

Building Materials List for Behm Design Plan #416-1HD

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1-800-210-6776

~ Local building code approved substitutions may be made to this list ~
Variations in construction methods and materials can require modification of this list. Every attempt is made for greatest accuracy, but typographical or human error is possible. Quantities verification by the material's supplier is recommended before materials package is finalized and/or shipped.

check materials list
against changes before
build.

Rough Framing

2 x 6 x 115-1/2" HF/DF exterior "stud" wall framing	77 pcs.
2 x 6 HF/DF No. 2 wall top plate material	220 lf
2 x 6 HF/DF No. 2 pressure-treated bottom plate	84 lf
2 x 4 x 120" HF/DF No. 2 lookouts material	4 pcs.
5-1/2 x 11-1/4" Header 2950Fb 2.0E	15'-9" length --- 1 pc.
2 x 6 DF No. 1 Header	8' length --- 1 pc.
2 x 6 DF No. 1 Header	10' length --- 2 pcs.
2 x 4 HF/DF No. 2 wall blocking material	140 lf
2 x 6 HF/DF No. 2 rafters	12' length --- 42 pcs.
2 x 6 HF/DF No. 2 ceiling joists	16' length --- 21 pcs.
2 x 8 HF/DF No. 2 ridge board	26 lf
2 x 3 soffit framing material	134 lf
1 x 4 collar tie material	4 pcs.

Sheathing Materials

7/16" o.s.b. wall sheathing	4 x 8 sheet --- 29 sheets
15/32" Roof C-D APA Plywood, ext. glue P.I. 24/0	4 x 8 sheet --- 24 sheets

Vapor Barrier

Roof 15# bituminous felt paper in 36" wide roll	246 lf
Wall 7# bituminous felt paper in 40" wide roll	288 lf
Floor .006" black polyethylene membrane	416 sf

Siding Materials

8" textured o.s.b. siding boards with 1" lap	796 sf siding area
Trim: 5/4 x 3 (<for alt. siding, use 1x thk. trims nailed over panels) - 10' length	4 pcs.
Trim: 5/4 x 4	8' length --- 9 pcs.
Trim: 5/4 x 4	10' length --- 4 pcs.
Trim: 5/4 x 4	11' length --- 1 pc.
Fascia: 1 x 6	52 lf
Rakeboard: 2 x 6	12' length --- 4 pcs.

Roofing Materials

Composition Roofing Shingles	616 sf roof area
Ridgevent material	26 lf

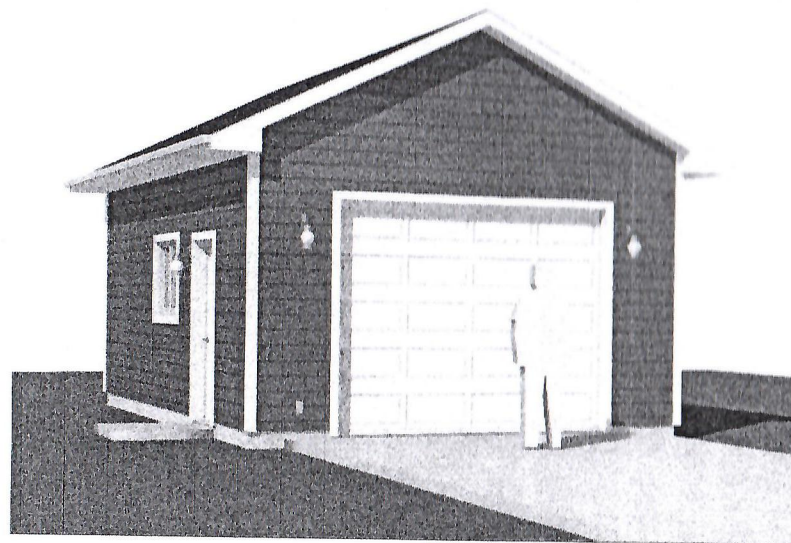
Window and Door Assemblies

4030 sliding window(s)	2 ea.
10'-0" wide x 8'-0" high sectional garage door	1 ea.
3068 exterior door	1 ea.

Metal Parts & Misc.

Anchor bolts: 1/2" dia. x 10' ASTM A-307	w/ hex nuts --- 18 pcs.
Flat washer for 1/2" dia: 2" square x 3/16" thick stl. pl.	18 pcs.
Simpson H2.5 connectors	38 pcs.
Simpson MST24 nailing strap	2 pcs.
16d sinker nails	30 lbs.
8d common nails @ 145 nails / lb.	21 lf
Drip flashing for window/door heads	52 lf
2" soffit screened vent strip	52 lf

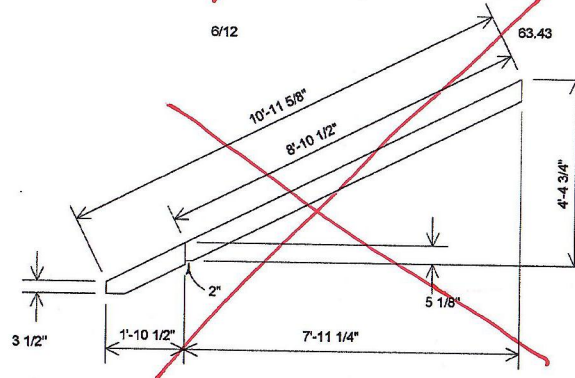
~ To advise corrections, call 1-800-210-6776 Thank you.~
(note: electrical components and finishing materials not included in this list)



HEAVY DUTY GARAGE PLAN #416-1HD

16 x 26
14'8" x 26'8"

See truss design from Foxworth Galbraith,
Dewey AZ attached.



4/12

Rafter Pattern

Slope = 8/12 (20.555°)

Run = 8'-0" 7'4"

Ridge Allowance = 3/4"

Adjusted Run = 7'-11 1/4"

Overhang = 4'-10 1/2"

Heel = 5'-4 1/8"

Seal = 2"

Rafter = 1 1/2" x 5 1/2"

Ridge = 1 1/2" x 7 1/4"

Building Categories and Data

Occupancy Classification: "U"

Construction Type: "V"

Grade-To-Ridge Height: 14'-10"

Gross Building Area: 416 sf

Building Code Compliance

This planset was prepared to comply with the prescriptive requirements of the International Residential Code (IRC)

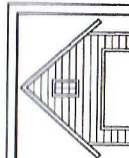
Parameters For Design

Wind Speed: 130 mph ultimate

Wind Exposure: D

Seismic Category: A, B and C

Ground Snow Load: 70# / sq.ft. (maximum)



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416-1HD

PLAN NO.

