, DECK, BALCONY AND STAIR CONSTRUCTION AND ATTACHMENT.
EXTERIOR LANDINGS, DECKS, BALCONIES, STAIRS AND SIMILAR FACILITIES SHALL BE POSITIVELY ANCHORED TO THE PRIMARY STRUCTURE TO RESIST BOTH VERTICAL AND LATERAL FORCES OR SHALL BE DESIGNED TO BE SELF-SUPPORTING. ATTACHMENT SHALL NOT BE ACCOMPLISHED BY USE OF TOENAILS OR NAILS SUBJECT TO WITHDRAWAL.

R311.6 HALLWAYS.
THE WIDTH OF A HALLWAY SHALL BE NOT LESS THAN 3 FEET (914 MM).

NOTICE DUTY OF COOPERATION

[redacted] assumes no liability for any HOME constructed from this plan. Release of these plans contemplates further cooperation among the owner, his contractor and the designer. Design and construction are complex. Although the designer and his consultants performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the designer. Failure to notify the designer compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the designer shall relieve the designer from responsibility for all consequences. Changes made from the plans without the consent of the designer are unauthorized and shall relieve the designer of responsibility for all consequences arising out of such changes. Only qualified Designer, Architect, Contractor, or Structural Engineer should attempt to modify any portion of this design.
Written dimensions on these drawings shall have precedence over scaled dimensions; contractors shall verify and be responsible for all dimensions and conditions on the job. This office must be notified of any variations from the dimensions and conditions shown by these drawings. Shop details must be submitted to this office for approval before proceeding with fabrication or construction.

[redacted]

REVISIONS	BY
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

24x36

[redacted]

[redacted]

DATE [redacted]
SCALE 1/4" = 1'-0"
BUILDER
JOB [redacted]
DRAWN BY

CAD DESIGNED

1 OF 5

[redacted]

R311.7 STAIRWAYS. WHERE REQUIRED BY THIS CODE OR PROVIDED, STAIRWAYS SHALL COMPLY WITH THIS SECTION.

EXCEPTIONS:
1. STAIRWAYS NOT WITHIN OR SERVING A BUILDING, PORCH OR DECK.
2. STAIRWAYS LEADING TO NONHABITABLE ATTICS.
3. STAIRWAYS LEADING TO CRAWL SPACES.

R311.7.1 WIDTH.
STAIRWAYS SHALL BE NOT LESS THAN 36 INCHES (914 MM) IN CLEAR WIDTH AT ALL POINTS ABOVE THE PERMITTED HANDRAIL HEIGHT AND BELOW THE REQUIRED HEADROOM HEIGHT. THE CLEAR WIDTH OF STAIRWAYS AT AND BELOW THE HANDRAIL HEIGHT, INCLUDING TREADS AND LANDINGS, SHALL BE NOT LESS THAN 31 1/2 INCHES (787 MM) WHERE A HANDRAIL IS INSTALLED ON ONE SIDE AND 27 INCHES (698 MM) WHERE HANDRAILS ARE INSTALLED ON BOTH SIDES.

NOTE: SEE SECTION R311.7.1 FOR EXCEPTION

R311.7.2 HEADROOM.
THE HEADROOM IN STAIRWAYS SHALL BE NOT LESS THAN 6 FEET 8 INCHES (2032 MM) MEASURED VERTICALLY FROM THE SLOPED LINE ADJOINING THE TREAD NOSING OR FROM THE FLOOR SURFACE OF THE LANDING OR PLATFORM ON THAT PORTION OF THE STAIRWAY.

NOTE: SEE SECTION R311.7.2 FOR EXCEPTION

R311.7.3 VERTICAL RISE.
A FLIGHT OF STAIRS SHALL NOT HAVE A VERTICAL RISE GREATER THAN 12 FEET 7 INCHES (3835 MM) BETWEEN FLOOR LEVELS OR LANDINGS.

R311.7.4 WALKLINE.
THE WALKLINE ACROSS WINDER TREADS AND LANDINGS SHALL BE CONCENTRIC TO THE TURN AND PARALLEL TO THE DIRECTION OF TRAVEL ENTERING AND EXITING THE TURN. THE WALKLINE SHALL BE LOCATED 12 INCHES (305 MM) FROM THE INSIDE OF THE TURN. THE 12 INCH (305 MM) DIMENSION SHALL BE MEASURED FROM THE WIDEST POINT OF THE CLEAR STAIR WIDTH AT THE WALKING SURFACE. WHERE WINDERS ARE ADJACENT WITHIN A FLIGHT, THE POINT OF THE WIDEST CLEAR STAIR WIDTH OF THE ADJACENT WINDERS SHALL BE USED.

R311.7.5 STAIR TREADS AND RISERS.
STAIR TREADS AND RISERS SHALL MEET THE REQUIREMENTS OF THIS SECTION. FOR THE PURPOSES OF THIS SECTION, DIMENSIONS AND DIMENSIONED SURFACES SHALL BE EXCLUSIVE OF CARPETS, RUGS OR RUNNERS.

R311.7.5.1 RISERS.
THE RISER HEIGHT SHALL BE NOT MORE THAN 7 3/4 INCHES (196 MM). THE RISER HEIGHT SHALL BE MEASURED VERTICALLY BETWEEN LEADING EDGES OF THE ADJACENT TREADS. THE GREATEST RISER HEIGHT WITHIN ANY FLIGHT OF STAIRS SHALL NOT EXCEED THE SMALLEST BY MORE THAN 3/8 INCH (9.5 MM). RISERS SHALL BE VERTICAL OR SLOPED FROM THE UNDERSIDE OF THE NOSING OF THE TREAD ABOVE AT AN ANGLE NOT MORE THAN 30 DEGREES (0.51 RAD) FROM THE VERTICAL. AT OPEN RISERS, OPENINGS LOCATED MORE THAN 30 INCHES (763 MM), AS MEASURED VERTICALLY, TO THE FLOOR OR GRADE BELOW SHALL NOT PERMIT THE PASSAGE OF 4-INCH-DIA. (102 MM) SPHERE.

NOTE: SEE SECTION R311.7.5.1 FOR EXCEPTION

R311.7.5.2 TREADS.
THE TREAD DEPTH SHALL BE NOT LESS THAN 10 INCHES (254 MM). THE TREAD DEPTH SHALL BE MEASURED HORIZONTALLY BETWEEN THE VERTICAL PLANES OF THE FOREMOST PROJECTION OF ADJACENT TREADS AND AT A RIGHT ANGLE TO THE TREAD'S LEADING EDGE. THE GREATEST TREAD DEPTH WITHIN ANY FLIGHT OF STAIRS SHALL NOT EXCEED THE SMALLEST BY MORE THAN 3/8 INCH (9.5 MM).

R311.7.5.2.1 WINDER TREADS.
WINDER TREADS SHALL HAVE A TREAD DEPTH OF NOT LESS THAN 10 INCHES (254 MM) MEASURED BETWEEN THE VERTICAL PLANES OF THE FOREMOST PROJECTION OF ADJACENT TREADS AT THE INTERSECTIONS WITH THE WALKLINE. WINDER TREADS SHALL HAVE A TREAD DEPTH OF NOT LESS THAN 6 INCHES (152 MM) AT ANY POINT WITHIN THE CLEAR WIDTH OF THE STAIR. WITHIN ANY FLIGHT OF STAIRS, THE LARGEST WINDER TREAD DEPTH AT THE WALKLINE SHALL NOT EXCEED THE SMALLEST WINDER TREAD BY MORE THAN 3/8 INCH (9.5 MM). CONSISTENTLY SHAPED WINDERS AT THE WALKLINE SHALL BE ALLOWED WITHIN THE SAME FLIGHT OF STAIRS AS RECTANGULAR TREADS AND SHALL NOT BE REQUIRED TO BE WITHIN 3/8 INCH (9.5 MM) OF THE RECTANGULAR TREAD DEPTH.

NOTE: SEE SECTION R311.7.5.2.1 FOR EXCEPTION

R311.7.5.3 NOSINGS.
NOSINGS AT TREADS, LANDINGS AND FLOORS OF STAIRWAYS SHALL HAVE A RADIUS OF CURVATURE AT THE NOSING NOT GREATER THAN 9/16 INCH (14 MM) OR A BEVEL NOT GREATER THAN 1/2 INCH (12.7 MM). A NOSING PROJECTION NOT LESS THAN 3/4 INCH (19 MM) AND NOT MORE THAN 1 1/4 INCHES (32 MM) SHALL BE PROVIDED ON STAIRWAYS. THE GREATEST NOSING PROJECTION SHALL NOT EXCEED THE SMALLEST NOSING PROJECTION BY MORE THAN 3/8 INCH (9.5 MM) WITHIN A STAIRWAY.

NOTE: SEE SECTION R311.7.5.3 FOR EXCEPTION

R311.7.5.4 EXTERIOR PLASTIC COMPOSITE STAIR TREADS.
PLASTIC COMPOSITE EXTERIOR STAIR TREADS SHALL COMPLY WITH THE PROVISIONS OF THIS SECTION AND SECTION R507.2.2.

R311.7.6 LANDINGS FOR STAIRWAYS.
THERE SHALL BE A FLOOR OR LANDING AT THE TOP AND BOTTOM OF EACH STAIRWAY. THE WIDTH PERPENDICULAR TO THE DIRECTION OF TRAVEL SHALL BE NOT LESS THAN THE WIDTH OF THE FLIGHT SERVED. FOR LANDINGS OF SHAPES OTHER THAN SQUARE OR RECTANGULAR, THE DEPTH AT THE WALK LINE AND THE TOTAL AREA SHALL BE NOT LESS THAN THAT OF A QUARTER CIRCLE WITH A RADIUS EQUAL TO THE REQUIRED LANDING WIDTH. WHERE THE STAIRWAY HAS A STRAIGHT RUN, THE DEPTH IN THE DIRECTION OF TRAVEL SHALL BE NOT LESS THAN 36 INCHES (914 MM).

NOTE: SEE SECTION 311.7.6 FOR EXCEPTION

R311.7.7 STAIRWAY WALKING SURFACE.
THE WALKING SURFACE OF TREADS AND LANDINGS OF STAIRWAYS SHALL BE SLOPED NOT STEEPER THAN ONE UNIT VERTICAL IN 48 UNITS HORIZONTAL (2-PERCENT SLOPE).

NOTE: SEE SECTION 311.7.7 FOR EXCEPTION

R311.7.8 HANDRAILS.
HANDRAILS SHALL BE PROVIDED ON NOT LESS THAN ONE SIDE OF EACH FLIGHT OF STAIRS WITH FOUR OR MORE RISERS.

R311.7.8.1 HEIGHT.
HANDRAIL HEIGHT, MEASURED VERTICALLY FROM THE SLOPED PLANE ADJOINING THE TREAD NOSING, OR FINISH SURFACE OF RAMP SLOPE, SHALL BE NOT LESS THAN 34 INCHES (864 MM) AND NOT MORE THAN 38 INCHES (965 MM).

NOTE: SEE SECTION 311.7.8.1 FOR EXCEPTIONS

R311.7.8.2 HANDRAIL PROJECTION.
HANDRAILS SHALL NOT PROJECT MORE THAN 4 1/2 INCHES (114 MM) ON EITHER SIDE OF THE STAIRWAY.

NOTE: SEE SECTION 311.7.8.2 FOR EXCEPTIONS

R311.7.8.3 HANDRAIL CLEARANCE.
HANDRAILS ADJACENT TO A WALL SHALL HAVE A SPACE OF NOT LESS THAN 1 1/2 INCHES (38 MM) BETWEEN THE WALL AND THE HANDRAILS.

R311.7.8.4 CONTINUITY.
HANDRAILS SHALL BE CONTINUOUS FOR THE FULL LENGTH OF THE FLIGHT, FROM A POINT DIRECTLY ABOVE THE TOP RISER OF THE FLIGHT TO A POINT DIRECTLY ABOVE THE LOWEST RISER OF THE FLIGHT. HANDRAIL ENDS SHALL BE RETURNED TOWARD A WALL, GUARD WALKING SURFACE CONTINUOUS TO ITSELF, OR TERMINATE TO A POST.

NOTE: SEE SECTION 311.7.8.4 FOR EXCEPTIONS

R311.7.8.5 GRIP-SIZE.
REQUIRED HANDRAILS SHALL BE OF ONE OF THE FOLLOWING TYPES OR PROVIDE EQUIVALENT GRASPABILITY.

NOTE: SEE R311.7.8.5 FOR TYPE I AND TYPE II HANDRAILS.

R311.7.8.6 EXTERIOR PLASTIC COMPOSITE HANDRAILS.
PLASTIC COMPOSITE EXTERIOR HANDRAILS SHALL COMPLY WITH THE REQUIREMENTS OF SECTION R507.2.2.

R311.7.9 ILLUMINATION.
STAIRWAYS SHALL BE PROVIDED WITH ILLUMINATION IN ACCORDANCE WITH SECTION R303.7 AND R303.8.

R311.7.10 SPECIAL STAIRWAYS.
SPIRAL STAIRWAYS AND BULKHEAD ENCLOSURE STAIRWAYS SHALL COMPLY WITH THE REQUIREMENTS OF SECTION R311.7 EXCEPT AS SPECIFIED IN SECTIONS R311.7.10.1 AND R311.7.10.2.

R311.7.10.1 SPIRAL STAIRWAYS.
THE CLEAR WIDTH AT AND BELOW THE HANDRAILS AT SPIRAL STAIRWAYS SHALL BE NOT LESS THAN 26 INCHES (660 MM) AND THE WALKLINE RADIUS SHALL BE NOT GREATER THAN 24 1/2 INCHES (622 MM). EACH TREAD SHALL HAVE A DEPTH OF NOT LESS THAN 6 3/4 INCHES (171 MM) AT THE WALKLINE. TREADS SHALL BE IDENTICAL, AND THE RISE SHALL BE NOT MORE THAN 9 1/2 INCHES (241 MM). HEADROOM SHALL BE NOT LESS THAN 6 FEET 6 INCHES (1982 MM).

R311.7.10.2 BULKHEAD ENCLOSURE STAIRWAYS.
STAIRWAYS SERVING BULKHEAD ENCLOSURES, NOT PART OF THE REQUIRED BUILDING EGRESS, PROVIDING ACCESS FROM THE OUTSIDE GRADE LEVEL TO THE BASEMENT SHALL BE EXEMPT FROM THE REQUIREMENTS OF SECTIONS R311.3 AND R311.7 WHERE THE HEIGHT FROM THE BASEMENT FINISHED FLOOR LEVEL TO GRADE ADJACENT TO THE STAIRWAY IS NOT MORE THAN 8 FEET (2438 MM) AND THE GRADE LEVEL OPENING TO THE STAIRWAY IS COVERED BY A BULKHEAD ENCLOSURE WITH HINGED DOORS OR OTHER APPROVED MEANS.

NOTE: SEE SECTION R311.7.11 THROUGH R311.7.12.2 FOR ALTERNATING TREAD DEVICES AND SHIPS LADDERS.

