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GYPSUM PLASTER PROPORTIONS

XXI

### FLOOR JOISTS

	Spen (feet and inches)				
		2 x 6	2x8 .	2 x 10	2 x 12
Species or Group	Grade	12" oc 16" oc 24"oc	12" oc 16" oc 24" oc	12" oc 16" oc 24" oc	12" oc 16" oc 24" oc
Doug-Fir Larch (Western)	Sel. Struc. No.1 & Btr. No. 1 No. 2 No. 3	12-6 11-4 9-11 12-3 11-2 9-9 12-0 10-11 9-7 11-10 10-9 9-1 9-8 8-5 6-10	16-6 15-0 13-1 16-2 14-8 12-8 15-10 14-5 12-4 15-7 14-1 11-6 12-4 10-8 8-8	21-0 19-1 16-8 20-8 18-9 16-1 20-3 18-5 15-0 19-10 17-2 14-1 15-0 13-0 10-7	25-7 23-3 20-3 25-1 22-10 18-8 24-8 21-4 17-5 23-0 19-11 16-3 17-5 15-1 12-4
Doug-Fir South (Western)	Scl. Struc. No. 1 No. 2 No.3	11-3 10-3 11-10 11-0 10-0 8-9 10-9 9-9 8-6 9-6 8-2 6-8	14-11 13-6 11-10 14-6 13-2 11-6 14-2 12-10 11-2 12-0 10-5 8-6	19-0 17-3 15-1 18-6 16-10 14-3 18-0 16-5 13-8 14-8 12-8 10-4	23-1 21-0 18-4 22-6 20-3 16-6 21-11 19-4 15-10 17-0 14-8 12-0
Hem-Fir (Western)	Scl. Struc. No. 1 & Btr. No. 1 No. 2 No. 3	11-10 10-9 9-4 11-7 10-6 9-2 11-7 10-6 9-2 11-0 10-0 8-9 9-8 8-5 6-10	15-7 14-2 12-4 15-3 13-10 12-1 15-3 13-10 12-0 14-6 13-2 11-4 12-4 10-8 8-8	19-10 18-0 15-9 19-5 17-8 15-5 19-5 17-8 14-8 18-6 16-10 13-10 15-0 13-0 10-7	24-2 21-11 19-2 23-7 21-6 17-10 23-7 20-9 17-0 22-6 19-8 16-1 17-5 15-1 12-4
Spruce- Pine-fir (South)	Scl. Struc. No.1 & Btr. No. 1 No. 2 No. 3	11-0 10-0 8-9 10-9 9-9 8-6 10-5 9-6 8-3 8-11 7-9 6-4	14-6 13-2 11-6 14-2 12-10 11-3 13-9 12-6 10-8 11-4 9-10 8-0	18-6 16-10 14-8 18-0 16-5 13-10 17-6 15-11 13-0 13-10 12-0 9-9	22-6 20-6 17-11 21-11 19-8 16-1 21-4 18-6 15-1 16-1 13-11 11-4
Doug Fir Larch North (Canada)	Sle. Struc. No. 1 No. 2 No. 3	12-6 11-4 9-11 11-10 10-9 8-10 11-10 10-9 8-10 9-6 8-2 6-8	16-6 15-0 8-10 15-7 13-8 11-2 15-7 13-8 11-2 12-0 10-5 8-6	21-0 19-1 16-8 19-3 16-8 13-8 19-3 16-8 13-8 14-8 12-8 10-4	25-7 23-3 19-10 22-4 19-4 15-10 22-4 19-4 15-10 17-0 14-8 12-0
Hem-Fir North (Canada)	Sle. Struc. No. 1 No. 2 No. 3	12-0 17-11 9-7 11-10 10-9 9-4 11-10 10-9 9-4 10-5 9-0 7-4	15-10 14-5 12-7 15-7 14-2 12-4 15-7 14-2 12-4 13-2 11-5 9-4	20-3 18-5 16-1 19-10 18-0 15-0 19-10 18-0 15-0 16-1 13-11 11-5	24-8 22-5 19-7 24-2 21-4 17-5 24-2 21-4 17-5 18-8 16-2 13-2
Spruce, Pine, Fir (Canada)	Sie. Struc. No. 1 No. 2 No. 3	11-7 10-6 9-2 11-3 10-3 8-11 11-3 10-3 8-11 9-8 8-5 6-10	15-3 13-10 12-1 14-11 13-6 11-6 14-11 13-6 11-6 12-4 10-8 8-8	19-5 17-8 15-5 19-0 17-8 14-1 19-0 17-8 14-1 15-0 13-0 10-7	23-7 21-6 18-9 23-0 19-11 16-3 23-0 19-11 16-3 17-5 15-1 12-4

			Span (feet and inches)		
		2×6	2 x 8	2 x 10	2 x 12
Species or Group	Grade .	. 12" oc 16" oc 24"oc	12" oc 16" oc 24" oc	12" oc 16" oc 24" oc	12" oc 16" oc 24" oc
Doug-Fir Lerch (Western)	Sel. Struc. No.1 & Btr. No. 1 No. 2 No. 3	11-4 10-4 9-0 11-2 10-2 8-10 10-11 9-11 8-8 10-9 9-9 8-1 8-8 7-6 6-2	15-0 13-7 11-11 14-8 13-4 11-8 14-5 13-1 11-0 14-2 12-7 10-3 11-0 9-6 7-9	19-1 17-4 15-2 18-9 17-0 14-5 18-5 16-5 13-5 17-9 15-5 12-7 13-5 11-8 9-6	23-3 21-1 18-5 22-10 20-5 16-8 22-0 19-1 15-7 20-7 17-10 14-7 15-7 13-6 11-0
Doug-Fir South (Western)	Scl. Struc. No. 1 No. 2 No. 3	10-3 9-4 8-2 10-0 9-1 7-1 9-9 8-10 7-9 8-6 7-4 6-0	13-6 12-3 10-9 13-2 12-0 10-5 12-10 11-8 10-0 10-9 9-3 7-7	17-3 15-8 13-8 16-10 15-3 12-9 16-5 14-11 12-2 13-1 11-4 9-3	21-0 19-1 16-8 20-6 18-1 14-9 15-2 13-2 10-9 15-2 13-2 10-9
Hem-Fir (Western)	Sel. Struc. No. 1 & Btr. No. 1 No. 2 No. 3	10.9 9.9 8.6 10.6 9.6 8.4 10.6 9.6 8.4 10.0 9.1 7.11 8.8 7.6 6.2	14-2 12-10 11-3 13-10 12-7 11-0 13-10 12-7 10-9 13-2 12-0 10-2 11-0 9-6 7-9	18-0 16-5 14-4 17-8 16-0 13-9 17-8 16-0 13-9 16-10 15-2 12-5 13-5 11-8 9-6	21-11 19-11 17-5 21-6 19-6 16-0 21-6 18-7 15-2 20-4 17-7 14-4 15-7 13-6 11-0
Spruce- Pine-Fir (South)	Sel. Struc. No. 1 No. 2 No. 3	10-0 9-9 8-6 9-9 8-10 7-9 9-6 8-7 7-6 8-0 6-11 5-8	13-2 12-0 10-6 12-10 11-8 10-2 12-6 11-4 9-6 10-2 8-9 7-2	16-10 15-3 13-4 16-5 14-11 12-5 15-11 14-3 11-8 12-5 10-9 8-9	20-6 18-7 16-3 19-11 17-7 14-4 19-1 16-6 13-6 14-4 12-5 10-2
Doug Fir Larch North (Canada)	SIe. Struc. No. 1 No. 2 No. 3	11.4 10.4 9.0 10.9 9.8 7.11 10.9 9.8 7.11 8.6 7.4 6.0	15-0 13-7 11-11 14-1 12-3 10-0 14-1 12-3 10-0 10-9 9-3 7-7	19-1 17-4 15-2 17-3 14-11 12-2 17-3 14-11 12-2 13-1 11-4 9-3	23-3 21-1 17-9 20-0 17-4 14-2 20-0 17-4 14-2 15-2 13-2 10-9
Hem-Fir North (Canada)	Sie. Struc. No. 1 No. 2 No. 3	10-119-11 8-8 10-9 9-9 8-6 10-9 9-9 8-6 9-4 8-1 6-7	14-5 13-1 11-5 14-2 12-10 11-0 14-2 12-10 11-0 11-9 10-3 8-4	18-5 16-9 14-7 18-0 16-5 13-5 18-0 16-5 13-5 14-5 12-6 10-2	22-5 20-4 17-9 21-11 19-1 15-7 21-11 19-1 15-7 16-8 14-6 11-10
Spruce, Pine, Fir (Canada)	Ste. Struc. No. 1 No. 2 No. 3	10-6 9-6 8-4 10-3 9-4 8-1 10-3 9-4 8-1 8-8 7-6 6-2	13-10 12-7 11-0 13-6 12-3 10-3 13-6 12-3 10-3 11-0 9-6 7-9	17-8 16-0 14-0 17-3 15-5 12-7 17-3 15-5 12-7 13-5 11-8 9-6	21-6 20-7 15-7 19-6 17-10 17-0 19-6 17-10 17-0 15-7 13-6 11-0

BUILDING ELEMENT NAIL SIZE AND TYPE NUMBER AND LOCATION

FLOOR		
CONSTRUCTION		
Built-up girders and	20d common	32" o.c. direct
beams		
Bridging to joists	8d common	2 each direct end
Floor joist to studs (no	10d common	5 direct
ceiling joists)		
Floor joist to studs (with	10d common	2 direct
ceiling joists)		
Floor joists to sill or	8d common	3 toe nail
girder	•	
Ledger strip	16d common	3 each direct joist
1" subflooring (6" or	8d common	2 each direct joist
less)		
2" subflooring	16d common	2 each direct joist
Particle board	6d annular threaded	6" o.c. direct edges and
underlayment (1/4"-		12" o.c. intermediate
3/4")		•
	8d common	6" o.c. direct edges and
particle board		12" o.c. intermediate
subflooring (5/8" or		
greater)		
Wood structural panel	8d common or 6d	6" o.c. direct edges and
subflooring (19/32"-	annular or spiral thread	12" o.c. intermediate
3/4")	annaide of opilal anoda	
3/4 )		<u> </u>

	nmon or 8d rng 6" o.c. intermediate 8d annular or read
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## CEILING JOISTS

Use these loading conditions for the following: No attic storage. Ceiling where the roof slope is not steeper than 3 in 12. Drywall ceilings.

