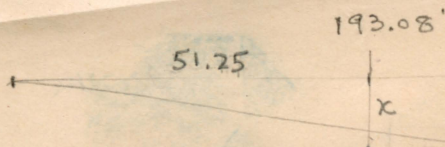


1



$$193.08 : 51.25 :: 14.72 : x$$

$$193.08x = (51.25)(14.72) = \underline{3.91}$$

$$\begin{array}{r} 194.09 \\ 3.91 \\ \hline 190.18 \end{array} \checkmark$$

North

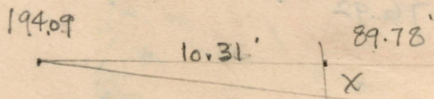
2' 4" Stairs
2' 4" Stairs
5' 8" Wall
1 1/2" Wall
2' 7 1/2" Stairs
3' 1 1/2" Wall

$$\begin{array}{r} 194.09 \\ 179.37 \\ \hline 14.72 \end{array}$$

$$\begin{array}{r} 104 \\ 14.22 \\ \hline 89.78 \end{array}$$

$$\begin{array}{r} 194.09 \\ 190.55 \\ \hline 3.54 \end{array}$$

$$\begin{array}{r} 24' \\ 51' \\ 6' \\ 5' 8" \\ 11' \\ 11' 5/8" \end{array}$$



$$89.78 : 10.31 :: 3.54 : x$$

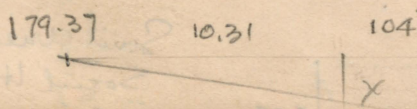
$$89.78x = (10.31)(3.54) = .406$$

$$.41$$

$$\begin{array}{r} 194.09 \\ .41 \\ \hline 193.68 \end{array} \checkmark$$

East

$$\begin{array}{r} 92.20 \\ 93.85 \\ \hline 104 \\ 93.85 \\ \hline 10.31 \end{array}$$



$$104 : 10.31 :: 6.17 : x$$

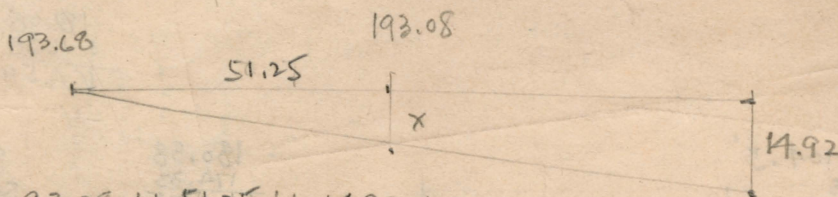
$$104x = (10.31)(6.17)$$

$$x = \underline{6.12}$$

$$\begin{array}{r} 179.37 \\ 6.12 \\ \hline 178.758 \end{array} \checkmark$$

West

$$\begin{array}{r} 179.37 \\ 173.20 \\ \hline 6.17 \end{array}$$



$$193.08 : 51.25 :: 14.92 : x$$

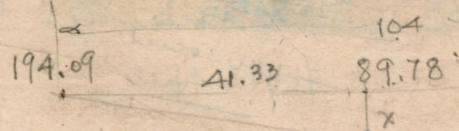
$$193.08x = (51.25)(14.92)$$

$$x = \underline{3.96}$$

$$\begin{array}{r} 193.68 \\ 3.96 \\ \hline 189.72 \end{array} \checkmark$$

North

$$\begin{array}{r} 193.68 \\ 178.76 \\ \hline 14.92 \end{array} \checkmark$$



$$89.78 : 41.33 :: 3.54 : x$$

$$89.78x = (41.33)(3.54)$$

$$x = \underline{1.63}$$

$$\begin{array}{r} 3.54 \end{array}$$

East

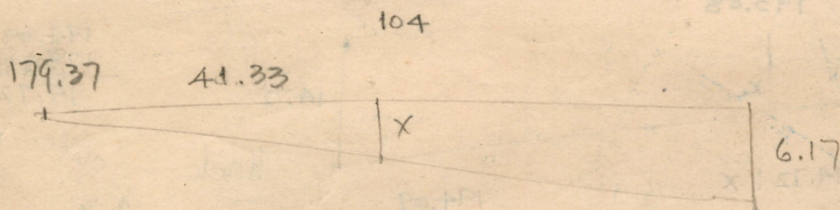
$$\begin{array}{r} 194.09 \\ 1.63 \\ \hline 192.43 \end{array} \checkmark$$

2'-8" Door
1'-1" Wall
5'-6" Stairs
1" Wall
52" Hall
1'-1" Wall

$$\begin{array}{r} 62-16 \\ 63'-4" \end{array}$$

$$\begin{array}{r} 104.12 \\ 63'-4" \end{array}$$

$$\begin{array}{r} 40'-8" \\ 40.67' \end{array}$$



$$104 : 41.33 :: 6.17 : X$$

$$104 X = (41.33)(6.17)$$

$$X = 2.45$$

$$179.37$$

$$2.45$$

$$176.92$$

$$194.09$$

$$193.08$$

$$165$$

$$14.72$$

X

$$193.08 : 165 :: 14.72 : X$$

$$193.08 X = (165)(14.72)$$

$$X = 12.6$$

$$194.09$$

$$12.6$$

$$181.49$$

$$5$$

$$7$$

$$15$$

$$7-6$$

$$27-13$$

$$28-1$$

North Wall
Social Hall
Entrances

$$193.08$$

$$28.08$$

$$165.00$$

$$181.08$$

$$165$$

$$8.98$$

X

$$181.08 : 165 :: 8.98 : X$$

$$181.08 X = (165)(8.98)$$

$$X = 8.18$$

$$182.49$$

$$8.18$$

$$174.31$$

$$193.08$$

$$28.08$$

$$165.00$$

$$182.49$$

$$173.51$$

$$8.98$$

$$28.58$$

$$12$$

$$16.58$$

$$181.08$$

$$16.58$$

$$164.50$$

South Wall
Social Hall

$$104.5$$

$$28.08$$

X

$$6.25$$

$$104.5 : 28.08 :: 6.25 : X$$

$$104.5 X = (28.08)(6.25)$$

$$X = 1.67$$

$$180.58$$

$$174.33$$

$$6.25$$

$$8'-6"$$

$$54'-2$$

$$13'-3$$

$$12'-7"$$

$$12'-16"$$

$$13'-8"$$

$$75'-11"$$

$$6$$

$$75'-17"$$

$$76'-5"$$

$$104'-6"$$

$$76'-5"$$

$$28'-1"$$

$$181.94$$

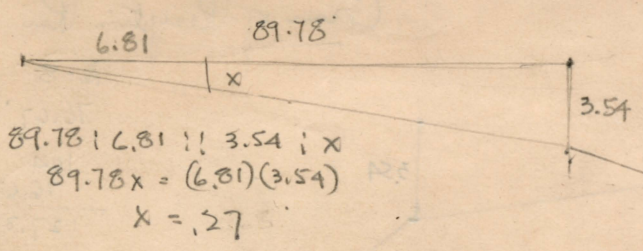
$$1.67$$

$$180.27$$

Foyer Social
Hall

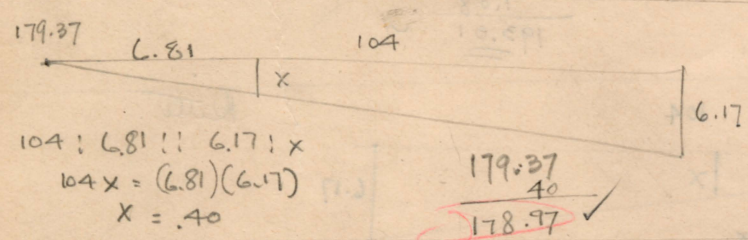
(2)

