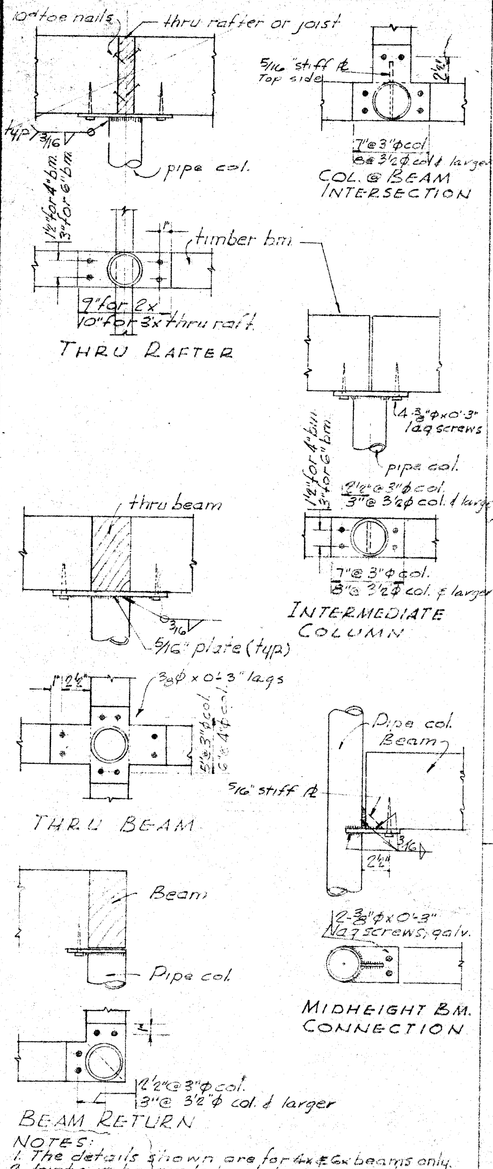
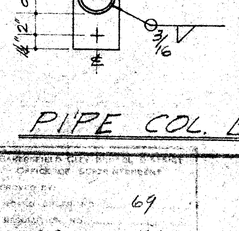


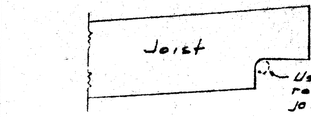
Joist Size	Dimension A	B	H	Nails a	b
2x4	1	2	3	2-8d	2-8d
2x6	1	2	4½	3-8d	2-8d
2x8	1	2	6½	3-16d	3-8d
2x10	1	2	7	4-16d	3-8d
2x12	1	2	9	5-10d	4-8d
2x14	1	2	10	5-10d	4-8d
2x16	1	2½	11	6-16d	4-8d
3x4	1	2	3	2-8d	2-8d
3x6	1	2	4½	3-8d	2-8d
3x8	1	2	6½	3-16d	3-8d

Joist Size	Dimension A	B	H	Nails a	b
3x10	1	2¼	7	4-16d	3-8d
3x12	1	2¼	9	5-16d	4-8d
3x14	1	2¼	10	5-16d	4-8d
3x16	1	2¼	11	6-16d	4-8d
4x4	1	2¼	3	2-16d	2-8d
4x6	1	2¼	5	3-16d	2-8d
4x8	1	2¼	7	4-16d	3-8d
4x10	1	2¼	9	5-16d	3-8d
4x12	1	2¼	11	6-16d	4-8d

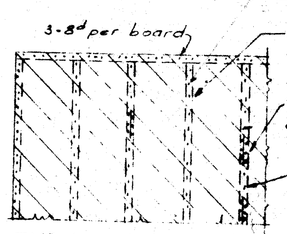
UNIVERSAL JOIST HANGERS (U/S-1)



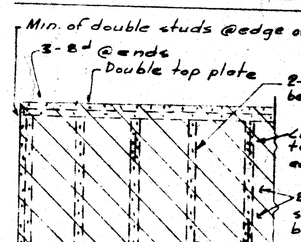
PIPE COL. BASE PL. (Z/S-1)



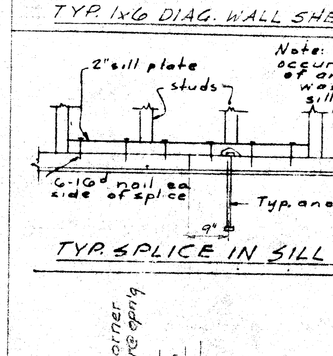
TYP. NOTCH CUT @ BEARING (O/S-1)



