



Building Department

Sample Residential Garage / Shop Drawings

General Project Submittal Information

- ❖ Three (3) sets of site plans
- ❖ Two (2) sets of erosion control plans (if required)
- ❖ Three (3) sets of structural plan
- ❖ Zoning worksheet and calculations (contact the zoning department at 503-786-7630 for more information)
- ❖ Required permits and worksheets:
 - ❖ Building Permit
 - ❖ Plumbing Permit (roof drains)
 - ❖ Electrical Permit (if applicable)
 - ❖ Erosion Control Permit (if applicable)
 - ❖ Zoning Work Sheet and calculations



Building Department

Residential Garage / Shop Double Door On Eave Side Of Building

General Notes:

Size

Maximum of 24 ft x 24 ft

Design Criteria

80 mph wind, exposure "B"

Seismic Design Category D₁

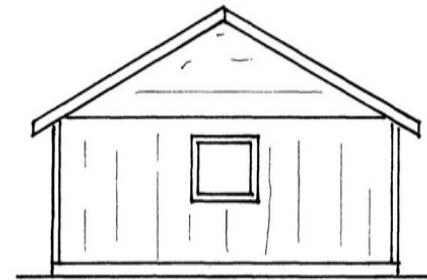
Roof snow load: (live load with minimum of 3:12 pitch roof)

25 psf up to 800 foot elevation

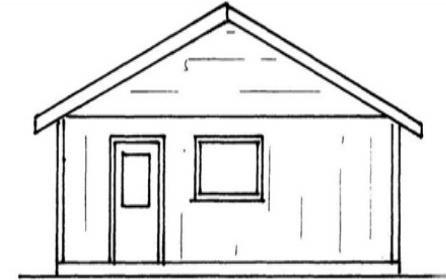
40 psf up to 801 to 1400 foot elevation

Construction Notes:

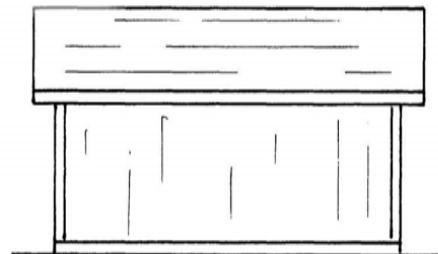
1. Verify all set backs to property lines with Planning Department 503-786-7630.
2. Check Erosion Control requirements with Storm Department 503-786-7675.
3. Check driveway access with Engineering Department 503-786-7606.
4. Garage / Shop shall be a minimum of 6' - 0" set back from other buildings.
5. A separate plumbing permit is required for rain drains.



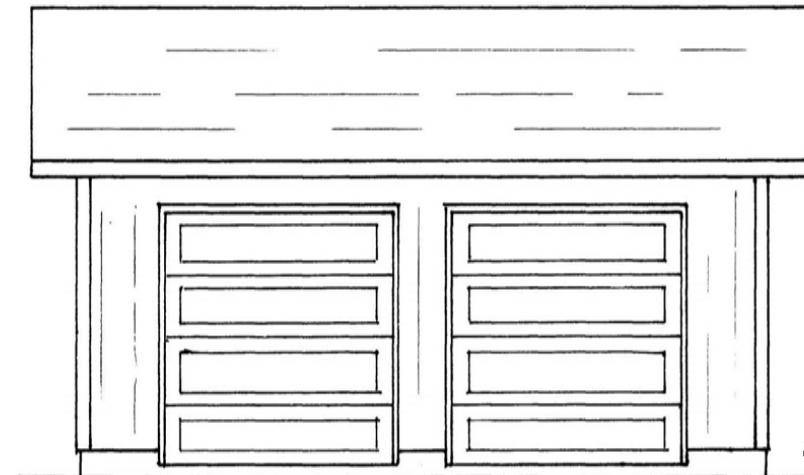
LEFT SIDE ELEVATION



RIGHT SIDE ELEVATION



REAR ELEVATION



FRONT ELEVATION



Building Department

Residential Garage / Shop Single Door On Eave Side Of Building

General Notes:

Size

Maximum of 24 ft x 24 ft

Design Criteria

80 mph wind, exposure "B"

Seismic Design Category D₁

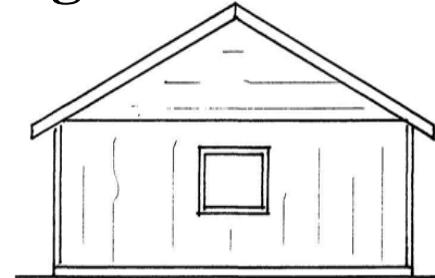
Roof snow load: (live load with minimum of 3:12 pitch roof)

25 psf up to 800 foot elevation

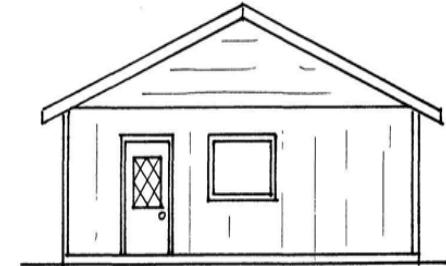
40 psf up to 801 to 1400 foot elevation

Construction Notes:

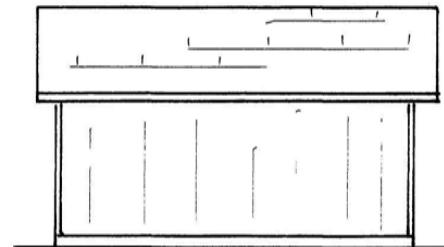
1. Verify all set backs to property lines with Planning Department 503-786-7630.
2. Check Erosion Control requirements with Storm Department 503-786-7675.
3. Check driveway access with Engineering Department 503-786-7606.
4. Garage / Shop shall be a minimum of 6' - 0" set back from other buildings.
5. A separate plumbing permit is required for rain drains.



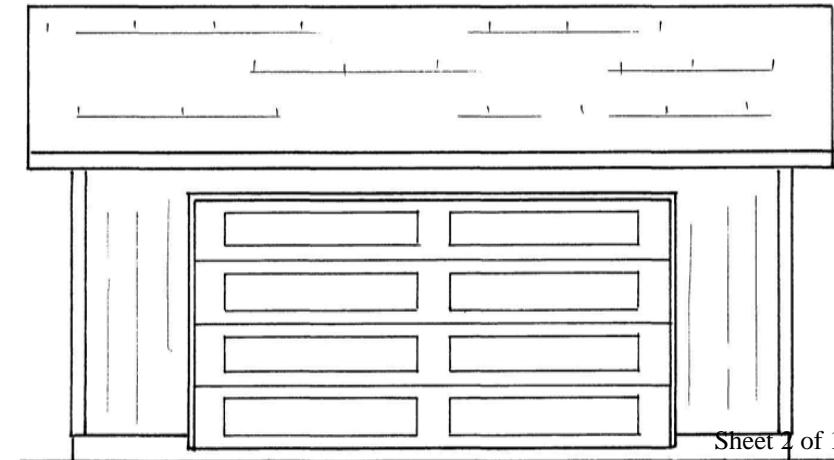
RIGHT SIDE ELEVATION



LEFT SIDE ELEVATION



REAR ELEVATION



FRONT ELEVATION



Building Department

Residential Garage / Shop Double Door On Gable Side Of Building

General Notes:

