

**APPROXIMATE WEIGHT OF TOWER AND HOUSE**

TOWER HEIGHT	WEIGHT
30'-0"	16500 lbs.
41'-3"	23700 "
54'-0"	28900 "
67'-6"	34900 "
83'-1 1/2"	34900 "

- L = 1L 3 x 3 x 1/4
- D = 2L 2 1/2 x 2 x 3/16
- d = 1L 2 1/2 x 2 1/2 x 3/16
- s = 1L 2 1/2 x 2 x 3/16
- L = 1L 3 x 3 x 1/4
- Under stair landing: S2 = 2L 3 1/2 x 3 x 1/4
- For 3 other sides: S2 = 2L 3 1/2 x 2 1/2 x 1/4
- D = 2L 2 1/2 x 2 x 3/16
- d = 1L 2 1/2 x 2 1/2 x 3/16
- s = 1L 2 1/2 x 2 x 3/16
- L = 1L 3 1/2 x 3 1/2 x 1/4
- S3 = 2L 3 1/2 x 3 x 1/4
- D = 2L 2 1/2 x 2 x 3/16
- d = 1L 2 1/2 x 2 1/2 x 3/16
- s = 1L 2 1/2 x 2 x 3/16
- L = 1L 4 x 4 x 1/4
- S4 = 2L 3 1/2 x 3 x 1/4
- D = 2L 3 x 2 1/2 x 1/4
- d = 1L 2 1/2 x 2 1/2 x 3/16
- s = 1L 2 1/2 x 2 x 3/16
- L = 1L 4 x 4 x 5/16
- S5 = 2L 4 x 3 x 1/4
- D = 2L 3 1/2 x 3 x 1/4
- d = 2L 2 1/2 x 2 1/2 x 3/16
- s = 2L 2 1/2 x 2 x 3/16
- L = 1L 4 x 4 x 7/16
- S6 = 2L 4 x 3 x 1/4
- D = 2L 3 1/2 x 3 x 1/4
- d = 2L 2 1/2 x 2 1/2 x 3/16
- s = 2L 2 1/2 x 2 x 3/16
- L = 1L 5 x 5 x 3/8
- S7 = 2L 5 x 3 1/2 x 3/16
- D = 2L 4 x 3 x 1/4
- d = 2L 2 1/2 x 2 1/2 x 3/16
- s = 2L 2 1/2 x 2 x 3/16

**FRONT OF TOWER**  
Showing sections for tower and arrangement of stairway

**RIGHT SIDE OF TOWER**

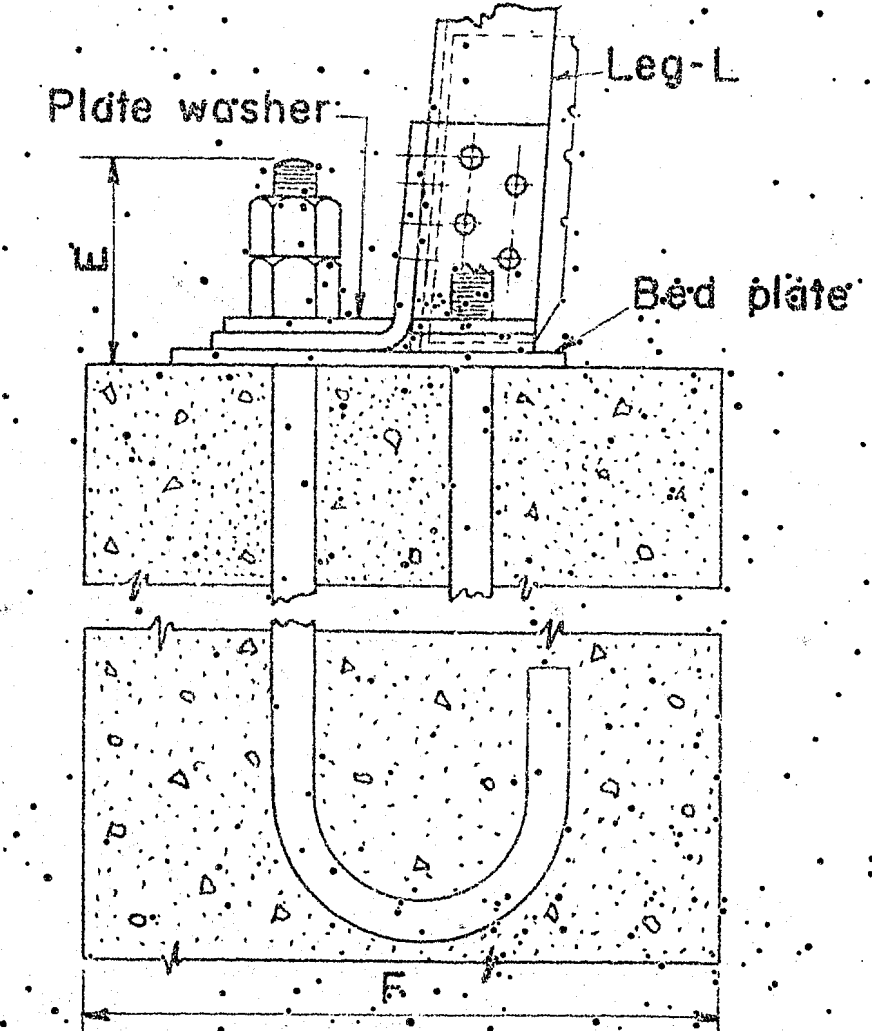
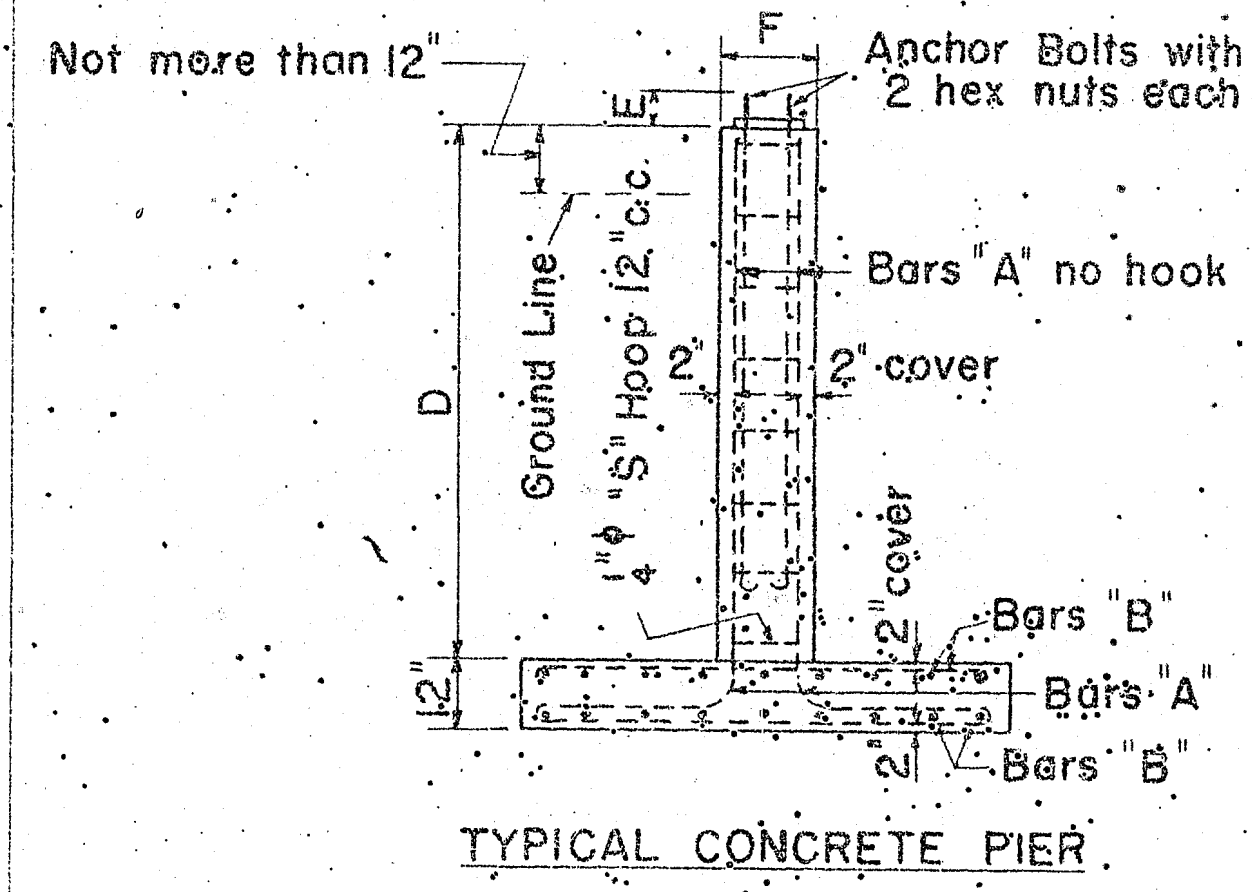
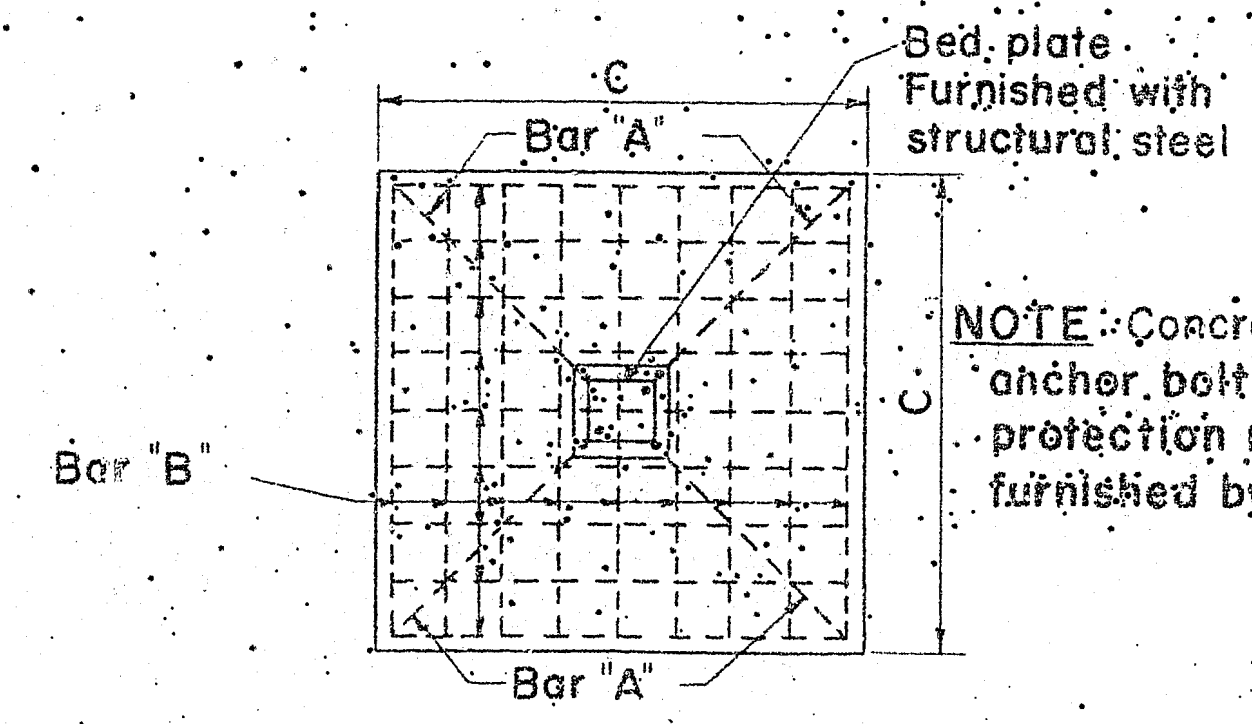
Top of base plate

2 angle sections shall have long or short legs back to back as shown.  
 sections to be field bolted with ring fillers at about 2 ft intervals.  
 Bolts in tower members 3/4" except for connections as noted on details.  
 Gusset plates 5/16" for tower members.  
 Working lines as shown above are gage lines, except as shown or noted.

**Loading**  
 Wind - 30#/ft on house and 30#/ft on 1/2 times exposed area of tower and stairs. Tower designed for wind blowing diagonally by increasing wind load stresses in tower members by 41.4%  
 Live load - House roof 65#/ft; house floor 50#/ft; catwalk 50#/ft; stairs 100#/ft on horizontal projection.

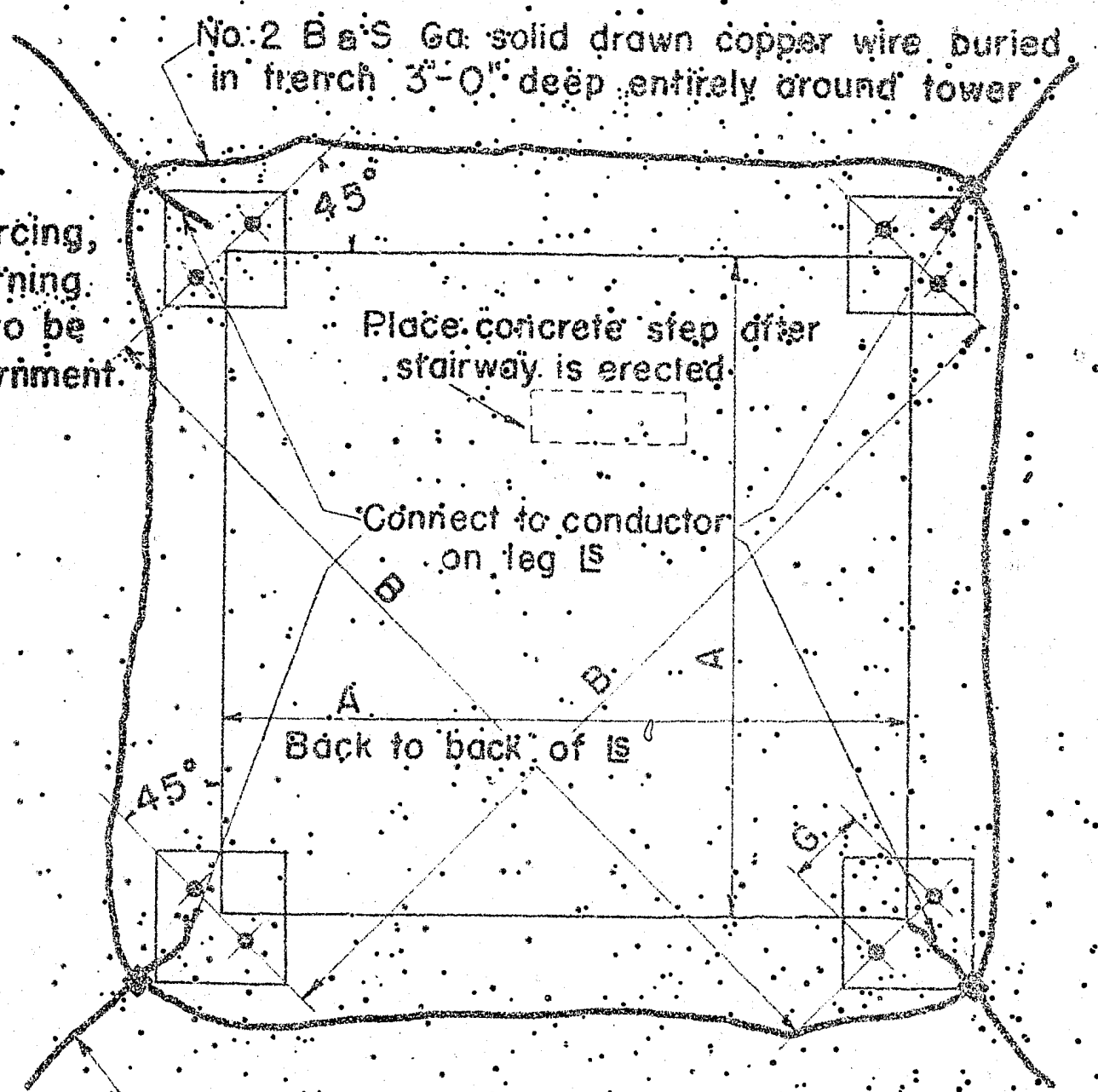
**Allowable Stresses**  
 Tension 20000#/ft on net section  
 Compression  
 Columns, Main Diagonals, & Struts (not to exceed 120) 17000-0.485(L)  
 Secondary Diagonals & Struts (not to exceed 200) 18000/1 + 15000/L

**Design Data**  
 Rivets B Ribbed Bolts Shear 15000#/ft Bearing 40000#/ft DS, 32000#/ft SS  
 Unfinished Bolts Shear 10000#/ft Bearing 25000#/ft DS, 20000#/ft SS



**ANCHOR BOLTS IN CONCRETE**

Note: Anchor bolts, reinforcing bars shall conform to F.S. Q-Q-B-71a, Grade 2. Anchor bolts & Hoop bars, Type A; Reinforcing bars, Type B.  
 Concrete Class A 1/2 aggregate. Mix 1-2-3 by volume 6 gal. of water per bag of cement.  
 Paint ends of anchor bolts with one coat of red lead before erecting tower, and with a second coat of red lead and a final coat of aluminum after erection.  
 Reinforcing, anchor bolts, concrete materials and lightning protection items not furnished by steel fabricator.



**FOUNDATION LAYOUT**

**SCHEDULE OF REINFORCING STEEL**

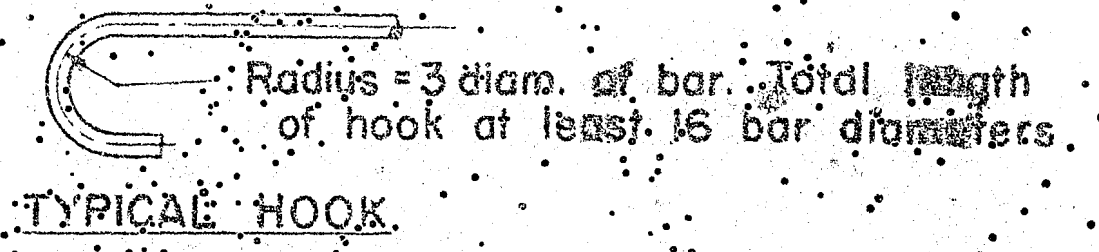
Tower Height	Bars A	Bars B	Hoops	Wt. lbs.	Anchor Bolts	Wt. lbs.
30'-0"	4	16	5	103	2	13
41'-3"	4	20	5	145	2	13
54'-0"	4	24	6	200	2	21
67'-6"	4	28	6	263	2	30
83'-1 1/2"	4	32	7	298	2	30

Note: Length given is finished length unless noted. Bars A Total length, no hook. Bar size No. 9 and No. 10 may be substituted for the 1" and 1 1/4" bars A listed. Quantities listed are for one pier only.

**PIER DIMENSIONS**

Tower Height	A	B	C	D	E	F	G	Cut. Core.
30'-0"	19'-3 7/8"	25'-10 5/8"	4'-6"	5'-0"	3 3/4"	1'-4"	2 15/16"	23
41'-3"	20'-2 3/8"	28'-7 7/8"	5'-0"	5'-6"	4"	1'-4"	5 1/8"	35
54'-0"	22'-4 1/8"	31'-7 3/8"	5'-6"	6'-0"	4 1/2"	1'-4"	5 1/8"	41
67'-6"	24'-7 1/2"	34'-9 3/8"	6'-0"	6'-6"	5"	1'-4"	5 1/8"	48
83'-1 1/2"	27'-3"	38'-5 1/8"	6'-6"	7'-0"	5"	1'-4"	7 1/8"	55

Concrete listed is for one pier only.



**TYPICAL HOOK**

Revised Jan. 1951, Jan. 1954, Dec. 1954, 1957

U. S. DEPARTMENT OF AGRICULTURE  
**FOREST SERVICE**

**STANDARD STEEL LOOKOUT TOWERS**  
 30, 41-3, 54, 67-6 & 83-1 1/2' HIGH  
 WITH LIVING QUARTERS

ELEVATION, MEMBERS and FOUNDATION PLAN

DESIGNER: REGION 7 DRAWN: REGION 7 TRACED: D. E. C.  
 SCALE: 3/4" = 1'-0" CHECKED: J. H. B.  
 APPROVED: Chief Engineer DATE: 5-14-57  
 SHEET 1 OF 3

