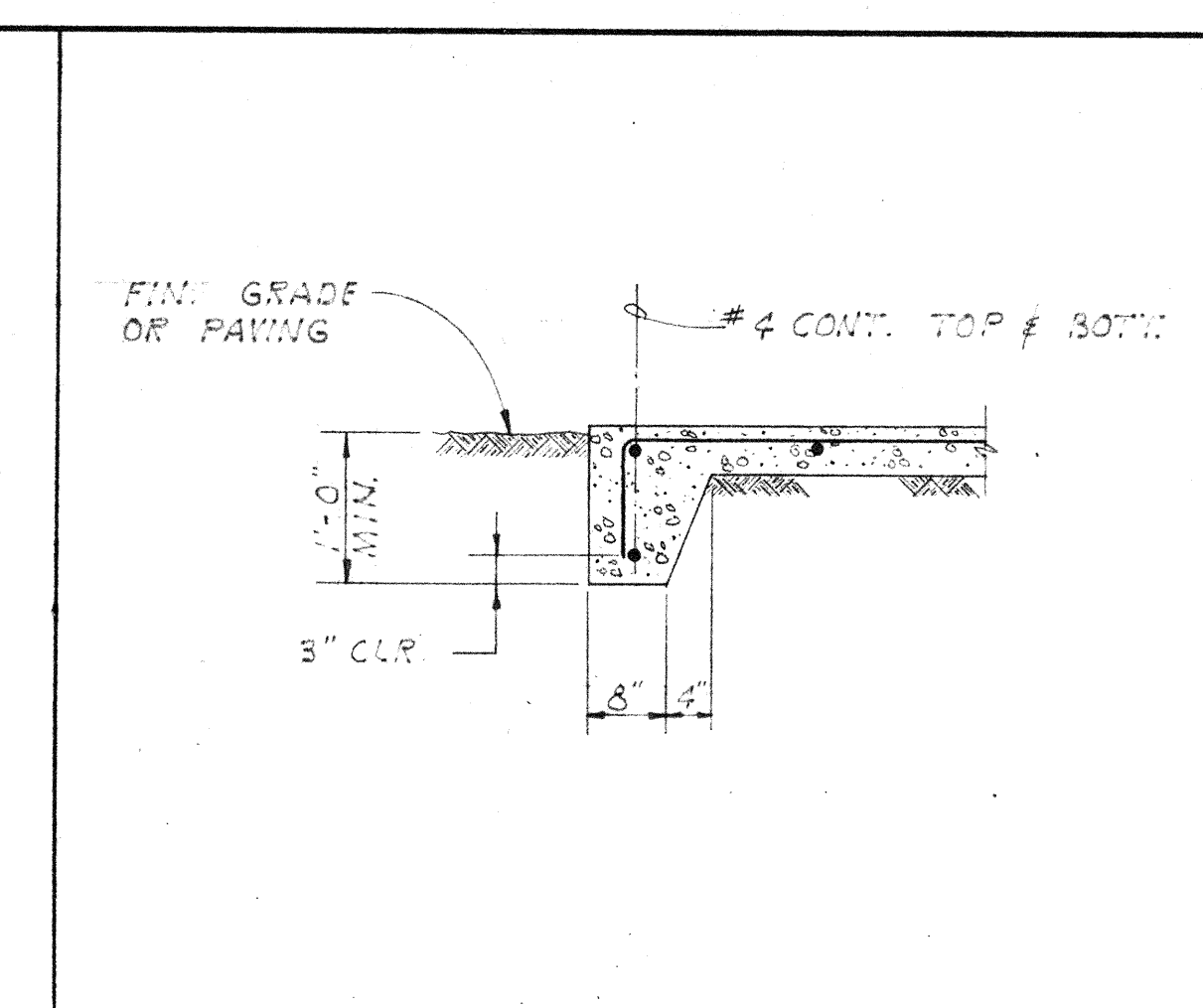
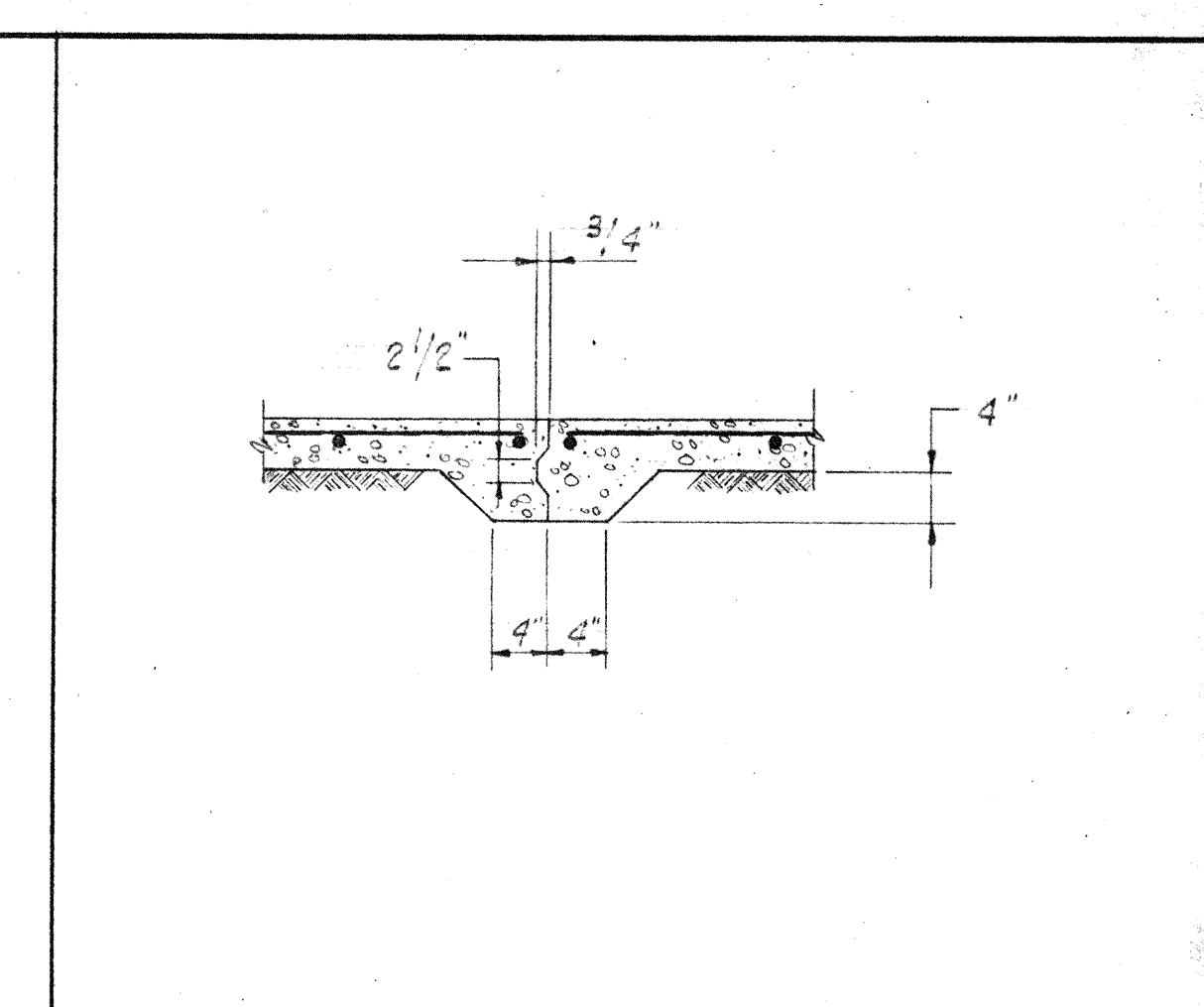