R311.8 RAMPS. WHERE REQUIRED BY THIS CODE OR PROVIDED, RAMPS SHALL COMPLY WITH THIS SECTION.

EXCEPTION: RAMPS NOT WITHIN OR SERVING A BUILDING, PORCH OR DECK.

R311.8.1 MAXIMUM SLOPE.
RAMPS SERVING THE EGRESS DOOR REQUIRED BY SECTION R311.2 SHALL HAVE A SLOPE OF NOT MORE THAN 1 UNIT VERTICAL IN 12 UNITS HORIZONTAL (8.3-PERCENT SLOPE). OTHER RAMPS SHALL HAVE A MAXIMUM SLOPE OF 1 UNIT VERTICAL IN 8 UNITS HORIZONTAL (12.5 PERCENT).

EXCEPTION: WHERE IT IS TECHNICALLY INFEASIBLE TO COMPLY BECAUSE OF SITE CONSTRAINTS, RAMPS SHALL HAVE A SLOPE OF NOT MORE THAN 1 UNIT VERTICAL IN 8 UNITS HORIZONTAL (12.5 PERCENT).

R311.8.2 LANDINGS REQUIRED.
THERE SHALL BE A FLOOR OR LANDING AT THE TOP AND BOTTOM OF EACH RAMP, WHERE DOORS OPEN ONTO RAMPS, AND WHERE RAMPS CHANGE DIRECTIONS. THE WIDTH OF THE LANDING PERPENDICULAR TO THE RAMP SLOPE SHALL BE NOT LESS THAN 36 INCHES (914 MM).

R311.8.3 HANDRAILS REQUIRED.
HANDRAILS SHALL BE PROVIDED ON NOT LESS THAN ONE SIDE OF RAMPS EXCEEDING A SLOPE OF ONE UNIT VERTICAL IN 12 UNITS HORIZONTAL (8.33-PERCENT SLOPE).

R311.8.3.1 HEIGHT.
HANDRAIL HEIGHT, MEASURED ABOVE THE FINISHED SURFACE OF THE RAMP SLOPE, SHALL BE NOT LESS THAN 34 INCHES (864 MM) AND NOT MORE THAN 38 INCHES (965 MM).

R311.8.3.2 GRIP SIZE.
HANDRAILS ON RAMPS SHALL COMPLY WITH SECTION R311.7.8.5.

R311.8.3.3 CONTINUITY.
HANDRAILS WHERE REQUIRED ON RAMPS SHALL BE CONTINUOUS FOR THE FULL LENGTH OF THE RAMP. HANDRAIL ENDS SHALL BE RETURNED OR SHALL TERMINATE IN NEWEL POSTS OR SAFETY TERMINALS. HANDRAILS ADJACENT TO A WALL SHALL HAVE A SPACE OF NOT LESS THAN 1 1/2 INCHES (38 MM) BETWEEN THE WALL AND THE HANDRAILS.

SECTION R312
GUARDS AND WINDOW FALL PROTECTION

R312.1 GUARDS.
GUARDS SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS R312.1.1 THROUGH R312.1.4.

R312.1.1 WHERE REQUIRED.
GUARDS SHALL BE PROVIDED FOR THOSE PORTIONS OF OPEN-SIDED WALKING SURFACES, INCLUDING FLOORS, STAIRS, RAMPS AND LANDINGS, THAT ARE LOCATED MORE THAN 30 INCHES (762 MM) MEASURED VERTICALLY TO THE FLOOR OR GRADE BELOW AT ANY POINT WITHIN 36 INCHES (914 MM) HORIZONTALLY TO THE EDGE OF THE OPEN SIDE. INSECT SCREENING SHALL NOT BE CONSIDERED AS A GUARD.

R312.1.2 HEIGHT.
REQUIRED GUARDS AT OPEN-SIDED WALKING SURFACES, INCLUDING STAIRS, PORCHES, BALCONIES OR LANDINGS, SHALL BE NOT LESS THAN 36 INCHES (914 MM) IN HEIGHT AS MEASURED VERTICALLY ABOVE THE ADJACENT WALKING SURFACE OR THE LINE CONNECTING THE NOSINGS.

NOTE: SEE SECTION 312.1.2 FOR EXCEPTION

R312.1.3 OPENING LIMITATIONS.
REQUIRED GUARDS SHALL NOT HAVE OPENINGS FROM THE WALKING SURFACE TO THE REQUIRED GUARD HEIGHT THAT ALLOW PASSAGE OF A SPHERE 4 INCHES (102 MM) IN DIAMETER.

NOTE: SEE SECTION 312.1.3 FOR EXCEPTION

R312.1.4 EXTERIOR PLASTIC COMPOSITE GUARDS.
PLASTIC COMPOSITE EXTERIOR GUARDS SHALL COMPLY WITH THE REQUIREMENTS OF SECTION R317.4.

R312.2 WINDOW FALL PROTECTION.
WINDOW FALL PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS R312.2.1 AND R312.2.2.

R312.2.1 WINDOW OPENING HEIGHT.
IN DWELLING UNITS, WHERE THE BOTTOM OF THE CLEAR OPENING OF AN OPERABLE WINDOW OPENING IS LOCATED LESS THAN 24 INCHES (610 MM) ABOVE THE FINISHED FLOOR AND GREATER THAN 72 INCHES (1829 MM) ABOVE THE FINISHED GRADE OR OTHER SURFACE BELOW ON THE EXTERIOR OF THE BUILDING, THE OPERABLE WINDOW SHALL COMPLY WITH ONE OF THE FOLLOWING:

1. OPERABLE WINDOW OPENINGS WILL NOT ALLOW A 4-INCH-DIAMETER (102 MM) SPHERE TO PASS THROUGH WHERE THE OPENINGS ARE IN THEIR LARGEST OPENED POSITION.
2. OPERABLE WINDOWS ARE PROVIDED WITH WINDOW OPENING CONTROL DEVICES OR FALL PREVENTION DEVICES THAT COMPLY WITH ASTM F2090.

R312.2.2 WINDOW OPENING CONTROL DEVICES.
WINDOW OPENING CONTROL DEVICES SHALL COMPLY WITH ASTM F2090. THE WINDOW OPENING CONTROL DEVICE, AFTER OPERATION TO RELEASE THE CONTROL DEVICE ALLOWING THE WINDOW TO FULLY OPEN, SHALL NOT REDUCE THE NET CLEAR OPENING AREA OF THE WINDOW UNIT TO LESS THAN THE AREA REQUIRED BY SECTION R310.2.1.

SECTION R313
AUTOMATIC FIRE SPRINKLER SYSTEMS

313.1 TOWNHOUSE AUTOMATIC FIRE SPRINKLER SYSTEMS.
AN AUTOMATIC RESIDENTIAL FIRE SPRINKLER SYSTEM SHALL BE INSTALLED IN TOWNHOUSES.

NOTE: SEE SECTION 313.1 FOR EXCEPTION

R313.1.1 DESIGN AND INSTALLATION.
AUTOMATIC SPRINKLER SYSTEMS FOR TOWNHOUSES SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH SECTION P2904 OR NFPA 13D.

R313.2 ONE- AND TWO-FAMILY DWELLINGS AUTOMATIC FIRE SPRINKLER SYSTEMS.
AN AUTOMATIC SPRINKLER SYSTEM SHALL BE INSTALLED IN ONE- AND TWO-FAMILY DWELLINGS.

NOTE: SEE SECTION 313.2 FOR EXCEPTION

R313.2.1 DESIGN AND INSTALLATION.
AUTOMATIC SPRINKLER SYSTEMS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH SECTION P2904 OR NFPA 13D.

SECTION R314 SMOKE ALARMS

R314.1 GENERAL.
SMOKE ALARMS SHALL COMPLY WITH NFPA 72 AND SECTION R314.

R314.1.1 LISTINGS.
SMOKE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 217. COMBINATION SMOKE AND CARBON MONOXIDE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 217 AND UL 2034.

R314.2 WHERE REQUIRED.
SMOKE ALARMS SHALL BE PROVIDED IN ACCORDANCE WITH THIS SECTION.

R314.2.1 NEW CONSTRUCTION.
SMOKE ALARMS SHALL BE PROVIDED IN DWELLING UNITS.

R314.2.2 ALTERATIONS, REPAIRS AND ADDITIONS.
WHERE ALTERATIONS, REPAIRS OR ADDITIONS REQUIRING A PERMIT OCCUR, THE INDIVIDUAL DWELLING UNIT SHALL BE EQUIPPED WITH SMOKE ALARMS LOCATED AS REQUIRED FOR NEW DWELLINGS.

NOTE: SEE SECTION 314.2.2 FOR EXCEPTION

R314.3 LOCATION.
SMOKE ALARMS SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS:
1. IN EACH SLEEPING ROOM.
2. OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.
3. ON EACH ADDITIONAL STORY OF THE DWELLING, INCLUDING BASEMENTS AND HABITABLE ATTICS AND NOT INCLUDING CRAWL SPACES AND UNINHABITABLE ATTICS. IN DWELLINGS OR DWELLING UNITS WITH SPLIT LEVELS AND WITHOUT AN INTERVENING DOOR BETWEEN THE ADJACENT LEVELS, A SMOKE ALARM INSTALLED ON THE UPPER LEVEL SHALL SUFFICE FOR THE ADJACENT LOWER LEVEL PROVIDED THAT THE LOWER LEVEL IS LESS THAN ONE FULL STORY BELOW THE UPPER LEVEL.
4. SMOKE ALARMS SHALL BE INSTALLED NOT LESS THAN 3 FEET (914 MM) HORIZONTALLY FROM THE DOOR OR OPENING OF A BATHROOM THAT CONTAINS A BATHTUB OR SHOWER UNLESS THIS WOULD PREVENT PLACEMENT OF A SMOKE ALARM REQUIRED BY THIS SECTION.
5. IN THE HALLWAY AND IN THE ROOM OPEN TO THE HALLWAY IN DWELLING UNITS WHERE THE CEILING HEIGHT OF A ROOM OPEN TO A HALLWAY SERVING BEDROOMS EXCEEDS THAT OF THE HALLWAY BY 24 INCHES (610 MM) OR MORE.

R314.3.1 INSTALLATION NEAR COOKING APPLIANCES.
SMOKE ALARMS SHALL NOT BE INSTALLED IN THE FOLLOWING LOCATIONS UNLESS THIS WOULD PREVENT PLACEMENT OF A SMOKE ALARM IN A LOCATION REQUIRED BY SECTION R314.3.

1. IONIZATION SMOKE ALARMS SHALL NOT BE INSTALLED LESS THAN 20 FEET (6096 MM) HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.
2. IONIZATION SMOKE ALARMS WITH AN ALARM-SILENCING SWITCH SHALL NOT BE INSTALLED LESS THAN 10 FEET (3048 MM) HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.
3. PHOTOELECTRIC SMOKE ALARMS SHALL NOT BE INSTALLED LESS THAN 6 FEET (1828 MM) HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.
4. SMOKE ALARMS LISTED AND MARKED "HELPS REDUCE COOKING NUISANCE ALARMS" SHALL NOT BE INSTALLED LESS THAN 6 FEET (1828 MM) HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.

R314.4 INTERCONNECTION.
WHERE MORE THAN ONE SMOKE ALARM IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING UNIT IN ACCORDANCE WITH SECTION R314.3, THE ALARM DEVICES SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTUATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL DWELLING UNIT. PHYSICAL INTERCONNECTION OF SMOKE ALARMS SHALL NOT BE REQUIRED WHERE LISTED WIRELESS ALARMS ARE INSTALLED AND ALL ALARMS SOUND UPON ACTIVATION OF ONE ALARM.

R314.5 COMBINATION ALARMS.
COMBINATION SMOKE AND CARBON MONOXIDE ALARMS SHALL BE PERMITTED TO BE USED IN LIEU OF SMOKE ALARMS.

R314.6 POWER SOURCE.
SMOKE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING WHERE SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND, WHERE PRIMARY POWER IS INTERRUPTED, SHALL RECEIVE POWER FROM A BATTERY. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN THOSE REQUIRED FOR OVERCURRENT PROTECTION.

NOTE: SEE SECTION 314.6 FOR EXCEPTIONS

R314.7 FIRE ALARM SYSTEMS.
FIRE ALARM SYSTEMS SHALL BE PERMITTED TO BE USED IN LIEU OF SMOKE ALARMS AND SHALL COMPLY WITH SECTIONS R314.7.1 THROUGH R314.7.4.

R314.7.1 GENERAL.
FIRE ALARM SYSTEMS SHALL COMPLY WITH THE PROVISIONS OF THIS CODE AND THE HOUSEHOLD FIRE WARNING EQUIPMENT PROVISIONS OF NFPA 72. SMOKE DETECTORS SHALL BE LISTED IN ACCORDANCE WITH UL 268.

R314.7.2 LOCATION.
SMOKE DETECTORS SHALL BE INSTALLED IN THE LOCATIONS SPECIFIED IN SECTION R314.3.

R314.7.3 PERMANENT FIXTURE.
WHERE A HOUSEHOLD FIRE ALARM SYSTEM IS INSTALLED, IT SHALL BECOME A PERMANENT FIXTURE OF THE OCCUPANCY, OWNED BY THE HOMEOWNER.

R314.7.4 COMBINATION DETECTORS.
COMBINATION SMOKE AND CARBON MONOXIDE DETECTORS SHALL BE PERMITTED TO BE INSTALLED IN FIRE ALARM SYSTEMS IN LIEU OF SMOKE DETECTORS, PROVIDED THAT THEY ARE LISTED IN ACCORDANCE WITH UL 268 AND UL 2075.

SECTION R315 CARBON MONOXIDE ALARMS

R315.1 GENERAL.
CARBON MONOXIDE ALARMS SHALL COMPLY WITH SECTION R315.

R315.1.1 LISTINGS.
CARBON MONOXIDE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 2034. COMBINATION CARBON MONOXIDE AND SMOKE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 2034 AND UL 217.

R315.2 WHERE REQUIRED.
CARBON MONOXIDE ALARMS SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS R315.2.1 AND R315.2.2.

R315.2.1 NEW CONSTRUCTION.
FOR NEW CONSTRUCTION, CARBON MONOXIDE ALARMS SHALL BE PROVIDED IN DWELLING UNITS WHERE EITHER OR BOTH OF THE FOLLOWING CONDITIONS EXIST.

1. THE DWELLING UNIT CONTAINS A FUEL-FIRED APPLIANCE.
2. THE DWELLING UNIT HAS AN ATTACHED GARAGE WITH AN OPENING THAT COMMUNICATES WITH THE DWELLING UNIT.