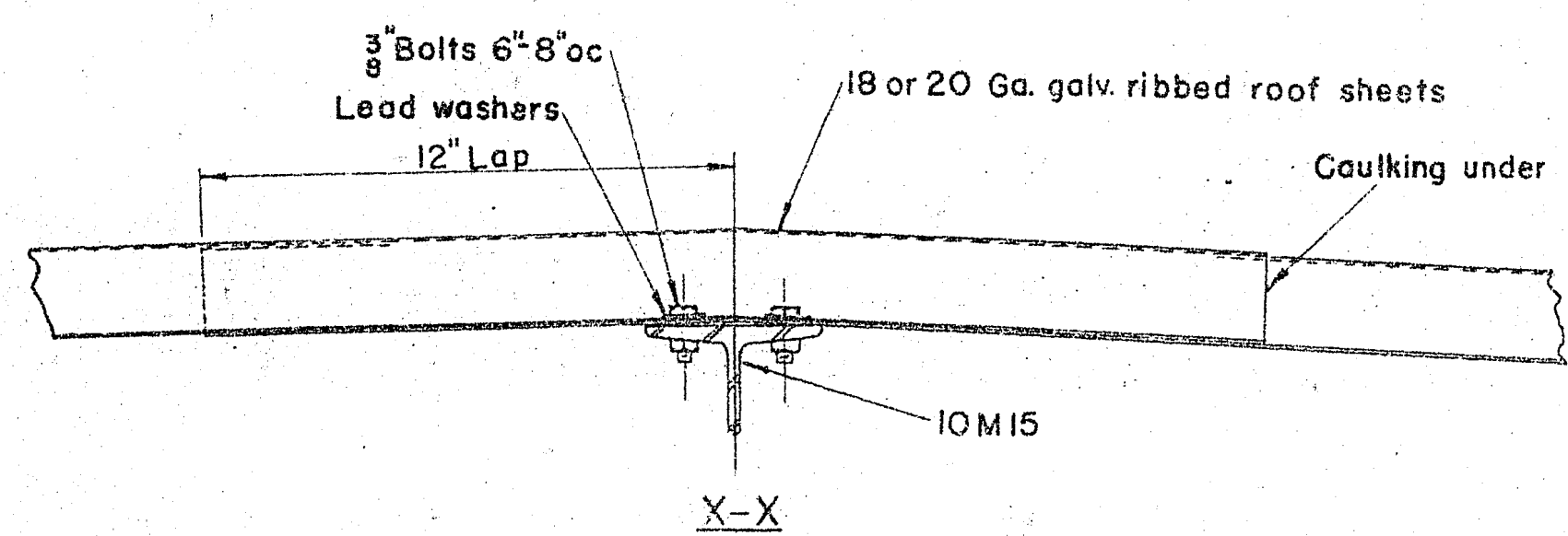




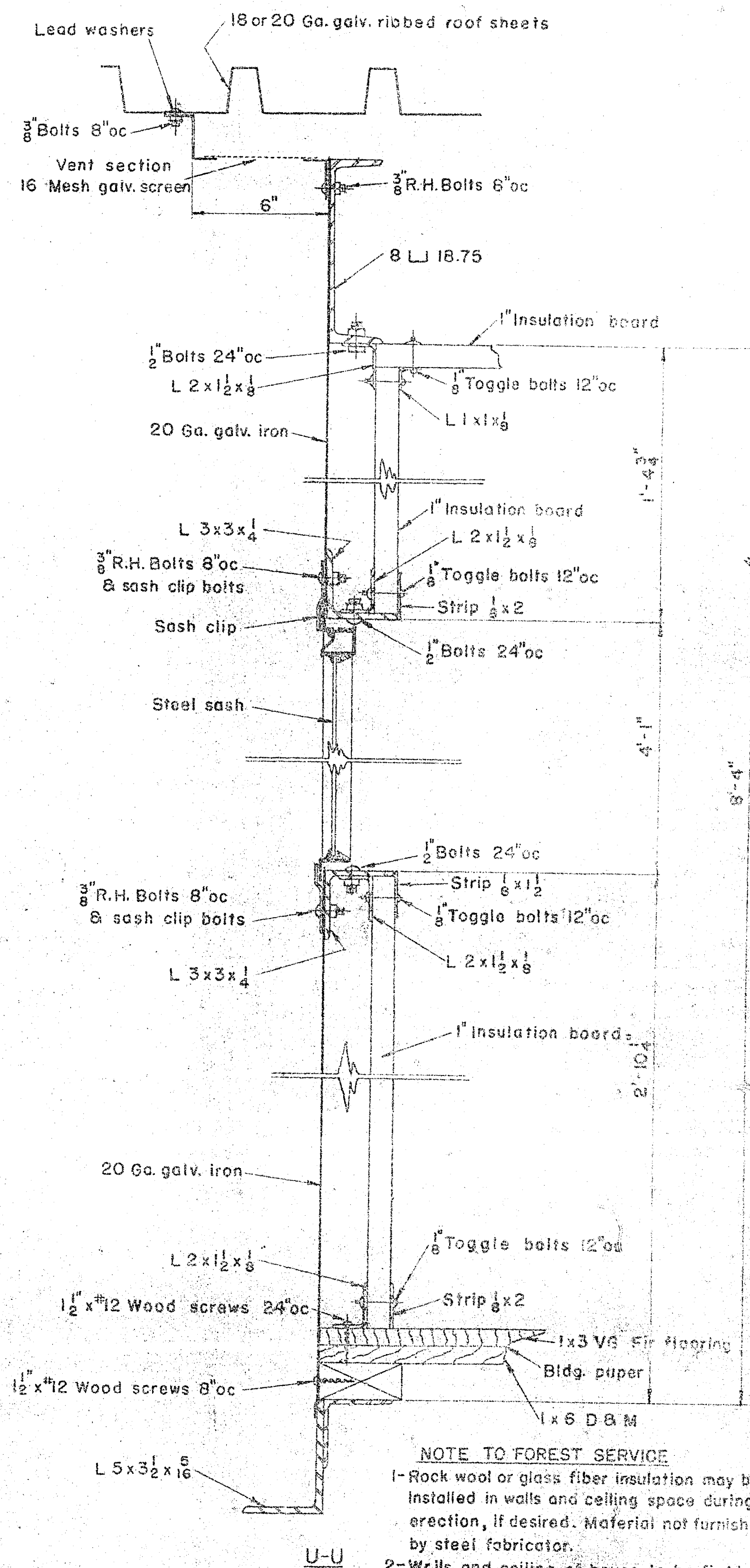
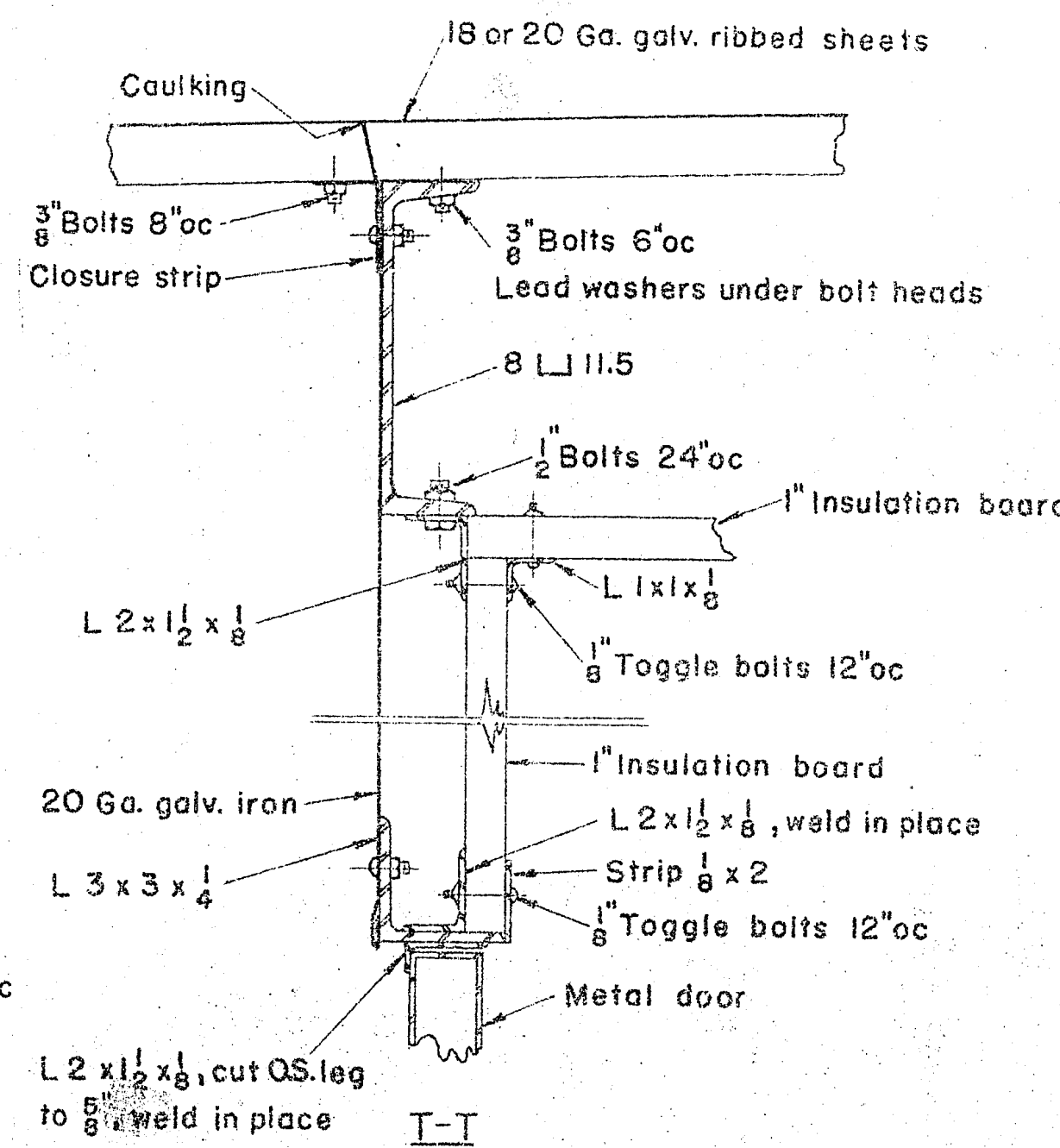




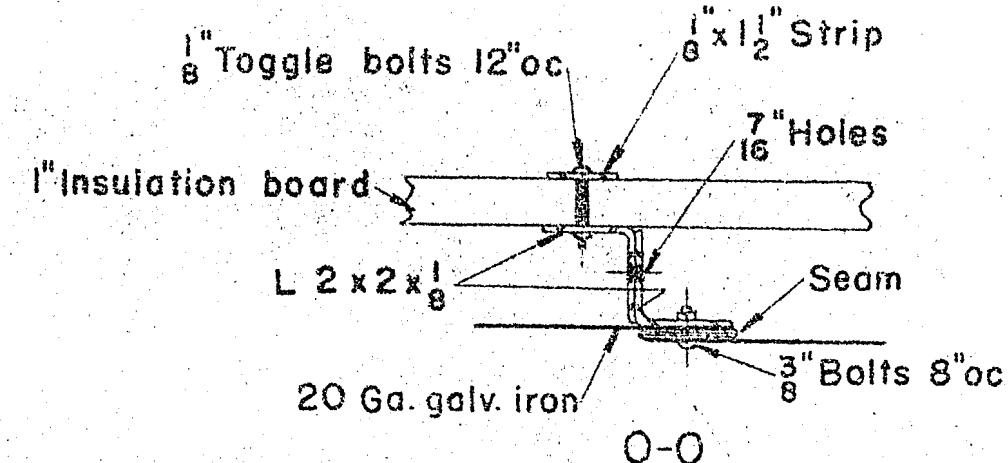
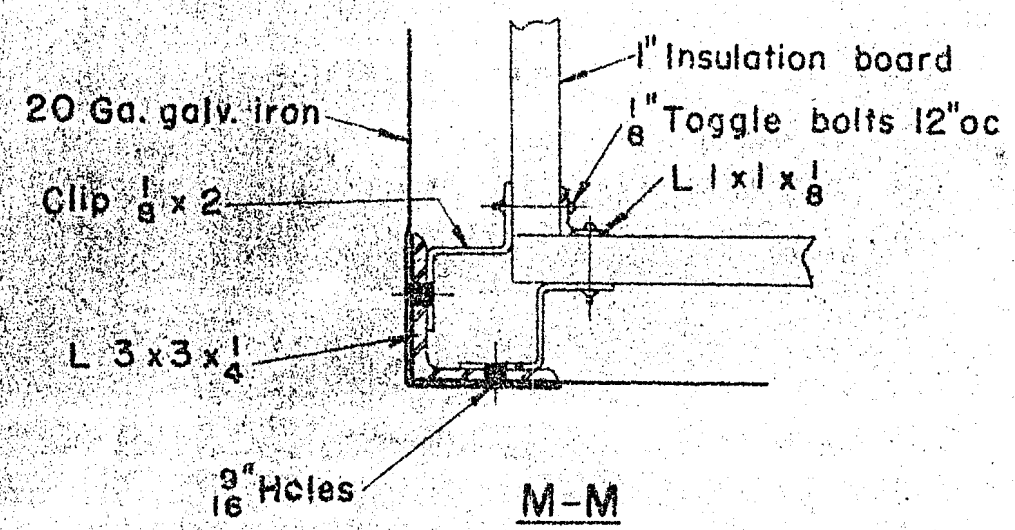
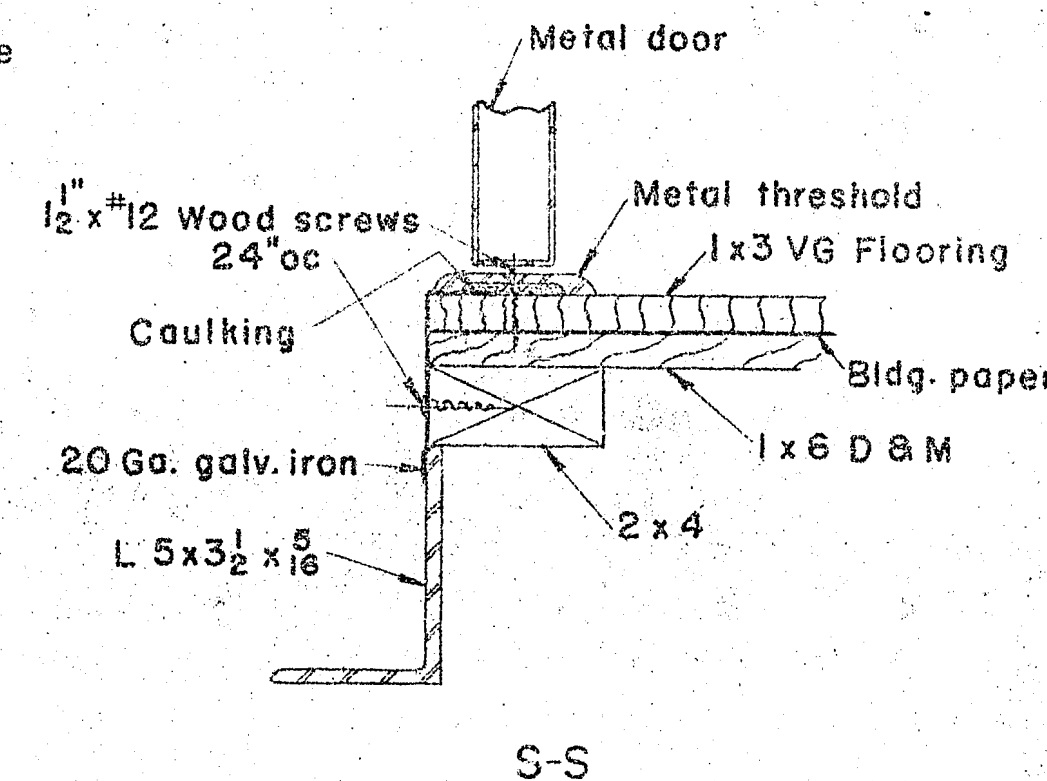
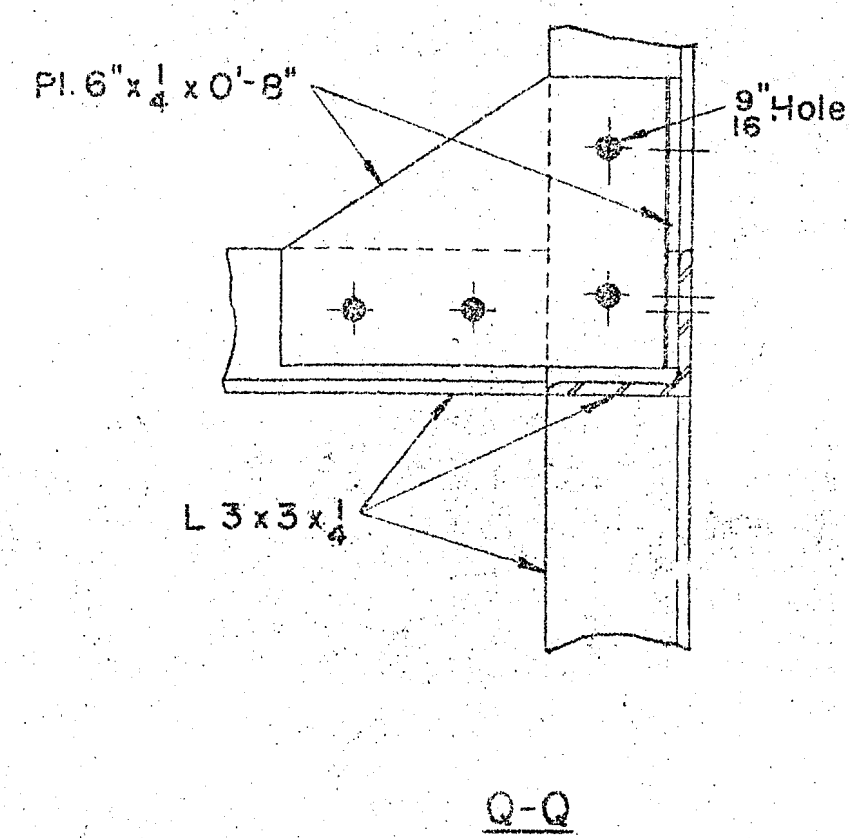
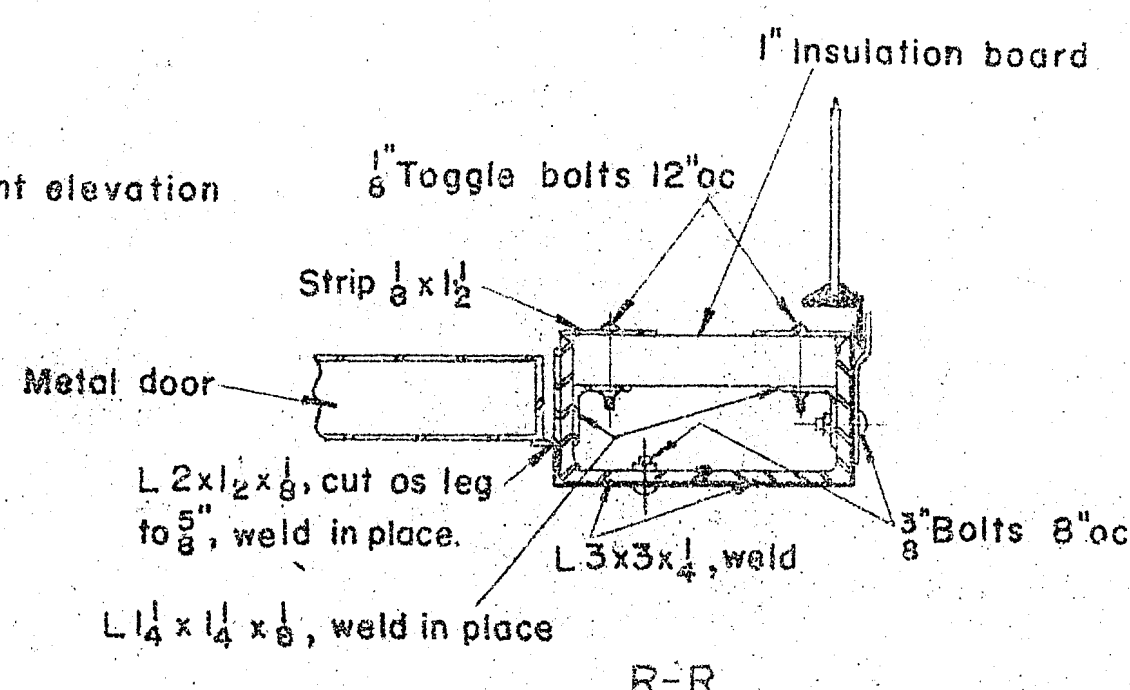
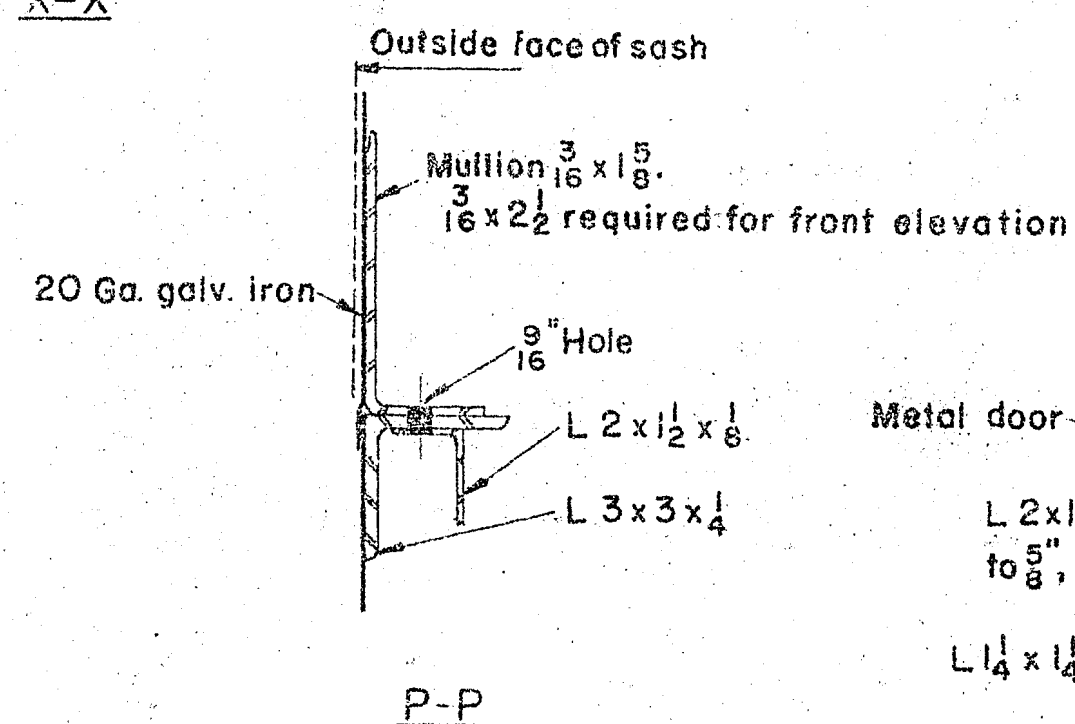
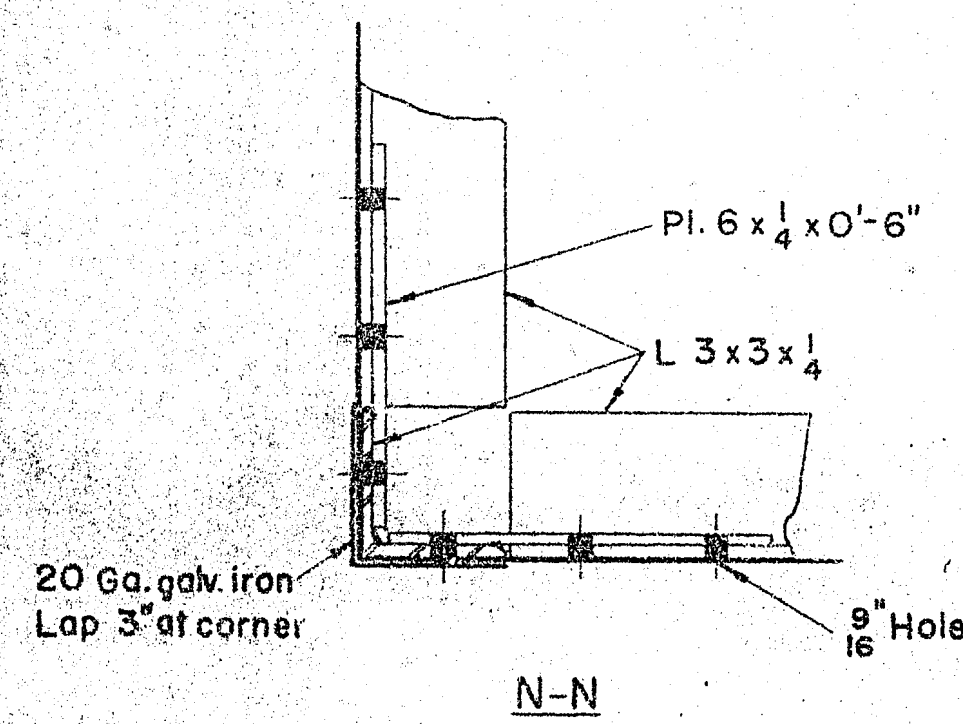




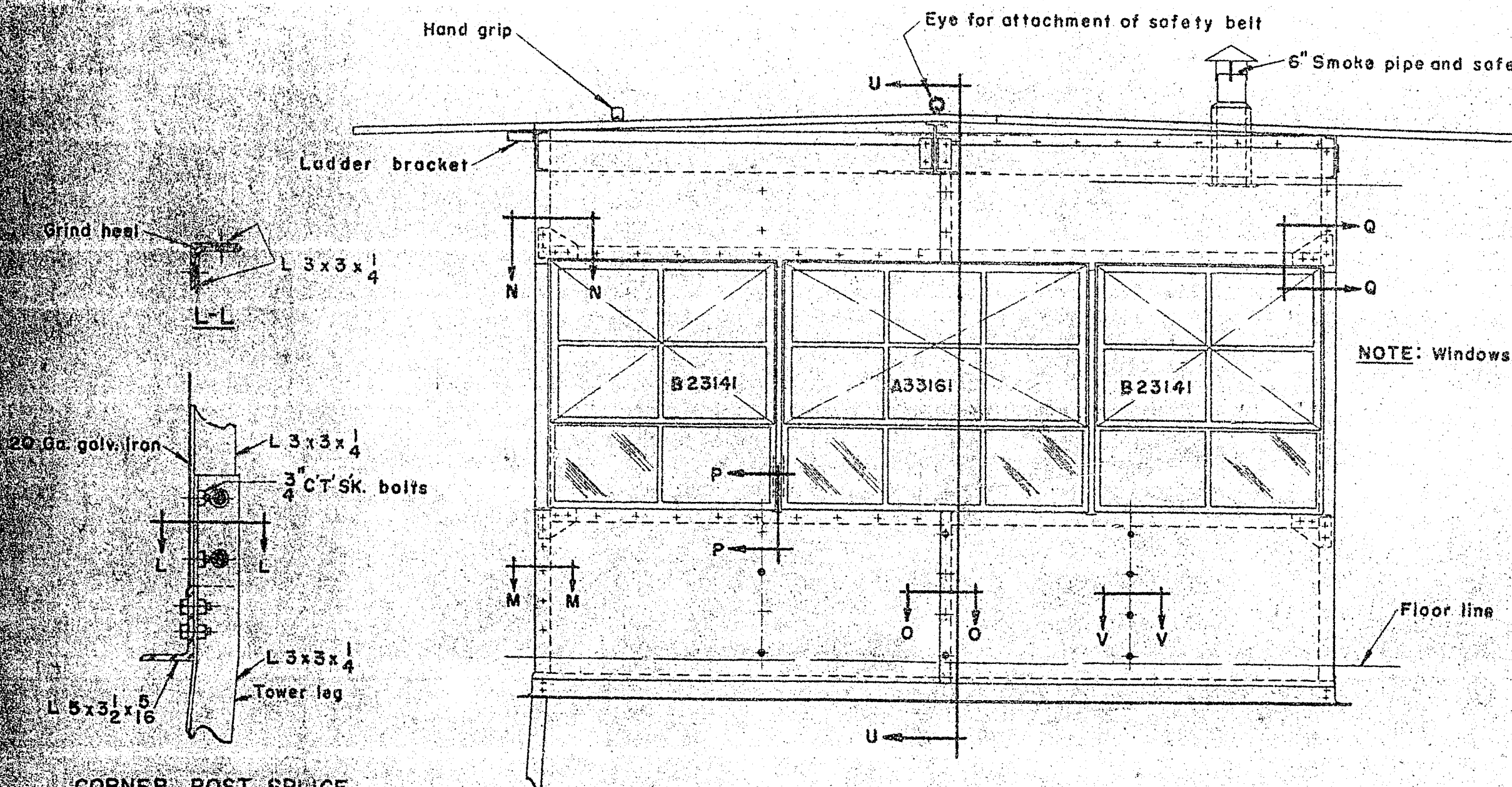
NOTE: Rib roofing may be 18 or 20 ga. designed for 65# roof live load.



