A.I.A. File No. 13 G

YOU *nail* to FIRE-SAFE STRAN-STEEL

STRAN-STEEL FRAMING

FOR HOUSES · APARTMENTS · COTTAGES · SHOPS · PARTITIONS · ETC.

ADVANCE DATA SHEETS

FOR

ARCHITECTS
CONTRACTORS
BUILDERS

STRAN-STEEL CORPORATION
DETROIT, U.S.A.

A.I.A. File No. 13 G

STRAN-STEEL FRAMING

is superior to all other types of framing materials BECAUSE:

1 **You nail flooring, lath, siding, roofing, wall board, etc. to Stran-Steel.** Nailing is the universal, low cost method of erecting good shelter.

2 **Stran-Steel framing requires no change in architectural design.** It allows full scope to individual preference and personal taste.

3 **Carpenters, their tools and methods, are employed in its erection,** in accord with standard building practice.

4 **Stran-Steel framing is fire-safe.** It is also rust resisting and not subject to attacks of rot, termites, or rodents.

5 **Stran-Steel is twice as strong as wood construction** yet the completed frame weighs approximately the same as wood.

6 **Stran-Steel is durable.** Wall cracks caused by shrinking and warping of frame, as well as warped floors, and sticking doors and windows are eliminated.

7 **Stran-Steel is 100% salvagable.** When partitions or walls are torn down the Stran-Steel is ready to be used again.

8 **Stran-Steel framing is economical.** Its strength permits placing on centers up to 4 feet.

9 **Stran-Steel reduces upkeep costs.** It reduces fire insurance premiums from 30 to 50%. It cuts repair bills and maintenance charges.

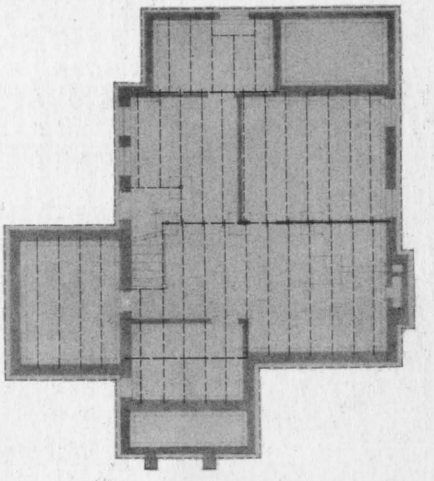
10 **Its permanency facilitates long term financing** on mortgages and contracts.

11 **Stran-Steel is available.** It is furnished in standard lengths for stocking in conveniently located warehouses.

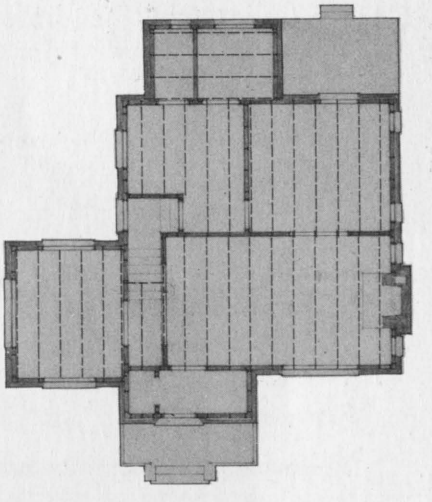
A structure is only as strong as its framing!

STRAN-STEEL CORPORATION

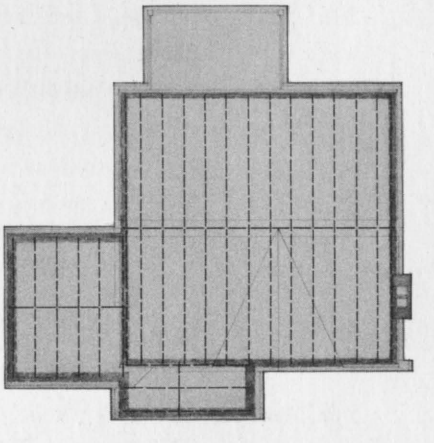
FACTORY AND MAIN OFFICE, 6100 McGRAW AVENUE, DETROIT, MICHIGAN • *Representatives In Principal Cities*



Basement plan showing first floor Stran-Steel joists dotted in.



First floor plan locating first floor Stran-Steel studs and showing second floor joists dotted in.



Roof plan showing position of Stran-Steel rafters by dotted lines.

FRAMING *ANY* HOME WITH STRAN-STEEL

THE house shown above, framed with Stran-Steel, was designed for wood framing. No changes in the design were required to permit the use of the steel framing. *Stran-Steel, on two-foot centers, was merely substituted for wood framing on 16″ centers.*

The architect's plans were used as steel framing plans, three of which are shown at the right side of the page.

The builder took off the bill of material from these framing plans with the assistance of the Stran-Steel distributer.

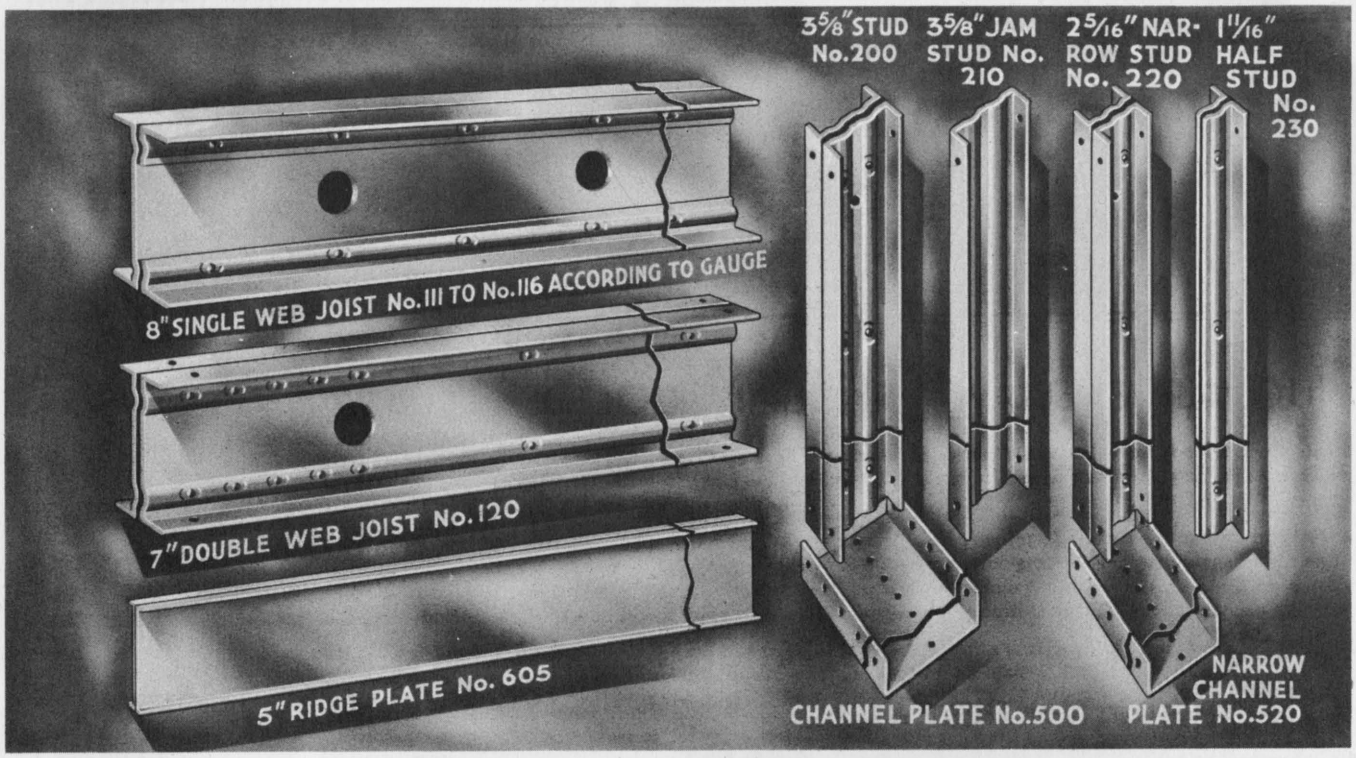
This bill of material, totaling 6½ tons of steel, comprised the following items in lineal feet: 950 ft. of 7″ single web joist (No. 120); 3573 ft. of 3⅝″ stud (No. 200); 1031 ft. of chanel plate (No. 500); 41 ft. of 5″ ridge plate (No. 605). The footage of 3⅝″ stud includes 680 ft. used as rafters, 555 ft. used as ceiling joists, and 83 ft. used as gable studs, as well as jack studs above and below window headers.

Five carpenters, only one of whom was experienced in erecting Stran-Steel framing, erected the frame of the above house in *five days*—not a record, just average time.

The result: A safe and economical home for generations to come. Architects, builders, and home owners may achieve similar safety and permanency for their houses by specifying Stran-Steel fire-safe framing.

YOU *NAIL* TO STRAN-STEEL

MAIN STRUCTURAL MEMBERS



8" Single Web Joist: 16, 14, 13, 12, and 11 gauges. Supports clear spans up to 18 ft. on 2 ft. centers with total load of 75 lbs. per sq. ft. Replaces wood 2" x 8", 2" x 10", joist construction.

7" Double Web Joist: 16 gauge. Supports clear spans up to 14 ft. on 2 ft. centers, with total load of 55 lbs. per sq. ft. Replaces wood 2" x 8" and 2" x 10", joist construction.

3⅝" Stud: 16 gauge. Used for framing outside walls up to 3 full stories; also as rafter, header, stair-stringer, and in bearing and non-bearing partitions, receiving air ducts, water and soil pipes, etc. Also used as non-bearing joist. Set on 2 ft. centers, this member replaces wood 2" x 4" and 2" x 6" set on 1 ft. centers.

3⅝" Jamb Stud: Same as one-half of 3⅝" stud, split along nailing groove. Used for holding wood door and window bucks.

2 5/16" Narrow Stud: 16 gauge. Used for framing outside walls on story and story and one-half construction or as short-span, light rafter and non-bearing ceiling joist. Also used in framing non-bearing partitions with sufficient depth to enclose water and steam pipes. Replaces wood 2" x 4" wall construction.