			Span (feet and inches)		
	,	2 x 4	. 2x6	2 x 8	2 x 10
Species or Group	Grade	12" oc 16" oc 24"oc	12" oc 16" oc 24" oc	12" oc 16" oc 24" oc	12" oc 16" oc 24" oc
Dotig-Fir Lerch (Western)	Sel. Struc. No.1 & Btr. No. 1 No. 2 No. 3	13-2 11-11 10-5 12-11 11-9 10-3 12-8 11-6 10-0 12-5 11-3 9-10 10-10 9-5 7-8	20-8 18-9 16-4 20-3 18-5 16-1 19-11 18-1 15-8 19-6 17-8 14-10 15-10 13-9 11-2	27-2 24-8 21-7 26-9 24-3 21-2 26-2 23-10 20-1 25-8 23-0 18-9 20-1 17-5 14-2	34-8 31-6 27-6 34-1 31-0 26-4 33-5 30-0 24-6 32-5 28-1 22-11 24-6 21-3 17-4
Doug-Fir South (Western)	ScL Struc. No. 1 No. 2 No. 3	11-10 10-9 9-5 11-7 10-6 9-2 11-3 10-3 8-11 10-7 9-2 7-6	18-8 16-11 14-9 18-2 16-6 14-5 17-8 16-1 14-1 15-5 13-5 10-11	24-7 22-4 19-6 24-0 21-9 19-0 23-4 21-2 18-3 19-7 16-11 13-10	31-4 28-6 24-10 30-7 27-9 23-3 29-9 27-1 22-3 23-11 20-8 16-11
Hem-Fir (Western)	Sel. Struc. No. 1 & Btr. No. 1 No. 2 No. 3	12-5 11-3 9-10 12-2 11-0 9-8 12-2 11-0 9-8 11-7 10-6 9-2 10-10 9-5 7-8	19-6 17-8 15-6 19-1 17-4 15-2 19-1 17-4 15-2 18-2 16-6 14-5 15-10 13-9 11-2	25-8 23-4 20-5 25-2 22-10 19-11 25-2 22-10 19-7 24-0 21-9 18-6 20-1 17-5 14-2	32-9 29-9 26-0 32-1 29-2 25-2 32-1 29-2 23-11 30-7 27-8 22-7 24-6 21-3 17-4
Spruce- Pine-Fir (South)	Sci. Struc. No. 1 No. 2 No. 3	11-7 10-6 9-2 11-3 10-3 8-11 10-11 9-11 8-8 10-0 8-8 7-1	18-2 16-6 14-5 17-8 16-1 14-1 17-2 15-7 13-8 14-7 12-8 10-4	24-0 21-9 19-0 23-4 21-2 18-6 22-8 20-7 17-5 18-6 16-0 13-1	30-7 27-9 24-3 29-9 27-1 22-7 28-11 26-0. 21-3 22-7 19-7 16-0
Doug Fir Larch North (Canada)	Sle. Struc. No. 1 No. 2 No. 3	13-2 11-11 10-5 12-5 11-3 9-10 12-5 11-3 9-10 10-7 9-2 7-7	20-8 18-9 16-4 · 19-6 17-8 14-5 19-6 17-8 14-5 15-5 13-5 10-11	27-2 24-8 21-7 25-8 22-4 18-3 25-5 22-4 18-3 19-7 16-11 13-10	34-8 31-6 27-6 31-6 27-3 22-3 31-6 27-3 22-3 23-11 20-8 16-11
Hem-Fir North (Canada)	Sle. Struc. No. 1 No. 2 No. 3	12-8 11-6 10-0 12-5 11-3 9-10 12-5 11-3 9-10 11-7 10-1 8-3	19-11 18-1 15-9 19-6 17-8 15-6 19-6 17-8 15-6 17-0 14-9 12-0	26-2 23-10 20-10 25-8 23-4 20-1 25-8 23-4 20-1 21-6 18-8 15-3	33-5 30-5 26-6 32-9 29-9 24-6 32-9 29-9 24-6 26-4 22-9 18-7
Spruce, Pine, Fir (Canada)	Sie. Struc. No. 1 No. 2 No. 3	12-2 11-0 9-8 11-10 10-9 9-5 11-10 10-9 9-5 10-10 9-5 7-8	19-1 17-4 15-2 18-8 16-11 14-9 18-8 16-11 14-9 15-10 13-9 11-2	25-2 22-10 19-11 24-7 22-4 18-9 24-7 22-4 18-9 20-1 17-5 14-2	32-1 29-2 25-5 31-4 28-1 22-11 31-4 28-1 22-11 24-6 21-3 17-4

CEILING JOISTS
Use these loading conditions for the following:
Limited attic storage where development of
future rooms is not possible. Ceilings where the
roof pitch is steeper than 3 in 12.
Where the clear height in the attic is greater
than 30 inches. Drywall ceiling.

Sam	1fact	end.	indies)	

	Span (fort and anches)				
		2×4	2×6	2 x 8	2×10
Species or Group	Grade	12" oc 16" oc 24"oc	12" oc 16" oc 24" oc	12" oc 16" oc 24" ec	12" oc 16" oc 24" oc
Doug-Fir Larch (Western)	Sci. Struc. No.1 & Btr. No. 1 No. 2 No. 3	10-5 9-6 8-3 10-3 9-4 8-1 10-0 9-1 7-8 9-10 8-9 7-2 7-8 6-8 5-5	16-4 14-11 13-0 16-1 14-7 12-0 15-9 13-9 11-2 14-10 12-10 10-6 11-2 9-8 7-11	21-7 19-7 17-1 21-2 18-8 15-3 20-1 17-5 14-2 18-9 16-3 13-3 14-2 12-4 10-0	27-6 25-0 20-11 26-4 22-9 18-7 24-6 21-3 17-4 22-11 19-10 16-3 17-4 15-0 12-3
Doug-Fir South (Western)	Scl. Struc. No. 1 No. 2 No. 3	9-5 8-7 7-6 9-2 8-4 7-3 8-11 8-1 7-0 7-6 6-6 5-3	14-9 13-5 11-9 14-5 13-0 10-8 14-1 12-6 10-2 10-11 9-6 7-9	19-6 17-9 15-6 19-0 16-6 13-6 18-3 15-9 12-11 13-10 12-0 9-9	24-10 22-7 19-9 23-3 20-2 16-5 22-3 19-3 15-9 16-11 14-8 11-11
Hem-Fit (Westem)	Sel. Struc. No. 1 & Btr. No. 1 No. 2 No. 3	9-10 8-11 7-10 9-8 8-9 7-8 9-8 8-9 7-6 9-2 8-4 7-1 7-8 6-8 5-5	15-6 14-1 12-3 15-2 13-9 11-6 15-2 13-5 10-11 14-5 12-8 10-4 11-2 9-8 7-11	20-5 13-6 16-2 19-11 17-10 14-7 19-7 16-11 13-10 18-6 16-0 13-1 14-2 12-4 10-0	26-0 23-8 20-6 25-2 21-9 17-9 23-11 20-8 16-11 22-7 19-7 16-0 17-4 15-0 12-3
Spruce- Pine-Fir (South)	Sel Struc No. 1 No. 2 No. 3	9-2 8-4 7-3 8-11 8-1 7-1 8-8 7-11 6-8 7-1 6-1 5-0	14-5 13-1 11-5 14-1 12-8 10-4 13-8 11-11 9-8 10-4 8-11 7-4	19-0 17-3 15-1 18-6 16-0 13-1 17-5 15-1 12-4 13-1 11-4 9-3	24-3 22-1 19-3 22-7 19-7 16-0 21-3 18-5 15-0 16-0 13-10 11-4
Doug Fir Lerch North (Canada)	Sie Struc No. 1 No. 2 No. 3	10-5 9-6 8-3 9-10 8-6 7-0 9-10 8-6 7-0 7-6 6-6 5-3	16-4 14-11 12-9 14-5 12-6 10-2 14-5 12-6 10-2 10-11 9-6 7-9	21-7 19-7 16-2 18-3 15-9 12-11 18-3 15-9 12-11 13-10 12-0 9-9	27-6 24-3 19-9 22-3 19-3 15-9 22-3 19-3 15-9 16-11 14-8 11-11
Hem-Fir North (Canada)	Sie, Struc. No. I No. 2 No. 3	10-0 9-1 8-0 9-10 8-11 7-8 9-10 8-11 7-8 8-3 7-1 5-10	15-9 14-4 12-6 15-6 13-9 11-2 15-6 13-9 11-2 12-0 10-5 8-6	20-10 18-11 16-2 20-1 17-5 14-2 20-1 17-5 14-2 15-3 13-2 10-9	26-6 24-1 21-3 24-6 21-2 17-4 24-6 21-2 17-4 18-7 16-1 13-2
Spruce, Pine, Fir (Canada)	Sie, Struc. No. i No. 2 No. 3	9-8 8-9 7-8 9-5 8-7 7-2 9-5 8-7 7-2 7-8 6-8 5-5	15-2 13-9 12-0 14-9 12-10 10-6 14-9 12-10 10-6 11-2 9-8 7-11	19-11 18-2 15-10 18-9 16-3 13-3 18-9 16-3 13-3 14-2 12-4 10-0	25.5 23-2 19.5 22-11 19-10 16-3 22-11 19-10 16-3 17-4 15-0 12-3