DESIGN
BY:

JJB

DATE:

update
08/16

SHEET CONTENTS:

Pictorial View Of Design

Project Data

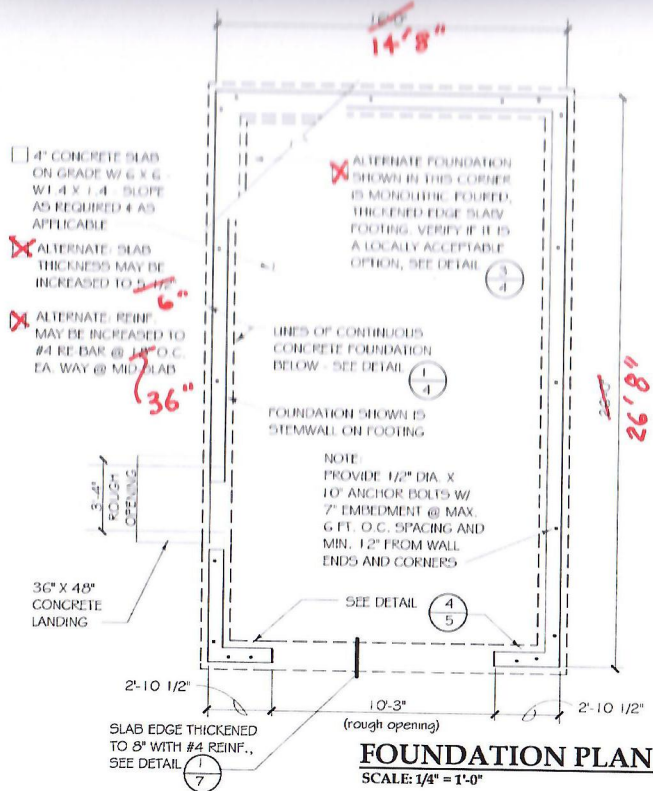
Building Materials List

SHEET

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

BRACED WALLS AS PER IRC, PG. 10.10, AS APPLICABLE FOR LOCAL CODES - TYPICAL WALL CONSTRUCTION - GS-WSP (SHOW)

EXTERIOR BRACED WALLS (MIN. 48") HAIL SIDING PANELS OR SHEATHING W/ 2" @ 6" O.C., EDGES AND @ 12" O.C., FIELD AND BLOCK AT HORIZONTAL PANEL JOINTS.

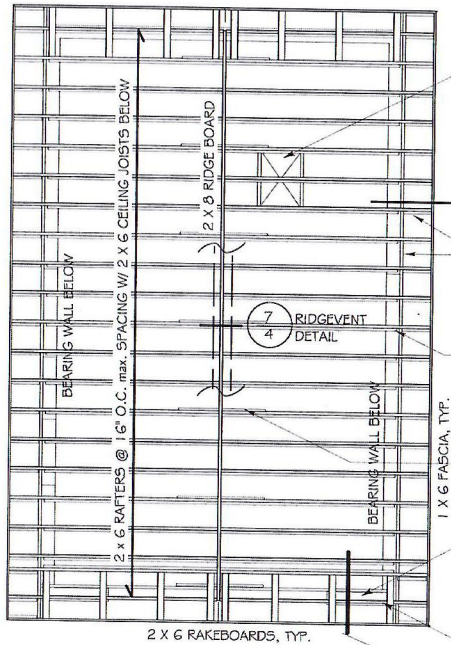
FRONT WALL CONSTRUCTION: "TTG" AS REFERENCED

NOTE: FLOOR PLAN DIMENSIONS ARE TO FACE OF FRAMING OR CENTERLINE OF BEARING, TYP. AS SHOWN

NOTE: DOOR AND WINDOW HEADERS SHALL BE 2" X 6" UNLESS OTHERWISE NOTED

NOTE: FOUNDATION PLAN DIMENSIONS ARE TO FACE OF CONCRETE OR CENTERLINE OF BEARING, AS SHOWN

1" 1/2" THICK RECESSED EDGE IN CONCRETE MAY BE USED TO GAIN EXTRA DOOR HEIGHT IF REQD. FOR GARAGE DOOR(S). SLOPE TO DRAIN OUT, TYP.



ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"

NOTE: FOR CLOSED CEILING - MIN. 22" X 30" ATTIC ACCESS OPENING W/ G.W.B. REMOVABLE PANEL, LOCATE W/ 30" VERTICAL CLEARANCE ABOVE

VENTED SOFFIT SEE TYPICAL WALL SECTION

SOFFIT FRAMING BELOW, TYP.

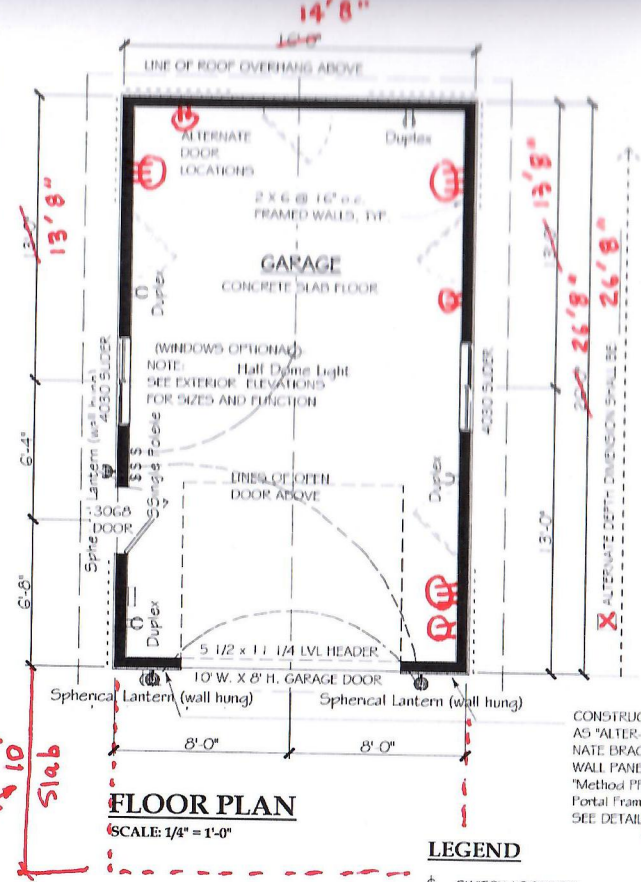
FACE NAIL CEILING JOIST TO RAFTER W/ (3) 16d NAILS, TYP. @ EA. CONNECTION

1 X 4 COLLAR TIES @ 4' O.C.

2 X 4 FLAT LOOKOUTS, LET-IN TO RAFTER, TOPS FLUSH, TYP.

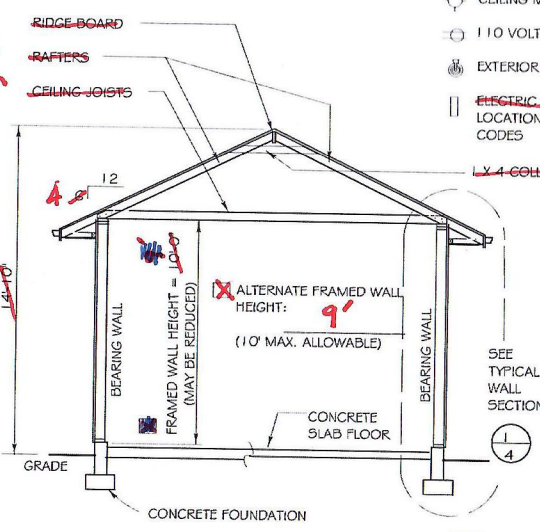
END RAFTER ON RAKED WALL BELOW, TYP.