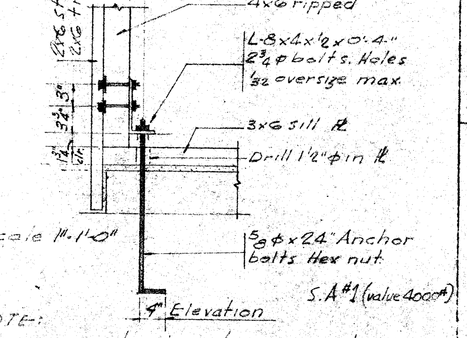
TYP. 1x6 DIAG. ROOF SHEATHING (P/S-1)



TYP. 1x6 DIAG. WALL SHEATHING (Q/S-1)

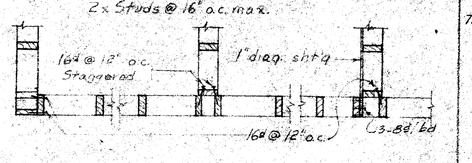


TYP. SPLICE IN SILL PLATE (P/S-1)



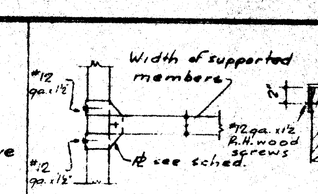
Note:
To properly locate special anchor bolts, contractor to check structural framing and location of Architectural openings before placing bolts

DETAIL OF SPECIAL ANCHOR (S/S-1)



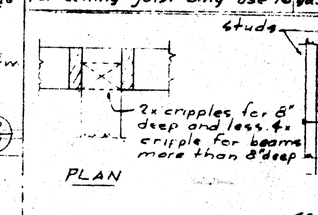
Notes:
1. Provide 4x posts where stud anchors occur.
2. Predrill for 20d nails where plywood occurs

STUD WALL CONNECTIONS @ CORNER AND INTERSECTIONS (V/S-1)

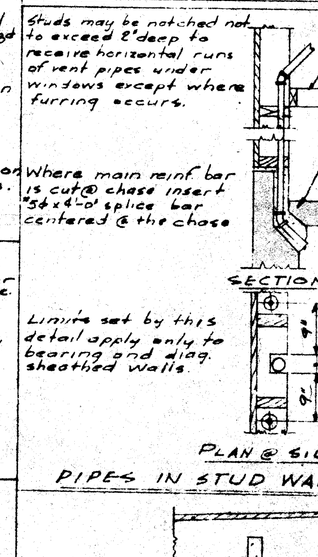


TYP. METAL JOIST HANGERS (L/S-1)

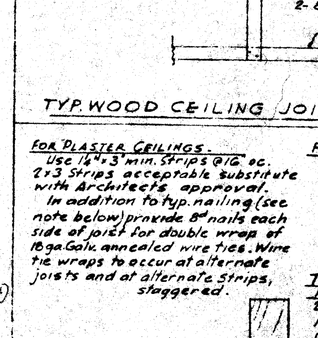
METAL HANGER SCHEDULE	
SIZE OF SUPPORTED MEMBER	SIZE OF MATERIAL
2x14 or 3x10 or less	2" x 3/16" Flt
3x14 or 4x10 or less	2½" x 3/16" Flt
4x14 or 6x10 or less	2½" x ¼" Flt
For ceiling joist only use 16 ga. material 8" wide	



TYP. SUPPORT OF BEAM AT WALL (K/S-1)



PIPES IN STUD WALL (L/S-1)

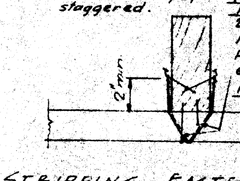


TYP. WOOD CEILING JOIST HANGERS (M/S-1)

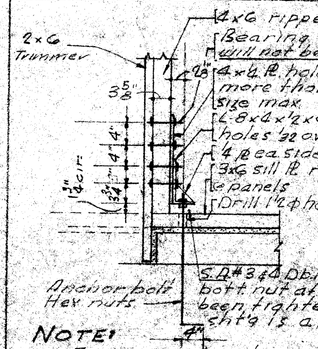
FOR PLASTER CEILINGS:
Use 1"x3" min. Strips @ 16" o.c. 2"x3" Strips acceptable substitute with Architects approval. In addition to typ. nailing (see note below) provide 8d nails each side of joist for double wrap of 18 ga Galv. annealed wire ties. Wire tie wraps to occur at alternate joists and at alternate strips, staggered.

FOR UNPLASTERED CEILINGS:
Use 1"x3" min. Strips at 12"o.c. to receive Acoustic Tile. Use 1"x3" min Strips at 16" o.c. to receive Gypsum Board Panels.