1 11/16" Half Stud: 16 gauge. Used as non-bearing nailing strips such as built-out partitions to enclose soil pipes, clothes chutes, and air ducts of more than 3⅝" depth. Used also as lath backing and in corners between studs, and ceiling corners between joists and as nailing strip insert in concrete construction floors and stairways.

Channel Plate: 16 gauge. Used with 3⅝" stud as sill and cap plate in outside walls and in partitions. Also used as stringer, header, ribband, girt and brace. Replaces wood 1" x 4", 1" x 5", and 1" x 6".

Narrow Channel Plate: 16 gauge. Used with 2 5/16" narrow stud.

Finish: All members and attachments are finished in tough, rust-resisting black enamel.

Standard Lengths: See table, Page 16.

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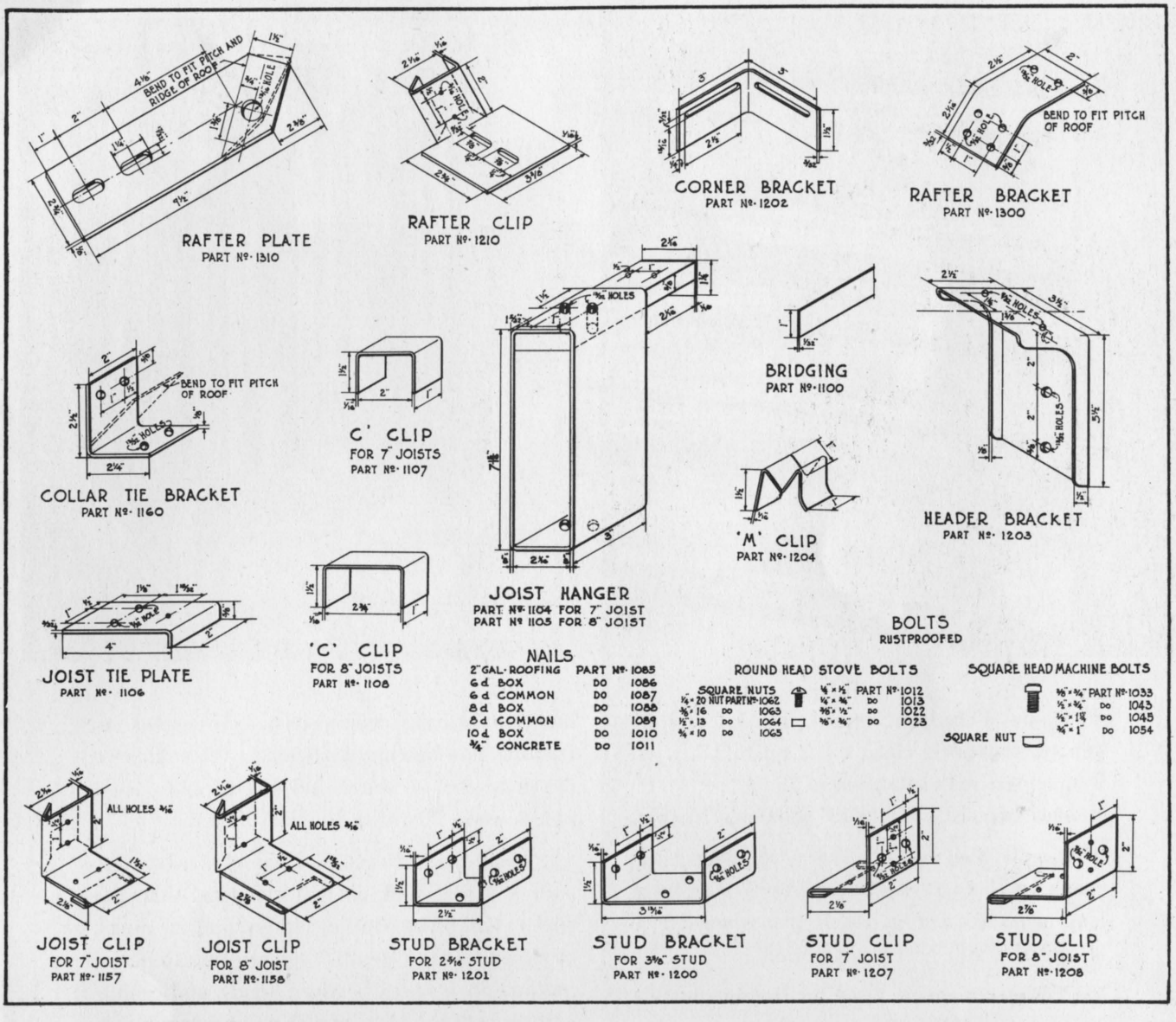
ATTACHMENTS for STRUCTURAL MEMBERS



TOOLS USED TO ERECT STRAN-STEEL FRAMING

The tools used in the erection of Stran-Steel framing are, with two possible exceptions, found in every carpenter's kit.

These tools include claw hammer, square, 12″ screw driver, level, plumb bob, chalk line, ratchet bit brace with drills for holes from $\frac{3}{16}$″ to $\frac{1}{2}$″ diameter. Hack saw frames with $5\frac{1}{4}$″ throat clearance are preferable to the narrower frames, and 12″ blades with 24 or 32 teeth per inch are recommended. A 10″ drift punch with $\frac{3}{16}$″ point, generally ground to prick point, is useful both as a punch and a drift.

S-type wrenches should include a Wescott with 8″ handle and a double end, light service S-wrench with jaws for $\frac{1}{4}$″ and $\frac{3}{8}$″ square nuts. Good quality wrenches are recommended since all nuts in steel frame construction should be drawn *tight*.

To the above is recommended the addition of a shear type bolt clipper with 30″ handles and a Whitney No. 7 hand punch which is supplied with three sizes of dies. These dies should be for holes of $\frac{5}{32}$″, $\frac{9}{32}$″, and $\frac{13}{32}$″ diameter.

Experience has not shown a single tool to be necessary in addition to those mentioned above, all of which are familiar to every carpenter and builder.

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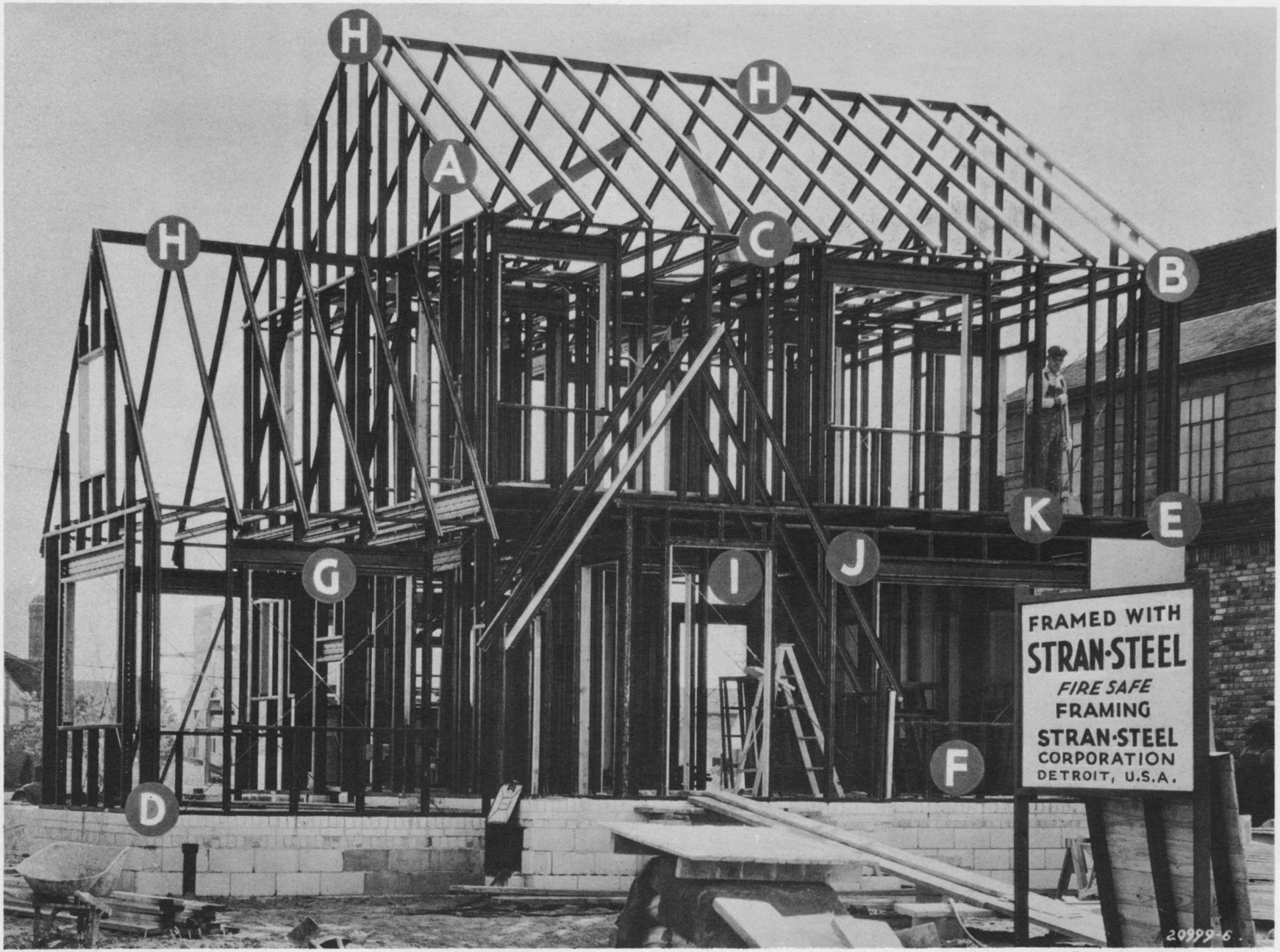
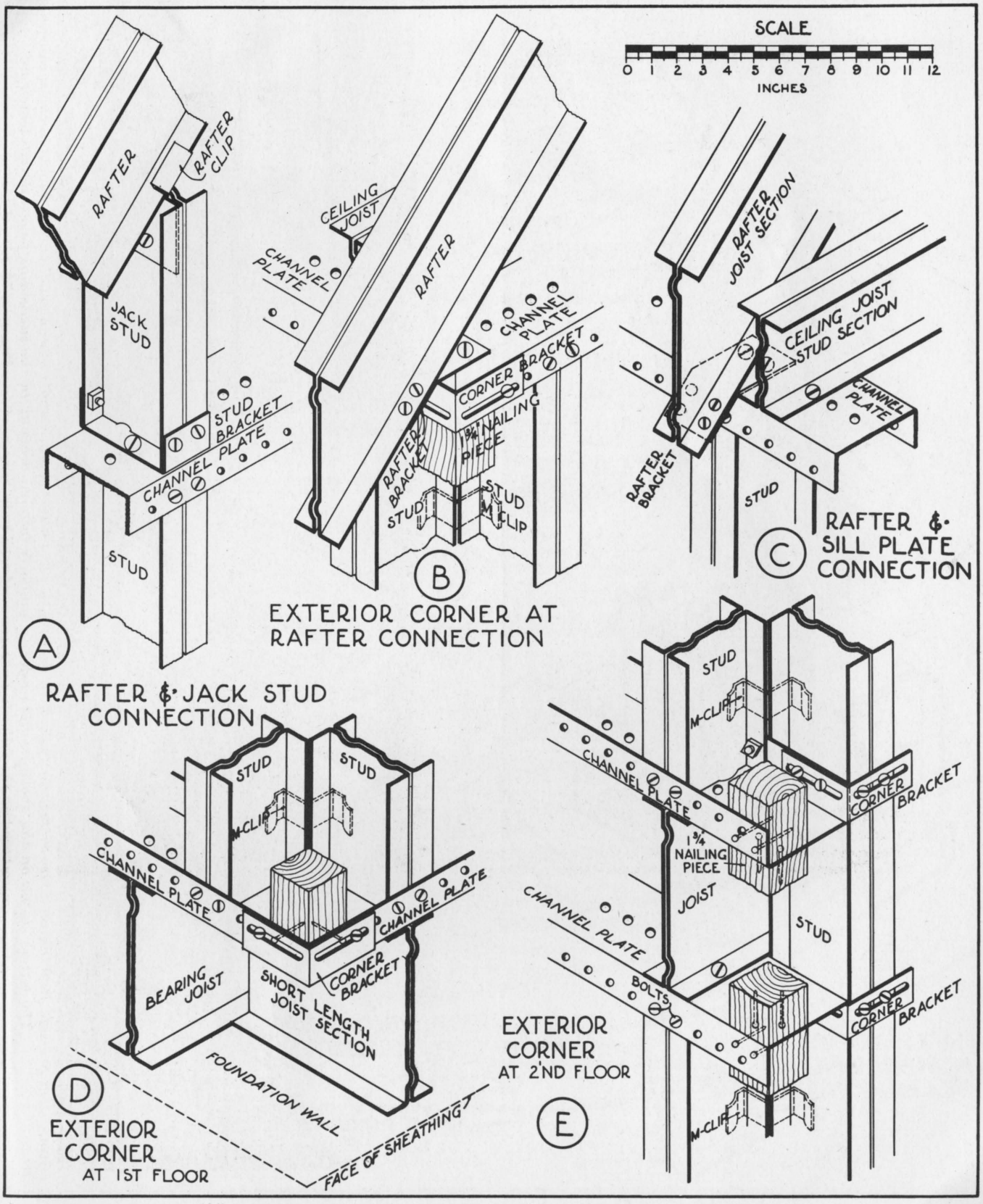