Front Wall of Chapel



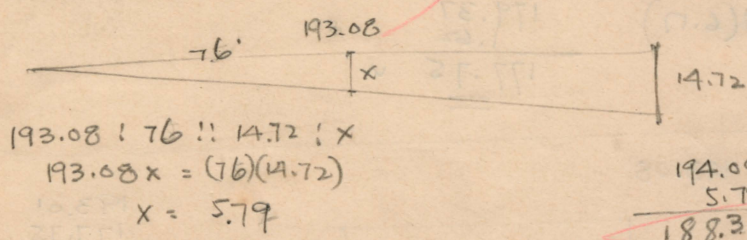
$$\begin{array}{r} 194.09 \\ 27 \\ \hline 193.82 \end{array} \checkmark$$

Ditto



$$\begin{array}{r} 179.37 \\ 40 \\ \hline 178.97 \end{array} \checkmark$$

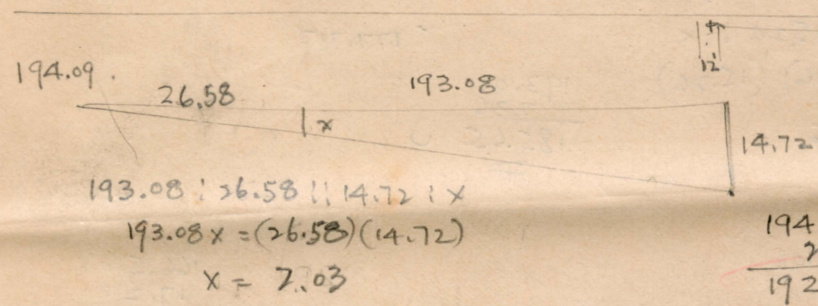
Ditto



$$\begin{array}{r} 194.09 \\ 5.79 \\ \hline 188.30 \end{array} \checkmark$$

Ditto

$$\begin{array}{r} 57 \\ 90 \\ 21.6 \\ \hline 118-13'' \\ 117-1'' \\ 193.08 \\ 117.08 \\ \hline 76' \end{array}$$

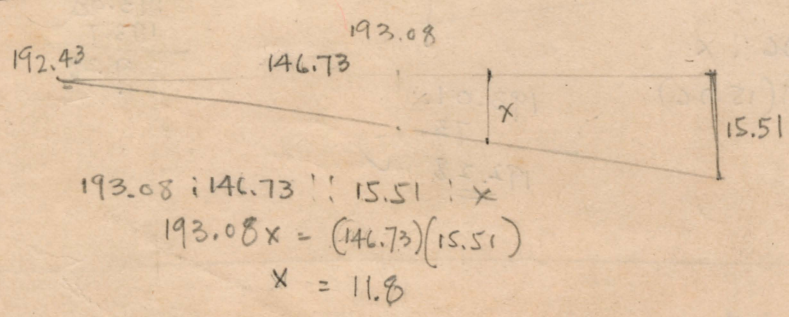


$$\begin{array}{r} 194.09 \\ 7.03 \\ \hline 192.06 \end{array} \checkmark$$

Ditto

$$\begin{array}{r} 117-1'' \\ 48-9'' \\ 8 \\ \hline 165-18'' \\ 166-6'' \\ 193.08 \\ 166.5 \\ \hline 26.58 \\ 5.58 \end{array}$$

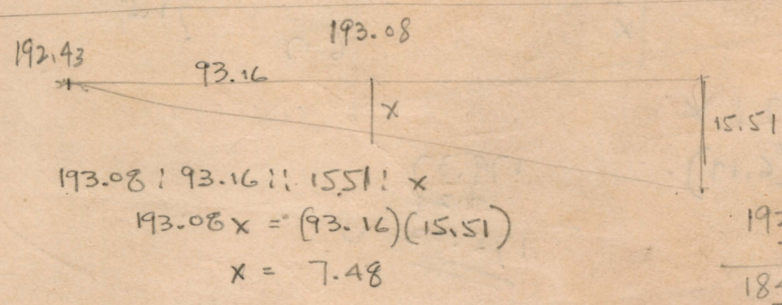
Front Wall of Social Hall



$$\begin{array}{r} 192.43 \\ 176.92 \\ \hline 15.51 \\ 193.08 \\ 46.25 \\ \hline 146.73 \\ 192.43 \\ 11.8 \\ \hline 180.63 \end{array} \checkmark$$

Ditto

$$\begin{array}{r} 5'-0'' \\ 9'' \\ 22-6 \\ 18- \\ 45-15 \\ 46-3'' \\ 46.25 \\ \hline 15'-0'' \\ 7-6'' \\ 22'-6'' \\ 21-6 \\ 10-9'' \\ 4-6 \\ 2-6 \\ 8 \\ 6-20 \\ 7-8 \end{array}$$



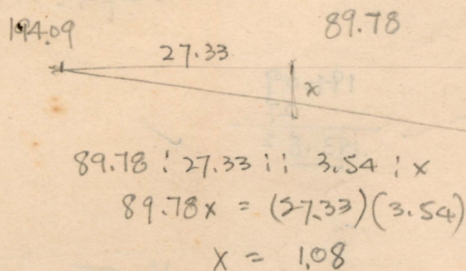
$$\begin{array}{r} 192.43 \\ 7.48 \\ \hline 184.95 \end{array} \checkmark$$

Ditto

$$\begin{array}{r} 117-1'' \\ 17-2'' \\ 99-11'' \\ 99.92 \\ 193.08 \\ 99.92 \\ \hline 93.16 \\ 12-13\frac{3}{4} \\ 17-13'' \\ 17-2'' \end{array}$$

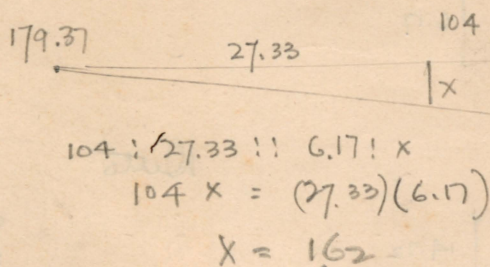
h-c
82 x h

Corner of Reception Run.