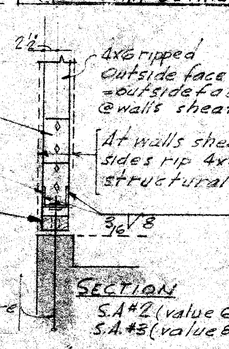
TYPICAL NAILING:
For 1"x6" Strips provide 2-8d each bearing. 1 straight & 1 slant nail. Predrill for nails & strip ends to prevent splitting. For 2 Strips - substitute 16 d nails, in above note.



STRIPPING FASTENING ON WOOD JOISTS. (N/S-1)



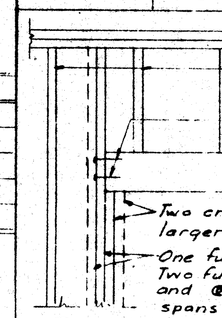
NOTE:
To properly locate special anchor bolts, contractor to check structural framing and location of Architectural openings before placing bolts.



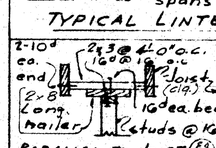
SPECIAL ANCHOR (W/S-1)

LINTEL SCHEDULE

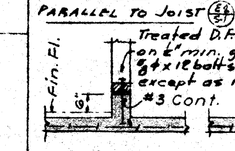
BEARING WALLS		NON-BEARING WALLS	
OPENING SIZE	LINTEL SIZE	OPENING SIZE	LINTEL SIZE
3'-6" or less	2-2x6	3'-0" or less	2-2x4
3'-6" to 7'-2"	6x6	3'-0" to 6'-0"	2-2x6



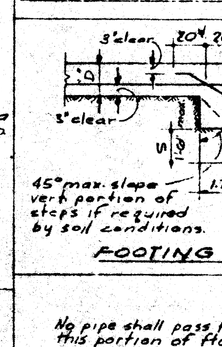
TYPICAL LINTEL END DETAIL (D/S-1)



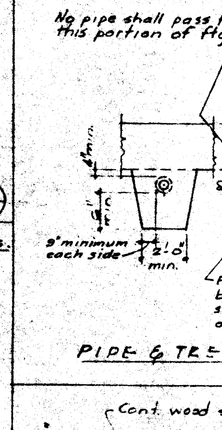
PARALLEL TO JOIST RIGHT ANGLE to JOIST (E&F/S-1)



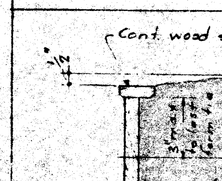
TYP. NON-BEARING PARTITIONS (E/S-1) (F/S-1)



FOOTING STEP (P/S-1)



PIPE & TRENCH LOCATION (Q/S-1)



TYP. FORM DETAIL @ POUR JOINT (F/S-1)

NAILING SCHEDULE

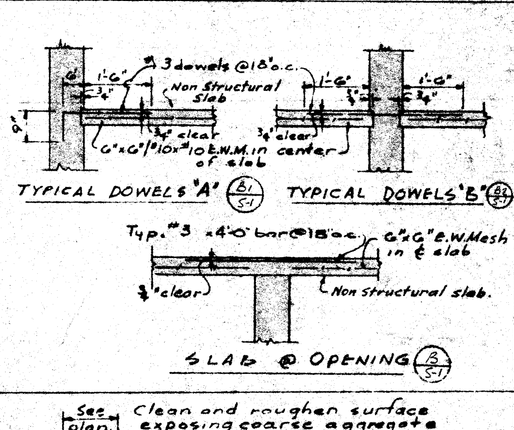
DETAIL	*NAILING
Joists or rafters to sides of studs -	
Joist depth 8" or less	3-10d
For ea. additional 2" in depth of joist	1-10d
Joist or rafters to sill bearings - toe nail ea. side	2-10d
studs to bearings - toe nails ea. side	2-10d
Blocking between joist or rafters - To joist or rafters - toe nail ea. side	2-10d
ea. end	2-10d
To bearings - toe nails ea. side	2-10d
1x6 sheathing at all bearings	2-8d
Cross bridging - toe nails ea. end	2-8d
Herringbone blocking	2-10d
1x3 ceiling strips to underside of joist. per bearing	2-8d
1x4 (min.) x 3 stripping	2-10d
Double top plates	2-10d
Lower plate to top of studs	2-20d
Upper plate to lower plate - staggered	16" @ 18" o.c.
Multiple studs staggered for width of more than 4"	16" @ 12" o.c.
Built up beams 8" or less in depth staggered	16" @ 12" o.c.
More than 8" deep - staggered	¾ bolts @ 24" o.c.
Double joists under partitions	2-10d @ 12" o.c.
Where not blocked apart - staggered	16" @ 12" o.c.
Where blocked apart - at ea. block	2-20d
Cribbing to studs	2-8d

* Covers min. permissible conns. only. Refer to details for special nailing.
** All nails shall be common wire nails. Where possible, nails driven perpendicular to the grain shall be used instead of toe nails.