Stran-steel fire-safe framing of house shown on Page 3, in process of erection. Certain details of construction are shown in the succeeding five pages. The letters shown on the above framing refer to similarly lettered drawing in the succeeding pages. Details which are numbered on the following pages are referred to in Specifications, Pages 12, 13, 14 and 15.

DETAILS OF CONSTRUCTION



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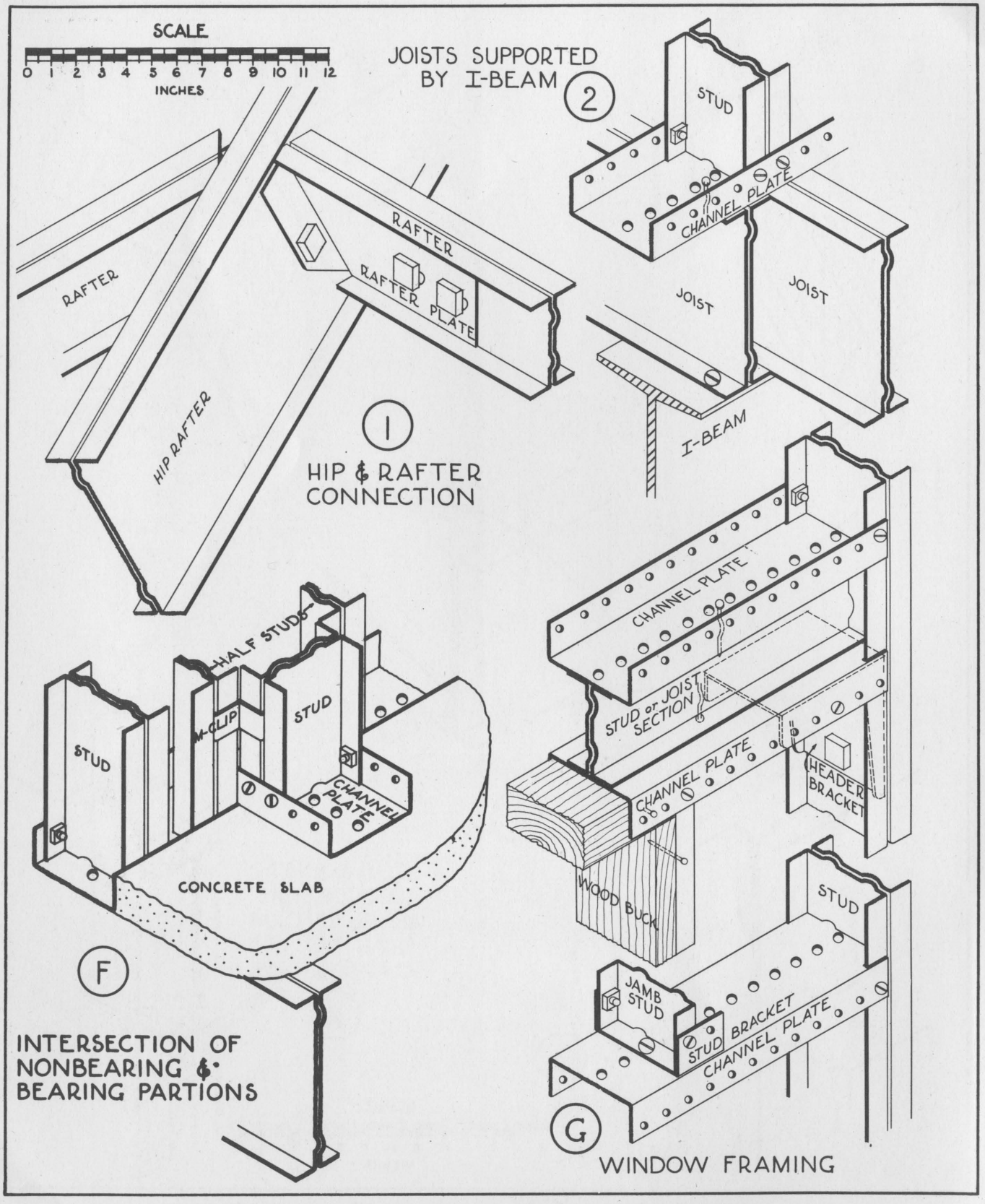
DETAILS OF CONSTRUCTION



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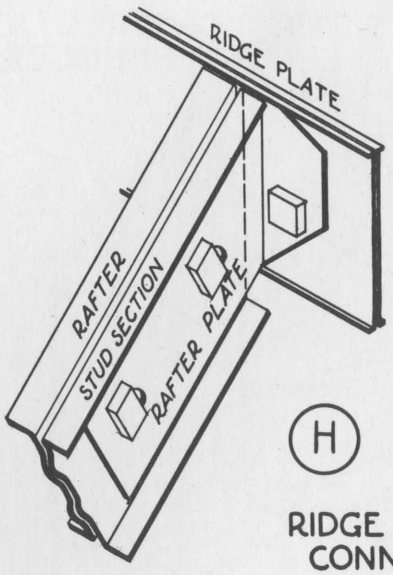
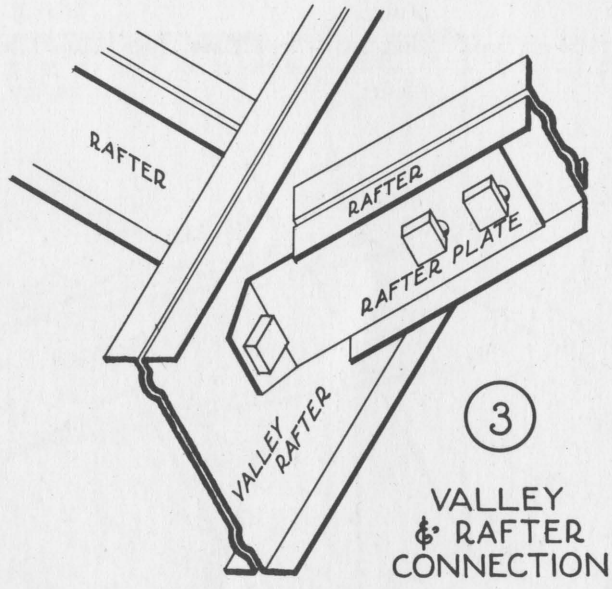
DETAILS OF CONSTRUCTION