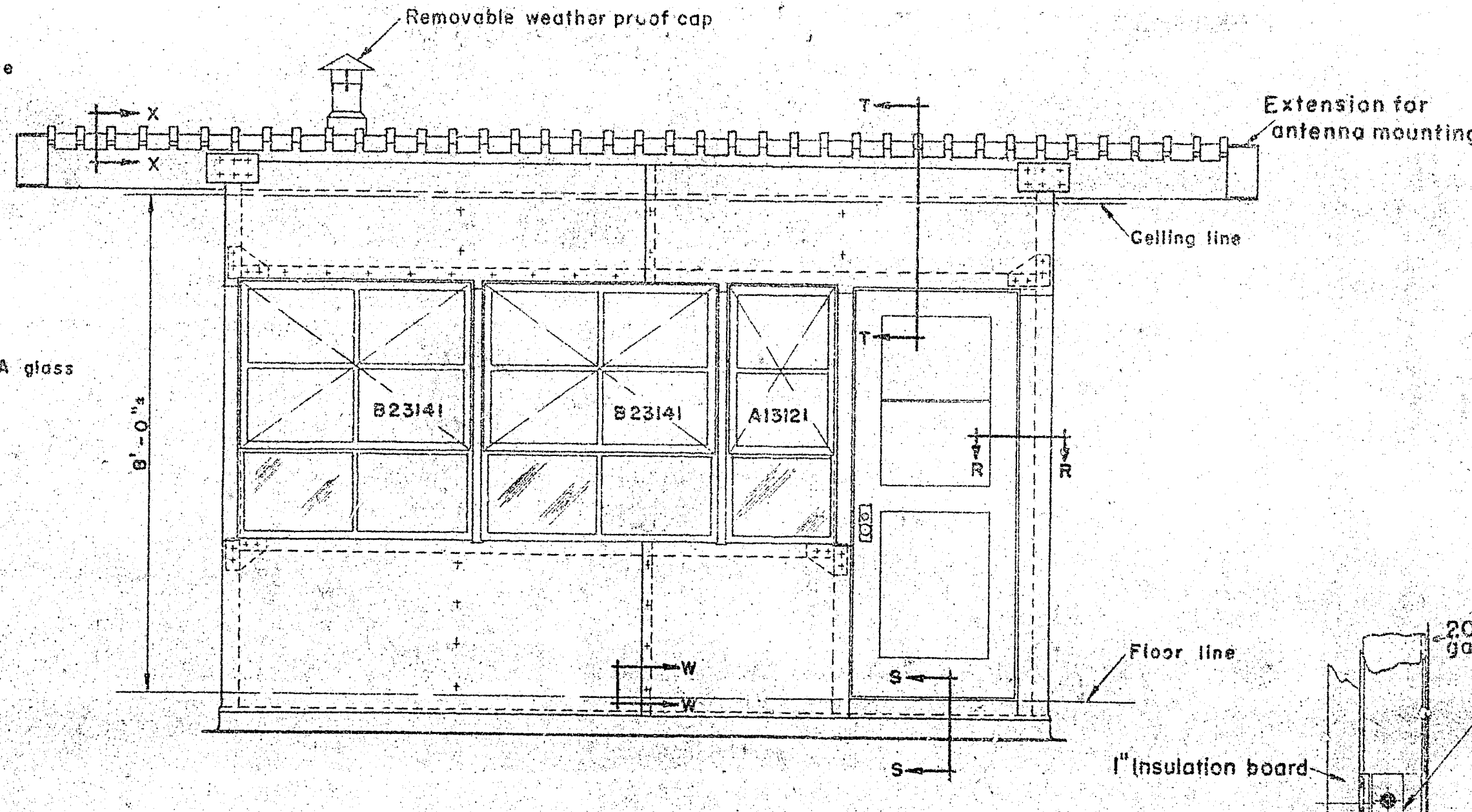
NOTE TO FOREST SERVICE  
 1-Rock wool or glass fiber insulation may be installed in walls and ceiling space during erection, if desired. Material not furnished by steel fabricator.  
 2-Walls and ceiling of house to be field painted with a light green gloss paint. Paint not furnished by steel fabricator.



Section V-V similar w/o break in galv. iron siding or insulation board.

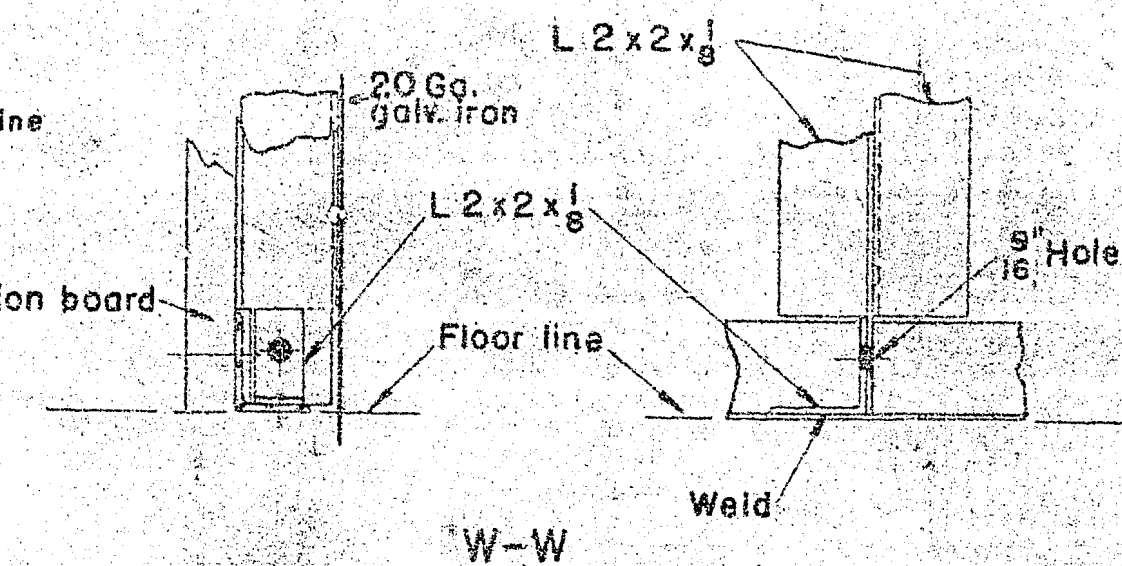


SIDE ELEVATION  
 (Rear elevation similar)



FRONT ELEVATION

NOTE  
 See Sheet 5 for floor and roof framing details



W-W

CORNER POST SPICE TO TOWER LEG

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 FOREST SERVICE

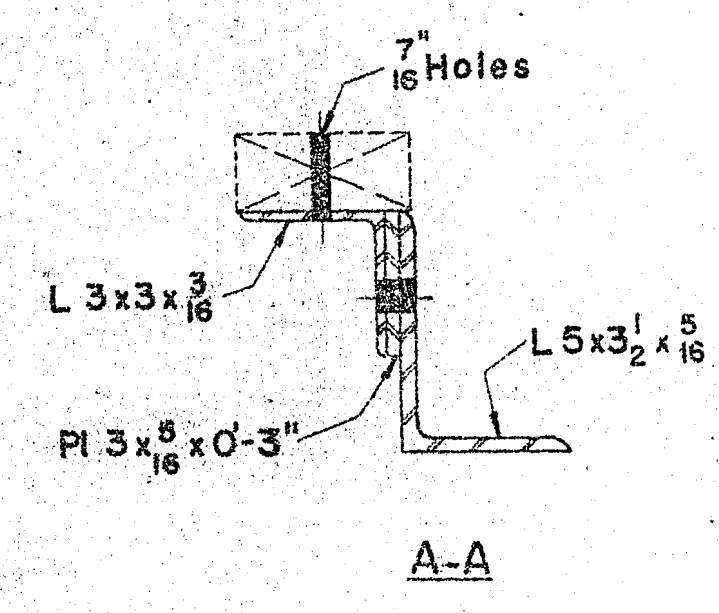
STANDARD STEEL LOOKOUT TOWERS  
 30', 41'-3", 54', 67'-6", & 83'-1 1/2" HIGH  
 WITH LIVING QUARTERS

HOUSE DETAILS

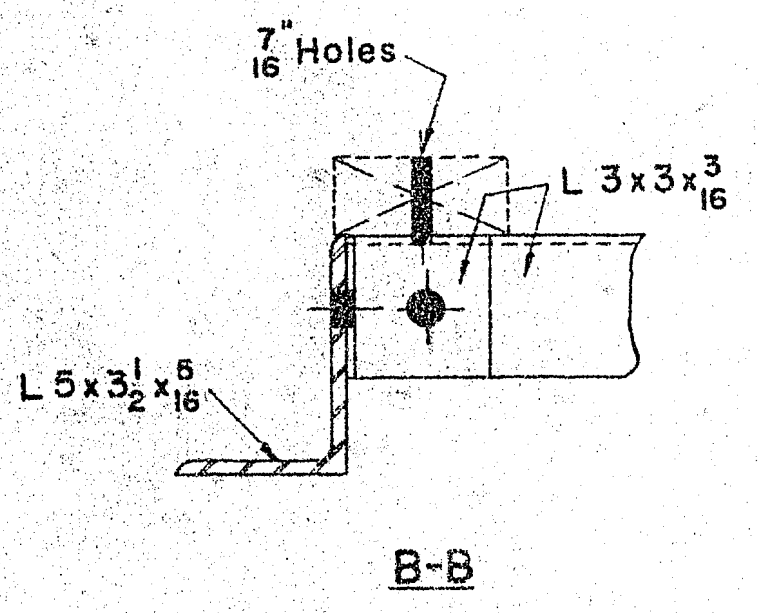
DESIGNED *RMO* - DSF DRAWN *DSF* TRACED *DSF*  
 SCALE: APPROVED *APD* CHECKED *APD*  
 Chief Engineer SHEET 4 OF 5

C-1104

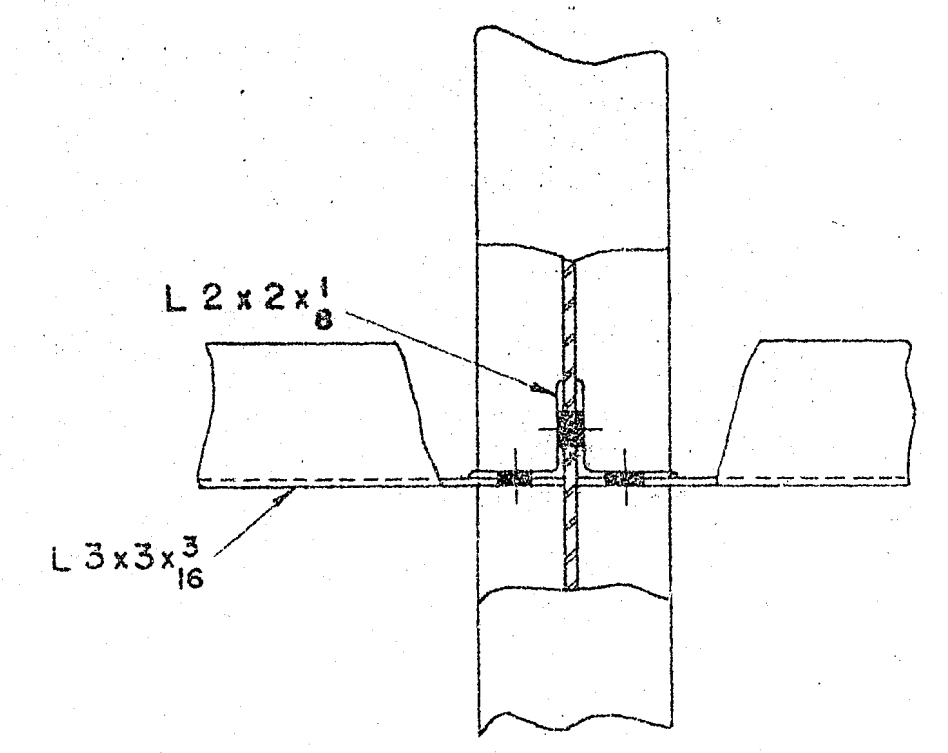




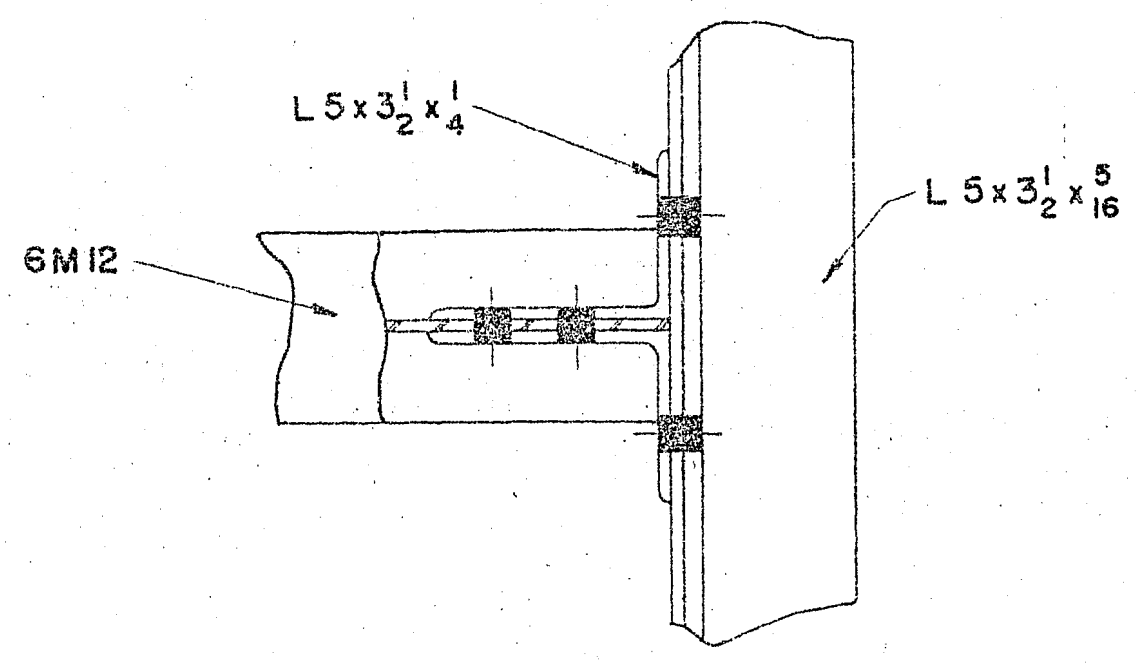
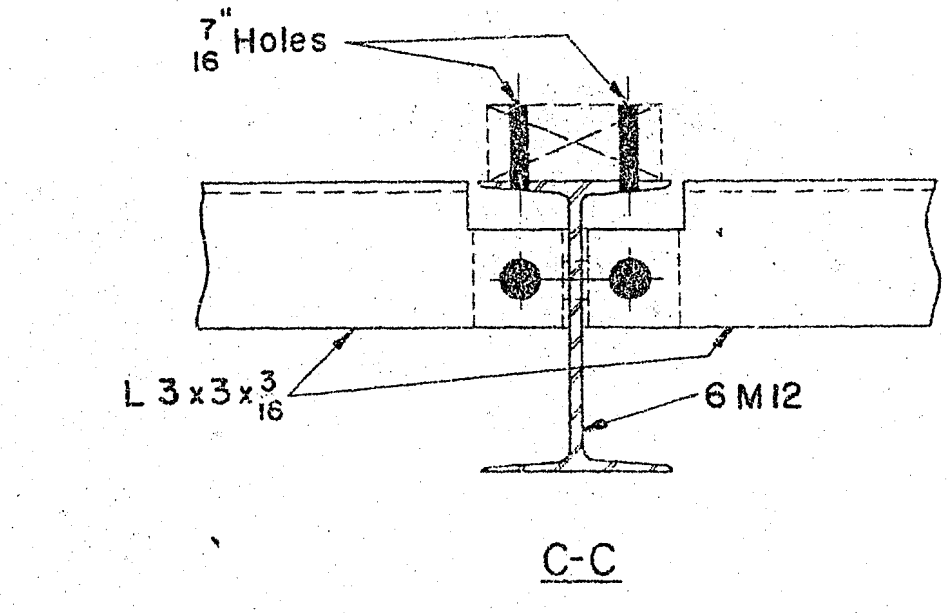
A-A



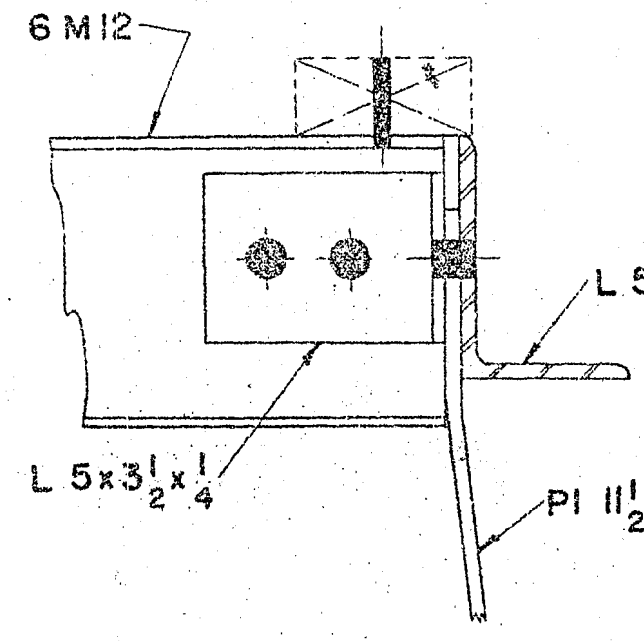
B-B



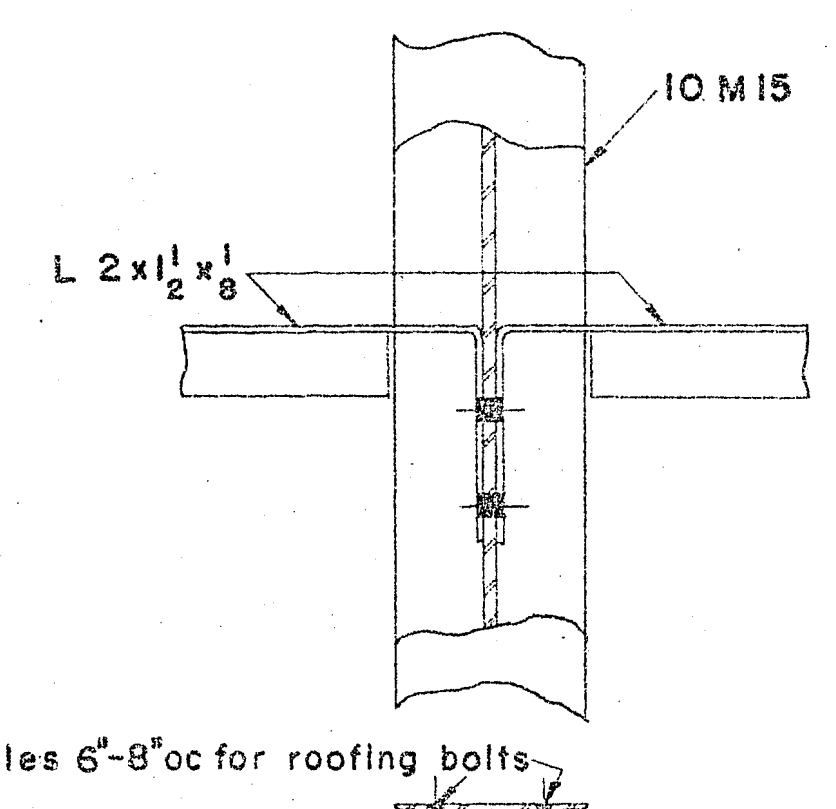
C-C



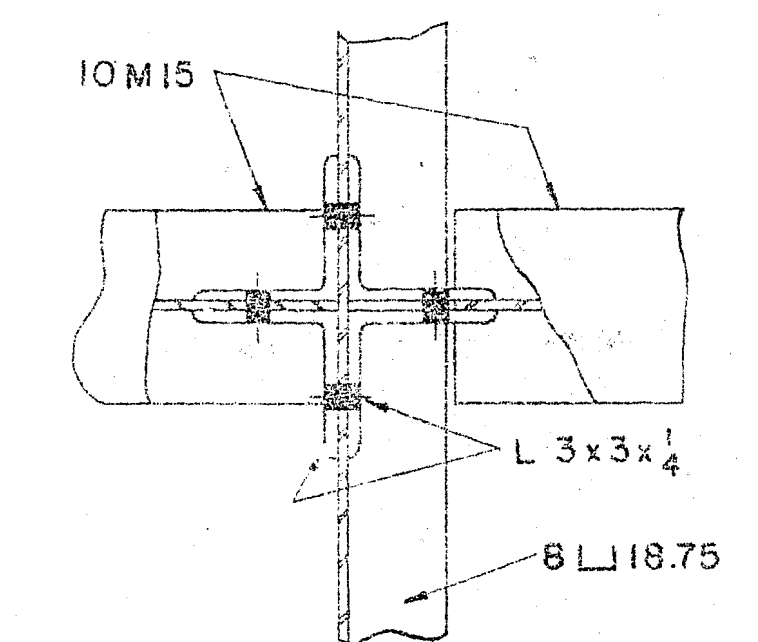
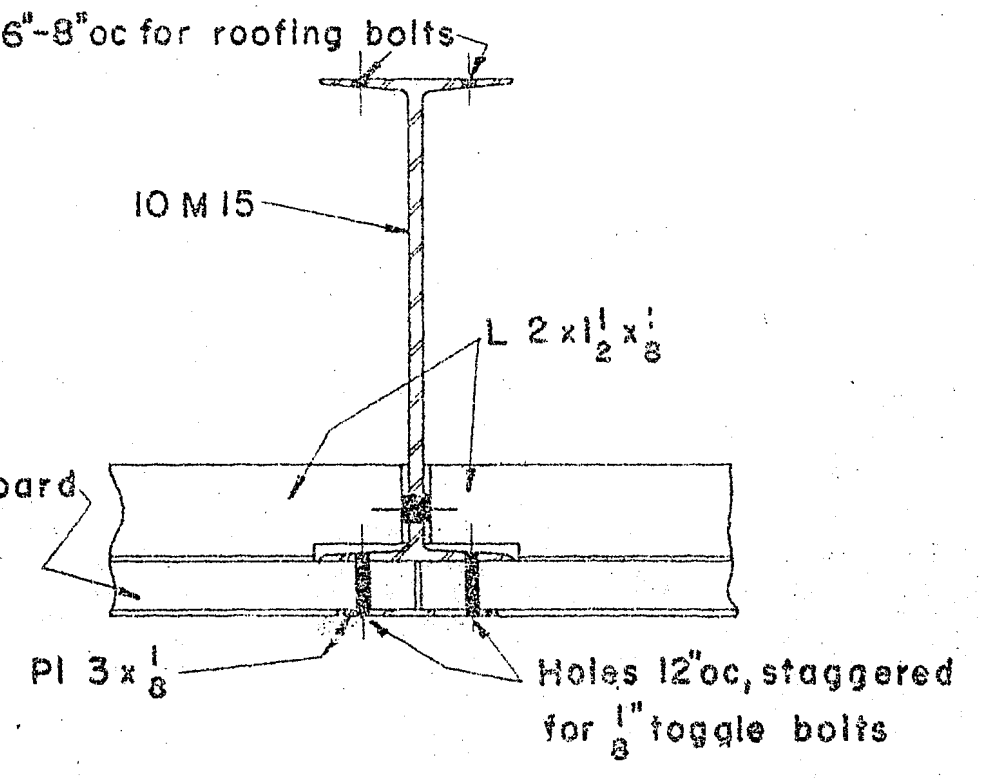
D-D