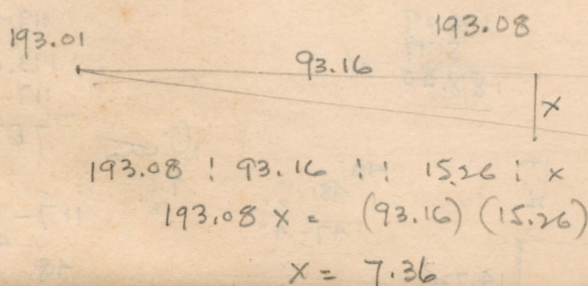
$$\begin{array}{r} 194.09 \\ 1.08 \\ \hline 193.01 \end{array} \quad \checkmark$$

$$\begin{array}{r} 76-8'' \\ 76.67' \\ 104 \\ 76.67 \\ \hline 127.33 \end{array}$$



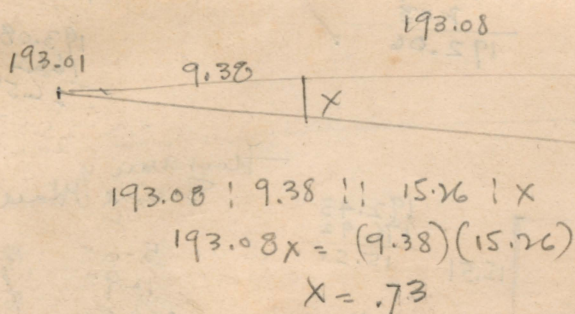
$$\begin{array}{r} 179.37 \\ 1.62 \\ \hline 177.75 \end{array} \quad \checkmark$$

Ditto.



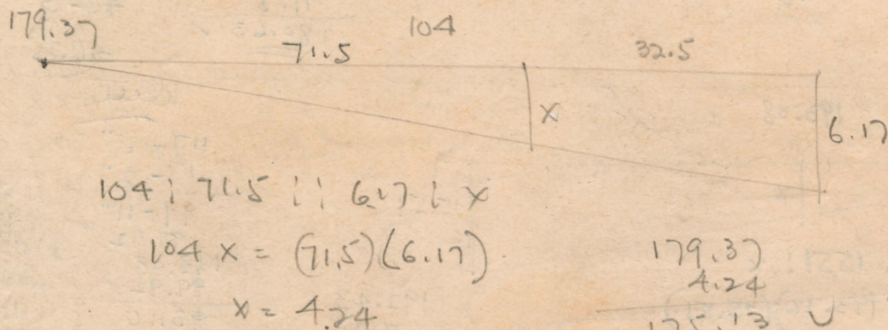
$$\begin{array}{r} 193.01 \\ 7.36 \\ \hline 185.65 \end{array} \quad \checkmark$$

$$\begin{array}{r} 193.01 \\ 177.75 \\ \hline 15.26 \end{array}$$



$$\begin{array}{r} 193.01 \\ .73 \\ \hline 192.28 \end{array} \quad \checkmark$$

$$\begin{array}{r} 166.5 \\ 17.2 \\ \hline 183.7 \\ 193.08 \\ 183.7 \\ \hline 9.38 \end{array}$$



$$\begin{array}{r} 179.37 \\ 4.24 \\ \hline 175.13 \end{array} \quad \checkmark$$

$$\begin{array}{r} 104 \\ 32.5 \\ \hline 71.5 \end{array}$$

$345 \overline{) 1.858}$
 $28 \overline{) 245}$
 $365 \overline{) 2100}$
 $3707 \overline{) 182500}$
 $45 \overline{) 27549}$

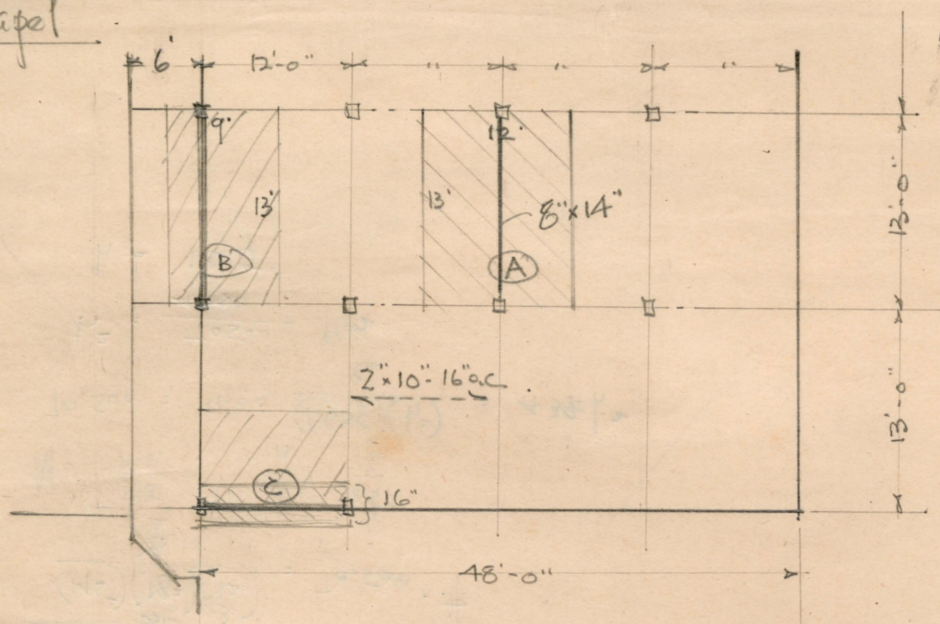
$50 \overline{) 1720}$
 150
 220
 200

3.45

$282 \times 10''$

Chapel

①



$$\begin{array}{rcl} \text{I.L.} & - & 100 \#/\text{sq.} \\ \text{Sub. Fl.} & - & 5 \\ \text{Fin. Pl.} & - & \underline{105 \#/\text{sq.}} \end{array}$$

Joists

12'-0" span 16" o.c.

$$(12)(1\frac{1}{3}) = 16 \text{ sq.}$$

$$(16)(105) = 1680 \#$$

$$\boxed{2" \times 10" - 2140 \#}$$

16" o.c.

USE

Own weight

2" x 10" @ 3.4 #/ft.

$$(3.4)(12) = 41 \#$$

$$\frac{1680}{41} = 1721 \#$$

Check

1600 #/sq. Allowable fibre stress

$$(108.4)(1\frac{1}{3}) = 145 \#/\text{sq.}$$

$$(145)(12^2)(\frac{3}{12}) = 31320 \text{ in}^3$$

$$M = f \frac{I}{n} \quad \frac{I}{n} = \frac{bh^2}{6}$$

$$31320 = 1600 \frac{(1.625)(h^2)}{6}$$

$$31320 = 432 h^2$$

$$h^2 = \frac{31320}{432} = 72.5$$

$$h = 8.51 \text{ in}$$

2" x 10" ✓

$$\frac{105}{3.4} = 108.4 \#/\text{sq.}$$

CORRIDOR (A)

13'-0" span.

$$(13)(12) = 156 \square'$$

$$(156)(108.4) = 16,910 \#$$

$$8" \times 14" - 18400 \#$$

$$13'-0" \text{ span}$$

$$\frac{17,200 \#}{5000} = 3.45$$

$$\sqrt{3.45} = 1.83$$

1'-10"

8" x 14" @ 22.5 #/ft

$$(22.5)(13) = 292.5$$

$$\begin{array}{r} 16910 \\ 293 \\ \hline 17,203 \# \end{array}$$

Check

$$M = \frac{2150}{17200} (13) = 28,000 \text{ ft} \#$$

$$bh^2 = \frac{140}{12} (28,000) \frac{3}{6} = 1260$$

$$b = \frac{1600}{8} = 8"$$

$$h^2 = 158$$

$$h = 12.5"$$

Total Wt

$$\begin{array}{r} (156)(105) = 16380 \\ 11 \text{ joists} \quad 341 \\ \hline 292.5 \\ \hline 17,013.5 \end{array}$$

$$\frac{1260}{8} = 157.5$$

CORRIDOR & RECEPTION RM

L.H. - 50 #/6'

$$\left. \begin{array}{l} \text{Sub. Pl.} \\ \text{Fin. Pl.} \end{array} \right\} - \frac{5}{55 \#} \square'$$