Size

Maximum of 24 ft x 24 ft

Design Criteria

80 mph wind, exposure "B"

Seismic Design Category D₁

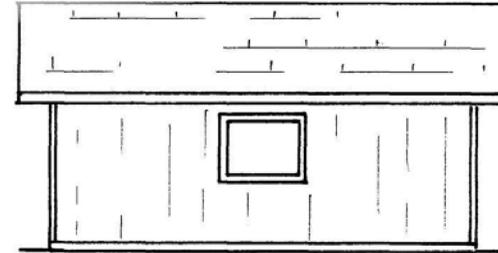
Roof snow load: (live load with minimum of 3:12 pitch roof)

25 psf up to 800 foot elevation

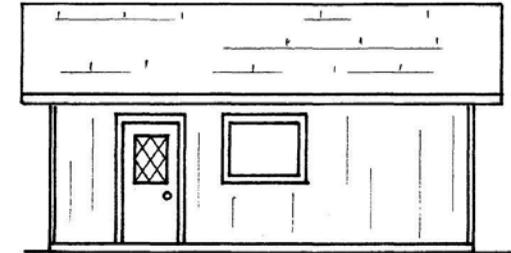
40 psf up to 801 to 1400 foot elevation

Construction Notes:

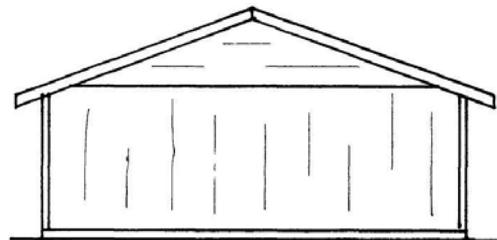
1. Verify all set backs to property lines with Planning Department 503-786-7630.
2. Check Erosion Control requirements with Storm Department 503-786-7675.
3. Check driveway access with Engineering Department 503-786-7606.
4. Garage / Shop shall be a minimum of 6' - 0" set back from other buildings.
5. A separate plumbing permit is required for rain drains.



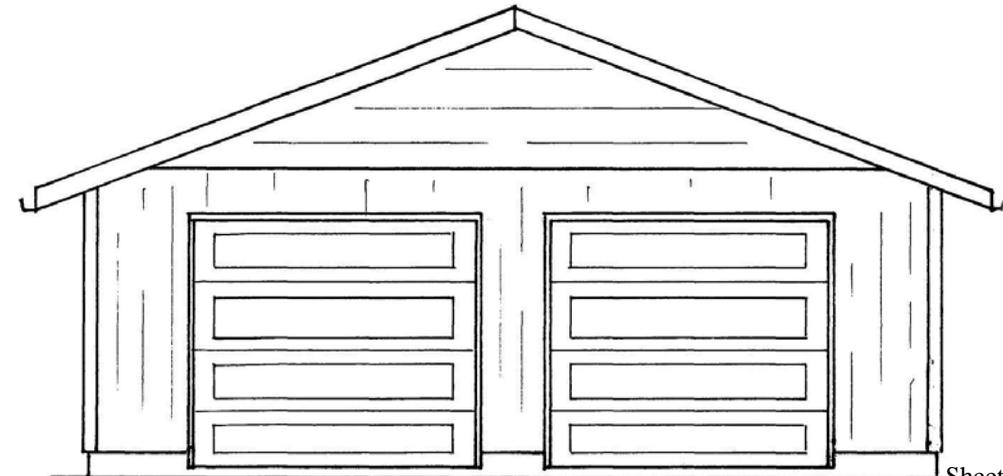
LEFT SIDE ELEVATION



RIGHT SIDE ELEVATION



REAR ELEVATION



FRONT ELEVATION



Building Department

Residential Garage / Shop Single Door On Gable Side Of Building

General Notes:

Size

Maximum of 24 ft x 24 ft

Design Criteria

80 mph wind, exposure "B"

Seismic Design Category D₁

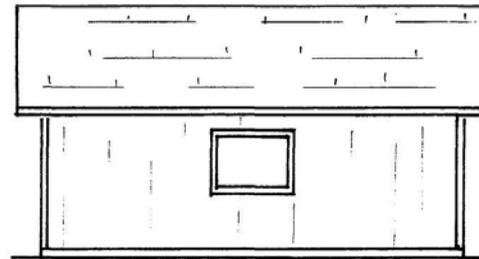
Roof snow load: (live load with minimum of 3:12 pitch roof)

25 psf up to 800 foot elevation

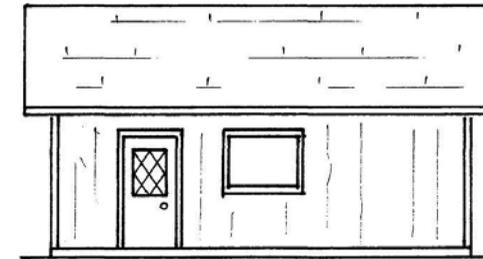
40 psf up to 801 to 1400 foot elevation

Construction Notes:

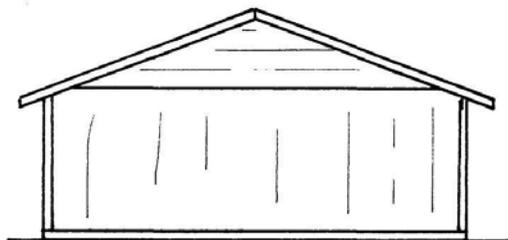
1. Verify all set backs to property lines with Planning Department 503-786-7630.
2. Check Erosion Control requirements with Storm Department 503-786-7675.
3. Check driveway access with Engineering Department 503-786-7606.
4. Garage / Shop shall be a minimum of 6' - 0" set back from other buildings.
5. A separate plumbing permit is required for rain drains.