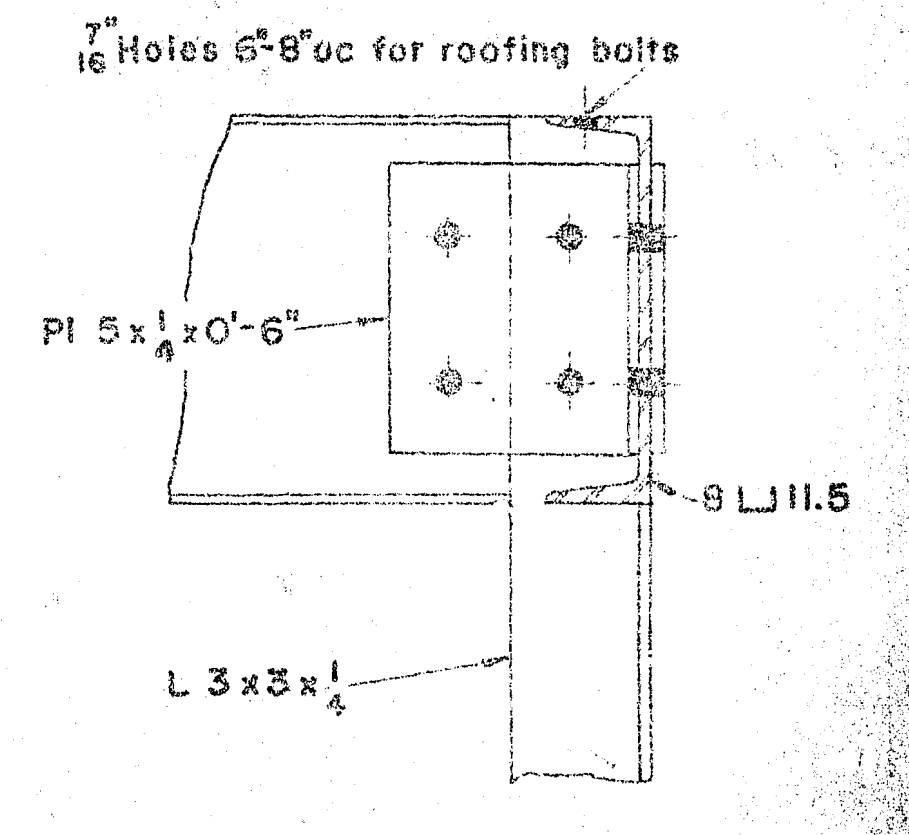
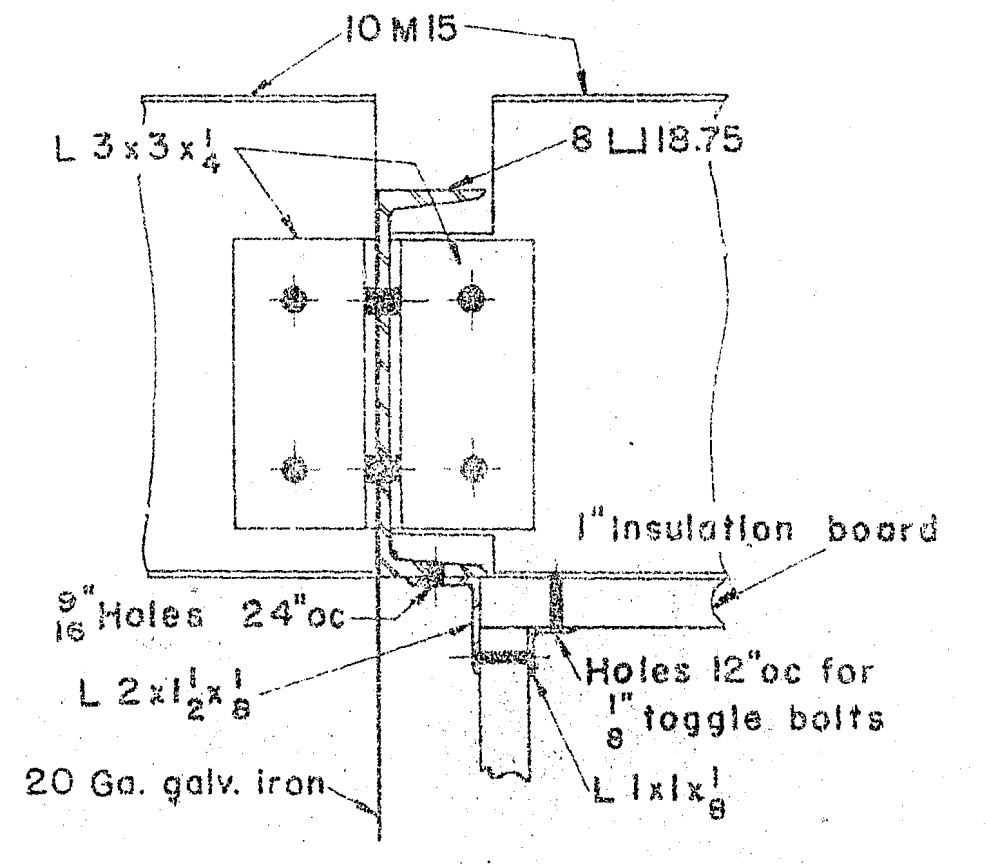
E-E



H-H

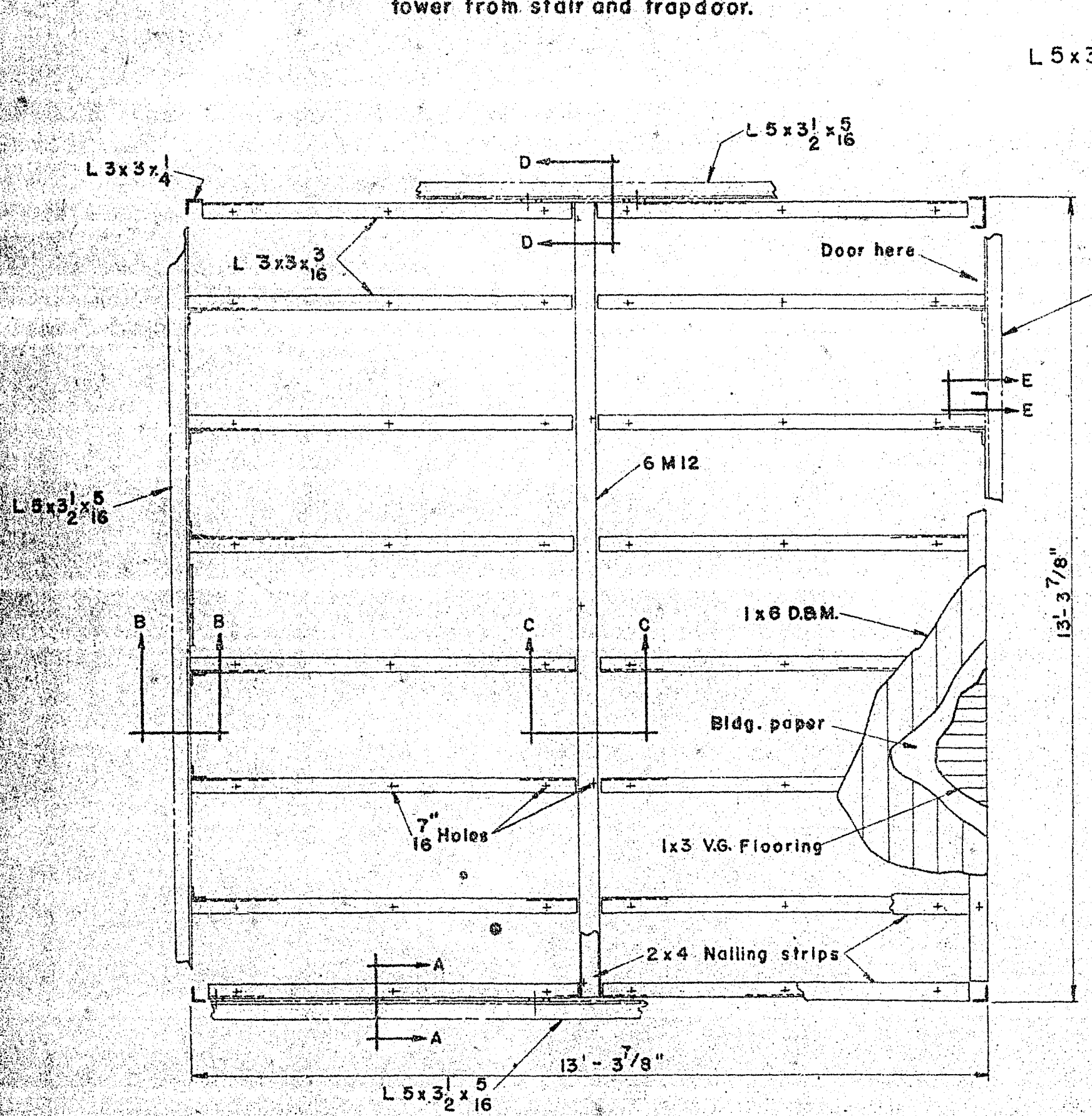


I-I

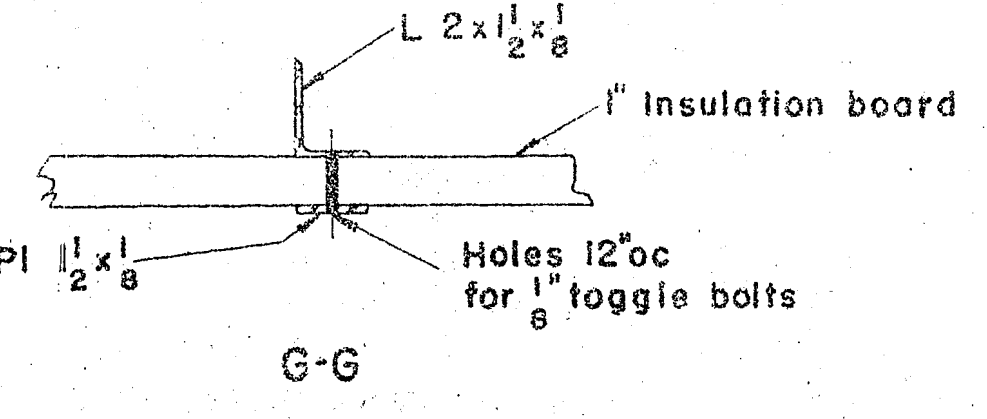


J-J

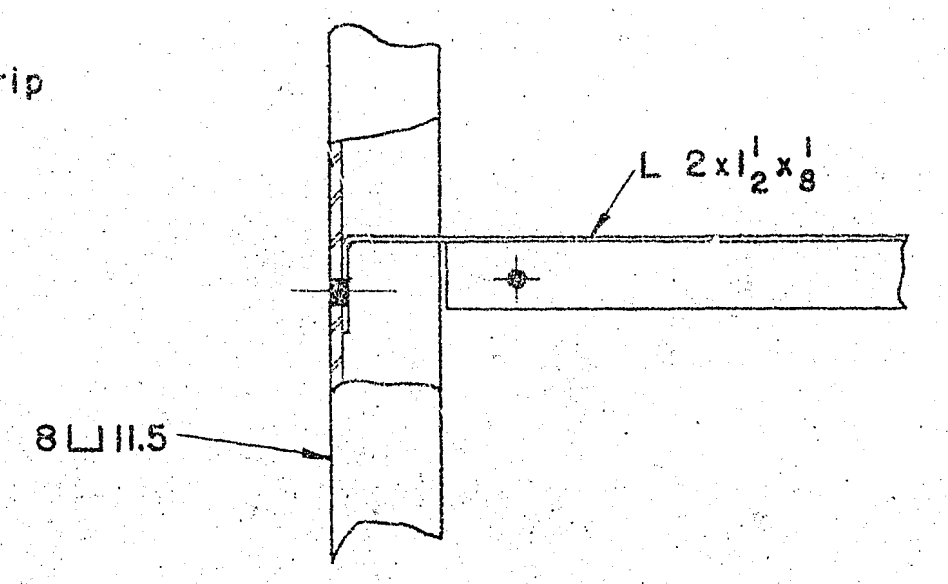
NOTE: Door of house to be on opposite side of tower from stair and trapdoor.



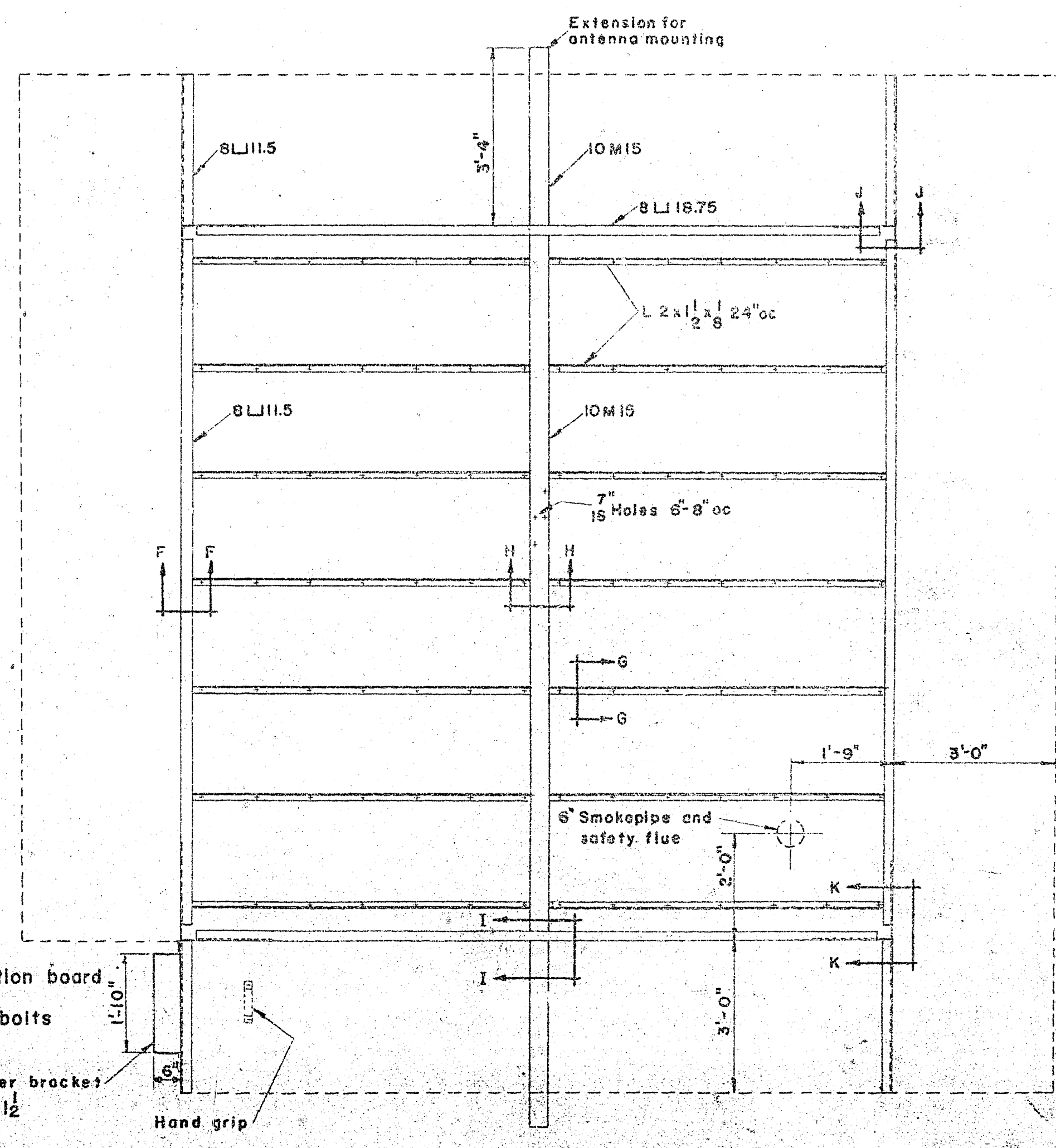
**FLOOR FRAMING**  
All holes in this framing to be 1/16 inch unless otherwise noted.  
2x4 Nailers and 1x6 D.B.M. subfloor to be furnished pressure treated with pentachlorophenol.



G-G

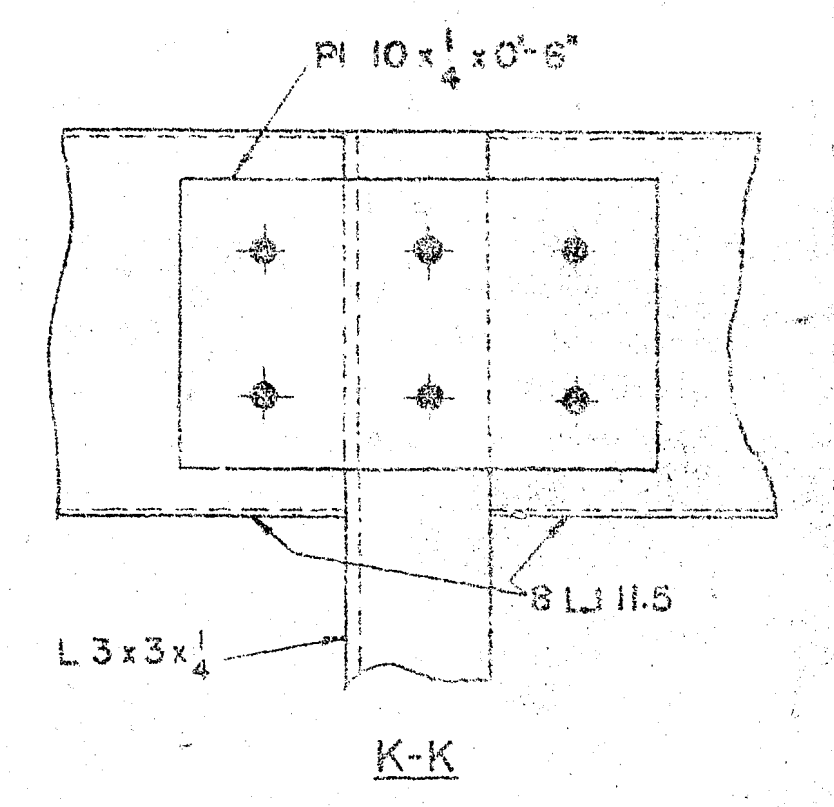


F-F



**ROOF FRAMING**

All holes in this framing to be 9/16 inch unless otherwise noted.



K-K

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FOREST SERVICE

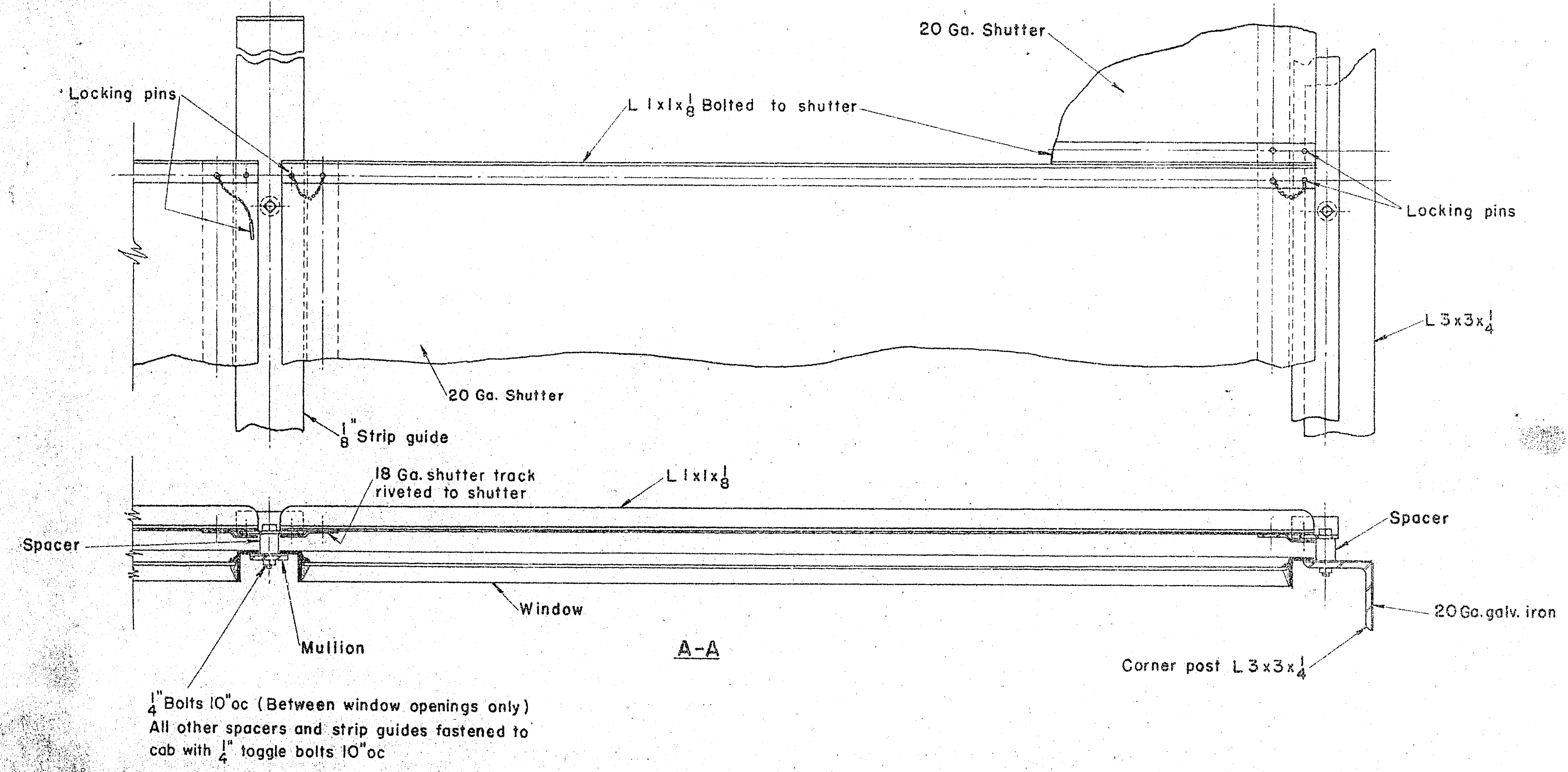
STANDARD STEEL LOOKOUT TOWERS  
30', 41'-3", 54', 67'-6", & 83'-1 1/2" HIGH  
WITH LIVING QUARTERS