Joists

18'-0" span - 16" o.c.

$$(18)(1\frac{1}{2}) = 24 \square'$$

$$(24)(55) = 1320 \#$$

2" x 10" - 1425 #

18' span

Weight of Joist

$$(3.4)(18) = 61.2 \#$$

$$\begin{array}{r} 1320 \\ 61.2 \\ \hline 1381.2 \# \end{array}$$

Check

$$\frac{162}{324} (145) (18^2) \frac{3}{12} = 70,500 \text{ ft} \#$$

$$M = f \frac{I}{n} \quad \frac{I}{n} = \frac{bh^2}{6}$$

$$70,500 = 1600 \frac{(1.675)(h^2)}{6} = 434 h^2$$

$$h^2 = \frac{70500}{434} = 162$$

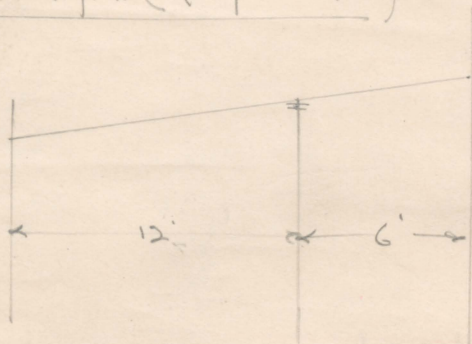
$$h = 12.7"$$

$$\begin{array}{r} 24 \\ 9\frac{1}{2} \\ \hline 12 \\ 216 \\ \hline 228 \end{array}$$

$$\begin{array}{r} 19' \text{ span} \\ 12 \mid 228 \\ \hline 108 \\ 108 \end{array}$$

Roof Rafter (Reception Rm.)

(3)



Snow load	-	25 #/o.
Sheathing	-	2 1/2
Roofing	-	1
Plaster	-	8
		<u>36 1/2 #/o.</u>

12'-0" Span - 16" o.c.

$$(12)(1 \frac{1}{2}) = 16 \text{ o'}$$

$$(16)(36 \frac{1}{2}) = 584 \#$$

$$2 \times 6'' - 16'' \text{ o.c.} - 750 \#$$

2x6 @ 2#/ft

$$(12)(2) = 24 \#$$

$$\frac{584}{24} = 24 \#$$

Rafter.

$$\begin{array}{r} 20 \frac{1}{2} \\ 52 \\ \hline 15 \\ 150 \\ \hline 165 \\ 13.75' \leftarrow \\ 12 \overline{) 165} \\ \underline{12} \\ 45 \\ 36 \\ \hline 90 \\ 84 \\ \hline 60 \end{array}$$

Investigating Joists Reception Rm Fl.

b.h. 60 #/o.
ub. Fl. } 5
Fin " } 65 #/o.

Span 12' Span - 16" o.c.

$$(12)(1 \frac{1}{2}) = 16 \text{ o'}$$

$$(16)(65) = 1040 \#$$

$$2 \times 8'' - 16'' \text{ o.c.} - 12'-0'' \text{ Span} - 1330 \#$$

$$\frac{18 \frac{1}{2}}{6} = 3 \frac{1}{2}$$

$$1560 \times$$

$$\frac{20 \frac{1}{2}}{6} = 3 \frac{1}{2}$$

$$\frac{20}{20}$$

$$\frac{24 \frac{1}{2}}{12} = 2 \frac{1}{2}$$

Large Reception Rm.

Span 14'-0" - 16" o.c.

$$(14)(1 \frac{1}{2}) = 19 \text{ o'}$$

$$(19)(65) = 1225 \#$$

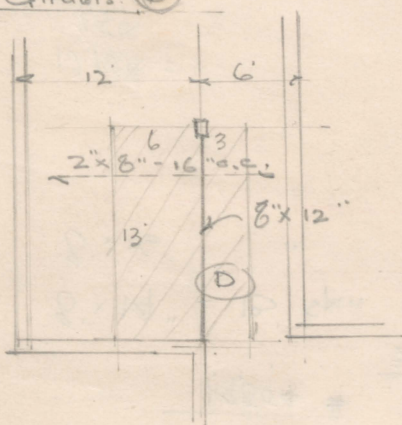
$$(2.7)(14) = 37.8$$

$$\text{Call } 38 \#$$

$$\frac{1225}{38} = 32 \#$$

Safe to use
2x8-16" o.c.

Girders (D)



11 Joists (Main Fl.)

2x10 @ 34 #/ft.

$$(9)(3.4) = 30.6$$

$$(31)(11) = 341 \#$$

Wall

2x4 Studs
Plaster 16 #/o.

$$(9)(13) = 117 \text{ o'}$$

$$(117)(16) = 1870 \#$$

Snow Load	-	25 #/o.
Sheathing	-	2 1/2
Roofing	-	1
Plaster	-	8
		<u>36 1/2 #/o.</u>

$$(9)(13) = 117 \text{ o'}$$

$$(117)(36 \frac{1}{2}) = 4270 \#$$

11 Rafters

2x6-16" o.c.

$$(2)(9) = 18 \#$$

$$(11)(18) = 198 \#$$

$$\frac{13400}{5000} = 2.68$$

$$\sqrt{2.68} = 1.64$$

$$1-8'' \times 1-8'' \times 10''$$

b.h. & floors

$$\begin{array}{l} (13)(9) = 117 \text{ o'} \\ (117)(55) = 6440 \# \end{array}$$

$$\begin{array}{r} 6440 \\ 341 \\ 1870 \\ 4468 \\ \hline 13119 \# \end{array}$$

$$(19.2)(13) = 250 \#$$

$$\begin{array}{r} 13119 \\ 250 \\ \hline 13369 \# \end{array}$$

$$8 \times 12 - 13' \text{ Span} - 13350$$

$$\begin{array}{r} 7450 \\ 341 \\ 1870 \\ 4468 \\ \hline 14129 \end{array}$$

GIRDER (B)

13'-0" span
 $(13)(9) = 117 \text{ ft}^2$
 $(117)(105) = 12300 \text{ #}$
 $\begin{array}{r} 1314 \\ 3952 \\ 1748 \\ 1490 \\ \hline 19804 \end{array}$

Own Wt.
 8"x14" -
 293 #

$\begin{array}{r} 19804 \\ 335 \\ \hline 20139 \end{array}$

8"x14" - 13' span 18400 #
 8"x16" " 23300 #

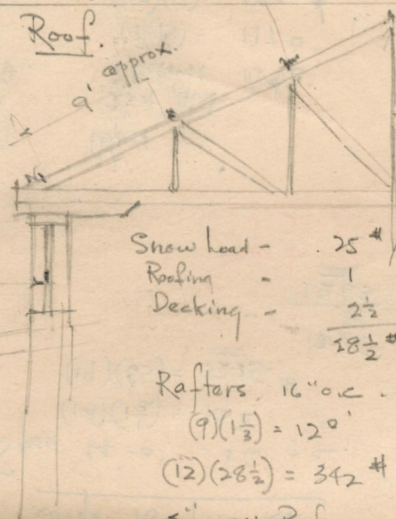
$\frac{10,100}{650} =$

Joists

6' - 2x10's
 $(3.4)(6) = 20.4$
 $(11)(20.4) = 224.4 \text{ #}$
 3' - 2x8's
 $(2.7)(3) = 8.1$
 $(11)(8.1) = 89.1 \text{ #}$