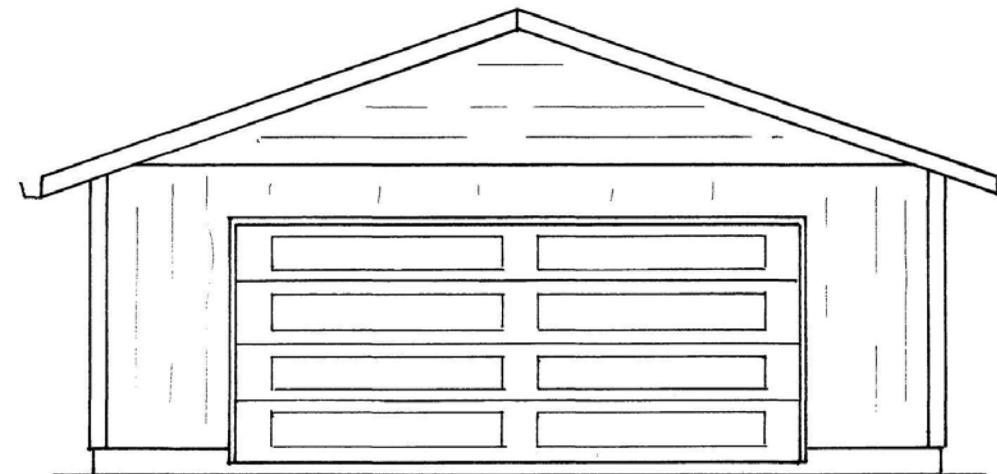
LEFT SIDE ELEVATION



RIGHT SIDE ELEVATION



REAR ELEVATION



FRONT ELEVATION



Building Department - Residential Garage / Shop

Construction Notes:

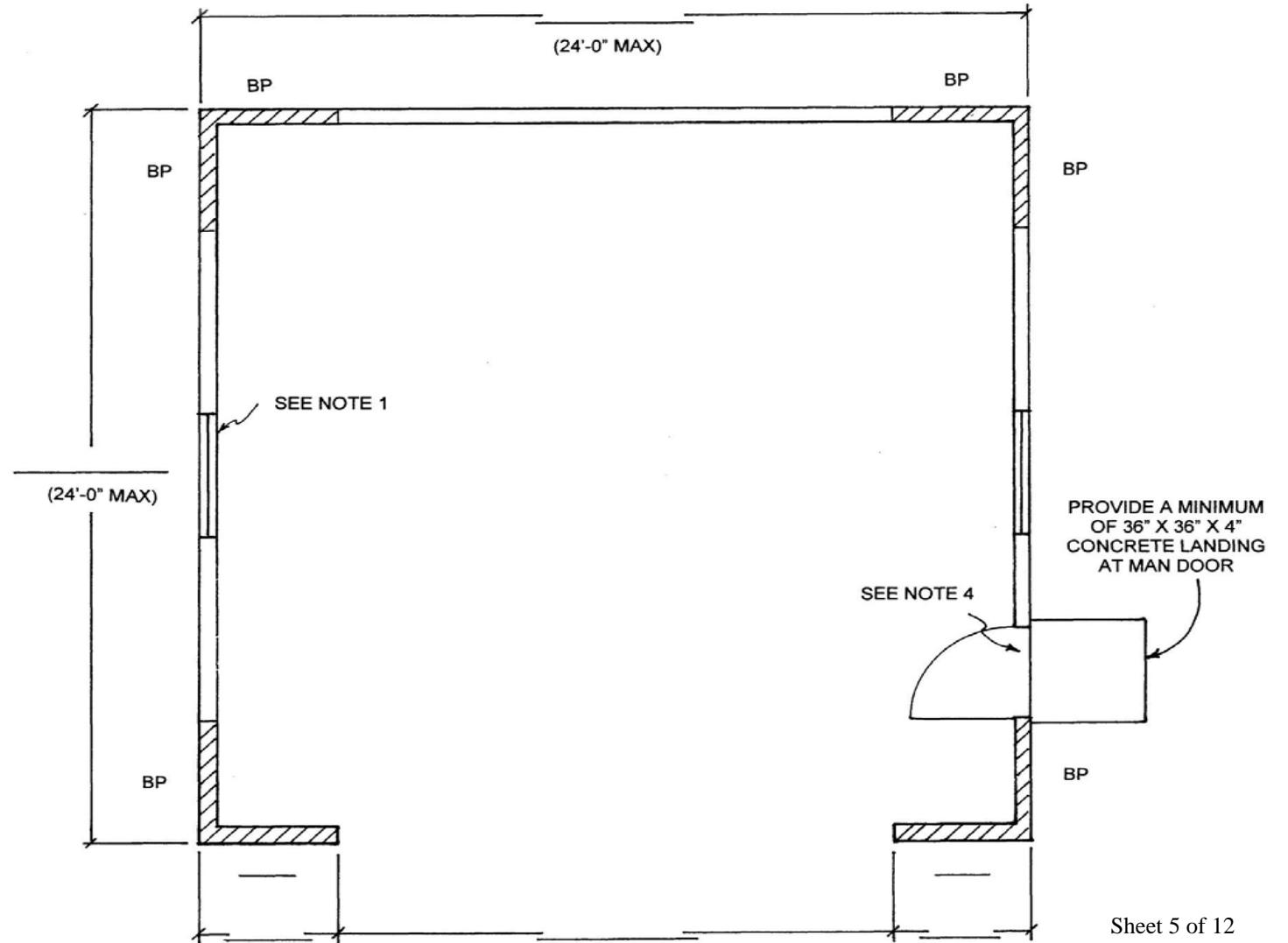
1. Doors and windows may be placed anywhere between the Brace Panels (BP), Alternate Brace Panels (ABP), or Portal Frame (PF). No door or windows shall be installed in, or encroach into a Brace Panel.
2. Exterior landing(s) shall not be more than 8 inches below the top of the exit door threshold and not less than 36" x 36".
3. Maximum wall height (plate to plate) is 10' - 0" when using Brace Panel(s) and Alternate Brace Panel(s), and 8' - 0" when using a Portal Frame. Use full height studs.
4. All headers to be DF #2 unless noted.
5. See sheet 12 of 12 for door and window header size schedules.