HOUSE DETAILS

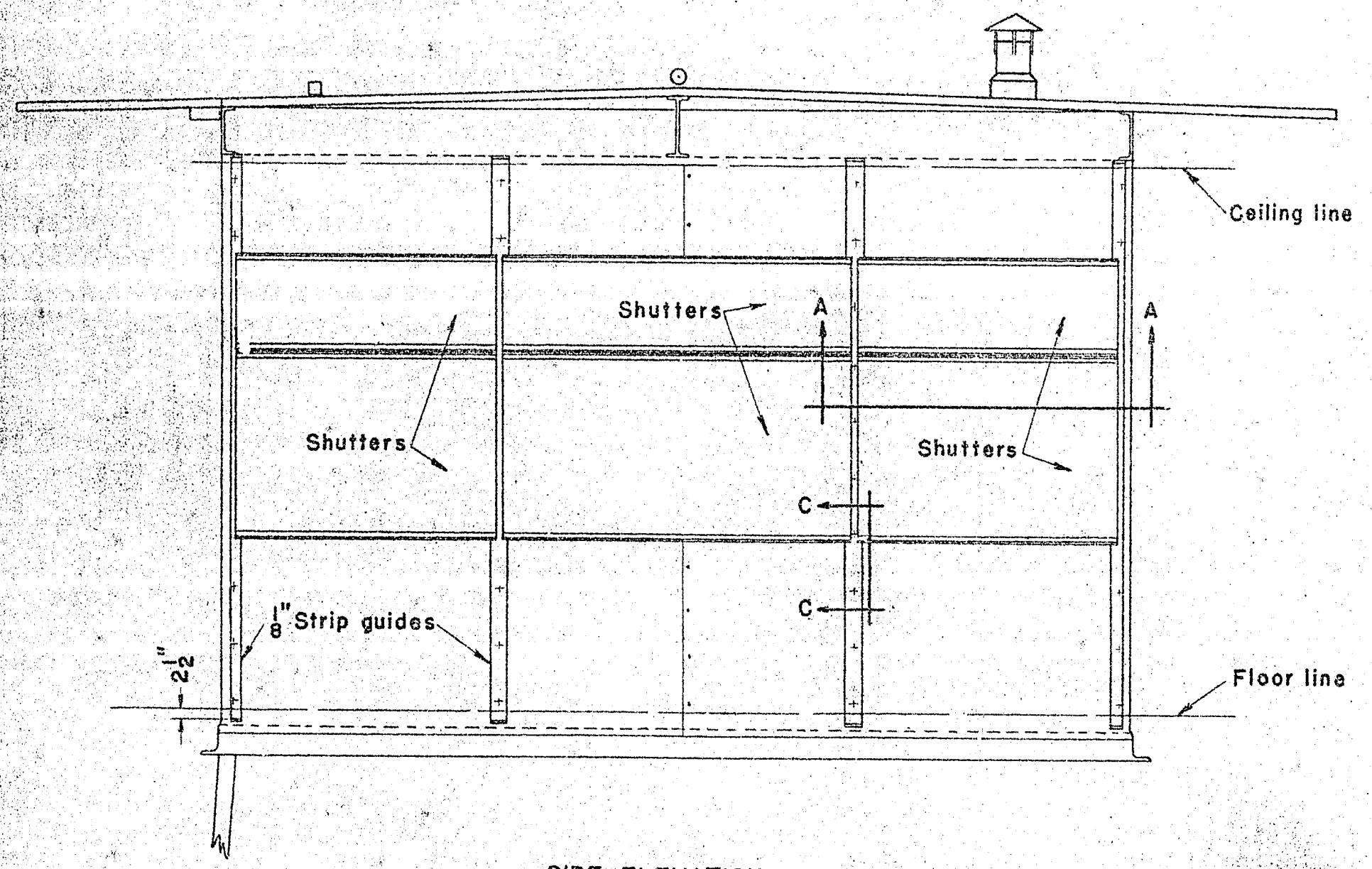
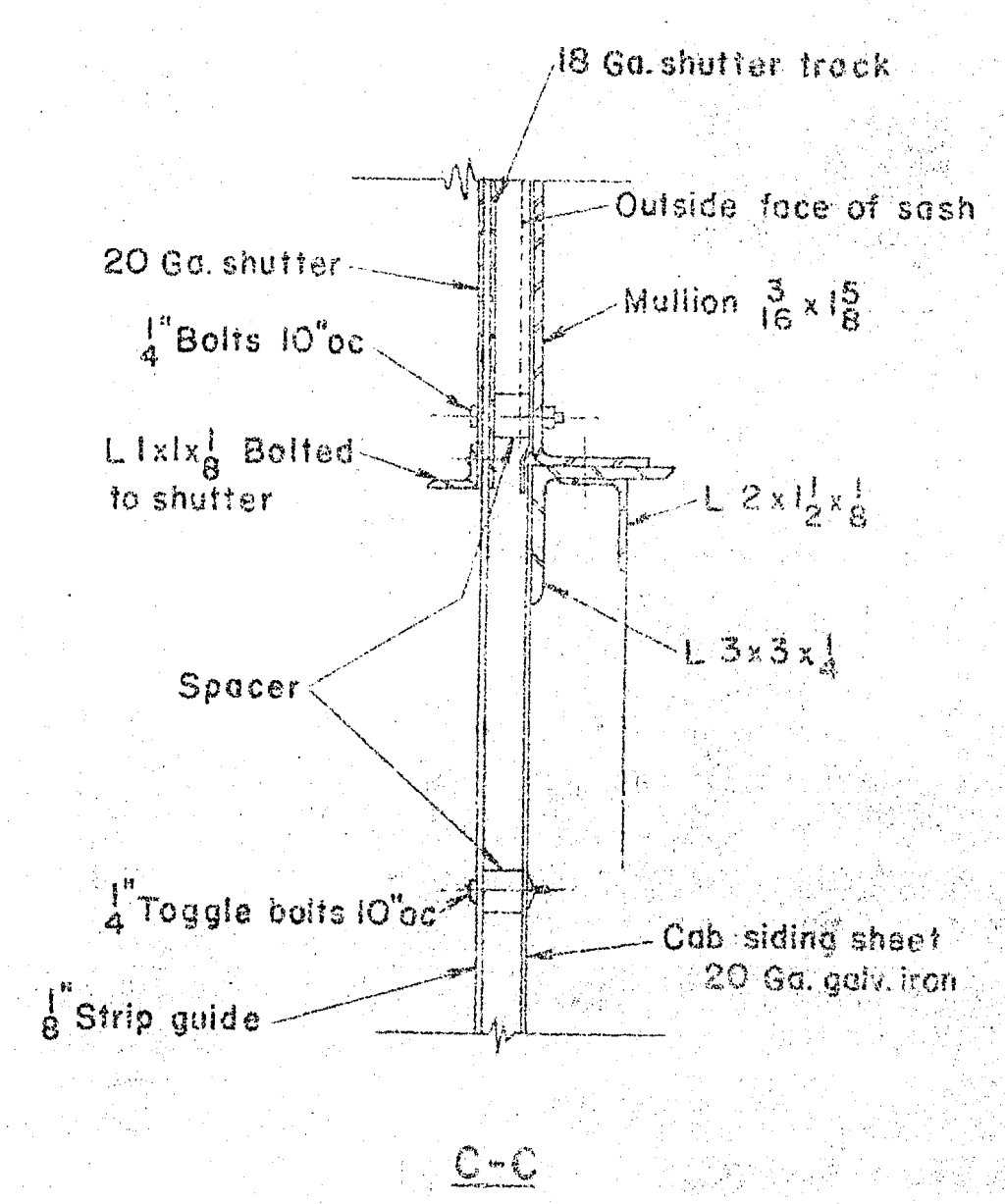
DESIGNED: NHC, DSF, GERNI, DSF  
SCALE: 1/4" = 1'-0"  
APPROVED: [Signature]  
Chief Engineer

TRACED: DSF  
CHECKED: [Signature]  
DATE: 3-23-37  
SHEET: 5 OF 11

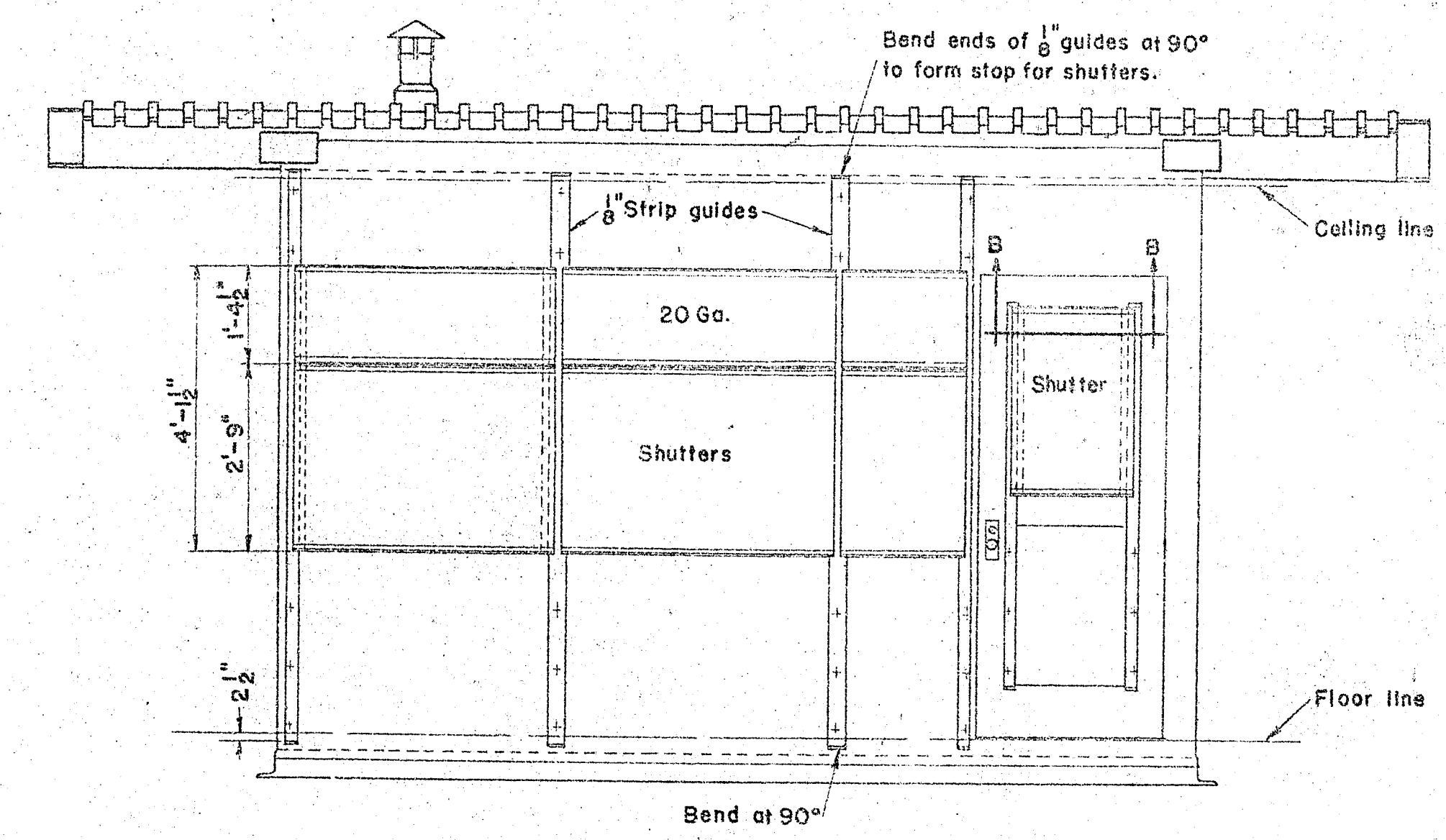




NOTE Shutters to slide vertically. Upper portion of window shutters to be raised for open position, bottom portion to be dropped to stop. Door shutter to be dropped to stop for open position. Shutters to be fixed by locking pins as shown in section A-A when closed or open. Arrangements for locking shutters to guides should be provided. Drill holes in guides for locking pins to keep upper portion of shutters in raised position, and both portions of shutters in closed position.



SIDE ELEVATION  
(Shutters shown in closed position)  
(Rear elevation similar)



FRONT ELEVATION  
(Shutters shown in closed position)

NOTE: Shutters are an optional item, and are not furnished with the standard tower unless specified.

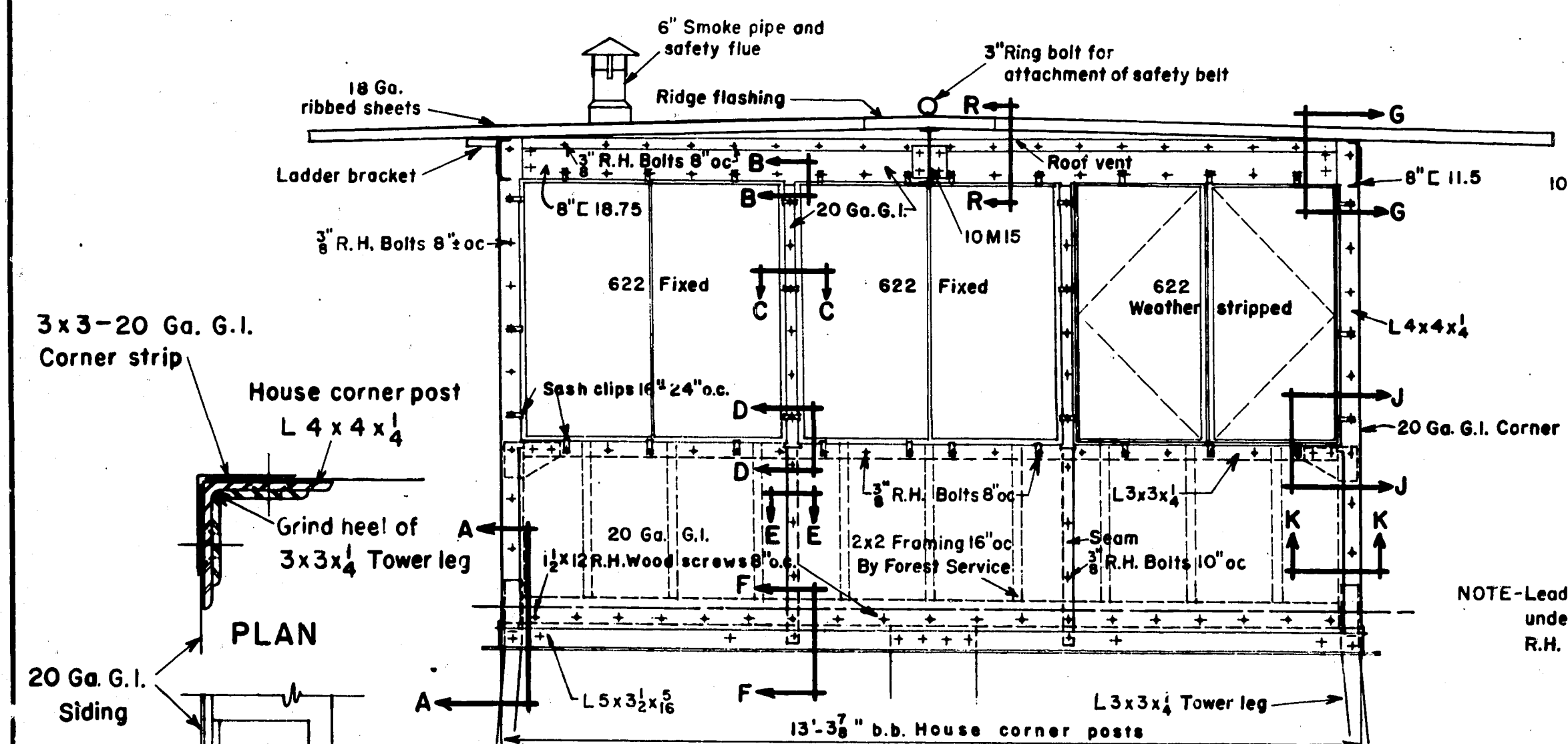
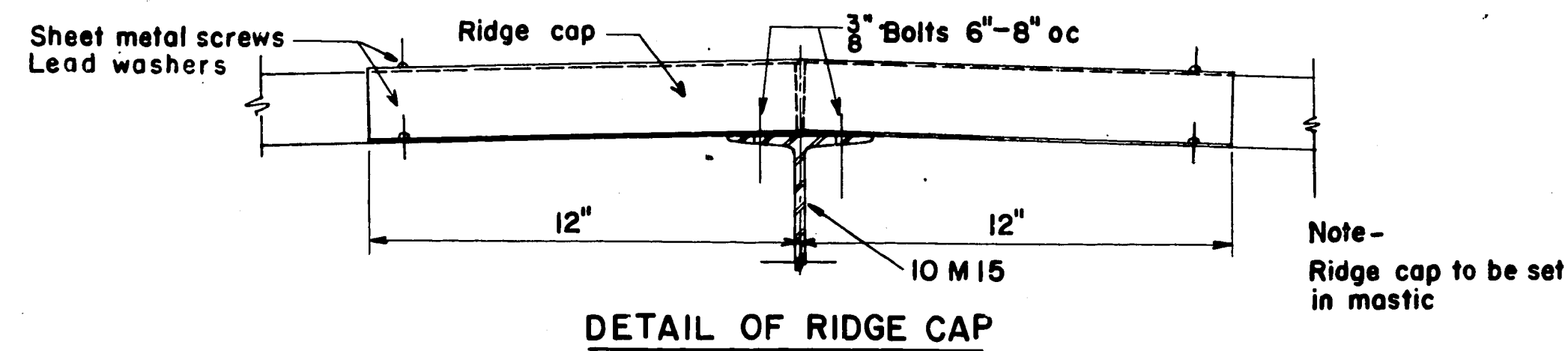
U. S. DEPARTMENT OF AGRICULTURE  
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STANDARD STEEL LOOKOUT TOWERS  
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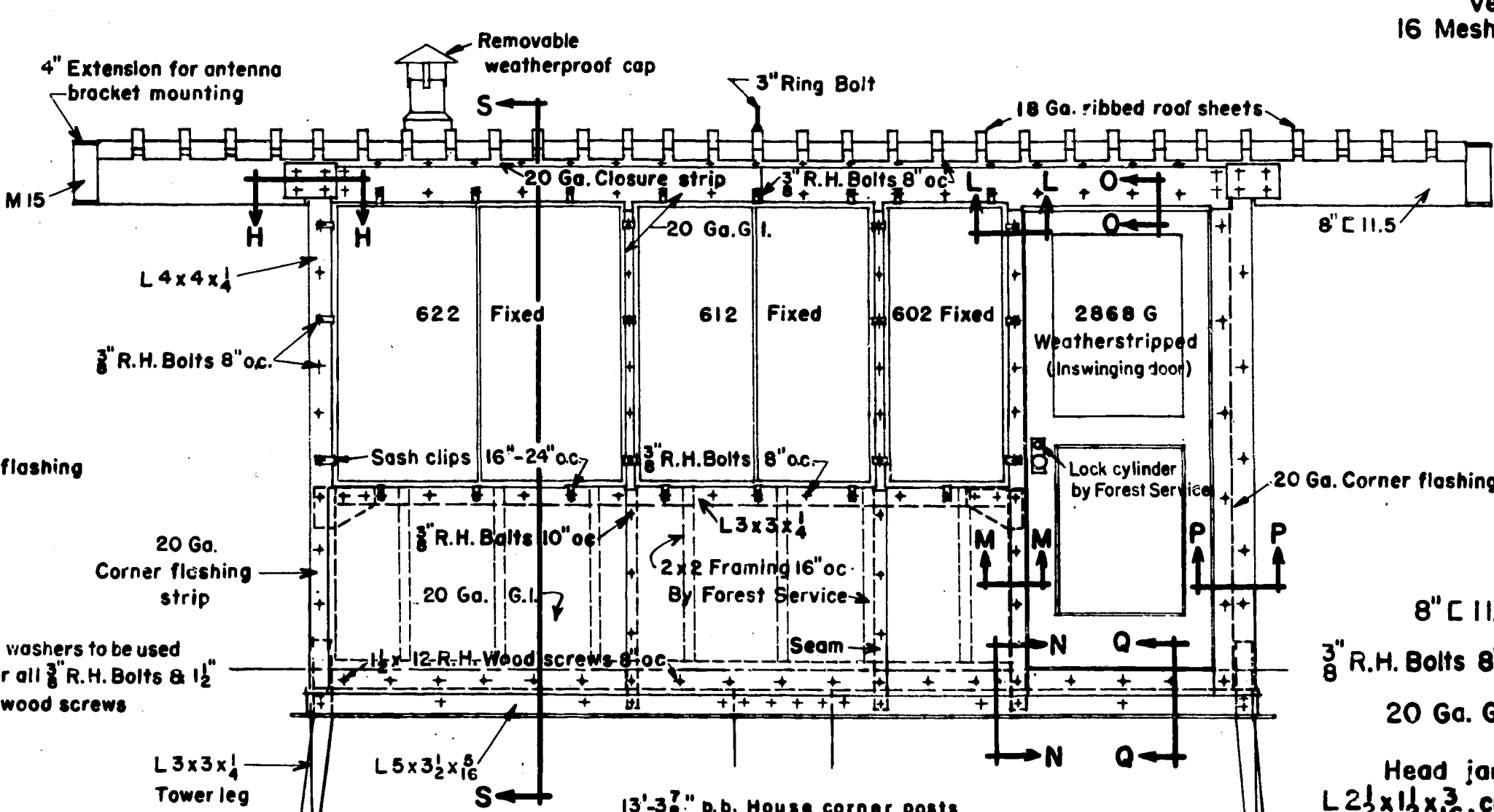
SHUTTER DETAILS