$\begin{array}{r} 224.4 \\ 89.1 \\ \hline 313.5 \\ \hline 314 \end{array}$

Partition 19 #/0.
 2x6" Plaster both sides
 $(13)(14) = 208 \text{ ft}^2$
 $(208)(19) = 3952 \text{ #}$



Corridor Roof

3x13 = 39 #
 $(39)(36 \frac{1}{2}) = 1424$
 $\begin{array}{r} 1424 \\ 66 \\ \hline 1490 \end{array}$

$(13)(4 \frac{1}{2}) = 58 \frac{1}{2} \text{ #}$
 $(59)(28 \frac{1}{2}) = 1682 \text{ #}$
 $\begin{array}{r} 1682 \\ 66 \\ \hline 1748 \end{array}$
 2x4 - 1.3 #
 $(1.3)(4 \frac{1}{2}) = 6 \text{ #}$
 $(6)(11) = 66 \text{ #}$

Joists (C)

$(12)(16) = 192 \text{ ft}^2$
 $(19)(192) = 3650 \text{ #}$
 $\begin{array}{r} 1721 \\ 5371 \\ 1677 \\ \hline 7048 \end{array}$

(Page ①)

(Page ⑤)

$\begin{array}{r} 7048 \\ 139 \\ \hline 7187 \end{array}$

6"x10" - 12 span - 7240 #

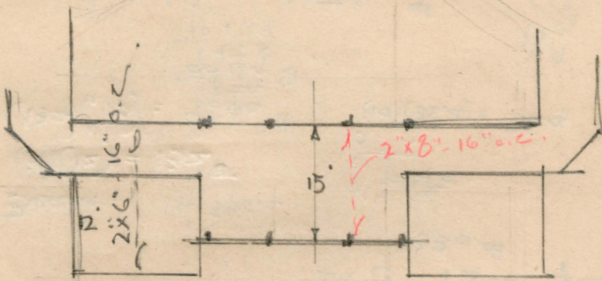
6x10 - 11.6 #
 $(11.6)(12) = 139$

$\frac{7200}{5000} = 1.44$

$\sqrt{144} = 1.22$

Ceiling Joists (Chapel Foyer)

5



Plastered Ceiling

8 #/sq'

$$(15)(1\frac{1}{3}) = 20 \text{ sq'}$$

$$(20)(8) = 160 \text{ #}$$

Foyer Ceiling

2x8 - 16" o.c. 15' span

Ceiling Foyer

$$(7\frac{1}{2})(12) = 90 \text{ sq'}$$

$$(90)(8) = 720 \text{ #}$$

Ceiling Chapel

$$(6\frac{1}{2})(12) = 78 \text{ sq'}$$

$$(78)(8) = 624 \text{ #}$$

$$\begin{array}{r} 720 \\ 203 \\ 624 \\ 130 \\ \hline 1677 \text{ #} \end{array}$$

2x8

$$\begin{array}{r} 30\frac{1}{2} \\ 7\frac{1}{2} \\ \hline 15 \\ 210 \\ \hline 225 \end{array}$$

2x6

$$\begin{array}{r} 30\frac{1}{2} \\ 5\frac{1}{2} \\ \hline 15 \\ 150 \\ \hline 165 \end{array}$$

$$\begin{array}{r} 18.75 \\ 12 \overline{) 225} \\ \underline{24} \\ 90 \\ \underline{90} \\ 0 \end{array}$$

$$\begin{array}{r} 13.75 \\ 12 \overline{) 165} \\ \underline{24} \\ 90 \\ \underline{90} \\ 0 \end{array}$$

10 - 2x8 Joists @ 2.7 #

$$(7\frac{1}{2})(2.7) = 20.3$$

$$(10)(20.3) = 203 \text{ #}$$

10 - 2x6 @ 2 #

$$(6\frac{1}{2})(2) = 13$$

$$(10)(13) = 130 \text{ #}$$

Office Ceiling

12' span

$$(12)(1\frac{1}{3}) = 16 \text{ sq'$$

$$(16)(8) = 128 \text{ #}$$

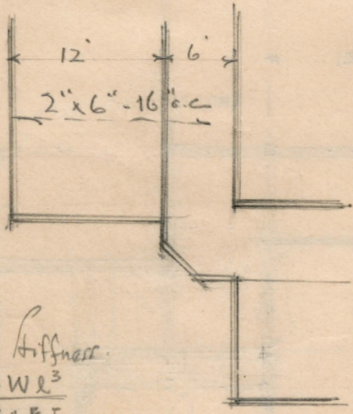
$$\begin{array}{r} 128 \\ 24 \\ \hline 152 \end{array}$$

2x6 - 12' o.c. span - 750 #

2x6 @ 2 #/ft

$$2 \times 12 = 24 \text{ #}$$

Ceiling-Rafters Reception Rms.



Snow load - 25 #/sq'

Shoathing - 2 1/2

Roofing - 1

Plastering - 8

$$\begin{array}{r} 36\frac{1}{2} \text{ #/sq'} \end{array}$$

12'-0" span

$$(12)(1\frac{1}{3}) = 16 \text{ sq'}$$

$$(16)(36\frac{1}{2}) = 584 \text{ #}$$

$$\begin{array}{r} 584 \\ 24 \\ \hline 608 \end{array}$$

2x6 - 12' span - 750 #

2x6 @ 2 #/ft

$$2 \times 12 = 24 \text{ #}$$

Design for Stiffness

$$D = \frac{5WL^3}{384EI}$$

$$\text{Span} = 13' = 156"$$

$$\frac{156}{360} = 0.43"$$

$$I = \frac{5 \times 658 \times 156^3}{384 \times 1,600,000 \times 0.43} = 47.5 = \frac{64^3}{12}$$

assumed breadth = 2"