PRESCRIPTIVE WALL BRACING

- BRACE PANEL - BP
- ALTERNATE BRACE PANEL - ABP
- PORTAL FRAME - PF

CONSTRUCTION DETAILS REFER TO SHEETS 9, 10 & 11 of 12



FLOOR PLAN

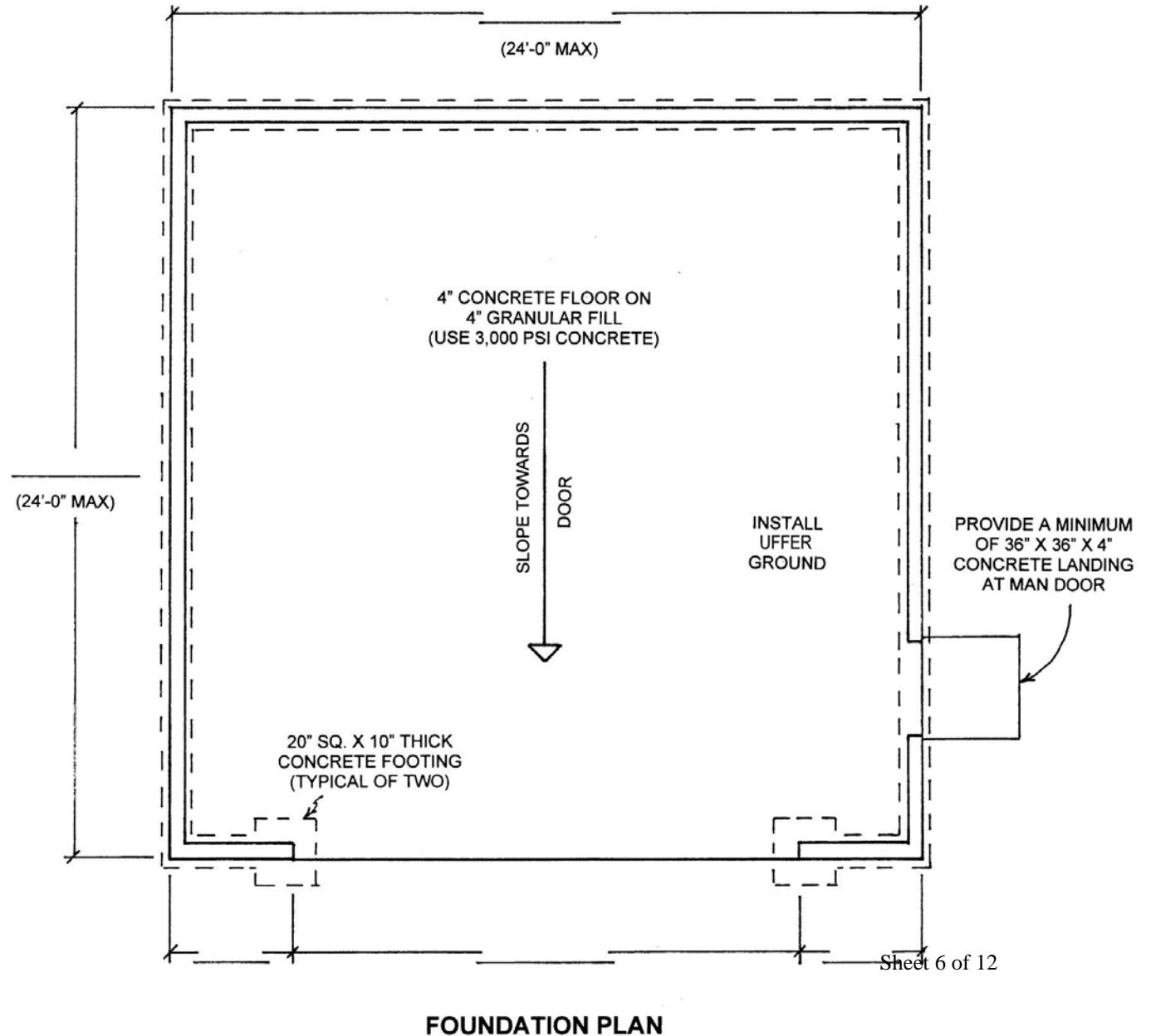
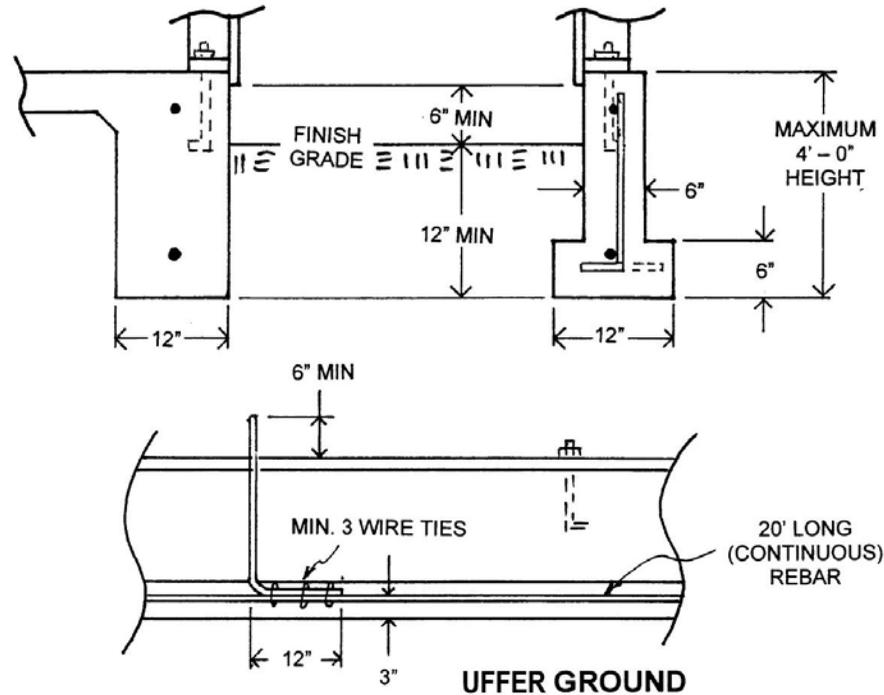


Building Department - Residential Garage / Shop

Construction Notes:

1. Footings shall bear on native soil, a minimum of 12 inches below finish grade.
2. Use a minimum of 3,000-psi concrete unless noted otherwise.
3. Anchor bolts shall be 1/2" x 10" with 7 inches embedment. Anchor bolts shall be a maximum of 6' - 0" on center, with one bolt within 12 inches of the end of each plate. A minimum of two anchor bolts per plate.
4. Provide uffer ground in footings for electrical bonding (grounding) see detail.