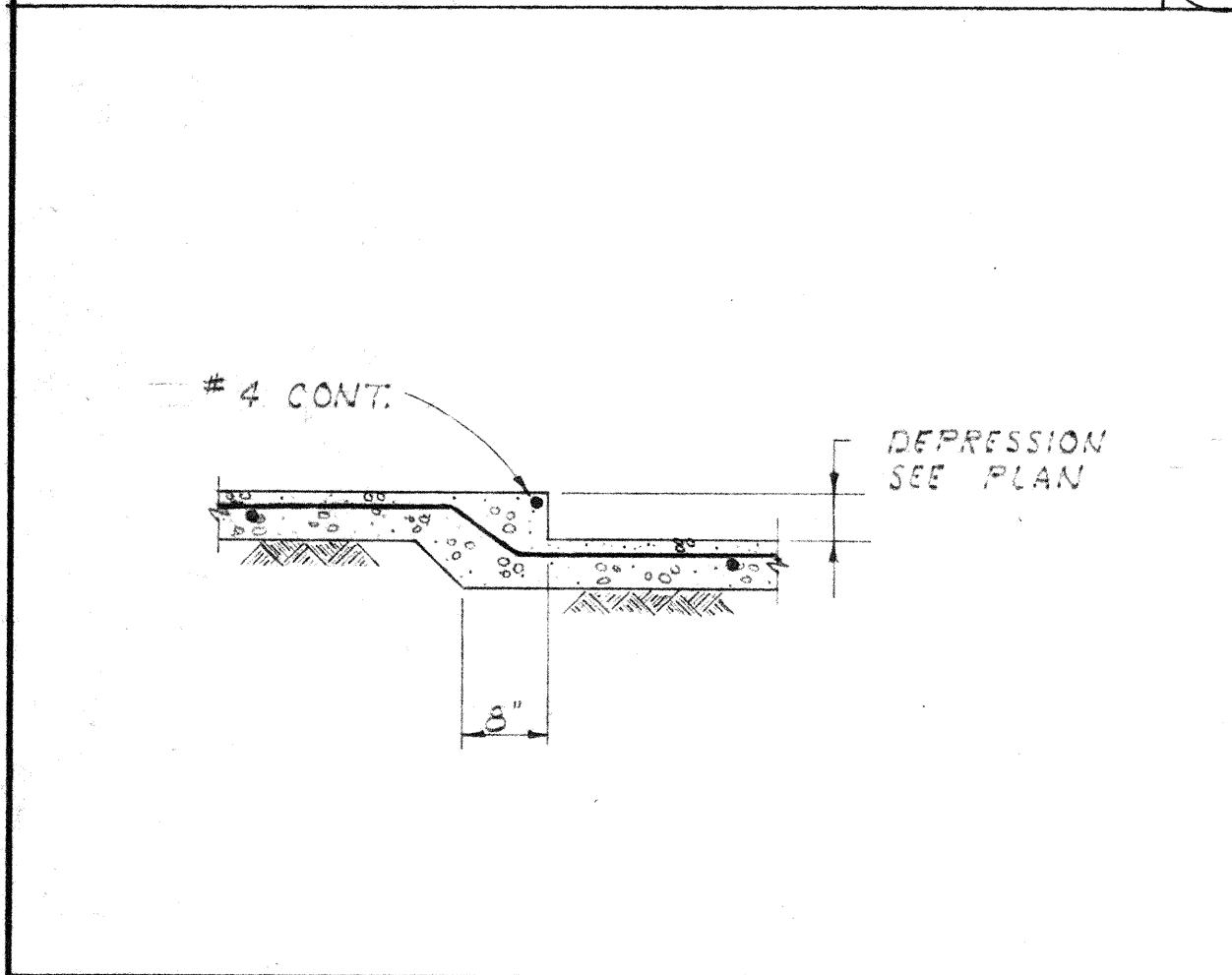
FOOTING STEPS 1



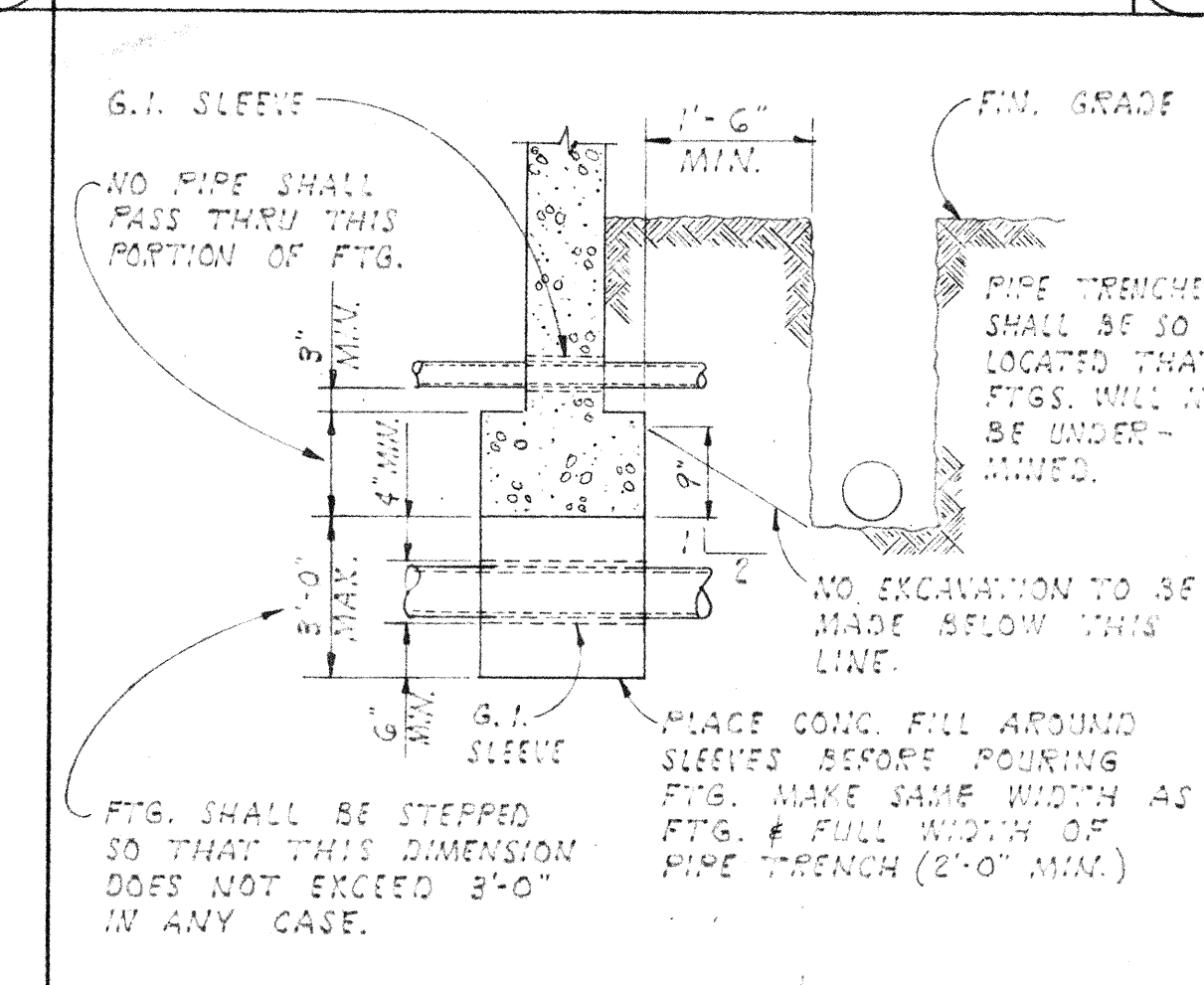
SLAB EDGE 2



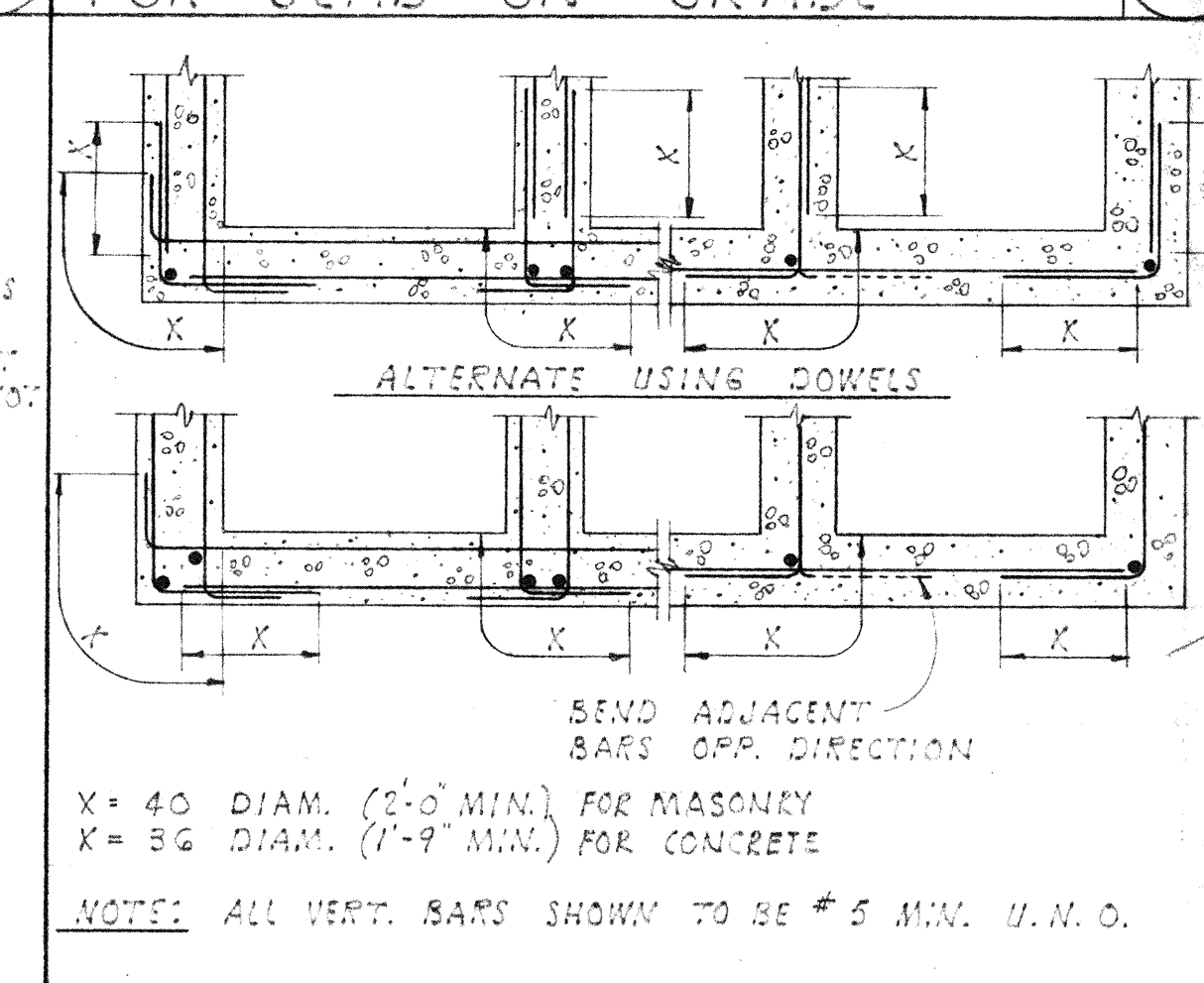
CONSTRUCTION JOINT FOR SLAB ON GRADE 3



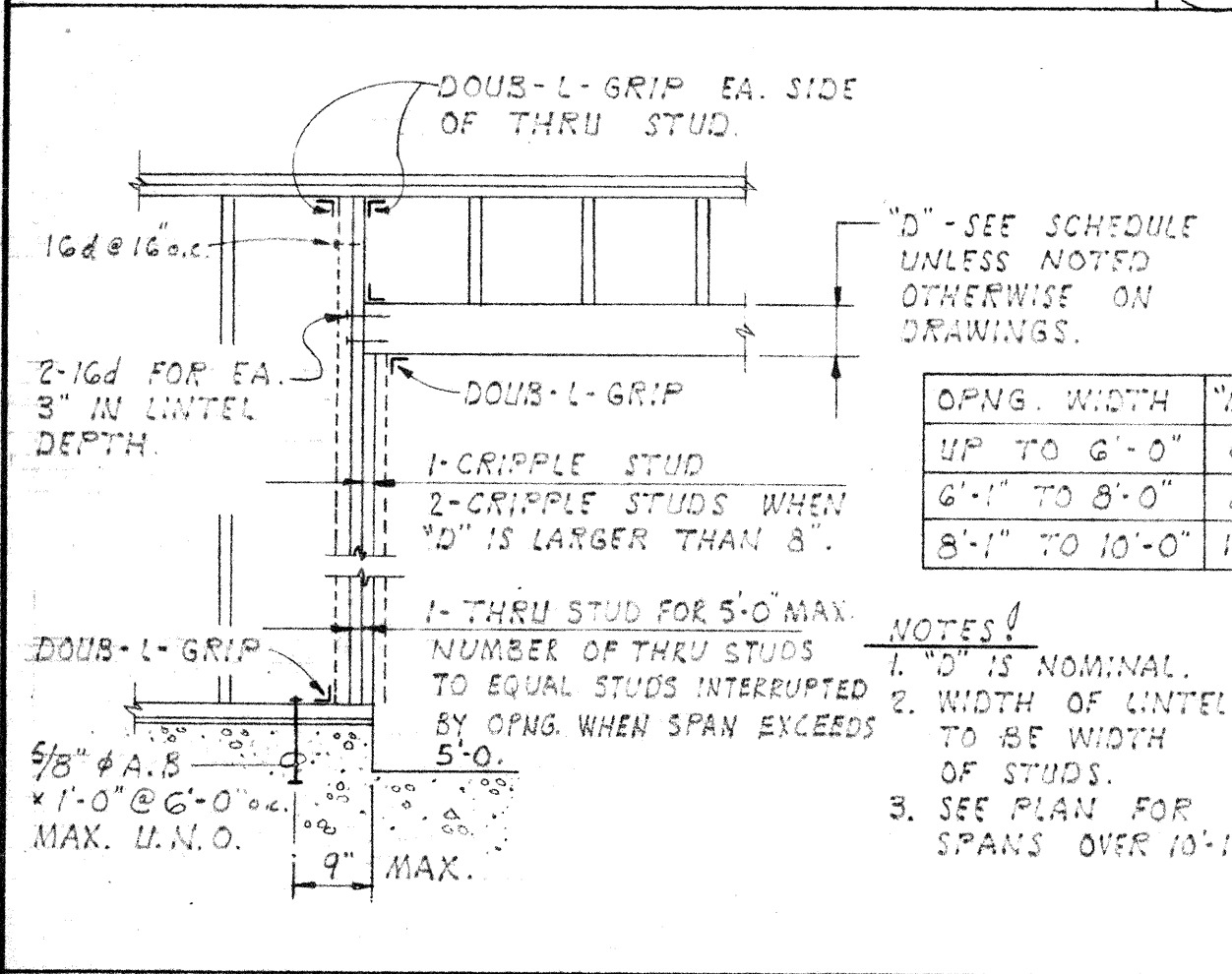
SLAB DEPRESSION 4



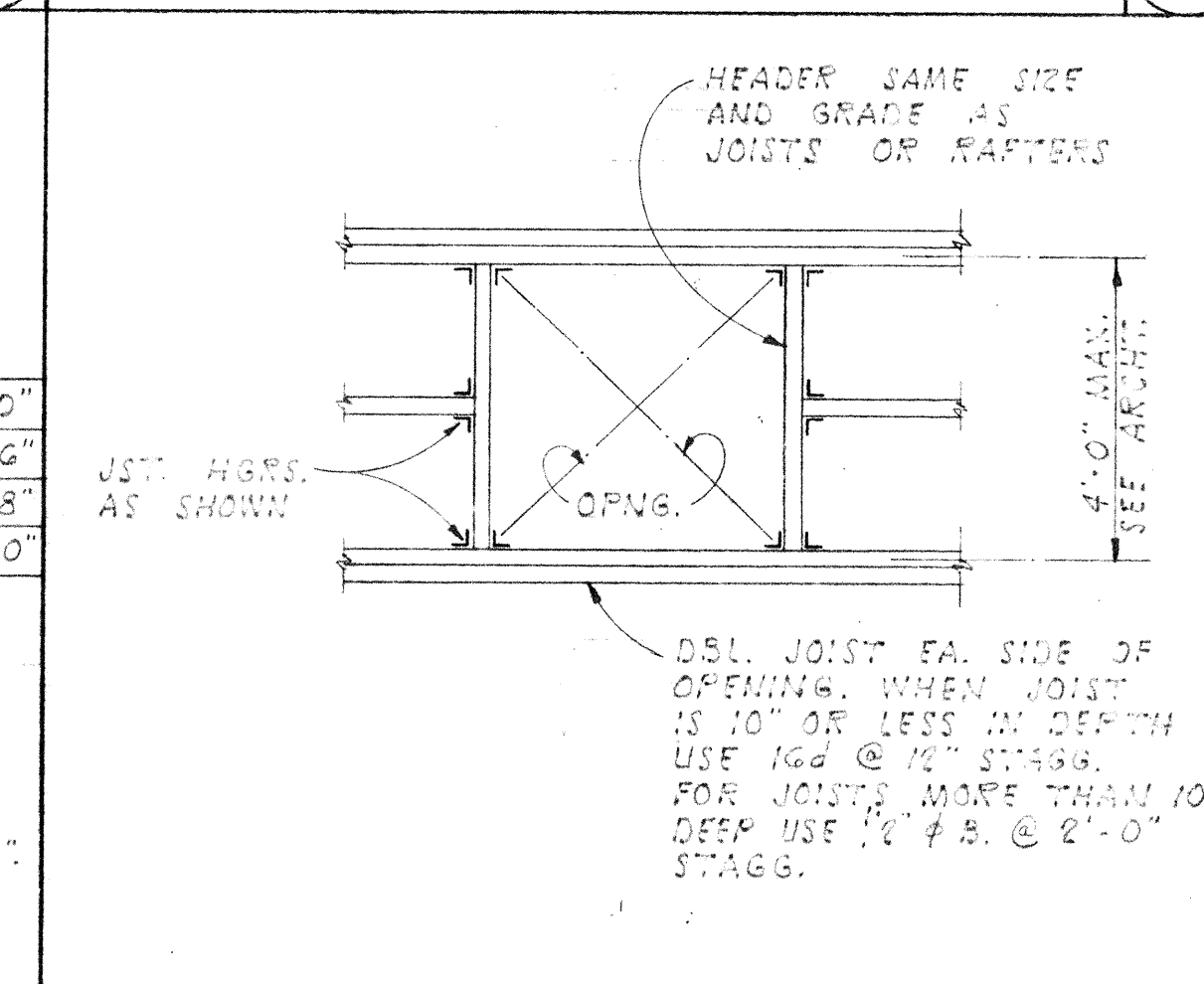
PIPE & TRENCH LOCATION 5



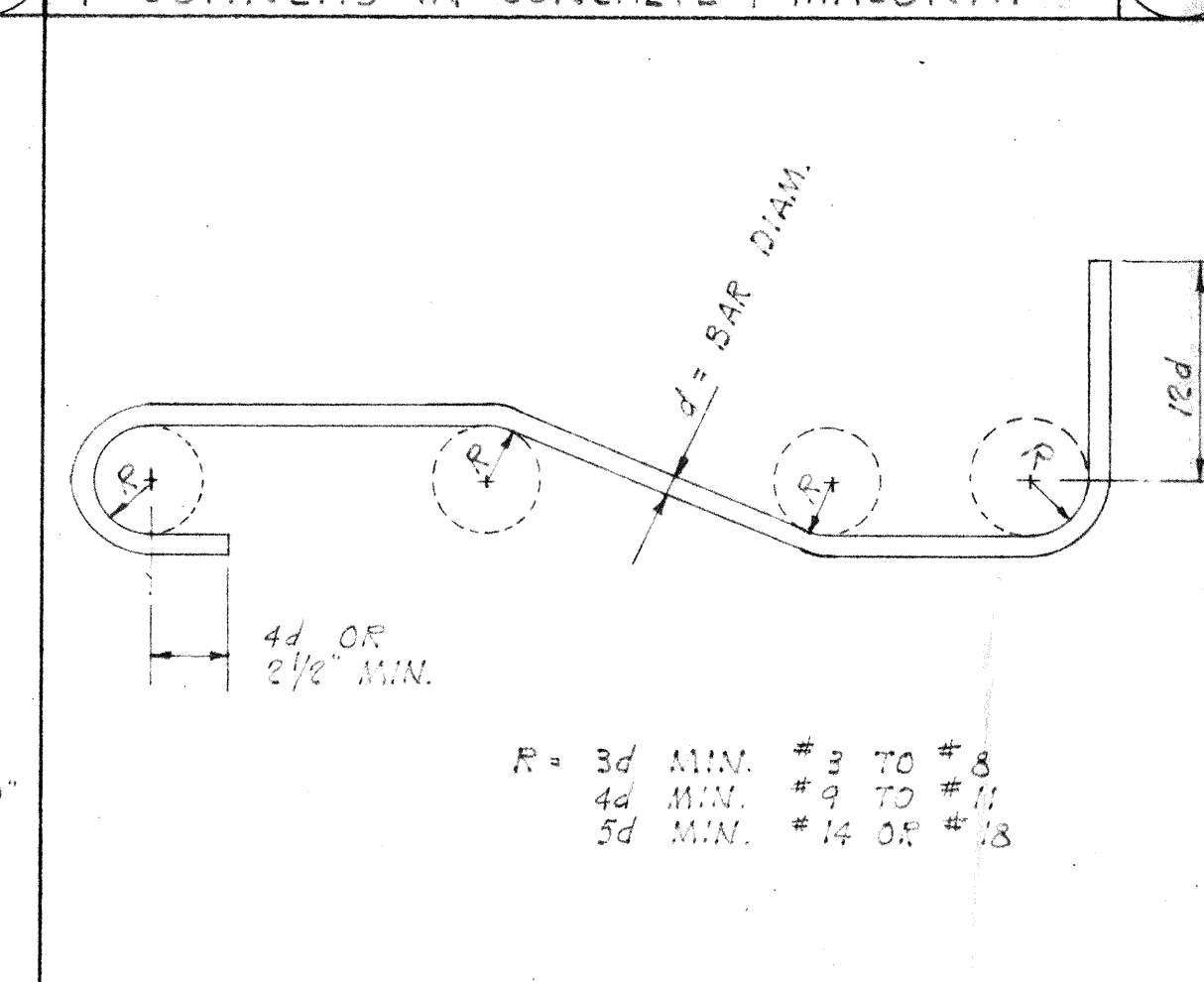