NOTE: ARROW LINE INDICATES EXTENT OF SPANNING MEMBERS, NOT THE DIRECTION OF SPAN



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

- LEGEND**
- SWITCH LOCATION
 - CEILING MOUNTED LIGHT FIXTURE
 - 110 VOLT DUPLEX OUTLET
 - EXTERIOR WALL-MTD. LIGHT FIXTURE
 - ELECTRIC PANEL OR SUB-PANEL LOCATION, INSTALL PER LOCAL CODES 100A
 - 1 X 4 COLLAR TIES @ 4' O.C.



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

NOTE: FOOTING/STEMWALL FOUNDATION SHOWN. FOR ALTERNATIVE THICKENED-EDGE FOUNDATION SEE DETAIL 3/4

4" AB compacted 4" concrete pad

See Truss Design

220V Outlet



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416-1HD

PLAN NO.

DESIGN BY: JJB

DATE

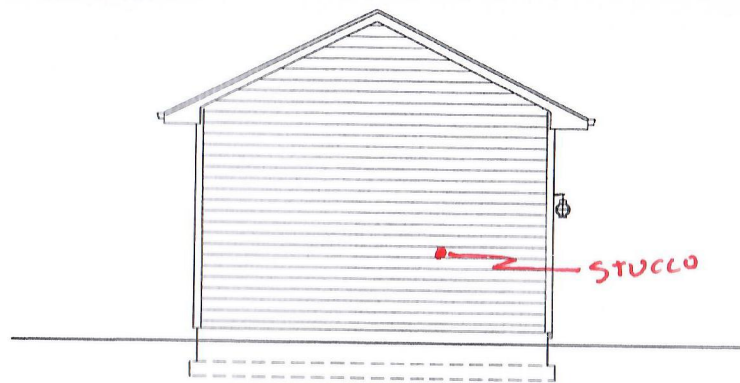
SHEET CONTENTS

FLOOR PLAN
FOUNDATION PLAN
ROOF FRAMING PLAN
CROSS-SECTION

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REAR ELEVATION

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

SIDING:
8" X 7/16" TEXTURED O.S.B.
SIDING BOARDS, OVER 7# FELT
VAPOR BARRIER, OVER SHEATHING
(APPROVED ALTERNATE SIDING
MATERIALS MAY BE SUBSTITUTED)

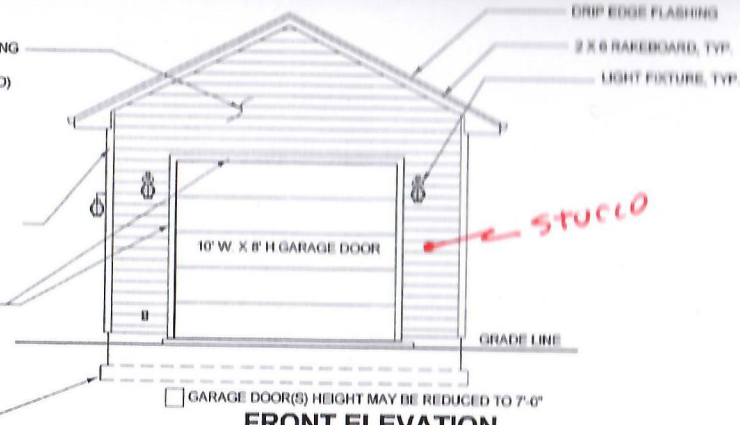
ALTERNATE SIDING:
7/16" TEXTURED O.S.B. SIDING
PANELS OVER 7# FELT
VAPOR BARRIER

5/4 X 4 / 5/4 X 3 CORNER BOARDS

5/4 X 4 WRAP TRIM - BUTT SIDE
MEMBERS TO TOP AND BOTTOM
MEMBERS

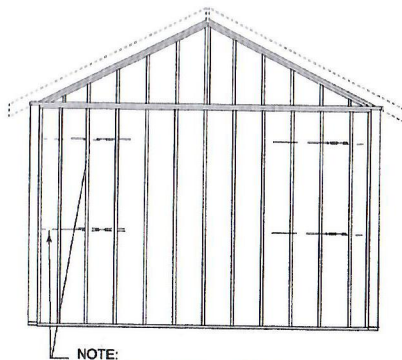
NOTE:
FOR ALTERNATIVE SIDING
USE 1x TRIM BOARDS - NAIL
OVER SIDING PANELS, TYP.

LINES OF FOUNDATION



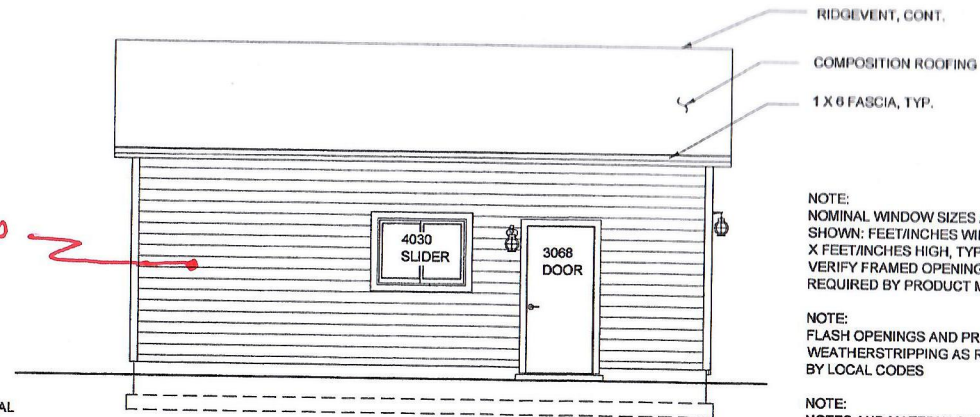
FRONT ELEVATION

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



REAR WALL FRAMING ELEVATION

STUCCO



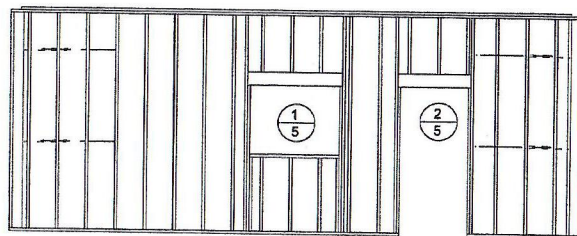
LEFT SIDE ELEVATION (RIGHT SIDE SIMILAR)

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

NOTE:
NOMINAL WINDOW SIZES ARE
SHOWN: FEET/INCHES WIDE
X FEET/INCHES HIGH, TYP. -
VERIFY FRAMED OPENING
REQUIRED BY PRODUCT MFR.