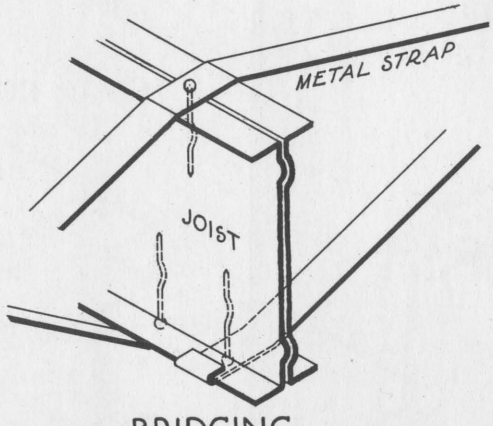
H

RIDGE & RAFTER CONNECTION



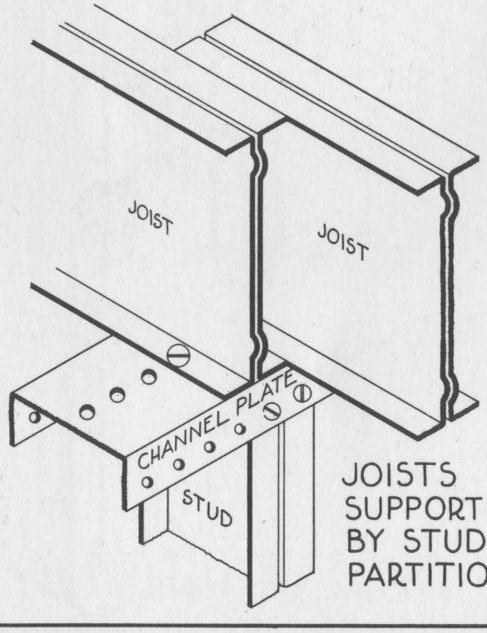
3

VALLEY & RAFTER CONNECTION



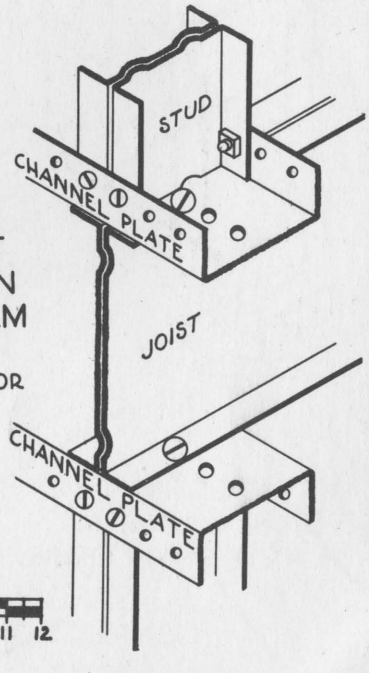
BRIDGING

I



J

JOISTS SUPPORTED BY STUD PARTITION



STUD & JOIST CONNECTION IN PLATFORM FRAMING AT SECOND FLOOR

K

SCALE

0 1 2 3 4 5 6 7 8 9 10 11 12

INCHES

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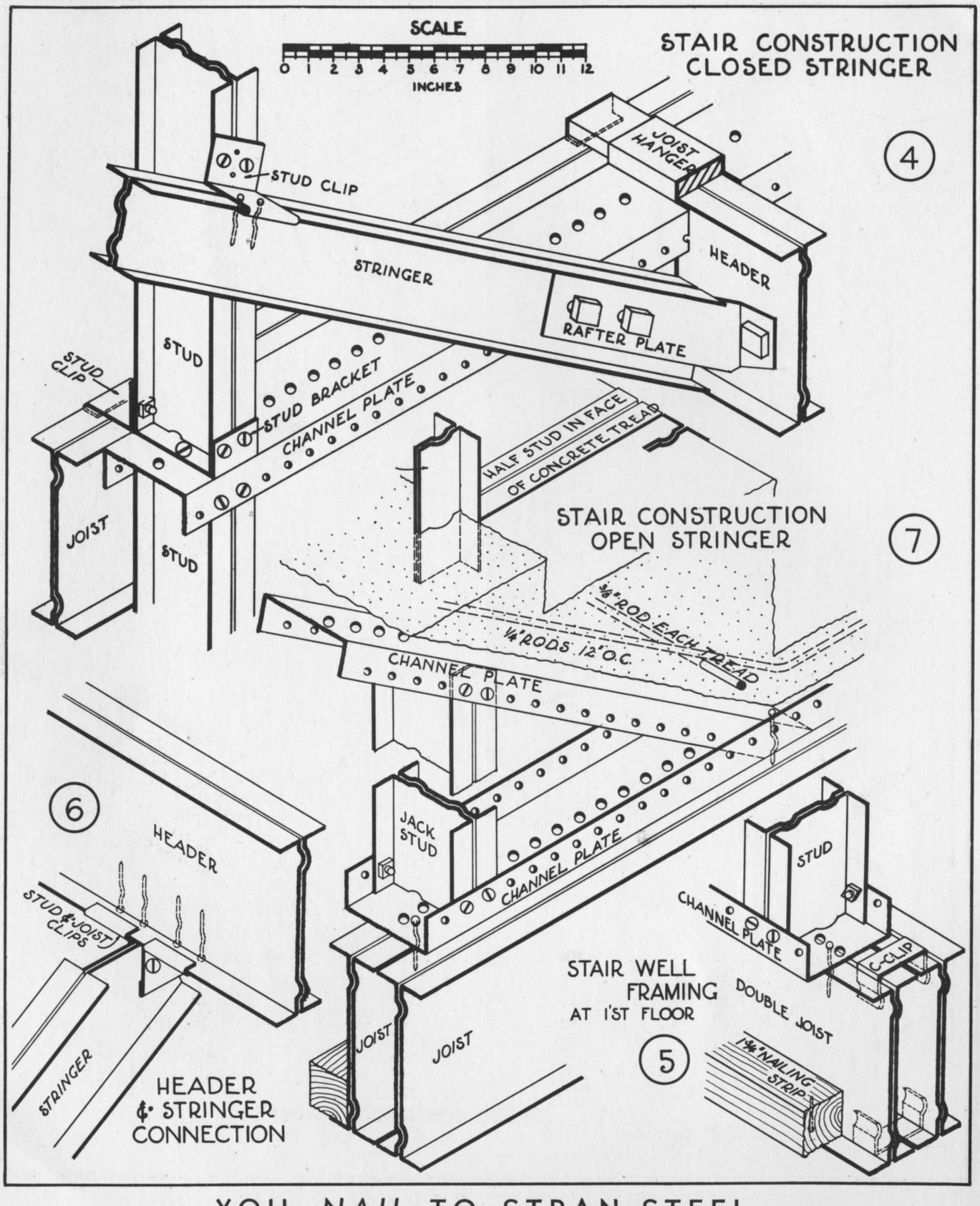
DETAILS OF CONSTRUCTION



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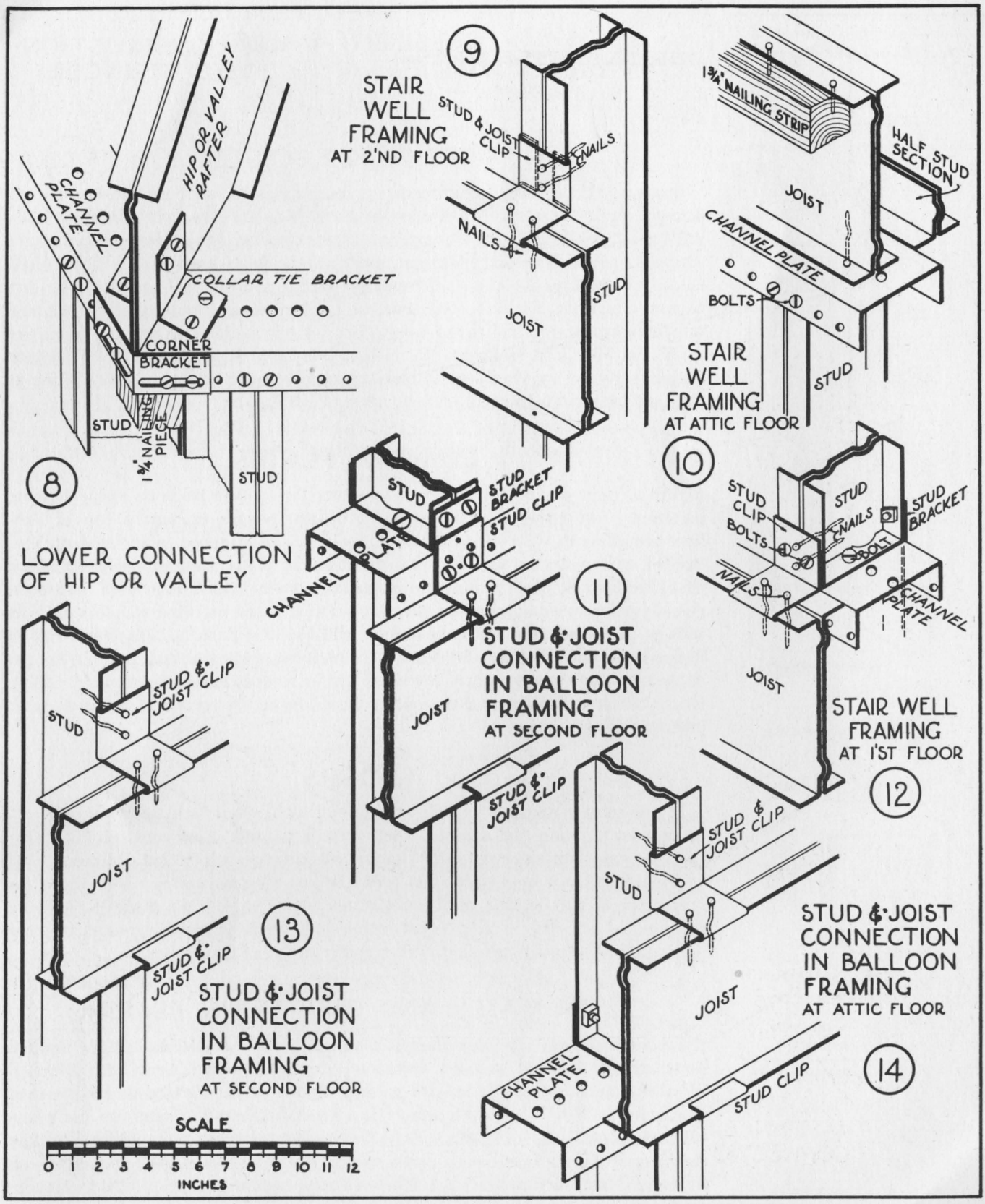
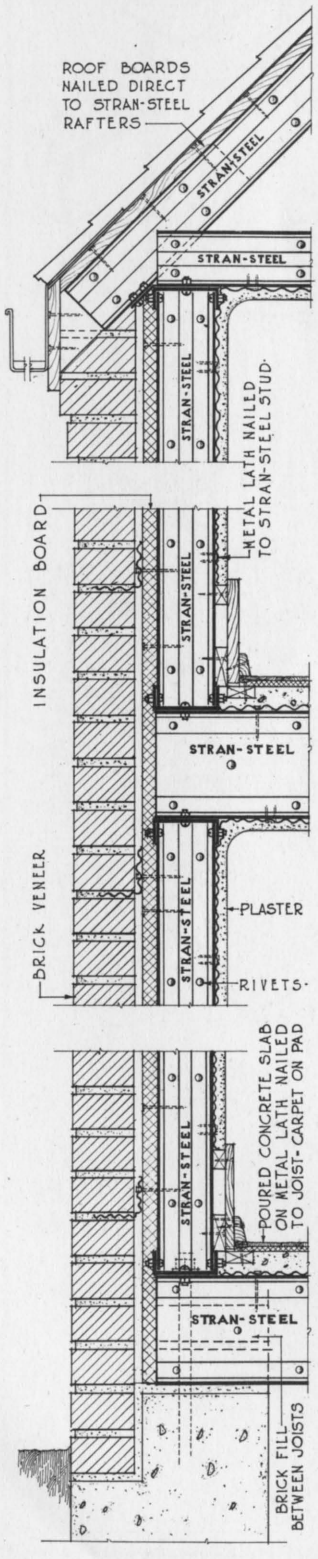
DETAILS OF CONSTRUCTION



YOU *NAIL* TO STRAN-STEEL

Wall elevation, below, shows Stran-Steel framing with typical brick veneer construction; channel plates attached direct to steel floor joists.