ROOF RAFTERS
Flat roof or cathedral ceiling
with drywall finish.
Light roof covering

Span (feet and inches)					
		2×6	2×8	2×10	2 x 12
or Group	Grade	12" oc 16" oc 24"oc	12" oc 16" oc 24" oc	12" oc 16" oc 24" oc	12" oc 16" oc 24" oc
Doug-Fir Larch (Western)	Scl. Struc. No.1 & Btr. No. 1 No. 2 . No. 3	14-4 13-0 11-4 14-1 12-9 10-6 13-9 12-0 9-10 13-0 11-3 9-2 9-10 8-6 6-11	18-10 17-2 15-0 18-6 16-4 13-4 17-7 15-3 12-5 16-5 14-3 11-8 12-5 10-9 8-9	24-1 21-10 18-3 23-0 19-11 16-3 21-6 18-7 15-2 20-1 17-5 14-2 15-2 13-2 10-9	29-3 26-0 21-2 26-8 23-1 18-11 24-11 21-7 17-7 23-3 20-2 16-6 17-7 15-3 12-5
Doug-Fir South (Western)	Sci. Struc. No. 1 No. 2 No. 3	12-11 11-9 10-3 12-7 11-5 9-4 12-3 10-11 8-11 9-7 8-3 6-9	17-0 15-6 13-6 16-7 14-5 11-9 16-0 13-10 11-3 12-1 10-6 8-7	21-9 19-9 17-3 20-4 17-8 14-5 19-6 16-11 13-9 14-10 12-10 10-6	26-5 24-0 20-1 23-7 20-5 16-8 22-7 19-7 16-0 17-2 14-10 12-2
Hem-Fir (Western)	Scl. Struc. No. 1 & Btr. No. 1 No. 2 No. 3	13-6 12-3 10-9 13-3 12-0 10-1 13-3 11-9 9-7 12-7 11-1 9-1 9-10 8-6 6-11	17-10 16-2 14-2 17-5 15-7 12-9 17-2 14-10 12-1 16-2 14-0 11-6 12-5 10-9 8-9	22-9 20-8 18-0 22-0 19-1 15-7 20-11 18-1 14-10 19-10 17-2 14-0 15-2 13-2 10-9	27-8 25-1 20-10 25-6 22-1 18-0 24-3 21-0 17-2 22-11 19-11 16-3 17-7 15-3 12-5
Spruce- Pine-Fir (South)	Sel Struc. No. 1 No. 2 No. 3	12-7 11-5 10-0 12-3 11-1 9-1 11-11 10-5 8-6 9-1 7-10 6-5	16-7 15-1 13-2 16-2 14-0 11-6 15-3 13-2 10-9 11-6 9-11 8-1	21-2 19-3 16-10 19-10 17-2 14-0 18-7 16-1 13-2 14-0 12-1 9-11	25-9 23-5 20-1 22-11 19-11 16-3 21-7 18-8 15-3 16-3 14-1 11-6
Doug Fir Larch North (Canada)	Sie. Struc. No. 1 No. 2 No. 3	14-4 13-0 11-2 12-7 10-11 8-11 12-7 10-11 8-11 9-7 8-3 6-9	18-10 17-2 14-2 16-0 13-10 11-3 16-0 13-10 11-3 12-1 10-6 8-7	24-1 21-2 17-4 19-6 16-11 13-9 19-6 16-11 13-9 14-10 12-10 10-6	28-5 24-7 20-1 22-7 19-7 16-0 22-7 19-7 16-0 17-2 14-10 12-2
Hem-Fir North (Canada)	Sie, Struc. No. 1 No. 2 No. 3	13-9 12-6 10-11 13-6 12-0 9-10 13-6 12-0 9-10 10-6 9-1 7-5	18-2 16-6 14-2 17-7 15-3 12-5 17-7 15-3 12-5 13-4 11-7 9-5	23-2 21-1 17-4 21-6 18-7 15-2 21-6 18-7 15-2 16-3 14-1 11-6	28-2 24-7 20-1 24-11 21-7 17-7 24-11 21-7 17-7 18-11 16-4 13-4
Spruce, Pine, Fir (Canada)	Sie, Struc, No. 1 No. 2 No. 3	13-3 12-0 10-6 12-11 11-3 9-2 12-11 11-3 9-2 9-10 8-6 6-11	17-5 15-10 13-10 16-5 14-3 11-8 16-5 14-3 11-8 12-5 10-9 8-9	22-3 20-2 17-0 20-1 17-5 14-2 20-1 17-5 14-2 15-2 13-2 10-9	27-1 24-1 19-8 23-3 20-2 16-6 23-3 20-2 16-6 17-7 15-3 12-5

ROOF RAFTERS
Roof slope greater than 3 in 12
No ceiling finish

### Span (feet and inches)

		2×6	2 x 8	2 x 10	2 x 12
Species or Group	Grade	12" oc 16" oc 24"oc	12" oc 16" oc 24" oc	12" oc 16" oc 24" oc	12" oc 16" oc 24" oc
Doug-Fir Larch (Western)	Sci. Struc. No.1 & Btr. No. 1 No. 2 No. 3	15-9 14-4 11-10 14-11 12-11 10-6 13-11 12-0 9-10 13-0 11-3 9-2 9-10 8-6 6-11	20-9 18-4 15-0 18-10 16-4 13-4 17-7 15-3 12-5 16-5 14-3 11-8 12-5 10-9 8-9	25-10 22-5 18-3 23-0 19-11 16-3 21-6 18-7 15-2 20-1 17-5 14-2 15-2 13-2 10-9	30-0 26-0 21-2 26-8 23-1 18-11 24-11 21-7 17-7 23-3 20-2 16-6 17-7 15-3 12-5
Doug-Fir South (Western)	Scl. Struc. No. 1 No. 2 No. 3	14-3 12-11 11-2 13-2 11-5 9-4 12-7 10-11 8-11 9-7 8-3 6-9	18-9 17-0 14-2 16-8 14-5 11-9 16-0 13-10 11-3 12-1 10-6 8-7	23-11 21-2 17-4 20-4 17-8 14-5 19-6 16-11 13-9 14-10 12-10 10-6	28-5 24-7 20-1 23-7 20-5 16-8 22-7 19-7 16-0 17-2 14-10 12-2
Hem-Fir (Western)	Sel. Struc. No. 1 & Btr. • No. 1 No. 2 No. 3	14-10 13-6 11-7 14-3 12-4 10-1 13-6 11-9 9-7 12-10 11-1 9-1 9-10 8-6 6-11	19-7 17-10 14-8 18-0 15-7 12-9 17-2 14-10 12-1 16-2 14-0 11-6 12-5 10-9 8-9	25-0 22-0 18-0 22-0 19-1 15-7 20-11 18-1 14-10 19-10 17-2 14-0 15-2 13-2 10-9	29-6 25-6 20-10 25-6 22-1 18-0 24-3 21-0 17-2 22-11 19-11 16-3 17-7 15-3 12-5
Spruce- Pine-Fir (South)	Sci. Struc. No. 1 No. 2 No. 3	13-10 12-7 11-0 12-10 11-1 9-1 12-0 10-5 8-6 9-1 7-10 6-5	18-3 16-7 14-2 16-2 14-0 11-6 15-3 13-2 10-9 11-6 9-11 8-1	23-4 21-2 17-4 19-10 17-2 14-0 18-7 16-1 13-2 14-0 12-1 9-11	28-5 24-7 20-1 22-11 19-11 16-3 21-7 18-8 15-3 16-3 14-1 11-6
Doug Fir Larch North (Canada)	Sie. Struc. No. 1 No. 2 No. 3	15-9 13-8 11-2 12-7 10-11 8-11 12-7 10-11 8-11 9-7 8-3 6-9	20-0 17-4 14-2 16-0 13-10 11-3 16-0 13-10 11-3 12-1 10-6 8-7	24-6 21-2 17-4 19-6 16-11 13-9 19-6 16-11 13-9 14-10 12-10 10-6	
Hem-Fir North (Canada)	Sie. Struc. No. 1 No. 2 No. 3	15-2 13-8 11-2 13-11 12-0 9-10 13-11 12-0 9-10 10-6 9-1 7-5	20-0 17-4 14-2 17-7 15-3 12-5 17-7 15-3 12-5 13-4 11-7 9-5	24-6 21-2 17-4 21-6 18-7 15-2 21-6 18-7 15-2 16-3 14-1 11-6	
Spruce, Pine, Fir (Canada)	Sle. Struc. No. 1 No. 2 No. 3	14-7 13-3 11-0 13-0 11-3 9-2 13-0 11-3 9-2 9-10 8-6 6-11	19-2 17-0 13-11 16-5 14-3 11-8 16-5 14-3 11-8 12-5 10-9 8-9	24-0 20-9 17-0 20-1 17-5 14-2 20-1 17-5 14-4 15-2 13-2 10-9	