TY. REINF. @ INTERSECTIONS & CORNERS IN CONCRETE & MASONRY 6



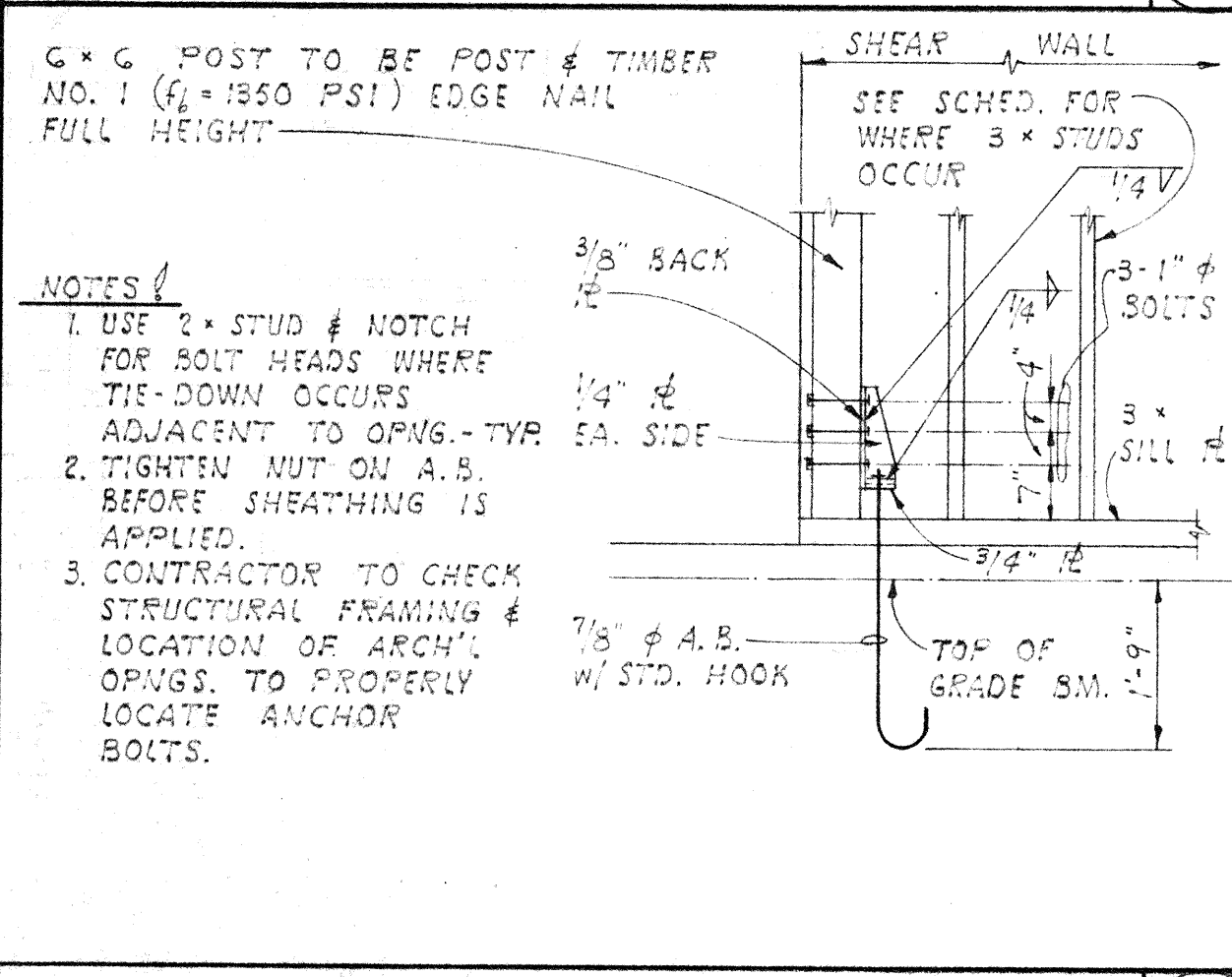
OPNG. DETAIL @ BRG. WALL 7



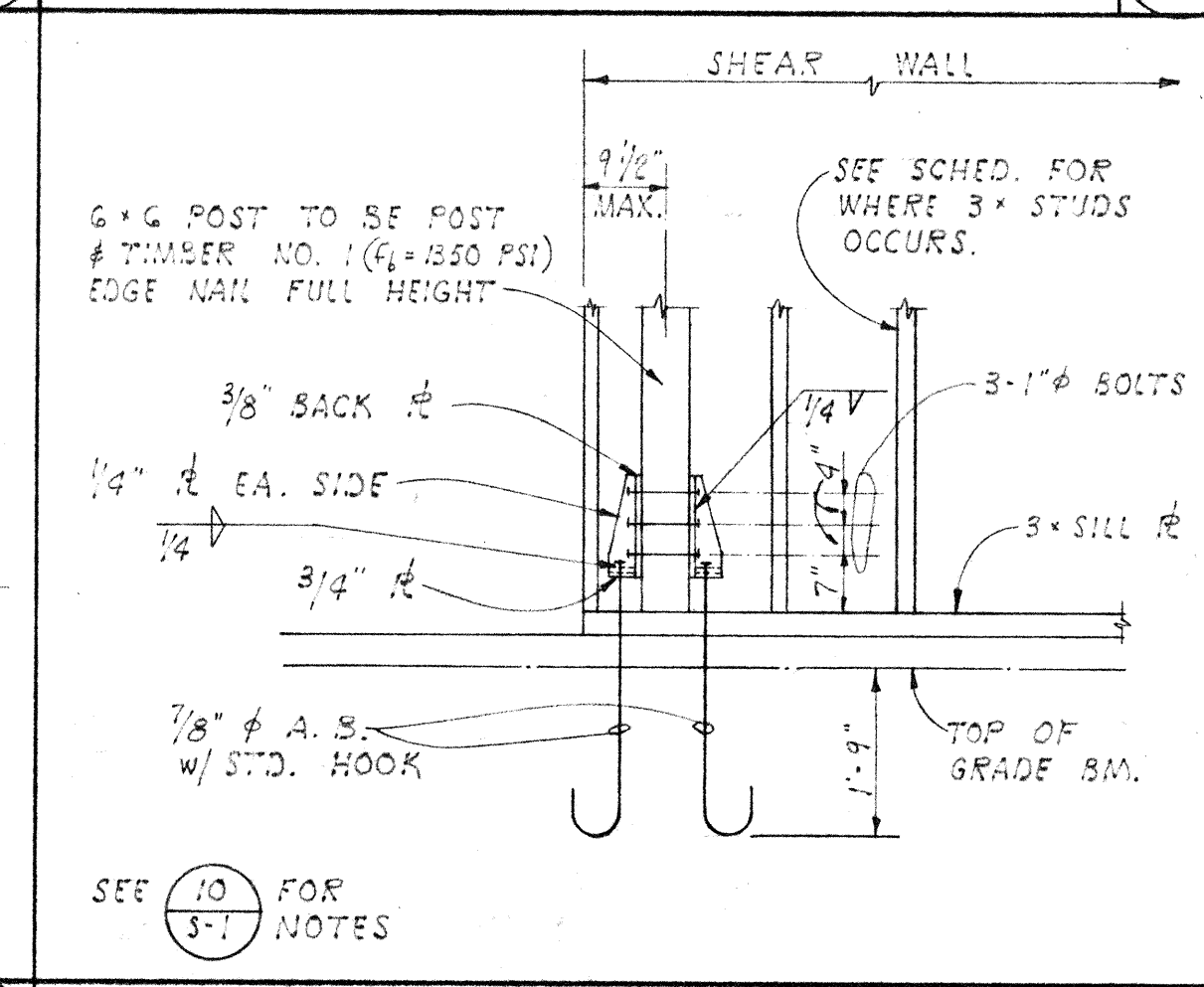
ROOF OR FLOOR OPENING 8



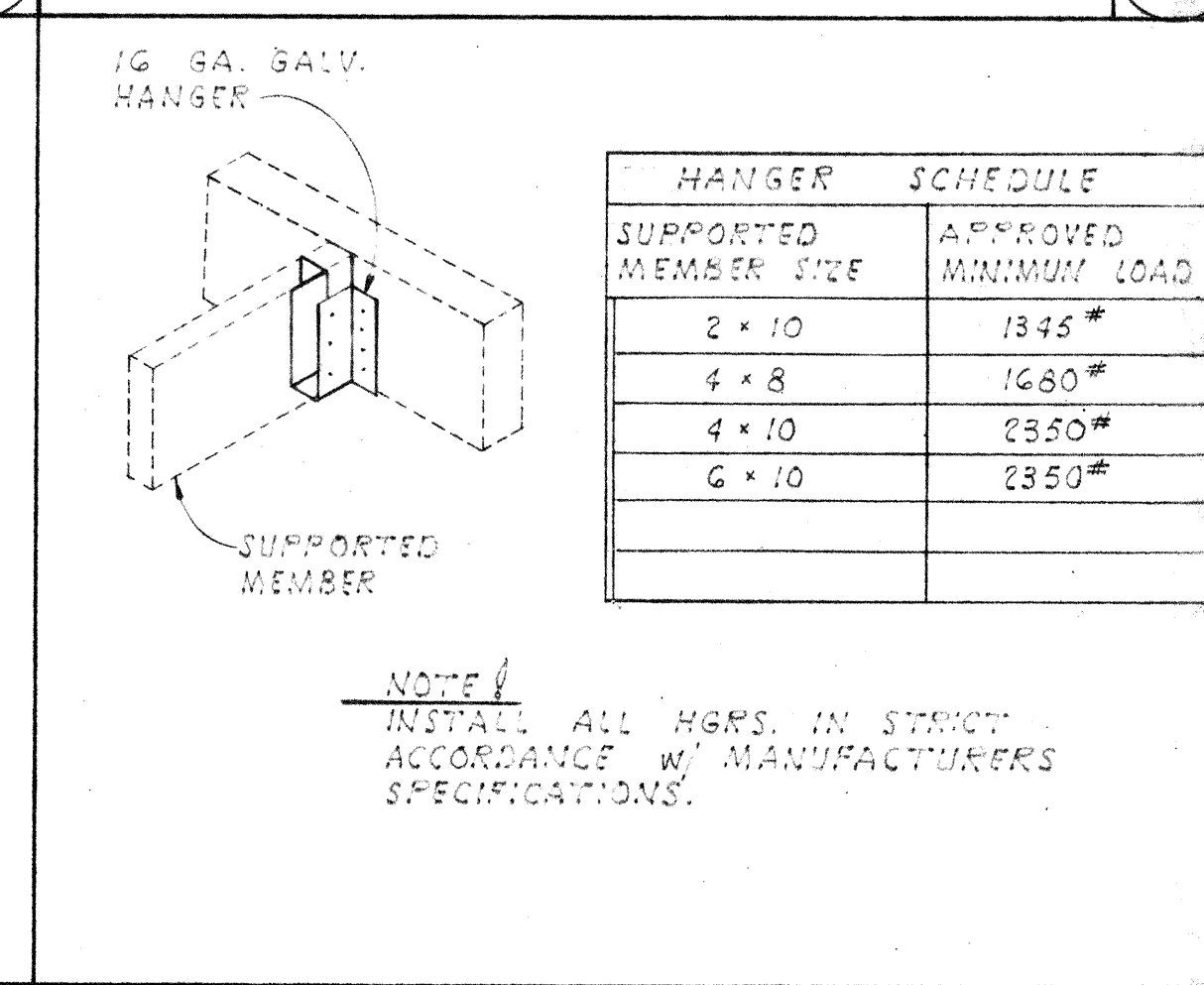
HOOKS & BENDS 9



TIE-DOWN #1 (GOOD FOR 12.2') 10



TIE-DOWN #2 (GOOD FOR 24.5') 11



JOIST HANGERS 12

STRUCTURAL NOTES

- GENERAL**