TYPICAL FOUNDATION SECTION



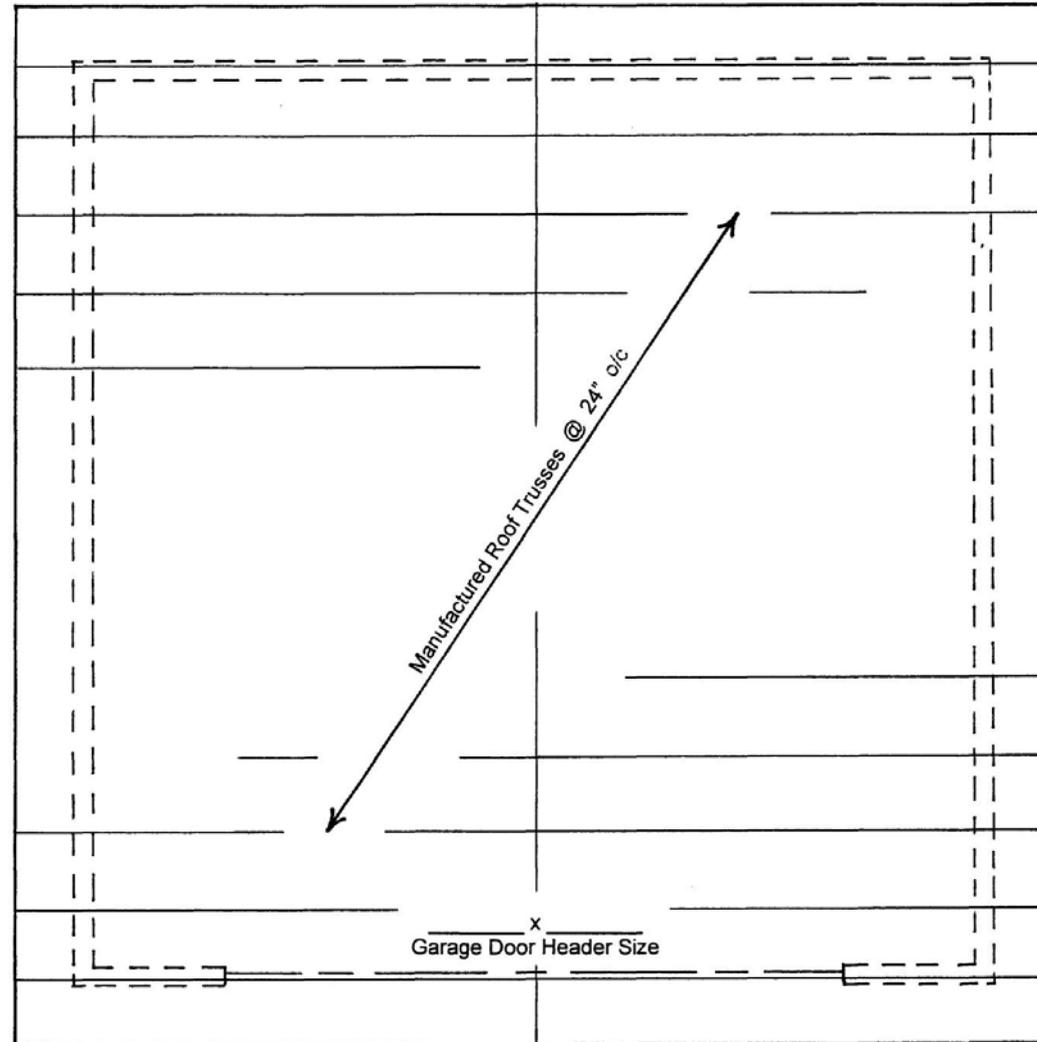


Building Department - Residential Garage / Shop

Construction Notes:

1. Roof coverings on roofs with slopes of 2:12 or greater may use composition shingles or roll roofing. Wood shingles may be used on roofs with a slope of 3:12 or greater. Wood shingles may be used on roofs with a slope of 4:12 or greater. Metal roofing may be used. Install 15-pound roof felt under all roof coverings. Use two layers of 15-pound roofing felt when the roofs slope is less than 4:12. Offset overlapping layers by 18 inches. **Do not use** tile, clay, or concrete shingles.

For door and window header sizes,
see sheet 12 of 12



ROOF PLAN

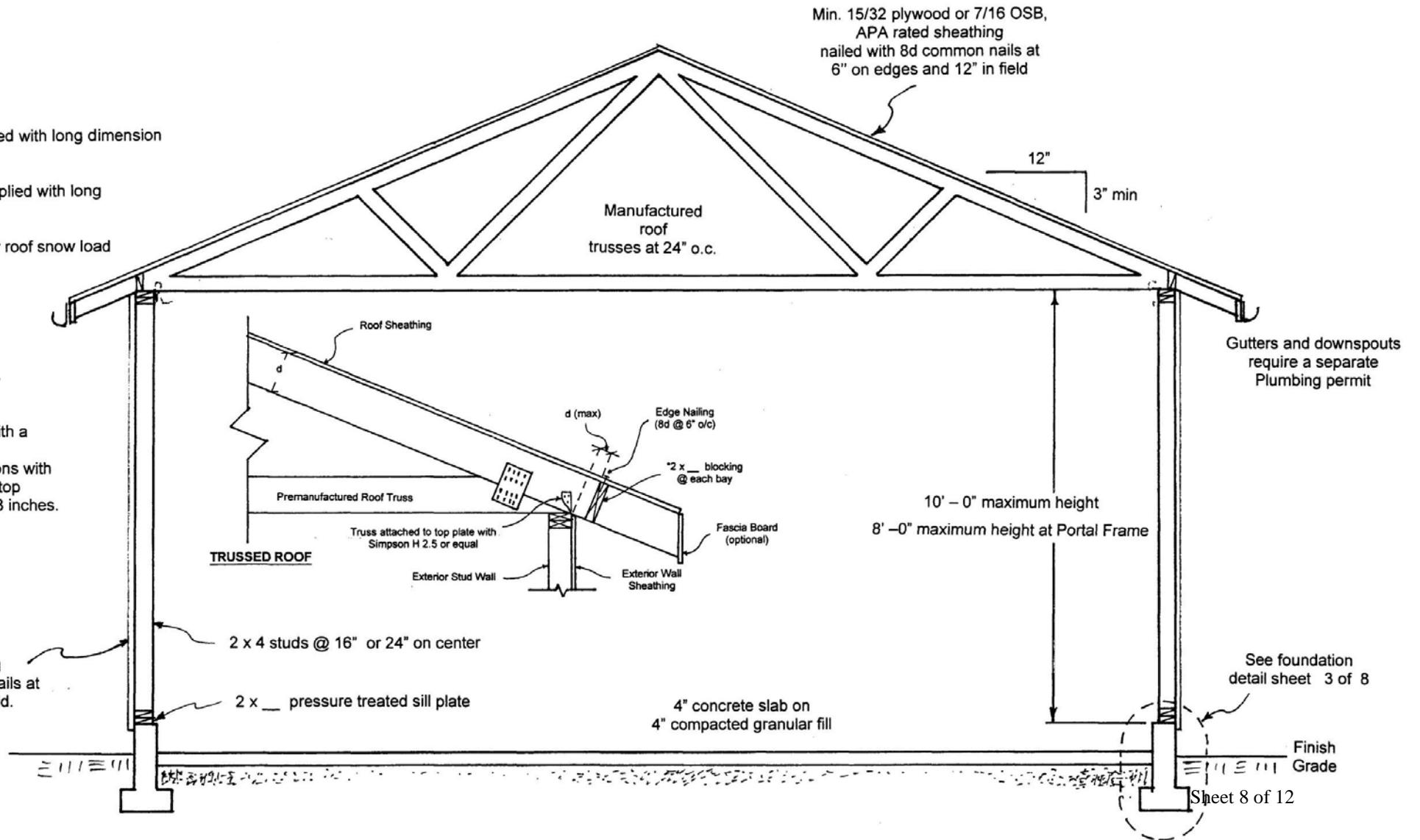


Building Department - Residential Garage / Shop

Construction Notes:

1. Use full height studs.
2. 3/8" plywood sheathing shall be applied with long dimension across studs.
3. Three-ply plywood panels shall be applied with long dimension across studs.
4. See design criteria on sheet 1 of 12 for roof snow load (live load).
5. Where roof-framing members are spaced more than 16 inches on center and studs are spaced 24 inches on center, such members shall bear within 5 inches of the studs below.
6. Exterior wall studs shall be capped with a double top plate installed to provide overlapping at corners and intersections with load-bearing partitions. End joints in top plates shall be offset a minimum of 48 inches.