BUILDING ELEMENT	NAIL SIZE AND TYPE	NUMBER AND LOCATION
Roof and ceiling construction		
Ceiling joists to plate	16d common	3 toe nail
Ceiling joists (laps over partition)	10d common	3 direct nail
Ceiling joists (parallel to rafter)	10d common	3 direct nail
Collar beam	10d common	3 direct
Roof rafter to plate	8d common	3 toe nail
Roof rafter to ridge	16d common	2 toe nail or direct nail
Jack rafter to hip	10d common or 16d common	3 toe nail or 2 direct nail
1" roof decking (6" or less in width)	8d common	2 each direct rafter
1" roof decking (over 6" in width)	8d common	3 each direct rafter

BUILDING ELEMENT NAIL SIZE AND TYPE NUMBER AND LOCATION

		· · · · · · · · · · · · · · · · · · ·
ROOF COVERINGS		
MATERIAL	FASTENER STYLE 2	SPACING SPECIFICATIONS 4
Base ply and roofing plies	12 ga. Roofing nail 6	Nails driven through tin discs, spaced maximum 12" o.c.
Asphalt shingles	12 ga. 3/8" HD roofing nail	2 nails per each 36" - 40" section of shingle
Asphalt hip and ridge shingles	12 ga. 3/8" HD roofing nail	2 nails are required for each hip and ridge shingle
Wood shingles 3	.076 shingle nail .080 T-nail	24" shingle 2 fasteners per shingle
Wood shingle 3	.080 shingle nail .080 T-nail	24" shingle 2 fasteners per shingle
Wood shakes 3	.0915 shingle nail .0915 to .099 T-nail	2 nails per shake
Particle board roof and wall sheathing (1/2" or less)	6d common	6" o.c. direct edges and 12" o.c. intermediate
5/8" or greater	8d common	6" o.c. direct edges and 12" o.c. intermediate
Wood structural panel roof and wall sheathing (1/2" or less)	6d common	6" o.c. direct edges and 12" intermediate

(19/32" or greater)		6" o.c. direct edges and 12" o.c. intermediate
Weatherboarding	8d corrosion resistant	2 each bearing

- 1. Shingles and shakes attached to roof sheathing having the underside of the sheathing exposed to visual view may be attached in these locations with nails having shorter lengths than specified so as not to penetrate the exposed side of the sheathing.
- 2. All nails shall be corrosion resistant.
- 3. Nails may have T-heads, clipped round heads or standard heads.
- 4. Roof coverings shall be fastened in an approved manner.
- 5. Nails shall be long enough to penetrate into the sheathing 3/4" or through the thickness of the sheathing, whichever is less.
- 6. Annularly threaded nails with minimum 1" diameter heads shall be used for plywood decks.
  - a. Shingle nails shall penetrate not less than 3/4" into nailing strips, sheathing or supporting construction except as otherwise provided for in Section 1507.0.

BUILDING ELEMENT	NAIL SIZE AND TYPE	NUMBER AND LOCATION
Wall and Roof Sheathing	·	
1" wall sheathing (8" or less in width)	8d common	2 each direct stud
1" wall sheathing (over 8" in width)	8d common	3 each direct
Diagonal wall sheathing (seismic bracing	See Table 2306.4.5	
1/2" fiberboard sheathing	1 ½" galvanized roofing nail or 6d common nail	3" o.c. exterior edge 6" o.c. intermediate
25/32" fiberboard sheathing	1 3/4" galvanized roofing nail or 8d common nail	3" o.c. exterior edge 6" o.c. intermediate
Gypsum sheathing	12 ga. 1 ¼" large head, corrosion resistant	4" o.c. on edge 8" o.c. intermediate
Gypsum sheathing (seismic bracing)	11 ga. 1 ¾" long 7/16" head, diamond point, galvanized	4" o.c. all bearing points

BUILDING ELEMENT	NAIL SIZE AND TYPE	NUMBER AND LOCATION	
WALL CONSTRUCTION			
Stud to sole plate	8d common	4 toe nail or 2 direct nail	
Stud to cap plate	16d common	2 toe nail or 2 direct nail	
Double studs	10d common	12" o.c. direct	
Comer studs	16d common	24" o.c. direct	
Sole plate to joist or	16d common	16" o.c.	
blocking			
Interior-braced wall sole	16d common	12" o.c.	
plate to parallel joist			
Double cap plate	10d common	12" o.c.	
Cap plate laps	10d common	2 direct nail	
Ribbon strip 6" or less	10d common	2 each direct bearing	
Ribbon strip 6" or more	10d common	3 each direct bearing	
Diagonal brace (to stud	8d common	2 each direct bearing	
and plate)			
Interior-braced wall top	10d common	12" o.c.	
plate to joist or blocking			
Tall beams to headers	20d common	1 ech end 4 sq. ft. floor	
(where nailing is		area	
permitted)			
Header beams to	20d common	1 each end 8 sq. ft. floor	
trimmers (where nailing is		area	
permitted)			
Continuous header to	8d common	4 toe nail	
stud			
Continuous header two	16d common	16" o.c. direct	
pieces			

## OTHER GYPSUM INSTALLATION (NAILS)

Thickness of gypsum wall-board inches	Plane of framing surface	Long dimension of gypsum wallboard sheets in relation to direction of framing members	Maximum spacing of framing members center to center in inches	Maximum spacing of fasteners center to center in inches	nails (a) to wood
1/2"	Horizontal	Either direction	16	7	No. 13 ga., 1 5/8" long,
	Horizontal	Perpendicul ar	24	7	19/64"   head, .098"
	Vertical	Either Direction	24	8	diameter, 1 3/8" long, annular ringed, 6d cooler nail
½" or 5/8" with	Horizontal	Either direction	16	16	As required for ½" and
adhesive	Horizontal	Perpendicul ar	24	12	5/8" gypsum
	Vertical	Either direction	24	16	wallboard, see above

2 layers	Horizontal	Perpendicul	24	16	Base ply nailed as
each 3/8" (3/4" total)	Vertical	ar Either Direction	24	24	required for 1/2" gypsum wallboard and face ply placed with adhesive

- a. Where the metal framing has a clinching design formed to receive the nails by two edges of metal, the nails shall not be less than 5/8" longer than the wallboard thickness, and shall have ringed shanks. Where the metal framing has a nailing groove formed to receive the nails, the nails shall have barbed shanks or be 5d cooler nails (No. 13-1/2 ga., 1-5/8" long, 15/16" head). For ½" gypsum wallboard; 6d cooler (No. 13 ga., 1-7/8" long, 15/64" head) for 5/8" gypsum wallboard.
- b. Two nails at 2" to 2-1/2" apart are permitted to be used if the pairs are spaced 12" center-to-center except around perimeters.
- c. For fire-resistance rated construction assemblies, see the pertinent fire test information.
- d. One inch equals 25.4 mm.

# OTHER GYPSUM INSTALLATION (SCREWS)

Thickness of gypsum wall board inches	Plane of framing surface	Long dimension of gypsum wallboard sheets in relation to direction of framing members	maximum spacing of framing members center to center in inches	Maximum spacing of fasteners center to center in inches	Nails )a) to wood
1/2"	Horizontal Horizontal	Either direction Perpendicul	16 24	12	No. 13 ga., 1-3/8" long, 19/64" head .098"
	Vertical	ar Either direction	24	12	diameter, 1- 1/4" long, annular ringed 5d cooler nail
5/8"	Horizontal	Either direction	16	12	no. 13 ga., 1-5/8" long,
	Horizontal	Perpendicul ar	24	12	19/64" head, .098"
	Vertical	Either Direction	24	12	diameter, 1'3/8" long, annular ringed, 6d cooler nail
½" or 5/8" with	Horizontal	Either direction	16	16	As required for ½" and
adhesive	Horizontal	Perpendicul ar	24	16	5/8" gypsum
	Vertical	Either direction	24	24	wallboard, see above

2 Layers each 3/8"	Horizontal	Perpendicul ar	24	6	Base ply nailed as
(3/4" total)	Vertical	Either direction	24	24	required for ½" gypsum wallboard and face ply placed with adhesive

- a. Screws shall be No. 6 with tapered head and long enough to penetrate into wood framing not less than 5/8" and metal framing not less than 1/4".
- b. For fire-resistance rated construction assemblies, see the pertinent fire test information.
- c. One inch equals 25.4 mm.

### THICKNESS OF PLASTER FINISHED THICKNESS OF PLASTER FROM FACE OF LATH, MASONRY, CONCRETE

	MASONKI, CONCRETE	
PLASTER BASE	GYPSUM PLASTER	PORTLAND CEMENT MORTAR
Expanded metal lath	5/8° minimum (1)	5/8" minimum (1)
Wire lath	5/8 <sup>∞</sup> minimum (1)	3/4" minimum (interior) (2) 7/8" minimum (exterior) (2)
Gypsum lath	7" minimam	
Masonry walls (3)	%" minimum	½" minimum
Monolithic concrete walls (3,4)	5/8" maximum	7/8°° maximum
Monolithic concrete ceilings (3,4)	3/8" maximum (5)	火" maximum
Gypsum veneer base (6)	1/16" minimum	

### For SI: 1 inch +25.4 mm.

- When measured from back plane of expanded metal lath, exclusive of ribs, or self-furring lath, plaster thickness shall be 3/4" minimum. (1)
- When measured from face of support or backing.
- Because meaonry and concrete surfaces may vary in plane, thickness of plaster need not be uniform.
- (2) (3) (4) (5) When applied over liquid bonding agent, finish coat may be applied directly to concrete surface.