- CONTRACTOR TO FOLLOW PROVISIONS OF THE UNIFORM BUILDING CODE, 1975 EDITION AND ORDINANCE NO. 520 NS, CITY OF THOUSAND OAKS.
 - CONTRACTOR TO VERIFY ALL DIMENSIONS. ANY DISCREPANCIES OR CONDITIONS DIFFERENT FROM THOSE INDICATED ON THE DRAWINGS SHALL BE BROUGHT TO THE STRUCTURAL ENGINEER'S ATTENTION.
 - ASTM DESIGNATIONS TO BE OF LATEST DATE ACCEPTABLE TO THE CHECKING AGENCY.
 - DETAILS MARKED TYPICAL ON DRAWINGS ARE INTENDED TO SHOW TYPICAL CONDITIONS FOR THE ENTIRE PROJECT AND ARE TO APPLY WHERE SIMILAR CONDITIONS OCCUR.
 - FRAMING CONDITIONS NOT SPECIFICALLY SHOWN SHALL BE FRAMED IDENTICAL TO TYPICAL DETAILS AS SHOWN FOR RESPECTIVE MATERIALS.
 - REFER TO ARCHITECTURAL, ELECTRICAL, AND MECHANICAL DRAWINGS FOR SLAB DEPRESSIONS, SLOPES, CURBS, DRAINS, OPENINGS, ETC., NOT SHOWN ON STRUCTURAL DRAWINGS.
 - PROVIDE OPENINGS AS REQUIRED PER TYPICAL DETAILS, FOR MECHANICAL AND ELECTRICAL EQUIPMENT, VENT DUCTS, PIPING, ETC. OBTAIN STRUCTURAL ENGINEER'S APPROVAL BEFORE PROVIDING OPENINGS REQUIRED BY THE MECHANICAL, ELECTRICAL OR ARCHITECTURAL DRAWINGS WHEN NOT SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS.
 - ALL MECHANICAL AND ELECTRICAL EQUIPMENT TO BE BRACED Laterally AND ANCHORED ADEQUATELY FOR SEISMIC LOADS.