DESIGNED DSF DRAWN DSF TRACED DSF  
SCALE APPROVED *C.P. Seaw* CHECKED *W.H.* DATE 5-3-51  
Chief Engineer SHEET 6 OF 6

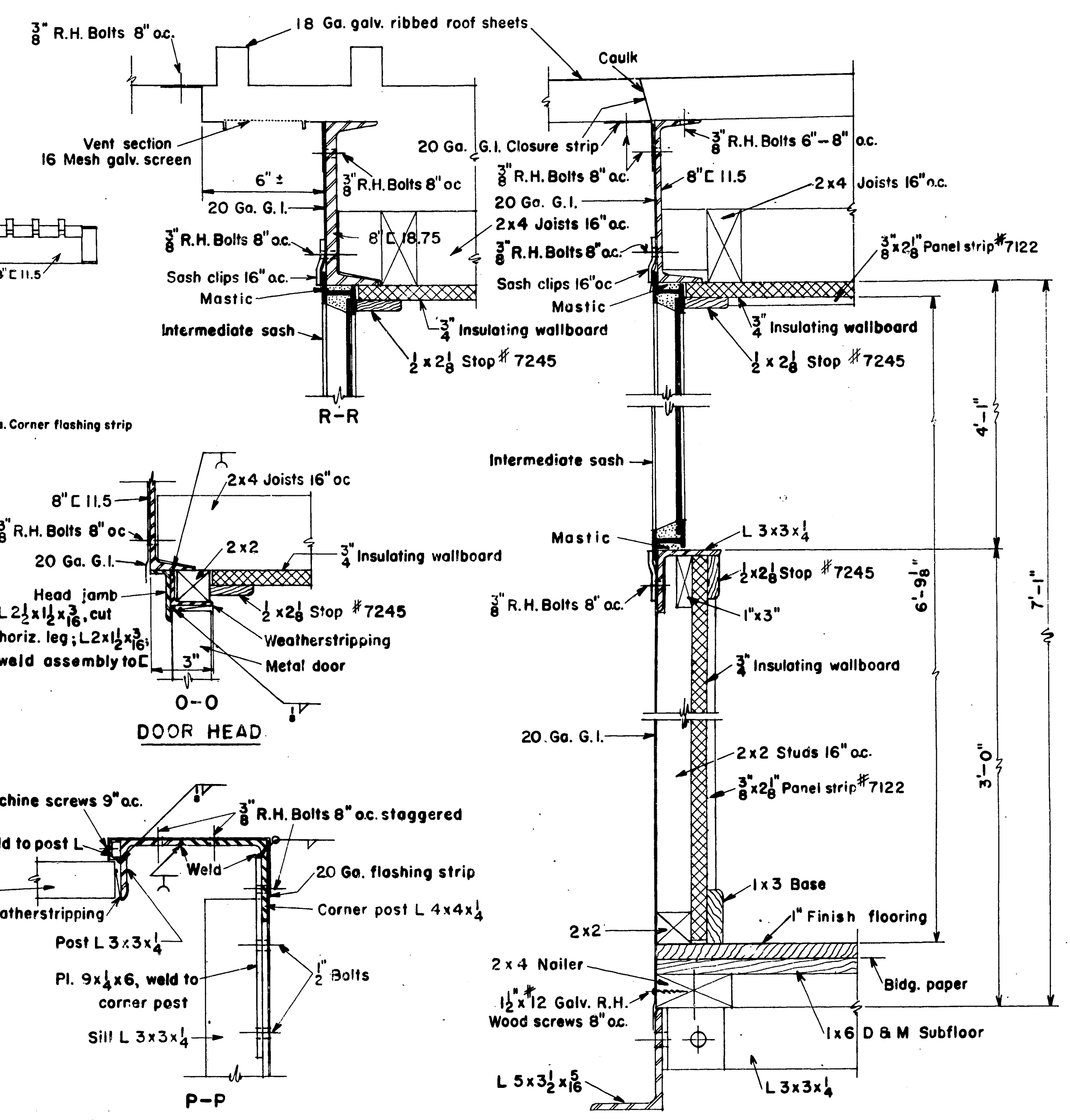




**LEFT SIDE ELEVATION**  
RIGHT SIDE & REAR SIMILAR  
NOTE: All sash in rear elevation to be fixed sash.

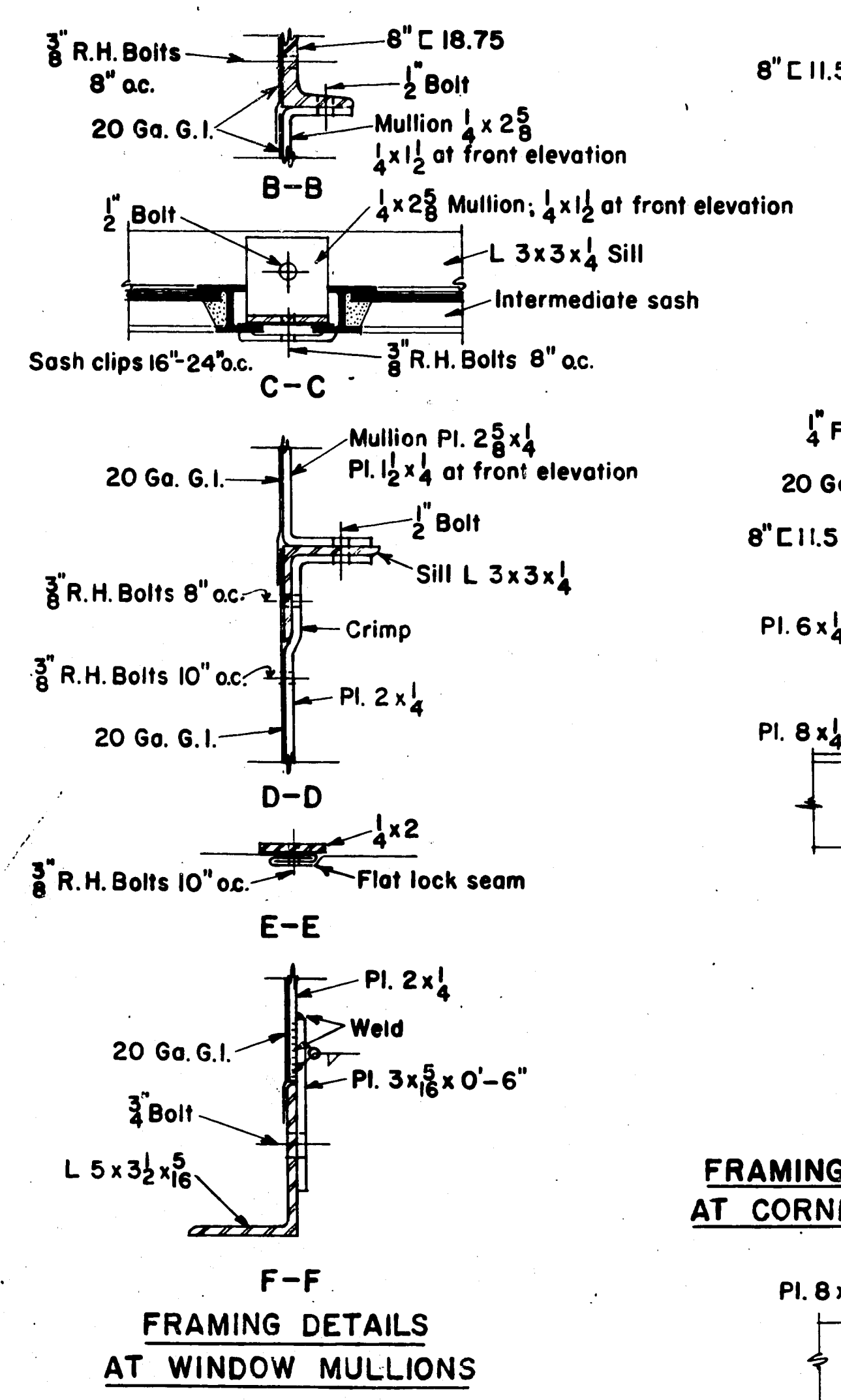
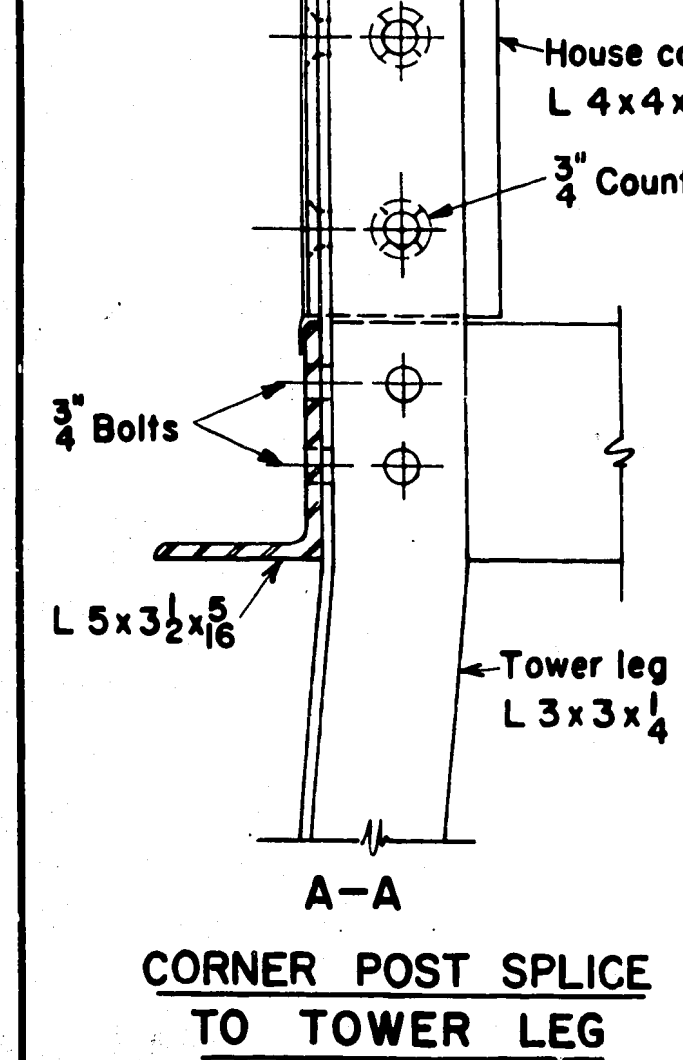


**FRONT ELEVATION**

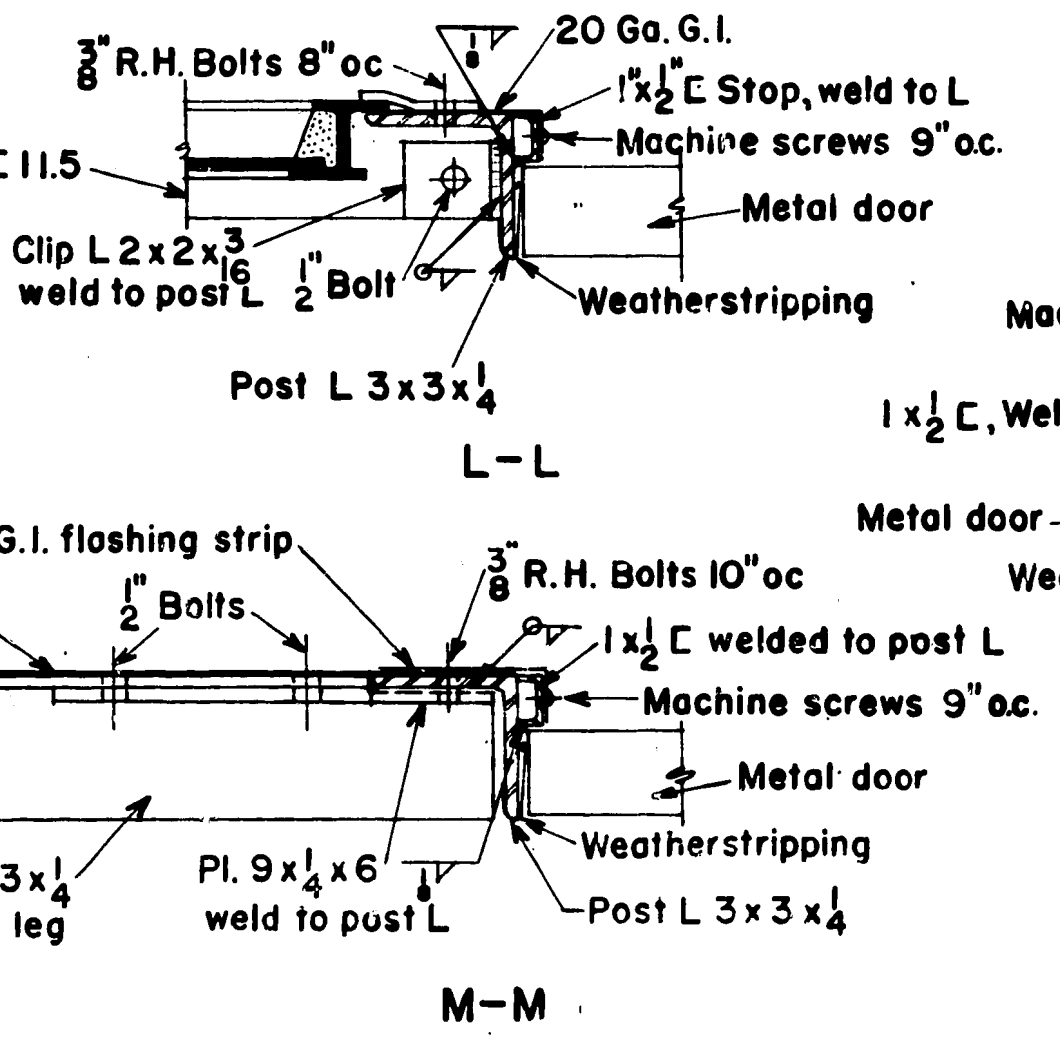
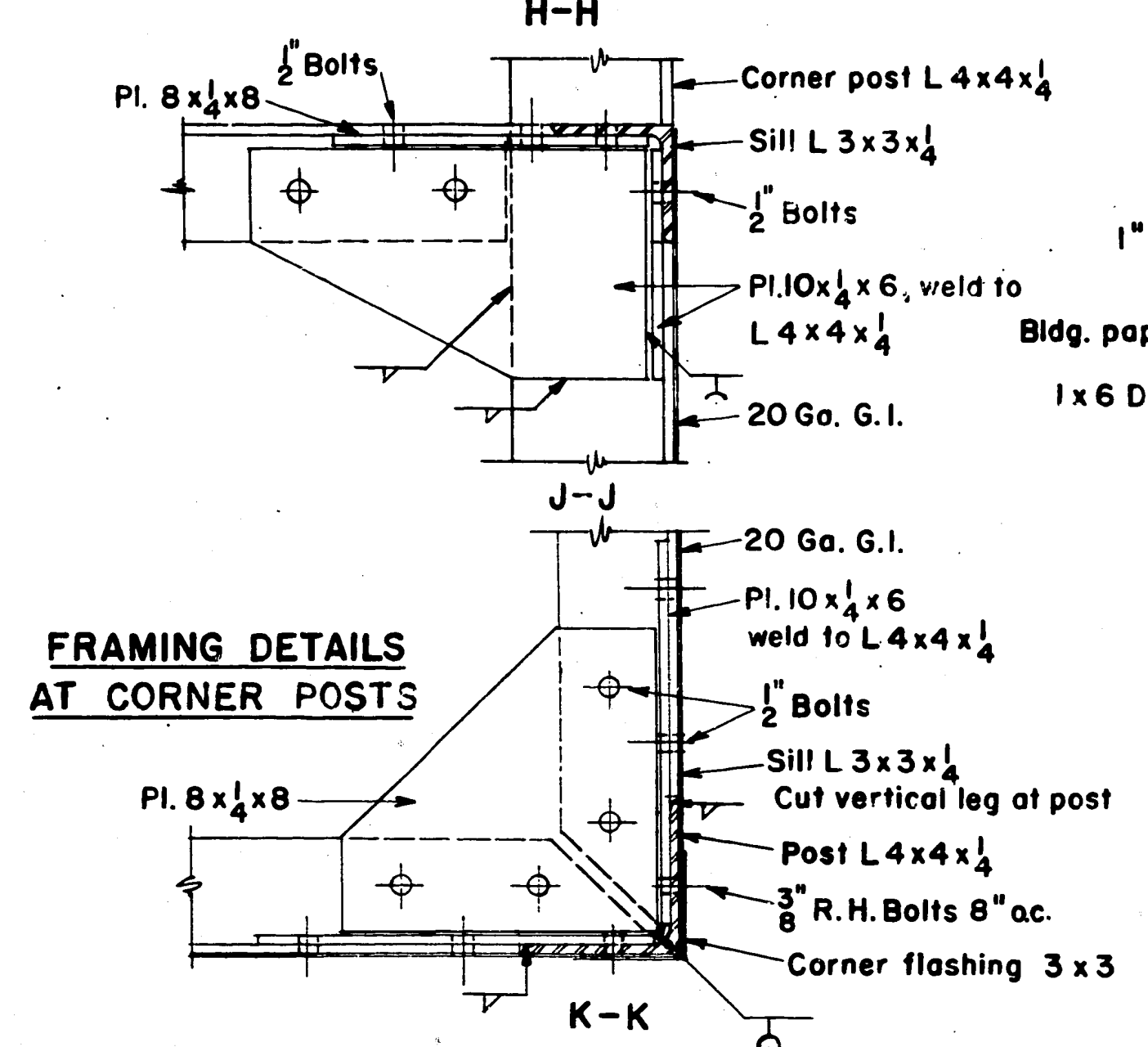


**TYPICAL WALL SECTION**  
See Section S-S

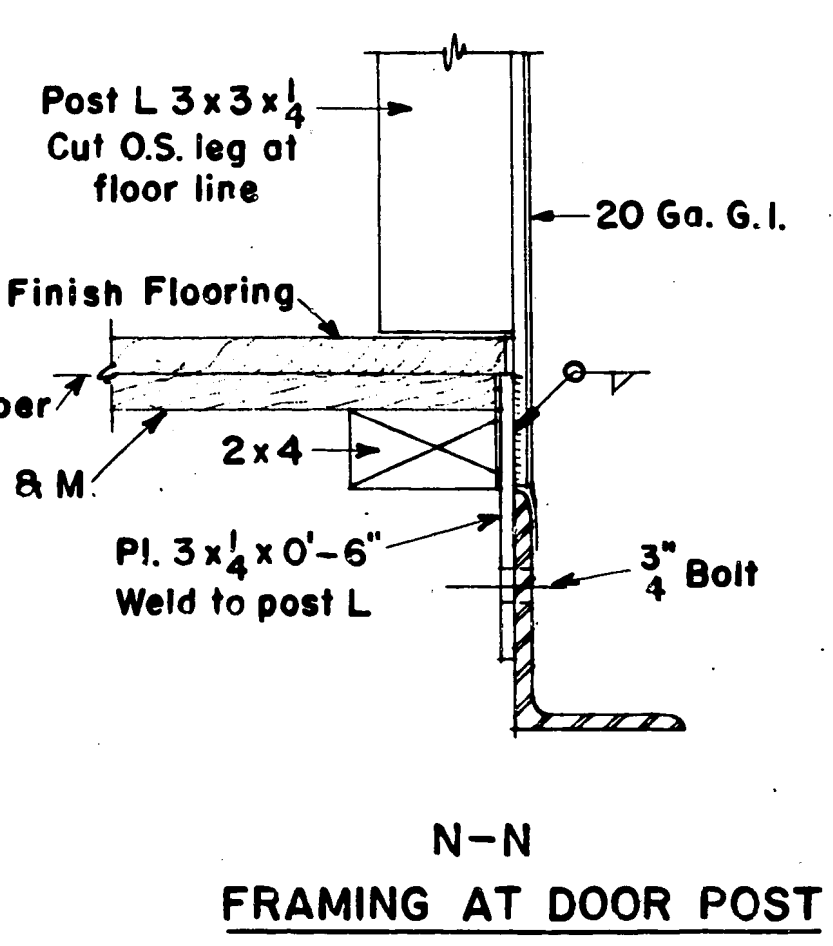
- NOTE TO FOREST SERVICE**
- 1-House framing lumber, flooring, wallboard and interior trim not furnished by steel fabricator.
  - 2-Rock wool or glass fiber insulation may be installed in walls and ceiling space, if desired. Material not furnished by steel fabricator.
  - 3-Interior wall and ceiling surfaces of house to be field painted with light green glass paint. Paint not furnished by steel fabricator.



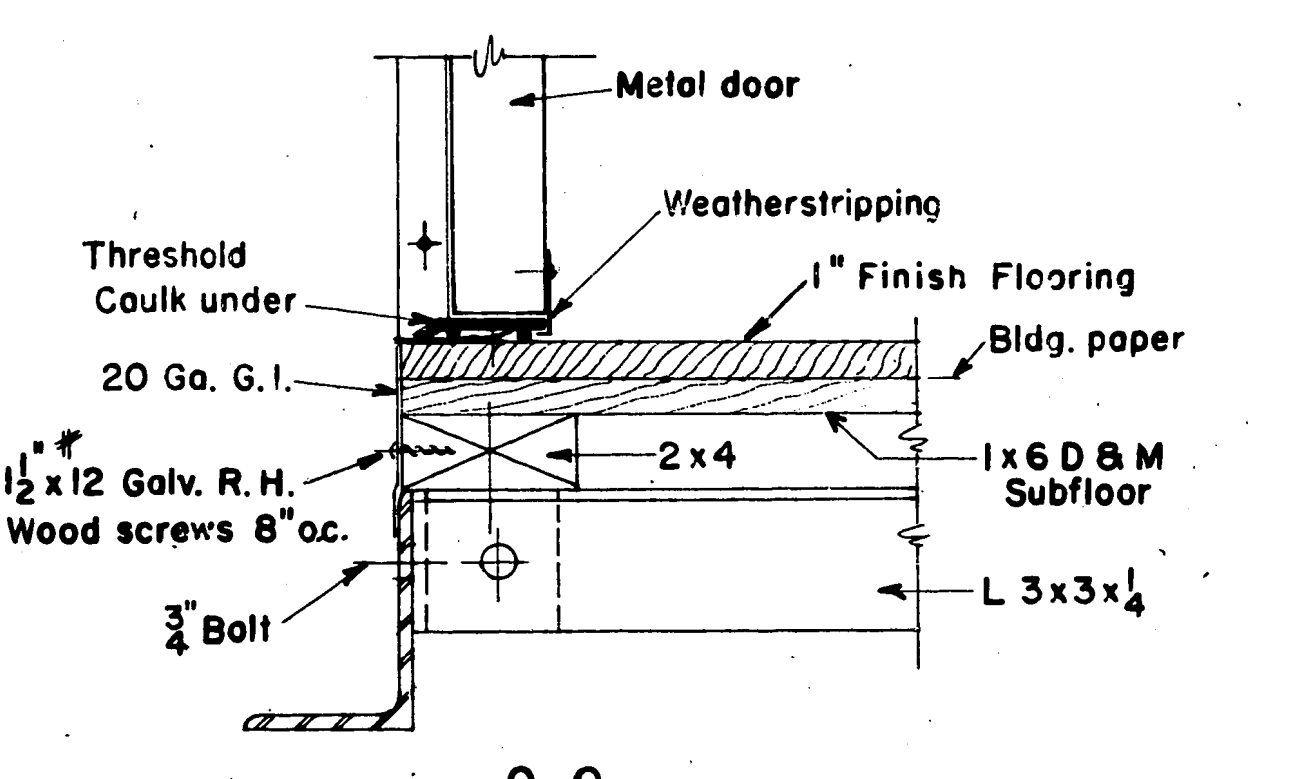
**FRAMING DETAILS AT CORNER POSTS**



**DOOR HEAD**



**FRAMING AT DOOR POST**



**DETAIL AT DOOR**

- NOTES**
- Unless otherwise noted, connections shall be as follows:
- Structural framing - 1/2 inch Bolts with lock nuts; 9/16 inch holes
  - Sheet metal - 3/8 inch R.H. Bolts with lock nuts; 1/2 inch Holes
  - Lead washers required at contact surface between head of fasteners and sheet metal, except for structural fasteners

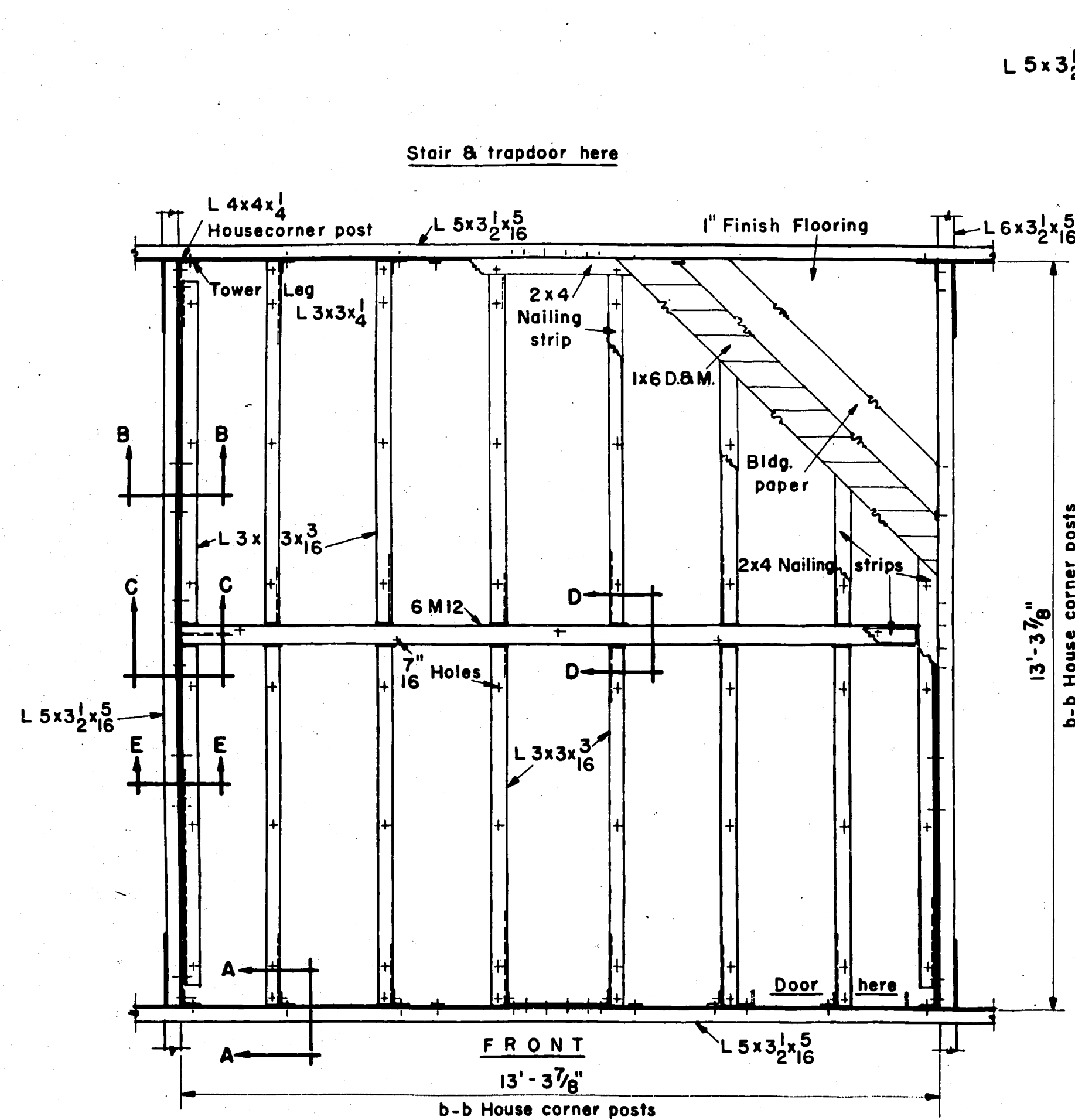
U. S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