  Approved acoustical plaster may be applied directly to concrete or over base coat plaster, beyond the finanium plaster thickness
- Attachment shall be in accordance with table (APPLICATION AND MUNIMUM THICKNESS OF GYPSUM WALLBOARD). (6)

### GYPSUM PLASTER PROPORTIONS (1)

## MAXIMUM VOLUME

### AGGREGATE PER

100 POUNDS MEAT PLASTER (2)

NUMBER	COAT	PLASTER BASE OR LATH	DAMP LOOSE SAND	PERLITE OR VERMICULITE
Two-coat work	Base coat	Gypsum lath	2 1/2	2
Two-coat work	Base coat	Masonry	3	3
Three-coat work	First coat	Lath	2 (4)	5
Three-coat work	Second coat	lath	3 (4)	2 (5)
Three-coat work	First and Second	Masonry	3	3

For SI: 1 inch + 25.4 mm. 1 cubic foot + 0.0283 m to the third power, 1 pound + 0.454 kg.

When determining the amount of aggregate in set plaster, a tolerance of 10 percent shall be allowed. (2).

(4)

<sup>(1).</sup> Wood-fibered gypsum plaster may be mixed in the portions of 100 pounds of gypsum to not more than 1 cubic foot of sand where applied on masonry or concrete.

Combinations of sand and lightweight aggregate may be used, provided the volume and weight relationship of the aggregate to the gypsum plaster is maintained. (3).

If used for both first and second coats, the volume of aggregate may be 2 ½ cubic feet.

Where plaster is 1 inch or more in total fulciness, the proportion for the second coat may be increased to 3 cubic feet. (5)

### MORTAR PROPORTIONS

Mortar	Type Portland Cement or		Ma	Masonry Cement		Hydrated Lime or	Aggregate Ratio Measured in Damp, Loose
		Bleached Cement	М	S	N	Lime Putty	Condition.
Cement-Lime	M S N O	î 1 1				1/4 Over 1/4to1/2 Over ½ to 1 1/4 Over 1 1/4 to 2 ½	Not less than 2 1/4 and not more than 3 times the sum of separate volumes of lime, if used, and cement
Masonry Cement	M M S S N	1 1\2" —	<u> </u>	<u></u>	1 -1 1		Not less than 2 1/4 and not more than 3 times the sum of separate volumes of lime, if used, and cement

For SI: 1 cubic foot = 0.0283 m to the third power, 1 pound = 0.454kg

For the purpose of these specifications, the weight of 1 cubic foot of the respective materials shall be considered to be as follows:

Portland Cement

94 lb.

Masonry Cement

Weight printed on the bag

Hydrated Lime

40 lb. 80 lb.

Lime Putty (Quicklime) Sand, damp and loose

80 lb.

2. Two air-entraining materials shall not be combined in mortar

### GROUT PROPORTIONS BY VOLUME FOR MASONRY CONSTRUCTION

AGGREGATE MEASURED IN A DAMP, LOOSE CONDITION

Туре	Portland Cement or Blended Concrete Slag Cement	Hydrate Lime or Lime Putty	Fine	Coarse
Fine	1	0 to 1/10	2 1/4 to 3 times the sum of the volume of the cementitious materials	
Coarse	1	0 to 1/10	2 1/4 to 3 times the sum of the volume of the cementitious materials	1 to 2 times the sum of the Volums of the cementitious materials

Siding

# TYPE OF SUPPORTS FOR SIDING MATERIAL AND FASTENERS

Siding Material	Normal Thicknes s (Inches)	Plywood Particle board	Fiberboard	Gypsum
Horizontal Aluminum siding Without insulation	.019	.120 nail-1- 1/2" .120 nail-1- 1/2"	.120 nail- 2" .120 nail- 2"	.120 nail-2" .120 nail-2"
With insulation	.019	.120 nail-1- 1/2"	.120 nail- 2-1/2"	.120 nail-2- 1/2"

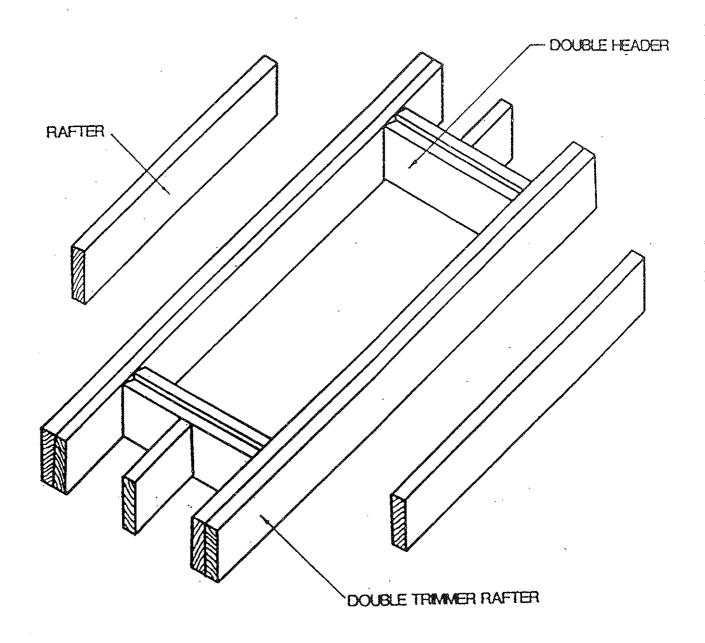
### GYPSUM PLASTER PROPORTIONS (1)

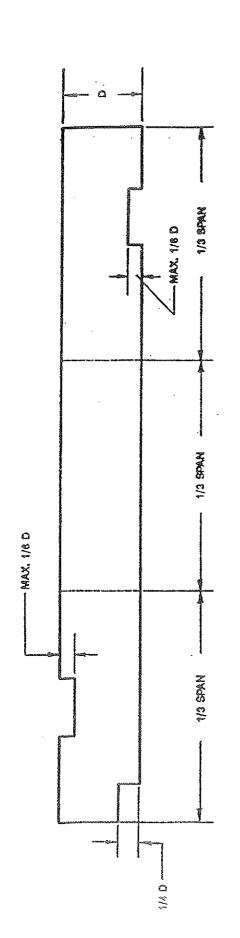
MAXIMUM VOLUME AGGREGATE PER 100 POUNDS MEAT PLASTER (2)

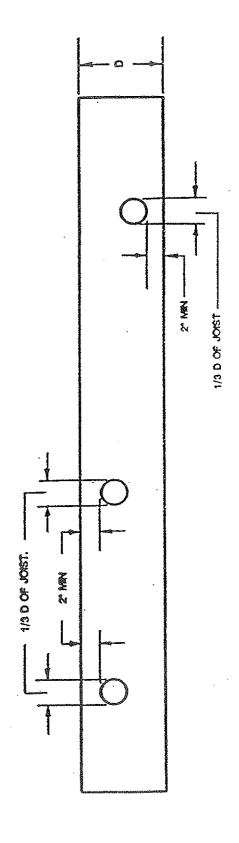
	·	100 FOORDS MEAT TEASTER (2)		
NUMBER	COAT	PLASTER BASE OR LATH	DAMP LOOSE SAND	PERLITE OR VERMICULITE
Two-coat work	Base coat	Gypsum lath	2 1/2	2
Two-coat work	Base coat	Masonry	3	3
Three-coat work	First coat	Lath	2 (4)	5
Three-coat work	Second coat	lath	3 (4)	2 (5).
Three-coat work	First and Second coats	Masonry	3	3

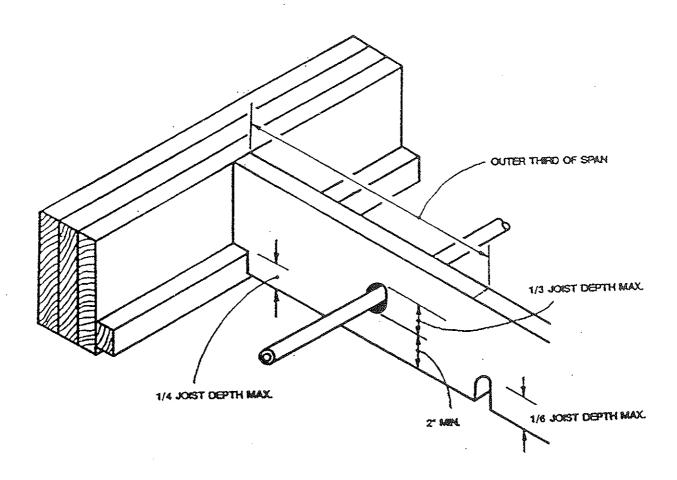
For SI: 1 inch + 25.4 mm. 1 cubic foot + 0.0283 m to the third power, 1 pound + 0.454 kg.

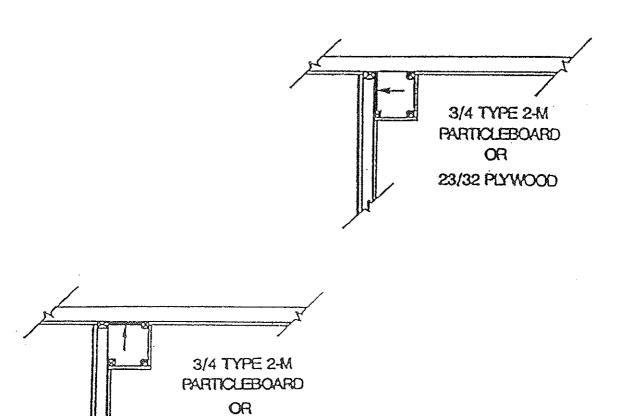
- (1). Wood-fibered gypsum plaster may be mixed in the portions of 100 pounds of gypsum to not more than 1 cubic foot of sand where applied on masonry or concrete.
- (2). When determining the amount of aggregate in set plaster, a tolerance of 10 percent shall be allowed.
- (3). Combinations of sand and lightweight aggregate may be used, provided the volume and weight relationship of the combined aggregate to the gypsum plaster is maintained.
- (4) If used for both first and second coats, the volume of aggregate may be 2 ½ cubic feet.
- (5) Where plaster is 1 inch or more in total thickness, the proportion for the second coat may be increased to 3 cubic feet.