R315.2.2 ALTERATIONS, REPAIRS AND ADDITIONS.
WHERE ALTERATIONS, REPAIRS OR ADDITIONS REQUIRING A PERMIT OCCUR, THE INDIVIDUAL DWELLING UNIT SHALL BE EQUIPPED WITH CARBON MONOXIDE ALARMS LOCATED AS REQUIRED FOR NEW DWELLINGS.
EXCEPTIONS:

NOTE: SEE SECTION 315.2.2 FOR EXCEPTION

R315.3 LOCATION.
CARBON MONOXIDE ALARMS IN DWELLING UNITS SHALL BE INSTALLED OUTSIDE OF EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS. WHERE A FUEL-BURNING APPLIANCE IS LOCATED WITHIN A BEDROOM OR ITS ATTACHED BATHROOM, A CARBON MONOXIDE ALARM SHALL BE INSTALLED WITHIN THE BEDROOM.

R315.4 COMBINATION ALARMS.
COMBINATION CARBON MONOXIDE AND SMOKE ALARMS SHALL BE PERMITTED TO BE USED IN LIEU OF CARBON MONOXIDE ALARMS.

R315.5 INTERCONNECTIVITY.
WHERE MORE THAN ONE CARBON MONOXIDE ALARM IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING UNIT IN ACCORDANCE WITH SECTION R315.3, THE ALARM DEVICES SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTUATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL DWELLING UNIT. PHYSICAL INTERCONNECTION OF CARBON MONOXIDE ALARMS SHALL NOT BE REQUIRED WHERE LISTED WIRELESS ALARMS ARE INSTALLED AND ALL ALARMS SOUND UPON ACTIVATION OF ONE ALARM.

NOTE: SEE SECTION 315.5 FOR EXCEPTIONS

R315.6 POWER SOURCE.
CARBON MONOXIDE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING WHERE SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND, WHERE PRIMARY POWER IS INTERRUPTED, SHALL RECEIVE POWER FROM A BATTERY. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN THOSE REQUIRED FOR OVERCURRENT PROTECTION.

NOTE: SEE SECTION 315.6 FOR EXCEPTION

R315.7 CARBON MONOXIDE DETECTION SYSTEMS.
CARBON MONOXIDE DETECTION SYSTEMS SHALL BE PERMITTED TO BE USED IN LIEU OF CARBON MONOXIDE ALARMS AND SHALL COMPLY WITH SECTIONS R315.7.1 THROUGH R315.7.4.

R315.7.1 GENERAL.
HOUSEHOLD CARBON MONOXIDE DETECTION SYSTEMS SHALL COMPLY WITH NFPA 720. CARBON MONOXIDE DETECTORS SHALL BE LISTED IN ACCORDANCE WITH UL 2075.

R315.7.2 LOCATION.
CARBON MONOXIDE DETECTORS SHALL BE INSTALLED IN THE LOCATIONS SPECIFIED IN SECTION R315.3. THESE LOCATIONS SUPERSEDE THE LOCATIONS SPECIFIED IN NFPA 720.

R315.7.3 PERMANENT FIXTURE.
WHERE A HOUSEHOLD CARBON MONOXIDE DETECTION SYSTEM IS INSTALLED, IT SHALL BECOME A PERMANENT FIXTURE OF THE OCCUPANCY AND OWNED BY THE HOMEOWNER.

R315.7.4 COMBINATION DETECTORS.
COMBINATION CARBON MONOXIDE AND SMOKE DETECTORS INSTALLED IN CARBON MONOXIDE DETECTION SYSTEMS IN LIEU OF CARBON MONOXIDE DETECTORS SHALL BE LISTED IN ACCORDANCE WITH UL 268 AND UL 2075.

SECTION R321
ELEVATORS AND PLATFORM LIFTS

R321.1 ELEVATORS.
WHERE PROVIDED, PASSENGER ELEVATORS, LIMITED-USE AND LIMITED-APPLICATION ELEVATORS OR PRIVATE RESIDENCE ELEVATORS SHALL COMPLY WITH ASME A17.1/CSA B44.

SECTION R322
FLOOD-RESISTANT CONSTRUCTION

R322.1 GENERAL.
BUILDINGS AND STRUCTURES CONSTRUCTED IN WHOLE OR IN PART IN FLOOD HAZARD AREAS, INCLUDING A OR V ZONES AND COASTAL A ZONES, AS ESTABLISHED IN TABLE R301.2(1), AND SUBSTANTIAL IMPROVEMENT AND REPAIR OF SUBSTANTIAL DAMAGE OF BUILDINGS AND STRUCTURES IN FLOOD HAZARD AREAS, SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS CONTAINED IN THIS SECTION. BUILDINGS AND STRUCTURES THAT ARE LOCATED IN MORE THAN ONE FLOOD HAZARD AREA SHALL COMPLY WITH THE PROVISIONS ASSOCIATED WITH THE MOST RESTRICTIVE FLOOD HAZARD AREA. BUILDINGS AND STRUCTURES LOCATED IN WHOLE OR IN PART IN IDENTIFIED FLOODWAYS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH ASCE 24.

R322.1.2 STRUCTURAL SYSTEMS.
STRUCTURAL SYSTEMS OF BUILDINGS AND STRUCTURES SHALL BE DESIGNED, CONNECTED AND ANCHORED TO RESIST FLOTATION, COLLAPSE OR PERMANENT LATERAL MOVEMENT DUE TO STRUCTURAL LOADS AND STRESSES FROM FLOODING EQUAL TO THE DESIGN FLOOD ELEVATION.

R322.1.3 FLOOD-RESISTANT CONSTRUCTION.
BUILDINGS AND STRUCTURES ERECTED IN AREAS PRONE TO FLOODING SHALL BE CONSTRUCTED BY METHODS AND PRACTICES THAT MINIMIZE FLOOD DAMAGE.

R322.1.4 ESTABLISHING THE DESIGN FLOOD ELEVATION.
THE DESIGN FLOOD ELEVATION SHALL BE USED TO DEFINE FLOOD HAZARD AREAS. AT A MINIMUM, THE DESIGN FLOOD ELEVATION SHALL BE THE HIGHER OF THE FOLLOWING:

1. THE BASE FLOOD ELEVATION AT THE DEPTH OF PEAK ELEVATION OF FLOODING, INCLUDING WAVE HEIGHT, THAT HAS A 1 PERCENT (100-YEAR FLOOD) OR GREATER CHANCE OF BEING EQUALED OR EXCEEDED IN ANY GIVEN YEAR.
2. THE ELEVATION OF THE DESIGN FLOOD ASSOCIATED WITH THE AREA DESIGNATED ON A FLOOD HAZARD MAP ADOPTED BY THE COMMUNITY, OR OTHERWISE LEGALLY DESIGNATED.

FOR DETERMINING DESIGN FLOOD ELEVATIONS AND IMPACTS REFER TO SECTIONS R322.1.4.1 AND R322.1.4.2.

R322.1.5 LOWEST FLOOR.
THE LOWEST FLOOR SHALL BE THE LOWEST FLOOR OF THE LOWEST ENCLOSED AREA, INCLUDING BASEMENT, AND EXCLUDING ANY UNFINISHED FLOOD-RESISTANT ENCLOSURE THAT IS USEABLE SOLELY FOR VEHICLE PARKING, BUILDING ACCESS OR LIMITED STORAGE PROVIDED THAT SUCH ENCLOSURE IS NOT BUILT SO AS TO RENDER THE BUILDING OR STRUCTURE IN VIOLATION OF THIS SECTION.

[redacted]

REVISIONS	BY
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
	24x36

[redacted]

[redacted]

CAD DESIGNED

DATE [redacted]
SCALE 1/4" = 1'-0"
BUILDER
JOB [redacted]
DRAWN BY

[redacted]

R322.1.6 PROTECTION OF MECHANICAL, PLUMBING AND ELECTRICAL SYSTEMS
ELECTRICAL SYSTEMS, EQUIPMENT AND COMPONENTS; HEATING, VENTILATING, AIR CONDITIONING; PLUMBING APPLIANCES AND PLUMBING FIXTURES; DUCT SYSTEMS; AND OTHER SERVICE EQUIPMENT SHALL BE LOCATED AT OR ABOVE THE ELEVATION REQUIRED IN SECTION R322.2 OR R322.3. IF REPLACED AS PART OF A SUBSTANTIAL IMPROVEMENT, ELECTRICAL SYSTEMS, EQUIPMENT AND COMPONENTS; HEATING, VENTILATING, AIR CONDITIONING AND PLUMBING APPLIANCES AND PLUMBING FIXTURES; DUCT SYSTEMS; AND OTHER SERVICE EQUIPMENT SHALL MEET THE REQUIREMENTS OF THIS SECTION. SYSTEMS, FIXTURES, AND EQUIPMENT AND COMPONENTS SHALL NOT BE MOUNTED ON OR PENETRATE THROUGH WALLS INTENDED TO BREAK AWAY UNDER FLOOD LOADS.

NOTE: SEE SECTION R322.1.6 FOR EXCEPTION

R322.1.7 PROTECTION OF WATER SUPPLY AND SANITARY SEWAGE SYSTEMS.
NEW AND REPLACEMENT WATER SUPPLY SYSTEMS SHALL BE DESIGNED TO MINIMIZE OR ELIMINATE INFILTRATION OF FLOOD WATERS INTO THE SYSTEMS IN ACCORDANCE WITH THE PLUMBING PROVISIONS OF THIS CODE. NEW AND REPLACEMENT SANITARY SEWAGE SYSTEMS SHALL BE DESIGNED TO MINIMIZE OR ELIMINATE INFILTRATION OF FLOODWATERS INTO SYSTEMS AND DISCHARGES FROM SYSTEMS INTO FLOODWATERS IN ACCORDANCE WITH THE PLUMBING PROVISIONS OF THIS CODE AND CHAPTER 3 OF THE INTERNATIONAL PRIVATE SEWAGE DISPOSAL CODE.

R322.1.8 FLOOD-RESISTANT MATERIALS.
BUILDING MATERIALS AND INSTALLATION METHODS USED FOR FLOORING AND INTERIOR AND EXTERIOR WALLS AND WALL COVERINGS BELOW THE ELEVATION REQUIRED IN SECTION R322.2 OR R322.3 SHALL BE FLOOD DAMAGE-RESISTANT MATERIALS THAT CONFORM TO THE PROVISIONS OF FEMA TB-2.

SEE SECTION R322.2 FOR FLOOD HAZARD AREAS (INCLUDING A ZONES).

R322.2.2 ENCLOSED AREA BELOW REQUIRED ELEVATION.
ENCLOSED AREAS, INCLUDING CRAWL SPACES, THAT ARE BELOW THE ELEVATION REQUIRED IN SECTION R322.2.1 SHALL:

1. BE USED SOLELY FOR PARKING OF VEHICLES, BUILDING ACCESS OR STORAGE.
2. BE PROVIDED WITH FLOOD OPENINGS THAT MEET THE FOLLOWING CRITERIA AND ARE INSTALLED IN ACCORDANCE WITH SECTION R322.2.2.1 SECTIONS 2.1 THROUGH 2.3, AS WELL AS, SECTIONS:

-R322.2.2.1 FOR INSTALLATION OF OPENINGS.
-R322.2.3 FOUNDATION DESIGN AND CONSTRUCTION.
-R322.2.4 TANKS.

REFER TO SECTION R322.3 FOR COASTAL HIGH-HAZARD AREAS (INCLUDING V ZONES AND COASTAL A ZONES, WHERE DESIGNATED), INCLUDING:

R322.3.1 LOCATION AND SITE PREPARATION
R322.3.2 ELEVATION REQUIREMENTS
R322.3.3 FOUNDATIONS
R322.3.4 CONCRETE SLABS
R322.3.5 WALLS BELOW REQUIRED ELEVATION
R322.3.6 ENCLOSED AREAS BELOW REQUIRED ELEVATION.
R322.3.7 STAIRWAYS AND RAMPS
R322.3.8 DECKS AND PORCHES
R322.3.9 CONSTRUCTION DOCUMENTS
R322.3.10 TANKS

SECTION R323 STORM SHELTERS

R323.1 GENERAL.
THIS SECTION APPLIES TO STORM SHELTERS WHERE CONSTRUCTED AS SEPARATE DETACHED BUILDINGS OR WHERE CONSTRUCTED AS SAFE ROOMS WITHIN BUILDINGS FOR THE PURPOSE OF PROVIDING REFUGE FROM STORMS THAT PRODUCE HIGH WINDS, SUCH AS TORNADOS AND HURRICANES. IN ADDITION TO OTHER APPLICABLE REQUIREMENTS IN THIS CODE, STORM SHELTERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ICC/NSSA ICC 500.

R323.1.1 SEALED DOCUMENTATION.
THE CONSTRUCTION DOCUMENTS FOR ALL STRUCTURAL COMPONENTS AND IMPACT PROTECTIVE SYSTEMS OF THE STORM SHELTER SHALL BE PREPARED AND SEALED BY A REGISTERED DESIGN PROFESSIONAL INDICATING THAT THE DESIGN MEETS THE CRITERIA OF ICC 500.

EXCEPTION: STORM SHELTERS, STRUCTURAL COMPONENTS AND IMPACT-PROTECTIVE SYSTEMS

SECTION R327 SWIMMING POOLS, SPAS AND HOT TUBS

R327.1 GENERAL.
THE DESIGN AND CONSTRUCTION OF POOLS AND SPAS SHALL COMPLY WITH THE INTERNATIONAL SWIMMING POOL AND SPA CODE.

SECTION R328 HABITABLE ATTICS

R328.1 GENERAL.
HABITABLE ATTICS SHALL COMPLY WITH SECTIONS R328.2 AND R328.3.

R328.2 MINIMUM DIMENSIONS.
A HABITABLE ATTIC SHALL HAVE A FLOOR AREA IN ACCORDANCE WITH SECTION R304 AND A CEILING HEIGHT IN ACCORDANCE WITH SECTION R305.

R328.3 STORY ABOVE GRADE PLANE.
A HABITABLE ATTIC SHALL BE CONSIDERED A STORY ABOVE GRADE PLANE.

NOTE: SEE SECTION R328.3 FOR EXCEPTION

R328.4 MEANS OF EGRESS.
THE MEANS OF EGRESS FOR HABITABLE ATTICS SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF SECTION R311.

CHAPTER 4 :: FOUNDATIONS

SECTION R401 GENERAL

R401.1 APPLICATION. THE PROVISIONS OF THIS CHAPTER SHALL CONTROL THE DESIGN AND CONSTRUCTION OF THE FOUNDATION AND FOUNDATION SPACES FOR BUILDINGS. IN ADDITION TO THE PROVISIONS OF THIS CHAPTER, THE DESIGN AND CONSTRUCTION OF FOUNDATIONS IN FLOOD HAZARD AREAS AS ESTABLISHED BY TABLE R301.2 SHALL MEET THE PROVISIONS OF SECTION R322. WOOD FOUNDATIONS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH AWC PWF.