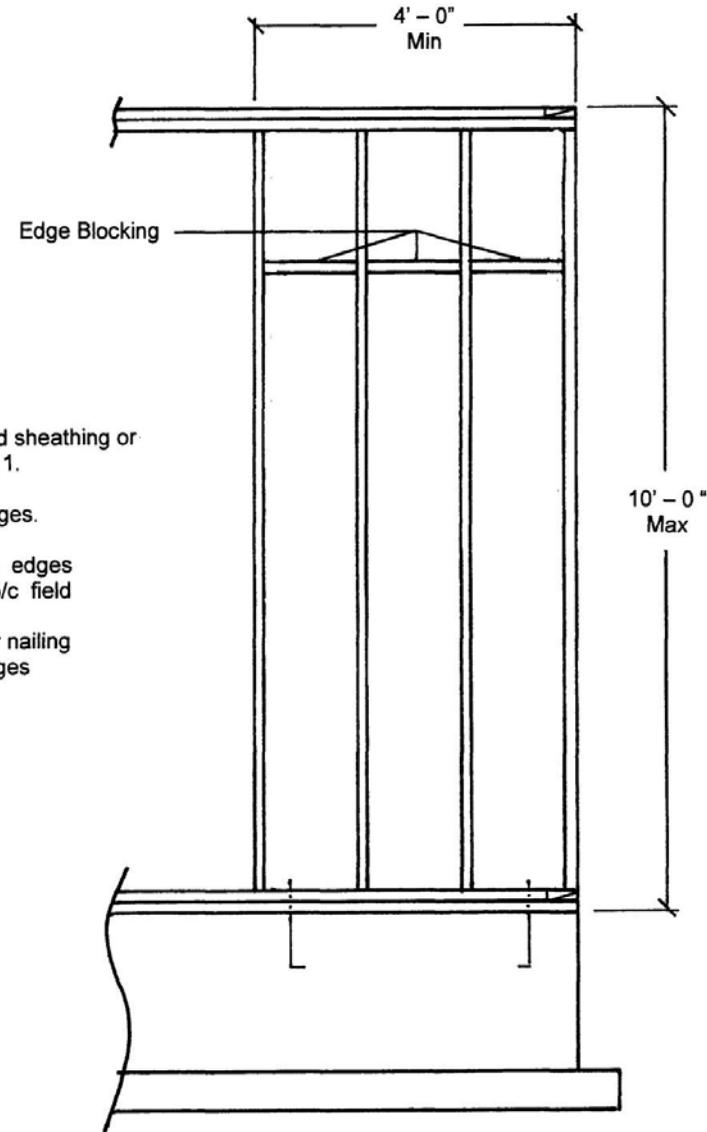
Min. 7/16" T-1-11 or 3/8 APA rated sheathing nailed with min 6d common nails at 6" on edges and 12" in field.



CROSS SECTION



Building Department - Residential Garage / Shop

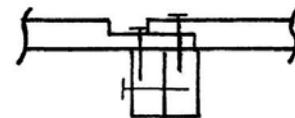


Use a min. of 3/8" APA rated sheathing or
APA rated T-1-11.

Block all panel edges.

Nail: 8d @ 6" o/c edges
8d @ 12" o/c field

See Details below for nailing
T-1-11 Panel Edges

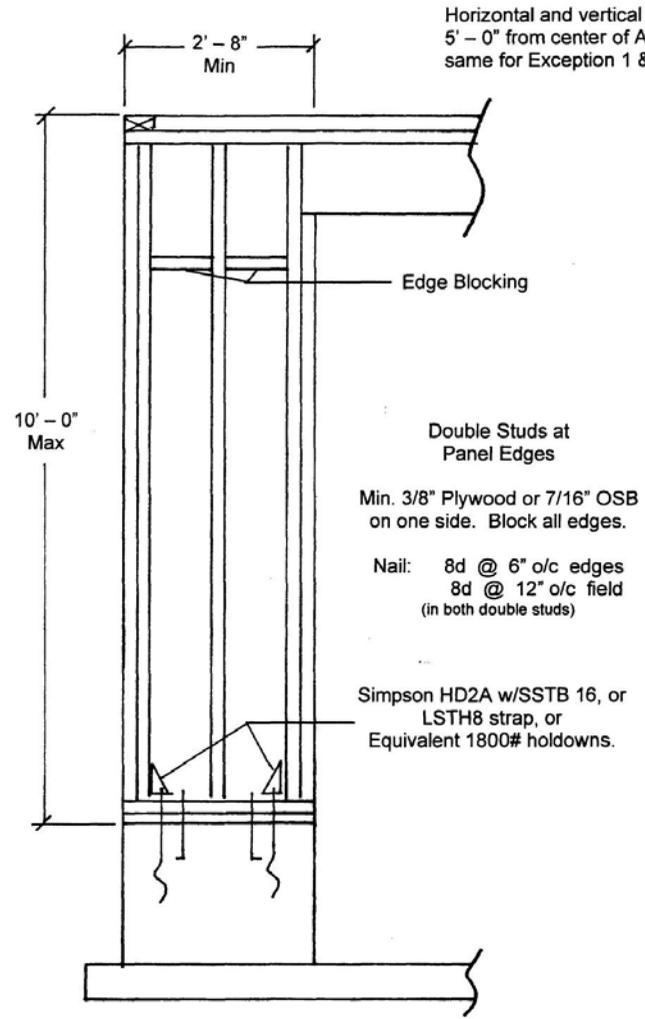


T-1-11 nailing detail
@ panel edge of brace panel

BRACE PANEL (BP)

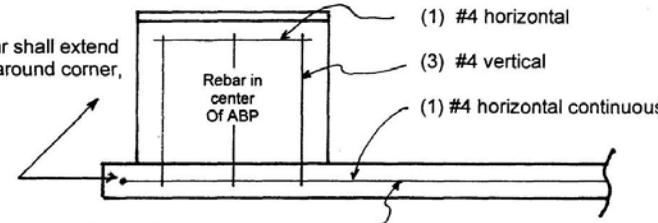


Building Department - Residential Garage / Shop



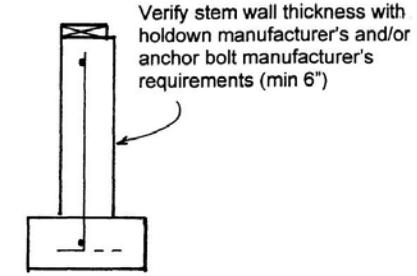
**ALTERNATE BRACE PANEL (ABP)
AT GARAGE DOOR**

Horizontal and vertical rebar shall extend 5' - 0" from center of ABP around corner, same for Exception 1 & 2.

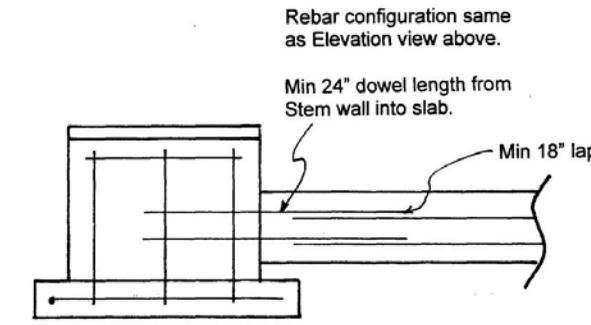


Elevation

Footing and rebar to be continuous across opening.