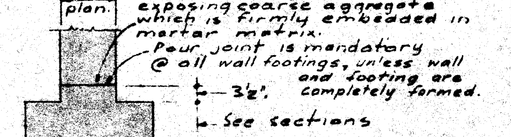
WASHER SCHEDULE

BOLT DIAM	ROUND WASHER DIAM. MALLEABLE IRON	SQUARE WASHER OR CUT STOCK - SIZE AND THICKNESS
⅝"	2½" x ¼"	2½" x ¼"
¾"	2¾" x 5/16"	2½" x ¼"
⅞"	3" x 5/16"	2¾" x 5/16"
1"	3½" x 7/16"	3¼" x 7/16"
1¼"	4" x ½"	3½" x ⅜"
1½"	2¼" x ½"	2¼" x ¼"

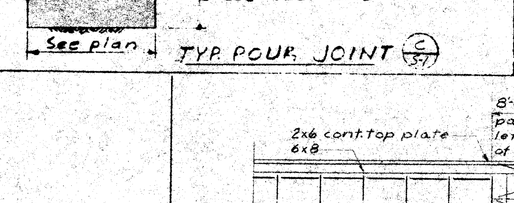
Where single curtain of reinfoccurs bend steel as shown bars in outside face.



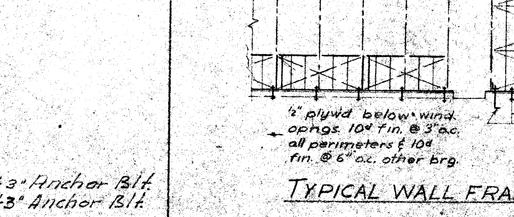
REINFORCING IN WALLS & FOOTING PADS @ CORNERS & INTERSECTIONS



TYPICAL DOWELS "A" (B/S-1) TYPICAL DOWELS "B" (B/S-1)



SLAB @ OPENING (B/S-1)



TYP. POUR JOINT (C/S-1)

GENERAL NOTES

REINFORCED CONCRETE -

1. Soil supporting footing is sandy loam
2. Soil bearing value used in design assumed to be 1500 # PSF at 2'-0" below finish grade, whichever is lower or below any loose or organic material.
3. Footings shall extend at least 1'-6" into natural undisturbed ground or 2'-0" below finish grade, whichever is lower. Fill below footings shall be wired together.
4. No brick or porous material shall be used to support footing steps.
5. All concrete shall have a minimum ultimate compressive strength of 2000 lbs/in² at 28 days unless otherwise noted.
6. Anchor bolts and dowels shall be securely held in place before concrete is poured.
7. Splices in reinforcing steel shall lap 36" bar diam. min. also column dowels shall lap 30 bar diam. min. unless otherwise noted. Separate bars and bar laps at splices 6" clear o.c. min. but in no case less than 1½" clear except for column bar splices at dowels which shall be separated 1" min. clear. Wall steel may be wired together.
8. Reinforcing steel shall have the minimum protective conc. covering indicated below:

Footing pads	3"
Tie columns (main steel)	2"
Spiral wrapped cols. (face of spiral)	1½"
Wall steel below grade	2"
Wall steel above grade	¾"
Slabs on fill other than walks shall be reinforced with 6x6 (10/10) W.W. Mesh at mid depth of slab.	
Beams sides, top & soffit	1½"
Joists sides, top & soffit	¾"

9. Slabs on fill other than walks shall be reinforced with 6x6 (10/10) W.W. Mesh at mid depth of slab.
10. Dowel slabs to wall as per typical details.
11. See Architectural and/or Mech. drawings for location of pipe vents, sleeves and other similar openings.
12. All walls shall be stepped for supporting footing beams or pads with bars of the same size and spacing as vertical bars in walls.
13. Anchorage of dowels shall be equivalent to bar splices.
14. If not provided for in details wall footing pad shall be 10" thick and 12" in width and reinf. as per typical details.
15. Concrete strength for reinf. shall conform with ASTM Specification A305-301

STRUCTURAL STEEL -

1. When stress is not given or details not shown design connections for members carrying direct stress to develop the strength of the members.
2. A.I.S.C. standard beam connections or connections of equal strength shall be used for all beam connections, unless noted otherwise.
3. Base plates shall be bedded on drypack 1" minimum thickness.
4. The following steel requires testing: 1 test per 10 T. of each W or 3rd pipe col. - 1 girder material - See Test Ref. 9/30 -
5. No thread bearing will be permitted on bolted connections, to assure such bearing washers or the equivalent shall be used.