NOTE: SEE SECTION R401.1 FOR EXCEPTION

R401.2 REQUIREMENTS.
FOUNDATION CONSTRUCTION SHALL BE CAPABLE OF ACCOMMODATING ALL LOADS IN ACCORDANCE WITH SECTION R301 AND OF TRANSMITTING THE RESULTING LOADS TO THE SUPPORTING SOIL. FILL SOILS THAT SUPPORT FOOTINGS AND FOUNDATIONS SHALL BE DESIGNED, INSTALLED AND TESTED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE.

R401.3 DRAINAGE.
SURFACE DRAINAGE SHALL BE DIVERTED TO A STORM SEWER CONVEYANCE OR OTHER APPROVED POINT OF COLLECTION THAT DOES NOT CREATE A HAZARD. LOTS SHALL BE GRADED TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS. THE GRADE SHALL FALL NOT FEWER THAN 6 INCHES (152 MM) WITHIN THE FIRST 10 FEET (3048 MM).

NOTE: SEE SECTION R401.3 FOR EXCEPTION

R401.4 SOIL TESTS.
WHERE QUANTIFIABLE DATA CREATED BY ACCEPTED SOIL SCIENCE METHODOLOGIES INDICATE EXPANSIVE SOILS, COMPRESSIBLE SOILS, SHIFTING SOILS, OR OTHER QUESTIONABLE SOIL CHARACTERISTICS ARE LIKELY TO BE PRESENT, THE BUILDING OFFICIAL SHALL DETERMINE WHETHER TO REQUIRE A SOIL TEST TO DETERMINE THE SOIL'S CHARACTERISTICS AT A PARTICULAR LOCATION. THIS TEST SHALL BE DONE BY AN APPROVED AGENCY USING AN APPROVED METHOD.

SECTION R402 MATERIALS

R402.1 WOOD FOUNDATIONS.
WOOD FOUNDATION SYSTEMS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF THIS CODE.

R402.1.1 FASTENERS.
FASTENERS USED BELOW GRADE TO ATTACH PLYWOOD TO THE EXTERIOR SIDE OF EXTERIOR BASEMENT OR CRAWLSPACE WALL STUDS, OR FASTENERS USED IN KNEE WALL CONSTRUCTION, SHALL BE OF TYPE 304 OR 316 STAINLESS STEEL. FASTENERS USED ABOVE GRADE TO ATTACH PLYWOOD AND ALL LUMBER-TO-LUMBER FASTENERS EXCEPT THOSE USED IN KNEE WALL CONSTRUCTION SHALL BE OF TYPE 304 OR 316 STAINLESS STEEL, SILICON BRONZE, COPPER, HOT-DIPPED GALVANIZED (ZINC COATED) STEEL NAILS, OR HOT-TUMBLED GALVANIZED (ZINC COATED) STEEL NAILS. ELECTROGALVANIZED STEEL NAILS AND GALVANIZED (ZINC COATED) STEEL STAPLES SHALL NOT BE PERMITTED.

R402.1.2 WOOD TREATMENT.
LUMBER AND PLYWOOD SHALL BE PRESSURE-PRESERVATIVE TREATED AND DRIED AFTER TREATMENT IN ACCORDANCE WITH AWPA U1 (COMMODITY SPECIFICATION A, SPECIAL REQUIREMENT 4.2), AND SHALL BEAR THE LABEL OF AN ACCREDITED AGENCY. WHERE LUMBER OR PLYWOOD IS CUT OR DRILLED AFTER TREATMENT, THE TREATED SURFACE SHALL BE FIELD TREATED WITH COPPER NAPHTHENATE, THE CONCENTRATION OF WHICH SHALL CONTAIN NOT LESS THAN 2 PERCENT COPPER METAL, BY REPEATED BRUSHING, DIPPING OR SOAKING UNTIL THE WOOD CANNOT ABSORB MORE PRESERVATIVE.

R402.2 CONCRETE.
CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH AS SHOWN IN TABLE R402.2. CONCRETE SUBJECT TO MODERATE OR SEVERE WEATHERING AS INDICATED IN TABLE R301.2(1) SHALL BE AIR ENTRAINED AS SPECIFIED IN TABLE R402.2. THE MAXIMUM WEIGHT OF FLY ASH, OTHER POZZOLANS, SILICA FUME, SLAG OR BLENDED CEMENTS THAT IS INCLUDED IN CONCRETE MIXTURES FOR GARAGE FLOOR SLABS AND FOR EXTERIOR PORCHES, CARPORT SLABS AND STEPS THAT WILL BE EXPOSED TO DEICING CHEMICALS SHALL NOT EXCEED THE PERCENTAGES OF THE TOTAL WEIGHT OF CEMENTITIOUS MATERIALS SPECIFIED IN SECTION 19.3.3.4 OF ACI MATERIALS USED TO PRODUCE CONCRETE AND TESTING THEREOF SHALL COMPLY WITH THE APPLICABLE STANDARDS LISTED IN CHAPTERS 19 AND 20 OF ACI 318 OR ACI 332. R402.2.1

R402.3 PRECAST CONCRETE.
PRECAST CONCRETE FOUNDATIONS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R404.5 AND SHALL BE INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF THIS CODE AND THE MANUFACTURER'S INSTRUCTIONS.

R402.4 MASONRY.
MASONRY SYSTEMS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THIS CHAPTER AND SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 1,500 PSI (10.3 MPA).

SECTION 403 FOOTINGS

R403.1 GENERAL.
ALL EXTERIOR WALLS SHALL BE SUPPORTED ON CONTINUOUS SOLID OR FULLY GROUTED MASONRY OR CONCRETE FOOTINGS, CRUSHED STONE FOOTINGS, WOOD FOUNDATIONS, OR OTHER APPROVED STRUCTURAL SYSTEMS THAT SHALL BE OF SUFFICIENT DESIGN TO ACCOMMODATE ALL LOADS ACCORDING TO SECTION R301 AND TO TRANSMIT THE RESULTING LOADS TO THE SOIL WITHIN THE LIMITATIONS AS DETERMINED FROM THE CHARACTER OF THE SOIL. FOOTINGS SHALL BE SUPPORTED ON UNDISTURBED NATURAL SOILS OR ENGINEERED FILL. CONCRETE FOOTINGS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF SECTION R403 OR IN ACCORDANCE WITH ACI 332.

R403.1.1 MINIMUM SIZE.
THE MINIMUM WIDTH, W, AND THICKNESS, T, FOR CONCRETE FOOTINGS SHALL BE IN ACCORDANCE WITH TABLES R403.1(1) THROUGH R403.1(3) AND FIGURE R403.1(1) OR R403.1.3, AS APPLICABLE, BUT NOT LESS THAN 12 INCHES (305 MM) IN WIDTH AND 6 INCHES (152) IN DEPTH. THE FOOTING WIDTH SHALL BE BASED ON THE LOAD-BEARING VALUE OF THE SOIL IN ACCORDANCE WITH TABLE R401.4.1. FOOTING PROJECTIONS, P, SHALL BE NOT LESS THAN 2 INCHES (51 MM) AND SHALL NOT EXCEED THE THICKNESS OF THE FOOTING. FOOTING THICKNESS AND PROJECTION FOR FIREPLACES SHALL BE IN ACCORDANCE WITH SECTION R1001.2. THE SIZE OF FOOTINGS SUPPORTING PIERS AND COLUMNS SHALL BE BASED ON THE TRIBUTARY LOAD AND ALLOWABLE SOIL PRESSURE IN ACCORDANCE WITH TABLE R401.4.1. FOOTINGS FOR WOOD FOUNDATIONS SHALL BE IN ACCORDANCE WITH THE DETAILS SET FORTH IN SECTION R403.2, AND FIGURES R403.1(2) AND R403.1(3). FOOTINGS FOR PRECAST FOUNDATIONS SHALL BE IN ACCORDANCE WITH THE DETAILS SET FORTH IN SECTION R403.4, TABLE R403.4, AND FIGURES R403.4(1) AND R403.4(2).

REFER TO THIS SECTIONS FOR THE FOLLOWING TOPICS:
-R403.1.2 CONTINUOUS FOOTING IN SEISMIC DESIGN CATEGORIES D_0, D_1 AND D_2.
-R403.1.3 FOOTING AND STEM WALL REINFORCING IN SEISMIC DESIGN CATEGORIES D_0, D_1, AND D_2.
-R403.1.3.4 INTERIOR BEARING AND BRACED WALL PANEL FOOTINGS IN SEISMIC DESIGN CATEGORIES D_0, D_1 AND D_2.
-R403.1.3.5 REINFORCEMENT.
-R403.1.3.6 ISOLATED CONCRETE FOOTINGS.

R403.1.4 MINIMUM DEPTH.
EXTERIOR FOOTINGS SHALL BE PLACED NOT LESS THAN 12 INCHES (305 MM) BELOW THE UNDISTURBED GROUND SURFACE. WHERE APPLICABLE, THE DEPTH OF FOOTINGS SHALL ALSO CONFORM TO SECTIONS R403.1.4.1. DECK FOOTINGS SHALL BE IN ACCORDANCE WITH SECTION R507.3.

R403.1.4.1 FROST PROTECTION.
EXCEPT WHERE OTHERWISE PROTECTED FROM FROST, FOUNDATION WALLS, PIERS AND OTHER PERMANENT SUPPORTS OF BUILDINGS AND STRUCTURES SHALL BE PROTECTED FROM FROST BY ONE OR MORE OF THE FOLLOWING METHODS:

1. EXTENDED BELOW THE FROST LINE SPECIFIED IN TABLE R301.2(1).
2. CONSTRUCTED IN ACCORDANCE WITH SECTION R403.3.
3. CONSTRUCTED IN ACCORDANCE WITH ASCE 32.
4. ERECTED ON SOLID ROCK.

FOOTINGS SHALL NOT BEAR ON FROZEN SOIL UNLESS THE FROZEN CONDITION IS PERMANENT.

NOTE: SEE SECTION R403.1.4.1 FOR EXCEPTIONS

R403.1.5 SLOPE.
THE TOP SURFACE OF FOOTINGS SHALL BE LEVEL. THE BOTTOM SURFACE OF FOOTINGS SHALL NOT HAVE A SLOPE EXCEEDING ONE UNIT VERTICAL IN 10 UNITS HORIZONTAL (10-PERCENT SLOPE). FOOTINGS SHALL BE STEPPED WHERE IT IS NECESSARY TO CHANGE THE ELEVATION OF THE TOP SURFACE OF THE FOOTINGS OR WHERE THE SLOPE OF THE BOTTOM SURFACE OF THE FOOTINGS WILL EXCEED ONE UNIT VERTICAL IN 10 UNITS HORIZONTAL (10-PERCENT SLOPE).

R403.1.6 FOUNDATION ANCHORAGE.
WOOD SILL PLATES AND WOOD WALLS SUPPORTED DIRECTLY ON CONTINUOUS FOUNDATIONS SHALL BE ANCHORED TO THE FOUNDATION IN ACCORDANCE WITH THIS SECTION.

COLD-FORMED STEEL FRAMING SHALL BE ANCHORED DIRECTLY TO THE FOUNDATION OR FASTENED TO WOOD SILL PLATES IN ACCORDANCE WITH SECTION R505.3.1 OR R603.3.1, AS APPLICABLE. WOOD SILL PLATES SUPPORTING COLD-FORMED STEEL FRAMING SHALL BE ANCHORED TO THE FOUNDATION IN ACCORDANCE WITH THIS SECTION.

WOOD SOLE PLATES AT ALL EXTERIOR WALLS ON MONOLITHIC SLABS, WOOD SOLE PLATES OF BRACED WALL PANELS AT BUILDING INTERIORS ON MONOLITHIC SLABS AND ALL WOOD SILL PLATES SHALL BE ANCHORED TO THE FOUNDATION WITH MINIMUM 1/2-INCH-DIAMETER (12.7 MM) ANCHOR BOLTS SPACED NOT GREATER THAN 6 FEET (1829 MM) ON CENTER OR APPROVED ANCHORS OR ANCHOR STRAPS SPACED AS REQUIRED TO PROVIDE EQUIVALENT ANCHORAGE TO 1/2-INCH-DIAMETER (12.7 MM) ANCHOR BOLTS. BOLTS SHALL EXTEND NOT LESS THAN 7 INCHES (178 MM) INTO CONCRETE OR GROUTED CELLS OF CONCRETE MASONRY UNITS. THE BOLTS SHALL BE LOCATED IN THE MIDDLE THIRD OF THE WIDTH OF THE PLATE. A NUT AND WASHER SHALL BE TIGHTENED ON EACH ANCHOR BOLT. THERE SHALL BE NOT FEWER THAN TWO BOLTS PER PLATE SECTION WITH ONE BOLT LOCATED NOT MORE THAN 12 INCHES (305 MM) OR LESS THAN SEVEN BOLT DIAMETERS FROM EACH END OF THE PLATE SECTION. INTERIOR BEARING WALL SOLE PLATES ON MONOLITHIC SLAB FOUNDATION THAT ARE NOT PART OF A BRACED WALL PANEL SHALL BE POSITIVELY ANCHORED WITH APPROVED FASTENERS. SILL PLATES AND SOLE PLATES SHALL BE PROTECTED AGAINST DECAY AND TERMITES WHERE REQUIRED IN SECTIONS R317 AND R318. ANCHOR BOLTS SHALL BE PERMITTED TO BE LOCATED WHILE CONCRETE IS STILL PLASTIC AND BEFORE IT HAS SET. WHERE ANCHOR BOLTS RESIST PLACEMENT OR THE CONSOLIDATION OF CONCRETE AROUND ANCHOR BOLTS IS IMPEDED, THE CONCRETE SHALL BE VIBRATED TO ENSURE FULL CONTACT BETWEEN THE ANCHOR BOLTS AND CONCRETE.

NOTE: SEE SECTION 403.1.6 FOR EXCEPTION

R403.1.6.1 FOUNDATION ANCHORAGE IN SEISMIC DESIGN CATEGORIES C, D_0, D_1 AND D_2.
IN ADDITION TO THE REQUIREMENTS OF SECTION R403.1.6, THE FOLLOWING REQUIREMENTS SHALL APPLY TO WOOD LIGHT-FRAME STRUCTURES IN SEISMIC DESIGN CATEGORIES D_0, D_1 AND D_2 AND WOOD LIGHT-FRAME TOWNHOUSES IN SEISMIC DESIGN CATEGORY C.

NOTE: SEE SECTION 403.1.6.1 FOR REQUIREMENTS

R403.1.7 FOOTINGS ON OR ADJACENT TO SLOPES.
THE PLACEMENT OF BUILDINGS AND STRUCTURES ON OR ADJACENT TO SLOPES STEEPER THAN ONE UNIT VERTICAL IN THREE UNITS HORIZONTAL (33.3-PERCENT SLOPE) SHALL CONFORM TO SECTIONS R403.1.7.1 THROUGH R403.1.7.4.

R403.1.8 FOUNDATIONS ON EXPANSIVE SOILS.
FOUNDATION AND FLOOR SLABS FOR BUILDINGS LOCATED ON EXPANSIVE SOILS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION 1808.6 OF THE INTERNATIONAL BUILDING CODE.