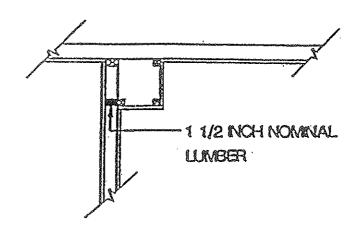


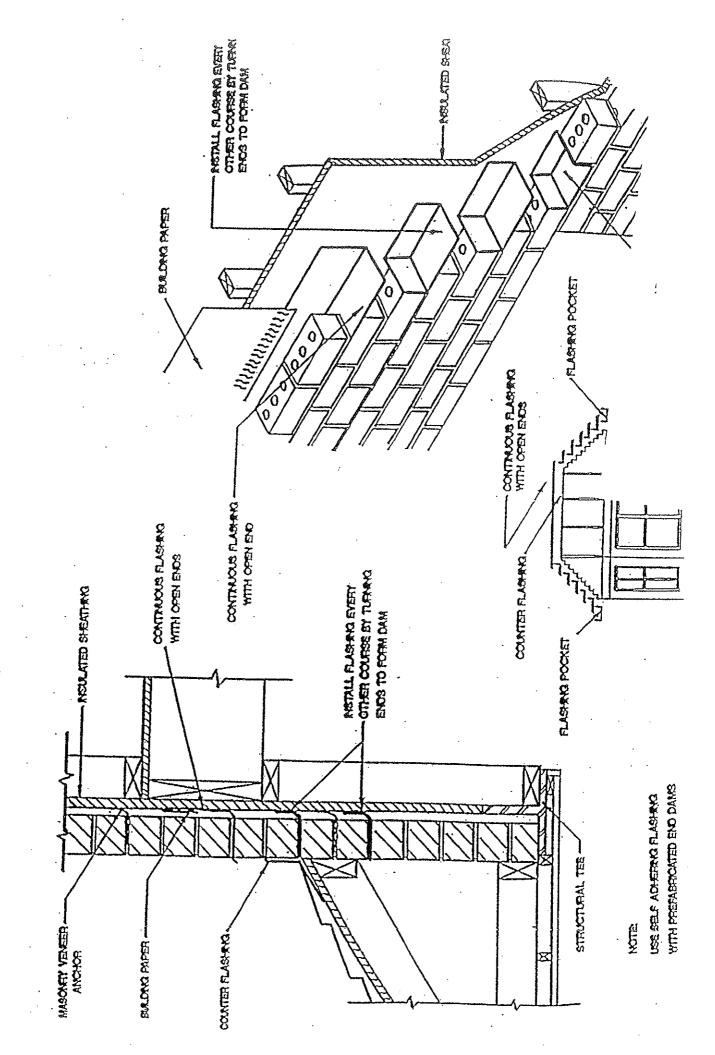




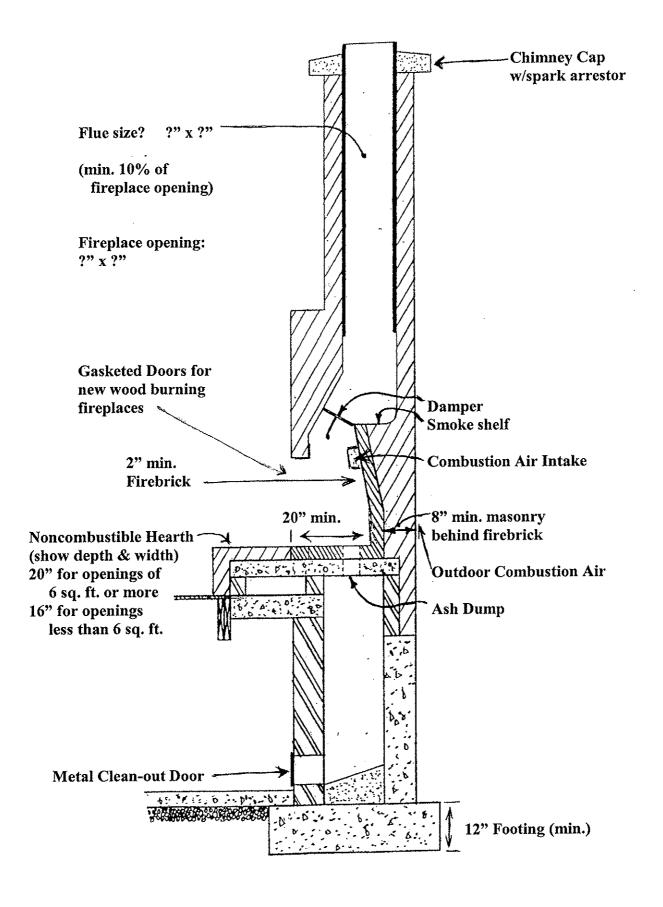


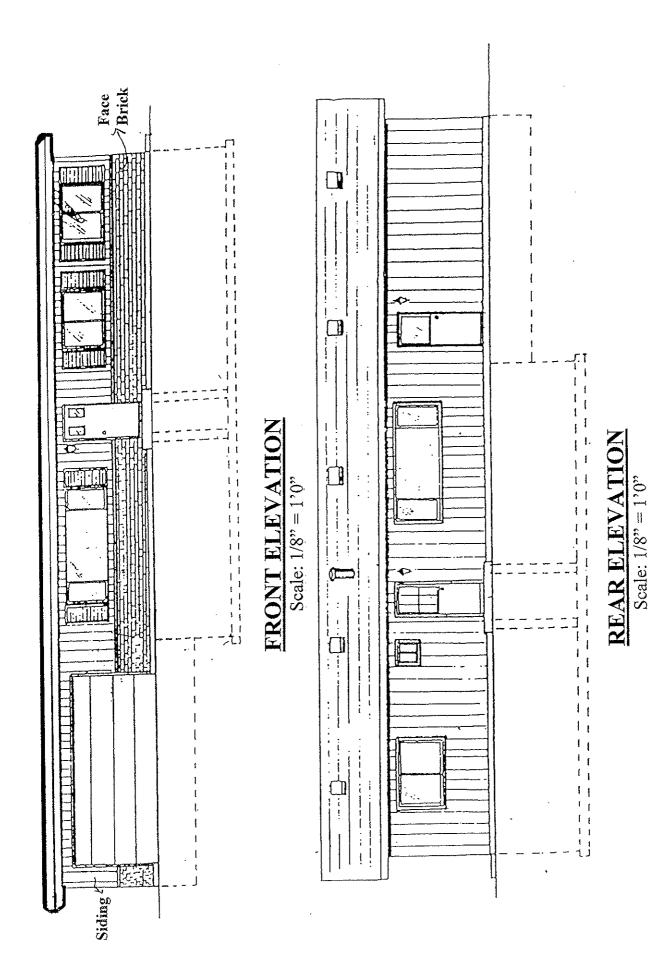
23/32 PLYWOOD

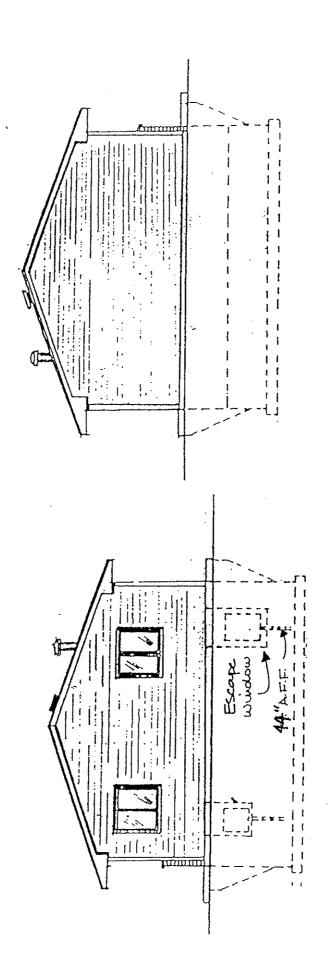




# FIREPLACE SECTION SAMPLE ONLY



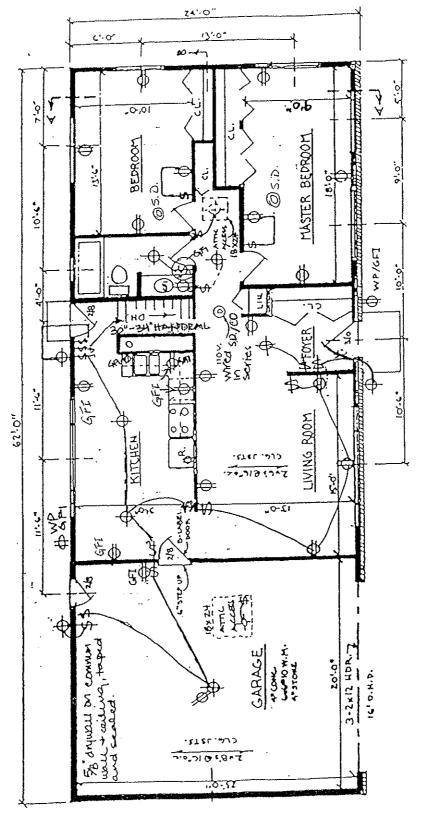




LEFT ELEVATION
Scale: 1/8" = 1' 0"

RIGHT ELEVATION
Scale: 1/8" = 1'0"

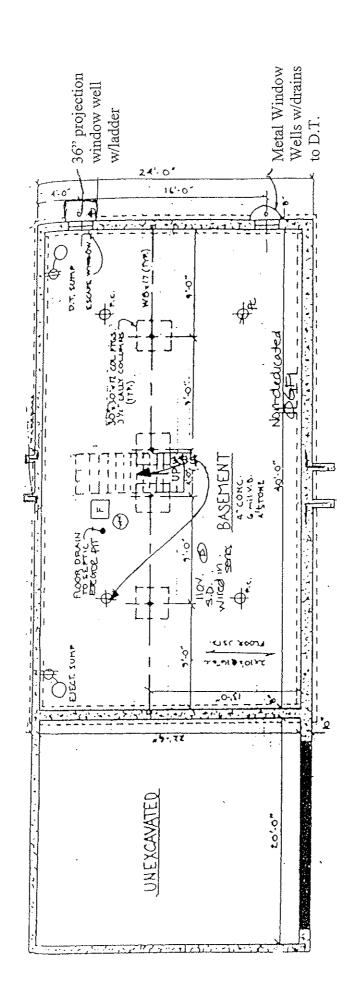
For diagrammatic purposes only! May not illustrate every code requirement. See appropriate sections in building code book.