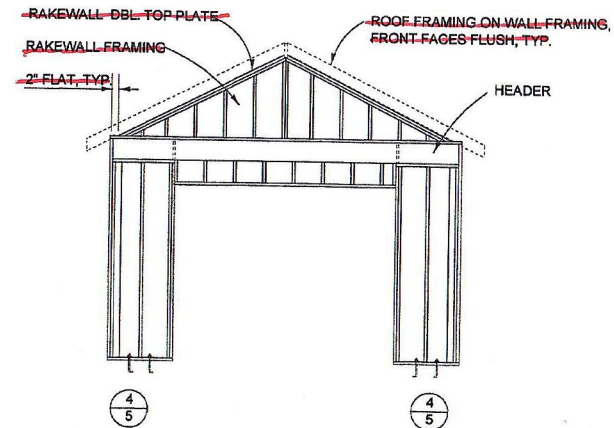
NOTE:
FLASH OPENINGS AND PROVIDE
WEATHERSTRIPPING AS REQUIRED
BY LOCAL CODES

NOTE:
NOTES AND MATERIALS INDICATED
IN THIS ELEVATION ARE TYPICAL
FOR ENTIRE BUILDING AS APPLIC.



**LEFT SIDE WALL FRAMING ELEVATION
(RIGHT SIDE SIMILAR)**

See
Truss
Design



FRONT WALL FRAMING ELEVATION



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PLAN NO.

DESIGN
BY: JJB

DATE: 12/10

SHEET CONTENTS:

EXTERIOR ELEVATIONS

WALL FRAMING ELEVATIONS

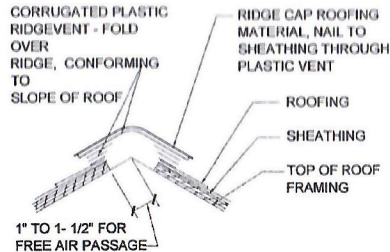
SHEET

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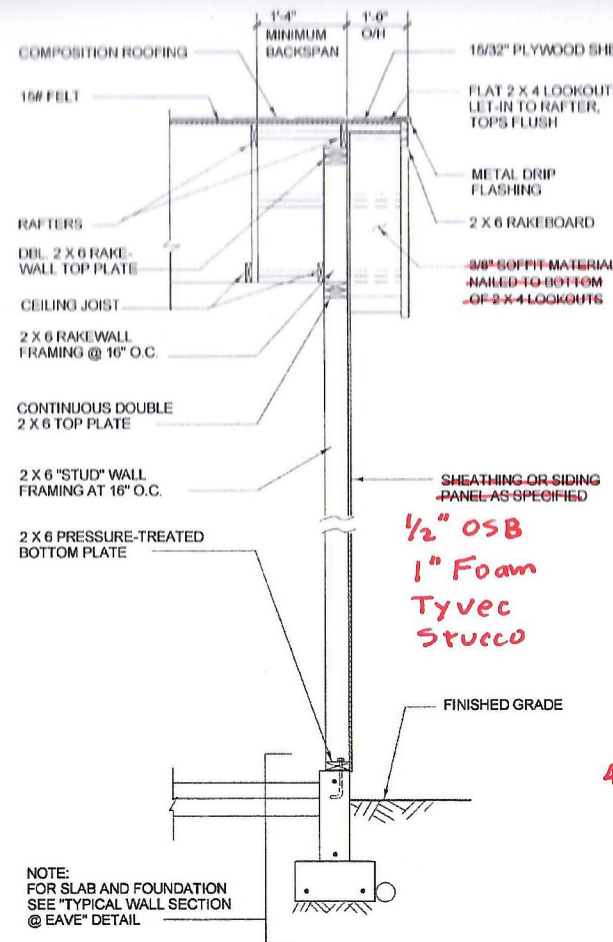
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SIMPSON CONNECTOR

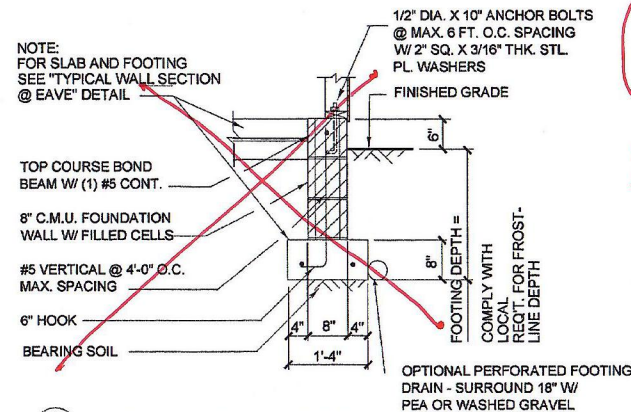


7 RIDGEVENT DETAIL



2 TYPICAL WALL SECTION @ GABLE

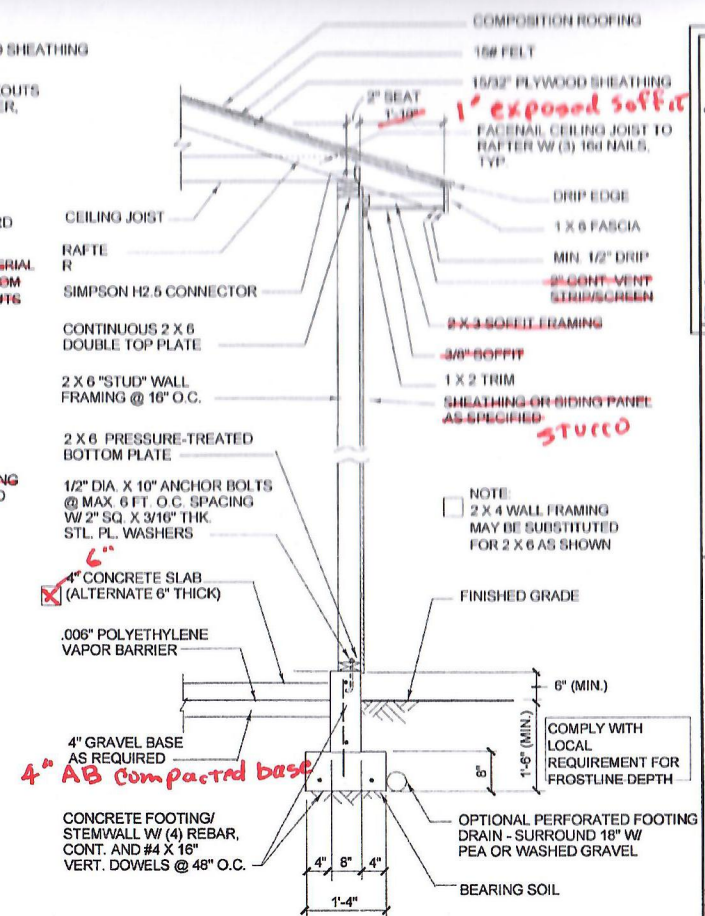
SCALE: 3/4" = 1'-0"