GENERAL SPECIFICATIONS

BASEMENT WALLS

Lay up in conventional manner to under sides of joists. 5/8" anchor bolts on 4' to 6' centers, embedded 2', are extended to 1" above tops of joists to anchor channel plate.

FIRST FLOOR JOISTS

Space on 2' centers. Lay directly on foundation walls where these walls run at right angles to joists. All headers and tail joists for basement windows, stairwells, etc., are placed as shown on plans. Where double joists are required as around stairwells and bulkheaded basement windows, the joists are tied together with C Clips (No. 1107 or No. 1108) driven into nailing groove on 1' centers, top and bottom (Page 10, No. 5). Joist ends are bricked in, and masonry walls running parallel to joists are laid up to level of top of joists. Header and tail joists are supported with Joist Hangers (No. 1104 or No. 1105, Page 10, No. 4). Where no anchor bolts are required for sill plate on parallel wall, brick in joists 8" long at right angles to wall and nail plate to same (Page 7, D).

CHANNEL PLATES

Run at right angles to floor joists, whether for outside walls or inside bearing partitions. Lay either directly on top of joists, flanges up, or on top of subfloor according to type of construction specified, and attached to anchor bolts embedded in basement walls. Outside wall channel plates running parallel to floor joists are laid, flanges up, directly on masonry wall. Punch holes with nail set in channel plate over every nailing groove at joist ends and nail channel plate to joists with 6d common or 8d box nails or bolt with 3/8" x 1/2" bolts. *Important:* Holes in flanges of channel plate on each wall must be in alignment with holes in flanges of channel plate along opposite wall to insure proper stud alignment. Bridging (No. 1100) is nailed in place diagonally from top to bottom of joists, at 4' to 6' intervals (Page 9, I).

FLOORS

If concrete, pour on 4 lb., high rib, metal lath. Nail lath to joists every 6" to prevent slipping and sagging when floor is poured. Concrete sub-floor 1 1/2" thick is poured to level of top of channel plate flanges which act as screeds. 3/4" concrete finish is poured either just before or just after plastering. This allows for anchorage of non-bearing partition channel plates as well as changes requiring breaking of sub-floor during construction and obviates breaking and patching finished floor. Wood floors are nailed directly to top of floor joists.

OUTER WALLS AND PARTITIONS, BEARING

Erect as follows: Lay top channel plate on horses parallel to bottom channel plate already fastened to joists. Bolt studs to top channel plates with 1/4" x 1/2" bolts. Assemble upper headers by nailing channel plates to top and bottom of header joist. Saw 7/8" deep clearance slots for stud flanges (using two hack saw blades in same frame), in both ends of header channel plate web. With Whitney punch, punch two holes for 1/4" bolts at each end of header channel plate to match holes in Header Bracket (No. 1203). Assemble header channel plates to Header

SPECIFICATIONS—*CONTINUED*

Brackets with ¼″ x ½″ bolts. Bolt assembly to door or window studs using ⅜″ x ¾″ bolts (Page 8, G). Insert jack studs between header and top channel plate and bolt in with ¼″x ½″ bolts. Raise section. Bolt in place in bottom channel plate with ¼″ x ½″ bolts, chipping clearance in cement where necessary for inside bolt heads. This procedure is followed until all first floor bearing walls and bearing partitions are in place.

OUTER WALLS, NON-BEARING

Erect as follows: Studs for this wall should protrude 1½″ above second story joist so that second floor channel plate forms screed for second story concrete subfloor. Lay top channel plate on horses parallel to bottom channel plate already anchored to masonry walls. Assemble headers using two channel plates over wide openings, otherwise one. Saw clearance for stud flanges in both ends of header channel plate web. Attach upper jack studs to first floor upper channel plate. Insert header assembly. Attach to jack studs with ¼″ x ½″ bolts. With Whitney punch, punch holes for ¼″ bolts through flanges of header plate and stud flanges at same time. Bolt in place. Raise section and bolt to first floor lower channel plate with ¼″ x ½″ bolts. Drive M Clips (No. 1204) to tie corner studs together every 3′. (See also: *Balloon Type Construction*, Page 15.)

WINDOW JACK STUDS, LOWER

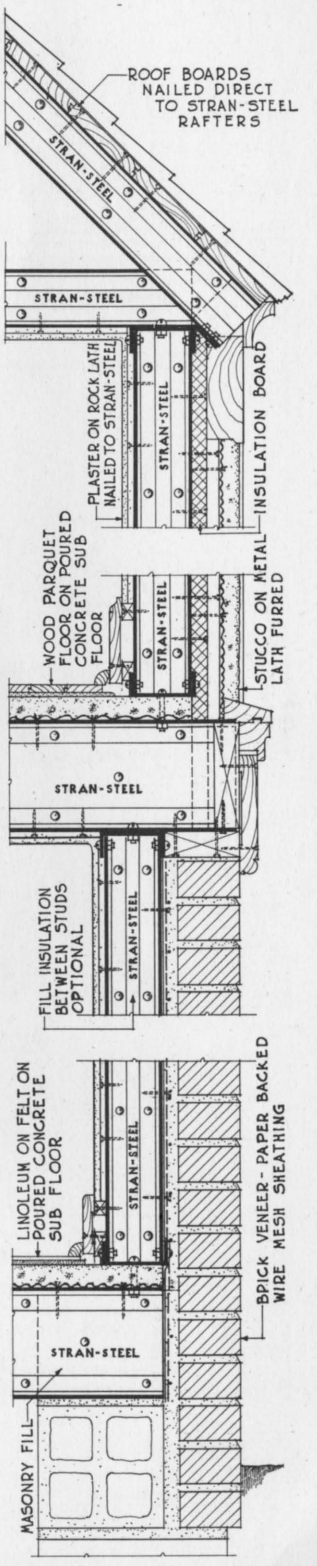
Also window headers and jamb studs: Below each window opening, where necessary, insert jack studs into first floor lower channel plate. Cut stud flange clearance in ends of lower header channel plate and place in position with flanges down on jack studs. Punch holes for ¼″ bolts through lower header flanges and main stud flanges at same time. Bolt lower header channel plate to main and jack studs. Bolt Stud Brackets (No. 1200) to lower ends of jamb studs. Place in position and bolt at bottoms through Stud Brackets to lower header channel plate.

PARTITIONS, NON-BEARING

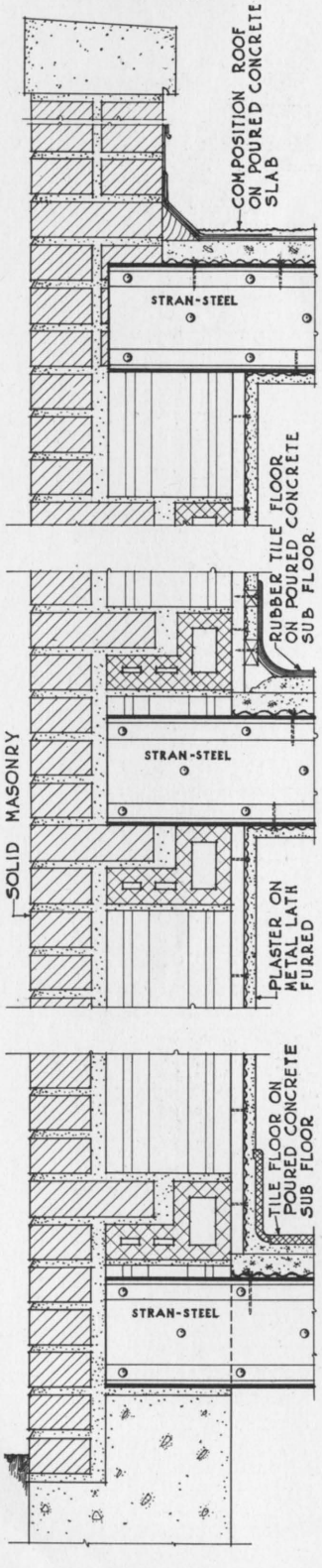
Have channel plate run their full length along top and along bottom except where cut out for door openings. It is very important that holes in these upper and lower channel plates are in vertical alignment when in place in order to plumb studs. To insure this alignment, first cut partition upper channel plate to length, being sure that centers of holes at one end are ½″ from end of plate or adjacent wall. Next lay out lower plate to upper plate, cutting out openings from lower plate, being sure that centers of holes in lower plate are always in vertical alignment with centers of holes in upper plate. If holes at other ends of upper and lower plates are too close or too far from adjacent wall punch new ¼″ holes.

Bolt upper and lower partition channel plates to partition stud ends with ¼″ x ½″ bolts before erecting partition. When assembling end partition studs to upper partition channel plates, bolt Corner Brackets (No. 1202) to upper ends of both sides of partition. Frame in tops of doors with channel plate, flanges extending downward. Bolt Stud Brackets (No. 1200) to lower ends of jack studs, and attach jack studs to partition upper channel plate and door header. Cut stud flange clearance in both ends of door header web and punch flanges at ends for attachment to studs. Erect partition. Previously attached Corner Brackets

Wall elevation, below, shows stucco and half timber second floor, brick veneer first floor. Note wall material nailed to Stran-Steel studs.