$$d^3 = 12 \times 47.5 = 570 \quad \sqrt[3]{570} = 8.3$$

13'-0" span

$$(13)(1\frac{1}{3}) = 17\frac{1}{3} \text{ sq'}$$

$$(17\frac{1}{3})(36\frac{1}{2}) = 632 \text{ #}$$

$$\begin{array}{r} 632 \\ 26 \\ \hline 658 \end{array}$$

2x6 - 13' span - 693 #

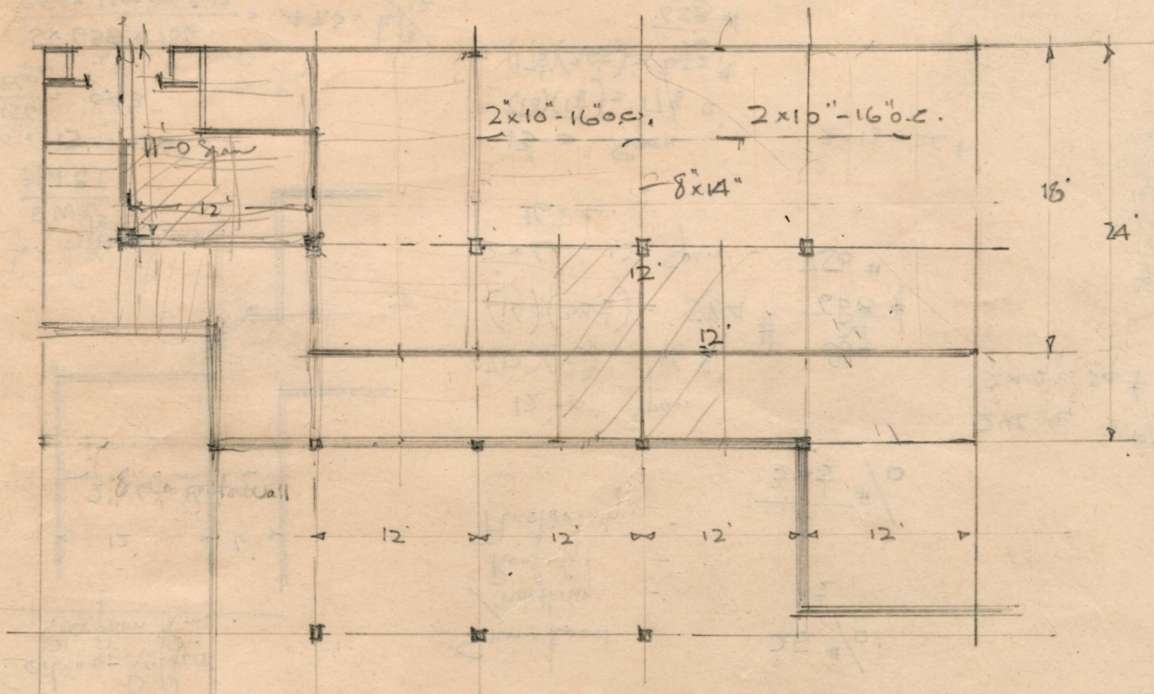
$$2 \times 13 = 26 \text{ #}$$

$$\begin{array}{r} 30\frac{1}{2} \\ 5\frac{1}{2} \\ \hline 15 \\ 150 \\ \hline 165 \\ 12 \overline{) 165} \\ \underline{24} \\ 90 \\ \underline{90} \\ 0 \end{array}$$

Altar

5 1/2 x 6

(6)



GIRDER (Sanitori Stgo.)

h.l. - 100 #/0.
 { Ob.Fl. - 5
 Fin.Fl. - 5
 Plastered - 8
 113 #/0.

(12)(12) = 144 #
 (14)(13) = 16300 #
 410
 270
 16980 #

8" x 14" - 12'-0" Span
 19950 #

8" x 14"
 (22.5)(12) = 270 #
 2" x 10" Joists
 (3.4)(12) = 41 #
 (10)(41) = 410 #

Boiler Rm.

Boiler Rm. Ceiling
 2 - 2" x 6" T. & G. &
 1/2" Plasterboard

h.l. - 100 #/0.
 { Ob.Fl. - 5
 Fin.Fl. - 5
 2 - 2" x 6" T & G - 12
 1/2 Plasterboard - 2
 119 #/0.

(119)(144) = 17140
 410
 270
 17820 #

8" x 14" - 12'-0" Span
 19950 #

Stairway (Rear of Chapel)

h.l. - 60 #/0.
 { Ob.Fl. - 5
 Fin.Fl. - 5
 Plaster - 8
 73 #/0.

Joists 12'-0" Span (27)(12) = 324
 (12)(1 1/3) = 16 #
 (73)(16) = 1170 #
 33
 1203 #