- DESIGN DATA**
- LIVE LOADS: ROOF 20 psf.
 - STRESSES:

CONCRETE	$f'_c = 2,500$ psi	CONCRETE BLOCK	$f'_m = 750$ psi (SOLID GROUTED)
REINFORCING STEEL	$f_s = 20,000$ psi GRADE 40	SHOP WELDING	= 100% ALLOW.
STRUCTURAL STEEL	$f_s = 24,000$ psi GRADE 60	FIELD WELDING	= 100% ALLOW.
TIMBER	$f_b = 22,000$ psi	GLUED LAMINATED	$f_b = 2200$ psi

- SOIL DATA**
- THE SOIL IS DARK BROWN SILTY CLAY.
 - THE MATERIAL AND COMPACTION OF ALL FILL SHALL BE APPROVED BY A QUALIFIED SOILS ENGINEER.
 - DESIGN SOIL BEARING PRESSURE IS 2000psf.
 - SOIL INVESTIGATION WAS MADE BY GORIAN AND ASSOCIATES, SEPTEMBER 26, 1975 NO. 336-1-10.
 - BOTTOM OF FOOTING TO BE 2'-0" MINIMUM BELOW FINISH FLOOR OR FINISHED GRADE WHICH EVER IS LOWER.
 - ALL BACKFILLING OF TRENCHES WITHIN AND NEXT TO BUILDING MUST BE COMPACTED TO DENSITY AS REQUIRED BY SOIL ENGINEER.

- INSPECTION AND TESTING**
- CONTINUOUS INSPECTION IS NOT REQUIRED EXCEPT ON THE FOLLOWING: STRUCTURAL WELDING AND CONCRETE.
 - COPIES OF THE REPORTS FOR ALL REQUIRED TEST AND INSPECTIONS TO BE SENT TO THE STRUCTURAL ENGINEER.
 - TESTS ARE REQUIRED FOR THE FOLLOWING MATERIALS:
 - CONCRETE COMPRESSION TESTS
 - CONCRETE SLUMP TESTS
 - MORTAR COMPRESSION TESTS
 - GROUT COMPRESSION TESTS
 - SOIL COMPACTION TESTS
 - OTHER TESTS AS MAY BE REQUIRED TO INSURE MATERIAL CONFORMANCE TO ASTM DESIGNATIONS.

- STRUCTURAL STEEL**
- STRUCTURAL STEEL: ASTM-A36 AND SHALL BE IDENTIFIED WITH MILL CERTIFICATES TO BE SENT TO STRUCTURAL ENGINEER.
 - PIPE COLUMNS: ASTM-A53, TYPES B OR S, GRADE B, SEAMLESS OR ELECTRIC WELDED PIPE. ALL DIMENSIONS SHOWN ON STRUCTURAL DRAWINGS INDICATE INSIDE DIAMETER.
 - SQUARE AND RECTANGULAR TUBING: ASTM-A500 OR ASTM-A501, GRADE B.
 - BOLTS: ASTM-A307 FOR ALL SHOP AND/OR FIELD CONNECTIONS USING 3/4" UNFINISHED AMERICAN STANDARD REGULAR BOLTS UNLESS NOTED OTHERWISE. "ANCHOR BOLTS" SHALL BE HOOK BOLTS (WITH 2" HOOK) OR MACHINE BOLTS WITH PLATE WASHER 2-1/2" SQ. x 1/4" THICK TACK WELDED TO BOLT HEAD.
 - CONNECTIONS AND FABRICATION TO BE ACCORDING TO AISC SPECIFICATION UNLESS NOTED OTHERWISE.
 - WELDING BY ELECTRIC-ARC PROCESS BY QUALIFIED AND CERTIFIED WELDERS USING APPROVED AND PROPER ELECTRODES, AS PER ASTM-A233.
 - SHOP DETAILS TO BE SUBMITTED TO STRUCTURAL ENGINEER FOR REVIEW BEFORE FABRICATION.
 - STEEL ERECTOR SHALL PROVIDE ALL ERECTION BRACING REQUIRED TO MAINTAIN STRUCTURE PLUMB AND PROPERLY BRACED DURING CONSTRUCTION. ALL ERECTION BRACING TO COMPLY WITH STATE SAFETY CODES.
 - STEEL IN CONTACT WITH SOIL SHALL BE PROTECTED WITH A MINIMUM OF 4" OF CONCRETE.

INDEX

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S-2-----FOUNDATION PLAN, CONCRETE CURB & SLAB PLAN

S-3-----ROOF FRAMING PLAN, SHEAR PANEL & SIM-LAM BEAM SCHEDULES

S-4-----DETAILS

S-5-----DETAILS

S-6-----DETAILS

HANGER	SCHEDULE
SUPPORTED MEMBER SIZE	APPROVED MINIMUM LOAD
2 x 10	1345#
4 x 8	1680#
4 x 10	2350#
6 x 10	2350#

STRUCTURAL NOTES (CONT)

- CONCRETE**
- CONCRETE TO BE 2500psi AT 28 DAYS.
 - CEMENT: TESTED, TYPE I PORTLAND, ASTM-C150. 5.5 SACKS OF CEMENT PER CUBIC YARD.
 - AGGREGATES: ASTM-C33. MAXIMUM SIZE 1".
 - WATER: DOMESTIC SUPPLY WITH 7.0 GALLONS MAXIMUM PER SACK OF CEMENT. SLUMP NOT TO EXCEED 4 INCHES.
 - REINFORCING STEEL TO BE BILLET STEEL, CLEAN AND UNRUSTED: ASTM-A615, GRADE 40 FOR #3 AND #4 BARS AND GRADE 60 FOR #5 BARS AND LARGER.
 - LAPPED SPLICES TO HAVE A 36 DIAMETER LAP WITH 2'-0" MINIMUM UNLESS NOTED OTHERWISE.
 - DOWELS TO BE PROVIDED FOR ALL VERTICAL AND HORIZONTAL REINFORCING BARS IN WALLS, COLUMNS, ETC., OF SAME SIZE AND NUMBER FROM FOOTINGS, SUPPORTING BEAMS, WALLS AND COLUMNS, EVEN IF NOT SPECIFICALLY SHOWN ON THE DETAILS.
 - WELDED WIRE FABRIC: ASTM-A185. LAP 6" ON ALL EDGES.
 - ADMIXTURE SHALL BE USED AS REQUIRED BY JOB SITE CONDITIONS TO MINIMIZE CRACKS AND SHRINKAGE WITH APPROVAL OF THE STRUCTURAL ENGINEER.
 - VERTICAL CONSTRUCTION JOINTS IN PLANTER OR RETAINING WALLS SHALL BE PROVIDED AT APPROXIMATELY 25'-0" OC MAXIMUM UNLESS NOTED OTHERWISE.
 - POURING PROCEDURE AND A LAYOUT SHOWING LOCATION OF CONSTRUCTION JOINTS FOR SLABS ON GRADE SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. AREA OF SLAB POUR TO BE APPROXIMATELY SQUARE AND NOT TO EXCEED 400 SQUARE FEET.
 - REINFORCING STEEL CLEARANCES (UNLESS NOTED OTHERWISE):
 - FOOTINGS:
 - POURED AGAINST EARTH ----- 3"
 - FORMED SURFACE ----- 2"
 - WALLS:
 - EXTERIOR FACE
 - #3, #4 AND #5 BARS ----- 1-1/2"
 - #6 BARS AND LARGER ----- 2"
 - INTERIOR FACE ----- 3/4"
 - SURFACES IN CONTACT WITH SOIL --- 2"
- FORMS NOT TO BE REMOVED FOR A MINIMUM OF 2 DAYS.