Wall elevation, below, shows Stran-Steel members with solid masonry construction. Note flat deck roof laid direct on steel roof joists.



SPECIFICATIONS—*CONTINUED*

(No. 1202) are now bolted through adjacent upper first floor channel plates. Where main studs are adjacent to one face of partition, they serve as lath backing.

Where no main studs are adjacent to partition face, half studs are bolted (with Channel Bracket bolts already placed) to upper and lower first floor channel plates in adjacent wall to serve as lath backing. M Clips (No. 1204) are then driven at 2′ 6″ intervals to tie end studs to adjacent wall studs to form corner. In like manner, where no joists are adjacent to parallel partitions to serve as lath backing, half studs are run parallel and adjacent to partition, bolted at ends to first floor upper channel plate and supported every four feet throughout span by Corner Brackets (No. 1202) to partition upper channel plate.

PLUMB WALLS AND PARTITIONS

Plumb outer walls with turnbuckle inserted between two lengths of ¼″ rod bent to right angle hooks at outer ends. Insert one hooked end in first story upper channel plate. Run turnbuckle assembly diagonally across several studs and hook other end into first floor lower channel plate. Tighten turnbuckle until corner is plumb. Then bolt lengths of Bridging (No. 1100) diagonally from upper to lower channel plates, avoiding door and window openings. Bridging remains as permanent bracing. If care has been taken to bolt inside partitions to vertically aligned holes in first floor upper and lower channel plates, partitions will be automatically plumbed with outer walls. Brace interior partitions as needed.

SECOND FLOOR JOISTS

Measure distance across from center to center of holes in web of first floor lower channel plates of walls or partitions which second floor joists are to span. Punch four holes for ⅜″ bolts at one end of second floor joists, one hole in each flange 1⅞″ from end and ½″ from edge of flange. Lay off distance measured between centers of first floor channel plates from centers of these four holes and similarly punch four holes in flanges of other ends of second floor joists. Place joists where shown on plans and bolt to channel plate with two ⅜″ x ½″ bolts at each end (Page 7, E; Page 9, K). At all parallel walls place joists against first floor wall studs (which have been run 1½″ above tops of second floor joists) and attach with Joist Clips (No. 1157 or No. 1158).

SECOND FLOOR CHANNEL PLATE

Attach with ⅜″ x ½″ bolts to second floor joists wherever bearing walls occur. Install Bridging and proceed same as on first floor except that outside non-bearing wall studs are set on top of first story upper channel plates at parallel walls and bolted directly over first story studs with Stud Brackets (No. 1200). They are also attached to second floor joists by Joist Clips (No. 1157 or No. 1158). These Joist Clips must be in place before concrete floor is poured.

SECOND STORY CEILING JOISTS

Lay out in same manner as first story joists and place in position with 2″ offset from center of studs, thus leaving room for rafters to set directly over studs. Attic floor is laid after second story ceiling joists are bolted in place.

SPECIFICATIONS—*CONTINUED*

GABLE ROOFS

Rafters are supplied with peak ends drilled for ¾″ x 1″ bolts. Adjacent flanges on peak ends are sheared off on job. After roof pitch is determined, lay out template on board or 2 x 4. Mark rafter lengths on template and transfer this dimension to steel rafter. Punch four holes for ¼″ bolts in flanges of rafter foot and attach Rafter Bracket (No. 1300) which has previously been bent in vise to proper pitch (Page 7, B). Lay rafters in place and loosely bolt peak ends.

Raise in pairs to position and bolt to rafter channel plate by means of Rafter Brackets (No. 1300). Space peak ends with roof board laid at right angles and temporarily nailed to rafters. Tighten peak bolts. Plumb end rafters and brace on under side with boards or Steel Bridging (No. 1100) nailed to rafters. Alternate construction using Ridge Plate may be used (Page 9, H).

GABLE STUDS

Attach Stud Brackets (No. 1200) to lower ends of gable studs (Page 7, A). Loosely bolt Rafter Clips (No. 1210), which have been previously bent to proper angle to fit pitch, to upper ends of gable studs and bend ends over lower flanges of end rafters. Bolt Stud Brackets (No. 1200) to channel plate. Plumb gable studs. Tighten bolts securing Rafter Clips (No. 1210) to gable studs and nail Rafter Clips to rafter.

HIP ROOFS

Raise main rafters and insert ¾″ x 1″ bolt. Assemble to this bolt hip rafters by means of Rafter Plates (No. 1310) attached to upper ends of hip rafters, bent to proper angle to fit pitch. The foot ends of these hip rafters should be level-cut to rest on corner of rafter channel plate so that top flanges of hip rafters are in plane with top flange of jack and main rafters. Assemble in this position by punching two holes for ⅜″ bolts and bolting to rafter channel plate with one Collar Tie Bracket (No. 1160) on each side of rafter (Page 11, No. 8).

Assemble to ¾″ bolt, already placed at main rafter peak, the peak of main rafter which lies between hip rafters by means of a Rafter Plate (No. 1310) bent to proper angle. Place nut on ¾″ bolt and draw all five members tight at peak. Jack and main rafters are attached to rafter channel plate by Rafter Brackets (No. 1300). Upper ends of jack rafters are bolted to Rafter Plates (No. 1310) bent to fit angle of web of hip rafters (Page 8, No. 1). Punch four holes in web of hip rafters to receive these bolts. One ½″ bolt is used for each pair of jack rafters.

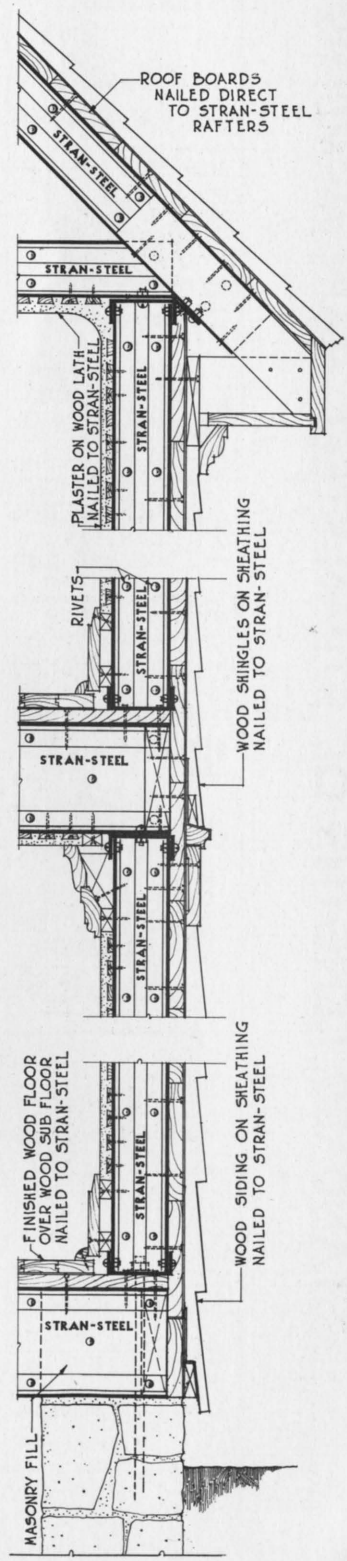
DORMER WINDOWS

Omit main rafters. Place header to provide desired head room. Attach jack rafters to upper header channel plate and bolt at peak to opposite rafter with ¾″ x 1″ bolts. Assemble dormer walls and attach to main rafters with Corner Brackets (No. 1202). Assemble and attach dormer rafters.

BALLOON TYPE CONSTRUCTION

May be used for non-bearing walls. Run studs from first floor lower channel plate to second story ceiling line, attaching them to tops and bottoms of second floor joists by Joist Clips (No. 1157 or No. 1158). Openings in this wall are framed in same manner as heretofore described (Page 11, No. 11, No. 12, No. 13).

Wall elevation, below, shows Stran-Steel framing with typical wood exterior. Note wood floors nailed direct to top of steel floor joists.

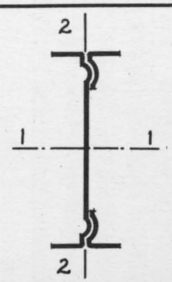
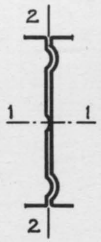
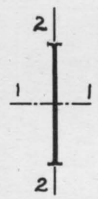
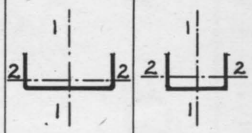


YOU *NAIL* TO STRAN-STEEL

STANDARD LENGTHS OF STRAN-STEEL MAIN MEMBERS

MEMBER	LENGTHS IN FEET AND INCHES									
JOISTS, 7" & 8"	3'-11½"	5'-11½"	7'-11½"	9'-11½"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"
" " " "	13'-6"	14'-0"	14'-6"	15'-0"	15'-6"	16'-0"	16'-6"	17'-0"	17'-6"	18'-0"
RAFTERS 3 5/8"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"	15'-6"	16'-0"	16'-6¼"
CEILING JOISTS 3 5/8"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	
STUDS & NARROW STUDS	3'-11½"	5'-11½"	7'-11½"	8'-3"	8'-9"	9'-3"				
JAMB STUDS	3'-7½"	4'-7¾"	5'-8"	6'-5½"	6'-11⅞"	7'-1⅞"	7'-5⅞"			
HALF STUDS	8'-3"	8'-9"	9'-3"	12'-0"	14'-0"	15'-0"	16'-0"			
CHANNEL PLATES	3'-11½"	5'-11½"	7'-11½"	9'-11½"	RIDGE PLATE		10'-0"	12'-0"	14'-0"	16'-0"
DOOR & WINDOW STUDS	8'-3"	8'-9"	9'-3"		JACK STUDS		0'-10"	1'-2 3/8"	1'-6 3/8"	

GENERAL PROPERTIES OF STRAN-STEEL MAIN MEMBERS

PROPERTIES		8" JOIST 					7" JOIST 	RIDGE PLATE 	3 5/8" STUD 	2 5/16" STUD 	HALF STUD 	CHANNEL PLATE 	NARROW CH. PLATE
THICKNESS		.0625	.078	.093	.109	.125	.0625	.0625	.0625	.0625	.0625	.0625	.0625
U.S. GAUGE		16	14	13	12	11	16	16	16	16	16	16	16
W'GT PER FOOT		3.348	4.212	5.023	5.890	6.755	3.875	2.130	2.375	1.823	1.204	1.364	1.094
AREA OF SECTION		.984	1.239	1.477	1.732	1.987	1.113	.627	.674	.512	.337	.401	.322
AXIS 1-1	I	9.591	11.963	14.148	16.439	18.700	6.300	1.363	1.212	.410	.102	.870	.331
	S	2.398	2.991	3.537	4.110	4.675	1.800	.545	.670	.356	.092	.456	.265
	r	3.125	3.110	3.095	3.080	3.070	2.380	1.475	1.340	.896	.550	1.472	1.014
	X										.578		
AXIS 2-2	I	.215	.270	.322	.378	.433	.088	.002	.086	.085	.042	.086	.075
	S	.156	.196	.234	.275	.315	.088	.0004	.086	.085	.042	.076	.072
	r	.468	.467	.467	.467	.467	.281	.0565	.358	.407	.353	.464	.483
	X											.364	.446

DEAD LOADS OF VARIOUS MATERIALS

Table of Combined Weights Per Square Foot of Floors, Roofs, Walls, Etc.