NOTE: SEE SECTION 403.1.8 FOR EXCEPTION AN EXPANSIVE SOILS CLASSIFICATIONS.

R403.2 FOOTINGS FOR WOOD FOUNDATIONS.
FOOTINGS FOR WOOD FOUNDATIONS SHALL BE IN ACCORDANCE WITH FIGURES R403.1(2) AND R403.1(3). GRAVEL SHALL BE WASHED AND WELL GRADED. THE MAXIMUM SIZE STONE SHALL NOT EXCEED 3/4 INCH (19.1 MM). GRAVEL SHALL BE FREE FROM ORGANIC, CLAYEY OR SILTY SOILS. SAND SHALL BE COARSE, NOT SMALLER THAN 1/16-INCH (1.6 MM) GRAINS AND SHALL BE FREE FROM ORGANIC, CLAYEY OR SILTY SOILS. CRUSHED STONE SHALL HAVE A MAXIMUM SIZE OF 1/2 INCH (12.7 MM).

R403.3 FROST-PROTECTED SHALLOW FOUNDATIONS.
FOR BUILDINGS WHERE THE MONTHLY MEAN TEMPERATURE OF THE BUILDING IS MAINTAINED AT NOT LESS THAN 64°F (18°C), FOOTINGS ARE NOT REQUIRED TO EXTEND BELOW THE FROST LINE WHERE PROTECTED FROM FROST BY INSULATION IN ACCORDANCE WITH FIGURE R403.3(1) AND TABLE R403.3(1). FOUNDATIONS PROTECTED FROM FROST IN ACCORDANCE WITH FIGURE R403.3(1) AND TABLE R403.3(1) SHALL NOT BE USED FOR UNHEATED SPACES SUCH AS PORCHES, UTILITY ROOMS, GARAGES AND CARPORTS, AND SHALL NOT BE ATTACHED TO BASEMENTS OR CRAWL SPACES THAT ARE NOT MAINTAINED AT A MINIMUM MONTHLY MEAN TEMPERATURE OF 64°F (18°C).

REFER TO SECTION 403 FOR THE FOLLOWING AREAS:

-R403.3.1 FOUNDATIONS ADJOINING FROST-PROTECTED SHALLOW FOUNDATIONS.
-R403.3.2 PROTECTION OF HORIZONTAL INSULATION BELOW GROUND.
-R403.3.3 DRAINAGE.
-R403.3.4 TERMITE PROTECTION.

R403.4 FOOTINGS FOR PRECAST CONCRETE FOUNDATIONS.
FOOTINGS FOR PRECAST CONCRETE FOUNDATIONS SHALL COMPLY WITH SECTION R403.4.

SECTION 404
FOUNDATION AND RETAINING WALLS

R404.1 CONCRETE AND MASONRY FOUNDATION WALLS.
REFER TO SECTION 404.1 FOR FURTHER SPECIFICATIONS, NOTES AND DESIGN CRITERIA FOR CONCRETE AND MASONRY FOUNDATION WALLS.

R404.2 WOOD FOUNDATION WALLS.
REFER TO SECTION 404.2 FOR FURTHER SPECIFICATIONS, NOTES AND DESIGN CRITERIA FOR WOOD FOUNDATION WALLS.

R404.3 WOOD SILL PLATES.
WOOD SILL PLATES SHALL BE NOT LESS THAN 2-INCH BY 4-INCH (51 MM BY 102 MM) NOMINAL LUMBER. SILL PLATE ANCHORAGE SHALL BE IN ACCORDANCE WITH SECTIONS R403.1.6 AND R602.11.

R404.4 RETAINING WALLS.
RETAINING WALLS THAT ARE NOT LATERALLY SUPPORTED AT THE TOP AND THAT RETAIN IN EXCESS OF 48 INCHES (1219 MM) OF UNBALANCED FILL, OR RETAINING WALLS EXCEEDING 24 INCHES (610 MM) IN HEIGHT THAT RESIST LATERAL LOADS IN ADDITION TO SOIL, SHALL BE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE TO ENSURE STABILITY AGAINST OVERTURNING, SLIDING, EXCESSIVE FOUNDATION PRESSURE AND WATER UPLIFT. RETAINING WALLS SHALL BE DESIGNED FOR A SAFETY FACTOR OF 1.5 AGAINST LATERAL SLIDING AND OVERTURNING. THIS SECTION SHALL NOT APPLY TO FOUNDATION WALLS SUPPORTING BUILDINGS.

R404.5 PRECAST CONCRETE FOUNDATION WALLS.
REFER TO SECTION 404.5 FOR FURTHER SPECIFICATIONS, NOTES AND DESIGN CRITERIA FOR PRECAST CONCRETE FOUNDATION WALLS.

SECTION R405 FOUNDATION DRAINAGE

R405.1 CONCRETE OR MASONRY FOUNDATIONS.
DRAINS SHALL BE PROVIDED AROUND CONCRETE OR MASONRY FOUNDATIONS THAT RETAIN EARTH AND ENCLOSE HABITABLE OR USABLE SPACES LOCATED BELOW GRADE. DRAINAGE TILES, GRAVEL OR CRUSHED STONE DRAINS, PERFORATED PIPE OR OTHER APPROVED SYSTEMS OR MATERIALS SHALL BE INSTALLED AT OR BELOW THE TOP OF THE FOOTING OR BELOW THE BOTTOM OF THE SLAB AND SHALL DISCHARGE BY GRAVITY OR MECHANICAL MEANS INTO AN APPROVED DRAINAGE SYSTEM. GRAVEL OR CRUSHED STONE DRAINS SHALL EXTEND NOT LESS THAN 1 FOOT (305 MM) BEYOND THE OUTSIDE EDGE OF THE FOOTING AND 6 INCHES (152 MM) ABOVE THE TOP OF THE FOOTING AND BE COVERED WITH AN APPROVED FILTER MEMBRANE MATERIAL. THE TOP OF OPEN JOINTS OF DRAIN TILES SHALL BE PROTECTED WITH STRIPS OF BUILDING PAPER. EXCEPT WHERE OTHERWISE RECOMMENDED BY THE DRAIN MANUFACTURER, PERFORATED DRAINS SHALL BE SURROUNDED WITH AN APPROVED FILTER MEMBRANE OR THE FILTER MEMBRANE SHALL COVER THE WASHED GRAVEL OR CRUSHED ROCK COVERING THE DRAIN. DRAINAGE TILES OR PERFORATED PIPE SHALL BE PLACED ON NOT LESS THAN 2 INCHES (51 MM) OF WASHED GRAVEL OR CRUSHED ROCK NOT LESS THAN ONE SIEVE SIZE LARGER THAN THE TILE JOINT OPENING OR PERFORATION AND COVERED WITH NOT LESS THAN 6 INCHES (152 MM) OF THE SAME MATERIAL.

REFER TO SECTION 405 FOR FURTHER SPECIFICATIONS, NOTES AND DESIGN CRITERIA FOR PRECAST CONCRETE FOUNDATION WALLS.

SECTION R406
FOUNDATION WATER-PROOFING AND DAMP-PROOFING

REFER TO SECTION 406 FOR FURTHER SPECIFICATIONS, NOTES AND DESIGN CRITERIA FOR WATER-PROOFING AND DAMP-PROOFING FOUNDATIONS INCLUDING THE FOLLOWING AREAS:

-R406.1 CONCRETE AND MASONRY FOUNDATION DAMPPROOFING.
-R406.2 CONCRETE AND MASONRY FOUNDATION WATERPROOFING.
-R406.3 DAMPPROOFING FOR WOOD FOUNDATIONS.
-R406.4 PRECAST CONCRETE FOUNDATION SYSTEM DAMPPROOFING.

SECTION R407 COLUMNS

REFER TO SECTION 407 FOR FURTHER SPECIFICATIONS, NOTES AND DESIGN CRITERIA FOR COLUMNS INCLUDING THE FOLLOWING AREAS:

-R407.1 WOOD COLUMN PROTECTION.
-R407.2 STEEL COLUMN PROTECTION.
-R407.3 STRUCTURAL REQUIREMENTS.

SECTION R408 UNDER-FLOOR SPACE

REFER TO SECTION 408 FOR FURTHER SPECIFICATIONS, NOTES AND DESIGN CRITERIA FOR UNDER-FLOOR SPACE INCLUDING THE FOLLOWING AREA:

-R408.1 MOISTURE CONTROL.
-R408.2 OPENINGS FOR UNDER-FLOOR VENTILATION.
-R408.3 UNVENTED CRAWL SPACE.
-R408.4 ACCESS.
-R408.5 REMOVAL OF DEBRIS.
-R408.6 FINISHED GRADE.
-R408.7 FLOOD RESISTANCE.
-R408.8 UNDER-FLOOR VAPOR RETARDER.

CHAPTER 5 :: FLOORS

SECTION R501 GENERAL

R501.1 APPLICATION.
THE PROVISIONS OF THIS CHAPTER SHALL CONTROL THE DESIGN AND CONSTRUCTION OF THE FLOORS FOR BUILDINGS, INCLUDING THE FLOORS OF ATTIC SPACES USED TO HOUSE MECHANICAL OR PLUMBING FIXTURES AND EQUIPMENT.

R501.2 REQUIREMENTS.
FLOOR CONSTRUCTION SHALL BE CAPABLE OF ACCOMMODATING ALL LOADS IN ACCORDANCE WITH SECTION R301 AND OF TRANSMITTING THE RESULTING LOADS TO THE SUPPORTING STRUCTURAL ELEMENTS.

SECTION R502 WOOD FLOOR FRAMING

R502.1 GENERAL.
WOOD AND WOOD-BASED PRODUCTS USED FOR LOAD-SUPPORTING PURPOSES SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THIS SECTION. SEE SECTIONS R502.1.1 THROUGH R502.1.7 FOR FURTHER SPECIFICATIONS.

R502.2 DESIGN AND CONSTRUCTION.
FLOORS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF THIS CHAPTER, FIGURE R502.2 AND SECTIONS R317 AND R318 OR IN ACCORDANCE WITH ANSI AWC NDS. SEE SECTIONS R502.2.1 THROUGH R502.2.2 FOR FURTHER SPECIFICATIONS.

R502.3 ALLOWABLE JOIST SPANS.
SPANS FOR FLOOR JOISTS SHALL BE IN ACCORDANCE WITH TABLES R502.3.1(1) AND R502.3.1(2). FOR OTHER GRADES AND SPECIES AND FOR OTHER LOADING CONDITIONS, REFER TO THE AWC STJR. SEE SECTIONS R502.3.1 THROUGH R502.3.3 FOR FURTHER SPECIFICATIONS.

R502.4 JOISTS UNDER BEARING PARTITIONS.
JOISTS UNDER PARALLEL BEARING PARTITIONS SHALL BE OF ADEQUATE SIZE TO SUPPORT THE LOAD. DOUBLE JOISTS, SIZED TO ADEQUATELY SUPPORT THE LOAD, THAT ARE SEPARATED TO PERMIT THE INSTALLATION OF PIPING OR VENTS SHALL BE FULL DEPTH SOLID BLOCKED WITH LUMBER NOT LESS THAN 2 INCHES (51 MM) IN NOMINAL THICKNESS SPACED NOT MORE THAN 4 FEET (1219 MM) ON CENTER. BEARING PARTITIONS PERPENDICULAR TO JOISTS SHALL NOT BE OFFSET FROM SUPPORTING GIRDERS, WALLS OR PARTITIONS MORE THAN THE JOIST DEPTH UNLESS SUCH JOISTS ARE OF SUFFICIENT SIZE TO CARRY THE ADDITIONAL LOAD.

R502.5 ALLOWABLE GIRDER AND HEADER SPANS.
THE ALLOWABLE SPANS OF GIRDERS AND HEADERS FABRICATED OF DIMENSION LUMBER SHALL NOT EXCEED THE VALUES SET FORTH IN TABLES R602.7(1), R602.7(2) AND R602.7(3).

R502.6 BEARING.
THE ENDS OF EACH JOIST, BEAM OR GIRDER SHALL HAVE NOT LESS THAN 1-1/2 INCHES (38 MM) OF BEARING ON WOOD OR METAL, NOT LESS THAN 3 INCHES (76 MM) OF BEARING ON MASONRY OR CONCRETE OR BE SUPPORTED BY APPROVED JOIST HANGERS. ALTERNATIVELY, THE ENDS OF JOISTS SHALL BE SUPPORTED ON A 1-INCH BY 4-INCH (25 MM BY 102 MM) RIBBON STRIP AND SHALL BE NAILED TO THE ADJACENT STUD. THE BEARING ON MASONRY OR CONCRETE SHALL BE DIRECT, OR A SILL PLATE OF 2-INCH MINIMUM (51 MM) NOMINAL THICKNESS SHALL BE PROVIDED UNDER THE JOIST, BEAM OR GIRDER. THE SILL PLATE SHALL PROVIDE A MINIMUM NOMINAL BEARING AREA OF 48 SQUARE INCHES (30 865 MM2). SEE SECTIONS R502.6.1 THROUGH R502.6.2 FOR FURTHER SPECIFICATIONS.

REFER TO THE IRC FOR FURTHER INFORMATION ON THE FOLLOWING AREAS:

-R502.7 LATERAL RESTRAINT AT SUPPORTS.
-R502.8 CUTTING, DRILLING AND NOTCHING.
-R502.9 FASTENING.
-R502.10 FRAMING OF OPENINGS.
-R502.11 WOOD TRUSSES.
-R502.12 DRAFTSTOPPING REQUIRED.
-R502.13 FIREBLOCKING REQUIRED.

REFER TO THE IRC FOR THE FOLLOWING SECTIONS.

SECTION 503 FLOOR SHEATHING
SECTION 504 PRESSURE PRESERVATIVE TREATED WOOD FLOORS
SECTION 505 COLD-FORMED STEEL FLOOR FRAMING

SECTION R506 CONCRETE FLOORS (ON GROUND)

R506.1 GENERAL.
CONCRETE SLAB-ON-GROUND FLOORS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF THIS SECTION OR ACI 332. FLOORS SHALL BE A MINIMUM 3-1/2 INCHES (89 MM) THICK (FOR EXPANSIVE SOILS, SEE SECTION R403.1.8). THE SPECIFIED COMPRESSIVE STRENGTH OF CONCRETE SHALL BE AS SET FORTH IN SECTION R402.2.

R506.2 SITE PREPARATION.
THE AREA WITHIN THE FOUNDATION WALLS SHALL HAVE ALL VEGETATION, TOP SOIL AND FOREIGN MATERIAL REMOVED.

R506.2.1 FILL.
FILL MATERIAL SHALL BE FREE OF VEGETATION AND FOREIGN MATERIAL. THE FILL SHALL BE COMPACTED TO ENSURE UNIFORM SUPPORT OF THE SLAB, AND EXCEPT WHERE APPROVED, THE FILL DEPTHS SHALL NOT EXCEED 24 INCHES (610 MM) FOR CLEAN SAND OR GRAVEL AND 8 INCHES (203 MM) FOR EARTH.