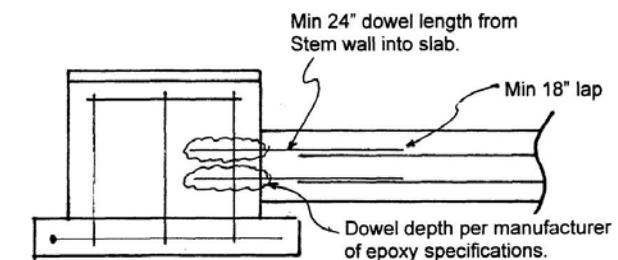
Double Studs at Panel Edges
Min. 3/8" Plywood or 7/16" OSB on one side. Block all edges.
Nail: 8d @ 6" o/c edges
8d @ 12" o/c field (in both double studs)
Simpson HD2A w/SSTB 16, or LSTH8 strap, or Equivalent 1800# holdowns.



Exception 1

Rebar configuration same as Elevation view above.

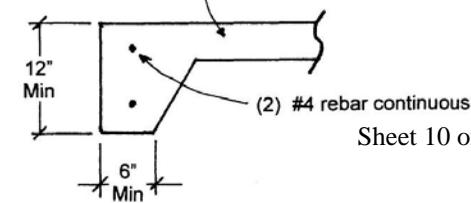
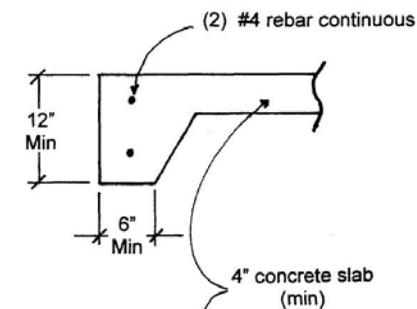
Min 24" dowel length from Stem wall into slab.



Exception 2

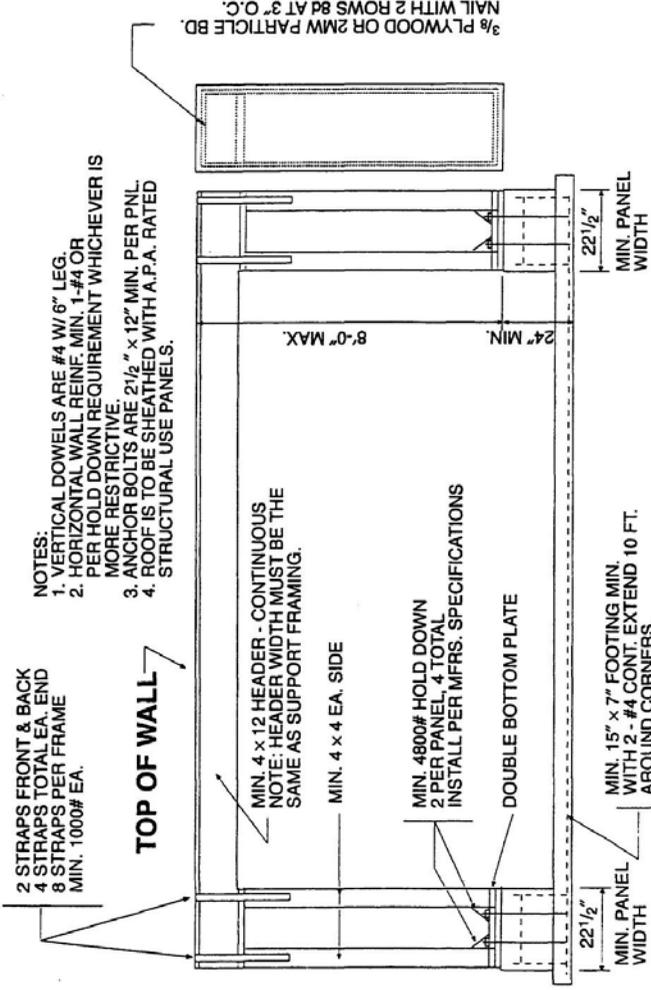
Rebar configuration same as Elevation view above.

Min 24" dowel length from Stem wall into slab.





Building Department Residential Garage / Shop



- NOTES:
1. VERTICAL DOWELS ARE #4 W/ 6" LEG.
 2. HORIZONTAL WALL REINF. MIN. 1-#4 OR PER HOLD DOWN REQUIREMENT WHICHEVER IS MORE RESTRICTIVE.
 3. ANCHOR BOLTS ARE 2 1/2" x 12" MIN. PER PNL.
 4. ROOF IS TO BE SHEATHED WITH A.P.A. RATED STRUCTURAL USE PANELS.

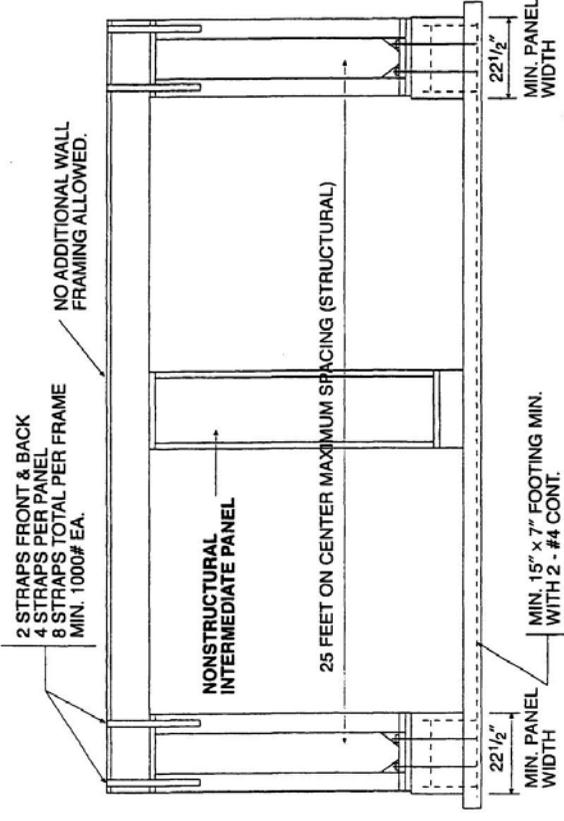
3/8 PLYWOOD OR 2MW PARTICLE BD.
NAIL WITH 2 ROWS 8d AT 3" O.C.