	STRAN-STEEL MEMBER	SUBFLOOR CONSTRUCTION	LATH	CEILING	CONSTRUCTION	LBS. PER SQ. FT.
FLOOR, DOUBLE WOOD	JOIST					10
			METAL	PLASTER		20
FLOOR, SINGLE WOOD	"	1½" CONCRETE				25
	"	1½" "	METAL	PLASTER		35
	"	2½" "				38
	"	2½" "	METAL	PLASTER		48
LINOLEUM	"	1½" "				22
	"	1½" "	METAL	PLASTER		32
	"	2½" "				35
	"	2½" "	METAL	PLASTER		45
1" QUARRY TILE LAID IN PORTLAND CEMENT MORTAR	"	1½" "				44
	"	1½" "	METAL	PLASTER		54
	"	2½" "				57
	"	2½" "	METAL	PLASTER		67
FLOOR, 1½" CONCRETE	"					21
	"		METAL	PLASTER		31
FLOOR, 2½" CONCRETE	"					34
	"		METAL	PLASTER		44
FLAT ROOFS TAR & GRAVEL	RAFTER				WOOD SHEATHING	12
	"		METAL	PLASTER		22
	"				1½" CONCRETE	27
	"		METAL	PLASTER	1½" "	37
	"				2½" "	40
	"		METAL	PLASTER	2½" "	50
SLOPING ROOFS [DEAD LOADS GIVEN IN PLANE OF ROOF]	JOIST	WOOD SHINGLES			WOOD SHEATHING	8
	"	3/16" SLATE			" "	12
	"	ASBESTOS			" "	9
	"	¼" SLATE			" "	15
	"	TILE			" "	19
	"	3 PLY ROOFING			" "	6
INTERIOR PARTITIONS						
	STUD				PLASTER 2 SIDES	22
EXTERIOR WALLS	"	1" SHEATHING OUTSIDE	METAL LATH AND PLASTER INSIDE			15
	"				WOOD SIDING	18
	"				4" BRICK VENEER	55

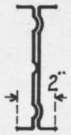
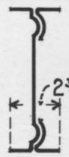
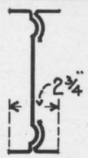
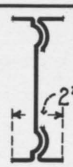
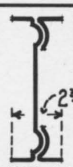
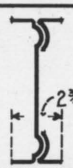
YOU *NAIL* TO STRAN-STEEL

MAXIMUM SAFE CLEAR SPAN FOR STRAN-STEEL MEMBERS

Designed In Accordance With The Specifications Of The American Institute Of Steel Construction And Steel Joist Institute

Table is based on 1/360 of span for total load where the dead load exceeds the live load, and on 1/360 of span for live load only, where the live load equals or exceeds the dead load. **Bold face figures recommended for permanent construction.**

MEMBER	LIVE LOAD LBS. PER SQ. FT.	DEAD LOAD IN POUNDS PER SQUARE FOOT																				
		10 LBS.			15 LBS.			20 LBS.			25 LBS.			35 LBS.			45 LBS.			55 LBS.		
		SPACING			SPACING			SPACING			SPACING			SPACING			SPACING			SPACING		
		12"	24"	36"	12"	24"	36"	12"	24"	36"	12"	24"	36"	12"	24"	36"	12"	24"	36"	12"	24"	36"
HALF STUD	10	7-5	5-3	4-3	5-8	4-6	3-10	5-4	4-3	3-6	5-1	4-0	3-3	4-8	3-6	2-10	4-4	3-2	2-7	4-1	2-11	2-4
	20	6-1	4-3	3-6	5-7	4-0	3-3	5-3	3-9	3-0	4-8	3-6	2-10	4-4	3-2	2-7	4-1	2-11	2-4	3-10	2-8	2-2
	30	5-3	3-9	3-0	4-11	3-6	2-10	4-8	3-4	2-8	4-6	3-2	2-7	4-2	2-11	2-4	3-10	2-8	2-2	3-7	2-6	2-1
	40	4-8	3-4	2-8	4-6	3-2	2-7	4-3	3-0	2-6	4-2	2-11	2-4	3-10	2-8	2-2	3-7	2-6	2-1	3-4	2-5	2-0
	50	4-3	3-0	2-6	4-2	2-11	2-4	4-0	2-10	2-3	3-10	2-8	2-2	3-7	2-6	2-1	3-4	2-5	2-0	3-3	2-3	1-10
NARROW CHANNEL PLATE	10	6-7	4-7	3-9	5-1	4-1	3-5	4-10	3-9	3-1	4-7	3-6	2-10	4-2	3-1	2-6	3-11	2-9	2-3	3-9	2-7	2-1
	20	5-4	3-9	3-1	4-11	3-6	2-10	4-8	3-3	2-8	4-2	3-1	2-6	3-11	2-9	2-3	3-8	2-7	2-1	3-4	2-4	1-11
	30	4-8	3-3	2-8	4-4	3-1	2-6	4-2	2-11	2-4	3-11	2-9	2-3	3-8	2-7	2-1	3-4	2-4	1-11	3-2	2-3	1-10
	40	4-2	2-11	2-4	3-11	2-9	2-3	3-9	2-8	2-2	3-8	2-7	2-1	3-5	2-5	1-11	3-2	2-3	1-10	3-0	2-2	1-9
	50	3-10	2-8	2-2	3-8	2-7	2-1	3-6	2-6	2-0	3-5	2-5	1-11	3-2	2-3	1-10	3-0	2-2	1-9	2-10	2-0	1-8
STANDARD CHANNEL PLATE	10	6-9	4-9	3-11	5-4	4-3	3-6	5-0	3-11	3-2	4-9	3-7	2-11	4-5	3-2	2-7	4-1	2-10	2-4	3-10	2-8	2-2
	20	5-6	3-11	3-2	5-1	3-7	2-11	4-9	3-4	2-9	4-5	3-2	2-7	4-1	2-10	2-4	3-11	2-8	2-2	3-6	2-5	2-0
	30	4-9	3-4	2-9	4-6	3-2	2-7	4-3	3-0	2-5	4-1	2-10	2-4	3-9	2-8	2-2	3-6	2-5	2-0	3-3	2-4	1-10
	40	4-3	3-0	2-5	4-1	2-10	2-4	3-11	2-9	2-3	3-9	2-8	2-2	3-6	2-5	2-0	3-3	2-4	1-10	3-1	2-2	1-9
	50	4-0	2-9	2-3	3-9	2-8	2-2	3-7	2-6	2-1	3-6	2-5	2-0	3-3	2-4	1-11	3-1	2-2	1-9	2-11	2-1	1-8
NARROW STUD	10	12-3	9-8	8-5	9-0	7-2	6-3	8-6	6-9	5-10	8-1	6-5	5-7	7-5	5-11	5-2	6-11	5-6	4-10	6-7	5-2	4-6
	20	9-8	7-8	6-9	8-10	7-0	6-1	8-4	6-7	5-8	7-5	5-11	5-2	6-11	5-6	4-10	6-7	5-2	4-6	6-3	4-11	4-4
	30	8-6	6-9	5-11	8-6	6-9	5-3	8-2	6-6	5-4	7-4	5-10	5-1	6-7	5-2	4-6	6-3	4-11	4-4	6-0	4-9	4-1
	40	7-8	6-1	5-4	7-8	6-1	5-1	7-8	5-11	4-10	7-3	5-9	4-8	6-5	5-0	4-4	6-0	4-9	4-1	5-9	4-7	3-10
	50	7-2	5-8	4-10	7-2	5-8	4-8	7-2	5-6	4-6	7-2	5-4	4-4	6-2	4-9	4-1	5-9	4-6	3-10	5-8	4-5	3-8
STANDARD STUD	10	17-6	13-11	11-7	12-11	10-3	8-11	12-2	9-8	8-5	11-6	9-2	8-0	10-7	8-5	7-4	9-11	7-11	6-11	9-2	7-5	6-6
	20	13-11	11-0	9-8	12-9	10-1	8-9	12-0	9-6	8-2	10-8	8-5	7-4	9-11	7-11	6-11	9-2	7-5	6-5	8-11	7-1	6-0
	30	12-2	9-8	8-2	12-2	9-5	8-2	11-10	8-11	7-4	10-6	8-3	7-0	9-5	7-6	6-5	9-0	7-1	6-0	8-7	6-10	5-7
	40	11-1	8-9	7-4	11-1	8-6	7-0	11-1	8-2	6-8	10-5	7-10	6-4	9-3	7-4	6-0	8-7	6-10	5-7	8-3	6-6	5-4
	50	10-3	8-2	6-8	10-3	7-10	6-5	10-8	7-7	6-2	10-4	7-3	6-0	9-1	6-10	5-7	8-5	6-6	5-4	7-11	6-2	5-0