**STANDARD STEEL LOOKOUT TOWERS**  
30', 41'-3", 54', 67'-6", & 83'-1 1/2" HIGH  
WITH LIVING QUARTERS

**HOUSE DETAILS**

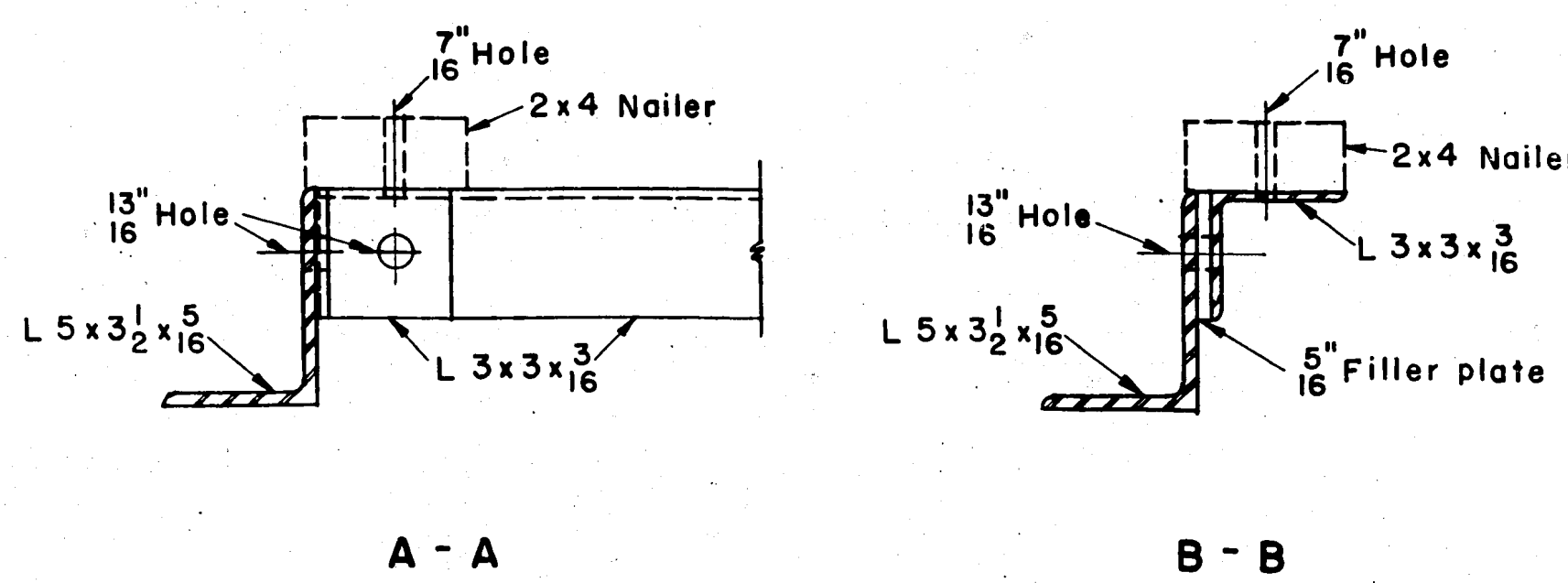
DESIGNED: NHO DRAWN: NHO-WLD TRACED: NHO  
SCALE: 1/8" = 1'-0" CHECKED: NHO  
APPROVED: Chief Engineer DATE: Dec. 1954 SHEET 4 OF 6



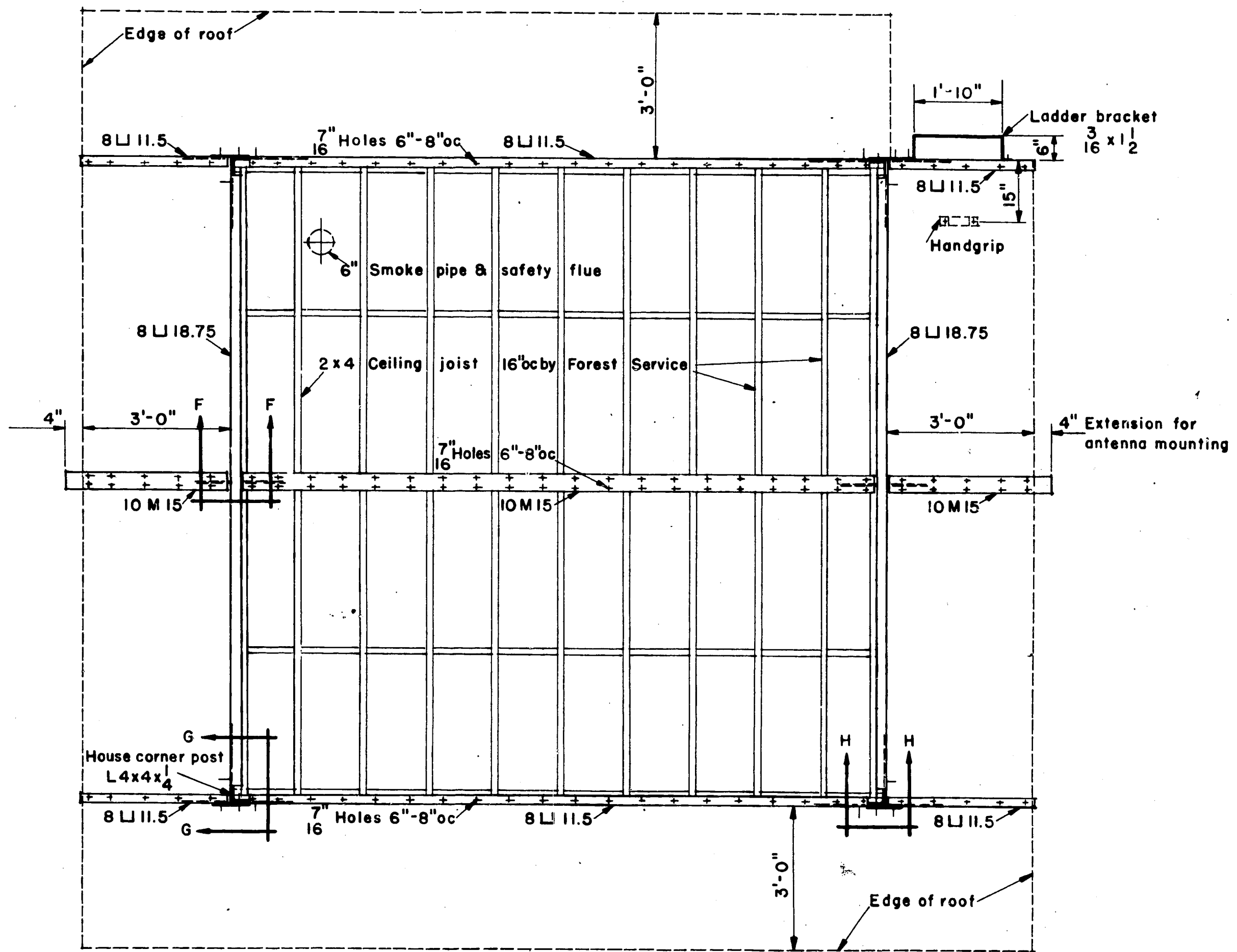
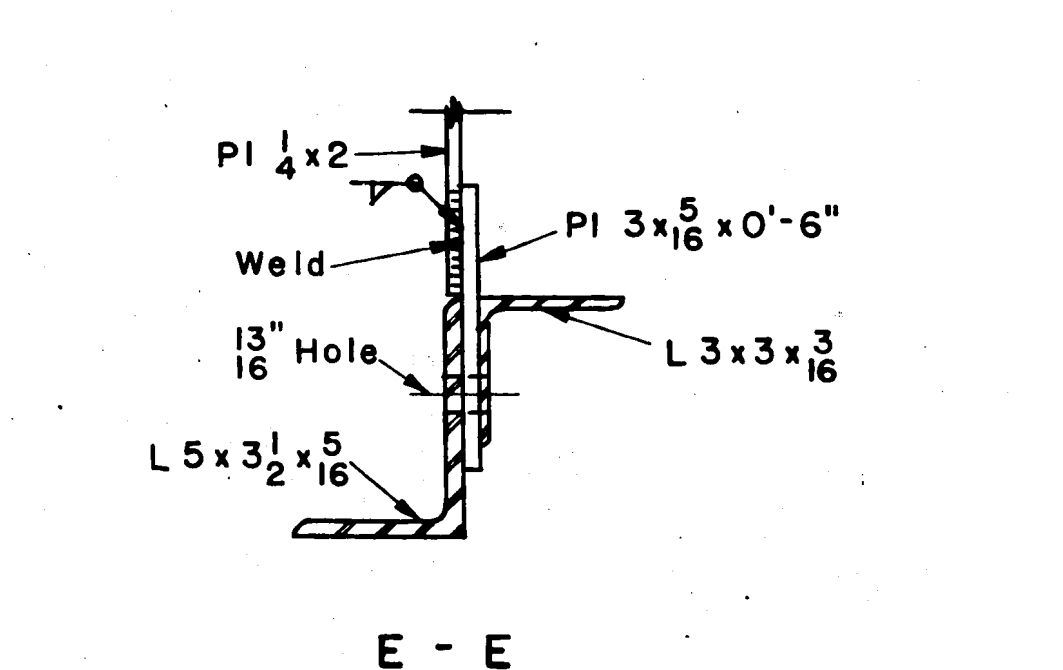
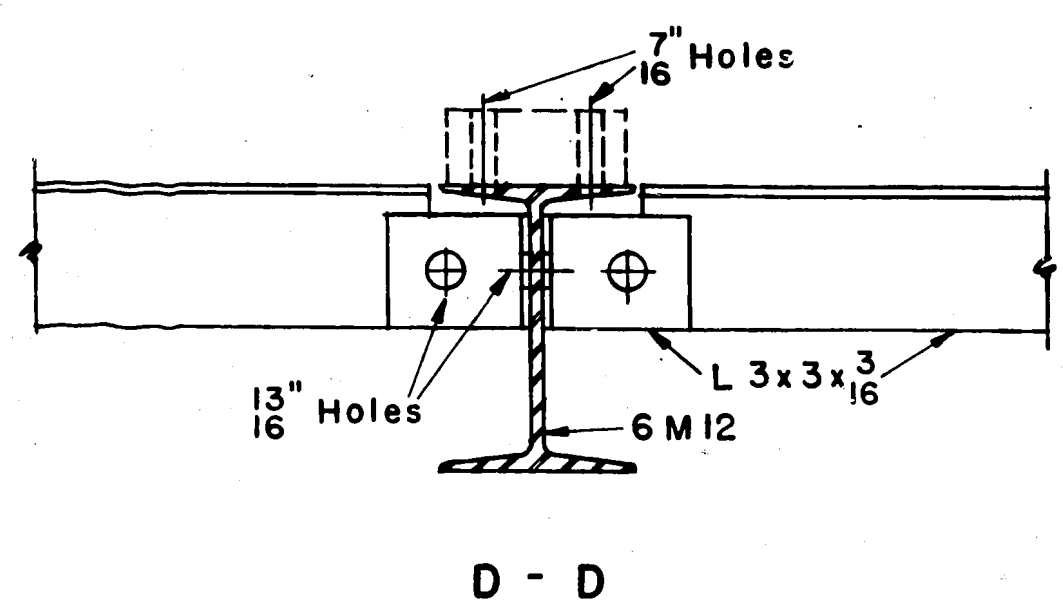
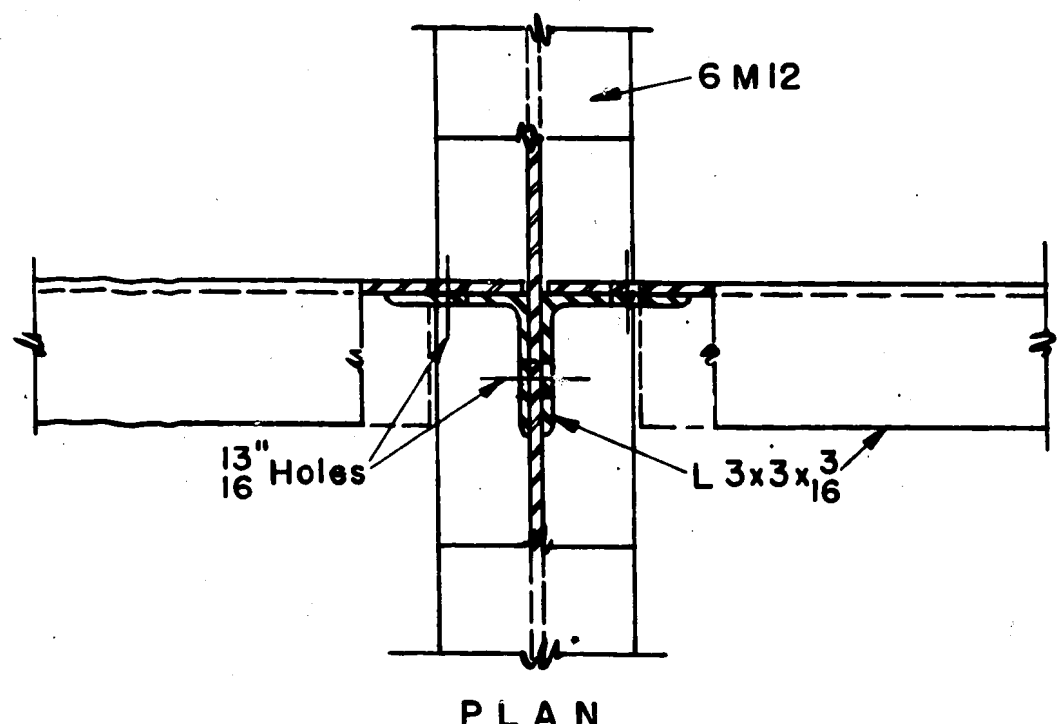
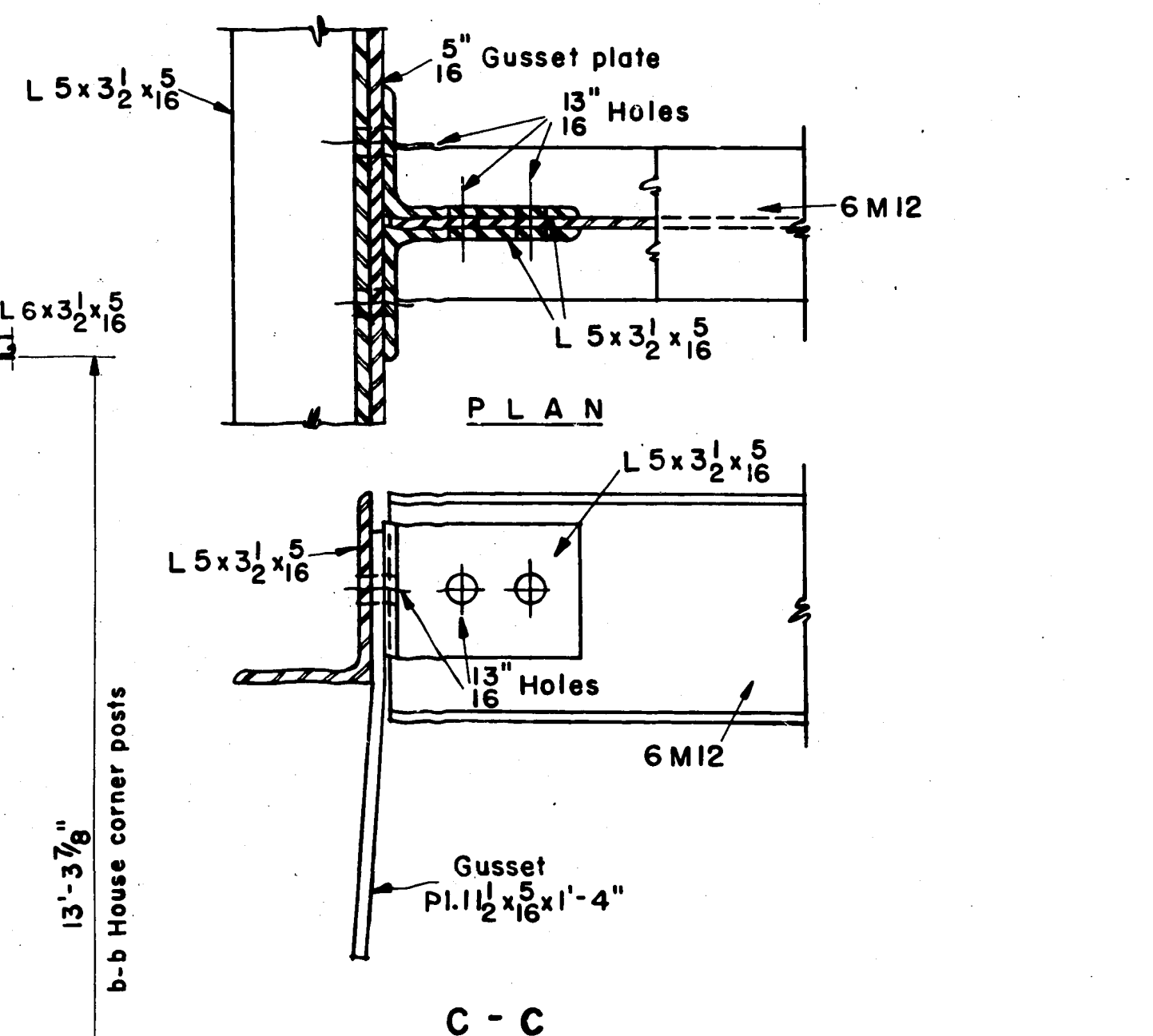


**FLOOR FRAMING**

All holes in this framing to be  $\frac{13}{16}$ " unless otherwise noted.  
 2x4 Nailers and 1x6 DBM subfloor to be pressure treated with pentachlorophenol.  
 Nailers and flooring not furnished by steel fabricator. Bolts for 2x4 nailer to be furnished.

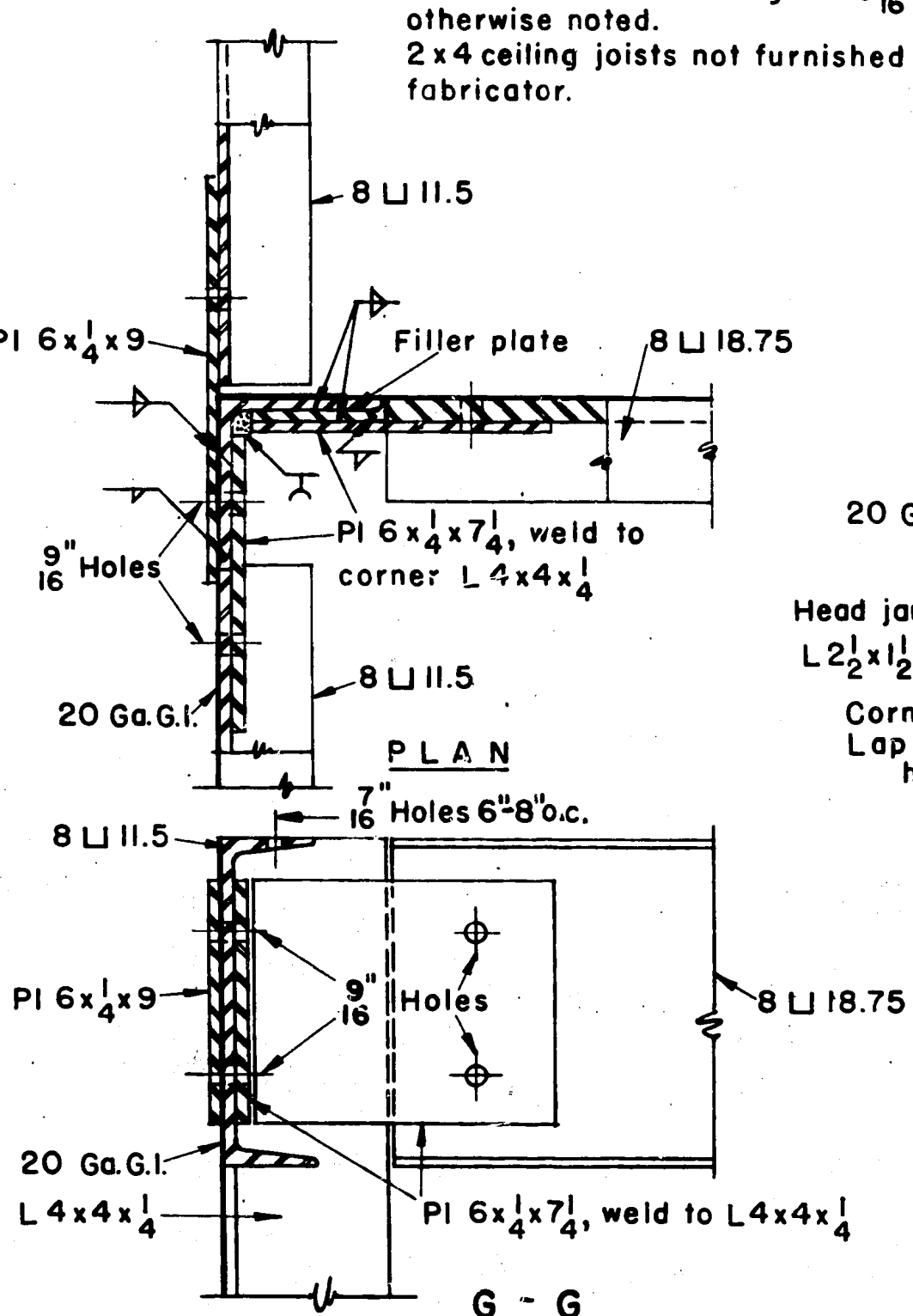
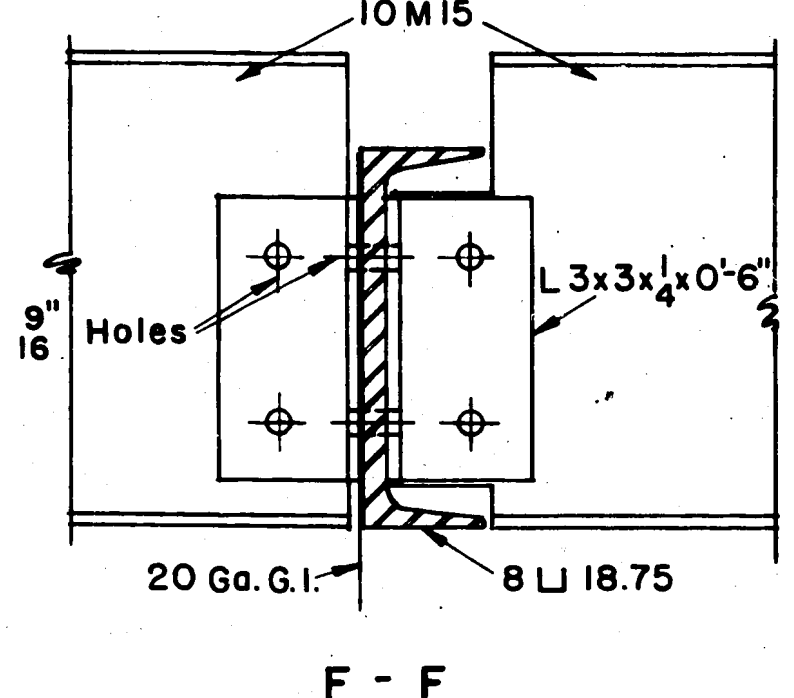
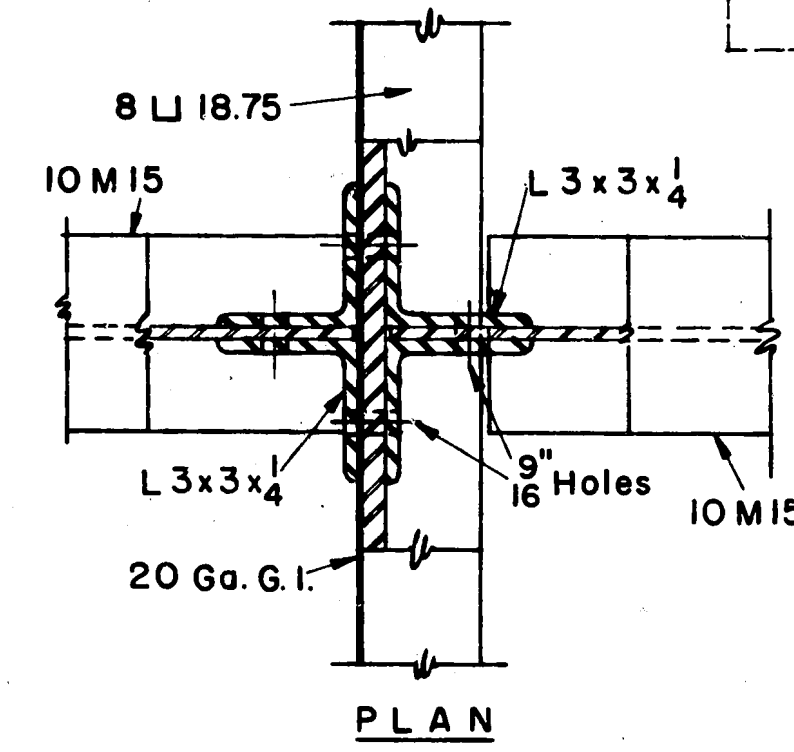