NOTICE: DUTY OF COOPERATION

[redacted] assumes no liability for any HOME constructed from this plan. Release of these plans contemplates further cooperation among the owner, his contractor and the designer. Design and construction are complex. Although the designer and his consultants performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the designer. Failure to notify the designer compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the designer shall relieve the designer from responsibility for all consequences. Changes made from the plans without the consent of the designer are unauthorized and shall relieve the designer of responsibility for all consequences arising out of such changes. Only qualified Designer, Architect, Contractor, or Structural Engineer should attempt to modify any portion of this design.
Written dimensions on these drawings shall have precedence over scaled dimensions; contractors shall verify and be responsible for all dimensions and conditions on the job. This office must be notified of any variations from the dimensions and conditions shown by these drawings. Shop details must be submitted to this office for approval before proceeding with fabrication or construction.

[redacted]

CAD DESIGNED

REVISIONS	BY
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
	24x36

[redacted]

[redacted]

DATE [redacted]
SCALE 1/4" = 1'-0"
BUILDER
JOB [redacted]
DRAWN BY

R506.2.2 BASE.
A 4-INCH-THICK (102 MM) BASE COURSE CONSISTING OF CLEAN GRADED SAND, GRAVEL, CRUSHED STONE, CRUSHED CONCRETE OR CRUSHED BLAST-FURNACE SLAG PASSING A 2-INCH (51 MM) SIEVE SHALL BE PLACED ON THE PREPARED SUBGRADE WHERE THE SLAB IS BELOW GRADE.

NOTE: SEE SECTION 506.2.2 FOR EXCEPTION

R506.2.3 VAPOR RETARDER.
A 10 MIL (0.010 INCH; 0.254 mm) VAPOR RETARDER CONFORMING TO ASTM E1745 CLASS A REQUIREMENTS WITH JOINTS LAPPED NOT LESS THAN 6 INCHES (152 MM) SHALL BE PLACED BETWEEN THE CONCRETE FLOOR SLAB AND THE BASE COURSE OR THE PREPARED SUBGRADE WHERE A BASE COURSE DOES NOT EXIST.

NOTE: SEE SECTION R506.2.3 FOR EXCEPTIONS

R506.2.4 REINFORCEMENT SUPPORT.
WHERE PROVIDED IN SLABS ON GROUND, REINFORCEMENT SHALL BE SUPPORTED TO REMAIN IN PLACE FROM THE CENTER TO UPPER ONE THIRD OF THE SLAB FOR THE DURATION OF THE CONCRETE PLACEMENT.

SECTION R507 DECKS

R507.1 DECKS.
WOOD-FRAMED DECKS SHALL BE IN ACCORDANCE WITH THIS SECTION. DECKS SHALL BE DESIGNED FOR THE LIVE LOAD REQUIRED IN SECTION R301.5 OR THE GROUND SNOW LOAD INDICATED IN TABLE R301.2, WHICHEVER IS GREATER. FOR DECKS USING MATERIALS AND CONDITIONS NOT PRESCRIBED IN THIS SECTION, REFER TO SECTION R301.

R507.2 MATERIALS.
MATERIALS USED FOR THE CONSTRUCTION OF DECKS SHALL COMPLY WITH THIS SECTION.

R507.2.1 WOOD MATERIALS.
WOOD MATERIALS SHALL BE NO. 2 GRADE OR BETTER LUMBER, PRESERVATIVE TREATED IN ACCORDANCE WITH SECTION R317, OR APPROVED, NATURALLY DURABLE LUMBER, AND TERMITE PROTECTED WHERE REQUIRED IN ACCORDANCE WITH SECTION R318. WHERE DESIGN IN ACCORDANCE WITH SECTION R301 IS PROVIDED, WOOD STRUCTURAL MEMBERS SHALL BE DESIGNED USING THE WET SERVICE FACTOR DEFINED IN AWC NDS. CUTS, NOTCHES, AND DRILLED HOLES OF PRESERVATIVE TREATED WOOD MEMBERS SHALL BE TREATED IN ACCORDANCE WITH SECTION R317.1.1. ALL PRESERVATIVE TREATED WOOD PRODUCTS IN CONTACT WITH THE GROUND SHALL BE LABELED FOR SUCH USAGE.

R507.2.1.1 ENGINEERED WOOD PRODUCTS.
ENGINEERED WOOD PRODUCTS SHALL BE IN ACCORDANCE WITH SECTION R502.

R507.2.2 PLASTIC COMPOSITE DECK BOARDS, STAIR TREADS, GUARDS, OR HANDRAILS.
PLASTIC COMPOSITE EXTERIOR DECK BOARDS, STAIR TREADS, GUARDS, AND HANDRAILS SHALL COMPLY WITH THE REQUIREMENTS OF ASTM D7032 AND SECTION R507.2.2. SEE SECTIONS R507.2.2.1 THROUGH R507.2.2.5 AND SECTIONS R507.2.3 THROUGH R507.2.5 FOR FURTHER SPECIFICATIONS.

R507.2.3 FASTENERS AND CONNECTORS.
METAL FASTENERS AND CONNECTORS USED FOR ALL DECKS SHALL BE IN ACCORDANCE WITH SECTION R317.3 AND TABLE R507.2.3.

R507.3 FOOTINGS.
DECKS SHALL BE SUPPORTED ON CONCRETE FOOTINGS OR OTHER APPROVED STRUCTURAL SYSTEMS DESIGNED TO ACCOMMODATE ALL LOADS IN ACCORDANCE WITH SECTION R301. DECK FOOTINGS SHALL BE SIZED TO CARRY THE IMPOSED LOADS FROM THE DECK STRUCTURE TO THE GROUND AS SHOWN IN FIGURE R507.3.

NOTE: SEE SECTION R507.3 FOR EXCEPTION

R507.4 DECK POSTS.
FOR SINGLE LEVEL DECKS, WOOD POST SIZE SHALL BE IN ACCORDANCE WITH TABLE R507.4.

R507.4.1 DECK POST TO FOOTING CONNECTION.
WHERE POSTS BEAR ON CONCRETE FOOTINGS IN ACCORDANCE WITH SECTION R403 AND FIGURE R507.4.1, LATERAL RESTRAINT SHALL BE PROVIDED BY MANUFACTURED CONNECTORS OR A MINIMUM POST EMBEDMENT OF 12 INCHES (305 MM) IN SURROUNDING SOILS OR CONCRETE PIERS. OTHER FOOTING SYSTEMS SHALL BE PERMITTED.

NOTE: SEE SECTION R507.4.1 FOR EXCEPTIONS

R507.5 DECK BEAMS.
MAXIMUM ALLOWABLE SPANS FOR WOOD DECK BEAMS, AS SHOWN IN FIGURE R507.5, SHALL BE IN ACCORDANCE WITH TABLES R507.5(1) THROUGH R507.5(4). BEAM PLIES SHALL BE FASTENED TOGETHER WITH TWO ROWS OF 10d (3-INCH X 0.128-INCH) NAILS MINIMUM AT 16 INCHES (406 MM) ON CENTER ALONG EACH EDGE. BEAMS SHALL BE PERMITTED TO CANTILEVER AT EACH END UP TO ONE-FOURTH OF THE ACTUAL BEAM SPAN. DECK BEAMS OF OTHER MATERIALS SHALL BE PERMITTED WHERE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICES.

[redacted]

R507.7 DECKING.
MAXIMUM ALLOWABLE SPACING FOR JOISTS SUPPORTING WOOD DECKING, EXCLUDING STAIRWAYS, SHALL BE IN ACCORDANCE WITH TABLE R507.7. WOOD DECKING SHALL BE ATTACHED TO EACH SUPPORTING MEMBER WITH NOT LESS THAN TWO 8d THREADED NAILS OR TWO NO. 8 WOOD SCREWS. MAXIMUM ALLOWABLE SPACING FOR JOISTS SUPPORTING PLASTIC COMPOSITE DECKING SHALL BE IN ACCORDANCE WITH SECTION R507.2. OTHER APPROVED DECKING OR FASTENER SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION REQUIREMENTS.

R507.9 VERTICAL AND LATERAL SUPPORTS.
WHERE SUPPORTED BY ATTACHMENT TO AN EXTERIOR WALL, DECKS SHALL BE POSITIVELY ANCHORED TO THE PRIMARY STRUCTURE AND DESIGNED FOR BOTH VERTICAL AND LATERAL LOADS. SUCH ATTACHMENT SHALL NOT BE ACCOMPLISHED BY THE USE OF TOENAILS OR NAILS SUBJECT TO WITHDRAWAL. FOR DECKS WITH CANTILEVERED FRAMING MEMBERS, CONNECTIONS TO EXTERIOR WALLS OR OTHER FRAMING MEMBERS SHALL BE DESIGNED AND CONSTRUCTED TO RESIST UPLIFT RESULTING FROM THE FULL LIVE LOAD SPECIFIED IN TABLE R301.5 ACTING ON THE CANTILEVERED PORTION OF THE DECK. WHERE POSITIVE CONNECTION TO THE PRIMARY BUILDING STRUCTURE CANNOT BE VERIFIED DURING INSPECTION, DECKS SHALL BE SELF-SUPPORTING.

CHAPTER 6 :: WALL CONSTRUCTION

SECTION R601 GENERAL

R601.1 APPLICATION.
THE PROVISIONS OF THIS CHAPTER SHALL CONTROL THE DESIGN AND CONSTRUCTION OF WALLS AND PARTITIONS FOR BUILDINGS.

R601.2 REQUIREMENTS.
WALL CONSTRUCTION SHALL BE CAPABLE OF ACCOMMODATING ALL LOADS IMPOSED IN ACCORDANCE WITH SECTION R301 AND OF TRANSMITTING THE RESULTING LOADS TO THE SUPPORTING STRUCTURAL ELEMENTS.

SECTION R602 WOOD WALL FRAMING

R602.1 GENERAL.
WOOD AND WOOD-BASED PRODUCTS USED FOR LOAD SUPPORTING PURPOSES SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THIS SECTION. SEE SECTIONS 602.1.1 THROUGH 602.1.1 FOR FURTHER SPECIFICATIONS.

R602.2 GRADE.
STUDS SHALL BE A MINIMUM NO. 3, STANDARD OR STUD GRADE LUMBER.

NOTE: SEE SECTION 602.2 FOR EXCEPTION

R602.3 DESIGN AND CONSTRUCTION.
EXTERIOR WALLS OF WOOD-FRAME CONSTRUCTION SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF THIS CHAPTER AND FIGURES R602.3(1) AND R602.3(2), OR IN ACCORDANCE WITH AWC NDS. COMPONENTS OF EXTERIOR WALLS SHALL BE FASTENED IN ACCORDANCE WITH TABLES R602.3(1) THROUGH R602.3(4). WALL SHEATHING SHALL BE FASTENED DIRECTLY TO FRAMING MEMBERS AND, WHERE PLACED ON THE EXTERIOR SIDE OF AN EXTERIOR WALL, SHALL BE CAPABLE OF RESISTING THE WIND PRESSURES LISTED IN TABLE R301.2(2) ADJUSTED FOR HEIGHT AND EXPOSURE USING TABLE R301.2(3) AND SHALL CONFORM TO THE REQUIREMENTS OF TABLE R602.3(5). WALL SHEATHING USED ONLY FOR EXTERIOR WALL COVERING PURPOSES SHALL COMPLY WITH SECTION R703. STUDS SHALL BE CONTINUOUS FROM SUPPORT AT THE SOLE PLATE TO A SUPPORT AT THE TOP PLATE TO RESIST LOADS PERPENDICULAR TO THE WALL. THE SUPPORT SHALL BE FOUNDATION OR FLOOR, CEILING OR ROOF DIAPHRAGM OR SHALL BE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE.

NOTE: SEE SECTION 602.3 FOR EXCEPTION

SEE SECTIONS 602.3.1 THROUGH 602.3.5 FOR FURTHER SPECIFICATIONS.

REFER TO THE IRC FOR FURTHER INFORMATION ON THE FOLLOWING AREAS:

R602.4 INTERIOR LOAD-BEARING WALLS.
R602.5 INTERIOR NONBEARING WALLS.
R602.6 DRILLING AND NOTCHING OF STUDS.
R602.7 HEADERS.
R602.8 FIREBLOCKING REQUIRED.
R602.9 CRIPPLE WALLS.

R602.10 WALL BRACING.
BUILDINGS SHALL BE BRACED IN ACCORDANCE WITH THIS SECTION OR, WHEN APPLICABLE, SECTION R602.12. WHERE A BUILDING, OR PORTION THEREOF, DOES NOT COMPLY WITH ONE OR MORE OF THE BRACING REQUIREMENTS IN THIS SECTION, THOSE PORTIONS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH SECTION R301.1.

REFER TO SECTIONS 602.10.1 THROUGH 602.10.11 FOR BRACED WALL PANELS, DESIGN AND CRITERIA.

REFER TO THE IRC FOR THE FOLLOWING SECTIONS:

SECTION R603 COLD-FORMED STEEL WALL FRAMING
SECTION R604 WOOD STRUCTURAL PANELS
SECTION R605 PARTICLEBOARD
SECTION R606 GENERAL MASONRY CONSTRUCTION
SECTION R607 GLASS UNIT MASONRY
SECTION R608 EXTERIOR CONC. WALL CONSTRUCTION
SECTION R609 (SEE BELOW)
SECTION R610 STRUCTURAL INSULATED PANEL WALL CONSTRUCTION

SECTION R609 EXTERIOR WINDOWS AND DOORS.

R609.1 GENERAL.
THIS SECTION PRESCRIBES PERFORMANCE AND CONSTRUCTION REQUIREMENTS FOR EXTERIOR WINDOWS AND DOORS INSTALLED IN WALLS. WINDOWS AND DOORS SHALL BE INSTALLED IN ACCORDANCE WITH THE FENESTRATION MANUFACTURER'S WRITTEN INSTRUCTIONS. WINDOW AND DOOR OPENINGS SHALL BE FLASHED IN ACCORDANCE WITH SECTION R703.4. WRITTEN INSTALLATION INSTRUCTIONS SHALL BE PROVIDED BY THE FENESTRATION MANUFACTURER FOR EACH WINDOW OR DOOR.

R609.2 PERFORMANCE. EXTERIOR WINDOWS AND DOORS SHALL BE CAPABLE OF RESISTING THE DESIGN WIND LOADS SPECIFIED IN TABLE R301.2(2) ADJUSTED FOR HEIGHT AND EXPOSURE IN ACCORDANCE WITH TABLE R301.2(3) OR DETERMINED IN ACCORDANCE WITH ASCE 7 USING THE ALLOWABLE STRESS DESIGN LOAD COMBINATIONS OF ASCE 7. FOR EXTERIOR WINDOWS AND DOORS TESTED IN ACCORDANCE WITH SECTIONS R609.3 AND R609.5, REQUIRED DESIGN WIND PRESSURES DETERMINED FROM ASCE 7 USING THE ULTIMATE STRENGTH DESIGN (USD) ARE PERMITTED TO BE MULTIPLIED BY 0.6. DESIGN WIND LOADS FOR EXTERIOR GLAZING NOT PART OF A LABELED ASSEMBLY SHALL BE PERMITTED TO BE DETERMINED IN ACCORDANCE WITH CHAPTER 24 OF THE IBC. DESIGN WIND LOADS FOR EXTERIOR GLAZING NOT PART OF A LABELED ASSEMBLY SHALL BE PERMITTED TO BE DETERMINED IN ACCORDANCE WITH CHAPTER 24 OF THE INTERNATIONAL BUILDING CODE.