MEMBER	LIVE LOAD	10 LBS. SPACING			15 LBS. SPACING			20 LBS. SPACING			25 LBS. SPACING			35 LBS. SPACING			45 LBS. SPACING			55 LBS. SPACING		
		12"	24"	36"	12"	24"	36"	12"	24"	36"	12"	24"	36"	12"	24"	36"	12"	24"	36"	12"	24"	36"
 7" JOIST	10	20-0"	20-0"	19-0"	20-0"	17-9"	16-3"	20-0"	16-9"	14-7"	20-0"	15-11"	13-11"	18-5"	14-7"	12-8"	17-3"	13-8"	11-6"	16-3"	12-11"	10-6"
	20	20-0"	19-0"	15-6"	20-0"	17-7"	14-4"	20-0"	16-6"	13-4"	18-4"	14-7"	12-8"	17-2"	13-8"	11-5"	16-3"	12-11"	10-6"	15-6"	12-0"	9-9"
	30	20-0"	16-6"	13-4"	20-0"	15-6"	12-8"	20-0"	14-8"	12-0"	18-2"	14-0"	11-6"	16-3"	12-11"	10-6"	15-6"	12-0"	9-9"	14-11"	11-3"	9-3"
	40	19-2"	14-9"	12-0"	19-2"	14-0"	11-6"	19-0"	13-4"	11-0"	18-0"	12-11"	10-6"	15-6"	12-0"	9-9"	14-11"	11-3"	9-3"	14-4"	10-8"	8-8"
	50	17-9"	13-4"	11-0"	17-9"	12-11"	10-6"	17-7"	12-5"	10-2"	17-0"	12-0"	9-9"	14-11"	11-3"	9-3"	14-4"	10-8"	8-8"	13-11"	10-2"	8-3"
 8" JOIST-16GA.	10	24-0"	24-0"	21-11"	24-0"	20-5"	17-10	24-0"	19-3"	16-10	23-0"	18-3"	16-0"	21-2"	16-10	14-7	19-10	15-9"	13-2"	18-9"	14-10	12-2"
	20	24-0"	21-11"	17-11"	24-0"	20-4"	16-7	24-0"	19-0"	15-6	21-2"	16-10	14-8	19-10	15-9"	13-3"	18-9"	14-10	12-2	17-10	13-10	11-4"
	30	24-0"	19-0"	15-6	24-0"	17-11"	14-7	24-0"	17-0"	13-10	21-0"	16-2"	13-3	18-9"	14-10	12-2	17-10	13-10	11-4"	17-2"	13-0"	10-8
	40	22-1"	17-0"	13-10	22-1"	16-2"	13-3	21-11"	15-6	12-8	20-10	14-11"	12-2	17-10	13-10	11-4"	17-2"	13-0"	10-8	16-6	12-4"	10-1"
	50	20-5"	15-6	12-8	20-5"	14-11"	12-2	20-4"	14-4	11-8	19-7	13-11"	11-4"	17-2"	13-0"	10-8	16-6	12-4"	10-1"	16-0"	11-8"	9-7"
 8" JOIST-14GA.	10	24-0"	24-0"	24-0"	24-0"	22-0"	19-3"	24-0"	20-9"	18-1"	24-0"	19-8"	17-2"	22-10"	18-1"	15-9"	21-4"	16-11"	14-9"	20-2"	16-0"	13-7"
	20	24-0"	24-0"	20-0"	24-0"	21-10"	18-6	24-0"	20-7"	17-3"	22-10"	18-1"	15-10	21-4"	16-11"	14-9"	20-2"	16-0"	13-7"	19-3"	15-5"	12-7"
	30	24-0"	21-2"	17-4"	24-0"	20-0"	16-4	24-0"	18-11"	15-6	22-8"	18-0"	15-0"	20-2"	16-0"	13-7"	19-3"	15-5"	12-7"	18-5"	14-6"	11-10
	40	23-8"	19-0"	15-6"	23-8"	18-1"	14-9	23-8"	17-4"	14-1"	22-6"	16-7"	13-7"	19-3"	15-5"	12-7"	18-5"	14-6"	11-10	17-9"	13-8"	11-3"
	50	22-0"	17-4"	14-2"	22-0"	16-7"	13-7"	22-0"	16-0"	13-1"	21-11"	15-6"	12-7"	18-5"	14-6"	11-10	17-9"	13-8"	11-3"	17-2"	13-1"	10-8"
 8" JOIST-13GA.	10	24-0"	24-0"	24-0"	24-0"	23-3"	20-4	24-0"	21-11"	19-2"	24-0"	20-10"	18-2"	24-0"	19-2"	16-8	22-6"	17-11"	15-8	21-4"	16-11"	14-8"
	20	24-0"	24-0"	21-8"	24-0"	23-1"	20-1	24-0"	21-9"	18-10	24-0"	19-2"	16-8	22-6"	17-11"	15-8	21-4"	16-11"	14-8	20-4"	16-2"	13-8"
	30	24-0"	21-11"	18-10	24-0"	21-8"	17-8	24-0"	20-7"	16-10	23-11"	19-0"	16-0	21-4"	16-11"	14-8	20-4"	16-2"	13-8	19-6"	15-6"	12-11"
	40	24-0"	19-11"	16-10	24-0"	19-7"	16-0	24-0"	18-10	15-4	23-9"	18-0"	14-8	20-4"	16-2"	13-8	19-6"	15-6"	12-11"	18-10	14-11"	12-2"
	50	23-3"	18-6"	15-5	23-3"	18-0"	14-8	23-3"	17-5"	14-2"	23-3"	16-10	13-8	19-6"	15-6"	12-11"	18-10	14-11"	12-2"	18-2"	14-2"	11-7"
 8" JOIST-12GA.	10	24-0"	24-0"	24-0"	24-0"	24-0"	21-5"	24-0"	23-1"	20-2"	24-0"	21-11"	19-2"	24-0"	20-1"	17-7	23-9"	18-10	16-6	22-5"	17-9"	15-7"
	20	24-0"	24-0"	23-5"	24-0"	24-0	21-3"	24-0"	22-11"	20-0"	24-0"	20-2"	17-7	23-9"	18-10	16-6	22-5"	17-9"	15-7	21-5"	17-0"	14-10
	30	24-0"	24-0"	20-4"	24-0"	23-5"	19-1"	24-0"	21-2"	17-4	24-0"	20-0"	17-4	22-5"	17-9"	15-7	21-5"	17-0"	14-10	20-7"	16-4"	13-11"
	40	24-0"	20-11"	18-1"	24-0"	20-11"	17-4	24-0"	20-2"	16-4	24-0"	19-6"	15-11"	21-5"	17-0"	14-10	20-7"	16-4"	13-11"	19-10"	15-9"	13-2"
	50	24-0"	19-6"	16-6	24-0"	19-6"	15-11"	24-0"	18-9"	15-4	24-0"	18-1"	14-10	20-7"	16-4"	13-11"	19-10"	15-9"	13-2"	19-2"	15-4"	12-6"
 8" JOIST-11GA.	10	24-0"	24-0"	24-0"	24-0"	24-0"	22-4"	24-0"	24-0"	21-0"	24-0"	22-10"	19-11"	24-0"	21-0"	18-5"	24-0"	19-8"	17-2"	23-5"	18-7"	16-3"
	20	24-0"	24-0"	24-0"	24-0"	24-0"	22-2"	24-0"	23-10"	20-10"	24-0"	21-0"	18-5"	24-0"	19-8"	17-2"	23-5"	18-7"	16-3"	22-4"	17-9"	15-6"
	30	24-0"	24-0"	21-7"	24-0"	24-0"	20-4"	24-0"	23-8"	19-4"	24-0"	20-10"	17-6	23-5"	18-7"	16-3"	22-4"	17-9"	15-6"	21-5"	17-0"	14-10
	40	24-0"	21-10"	19-4"	24-0"	21-10"	18-5"	24-0"	21-7"	17-8	24-0"	20-8"	17-0"	22-4"	17-9"	15-6"	21-5"	17-0"	14-10	20-8"	16-5"	14-0"
	50	24-0"	21-7"	17-8"	24-0"	20-8"	17-0"	24-0"	20-0"	16-5"	24-0"	19-5"	15-10	21-5"	17-0"	14-10	20-8"	16-5"	14-0"	19-11"	15-10	13-4"

In the above table, while no spans greater than 20 ft. are shown for the 7" joist, nor greater than 24 ft. for the 8" joist, longer spans are sometimes desirable for relatively light loads. Such spans may be calculated from table headed: **General Properties of Stran-Steel Main Members,** *as shown on Page 16.*

THREE TYPICAL HOMES FRAMED WITH STRAN·STEEL

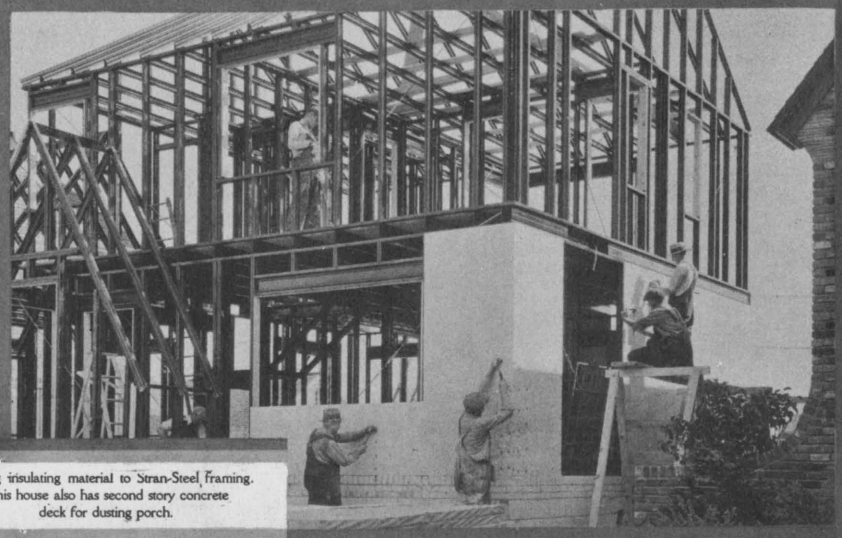
Detroit Builders Ideal Home
Architects: O Dell & Rowland
Builders: C. J. Prost & Son

Flat roof, wide overhanging eaves, and second floor terrace distinguish this Stran-Steel framed house.

Eight room house, framed in Stran-Steel. There are nine different pitches to the roof of the house.

Residence in Jackson, Michigan
Architect & Builder: V. Nurmi

Residence of Thos. C. Scott, Detroit.
Architect: George R. Weller;
Builders: Henry & George Buelow.



Nailing insulating material to Stran-Steel framing. This house also has second story concrete deck for dusting porch.