2" x 8" - 12'-0" Span
 1330 #

Beam 11' Span

(11)(12) = 132 #
 (132)(73) = 9640 #
 324
 9964 #
 10139

8" x 10" - 10760 #

11'-0" Span

Investigate Joists

(12)(1 1/3) = 16 #
 (16)(119) = 1904 #
 2" x 10" - 16" o.c., 12' span
 2140 #

159
 159
 159
 179

Russ

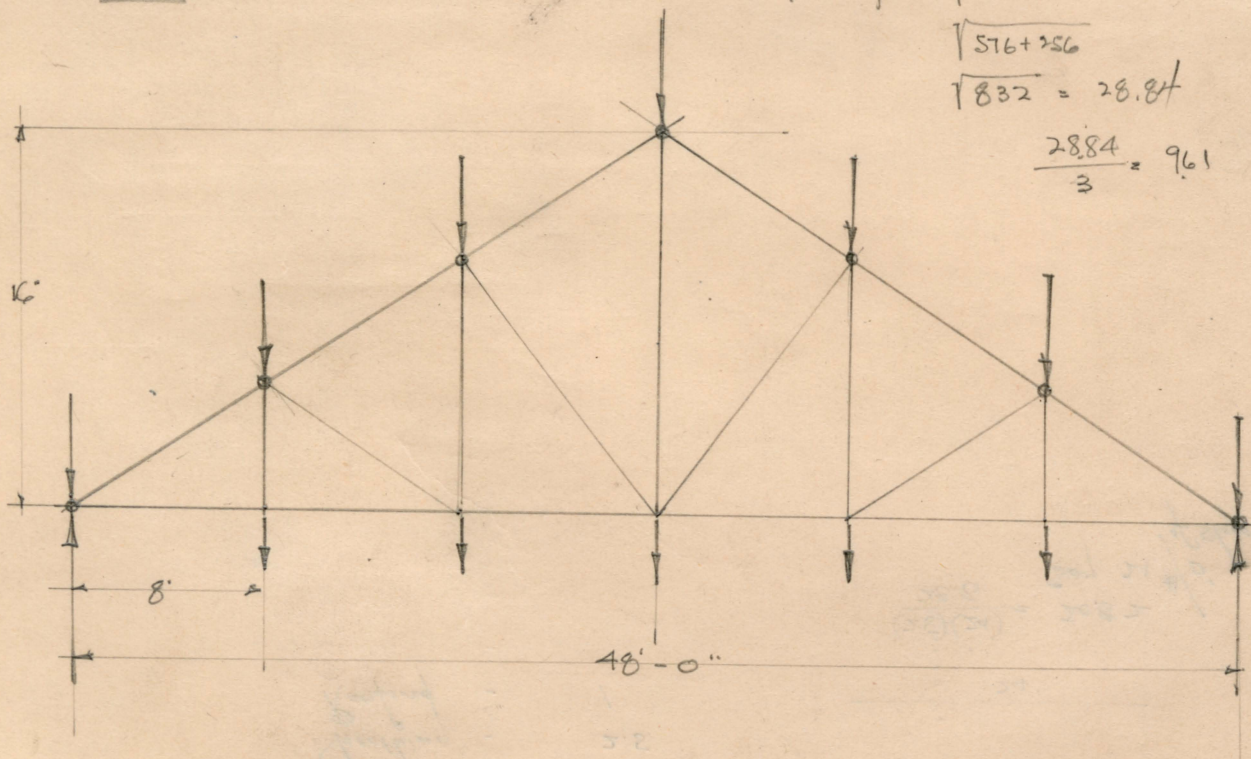
length of slope

$$\sqrt{24^2 + 16^2}$$

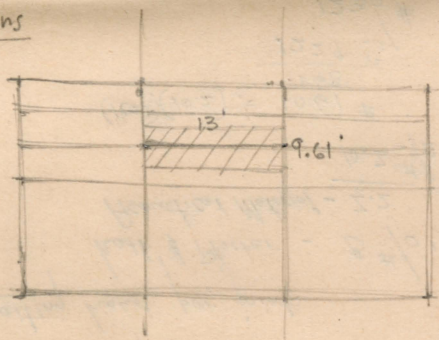
$$\sqrt{576 + 256}$$

$$\sqrt{832} = 28.84$$

$$\frac{28.84}{3} = 9.61$$



Purlins



Snow load
Wind
Heating
Roofing

-	25 #/□	Horiz. Proj.
-	2 1/2	Rt. surface.
-	1	
	<u>28 1/2 #/□</u>	

$$(13)(9.61) = 125 \square'$$

$$(125)(28 \frac{1}{2}) = 3560 \#$$

$$\frac{138}{3698 \#}$$

$$3817 \#$$

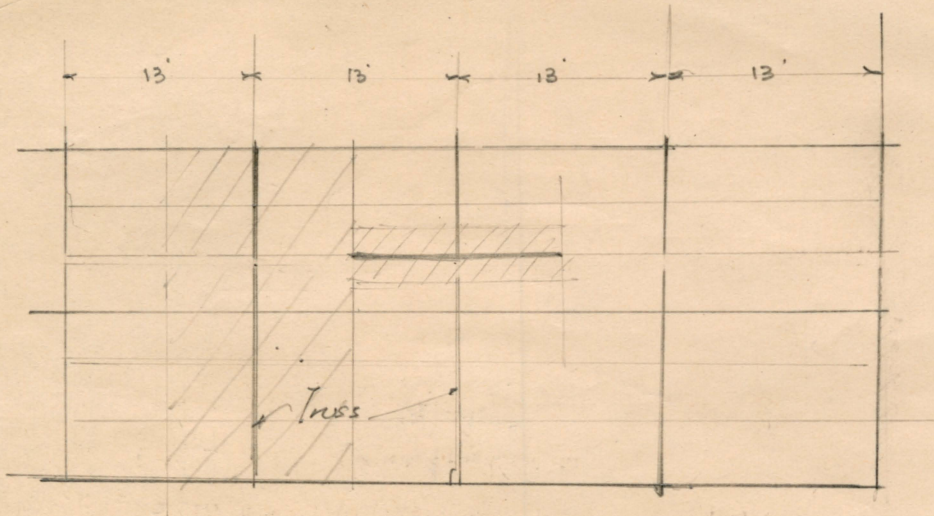
$$6" \times 8" - 13' \text{ span} = 4170 \#$$

2x4 Rafters

$$(13)(9.61) = 125.5$$

$$(11)(12.5) = 138 \#$$

$$6" \times 8" (13)(9.7) = 119 \#$$



Tributary Area per joint.

on slope = $(13)(9.61) = 125 \text{ sq. ft.}$

horiz. proj = $(13)(8) = 104 \text{ sq. ft.}$

Ceiling Load per joint.

lath & Plaster - 8 #/sq. ft.

Acoustical Material - 2.2 approx
 10.2 #/sq. ft.

$$\begin{array}{r} (104)(10.2) = 1061 \text{ #} \\ \underline{168} \\ 1229 \text{ Say} \\ \underline{1230 \text{ #}} \end{array}$$

Ceiling joists. 12' span



$(12)(1 \frac{1}{2}) = 16 \text{ sq. ft.}$

$(16)(10.2) = 163 \text{ #}$

$2 \times 6 @ 2 \text{ #/ft.}$

$2 \times 12 = 24 \text{ #}$

$(7)(24) = 168 \text{ #}$

$2' \times 6' = 16 \text{ sq. ft.}$

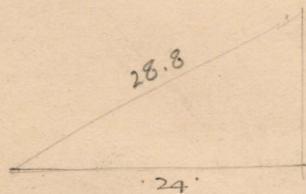
Roof Load per joint.

loads / sq. ft. on top of truss

Snow & Wind - 21 #/sq. ft.

Sheathing - 2.5

Roofing - 1



$\frac{(25)(24)}{28.8} = 208.2$

Say 21 #/sq. ft.
of slope

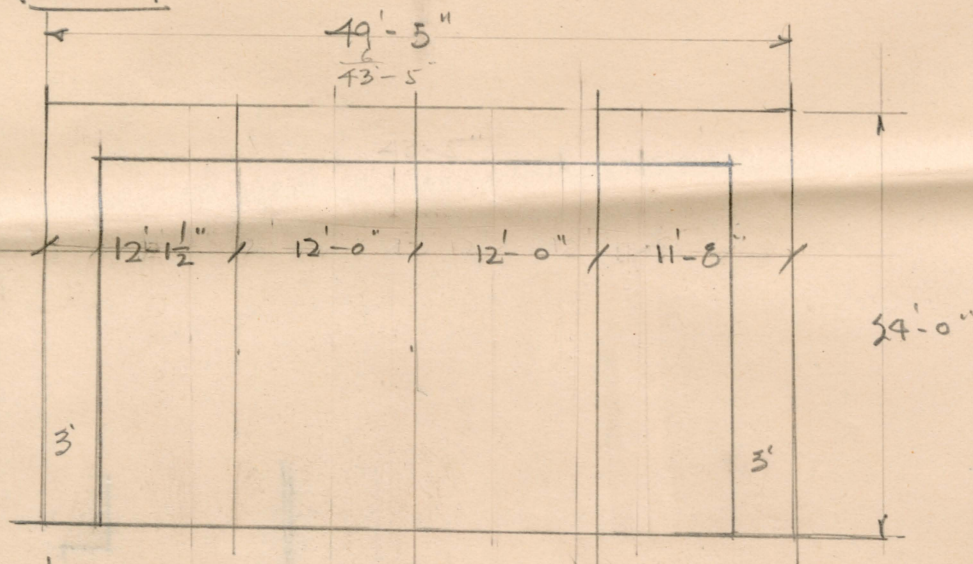
16000 #

$$9 \times 13 = 117 \text{ sq ft.}$$

$$\begin{array}{r} 117 \\ 117 \\ \hline 12870 \end{array}$$

13 x 14

Altar Pl.



Joists

L.L. 60 #/12'

Sub. Pl. } 5 #
Fin. " }

65 #/12'

Span 12'-0" @ 16" o.c.

$$(12)(1\frac{1}{3}) = 16'$$

$$(16)(65) = 1040 \#$$

$$\begin{array}{r} 1040 \\ 32.4 \\ \hline 1072.4 \# \end{array}$$

$$\begin{array}{r} 2.7 \\ 12 \\ 54 \\ 27 \\ \hline 32.4 \end{array}$$

2" x 8" - 16" o.c. - 1350 #
12' Span

$$\begin{array}{r} 24 \\ 7\frac{1}{2} \\ 12 \\ 168 \\ 180 \\ 12/180 \\ 2 \\ 360 \end{array}$$