1 STORY STRUCTURE

THE PANELS AT EACH END OF EACH PORTAL FRAME MUST BE EQUAL WIDTH AND HEIGHT

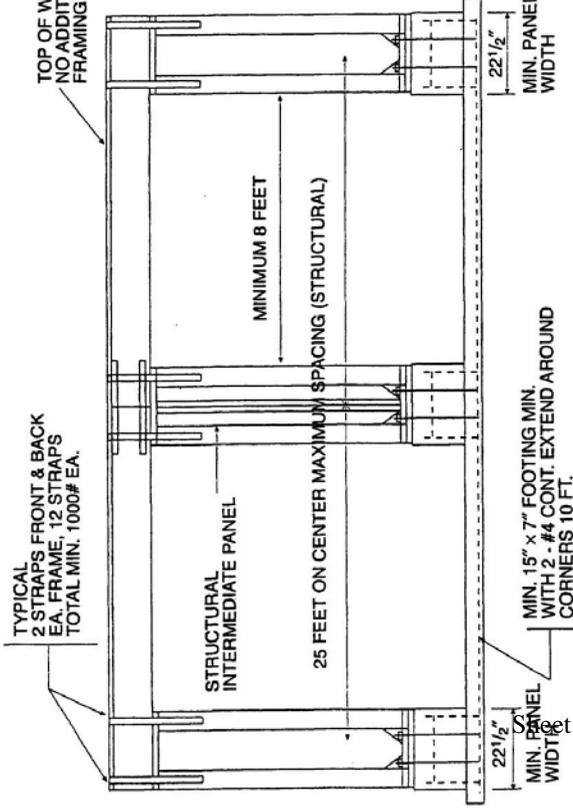
PORTAL FRAME MINIMUM BUILDING WIDTH IS 12 FEET

REV. ED
10-11-86



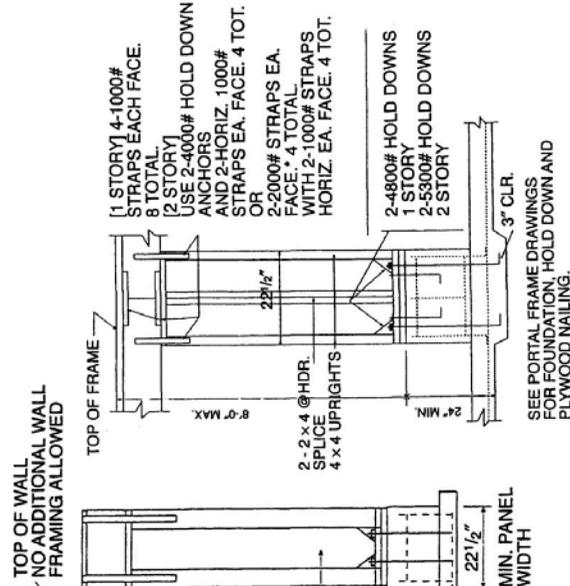
NONSTRUCTURAL INTERMEDIATE PANEL

PORTAL FRAME



STRUCTURAL INTERMEDIATE PANEL

PORTAL FRAME



SEE PORTAL FRAME DRAWINGS FOR FOUNDATION, HOLD DOWN AND PLYWOOD NAILING.

*SPECIAL FRAMING REQUIRED TO ACCOMMODATE STRAPS.

INTERMEDIATE FRAME

THIS IS NOT AN ALTERNATE BRACE PANEL



Building Department - Residential Garage / Shop

CONSTRUCTION NOTES:

- 1 Solid sawn lumber was calculated using Doug-Fir No. 2 or better.
- 2 Glu-Lam's were calculated using grade 24F-V4
- 3 When using 6 x ___ beams and headers, frame supporting walls with 2 x 6 studs.

HEADERS SUPPORTING ROOF TRUSSES WITH 25 psf SNOW LOAD

25 psf LL, 15 psf DL, Deflection L/360 LL - L/240 TL, 15% increase for snow

16 FOOT TRUSSES

header length	solid sawn size	glu-lam size
4 ft	4 x 4	
6 ft	4 x 6	
8 ft	4 x 8	
10 ft	4 x 10	
12 ft	4 x 14 or 6 x 12	3.125 x 9 or 5.125 x 7.5
14 ft	4 x 16 or 6 x 12	3.125 x 10.5 or 5.125 x 9
16 ft		3.125 x 12 or 5.125 x 10.5

20 FOOT TRUSSES

header length	solid sawn size	glu-lam beam size
4 ft	4 x 6	
6 ft	4 x 8	
8 ft	4 x 10	
10 ft	4 x 12 or 6 x 10	
12 ft	4 x 14 or 6 x 12	3.125 x 10.5 or 5.125 x 9
14 ft	4 x 16 or 6 x 14	3.125 x 12 or 5.125 x 10.5
16 ft	6 x 14	3.125 x 13.5 or 5.125 x 10.5

24 FOOT TRUSSES

header length	solid sawn size	glu-lam beam size
4 ft	4 x 6	
6 ft	4 x 8	
8 ft	4 x 10	
10 ft	4 x 14 or 6 x 10	3.125 x 9 or 5.125 x 7.5
12 ft	4 x 14 or 6 x 12	3.125 x 10.5 or 5.125 x 9
14 ft		3.125 x 12 or 5.125 x 10.5
16 ft	6 x 14	3.125 x 13.5 or 5.125 x 12

GABLE END WALL

beam length	solid sawn size
4 ft	4 x 4
6 ft	4 x 4
8 ft	4 x 6
10 ft	4 x 8
12 ft	4 x 8
14 ft	4 x 10
16 ft	4 x 12

HEADERS SUPPORTING ROOF TRUSSES WITH 40 psf SNOW LOAD

40 psf LL, 15 psf DL, Deflection L/360 LL - L/240 DL, 15% increase for snow

16 FOOT TRUSSES

header length	solid sawn size	glu-lam beam size
4 ft	4 x 6	
6 ft	4 x 8	
8 ft	4 x 10	
10 ft	4 x 12 or 6 x 10	3.125 x 9 or 5.125 x 7.5
12 ft	4 x 16 or 6 x 12	3.125 x 10.5 or 5.125 x 9
14 ft		3.125 x 12 or 5.125 x 10.5
16 ft	6 x 14	3.125 x 13.5 or 5.125 x 12

20 FOOT TRUSSES

header length	solid sawn size	glu-lam beam size
4 ft	4 x 6	
6 ft	4 x 8	
8 ft	4 x 12 or 6 x 10	
10 ft	4 x 14 or 6 x 12	3.125 x 9 or 5.125 x 7.25
12 ft		3.125 x 12 or 5.125 x 9
14 ft	6 x 14	3.125 x 13.5 or 5.125 x 10.5
16 ft	6 x 16	3.125 x 15 or 5.125 x 12

24 FOOT TRUSSES

header length	solid sawn size	glu-lam beam size
4 ft	4 x 8	
6 ft	4 x 10	
8 ft	4 x 14 or 6 x 10	3.125 x 7.5
10 ft	4 x 16 or 6 x 12	3.125 x 10.5 or 5.125 x 9
12 ft		3.125 x 12 or 5.125 x 10.5
14 ft		3.125 x 13.5 or 5.125 x 12
16 ft		3.125 x 15 or 5.125 x 13.5

GABLE END WALL

header length	solid sawn size	glu-lam beam size
4 ft	4 x 4	
6 ft	4 x 4	
8 ft	4 x 6	
10 ft	4 x 8	
12 ft	4 x 10	
14 ft	4 x 12	
16 ft	4 x 14 or 6 x 12	3.125 x 9 or 5.125 x 9