- CONCRETE BLOCK**
- MASONRY TO BE REINFORCED CONCRETE BLOCK FILLED CELL CONSTRUCTION AS PER CHAPTER 24 OF UNIFORM BUILDING CODE.
 - CONCRETE BLOCK: ASTM-C90. FACE SHELL THICKNESS 1-1/4" MINIMUM.
 - SAND: ASTM-C144.
 - CEMENT AND REINFORCING: SAME AS REQUIRED FOR CONCRETE.
 - MORTAR: 1 PART CEMENT, 3 PARTS SAND, 1/4 PART LIME PUTTY.
 - PEA GRAVEL CONCRETE GROUT FOR FILLING CELLS TO BE 2,000psi AT 28 DAYS. MIX 1 PART CEMENT, 3 PARTS SAND, 2 PARTS PEA GRAVEL.
 - WEBS OF EACH COURSE DIRECTLY OVER WEBS IN COURSE BELOW. BED JOINTS TO BE FULL BEDDED IN MORTAR. HEAD JOINTS TO BE SOLIDLY FILLED AT LEAST 1-1/4" FROM EACH FACE.
 - CLEANOUT OPENINGS SHALL BE PROVIDED AT THE BOTTOMS OF ALL CELLS TO BE FILLED AT EACH LEFT OR FOUR OF GROUT WHERE SUCH LEFT OR FOUR OF GROUT IS IN EXCESS OF FOUR FEET (4'-0") IN HEIGHT. MAXIMUM HEIGHT OF ANY FOUR TO BE 8'-0". ANY OVERHANGING MORTAR OR OTHER OBSTRUCTION OR DEBRIS SHALL BE REMOVED FROM THE INSIDES OF SUCH CELL WALLS. THE CLEANOUTS SHALL BE SEALED BEFORE GROUTING, AFTER INSPECTION.
 - VERTICAL REINFORCING SHALL BE HELD SECURELY IN POSITION BY WIRE TIES EMBEDDED IN JOINTS SPACED NOT OVER 4'-0" OR VERTICALLY. AT SPLICES, LAP REINFORCING BARS 40 DIAMETER (2'-0" MIN.) UNLESS NOTED.
 - FILL 2-COURSES SOLID WITH PEA GRAVEL CONCRETE GROUT AT HORIZONTAL REINFORCING BARS. METAL LATH STRIPS TO BE USED AS FORMS IN NEXT JOINT BELOW HORIZONTAL REINFORCING BARS. DO NOT USE PAPER.
 - PROVIDE APPROVED WIRE BRACKETS TO KEEP REINFORCING BARS IN CORRECT POSITION.
 - GROUT TO BE PUDDLED AND TAMPED TO ASSURE FILLING OF ALL VOIDS.

- TIMBER**
- ALL TIMBER TO BE DOUGLAS FIR-LARCH UNLESS NOTED OTHERWISE AND SHALL CONFORM TO 1970 STANDARD GRADING RULES FOR WESTERN LUMBER BY WPA OR WOLFB. ALL LUMBER TO BE GRADE MARKED AS CALLED FOR BELOW:

CATEGORY	GRADE	STRESS
STRUCTURAL LIGHT FRAMING	NO. 1	$F_b = 1,750$ psi
TYPICAL FRAMING	CONSTRUCTION	$F_b = 1,050$ psi
JOISTS & PLANKS	NO. 2	$F_b = 1,250$ psi
BEAMS & STRINGERS	NO. 1	$F_b = 1,350$ psi
POSTS & TIMBERS	NO. 1	$F_b = 1,200$ psi
 - SILLS ON CONCRETE TO BE PRESSURE TREATED DOUGLAS FIR.
 - BOLTS IN TIMBER TO HAVE STANDARD CUP WASHERS, UNLESS NOTED AND UNLESS USED WITH STEEL PLATES OR ANGLES. HOLES FOR BOLTS TO BE NOT MORE THAN 1/16" LARGER THAN BOLT DIAMETER. (ALSO SEE BOLTS UNDER "STRUCTURAL STEEL").
 - NAILS TO BE COMMON WIRE NAILS. HOLES FOR 20d AND LARGER NAILS TO BE PRE-DRILLED.
 - THE FOLLOWING NAILS MAY BE USED FOR PLYWOOD IF APPROVED BY THE STRUCTURAL ENGINEER.
 - 10d NAILS FOR 1/2" PLYWOOD TO BE 9 GA. PLYWOOD NAIL 2-1/4" LONG.
 - 10d NAILS FOR 3/4" PLYWOOD TO BE STANDARD FULL LENGTH COMMON WIRE NAILS.
 - JOIST HANGERS SHOWN ON STRUCTURAL DRAWINGS ARE TO BE 16 GA. (MINIMUM) GALV. STEEL AND TO BE APPROVED BY THE CHECKING AGENCY. THEY SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 - SOLID BLOCKING TO BE PROVIDED AT ALL SUPPORTS FOR ROOF JOISTS.
 - PLYWOOD SHEATHING TO BE DOUGLAS FIR PLYWOOD, (DPPA GRADE MARKED). STRUCTURAL I AS PER PS 1-74. NAILING ON PLYWOOD SHEATHING TO BE INSPECTED PRIOR TO PLACING OF COVERING MATERIAL. SOLID BLOCKING (SHEAR WALLS ONLY) SHALL CONSIST OF 3 x BLOCKING.
 - GLUED LAMINATED TIMBER SHALL BE IN ACCORDANCE WITH PS 56-73 AND AISC 117-74. THE GLUED LAMINATED TIMBER TO BE COMBINATION 24F. SEE GLU-LAM BEAM SCHEDULE FOR APPEARANCE GRADE AND TYPE OF GLUE. END JOINTS MAY BE EITHER A FLARE SCARF JOINT HAVING A SLOPE NOT STEEPER THAN 1:10 OR AN APPROVED FINGER JOINT. ALL MEMBERS TO BE TREATED WITH ONE SHOP COAT OF "R22" OR EQUAL. SEE PAINTING SECTION IN SPECIFICATIONS AND VERIFY COMPATIBILITY WITH STAIN. MANUFACTURER TO FURNISH AN AITC CERTIFICATE OF COMPLIANCE TO BE SENT TO THE STRUCTURAL ENGINEER.
 - ALL STUD WALLS SHALL BE FIRE STOPPED WITH 2" THICK MATERIAL AT THE FLOOR, CEILING, AND MID-HEIGHT. MAXIMUM SPACING FOR BLOCKING IS 8'-0".
 - ALL WOOD MEMBERS SHALL BE SHAVED AS SHOWN AND AS REQ'D BY DETAILS, EVEN IF NOT SPECIFICALLY CALLED OUT.

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REVISIONS
 NO. 1
 NO. 2
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 NO. 9
 NO. 10
 NO. 11
 NO. 12

STRUCTURAL NOTES AND TYPICAL DETAILS
 CONEJO VALLEY CHURCH OF CHRIST
 MANITARY BUILDING
 5716 THOUSAND OAKS, CALIFORNIA