R609.4 GARAGE DOORS.
GARAGE DOORS SHALL BE TESTED IN ACCORDANCE WITH EITHER ASTM E330 OR ANSI/DASMA 108, AND SHALL MEET THE ACCEPTANCE CRITERIA OF ANSI/DASMA 108.

CHAPTER 7 :: WALL COVERING

R702.1 GENERAL.
INTERIOR COVERINGS OR WALL FINISHES SHALL BE INSTALLED IN ACCORDANCE WITH THIS CHAPTER AND TABLE R702.1(1), TABLE R702.1(2), TABLE R702.1(3) AND TABLE R702.3.5. INTERIOR MASONRY VENEER SHALL COMPLY WITH THE REQUIREMENTS OF SECTION R703.7.1 FOR SUPPORT AND SECTION R703.7.4 FOR ANCHORAGE, EXCEPT AN AIRSPACE IS NOT REQUIRED. INTERIOR FINISHES AND MATERIALS SHALL CONFORM TO THE FLAME SPREAD AND SMOKE-DEVELOPMENT REQUIREMENTS OF SECTION R302.9.
SEE SECTIONS 702.2 THROUGH 702.7 FOR FURTHER SPECIFICATIONS.

SECTION R703 EXTERIOR COVERING

R703.1 GENERAL.
EXTERIOR WALLS SHALL PROVIDE THE BUILDING WITH A WEATHER-RESISTANT EXTERIOR WALL ENVELOPE. THE EXTERIOR WALL ENVELOPE SHALL INCLUDE FLASHING AS DESCRIBED IN SECTION R703.4.

R703.2 WATER-RESISTIVE BARRIER.
NOT FEWER THAN ONE LAYER OF WATER-RESISTIVE BARRIER SHALL BE APPLIED OVER STUDS OR SHEATHING OF ALL EXTERIOR WALLS WITH FLASHING AS INDICATED IN SECTION R703.4, IN SUCH A MANNER AS TO PROVIDE A CONTINUOUS WATER-RESISTIVE BARRIER BEHIND THE EXTERIOR WALL VENEER. THE WATER-RESISTIVE BARRIER MATERIAL SHALL BE CONTINUOUS TO THE TOP OF WALLS AND TERMINATED AT PENETRATIONS AND BUILDING APPENDAGES IN A MANNER TO MEET THE REQUIREMENTS OF THE EXTERIOR WALL ENVELOPE AS DESCRIBED IN SECTION R703.1. WATER-RESISTIVE BARRIER MATERIALS SHALL COMPLY WITH ONE OF THE FOLLOWING:

1. NO. 15 FELT COMPLYING WITH ASTM D226, TYPE 1.
2. ASTM E2556, TYPE 1 OR 2.
3. ASTM E331 IN ACCORDANCE WITH SECTION R703.1.1.
4. OTHER APPROVED MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

NO. 15 ASPHALT FELT AND WATER-RESISTIVE BARRIERS COMPLYING WITH ASTM E2556 SHALL BE APPLIED HORIZONTALLY, WITH THE UPPER LAYER LAPPED OVER THE LOWER LAYER NOT LESS THAN 2 INCHES (51 MM), AND WHERE JOINTS OCCUR, SHALL BE LAPPED NOT LESS THAN 6 INCHES (152 MM).

R703.3.3 FASTENERS.
EXTERIOR WALL COVERINGS AND ROOF OVERHANG SOFFITS SHALL BE SECURELY FASTENED WITH ALUMINUM, GALVANIZED, STAINLESS STEEL OR RUST-PREVENTATIVE COATED NAILS OR STAPLES IN ACCORDANCE WITH TABLE R703.3(1) OR WITH OTHER APPROVED CORROSION-RESISTANT FASTENERS IN ACCORDANCE WITH THE WALL COVERING MANUFACTURER'S INSTALLATION INSTRUCTIONS. NAILS AND STAPLES SHALL COMPLY WITH ASTM F1667. NAILS SHALL BE T-HEAD, MODIFIED ROUND HEAD, OR ROUND HEAD WITH SMOOTH OR DEFORMED SHANKS. STAPLES SHALL HAVE A MINIMUM CROWN WIDTH OF 7/16 INCH (11.1 MM) OUTSIDE DIAMETER AND BE MANUFACTURED OF MINIMUM 16-GAGE WIRE. WHERE FIBERBOARD, GYPSUM, OR FOAM PLASTIC SHEATHING BACKING IS USED, NAILS OR STAPLES SHALL BE DRIVEN INTO THE STUDS. WHERE WOOD OR WOOD STRUCTURAL PANEL SHEATHING IS USED, FASTENERS SHALL BE DRIVEN INTO STUDS UNLESS OTHERWISE PERMITTED TO BE DRIVEN INTO SHEATHING IN ACCORDANCE WITH EITHER THE SIDING MANUFACTURER'S INSTALLATION INSTRUCTIONS OR TABLE R703.3.2.

R703.4 FLASHING.
APPROVED CORROSION-RESISTANT FLASHING SHALL BE APPLIED SHINGLE-FASHION IN A MANNER TO PREVENT ENTRY OF WATER INTO THE WALL CAVITY OR PENETRATION OF WATER TO THE BUILDING STRUCTURAL FRAMING COMPONENTS. SELF-ADHERED MEMBRANES USED AS FLASHING SHALL COMPLY WITH AAMA 711. FLUID-APPLIED MEMBRANES USED AS FLASHING IN EXTERIOR WALLS SHALL COMPLY WITH AAMA 714. THE FLASHING SHALL EXTEND TO THE SURFACE OF THE EXTERIOR WALL FINISH. APPROVED CORROSION-RESISTANT FLASHING SHALL BE INSTALLED AT THE FOLLOWING LOCATIONS:

1. EXTERIOR WINDOW AND DOOR OPENINGS. FLASHING AT EXTERIOR WINDOW AND DOOR OPENINGS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION R703.4.1.
2. AT THE INTERSECTION OF CHIMNEYS OR OTHER MASONRY CONSTRUCTION WITH FRAME OR STUCCO WALLS, WITH PROJECTING LIPS ON BOTH SIDES UNDER STUCCO COPINGS.
3. UNDER AND AT THE ENDS OF MASONRY, WOOD OR METAL COPINGS AND SILLS.
4. CONTINUOUSLY ABOVE ALL PROJECTING WOOD TRIM.
5. WHERE EXTERIOR PORCHES, DECKS OR STAIRS ATTACH TO A WALL OR FLOOR ASSEMBLY OF WOOD-FRAME CONSTRUCTION.
6. AT WALL AND ROOF INTERSECTIONS.
7. AT BUILT-IN GUTTERS.

-R703.5 WOOD, HARDBOARD AND WOOD STRUCTURAL PANEL SIDING.
-R703.6 WOOD SHAKES AND SHINGLES.
-R703.7 EXTERIOR PLASTER (STUCCO).
-R703.8 ANCHORED STONE AND MASONRY VENEER, GENERAL.
-R703.9 EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)/EIFS WITH DRAINAGE.
-R703.10 FIBER CEMENT SIDING.
-R703.11 VINYL SIDING.
-R703.12 ADHERED MASONRY VENEER INSTALLATION.
-R703.13 INSULATED VINYL SIDING.
-R703.14 POLYPROPYLENE SIDING.
-R703.15 CLADDING ATTACHMENT OVER FOAM SHEATHING TO WOOD FRAMING.
-R703.16 CLADDING ATTACHMENT OVER FOAM SHEATHING TO COLD-FORMED STEEL FRAMING.
-R703.17 CLADDING ATTACHMENT OVER FOAM SHEATHING TO MASONRY OR CONCRETE WALL CONSTRUCTION.

CHAPTER 8 :: ROOF-CEILING CONSTRUCTION

SECTION 802 WOOD ROOF FRAMING

R802.1 GENERAL.
WOOD AND WOOD-BASED PRODUCTS USED FOR LOAD SUPPORTING PURPOSES SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THIS SECTION.

SEE SECTIONS 802.1.1 THROUGH 802.1.8 FOR FURTHER SPECIFICATIONS.

R802.2 DESIGN AND CONSTRUCTION.
THE FRAMING DETAILS REQUIRED IN SECTION R802 APPLY TO ROOFS HAVING A MINIMUM SLOPE OF THREE UNITS VERTICAL IN 12 UNITS HORIZONTAL (25-PERCENT SLOPE) OR GREATER. ROOF-CEILINGS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF THIS CHAPTER AND FIGURES R606.11(1), R606.11(2) AND R606.11(3) OR IN ACCORDANCE WITH AWC NDS. COMPONENTS OF ROOF-CEILINGS SHALL BE FASTENED IN ACCORDANCE WITH TABLE R602.3(1).

R802.3 RIDGE.
A RIDGE BOARD USED TO CONNECT OPPOSING RAFTERS SHALL BE NOT LESS THAN 1 INCH (25 MM) NOMINAL THICKNESS AND NOT LESS IN DEPTH THAN THE CUT END OF THE RAFTER. WHERE CEILING JOISTS OR RAFTER TIES DO NOT PROVIDE CONTINUOUS TIES ACROSS THE STRUCTURE AS REQUIRED BY SECTION R802.4.5, THE RIDGE SHALL BE SUPPORTED BY A WALL OR RIDGE BEAM DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE AND SUPPORTED ON EACH END BY A WALL OR COLUMN.

R802.4 RAFTERS.
RAFTERS SHALL BE IN ACCORDANCE WITH THIS SECTION.

R802.4.1 RAFTER SIZE.
RAFTERS SHALL BE SIZED BASED ON THE RAFTER SPANS IN TABLES R802.4.1(1) THROUGH R802.4.1(8). RAFTER SPANS SHALL BE MEASURED ALONG THE HORIZONTAL PROJECTION OF THE RAFTER. FOR OTHER GRADES AND SPECIES AND FOR OTHER LOADING CONDITIONS, REFER TO THE AWC STJS.

R802.4.2 FRAMING DETAILS.
RAFTERS SHALL BE FRAMED OPPOSITE FROM EACH OTHER TO A RIDGE BOARD, SHALL NOT BE OFFSET MORE THAN 1-1/2 INCHES (38 MM) FROM EACH OTHER AND SHALL BE CONNECTED WITH A COLLAR TIE OR RIDGE STRAP IN ACCORDANCE WITH SECTION R802.4.6 OR DIRECTLY OPPOSITE FROM EACH OTHER TO A GUSSET PLATE IN ACCORDANCE WITH TABLE R602.3(1). RAFTERS SHALL BE NAILED TO THE TOP WALL PLATES IN ACCORDANCE WITH TABLE R602.3(1) UNLESS THE ROOF ASSEMBLY IS REQUIRED TO COMPLY WITH THE UPLIFT REQUIREMENTS OF SECTION R802.11.

R802.4.3 HIPS AND VALLEYS.
HIP AND VALLEY RAFTERS SHALL BE NOT LESS THAN 2 INCHES (51 MM) NOMINAL IN THICKNESS AND NOT LESS IN DEPTH THAN THE CUT END OF THE RAFTER. HIP AND VALLEY RAFTERS SHALL BE SUPPORTED AT THE RIDGE BY A BRACE TO A BEARING PARTITION OR BE DESIGNED TO CARRY AND DISTRIBUTE THE SPECIFIC LOAD AT THAT POINT.

R802.4.4 RAFTER SUPPORTS.
WHERE THE ROOF PITCH IS LESS THAN 3:12 (25-PERCENT SLOPE), STRUCTURAL MEMBERS THAT SUPPORT RAFTERS, SUCH AS RIDGES, HIPS AND VALLEYS, SHALL BE DESIGNED AS BEAMS, AND BEARING SHALL BE PROVIDED FOR RAFTERS IN ACCORDANCE WITH SECTION R802.6.

REFER TO THE IRC FOR FURTHER INFORMATION ON THE FOLLOWING AREAS:

R802.5 ALLOWABLE RAFTER SPANS.
R802.6 BEARING.
R802.7 CUTTING, DRILLING AND NOTCHING.
R802.8 LATERAL SUPPORT.
R802.9 FRAMING OF OPENINGS.
R802.10 WOOD TRUSSES.

R802.10.1 TRUSS DESIGN DRAWINGS. TRUSS DESIGN DRAWINGS, PREPARED IN CONFORMANCE TO SECTION R802.10.1, SHALL BE PROVIDED TO THE BUILDING OFFICIAL AND APPROVED PRIOR TO INSTALLATION. TRUSS DESIGN DRAWINGS SHALL BE PROVIDED WITH THE SHIPMENT OF TRUSSES DELIVERED TO THE JOB SITE. TRUSS DESIGN DRAWINGS SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING INFORMATION:

REFER TO SECTION 802.10.1 (1-12) FOR MINIMUM INFORMATION

R802.10.2 DESIGN.
WOOD TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE. THE DESIGN AND MANUFACTURE OF METAL-PLATE-CONNECTED WOOD TRUSSES SHALL COMPLY WITH ANSI/TPI 1. THE TRUSS DESIGN DRAWINGS SHALL BE PREPARED BY A REGISTERED DESIGN PROFESSIONAL WHERE REQUIRED BY THE STATUTES OF THE JURISDICTION IN WHICH THE PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH SECTION R106.1.

R802.10.3 BRACING.
TRUSSES SHALL BE BRACED TO PREVENT ROTATION AND PROVIDE LATERAL STABILITY IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN THE CONSTRUCTION DOCUMENTS FOR THE BUILDING AND ON THE INDIVIDUAL TRUSS DESIGN DRAWINGS. IN THE ABSENCE OF SPECIFIC BRACING REQUIREMENTS, TRUSSES SHALL BE BRACED IN ACCORDANCE WITH ACCEPTED INDUSTRY PRACTICES SUCH AS THE SBCA BUILDING COMPONENT SAFETY INFORMATION (BCSI) GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING & BRACING OF METAL PLATE CONNECTED WOOD TRUSSES.

R802.10.4 ALTERATIONS TO TRUSSES.
TRUSS MEMBERS SHALL NOT BE CUT, NOTCHED, DRILLED, SPLICED OR OTHERWISE ALTERED IN ANY WAY WITHOUT THE APPROVAL OF A REGISTERED DESIGN PROFESSIONAL. ALTERATIONS RESULTING IN THE ADDITION OF LOAD SUCH AS HVAC EQUIPMENT WATER HEATER THAT EXCEEDS THE DESIGN LOAD FOR THE TRUSS SHALL NOT BE PERMITTED WITHOUT VERIFICATION THAT THE TRUSS IS CAPABLE OF SUPPORTING SUCH ADDITIONAL LOADING.