TIMBER

1. All framing lumber to be grade marked D.F. 2nd Specs.
2. All sills to be treated D.F. with Sch mud sills on the min grout. After grout is in place, sand to level.
3. Sill plates shall be bolted to concrete with ⅝" ø x 12" bolts @ 6'-0" o.c. max. unless otherwise noted at all corners, intersections and at door openings, place a bolt 6" max. from end of sill pieces. Spliced sills as shown in detail 3A. When bolts are more than 2" from each side of joint.
4. Where studs are not shown, join conc. or masonry walls, the end stud shall be anchored thereto with 3 bolts, one near each end and one at mid length. Such bolts shall be ⅝" ø x 12" long, except bolts less than 12" long shall be ½" ø. Studs shall be spaced @ 16" o.c. min. and of the size shown on plans.
5. Non-structural members shall be cut for pipes, vents, ducts and other similar openings except as detailed or specified. Joist and rafters shall be spliced at supports only except as detailed. Splices shall lap not less than 4'-0" with a min. of 5 nails.
6. No crack solid blocking shall be placed between all joist and rafters at all supports and under all partitions unless otherwise detailed.
7. Cross bridging shall be placed between joist or rafters where spans exceed 8'-0". The distance between rows of cross bridging and between bridging and wall shall not exceed 8'-0". Cross bridging may be omitted at roof and ceiling joists at ends and under parallel solid bridging shall be placed between joist or rafters at all points of support.
8. All bolts shall be drifted with malleable iron or steel plate washers. Holes for bolts shall be bored with a bit of the same nominal diameter as the bolt.

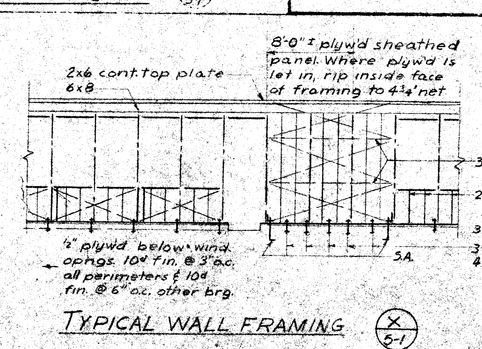
BRICK

See specifications for brick mortar and grout. All trade to lap to min. For isolated bolts, the brick joint shall be opened to a min. of 8" horiz. and vertically, the bolt centered therein and the area grouted. Clusters of bolts shall be grouted as a unit with a min. of 1" grout on all sides of any bolt. Min. spacing of bolts shall be 4" and. Wood ledgers and steel shelf angles supporting roof joists shall be bedded in fully confined grout. The full length of the ledger or adequately secured. Bolts to joists or solid blocking shall be set in walls to which they are parallel shall be bedded in grout. Where each bolt shall be grouted as an isolated bolt.

NOTE! All Wood Beams 6x6 & larger to be selected stock. See specs.

LEGEND

- Existing conc.
- Conc. in sect
- Wood blocking
- Cont. wood
- Brick in section
- = Wall Framing Elev.
- Footing step
- 0'-0" Elev. at bottom of footing
- (A/S-1) Detail Number / Sheet Number
- E.W.M. Electric welded mesh
- Nominal finished floor elevation
- f.o.s. (F.O.S.) Face of studs



TYPICAL WALL FRAMING (X/S-1)

CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS AT JOB SITE BEFORE PROCEEDING WITH THE WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT.

GENERAL NOTES & TYPICAL DETAILS

CALIFORNIA STATE DEPARTMENT OF EDUCATION Office of School Inspection APPROVED DATE	69	HILLMAN & NOBELL STRUCTURAL ENGINEERS 215 WEST 7TH STREET LOS ANGELES 14	OFFICE OF SUPERINTENDENT OF SCHOOLS APPROVED DATE	STATE OF CALIFORNIA DEPARTMENT OF PUBLIC WORKS DIVISION OF ARCHITECTURE	STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS DIVISION OF ARCHITECTURE 12120 APPROVED AUG 31 1954 BY E. Mang	BAKERSFIELD CITY SCHOOLS 1600 L ST. BAKERSFIELD CALIF. BOARD OF EDUCATION APPROVED DATE
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