FLOOR PLAN

Scale: 1/8" = 1'0"

For diagrammatic purposes only! May not illustrate every code requirement. See appropriate sections in building code book.

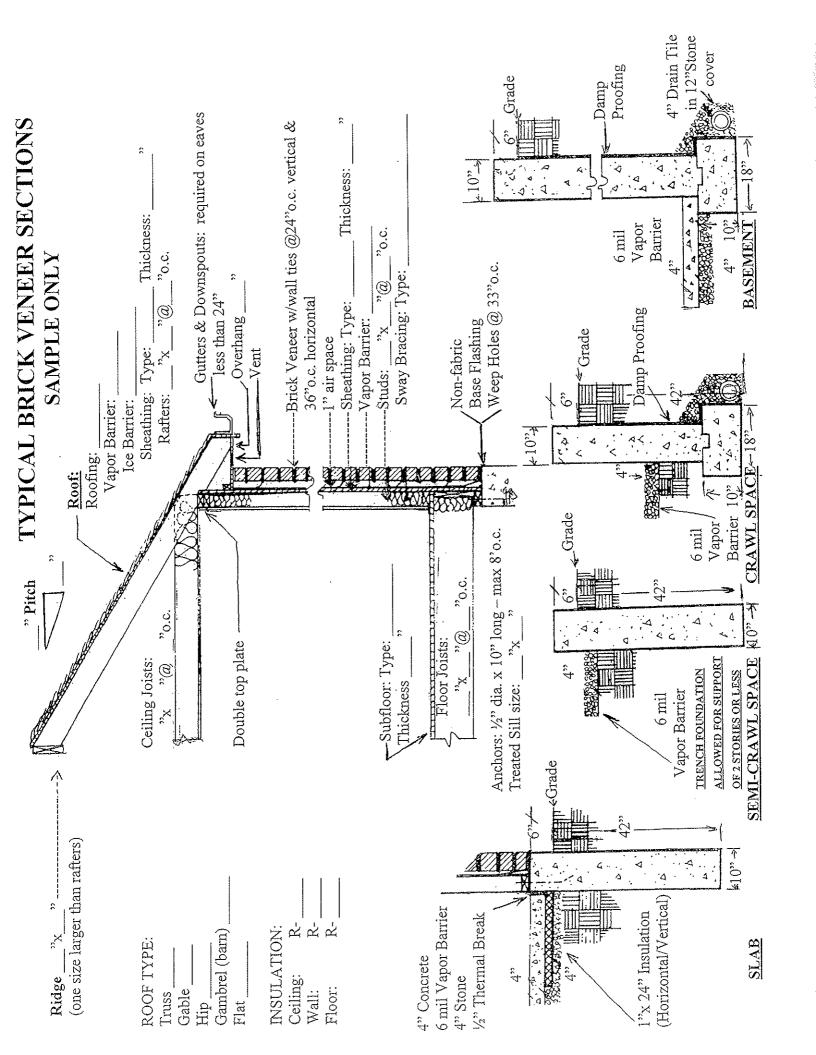


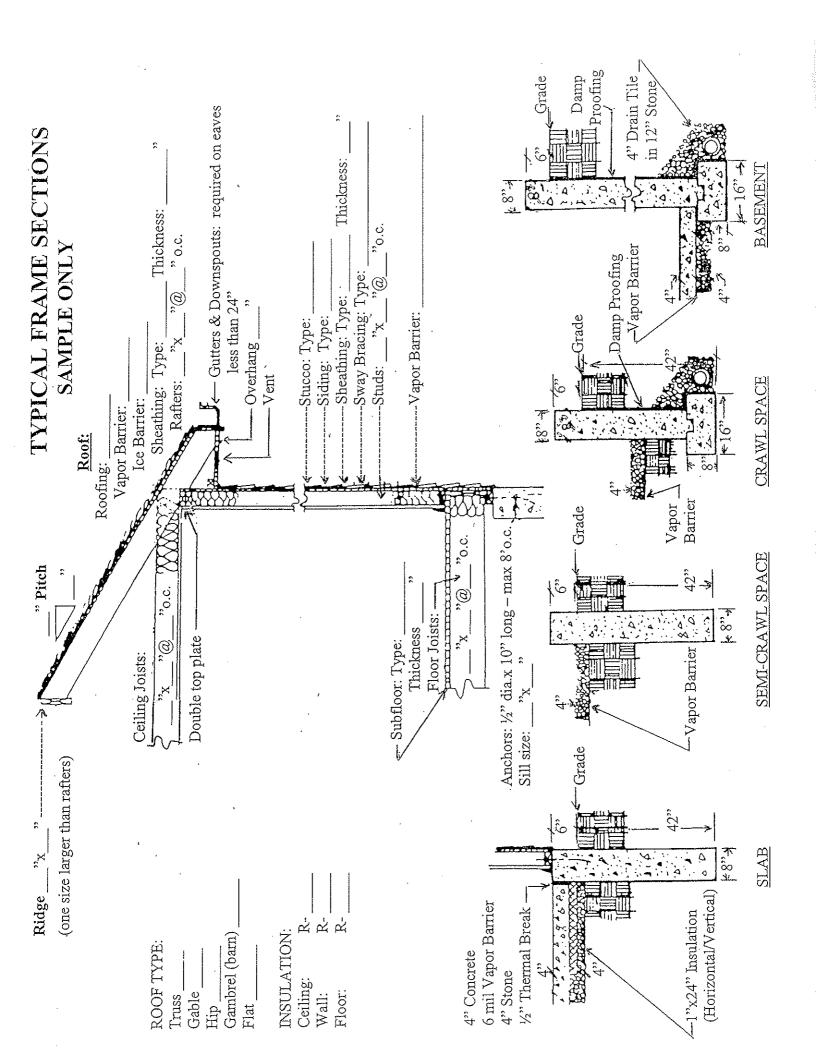
Depress Foundation 6"