R802.11 ROOF TIE-UPLIFT RESISTANCE.
ROOF ASSEMBLIES SHALL HAVE UPLIFT RESISTANCE IN ACCORDANCE WITH SECTIONS R802.11.1 AND R802.11.2.

NOTE: SEE SECTION 802.11 FOR EXCEPTION

R802.11.1 TRUSS UPLIFT RESISTANCE.
TRUSSES SHALL BE ATTACHED TO SUPPORTING WALL ASSEMBLIES BY CONNECTIONS CAPABLE OF RESISTING UPLIFT FORCES AS SPECIFIED ON THE TRUSS DESIGN DRAWINGS FOR THE ULTIMATE DESIGN WIND SPEED AS DETERMINED BY FIGURE R301.2(5)A AND LISTED IN TABLE R301.2(1) OR AS SHOWN ON THE CONSTRUCTION DOCUMENTS. UPLIFT FORCES SHALL BE PERMITTED TO BE DETERMINED AS SPECIFIED BY TABLE R802.11, IF APPLICABLE, OR AS DETERMINED BY ACCEPTED ENGINEERING PRACTICE.

R802.11.2 RAFTER UPLIFT RESISTANCE.
INDIVIDUAL RAFTERS SHALL BE ATTACHED TO SUPPORTING WALL ASSEMBLIES BY CONNECTIONS CAPABLE OF RESISTING UPLIFT FORCES AS DETERMINED BY TABLE R802.11 OR AS DETERMINED BY ACCEPTED ENGINEERING PRACTICE. CONNECTIONS FOR BEAMS USED IN A ROOF SYSTEM SHALL BE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE.

REFER TO THE IRC FOR THE FOLLOWING SECTIONS:

SECTION R803 ROOF SHEATHING
SECTION R804 COLD-FORMED STEEL ROOF FRAMING

SECTION 805 CEILING FINISHES

R805.1 CEILING INSTALLATION.
CEILINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS FOR INTERIOR WALL FINISHES AS PROVIDED IN SECTIONS R702.1 THROUGH R702.6.

SECTION R806 ROOF VENTILATION

R806.1 VENTILATION REQUIRED.
ENCLOSED ATTICS AND ENCLOSED RAFTER SPACES FORMED WHERE CEILINGS ARE APPLIED DIRECTLY TO THE UNDERSIDE OF ROOF RAFTERS SHALL HAVE CROSS VENTILATION FOR EACH SEPARATE SPACE BY VENTILATING OPENINGS PROTECTED AGAINST THE ENTRANCE OF RAIN OR SNOW. VENTILATION OPENINGS SHALL HAVE A LEAST DIMENSION OF 1/16 INCH (1.6 MM) MINIMUM AND 1/4 INCH (6.4 MM) MAXIMUM. VENTILATION OPENINGS HAVING A LEAST DIMENSION LARGER THAN 1/4 INCH (6.4 MM) SHALL BE PROVIDED WITH CORROSION-RESISTANT WIRE CLOTH SCREENING, HARDWARE CLOTH, PERFORATED VINYL OR SIMILAR MATERIAL WITH OPENINGS HAVING A LEAST DIMENSION OF 1/16 INCH (1.6 MM) MINIMUM AND 1/4 INCH (6.4 MM) MAXIMUM. OPENINGS IN ROOF FRAMING MEMBERS SHALL CONFORM TO THE REQUIREMENTS OF SECTION R802.7. REQUIRED VENTILATION OPENINGS SHALL OPEN DIRECTLY TO THE OUTSIDE AIR AND SHALL BE PROTECTED TO PREVENT THE ENTRY OF BIRDS, RODENTS, SNAKES, AND OTHER SIMILAR CREATURES.

R806.2 MINIMUM VENT AREA.
THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE.

NOTE: SEE SECTION 806.2 FOR EXCEPTION

R806.3 VENT AND INSULATION CLEARANCE.
WHERE EAVE OR CORNICE VENTS ARE INSTALLED, BLOCKING, BRIDGING, AND INSULATION SHALL NOT BLOCK THE FREE FLOW OF AIR. NOT LESS THAN A 1-INCH (25 MM) SPACE SHALL BE PROVIDED BETWEEN THE INSULATION AND THE ROOF SHEATHING AND AT THE LOCATION OF THE VENT.

R806.4 INSTALLATION AND WEATHER PROTECTION.
VENTILATORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. INSTALLATION OF VENTILATORS IN ROOF SYSTEMS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION R903. INSTALLATION OF VENTILATORS IN WALL SYSTEMS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION R703.1.

R806.5 UNVENTED ATTIC AND UNVENTED ENCLOSED RAFTER ASSEMBLIES.
UNVENTED ATTICS AND UNVENTED ENCLOSED ROOF FRAMING ASSEMBLIES CREATED BY CEILINGS THAT ARE APPLIED DIRECTLY TO THE UNDERSIDE OF THE ROOF FRAMING MEMBERS AND STRUCTURAL ROOF SHEATHING APPLIED DIRECTLY TO THE TOP OF THE ROOF FRAMING MEMBERS/RAFTERS, SHALL BE PERMITTED WHERE ALL THE FOLLOWING CONDITIONS ARE MET:

SEE CONDITIONS 806.5 (1 THROUGH 5)

SECTION R807 ATTIC ACCESS

R807.1 ATTIC ACCESS.
BUILDINGS WITH COMBUSTIBLE CEILING OR ROOF CONSTRUCTION SHALL HAVE AN ATTIC ACCESS OPENING TO ATTIC AREAS THAT HAVE A VERTICAL HEIGHT OF 30 INCHES (762 MM) OR GREATER OVER AN AREA OF NOT LESS THAN 30 SQUARE FEET (2.8 M2). THE VERTICAL HEIGHT SHALL BE MEASURED FROM THE TOP OF THE CEILING FRAMING MEMBERS TO THE UNDERSIDE OF THE ROOF FRAMING MEMBERS.

THE ROUGH-FRAMED OPENING SHALL BE NOT LESS THAN 22 INCHES BY 30 INCHES (559 MM BY 762 MM) AND SHALL BE LOCATED IN A HALLWAY OR OTHER LOCATION WITH READY ACCESS. WHERE LOCATED IN A WALL, THE OPENING SHALL BE NOT LESS THAN 22 INCHES WIDE BY 30 INCHES HIGH (559 MM WIDE BY 762 MM HIGH). WHERE THE ACCESS IS LOCATED IN A CEILING, MINIMUM UNOBSTRUCTED HEADROOM IN THE ATTIC SPACE SHALL BE 30 INCHES (762 MM) AT SOME POINT ABOVE THE ACCESS MEASURED VERTICALLY FROM THE BOTTOM OF CEILING FRAMING MEMBERS. SEE SECTION M1305.1.3 FOR ACCESS REQUIREMENTS WHERE MECHANICAL EQUIPMENT IS LOCATED IN ATTICS.

CHAPTER 9 :: ROOF ASSEMBLIES

SECTION R901 GENERAL

R901.1 SCOPE. THE PROVISIONS OF THIS CHAPTER SHALL GOVERN THE DESIGN, MATERIALS, CONSTRUCTION AND QUALITY OF ROOF ASSEMBLIES.

CHAPTER 10 :: CHIMNEYS & FIREPLACES

R1001.1 GENERAL.
MASONRY FIREPLACES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THIS SECTION AND THE APPLICABLE PROVISIONS OF CHAPTERS 3 AND 4.

NOTICE: DUTY OF COOPERATION

[redacted] assumes no liability for any HOMES constructed from this plan. Release of these plans contemplates further cooperation among the owner, his contractor and the designer. Design and construction are complex. Although the designer and his consultants performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the designer. Failure to notify the designer compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the designer shall relieve the designer from responsibility for all consequences. Changes made from the plans without the consent of the designer are unauthorized and shall relieve the designer of responsibility for all consequences arising out of such changes. Only qualified Designer, Architect, Contractor, or Structural Engineer should attempt to modify any portion of this design.
Written dimensions on these drawings shall have precedence over scaled dimensions; contractors shall verify and be responsible for all dimensions and conditions on the job. This office must be notified of any variations from the dimensions and conditions shown by these drawings. Shop details must be submitted to this office for approval before proceeding with fabrication or construction.

[redacted]

CAD
DESIGNED

REVISIONS	BY
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
	24x36

[redacted]

[redacted]

[redacted]

DATE [redacted]
SCALE 1/4" = 1'-0"
BUILDER
JOB [redacted]
DRAWN BY

[redacted]

TABLE N1102.4.1.1 (R402.4.1.1)
AIR BARRIER AND INSULATION INSTALLATION[a]

COMPONENT	AIR BARRIER CRITERIA	INSULATION INSTALLATION CRITERIA
General requirements	A continuous air barrier shall be installed in the building envelope. The exterior thermal envelope contains a continuous air barrier. Breaks or joints in the air barrier shall be sealed.	Air-permeable insulation shall not be used as a sealing material.
Ceiling/attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier sealed. Access openings, drop down stairs or knee wall doors to unconditioned attic spaces shall be sealed.	The insulation in any dropped ceiling/soffit shall be aligned with the air barrier.
Walls	The junction of the foundation and sill plate shall be sealed. The junction of the top plate and the top of exterior walls shall be sealed. Knee walls shall be sealed.	Cavities within corners and headers of frame walls shall be insulated by completely filling the cavity with a material having a thermal resistance of R-3 per inch minimum. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier.
Windows, skylights and doors	The space between framing and skylights, and framing the jambs of windows and doors, shall be sealed.	
Rim joists	Rim joists shall include the air barrier.	Rim joists shall be insulated.
Floors (including above garage and cantilevered floors) and floors above garages)	The air barrier shall be installed at any exposed edge of insulation.	Floor framing cavity insulation shall be installed to maintain permanent contact with the underside of subfloor decking. Alternatively, floor framing cavity insulation shall be in contact with the top side of sheathing, or continuous insulation installed on the underside of floor framing; and extending from the bottom to the top of all perimeter floor framing members.
Crawl space walls	Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.	Crawl space insulation, where provided instead of floor insulation, shall be permanently attached to the walls.
Shafts, penetrations	Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.	
Narrow cavities		Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled with insulation that on installation readily conforms to the available cavity space.
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.	
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be sealed to the finished surface.	Recessed light fixtures installed in the building thermal envelope shall be air tight and IC rated.
Plumbing and wiring		In exterior walls, batt insulation shall be cut neatly to fit around wiring and plumbing, or insulation that on installation readily conforms to available space, shall extend behind piping and wiring.
Shower/tub on exterior wall	The air barrier installed at exterior walls adjacent to showers and tubs shall separate the wall from the shower or tub.	Exterior walls adjacent to showers and tubs shall be insulated.
Electrical/phone box on exterior walls	The air barrier shall be installed behind electrical and communication boxes. Alternatively, air-sealed boxes shall be installed.	
HVAC register boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the subfloor or drywall.	
Concealed sprinklers	When required to be sealed, concealed fire sprinklers shall only be sealed in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids between fire sprinkler cover plates and walls or ceilings.	

a. Inspection of log walls shall be in accordance with the provisions of ICC 400.

2015 INTERNATIONAL RESIDENTIAL CODE®

TABLE N1102.1.2 (R402.1.2)
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

CLIMATE ZONE	FENESTRATION U-FACTOR	SKYLIGHT U-FACTOR	GLAZED FENESTRATION SHGC	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE	FLOOR R-VALUE	BASEMENT WALL R-VALUE	SLAB R-VALUE & DEPTH	CRAWL SPACE WALL R-VALUE
1	NR	0.75	0.25	30	13	3/4	13	0	0	0
2	0.40	0.65	0.25	38	13	4/6	13	0	0	0
3	0.35	0.55	0.25	38	20 or 13+5	8/13	19	5/13	0	5/13
4 except Marine	0.35	0.55	0.40	49	20 or 13+5	8/13	19	10/13	10, 2 ft	10/13
5 and Marine 4	0.32	0.55	NR	49	20 or 13+5	13/17	30	15/19	10, 2 ft	15/19
6	0.32	0.55	NR	49	20+5 or 13+10	15/20	30	15/19	10, 4 ft	15/19
7 and 8	0.32	0.55	NR	49	20+5 or 13+10	19/21	38	15/19	10, 4 ft	15/19

For SI: 1 foot = 304.8 mm.

a. [illegible]

b. [illegible]

c. [illegible]

d. [illegible]

e. [illegible]

f. [illegible]

g. [illegible]

h. [illegible]

i. [illegible]

TABLE N1102.1.4 (R402.1.4)
EQUIVALENT U-FACTORS[a]

CLIMATE ZONE	FENESTRATION U-FACTOR	SKYLIGHT U-FACTOR	CEILING U-FACTOR	FRAME WALL U-FACTOR	MASS WALL U-FACTOR	FLOOR U-FACTOR	BASEMENT WALL U-FACTOR	CRAWL SPACE WALL U-FACTOR
1	0.50	0.75	0.035	0.084	0.197	0.064	0.360	0.477
2	0.40	0.65	0.030	0.084	0.165	0.064	0.360	0.477
3	0.35	0.55	0.030	0.060	0.098	0.047	0.091c	0.136
4 except Marine	0.35	0.55	0.026	0.060	0.098	0.047	0.059	0.065
5 and Marine 4	0.32	0.55	0.026	0.060	0.082	0.033	0.050	0.055
6	0.32	0.55	0.026	0.045	0.060	0.033	0.050	0.055
7 and 8	0.32	0.55	0.026	0.045	0.057	0.028	0.050	0.055

a. [illegible]

b. [illegible]

c. [illegible]

SPECIAL CONTRACTOR NOTES:

REVISIONS	BY
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
	24x36

[redacted]

[redacted]

[redacted]

NOTICE DUTY OF COOPERATION

[redacted] assumes no liability for any HOMES constructed from this plan. Release of these plans contemplates further cooperation among the owner, his contractor and the designer. Design and construction are complex. Although the designer and his consultants performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the designer. Failure to notify the designer compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the designer shall relieve the designer from responsibility for all consequences. Changes made from the plans without the consent of the designer are unauthorized and shall relieve the designer of responsibility for all consequences arising out of such changes. Only qualified Designer, Architect, Contractor, or Structural Engineer should attempt to modify any portion of this design.
Written dimensions on these drawings shall have precedence over scaled dimensions, contractors shall verify and be responsible for all dimensions and conditions on the job. This office must be notified of any variations from the dimensions and conditions shown by these drawings. Shop details must be submitted to this office for approval before proceeding with fabrication or construction.

[redacted]

CAD
DESIGNED

DATE [redacted]
SCALE
1/4" = 1'-0"
BUILDER
JOB [redacted]
DRAWN BY

5 OF 5