4 BLOCK FOUNDATION WALL DETAIL

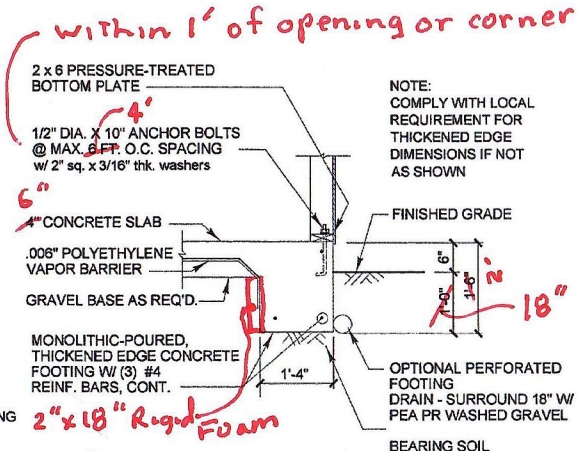
SCALE: 3/4" = 1'-0"

☐ ALTERNATE



1 TYPICAL WALL SECTION @ EAVE

SCALE: 3/4" = 1'-0"



3 MONOLITHIC FOOTING DETAIL

SCALE: 3/4" = 1'-0"

☒ ALTERNATE

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416-1HD

DESIGN BY: JJB

DATE: 12/10

SHEET CONTENTS:

TYPICAL WALL SECTIONS

FOUNDATION DETAILS

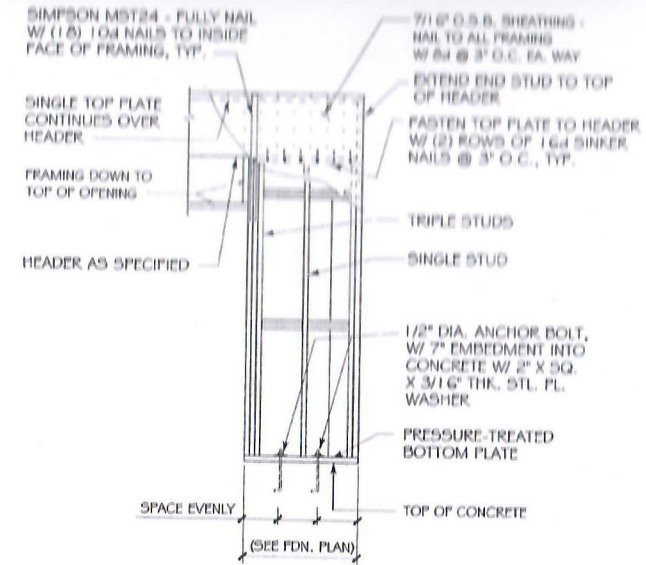
ROOF DETAILS

SHEET

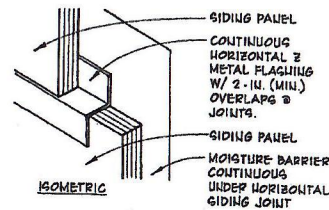
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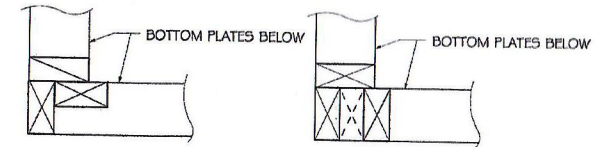
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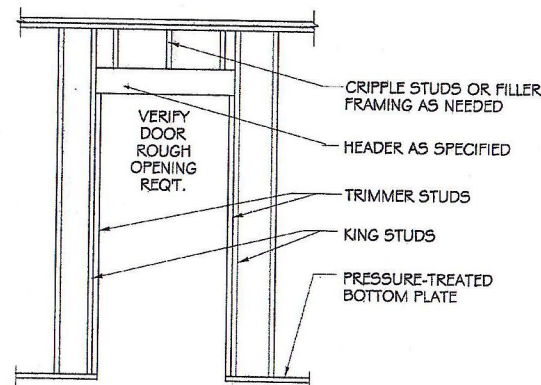
4 ALTERNATE BRACED WALL PANEL METHOD PFG PORTAL FRAME



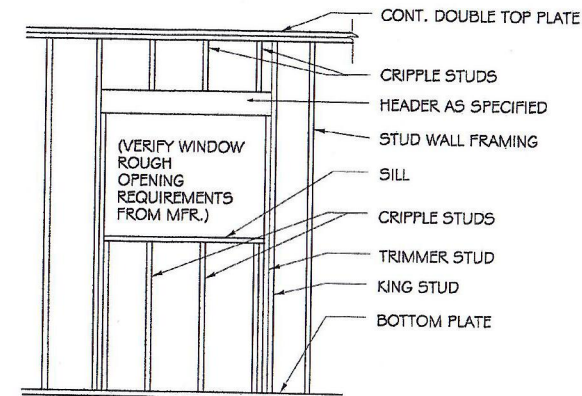
5 FLASHING DETAIL (PANEL SIDING)



STUDS @ CORNER OPTIONS (PLAN VIEW)



2 DOOR OPENING DETAIL



1 WINDOW OPENING DETAIL

STRUCTURAL/GENERAL NOTES & SPECIFICATIONS

A. General

The following notes shall clarify and supplement the working drawings.

B. Codes & Standards

International Residential Code (IRC) -
ACI-318, ACI 308-1R / M & M A Manual
(and comply with all local applicable codes as required by Building Official)

C. Live Loads

Ground Snow Load (maximum) 70 lbs/sf
Floors 40 lbs/sf
Stairs & Exits 100 lbs/sf
Wind 130 mph ultimate, exposure D
Seismic zone a, b, c
Earth Pressure 30 lbs/sf equiv. Fluid pressure

D. Soil & Foundation Data

1. Soil bearing data not available. Assumed soil bearing capacity = 1500 lbs/sf.
2. Extend all footings down to undisturbed soil of the specified strength with a minimum depth of 1'-6" below adjacent grade, or as required by local building official, based on local frost line depth.
3. Center all footings on columns and walls unless specifically dimensioned otherwise.
4. Compacted fill to be well graded and granular with not more than 5% passing a 200 sieve. Place in 8-inch loose lifts and compact to 95% modified AASHTO density at optimum moisture.