**FLOOR FRAMING DETAILS**

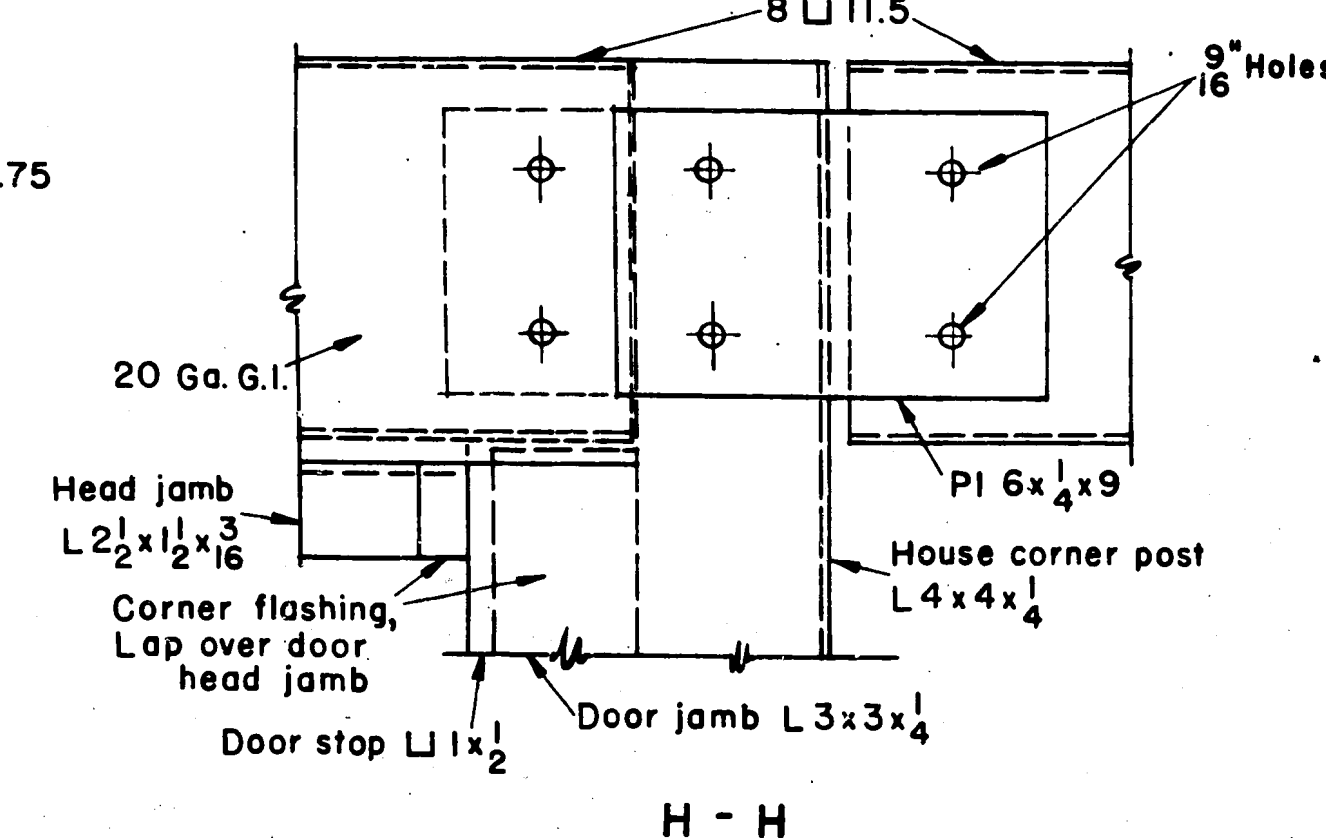


**ROOF FRAMING**

All holes in this framing to be  $\frac{9}{16}$ " unless otherwise noted.  
 2x4 ceiling joists not furnished by steel fabricator.



**ROOF FRAMING DETAILS**

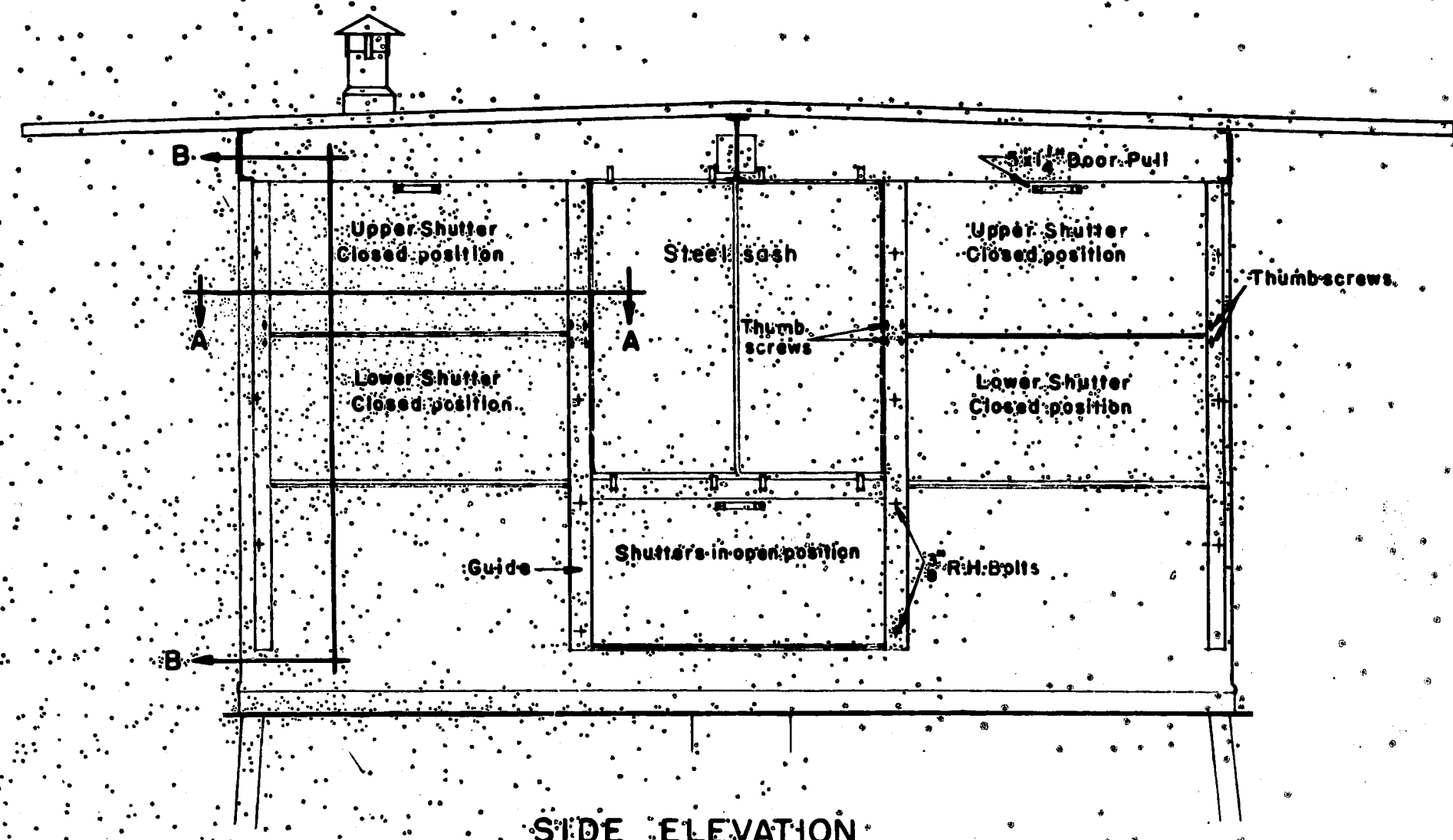


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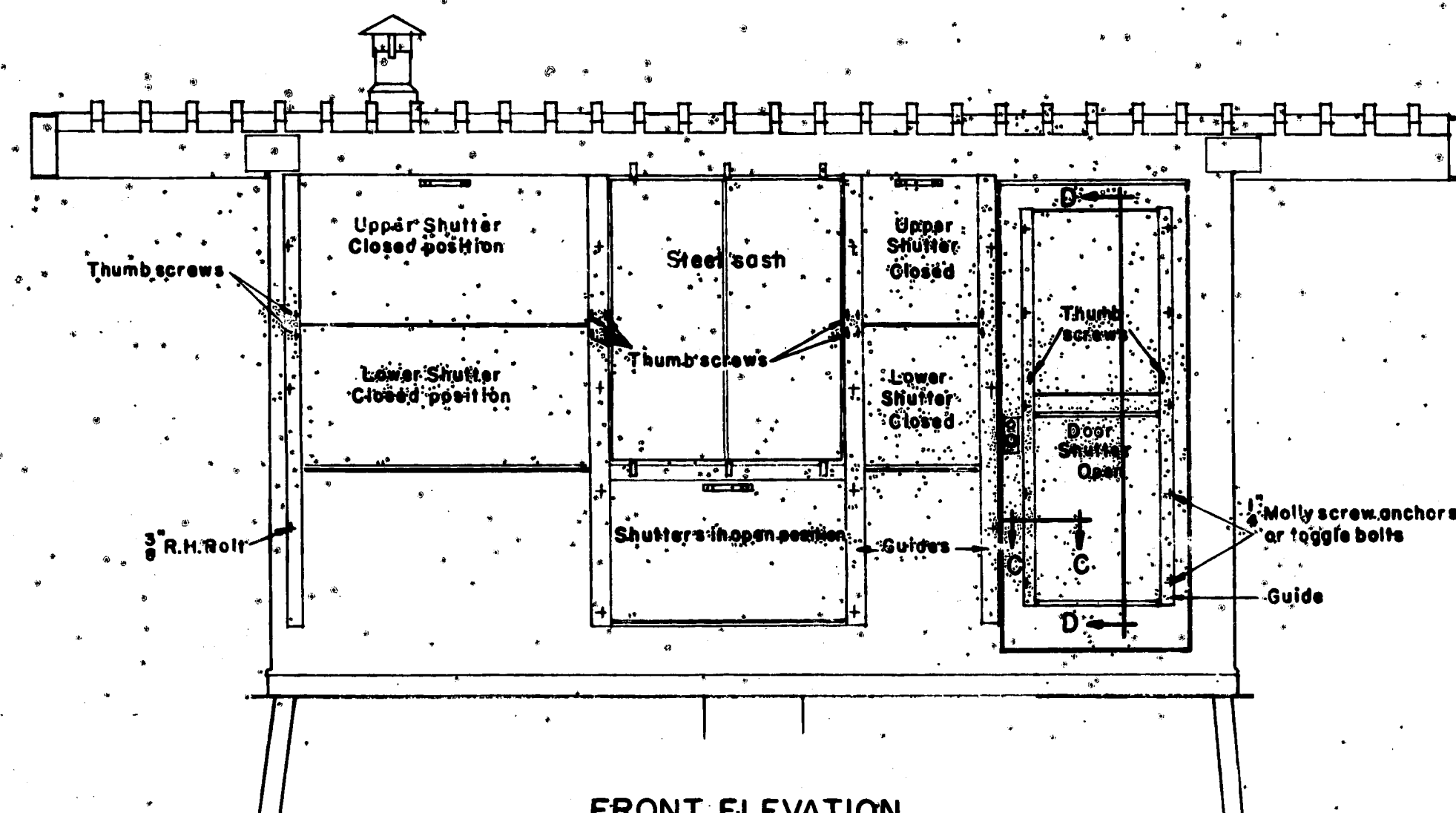
STANDARD STEEL LOOKOUT TOWERS  
 30', 41'-3", 54', 67'-6", & 83'-1 1/2" HIGH  
 WITH LIVING QUARTERS  
 HOUSE DETAILS

DESIGNED NHO DRAWN NHO-RR TRACED  
 SCALE APPROVED *AP* CHECKED *MLC*  
 Chief Engineer DATE Dec. 1954  
 SHEET 5 OF

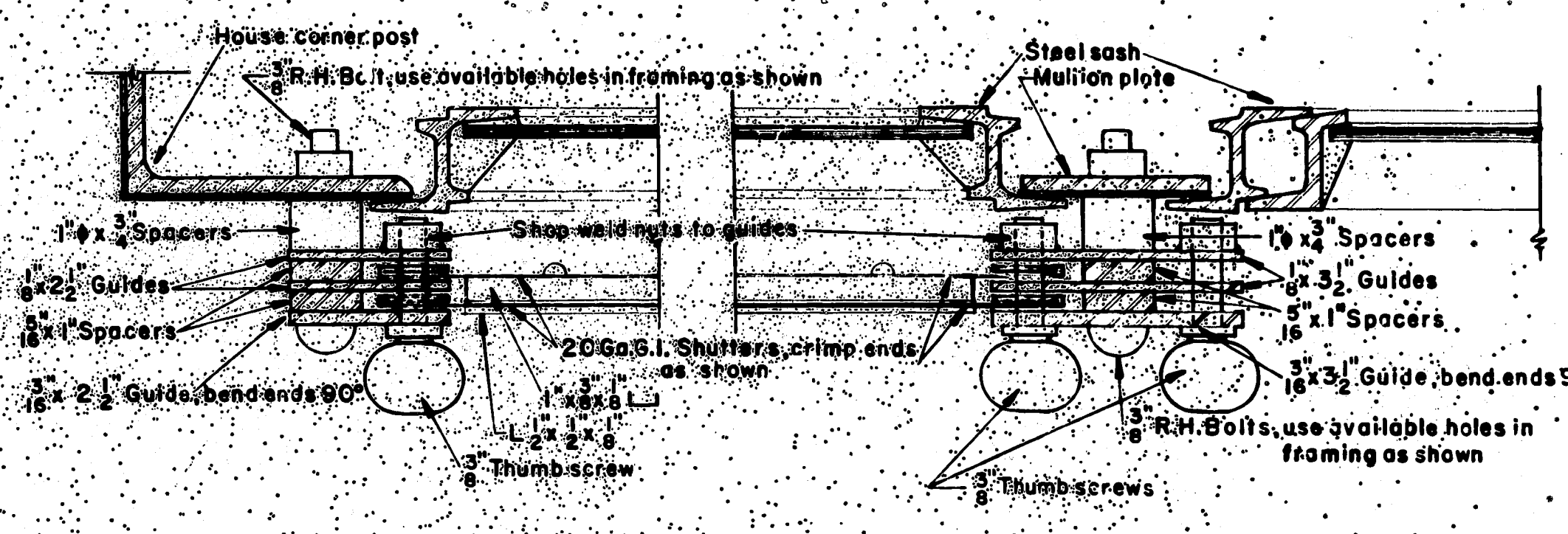




SIDE ELEVATION  
Rear elevation similar

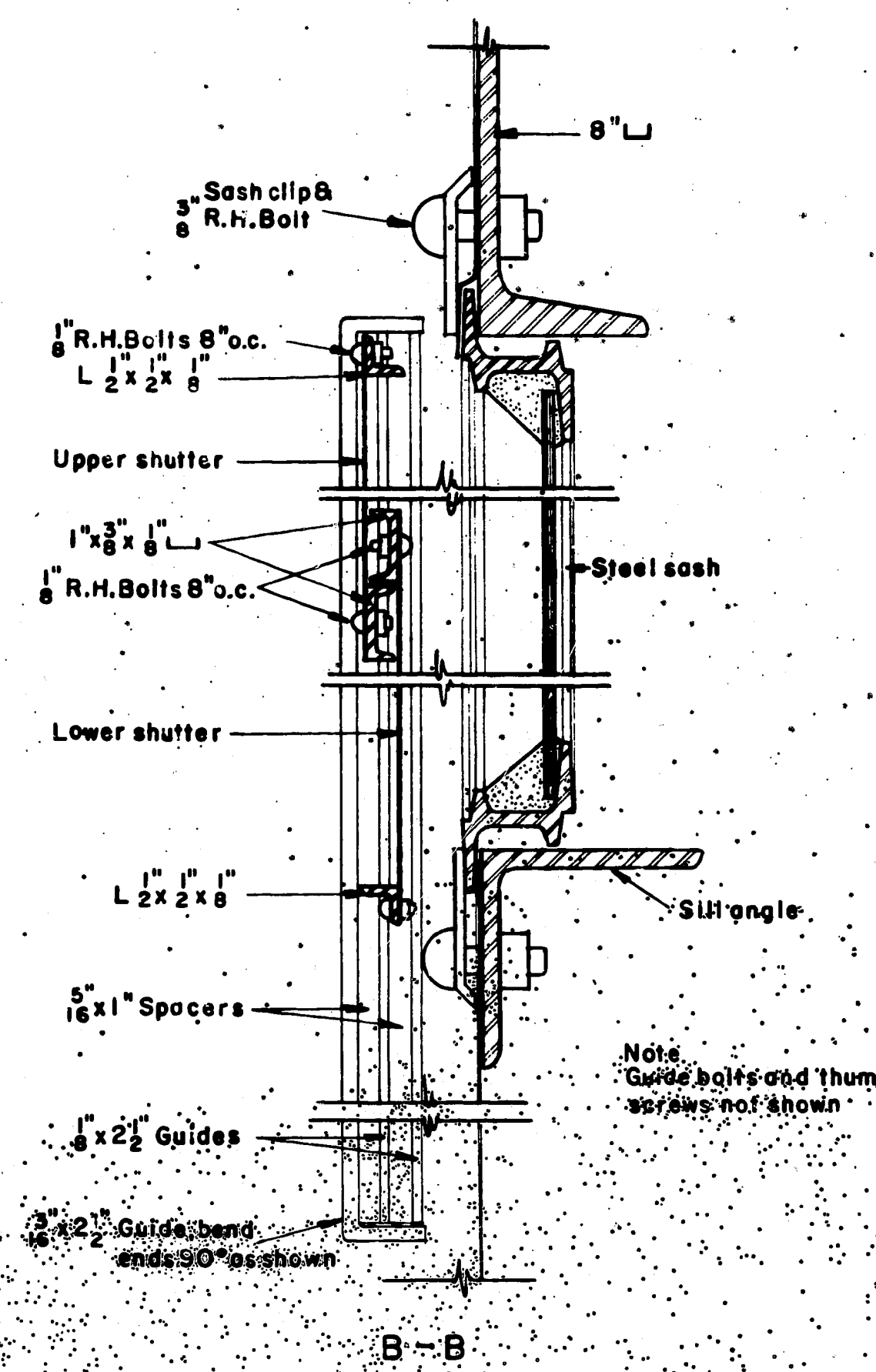


FRONT ELEVATION

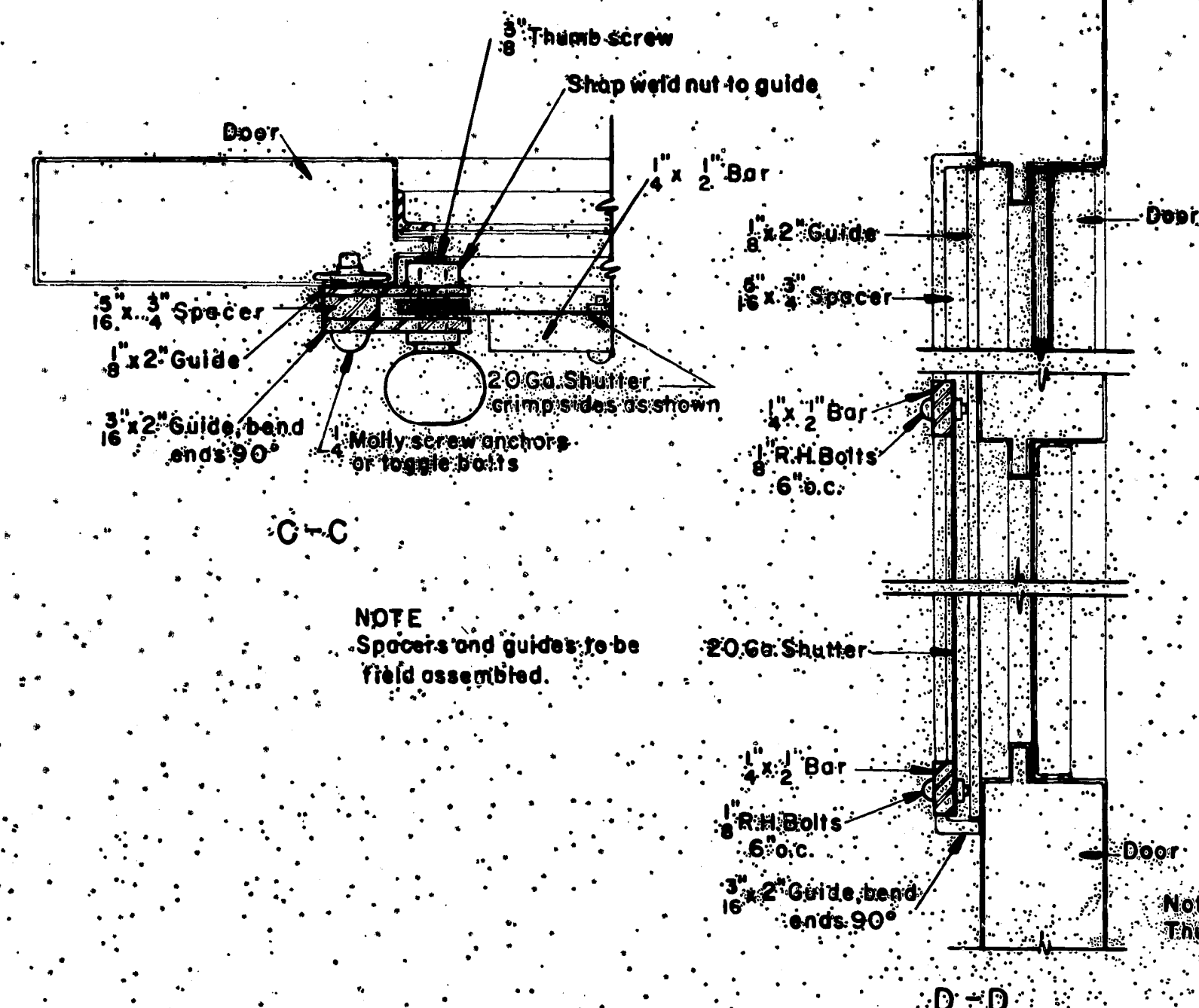


A - A

NOTE:  
Spacers and guides to be  
field assembled.



B - B



NOTE:  
Spacers and guides to be  
field assembled.

NOTE: Shutters are an optional item, and are not furnished with the standard house unless so specified.

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FOREST SERVICE

STANDARD STEEL LOOKOUT TOWERS  
30', 41'-3", 54', 67'-6", 83'-1/2" HIGH  
WITH LIVING QUARTERS

SHUTTER DETAILS

DESIGNED: N.H.O.	DRAWN: N.H.O.	TRACED: N.H.O.
SCALE: 1/8" = 1'-0"	CHECKED: L.M.R.	DATE: Dec. 1954
APPROVED: <i>[Signature]</i>	Chief Engineer	SHEET 6 OF 6