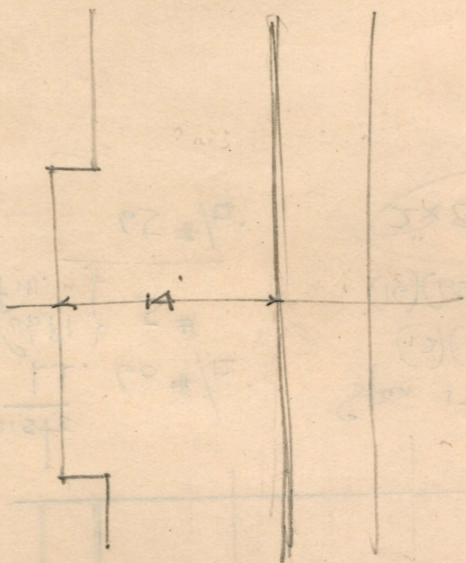
Ceiling Rafters
Reception Run

Snow load - 25 #/b.
 Sheathing - $2 \frac{1}{2}$
 Tar & Gravel - $\frac{6}{33 \frac{1}{2} \text{ #/b.}}$

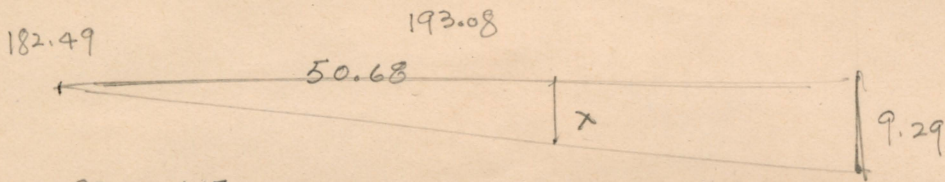
$$14 \times 1 \frac{1}{3} = 18 \frac{2}{3} \text{ by } 19 \text{ ft.}$$

$$18 \frac{2}{3} \times 33.5 = 625 \text{ #}$$

$$2 \times 6 - 14 \text{ Span } \frac{28}{653}$$



Centre line thru Hall Chapel



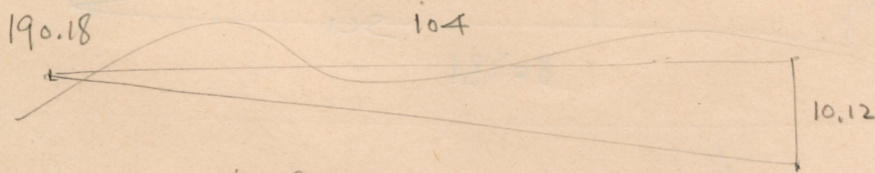
$$\begin{array}{r} 182.49 \\ 173.20 \\ \hline 9.29 \end{array}$$

$$193.08 : 50.68 :: 9.29 : X$$

$$193.08 X = (50.68)(9.29)$$

$$X = 2.43$$

$$\begin{array}{r} 182.49 \\ 243 \\ \hline 180.06 \end{array}$$



$$\begin{array}{r} 190.18 \\ 180.06 \\ \hline 10.12 \end{array}$$

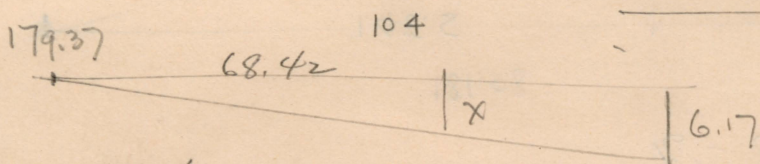
$$\begin{array}{r} 194.09 \\ 190.18 \\ \hline 3.91 \end{array} \quad 3 - 10\frac{7}{8}$$

$$\begin{array}{r} 190.55 \\ 3.91 \\ \hline 186.64 \end{array}$$

$$\begin{array}{r} 186.64 \\ 170 \\ \hline 16.64 \end{array}$$

$$16 - 7\frac{5}{8}$$

Centre thru longitudinal Social Hall



$$\begin{array}{r} 8.5 \\ 27.08 \\ \hline 35.58 \end{array}$$

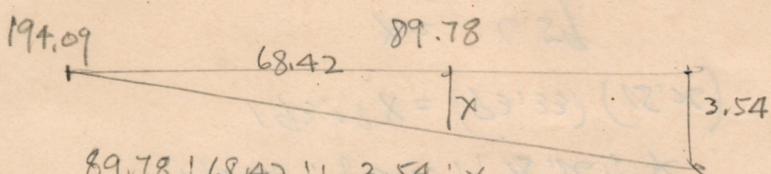
$$104 : 68.42 :: 6.17 : X$$

$$104 X = (68.42)(6.17)$$

$$X = 4.06$$

$$\begin{array}{r} 179.37 \\ 4.06 \\ \hline 175.31 \end{array}$$

$$\begin{array}{r} 104 \\ 35.58 \\ \hline 68.42 \end{array}$$



$$89.78 : 68.42 :: 3.54 : X$$

$$89.78 X = (68.42)(3.54)$$

$$X = 2.7$$

$$\begin{array}{r} 194.09 \\ 2.7 \\ \hline 191.39 \end{array}$$

193.01

193.08

83.33

X

15.26

$$\begin{array}{r} 193.01 \\ 177.75 \\ \hline 15.26 \end{array}$$

193.08 | 83.33 | 15.26 | X

$$193.08 X = (83.33)(15.26)$$

$$X = 6.59$$

$$\begin{array}{r} 193.01 \\ 6.59 \\ \hline 186.42 \end{array}$$

$$\begin{array}{r} 186.42 \\ 120 \\ \hline 16.42 \end{array}$$

16.42

16' - 5"

181.08

145.5

X

8.98

$$\begin{array}{r} 90 \\ 58 \\ \hline 148 \end{array}$$

181.08 | 145.5 | 8.98 | X

$$181.08 X = (145.5)(8.98)$$

$$X = 7.2$$

$$\begin{array}{r} 182.49 \\ 7.2 \\ \hline 175.29 \\ 170 \\ \hline 5.29 \end{array}$$

Rem Steps
Exit

181.08

125

X

8.98

$$\begin{array}{r} 90 \\ 38 \\ \hline 128 \end{array}$$

181.08 | 125 | 8.98 | X

$$181.08 X = (125)(8.98)$$

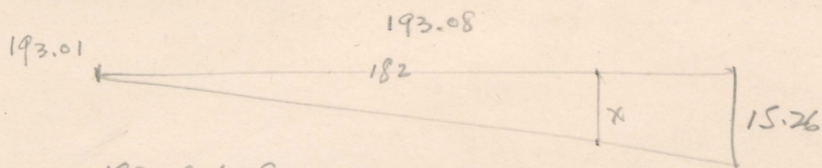
$$X = 6.2$$

$$\begin{array}{r} 182.49 \\ 6.2 \\ \hline 176.29 \end{array}$$

$$\begin{array}{r} 176.29 \\ 120 \\ \hline 6.29 \\ 6 - 3\frac{1}{2} \end{array}$$

Rem
Exit

Social Hall Entrance.



$$\begin{array}{r} 193.01 \\ 177.75 \\ \hline 15.26 \end{array}$$

$$\begin{array}{r} 90 \\ 82 \\ \hline 182 \end{array}$$

$$193.08 : 182 : 15.26 : x$$

$$193.08x = (182)(15.26) -$$

$$x = 14.3$$

$$\begin{array}{r} 193.01 \\ 14.3 \\ \hline 178.71 \end{array}$$

$$8\frac{1}{2}$$

$$\begin{array}{r} 178.71 \\ 170 \\ \hline 8.71 \end{array}$$

$$8 - 8\frac{1}{2}$$

$$\begin{array}{r} 180.27 \\ 178.71 \\ \hline \end{array}$$