E. Cast-in-Place Concrete and Reinforcing Steel

1. Concrete of the following 28-day strength: 5 sack cement/cy (min. 2500 psi); max. 6 gal water/sack for all structural concrete, including foundations and slabs on grade. Maximum sized aggregate 3/4". Maximum slump 4". Add Master Builders Pozzolith per manufacturer's recommendations to all concrete except footings. Concrete for exterior walls to be air entrained (5% air).
2. Reinforcing steel ASTM A-615 grade 40/60. Use grade 40 for temperature steel, stirrups and dowels. Detail, fabricate and place in accordance with the latest edition of A.C.I. "Manual Of Standard Practice".
3. Concrete cover on reinforcing steel (clear dimensions):
Suspended slabs 3/4"
Beams & columns (to ties) 1 1/2"
Non-exposed vertical faces 1"
Vertical faces exposed to earth or weather 2"
Bottom of footings 3"
Slabs-on-grade (from top) 1 1/2"
4. Lap all field splices 24 diameters with minimum of 12". Bend outer wall footing bars 12 inches or use corner bars at all corners and wall intersections.
5. Provide min. one continuous #4 bar at top and bottom of foundation walls w/ #4 at 12" o.c. where wall height exceed two feet. Provide min. two continuous #4 bars in footings. Dowel foundation walls to footings w/ #4 x 1'-6" long @ 16" o.c. Embedded 6" into footing. (No shear keys required)
6. Reinforce around wall and slab openings, with sides of 12" or greater, with two #5 bars extending 24" beyond corners on all four sides. Provide one extra #5 diagonal bar, 4'-0" long, at each corner.
7. Slabs-on-grade: Roll sub grade and moisten before pour. Saw cut crack control joints within 24 hours of pour or install Zip-Strip, with maximum of 12'-0" for 4" non-reinforced slabs and 40'-0" for reinforced slabs. (min. reinforcing: w6 x 6 - w1.4 x 1.4, supported)
8. Vibrate all concrete. Segregation of materials to be prevented. Test cylinders not required.
9. Place no fill against foundation or basement walls until floors are in place or walls have been adequately shored to resist lateral earth pressures.

F. Masonry (as applicable)

1. Hollow masonry units: F'M=1350 (half & half c.m.u.)
Mortar type S: 1 pc, 1/2 lime putty, 4 sand
Grout: 2000 psi pea gravel concrete (7 sack)
2. Reinforcing steel: ASTM A-615, grade 40.
3. Place grout in lifts no greater than 4'-0" height.
4. Wall reinforcing:
.....6" walls: #4 vertical @ 48" o.c. w/ #9 wire horiz. Joint reinf. @ 8" o.c.
.....8" walls: #5 vertical @ 48" o.c. w/ 3/16" dia. wire horiz. Joint reinf. @ 8" o.c.
Install two bars in corners, wall intersections, wall endings and around openings. Lap all bars 20 inches and joint reinforcing, 12 inches. Use corner bars for outer bars in bond beams and at intersecting walls.
5. Anchor brick veneer to wood framed wall as detailed with 22 ga. X 7/8" x 7" galvanized corrugated wall ties @ 16" o.c. ea. Way with one Simpson n20a nail.

G. Timber and Wood Framing

1. Substitution of wood species identified herein may be as approved by local Building Official and material strength and capacities shall equal or exceed that of the species identified herein.
2. All lumber to be graded per book 16 of the West Coast Lumber Inspection Bureau
HF/DF no. 2 for joists, rafters, light framing, plates and bracing
DF no. 1 for posts and beams
HF/DF "stud" for stud wall framing
4. Joists and rafters (lumber) shall have 2" nominal thick solid blocking at supports.
3. Comply with the latest edition of the NFPA "National Design Specification" as modified by the applicable code for all structural timber requirements.
5. Spike laminated members together w/ 10d nails @ 12" o.c., staggered. Splice laminations at supports only.
6. Provide cut washers for all bolts bearing on wood.
7. All nails shall be common wire nails.
8. Glue-laminated timbers, Douglas Fir, A.I.T.C. grading: combination 24F-V3 for simple spans; 24F-V8 for cantilevered spans. Dry conditions of use. Architectural appearance grade where exposed to view. Fabrication plant A.I.T.C. inspected / Wrap individual members.
9. Plywood: Roof sheathing to be 15/32" C-D Int-apa plywood with exterior glue, P.I. 24/0 (use 5-ply for panelized roofs) Nailing 8d @ 6" o.c. at panel edges and 8d @ 12" o.c. at intermediate supports. Sub-flooring to be 3/4" C-D-apa plywood with exterior glue, P.I. 32/16. Use T&G if no underlayment. Glue and nail with 10d @ 6" o.c. at panel edges and @ 10" at intermediate supports.
10. Pre-fabricated trussed members to be designed by applicable state licensed engineer in accordance with requirements shown in the drawings. Contractor shall verify as-framed dimensions and conditions prior to truss fabrication and coordinate as required. All engineering data shall be made available for submittal to the Building Official as required.

H. Structural Steel

1. All steel, except tubing: ASTM A-36. Pipe: ASTM A-53, Type E or S, grade B. Tubular section: ASTM A500, grade B. All bolts: ASTM A-307.
2. All fabrication, erection and detailing shall be in accordance with the latest edition of the "Manual Of Steel Construction" of the American Institute Of Steel Construction.
3. All welding by WABO certified welders in accordance with the "Welding Handbook" by the American Welding Society.
4. All welds 3/16" min. continuous fillet welds using ASWA5, E70XX electrodes.
5. Provide washers on all bolted connections.
6. All steel not embedded in concrete or masonry shall receive one shop coat of an approved primer paint. Apply two coats of heavy asphaltic paint to all steel exposed to earth.
7. Furnish complete shop drawings prior to fabrication.

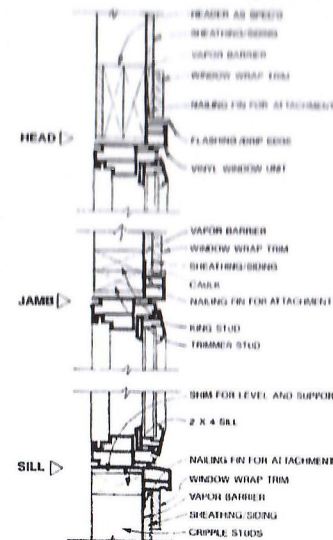
I. Miscellaneous

1. Contractor shall verify all site conditions and dimensions in field.
2. Provide temporary bracing as required until all permanent connections and stiffening have been installed.
3. Verify size and locations of all openings in floor, roof and walls and coordinate with electrical and mechanical work.
4. Pre-fabricated items shall be handled and installed in accordance with manufacturers' recommendations. Pre-fabricated

assemblies shall be coordinated with any as-built conditions by the contractor regarding dimensions, clearance and applicable building code requirements.

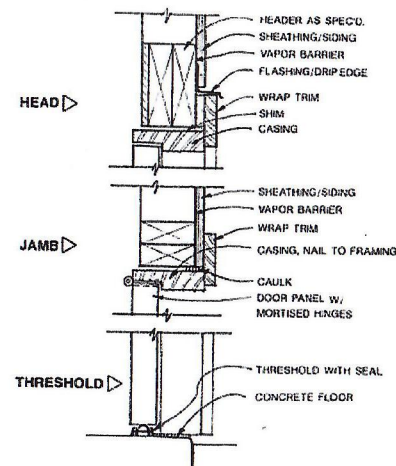
5. All HVAC equipment shall be determined by owner and/or contractor specific to this project and comply with all applicable codes. Performance data and distribution layout shall be provided by mechanical subcontractor. Submittals shall be coordinated by the contractor as required by the Building Official.

6. It is the intent of these drawings and specifications to comply with the requirements of the applicable Building Code and all other relevant codes and ordinances. Any discrepancies, omissions or errors shall be brought to the attention of the designer for clarification or correction before beginning the work. It is the responsibility of the general contractor to seek clarification or correction if needed.