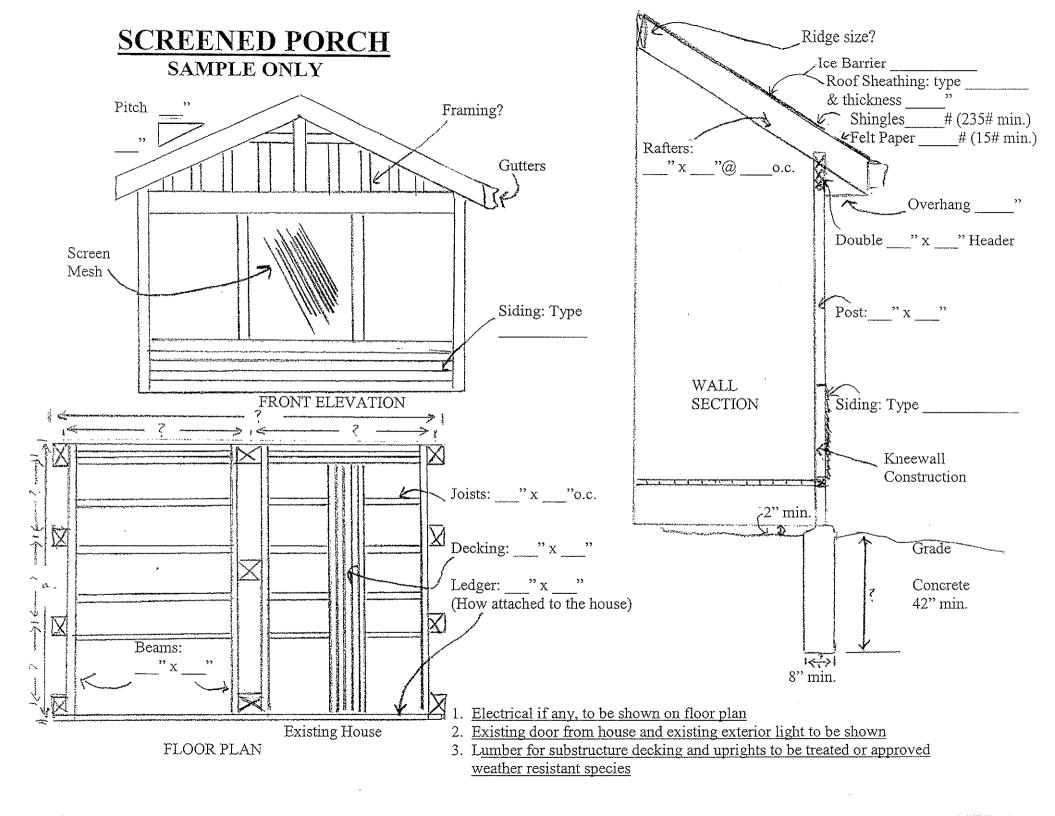
Wing Walls

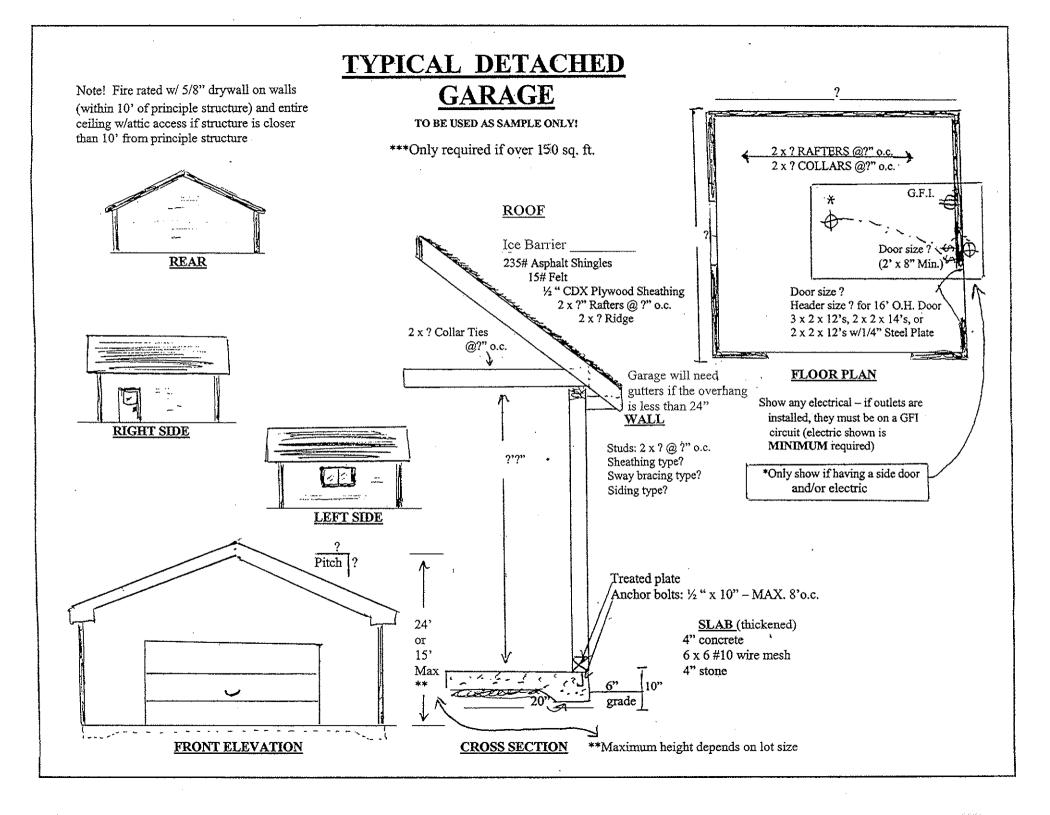
# FOUNDATION PLAN

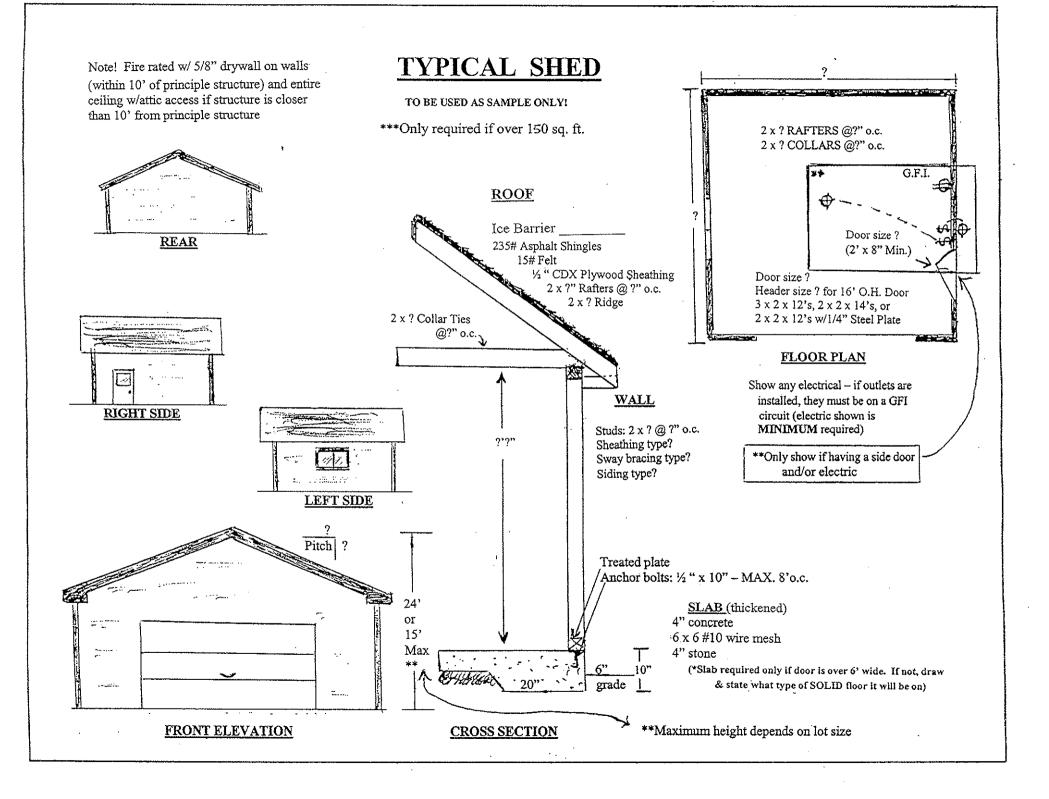
Scale: 1/8" = 1'0"









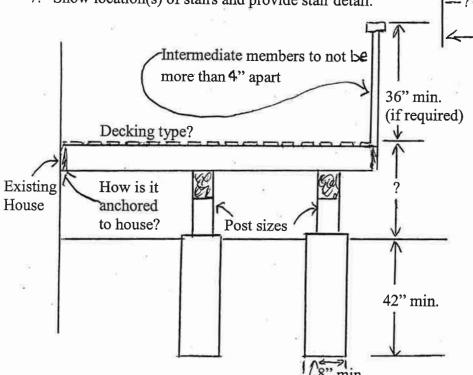


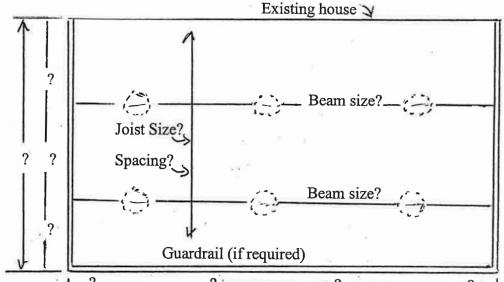
# TYPICAL DECK REQUIREMENTS SAMPLE ONLY

### **SIDE**

- 1. What is the deck height above ground? (36" minimum guardrail with balusters maximum 6"o.c. required everywhere deck floor exceeds 24" above grade and on all open sides of stairs over two stairs, w/ separate handrail on one side.)
- 2. How is the deck anchored to the house?
- 3. Pier size? (8" diameter x 42" deep minimum)
- 4. Flooring? What type?
- 5. Post size(s) if any? (4 x 4, 4 x 6, etc.)
- 6. How are posts or beams anchored to piers?

7. Show location(s) of stairs and provide stair detail.





### **TOP**

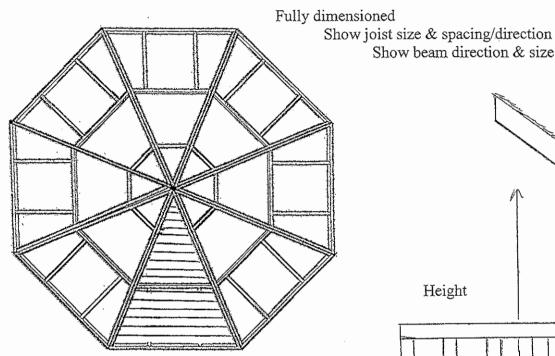
- 1. Fully dimensioned?
  - A. Over-all dimensions.
  - B. Dimensions of any off sets or irregular shapes.
  - C. Dimensions of pier & beam locations. (see above drawing).
- 2. Show joist size(s), direction(s) & spacing.
- 3. Show beam size(s). (2-2x6's, 3-2x10's, etc.)

# TYPICAL GAZEBO REQUIREMENTS

Show beam direction & size

{--dimension--}

### TOP VIEW



Flooring type

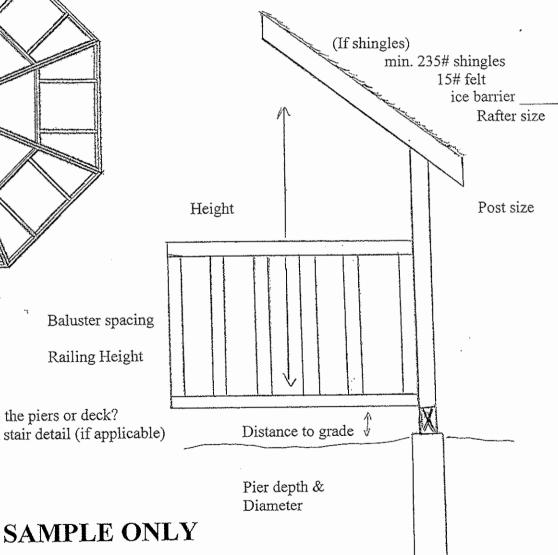
Baluster spacing

Railing Height

### SIDE VIEW

What are the post sizes?

How are the posts/beams anchored to the piers or deck? Show location of stairs and provide a stair detail (if applicable)



Joist size & spacing