WINDOW DETAILS

(NOT TO SCALE)



DOOR DETAILS

(NOT TO SCALE)



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416-1HD

PLAN NO.

DESIGN BY: JUB
DATE:

SHEET CONTENTS:
STRUCTURAL/GENERAL NOTES
WINDOW DETAILS
DOOR DETAILS

SHEET

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- FASTENING REQUIREMENTS -

TABLE B100 (3) FASTENING REQUIREMENTS FOR WOOD STRUCTURAL MEMBERS							
ITEM	DESCRIPTION OF BUILDING MATERIALS	DESCRIPTION OF FASTENERS	NUMBER AND TYPE OF FASTENERS	SPACING OF FASTENERS	EDGES (inches)	INTERMEDIATE SUPPORTS (inches)	Notes
1	Blocking between joists or rafters to top plate, toe nail	3-8d (2 1/2" x 0.113")	3-8d	12"	6"	12"	
2	Cutting plate to plate, toe nail	3-8d (2 1/2" x 0.113")	3-8d	12"	6"	12"	
3	Cutting plate not attached to parallel rafter, lap over partitions, face nail	3-10d	3-10d	12"	6"	12"	
4	Cut the rafter, face nail or 1 1/2" x 20 gauge ridge strap	3-10d (3" x 0.128")	3-10d	12"	6"	12"	
5	Batten to plate, toe nail	2-16d (1 1/2" x 0.135")	2-16d	12"	6"	12"	
6	Roof rafter to ridge, valley or hip rafters, toe nail	4-16d (1 1/2" x 0.135")	4-16d	12"	6"	12"	
7	Roof rafter to ridge, valley or hip rafters, face nail	4-16d (1 1/2" x 0.135")	4-16d	12"	6"	12"	
8	Built up corner studs	10d (3" x 0.128")	10d	24" o.c.	6"	12"	
9	Built up header, two pieces with 1/2" spacer	16d (1 1/2" x 0.135")	16d	16" o.c. along each edge	6"	12"	
10	Continuous header, two pieces	16d (1 1/2" x 0.135")	16d	16" o.c. along each edge	6"	12"	
11	Continuous header to stud, toe nail	4-8d (2 1/2" x 0.113")	4-8d	12"	6"	12"	
12	Double studs, face nail	10d (3" x 0.128")	10d	24" o.c.	6"	12"	
13	Double top plates, face nail	10d (3" x 0.128")	10d	24" o.c.	6"	12"	
14	Double top plates, minimum 48-inch offset of end joints, face nail in lapped area	8-16d (1 1/2" x 0.135")	8-16d	16" o.c.	6"	12"	
15	Sole plate to joist or blocking, face nail	16d (1 1/2" x 0.135")	16d	16" o.c.	6"	12"	
16	Sole plate to joist or blocking at braced wall panels	3-16d (1 1/2" x 0.135")	3-16d	16" o.c.	6"	12"	
17	Stud to sole plate, toe nail	3-8d (2 1/2" x 0.113")	3-8d	12"	6"	12"	
18	Top or sole plate to stud, end nail	2-16d (1 1/2" x 0.135")	2-16d	12"	6"	12"	
19	Top plates, lap at corners and intersections, face nail	2-10d (3" x 0.128")	2-10d	12"	6"	12"	
20	1" brace to each stud and plate, face nail	2-8d (2 1/2" x 0.113")	2-8d	12"	6"	12"	
21	1" x 6" sheathing to each bearing, face nail	2-8d (2 1/2" x 0.113")	2-8d	12"	6"	12"	
22	1" x 8" sheathing to each bearing, face nail	2-8d (2 1/2" x 0.113")	2-8d	12"	6"	12"	
23	Wider than 1" x 8" sheathing to each bearing, face nail	3-8d (2 1/2" x 0.113")	3-8d	12"	6"	12"	
24	Joist to sill or girder, toe nail	3-8d (2 1/2" x 0.113")	3-8d	12"	6"	12"	
25	1" x 6" subfloor or less to each joist, face nail	2-8d (2 1/2" x 0.113")	2-8d	12"	6"	12"	
26	2" subfloor to joist or girder, blind and face nail	2-16d (1 1/2" x 0.135")	2-16d	12"	6"	12"	
27	Rim joist to top plate, toe nail (roof applications also)	8d (2 1/2" x 0.113")	8d	12"	6"	12"	
28	2" planks (plank & beam - floor & roof)	2-16d (1 1/2" x 0.135")	2-16d	12"	6"	12"	
29	Built-up girders and beams, 2-inch lumber layers	10d (3" x 0.128")	10d	24" o.c.	6"	12"	
30	Ledger strip supporting joists or rafters	3-16d (1 1/2" x 0.135")	3-16d	12"	6"	12"	

ITEM	DESCRIPTION OF BUILDING MATERIALS	DESCRIPTION OF FASTENERS	NUMBER AND TYPE OF FASTENERS	SPACING OF FASTENERS	EDGES (inches)	INTERMEDIATE SUPPORTS (inches)	Notes
30	Wood structural panels, subfloor, roof and interior wall sheathing in framing and partitioned wall sheathing to framing	6d common (2" x 0.113") nail (subfloor wall) 8d common (2 1/2" x 0.131") nail (roof)	6d common (2" x 0.113") nail (subfloor wall) 8d common (2 1/2" x 0.131") nail (roof)	6"	12"	12"	
31	Wood structural panels, subfloor, roof and interior wall sheathing in framing and partitioned wall sheathing to framing	6d common (2" x 0.113") nail (subfloor wall) 8d common (2 1/2" x 0.131") nail (roof)	6d common (2" x 0.113") nail (subfloor wall) 8d common (2 1/2" x 0.131") nail (roof)	6"	12"	12"	
32	Wood structural panels, subfloor, roof and interior wall sheathing in framing and partitioned wall sheathing to framing	6d common (2" x 0.113") nail (subfloor wall) 8d common (2 1/2" x 0.131") nail (roof)	6d common (2" x 0.113") nail (subfloor wall) 8d common (2 1/2" x 0.131") nail (roof)	6"	12"	12"	
33	Wood structural panels, subfloor, roof and interior wall sheathing in framing and partitioned wall sheathing to framing	10d common (3" x 0.148") nail or 8d (2 1/2" x 0.131") deformed nail	10d common (3" x 0.148") nail or 8d (2 1/2" x 0.131") deformed nail	6"	12"	12"	
34	Other wall sheathing	1/2" galvanized roofing nail, 1/8" crown or 1" crown staple 16 ga., 1 1/2" long	1/2" galvanized roofing nail, 1/8" crown or 1" crown staple 16 ga., 1 1/2" long	3"	6"	6"	
35	Other wall sheathing	1/2" galvanized roofing nail, 1/8" crown or 1" crown staple 16 ga., 1 1/2" long	1/2" galvanized roofing nail, 1/8" crown or 1" crown staple 16 ga., 1 1/2" long	3"	6"	6"	
36	Other wall sheathing	1/2" galvanized roofing nail, staple galvanized, 1 1/2" long, 1 1/4" screws, Type W or S	1/2" galvanized roofing nail, staple galvanized, 1 1/2" long, 1 1/4" screws, Type W or S	7"	7"	7"	
37	Other wall sheathing	1/2" galvanized roofing nail, staple galvanized, 1 1/2" long, 1 1/4" screws, Type W or S	1/2" galvanized roofing nail, staple galvanized, 1 1/2" long, 1 1/4" screws, Type W or S	7"	7"	7"	
38	Wood structural panels, combination subfloor underlayment to framing	6d deformed (2" x 0.120") nail or 8d common (2 1/2" x 0.131") nail	6d deformed (2" x 0.120") nail or 8d common (2 1/2" x 0.131") nail	6"	12"	12"	
39	Wood structural panels, combination subfloor underlayment to framing	8d common (2 1/2" x 0.131") nail or 8d deformed (2 1/2" x 0.120") nail	8d common (2 1/2" x 0.131") nail or 8d deformed (2 1/2" x 0.120") nail	6"	12"	12"	
40	Wood structural panels, combination subfloor underlayment to framing	10d common (3" x 0.148") nail or 8d deformed (2 1/2" x 0.120") nail	10d common (3" x 0.148") nail or 8d deformed (2 1/2" x 0.120") nail	6"	12"	12"	

For SF: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s; 1 ksi = 6.895 MPa.

a. All nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average tensile strength as shown: 80 ksi for shank diameter of 0.192 inch (20d common nail), 90 ksi for shank diameter of 0.142 inch or less.

b. Staples are 16 gauge wide and have a minimum 1/8" inch on diameter crown width.

c. Nails shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater.

d. For roof by 8-foot or 4-foot by 8-foot panels shall be applied vertically.

e. Spacing of fasteners not included in this table shall be based on Table B102.2(2).

f. For regions having basic wind speed of 110 mph or greater, 8d deformed (2 1/2" x 0.120") nails shall be used for attaching plywood and wood structural panel roof sheathing to framing within minimum 48-inch distance from gable end walls, if mean roof height is more than 25 feet, up to 35 feet maximum.

g. For regions having basic wind speed of 110 mph or less, nails for attaching wood structural panel roof sheathing to gable end walls shall be spaced 6 inches on center. When basic wind speed is greater than 100 mph, nails for attaching wood structural panel roof sheathing to intermediate supports shall be spaced 6 inches on center for maximum 48-inch distance from ridges, eaves and gable end walls, and 4 inches on center to gable end wall framing.

h. Gypsum sheathing shall conform to ASTM C 1396 and shall be laminated in accordance with GA-253. Fiberglass sheathing shall conform to ASTM C 208.

i. Spacing of fasteners on floor sheathing panel edges applies to panel edges supported by framing members and required blocking and at all floor perimeter only. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and required blocking. Blocking of roof or floor sheathing panel edges perpendicular to the framing members need not be provided except as required by other provisions of this code. Floor perimeter shall be supported by framing members or solid blocking.

ITEM	DESCRIPTION OF BUILDING MATERIALS	DESCRIPTION OF FASTENERS	NUMBER AND TYPE OF FASTENERS	SPACING OF FASTENERS	EDGES (inches)	INTERMEDIATE SUPPORTS (inches)	Notes
1	Blocking between joists or rafters to top plate, toe nail	3-8d (2 1/2" x 0.113")	3-8d	12"	6"	12"	
2	Cutting plate to plate, toe nail	3-8d (2 1/2" x 0.113")	3-8d	12"	6"	12"	
3	Cutting plate not attached to parallel rafter, lap over partitions, face nail	3-10d	3-10d	12"	6"	12"	
4	Cut the rafter, face nail or 1 1/2" x 20 gauge ridge strap	3-10d (3" x 0.128")	3-10d	12"	6"	12"	
5	Batten to plate, toe nail	2-16d (1 1/2" x 0.135")	2-16d	12"	6"	12"	
6	Roof rafter to ridge, valley or hip rafters, toe nail	4-16d (1 1/2" x 0.135")	4-16d	12"	6"	12"	
7	Roof rafter to ridge, valley or hip rafters, face nail	4-16d (1 1/2" x 0.135")	4-16d	12"	6"	12"	
8	Built up corner studs	10d (3" x 0.128")	10d	24" o.c.	6"	12"	
9	Built up header, two pieces with 1/2" spacer	16d (1 1/2" x 0.135")	16d	16" o.c. along each edge	6"	12"	
10	Continuous header, two pieces	16d (1 1/2" x 0.135")	16d	16" o.c. along each edge	6"	12"	
11	Continuous header to stud, toe nail	4-8d (2 1/2" x 0.113")	4-8d	12"	6"	12"	
12	Double studs, face nail	10d (3" x 0.128")	10d	24" o.c.	6"	12"	
13	Double top plates, face nail	10d (3" x 0.128")	10d	24" o.c.	6"	12"	
14	Double top plates, minimum 48-inch offset of end joints, face nail in lapped area	8-16d (1 1/2" x 0.135")	8-16d	16" o.c.	6"	12"	
15	Sole plate to joist or blocking, face nail	16d (1 1/2" x 0.135")	16d	16" o.c.	6"	12"	
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24	Joist to sill or girder, toe nail	3-8d (2 1/2" x 0.113")	3-8d	12"	6"	12"	
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30	Ledger strip supporting joists or rafters	3-16d (1 1/2" x 0.135")	3-16d	12"	6"	12"	

For SF: 1 inch = 25.4 mm.

a. Nail is a general description and may be Plain, modified round head or round head.

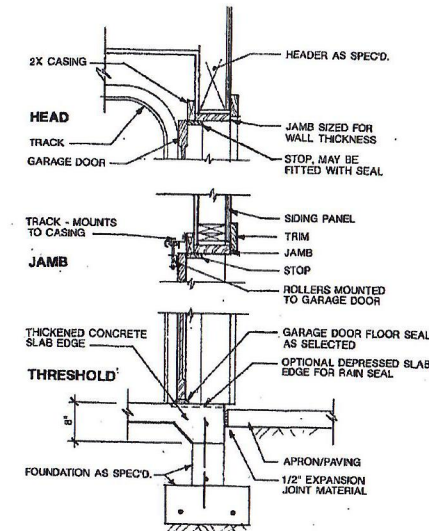
b. Staples shall have a minimum crown width of 1/8" inch on diameter except as noted.

c. Nails or staples shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater. Nails or staples shall be spaced at not more than 12 inches on center at intermediate supports for floors.

d. Fasteners shall be placed in a grid pattern throughout the body of the panel.

e. For 5-ply panels, intermediate nails shall be spaced at not more than 12 inches on center each way.

f. Underlayment shall conform to ANSI/AIA 135.4.



1 GARAGE DOOR DETAILS

check against
changes before
build

PLAN NO.

DESIGN BY:

JJB

DATE:

04/11

SHEET CONTENTS:

CODE REQUIREMENTS FOR FASTENINGS AND SHEATHING

GARAGE DOOR DETAILS

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